GENERAL SPECIFICATIONS
FOR THE REHABILITATION OF SANITARY SEWER LINE - 2017

1. **GENERAL**

1.1 This specification is intended to provide guidance for the rehabilitation of approximately Two thousand one hundred fifty six (2156) linear feet of eight (8) inch vitrified clay pipe (VCP) sanitary sewer line in Baldwin township at Various Street Locations using Cured-In-Place Pipe (CIPP); 3 spot repairlining locations for approximate total of 25 feet, Raising one buried manhole, Installing one new manhole at existing lamp hole location and related work.

1.2 The Contractor shall be allowed to use either the inversion or pulled-in-place method as long as installation is in compliance with all applicable ASTM Standards for the method and products used.

1.3 **Quantities listed in this document are approximate and are assumed solely for comparison of Bids. Compensation will be based upon the unit price bid and actual quantities.**

1.4 Each Bidder shall carefully examine the bid documents and should it find any discrepancies, ambiguities or omissions, at once but no later than **4:00 pm March 5, 2017** notify the Baldwin Township Engineer regarding the nature of the problem or question. This notification must be in writing and may be sent by email.

1.5 Sealed proposals must be mailed or hand delivered to the Baldwin Township Office at 10 Community Park Drive Pittsburgh, Pa. 15234 by **4:00pm EST on Tuesday , March 7, 2017** at which time they will be opened and read in public.

1.6 **The contract time for the work shall be seventy-five (75) consecutive calendar days from the date of Notice-To-Proceed.**

1.7 The Contractor shall be responsible for furnishing, delivery, storage, and handling of all materials.

1.8 The Contractor shall comply with all applicable OSHA regulations and all safety rules. The Contractor shall provide documentation that his/her personnel or subcontractors on this project, have received Confined Space Training. **CONFINED SPACE REGULATIONS AND PROCEDURES WILL BE STRICTLY ENFORCED.**

1.09 The Contractor shall provide, and maintain temporary sanitary facilities in compliance with governing laws. The location for temporary facilities shall be determined at pre construction meeting with Township Officials.

1.10 Material Safety Data Sheets on all products used during construction shall be retained at the job site and be available for Owner's review.

2. SCOPE OF WORK

2.1 The project consists of furnishing all labor, material and equipment necessary to complete the Work covered in this specification. The work shall include bypass/collection of sewage; sewer line cleaning; pre-installation closed circuit television (CCTV) inspection; CIPP installation; re-establishment of existing laterals and inverts; cutting protruding laterals, post-installation CCTV inspection; 3 spot liner locations; Raising one Buried manhole, Installing one new precast concrete manhole at existing Lamp hole location,lining and all other work necessary for a "turnkey" job.

2.2 If Manhole lining is required it will consist of spray applying a cement-based mix to the interior of manholes from the channel to the frame. Results shall be a monolithic liner of a minimum ½″ thickness. Product shall be applied in compliance with the manufacturer's guidelines.

2.3 It is the Contractor's responsibility to visit the project site and obtain all necessary field measurements of the existing pipe for verification of diameter, ovality, length, etc.

2.4 All work and materials shall comply with these specifications, applicable ASTM Standards, and the specific product manufacturer's guidelines. Any conflict between these documents shall be resolved with the Owner prior to proceeding with work.

3. REFERENCED DOCUMENTS

ASTM F1216 – Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube.

ASTM F1743 – Standard Practice for the Rehabilitation of Existing Pipelines and Conduits by the Pulled-in-Place Installation of Cured-in-Place Thermosetting Resin Pipe (CIPP).

ASTM D5813 – Standard Specification for Cured-in-Place Thermosetting Resin Sewer Pipe.

ASTM D790 – Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Material.

ASTM D2990 – Test Methods for Tensile, Compressive, and Flexural Creep and Creep-Rupture of Plastics.

ASTM C109 – Test Method for Compressive Strength of Hydraulic Cement Mortars.

4. PRODUCT, MANUFACTURER, INSTALLER QUALIFICATION REQUIREMENTS

4.1 Bidders are required to be **licensed Contractors in the State of Pennsylvania** at the time of submission of bid.

4.2 All materials planned for use on the project shall be pre-approved by the Owner Engineer.

4.3 CIPP products shall have a minimum 50-year design life. Only proven products with substantial successful long-term track records will be allowed. Documentation must be provided and meet the satisfaction of the Owner.

4.4 The installing contractor shall be licensed or certified by the CIPP manufacturer. The Contractor and its sub-contractor(s) must have a minimum of five (5) years of experience in the installation of the CIPP system proposed. Contractor shall submit list of references (minimum of 4) for similar restoration projects upon the Owner's request. The Contractor shall be responsible for submitting references for sub-contractors.

4.5 The resin system used on this project shall be within the resin manufacturer's recommended shelf life. Resins that are expired are not allowed.

4.6 Manhole lining material shall be *Permacast MS-10,000* or approved equal. The installing contractor shall be licensed or certified by the product manufacturer.

4.7 The Contractor must satisfy all insurance, financial and bonding requirements of the Owner.

5. SUBMITTALS

5.1 A Notice-of-Award for the Contract will be issued once a successful bidder has been determined. Upon receiving Notice of Award of Contract, the Bidder shall, within ten **(10)** Calendar Days submit the following (Include Documentation on both CIPP Spot Liners and Manhole Lining Products):

5.1.1 Manufacturer's Certificate of Compliance certifying compliance with the applicable specifications and standards.

5.1.2 Documentation that installer has the experience and is licensed or certified by the manufacturers as required in Section 4.3 and 4.5.

5.1.3 Manufacturer's product technical data sheet(s).

5.1.4 Manufacturer's installation instructions and procedures.

5.1.5 CIPP pipe sizing and thickness data using applicable ASTM standards.

5.1.6 Contractor's Certificate of Insurance

5.1.7 Proof that Contractor possesses a valid Pennsylvania Contractor's License.

6. EXECUTION

6.1 All cured-in-place lining products shall comply with applicable ASTM standards. Owners Engineer shall review product data information for compliance. For direct inversion installations, the CIPP shall be installed in accordance with the practices given in ASTM F1216 and for pulled-in-place installations, ASTM F2019.

6.2 The Contractor shall provide its own water source. All work necessary for the project completion where not described in a bid schedule item shall be included in the bid item schedule as part of the bid. (example: Traffic Control).

6.3 Where work is performed along roadways or in any manner has an impact on traffic, the contractor shall furnish appropriate barricades, cones, signage, and/or flagmen necessary to protect the public and the work. When used during periods of darkness, such equipment/devices shall be suitably illuminated. **Payment shall be included in the CIPP lining per foot price.**

6.4 The Contractor shall be responsible for diverting/bypassing the flow of the existing service during CIPP installation.
NOTE: The Contractor shall be responsible for determining the best method of diversion and must submit its plan to the Owner for approval. **Payment for service diversion/bypass shall be included in the CIPP lining per foot price.**

6.5 It is the responsibility of the Contractor to clear the sewer lines of all debris, roots, and other materials that would block proper installation of the cured-in-place pipe. Debris removed from the sewers during cleaning shall be collected and disposed of onsite at the direction of the Owners Representative.

6.6 If pre-installation inspection reveals an obstruction such as a collapse or dropped joint, that was unknown to the Owner and will prevent the installation process, the Contractor shall immediately notify the Owner so that an agreed upon resolution can be expedited. Any such item shall be considered as a separate pay item.

6.7 The Contractor shall be responsible for confirming the location of all branch service connections prior to installing the CIPP. Reestablishment of branch connections shall be done so without excavation, utilizing a remotely controlled cutting device monitored by CCTV.

6.8 The flexible tube shall be fabricated to a size that when installed, the final cured product is snug against the wall of the host pipe but not bonded to the pipe.

6.9 The interface between exterior surface and the liner at the manhole entrance and exit should be watertight. The ends of the liner, lateral cutouts and invert cutouts should be neatly cut and have a smooth finish.

6.10 The thickness of the liner shall be that determined by ASTM F1216 calculations or six (6) millimeters**, whichever is greater.**

6.11 Contractor shall perform post-cleaning video inspection of the pipelines. Only PACP (Pipeline Assessment & Certified Program) certified personnel shall perform the inspections.

7. QUALITY ASSURANCE

7.1 The Contractor shall prepare a restrained sample for each CIPP installed section. **For this project there will be Five (5) samples.** Restrained samples shall be made using forms having a similar inside diameter to that of the existing pipe. The sample shall be taken from the receiving manhole. The form must be maintained in a reasonably horizontal orientation using a proper heat sink. The length of the sample shall be a minimum of six (6) inches and shall be turned over to the Owner for inspection. **All cost associated with providing these samples shall be included in the lump sum price bid for mobilization.**

7.2 The Contractor shall monitor and record the cure cycle temperatures and provide the Owner a copy of the data.

7.3 A recorded video inspection shall be conducted after final installation to identify defects such as annular gaps, interior bulges, ribs, ripples, folds or other irregularities. This post-installation video shall be performed with no flow through the pipe so that a full, unobstructed view of the new liner can be obtained. The Contractor shall review the video with the Owners Representative and shall provide the Owner with a copy of the video in DVD format and a suitable written log for each line section. Any pipe sections that have defects that affect the integrity, functionality and longevity of the system will be deemed unacceptable and shall be replaced at no additional cost to the owner.

8. FINAL ACCEPTANCE

8.1 All sampling, testing and post-installation documentation to be provided to Owner in the requested format as required in these specifications are to be completed before final acceptance.

8.2 The Contractor shall perform a detailed CCTV inspection in accordance with ASTM standards in the presence of the Owner after installation of the CIPP liner. Unedited digital documentation of the inspection shall be provided to the Owner within ten (10) working days of the liner installation. The data shall note the inspection date, location of all reconnected laterals, debris, as well as any defects in the liner. This documentation and any required corrections shall be completed before final acceptance.

9 WARRANTY

9.1 The materials used for this project shall be certified by the manufacturer for the specific purpose. The Contractor shall warrant the liner material and installation for a period of one (2) years from date of acceptance. During the warranty period, any defect which may materially affect the integrity, strength, function and/or operation of the pipe, shall be repaired at the Contractor's expense.

9.2 On any work completed by the contractor that is defective and/or has been repaired, the Contractor shall warrant this work for one (2) years in addition to the warranty required by the contract.