ADDENDUM NO. 1

WATERVIEW SANITARY SEWER SYSTEM LINING PROJECT
CITY OF GREENFIELD, INDIANA
AMERICAN STRUCTUREPOINT PROJECT NO. 2021.02592

JUNE 30, 2023

PREPARED BY:

AMERICAN STRUCTUREPOINT, INC.
116 E. BERRY STREET, SUITE 1515
FORT WAYNE, IN 46802

This Addendum forms part of the Contract Documents and modifies the original Bidding Documents as noted below. Acknowledge receipt of the Addendum in the space provided in the Bid Form. Failure to do so may subject Bidder to disqualification.

REVISIONS TO PROJECT MANUAL:

BID

1. Replace Bid Sheets 3&4 (removed Bid items 0011-0014 and added Construction Contingency Bid Item 0002).
2. Replace Spec 33 01 30 (Relining Sewers) in its entirety.
3. Replace Spec 01 20 00 (Price and Payment Procedures) in its entirety.

CLARIFICATIONS/QUESTIONS AND ANSWERS:

1. **Question:** Can the individual point repairs be removed from the BID sheet and included in the Construction Contingency (Bid Item 0002).
   Answer: Yes. Revised Bid Form and spec 01 20 00 is included.

2. **Question:** Is continuous temperature monitoring required per spec 33 01 30.72, section 2.1.B
   Answer: No. See revised spec sheet 33 01 30.72-5.

3. **Question:** Who will determine whether grouting is required? Can this requirement be removed from spec 33 01 30.72. section 3.2.E
   Answer: Yes. See Revised spec 33 01 30.72

4. **Question**: Can we extend working hours from 7 am to 7 pm during summer months?
   Answer: This will be determined after the award of Bid.

5. **Questions**: Is Tensile testing required for gravity pipe?
   Answer: No. Only for pressure pipe.

6. **Question:** The End Sealing per spec 33 01 30.72; section 2.3.B.4 is open to many products with some much more expensive than others. Can Hydrophilic O-rings by Insignia be spec'd so that all bids are on based on same product and price comparison?
   Answer: Yes. Revised spec is included to refer to Insignia.

7. **Question:** Will the City provide access to the Lift Station?
   Answer: Yes. They will also be monitoring the water levels in the station to ensure water does not back up into incoming pipes.

8. **Question:** Can the City recommend a local contractor for excavation work if needed?
   Answer: The City can provide a list of those they have worked with but they will not provide a recommendation letter.

9. **Question:** Is there a nearby waste disposal site or location to dump material cleaned from sewers such as roots, etc?
   Answer: Material can be taken to local treatment plant. General bypass pumping can be done by extending to next manhole or connecting to bypass at the lift station.

10. **Question:** Will City provide water during construction activities?
    Answer: Yes. There is a bulk filling station in City. Also per spec 01 50 00-2 a meter can be placed on hydrant with no associated fees. Contractor will be limited to 1 hydrant near construction site.

11. **Question:** Is air testing of liner required?
    Answer: No

OTHER:

1. The sign-in sheet for the pre-bid meeting which was held June 27, 2023 is included with this addendum.
2. Acknowledgement of Addendum

END OF ADDENDUM NO. 1

PART 3
CONTRACT ITEMS AND UNIT PRICES

Bid Item	Description	Quantity	Unit	Unit Price	Item Total
0001	MOBILIZATION AND DEMOBILIZATION	1	LS		
0002	CONSTRUCTION CONTINGENCY	1	LS	50,000	50,000
0003	MAINTENANCE OF TRAFFIC	1	LS		
0004	BYPASS PUMPING	1	LS		
0005	8-INCH DIAMETER CIPP LINING	4,348	LF		
0006	10-INCH DIAMETER CIPP LINING	3,803	LF		
0007	12-INCH DIAMETER CIPP LINING	933	LF		
0008	ROOT REMOVAL	1,830	LF		
0009	CUT PROTRUDING TAP	3	EA		
0010	SANITARY SEWER, LATERAL REINSTATEMENT IN CURED-IN-PLACE PIPE	151	EA		
0011	LINE MANHOLE	374	VF		
0012	REPLACE MANHOLE FRAME AND LID (Assumed Quantity)	5	EA		
0013	MANHOLE BENCH REPLACEMENT (Assumed Quantity	4	EA		

A. Total of Base Bid Items (in words):	*(In figures)*
	$

Mandatory Alternate Bid

0014	6-INCH LATERAL LINER, UP TO 5’	151	EA		

B. Total Base Bide with Mandatory Alternate Bid (in words)	*(In figures)*
	$

SECTION 01 20 00 - PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Contingency allowances.

B. Schedule of Values.

C. Application for Payment.

D. Change procedures.

E. Defect assessment.

F. Unit prices.

1.2 CONTINGENCY ALLOWANCES

A. Contingency allowances are for unforeseen Work or Work requested by the Owner. The Contractor shall carry out the Work only after approval by the Owner.

B. Contractor's costs for products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead, and profit will be included in Change Orders authorizing expenditure of funds from this contingency allowance.

C. Funds will be drawn from contingency allowance only by Change Order upon approval by the Owner.

D. At closeout of Contract, funds remaining in contingency allowance will be credited to Owner by Change Order.

1.3 SCHEDULE OF VALUES

A. The Unit Prices submitted as the Bid and incorporated into the Agreement shall serve as the Schedule of Values.

1.4 APPLICATION FOR PAYMENT

A. Submit three copies of each Application for Payment on EJCDC C-620 - Contractor's Application for Payment.

B. Content and Format: Use Schedule of Values for listing items in Application for Payment.

C. Submit updated construction schedule with each Application for Payment.

D. Payment Period: Submit at intervals stipulated in the Agreement.

E. Submit submittals with transmittal letter as specified in Section 01 33 00 - Submittal Procedures.

F. Submit three copies of all waivers requested by Owner.

G. Substantiating Data: When Engineer requires substantiating information, submit data justifying dollar amounts in question. Include the following with Application for Payment:
   1. Record Documents as specified in Section 01 70 00 - Execution and Closeout Requirements, for review by Owner, which will be returned to Contractor.
   2. Affidavits attesting to off-Site stored products.
   3. Construction Progress Schedule, revised and current as specified in Section 01 33 00 - Submittal Procedures.

1.5 CHANGE PROCEDURES

A. Submittals: Submit name of individual who is authorized to receive change documents and is responsible for informing others in Contractor's employ or Subcontractors of changes to the Work.

B. Carefully study and compare Contract Documents before proceeding with fabrication and installation of Work. Promptly advise Engineer of any error, inconsistency, omission, or apparent discrepancy.

C. Requests for Interpretation (RFI) and Clarifications: Allot time in construction scheduling for liaison with Engineer; establish procedures for handling queries and clarifications.
   1. Use an approved RFI form for requesting interpretations.
   2. Engineer may respond with a direct answer on the Request for Interpretation form EJCDC C-942 - Field Order, or Proposal Request.

D. Engineer will advise of minor changes in the Work not involving adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on EJCDC C-942.

E. Owner may issue Request for Proposal (RFP) including a detailed description of proposed change with supplementary or revised Drawings and Specifications, a change in Contract Time for executing the change. Contractor will prepare and submit estimate within 7 days to the Owner for review and approval.

F. Stipulated Sum/Price Change Order: Based on Request for Proposal and Contractor's fixed price quotation.

G. Unit Price Change Order: For Contract unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of that which are not predetermined, execute Work under **Work Directive Change**. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.

H. Work Directive Change: Owner may issue directive and signed by Owner, instructing Contractor to proceed with change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute change.

I. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in Conditions of the Contract. Owner will determine change allowable in Contract Sum/Price and Contract Time as provided in Contract Documents.

J. Maintain detailed records of Work done on time and material basis. Provide full information required for evaluation of proposed changes and to substantiate costs for changes in the Work.

K. Document each quotation for change in Project Cost or Time with sufficient data to allow evaluation of quotation.

L. Change Order Forms: EJCDC C-941 - Change Order.

M. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in Conditions of the Contract.

N. Correlation of Contractor Submittals:
1. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as separate line item and adjust Contract Sum/Price.
2. Promptly revise Progress Schedules to reflect change in Contract Time, revise subschedules to adjust times for other items of Work affected by the change, and resubmit.
3. Promptly enter changes in Record Documents.

1.6 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to specified requirements at no cost to the Owner.

B. If, in the opinion of Engineer, it is not practical to remove and replace the Work, Engineer will direct appropriate remedy or adjust payment.

C. The defective Work may remain, but unit sum/price will be adjusted to new sum/price at discretion of Owner.

D. Defective Work will be partially repaired according to instructions of Owner, and unit sum/price will be adjusted to new sum/price at discretion of Owner.

E. Individual Specification Sections may modify these options or may identify specific formula or percentage sum/price reduction.

F. Authority of Owner to assess defects and identify payment adjustments is final.

G. Nonpayment for Rejected Products: Payment will not be made for rejected products for any of the following reasons:
1. Products wasted or disposed of in a manner that is not acceptable.
2. Products determined as unacceptable before or after placement.
3. Products not completely unloaded from transporting vehicle.
4. Products placed beyond lines and levels of the required Work.

5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

1.7 UNIT PRICES

A. Authority: Measurement methods are delineated in individual Specification Sections.

B. Measurement methods delineated in individual Specification Sections complement criteria of this Section. In event of conflict, requirements of individual Specification Section govern.

C. Take measurements and compute quantities. Engineer will verify measurements and quantities.

D. Unit Quantities: Quantities and measurements indicated on Bid Form are for Contract purposes only. Actual quantities provided shall determine payment.
   1. When actual Work requires more or fewer quantities than those quantities indicated, provide required quantities at contracted unit sum/prices.
   2. When actual Work requires 25 percent or greater change in quantity than those quantities indicated, Owner or Contractor may claim a Contract Price adjustment.

E. Payment Includes: Full compensation for required labor, products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application, or installation of item of the Work; overhead and profit.

F. Final payment for Work governed by unit prices will be made on basis of actual measurements and quantities accepted by Engineer multiplied by unit sum/price for Work incorporated in or made necessary by the Work.

G. Measurement of Quantities:
   1. Weigh Scales: Inspected, tested, and certified by applicable State of Indiana weights and measures department within past year.
   2. Platform Scales: Of sufficient size and capacity to accommodate conveying vehicle.
   3. Metering Devices: Inspected, tested, and certified by applicable State of Indiana department within past year.
   4. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel, or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
   5. Measurement by Volume: Measured by cubic dimension using mean length, width, and height or thickness.
   6. Measurement by Area: Measured by square dimension using mean length and width or radius.
   7. Linear Measurement: Measured by linear dimension, at item centerline or mean chord.
   8. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as completed item or unit of the Work.

H. Unit Price Schedule:
   1. Item 0001: Mobilization / Demobilization; Section 01 50 50.

2. Item 0002: Construction Contingency:

    a. Description: The Contractor shall furnish all labor, materials, equipment, and services to perform unforeseen work not included in the other bid items that may be requested and approved by the Owner such as point repairs, etc.
    b. Basis of Payment: The cost of this additional work shall be agreed upon in writing and approved by the Owner prior to commencement of the work. The Contractor shall be paid on the percent completion of approved work.

3. Item 0003: Maintenance and Protection of Traffic:
    a. Description: This Work shall consist of all labor, equipment, and materials necessary for traffic control as described in Section 01 50 00.
    b. Basis of Payment: Traffic Control shall be paid for at the Contract LUMP SUM price as shown in the Itemized Proposal and Declarations.
    c. Payment Details: Item includes the cost of traffic control materials (Barricades, signs, signals); furnishing, installing, maintaining, and removing traffic control materials; temporary pavement marking; clean up; preparation and submittal of temporary signal designs and traffic control plans to State and local agencies; revisions to traffic control plans and signal designs requested by Owner, state or county; furnishing, installing, maintaining, and removing temporary pavement required for traffic rerouting due to traffic control; maintenance of temporary traffic signals and maintenance of remainder of signalized intersection altered by temporary traffic signals; flag persons; replacement of permanent pavement markings, signs, or signals removed or damaged by construction operations; and other pertinent and incidental work.

4. Item 0004: Bypass Pumping; Section 01 51 00.

5. Item 0005: 8-Inch Diameter CIPP Lining; Section 33 01 30.72.

6. Item 0006: 10-Inch Diameter CIPP Lining; Section 33 01 30.72.

7. Item 0007: 12-Inch Diameter CIPP Lining; Section 33 01 30.72.

8. Item 0008: Root Removal; Section 33 01 30.10.

9. Item 0009: Cut Protruding Tap; Section 33 01 30.72.

10. Item 0010: Sanitary Sewer, Lateral Reinstatement in Cured-In-Place Pipe; Section 33 01 30.72.

11. Item 0011: Line Manhole Section 33 31 11.00.

12. Item 0012: Replace Manhole Frame and Lid; Section 33 01 30.76.

13. Item 0013: Manhole Bench Replacement; Section 33 01 30.76.

14. Item 0014: Lateral Liner using Full Mainline Circumference Connection, 6", up to 5 feet; Section 33 01 30.74.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

Revised per Addendum No. 1

SECTION 330130.72 - RELINING SEWERS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cleaning and flushing existing sanitary sewers.
2. Taking video of existing sewers and analyzing their condition.
3. Liners for existing sewers:
    a. Inverted, resin-impregnated tube pipe liner
4. Reestablishing service connections.

B. Related Requirements:
1. Section 33 01 30.10 – Sewer Line Cleaning.
2. Section 33 01 30.74 – Lateral Lining.
3. Section 33 05 13.16 – Public Manholes and Structures.

1.2 UNIT PRICE - MEASUREMENT AND PAYMENT

A. Section 012000 - Price and Payment Procedures: Contract Sum/Price modification procedures.

B. Item 0005: 8-inch Diameter CIPP Lining:
1. Basis of Measurement: By linear foot, measuring horizontally.
2. Basis of Payment: Includes pipe cleaning and flushing; TV inspection and videography; elimination of active infiltration prior to liner installation; lining materials necessary for installation, and liner installation.

C. Item 0006: 10-inch Diameter CIPP Lining:
1. Basis of Measurement: By linear foot, measuring horizontally.
2. Basis of Payment: Includes pipe cleaning and flushing; TV inspection and videography; elimination of active infiltration prior to liner installation; lining materials necessary for installation, and liner installation.

D. Item 0007: 12-inch Diameter CIPP Lining:
1. Basis of Measurement: By linear foot, measuring horizontally.
2. Basis of Payment: Includes pipe cleaning and flushing; TV inspection and videography; elimination of active infiltration prior to liner installation; lining materials necessary for installation, and liner installation.

E. Item 0009: Cut Protruding Tap:
1. Basis of Measurement: By each protruding tap cut.
2. Basis of Payment: Includes the cutting of any taps that would interfere with lining the sewers. Dispose of excess material. See Contract Documents.

F. Item 0010: Sanitary Sewer, Lateral Reinstatement, In Cured-In-Place Pipe:

1. Basis of Measurement: By each active lateral connection that must be reinstated after CIPP lining of the main line pipe.
2. Basis of Payment: Work includes the reinstatement of all laterals not capped along the mainline sewers lined with CIPP in the course of the work. See Contract Documents.

1.3 REFERENCE STANDARDS

A. ASTM International:
1. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
2. ASTM D543 – Test Method for Resistance of Plastics to Chemical Reagants.
3. ASTM D638 - Standard Test Method for Tensile Properties of Plastics.
4. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
5. ASTM D1693 - Standard Test Method for Environmental Stress-Cracking of Ethylene Plastics.
6. ASTM D2837 - Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products.
7. ASTM D3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
8. ASTM D5260 – Standard Classification for Chemical Resistance of Poly (Vinyl Chloride) (PVC) Homopolymer and Copolymer Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.
9. ASTM D5813 – Standard Specification for Cured-in Place Thermosetting Resin Sewer Pipe.
10. ASTM F1216 - Standard Practice for Rehabilitation of Existing Pipelines and Conduits by the Inversion and Curing of a Resin-Impregnated Tube.

1.4 COORDINATION

A. Section 013000 - Administrative Requirements: Requirements for coordination.

B. Coordinate Work of this Section with users connected to system.

C. Notify home owners and businesses at least 48 hours in advance of expected disruption of sanitary service.

D. Limit disruption of service to individual properties to one-time occurrence for maximum of eight hours.

E. Provide and maintain temporary facilities, including piping and pumps, to meet requirements.

1.5 SUBMITTALS

A. Section 013300 - Submittal Procedures: Requirements for submittals.

B. Product Data: Submit manufacturer information on liner material, curing chemicals, and lubricants. Also include:

- CIPP system data,
- Manufacturer’s resin data test results
- Resin enhancer manufacturer’s data
- Bond enhancer manufacturer data, certification of applicability of resin
- Complete description of proposed wet-out procedures.

C. CIPP liner installation plan: Document proposed pre-lining preparation methods to address at a minimum, liner inversion locations, required excavation locations and broken/collapsed laterals and manholes.

D. Shop Drawings: Indicate liner dimensions for each pipe size to be relined.

E. CCTV RECORDINGS:

1. Submit video recordings of piping sections as follows:

    a. Show condition of existing pipe and pipe joints and location of existing service connections after root cutting, cleaning and prior to relining.
    b. Show cured liner and reestablished service connections after relining Work is complete.

F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
1. Liner manufacturer shall have in place a quality management system which complies with the requirements of ISO 9000. Submit certification of compliance.

G. Delegated Design Submittals: Submit signed and sealed Shop Drawings with structural design calculations and assumptions for liner thickness. The engineering design calculations for the liner thickness used for installation of the CIPP performed and certified by a Registered Professional Engineer in the State of Indiana.

H. Test and Evaluation Reports: Submit reports certifying liner material meets ASTM testing standards listed in this Section.

I. Manufacturer Instructions:

1. Submit detailed description of liner placement and curing procedures for piping.
2. Include description of procedures for sealing liner material at manholes and reestablishing service connections.
3. Submit manufacturer's requirements for receiving, handling, and storage of materials.

J. Source Quality-Control Submittals: Indicate results of factory tests and inspections.

K. Field Quality-Control Submittals: Indicate results of Contractor-furnished tests and inspections.

L. Qualifications Statements:

1. Submit qualifications for manufacturer, installer, licensed professional, pipeline assessor, and inspector.
2. Submit manufacturer's approval of installer.

1.6 CLOSEOUT SUBMITTALS

A. Section 017000 - Execution and Closeout Requirements: Requirements for submittals.

B. Project Record Documents: Record actual locations of each service connection.

1.7 QUALITY ASSURANCE

A. Perform Work according to lining manufacturer’s standards.

1.8 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing products specified in this Section with minimum three years' documented experience.

B. Installer: Company specializing in performing Work of this Section with minimum three years' documented experience in installation of liner materials and licensed or certified by manufacturer.

C. Licensed Professional: Professional engineer experienced in design of specified Work and licensed in State of Indiana.

D. Pipeline Assessor:

1. Person specializing in assessing condition of sewer pipelines prior to and following relining.
2. Currently certified in Pipeline Assessment and Certification Program (PACP) of the National Association of Sewer Service Companies (NASSCO).

E. Inspector:

1. Person specializing in inspection of sewer pipeline rehabilitation.
2. Currently certified in Inspector Training and Certification Program (ITCP) of NASSCO.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Inspection: Accept materials on Site in manufacturer's original packaging and inspect for damage.

B. Store liner material according to manufacturer instructions.

C. Protect liner material from moisture, sunlight (if applicable) and other potential damage. Any liner damaged in shipment shall be replaced as directed by the ENGINEER at no additional cost to OWNER.

1.10 EXISTING CONDITIONS

A. Field Measurements:

1. Verify field measurements prior to fabrication.
2. Indicate field measurements on Shop Drawings.

1.11 WARRANTY

A. Furnish three-year manufacturer's warranty for liner.

PART 2 - PRODUCTS

2.1 PERFORMANCE AND DESIGN CRITERIA

A. Design lining material to have sufficient structural strength to support dead loads, live loads, and groundwater load imposed, assuming existing pipe cannot share loading or contribute to structural integrity of liner. Design of circular portions of the liner shall be based on the condition of the existing pipe which shall be classified as fully deteriorated based upon the definitions contained in ASTM F1216 Appendix X1.
1. Assume groundwater is five feet below ground surface for design calculations.
2. For circular portions of the existing sewer, the ovality is considered to be 5 percent in circumference.

B. Design liner to least possible thickness to minimize decreasing interior pipe diameter.

C. Design liner material to provide jointless, continuous, watertight and structurally sound construction able to withstand imposed static, dynamic, and hydrostatic loads on a long-term basis. The proposed cured-in-place pipe liner to be used shall be designed for a minimum fifty-year service life under continuous loading conditions.

D. General Corrosion Requirements: The cured-in-place pipe system shall utilize resins which will withstand the corrosive effect of the existing residential, commercial, and industrial effluents, liquids, and/or gases containing hydrogen sulfide, carbon monoxide, carbon dioxide, methane, dilute sulfuric acid and external exposure to soil bacteria and chemical attack which may be due to materials in the surrounding ground and sewage within.

2.2 SIZING

A. The liner shall be fabricated to a size that when installed shall neatly and tightly fit the internal perimeter of the pipe being rehabilitated as specified by Engineer.

B. Contractor shall verify all lengths in the field prior to fabrication of the tube.

2.3 INVERTED, RESIN-IMPREGNATED TUBE PIPE LINER

A. Furnish materials according to the latest versions of ASTM F1216, including appendices.

B. Description:

1. Fabric Tube:

a. One or more layers of absorbent, non-woven felt fabric, felt/fiberglass, or fiberglass.
b. Comply with ASTM D5813, F1216, F1743, and F2019.
c. Capable of absorbing and carrying resins.

2. Resin: Corrosion-resistant polyester or vinyl ester resin and catalyst system that, when properly cured within tube composite, meets requirements of ASTM F1216, and has the following minimum physical properties for the cured pipe, while still meeting the Performance and Design Criteria in paragraph 2.1.A in this specification:

a.	Flexural Strength (minimum)	4,500 psi
b.	Flexural Modulus of Elasticity (minimum)	250,000 psi
c.	Long-term Flexural Modulus of Elasticity (minimum)	125,000 psi

3. Wet-Out Fabric Tube: Uniform thickness and excess resin distribution that, when compressed at installation pressure, will meet or exceed design thickness after cure.

4. End Sealing: Each end of the CIPP shall be sealed to provide a watertight seal between the original pipe and the CIPP liner. Sealing materials shall be compatible with the original pipe material and shall be suitable for application to moist surfaces.
   a. Acceptable end sealing products include:
      1) Hydrophilic O-rings by Insignia.

2.4 CHEMICAL GROUT

A. Chemical Grout:
1. Products: Avanti, Sauereisen, Sealing Systems, Inc., DeNeef or Approved Equal.
2. Materials, additives, mixture ratios, and procedures utilized for the grouting process shall be in accordance with manufacturer’s recommendations and shall be appropriate for the application.
3. Chemical grout used to stop very active infiltration and fill voids.

2.5 SOURCE QUALITY CONTROL

A. Inspect extruded material for defects and physical properties according to ASTM D1785. Verify liner material is homogeneous and free of defects, cracks, holes, blisters, protrusions, foreign materials, or other deleterious faults.

B. Chemical and Physical Testing: Test cured samples according to ASTM D5260.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation examination.

B. Verify location of piping to be relined or replaced.

3.2 PREPARATION

A. Section 017000 - Execution and Closeout Requirements: Requirements for installation preparation.

B. Coordination with Collection System Customers
   1. CONTRACTOR shall notify and coordinate with all collection system customers connected to the sewer to be rehabilitated whose building sewer laterals will be out of service during the cured-in-place pipe installation, curing and restoration processes. Notifications shall be in writing via door hanger, door flier or U.S. mail given 24-hours but no more than 48 hours in advance of loss of service, (excluding weekends and holidays). Notification shall clearly state the purpose of the work, shall advise all affected customers against water usage until the sewer line is placed back in service, and shall clearly state the potential consequences of use of residential wastewater generating facilities during the time when the building sewer service will be out of service (i.e. sewer back-up). The notice shall include a local 24-hour contact telephone number for residents to call if they have questions regarding the work.
   2. The maximum time of no service shall be eight (8) hours for any property served by the sewer.

C. Cleaning: Clean pipeline per Specification 33 01 30.10 – Sewer Line Cleaning.
   In addition to the requirements of Section 33 01 30.10, CONTRACTOR shall be responsible for clearing the designated sewer line of obstructions such as dropped joints, protruding lateral connections, and broken pipe/crushed pipe which reduces the cross-sectional area by more than 40% and/or which will prevent the insertion of liner. If pre-installation television inspection required to be performed by the CONTRACTOR reveals an obstruction that cannot be removed by conventional cleaning and/or cutting equipment, CONTRACTOR shall Notify Engineer immediately.

D. Initial Video Inspection and Repair:

   1. Conduct closed-circuit video inspection as specified in Section 33 01 30.10 – Sewer Line Cleaning.
   2. Determine condition of existing piping, degree of offset of joints, crushed walls, and obstructions.
   3. Determine sizes and locations of service entrances and connections.
   4. Evaluation of pipe conditions to be done by a pipeline assessor.
   5. Inspection of Work to be done by an ITCP-certified inspector.

6. Clear obstructions, service piping protrusions, and other materials from bottom of existing pipe to ensure inserted pipe liner directly contacts existing pipe wall.

E. Cut Taps

1. Cut any protruding taps that will impact the Work lining the sewers.

3.3 INSTALLATION

A. Perform relining and reestablish service connections without need for excavation while minimizing disruptions to adjacent occupied buildings, traffic and railroad.

1. The CIPP shall be installed in accordance with the practices given in ASTM F1216 (for direct inversion installations) or ASTM F1743 (for pulled-in-place installations).

2. Prior to installation, the liner shall be free of all tears, holes, cuts, foreign materials, and other defects.
3. Coat outside or inside layer of fabric tube (before inversion) with an impermeable, flexible membrane that will contain resin and facilitate, vacuum impregnation and monitoring of resin saturation during resin impregnation (wet-out) procedure. A vacuum impregnation process shall be used in conjunction with a roller system to achieve a uniform distribution of the resin throughout the CIPP tube.
4. Prior to installation, place remote temperature gages or sensors inside host pipe to monitor temperature during cure cycle.
5. Position wet-out tube in pipeline using method specified by manufacturer. Care should be exercised not to damage tube during installation.
6. CTM- Continuous Temperature Monitoring Technology

3.4 CURING

1. After the CIPP liner installation is completed the Installation Contractor shall supply a suitable heat source and recirculation equipment (if required). The equipment shall be capable of delivering hot water or steam throughout the section to uniformly raise the temperature above the temperature required to affect a cure of the resin.

2. The heat source shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing heat supply (for water cure) and outgoing heat supply (for steam cure). Water or air temperature in the pipe during the cure period shall be as recommended by the resin Manufacturer.

3. Temperature monitoring shall be end of liner as described below.

a. End of liner temperature monitoring shall be required for all installations and shall be incidental to bid. Prior to installation remote temperature gauges (thermocouple wires) shall be placed inside the host pipe and the CIPP liner at the invert level and crown (6- and 12- o'clock positions) of each end to monitor the temperatures during the cure cycle. Liner and host pipe interface temperature shall be monitored and logged during cure and cool down.

4. Initial cure shall be deemed to be completed when inspection of the exposed portions of CIPP appears to be hard and sound and the remote temperature sensor(s) indicates that the temperature is of a magnitude to realize an exotherm. The cure period shall be of a duration recommended by the resin Manufacturer, as modified for the installation process, during which time the recirculation of the heat and/or cycling of the heat exchanger to maintain the temperature continues.

3.5 COOLING

1. Cool down may be accomplished by the introduction of cool water or air to replace water or pressurized air being relieved. Care shall be taken in the release of the hydrostatic head so that a vacuum will not be developed.

3.6 FINISH

A. The finished CIPP shall be continuous over the entire length of an insertion run and be as free as commercially practical from visual defects such as foreign inclusions, dry spots, pinholes, and delamination. The CIPP shall be homogeneous and free of any leakage from the surrounding ground to the inside of the CIPP.

B. Where the CIPP is installed through an intermediate manhole uninterrupted, the invert shall be maintained smooth through the manhole, with approximately the bottom half of the CIPP continuous through the manhole. The invert of the manhole shall be shaped and grouted as necessary to support the liner. The cost of this work shall be included in the CIPP unit price.

C. During the warranty period, any defects which will affect the integrity or strength of the CIPP, collect solids, or reduce hydraulic flow capabilities of the product shall be repaired at the Installation Contractor's expense in a manner mutually agreed upon by the Owner and the Installation Contractor.

3.7 LATERAL REINSTATEMENT:

7. Reestablish existing sewer service connections through use of closed-circuit television camera and remote-controlled cutting device.
8. Match invert of reestablished service with previously existing invert. Maintain minimum of 95 percent to maximum of 100 percent of original service connection opening.
9. After re-establishing service connection, flush piping clean.
10. All cut lateral and service connections shall be free of burrs, frayed edges, or any restriction preventing free flow of wastewater. Laterals shall be reinstated to a minimum of 90% of their original diameter and no more than 100% of their minimum diameter. The CIPP shall be tightly sealed at the cut openings with no gaps.

3.8 FIELD QUALITY CONTROL

B. Section 017000 - Execution and Closeout Requirements: Requirements for testing, adjusting, and balancing.

C. For every two thousand five hundred (2,500) lineal feet of liner installed, two (2) flat plate samples shall be processed and tested. For pipe diameters less than 18 inches, restrained end

samples may also be utilized. The CIPP physical properties shall be tested in accordance with ASTM F1216, Section 8, using either allowed sampling method.

D. Testing shall be completed by an accredited, independent laboratory. Testing results shall be provided to the Owner within 7 days of receipt of such results.

E. CIPP installation shall be inspected by post-lining video inspection. Variations from true line and grade may be inherent because of the conditions of the original piping. No infiltration of groundwater should be observed. All service entrances should be unobstructed and accounted for.

F. Flexural testing of the collected samples shall be conducted in accordance with ASTM D790, latest version, with only the structural portion of the CIPP being tested.

G. Wall thickness of samples shall be determined in a manner consistent with 8.1.2 of ASTM D5813.

H. If liner fails to re-form or cure, remove failed liner and install new liner.

I. Conduct closed-circuit video inspection of completed relining Work.

J. No infiltration of groundwater is permitted.

K. Acceptance:

1. No visual defects, including foreign inclusions, dry spots, pinholes, cracks, or delamination.
2. Confirm that service connections are complete and unobstructed.

END OF SECTION 330130.72

ADDENDUM NO. 1

City of Greenfield
Waterview Sanitary Sewer System Lining Project

Number of Pages (Including this page): 3

June 30, 2023

NOTICE TO BIDDERS – IT IS MANDATORY THAT, UPON RECEIPT OF THIS ADDENDUM, YOU 1) SIGN, 2) DATE, 3) WRITE IN YOUR COMPANY NAME, AND 4) RETURN THIS SHEET TO BRYAN HOOD OF AMERICAN STRUCTUREPOINT, BHOOD@STRUCTUREPOINT.COM – THANK YOU.

IF YOU HAVE ANY QUESTIONS CONCERNING THIS ADDENDUM, PLEASE CALL BRYAN HOOD @ (260) 417-6312.

1. Please sign below to acknowledge receipt of this addendum. _____	2. Please insert date of receipt. Date:_____	3. Please insert your company name _____	4. Please return to Bryan Hood. bhood@structurepoint.com

This addendum is being issued as a supplement to the specifications and drawings and shall be considered an integral part of the same. This addendum will become part of the contract documents.

Sign In Sheet

Waterview Sanitary Sewer Lining Project

Pre-Bid

6/27/2023

Name	Agency	e-mail	Phone
Bryan Hood	American Structurepoint	bhood@structurepoint.com	260 417 6312
John Sebolt	Insight Pipe Contracting	John.Sebolt@Insightpipe.com	412 477 3762
Scott Evans	City of Greenfield	sevans@greenfieldin.org	317-526-0013
Nicholas Dezelan	City of Greenfield	ndezelan@greenfield.in.org	317-538-3777
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Caleb Osborne	Greenfield Water	Cosborne@greenfieldin.org	317-967-0025
Jason Koch	Greenfield Eng	jkoch@greenfieldin.org	317-325-1322
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