ADDENDUM NO. 1
FOR

TOWNSHIP OF SOUTH BRUNSWICK
LAWRENCE BROOK INTERCEPTOR PIPE
& MANHOLE REHABILITATION

MIDDLESEX COUNTY, NEW JERSEY
BID NO. 25-05

JUNE 6, 2025

DATE: 6/6/25

Richard A. Alaimo, P.E.
N.J. Professional Engineer
License No. 13195

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OUR FILE NO. M-0300-0140-000 (S2996)

ADDENDUM NO. 1

TOWNSHIP OF SOUTH BRUNSWICK
LAWRENCE BROOK INTERCEPTOR PIPE
& MANHOLE REHABILITATION
BID NO. 25-05

TO: ALL PRIME BIDDERS OF RECORD

This Addendum forms a part of the Contract Documents and modifies the original Specifications dated May 2025, as-noted below. Acknowledge receipt of this Addendum by signing the Acknowledgment contained in the Proposal on Page 00 41 00-11. Failure to do so may subject the bidder to disqualification.

I. PROJECT MANUAL

A. SECTION 00 10 00; NOTICE TO BIDDERS

1. **Delete** first paragraph and **Add** new first paragraph **to read** as follows:

   "Notice is hereby given that sealed bids will be received by the Township of South Brunswick, for the Lawrence Brook Interceptor Pipe & Manhole Rehabilitation, Bid No. 25-05, and will be opened and read in public at the Municipal Building, 540 Ridge Road, Monmouth Junction, New Jersey 08852 on **Tuesday, June 24, 2025 at 2:00 P.M.**, prevailing time."

B. SECTION 00 41 00; PROPOSAL

1. **Delete** Pages 00 41 00-3, -4, and -5, and **Add** new Pages 00 41 00-3, -4, and -5, dated June 6, 2025, attached.

C. SECTION 33 01 35.1; CURED-IN-PLACE PIPE LINING

1. **Add** Section 33 01 35.1, dated June 6, 2025, attached.

D. SECTION 33 01 37; MANHOLE LINING

1. **Add** paragraphs 4.04A. and 4.04B. **to read** as follows:

"4.04 REPLACEMENT CASTINGS

A. Quantity: The quantity for which payment will be made will be for the number of castings actually replaced as specified, measured in the field, as shown or directed.

B. Payment: Payment will be made for the quantity as above determined, at the unit price bid in the Proposal for the item of *REPLACE MANHOLE CASTINGS*, which prices shall include frames, curb pieces, back plates, grates, manhole covers or lids and all other materials and labor necessary to replace the existing castings as specified."

II. CONTRACT DRAWINGS

A. SHEET 2; PROPOSED IMPROVEMENTS PLAN – BASE BID

1. **Delete** Span 1, MH – 16 – 022 to MH – 16 – 021 from the Sanitary Sewer Pipe Lining Information Table. This section has already been lined and shall be removed from this project.

****END OF ADDENDUM NO. 1****

Item No.	Description	Unit Price	Total Price
4.	155 VERTICAL FEET Sanitary Manhole Lining, 6' Diameter. UNIT PRICE PER VERTICAL FOOT _____ Dollars and_____ Cents	$_____	$_____
5.	11 UNITS Sanitary Manhole Channel and Bench Repair, 6' Diameter. UNIT PRICE _____ Dollars and_____ Cents	$_____	$_____
6.	11 UNITS Replace Manhole Castings, if and where directed. UNIT PRICE _____ Dollars and_____ Cents	$_____	$_____
7.	11 UNITS Infiltration Prevention Inserts, if and where directed. UNIT PRICE _____ Dollars and_____ Cents	$_____	$_____

PROPOSAL (Continued)

Item No.	Description	Unit Price	Total Price
8.	1,000 LINEAR FEET Heavy Pipeline Cleaning, if and where directed. UNIT PRICE PER LINEAR FOOT _____ Dollars and_____ Cents	$_____	$_____
9.	1,716 LINEAR FEET Sanitary Sewer Lining, 36". UNIT PRICE PER LINEAR FOOT _____ Dollars and_____ Cents	$_____	$_____
10.	5 UNITS Reinstatement of Service Laterals. UNIT PRICE _____ Dollars and_____ Cents	$_____	$_____
11.	Uniformed Police Traffic Directors. ALLOWANCE Three Thousand Dollars and No Cents		$ 3,000.00

PROPOSAL (Continued)

Item No.	Description	Unit Price	Total Price
12.	Spot Repairs. ALLOWANCE Fifty Thousand Dollars and No Cents		$50,000.00
13.	Two-Year Anniversary Inspection. FIXED PRICE Thirty Thousand Dollars and No Cents		$30,000.00
14.	Unforeseen Work. ALLOWANCE Fifty Thousand Dollars and No Cents		$50,000.00

PRICE BID – BASE BID
BID NO. 25-05
ITEM NOS. 1 THROUGH 14

_____ Dollars

and _____ Cents $_____

SECTION 33 01 35.01

CURED-IN-PLACE PIPE LINING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included:

1. Design, furnish and install a cured-in-place pipe (CIPP), resin impregnated liner in an existing deteriorated sanitary sewer line.

2. Reconnect sanitary services by cutting liner from inside.

3. Closed circuit color TV inspection of pipeline before and after installation of liner.

4. Cleaning of the sewer line and removal of obstructions that would prevent insertion of the liner.

5. Flow diversions as required.

6. Low pressure air testing of the completed liner.

B. Related work:

1. Other sections of the specifications, not referenced below, shall also apply to the extent required for proper performance of this work.

2. *Section 01 53 28: Temporary By-Pass Pumping*

3. *Section 01 55 26: Maintenance and Protection of Traffic*

4 *Section 01 74 00: Cleaning and Restorations*

1.02 REFERENCES

A. American Society for Testing and Materials:

1. ASTM D638: Test Method for Tensile Properties of Plastics.

2. ASTM D790: Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

3. ASTM D5813: Standard Specification for Cured-In-Place Thermosetting Resin Sewer Piping Systems.

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

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

1.03 SYSTEM DESCRIPTION

A. Design requirements:

1. Liner shall be designed in accordance with ASTM F1216, Appendix X1 and the following requirements:

a. Existing pipe condition: Fully deteriorated

b. Ground water: Zero feet (0') below grade

c. Soil condition: Saturated

d. Loading: H-20

e. Nominal Pipe Diameter: As shown

f. Depth: As shown, varies

g. Design Factor of Safety: 2.5

h. Enhancement Factor, K = 7

i. Allowable Deflection: Manufacturers Standard or 5%, whichever is less.

j. Chemical Resistance: The CIPP shall meet the chemical resistance requirements of ASTM F1216, Appendix X2. The liner shall meet the chemical resistance requirements with and without the plastic

coating. Contractor shall submit certified test results for the liner materials proposed.

k. Design Structural properties:

Cured Liner	Standard	Minimum Results
Flexural Strength	ASTM-D-790	≥ 4,500 psi
Flexural Modulus	ASTM-D-790	≥250,000 psi

2. Liner shall be designed to withstand all internal and external loads taking into account internal pressure (to top of manhole) and external soil pressures, loads, paving and full traffic (H-20) loads. The CIPP design shall assume no bonding to the original pipe wall.

3. All calculations shall be submitted to the *ENGINEER*, in duplicate, for his information and be signed and sealed by a Professional Engineer.

4. The hydraulic cross-section shall be maintained as large as possible. The CIPP shall have a minimum of the full flow capacity of the original pipe before rehabilitation. Calculated capacities may be derived using a commonly accepted roughness coefficient for the existing pipe material taking into consideration its age and condition.

5. The insert tube shall be impregnated with a resin and catalyst system and all materials and methods utilized shall be in accordance with the requirements of the particular system utilized.

B. Contractor shall be fully responsible for the design of the CIPP (liner) and shall save and hold harmless the *OWNER* and *ENGINEER* from any and all costs or damages directly or indirectly related to the structural design of the CIPP.

C. Prior to design and ordering of the liner, verify the internal dimensions of the existing sewer mains to ensure that the lining utilized will be of appropriate dimension.

1.04 SUBMITTALS

A. Comply with provisions of *Section 01 33 23, Shop Drawings, Product Data and Samples.*

B. Product data:

1. Materials list of items to be provided under this Section.

2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
3. Manufacturer's recommended installation procedures which will become the basis for accepting or rejecting actual installation procedures used on the Work.

C. Design calculations: Submit liner design calculations signed and sealed by a Professional Engineer licensed in the State of New Jersey.

D. Test results: Submit certified test results showing that the liner meets the specified chemical resistance and physical requirements.

E. Submit Material Safety Data sheets for all resins and other additives such as accelerants, colorants, and lubricants utilized in the pipe liner/lining process.

F. Submit manufacturer's data that describes the materials, curing speeds, curing installation processes, installation pressures, temperature limitations, and recommended post curing documentation.

G. Field sampling procedures shall be in accordance with ASTM D5813.

1.05 QUALITY ASSURANCE

A. Qualifications:

1. Qualifications of manufacturer: Products used in the work of this section shall be produced by manufacturers regularly engaged in the manufacture of similar items and with a history of successful production acceptable to the *ENGINEER*.

2. Contractor qualifications: Installing Contractor shall be licensed by the lining system manufacturer and shall be thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and the methods needed for proper performance of the work of this section.

B. Regulatory requirements:

1. Perform operations in strict accordance with all OSHA, NJDEP, and *OWNER's* safety requirements as well as those of the lining system manufacturer.

2. Debris removed from the existing pipeline, as well as construction debris, shall be disposed of in accordance with NJDEP requirements. Proof of proper disposal shall be furnished to *OWNER* prior to final payment.

1.06 DELIVERY, STORAGE AND HANDLING

A. Comply with provisions of *Section 01 66 00, Storage and Protection.*

1.07 WARRANTY AND WARRANTY REPAIRS

A. Warranties shall be provided as specified in *Section 01 78 36, Guarantees.* A copy of the manufacturer's warranty shall accompany the shop drawing submittal.

B. The *CONTRACTOR* and/or equipment manufacturer shall be responsible for all costs of warranty repair work including removal, shipping, reinstallation and re-start-up during the warranty period.

C. Contractor shall warrant the liner installation for the two (2) year contract maintenance period. During the two (2) year maintenance period, any defect that may materially affect the integrity, strength, function and/or operation of the pipe shall be repaired within 30 days of notification at the Contractor's expense in accordance with the manufacturers recommended repair procedures.

D. Two Year Anniversary Inspection: Sixty days before release of the Maintenance Bond, the *CONTRACTOR* shall inspect by CCTV all portions of the line installed under this contract. Any abnormalities or defects discovered shall be repaired or replaced by the *CONTRACTOR* at no additional cost to the *OWNER.*

PART 2 - PRODUCTS

2.01 GENERAL

A. Products: Whenever materials or equipment are described using a certain brand, make, supplier, manufacturer or by specification, such naming shall be regarded as a standard and be intended to convey function, design features, general style, type, materials of construction, character and quality of material or equipment, serviceability and other described essential characteristics.

B. Other materials may be considered by the *ENGINEER* in accordance with the provisions of *Section 01 25 13, Substitutions.*

C. Acceptable Manufacturers:

1. Inliner Solutions
   1468 West Hospital Road
   Paoli, IN 47454
   Tel: (812) 723-0244
   www.inliner.com
2. Insituform Technologies, LLC
   17988 Edison Avenue
   St. Louis, MO 63005
   Tel: (800) 224-2992
   www.insituform.com

4. Or equivalent.

2.02 MATERIALS

A. Liner tube:

1. Inversion Flexible Felt Tube:

   a. A sewn tube consisting of one or more layers flexible needled felt, polyester or glass fibers, or an equivalent non-woven or woven material meeting the provisions of ASTM F1216, Section 5.1, can be used. The tube shall be lined on one side with a translucent waterproof coating such as polyurethane or polyvinylchloride (PVC) and fully impregnated with a sulfuric acid corrosion resistant liquid thermosetting polyester, vinyl ester, or epoxy resin and catalyst system compatible with the inversion process. The resin must meet ASTM F1216, Section 5.2. Any fiberglass stranded mattes are not acceptable.

   b. Size the tube to the existing wastewater pipe circumference and length between manholes as shown on drawings so it will stretch to fit irregular pipe sections; have sufficient strength to bridge missing pipe sections; and invert smoothly around bends. Allow for circumferential stretching during inversion.

2. Pulled-in Felt Fabrication:

   a. A sewn tube consisting of one or more layers flexible needled felt, polyester or glass fibers, or an equivalent non-woven or woven material meeting the provisions of ASTM F1743, Section 5.2.1, can be used. The outside layer of the tube shall have an impermeable flexible coating to contain the resin during and after

tube impregnation with a sulfuric acid corrosion resistant liquid thermosetting polyester, vinyl ester, or epoxy resin and catalyst system meeting ASTM F1216, Section 5.2 and compatible with the installation process.

b. Size the tube to the existing wastewater pipe circumference and length between manholes shown on drawings so it will stretch to fit irregular pipe sections; have sufficient strength to bridge missing pipe sections; and invert smoothly around bends.

B. Resin:

1. Furnish a corrosion resistant polyester, vinyl ester or epoxy resin including all required catalysts and initiators that when cured within the tube creates a composite that satisfies the requirements of ASTM F1216, Section 5.1 and 5.2 or ASTM F1743, Section 5.2.1 and 5.2.3 or ASTM D 5813, Sections 5 and 6. The resin shall produce a CIPP that will comply with the structural requirements specified herein and the chemical resistance requirements of ASTM F1216, Appendix X2.

2.03 OTHER MATERIALS

A. All other materials, not specifically described but required for a complete and proper installation of the work of this section, shall be as recommended by the manufacturer and approved by the *ENGINEER*.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Prior to beginning work the interior of the pipeline shall be inspected by CCTV (color) to determine the location of conditions that may prevent proper installation of the liner and to locate service laterals.

B. The CCTV camera shall be capable of viewing all interior areas of the pipe and sufficient illumination shall be provided to reveal any and all defects within the pipe. The travel speed of the CCTV camera shall be uniform and shall not exceed a maximum speed of 30 feet per minute. The CCTV operator shall pause at each defect found and provide a verbal description of each defect as the camera focuses on it.

C. A video recording of the inspection together with a log shall be provided to the *ENGINEER*.

D. All conditions that may prevent installation of the liner shall be noted so that they may be corrected before installation begins.

3.02 PREPARATION

A. Flow diversions: Comply with *Section 01 53 28, Temporary By-Pass Pumping.*

B. Protection of Property: Contractor shall provide all measures necessary to prevent rutting or other damage to property. He shall lay plywood or other protective materials as required when crossing grassed areas. Any property damage shall be repaired as specified at Contractor's expense.

C. Provide screening devices in downstream manholes to collect debris dislodged as a result of cleaning and removal of line obstructions. Remove all debris and dispose of in accordance with NJDEP requirements.

D. Point Repairs/Line Obstructions:

1. Clear the line of obstructions such as, but not limited to solids, roots, offset joints or collapsed pipe that will prevent the insertion of the liner.

2. If the pre-installation inspection reveals an obstruction that cannot be removed by conventional sewer cleaning equipment, coordinate with the *OWNER* and *ENGINEER* to enable them to make arrangements for excavation (by others) to uncover and remove or repair the obstruction.

3. Coordinate with the *OWNER'S* excavator so as to not delay the progress of work.

4. Repairs requiring excavation shall be completed prior to mobilization for lining.

E. Cleaning:

1. Remove from the sewer main all internal debris, foreign objects, and materials of any nature which would render the interior pipe surface unsuitable to receive the resin impregnated liner prior to insertion.

2. The degree of cleaning necessary shall be defined as follows:

a. Light Cleaning: Shall be accomplished by flushing and jetting of the lines to remove any accumulation of solids or grease from within the main. Payment for light cleaning shall be included in the price bid for resin impregnated liner. Light cleaning shall consist of a minimum of six (6) passes through the line with the jet nozzle or until such time as the *CONTRACTOR* determines and recommends to the *ENGINEER* (and the *ENGINEER* concurs) that the main is sufficiently clean to allow proper installation and cure of the liner.

b. Heavy Cleaning: Shall be accomplished as described above and shall only be undertaken if and when directed by the *ENGINEER*. Heavy cleaning shall also include the use of a pig, scrapers, cutters or other equipment and the removal of roots, debris, foreign objects, and materials not removed by Light Cleaning by whatever means deemed necessary.

F. In the event that the line is deemed by the *ENGINEER* to be unsuitable for lining, the *CONTRACTOR* will be compensated for any light cleaning, CCTV inspection, and mobilization actually performed at the price bid in the Proposal.

G. Verify that all necessary point repairs and cleaning have been completed before the installation of the liner.

3.03 INSTALLATION

A. Installation of the liner shall be through existing manholes. Excavation for liner insertion shall not be permitted.

B. Where water is used for inversion and curing processes it will be supplied from existing hydrants designated by the *ENGINEER*. Appropriate backflow prevention devices shall be installed on hydrants by the Contractor to prevent contamination of the potable water system.

C. Designate a location where the uncured resin in the original containers and the un-impregnated liner will be impregnated prior to installation. Allow the *OWNER* and *ENGINEER* to inspect the materials and "wet out" procedure. A resin and catalyst system compatible with the requirement of this method shall be used.

D. Insertion by inversion:

1. The wet out liner shall be inserted through an existing manhole by means of an inversion process and the application of a hydrostatic head or air

pressure sufficient to fully extend it to the next designated manhole. At the lower end of the standpipe or guide chute, the liner shall be turned inside out and attached to the standpipe (or chute) so that a leakproof seal is created. The inversion head or air pressure will be adjusted to be of sufficient height to cause the impregnated liner to invert from manhole to manhole and hold the tube tight to the pipe wall, produce dimples at service lateral connections and flared ends at the manholes. A lubricant shall be used if required. Care shall be taken during the elevated curing temperature so as not to over stress the liner materials.

2. Curing after inversion:

   a. After inversion is completed, supply a suitable heat source and water recirculation or steam generating equipment. The equipment shall be capable of delivering hot water or steam throughout the section to uniformly raise the temperature above the temperature required to effect a cure of the resin. This temperature shall be determined by, and suitable for, the resin/catalyst system employed.

   b. The heat source shall be fitted with suitable monitors to gauge the temperature of the incoming and outgoing curing medium. Another such gauge shall be placed between the impregnated liner and the pipe invert at the remote manhole to determine the temperatures during cure. The curing medium temperature in the line during the cure period shall be as recommended by the resin manufacturer.

   c. Initial cure shall be deemed to be completed when inspection of the exposed portions of liner appear to be hard and sound and the remote temperature sensor indicates that the temperature is of a magnitude to realize an exotherm. After initial cure is reached the temperature shall be raised to the post cure temperature recommended by the resin manufacturer. The post cure temperature shall be held for the period recommended by the resin manufacturer, during which time the distribution and control of the curing medium shall continue. The curing of the cast in place pipe (CIPP) shall consider the host pipe material, the resin/catalyst system, and the temperature, moisture level and thermal conductivity of the soil.

E. Insertion by winching:

1. Prior to installation of the liner, the downstream manhole of the section to be lined shall be plugged.

2. The wet out liner shall be inserted through the existing upstream manhole and pulled through the section through the use of a power winch and steel cable attached to the end of the liner with an appropriate pulling head.

3. Rollers shall be installed in the upstream and downstream manholes to guide through the liner into and out of the host pipe and to guard against chafing of the crowns at the entry and exit from the winch cable.

4. The sewer invert throughout the section to be lined shall be covered with a polyethylene foil or other suitable material to facilitate threading of the liner and reduce the risk of damage to the liner material.

5. Attach air and steam manifolds at both ends of the liner and expand with air pressure inflating and pressing the liner material in a tight fit against the inner walls of the host pipe.

6. Curing after winching:

   a. After inflation is completed supply a suitable heat source. The equipment shall be capable of delivering steam to the remote end of the run and shall allow a uniform raising of the temperature and pressure required to cure the resin.

   b. The heat source shall be fitted with suitable monitors to gauge the pressure of the incoming and outgoing steam. The temperature of the line during the cure period shall be as recommended by the resin manufacturer.

   c. Initial cure shall be deemed to be completed when inspection of the exposed portions of liner appear to be hard and sound and the remote temperature sensor indicates that the temperature is of a magnitude to realize an exotherm. After initial cure is reached the temperature shall be raised to the post cure temperature recommended by the resin manufacturer. The post cure temperature shall be held for the period recommended by the resin manufacturer, during which time the distribution and control of the curing medium shall continue. The curing of the cast in place pipe (CIPP) shall consider the host pipe material, the resin/catalyst

system, and the temperature, moisture level and thermal conductivity of the soil.

F. Cool-down: Cool the hardened liner to a temperature below 100°F or 113°F for water or steam curing, respectively, before relieving the pressure in the section. Cool-down may be accomplished by the introduction of cool water into the section to replace water or steam and water being drained from a small hole made in the downstream end. Care shall be taken in the release of the static head or air pressure so that a vacuum will not be developed that could damage the newly installed lining.

G. Service connections:

1. After curing and testing is complete, reconnect the existing active service connections from the interior of the pipe by means of a television camera and a cutting device that reestablishes them to not less than ninety percent (90%) capacity.

2. All service connections disrupted by the lining process shall be restored the same day.

3. Reinstated service connections shall be sealed to the main to eliminate infiltration

H. Sealing at manholes: If, due to broken or misaligned pipe at manhole walls, the CIPP fails to make a tight seal, apply a seal at that point. The seal shall be of a resin mixture compatible with and suitable for the installed liner.

I. Finish: The finished cured in place pipe shall be continuous over the entire length of any section and be as free as commercially practical from visual defects such as foreign inclusions, dry spots, pinholes and delamination. It shall meet the pressure and leakage test specified herein.

3.04 FIELD QUALITY CONTROL

A. Testing:

1. Leakage testing shall be performed on completed liner prior to making service connections.

2. Leakage testing shall conform to Paragraph 8.2 of ASTM F1216 and be conducted for a period of one (1) hour.

3. Allowable leakage shall not exceed 50 gallons per inch of diameter per mile per day.

B. Inspection:

1. After the work is completed, reinspect the pipeline by closed circuit color television inspection and provide the *ENGINEER* with a video of this inspection (in digital format) for the *OWNER'S* records.

2. Any repaired areas will be re-televised and recorded.

3.05 RESTORATIONS

A. Upon completion of the installation, clean and restore the site in conformance with *Section 01 74 00, Cleaning and Restorations.*

PART 4 - PAYMENT

4.01 CURED-IN-PLACE PIPE LINING

A. Quantity: The quantity for which payment will be made will be for the actual length of cured in place pipe installed as specified.

B. Payment: Payment will be made for the quantity as above determined, measured in linear feet, at the price per linear foot bid in the Proposal for the various items of *SANITARY SEWER LINING, 36"*, which prices shall include all materials, equipment and supplies necessary for the complete installation of the liner, CCTV inspections and re-inspections, video recordings, cleaning, trimming of intruding laterals, flow diversion, sealing at manholes, testing, and cleaning and restorations.

4.02 HEAVY CLEANING

A. Quantity: The quantity for which payment will be made will be for the actual length of sanitary sewer main cleaned as specified if and when directed.

B. Payment: Payment will be made for the quantity as above determined, measured in linear feet, at the price per linear foot bid in the Proposal for the item *HEAVY PIPELINE CLEANING*, which price shall include all machinery and equipment necessary to complete the work as specified.

4.03 REINSTATEMENT OF SERVICE LATERAL

A. Quantity: The quantity for which payment will be made will be for the actual length of service laterals reinstated and sealed as specified.

B. Payment: Payment will be made for the quantity as above determined at the unit price bid in the Proposal for the item *REINSTATEMENT OF SERVICE LATERALS*, which prices shall include all materials, equipment and supplies necessary to complete the work as specified.

****END OF SECTION****