Addendum No. 1

April 28, 2021

STANDARD CONSTRUCTION AND MATERIAL SPECIFICATIONS
FOR
BUILDING SEWER AND LATERAL INSTALLATIONS

Lower Paxton Township Authority

Modifications to the Specifications:

1. **ADD:** Section 02721-Pipe Bursting of Building Sewers, attached.
2. **ADD:** Section 02722-Lining of Building Sewers and Laterals, attached.

Modifications to the Details:

1. **ADD:** LAT-7 Building Sewer Pipe Bursting Detail, attached.
2. **ADD:** LAT-8A LMK Lateral Liner System Detail, attached.
3. **ADD:** LAT-8B BLD Services LLC Service Connection Seal Plus Lateral (SCS+L) – Full Wrap Detail, attached.
4. **ADD:** LAT-9 Service Lateral Connection to Existing Lined Sewer Main Detail, attached.

END OF ADDENDUM NO. 1

SECTION 02721

PIPE BURSTING OF BUILDING SEWERS

PART 1 GENERAL

1.01. WORK INCLUDED

A. The work includes rehabilitation of existing Building Sewers by pipe bursting. This document is provided by Lower Paxton Township Authority for use by Property Owners and their Contractors. The standards in this document must be followed for design and construction. Use of this document for any other purpose other than preparation of plans for submittal to Lower Paxton Township Authority or for construction of sanitary sewers in the Authority's service area is forbidden.

1.02. SUBMITTALS

A. The Contractor shall submit the following:

1. Shop drawings, catalog data, and manufacturer's technical data showing complete information on material composition, physical properties, and dimensions of new pipe and fittings.

2. Description of process to be used.

1.03. PERMITS

A. Due to the special circumstances of pipe bursting, Property Owner must pick up the Sewer Repair Permit at the Township. Permits will not be issued to the Contractor.

1.03. COMPLETION CERTIFICATE

A. Township to provide a completion certification to the Property Owner after the repair has been inspected and deemed acceptable. Property Owner should not pay contractor the full amount until a completion certificate is provided.

PART 2 PRODUCTS

2.01. PIPE

A. For Pipe Bursting: Polyethylene Plastic Pipe shall be high density polyethylene pipe (HDPE) and meet the applicable requirements of ASTM F714 Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter or AWWA C906, ASTM D1248 Polyethylene Plastics Extrusion Materials for Wire and Cable and ASTM D3350 Polyethylene Plastics Pipe and Fittings Materials.

1. The replacement piping shall be of the same nominal size as the existing piping.

2. The pipe shall be homogenous throughout and shall be free of visible cracks, holes, foreign material, blisters, or other deleterious faults.

3. Dimension Ratios: The minimum wall thickness of the polyethylene pipe shall be a minimum DR 17.

4. Material color shall be black on the outside with a green stripe or solid black.

5. Pipe shall be one continuous piece; no fusions are permitted without prior approval from AUTHORITY.

B. For reconnections and cleanouts: PVC Pipe (4 or 6-inch diameter):

1. Unplasticized polyvinyl chloride (PVC) gravity sewer pipe and fittings with integral wall bell and spigot joints meeting ASTM D3034 specification for Type PSM PVC sewer pipe and fittings, Standard Dimension Ratio (SDR) 35, SDR 26, or ASTM F789. (For gasket joints only.)

2. The pipe shall be joined with an integral bell, bell-and-spigot type rubber gasketed joint. Rubber gasket shall conform to ASTM F 477. The rubber gasket shall be compressed radially on the pipe spigot to form a watertight seal in accordance with ASTM D3212.

2.02. FITTINGS

A. Use HDPE fittings that conforms to cell classification number PE3608, PE4608 or PE4710 as indicated in ASTM F714. The pipe fittings shall be manufactured with an SDR 17 and in compliance with ASTM D2683.

B. Use PVC SDR 35 Fittings on PVC pipe. Fittings shall be made of PVC having a cell classification of 12454B as defined in ASTM D1784.

C. Use Schedule 40 to SDR 35 adapter for reconnection to interior plumbing and connecting HDPE to SDR 35 pipe: SDR 26 PVC fitting “long neck” as manufactured by Multi Fittings or GPK.

D. Flexible Pipe Couplings with Anti-Shear Stainless Steel Collar (only for pipes 6-inches and smaller for reconnection to non PVC or Schedule 40 pipe):

1. Provide flexible pipe couplings with anti-shear stainless steel collar designed for differing pipe material connection; and for transition/reducing conditions of differing pipe material connections. (Flexible-couplings are not permitted for connecting pipe of like materials.)

2. Coupling Construction: Virgin PVC material which meets the performance requirements of Commercial Standard Specification CS 226-59. Couplings designed for pipe outside diameter coupling shall incorporate recesses to contain the stainless steel bands. Couplings provided with pre-assembled type 305 stainless steel bands and screws.

3. Acceptable Manufacturers:

a. FERNCO Inc., Distributed by the General Engineering Company.

b. Or Equal.

PART 3 EXECUTION

3.01. PREPARATION

A. Cleaning: Clean existing piping interior prior to bursting. Keep open ends of piping and pipe attachment openings capped or plugged until actual connection or actual pipe testing.

B. Due to the nature of the work, perform pre-renewal CCTV to confirm existing Building Sewer has no depressions or obstructions that would prevent the bursting. Confirm these findings with the AUTHORITY prior to repairs being made.

1. Refer the following to Authority for resolution:

a. Pipe with offsets, sags, missing or collapsed pipe, etc. Pipe with these defects must be externally repaired.

b. Connections with less than 2 percent slope.

C. See Section 1 – General Instructions paragraph 1.15.B for items required prior to pipe bursting.

D. Before any excavation is done for any purposes, the Contractor shall contact the appropriate One Call agency for determining field locations of existing utilities.

3.02. CONSTRUCTION METHODS – PIPE BURSTING

A. Use proper and suitable tools and appliances for the proper and safe handling, and installation of pipes.

B. The rehabilitation of the existing sanitary sewers by pipe bursting and installation of new HDPE pipe shall be done by use of pneumatic, static or hydraulic bursting head, with pipe splitters. Bursting head is directionally guided by host sewer main and towed under tension by winch, chain or rod assembly. New pipe is towed immediately behind bursting head.

C. Insertion pits shall be of sufficient length to allow the bursting head and new HDPE pipe to enter the host pipe at an angle that will maintain the grade of the existing sanitary sewer.

D. The Contractor shall install all pulleys, rollers, bumpers, alignment control devices and other equipment required to protect existing facilities, and to protect the pipe from damage during installation. Lubrication may be used as recommended by the manufacturer. Under no circumstances will the pipe be stressed beyond its yield stress.

E. The installed pipe shall be allowed the manufacturer’s recommended amount of time, but not less than four (4) hours, for cooling and relaxation due to tensile stressing prior to sealing of the annulus or backfilling of the launching and pull pits.

3.03. INSPECTION AND TESTING

A. Inspections by the AUTHORITY are required for installation, testing and post installation video. All testing shall be performed with an inspector present. Property Owner shall schedule the inspection with the Contractor and AUTHORITY and Property Owner must be present during the inspection. If inspection cannot be completed at scheduled inspection time a re-inspection must be scheduled for the following day. Complete visual inspection of installation and testing is required. Pictures/video of installation are not acceptable in lieu of the visual inspection.

B. General Requirements for Testing: Conduct test specified herein so that each Building Sewer pipe bursted is tested to the satisfaction of the AUTHORITY. Tests shall be conducted in the presence of the AUTHORITY:

1. Provide tools, materials, apparatus and instruments necessary for pipeline testing.

2. The testing procedure will need to include the observation tee and stack pipe and the building sewer cleanout and stack pipe if applicable.

3. If the connection to the existing main is being replaced, the tee and pipe reconnections to the main must be tested, except if connecting into a line that is ACP or VCP. Air testing requirements are identified in Section 02700 and Detail Drawings.

C. Testing Equipment: Control valve and test gauge apparatus shall be located above grade during the testing to allow for observation by the AUTHORITY:

1. Use testing apparatus equipped with necessary piping, control valves and gauges to control pressure within piping test section and to monitor pressures throughout the test.

2. To prevent accidental overloading of piping test section, provide testing apparatus with an approved pressure relief device set to relieve at 10 psi. An extra pressure gage of known accuracy shall also be provided so that the gages of the test equipment can be frequently checked. All gages shall be oil filled and shall read to the 1/10 psi increment

3. The test gauge shall be in satisfactory operating condition and recently calibrated. Gauge shall read in one-tenth increments and be liquid filled.

D. Air Acceptance Test: After installation is complete perform a low pressure air line acceptance test in accordance with the Standards listed herein and the following:

1. Test the seal plugs before actual use by testing plugs outside the trench in a short length of pipe pressurized to maximum anticipated testing pressure. Plugs shall hold and be properly braced, and show no movement. All Building Sewers to be tested from 6-inch observation tee.

2. Introduce low-pressure air slowly into sealed pipeline until internal air pressure meets the following requirements. Introduce air until the pressure stabilizes (2 minutes) after which the test period shall begin. Test pressure shall be 5 psig.

(Or, if groundwater conditions are known, the test pressure shall be determined as follows:

$$\text{Test Pressure} = 5 \text{ psig} + \frac{H}{2.31}$$

where H = depth of groundwater above the pipe in feet.)

a. A successful test is when <u>no drop</u> in pressure (no loss of air at all) is observed.

3. Building Sewer:

   a. Insert 6” solid ball in downstream side of observation tee making sure that it is all the way past the T into the 6” pipe.

   b. Insert 6” test ball into the top of the 6” observation tee.

   c. Insert 4” solid ball into the upstream side of the Building cleanout making sure that it is all the way past the T into the 4” pipe as close to the reconnection point as possible. Testing from inside of the house is permitted if a Building cleanout is not present. If a Building cleanout is not present, and it is not possible to test from inside of the house, a Building cleanout must be installed per the specifications.

   d. Insert 4” solid ball into the top of the 4” Building cleanout, if present.

   e. Insert 4” solid balls into the top of any remaining intermediate cleanouts, if present.

   f. Inflate line to proper pressure. Make sure air source (i.e. air compressor, air tank etc.) is disconnected from the test ball once proper pressure is achieved.

   g. Wait for allotted time making sure that there is 0 PSI drop.

   h. Deflate line. Make sure liquid filled pressure gauge returns to 0 PSI.

E. Any defective work shall be repaired at the Property Owner’s expense and retested. When the pipeline fails to meet test requirements specified previously, comply with the following procedures:

   1. Determine source or sources of leakage.

   2. Repair or replace defective material, and if a result of improper workmanship, make corrections in the presence of the AUTHORITY.

   3. Conduct additional test required to demonstrate that pipeline meets specified tests requirements.

END OF SECTION

COMPLETION CERTIFICATE
SANITARY SEWER SERVICE REPAIR

Property Owner:

Property Owner Address:

Contractor:

Date of Repair:

Type of Repair:

The sanitary sewer service repair work has been inspected by an authorized representatives of Owner and the work was found to be acceptable and complete.

OWNER'S REPRESENTATIVE:

By: _____
(Authorized signature) (Printed Name)

Title: _____

Date: _____

SECTION 02722

LINING OF BUILDING SEWERS AND LATERALS

PART 1 GENERAL

1.01. WORK INCLUDED

A. The work includes rehabilitation of existing building sewers and laterals by lining. This document is provided by Lower Paxton Township Authority for use by Property Owners and their Contractors. The standards in this document must be followed for design and construction. Use of this document for any other purpose other than preparation of plans for submittal to Lower Paxton Township Authority or for construction of sanitary sewers in the Authority's service area is forbidden.

1.02. DEFINITIONS

A. Cured-in-Place Liner - Resin impregnated, flexible tube with integral 360° "T" at the service lateral to mainline sewer connection. Tube is inserted from the mainline sewer into an existing sanitary sewer service lateral (with resin and host pipe contacting) and subsequently cured. When cured, the finished liner is continuous and tight fitting to prevent leakage between the host pipe and the liner, and provides a jointless pipe-within-a-pipe.

B. Cured-in-Place Liner for Laterals Entering Manholes - Resin impregnated, flexible tube shall be installed for service laterals entering manholes. Tube is inserted from the manhole into an existing sanitary sewer service lateral (with resin and host pipe contacting) and subsequently cured. When cured, the finished liner is continuous and tight fitting to prevent leakage between the host pipe and the liner, and provides a jointless pipe-within-a-pipe.

C. Host Pipe - Existing gravity sanitary sewer service lateral to be internally rehabilitated by installation of a cured-in-place liner.

1.03. SUBMITTALS

A. The Contractor shall submit the following:

1. Shop drawings, catalog data, and manufacturer's technical data showing complete information on material composition, physical properties, and dimensions of liners.

2. Description of process to be used.

3. Television inspection reports and video tapes made before and after liner installation.

1.04. PERMITS

A. Due to the special circumstances of lining, Property Owner must pick up the Sewer Repair Permit at the Township. Permits will not be issued to the Contractor.

1.04. COMPLETION CERTIFICATE

A. Township to provide a completion certification to the Property Owner after the repair has been inspected and deemed acceptable. Property Owner should not pay contractor the full amount until a completion certificate is provided.

PART 2 PRODUCTS

2.01. LINER

A. General Design/Installation Characteristics:

1. The liner shall be one piece consisting of the service lateral/building sewer portion and the mainline 360° "T" portion. The liner shall extend from the insertion point in the mainline sewer to the observation tee or termination point in the service line without joints. The finished installation shall provide a verifiable non-leaking connection at the interface of the mainline and service line.

2. The liner shall be one piece and shall extend from the insertion point in the manhole to the observation tee or termination point in the service line without joints. The finished installation shall provide a verifiable non-leaking connection at the interface of the manhole and service line.

3. The liner shall be continuous in length having uniform wall thickness to provide complete structural integrity. The liner design shall have sufficient strength to support all imposed loads, including dead loads, live loads, and groundwater pressure.

4. The installed liner shall match the configuration of the host pipe, including bends and transitions. The liner shall be able to negotiate pipeline bends of 45° with minimal wrinkling and without splitting or rupturing.

5. Installation and processing shall cause no degradation of the physical properties of the liner, including the continuous lateral connection.

B. Structural Properties:

1. The cured liner shall have as a minimum the structural properties listed below:

Flexural Strength	ASTM D-790	4,500 psi
Flexural Modulus	ASTM D-790	250,000 psi

C. Liner Tube:

1. The tube shall consist of one or more layers of absorbent textile that is needle punched felt or circular knit that may contain fiberglass and meets the requirements of ASTM F1216 and specification D5813, sections 6 and 8. The main sheet and lateral tube shall be constructed to withstand installation pressures and to have sufficient strength to bridge missing pipe segments and flexibility to fit irregular pipe sections. The tube shall be compatible with the resin system used. This coating shall form the inner layer of the finished pipe. The tube shall be fabricated to a size that, when installed, will tightly fit the internal circumference and the length of the host pipe. Allowance shall be made for circumferential stretching during inversion.

2. The outside layer of the tube (before inversion) and the interior of the main sheet (before inflation) shall be coated with an impermeable, translucent flexible membrane.

3. The interface of the main sheet and tube shall be vacuum tested with 10 in. HG by the manufacturer to verify a leak free connection.

4. The main sheet and lateral tube shall be a one-piece assembly formed into the appropriate tee or wye shaped fitting. The main sheet and lateral tube shall be

surrounded by a second impermeable, flexible translucent membrane (bladder) that will contain the resin and facilitate the vacuum impregnation and monitoring the resin saturation during wet out.

5. The tube shall be the minimum length to effectively span the distance between the insertion and termination points, in accordance with actual distances as field verified by the Contractor prior to impregnation of the liner tube.

6. The tube shall be fabricated to accommodate transitions in the host pipe without compromising the specified structural properties of the cured pipeliner.

7. The outside of the tube shall be marked for distance at regular intervals along its entire length, not to exceed five (5) feet.

D. Resin:

1. Resin and hardener that are compatible with the inversion process shall be used. The resin shall be able to cure in the presence of water. The initiation temperature for cure shall be less than 180° F.

2. The resin shall be a corrosion resistant polyester, vinyl ester, epoxy resin or silicate and catalyst system that when properly cured within the composite pipe assembly meets the requirements of ASTM F-1216 as well as the physical properties herein.

3. For design purposes, a 50-year time dependent flexural modulus shall be determined in accordance with ASTM D2290 with a minimum test duration of 10,000 hours.

E. Acceptable lateral lining Manufacturers:

1. LMK T-Liner

2. BLD Service Connection Lateral

3. Or a preapproved equal

2.02. HYDROPHILIC SEALS

A. Insignia Hydrophilic O-Rings: Two hydrophilic O-Rings, or BLD equivalent product, shall be installed at the terminal end of the lateral liner and on both ends of the 360° “T” portion within the mainline liner as in the Details.

B. Insignia TM Hydrophilic Connection Hat: Gasket to be installed at the intersection of the lateral liner and the main and liner for LMK products. Use an equivalent manufacture approved hydrophilic material for the BLD products. Reference details at end of this section.

C. Insignia End Seal Sleeve: A seamless molded flange-shaped gasket to be installed within the lateral when the lateral enters a manhole. Both ends of the lateral that enters a manhole must have seals; at the end entering the manhole (end seal sleeve) and at the end where it terminates at the observation tee (o-rings) Use an equivalent manufacture approved hydrophilic material for the BLD lateral system.

D. See attached details for installation of LMK and BLD systems.

PART 3 EXECUTION

3.01. PREPARATION

A. Cleaning: The host pipe and manhole, if applicable, shall be thoroughly cleaned to remove all internal foreign materials that would prevent proper installation of the liner.

B. Due to the nature of the work, perform pre-renewal CCTV to confirm existing pipe has no depressions or obstructions that would prevent the lining. Confirm these findings with the AUTHORITY prior to repairs being made.

1. Refer the following to Authority for resolution:

a. Pipe with offsets, sags, missing or collapsed pipe, etc. Pipe with these defects must be externally repaired.

b. Connections with less than 2 percent slope.

C. See Section 1 – General Instructions paragraph 1.15.B for items required prior to lining.

3.02. INSTALLATION

A. General:

1. The Contractor shall install and process the cured-in-place liner and seals in accordance with the manufacturer's specific detailed instructions.

2. The completed liner shall fit tightly against the inside wall of the host pipe and be locked into the joints of the host pipe.

B. Resin Impregnation:

1. Unless otherwise approved by the AUTHORITY/Engineer, the liner tube shall be impregnated ("wet-out") with resin using a vacuum pump under controlled conditions and calibration rollers specified by the manufacturer. Thorough saturation of the liner tube with resin shall be visibly evident.

2. The volume of resin used shall be sufficient to fill all voids in the tube material at nominal thickness and diameter, and seal the ends at the insertion and termination points. The volume shall be adjusted by adding excess resin in accordance with the manufacturer's recommendations to account for the change in resin volume due to polymerization and to allow for any migration of resin into the cracks and joints of the host pipe.

C. Insertion:

1. The lateral tube and inversion bladder shall be inserted into the launching hose in accordance with Practice F1216. No dry or unsaturated area in the main sheet or lateral tube shall be acceptable upon visual inspection. The main bladder and flat textile sheet (main liner tube) shall be wrapped around a launching device, formed into a tube and secured. The main sheet shall be properly aligned with the bladder so the opening of the main sheet aligns with the opening of the main bladder and wrapped around the 360° "T" launching device. CCTV must verify proper placement of the main sheet prior to inflation.

2. Apply hydrophilic sealant on the backside of the connection a minimum of one-inch wide bead. Use Adeka Ultra Seal P201A or equal.

3. The main bladder shall be inflated causing the main sheet to unwrap and expand; pressing the main tube firmly into contact with the main pipe and embedding the flange shaped gasket or hydrophilic seal between the main tube and the main pipe at the lateral opening. The lateral tube is inverted through the main tube aperture by the action of the lateral bladder extending into the lateral pipe to the termination point of the new double sweeping tee. The bladder assembly shall extend beyond each end of the liner, so the liner remains open-ended and no cutting shall be required.

4. In accordance with ASTM 2561, lateral liners less than 50' in length must terminate no more than 18 inches from the double sweeping tee. Lateral liners greater than 50' in length must terminate no more than 36 inches from the double sweeping tee.

D. Curing:

1. After inversion is completed, the "wet-out" tube shall be either heat cured using suitable heat source equipment or ambient cure. Pressure is maintained pressing the liner firmly against the inner pipe wall until the liner is fully cured. The curing of CIPP shall take into account the existing pipe material, the resin system, and the ground conditions.

2. If heat cured, the temperature must be monitored and logged at the upstream end of the lining. The heat source temperatures shall be monitored and logged during the cure and cool down cycles. The cure temperature and cure time shall be as determined by the pipeliner manufacturer and the manufacturer's recommended cure schedule shall be followed and submitted.

3. If heat cured, the liner material shall be cooled to 100 degrees Fahrenheit or less before relieving pressure on the liner.

E. Finish:

1. The finished CIPP shall be a continuous homogenous liner assembly located at the main/lateral interface and extending into the lateral pipe to the double sweeping tee or otherwise specified distance. The CIPP shall be smooth with minimal wrinkling. It shall be free of dry spots, lifts, and delamination. The CIPP shall include a textile taper at each end providing a smooth transition to the host mainline liner for accommodating video equipment and maintaining proper flow in the mainline.

2. There should be no resin slugs left behind in the mainline or lateral. Resin slugs must be removed by the Contractor at no cost to the AUTHORITY.

F. In the presence of the AUTHORITY's authorized representative/inspector, televise the liner immediately after installed.

G. No pipeliner protrusions into the mainline sewer are permitted. Protrusions shall be remedied by the Contractor at no additional cost to the AUTHORITY.

3.04. INSPECTION AND TESTING

A. Inspections by the AUTHORITY are required for installation, testing and post installation video. All testing shall be performed with an inspector present. Property Owner shall schedule the inspection with the Contractor and AUTHORITY and Property Owner must be present during the inspection. If inspection cannot be completed at scheduled

inspection time a re-inspection must be scheduled for the following day. Complete visual inspection of installation and testing is required. Pictures/video of installation are not acceptable in lieu of the visual inspection.

B. Observed groundwater infiltration of the Liner is zero.

C. Acceptance Test (Air Test):

1. General:

a. Lined pipes shall be air tested after they are installed and allowed to cure but no longer than 5 working days after they are installed, as described in this section.

b. Air test must include the tee portion in the main and entire liner.

c. All wyes, tees, and or ends of pipe shall be plugged with flexible-joint caps, or acceptable alternate, securely fastened to withstand the internal test pressure. Plugs or caps shall be readily removable.

d. The lined pipe shall be tested with low pressure air to 4 psig. [Or, if groundwater conditions are known, the test pressure shall be determined as follows:

Test pressure = H/2.31 + 5 psig, where H is the depth of groundwater over pipe.

e. Insert solid balls into 6” observation tees on the downstream side.
Install solid ball into the upstream side and downstream side of the mainline.

f. Inflate line from the downstream manhole. To proper pressure. Maximum test pressure shall be 10 psig.

g. At least 2 minutes shall be allowed for temperature stabilization, adding only the amount of air required to maintain pressure.

h. The lined pipe shall hold the required test pressure for 3 minutes after the initial 2 minutes allowed for stabilization.

i. ASTM 2561 permits a drop of 0.5 psi. Anything in excess of this drop is considered a failed test.

2. Air Testing Equipment:

a. Air testing shall be performed utilizing testing equipment consisting of an air-compressor and storage tank of adequate capacity; an air control panel equipped with all necessary piping, valves and pressure gages to control the rate at which the air flows to the test section and to monitor the air pressure inside the test section; and all required plugs. In order to prevent overloading the test section with the full pressure of the compressor, the test equipment must be provided with an approved pressure relief device set to blow out at 10 psi. An extra pressure gage of known accuracy shall also be provided so that the gages of the test equipment can be frequently checked.

b. All gages shall be oil filled and shall read to 1/10 increments.

D. Any defective work shall be repaired at the Contractor's expense and retested. When the pipeline fails to meet test requirements specified previously, comply with the following procedures:

1. Determine source or sources of leakage.

2. Repair or replace defective material, and if a result of improper workmanship, make corrections in the presence of the AUTHORITY.

3. Conduct additional test required to demonstrate that pipeline meets specified tests requirements.

3.05. POST-INSTALLATION VIDEO INSPECTION

A. To document the quality of the installation, the Contractor shall perform a closed-circuit television inspection, in the presence of an Inspector.

END OF SECTION

COMPLETION CERTIFICATE
SANITARY SEWER SERVICE REPAIR

Property Owner:

Property Owner Address:

Contractor:

Date of Repair:

Type of Repair:

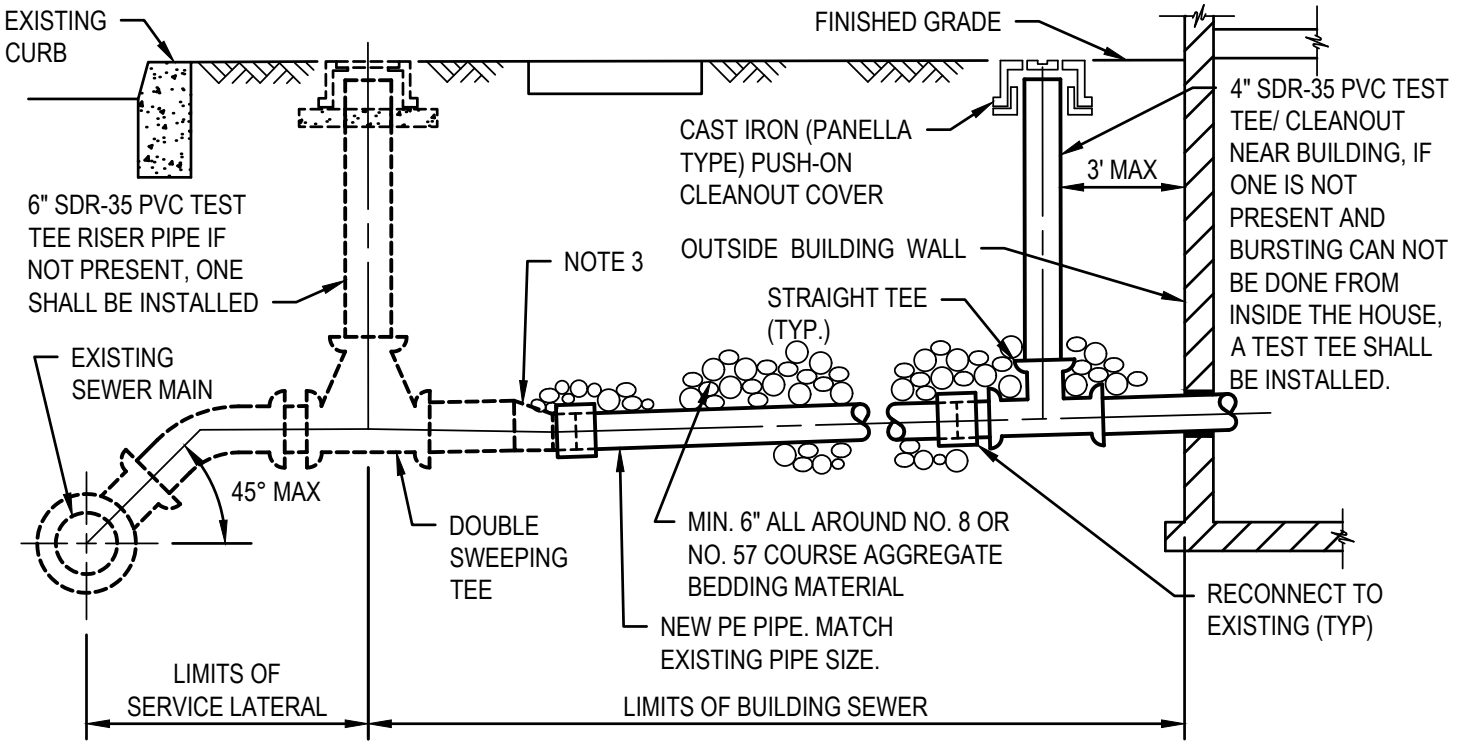
The sanitary sewer service repair work has been inspected by an authorized representatives of Owner and the work was found to be acceptable and complete.

OWNER'S REPRESENTATIVE:

By: _____
(Authorized signature) (Printed Name)

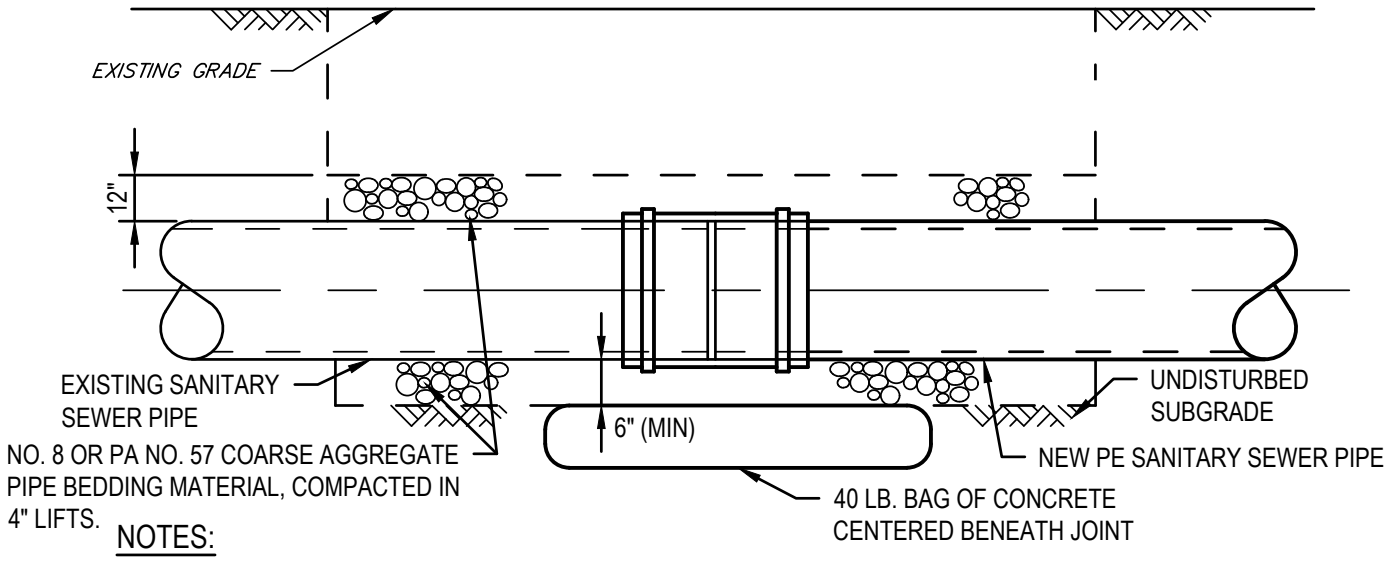
Title: _____

Date: _____



NOTES:

1. PIPE SIZES AND MATERIALS TO BE IN ACCORDANCE WITH AUTHORITY REQUIREMENTS.
2. LOCATE CURB CLEANOUT BETWEEN CURB AND SIDEWALK, BUT NOT UNDERNEATH ANY CURB SIDE UTILITIES. IF THERE IS NO CURB, LOCATE CLEANOUT AT EDGE OF RIGHT-OF-WAY.
3. FOR 4" BUILDING SEWER, USE ECCENTRIC 4"x6" ADAPTER FITTING FOR TRANSITION TO TEST TEE (4"X6" FLEXIBLE COUPLING NOT ALLOWED).
4. CLEANOUT/TEST TEE SPACING IS 100' MAXIMUM. ADD INTERMEDIATE CLEANOUT IF NEEDED.



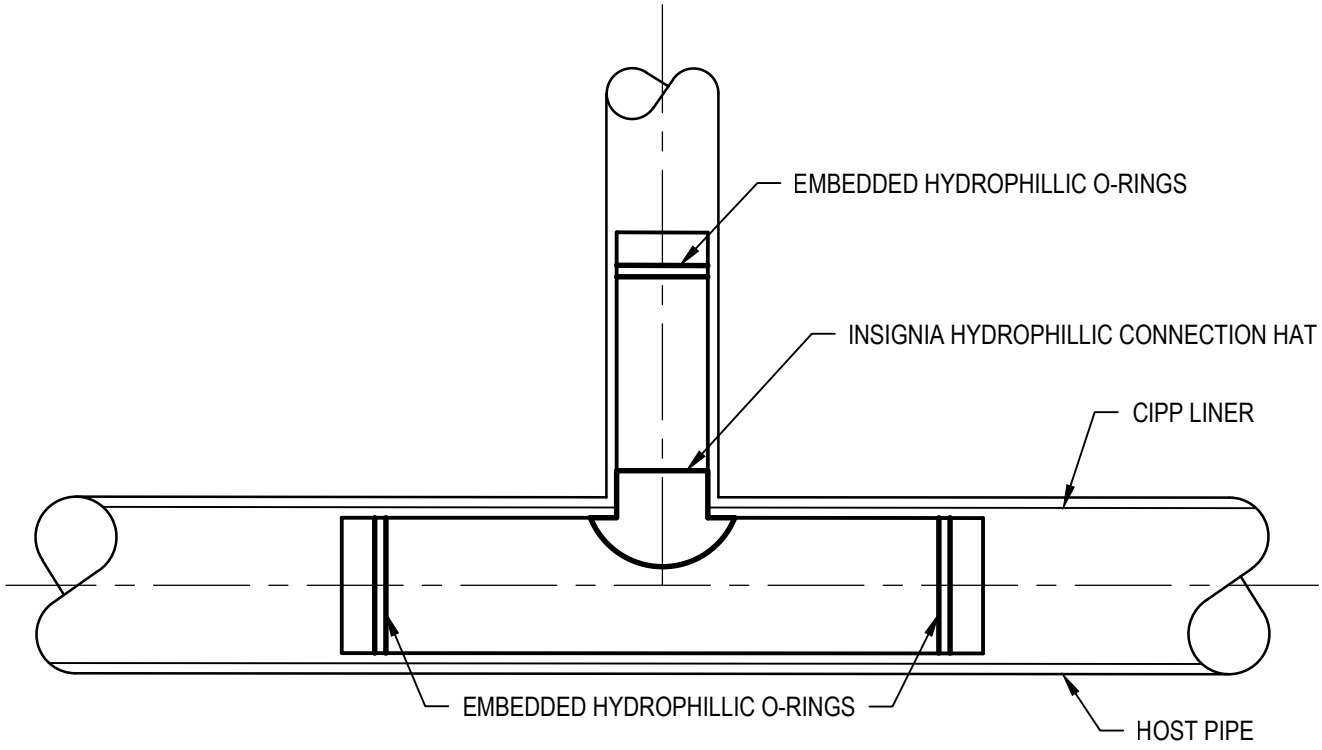
NOTES:

1. RECONNECTIONS TO BE AIR TESTED IN ACCORDANCE WITH SPECIFICATIONS.
2. A SDR 26 PVC LONG NECK FITTING OR A FLEXIBLE PIPE COUPLER WITH ANTI-SHEAR STAINLESS STEEL COLLAR SHALL BE USED TO RECONNECT TO EXISTING PIPING.

BUILDING SEWER PIPE BURSTING DETAIL

DATE	REVISIONS

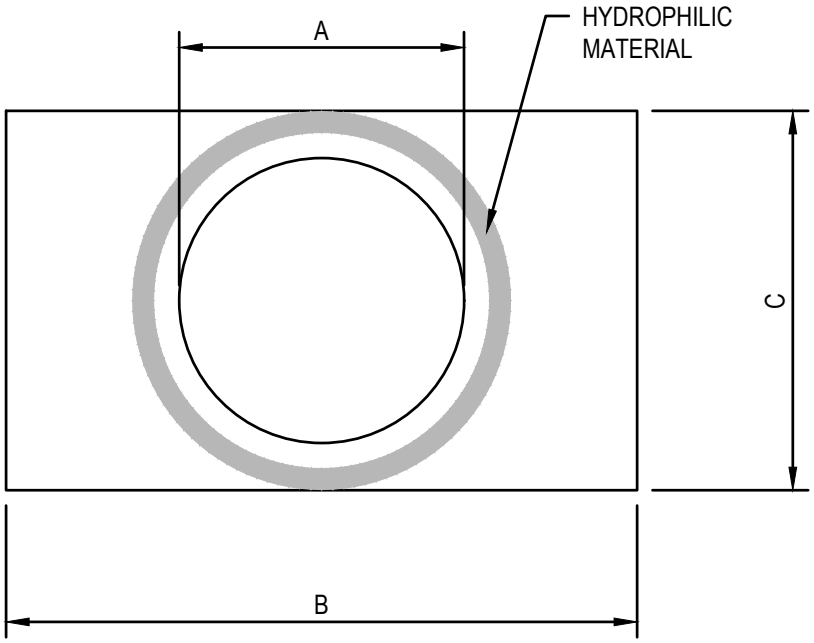
SCALE	FILE
NO SCALE	LAT-7



LMK LATERAL LINER SYSTEM

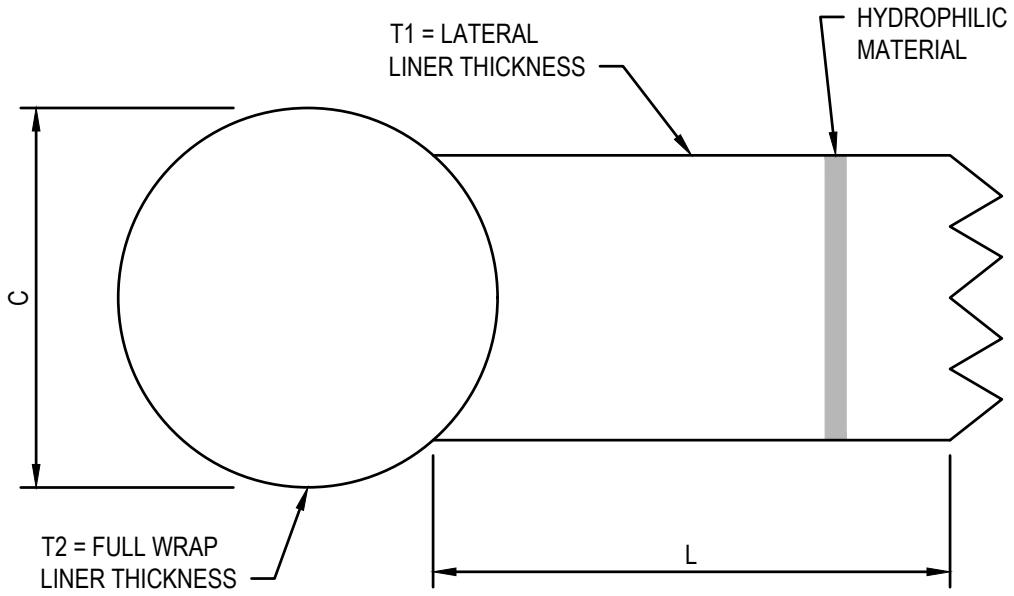
DATE	REVISIONS

SCALE	FILE
NO SCALE	LAT-8A



A = LATERAL DIAMETER (4"-6")
B = FULL WRAP LINER LENGTH (NTX 18")
C = MAIN LINE PIPE DIAMETER (TYPICALLY 8"-24")
T1 = LATERAL LINER THICKNESS (REFER TO DESIGN CALCULATIONS)
T2 = FULL WRAP LINER THICKNESS (TYPICALLY 3.0 MM)
L = LENGTH OF LATERAL LINER

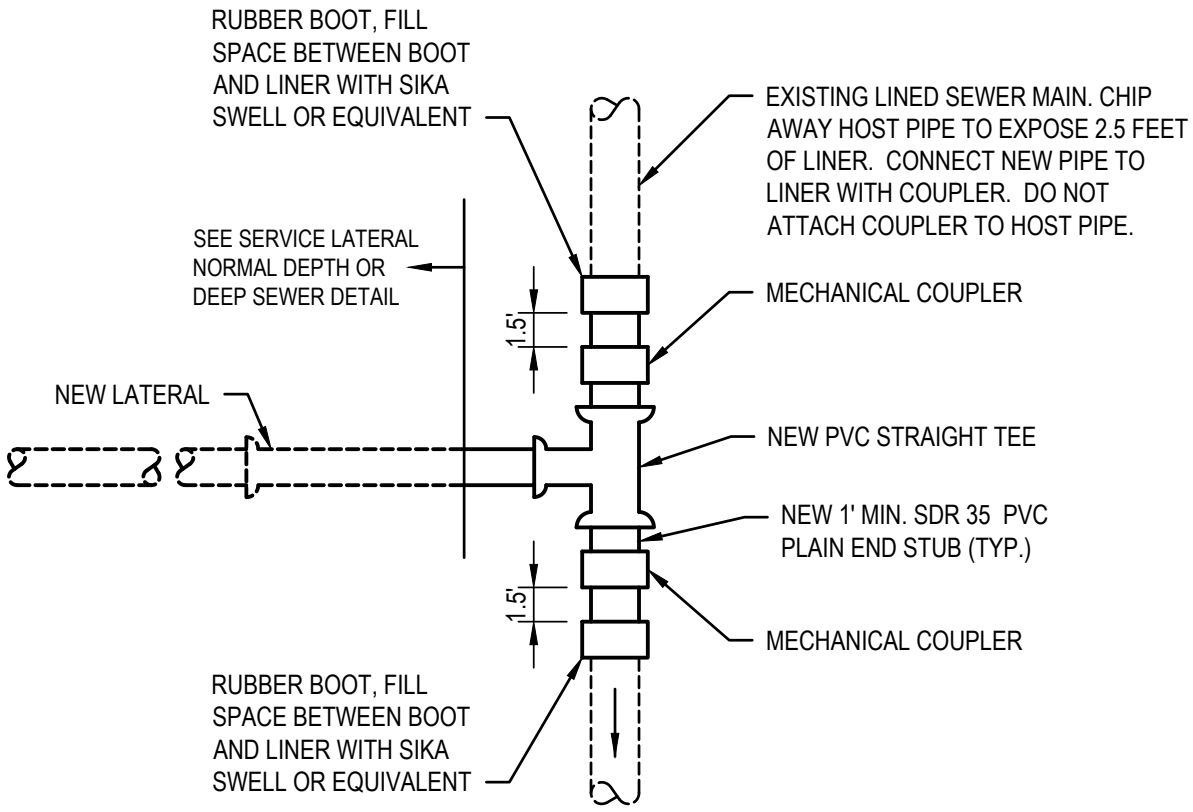
NOTE: ALL LENGTHS AND THICKNESS VALUES WILL BE DETERMINED BY THE TECHNICAL SPECIFICATIONS AND/OR DESIGN CALCULATIONS



BLD SERVICES LLC SERVICE CONNECTION SEAL PLUS LATERAL (SCS+L) - FULL WRAP

DATE	REVISIONS

SCALE	FILE
NO SCALE	LAT-8B



SERVICE LATERAL CONNECTION TO EXISTING LINED SEWER MAIN

DATE	REVISIONS

SCALE	FILE
NO SCALE	LAT-9