PIPE BURSTING

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Sanitary sewer replacement by pipe bursting
B. Reconnection of existing services
C. Testing

1.02 DESCRIPTION OF WORK

A. Replacement of sanitary sewer main by pipe bursting.
B. Replacement of sanitary sewer services by pipe bursting.

1.03 SUBMITTALS

Comply with Division 1 – General Provisions and Covenants of SUDAS Specifications as well as the following:

A. Detailed construction procedures including layout plans and sequence of construction.
B. Locations, sizes and construction methods for service reconnection pits.
C. Methods of construction, reconnection and restoration of existing service laterals.
D. Descriptions of methods for modifying existing manholes.
E. Detailed procedures for installation and bedding of new pipe in launching and receiving pits.
F. Sewer bypass plans including methods and equipment.

1.04 SUBSTITUTIONS

A. Comply with Division 1 – General Provisions and Covenants of SUDAS Specifications.

1.05 DELIVERY, STORAGE AND HANDLING

A. Comply with Division 1 – General Provisions and Covenants of SUDAS Specifications.
1.06 SCHEDULING AND CONFLICTS

A. Comply with Division 1 – General Provisions and Covenants of SUDAS Specifications.

1.07 SPECIAL REQUIREMENTS

A. Operators of pipe bursting equipment shall be trained and certified by the equipment manufacturer for the system operation.

B. Operators of the pipe fusion equipment shall be trained and certified by the equipment manufacturer for the fusion methods and equipment operation.

1.08 MEASUREMENT AND PAYMENT

A. Pipe Bursting:
   1. Measurement: Each type and size of pipe installed by pipe bursting will be measured in linear feet from center of manhole to center of manhole or along length installed between pits.

   2. Payment: Payment will be made at the unit price per linear foot for each type and size of pipe.

   3. Includes: Unit price includes, but is not limited to, pre-bursting inspections, pit excavations, dewatering, furnishing bedding material, placing bedding and backfill material, pit restoration, and testing.

B. Service Reconnection:
   1. Measurement: Each completed reconnection per size of service pipe will be counted.

   2. Payment: Payment will be made at the unit price for each reconnection.

   3. Includes: Unit price includes, but is not limited to, removal of existing pipe, trench excavation and backfill, couplers, fitting, and pipe necessary for reconnection.

PART 2 – PRODUCTS

2.01 Sanitary Sewer:

A. High Density Polyethylene Pipe (HDPE):
   1. Comply with ASTM F714 based on outside diameter or AWWA C906, ASTM D1248 and ASTM D3350.


   3. Homogenous throughout entire pipe, free from cracks, holes, foreign material, Blisters, or other deleterious faults.
2.02 Service Connector:

A. Existing Service Lateral:
   1. Flexible connector conforming to ASTM C425.

B. New Service Lateral:
   1. Compression-fit type with nominal inside diameter of existing service.
   2. Inserta-Tee® or approved equal.

2.03 Joint Lubricants: Must be compatible with pipe material. Follow manufacturer recommendations for application.

PART 3 – EXECUTION

3.01 PREPARATION:

A. Clean and televise the host pipe and perform internal inspections. Provide a copy of the video and summary report to the Engineer.

B. Identify, locate, excavate, and disconnect laterals from host sewer main as referenced in the contract documents.

C. Provide access pits as required to facilitate pipe bursting insertion process. Locate pits where interference to vehicular traffic and inconvenience to public is minimized. Use sewer lateral connection locations, changes in sewer line and grade, and sags as access pit locations, and provide access to sewer from both directions. Prevent damage to adjacent areas during bursting process.

D. Locate and protect existing utilities.

3.02 PIPE INSTALLATION

A. General:
   1. Do not exceed approved submittal insertion rate or force at any time.
   2. Use approved lubricant to ease installation friction. Match lubricants to soil and insertion conditions.
   3. Ascertain elevations of upstream and downstream manhole inverts or at main to be burst at insertion pits and intermediate points if excavated, to assure line and grade of new pipe is maintained.
   4. Provide by-pass pumping.

B. Pipe Jointing:
   1. Assemble and joint pipe on site using the butt-fusion method to provide a leak-proof joint. Threaded or solvent-cement joints and connections are not permitted. Comply with manufacturer’s recommendations for all equipment and procedures. Perform fusion with personnel certified as fusion technicians by a manufacturer of HDPE pipe and/or fusing equipment.
2. Use proper temperature and pressure to assure the butt-fused joint is in true alignment and has uniform rollback beads. Remove irregular internal bead projections that are not uniform. Allow adequate cooling time before removal of pressure. The fused joint to be watertight and have tensile strength equal to that of the pipe. All joints are subject to acceptance by the Engineer prior to insertion.

C. Relaxation Period:
1. Allow inserted HDPE pipes to rest for a period as recommended by the manufacturer but no less than 4 hours before cutting and trimming replacement pipe, reconnecting services, or connections to manholes.

2. After relaxation period, cut, trim, and seal replacement pipe 3 inches inside upstream and downstream manholes if appropriate. Reconnect existing pipe at manhole or insertion pit with approved flexible coupling method.

D. Restoration:
1. Prior to backfilling access pits, ensure new pipe is properly supported and on the required grade. Stone or other approved material shall be used under the new pipe as support to avoid sagging after backfill and compaction.

2. Restore all pits, excavations, and associated surface areas to original condition or as specified in the contract documents.

3.03 TESTING

A. Perform low pressure air testing prior reconnection of services. Test according to Section 4060. 3.04B. Sanitary Sewer Exfiltration Testing of SUDAS Specifications.

B. Perform video inspection upon completion of all connections. Provide a copy of the video inspection to the Engineer.

C. Provide necessary repairs or replacements of all detected defects at Contractor’s expense.

END OF SECTION