**SECTION 01250**

**MEASUREMENT & PAYMENT FOR PIPE REPLACEMNTS**

# GENERAL

## BASIS

* + 1. All work shall be paid on the basis of the unit prices stated in the bid form and upon the actual work performed and materials installed, complete-in-place, in accordance with the contract documents.
		2. No separate payment shall be made for such items as the constant maintenance and coordination of the work, utility excavation, excavation, trench protection, utility support and coordination, traffic control management, sheeting and shoring, underpinning, installation procedure, maintaining drainage flow, maintaining sewage flow, dewatering, utility backfill, backfill, pavement sawcutting, cutting and removal, inspection, testing and restoration except when specified otherwise.
		3. The expense for any other incidental or related work necessary to provide and install a bid item, complete-in-place, shall be included in the unit price for that particular bid item.
		4. No provisions are made for varying trench widths and/or depths, and therefore contractor should use a weighted average width and depth and its own determinations of field conditions when assigning value to this work, subject to review by the resident project representative and final determination by the engineer.

# PRODUCTS – NOT USED

# EXECUTION

## MEASUREMENT AND PAYMENTS

### Mobilization

Mobilization price shall include and be full compensation for the mobilization of personnel, all materials, labor, tools, equipment and incidentals to the project site; payment of performance bonds, payment bonds, and other insurance premiums; establishment of the contractor's offices, buildings and other facilities necessary to begin work on the substantial phase of the contract. No additional payment will be made for demobilization and/or remobilization due to shutdowns, suspensions of the work or for other mobilization activities. Payment shall be made at the lump sum price listed in the bid schedule for this bid item. Mobilization shall not exceed five percent (5%) of total bid for the division of work.

### Sanitary Sewer Pipe

Measurements shall be made on a per linear foot basis, of the actual horizontal length from center of manhole to center of manhole, or from center of manhole to center of cleanout, installed complete-in-place. The linear foot measurements shall be based upon horizontal plane surveying and correspond to the station numbers on the plans. Contractors are advised that the amount of material required for construction may vary from the horizontal linear foot designations due to vertical ground relief. The bid unit price (linear foot) shall include all labor, equipment and materials for clearing, tree removal, excavation; backfill; pipe; fittings; improved bedding; compaction; removal of existing pipe, laterals and manholes; abandonment of existing pipe, manholes and laterals indicated on the drawings, including where removal is indicated within a structure; plugging of existing pipes and laterals; connections of pipes of different materials and different sizes; all required testing and inspection; miscellaneous concrete required in accordance with the details; all work required in making the connections to the existing system; and any other work necessary to make a complete working sanitary sewer system. The measurement for sewer pipe shall also include carrier pipe within casing pipe. Payment shall be made on a horizontal linear foot unit price basis, for each size of pipe specific or indicated, according to the type of material indicated. If the unit bid price for a required material (such as ductile iron) is higher than the unit bid price for allowed material (such as PVC), the contractor shall not be allowed to increase the footage under the required material pay item unless authorized by change order. No additional payment shall be made for the contractor electing to install higher-grade material when it is not required.

### Sanitary Sewer Manhole

Measurements shall be made on a per each basis, including the base, vertical risers and top. The bid unit price shall include all labor, equipment and materials for sheeting and shoring, excavation, backfill, bedding material, flexible connection, invert shaping, pipe installations, joint materials, boots, vacuum testing, lamp testing, CCTV inspection, steps, and drop connection special construction techniques and any other item required for the complete-in-place installation.

### Sanitary Sewer Frames and Covers

Measurement shall be paid for at the unit price bid for each type frame and cover, either standard or watertight. The bid unit price shall include all labor, equipment and materials for the frame; the cover, joint material, bolts, testing, concrete, grade rings or any other items required to set the frame at the correct elevation for the complete-in-place installation.

### Sewer Service Connection – 4-inch

Measurement shall be made on a per each basis for the 4-inch sewer service connection. The bid unit price shall include all labor, equipment and materials for sheeting and shoring, excavation, backfill, bedding material, and all work required in making the 4-inch connection to the sewer mainline and setting of the right-of-way/easement line cleanout and cover; including saddle, right-of-way/property line or easement cleanout and cover, fittings, miscellaneous pipe (excluding 4-inch sewer lateral), surface restoration (excluding asphalt) and any other work required for the complete-in-place installation.

### Multi-unit Sewer Service connection – 6-inch

Measurement shall be made on a per each basis for the 6-inch multi-unit sewer service connection. The bid unit price shall include all labor, equipment and materials for sheeting and shoring, excavation, backfill, bedding material, and all work required in making the 6-inch connection to the sewer mainline, the setting of the 6-inch multi-unit cleanout and the two (2) 4-inch right-of-way/easement line cleanouts ; including saddle, right-of-way/property line or easement cleanout and cover, fittings, miscellaneous pipe (excluding 6-inch sewer lateral), surface restoration (excluding asphalt) and any other work required for the complete-in-place installation.

### Sanitary Sewer Lateral (excluding residential sewer lateral)

Measurement shall be made on a per lineal foot basis, measured horizontally along the centerline of the pipe, beginning at the mainline connection, and ending at the right-of-way/easement line cleanout. The bid unit price shall include all labor, equipment and materials for clearing, tree removal, excavation; backfill; pipe; fittings; improved bedding; compaction; all required testing and inspection; miscellaneous concrete required in accordance with the details; and any other items necessary for the complete-in-place installation.

### Residential Sewer Lateral

Measurement shall be made on a per lineal foot basis, measured horizontally along the centerline of the pipe, beginning at the right-of-way/easement line cleanout, and ending at the connection to existing residential gravity line. The bid unit price shall include shall include all labor, equipment and materials for clearing, tree removal, excavation; backfill; pipe; fittings (excluding yard cleanouts); improved bedding; compaction; abandonment of existing pipe; connections of pipes of different materials and different sizes; all required testing and inspection; miscellaneous concrete required in accordance with the details; all work required in making the connections to the existing system; and any other items necessary for the complete-in-place installation.

**Yard Cleanout**

Measurement shall be made on a per each basis, for the installation of yard cleanouts.

The bid unit price shall include all labor, equipment and materials for clearing, tree removal, excavation; backfill; pipe; fittings; improved bedding; compaction; all required testing and inspection; miscellaneous concrete required in accordance with the details; and any other items necessary for the complete-in-place installation.

**Redirect House Plumbing**

Measurements shall be made on a per each basis, to redirect plumbing underneath a residential house in the event a connection cannot be made to existing plumbing location. The bid unit price shall include all equipment, labor and materials for sheeting and shoring, excavation, backfill, bedding material, flexible connection, pipe and fitting installations, joint materials, boots, and any other item(s) required to redirect plumbing to the nearest feasible exterior wall for complete-in-place installation.

### Grey Water/Discharge Connection

Measurements shall be made on a per each basis, to connect existing grey water/discharge points to the sewer service connection. The bid unit price shall include all equipment, labor and materials for sheeting and shoring, excavation, backfill, bedding material, flexible connection, pipe and fitting installations, joint materials, boots, and any other item required for the complete-in-place installation.

### Septic Tank Abandonment

Measurement shall be made on a per each basis for the Septic Tank Abandonment. The bid unit price shall include all equipment, labor and materials required for pumping out the septic tank, removing contents to an approved septage receiving wastewater treatment plant, breaking the bottom to allow drainage, filling the tank with gravel and/or sand, and removing or crushing the top for the complete-in-place abandonment.

### Lift Station

Measurement shall be made on a per each basis for the Lift Station. The bid unit price shall include all labor, equipment and materials for excavation, backfill, the building and accessories, wet well, site work, electrical work, piping, valves, concrete, pump controls, pumps and accessories, wiring and any other items required for a complete-in-place installation.

### Sewer Forcemain Lines (excluding residential forcemain)

Measurement shall be made on a per a linear foot basis. The linear foot measurements shall be based upon horizontal plane surveying and correspond to the station numbers on the plans. Contractors are advised that the amount of material required for construction may vary from the horizontal linear foot designations due to vertical ground relief. The bid unit price shall include all labor, equipment and materials for clearing, tree removal, excavation; backfill; pipe; fittings; reaction blocking, improved bedding; compaction; removal or abandonment of existing pipe, indicated on the drawings, including where removal is indicated within a structure; plugging of existing pipes and laterals; connections of pipes of different materials and different sizes; all required testing and inspection; miscellaneous concrete required in accordance with the details; all work required in making the connections to the existing system; and any other work necessary to make a complete working sewer forcemain system. The measurement for forcemain pipe shall also include carrier pipe within casing pipe. Payment shall be made on a horizontal linear foot unit price basis, for each size of pipe specific or indicated, according to the type of material indicated. If the unit bid price for a required material (such as ductile iron) is higher than the unit bid price for allowed material (such as PVC), the contractor shall not be allowed to increase the footage under the required material pay item unless authorized by change order. No additional payment shall be made for the contractor electing to install higher-grade material when it is not required.

### Residential Forcemain

Measurement shall be made on a per linear foot basis, measured horizontally along the centerline of the pipe, beginning at the center of the grinder pump and ending at the connection to the sewer system. The bid unit price shall include shall include all labor, equipment and materials for clearing, tree removal, excavation; backfill; pipe; fittings (excluding yard cleanouts); improved bedding; compaction; abandonment of existing pipe; connections of pipes of different materials and different sizes; all required testing and inspection; miscellaneous concrete required in accordance with the details; all work required in making the connections to the sewer system; and any other items necessary for the complete-in-place installation.

### Residential Grinder Pump

Measurement shall be made on a per each basis, for the installation of the residential grinder pump. The bid unit price shall include shall include all labor, equipment and materials for clearing, tree removal, excavation; backfill; pipe; fittings, connection to existing plumbing; improved bedding; compaction; abandonment of existing pipe; connections of pipes of different materials and different sizes to the wet well; power drop and wiring; all required testing and inspection; miscellaneous concrete; all work required in making the connections to the existing system; and any other items necessary in accordance with the details for the complete-in-place installation.

### Water Line (excluding service line)

Measurement shall be made on a per linear foot basis. The linear foot measurements shall be based upon horizontal plane surveying and correspond to the station numbers on the plans. Contractors are advised that the amount of material required for construction may vary from the horizontal linear foot designations due to vertical ground relief. The bid unit price shall include all labor, equipment and materials for clearing, tree removal, excavation; backfill; reaction blocking, pipe; fittings; improved bedding; compaction; abandonment of existing pipe and surface restoration (excluding asphalt), but shall not include services, gate/plug/butterfly valves, air release valves, blowoffs, hydrants, etc. The unit price shall also include pressure testing and bacteriological testing. The plans designate required pipe size and material. If the unit bid price for a required material (such as ductile iron) is higher than the unit bid price for allowed material (such as PVC), the contractor shall not be allowed to increase the footage under the required material pay item unless authorized by Change Order. No additional payment shall be made for the contractor electing to install a higher-grade material when it is not required.

### Valves, including Air Release Valves, Blowoff Valves, Gate Valves, Plug Valves, Butterfly Valves, etc.

Measurement shall be made on a per each basis for valves. The bid unit price shall be for complete installation of a valve assembly including the valve, support, valve box, and all other items indicated on the standard detail plan sheets.

### Water Service Meter Assembly

Measurement shall be made on a per each basis, for the installation of the water service meter assembly. The bid unit price shall include, all labor, equipment and materials for installation of the meter box and cover, meter and setter, pressure reducing valve (if applicable), connection to the mainline; clearing, tree removal, excavation; backfill; pipe (excluding Service Line); fittings; improved bedding; compaction; all required testing and inspection; surface restoration (excluding asphalt); and any other items necessary for the complete-in-place installation.

**Service Line (Excluding Customer Service Line)**

Measurement shall be made on a per linear foot basis, measured horizontally along the centerline of the pipe, beginning at the mainline connection, and ending at center of the Water Service Meter Assembly. The bid unit price shall include all labor, equipment and materials for clearing, tree removal, excavation; backfill; reaction blocking, pipe; fittings; improved bedding; compaction; abandonment of existing pipe and surface restoration (excluding asphalt); pressure testing and bacteriological testing; miscellaneous concrete required in accordance with the details; and any other items necessary for the complete-in-place installation.

### Customer Service Line

Measurement shall be made on a per linear foot basis, measured horizontally along the centerline of the pipe, beginning at the Water Service Meter Assembly and ending with the connection to the Customer Plumbing. The bid unit price shall include all labor, equipment, materials and fittings for connection to the Water Service Meter Assembly and existing residential plumbing; clearing, tree removal, excavation; backfill; reaction blocking, pipe; fittings; improved bedding; compaction; abandonment of existing pipe and surface restoration (excluding asphalt); pressure testing and bacteriological testing; miscellaneous concrete required in accordance with the details; and any other items necessary for the complete-in-place installation.

### Fire Hydrants

Measurement shall be made on a per each basis. The bid unit price shall include connection to the mainline, the main line tee; 6" gate valve, fire hydrant, 6” restrained ductile iron pipe, reaction blocking, fittings; clearing, tree removal, excavation; backfill; improved bedding; compaction, culvert pipe (if required); all required testing and inspection; surface restoration (excluding asphalt); and any other items necessary for the complete-in-place installation in accordance with the details.

### Road or Railroad Crossing Encasement; Open Cut

Measurement shall be made on a per horizontal linear foot basis. The bid unit price includes only the casing pipe, appurtenances, excavation, and all surface restoration (excluding asphalt). Lines installed through the casing pipe shall be paid for separately under the respective bid unit line item. This bid item applies only to work within paved VDOT roadways or abandoned/inactive railroad rights-of-way. No road crossings may be completed by open cut without prior authorization from VDOT or the railroad.

###  Road or Railroad Crossing, Jack or Bore & Encasement

Measurement shall be made on a per horizontal linear foot basis. The bid unit price shall include the casing pipe, appurtenances, boring, and bore attempts. Lines installed through the casing pipe shall be paid for separately under the respective bid unit line item. The plan sheets designate the anticipated length of each crossing installation. There shall be no additional compensation made if the actual length of the installation is greater than the required length. Lines installed through the crossing shall be paid for separately under the respective bid unit line item. No separate payment shall be made for unsuccessful bore attempts. This bid item applies only to work within paved VDOT roadways or railroad rights-of-way.

### Stream Crossing, Open Cut Installation

Measurement shall be made on a horizontal linear foot basis, for the designated lengths as shown on the plans. The bid unit price shall include all costs to complete the installations as shown on the plans and/or specified; including excavation, temporary flume pipe(s) to maintain stream flow, fittings, testing, restoration, and all related work. The plan sheets designate the anticipated length of each open cut installation. There shall be no additional compensation made if the actual length of the installations is greater than the specified length. No separate payment will be made for unsuccessful attempts. Lines through the installations shall be paid for separately under the respective line unit price.

### Stream Crossing, Steel or Concrete Encased

Measurement shall be made on a horizontal linear foot basis,for the designated lengths as shown on the plans. The bid unit price shall include all costs to complete the installations as shown on the plans and/or specified; including excavation, temporary flume pipe(s) to maintain stream flow, casing pipe or concrete encasement, carrier pipe, fittings, testing and inspection, restoration, and all related work. The plan sheets designate the anticipated length of each installation. There shall be no additional compensation made if the actual length of the installations is greater than the specified length.

### Directional Drilled Stream Crossing

Measurement shall be made on a per linear foot basis, for the designated lengths as shown on the plans. The bid unit price shall include all costs to complete the installation as shown on the plans and/ or specified; including directional drilling beneath the obstacle, fittings, testing, restoration, and all related work. There shall be no additional compensation made if the actual length of the installation is either greater than or less than the specified length. No separate payment will be made for unsuccessful attempts.

The Contractor may also elect to complete any stream crossing called out as open cut or encased by directional drilling without separate encasement. If directional drilling is used, the Contractor shall be paid for the crossing using the designated open cut or encased quantities and bid unit prices – i.e. at no cost increase to the Owner.

### Asphalt Patching and Repair

Measurement shall be made on a square yard basis assuming depths as shown in the Standard Details and shall be measured horizontally along centerline of the pipe. The bid unit price shall include and cover the furnishing of all materials, labor, tools, and equipment necessary to complete this item of work in accordance with the Plans, Details and Specifications.

### Reseeding

Measurement shall be made on at the Lump sum price. The price shall include and cover the furnishing of all materials, labor, tools, and equipment necessary to complete this item of work in accordance with the Plans, Details and Specifications.

END OF SECTION