

## SECTION 530

### ABANDONMENT OF EXISTING PIPELINES AND STRUCTURES

#### I. GENERAL

##### 1.1 DESCRIPTION OF WORK

The Work shall consist of the abandonment of water mains, valve boxes, residential meter boxes, sanitary sewers, storm sewers, manholes, drainage structures, valve/meter vaults, cleanouts, force mains, fire hydrants, and sewer laterals in accordance with the Contract Documents. Abandonment of pipelines and structures will be performed where shown in the Contract Documents or where designated by the Owner. The Contractor shall furnish all materials, equipment and labor necessary to abandon the designated pipelines and structures in-place, or remove in their entirety, as specified or indicated in the Contract Documents. Materials designated to be salvaged shall be handled in accordance with Section 510, Relocating or Modifying Existing Miscellaneous Items.

##### 1.2 MATERIALS

- A. Flowable fill shall conform to Section 200.
- B. Aggregate bedding material shall conform to Section 200.

##### 1.3 SUBMITTALS

Submittals for controlled density fill (flowable fill) shall be made by the Contractor in accordance with the procedures set forth in Section 105 and as described below.

- A. The Contractor shall submit reports of material analysis, concrete mix designs, and shall confirm conformance of all materials with the requirements of this section and all applicable VDOT or permit requirements.
- B. The "Acceptance Procedures for Aggregates" shall be in accordance with Section 200.
- C. Prior to use or placement, the Contractor shall submit certifications in the form of affidavits from the material suppliers, together with supporting data, attesting that the products and materials meet specification requirements.
- D. The Contractor shall submit for approval of the Owner his proposed method for filling the pipes, valve boxes, manholes, and other structures. Contractor's method shall take into consideration the removal of air from pipelines and the prevention of loss of fill material to the environment. Contractor's submittal shall include acceptable information on plugs, pumping equipment, traffic control (if required), proposed method for maintaining utilities to remain in service, and any required equipment or personnel certifications.

#### II. EXECUTION

Pipelines to be abandoned must be properly dewatered in accordance with all local, state and federal environmental regulations governing the disposal of chlorinated water or wastewater for sewerage collection systems.

## 2.1 PROCEDURES

Unless designated for removal, the Contractor shall abandon all pipes and structures indicated in the Contract Documents by filling them in-place with flowable fill.

### A. Existing Pipelines (Larger than 2-inch Diameter)

Existing pipes indicated in the Contract Documents to be abandoned shall be plugged at the designated locations and abandoned as follows:

1. Pipes shall be closed with an approved plug with reaction blocking as approved by the Owner.
2. Pipes, once closed as required above, shall be filled with flowable fill to the satisfaction of the Owner.
3. Pipes to be filled that connect to active structures shall be plugged with brick and mortar plugs and braced.

### B. Pipelines Two (2) Inches and Smaller in Diameter

Unless specifically called for in the Contract Documents to be removed, pipelines two (2) inches and smaller in diameter shall be abandoned in place, shall not be required to be filled with flowable fill, and shall have their ends crimped or plugged, as approved by the Owner.

### C. Valves and Valve Boxes

1. At a minimum, the top two (2) feet of all existing valves boxes designated to be abandoned, including the frame and cover, shall be removed. The remaining portion of the structure shall be filled with the specified fill material. If no material is specified, the box shall be filled with aggregate bedding material, the material in accordance with Section 200.
2. For valves designated to be salvaged, the valve and casting shall be handled in accordance with Section 510, Relocating or Modifying Existing Miscellaneous Items. The box shall be removed in its entirety and disposed of by the contractor, as indicated. Backfill and backfilling shall be in accordance with the Section 303, Earthwork, and as indicated in the Contract Documents.
3. For valves to be abandoned in place on a line to be abandoned the valve shall be fully opened and the valve box removed in its entirety.
4. For valves to be abandoned in place on a line to remain active, the valve shall be fully opened, the operating nut removed, and the valve box handled as indicated above.
5. The resulting excavated area for each valve location shall receive the specified restorative measures including pavement replacement material(s); or, topsoil in accordance with Section 602 and, grass seed or sod in accordance with Sections 603, or 604; as appropriate, and as specified.

D. Meter Boxes

1. Water meter boxes shall be removed in their entirety; the excavated area backfilled with an Owner approved material, and compacted in accordance with Section 303, Earthwork. The resulting excavated area shall receive the specified surface restorative measures to include pavement replacement material(s); or, topsoil in accordance with Section 602 and, grass seed or sod in accordance with Sections 603 or 604; as appropriate, and as specified.
2. If water meters are to be removed and salvaged, they shall be delivered to a location designated by the Owner, unless otherwise specified.
3. All water service lines to be abandoned shall be disconnected from the water main. This shall include removal of the service saddle or the corporation stop and installation of a full circle stainless steel repair band and stainless steel hardware.

E. Laterals and Cleanouts

1. Abandonment of laterals and cleanouts with standpipes shall include the:
  - a. Removal, disposal or salvage of castings, if existing,
  - b. Destruction of no less than the top two (2) feet of the standpipe,
  - c. Plugging of the end where indicated in the Contract Documents or as specified, and
  - d. Placement of flowable fill within the remaining pipeline.
2. Abandonment of laterals and cleanouts without standpipes shall include the:
  - a. Plugging of the end where indicated in the Contract Documents or as specified, and
  - b. Placement of flowable fill within the remaining pipeline.
3. Laterals to be abandoned on a main line to remain active shall be plugged at the property line with an Owner approved plug.
4. Surface restorative measures after abandonment of laterals and cleanouts shall include pavement replacement material(s); or, topsoil in accordance with Section 602 and, grass seed or sod in accordance with Sections 603 or 604; as appropriate, and as specified.

F. Concrete or Masonry Structures

1. The lines entering a structure shall be plugged with an Owner approved plug. At a minimum, the top four (4) feet of the structure shall be destroyed or removed, and the frame and cover shall be removed and either disposed of, or returned to the Owner, as specified. The concrete or masonry manhole, drainage structure, or valve/meter vault, shall then be completely filled with flowable fill or other Owner approved material.

2. Backfill and backfilling, including compaction, shall be in accordance with Section 303 and as indicated in the Contract Documents
3. Surface restorative measures after abandonment of structures shall include pavement replacement material(s); or, topsoil in accordance with Section 602, and grass seed or sod in accordance with Sections 603 or 604; as appropriate, and as specified.

**G. Metallic Structures**

1. The lines entering a structure shall be plugged with an Owner approved plug. The existing metallic structure shall be removed in its entirety and the resulting excavated area shall be backfilled and compacted in accordance with the Section 303, Earthwork, and as indicated in the Contract Documents.
2. Surface restorative measures after abandonment of structures shall include pavement replacement material(s); or, topsoil in accordance with Section 602, and grass seed or sod in accordance with Sections 603 or 604; as appropriate, and as specified.

**H. Fire Hydrants**

All fire hydrants shall be removed from the abandoned line and returned to the Owner as directed.

**III. MEASUREMENT FOR PAYMENT**

**A. Pipelines (Larger than 2-inch Diameter)**

Abandonment of existing pipelines, larger than 2-inch diameter, in-place, to include:

1. Plugs and filling with flowable fill, will be measured horizontally along the centerline of the pipe.
2. Opening the pipe at sufficient intervals to install the flowable fill and to release air will not be measured nor paid for separately. Costs associated with this item shall be considered incidental to the costs of pipeline abandonment.
3. Pavement patches in areas not designated to be patched in the Contract Documents, shall be considered incidental to the cost of the pipeline abandonment.
4. Surface restoration, including providing and installing pavement replacement and backfill materials, topsoil, seed and sod, shall be considered incidental to the cost of abandoning the pipeline. Backfill shall be in accordance with Section 303.
5. Abandonment of existing pipelines larger than 2-inch diameter will be paid for at the unit price per linear foot for the pipe size abandoned or, per cubic yard of flowable fill as indicated on the Bid form.

**B. Pipeline Two (2) Inches and Smaller**

Abandonment of pipe two (2) inches and smaller in diameter shall not be measured for payment and the cost shall be considered incidental other items of Work and no separate payment will be made.

**C. Valves and Valve Boxes**

1. The abandonment of existing valve boxes, including removal and disposal of the valve boxes; and, providing and installing pavement replacement materials, topsoil, seed and sod, shall be considered incidental to the cost of abandoning the pipeline.
2. The abandonment of valves in place shall be considered incidental to the other items of Work and no separate payment will be made.

**D. Meter Boxes**

1. Meter box abandonment shall be measured and paid as each.
2. The abandonment of existing meter boxes shall include the removal and disposal of the meter boxes; backfill material and backfilling, compaction and testing; and, providing and installing pavement replacement materials, topsoil, seed and sod, as appropriate.
3. The removal and delivery of water meters to the Owner's designated location, if required, shall be considered incidental to the cost of the abandonment of the meter boxes.

**E. Laterals and Cleanouts**

1. The abandonment of laterals shall be measured and paid per linear foot along the centerline of the lateral pipe, regardless of pipe diameter or depth, or at a unit price for each. Abandonment of cleanouts shall be considered incidental to the lateral and shall include all costs associated with plugging and restoration.
2. The abandonment of laterals on active main lines shall be measured and paid as each and shall include providing and installing an Owner approved plug, excavation, backfill and backfilling, and surface restoration.

**F. Concrete or Masonry Manholes, Drainage Structures, Meter/Valve Vaults and other Structures**

1. Abandonment of concrete or masonry manholes, drainage structures, meter/valve vaults and other structures, to include plugging of incoming pipelines and filling with flowable fill or Owner approved material will be measured and paid for each regardless of size or depth.
2. Surface restoration including backfill material and backfilling, compaction and testing, and, providing and installing pavement replacement materials, topsoil, seed and sod, as appropriate, will be considered incidental to the cost of the structure abandonment.

**G. Metallic Structures**

1. The removal of metallic structures, to include plugging of lines shall be measured at the unit price for each regardless of size or depth.
2. Surface restoration including backfill material and backfilling, compaction and testing, and, providing and installing pavement replacement materials, topsoil, seed and sod, as appropriate, will be included in the cost of the structure abandonment.

H. Fire Hydrants

Abandonment of existing fire hydrants will be considered incidental to new water line installation, and no direct payment will be made; or, per each, as indicated on the Bid form.

End of Section