

NATURAL RESOURCES CONSERVATION SERVICE

CONSTRUCTION SPECIFICATION

634A – MANURE TRANSFER – GRAVITY PIPES

1. SCOPE

This work shall consist of furnishing materials and installing all components of the gravity manure transfer system as shown on the drawings or as specified in Section 8.

Prior to commencing construction, public utilities shall be notified in accordance with N.Y.S. Industrial Code 753.

2. MATERIALS

The materials and equipment required for the gravity manure transfer system shall be as shown on the drawings or in Section 8. The materials specified shall meet the quality requirements as listed in the following latest revision of the appropriate ASTM specification.

ASTM Specification

PIPE

D-2241	PVC Pressure-Rated Pipe (SDR Series)
D-1785	PVC Plastic Pipe, Schedules 40, 80, and 120
D-2466	PVC Plastic Pipe Fittings, Schedule 40
D-3034	PVC (Type PSM) Sewer Pipe and Fittings
F-679	PVC Large Diameter Plastic Gravity Sewer Pipe and Fittings
D-2564	Solvent Cements for PVC Plastic Piping Systems
D-2447	PE Plastic Pipe, Schedules 40 and 80, Based on Outside Diameter
D-3035	PE Plastic Pipe (DR-PR) Based on Controlled Outside Diameter
F-894	PE Large Diameter Profile Wall Sewer and Drain Pipe
D-3212	Joints For Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
A-53	Pipe, Steel, Black & Hot Dipped, Zinc-coated, Welded & Seamless
A-134	Pipe, Steel, Electric-Fusion (Arc)-Welded
A-135	Electric-Resistance-Welded Steel Pipe
A-139	Electric-Fusion (Arc)-Welded Steel Pipe
C-76	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

AASHTO Specification

M252	Corrugated Polyethylene Drainage Pipe, Type S
M294	Corrugated Polyethylene Pipe, 12-48 inch Diameter, Type S
MP7	Corrugated Polyethylene Pipe, 54 and 60 inch Diameter, Type S

If Specified in Section 8, used steel pipe may be used provided it is structurally sound and can be installed with water tight joints. Review and approval of the proposed pipe

shall be granted by the approving official prior to pipe installation.

3. EXCAVATION

All trench excavations over 5 feet shall be sloped or shored in accordance with OSHA part 1926 and N.Y.S. Industrial Code 23. When bracing or other trench support is required, the width of the excavation shall be adjusted to allow space for the shoring. The contractor shall furnish, place and subsequently remove such supporting installations as necessary to safeguard work and workers.

Unless otherwise specified, excavation for and installation of each gravity manure transfer system shall begin at the outlet and progress upstream, with the bell end of each pipe pointing upstream.

All excavations for the gravity manure transfer system shall be constructed to the widths, depths, lines, grades, elevations and cross sections as shown on the drawings. Unless otherwise specified in Section 8, minimum trench width shall be according to AASHTO Section 30 (1-1/2 times pipe O.D. plus 12 inches). See Table 1.

Table 1

Nominal Pipe Diameter (inches)	Minimum Trench Width (inches)
4	19
6	22
8	26
10	29
12	34
15	38
18	44

Nominal Pipe Diameter (inches)	Minimum Trench Width (inches)
24	54
30	65
36	75
42	84
48	91
60	110

Pipe shall be placed on non-yielding undisturbed or recompacted material.

Where pipes are installed to transfer waste to or from an earthen waste storage facility, the side slopes of the trench shall have a slope no steeper than 1H:1V to allow for adequate compaction.

4. JOINTS

Pipe joints shall be made with manufactured fittings that are of the same material and are comparable in strength with the specified material. Pipe lengths shall be joined in accordance with manufacturer's recommendations. All pipe shall be installed with water tight, pressure rated joints. Elbows or bends in the pipe alignment greater than 5 degrees shall be supported by concrete thrust blocks, or other mechanical thrust restraint. If thrust blocks are used, they will be cast against nonyielding, undisturbed or compacted material.

5. APPURTENANCES

Any appurtenances such as gates, valves, breathers and vents shall be installed at the location shown on the drawings. Items shall be fabricated as shown on the drawing or installed according to manufacturer's recommendations.

Where chain or cable for pipe cleanout is specified, it shall extend to an accessible point near each end of the pipe and securely fastened.

6. BACKFILLING

Prior to backfilling, the pipe installation shall be inspected and approved for line, grade, depth, bedding, and pipe placement by the approving official or designated representative. The backfill material shall be as shown on the drawings or as specified in Section 8. Backfill material shall contain no frozen soil, brush, roots, debris or other objectionable material. Backfill within 2 feet of the pipe shall be free from rocks larger than 3 inches. Backfill shall be placed in approximately uniform, compacted layers.

The pipe shall be loaded sufficiently during backfilling around the sides to prevent displacement and to prevent its being lifted from the bedding. Hand compaction shall be used until 2 feet of fill is in place around the pipe and a minimum of 2 feet on top, unless otherwise authorized by the approving official or designee. The maximum lift thickness shall be 4 inches for cohesive soils and 8 inches for granular material. Each lift shall be compacted with 2 passes of a hand tamping device or a manually directed power tamper.

7. MEASUREMENT AND PAYMENT

Method 1

For items of work for which specific unit prices are established in the contract, the length of the gravity pipe will be measured to the nearest linear foot along the centerline of the pipe. Payment for the gravity pipe will be made at the contract unit price. Such payment will constitute full compensation for all labor, materials, equipment, tools, and other appurtenances necessary and incidental to the completion of the work, including supplying, installing, and backfilling any associated structures.

Method 2

For items of work for which specific lump sum prices are established in the contract, the quantity of gravity pipes will not be measured. Payment for the gravity pipe will be made at the contract lump sum price. Such payment will constitute full compensation for all labor, materials, equipment, tools, and other appurtenances necessary and incidental to the completion of the work, including supplying, installing, and backfilling any associated structures.

Compensation for any item of work described in the contract but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in Section 8.

8. ITEMS OF WORK AND ADDITIONAL CONDITIONS: