

NATURAL RESOURCES CONSERVATION SERVICE

CONSTRUCTION SPECIFICATION

634B – MANURE TRANSFER – PRESSURE SYSTEM

1. SCOPE

This work shall consist of furnishing materials and installing the components of the manure transfer system, including pump, motor, power connections, valves and related appurtenances, as shown on the drawings or as specified in Section 8. This work shall not consist of upgrading electrical systems or furnishing engines or power takeoffs.

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 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), Minimum wall thickness of SDR 26
D-2466	PVC Plastic Pipe Fittings, Schedule 40
D-1785	PVC Plastic Pipe, Schedules 40, 80, and 120
D-2665	PVC Plastic Drain, Waste, and Vent Pipe and Fittings
D-2564	Solvent Cements for PVC Plastic Piping Systems
D-3035	PE Plastic Pipe (DR-PR) Based on Controlled Outside Diameter, minimum wall thickness of DR 26
D-2104	PE Plastic Pipe, Schedule 40
D-2447	PE Plastic Pipe, Schedule 40 and 80, Based on Outside Diameter
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

If specified in Section 8, used steel pipe may be used provided it is structurally sound and can be installed with watertight joints. Review and approval of the proposed pipe shall be granted by the approving official prior to pipe installation.

Pumps

Pumps shall be rated to handle the planned material to transfer, and sized to handle the distance it is to be moved, taking into account the total dynamic head and discharge

required, as shown on the drawings or specified in Section 8.

All pumps and pumping equipment must be designated as suitable for manure and wastewater.

Pumps shall be installed and operated according to the manufacturer's recommendations.

Pumps, motors and electric appurtenances shall be compatible with the existing electric service, or the service shall be upgraded as necessary. PTO pumps and farm equipment shall be compatible. All shields and guards shall be in place and properly secured. All electrical installations shall conform to the National Electrical Code and state and local codes, and be properly grounded.

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 supporting 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 manure transfer system shall begin at the outlet and progress upstream, with the bell end of each pipe pointing upstream.

All excavations for the manure transfer pressure pipe 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 undisturbed soil or non-yielding recompacted material.

Where pipes are installed under or through embankment of 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 thrust blocks, or other mechanical thrust restraints.

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.

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 pipe will be measured to the nearest linear foot along the centerline of the pipe. Payment for the 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 pipe will not be measured. Payment for the 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: