

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE CONSTRUCTION SPECIFICATION
WASTE TRANSFER
CODE 634**

1. SCOPE

The work shall consist of furnishing, assembling, and installing all components for conveying manure as shown on the drawings. Details of construction shown on the drawings but not included herein are considered as part of this specification.

2. SITE PREPARATION

Site preparation (mobilization and demobilization, clearing and grubbing, structure removal, pollution control, and water for construction) shall be in accordance with Construction Specification 587.

3. MATERIALS

a. Pipe

Pipe shall be of the size, type and pressure class as shown on the drawings and in accordance with the following:

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

<u>Pressure Pipes</u>	<u>ASTM Specification</u>
PVC Pressure-Rated Pipe, Minimum wall thickness of SDR 26	D 2241
PVC Plastic Pipe Fittings, Schedule 40	D 2466
PVC Plastic Pipe, Schedules 40, 80, and 120	D 1785
PVC Plastic Drain, Waste, and Vent Pipe and Fittings	D 2665
Solvent Cements for PVC Plastic Piping Systems	D 2564
PE Plastic Pipe (DR-PR), minimum wall thickness of DR 26	D 3035
PE Plastic Pipe, Schedule 40	D 2104
PE Plastic Pipe, Schedule 40 and 80, Based on Outside Diameter	D 2447
Pipe, Steel, Black & Hot Dipped, Zinc-coated, Welded & Seamless	A 53
Pipe, Steel, Electric-Fusion (Arc)-Welded	A 134
Electric-Resistance-Welded Steel Pipe	A 135
Electric-Fusion (Arc)-Welded Steel Pipe	A 139

Conservation practice construction specifications are reviewed periodically, and updated if needed. To obtain the current version of this specification, contact the Natural Resource Conservation Service.

Construction Specification 634-2

b. Pumps and Motors

Pumps and motors shall be of the type as specified on the drawings. Pumps shall be specifically rated for handling for handling livestock waste. Pumps and motors shall be installed in accordance with the manufacturer's recommendations.

All wiring and electrical connections shall meet applicable state and local electrical codes.

c. Concrete

Concrete work shall be in accordance with Construction Specification 587C. The class of concrete required is 3000 unless otherwise identified on the drawings.

d. Timber

Timber work shall be in accordance with Construction Specification 587T.

e. Pre-Fabricated Structures

Tanks shall be watertight and constructed durable material. Fiberglass or polyethylene tanks may not be used unless shown on the drawings.

4. FOUNDATION WORK

Foundation work (diverting surface water, dewatering the construction site, dewatering borrow areas, and foundation preparation) shall be in accordance with Construction Specification 587.

5. EARTHWORK

Earthwork (common excavation and earthfill) shall be in accordance with Construction Specification 587.

All excavations for the gravity waste transfer pipelines shall be constructed to the widths, depths, lines, grades, elevations and cross sections as shown on the drawings. The minimum trench width shall be according to the following table:

Nominal Pipe Diameter (inches)	Minimum Trench Width (inches)
4	19
6	22
8	26
10	29

Nominal Pipe Diameter (inches)	Minimum Trench Width (inches)
12	34
15	38
18	44
24	54

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

6. COMPONENT INSTALLATION

All components of the system shall be installed to the lines and grades shown on the drawings.

Pipe shall be placed on undisturbed soil or non-yielding 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.

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.

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.

Openings in concrete for appurtenances, pipe, et cetera, shall be sealed by packing a neat cement-mortar mix bituminous caulk or other appropriate joint sealing compound between the appurtenance and the wall to form a liquid-tight seal.

All transfer equipment shall be installed in accordance with the manufacturer's recommendations.

The contractor shall provide in writing the performance characteristics (discharge and head) of the transfer equipment and its relationship to or requirements of the following:

- Operating horsepower requirements.
- Maximum or minimum elevation or distance instructions.
- Daily operational maintenance requirements.
- Estimated serviceable life.

All pipe shall be installed with watertight joints.

7. MEASUREMENT

Site Preparation

There is no measurement for mobilization and demobilization, structure removal, pollution control, or water for construction.

The area cleared and grubbed shall be measured to the nearest 0.1 acre.

Foundation Work

There is no measurement for diverting surface water, dewatering the construction site, or foundation preparation.

Earthwork

The volume of excavation shall be measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.

The earthfill volume shall be measured within the specified limits and computed to the nearest cubic yard by the method of average cross-sectional end areas.

Concrete

Concrete is measured to the neat lines shown on the drawings, and volume of concrete is computed to the nearest 0.1 cubic yard. Measurement of concrete placed against the sides of an excavation without using intervening forms is made only to the neatness or pay limits shown on the drawings. No deduction in volume is made for chamfers, rounded or beveled edges, or any void or embedded item that is less than 5 cubic feet in volume.

The weight of steel reinforcement placed in the concrete in accordance with the drawings is determined to the nearest pound by computation from the placing drawings. Measurement of hooks and bends is based on the requirements of ACI Standard 315. Computation of weights of reinforcement or welded wire fabric is based on tables in ACI Standard 315. The area of welded wire fabric reinforcement placed in the concrete in accordance with the drawings is determined to the nearest square foot by computation from the placing drawings with no allowance for required laps. The weight of steel reinforcing in extra splices or extra-length splices approved for the convenience of the contractor or the weight of supports and ties is not included in the measurement.

Pipe

The quantity of each size, type, and class of pipe shall be determined to the nearest foot by measurement of the laid length of pipe along the crown centerline of the conduit.

Pumps, Motors and Pre-Fabricated Structures

Measurement shall be identifying the number of items installed.

Construction Specification 634-4

Project Name:

Date:

8. ITEMS OF WORK AND CONSTRUCTION DETAILS

Items of work to be prepared in conformance with this specification and the construction details are: