634 WASTE TRANSFER CONSTRUCTION SPECIFICATION

1. SCOPE

This Specification covers furnishing materials and installing all components of the waste transfer systems as outlined in this specification and the drawings. Components of the systems may include reception pits, pumps, pipes, chutes, valves, or other such structures or equipment.

2. MATERIALS

All materials and equipment used shall conform to the quality and grade noted on the approved plans set forth in Section 6, or as otherwise listed. Used pipe or "seconds" shall not be used. Pipe and fittings shall be approved by the engineer prior to installation.

Reinforced concrete placement and other structures and components, including grates or covers, shall be made in conformance with the requirements of Construction Specification 313.

Equipment such as pumps, rams, chutes, chains, valves, conveyers or augers shall be new, with manufactures' warranties, as applicable. Owner's manuals shall be provided to the operator.

The pipe and fittings, where applicable, shall be marked by the manufacturer as described in the applicable ASTM specification.

PVC Pipe for pressure flow systems shall meet the requirements of schedule 40 (ASTM-D1785) or SDR Pressure Rated Pipe (ASTM-D2241) for the operating pressure specified in Section 6, or determined by the pump manufacturer. Markings shall meet the requirements of ASTM-D1785 or ASTM-D2241 as applicable.

Fittings for pressure systems shall be rated equal to the pipe specified.

Pipe used in gravity flow systems shall conform to the following specifications:

Table for Gravity Pipe

Pipe Material	Specification
Polyvinyl Chloride (PVC)	**ASTM D 3754** **ASTM F 679** **ASTM D1785** **ASTM D3034** **ASTM F794**
Polypropylene	**ASTM F2736**
Polyethylene	**ASTM F894, F2648** **ASTM D3035** **AASHTO M252, M294**
Steel	**ASTM A53, or ASTM A134, or ASTM A135, ASTM A139**

Joints in PVC, PP, and PE gravity pipelines with push-on (gasketed) joints shall meet the requirements of ASTM D3212 for joint tightness.

Joints in PVC pressure flow systems shall meet the requirements of ASTM-D2672 or ASTM D3139. PVC cement shall meet ASTM-D2564.

Pre-cast concrete units shall conform to Penn DOT requirements for such units and be approved by the Engineer or his/her designated representative.

3. EQUIPMENT REQUIREMENTS

The equipment furnished as part of the waste transfer system shall be compatible with the type of manure and waste to be transferred and meet all the performance requirements set forth in Section 6 of this specification. The contractor shall be responsible for assessing the consistency, nature, quality and quantity of the

manure and waste to be transferred and provide the appropriate equipment.

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:

a) Operating horsepower requirements.
b) Maximum or minimum elevation or distance instructions.
c) Daily operational maintenance requirements.
d) Estimated serviceable life.

In order to confirm the operation of the equipment, the contractor shall work with the landowner during several operation cycles.

4. COMPONENT INSTALLATION

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

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

a. Equipment

All transfer equipment shall be installed to the manufacturer's recommendations. The final installation shall be certified by the installer as to meeting all the guidelines, recommendations, or requirements of the manufacturer and this specification.

b. Pipelines

All pipe shall be installed to provide watertight joints.

Pipe installed in conjunction with a pump shall meet or exceed the pump manufacturer's recommendations.

Pipe shall be placed on undisturbed soil or non-yielding compacted material. Over-excavation must be corrected as noted on the drawings, or as directed by the responsible engineer or his designated representative.

Backfill shall be placed so as not to damage the pipe nor disturb alignment in any way.

All pipe shall be properly bedded as designated on the drawings or in Section 6.

c. Grates

All grates or coverings shall be constructed to be removable for maintenance purposes.

d. Structures

Pre-cast structures shall have shop drawings or schematics and shall be furnished to the engineer prior to installation.

5. CERTIFICATION

The waste transfer system shall be certified by the contractor responsible for the final installation. The system shall conform to all the applicable material and construction specifications and the equipment manufacturer requirements.

6. ADDITIONAL CONDITIONS WHICH APPLY TO THIS PROJECT ARE: