

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE GENERAL SPECIFICATIONS**

PIPELINE

(FT.)

CODE 516

1. Scope

The work shall consist of furnishing and installing the pipe, fittings, and appurtenances as specified.

2. Location

The pipeline shall be located as shown on the drawings or as staked in the field.

3. Public and Private Utilities

Utilities are defined to be overhead and underground power or communication lines, and pipelines. All utilities discovered to be in the work area will be identified on drawings or sketches. However, the absence of indicators on the drawings or sketches does not assure the nonexistence of utilities in the work area. The contractor is alerted to conduct his/her own search and discovery for utilities in order to avoid potential damages. The owner/operator shall complete TX-ENG-80, UTILITIES INVENTORY prior to layout or any ground disturbance and return it to an NRCS representative.

4. Materials

Pipe

The pipe shall be new and meet the following requirements:

- a. Steel pipe shall meet the requirements of ASTM Specification A-120 or AWWA Specification C-202. Steel pipe and fittings shall be zinc-coated (galvanized) in accordance with ASTM A-120.*
- b. Plastic pipe shall comply with one of the following specifications:*

<u>Kind of Pipe</u>	<u>ASTM</u>
ABS	D-2282 (SDR-PR) D-1527 (Sch 40 and 80)
PE	D-2104 (Sch 40) D-2239 (SIDR 1/ -PR) D-2447 (Sch 4U and 80) D-2737 (PE Tubing-PR) D-3035 (SDR-PR)
PVC	D-1785 (Sch 40,80, and 120) D-2241 (SDR-PR) D-2672 (Sch 40, Bell End) D-2740 (PVC Tubing-PR)

Plastic pipe shall be marked in accordance with the above standards or ASTM Specifications and shall include the following:

Conservation practice general specifications are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

GS-516-2

- a. *Nominal pipe size; e.g., 2".*
- b. *Type of plastic pipe material in accordance with Standard Thermo-plastic Pipe Materials Designation Code; e.g., PVC 1120.*
- c. *Pressure rating in psi; e.g., 160 psi.*
- d. *Standard of ASTM designation with which the pipe complies; e.g., ASTM D-2241.*
- e. *Manufacturer's name or trademark.*
- f. *Seal of approval of the National Sanitation Foundation, or of some other accredited laboratory.*

1/ *Based on inside diameter*

Joints

Watertight joints having strength equal to that of the pipe shall be used. Couplers must be of similar material or completely insulated. Manufacturer's installation specifications shall be followed.

Accessories

All valves and appurtenances shall be of adequate capacity and suitable quality to withstand the design pressures and shall be installed in accordance with the manufacturer's recommendations.

Pressure relief valves shall be no smaller than 1/4 -inch nominal size for each diameter inch of the pipeline and shall be set at a maximum of 5 psi above the pressure rating of the pipe.

Air release and vacuum release valve outlets shall be at least 1/2 -inch nominal diameter when specified for lines of 4-inch diameter or less, and at least 1 inch for lines of 5 inches to 8 inches in diameter.

5. Placement

Pipe shall be laid to the line and grade shown on the drawings or as staked in the field. Abrupt changes in grade must be avoided to prevent rupture of the pipe.

Pipe shall be placed in a "snake-like" position if recommended by the manufacturer.

All pipe shall be placed deep enough below the land surface to protect it from hazards imposed by traffic crossings, farm operations, erosion, freezing temperatures, or soil cracking. Minimum depth of cover must exceed 12 inches, except when crossing cultivated fields for which the minimum cover shall be 18 inches. Trenches for plastic pipelines shall be free of rocks and other sharp-edged materials or be bedded with material free of rock.

In isolated locations where the terrain is rough or the soil is thin, minimum depth of cover maybe waived where other suitable protection can be provided and prior approval is obtained. Unless otherwise approved, suitable protection for surface or above ground installation shall be one of the following:

- (1) *Install plastic pipe manufactured from high density black, PE3408, NSF approved polyethylene pipe resin. The pipe should be 200 PSI, SIDR 7, ASTM D-2239 or equivalent; 160 PSI may be used where mounding of earthfill can provide minimum 2- 6 inches protective cover for the polyethylene pipe.*
- (2) *Steel Pipe*
- (3) *Plastic Pipe installed in encasement pipe or equivalent at vehicle crossings.*

6. Pressure Testing

Pipelines shall be pressure tested by one of the following methods:

1. *Before backfilling, the pipe shall be filled with water and tested at design working head or a minimum head of 10 feet, whichever is greater. All leaks shall be repaired and the test repeated before backfilling starts.*

7. Backfilling

Backfilling shall be completed before the line is placed in service. For plastic pipe, the initial backfill shall be of selected material, free from rocks or other sharp-edged material that would damage the pipe. This initial fill should be compacted around the pipe to a density at least equal to the natural density of the trench sidewalls. Deformation or displacement of the pipe must not occur during backfilling.

Backfill of plastic pipe should be done after the pipe reaches the same temperature as the water or soil. This may be done by filling the pipeline with water or by leaving the trench open overnight before backfilling.

Installation and backfilling shall be done in a workmanlike manner. Provisions shall be made for stabilizing disturbed areas and controlling erosion, as necessary.

8. Certification and Guarantee

The installing contractor shall certify to the purchaser that the materials and installation comply with the requirements of these specifications. He / She shall furnish the purchaser a written guarantee against defective workmanship and materials to cover a period of not less than one year and shall record on the guarantee the manufacturer's name and markings of the plastic pipe used. If steel pipe is used, the contractor shall include with his guarantee a certificate or tag from the pipe vendor stating that the pipe and treatment meet the above steel pipe specifications.

The installing contractor shall furnish the Natural Resources Conservation Service a copy of his certification and guarantee, which will be made a part of the supporting records of the pipeline. Owners who install their own pipeline shall furnish for NRCS records manufacturer's name and markings of plastic pipe or the vendor's certificate referred to above for steel pipe.

9. Measurement

The amount of pipeline completed as specified will be determined by measuring the length, in feet, of each size and kind of pipe installed.

10. Construction Details