

**NATURAL RESOURCES CONSERVATION SERVICE**  
**CONSERVATION PRACTICE SPECIFICATION**

**SUBSURFACE DRAIN**  
**(feet)**  
**CODE 606**

## **SCOPE**

This specification covers the installation of subsurface drains. Construction shall be according to the construction plans and these specifications. The installing contractor shall certify that the installation complies with the requirements of these specifications. He shall also name the source for materials used.

## **INSTALLATION**

### **Materials**

Materials for subsurface drains shall meet the requirements shown on the plans. Material for subsurface drains shall be carefully inspected and approved before installation. Bituminized fiber and plastic pipe and tubing shall be protected from hazards causing deformation or warping. Plastic pipe and tubing with physical imperfections shall not be installed. A damaged section shall be removed and a suitable joint made connecting the replaced and retained sections. All material shall be satisfactory for its intended use and shall meet applicable specifications and requirements.

### **Installation**

All subsurface drains shall be laid to the line and grade as shown on the plans and covered with the required blinding, envelope, or filter material to a depth of not less than 3 inches (76 mm). If an impervious sheet is used over the drain, a 3-inch (76 mm) minimum cover of blinding material must cover the sheet. No reversals in grade of the conduit shall be permitted.

If the conduit is to be laid in a rock trench or if rock is exposed at the bottom of the trench, the rock shall be removed below grade so that the trench can be backfilled, compacted, and bedded. When completed, the conduit shall be not less than 2 inches (50 mm) from rock.

Joints between drain tile shall not exceed 1/8 inch (3 mm) except in sandy soils, where the closest possible fit shall be obtained, and in organic soil where some of the more fibrous types make it desirable to slightly increase the space between tile.

Flexible conduits, such as plastic pipe or tubing and bituminized fiber pipe, shall be installed according to the requirements in ASTM-F-449, "Standard Recommended Practice for Subsurface Installation of Corrugated Thermoplastic Tubing for Agricultural Drainage or Water Table Control."

Earth backfill material shall be placed in the trench in a manner to insure that the conduit does not become displaced and so that the filter and bedding material, after backfilling, meet the requirements of the plans.

If a filter is required, all openings in the subsurface drain shall be covered by the filter, or approximately the lower half of the drain is to be covered by the filter and the rest of the drain covered by a sheet of impervious plastic. No portion of the drain containing openings is to be left exposed when a filter is used.

If sand-gravel filter material is used, it shall be a mixture within the gradation required by the base material in the trench and as described on the plans. The trench shall be overexcavated 3 inches and backfilled to grade with filter material. After the conduit is placed on the filter material, additional filter material shall be placed over the conduit to fill the trench to a depth of 3 inches over the conduit. A plastic sheet and friable soil may be used as the backfill over the subsurface drain, if specified on the plans.

## **SAFETY**

Landowners or operators, sponsoring organizations, and contractors shall be liable for damage to utilities and damage resulting from disruption of service caused by construction activities. The Natural Resources Conservation Service makes no representation on the existence or nonexistence of any utilities. Absence of utilities on plan drawings is not assurance that no utilities are present at the site.

It is the responsibility of the landowner or operator to determine if there are buried or overhead utilities in the vicinity of the proposed work. They should take proper procedures to insure that the utilities shall not be jeopardized and that equipment operators and others will not be injured during construction operations.