

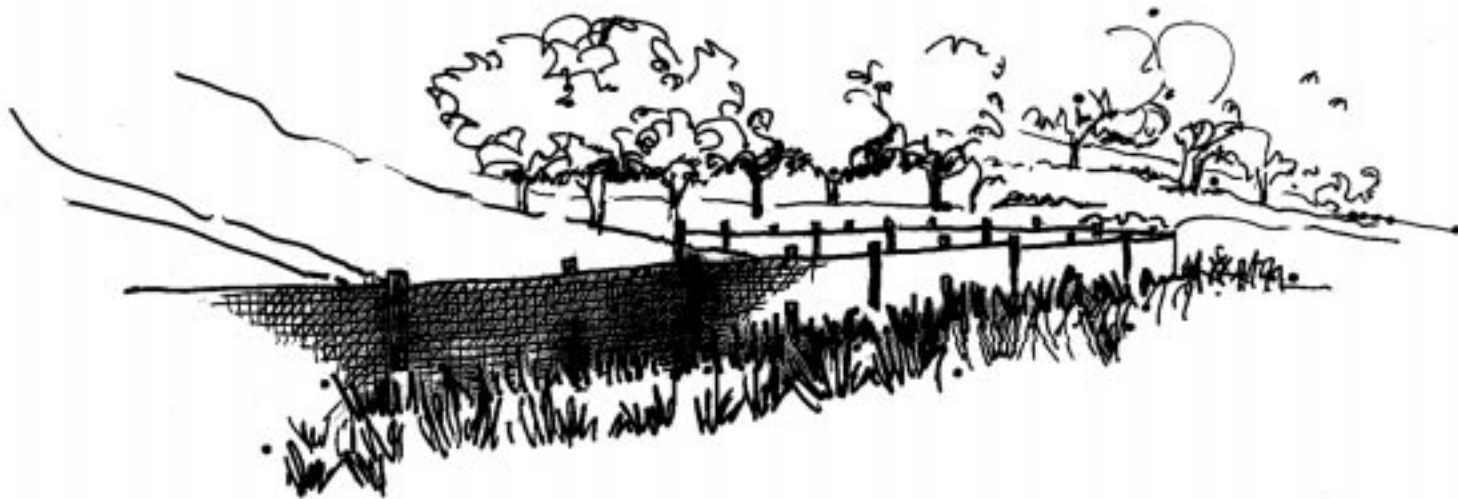
**PRIMARY USE:** Erosion control.  
**ADDITIONAL USES:**

## SILT FENCE

**What is it?** A temporary structure to prevent or minimize transport of sediment in storm water run off. There are two types. The Silt Fence is a temporary linear filter barrier constructed of synthetic filter fabric, posts, and, depending upon the strength of the fabric used, wire fence for support. The Filter Barrier is constructed of stakes and burlap or synthetic filter fabric. Also known as Filter Fence.

### Purpose

Silt fences are inexpensive, relatively easy to construct, and effective. They are mainly used below disturbed areas where erosion would occur in the form of sheet and rill erosion.



**Silt Fence  
Perspective View**

### Limitations

Silt fence has a life expectancy of 3 months to 1 year. Use only where the size of the drainage area is no more than 1/4 acre per 100 feet (0.10 hectare per 30.0 m) of silt fence length; the maximum slope length behind the barrier is 100 feet (30 m), and the maximum gradient behind the barrier is 50 percent. Use in minor swales or ditch lines where the maximum contributing drainage area is no greater than 2 acres (0.8 hectare). Under no circumstances should silt fences be constructed in live streams or in swales or ditch lines where flows are likely to exceed 1.0 cubic foot per second (0.3 meters per second).

### Materials

Geotextile, class F; fence posts - 36 in (0.9 m) minimum.

### Installation

Silt fences composed of a wire support fence and an attached synthetic filter fabric slow the flow rate significantly and have a higher filtering efficiency than burlap. Both woven and non-woven synthetic fabrics are commercially available. It is recommended that woven fabrics be used exclusively and non-woven fabric should not be considered.

**Source:** Indiana Department of Natural Resources : NRCS Planning and Design Manual, NRCS.

# SILT FENCE

## Installation Guidelines continued:

Specifications for installing the silt fence should be in conformance with the following.

### Materials

1. Synthetic filter fabric shall be a pervious sheet of propylene, nylon, polyester or ethylene yarn and shall be certified by the manufacturer or supplier as conforming to the following requirements: synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months of expected usable construction life.
2. Burlap shall be 10 ounces per square yard fabric.
3. Posts for silt fences shall be either 4 in (10 cm ) diameter wood or 1.33 lbs / ft ( 2 kg/m) steel with a minimum length of 5 ft (1.5 m). Steel posts shall have projections for fastening wire to them.
4. Stakes for filter barriers shall be 1 x 2 in (2.5 x 5 cm) wood or equivalent metal with a minimum length of 3 ft (0.9 m).
5. Wire fence reinforcement for silt fences using standard strength filter cloth shall be a minimum of 3 ft (0.9 m) in height, a minimum of 14 gauge and shall have a maximum mesh spacing of 6 in (15 cm).

### Filter Barrier

1. This sediment barrier may be constructed using burlap or standard strength synthetic filter fabric. It is designed for low or moderate flows.
2. The height of a filter barrier shall be a minimum of 15 in (381 mm) and shall not exceed 18 in (457 mm).
3. Burlap or standard strength synthetic filter fabric shall be purchased in a continuous roll and cut to the length of the barrier to avoid the use of joints.
4. The stakes shall be spaced a maximum of 3 feet (0.9 m) apart at the barrier location and driven securely into the ground - a minimum of 8 in (203 mm).
5. A trench shall be excavated approximately 4 in (102 mm) wide and 4 in (102 mm) deep along the line of stakes and upslope from the barrier.
6. The filter material shall be stapled to the wooden stakes, and 8 in (203 mm) of the fabric shall be extended into the trench. Heavy duty wire staples at least 1/2 in (13 mm) long shall be used. Filter material shall not be stapled to existing trees.
7. The trench shall be backfilled and the soil compacted over the filter material.
8. If a filter barrier is to be constructed across a ditch line or swale, the barrier shall be of sufficient length to eliminate end flow, and the plan configuration shall resemble an arc or horseshoe with the ends oriented upslope.
9. Filter barriers shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

# SILT FENCE

## Installation Guidelines continued:

### Silt Fence

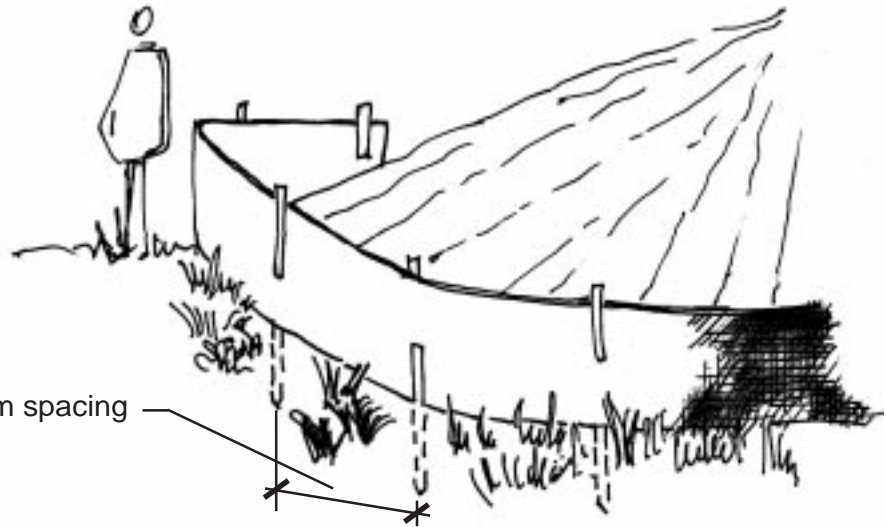
- 1• This sediment barrier utilizes standard strength or extra strength synthetic filter fabrics. It is designed for situations in which only sheet or overland flows are expected.
- 2• The height of a silt fence shall not exceed 3 ft (0.9 m); (higher fences may impound volumes of water sufficient to cause failure of the structure).
- 3• The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are necessary, filter cloth shall be spliced together only at a support post, with a minimum 6 in (152 mm ) overlap, and securely sealed.
- 4• Posts shall be spaced a maximum of 10 ft (3 m) apart at the barrier location and driven securely into the ground (minimum of 12 in (305 mm)). When extra strength fabric is used without the wire support fence, post spacing shall not exceed 6 ft (1.85 m).
- 5• A trench shall be excavated approximately 4 in (102 mm) wide and 8 in (203 mm )deep along the line of posts and upslope from the barrier.
- 6• When standard strength filter fabric is used, a wire mesh support fence shall be fastened securely to the upslope side of the posts using heavy duty wire staples at least 1 in (25 mm) long, tie wires or hog rings. The wire shall extend into the trench a minimum of 2 in (51 mm) and shall not extend more than 3 ft ( 0.9 m) above the original ground surface.
- 7• The standard strength filter fabric shall be stapled or wired to the fence, and 8 in (203 mm) of the fabric shall be extended into the trench. The fabric shall not extend more than 3 ft (0.9 m) above the original ground surface.
- 8• When extra strength filter fabric and closer post spacing are used, the wire mesh support fence may be eliminated. In such cases the filter fabric is stapled or wired directly to the posts.
- 9• The trench shall be backfilled and the soil compacted over the filter fabric.
- 10• Silt fences shall be removed when they have served their useful purpose, but not before the upslope area has been permanently stabilized.

Install parallel to the contour of the land and with no more than 0.25 acre (0.1 hectare) drainage area per 100 ft (30 m) of fence. Extend ends upslope enough to allow water to pond behind the fence. Fence posts buried a minimum of 15 in (381 mm). Excavate a trench 4 in (102 mm) wide and 8 in (203 mm) deep. Install fence with stakes on the downslope side. Bury 12 in (305 mm) of fabric in the trench, extending the bottom 4 in (102 mm) toward the upslope side. Backfill trench with soil material, and compact. Join silt fence sections by overlapping sections and nailing with lath to the nearest post. Inspect twice a week and after each storm event, repairing as needed and removing sediment deposits when they reach one-half the fence height.

# SILT FENCE

## Additional Drawings:

**Standard Silt Fence  
Perspective View**



10 ft (3.0 m) maximum spacing  
between post

36 in (0.9 m) minimum  
fence post length

Geotextile class F  
filter cloth

Fence post  $\geq$  20 in (508 mm)  
above ground

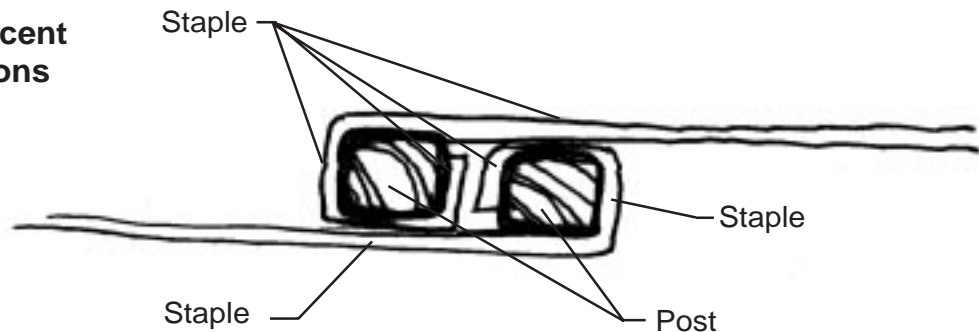
Flow

**Standard Silt Fence  
Section View**

Embed post and filter cloth  
a minimum of 8 in (203 mm)  
vertically into the ground

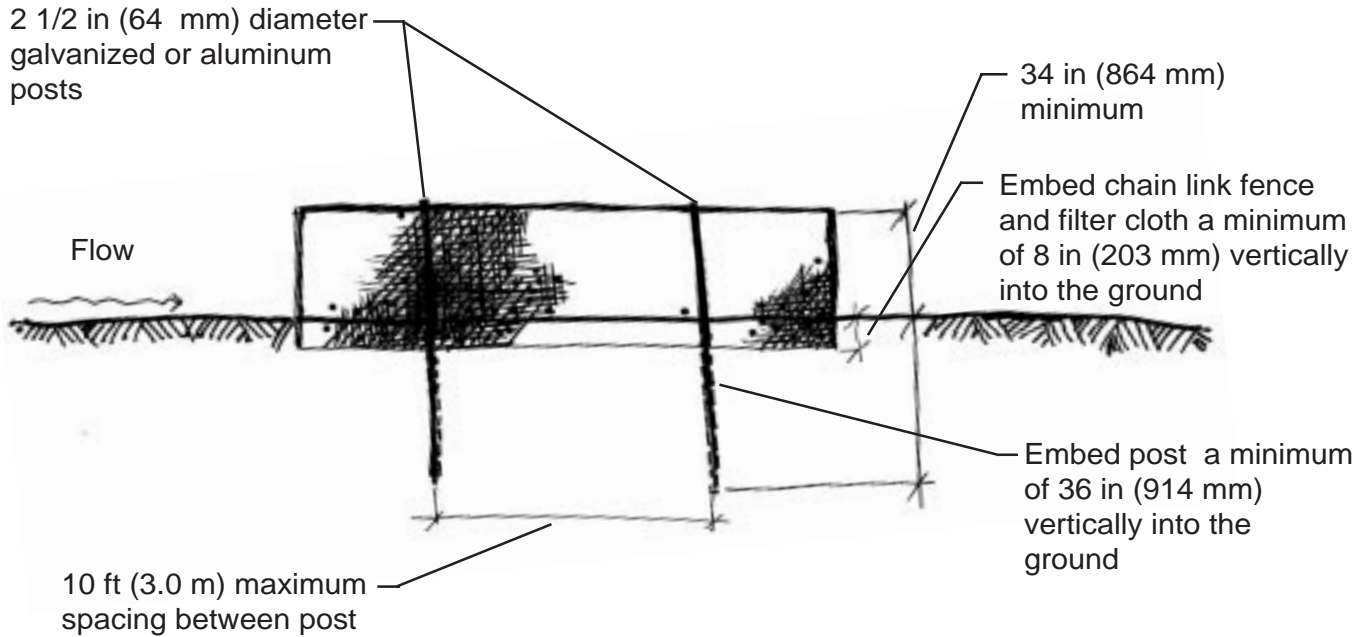
Fence post driven  $\geq$  16 in (406 mm)  
into ground

**Joining Two Adjacent  
Silt Fence Sections  
Plan View**

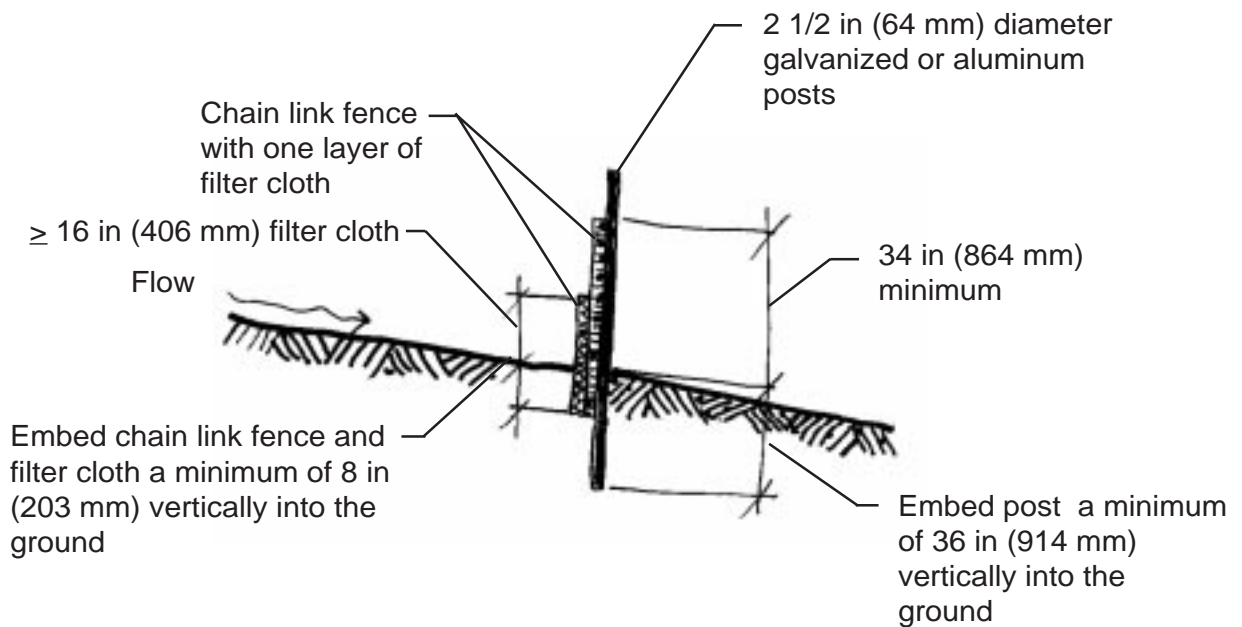


# SILT FENCE

## Additional Drawings:



**Super Silt Fence  
Perspective View**



**Super Silt Fence  
Section View**