

STANDARD FOR SEDIMENT BARRIERS

Definition

A temporary barrier installed across or at the toe of a slope.

Purpose

The purpose of a sediment barrier is to intercept and detain small amounts of sediment from unprotected areas of limited extent.

Conditions Where Practice Applies

The sediment barrier is used where:

1. No other practice is feasible,
2. There is no concentration of water in a channel or other drainage way above the barrier, and
3. Erosion would occur in the form of sheet and rill erosion.

Design Criteria

A. All types of sediment barriers:

1. Contributing drainage area is less than 1 acre and the length of slope above the barrier is less than 150 feet.
2. The slope of the contributing drainage area for at least 30 feet adjacent to the barrier shall not exceed 5%.
3. The barrier shall be constructed so water cannot bypass the barrier around the ends.
4. Inspection shall be frequent and repair or replacement shall be made promptly as needed.
5. The barrier shall be removed when the contributing drainage area has been stabilized so as not to block or impede storm flow or drainage.

B. Requirements for bale barrier (e.g., straw, hay, or other acceptable vegetative material):

1. All bales shall be securely tied and staked on the contour (Fig. 23-1).
2. Bales shall be placed in a row with ends tightly abutting the adjacent bales.
3. Each bale shall be embedded in the soil a minimum of 4 inches.
4. Bales shall be securely anchored in place by two stakes or re-bars driven through each bale. The first stake in each bale shall be driven toward previously laid bale to force bales together.

C. Requirements for silt fence:

1. Fence posts shall be spaced 8 feet center-to-center or closer. They shall extend at least 2 feet into the ground and extend at least 2 feet above ground (Fig. 23-2). Posts shall be constructed of hardwood with a minimum diameter thickness of 1 ½ inches.
2. **“Super” silt fence** - A metal fence with 6 inch or smaller mesh openings and at least 2 feet high may be utilized, fastened to the fence posts, to provide reinforcement and support to the geotextile fabric. Posts may be spaced less than 8 feet on center and may be constructed of heavier wood or metal as needed to withstand heavier sediment loading. This practice is appropriate where space for other practices is limited and heavy sediment loading is expected. “Super” silt fence is not to be used in place of properly designed diversions (pg. 15-1) which may be needed to control surface runoff rates and velocities.
3. A geotextile fabric, recommended for such use by the manufacturer, shall be buried at least 6 inches deep in the ground. The fabric shall extend at least 2 feet above the ground. The fabric must be securely fastened to the posts using a system consisting of metal fasteners (nails or staples) and a high strength reinforcement material (nylon webbing, grommets, washers etc.) placed between the fastener and the geotextile fabric. The fastening system shall resist tearing away from the post. The fabric shall incorporate a drawstring in the top portion of the fence for added strength.

D. Requirements for stone barrier:

1. The stone shall be piled to a natural angle of repose with a height of at least 2 feet.
2. The stone shall meet ASTM C-33 size No. 2 (2.5 to 1.5) or 3 (2 to 1 inch).

Maintenance

1. Sediment shall be removed from the upstream face of the barrier when it has reached a depth of ½ the barrier height.
2. Repair or replace barrier (fabric, posts, bales etc.) when damaged.
3. Barriers shall be inspected daily for signs of deterioration and sediment removal.

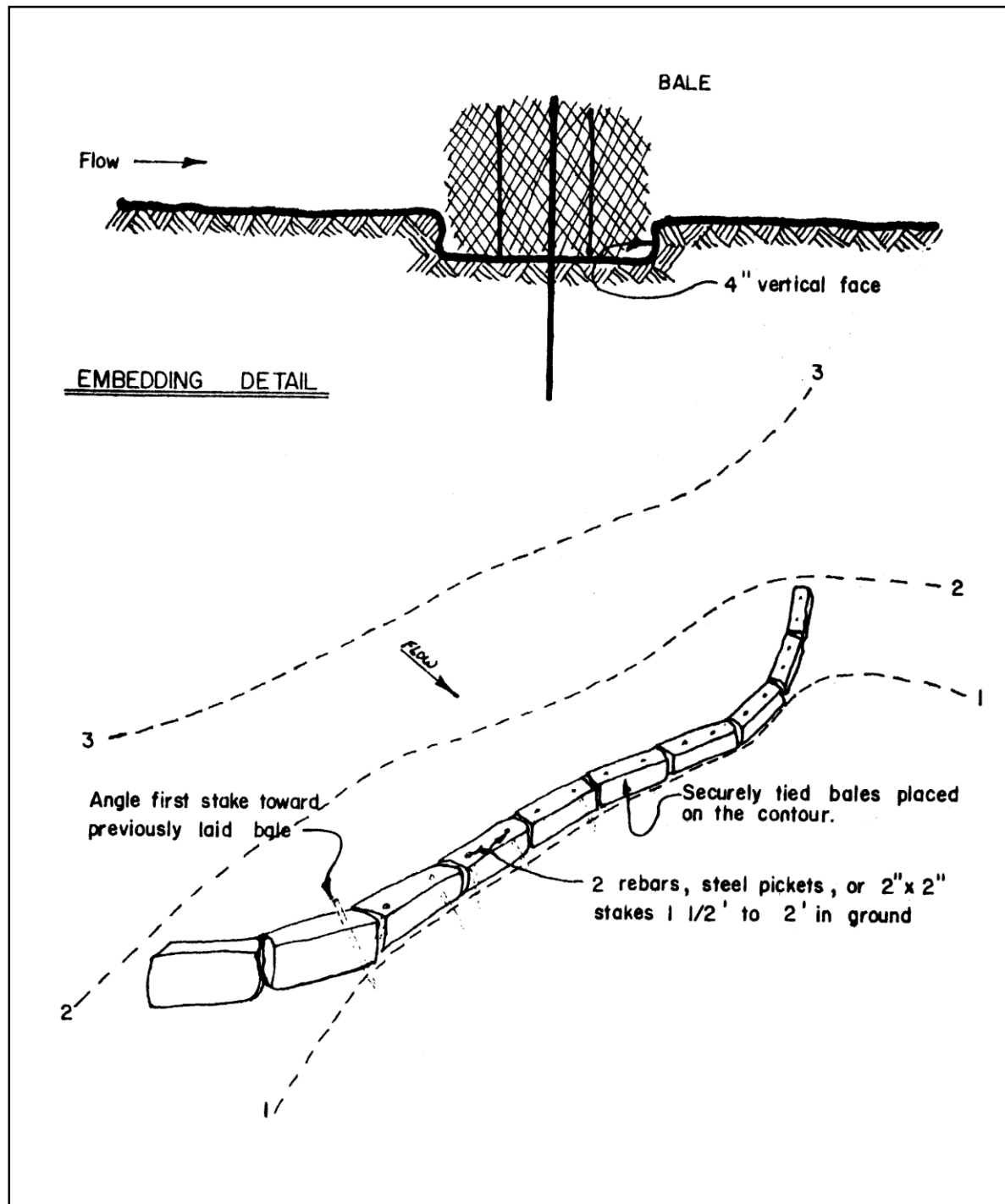


Figure 23-1: Placement and Anchoring Detail Bale Sediment Barriers

Figure 23-2: Silt Fence construction and installation detail

