

## **6.34 Treatment Measures: STRAW (OR HAY) BALE SEDIMENT BARRIERS**

*Note: Straw (or hay) bale sediment barriers are effective sediment-control practices only when they are used in appropriate locations and properly installed and maintained. Generally, alternatives, such as stone check dams, or silt fences should be used, especially in areas of concentrated flow. In many cases, installation or maintenance conditions are not met and the practice fails.*

*This practice is only recommended when proper planning is used and adequate construction supervision is available to ensure that the structure is installed and maintained correctly. Check dams (see part 6.3.) are more reliable and should be used if possible*

### ***DESCRIPTION AND PURPOSE***

A straw (or hay) bale sediment trap is a row of entrenched and anchored bales, which are installed so that they detain and filter sediment-laden runoff.

This type of sediment trap is intended to remove coarse sediment from small amounts of runoff before it leaves the site.

The use of straw bales for a sediment trap is not recommended in areas of concentrated flow, such as ditches; instead, rock check dams should be used.

### ***EFFECTIVENESS***

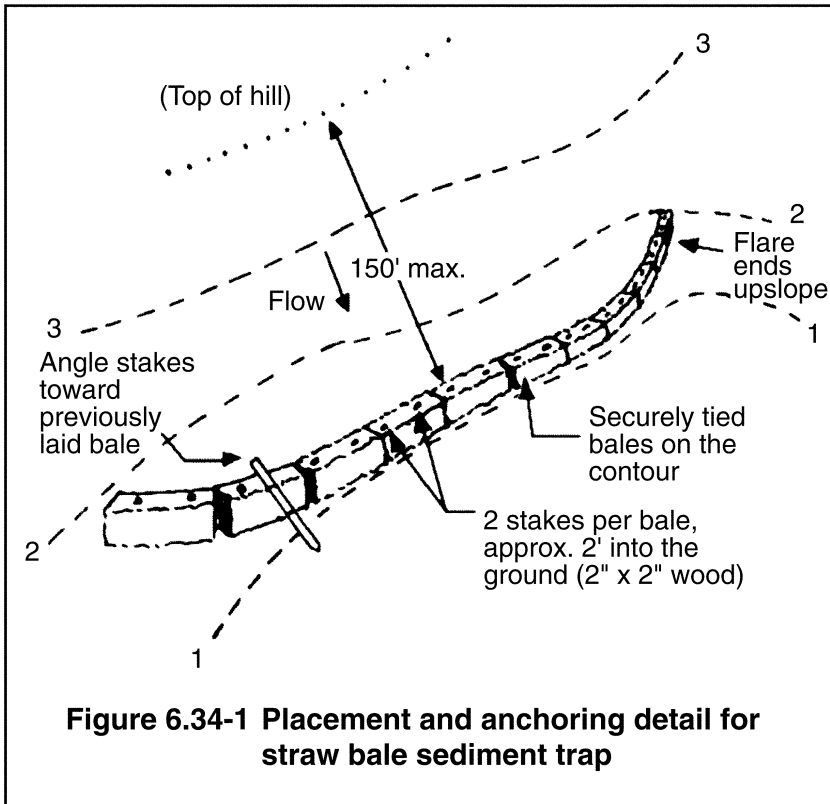
Straw bales are moderately effective for trapping medium and coarse-grained sediment particles. They are generally not effective for trapping fine silt or clay particles in runoff. And, if straw bales are improperly installed, they can actually increase the amount of erosion by concentrating runoff and causing gully erosion.

### ***PLANNING CONSIDERATIONS***

Straw bale sediment traps are generally used in locations where silt fences could be used. Silt fences are almost always preferable to straw bales because they have a lower failure rate, are more effective and have a longer life. Because straw bale sediment traps have been widely used in the past, their proper use and installation is presented here for the planner's consideration.

### ***DESIGN RECOMMENDATIONS***

1. The slope length above the bales should be 100 ft or less.
2. The bales should be installed on the contour with their ends flared upslope, as shown in Figure 6.34-1.
3. The bales should be composed of clean straw or hay.



4. The bales should be trenched 4 inches into the ground and should be staked with steel fence posts or 2" x 2" wood stakes. The stakes should be angled toward the previously laid bale.
5. Soil should be compacted on the upslope side of bales as shown in Figures 6.34-2 and 6.34-3. Loose straw should be wedged between the bales.

## MAINTENANCE

Straw bale sediment traps should be inspected after every significant runoff event. Sediment deposits should be removed from behind the barrier as needed. Sediment should not be allowed to accumulate to a depth of more than one-half the height of the bales. Damaged, destroyed or rotted bales should be replaced immediately.

