

JOINT PLANTING

Joint planting is a combination of covering a streambank with rock and live stakes.

Advantages and Disadvantages

- The riprap aggregate can be used to reinforce the toe of the slope below the stream.
- The roots from the live stakes establish a root mat below the rock to prevent the erosion of fine particles below and between the rocks.
- Erosion control fabric can also be used underneath the rocks to prevent soil loss. This method is very effective where riprap is required or already being used.
- Live stakes establish the natural look of the slope.
- The live stakes' growth over the stream improves aquatic habitats in the cooler water due to the shade.

Materials

There must be a supply of live cuttings in the area and a source of riprap (see Riprap section on page 9).



Figure 6. Joint planting system installation

Preparation

- The streambank should be shaped to a slope of two feet horizontal to one foot vertical (2H: 1V) or flatter.
- Check with the DNR prior to any flood plain disposal of spoil material resulting from the streambank grading.
- The stakes are prepared as they are in live staking.
- The stakes should have a minimum diameter of 1.5 inches.

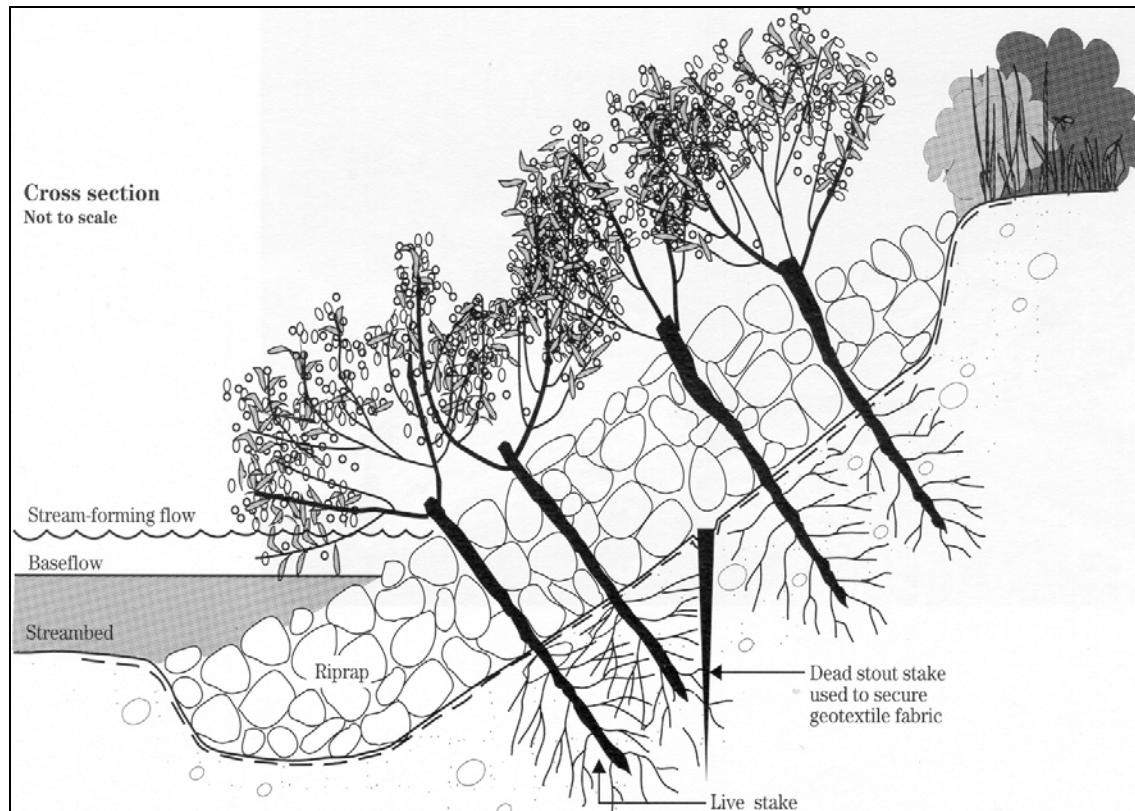


Figure 7. Joint planting details

Installation

- Riprap should be mechanically or hand placed across the full height of the bank to ensure a uniform distribution of rock particle sizes across the disturbed area.
- Stakes can be placed randomly between the rock (two to four stakes per square yard) during or after the installation of the rock.
- The bottom ends of each cutting should extend well into the soil and protrude slightly from the rock. Buds should be placed upward when planted and the cutting should be undamaged.

LIVE FASCINE

Live fascine is the placement of bundles of branches in trenches on the streambank to reduce erosion across the bank and establish soil stability.

Advantages and Disadvantages

- Live fascine is most effective when combined with live staking and riprap.
- The fascine is placed above the stream-forming flow and causes minimal site disturbance.
- A tiered streambank creates shorter slopes to slow overland flow. Angled fascines create drainage paths in the slope.
- Successful fascines require a large supply of long branches.

Materials

- Adequate supply of long branches.
- Rock for riprap (see Riprap section on page 9).
- Twine.
- Shovel.
- Live stakes and untreated lumber stakes.

Preparation

- The streambank should be at least a two feet horizontal to one foot vertical (2H: 1V) slope, or tiered with three- to five-foot steps.
- Long, straight bundles of native branches should be prepared in six- to eight-inch diameter bundles, bound with untreated twine. The bundles should be from five to ten feet in length.
- Within the bundles, all of the growing tips should be oriented the same direction.
- A supply of live stakes and dead stout stakes should be prepared in 2.5-foot lengths. The dead stout stakes should be made of untreated lumber.



Figure 8. Live fascine placement



Figure 9. Live fascine stake network

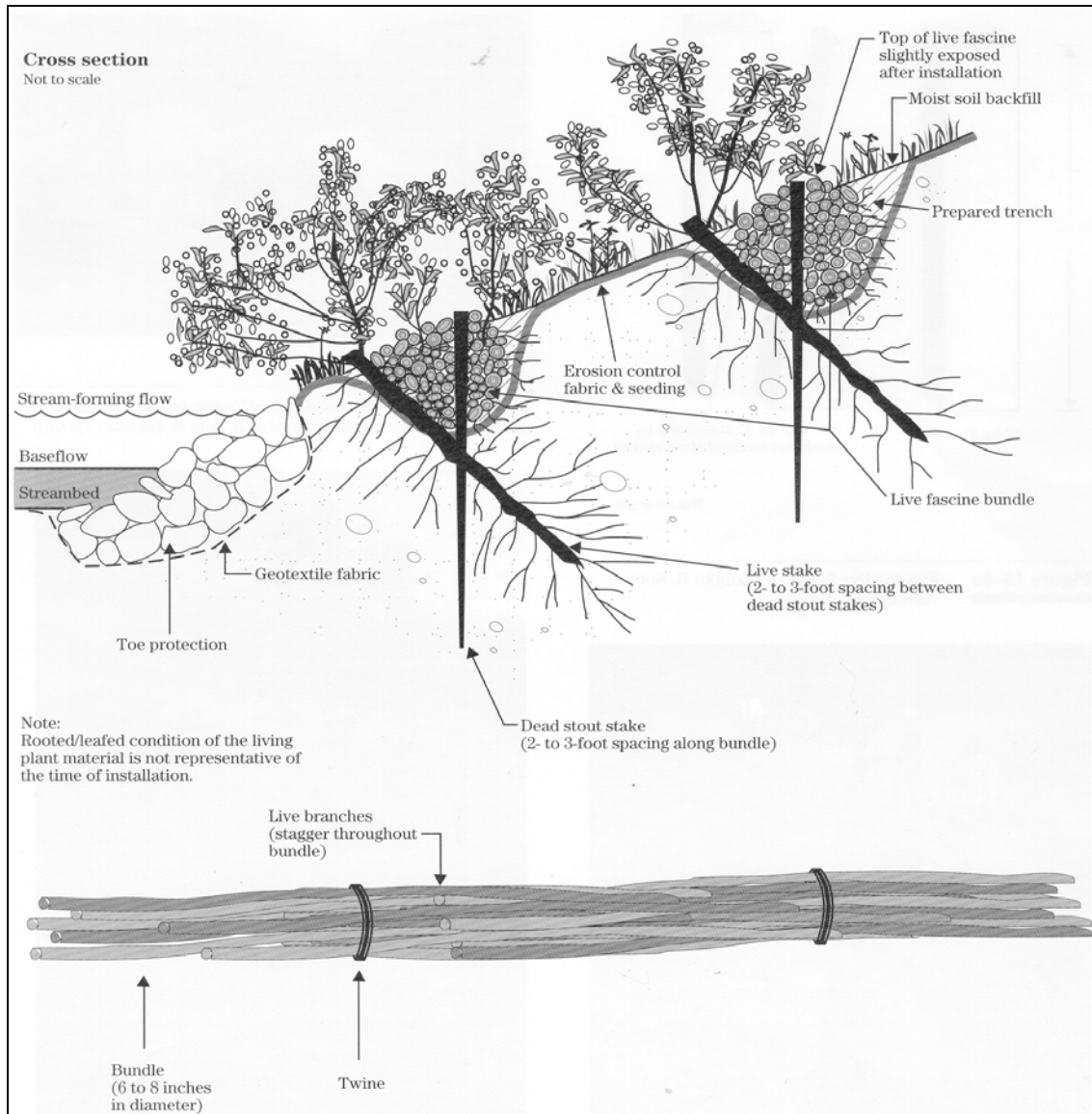


Figure 10. Live fascine details

Installation

- Excavate trench(es) on the slope.
- Place erosion control fabric in and between the trenches (see Figure 10).
- Place fascines in the trench(es).
- Drive dead stout stakes directly through the fascine every two to three feet, flush with the top of the fascines and at the connections of bundles.
- Drive live stakes between dead stout stakes, with three inches above the fascine.
- Place moist soil alongside of the fascine, but allow the top of the fascine to be seen.
- Riprap can be used to stabilize the toe of the slope, prevent it from being scoured, and secure the erosion control fabric.