



## Willow Stake and Willow Fascine Construction Guidelines

### Fascine live material sizes and preparation

- Buy Stakes or Harvest live viability wood vegetation in mid-March to early April (depending on weather conditions) harvest dormant willow whips not more than 1 1/2 inches in and should be about 5-10' long. (Cuttings tied together to form live fascine bundles normally vary in length from 8-10 feet or longer, depending on site conditions and limitations in handling.)
- The completed bundles should be 6 to 8 inches (8-15 stems per bundle) in diameter, with all of the growing tips oriented in the same direction. Stagger the cuttings in the bundles so that tops are evenly distributed throughout the length of the uniformly sized live fascine.
- Fascines shall be tied on not more than 24-inch centers with a minimum of two wraps of natural bailing twine by a non-slipping knot.
- Live cuttings shall be bundled together securely at the collection site with branches and limbs kept intact and transported in enclosed or covered trucks. Cuttings shall be sprayed with water and covered with a wet tarp during storage and transport.
- Cuttings should be installed within 24 hours of harvest. Live cuttings that cannot be installed within 24 hours shall be placed in storage, at about 40 degrees F for protection. Storage will provide protection from the wind, direct sunlight and drying by covering with a wet tarp. Cuttings must be refrigerated if the air temperature is above 50 degrees F. **Once harvested care and handling is key to survivability.**
- The harvesting site shall be left in a condition that will enhance regeneration of the plants.

### Fascine Installation

- Soak the bundles at least 24hrs before installation.
- Wrap stakes in a tarp and keep moist, out of wind and sun during installation.
- Start at the downstream end, excavate to remove sod/vegetation. Taking care not to undermine any existing bank stability and being aware to not waste soil they will be needed for covering fascine. (Likely will work best to work in sections.)
- Erosion control fabric is not always needed but on erosive slopes over 3-4% erosion control blanket should be considered for installation.
- Make the trench in exposed soil area. Place the **wet** live fascine into trench overlap ends 6"-12" in a shingle fashion upstream to downstream. The fascine bundle shall be covered immediately with soil and tamped. It is important to achieve the maximum plant material to soil contact to insure root development success. About ten percent of the bundle shall be left exposed when all construction is completed.
- Drive 5-7 live stakes directly through the live fascine including at connections or bundle overlaps.
- Place **moist** soil along the sides of the bundles. The top of the live fascine should be slightly visible when the installation is completed.

### Stake live material sizes and preparation

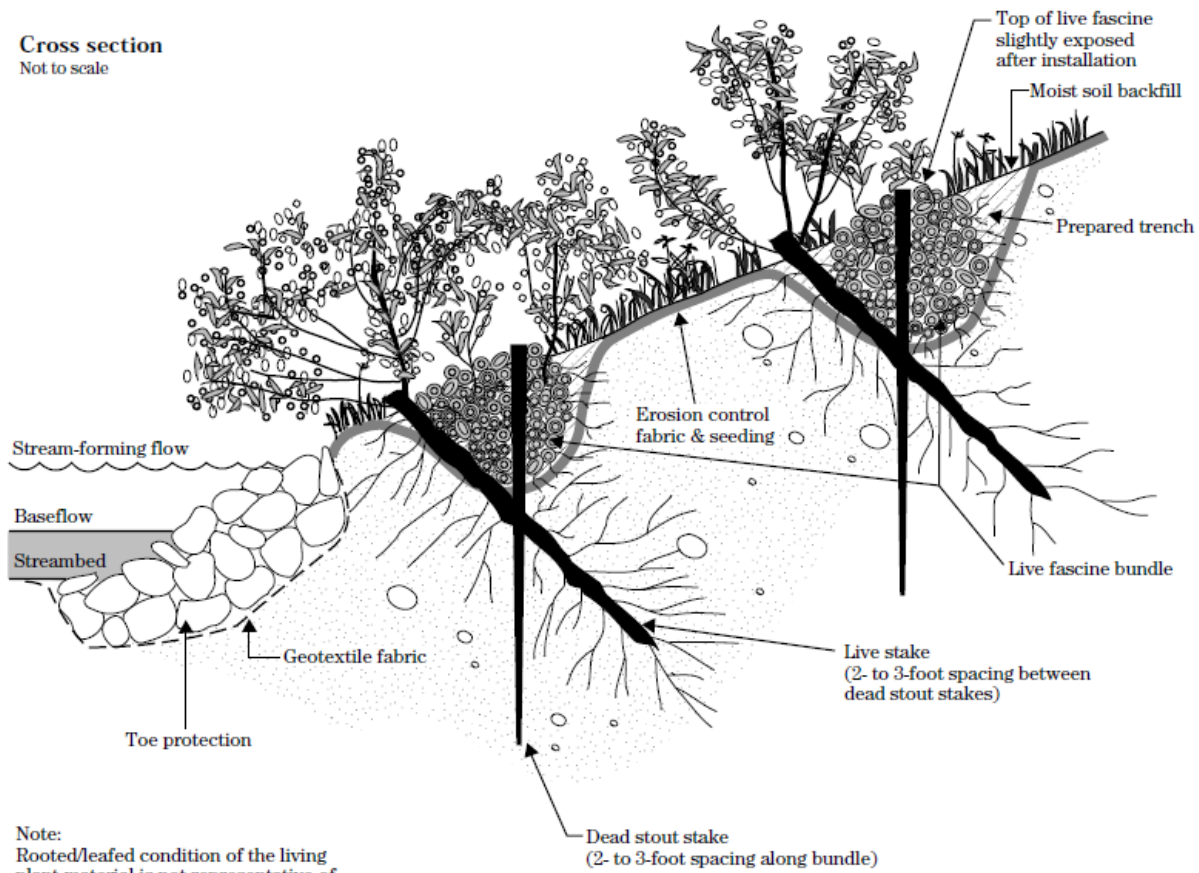
- Cuttings must be from species, such as young willows or shrub dogwoods, that root easily and have long, straight branches. Or these can be ordered or purchased (as long as they are native).
- Live stakes should be 1-2" in diameter and 2.5 feet long and harvested from native willows.
- The basal ends should be cut at an angle or point for easy insertion into the soil. The top should be cut square for ease of pounding in. **IMPORTANT:** when preparing the stake ends for installation make sure buds scars on the stake are oriented upward.
- Ideally materials should be installed as soon as possible after they are prepared. Once harvested care and handling is key to survivability.
- Wrap stakes in a tarp, keep moist and dark. Soak stakes at least 24 hrs before installation. Soaking releases the willow root growth hormone, pour the soaking water on the installed willows.

### Stake Installation

- An iron bar can be used to make a pilot hole in firm soil. Tamp the live stake into the **MOISTENED** ground at right angles to the slope and diverted downstream.
- **IMPORTANT:** The buds scars on the stake should be oriented up.
- Four-fifths (80%) of the length of the live stake should be installed into the ground, and soil should be firmly packed around it after installation.
- Do not split the stakes during installation. Stakes that split should be removed and replaced.
- Tamp the stake into the ground with a dead blow hammer (rubber head hammer filled with shot or sand).
- \* If the top of the stake is "mushroomed" from hammering, cut the damaged top of the stake off.



**Cross section**  
Not to scale



Note:  
Rooted/leafed condition of the living  
plant material is not representative of  
the time of installation.

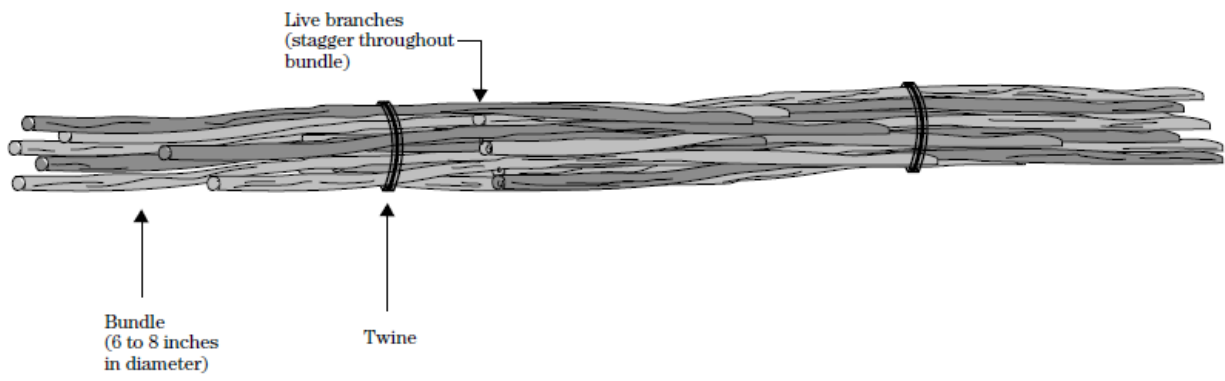




FIGURE 1: FASCINE SOAKING



FIGURE 2: FASCINE TRENCH MAKING



FIGURE 3 & 4: FASCINE INSTALLATION



FIGURE 5: FASCINE AFTER ONE YEAR OF INSTALLATION