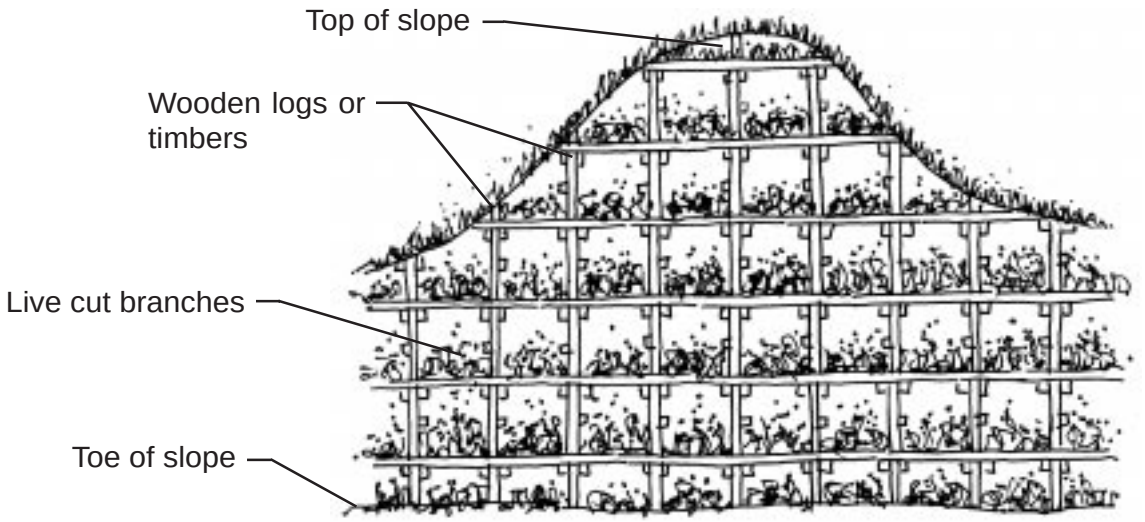
PRIMARY USE: Minimize bank erosion.
ADDITIONAL USES: Enhance aesthetics through the establishment of vegetation.

LIVE SLOPE GRATING

What is it? A live slope grating is a lattice-like array of vertical and horizontal untreated timbers that are fastened or anchored to a steep slope. It is constructed to be self-supporting. The openings in the structure are filled with suitable backfill material and layers of live branch cuttings which are placed in a manner similar to brushlayering. The purpose of the grating structure itself is not revetment for the slope, but rather to provide a means to make establishment of vegetation possible.

Purpose

This technique is used because it allows for vegetation to be established on very steep slopes (steeper than 1.5:1) without requiring extensive excavation and clearance at the foot of the slope or extensive importation of select backfill and cribfill.



Live Slope Grating
Frontal View

Limitations

No significant limitaions.

Materials

Use live branches 0.5 to 2 in (13 to 51 mm) in diameter and long enough to reach the back of the slope and to extend just beyond the wooden slope grating face. Untreated wooden poles or logs 4 to 6 in (101 to 152 mm) in diameter and 3 to 5 ft (0.9 to 1.5 m) long (depending on the size of the grid) are used to construct the horizontal grid; vertical members are of the same material and size, but must be long enough to extend to the top of the grid.

Installation

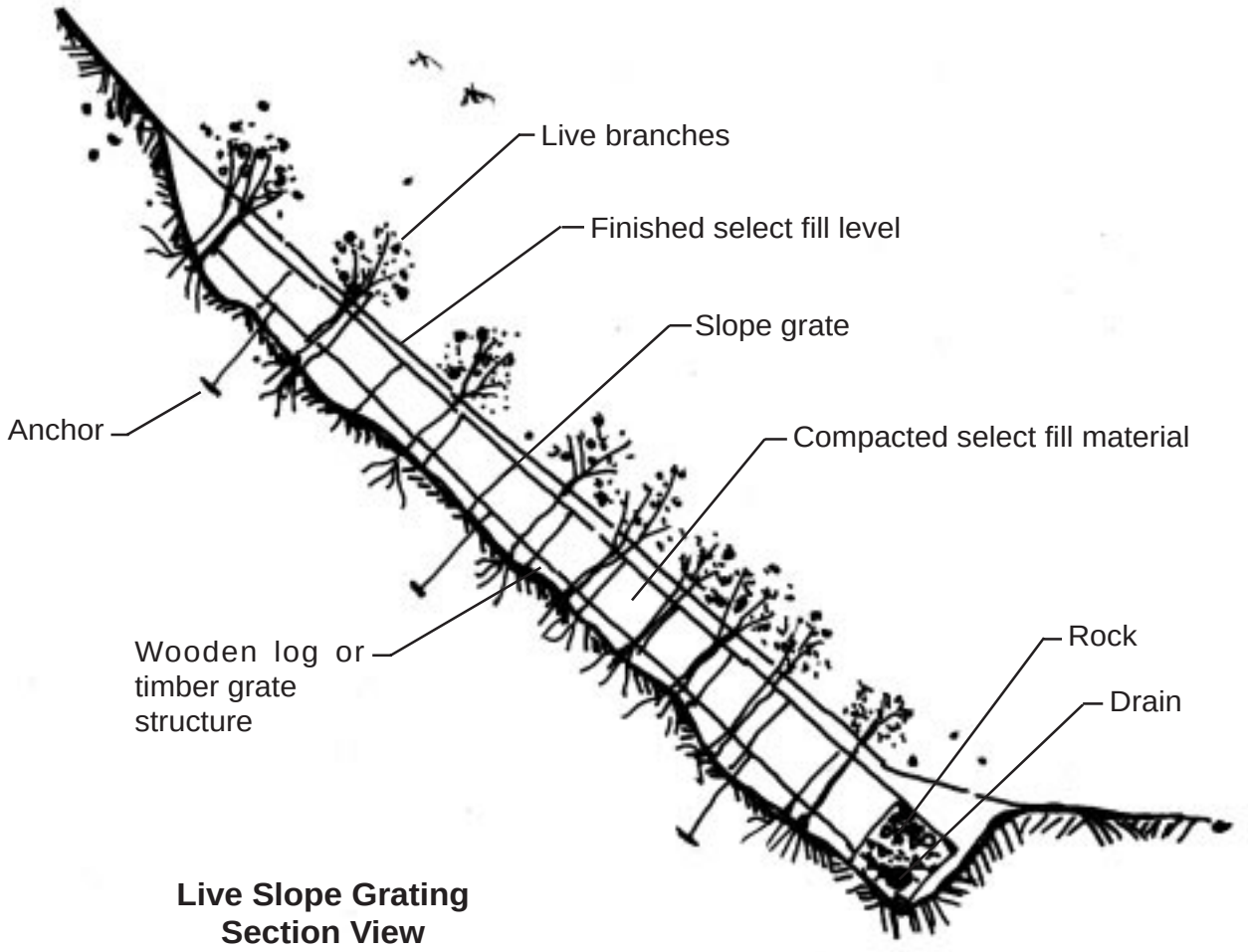
A trench is excavated at the bottom by hand or machine. The trench should be approximately 2.5 to 3 ft (0.76 to 0.9 m) deep and the bottom sloped in so that the wooden frame or grating can be placed as flush as possible against the slope face. The slope grating framework has a prism shape with a thickness of 24 to 36 in (610 to 914 mm) at the bottom tapering to approximately 18 to 24 in (457 to 610 mm) at the top to accommodate backfill and live cuttings in the compartments formed by the lattice construction.

Source: Biotechnical and Soil Bioengineering: Slope Stabilization, Gray and Sotir.

LIVE SLOPE GRATING

Installation Guidelines continued:

The lattice is built and reinforced by timbers nailed at right angles to the vertical poles or posts every 4 ft (1.2 m) up their length. Depending upon conditions, the grating can be secured to the slope at selected points by means of suitable anchors such as screw plate or duckbill type anchors. The compartments of the grating are backfilled with soil capable of supporting vegetation and live cut branches. The branches are place in an overlapping or crisscross fashion similar to brushlayering. The branches are placed at either the bottom or mid-height of the compartments and are oriented approximately perpendicular to the face of the grating. A rock drain wrapped in a filter fabric is placed in the bottom-most compartment at the base of the grating along its entire width.



Live Slope Grating
Section View

Source: Biotechnical and Soil Bioengineering: Slope Stabilization, Gray and Sotir.