

# Norton Branch Vegetated Reinforced Soil Slope Revisited After 25 years

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A section of Norton branch tributary, located in Sevierville Tennessee, was relocated to maximize space for a shopping center in 1994. To maintain the resulting steep and high banks of the newly relocated stream system and enhance aquatic and wildlife habitat, a vegetated reinforced soil slope system (VRSS) was constructed to contain the flow. This case history explores the use of soil bioengineering to meet the challenges associated with an environmentally sensitive stream diversion project and examines the performance over the course of 25 years. Figures 1 and 2 show during and after completion of construction.



**Figure 1 – During Construction**



**Figure 2 – Immediately After Construction**

It is important to note that bare-root, nursery-stock plants were used in the soil bioengineering VRSS construction. To restore some of the lost riparian and aquatic habitat, the vegetation was installed in the lower bank wraps. The varieties of plants used included Bankers willow; Salix X cotteti and Streamco willow, and Salix purpurea, which are hybrids, developed by the USDA/NRCS.

As shown in Figures 3 and 4 the reconstructed channel is completely stable. Survival and growth of the plantings has been excellent with growth overhanging approximately two-thirds of the streambed.



**Figure 3 – Third Growing Season**



**Figure 4 – After 25 years**