INTUITION & LOGIC

Bank Stabilization at Vess Soda

City of Maryland Heights, Missouri

Channel incision led to the failure of the right descending bank and undermined the bridge piers at the Vess Soda site. The site was particularly challenging because it is paved to the top of the streambank and the side slopes are steep (about 1:1). These factors combine to produce an exceptionally dry, drought-prone project site that would generally be considered unsuitable for soil bioengineering stabilization.

We addressed both the slope failure and stream instability undermining the bridge by designing in-stream grade control structures to dissipate erosive energy and focus the flow under the bridge and away from the piers. The slope was stabilized using a composite revetment, reinforced with horizontal layers of structural geogrid. The plant palette for this site relied on drought tolerant species, such as *Amorpha fruticosa* (False indigo). The site was not well maintained during the first growing season and has received no maintenance since installation in February of 1999. Nevertheless, the vegetation is well established and growing vigorously. The root gel used on the plant roots contains humic acid, kelp, vitamin B and naphthalene acetic acid to reduce transplant shock, as well as hydrophilic gel for water retention.