

SOFT ARMOR EROSION CONTROL SYSTEM PROTECTS STEEP BRIDGE DRAIN



ScourStop offers a no-maintenance, green solution for Tennessee DOT bridge drain

The Tennessee Department of Transportation, like many DOTs, has traditionally used rock rip rap as its primary erosion control solution for bridge drain applications. But in the case of the extreme water flows from one of its overpasses, located at U.S. Highway 72 and State Highway 385 just southeast of Memphis, rip rap wasn't the appropriate remedy.

"Because the bridge had a steep drainage channel with a 3:1 slope, the stress of concentrated water flows and gravity easily dislodged the rock," said Steve Lemmon, Tennessee DOT's Assistant District Superintendent. "To ensure the integrity of the engineered drainage system at the overpass, our maintenance team routinely inspected the site, and had to repair or replace the rock."

The site also became a safety hazard for motorists because of the sediment deposits running onto the roadway. Tennessee DOT incurred continuing costs from the frequent need to remove sediment and repair the rip rap after each major storm event.

ScourStop was presented to Tennessee DOT as a solution to deal with steep slopes and extreme water velocities.

ScourStop transition mats are easily installed on steep slopes without requiring heavy equipment, and are a no-maintenance, vegetated, NPDES-compliant alternative to hard armor solutions.

Approximately 1,000 square feet of ScourStop transition mats were used with a combination of sod and turf reinforcement mats to replace the rip rap at the bridge drain. In steep drainage designs, ScourStop manages these stresses more effectively through its unique combination of deep-seated anchoring and lower profile. In addition, the ScourStop system allows the incorporation of vegetation into the steep drainage channel, which in turn decreases the velocity of the flows, cleans the runoff water and enables infiltration into the soil.

"ScourStop not only addressed the erosion control issues, but also stabilized the drainage system," said Lemmon. "Our maintenance team no longer has to return to repair or replace the dislodged riprap and the sediment is no longer being carried onto the roadway."

Summary

Project

Bridge drain at U.S. Highway 72 and State Highway 385 just southeast of Memphis, Tenn.

Product Application

ScourStop transition mat over a sod/turf reinforcement mat soil-cover systemCase

Project Owner

Tennessee Department of Transportation



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