

REVISITING A CLASSIC

A 1987 EROSION CONTROL PROJECT REMAINS AN EXEMPLARY CASE

In the summer of 1987, the Illinois Department of Transportation (IDOT) District 4 was working on a stretch of Rte. 6 from Chillicothe to Rte. 40. The large project created endless disturbed slopes of varying length and steepness that needed to be protected and revegetated.

Many areas of the project were experiencing severe rainfall-induced erosion on the slopes. The slopes were washing into waterways and clogging outlets which eventually emptied into the Illinois River. To make matters worse, the erosion potential threatened to destabilize the Rte. 6 roadbed above. With this in mind, it was imperative to establish dense vegetation with a structural root system to handle rainfall impact and overland flow.

Two different types of slopes were identified. One slope type consisted of those that would require dense vegetation with a structural root system to protect the roadbed above. The second slope type consisted of all remaining slopes where the revegetation system would not directly influence the stability of the roadbed.

Two products for the separate scenarios were recommended. First, a high velocity (HV) erosion control blanket (ECB) was recommended for all steep slopes that were adjacent to the roadbed. The HV contained 1.62 lb per sq ft of fibers, which anchor to the subgrade when wetted because of their engineered, curled and barbed properties. A product that would last at least three growing seasons was required because the project team felt it would take that long for the root systems to become established enough to stabilize the roadbed above the slopes. The HV has a functional longevity of at least three years. Secondly, another ECB was recommended for the remaining slopes because of the product's versatility. The second ECB provided successful erosion control and revegetation benefits on slopes up to 2H:1V.

All slopes consisted of loam soils and were seeded with IDOT standard roadside mix, which is comprised mainly of perennial rye, red fescue and bluegrass. Crews installed 55,000 sq yd of the HV on the steep roadside slopes (1.5H:1V up to 200 ft long), plus ditch bottoms at a rate of 600 sq yd per man per hour. Also installed on the remaining slopes was 145,000 sq yd of the other recommended ECB; this installation ran along the remaining 3,000 ft of the project and was put in at a rate of approximately 30,000 sq yd per day. The majority of the second ECB slopes were 2.5H:1V and contained one terrace to break up the 300-ft-long slopes.

Full vegetation was established on the 2.5H:1V slopes after approximately 25 days. The steeper slopes were fully vegetated after approximately 30 to 45 days, and the structural root system was established before the 1.62 lb per sq yd of excelsior had degraded. All slopes were successfully protected along the project, which resulted in roadbed preservation and sediment-free runoff around the receiving waterways.

The 2.5H:1V slopes were established within a month and remain unblemished today. The HV blankets did not biodegrade until almost four years after installation. Thus, the product provided heavy-duty slope protection during the critical development phase of a structural root system. **SWS**



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