

the ROAD AHEAD

Contractors for South Carolina highway project tap hydraulic mulch, not blankets

By Jeff Salem

A 7-mile road construction project located in Mount Pleasant, S.C., near Charleston, involved lane additions to U.S. Highway 17 as well as a large soil stabilization and vegetation establishment effort. More than 40 acres of roadside soil would need to be stabilized for a time and ultimately revegetated once construction ended in phases throughout the corridor.

Before work began, project officials switched the erosion control specification from a rolled erosion control blanket to a high-performance flexible growth medium (HP-FGM) spec. The project team cited reduced labor costs, better performance and fewer maintenance headaches down the road by applying Profile Products Flexterra HP-FGM instead of installing blankets.

“We wanted to do it right the first time,” said Jules Schwerin, owner of Jasco & Sons, the contractor charged with controlling the slopes and establishing vegetation on the roadside soil. “Everyone involved with this project from the top down had a vested interest because we’re all from the area. Switching the spec to hydraulics ensured we gave Mount Pleasant the best possible results.”

Widening the ‘Avenue of Tourism’

Highway 17 is often referred to as the “Avenue of Tourism” for South Carolina because much of the roadway’s vehicle traffic comes from its nearby tourist hotspot, Myrtle Beach. In the spring of 2011, officials broke ground on a road improvement project

designed to widen both directions of traffic and ease increasing traffic congestion.

As each phase of the \$42-million road-widening project came to completion, Jasco & Sons was on site to reestablish vegetation. There was a lot to cover. On either side of the 7-mile corridor were roadside embankments with 2:1 slopes. If that was not enough area to cover, the two directions of traffic on the highway were divided by a grass median.

Setting the Stage

When the project first went out for bid, blankets were specified to ensure soil stayed in place during construction and to reestablish vegetation.

While blankets can be a good solution for projects with milder slopes, they can be problematic when installed on steeper roadside banks. Even on flat medians, a blanket can pose issues with tenting if not properly installed. They can be especially suspect if the area in which they are installed will be mowed on a regular basis—like the Highway 17 medians.

Brandon Shaw, an ACF Environmental sales manager who worked on the project, said mowing can cause significant damage to mowers because a blanket’s netting never fully degrades. The city, therefore, would have fewer maintenance issues to worry about if net-free hydraulic mulch was applied.

A fiber-reinforced matrix (FRM)



such as the Flexterra HP-FGM used on this project consists of non-toxic, 100% biodegradable elements that bond instantly to soil and require no cure time. It has a functional longevity of up to 18 months, so it is like a spray-on blanket, as it bonds directly to soil to simultaneously prevent soil erosion and ensure seed-to-soil contact.

Unlike a blanket, however, an HP-FGM will biodegrade, making it safe for mowers and other equipment to perform maintenance on the site in the future. It also is safer for area wildlife, which may become entangled in a blanket’s netting, and HP-FGM minimizes the sediment loss that can accumulate in storm drains and at the base of slopes.

Upon consulting with Profile Products and ACF Environmental, Jasco & Sons went to Gulf Stream, the construction company in charge of the project, and suggested a change.

“Gulf Stream knew if they listened to our suggestions, we’d only have to do it once. And that saves everybody money,” Schwerin said.

Switching the Spec

ACF Environmental and Profile Products acted as a consultant and partner while Schwerin, Gulf Stream and Marshall Crown—the civil engineer with HDR overseeing the project—determined how to best re-specify the project.

The group determined that an HP-FGM was the best solution.

Schwerin tested a section of the median with Flexterra HP-FGM for project officials. Steve Zwilling, market development manager for Profile Products in the eastern U.S. and Canada, said the test plot proved to project officials that Jasco & Sons could get exceptional grow-in at the project site.

"[Schwerin] was getting incredible results right next to a section of the project where another contractor had previously failed with a different solution," Zwilling said.

Another benefit project officials saw was that hydraulically applied mulch also helped to reduce labor costs because it is less labor-intensive than installing a blanket.

Schwerin applied a slurry of Flexterra HP-FGM at a rate of 3,500 lb per acre with a blended seed mix called EarthShield from ACF Environmental. The EarthShield seed mix is coated with a growth stimulant and a water polymer to retain moisture and accelerate germination.

While the South Carolina Department of Transportation only requires a grass seed application rate of 30 lb per acre, Schwerin said he applied it at a rate of 100 lb per acre on the Highway 17 project, which contributed to the positive results.

"When you mix at a higher seed-to-mulch ratio and apply it following the proper installation procedures, you probably wouldn't have to reseed this area until after your kids were in college," Schwerin said.

Schwerin prefers to implement a multi-pass application technique when seeding a project. The first application contained both the hydraulic mulch and seed, while the second—and sometimes third—application contained only the HP-FGM mulch to insulate and provide intimate seed and soil contact.

Surviving Unexpected Rains

Schwerin said pairing EarthShield with Flexterra HP-FGM is a tried-and-tested method for many of his projects.

"You add it all together and you achieve a better end result," he said. "Did the product cost me a little extra?"

Yeah. But what's the end result? Grass."

The project also had to protect against periods of heavy rains. In early October 2012, Charleston received 16 in. of rain in a single week. All of the slopes sprayed with the HP-FGM held up well.

With the erosion control and vegetation establishment portion of the project expected to wrap up in early 2013, Schwerin credited project leaders for not skimping on product quality.

"The city of Mount Pleasant,

Crown at HDR and Gulf Stream did everything at 110%," Schwerin said. "No one compromised on quality, and because of that vision, it got done right the first time." **SWS**

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