

application **Subgrade Stabilization**
 location **Savannah Raceway**
 product **Mirafi® HP570**

THE CHALLENGE

The site for Chatham County's new formula one racetrack was in a low lying area which had previously been filled in with dredged spoils. The site subgrade was very weak with CBR values of less than one. Because of the weak subgrade, low tire pressure vehicles were used to clear the site. It was determined by the engineer that geosynthetic reinforcement would be needed to prevent mud waving and subgrade failure. The geosynthetic would need to resist separation at the seams during fill placement and have a high strength at low strain to prevent excessive subgrade deformation.

THE DESIGN

A performance based specification, taking into account high seam strength, ultimate strength and strength at 5% strain was provided in bid documents. The successful contractor selected Mirafi® HP570 based upon its excellent performance on similar Georgia DOT projects in the area.

The benefits of using the HP570 were;

- 1. High strength at low strains** - HP570 has a very high strength at low strain which helped reduce the stresses imparted on the weak subgrade and eliminate mud waving.
- 2. Separation** -Mirafi® HP570 is a woven geotextile which acts as a separator to prevent fine grained soil from lowering the strength of the load bearing base.
- 3. Seam Strength** - the seams of adjacent rolls could be sewn to achieve continuity of strength across adjacent rolls, which cannot be achieved with geogrids.

CONSTRUCTION

Placement of the geotextile was made after the brush was cleared, but was placed directly over the intact vegetative mat to help eliminate mud waving. Fill was then placed over the geotextile in 19- to 24-inch lifts using low pressure vehicles. The result was that the site sub-

grade was successfully stabilized which allowed for more efficient grading operations for Chatham County's new formula one racetrack.

PERFORMANCE

Where soft subgrades are encountered, high performance geotextiles have proven to be a cost-effective and technically appropriate construction method. The contractor, R.B Baker Construction, Savannah, GA, and the site engineer, Hunter Saussy Engineering Inc, Savannah, GA, were both very satisfied with the results. The project was completed on-time and below budget.

JOB OWNER
Chatham County, Georgia

ENGINEER
Hunter Saussy Engineering, Inc.
Savannah, Georgia

CONTRACTOR
R.B. Baker Construction
Savannah, Georgia

Weak subgrade not suitable for construction



Deployment of geotextile allows construction



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