



NEWLAND ROAD (SR-1126) ROPER, NORTH CAROLINA

Application: A 3.5-mile segment of a heavily trafficked road, located in farming and logging country in eastern North Carolina, was overlaid with the GlasGrid® Pavement Reinforcement System. The project also included installation of Tensar® BX1500 Geogrid to repair the pavement subgrade in a number of areas along the segment.

The Challenge: Areas of the segment were significantly distressed due to differential settlement resulting from ongoing subgrade failure. In addition, the existing asphalt was severely cracked from years of heavy traffic.

Site Conditions: The segment of road was constructed more than 50 years ago through a low-

lying area with poor quality soils. At the time, a canal nearly 17 feet deep was excavated along Newland Road's southern border to provide adequate drainage. With poor native soil conditions and years of trucking traffic, portions of the segment had continuously failed. Conditions were so poor that road rehabilitation (repairs and repaving) was taking place every two years.

Alternative Solutions: "The road had been repaved a number of times over the years and the North Carolina DOT felt it had tried nearly everything," remarked Allen R. Parker, Jr., P.E., Tensar International's Mid Atlantic-South regional manager. "NCDOT's only other alternative was to undercut the road three feet and rebuild it with multiple layers of geogrid," he continued.

The Solution: Rehabilitation began with subgrade repair and the installation of nearly 4,300 sq yd of BX1500 Geogrid. An 8-in. layer of ABC stone was placed over the grid, followed by a 5-in. layer of I 19.08B hot mix asphalt. This brought the repaired sections level to the existing surface. A .75-in. leveling course of SF9.5A asphalt surface mix was then placed over the entire segment, followed by 47,060 sq yd of GlasGrid mesh. The mesh was then topped with a 2-in. layer of I 19.08B binder mix and a 1.5-in. layer of S9.5B surface mix.



The GlasGrid® System is able to withstand construction equipment trafficking before being overlaid.

PROJECT HIGHLIGHTS

Project:

Newland Road (SR-1126)

Location:

Roper, Washington County
North Carolina

Installation:

August 2008

Product/System:

GlasGrid® 8511 Complete Road System
Spectra® Roadway Improvement System

Quantity:

47,060 square yards of GlasGrid 8511
4,300 square yards of BX1500 Geogrid

Owner/Developer:

North Carolina DOT

Design Engineer:

North Carolina DOT

Contractor:

Barnhill Contracting Company

CASE STUDY



REINFORCED ASPHALT OVERLAY

CASE STUDY

“The installation went well,” commented David Barnhill, area manager, Northeast division of North Carolina’s Barnhill Contracting Company. “The product adhered to the surface so well that we eliminated the use of our roller after the first day.” The company’s three-man crew included one worker on a tractor and two working the road surface. A paving crew immediately followed the GlasGrid laydown crew. Barnhill added that the road’s width was increased from 18 to 22 feet and the project was completed ahead of schedule.

“The roadway is smooth and level,” added Tensar International’s Parker. “This was the DOT’s first experience with the GlasGrid System, so Tensar provided continuous observation and support, which the agency greatly appreciated.”

The GlasGrid Advantage: The GlasGrid System is the leading reinforcement interlayer system for pavement overlay design. It has been successfully used within asphalt overlays on highways, airport aprons, runways and parking lots across the world to combat reflective cracking initiated by thermal loading, lane widening and asphalt construction joints among many other causes.

On SR-1126, the GlasGrid System was successfully installed to delay the onset of reflective cracking in the overlay caused by lane widening joints, repair joints and existing fatigue conditions.



Paving equipment running along the installed GlasGrid System on Newland Road.

Properly installed, the system can extend pavement life up to 200%, dramatically reducing maintenance and life cycle costs.

Additional Information and Services:

Tensar International Corporation, the leader in geosynthetic soil reinforcement, offers a variety of solutions for foundation and roadway projects. Our products and technologies, backed by the most thorough quality assurance practices, are at the forefront of the industry. Highly adaptable, cost-effective and installation friendly, they provide exceptional, long-term performance under the most demanding conditions. Our support services include site evaluation, design consulting and site construction assistance.

For innovative solutions to your engineering challenges, rely on the experience, resources and expertise that have set the industry standard for more than two decades.

For more information on the GlasGrid Pavement Reinforcement System or other Tensar Systems, call **800-TENSAR-1**, e-mail info@tensarcorp.com or visit www.tensar-international.com.

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