

# GEOWEB®

## BASE STABILIZATION SOLUTION FOR SOFT SUBGRADES New Mexico

### OVERCOMING SITE CHALLENGES:

- TIME CONSTRAINTS
- EXTREMELY SOFT SUBGRADES
- SHALLOW UNDERGROUND UTILITIES



### GEOWEB® SYSTEM STRENGTHENS HIGHWAY SUBGRADE

#### THE PROJECT

New Mexico's State Highway and Transportation Department (NMSH&TD) made news with innovative financing and a record setting pace in the construction of 118 miles (190 km) of four lane highway along a route in the northwestern part of the state formerly known as Highway 44. With a construction timetable of just two years, and with the construction season limited by cold Rocky Mountain winter weather, design engineers needed to solve construction challenges without delay.

#### THE GEOWEB SYSTEM MET SITE CHALLENGES

Presto Geosystems' **GEOWEB®** Cellular Confinement System was the perfect answer to a unique soft subgrade problem that threatened to stop paving operations with just a half mile of highway to complete and cold winter temperatures only months away.

While most of the highway, now known as U.S. 550, runs through remote and open country, the highway passes through the small town of Cuba. With time pressures, extremely soft subgrade conditions, relatively shallow underground utility lines running under the highway, and a need to tie in to the existing elevations of sidewalks and parking lots of businesses adjacent to the highway, design engineers were faced with a challenge.



Dumping sand infill in the GEOWEB cellular confinement system.



The finished roadway is paved with asphalt.

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Expanding the GEOWEB sections over a geotextile.



Connecting adjacent GEOWEB sections prior to infill.



Infilling the GEOWEB sections with locally-available sand.



*"The GEOWEB® System addressed the problem in far less time than any other alternative we had available. It went in quickly, without any complications for the construction crew. The GEOWEB® section will be included in a twenty year monitoring program we have scheduled for the entire U.S. 550 project."*

*- NMSH&TD Project Engineer Allan Whitesel*

### THE GEOWEB SOLUTION FOR STIFFENING SOFT SUBGRADES

Unable to proceed on a timely basis with any of the three conventional alternatives (*excavating deep deposits of saturated soils and replacing with more stable materials, thickening the base and subbase structural section to a higher elevation in order to bridge the soft subgrade, or strengthening the limited structural sections with conventional chemical stabilizers or other geotextile/geogrid type products*), they turned to the Presto **GEOWEB®** System. The **GEOWEB®** System is based on cellular confinement (geocell) technology with a proven record of providing an easily deployed stiffened flexural beam for bridging extremely soft subgrade conditions.

### USING LOW-COST ONSITE INFILL SAVES COST

Because **GEOWEB®** cells are functional with either clean sand or aggregate infill materials, designers selected a locally available low cost source of free-draining sand for placement within the six inch deep cell structure. The system was deployed over a geotextile to protect the sand infill from contamination.

Working half the width of the highway at a time, crews rapidly installed the **GEOWEB®** for the final half mile. The project required 189,000 sq ft of product. With the firm **GEOWEB®** working platform in place, base construction and asphalt paving were quickly completed, facilitating a timely grand opening for the 118 mile highway improvement project.