

# GEOWEB®

## REPAIR OF AN ERODED HIGHWAY EMBANKMENT

Salisbury, Maryland



Topsoil infill was placed in the GEOWEB system. The system was planted with a native grass mix.

## Geocellular Slope System Repairs Eroded Highway Slope and Protects from Runoff

### PROJECT LOCATION

Salisbury, Maryland

### PROJECT BACKGROUND

Over time, runoff from an adjacent highway caused severe erosion of a 2H:1V embankment at the U.S. Rt. 50 & Naylor Mill Road interchange in Salisbury, Maryland.

Sloughing of large sections of the upper topsoil layer exposed the Clayey Sand embankment soils to surface runoff, which developed into rills and gullies that were up to 4 ft. deep. To prevent further erosion, a repair was deemed necessary.

A wetlands at the bottom of the embankment prevented flattening the slope. A turf reinforcement mat was considered, but ruled out by the project engineer for the Maryland

State Highway Administration (MDSHA). The severity of the problem and potential for reoccurrence warranted a stronger type of cover solution.

### REPAIR SOLUTION

The MDSHA turned to a solution they successfully employed on a previous project—the Presto **GEOWEB**® system. The GEOWEB system's 3-D structure is designed to confine and stabilize topsoil on steep slopes. The confined infill remains stable, and is minimally affected by surface runoff.

Approximately 29,000 sf of the GEOWEB material was placed and anchored on slopes varying between 50 and 75 feet in length.



### DESIGN & CONSTRUCTION TEAM:

#### PROJECT OWNER

Maryland State Hwy Admin

#### PROJECT ENGINEER

Schnabel Engineering Consultants

#### CONTRACTOR

David A. Bramble Construction

#### MATERIAL SUPPLIER

ACF Environmental

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The flexibility of the GEOWEB system allows it to accommodate obstructions.



#### PHOTOS:

1) The severely eroded embankment prior to repair

2 & 3) Preparing the slope surface prior to placement of GEOWEB sections.

4 & 5) Infilling the GEOWEB slope protection system with topsoil.



#### THE DESIGN SOLUTION

Presto Geosystems' Chief Design Engineer, Bryan Wedin, PE, collaborated with MDSHA's consultant, Steve Fung, PE., of Schnabel Engineering Consultants, to provide a solution specific to this site. **Presto evaluates each project individually and recommends a solution including the GEOWEB cell type, depth and anchoring components and spacing.**

For this site, the solution included the GEOWEB GW30V (mid-size cell), 4 inch depth material with 3 foot ATRA® anchors. The anchor pattern was on three foot centers.

ATRA® keys were used to connect GEOWEB sections side to side and end to end. They engage through slots in the GEOWEB material, and "lock" into place. They are an efficient and safe way to permanently connect sections, especially in areas difficult to access like the 2H:1V slopes.

A double-sided erosion control blanket was included as a surface treatment to provide erosion protection during the germination period.

#### CONSTRUCTION SITE SUPPORT

John Easom, ACF Environmental, was on site for three days to provide installation support to the contractor, David A. Bramble Construction, per contract requirements.

Site Supervisor, Bobby Bramble, *David A. Bramble Construction* was impressed with the ease of the GEOWEB installation and amount of area they could accomplish per day (approx. 5,000 sf).



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## GEOSYSTEMS

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