GEOWEB®

3D CONFINEMENT SYSTEM REINFORCES ACTIVE HEAVY LOAD AREAS AT CSX RAIL LAYDOWN YARD

CHARLESTON, SOUTH CAROLINA

PROJECT TEAM

OWNER: CSX Intermodal Terminals

ENGINEER: Wendi Leanhardt, P.E. CSX Facilities Manager, South Region, Terminal Development, Jacksonville, FL
Monique Whitehead, CSX Terminal Manager

GENERAL CONTRACTOR: Polivka International Co., Inc.

ON-SITE MANUFACTURER'S REP & MAT'L SUPPLIER:
Staci Smith, P.E., ACF Environmental

PROJECT OVERVIEW:

The CSX Charleston Intermodal terminal aggregate surface lot required base reinforcement due to poor subgrade conditions. The two areas included one area to support 120,000 pound reach stackers lifting and moving 10,000 pound containers and an existing grass area to support empty chassis parking.

Top photo: Chassis parking area
Bottom photo: Loaded rail containers

USE OF ON-SITE INFILL ELIMINATES HAULING OF FILL, LIMITS DOWNTIME AT HIGH VOLUME TERMINAL

GEOWEB® LOAD SUPPORT SOLUTION

CSX Project Engineer Wendi Leanhardt contacted Staci Smith, PE, Regional Engineer for ACF Environmental for assistance and solutions to stabilize a soft sub base for the container yard facilities. Wendi, Staci and Bryan Wedin, P.E., Chief Design Engineer for Presto Geosystems, worked together to develop a solution. CSX obtained geotechnical information on the site's soils to 1) determine if it could be used for the GEOWEB infill and 2) assess the current base stability of each site.

DESIGN SOLUTIONS

Presto Geosystems provided separate design recommendations for the reach stacker and chassis parking areas utilizing the on-site material which eliminated the need to haul in select fill. Each design was calculated factoring in the sub base type/strength, loading weight, and frequency of traffic.

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ECONOMICAL AND EFFICIENT SOLUTION SHORTENS DOWNTIME, REDUCES MAINTENANCE

Eliminating the need to import costly fill, the downtime of the yard was significantly reduced which was especially important due to the high volume of tractor trailers the facility handles on a daily basis.

The reach stacker area used a high strength woven geotextile, three inches of aggregate base, GEOWEB GW30V6 (mid-size cell, 6 inch deep) sections and two-inch wearing surface. The chassis parking area utilized a high strength woven geotextile and GEOWEB GW30V6 sections with a two inch wearing surface. Both areas will have minimal maintenance to maintain the surface.

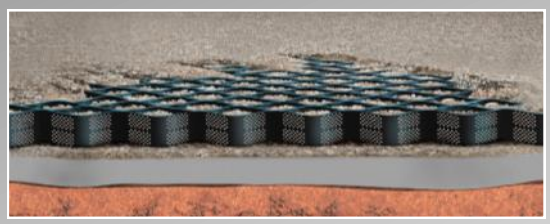
In both locations, the GEOWEB sections were anchored with ten, 18-inch long No. 4 rebar capped with Presto's patented **ATRA® Stake Clips**.

TOTAL GEOWEB-REINFORCED PROJECT:

A total of 1.75 acres of laydown yard was stabilized with the GEOWEB Cellular Confinement System in May of 2015. As of December 2015, the areas were functioning according the requirements set by CSX.

GEOSYNTHETIC SOLUTION

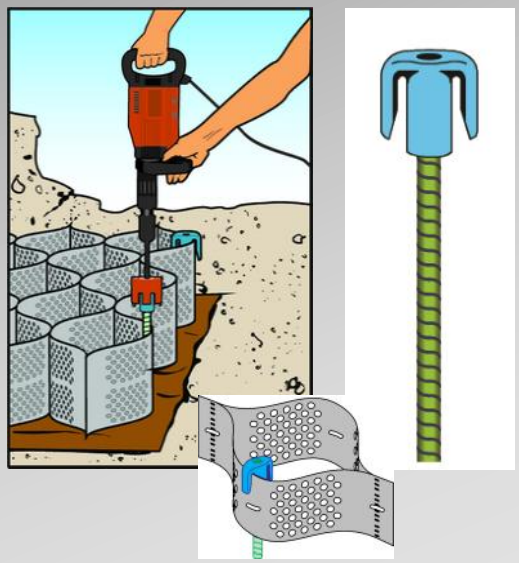
GEOWEB sections were placed over a high strength woven geotextile. Locally-available aggregate infill was used, eliminating the need to import costly fill. A two-inch wearing surface covers the top surface.



ANCHORING of GEOWEB SECTIONS

ATRA® Stake Clips are temporary or permanent anchors to facilitate construction of GEOWEB sections. The lipped arm of the ATRA stake clip head makes a secure connection with the GEOWEB cell wall.

ATRA® Drivers are used with ATRA anchors to drive anchors quickly and efficiently.



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