

# HOUSTON INTERMODAL FACILITY DEMONSTRATES EFFECTIVENESS OF GEOWEB<sup>®</sup> CELLULAR CONFINEMENT SYSTEM



When the Santa Fe Railway (now BNSF) decided to expand their intermodal yard in Houston, they discovered that the land they had purchased for this purpose, an abandoned landfill, had serious stability problems. The soft subgrade of expansive clay and decomposed landfill material was further weakened by a high water table and posed a serious load support design challenge for the railroad. A typical design used in these yards requires the excavation of several feet of the soft subgrade material, lime treatment of a layer of the native material, and replacement of the excavated material with compacted aggregate - all of which is capped with an asphalt running surface. However, the high moisture content and the expansive subgrade materials raised concerns about the long term stability of this design.

After repeated overlays of aggregate material proved ineffective, the Santa Fe engineers decided to bridge the soft subgrade with a high performance engineered geosynthetic load support system, the GEOWEB Cellular Confinement System. Available from Soil Stabilization Products Company, the GEOWEB System is an HDPE plastic honeycomb-like structure which is placed at grade and infilled with angular aggregate material, which when compacted, transforms the aggregate infill by lateral confinement into a stiffened, high modulus flexible layer that spreads concentrated loads across the surrounding system.

The GEOWEB System was installed over a three acre section of the yard and infilled with crushed concrete aggregate. An adjacent area received the same treatment (not including the geocell system) as a basis for performance comparison. The entire area was then graded and roller compacted.

The side by side comparison of these two areas of this BNSF Railroad intermodal yard clearly illustrates the benefits of geocellular load support. After seven years of use, Gail Seeman-Foster, Yard Superintendent, reported, "...the traditional section of crushed rock and asphalt has seen considerable maintenance...whereas.. the GEOWEB section has required virtually none ...it has more than surpassed our expectations."



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