PROJECT PROFILE

INNOVATIVE STABILIZATION OF LOESS BLUFF ALONG MISSISSIPPI RIVER

The 200-foot-high loess bluffs above the Mississippi River in Natchez, Mississippi have experienced frequent landslides which have resulted in significant losses of property along the crest of the bluffs and the loss of two lives in 1980. Phase Three of the Natchez Bluff Stabilization Project presented one of the most problematic areas for bluff stabilization. Regression of the bluff crest in this section resulted in the total loss of Clifton Avenue and threatened several historic residences. Bluff stabilization was imperative for the City's adjacent historic section's preservation.

Stabilized loess bluff and a view of the Mississippi River below.

D'Appolonia was lead designer for a design/build team selected by the U.S. Army Corps of Engineers, Vicksburg District (COE) to design the stabilization plan. The COE administered the project for the City and provided information from numerous prior geotechnical investigations of the site.

The stabilization plan consisted of a combination of soil nail and prestressed tieback anchor walls, along with a mechanically stabilized earth (MSE) wall that was constructed using light-weight fill. This innovative design has locally stabilized the bluff and has allowed for reclamation of property at the top of the bluff lost during previous landslides. The project was completed four months ahead of schedule at a significant cost savings compared to other stabilization measures that had been considered. Recognized by the Consulting Engineers Council of Mississippi, the project's innovative design received a Grand Conceptor Award for Engineering Excellence.

Soil nail installation at Natchez Bluff site.

D'Appolonia has developed numerous designs to stabilize slopes for highway, railroad, industrial and commercial project sites. These projects have employed soil nails, anchors, micropiles, reinforced soil slopes and/or MSE walls have been constructed in several regions of the country.

Aerial view of the loess bluff following completion of the project.