

## **GeoStructures Deploys System To Restore Engineering Landmark**

### **Company to Present Case Study at Sept. Conference of International Micropile Society**

PURCELLVILLE, Va., July 12, 2010 – Design-build contractor GeoStructures has completed foundation reinforcement of Pennsylvania's Kinzua Bridge in the effort to restore the historic structure as a tourist attraction.

Installation of tension micropiles increased lateral load resistance of the remaining sections of the former railroad bridge that was partially destroyed by a 2003 tornado. The micropiles, which anchor the existing tower piers to rock, were the ideal solution because they were able to be installed through the existing sandstone foundation piers. The company performed core drilling through the 108 year-old piers, then installed steel casings and micropiles using a compact drill rig on a CAT 314 excavator base. GeoStructures installed a total of 48 primary tension micropiles with load capacities ranging from 54 kips to 84 kips to supplement foundation uplift resistance and 48 secondary anchors to reinforce the existing tower piers.

"Micropiles are one of the more versatile structural foundation systems in that they can support existing or new foundations, can be installed in difficult access situations and can resist both tension and compression forces," says Jon Bennett, GeoStructures Micropile specialist who oversaw the micropile design.

Pre- and post-tornado investigations showed the shortcomings of the bridge, also known as the Kinzua Viaduct. In some areas the existing pier anchors had rusted through and were not adequate to resist the extreme uplift and lateral loads caused by the tornado. The storm overturned 11 of the bridge's support towers along with 23 of its 41 spans, which fell some 300 feet into the ravine.

Bennett will present project details at the [10th international workshop at a meeting of the International Society for Micropiles, Sept. 22-25, 2010 in Washington, D.C.](#)

After the project is completed by GeoStructures and general contractor [J.D. Eckman](#) this year, the state plans to open the bridge as a visitor's center that will include an observation platform with a glass bottom on top of the remaining southern part of the bridge. The structure is on ASCE's National Register of Historic Civil Engineering Landmarks, and on the National Register of Historic Places.

## About GeoStructures

[GeoStructures](#) is a design-build contractor with solutions for integrated foundation improvement, earth support and wall construction on commercial, industrial and transportation projects. By deploying its engineering expertise at the design stage, the company efficiently addresses unique site-development challenges and makes the best use of construction schedules and budgets.

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