

PROJECT DESCRIPTION

Letchworth Park High Bridge Road Stabilization



Drilling Anchors into Slope Face

Location:
Portageville, New York

Client:
TVGA for OPRHP

Client Contact:
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The New York State Office of Parks, Recreation and Historic Preservation (OPRHP) operates Letchworth State Park in Wyoming and Livingston Counties, New York. The park is located along the Genesee River, which traverses a deep rock gorge. A section of the main park road traverses a steep soil slope just downhill from an active railroad. Continual slope movements have caused distress to the park roadway requiring numerous pavement repairs over the years. By 2007 the condition had deteriorated to the point where it was difficult to maintain traffic on the road. The OPRHP commissioned an engineering study to devise a plan to remediate the slope movement.

The subsurface exploration and monitoring program included borings, and instrumentation consisting of piezometers and inclinometers. The inclinometer data revealed that the movement occurred along thin silt layers confined between layers of lacustrine clay soil. The remedial plan, constructed in 2008, included horizontal drains installed into the silt layers and ground anchors secured to reinforced concrete reaction blocks on the slope. The ground anchors were tensioned to compress the soil and increase the resistance within the failure zone. The inclinometer was maintained throughout construction providing information on the slope movement during and after construction. The inclinometer and load cells installed on three ground anchors continue to be monitored providing data on the force applied to the reaction blocks and slope movement.