



Route 5 Retaining Wall

Clinton, Maryland

The Maryland State Highway Administration reported a cost savings of over \$250,000 by using the Geopier® System

Description: The Maryland Route 5 widening project required construction of 500 feet of new retaining walls to meet grade separation requirements and right-of-way limits. Wall heights varied from 5 to 13 feet.

Subsurface Conditions: Coastal Plain soils varied from dense gravel to very soft silt and clay soils. SPT N-values in the silt and clay were as low as 2 to 3 blows per foot. Groundwater was encountered at shallow depths.

Geopier Solution: The Intermediate Foundation® solution was approved by the Maryland State Highway Administration (MDSHA) as an alternative to the proposed grouted mini-piles. The Rammed Aggregate Pier® (RAP) elements, with shaft lengths ranging from 10 to 18 feet, were used to support compressive loads of 65 kips per pier. Uplift anchors were installed in the RAP elements to resist uplift loads of 25 kips per RAP. The Geopier® System was designed to limit total and differential settlement to 1 inch and ½ inch, respectively.



PROJECT TEAM

Owner:

Maryland State Highway Administration

Review Engineer:

Dr. M. Sherif Aggour, Univ. of Maryland

Structural Engineer:

KCI Technologies

General Contractor:

Facchina Construction Company, Inc.

Geopier Installer:

GeoConstructors, Inc.

Geopier Designer:

GeoConstructors, Inc.