



Railroad Spur Embankment Support

Southeastern Iowa

The Geopier GP3® system was recommended as an effective way to minimize risks and save on cost

Description: New construction of railroad embankments of up to 34 feet tall along 1,200 feet of alignment. Side slope inclinations ranged from 2.5 (Horizontal):1 (Vertical) to 3 (Horizontal):1 (Vertical).

Subsurface Conditions: Soft to medium stiff alluvial clay to loose sand to depths ranging from 10 to 17 feet below grade. Soils were underlain by weathered shale.

Geopier Solution: The Geopier GP3® system was selected as a cost effective alternative to over excavation and replacement. A total of 1,358 Geopier Rammed Aggregate Pier® (RAP) elements were installed at spacings of 7 to 8 feet on center beneath each embankment slope to increase the factor of safety against slope instability from less than 1.20 to 1.35. Peterson Contractors, Inc. installed the RAP elements in less than one month, reducing the project schedule by at least three months. The Geopier System provided a cost savings of \$300,000 compared to the traditional overexcavation and replacement alternative.



PROJECT TEAM

Geotechnical Engineer:

Terracon Consultants

Structural Engineer:

Peterson Contractors, Inc.

General Contractor:

Peterson Contractors, Inc.

Geopier Designer:

GFC Midwest