Preston Bridge Replacement Project

Background & Project Challenges

The Connecticut Department of Transportation (ConnDOT) is replacing a single span bridge in Preston, Connecticut. The existing bridge foundations will be reused for support of the new bridge superstructure. Several sensitive utilities are supported on the existing bridge and will need to be relocated and temporary support on deep foundation during the bridge construction as well. Approximately 1,000 linear feet of retaining walls will be constructed for widening and raising of the existing bridge approach embankments. The site is underlain by soft organic deposits requiring care assessments of potential roadway settlements during construction. Excavation of existing fills and replacement with lightweight fill will be required to maintain the stability of the existing abutments under the new bridge loading conditions.

Geocomp Role & Accomplishments

Geocomp is the geotechnical engineer of record for ConnDOT for the bridge replacement project. The roles performed by Geocomp on this project included:

• Design, coordination and supervision of an extensive subsurface investigation program
• Geotechnical laboratory testing of collected soil samples
• Analysis of bearing capacity and anticipated settlements of the existing abutments and wingwalls under new superstructure loads
• Design of temporary pile support system for support of relocated utilities
• Slope stability analyses for the revised embankment slopes
• Geotechnical recommendations for design and construction of the new retaining walls, reuse of the abutment foundations, lightweight fill requirements, and associated earthworks and dewatering
• Provided geotechnical specifications.

Client:
CME Associates, Inc.

Location:
Preston, CT

Value Provided:
• Performed feasibility assessment of retaining wall options for roadway widening
• Identified risk of excessive settlements of the reconstructed embankment and associated mitigation measures
• Identified the need for lightweight fill to maintain stability of the existing abutments under new bridge superstructure loads