Mullica River Bridge
Garden State Parkway
Port Republic, New Jersey

DBA Client: Parsons Brinckerhoff

Drilled Shaft Contractor: Case Foundation Company

DBA Services:

- Consultant for load test shaft planning, construction, and implementation
- On-site observation of test shaft construction, including base inspection with mini-SID
- Consultant and on-site guidance regarding use of High Performance Drilled Shaft Concrete (HPDSC) also referred to as self-consolidating concrete.

Owner:

New Jersey Turnpike Authority

Project Highlights:

The Mullica River Bridge is part of the Garden State Parkway between mile markers 48.5 to 49.7. It is a 1230-ft long girder bridge supported by five intermediate piers. Each pier is founded on three 8ft diameter drilled shafts up to 200ft deep.

A full-scale construction phase O-cell load test was performed on a non-production shaft to verify and refine the foundation design and construction. High Performance Drilled Shaft Concrete (HPDSC) was tremie placed under polymer slurry. This HPDSC was chosen for its superior workability, workability retention, and passing ability. The pea gravel mix was also designed to resist segregation, bleeding, and detrimental effects from heat of hydration.

The predominantly fine-grained soil profile demonstrated an equivalent top-down load of approximately 12,000k at 1inch of displacement. The average nominal unit side resistance was around 2ksf, but varied from 0.4ksf to 4.4ksf depending on the contributing stratum. The nominal unit base resistance was about 25ksf at 1in of displacement and was continuing to increase with increased deformation.

Photo Credits: DBA

Dan Brown and Associates, PLLC 300 Woodland Road Sequatchie, TN 37374 Phone: 423-942-8681 Fax: 423-942-8687
www.danbrownandassociates.com