**Background & Project Challenges**

The Glens Bay Interchange project included construction of a new interchange and various roadway improvements at the intersection of U.S. 17 Bypass and Glenn’s Bay Road in Conway, SC. The project included widening of the roadways to ease traffic, improve drainage conditions and facilitate pedestrian access - with new sidewalks constructed on either side of Glen’s Bay Road from U.S. 17 Bypass to U.S. 17 Business. An additional highway exit also provides a northbound exit for residents of The Lakes Community. Geocomp provided instrumentation and monitoring throughout project construction from the fall of 2014 through 2018.

**Geocomp Role & Accomplishment**

Geocomp implemented a comprehensive geotechnical and structural instrumentation and monitoring program for the project to help mitigate the risk of excessive settlement and embankment movement or instability, particularly considering the potential for seismic activity while the embankments and MSE walls were most vulnerable during construction. Real-time monitoring of key parameters including ground pressures, water elevations, pore water pressures, settlement and slope displacements was performed with a network of piezometers, earth pressure cells, settlement sensors and Inclinometers.

Instrumentation data collection was automated and Geocomp provided real-time monitoring of sensors using Geocomp’s iSiteCentral™ web-based monitoring system. Charts showing the data plots for each sensor was available to the team via a project website that could be accessed from any PC, phone, or tablet. Custom threshold limits were established by the design team for each sensor; and automated email messages were sent whenever any monitoring point showed movement greater than the pre-established threshold limits and alert limits. The messaging system allowed the project team to keep track of the movement and determine appropriate courses of action.

Real-time monitoring was performed using Geocomp’s Geocomp also performed automated vibration monitoring, installed and monitored crack gauges, and conducted pre and post construction surveys on surrounding structures to help the client mitigate the risk of construction activities impacting nearby structures.