

CEE 595F – Geotechnical Engineering Seminar

Friday, October 18, 2019 | 11:00 AM, Newmark Lab 3310 | open to all CEE



Foundation Design and Construction for the Mario M. Cuomo Bridge: Tappan Zee Hudson River Crossing

Thomas L. Cooling, P.E., D.GE.

AECOM Technical Services, Inc.

Abstract: The \$3.2 billion Mario M. Cuomo Bridge replaced the original Tappan Zee Bridge that carried I-287 over the Hudson River 25 miles north of New York City. Foundation design and construction for the 3.1 mile crossing was complex due to the high structural demands and difficult foundation conditions. Foundations for a portion of the new bridge will consist of 4-foot diameter steel friction piles up to 330 feet long that derive their support in a thick deposit of varved silt and clay. Other portions of the bridge will be supported on high capacity end-bearing pipe piles up to 6 feet in diameter and 280 feet long. An extensive load testing program involving 20 over-water load tests was completed during construction to verify the original tender design. This presentation covers the design, construction, and load testing program along with lessons learned.

Speaker Bio: Tom, now semi-retired, was formerly a Vice President of AECOM and managed the company's Geotechnical Engineering Group in St. Louis. His role on the Tappan Zee project was Lead Foundation Designer. He has served on four Transportation Research Board Committees and is a Diplomate of Geotechnical Engineering in ASCE's Academy of Geo-Professionals.

Tom is a registered engineer in five states. He obtained a bachelor's degree at the University of Illinois, Urbana-Champaign, and a master's degree at the University of California at Berkeley, both in civil engineering.