



CEE 595 – Geotechnical Engineering Seminar

Friday, November 17, 2017
11:00AM, Newmark Lab 3310

Effect of Embedment Depth on Tip Resistance of Drilled Shafts in Soft Rock

*Pouyan Asem (BS, MS UIUC)
University of Illinois at Urbana-Champaign*

Abstract

The traditional bearing capacity theories suggest an increase in the tip resistance of drilled shafts with increase in the embedment depth. Accordingly, a depth factor is often used to empirically account for this increase. Load test data, however, suggest that increase in the depth of embedment does not significantly improve the tip resistance. The bearing capacity theories and the origin of depth factor are discussed. Load test data are used to investigate beneficial effects of embedment on the bearing capacity of drilled shafts. The observed failure mechanism for the rock in the immediate vicinity of the drilled shaft tip is used to explain the embedment depth effect and its significance to the design of shallow and deep foundations

Short Bio

Pouyan Asem holds a B.S. (2011) with Highest Honors and M.S. (2013) in Civil Engineering, all from the University of Illinois at Urbana-Champaign. He is currently Ph.D. Candidate in Civil Engineering. He has been involved in both geotechnical and structural engineering research. He has participated in teaching a number of geotechnical and structural engineering courses at CEE at Illinois.