Short Courses in Conjunction with the 56th Annual Geotechnical Conference

Thursday, February 28, 2008

Full-Day Short Course:
Application and Design of Reinforced Soil Structures

Time: **8:00 am - 5:00 pm**

Objective: Soil and reinforcing materials made of steel or polymers may be combined to produce a composite material with improved engineering properties. Four primary applications of reinforced soil are addressed in this course: mechanically stabilized earth walls (MSEW), reinforced soil slopes (RSS), embankments of soft soils (EOSS), and load transfer platforms (LTP). Applications, advantages, and limitations of these structures are reviewed. The use of both geosynthetic and steel soil reinforcements are addressed.

State-of-the-practice design methodologies for these four applications are summarized, and specific design references are provided. Mn/DOT standard designs for modular block faced MSEW and for RSS structures are also reviewed. The AASHTO LRFD and ASD MSEW design methods are compared to each other, and to the NCMA design method. Analysis and design options for RSS, EOSS, and LTP structures are examined. The instructors share their insights and experience with analysis, design, and construction of reinforced soil structures.

Instructors: *Ryan Berg,* P.E.
Geotechnical Consultant
Woodbury, Minnesota

Naresh C. Samtini, Ph.D., P.E.
NCS Consultants
Tucson, Arizona

Half-Day Short Courses

Morning Short Course: ***Basic Principles of Limit Equilibrium Slope Stability***

Time: **8:00 am - 12:00 noon**

Objective: Basic principles of limit equilibrium slope stability analyses will be reviewed. Important details including the definition used for the factor of safety and the shape assumed for the slip surface will be examined through a number of examples and case histories. Common problems will be discussed and special considerations for analyses of reinforced slopes and walls will be covered.

Instructor: *Steve Wright*, Ph.D.
Brunswick-Abernathy Regents Professor
University of Texas at Austin

Afternoon Short Course: ***Design of Helical Piles & Steel Piers***

Time: **1:00 pm - 5:00 pm**

Objective: Helical Piles are often more cost effective than driven or concrete piles in projects where limited access and/or vibrations are a concern. Depending on the structure's loading, soils, and overall project parameters will determine the pile design. Helical piles have a long track record of successful remediation of settled structures. Additionally, Helical Piles have been proven, with overwhelming success, in new construction applications and tie-backs. This short course is based on standard formulae and information used throughout the industry, special information from Earth Contact Products Design & Technical Service Manual and case studies. It will give attendees new ideas in designing and implementing Helical Piles in their projects. Topics include: history of helical piles, formulae for using helical piles, product selection, determination of factors of safety, helical piles spacing, design samples and load testing.

Instructor: *Don Clayton*, P.E.
Design Engineer
Earth Contact Products