

PREFACE

The Soils and Foundations Workshop (NHI Course No. 132012) is a basic geotechnical course which will provide practical knowledge for both generalists and those planning to take more advanced geotechnical courses in the future. The workshop will be of most benefit to bridge and foundation engineers; particularly those involved in the design and construction aspects of highway projects. The course objective is to impart to the participants the necessary knowledge and skills to determine the minimum level of geotechnical effort needed on a highway project. The participants will develop knowledge and appreciation of foundation activities in all project phases.

The course content follows a project oriented approach whereby the actual foundation work for a bridge project is traced from preparation of the boring request, to laboratory work, through design computations to construction activities. The concepts presented in each lesson are concise and specifically directed at a particular operation in the foundation design process. Recommendations are presented on how to efficiently layout borings, how to minimize approach embankment settlement, how to design the most cost-effective pile foundation, and how to transmit design information properly to construction. Basic examples are included in several lessons for hands-on knowledge. Continuity between lessons is achieved by sequencing the information in the normal progression of a foundation design study. In each phase of the fictitious project the soil concepts are developed into specific foundation designs or recommendations for that segment of the workshop design problem.

All participants will be provided with a copy of the Reference Manual and Participant Workbook. This Participant Workbook includes copies of visual aids and student exercises that closely follows the presentations being made by the instructors. The student exercises are designed to promote the interaction in the classroom, and to illustrate the basic principles and analyses. Solutions to the exercises are included in the back of the workbook. The Reference Manual (NHI-00-045), which was based on the 2nd edition of the previous Workshop Manual (1993), is geared to the practicing engineer who routinely deals with soils and/or foundations but has little theoretical background in soil mechanics or foundation engineering.

This Instructor's Guide is developed to provide an annotated outline and instructor's notes of the course that can be used as a guide during the preparation and delivery of the course by FHWA approved qualified Instructors.

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