GUIDELINES FOR PREPARING USSD DRAFT AND FINAL MANUSCRIPTS

All papers accepted for the Conference will be published electronically and distributed to Conference Participants in Anaheim. A book including abstracts of each paper may also be printed and distributed during the Conference.

To help you format your paper properly, to ensure uniformity among papers, and to reduce processing time by USSD, please use the template.doc provided. The sample document carries the appropriate margins, Word styles for headings and text, and headers and footers. You can type directly into the document, cut and paste into it, and insert material. Simply delete template material you do not want to use. You may also refer to the instructions found below. A sample page one is included at the end of this document for your reference.

Please prepare your draft **AND** final papers using the template and the following **Formatting Instructions.** Instructions for submitting your **draft** and **final** versions are found at the end of these Guidelines.

FORMATTING INSTRUCTIONS

Paper Size: letter size paper (8 1/2 by 11 inches)

Margins: Top and bottom: 1.0 inches; left and right: 1.25 inches. **All** text, figures, tables and photographs **must** fit within these margins. Please reduce illustrations as needed to fit.

Font: 12 point Times New Roman for text, paper title, captions and headings. **Footnotes** should be in TNR 10 point.

Align Left. Do not indent first line of paragraphs.

Single spacing with one blank line between paragraphs.

Length: Papers should be 10-15 pages, including tables and figures.

Pagination: Do **not** use page numbers, as USSD will paginate the proceedings.

EXTENDED INSTRUCTIONS

Paper Title/Author Block: The title (please limit the title to 12 words) should be in all caps, bold and single spaced, 12 point Times New Roman. Place one blank line following the paper title before listing the authors. For one to five authors, center author's names, one name per line. For six or more authors type them flush left and flush right. For an odd number of authors, center the last author under the others. Place one blank line after authors' names, before the Abstract. Please see sample page for example. Use of professional titles is optional.

Author Information — a **footnote** reference stating present position, employer, address and e-mail must appear on the bottom of the first page for each author. Use the Word footnote function.

Abstract — Paper should begin with an Abstract of no more than **250 words**. Use Heading 1 **ABSTRACT.** The Abstract should reflect the information actually included in the paper; this is not necessarily the abstract submitted in response to the Call for Papers. The Abstract should not include figures, tables or photographs. Please do not exceed the 250 word limit for the abstract to ensure that your abstract will fit on one page in the abstracts book.

Footnotes — A solid line separating footnotes from text should extend two inches (50 mm) from left margin.

Headers and Footers — Do not use the Word headers and footers, as these are reserved for USSD to paginate the published proceedings. As noted above, author information should be provided in **footnotes**, not footers.

References —The References section should immediately follow the text, rather than beginning on a new page. Use Heading 1 style **REFERENCES**. References should be listed alphabetically by last name of the first author. Please do not indent reference text; double space between citations.

Units — Authors may select either SI or English system of units. Conversion to the other system is not recommended.

HEADINGS

Following are the formats of the three levels of headings. Note: **headings should not be numbered.**

HEADING 1 STYLE

Heading 2

Text begins here . . .

Heading 3. Text begins here . . .

Heading 1 Style should be in all capital letters, **bold,** centered. One blank line before and after heading. (Suggested use of Heading 1: Abstract, Introduction, two or three major technical sections, Conclusions and References.)

Heading 2 style should have initial caps (title case), begin at left margin, **bold** and underlined. One blank line before and after heading.

Heading 3 should begin at left margin, with initial caps, underlined (not bold), followed by a period. Begin text on the same line (one blank line before the heading).

FIGURES, TABLES AND EQUATIONS

Figures and Photographs — All figures and photographs should be electronic images inserted into the document. They should appear within the main text as soon after the initial reference as possible. Figures and photographs may be in color. **All figures and photographs must fit within the same margins as the text.** Place the caption (12 point Times New Roman) below the illustration, centered, as follows:

Figure 1. Project Location Map

Tables — Should appear within the main text as soon after the initial reference as possible. **All tables must fit within the same margins as the text.** Place the caption (12 point Times New Roman) above the table, centered, as follows:

Table 1. Rainfall Intensity

Equations — Place one blank line between text and equation, and center equation on page. Number equations consecutively. Equation number should be in parentheses and flush right (ending at right margin). Use Normal Style or Microsoft's Equation Editor for equations; choose symbols from the Symbol or Times New Roman, Latin, or Greek sets.

SUBMITTING YOUR PAPER

Please note: Only papers that meet the deadlines for **draft** and **final** manuscript submittals will be considered for the outstanding paper awards. Draft and Final papers should be submitted to sue.ussd@comcast.net. If your file is too large to send by e-mail (25MB), USSD will provide uploading information.

DRAFT — By no later than **October 21, 2016**, send your draft as a Word .doc or .docx . USSD will forward your draft paper to the Session Moderators for review. The reviewers will send comments directly to you by e-mail.

FINAL — By no later than **February 1, 2017**, send your final manuscript as a Word .doc or .docx AND as a .pdf . Having the .pdf version of your paper helps ensure that your paper appears in the Proceedings as you intended.

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RESIDUAL SHEAR STRENGTH OF LIQUEFIED SOILS

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ABSTRACT

An evaluation of post-earthquake static stability for embankment dams that contain, or are founded on, soils that may liquefy requires estimating the liquefied soil's residual shear strength, S_r. Decisions regarding the need for expensive mitigation efforts, including ground improvement work, often hinge on the selected S_r values. This paper presents recommended relationships for estimating the residual shear strength ratio, S_r/σ'_{vo}, of liquefied nonplastic soils in the field based on a review of prior case history studies, laboratory testing studies, and recent findings regarding void redistribution mechanisms. The recommended relationships provide guidance regarding the unavoidable task in practice of having to extrapolate beyond the available case history data. Limitations in the state of knowledge are discussed.

INTRODUCTION

Procedures for estimating the residual shear strength, S_r, of liquefied cohesionless or nonplastic soils have evolved considerably over the past 25 years. Procedures that require laboratory testing of field samples have been developed that use samples obtained by frozen sampling techniques (e.g., Robertson et al. 2000) or samples obtained by high-quality tube sampling techniques coupled with procedures for "correcting" the shear strength for the estimated volume changes that occur during sampling and testing (e.g., Castro 1975, Castro and Poulos 1977, Poulos et al. 1985). Case history based procedures for estimating the in situ S_r of liquefied soils have been developed by back-analyses of liquefaction flow slides, as first presented by Seed (1987) and since modified by a number of investigators (e.g., Seed and Harder 1990, Ishihara 1993, Wride et al. 1999, Olson and Stark 2002).

Whitman (1985) described situations where pore water seepage driven by earthquake-induced excess pore water pressure gradients could lead to the localized loosening of the liquefied soil, or "void redistribution", that could result in S_r being much lower in the field than would be obtained from laboratory tests of samples at the pre-earthquake void ratio. These situations require the presence of a soil layer of significantly lower permeability overlying the liquefied soil layer, thereby impeding the outward seepage, as illustrated for an infinite slope in Figure 1. Physical and analytical modeling studies by Kokusho (2000), Kulasingam et al. (2004), and Malvick et al. (2004) have illustrated the void redistribution phenomena and evaluated several factors that significantly affect it.

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