

# CONTENTS

<b>Uplift and Bearing Capacity of Short Piers in Sand</b> <i>by Nabil F. Ismael and Tony W. Klym</i> . . . . .	579
<b>Oil Shale Properties by Split Cylinder Method</b> <i>by Ken P. Chong, John Ward Smith, Bin Chang, and Sigmund Roine</i> . . . . .	595
<b>Retaining Wall Performance during Backfilling</b> <i>by Terry S. Ingold</i> . . . . .	613
<b>Settlement of Single Piles in Nonhomogeneous Soil</b> <i>by Harry G. Poulos</i> . . . . .	627
<b>Pile Cap Soil Interaction from Full-Scale Lateral Load Tests</b> <i>by Jai B. Kim, Lakshman P. Singh, and Robert J. Brungraber</i> . . . . .	643
<b>Statics of SPT</b> <i>by John H. Schmertmann</i> . . . . .	655

---

## TECHNICAL NOTES

Proc. Paper 14556

---

<b>Erosion of Cohesive Sediments as Rate Process</b> <i>by William E. Kelly, Ronald C. Gularte, and Vito A. Nacci</i> . . . . .	673
--	-----

→

---

This Journal is published monthly by the American Society of Civil Engineers. Publications office is at 345 East 47th Street, New York, N.Y. 10017. Address all ASCE correspondence to the Editorial and General Offices at 345 East 47th Street, New York, N.Y. 10017. Allow six weeks for change of address to become effective. Subscription price to members is \$12.00. Nonmember subscriptions available; prices obtainable on request. Second-class postage paid at New York, N.Y. and at additional mailing offices. GT, HY.

The Society is not responsible for any statement made or opinion expressed in its publications.

<b>Railroad Ballast Sizing and Grading</b> <i>Gerald P. Raymond and Vishnu A. Diyaljee</i> . . . . .	676
---	-----

<b>Yield Acceleration for Seismic Stability of Slopes</b> <i>by Edward G. Prater</i> . . . . .	682
---	-----

---

DISCUSSION

Proc. Paper 14549

---

<b>Factors Affecting Liquefaction and Cyclic Mobility,</b> <sup>a</sup> by Gonzalo Castro and Steve J. Poulos (June, 1977). <i>by Stanley J. Johnson</i> . . . . .	691
---	-----

<b>Three-Dimensional Slope Stability Analysis Method,</b> by H. John Hovland (Sept., 1977. Prior Errata: Oct., 1978. Prior Discussions: Sept., 1978). <i>closure</i> . . . . .	693
---	-----

<b>Bearing Capacity by Variational Method,</b> by Michael Garber and Rafael Baker (Nov., 1977. Prior Discussions: May, Sept., 1978). <i>closure</i> . . . . .	695
--	-----

<b>Analytical Solutions of Sand Drain Problems,</b> by Punyabrata Basak and Madira R. Madhav (Jan., 1978. Prior Discussion: Oct., 1978). <i>closure</i> . . . . .	698
--	-----

<b>Soil-Structural Interaction and Concrete Tie Design,</b> by Gerald Patrick Raymond (Feb., 1978. Prior Discussion: Nov., 1978). <i>closure</i> . . . . .	698
---	-----

<b>Stability Charts for Simple Earth Slopes,</b> by Brian F. Cousins (Feb., 1978. Prior Discussion: Nov., 1978). <i>closure</i> . . . . .	700
--	-----

<b>Remedial Underpinning of Steel Tank Foundation,</b> by Dinesh Mohan, G. R. S. Jain, and R. K. Bhandari (May, 1978). <i>errata</i> . . . . .	701
---	-----

<b>Comprehensive Model for Rock Discontinuities,</b> by William J. Roberds and Herbert H. Einstein (May, 1978). <i>errata</i> . . . . .	701
--	-----

---

<sup>a</sup>Discussion period closed for this paper. Any other discussion received during this discussion period will be published in subsequent Journals.

<b>Embedment Anchors Subjected to Repeated Loading,<sup>a</sup></b> by Andreas Andreadis, Roger C. Harvey, and Eldon Burley (July, 1978). <i>by Joe O. Akinmusuru</i> . . . . .	702
<b>Uncertainties in Seismic Risk Procedures,<sup>a</sup></b> by Neville C. Donovan and Ann E. Bornstein (July, 1978). <i>by S. K. Guha and J. G. Padale</i> . . . . .	703
<i>by John A. Blume</i> . . . . .	705
<i>by Kutay I. Özeydin and Ali M. Erguvanli</i> . . . . .	706
<b>Simplified Procedure for Estimating Dam and Embankment Earthquake-Induced Deformations,<sup>a</sup></b> by Faiz I. Makdisi and H. Bolton Seed (July, 1978). <i>by Antônio J. C. Mineiro</i> . . . . .	708
<b>Definition of Terms Related to Liquefaction,<sup>a</sup></b> by the Committee on Soil Dynamics of the Geotechnical Engineering Division (Sept., 1978). <i>by Hans F. Winterkorn</i> . . . . .	710
<i>by G. Gudehus</i> . . . . .	711

INFORMATION RETRIEVAL

The key words, abstract, and reference "cards" for each article in this Journal represent part of the ASCE participation in the EJC information retrieval plan. The retrieval data are placed herein so that each can be cut out, placed on a 3 × 5 card and given an accession number for the user's file. The accession number is then entered on key word cards so that the user can subsequently match key words to choose the articles he wishes. Details of this program were given in an August, 1962 article in CIVIL ENGINEERING, reprints of which are available on request to ASCE headquarters.

---

<sup>a</sup>Discussion period closed for this paper. Any other discussion received during this discussion period will be published in subsequent Journals.