

fundamentals

VOL. 92 NO. SM1. JAN. 1966

JOURNAL OF THE SOIL MECHANICS AND FOUNDATIONS DIVISION

PROCEEDINGS OF
THE AMERICAN SOCIETY
OF CIVIL ENGINEERS



BITCOLD

R

ASCE

1966

1

2-R-15



AMERICAN SOCIETY OF CIVIL ENGINEERS

BOARD OF DIRECTION

President

William J. Hedley

Vice Presidents

E. Leland Durkee

Jewell M. Garrelts

Royce J. Tipton

Leland J. Walker

Directors

Robert M. Belt

H. T. Person

Oscar S. Bray

Gardner M. Reynolds

Lloyd T. Cheney

Michael N. Salgo

Robert H. Dodds

A. L. R. Sanders

Clyde D. Gessel

William M. Sangster

John M. Hayes

James R. Sims

Carl B. Jansen

Robert P. Vreeland, Jr.

Carl E. Kindsvater

Horace J. Whitacre

Jack E. McKee

Clifford D. Williams

James D. Wilson

Past Presidents

Waldo G. Bowman

Wallace L. Chadwick

Executive Officers

William H. Wisely, *Executive Secretary*

Don P. Reynolds, *Assistant Secretary*

William N. Carey, *Secretary Emeritus*

E. Lawrence Chandler, *Treasurer*

Richard H. Tatlow III, *Asst. Treasurer*

COMMITTEE ON PUBLICATIONS

Robert M. Belt, *Chairman*

Robert P. Vreeland, Jr., *Vice Chairman*

Carl B. Jansen

A. L. R. Sanders

H. T. Person

Clifford D. Williams

SOIL MECHANICS AND FOUNDATIONS DIVISION

Executive Committee

Woodland G. Shockley, *Chairman*

T. William Lambe, *Vice-Chairman*

Bramlette McClelland Frank E. Richart, Jr.

James K. Mitchell, *Secretary*

James D. Wilson, *Board Contact Member*

Publications Committee

Richard J. Woodward, Jr. *Chairman*

Richard G. Ahlvin

E. D'Appolonia

W. D. Liam Finn

John A. Focht, Jr.

Bernard B. Gordon

James P. Gould

Milton E. Harr

Kenneth S. Lane

L. C. Reese

James K. Mitchell, *Exec. Comm. Contact Member*

TECHNICAL PUBLICATIONS

Paul A. Parisi, *Manager*

Irvin J. Schwartz, *Editor*

Albert W. Turckick, *Associate Editor*

William D. French, *Assistant Editor*

Ann R. Pyk, *Assistant Editor*

Barbara Greene, *Editorial Assistant*

Michele Sobel, *Editorial Assistant*

Susan E. Salomone, *Editorial Assistant*

Frank J. Loeffler, *Draftsman*

Copyright 1966 by the American Society of Civil Engineers

This Journal is published bi-monthly by the American Society of Civil Engineers. Publications office is at 2500 South State Street, Ann Arbor, Michigan. Editorial and General Offices are at 345 East 47th Street, New York, N. Y. 10017. Subscription price is \$8.00 per year with discounts to members and libraries. Second-class postage paid at Ann Arbor, Michigan. EM, HY, SA, SM, ST.

CONTENTS

Papers

	Page
Earthquake Stability of Cohesive Slopes by W. D. Liam Finn	1
A Method for Earthquake Resistant Design of Earth Dams by H. Bolton Seed	<u>13</u>
Piling Difficulties in the New York Area by James D. Parsons	43
Dynamic Response of Footings to Vertical Loading by J. Lysmer and F. E. Richart, Jr.	65
Quality Control of Compacted Earthwork by W. J. Turnbull, J. R. Compton, and R. G. Ahlvin	<u>93</u>
Neutral Pressures in Compacted Cohesive Soils by Francisco Pacheco Silva	105
Bank Erosion in Soils of the Lower Mississippi Valley by Willard J. Turnbull, Ellis L. Krinitzsky, and Frank J. Weaver	121

(over)

Key Words and Abstracts for United States Papers in Proceedings of the 6th International Conference on Soil Mechanics and Foundation Engineering United States National Committee for the International Society of Soil Mechanics and Foundation Engineering	137
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----

DISCUSSION

ore Pressures and Bearing Capacity of Layered Clays, by T. Cameron Kenney. (July, 1964. Prior discussion: January, March, 1965. Discussion closed.) by T. Cameron Kenney (closure)	157
Clay Mineralogical Aspects of the Atterberg Limits, by H. Bolton Seed, Richard J. Woodward, Jr., and Raymond Lundgren. (July, 1964. Prior discussion: January, March, 1965. Discussion closed.) by H. Bolton Seed, Richard J. Woodward, Jr., and Raymond Lundgren (closure)	163
Subsurface Stabilization of Organic Silty Clay by Precom- pression, by Ernest Jonas. (September, 1964. Prior discussion: May, 1965. Discussion closed.) by Ernest Jonas (closure)	164
Consolidation Testing with Back Pressure, by John Lowe III, Philip F. Zaccheo, and Harvey S. Feldman. (September, 1964. Prior discussion: May, 1965. Discussion closed.) by John Lowe III, Philip F. Zaccheo, and Harvey S. Feldman (closure)	167
Lateral Response of Piles, by William R. Spillers and Robert D. Stoll. (November, 1964. Prior discussion: July, 1965. Discussion closed.) errata	167
Piles in Cohesionless Soil Subject to Oblique Pull, by Yoshiaki Yoshimi. (November, 1964. Prior discussion: July, 1965. Discussion closed.) by Yoshiaki Yoshimi (closure)	168
Buckling of Long Unsupported Timber Piles, by Earle J. Klohn and G. T. Hughes. (November, 1964. Prior discussion: July, 1965. Discussion closed.) by Earle J. Klohn and G. T. Hughes (closure)	169
The Nature of Damping in Sands, by Bobby O. Hardin. (January, 1965. Prior discussion: July, 1965. Discussion closed.) by Bobby O. Hardin (closure)	170

Earth Pressures for Bilinear Backfill Surface, by Bulusu Satyanarayana. (January, 1965. Prior discussion: July, 1965. Discussion closed.)	
by Bulusu Satyanarayana (closure)	175
Some Swelling Characteristics of Compacted Clays, by James V. Parcher and Ping-chuan Liu. (May, 1965. Prior discussion: November, 1965. Discussion closed.)	
by Clyde N. Laughter	176
by F. L. D. Woollorton	177
Criteria for Acceptability of Papers, by the Committee on Publications. (May, 1965. Prior discussion: None. Discussion closed.)	
by Asit K. Biswas	178
by James W. Dunham	179
by Charles L. Barker	180
by Francis G. Christian	181
Tolerance of Structures to Settlement, by Jacob Feld. (May, 1965. Prior discussion: September, November, 1965. Discussion closed.)	
by Pablo Girault	182
Design of Laterally Loaded Piles, by Bengt B. Broms. (May, 1965. Prior discussion: None. Discussion closed.)	
by Peter Kocsis	183
Role of the "Calculated Risk" in Earthwork and Foundation Engineering, by Arthur Casagrande. (July, 1965. Prior discussion: None. Discussion closed.)	
by James H. Stratton	185
by F. A. Nickell	187
by Hugh Q. Golder	188
by Geoffrey M. Binnie	189
by Francis B. Slichter	191
by Irving Sherman	192
Standard Penetration Test: Its Uses and Abuses, by Gordon F. A. Fletcher. (July, 1965. Prior discussion: None. Discussion closed.)	
by Victor J. Lo Pinto	195
by Henry A. Mohr	196
Stability of Slopes in Anisotropic Soils, by Kwan Yee Lo. (July, 1965. Prior discussion: November, 1965. Discussion closed.)	
by Peter Lumb	199
by John H. Schmertmann	203