REVIEWS

Horizontal Loads on Piles

REFERENCE: *The Effect of Horizontal Loads on Piles, Due to Surcharge or Seismic Effects.* Proceedings of Specialty Session 10 of the Ninth International Conference on Soil Mechanics and Foundation Engineering, 14 July 1977, Japanese Association for Steel Pipe Piles, Tokyo, 1977, 200 pages.

A partial listing of the contents would include "Piles Subjected to Static Lateral Loads" by E. De Beer, "Seismic Effects on Piles" by H. Tajimi, "The Effects of Horizontal Loads on Piles due to Landslides" by M. Fukuoka, "Horizontally Loaded Piles in Layered Soils" by C. M. Dordi, "A Field Study of Laterally Loaded Piles" by T. S. Ingold, "The Effects of Piles in a Row on the Slope Stability" by T. Ito and T. Matsui, "Creeping Slope in a Stiff Clay" by H. Sommer, "Notes on Stiffness and Damping of Pile Systems" by F. E. Richart, Jr., and C. S. Chon, "Static and Dynamic Tests of Piles Under Horizontal Load" by J. Petrovski and D. Jurukovski, "Surcharge and Seismic Effect on Piles" by A. C. Chaturvedi, "Behaviour of End Bearing Piles Under Seismic Forces" by R. J. Flores-Berrones, and "Effects of Soil Liquefaction on Dynamic Behavior of Pile Foundations" by M. Hakuno et al.

Subdrainage and Soil Moisture

REFERENCE: Transportation Research Board, *Subdrainage and Soil Moisture,* Transportation Research Record 705, Washington, D.C., 1979, 76 pages.

The contents include "Analysis of Parallel Drains for Highway Cut-Slope Stabilization" by R. W. Prellwitz, "Evaluation of Pavement Systems for Moisture-Accelerated Distress" by S. H. Carpenter et al, "Influence of Precipitation, Joints, and Sealing on Pavement Drainage" by B. J. Dempsey and Q. L. Robnett, "Installation of Straw and Fabric Filter Barriers for Sediment Control" by W. C. Sherwood and D. C. Wyant, "Subgrade Stability" by M. R. Thompson, "Predicting Field Compacted Strength and Variability" by J. T. Price et al, "Membrane Technique for Control of Expansive Clays" by D. Forstie et al, "Soil-Water Potential and Resilient Behavior of Subgrade Soils" by T. B. Edil and S. E. Motan, "Comparison of the Precise Freezing Cell with Other Facilities for Frost-Heave Testing" by R. H. Jones and S. J-M. Dudek, and "Subdrainage with a Sand Backfill as a Positive Influence on Pavement Performance" by M. L. Steinberg.

LETTERS

Soil Bearing Footing Area Tests

The following letter is a response to a letter on the same topic from Gay D. Jones, Jr., of Howard Needles Tammen and Bergendoff in Kansas City, Mo., which appeared in the June 1979 issue of the Geotechnical Testing Journal.

To the editor:

Regarding Jones's interest in a portable testing device for verification of bearing capacity, the writer presumes that Jones does not intend that this be substituted for the practice of preconstruction site investigation with borings.

If a professional site investigation has been done, the problem of verification and approval ought to be easily solved.

A geotechnical engineer who has recommended that footings be founded on a particular soil and proportioned using some allowable pressure has or should have a theory of the soil upon which the footings will rest. He can define his theoretical soil in such a way that it can be identified by measurable things. Otherwise he has not done a professional workup.

In the case of natural deposits, in the writer's experience, it is possible to differentiate between, for example, a softened surface layer of clay and the underlying stiff unsoftened material by using some or all of the following quantitative tests: elevation or depth of soil in question, dry density, moisture content, penetration resistance (with a calibrated hand penetrometer), and Torvane test results. All these tests can be done with portable equipment in minutes, and the results compared with the geotechnical engineer's theory of the soil. Simple field identification tests, such as those often used with the Unified Soil Classification System, are also useful, and color can provide a clue. This may be easier for the geotechnical engineer than for, say, a nonspecialist construction inspector, but the geotechnical engineer can or should be able to reduce this theory to writing, giving however many criteria are required to identify the soil he has in mind, even if it takes another geotechnical engineer to apply the criteria.

In the case of fills, if the geotechnical engineer has done a thorough workup, the mere fact that the fill meets his moisture and density specifications ought to be sufficient to establish the presumption that it has the bearing capacity he has attributed to it. This is done daily in pavements.

If a professional site investigation has not been done, or a fill has unknown composition and compaction, the geotechnical engineer is not obliged to guess for anyone's account, and tests of the surface are as likely to be misleading as not. Who needs this kind of work?

The opinions expressed herein are those of the writer and do not necessarily reflect the opinions of Spencer J. Buchanan and Associates, Inc.

Very truly yours,

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