Discussion on Papers

Interference between Adjacent Square Footings on Cohesionless Soil*

by

Alam Singh, B.C. Punmia and M.L. Ohri

P.K. DASH**

THE authors have to be commended for the interesting study made on foundation interference.

The authors have given equations to the bearing capacity efficiency factor F_r for $S/B \leqslant 3.25$ and $S/B=5$. Since, as reported by the authors, the bearing capacity of an adjacent footing is affected till $S/B=5$, it would have been better to propose an equation for F_r for the range 3.25 to 5 also.

As has been stated by the authors, the load-settlement observations have been taken for each footing. The authors may please enlighten the writer as to how the inferences (No. i, page 282) regarding soil reaction and failure pattern have been drawn from these observations. Of course West and Stuart (1965) have drawn similar conclusions from their investigations.

Reference

WEST, J.M. and STUART, J.G. (1965): "Oblique Loading Resulting from Interference between Surface Footings on Sand." *Proceedings, Sixth International Conference, Soil Mech. & Foundation Engg.*, Montreal, Canada, Vol. II, pp. 214-217.

AUTHORS' REPLY

Authors are thankful to Shri P.K. Dash for his keen interest in their paper. The reply to his comments is as follows :

(1) The equation of the average curve between interference efficiency

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factor (F_r) for bearing capacity and spacing $\left(\frac{S}{B}\right)$ may be expressed as follows :

$$F_r = 2.25 - 0.31\left(\frac{S}{B}\right) \text{ for } \frac{S}{B} \leqslant 3.25$$

$$F_r = 1.69 - 0.135\left(\frac{S}{B}\right) \text{ for } \frac{S}{B} \geqslant 3.25 \leqslant 5.0$$

(2) The inferences regarding soil reaction and failure pattern have been drawn on the basis of Visual Observations of the filling of the footings. Because of three-dimensional behaviour of the test footings exact behaviour cannot be predicted.

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Soil Cement Interaction*

by

K.S. Tyagi

T.V. PAVATE**

The writer has come across a Ph.D. Thesis by K.S. Tyagi, in which exhaustive work has been reported pertaining to a general topic of soil cement interaction. It is not clear from author's paper whether there is any similarity to the work done at Indian Institute of Technology, Bombay. But it is very clear from the paper, that bulk of the data seems to have been picked up from the thesis. It would be appreciated if the author mentions the name of the organisation where he got the facilities for D.T.A. and X'ray analysis for conducting the work reported in the paper. The writer likes to know the exact method followed for preparing the soil samples for X'ray studies. It is noted in the paper that silt particles were chemically attacked in the first week of curing. Author may kindly enlighten this aspect as there are no D.T.A. or any other date in the paper for silt combinations.

AUTHOR'S REPLY

Author was the first research scholar in the Soil Engineering Section of the Indian Institute of Technology, Bombay to complete his Ph.D. In this content it is heartening to see the comments from the writer on his paper. The author wishes to reply as follows :

No. of Sentence in Writer's Comments	*Author's Reply*
1	This is incorrect. In the thesis work has been reported pertaining to the following specific topic "Effect of potassium iodide on the development of shear strength in a

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black cotton soil and its size fractions treated with 'Lime', 'Cement' and Lime+Cement."

2 and 3 — So What ?

4 — The author was helped and guided by Dr. R.K. Katti, Professor of Civil Engineering, I.I.T., Bombay in connection with some aspects of this study. The author also received excellent cooperation from Dr. G. Mandal and Shri Venkatraman of Chemical and Metallurgy Departments of I.I.T., Bombay and Project Students at BITS, Pilani.

5 — Author has given the relevent details in the paper in the Appendix.

6 and 7 — This probably refers to the statement on page 307, para 3, lines 9 and 10. It is clear from the paper, that the statement 'Silt particles were chemically attacked in the first week of curing', is a part of results reported by Mitchell and Jack (1966). This has been duly indicated in the paper. It is hoped that this clarification will suffice to enlighten the writer on this aspect.