

Evaluating of Bearing Capacity of Two Adjacent Strip Foundations Located around a Soil Slip

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Abstract : Selection of soil bearing capacity is an important issue that should be investigated under different conditions. The bearing capacity of foundation around of soil slope is based on the active and passive forces. On the other hand, due to extension of urban structures, it is inevitable to put the foundations together. Concerning the two cases mentioned above, investigating the behavior of adjacent foundations which are constructed besides soil slope is essential. It should be noted that, according to the conditions, the bearing capacity of adjacent foundations can be less or more than mat foundations. Also, soil reinforcement increases the bearing capacity of adjacent foundations, and the amount of its increase depends on the distance between foundations. In this research, based on numerical studies, a method is presented for evaluating ultimate bearing capacity of adjacent foundations at different intervals. In the present study, the effect of foundation width, the center to center distance of adjacent foundations and reinforced soil has been investigated on the bearing capacity of adjacent foundations beside soil slope. The results indicate that, due to interference of failure surfaces created under foundation, it depends on their intervals and the ultimate bearing capacity of foundation varies.

Keywords : adjacent foundation, bearing capacity, reinforcements, settlement, numerical analysis

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