

Effect of Boundary Retaining Walls Properties on the Raft Foundations Behaviour

Authors : Mohamed Hussein

Abstract : This paper studies the effect of boundary retaining walls properties on the behavior of the raft foundation. Commercial software program Sap2000 was used in this study. The soil was presented as continuous media (follows the Winkler assumption). Shell elements were employed to model the raft plate. A parametric study has been carried out to examine the effect of boundary retaining walls properties on the behavior of raft plate. These parameters namely, height of the boundary retaining walls, thickness of the boundary retaining walls, flexural rigidity of raft plate, bearing capacity of supporting soil and the earth pressure of boundary soil. The main results which were obtained from this study are positive, negative bending moment, shear stress and deflection in raft plate, where these parameters are considered the main parameters used in design of raft foundation. It was concluded that the boundary retaining walls have a significant effect on the straining actions in raft plate.

Keywords : Sap2000, boundary retaining walls, raft foundations, Winkler model, flexural rigidity

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