

The additional settlement of a rigid circular foundation on an isotropic elastic halfspace due to multiple distributed loads

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The paper is concerned with the interaction between a rigid circular foundation resting on an elastic halfspace and a distributed external load of finite extent which acts at an exterior region of the halfspace. This problem serves

example, Boussinesq's (1885) solution for the indentation of an isotropic elastic halfspace by a rigid circular foundation explicitly assumes that

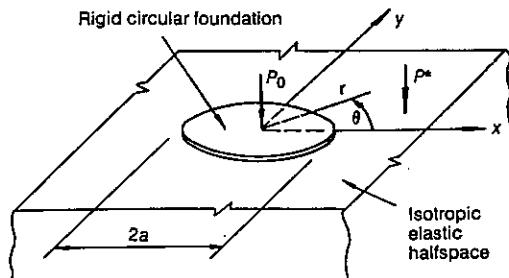


Fig. 1. Geometry of the rigid circular foundation and the co-ordinate system

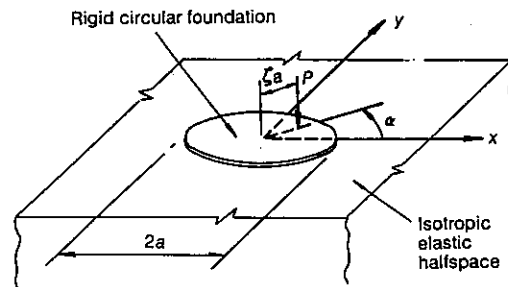


Fig. 2. Eccentric direct loading of the rigid circular foundation

igid circular foundation

$\gamma$

distribution in the elastic halfspace region can be

location  $(\rho a, \theta, 0)$  within the rigid circular foundation. The displacement at an external medium ( $\nu = 1/2$ ) the elastostatic solutions for the

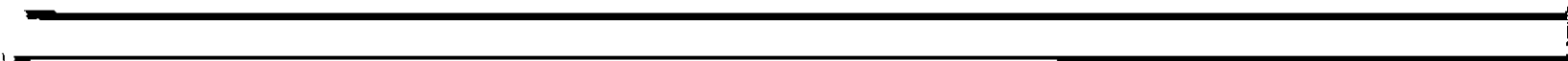
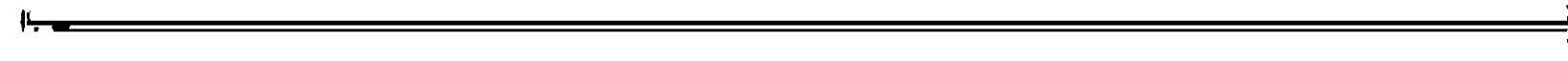
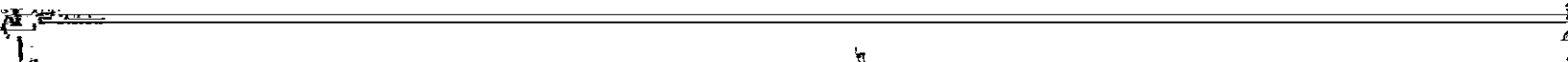
SETTLEMENT OF FOUNDATION ON HALFSPACE

the settlement within the foundation region is  $2.0$

$$\beta = 0.0001$$

$E=2$

6



rigid circular foundation. The proposed silo foundations each carry a load of  $P$ . The radii of

