

عنوان مقاله:

Effect of the Seepage Flow on the Bearing Capacity of Strip Foundations by the Method of Stress Characteristics

محل انتشار:

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نویسندگان:

Mehdi Veiskarami - Assist. Professor, Civil Engineering Department, The University of Guilan, Iran

Jyant Kumar - Assoc. Professor, Civil Engineering Department, Indian Institute of Science (IISc), Bangalore, India

خلاصه مقاله:

Groundwater flow can introduce an unbalanced force which reduces the bearing capacity of the foundation. The hydraulic gradient can exceed some critical value beyond which, soil completely loses the shear strength. In this research, the bearing capacity of shallow foundations subjected to seepage force has been investigated. A boundary value problem in soil plasticity was solved by numerical method and the limit load on the foundation was found. The plasticity equations were solved by the method of stress characteristics. The results showed that, under general assumptions, there is a critical seepage gradient beyond which, a general instability would occur. This latter can be well observed by plotting the variation of the dimensionless bearing capacity factor against the dimensionless groundwater flow and by analytical approach.

کلمات کلیدی:

Computational Modeling, Stress Characteristics, Foundations, Plasticity, Seepage

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