عنوان مقاله:

Application of Stone Columns on Slopes Stability Using Numerical Analysis

محل انتشار:

اولین کنفرانس ملی مکانیک خاک و مهندسی پی (سال: 1393)

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خلاصه مقاله:

A two-dimensional (2D) finite difference method was adopted in this study to estimate the factor of safety (FS) against deep-seated failure of embankments over stone column-improved soft clay based on individual column and equivalent area models. In the equivalent area model, the equivalent parameters (unit weight, cohesion, and friction angle) for the improved area were estimated based on the area average of the parameters from stone columns and soft clay. The factors influencing the FS against deep-seated failure of embankments over stone column-improved soft clay were investigated including the spacing, size, and friction angle of stone columns, cohesion of soft clay, friction angle of embankment fill, and existence of ground water. The comparative study shows that the FS values obtained by the equivalent area model are higher than those by the individual column model. The existence of the water table and pore water pressure reduced the frictional shear strength of the improved foundation.

کلمات کلیدی:

Stone columns, embankment stability analysis, finite difference method, safety factor

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