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Investigation of Slope Stability in Gravel Soils in Unsaturated State

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Abstract : In this paper, we consider the stability of a slope of 10 meters in silty gravel soils with modeling in the Geostudio Software. we intend to use the parameters of the volumetric water content and suction dependent permeability and provides relationships and graphs using the parameters obtained from gradation tests and Atterberg’s limits. Also, different conditions of the soil will be investigated, including: checking the factor of safety and deformation rates and pore water pressure in drained, non-drained and unsaturated conditions, as well as the effect of reducing the water level on other parameters. For this purpose, it is assumed that the groundwater level is at a depth of 2 meters from the ground. Then, with decreasing water level, the safety factor of slope stability was investigated and it was observed that with decreasing water level, the safety factor increased.

Keywords : slope stability analysis, factor of safety, matric suction, unsaturated silty gravel soil
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