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Evaluation of Minimization of Moment Ratio Method by Physical Modeling

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Abstract : Under active stress conditions, a rigid cantilever retaining wall tends to rotate about a pivot point located within the embedded depth of the wall. For purely granular and cohesive soils, a methodology was previously reported called minimization of moment ratio to determine the location of the pivot point of rotation. The usage of this new methodology is to estimate the rotational stability safety factor. Moreover, the degree of improvement required in a backfill to get a desired safety factor can be estimated by the concept of the shear strength demand. In this article, the accuracy of this method for another type of cantilever walls called Contiguous Bored Pile (CBP) retaining wall is evaluated by using physical modeling technique. Based on observations, the results of moment ratio minimization method are in good agreement with the results of the carried out physical modeling.

Keywords : cantilever retaining wall, physical modeling, minimization of moment ratio method, pivot point
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