Thesis Title	Settlement Analysis of The Pakpanang Closure Dam and The Embankment No.2 of The Pakpanang River, Pakpanang District, Nakhonsrithammarat Province
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Abstract

In the case study, the settlement predicting of the Pakpanang Closure Dam and the Embankment No.2 of the Pakpanang River which are constructed on very soft clay and stabilized by soil cement column for decreasing all settlement has taken place. Settlement is analyzed by using installation of settlement instrument, inclinometer, soil exploration and obtaining fairly undisturbed soil samples for parameters laboratory testing that shown the Pakpanang Soft Clay is slightly overconsolidated state. In generally, settlement analysis of soil cement column are calculated by 1). Broms and Boman and 2). Sweroad methods, which have column spacing between 0.8-1.8 m. The Pakpanang Closure Dam and the Embankment No.2 of the Pakpanang River's spacing of soil cement column are 3.00 m. and 2.771 m. respectively which is not conform these assumption. The assumption of equivalent footing at the depth of $2L/3$ length of column from the top and at the end of column for conventional method are taken. At the time 590 days, the center of the closure dam (Sta.2+517), increased stress(Δp) and settlement analysis are calculated by using 2V:1H and Duncan respectively. The settlement, which is calculated from the aforsaid theory more than the actual settlement 13.60 percent at $2L/3$ length of column and less than 2.89 percent at the end of column. The circumference of the closure dam (Sta.2+420 and Sta.2+614) are calculated by using 2V:1H and Terzaghi give the settlement value more than the actual settlement value 12.19 percent at $2L/3$ length of column and 2.34 percent at the end of column.

The Embankment No.2 has equivalent footing at 2L/3 of column from the top of column, increased stress(Δp) and settlement analysis are calculated in two cases by 1). Osterberg and Terzaghi and 2). 2V:1H and Duncan respectively, which have differential settlement from actual settlement about 40 percent. Asaoka's graphic method is the most approachable settlement rate different from actual settlement about 3 percent for each points because settlement equations are determined from linear fitting curve of actual settlement.

Besides in the case study, lateral displacement are determined by inclinometer installation. At the time 12 months, maximum displacement are 24.53 mm. at El.-12.50 m. and 17.09 mm. at El.-6.50 m. at the center of the closure dam (Sta.2+517) and new profile of Bang Pra canal respectively, both are downstream direction. Due to the different water level between upstream and downstream are approaches, so the pressure of the both sides are approaches too.