PREDICTION OF CONSOLIDATION FROM REDUCED CONSOLIDATION TESTING TIME (CONTINUATION)

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SYNOPSIS

The objective of this project is to study the possibility of reducing the consolidation testing time test.

This project is a continuation from last year project. The previous student attempted the prediction of consolidation from reduced consolidation testing time test immediately after the cessation of 100% primary consolidation. This was found not satisfactory. Therefore the continuation is made in order to achieve a better results by predicting such test beyond 100% primary consolidation, i.e within the secondary consolidation zone.

Prediction of consolidation from such test is entirely based on the S.B. Tan techniques. Comparison between the normal and reduced consolidation testing time test had been done to justify the accuracy of the results obtained from reduced test. The variation of results between the two set of tests was found within the range of 2% to 7% compared with previous attempt which was 10% to 20%.

Therefore this shows that the prediction made beyond the primary consolidation gives a more accurate result.

1.1 INTRODUCTION

Consolidation test is a soil test carried out in soil investigation in order to estimate on predict the rate of consolidation and consolidation settlement of soil subjected to vertical stresses from foundations of building or other structures above it. At the same time the other properties of the soil such as the coefficient of compressibility (M_v), coefficient of consolidation (C_v) and compression index could also be determined.

In studying the settlement of structures, the rate of consolidation will be the main consideration. The consolidation settlement of a foundation will only take place as water seeps from the soil at a rate which will depend upon the permeability and the length of the drainage path that the particles of water follow in the underlying soil. Therefore consolidation may take many years before it finally reaches its maximum compression.