RESIDUAL STRENGTH OF MALAYSIA RESIDUAL SOIL

BY:

MHD. ZAHIR BIN NORDIN

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Mhd. Zahir b. Nordin

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ABSTRACT

Residual soil have been a main concern in recent years. Residual soil which are formed by weathering presents a particulars problem in relating soil structure and stress history which are both continuosly changing. The ability of soil mass to support an imposed loading of a soil mass to support itself is governed by the shear strength. The shear strength which ultimately reaches is known as residual shear strength, which is often appreciably lower than maximumm or peak value.

The knowledge on behaviour and properties of residual soil would enable engineers confortably design economical and safe design. Majority of soil encountered are residual soil. It is important to investigate the behaviour of shear strength characteristic of residual soil. The shear strength is determined by the shear box . It is required to evaluate the supporting stability and bearing capacity of soil. The strength parameters, cohesion c and angle of friction ϕ are an important factors involving problem concerning the stability of soil.

The objective of this project is to determine the residual shear strength of residual soil in Malaysia. Residual soil samples were taken at the site along old federal road highway at km 36 Jalan Seremban - Kuala Pilah and at ITM Shah Alam slope in front of Kolej Delima.

1.0 INTRODUCTION

1.1 General

Malaysia is one of the fastest developing countries in South East Asia, thus the development of infrastructures such as bridges, embankment, roads, highways and highrise structures is the first priority. Therefore, the engineers have to know the soils and its engineering properties in order to understand and to tackle any problems encountered.

The shear strength of a soil is define as the maximum, or limiting, value of a shear stress that may be induced within its mass before the soil yields. Under certain circumstances yielding will lead to formation of shear slip surface, over which a significant amount of sliding movement may take place, e.g. landslip, rotational slope and excavation failures.

Stresses set up in the soil cause deformation of soil which occur by slippage of soil particles, one on another, which may lead to the sliding of the body of soil relative to the surrounding mass.

When the stresses set up beyond the maximum shear resistance of the soil, shear failure will take place. This condition must be avoided in order to prevent disastrous failure. The usual safeguard is to carry out stability analysis for which the shear strength of the