



CHAPTER I

INTRODUCTION

The city of Bangkok is located on the bank of the Chao Phraya river 20 km. north of the Gulf of Thailand. The Chao Phraya river meanders through the Chao Phraya plain of central Thailand, which extends 300 km. north from the Gulf of Thailand with an average width of 100 km. The plain is underlain by a thick deposit of soft, highly plastic marine clay. Ground surface varies between 0.5 and 3.0 m. above mean sea level. The low strength and high compressibility of the clay pose severe soil engineering problems. The in situ subsoil investigation were made by means of the standard penetration test, field vane test and cone penetration test (CPT).

The cone penetration test is one of the most convenient method, but it can not be used to interpret undrained shear strength directly.

1. Purpose of the study

The purpose of this thesis is to find the method and formulae to obtain the unconfined compressive strength, field vane strength and unconsolidated undrained strength from the cone resistance data in soft Bangkok clay. The available formulae will be studied and modified to suit the condition.

2. Scope of the study

The scope of this study is limited to the soft Bangkok clay which consists of soft to very soft clay layers that usually extends to EL.-12± 2 m. (refer to mean sea level).

The cone resistance in this study were obtained from the 60° apex angle cone penetrometer.

Data of cone resistance and other soil properties were collected from various places as will be described in chapter III. The predicted value of undrained shear strength as computed by different theories were analyzed from the cone resistance data. They will be compared with the test results from the laboratories. The results of the study will give the suggested methods to obtain the undrained shear strength from the cone resistance.