

CHAPTER IINTRODUCTION

Many tall buildings have been constructed in Bangkok in order to increase the standard of living of people. It has been known that in Bangkok area the rock strata is more than 300 meters below the natural ground surface, the top soil is very soft therefore driven precast piles are necessary for the foundation works.

Many experiments have been performed to find the bearing capacity of piles. In 1969 Vera Suwanakul had embedded load cell using electrical resistance strain gauges to investigate the shaft friction and end bearing capacity of 24 m cast-in-situ bored piles. The result shows that about 90% of the bearing capacity of pile is dependent on shaft friction. In 1972, Jutasurivonse had carried out a good research which showed the performance of some driven and cast in-situ piles in Bangkok clay. However due to the difficulty in construction of cast-in-situ bored piles, driven precast piles are used. Therefore it is very interesting to investigate the bearing capacity of piles having various shapes in order to find the economical section.

Purpose of Study

The purpose of this study is to determine

- 1) The bearing capacity of piles having various shapes (based on ML and Quick Test).
- 2) The adhesion factor of clay to various pile shapes.

- 3) The effect of the boundary of pile on skin friction.
- 4) The economical shape of short pile.

#### Scope of Test

The study is made on single pile. No consideration is given to the group action, the strata effect of clay, the effect of negative skin friction. The shapes of piles using in this research are square, double half moon, octagonal, circular, equilateral triangular, and Y.