CHAPTER II

LITERATURE REVIEW

Al-Refeai and Al-Suhaibani (1996) did research about Prediction of CBR Using Dynamic Cone Penetrometer. The results are:

- Result of correlation study between the cone penetrometer laboratory tests and CBR laboratory tests indicate a consistent and definable relationship. DCP penetration can be used to predict CBR values with relatively high accuracy for soils ranging from sand with gravel to clay.
- A very good relationship between DCP penetration and CBR were obtained for each type of soil tested. The coefficient of determination (R^2) ranges between 0.8 - 0.96 and the standard error of estimate (SEE) was relatively low.
- For a given type of soil, the variability in data, as indicated by SEE values and the scatter of data points in CBR-D plots, is affected by the type of soil and increases as the soil changes from fine grained to granular.
- When all soils data were pooled together, a relatively good relationship was obtained between CBR and D values. R^2 and SEE were 0.69 and 0.548 respectively.
- A good agreement was found between the model developed in this study and two other models were reported in literature.

Nur (1994) did research about Application of Dynamic Cone Penetrometer (DCP) on The Road Sub grade using R – 7 graphic and the result is small CBR value caused by bad drainage system. To stabilize soil condition need to repair the soil sub grade and good soil quality.

Suprapto (1998) did research about the correlation between the CBR and DCP value in compacted peat soil. He suggests that:

- In CBR and DCP tests on peat soil was compacted by modified proctor, need to be tested for water content in dry conditions below 100% to see the trend of CBR and the DCP is happening whether to drop or higher than studies conducted on the water content 100 % to 140%.
- Laboratory data need more to strengthen the relationship between CBR and DCP values.
- In order correlation can be used in general, it is necessary to conduct further research in the field to get the CBR and DCP test correlation with peat soil sample.

In research that has been done Wibisono and Tjandra (1994) correlation between DCP and CBR field tests on original soil and landfill, the result is:

- By using a DCP, soil strength can be known only to a depth of ± 1 meter.
- DCP tests conducted on soil that has a plasticity index more than 50% get results in accordance with the CBR value.