COMPUTER – AIDED DESIGN AND ANALYSIS OF REINFORCED CONCRETE FOOTINGS

A Special Paper

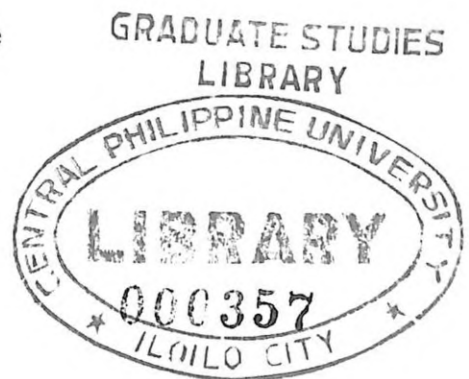Presented to

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ABSTRACT

The primary objective of this study was to develop a software application in the field of Civil Engineering. The software is entitled *"Computer-Aided Design and Analysis of Reinforced Concrete Footings"*. The software is using System International (S.I.) units of measurement and using Ultimate Stress Design method.

The software can overrun the manual computation which known to be tedious and requires a lot of time. The software was designed to have features that could be utilized in both theory and practice in the design and analysis of concrete footings. The software sill prove to be beneficial to instructors, practicing engineers and civil engineering students in terms of cost, time and accuracy of results.

The software is capable of solving the following types of footings: 1) Wall footing subjected to axial load; 2) Isolated square footing subjected to axial load; 3) Isolated rectangular footing subjected to axial load; 4) Isolated footing subjected to axial load and bending moment, where soil pressure at the base of footing is not uniform; 5) Isolated Rectangular footing subjected to axial load and bending moment, where soil pressure at the base of footing is uniform; 6) Rectangular combined footing subjected to axial load, where one of the column is within the property line; 7) Rectangular combined

footing subjected to axial loads, both columns are internal; 8) Trapezoidal combined footings subjected to axial loads, and 9) Strap footing subjected to axial loads.

The programming language used was Visual Basic 6.0, Enterprise Edition.