Ain Shams University
Faculty of Engineering

Study of Retaining Walls With Shelf

By

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A Thesis

Submitted in Partial Fulfillment for the
Requirements of the Degree of Master of Science
in Civil Engineering
Department of Structural Engineering

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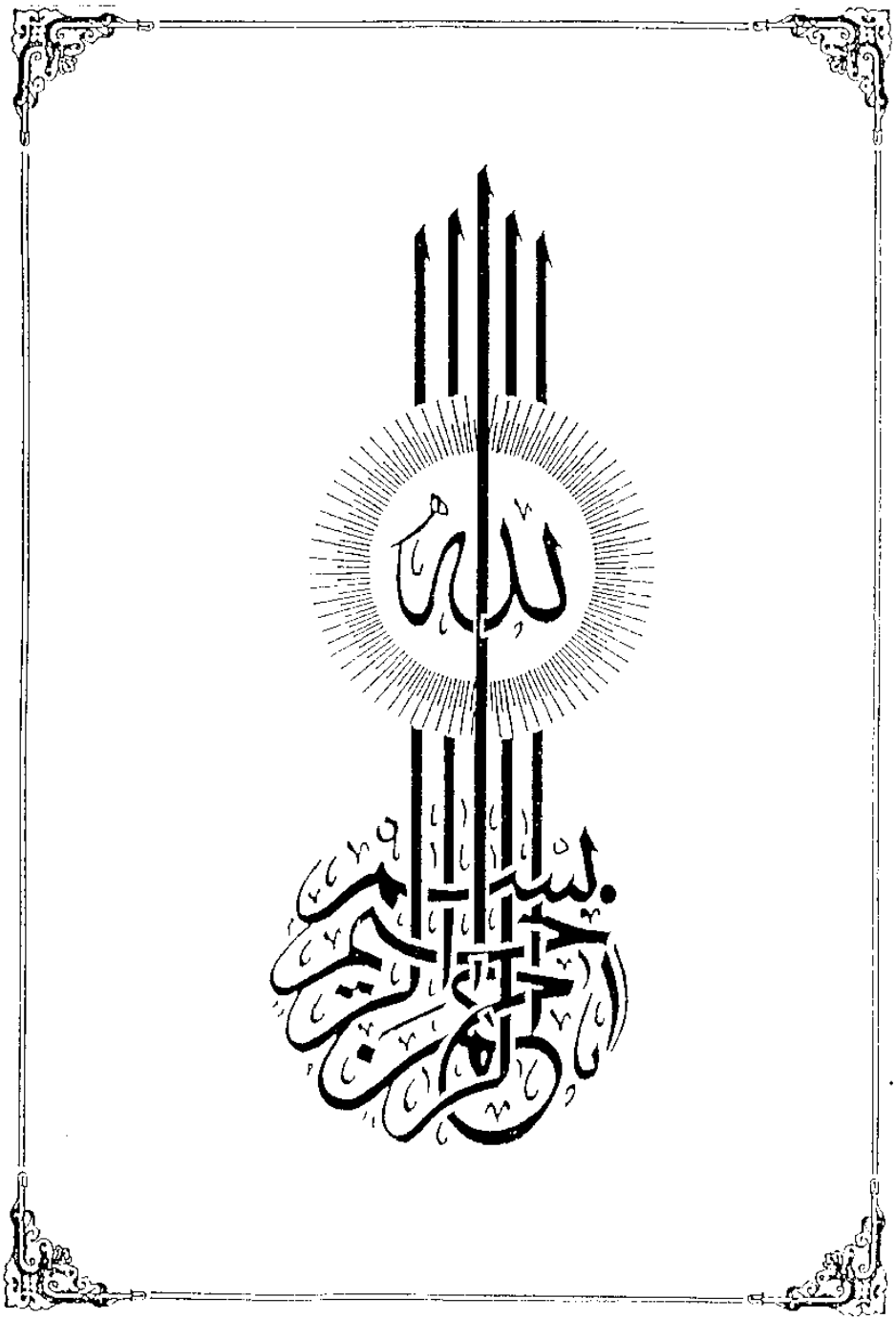
بسم الله الرحمن الرحيم

« ربنا أتنا من لدنك
رحمة وهيئ لنا من أمرنا رشداً »

صدق الله العظيم



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STATEMENT

This dissertation is submitted to Ain Shams University for the degree of Master of Science in Civil Engineering.

The work included in the thesis was carried out by the author in the Department of Structural Engineering, Ain Shams University, from January 1992 to September 1993.

No part of this thesis has been submitted for a degree or a qualification at any other university or institution.

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Abstract of the M.Sc. Thesis submitted by : **Essam Shafik Mohamed**

Title of Thesis : " **Study of Retaining Walls With Shelf** "

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Summary

The purpose of this research is to study the pressure distribution on unyielding retaining wall provided with shelf due to strip loading acting on the surface of sandy soil . To achieve this , models of retaining wall provided with pressure cells were made , placed in a tank and the sandy soil was spread behind the wall up to the top level of wall stem . The research investigated the effect of shelf breadth and position on the pressure distribution on the wall stem and the resulting lateral force under surface strip loading .

Results of Numerical solutions using finite element method were compared with results of the experimental work .

This research demonstrated that horizontal shelf fixed to retaining walls decreases the lateral force significantly . It was noticed that the decrease in this lateral force depends on the shelf breadth and position .

Keywords : Model Tests , Retaining Wall , Shelf , Strip Load Pressure and Numerical Solution

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