

Ain Shams University
Faculty of Engineering

Study of Retaining Walls With Shelf

By

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E201, 164
F. S

A Thesis



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

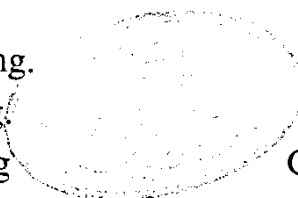
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1443

بسم الله الرحمن الرحيم

« رِبْنَا أَتْنَامِن لَدُنْكَ
رَحْمَةً وَهَيِّئْ لَنَا مِنْ أَمْرِنَا رَشَدًا »

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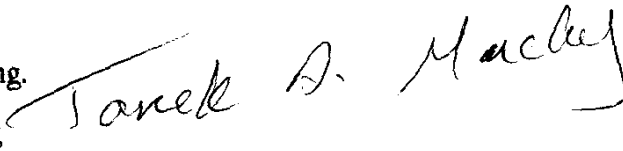


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STATEMENT

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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ACKNOWLEDGMENTS

My cordial and deepest thanks to the supervisors of this work :

1) Prof. Dr. Fathalla Mohamed El-Nahas

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2) Dr. Rawia Ragab El-Sakhawy

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Thanks to Staff and Technicians of Soil Mechanics laboratory
in " G O H B P R "

Thanks to " G O H B P R "

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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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