



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الإلكتروني والميكروفيلم



شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم



نقسم بـالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %



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@ ASUNET



بعض الوثائق

الأصلية تالفة



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بالرسالة صفحات

لم ترد بالأصل

B1.9.v

**SHEAR STRENGTH CHARACTERISTICS OF
COMPACTED CLAYEY SAND**

by

Rami Mahmoud Gharib El-Sherbiny

B.Sc. (Civil Eng.) Cairo University

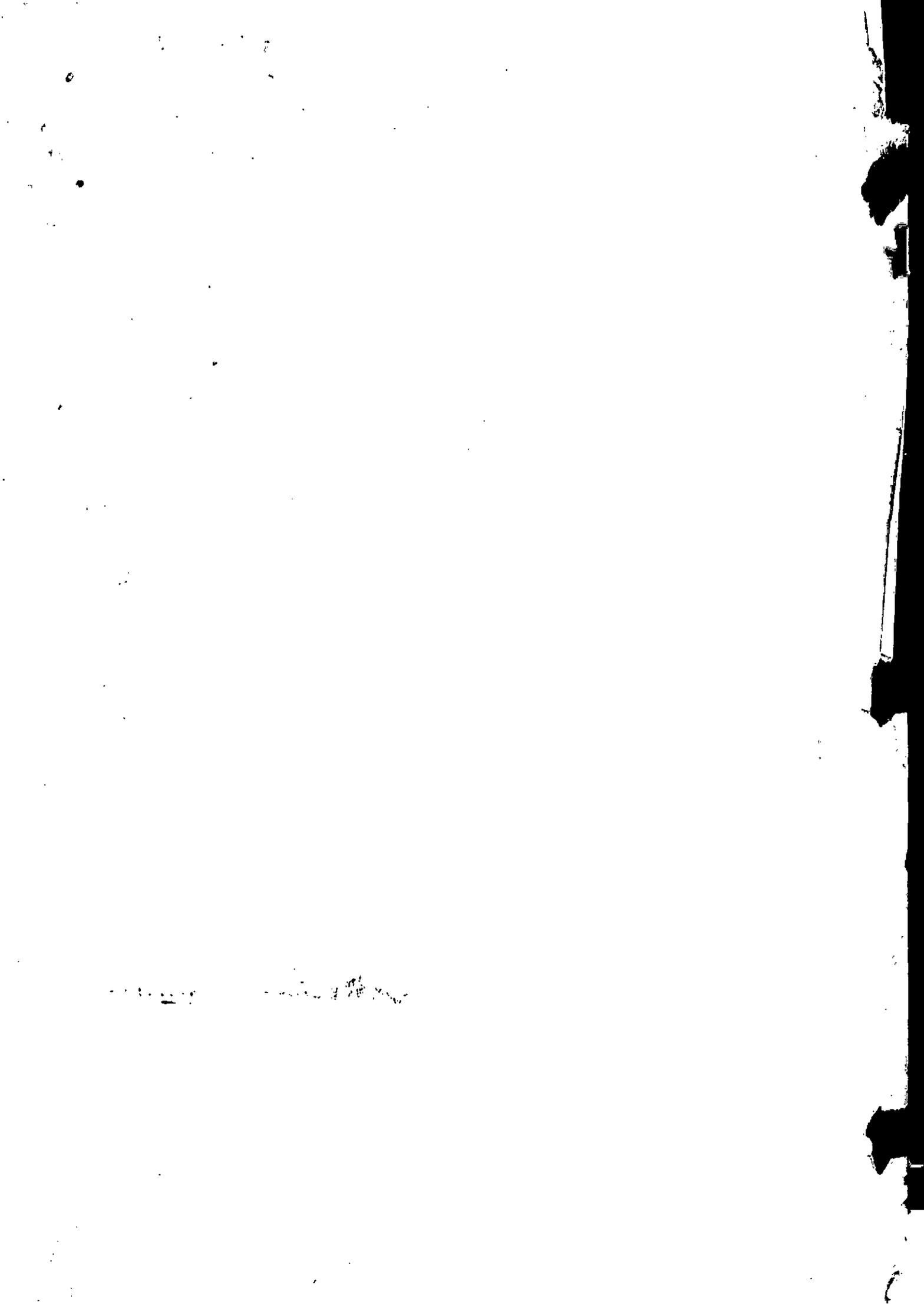
A Thesis Submitted to the
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MASTER OF SCIENCE

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CIVIL ENGINEERING

**FACULTY OF ENGINEERING, CAIRO UNIVERSITY
GIZA, EGYPT
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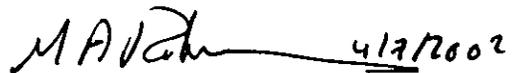
Prof. Dr. Ali A. Sabry
Prof. of Soil Mechanics and Foundations



Prof. Dr. Magda M. Abdel Rahman
Chairman of Public Works Department
Head of SMFRL



Dr. Mostafa H. El Ehweny
Assistant Prof. of Soil Mechanics and Foundations



FACULTY OF ENGINEERING, CAIRO UNIVERSITY
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1942

1943

1944

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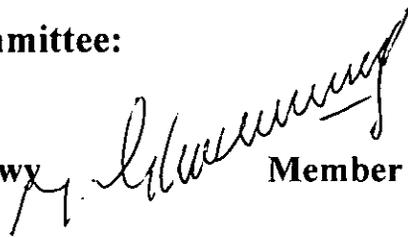
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Approved by the Examining Committee:

Prof. Dr. Moustafa K. El-Ghamrawy



Member

Prof. Dr. Abdelsalam M. Salem

Member

Prof. Dr. Magda M. Abdel Rahman



Thesis Advisor

Prof. Dr. Ali A. Sabry



Thesis Advisor

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1875

1876

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ABSTRACT

Clayey-sand soils are commonly found in nature and widely used in geotechnical engineering applications, but have not received enough attention yet. This thesis addresses the shear strength characteristics of compacted granular soils with plastic fines (clay) of different plasticity indices. One typical Egyptian poorly graded sand was mixed with fines ranging between 5% and 50% by weight. Four types of clay with different plasticity indices (I_p) ranging between 20% and 360% were used.

Drained laboratory tests using either Direct Shear Box or Triaxial Compression Apparatus were conducted according to ASTM D3080 and ASTM D2850, respectively. Unlike the continuous increase of the plasticity index of the mix with fines contents, the results show how the other physical and mechanical characteristics are modified. The maximum dry density was found to increase with fines content till an optimum value after which it reflects back. On the contrary, the optimum moisture content and void ratio decrease till the optimum fines content then reflect back. The increase in fine's plasticity, however, causes a decrease in both maximum dry density, and optimum fine content, and also an increase in optimum moisture content.

The results show that The angle of peak shear resistance (ϕ) drops with adding a small percentage of fines to the host sand, however, it increases back gradually with increasing fines content till the optimum fines content at which a maximum (ϕ) is reached. Further increase in fines content causes a drop in angle of shearing resistance. At optimum conditions, the cohesion intercept (c) increases with increasing either the fines content or the plasticity index. A comparison of results with the proposed hyperbolic non-linear failure envelope shows fair agreement except at low stress levels. The progressive mobilization of shear strength has been studied. Mobilized angle of shear resistance and shear intercept are obtained at different displacements during shearing. It was observed that failure takes place in the vicinity of the maximum mobilized shear intercept.

