THE UNDRAINED SHEAR STRENGTH OF SOFT CLAY REINFORCED WITH SINGLE CERAMIC WASTE COLUMN

MOHAMAD LAZIEM JAMEEL BIN MOHD SOFE

Faculty of Civil Engineering and Earth Resources

UNIVERSITY MALAYSIA PAHANG

Dedicated to my parents and my family

SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis and in my opinion, this thesis is adequate in terms of scope and quality for the award of the degree of in Bachelor of Civil Engineering.

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(Supervisor's Signature)

Full Name :DR. MUZAMIR BIN HASAN

Position : SENIOR LECTURER

Date : 16. JUNE .2017

STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universitiy Malaysia Pahang or any other institutions.

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(Student's Signature)

Full Name : MOHAMAD LAZIEM JAMEEL BIN MOHD SOFE

ID Number : AA13165

Date : 16. JUNE. 2017

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MOHAMAD LAZIEM JAMEEL BIN MOHD SOFE

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LIST OF SYMBOLS

A_c	Area of a column
A_s	Area of a sample
H_c	Height of a column
H_s	Height of a sample
V_c	Volume of a column
V_s	Volume of a sample
D_c	Diameter of a column
G_s	Specific gravity
m_1	Mass of bottle water
m_2	Mass of bottle soil water
m_3	Mass of bottle dry soil
m_4	Mass of density bottle
Dr	Relative density
γ	Unit weight of current sample
γ_{min}	Minimum unit weight
γ_{max}	Maximum unit weight
τ	Shear strength of the soil
σ	Effective normal stress
ϕ	Cohesion
w_L	Liquid limit
w_P	Plastic limit
I_P	Plastic index

w_{opt}	Optimum moisture content
q_u	Deviator stress
s_u	Undrained shear strength
Δs_u	Improvement of undrained shear strength
ρ_d	Dry density
R^2	Correlation cohesion

LIST OF ABBREVIATIONS

CWC	Ceramic Waste Column
USCS	Unified Soil Classification System
AASHTO	American Association of State Highway and Transportation Officials
ML	Low plasticity silt
UCT	Unconfined Compression Test
ASTM	American Society of Testing Material
BS	British Standard
UU	Unconsolidated Undrained Test