THE UNDRAINED SHEAR STRENGTH OF SOFT CLAY REINFORCED WITH GROUP ENCAPSULATED LIME BOTTOM ASH COLUMNS

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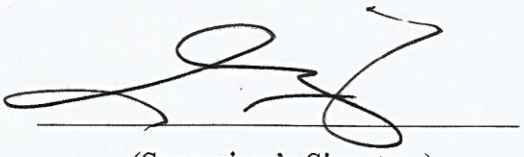

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I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti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

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To my beloved family.

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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	Volumes of a column
V_s	Volumes of a sample
D_c	Diameter of a column
Si	Immediate settlement
Sc	Primary consolidation
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 water content
q_u	Deviator stress
S_u	Undrained shear stress
ΔS_u	Improvement undrained shear strength
ρ_d	Dry density
R^2	Correlation cohesion

LIST OF ABBREVIATIONS

ACAA	American Coal Ash Association
AASHTO	American Association of State Highway and Transportation Officials
ASTM	American Society of Testing Material
BS	British Standard
BSCS	British Soil Classification System
EDS	Energy Dispersive Spectrometry
EPF	Employee Provided Fund
FHWA	Federal Highway Administration
MIT	Massachusetts Institute of Technology
ML	Low Plasticity Silt
USCS	Unified Soil Classification System
USDA	US Department of Agriculture
WV	West Virginia
XRF	X-Ray Fluorescence