

**ANALYSIS OF AXIALLY LOADED SINGLE PILE
(CASE STUDY OF PORT DEVELOPMENT IN COAL MINING DIVA
KENCANA BORNEO PROJECT, PT. ATLAS RESOURCES,
EAST KALIMANTAN)**

Final Project

**By:
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**CIVIL ENGINEERING INTERNATIONAL PROGRAM
ENGINEERING FACULTY
ATMA JAYA YOGYAKARTA UNIVERSITY
YOGYAKARTA, 2011**

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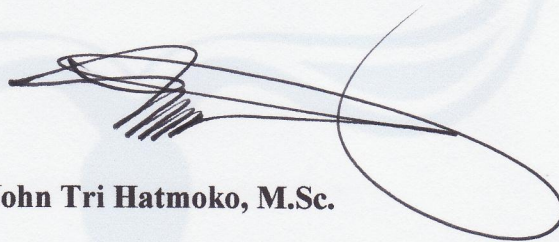
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LEGALIZATION SHEET

Final Project

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PREFACE

First and foremost, the author would like to thank Allah SWT for His blessing that had been given to the author, so that the author could prepare and finish this on site practice report. This final project was arranged, due to finish the under-graduate program at Faculty of Engineering, Department of Civil Engineering, Atma Jaya University Yogyakarta.

The author realized that there are still limitations and flaws in this final project report. However the author still hopes that this final project report might be useful for the readers and the author herself.

The author would like to say thank you for:

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7. All of my friends.

8. And everyone who become very helpful during preparing the final project who could not be mentioned one by one.

The author realized that, this report have some mistakes maybe, but the author trust all critics from all of you can make it better.

Finally the author hopes this report could give advantages for the readers.

Yogyakarta, April 2011

Ganesha Maghemila

CONTENTS

COVER	i
DECLARATION	ii
APPROVAL SHEET	iii
LEGALIZATION SHEET	iv
PREFACE	v
CONTENTS	vii
FIGURE LIST	ix
TABLE LIST	x
ABSTRACT	xi
I. INTRODUCTION	1
1.1. Background	1
1.2. Problem Statement	2
1.3. Problem Limitation	2
1.4. Objectives	3
1.5. Research Benefits	3
1.6. Location of the Project	4
II. LITERATURE REVIEW	5
2.1. Deep Foundation	5
2.2. Pile Foundation System	5
2.3. Related Research	8
III. BASIC THEORIES	11
3.1. Direct Calculation Using Cone Penetration Test Data	11
3.1.1. The Dutch Method (1979)	12
3.1.2. Schmertmann & Nottingham method (1978)	14
3.1.3. LCPC method (1982)	16

3.2. Interpretation of CPT Data That Support for The Calculation Based on The Soil Properties	21
3.2.1. α method	21
3.2.2. λ method.....	23
3.2.3. β method.....	24
3.3. Interpretation of CPT Data That Support for the Standard Penetration Test Calculation.....	26
3.3.1. Meyerhof's method.....	26
3.3.2. Briaud's method.....	28
IV. RESEARCH METHOD	30
V. DATA ANALYSIS AND RESULT	32
5.1. Data Provided.....	32
5.2. Data Analysis	34
5.2.1. Direct Calculation Using Cone Penetration Test Data	34
5.2.2. Interpretation of CPT Data That Support for The Calculation Based on The Soil Properties	39
5.2.3. Interpretation of CPT Data That Support for The Standard Penetration Test Calculation.....	45
5.3. Result	51
VI. CONCLUSIONS AND RECOMMENDATIONS	54
6.1. Conclusions.....	54
6.2. Suggestions	55
REFERENCES.....	56
APPENDIX.....	58

FIGURE LIST

Figure 1.1 Map of the Kalimantan Island	4
Figure 1.2 Location of the Project	4
Figure 2.1 Typical Pile Configurations.....	7
Figure 3.1 Dutch method for determination of base resistance	13
Figure 3.2 Reduction factor in Schmertmann's method (1978)	15
Figure 3.3 Equivalent cone resistance q_{ca} for LCPC method	20
Figure 3.4 Relationship between soil and adhesion factor	22
Figure 3.5 λ coefficients depending on pile penetration.....	23
Figure 3.6 Plot of S_u and \bar{q} versus average skin resistance f_s to illustrate scatter	25
Figure 4.1 Flow Chart of Final Project	31
Figure 5.1 Relationship between cone bearing and drained young modulus for normally consolidated, un-cemented, quartz sand (Baldi et al. 1981)	48
Figure 5.2 Pile Capacity Analysis Result Graph	52

TABLE LIST

Table 3.1 Values of correlation factor w for the Dutch method	13
Table 3.2 Values of the factor c_{sf} by Schmertmann (1978)	15
Table 3.3 Values of k_s for different soil and pile types.....	18
Table 3.4 Values of k_c for different soil and pile types	19
Table 3.5 Friction angels δ between various foundation of materials and soil or rock	22
Table 5.1 Result of Cone Penetration Test	33
Table 5.2 Data analysis using The Dutch method	35
Table 5.3 Data analysis using Schmertmann & Nottingham method	37
Table 5.4 Data analysis using LCPC method	39
Table 5.5 Data analysis using α method	41
Table 5.6 Data analysis using λ method	43
Table 5.7 Data analysis using β method	45
Table 5.8 Data analysis using Meyerhof's method.....	47
Table 5.9 Data analysis using Briaud's method.....	51

ABSTRACT

ANALYSIS OF AXIALLY LOADED SINGLE PILE(CASE STUDY OF PORT DEVELOPMENT IN COAL MINING DIVA KENCANA BORNEO PROJECT, PT. ATLAS RESOURCES, EAST KALIMANTAN),

prepared by Ganesha Maghemila, SN: 06 13 12451, year of 2011, Civil Engineering Department, Engineering Faculty, University of Atma Jaya Yogyakarta.

In the construction project, foundation takes very important part. The main aim of the foundation is to distribute the load from the upper structure to the ground layer under the foundation. PT. Atlas Resources as a mining contractor has the project where located in the Siluq Ngurai Village, West Kutai, East Kalimantan. The name of the project is Diva Kencana Borneo Project which work on the coal mining. In coal mining, pile foundation can be used in the conveyor. Conveyor is tool used for distribute coal from one place to another place.

In this final project, the author wants to redesign pile foundation using Cone Penetration Test (CPT) data. There are a lot of method can be used to calculate the pile capacity. The CPT data are calculated using three ways, first is direct calculation using The Dutch method, Schmertmann's method, and LCPC method; second is the calculation based on the soil properties using α method, λ method, and β method; and third is the calculation based on CPT - SPT correlation using Meyerhof's method and Briaud's method.

Data analysis of those methods gives different result. All of the results of the analyses are sufficient to resist the load that has to be carried by pile foundation. Maximum total load is not more than 50 ton. The Dutch method, Schmertmann's method, and LCPC method are the most suitable methods for pile design. The calculation based on the soil properties using α method, λ method, and β method give the highest value among the other methods. In this case, model of the S_u give big influence in the calculation. The calculation based on CPT - SPT correlation using Meyerhof's method and Briaud's method give the smallest value among the other methods. Conversion of the q_c to the N value take important part in this section. The conversion can't be same interpret with the N value gotten directly from the field.

Keywords : Pile capacity, Cone Penetration Test, calculation using soil properties, calculation using CPT-SPT correlation.