



LOCATION

COORDINATES

**GROUND ELEVATION** 

**BOR MACHINE TIPE** 

TOTAL DEPTH (-m)

METHODE OF BORING

# Wira Nusantarabumi

SOIL SIMAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

Ø 89 mm

F.S.	On Urban Arterial Road System	Devolopment Project in	Jakarta Metropolitan Area

CASSING

Jl. Hayam Wuruk

0.76

Rotary Core Drilling

40.65

YBM - YSO.1HE

karta Metropolitan Area	MB No : NS . 94-01
DATE COMMENCED	January 25th 1994
DATE COMPLETED	January 27th 1994
SOIL & MAT. ENGINEER	D. Sukarta Ir.
BOR MASTER / DRILLER	Ismail / Uhen
SUPERVISOR	Yosuke Sasaki

Formula   Part   Part		2	3		4	5	6	7	8	9					1	n.	ال							<u> </u>	
Company   Comp	<u>.</u>	_	•				· ·					TA:	10.4	. n						~		<b>T</b>		_	
DESCRIPTION & CLASSIFICATION   Section   CLASSIFICATION   CLASSIFICATION	ן בֿ	_				VISUAL			ا با	u-)	3	PIAN										1 6	:S	I	
1   1.50   Soft   Sandy Clay with a little gravels   medium to low plasticity   Cft   Clay = 80%   Soft   Corgonic Clay with a little Sand and mollucs   poorty graded   Sy   with mollucs   with mollucs   poorty graded   Sy   with mollucs   w		ESS	ندا	h-				E G								_			_						╝
1   1.50   Soft   Sandy Clay with a little gravels   medium to low plasticity   Cft   Clay = 80%   Soft   Corgonic Clay with a little Sand and mollucs   poorty graded   Sy   with mollucs   with mollucs   poorty graded   Sy   with mollucs   w	PTH	CK	3		`Σ	CLASSIFICATION		Ä-i		РТН	15													_	
1.50   gravels   medium to high plasticity, CLI (Clay = 80%, Class and = 15%, gavets = 5%)   S.1   2   2   2   4   6   6	a DE	T.H	G.					Æ		3 <b>a</b>	1 I	"		2	<u> </u>	l		<i>χ</i> υ 	,	30		10	5	,0 	
Institity   CH   Clay = 89%   New   Serve	1	1,50								1							$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
Very loose-loose; Sand   fine   Blackish   Size	2			2		plasticity, CH, Clay = 80%,	1			, -	,						$\parallel$	#	Щ	#	$\parallel$	#	$\prod$		Щ
Section   Sect						time sand = 15%, gravels = $5%$					2	2	4	- 6	₩	╫	H	+	$\mathbf{H}$	H	₩	Н	#	₩	₩
Second   S	3-	3.50								3_	1	1	2	3	$\prod$	Щ	$\prod$	$\prod$	Щ	$\mathbb{H}$	Щ	$\prod$	$\prod$	$\prod$	Щ
Loose   Sifty Sand (crganic), fine sand   with mollucs   Sand   Specific San	4_			VI.	i pa eng	graded, SP, with mollues Sand			3.45	4_					Ш	Ш	Щ	#	Щ	#	Щ	Ш	Ш		Ш
10	5_			רות	) - Day 3 - 0	= 90%, mollucs = 10%.			_	5_	ı	i	2	3		$\left\  \cdot \right\ $	+	H	H	╢	Ш	+		H	Н
Soft   Cryanic Clay with a little Sand and mollucs   high plasticity   CH   Clay = 85%   Sand and mollucs   high plasticity   CH   Clay = 85%   Sand and mollucs   high plasticity   CH   Clay = 85%   Sand and mollucs   high plasticity   CH   Clay = 85%   Sand = 10%   mollucs = 5%   Sand = 10%   mollucs = 10%   m	6	2.00	6.50	-			Blackish			6 "							$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
Sept	,-		•	SAC		poorly graded, SP, fine Sand =			<b>S.4</b>		1	1	2	3		Ш	#	$\parallel$	╫	╬	Ш	Ш	Щ	╫	Ш
Soft ; Organic Clay with a little Sand and mollues , high plasticity , CH , Clay = 85%, Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand and mollues , high plasticity , CH , Clay = 85%, Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand and mollues , high plasticity , CH , Clay = 85%, Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand and mollues , high plasticity , CH , Clay = 85%, Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand and mollues , high plasticity , CH , Clay = 85%, Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand and mollues , high plasticity , CH , Clay = 85%, Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand and mollues , high plasticity , CH , Clay = 85%, Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand and mollues , high plasticity , CH , Clay = 85%, Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand and mollues , high plasticity , CH , Clay = 85%, Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand = 10% , mollues = 5%.  Soft ; Organic Clay with a little Sand = 10% , mollues = 5%.  Soft i UD2   12.00   12	-			ö					6.45	-					╫	$\ $	H	#	₩	#	╢	Ш	H	₩	₩
Sand and mollucs   Sand   Sa	8-	1.60							<b>1.5</b> 0	8_					Щ	$\prod$	$\prod$	$\prod$	Щ	$\prod$	Щ	$\prod$	$\prod$	$\prod$	Щ
10	9_								S.5	9_	1	2	3	5		Ш	Ш	Ш	Ш	Ш	Щ	Ш	Щ	Ш	Ш
11	10								1	10						Н	Н	H	+ -	H	Ш	#	Н	H	Н
Soft   Organic Clay with a little   Sand and mollucs   high plasticity   CII   Clay = 85%   Reddish grey   12   12   3   5   1   2   3   5   1   2   3   5   1   1   2   3   5   1   1   2   3   5   1   1   2   3   5   1   1   2   3   5   1   1   2   3   5   1   1   2   3   5   1   1   2   3   5   1   1   2   3   5   1   1   1   1   1   1   1   1   1	11 -									11	3	3	3	6	Ш		$\prod$	$\parallel$	$\prod$	$\prod$	П	$\prod$	$\prod$	Щ	П
Sand and mollucs   high plasticity   CII   Clay = 85%   Reddish grey   Sand = 10%   mollucs = 5%	1, -	C 40		CK		G 6 0 100 100 1000	l							:		Ш	Ш	#	H	$\parallel$	╫	₩	Щ	Ш	Ш
15   16		0.40						_		12_	1	2	3	5		╫	₩	#	₩	╫	₩	₩	╫	₩	Н
15   16	13-			ANIC			l		1	13		7			Ш		$\prod$	$\parallel$	Щ	#	$\prod$	$\prod$		Щ	Щ
16	14		ļ	ULC					5.8	14_	1	2	3	5		Ш	Ш	$\parallel$	Ш	$\parallel$	Ш		Ш	Ш	Ш
Very staff to Hard; Taffaceous Sandy Silt , medium to low plasticity , ML , Silt = 80% , fine sand = 20%.  Very dense; Sandstone , fine to coarse grain , SW , weak to medium cemented.  Very dense; Sandstone , fine to coarse grain , SW , weak to medium cemented.  Very dense; Sandstone , fine to coarse grain , SW , weak to medium cemented.  Very dense; Sandstone , fine to coarse grain , SW , weak to medium cemented.  S.10  16.59  S.10  18  S.11  18  19  20  S.12  20  7 16 26 42  19.99  21.00  S.13  22.79  23  24  S.14  23  29  55  ->60  S.14  22.75  24  S.15  11 15 18 33	15_			Ð						15						N	$\mathbb{H}$	#	╢	H	H	#	,,,,,,	$\parallel \parallel$	Н
Very staff to Hard; Taffaceous Sandy Silt , medium to low plasticity , ML , Silt = 80% , fine sand = 20%.  Very dense; Sandstone , fine to coarse grain , SW , weak to medium cemented.  Very dense; Sandstone , fine to coarse grain , SW , weak to medium cemented.  Very dense; Sandstone , fine to coarse grain , SW , weak to medium cemented.  Very dense; Sandstone , fine to coarse grain , SW , weak to medium cemented.  S.10  16.59  S.10  18  S.11  18  19  20  S.12  20  7 16 26 42  19.99  21.00  S.13  22.79  23  24  S.14  23  29  55  ->60  S.14  22.75  24  S.15  11 15 18 33	16			OUN			Yellowish			16	4	7	10	17			1	$\parallel$		$\prod$	П	$\parallel$	$\prod$	Щ	$\prod$
Plasticity , ML , Silt = 80% , fine sand = 20%.   Plasticity , ML , Silt = 80% , fine sand = 20% , fine sand	17	2.45		٨			grey		16.50						<b> </b>	Ш	#	d T	Ш	#	╫	#	Щ	Ш	Ш
19		3.45								1′-	6	8	12	20	₩	₩	₩	$^{\dagger}$	₩	#	H	Ж	#	₩	₩
19	18 -						brown			18_	8	17	24	41		$\prod$	Щ	$\prod$	Щ	1	H	$\prod$	$\prod$	Щ	П
20 7 16 26 42	19_								18.45	19_	Ť	- 1		-7.1	Щ	Ш	Щ	#	Щ	Щ	Ш	$\parallel$	Щ	Щ	Щ
23   23   29   55   - >60	20_			NO						20	7	16	26	42	₩	$\ $	H	H	$\parallel \parallel$	H	H	Ц	$\mathbb{H}$	╫	₩
23   23   29   55   - >60	21 -	3,55		MA T		Very dense : Sandstone . fine	Yellowish		1 1	21		•				$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$		ľ	K	$\prod$
23   23   29   55   - >60	72.			FOR		to coarse grain, SW, weak to	1		S.13		60	-	-	>60		╫	#	$\parallel$	Ш	Ħ	╫	#	$\parallel$	╫	Ħ
S.15 11 15 18 33	-					meaium cemented.				. 4.2					₩	$\ $	₩	#	Щ	1	₩	H	H	₩	$\mathbb{H}$
S.15 11 15 18 33	23			NTE						23	29	55	-	>60	Ш	$\prod$	#	4	Щ	$\prod$	$\parallel$	$\parallel$	Щ	Щ	Щ
	24			GE	1111146666555	. W			24.0	24					Ш	Ш	#	#	Ш		∄	Ш	#	lt	$\prod$
	25									25	11	15	18	33	╂╫┦	$\prod$	$\prod$	+	$\prod$	H	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$



SOIL 8 MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Aterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: NS. 94-01

1	2	3		4	5	6	7	8	9	*				1	0								. 5	Į
-m)	m )	<u>-</u>					*		Ē	S	TAN	DAF	D P	EN	E	r <b>R</b> .	Α.	ΓIC	AC	١.	TE	S	Γ	
-	)	<b>ш−</b> }			VISUAL		Thin-Walled Tube	¥o.	÷				STN											ļ
	THICKNESS	نـ	L.	101	DESCRIPTION &	я.	allec	1					1										_	4
DEPTH	CKN	G.W.L.	- z	₩ E	CLASSIFICATION	070	N-ri	P.T	DEPTH	15	N V	ALUE 45			10		1BI 20		OF 30		LO 40	WS 5		
DE I	₹	Ö	5	SΥ		CC	F	ဖ်	30	Cm	Cm	Cm	N	111	Ï		Ī	<del></del>	Ï	137	Ĺ,	اب		
26 -	3.00				Very Stiff to Hard; Tuffaceous	Grey		25.50 <b>S.16</b>	26 ~	8	12	14	26	+	╢	$\mathbb{H}$	╢	$\parallel$	$\mathbb{H}$	₩	╢	╢	╫	
-					Clayey Silt, medium plasticity, ML, Clay = 75%, Silt = 25%	City		25.95							#		Ħ	#	۲	${\mathbb T}$	$\parallel$	$\parallel \parallel$	$\prod$	1
27_								27.00 <b>S.17</b>	27	12	17	31	48	+++	╫		╫	#	╫	₩	H	╢	╫	H
28_		·			Dense; Sandstone, fine to	<b>.</b>		27.45	28						#	Щ	Ш	$\parallel$	Щ	Ш	Щ	Щ	Ш	$\downarrow$
29 -	3.45				medium grain , poorly graded ,	Yellowish grey		21.50 S.18	29 .	16	22	25	47	+++	╫	H	╫	++-	H	++1	#	#		1
-					SP , medium to strongly comented.			28.95	30					$\prod$	$\ $	I	$\prod$	$\prod$	$\prod$	$\prod$	K	$\prod$	$\prod$	$\prod$
30_	-				·			30.0 <b>S.19</b>	_	10	14	16	30	Ш	#	Ш	$\parallel$	#	K	$     \      \  $	$\parallel \parallel$	#	+	$\parallel$
31_			S.					30.45 31.50	31_					Щ	$\prod$	$\prod$	$\prod$	#	₩	$\Psi$	H	Щ	$\mathbb{H}$	#
32_	1		FORMATION					S.20	32_	10	17	22	39	Щ	$\parallel$	Щ	#	$\parallel$	$\parallel$	#	$\downarrow \downarrow$	Щ	Ш	#
33	]		OR					31.95 33.0	33							Н	╫	╫	-	X	H	#	Н	H
1 -								S.21	34	10	14	16	30		П		$\parallel$	$\parallel$	1	$\prod$	$\prod$	$\parallel$	$\prod$	
34_	-		GENTENG					33.45 34.50	34 -	1				₩	₩	╫	╫	╫	╁	╫	╫	+	Ш	H
35_	1		GE)		Very Stiff to Hard; Tuffaceous	V-9		S.22 34.95	35_	9	12	17	29	$\prod$	Щ	Ш	$\prod$	$\prod$	Į	$\prod$	$\prod$	$\prod$	Ш	
36	10.25	١.			Clay, high plasticity, CH, the bottom with a little sand, Clay	Yellowish grey		36.0	36					Ш			#	Ш	∄	Щ				Ш
37	1				= 90 %, Sand = 10 %.			S.23 36.45	37	9	15	21	36		Ш	$\parallel$	$\parallel$	-	$\  \ $	$\mathbb{A}$	₩		-	$\mathbb{H}$
1 -	1							37.50	] -	1				Ш	<u> </u>		#	$\prod$	$\parallel$	#	V,		Ш	⇈
38_	-					ļ		S.24 37.95	38_	12	16	25	41	₩	╢	$\prod$	#	₩	₩	₩	₽	$\ \cdot\ $	╫	H
39	1							39.0	39_	1	2.1	20				$\parallel$	#	$\prod$	$\parallel$	$\prod$	$\parallel$			Щ
40:	4				·			<b>S.25</b> 39.45	40	18	24	30	54	╫		$^{\dagger}$	H	$\parallel \parallel$	∦	$\parallel \parallel$	$\prod$	$\prod$	$\ $	$\ $
	1							40.50						$\ $			1	1	$\prod$	Щ	$\prod$		$\prod$	
-	]			END OF	BORE HOLE ( - 40.65 m )			40.65	1 -	ود	<u> </u>	-	<b>200</b>		1	#	Щ	Ш	#	₩	#	Ш	Ш	Ш
42 _				1					42 -	1		Ì		$\parallel \parallel$	H	╬	₩	H	#	₩	₩	₩	₩	$\mathbb{H}$
43 _	1								43_	1				$\parallel$	Щ	$\parallel$	Щ	Щ	#	Щ	$\parallel$	$\parallel \parallel$	$\parallel$	Щ
44	-								44_	1				$\parallel$	H	$\coprod$	╫	$\prod$	$\prod$	╫	₩	╫	₩	$\coprod$
45	7								45	7					$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
43-	}								-	1				H	$\parallel$	$\parallel$	Ш	╫	$\parallel$	$\parallel$	#	₩	₩	╢
46_									46	-				$\prod$	$\prod$	$\mathbb{H}$	$\prod$	#	$\mathbb{H}$	₩	$\parallel$	$\coprod$	$\prod$	╢
47						1			47	1				Щ	#	Щ	Щ	#	Щ	Щ	#	Щ	Ш	Щ
48	+								48	4				$\parallel$	#	₩	₩	#	$\ $	$\parallel \parallel$	$\parallel \parallel$	$\parallel \parallel$	$\parallel \parallel$	╢
'	1	1.	1						-	1			ļ	Щ	#	$\ $	$\parallel$	#	Щ	$\parallel$	$\ $	$\parallel$	$\parallel$	$\parallel$
49.	-								49	-				$\mathbb{H}$	╫	₩	₩	#	₩	#	#	₩	╫	₩
50	1_			<u> </u>		<u> </u>	<u></u>		50	1	<u> </u>	<u> </u>	<u></u>				Ш	$\coprod$	Ш	$\coprod$	Ш			Ш



**EXPLORATION BOR LOG** 

SOIL 8 MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

F.S. On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: NS: 94-0		
MAIN MADE IN MADE IN	_	
1110 140 1 140 1 04 0	-	

LOCATION	Jl. Hayam Wuruk	DATE COMMENCED	February 5th 1994
COORDINATES		DATE COMPLETED	February 7th 1994
GROUND ELEVATION	2.36	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	32.40	CASSING	Ø 89 mm

1	2	3		4	5	6	7	8	9		<u>.</u>			1(	0										ı
( - m )	( w )	(-m·)		OL	VISUAL DESCRIPTION &	œ	Thin-Walled Tube	No.	(-m)	S	TAN		D PE								Tı	ES	T		
Ŧ	THICKNESS	9.W.L	<b>⊢</b>	N N	CLASSIFICATION	010	-Val	P. T.	DEPTH	_	N VA						٠.					W			
DEPTH	THE	0	2	λs		၀၁	Ē	ທ	<u> </u>	15 Cm	- 1	45 Cm	N.		10 		20 		30		40	•	50 		
1_								6.4	1_	1	2	4	_			#		<del>  </del>			-	$\frac{\parallel}{\parallel}$			1
2		2.50			Soft to medium; Sandy Silt with a little Clay, medium to	Brownish		S.1 S.2	2_	1	1	3	6 4	V.	Ш	$\parallel$	Ш	Щ	₩	Щ	Щ	Ш			1
3	5,00	*			high plasticity, MH, Silt = 60 %, Sand = 25 %, Clay = 15	grey to Blackish	UD.1 2.50	S.3	3_	2	3	4	7	1	Ш	Ш		Ш	$\prod$	Ш	Ш		Ш		
4	1				%, Sand - 23 %, Clay - 13 %.	grey	UD.2	S.4	4 -	1	2	3	5	1	#	H	$\  \ $	Н	#	H		$\mathbb{H}$	$\ \cdot\ $	╫	
<u> </u>	1		OIL				5.00	S.5 S.6	5	2	3	4 2	7	1	$\prod$	$\prod$	T	$\prod$	$\parallel$	Щ	$\blacksquare$	$\prod$	$\prod$	$\prod$	1
-		1	S				UD.3		6 -						\$	H	#	Щ	#		$\parallel$	Ħ	<b>       </b>	Ħ	d
6-			DUAL				5.45	S.7 S.8	-	3 4	5	9 7	15 12	Ш	#	1	#	Ш	#	╫	#	Щ	╫	╫	H
7-	Ì		ESID					S.9 S.10	7_	5	6	8	6 14		1	H	+	H	#	Ш	#	$\parallel \parallel$	H	#	H
8_	6.95		ď		Medium to stiff; Silty Clay,	Reddish brown		S.11 S.12	8_	3	5	8	13 13		$\mathbf{H}$	$\blacksquare$	$\parallel$	$\prod$	H	$\prod$	$\parallel$	H	$\mathbb{H}$	#	H
9_	""				high plasticity , CH , Clay = 65 % , Silt = 30 % , Sand = 5 %.	to Yellowish		S.13 S.14	9_	3	5	6	10		H	$\prod$	$\parallel$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	#	H
10_	1					brown		S.15	10_	2	2	3	5	ľ	#	$\prod$	#	#	$\prod$	$\prod$	$\prod$		₩	#	
11	}							S.16 S.17	11	5	1 8	3 11	4 19		<u>H</u>	∄	┧	╫	Ш	Ш	Ш	Ш	╢		H
12	}						1	S.18 S.19	12	2	3	8 6	11 9	$\prod$	H		$\frac{1}{2}$	#	Ш	H	Ш	Ш	Ш	Ш	$\frac{1}{2}$
13	1	1			Stiff to hard; Tuffaceous Silty	Grey	]	S.20 S.21	13	6	3 14	11 22	14 36		$\prod$	H	$\blacksquare$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$		$\prod$
14	3.05				Clay , medium to high plasticity, CH, Clay = 75 %,	to		S.22 S.23	14	7 8	13 12	20 16	33 28	$\ $		$\parallel$		$\parallel$	$\prod$	7	П	П	$\parallel$		Ħ
-	1				Silt = 20 %, Sand = 5 %.	Yellowish grey	<b>'</b>	S.24	] ~	8	11	15	26		╫	$\forall$	H	+	Ħ	$\parallel$		₩	$\parallel$		ļ
15_	_	1		188	<u> </u>		-	S.25 S.26	]	14	8 32	16 35	24 >60	╫	Ш	#	Ħ	Ħ	Ħ	#	$\parallel \parallel$	╫	#		Ħ
16 -	-				Very dense; Gravels with	Blackish		S.27 S.28		52/8 55/5			>60 >60	╫	H	#	╫	$^{+}$	₩	#	H	₩	H	₩	+
17_	4.00		Ξ	1	mixed cobble and Sand, well graded, GW, gravels = 60 %,	grey		S.29 S.30		51/5 50/3	- 1		>60 >60	$\prod$	$\prod$	H		$\prod$	H	$\mathbb{H}$	₩	Щ	H	$\frac{ \cdot }{ \cdot }$	ļ
18_	_		2		cobble = 30 %, Sand = 10 %.				18	25/2			>60	₩	$\prod$	#	Щ	H	╫	$\coprod$	₩	#	$\prod$	₩	ļ
19	<u> </u>		n A					5.31	] 19	T				╫	₩	Щ	Ш	Ш	Ш		Ш	Ш	Щ	Щ	+
20	_		ALL		<i>.</i> :			S.32	20	57/5			>60	╢	$\coprod$	Ш	╢	Ш	₩	Ш	╢	Ш	Ш	╢	1
21	-				Very dense; gravelly coarse			S.33	21	35/2			>60	╢	∄		$\prod$	H	╢	$\coprod$	$\coprod$		╢	$\ $	+
22	4.20	· ]			Sand, Angular to sub angular, Sand = 90 %, Gravel = 10 %.	Black		S.34	22	45	52/10		>60	╢	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	H
23	7							S.35		40	54		>60	$\parallel \parallel$	#	$\parallel$	#		#			$\parallel$	$\prod$	$\parallel$	#
'	┪—	_		1. (1. (1. (1. (1. (1. (1. (1. (1. (1. (			-	8.36	<u>.</u>	47	51		>60	<b>#</b>	#	╫	#	ľ	#	$\parallel$	#	$\parallel \parallel$	卌	$\parallel$	+
24	-							8.37		35	54		>60	$\parallel$	#	╫	#	H	#	╫	+	╫	╫	H	$\parallel$
25	1_					<u> </u>			25				<u> </u>	Щ	Ш	Щ	Ц	Щ	Ш	Ш	Ш	Щ	Ш	Ш	Ц



SOIL 8 MAT INVESTIGATIONS + TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Aterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: NS. 94-02

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•	)	)		7	VISUAL DESCRIPTION &		Thin-Walled Tube	No.	ت ا		( A	STM	-	D.1	58	6	)		
=	THICKNESS	G.W.L.	<b>–</b>	MBO	CLASSIFICATION	LOR	-Wall	. ·	Ŧ		/ALUE							.ow	s
DEPTH	THIC	0	2 3	λS	:	0 0	Ē	S.P	DEPTH	15 30 Cm Cm	45 Cm	N		10	20	30	4	؛ ٥	50
26	4.10				Very dense; Silty Sand, fine grain, poorly graded, SP,	Black		S.38	26_	22 31	22	53		Ш	Ш	Ш			
27_					angular to sub rounded grain shape, Sand = 70 %, Silt = 30			8.39	27_	25 40		>60			Ш	Щ			
28_			2		%			S.40	28_	41 54		>60			Ш	Щ			
29_	3.00		r n v		Hard; Tuffaceous Silty Clay, medium plasticity, CL with a	Grey		S.41 S.42	29_	25 35	20	>60 55				╫			$\square$
30	3.00		ALL		little mollucs, Clay = 70 %, Silt = 25%, mollucs = 5%	Gley		S.42	30 °	47 52/10		>60				╫			$\!$
31_								S.44	31_	12 17	18	35		<b> </b>	╫	╫			
32_	1.40				Hard; Organic Clay, high plasticity, CH, Clay = 100%	Black		S.45	32	17 22		56							
33				E	ND OF BORE HOLE ( - 28.60)	m.)			33_	-					$\blacksquare$	$\prod$		$\prod$	
34_									34_	}						$\prod$			
35_									35_	]				$\prod$		$\prod$			
36						-			36	1			++	$\mathbf{H}$	#	╫			
37					·				37_	1					╫	╫			
38_									38_	1				₩	╫	╫			
40				·					37 -   40 ·	1				╫		╫			
41			-						41	1					#				<b>†</b>
42									42	1								#	
43									43	]					$\prod$				$\prod$
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46_									46_	1				$\prod$	$\prod$				
47_						1			47_	1		•		$\prod$		Ш			
48_									48	1			111						
49_	1								49_	1									
50	<u> </u>	<u> </u>							50	<u> </u>				Ш	∭			Ш	



EXPLORATION BOR LOG

SOIL & MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

F.S. On Urban Arterial	Road System Devolopment Pr	oject in Jakarta Metropolitan Area	MB No : NS , 94-03

LOCATION	Jl. Abdul Muis	DATE COMMENCED	February 8th 1994
COORDINATES		DATE COMPLETED	February 10th 1994
GROUND ELEVATION	1.84	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	32.40	CASSING	Ø 89 mm

1.	2.	3		4	5	• 6	7	8	9					1	0						1	'		E
( -m )	( E	( [					e e		(m-)	9	TAR	IDAG	RD P	ENI	Ė	rD	۷.	T14			Te		_	7
=	_	E.			VISUAL		Thin-Walled Tube	ا بر	-	`	, i Air		ASTA									ا ج.	ļ	
	THICKNESS	:		OL	DESCRIPTION &	oκ	Pe	. No.		,					_		<u> </u>							
Ŧ	X	G.₩.∟	<u>-</u>	MB	CLASSIFICATION	10	-Va	P.T	ŧ		N v				N	UN	18	ER	O	F 8	LO	Ws	š	
ОЕРТН	Ĭ	0	2	sΥ		CO	Thir	S.F	DEPTH	15 Cm	30 Cm	45 Cm	N		10		20 		30 I	4	40 I	- 5(	0	
			32		Stiff; Sandy Silt, low plasticity,					CIII	CIII	Cm		Ш	$\dagger$				$\mathbf{h}$			П	Ш	$\forall$
1 -	1.45	₩	9		ML, Silt=80%, fine sand=20%	Brownish black		S.1 S.2	1_	5	5	6	11	$\prod$				H	Щ		Ш	Ш	Щ	$\downarrow \downarrow$
2_		-			Medium ; Silty Clay , high	DIACK	2.00	S.3	2 _	2	2	3	5		1				$\parallel$	Ш	$\parallel$	$\prod$	+++	$\parallel$
3	1.65		ALLUVIUM		plasticity, CH , organic characteristic , Clay = 70% ,	Black	UD.1	5.4	3 "	2	3	5	8		$\ $			$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	$\prod$
			¥		Silt = 30 %.		2,50	\$.5	_	2	3	4	7		dt.		+	$\dagger$	$\parallel$	H	╫	₩	Ш	$\dagger$
4-			i.			Yellowih		S.6 S.7	4_	5 2	6·- 3	8	14	++	¥	牉	$\blacksquare$	$\parallel$	Щ		Щ	Ш	Щ	$\prod$
5_	3.35				Medium to stiff; Tuffaceous	grey to	5.00	S.8	5_	2	3	4	7		1	$\parallel$	ŀ	$\parallel$	Ш		$\parallel$	Ш	Ш	$\frac{1}{2}$
6					Silty Clay, high plasticity, CH, Clay = 80%, Silt = 20%.	Reddish grey	UD.2	S.9	6	2	2	4	6		$\ $	$\prod$		$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	$\prod$
						<b>19</b> 44)	2.50	S.10	_	3	3	4	7		#			1	Ш	╫	╫	₩	##	Ħ
7_								S.11 S.12	7_	2	3	7	6 10	118	V	1		1	$\parallel$		Щ	Ш	Щ	$\prod$
8_					Medium to very stiff;	Yellowih		S.13	8_	3	7	8	15		ľ	1		$\parallel$			Ш	╫		
9 -	4.05				Tuffaceous Clayey Silt , low plasticity , ML , Silt = 70 % ,	grey to Blackish		S.14 S.15	٠,	3	8	8	16 15		$\ $	I		$\prod$	$\prod$		$\prod$	Щ	$\prod$	$\prod$
١٦					Clay = 30 %.	grey		S.16	_	11	20	28	48		╫	HŦ	Ħ	Ħ	╫	₩	₩	₩	+	$\dagger$
10								S.17 S.18	10_	11 8	23 8	27 13	50 21		$\prod$	$\prod$	$\prod$			Щ	H	$\blacksquare$	Щ	$\prod$
11		1		***************************************		<del></del>		S.19	11	10	13	15	28				H	H	╢	$\coprod$	$\prod$	H	+	
12			¥					S.20 S.21	12	9 15	11 52	12	23 >60	$\prod$	$\prod$		П	1	H	H	$\prod$	$\prod$	$\prod$	$\blacksquare$
			ROCK				•	S.22	_		53/10		<i>-</i> 700 >60		╫	╫	Н	╫	H	₩	₩	╫	+	$\dagger$
13								S.23 S.24	13	29 47	51 48	20	>60	Ш		Щ	П		Щ	Ш	Ш	Щ	Щ	$\prod$
14			VULCANIC		•			8.25	14		56/10	20	>60 >60		$\parallel$			$\parallel$		╫	H	₩	$\parallel \parallel$	$^{\dagger}$
15			/UL					S.26 S.27	15	22 58	52/5		>60 >60		$\ $					$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
16					Medium to very dense ,	Black		S.28		60			>60		1	Ì				Ш		╫	$\parallel$	$\parallel$
1.0	11.50		OUNG		Tuffaceous Silty Sand, poorly graded, SP, fine to coarse grain	to Yellowish		S.29 S.30	16_	55/10 53/10			>60 >60	Ш	∦	1	Н	H	Ш	Ш	Щ	₩	$\prod$	
17_			λ.		, locally comented, Sand = 70 %, Silt = 30 %.	grey	ĺ		17				-700					H	1	$\parallel$	H		111	$\parallel$
18					%, Sin = 30 %.			S.31	18	51/5			>60	Ш	╢	Щ	Ц	$\prod$	$\prod$	Ш	$\prod$	Ш	$\prod$	$\prod$
19								S.32		20	52		>60		#	Ш	Ħ	$\parallel$	$\parallel$	╫	$\parallel \parallel$	$\prod$	Ш	#
119-								8.33	19	15	39	20	59	$\mathbb{H}$	╫	₩	4	$\coprod$	Ш	4	₩	$\coprod$	Ш	4
20									20						#		1	$\parallel$	Ш		Ш	Ш		#
21					· •			S.34	21	10	29	23/10	>60		$\prod$	$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	$\prod$		
, -								S.35	_	20	33	27/5	>60		$\parallel$	╫	$\parallel$	$\parallel$	╫		₩	$\parallel \parallel$	Ж	$\sharp$
22		-					-	S.36	22 _	15	20	25	45		$\prod$	$\prod$	$\prod$	$\prod$	$\prod$		$\prod$	∭	4	
23_					Stiff to hard; Organic Clayey				23				43		$\parallel$	Ш	$\parallel$				州	$\prod$		
24					Silt, medium to low plasticity,			S.37	24	7	15	12	27		$\prod$	$\prod$	$\prod$		1	$\prod$	$\prod$	$\prod$	$\prod$	I
	5.00				ML, Silt = 70%, Clay = 30%	Black		S.38	_	8	9	12	21		$\parallel$		þ	1	H	₩	₩	₩	+	+
25	L	<u> </u>			CONTINUED	<u>l</u>	<u> </u>	L	25	J				Ш	I		N		Щ		Ш	Ш	Ш	$\prod$



**EXPLORATION BOR LOG** 

SOIL'S MAT INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

F.S. On Urban Aterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: NS: 94-03

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l ₹	3	G.W.L	-  2	SYMB	CLASSIFICATION	010	2	۱.	DEPTH		30 45			10	20	30	40		50	1
DEPTH	₹	o .	5	SΥ		ŏ	₹	S.	20	1	Cm Cm	N		Ĭ	ī	Ĩ	٠Ï		Ĩ	
-	1	<del>                                     </del>				<u> </u>		S.39			6 8	14		117	Ш	Ш	Ш	Ш	Ш	
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27	-	•	Š					S.40	27 -	6	8 10	18		$\{ \} \} \}$	₩	╫	╫	HH	HH	Н
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	]	ĺ	VULCANIC		·	]	İ	S.42	29 -	15	22 24	46	414	$\parallel \parallel \parallel \parallel$	$\prod$	╁╁╂╁		$\mathbb{H}$	₩	Ш
29_	4		E E		Very Stiff to hard; Tuffaceous	Blackish grey		S.43		13	23 24	47		╫╢	╫╫	╫╫	╫	╫	₩	Н
30	5.40				Clay, with a little organic, high plasticity, CH, Clay =	to		3.40	30	10		-1/		<b>1</b> 111	††††		Ш		Ш	Ш
-	1		NG		100 %.	Greensih		S.44	]	15	25 30	55	$\prod$	$\prod$	Ш	Ш	Ш	Ш	$\prod$	
31	] .	l	YOUNG			grey		0.45	31_	25	40 18	58	₩	╂┼┼	-	╫	Ш	++++	##	Ŋ
32	-	1	_					S.45	32	23	40 18	20	HH	1111	-	+++	╫	╁╂╂	+++	-
·	┧					<u> </u>		9.46		27	41 21/10	>60		Ш	Щ	Ш	Щ	Ш	Щ	Щ
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42									42_	]			Щ	Щ	Щ	Ш	Ш	Щ	Щ	$\prod$
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48	4								48	4			HH	╂╂	+}}	╫╫	╫	$\parallel \parallel \parallel$	₩	#
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SOIL 8 MAT INVESTIGATIONS - TOPOGRAPHIC CURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area

MB	No	;	NS		94-04	
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TOTAL DEPTH (-m)	28.60	CASSING	Ø 89 mm
BOR MACHINE TIPE	YBM - YSO.1HE	SUPERVISOR	Yosuke Sasaki
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
GROUND ELEVATION	3.91	SOIL & MAT. ENGINEER	D. Sukarta Ir.
COORDINATES		DATE COMPLETED	January 22th 1994
LOCATION	Tanah Abang	DATE COMMENCED	January 20th 1994

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Ŧ	X	N.	-	8	CLASSIFICATION	LO	<b>₹</b>	1	Ŧ	<u> </u>	N VA	ALUE			N	UN	ИB	EF	t C	F	BLO	OW	/S	
DEPTH	THICKNESS	G.W.L	z	> 0		၀	Thin-Walled Tube	S.P	DEPTH	15	30	45	N		10	)	20	)	30	)	40		50	ı
$\vdash$	0.50			.,		Black	-	- <b>"</b>		Cm	Cm	Cm		Н	╁	Ш	╫	П	$^{+}$	П	+	T	+	ᆔ
1_1					Loose, Gravelly Sand, well graded, SW, Sand = 80%,	Brownish			1	-				Н	$\parallel$	╂╂	╫	H	╫	Ш	#		#	HH
2	1.00				gravel = 20%	black		1.50						$\prod$	$\parallel$				$ lap{1}$	Ш	Ш	П	Ш	Ш
*-					Soil and organic matter		2.50	<b>S.1</b>	2_	1	1	1 -	2	H	₩	Ш	#	H	#	Ш	Щ	Н	₩	Щ
3			M				UD.1	3.00	3	<u>L</u>				Н	$\parallel$	$\parallel \parallel$	╫	H	#	╫	###		₩	HH
4 -	4.50	}	- >		Soft to stiff; Tuffaceous Clay,	Grey	3.00	S.2		2	2	3	5	$\Box$	$\prod$	Щ	$\parallel$	Π	I	Ш	Ш	П	Ш	Ш
'	4.50		_		high plasticity, CH, Clay =	to Brownish		3.45 4.50	4_					Ш	₩	₩	╫	₩	╫	$\mathbb{H}$	##	Н	₩	HH
5_			7 7		100 %	grey		8.3	5_	4	5	6	11	Ш	1	∭	$\dagger$		#	╁╫	#	#	#	Ш
6			A					4.95	6 -					Ш	A	Ш	$\prod$		$\prod$	П	$\prod$	$\prod$	$\prod$	Щ
		6.70	<del>ا</del> ا					6.00 S.4	,	<del>                                     </del>	1	2	3	Ш	#	╫	╫	╫	#	₩	#	╫	╫	HH
7_		<b>*</b>	OAST					6.45	7_				~	Ш	#	Ш	$\parallel$		$\parallel$	Ш	Ш			Ш
8 -	4.10		C		Soft to medium; Organic Clay with a little Sand, high	Greyish		7.50 <b>S.5</b>	8 -	<del>├ ,                                   </del>	2	3	5		$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	H	$\prod$	Ш
					plasticity, CII, Clay = 95 %,	black		7.95				3	5	Н	╫	₩	╫	H	#	₩	₩	╫	₩	HH
9_					Sand = 5 %.			9.00	9_					Ш	1	Ш	1		1	Ш	Ш	Ш	Ш	Ш
10								9.45	10	1	1	3	4	Щ	Щ		$\parallel$	<b>  </b>  -	$\parallel$	$\parallel \parallel$	Щ	Щ		Ш
			Γ			·		10.50						Н	╢	₩	╫	Н	#	₩	₩	++	#	Ш
111_								8.7	11_	2	3	5	8	Щ	V	Щ	#	Ц	#	Ш	Ш	Ш	Щ	Ш
12					Stiff to very stiff; Tuffaceous			10.95 12.00	12 -					Ш	1	igwedge	$\parallel$	Ц.	$\parallel$	₩		1	H	Ш
	4.90				Sandy Silt, low plasticity, ML	Blackish		5.8		4	6	10	16	Ш	╫	X	#	H	#	₩	1	#	╫	₩
13					, Silt = 80 % , fine Sand = 20	grey		12,45	13_		ľ			Ш	Ц	Щ	X		1	Ш	Ш	Т	Ш	Ш
14					<b>%</b> .			13.50 S.9	14	8	12	17	29	$\mathbb{H}$	╫	H	╫		$\Psi$	₩	╁Н	144	₩	Ш
15	-							13.95	_				<u> </u>		$\dagger \dagger$	Ш	$\parallel$	Н	T)	Ħ	#	#	$\dagger \dagger$	H
13-		ł	×					15.00	15_	1,2		ac		Щ	$\parallel$	Щ	$\prod$	Ш	$\prod$	Щ	N	$\coprod$		Ш
16			ROCK	2.5	Medium to dense; fine Sand, poorly graded, SP, Sand =			S.10 15.45	16	17	21	26	47	$\parallel \parallel \parallel$	╫	₩	╫	H	#	₩	Щ	₽	₩.	:++
17	2.50				100%, grain size rounded to	Black		16.55						Ш	$\parallel$	Ш	$\parallel$	Ц	扌		$\parallel$		$\parallel$	Ш
^′			CANIC		sub rounded			S.11 17.00	17_	16	7	9	16	$\parallel \parallel$	#		1	Щ	$\prod$	Щ	$\prod$	Щ	$\prod$	Щ
18		1	ULC		Medium , Silty Sand , coarse	<del>                                     </del>		18.00	18	<u> </u>				HH	#	╫	╢	N	#	₩	₩	H	╫	Ш
19	2.00		>		grain, well graded, SW, Sand	Grey		S.12	10-	12	14	15	29	Ш	1		#		Х	Щ	$\parallel \parallel$	#		Ш
~′ -			YOUNG		= 80%, Silt = 20%	-		18.45 19.50	19_					Ш	╫	$\parallel \parallel$	╫	Ш	#	N	₩	$\mathbb{H}$	$\prod$	Щ
20_			ΥO					5.13	20_	15	12	27	39	Ш	$\dagger$	<u> </u>	╁	H	#	$\parallel \parallel$	₩	++	╫	$\mathbb{H}$
21	2.50				Hard; Tuffaceous Sandy Clay, high plasticity, CH, Clay =	Yellowish		[9.95				T		Ш	$\prod$	Ш	$\parallel$		$\prod$	$\prod$	I	$\prod$	П	$\prod$
	2.30				90%, Sand = 10%	grey		21.00 S.14	<sup>21</sup> _	13	15	20	35	HH	╫	₩	╫	₩	#	₩	₩	#	₩	Щ
22				TITLE STATE OF THE		<u> </u>		21.45	22_				<u></u>	Ш	∄	Ш	$\parallel$		#		╫	$\parallel$		+
23						V.,13		22.50	72 -	<b> </b>	10		26	$\prod$	$\prod$	$\prod$	$\parallel$		$\prod$	$\prod$	П	$\prod$	$\prod$	$\blacksquare$
	3.00				Hard; Tuffaceous Sandy Silt,	Yellow to		S.15 22.95	23_	10	18	20	38	₩	#	₩	╫	Н	#	₩	H	#	Ш	Щ
24					medium to high plasticity, Silt = 70%, Sand = 30%	Yellowish		24.0	24_						∄	╢	╁	H	#	╫	#	٧	Ш	HH
25				ĺ		grey		S.16	25	10	20	28	48	$\prod$		$\prod$	$\prod$	П	$\prod$	$\prod$	П	$\prod$	H	Щ
		<u> </u>		711111 <b>2</b> 11111111	CONTINUED	l		24.45	<b>43</b>	L				Ш	Ц	Ш	Ц	Ш	1	Ш	Ш	Ш	Щ	П



SOIL & MAT INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### EXPLORATION BOR LOG

F.S. On Urban Aterial Road System Devolopment Project In Jakarta Metropolitan Area

MB No: NS . 94-04

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ш-)	E .	ш-)			VISUAL		Thin-Walled Tube		-)		HAN		ASTN						1 6	31	١
	SS			0 L	DESCRIPTION &	œ	2	No.				. ,	4011		J.	100	·U	,			
E	THICKNESS	G.W.L.	<b>—</b>	8	CLASSIFICATION	0	×	F	Ŧ		N v	ALUE			NU	мв	ER C	OF B	LO	WS	
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<u> </u>	-	۳		<i>0</i> )			<u> </u>	25.50		Cm	Cm	Cm			Ш	т	Ш	Ш	Ш	$\Pi$	П
26_			Нонвивной			n		5.17	26	65			>60	Щ	Ш	Щ	Щ	Ш	$\prod$	Щ	Щ
27 -	3.60		F., F8		Very dense ; Sandstone ,	Blackish grey		25.65 27.00	27	1			٠	$\parallel \parallel$	$\parallel \parallel$	₩	<b>}</b>	##	$\parallel \parallel$	$\parallel \parallel \parallel$	+++
-			SPN 1844.		medium to strongly cemented	to black		S.18	28	60			>60	$\prod$	$\prod$	Ш	$\prod$		$\prod$	$\prod$	П
28 _	İ		3.6h					27.15 28.50		·				₩	╫	₩	<b>    </b>	+++	╫	₩	+++
27					T 0110111111111111111111111111111111111	<del> </del>		3.19 21.6	27	J6/10			<b>≥0</b> 0			$\prod$	$\blacksquare$			$\prod$	$\blacksquare$
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-									-	<u> </u>				Ш		+++	+			Ш	Ш
32_	}								32_	┨				₩	HH	╫	HH	Щ		₩	+++
33	1	1							33	1				Ш	Щ	Ш	Ш			Ш	Ш
34		ļ							34	$\cdot$	}			H	HH	+++	$+\!\!+\!\!+\!\!-\!\!+$	$\mathbb{H}$		+++	+++
-	1								- آءِ ا	1						$\prod$	$\parallel \parallel$	Ш		111	$^{\dagger \dagger }$
35_	1					ĺ			35_	-				₩		++++	++++	╫		╫╫	+++
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	1				ł	}			38	1				Ш		Ш				$\prod$	$\prod$
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39_	1		1						39	]				$\prod$	Щ	$\prod$	$\prod$				$\prod$
40	1				· ·		ļ		40	j				Ш		Ш	Ш	Ш	Ш	Ш	Ш
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-	1								-	1					#			$\parallel \parallel$		Щ	Ш
42 _	4								42 -	-				HH	╫	₩	HH	₩	₩	$\mathbb{H}$	$+\!\!+\!\!\!+\!\!\!\!+\!\!\!\!+$
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44	-								44	1				$\mathbb{H}$	-	₩		╂┼┼	+ + + +	+ + + +	HH
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45_	1							1	*3-	1				$\parallel \parallel$	₩	₩	₩	╫		+++	Ш
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SOIL & MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area

MR	No	· NS	. 94-05
1712	110	. 110	. 34-03

LOCATION	Jl. Tenaga Listrik (Pintu Air)	DATE COMMENCED	January 22th 1994
COORDINATES		DATE COMPLETED	January 23th 1994
GROUND ELEVATION	5.18	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	YBM - YSO.1HE	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	30.25	CASSING	Ø 89 mm

Fig.   Fig.	<b>.</b> 1.	2	3		4	5	6	. 7	- 8	9					1	0									
Cast   Cast	<u> </u>		_				· ·			_	6		D. 4	, P	=		:			_	-	~			
Soft   Clayey Sit   medium to hisph plasticity   CH   Sit   hrown   Soft   Clayer Sit   medium to hisph plasticity   CH   Sit   hrown   Soft   Clayer Sit   medium to dense   Sit   Soft   So	u-)		- E			VISUAL		d d		٠ ١	3	TAN										ı	ES	ìΤ	
Soft   Clayey Sit   medium to hisph plasticity   CH   Sit   hrown   Soft   Clayer Sit   medium to hisph plasticity   CH   Sit   hrown   Soft   Clayer Sit   medium to dense   Sit   Soft   So		ESS				DESCRIPTION &	α	lled	8				( )	45 I II	1 -	U		5	5t	<b>)</b>	)				
Soft   Clayey Sift   medium to high platicity   CN   Sit =	Ŧ	CKN	<del> </del>			CLASSIFICATION	10	-Wa	•	E					1	N	U	ЛE	EF	l C	)F	BL	ow	/S	
1   1,00   1,0	DEF	Ē	Ö				ပိ	Ē		DEF			,	N ·		. 10 	) .	20	)	30	3	40	1	50 	
10	1 -														$\prod$	$\parallel$		1			$\prod$	$\prod$		$\prod$	Щ
Seft - medium ; Clay with a little gravels , high plasticity , CH , Clay = 98 % , gravel = 2 % .  Seft - medium ; Clay with a little gravels , high plasticity , CH , Clay = 98 % , gravel = 2 % .  Seft - medium ; Clay with a little gravels , high plasticity , CH , Clay = 98 % , gravel = 2 % .  Medium : Sardy Silt with a little Clay , low to medium plasticity , MI , Silt = 70 % .  Sand = 20 % , Clay = 10 % .  Medium to dense ; Silty Sand , poorly graded , SP , Sand = 20 % .  Now, Silt = 20 % .  Now, Silt = 20 % .  Now, Silt = 20 % .  Now to medium plasticity , MI .  Silt = 80 % , fine Sand = 20 % .  Seft - medium ; Clay with a little gravels , incomplete the poorly graded , fine medium grain s. SP , Sand = 20 % .  Seft - medium ; Clay with a little gravels , incomplete the poorly graded , fine medium grain s. SP , Sand = 20 % .  Seft - medium ; Clay with a little gravels , incomplete the poorly graded , gravels , g		1.00					brown		1.50	1-					-	#	H	$\parallel$	Н	H	₩	H	Ш	╫	₩
Self - medium ; Clay with a little gravels, high plasticity , CH, Clay = 98 % , gravel = 2 %.  CH, Clay = 10 %.  CH, Clay = 98 % , gravel = 2 %.  CH, Clay = 98 % , gravel = 2 %.  CH, Clay = 10 %.  CH, Clay = 98 % , gravel = 2 %.  CH, Clay = 10 %.  CH, Clay = 98 % , gravel = 2 %.  CH, Clay = 10 %.  CH, Clay = 98 % , gravel = 2 %.  CH, Clay = 10 %.  CH, Clay =	2-							•		2	3	4	3	7	$\prod$	H		$\prod$		$\prod$	$\prod$	$\prod$	$\prod$		Ш
Second   S	3_					Soft - medium : Clay with a				3 _					$\parallel$		Ш	#		$\parallel$	Щ	Щ			Ш
CH, Clay = 98 %, gravel = 2 %.  CH, Clay = 98 %, gravel = 2 %.  Medium: Sandy Silt with a little Clay, low to medium plasticity, ML, Silt = 70 %, Sand = 20 %, Clay = 10 %.  Medium to dense; Silty Sand, poorty graded, SP, Sand = 80%, Silt = 20%.  Medium to dense; Silty Sand, poorty graded, SP, Sand = 80%, Silt = 20%.  Medium to dense; Silty Sand, poorty graded, SP, Sand = 80%, Silt = 20%.  Medium to dense; Silty Sand, poorty graded, SP, Sand = 80%, Silt = 20%.  Medium to dense; Silty Sand, poorty graded, SP, Sand = 80%, Silt = 20%.  Medium to dense; Silty Sand, poorty graded, SP, Sand = 80%, Silt = 20%.  Medium to dense; Silty Sand, poorty graded, SP, Sand = 80%, Silt = 20%.  Medium to dense; Silty Sand, poorty graded, SP, Sand = 80%, Silt = 20%.  Brown SI, Sp, Sand = 11	4_	5.00				little gravels, high plasticity,	1			4	2	2	4	6	Н	+		╫	₩	+	₩	#	$\mathbb{H}^{!}$	$\prod$	
Medium ; Sandy Silt with a little Clay , low to medium plasticity ML, Silt = 70 %, Sand = 20 %, Clay = 10 %.   Shown it to plasticity , ML, Silt = 70 %, Sand = 20 %, Clay = 10 %.   Shown it to plasticity , ML, Silt = 80 %, Silt = 20 %.   Shown it to poorly graded , SP , Sand	5									, 7					П	$\parallel$	П	#		$\parallel$	$\prod$	$\parallel$	$\prod$	Т	
Medium   Sandy Silt with a little Clay   low to medium plasticity   M.   Silt = 70 %   Sand = 20 %   Clay = 10 %			6,00												#	╫	╫	#	$\parallel$	#	₩	#	#	₩	₩
Medium   Sandy Silt with a little Clay   Itory to medium plasticity   ML   Silt = 70 %   Sand = 20 %   Clay = 10 %   S.4   S			¥				<b>-</b>			6-	1	1	2	3	+	$\prod$	$\prod$	$\prod$	H	$\prod$	#	$\prod$	$\prod$	$\prod$	$\prod$
Sand   Sand	7		•			Medium: Sandy Silt with a			150	7_							Щ	#	#	#	#	Щ	Щ	Щ	Щ
Sand = 20 %, Clay = 10 %.   brown	8_	4.00				little Clay, low to medium	1			8_	2	3	5	8	Н	╢	H	$\parallel$		$\ $	#	$\parallel$	11		HH
10	9 -						£			,					$\parallel$	$\ $	$\prod$	$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	П	$\prod$
11				1 / 1		,,,,,,	DIOWII	,	S.5		2	3	5	8		╫	Ш	Ħ	+	$\parallel$	#	$\parallel$	$\parallel$	#	Ш
Medium to dense; Sity Sand, poorly graded, SP, Sand = 80%, Sit = 20%.   Brown   12   13   14   14   15   15   16   18   15   16   18   16   18   16   18   17   18   19   16   18   18   19   10   10   13   23   19   19   10   10   13   23   19   19   10   10   13   23   19   19   19   19   19   19   19   1				, ,		,				10						A	H	₩	$\parallel$	H	-  -	$\!$	₩	H	₩
12   3.30   80%   Sit = 20%   Brown     12.00   12	11			٩.		Medium to dense : Sitty Sand				11	3	4	8	12	Щ	Ц	Ц	#		#	$\parallel$	#	Ш	Ш	Ш
13   14   13   13   13   13   13   13	12_	3.50				poorly graded, SP, Sand =	Brown		12.00	12						$\coprod$	Ш	ſ	H	$\coprod$	#	$\parallel$	+	-	
14   15   15   15   15   15   15   15	13					80% , Silt = 20%.				13	_5	15	16	31		$\prod$	$\prod$	$lac{1}{4}$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
Very stiff to hard; Sandy Silt, low to medium plasticity, ML, Silt = 80 %, fine Sand = 20 %.   Brownish yellow   S.9   15.00   S.9   16   S.10   S.	14						<u> </u>		13.50						Щ	#		#	Ħ	∄	T	$\parallel$	Ш		Ш
Very stiff to hard; Sandy Silt, low to medium plasticity, ML, Silt = 80 %, fine Sand = 20 %.  Dense to very dense; Tuffaceous Silty Sand, locally cemented, poorly graded, fine-medium grain, SP, Sand = 80%, Silt = 20%  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Brownish yellow  S.9  16  4 5 7 12  18  16  17  4 7 9 16  S.11  18.  S.11  19  20  10 10 13 23  11 14 21 30 51  21 22  22 3 25 23 25 48  S.14  23 25 25 23 25 48  S.15  S.16  S.17  S.18  S.19  S.19  S.19  S.19  S.19  S.10  S.11  S.12  S.12  S.13  S.14  S.15  S.16  S.17  S.18  S.18  S.19  S.19  S.19  S.10  S.11  S.11  S.12  S.12  S.13  S.14  S.15  S.16  S.17  S.18  S.18  S.18  S.19  S.19  S.10  S.11  S.11  S.12  S.12  S.13  S.14  S.15  S.14  S.15  S.16  S.17  S.18  S.18  S.18  S.19  S.19  S.19  S.10  S.11  S.12  S.12  S.13  S.14  S.15  S.15  S.16  S.17  S.18  S.18  S.18  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.10  S.11  S.12  S.12  S.13  S.14  S.15  S.14  S.15  S.15  S.16  S.16  S.17  S.18  S.18  S.18  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.19  S.10				1					_		6	13	22	35		H	H	╫	Ш	∦	ď	#		₩	HH
16	15 -					Very stiff to hard; Sandy Silt,	Brownish			15	4	<u> </u>	7	12			Į	¥	1	Щ	$\prod$	$\parallel$		Ш	
17	16	4.50				low to medium plasticity, ML,	ı.		15.45	16	7	ر		14	Ш	Ш	M	#	$\parallel$	Ш	╫	Щ	Ш		Ш
Dense to very dense; Tuffaceous Silty Sand, locally cemented, poorly graded, fine-medium grain, SP, Sand = 80%, Silt = 20%  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.	17					20 70, 1100 Balle - 20 70,				17	4	7	9	16	$\mathbb{H}$		H		$\mathbb{H}$	H	#	╟	$\coprod$	$\mathbb{H}$	$\parallel \parallel$
Dense to very dense; Tuffaceous Silty Sand, locally cemented, poorly graded, fine-medium grain, SP, Sand = 80%, Silt = 20%  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense to very dense; Sand, Yellowish grey  20	18								16.95	18			7					X		#	#	#	$\parallel$	#	
Tuffaceous Sitty Sand, locally cemented, poorly graded, fine-medium grain, SP, Sand = 80%, Sitt = 20%  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Dense - Very dense; Sand, fine-coarse grain, well graded, SW, locally cemented (Sandstone), Sand = 100 %.  Tuffaceous Sitty Sand, locally cemented grey  Yellowish grey  S.12  20  10  25  36  60  11.45  19.90  21  21  S.13  21.45  22  22.55  S.14  23  24  24  S.15  24  24  24  S.15  25  10  18  30  48  19.90  21  10  11  11  12  13  14  21  22  22  24  24  24  24  24  24			1				<del>                                     </del>		S.11		10	10	13	23		$\parallel$		∦	H	$\parallel$	#	$\parallel$	₩	#	H
21 -	-	3.00		CK		Tuffaceous Silty Sand, locally	Yellowish		1	19_					Ш	$\prod$	$\prod$	#		$\prod$	#	#	+	#	$\coprod$
21	20 _			RO		medium grain , SP , Sand =	I		S.12	20	10	25	36	>60	Щ	#		#	$\parallel$	$\parallel$	#	Щ	Щ	Щ	Щ
23 3.60 SW , locally cemented (Sandstone), Sand = 100 %. Black (Sandstone) S. Sand = 100 %. S. Sand = 100 %. Sand	21			NIC		80%, Silt = 20%			21.00	21_					#	$\  \cdot \ $	$\ \cdot\ $	+	H	+	H		Ш	#	X
23 3.60 SW , locally cemented (Sandstone), Sand = 100 %. Black (Sandstone) S. Sand = 100 %. S. Sand = 100 %. Sand	22 -			CA						22	14	21	30	51	$\prod$			$\parallel$	T	$\parallel$	#	#	$\parallel$	ľ	
24	-			٧n					22.55						$\parallel \parallel$	╢	$\parallel$	#	$\parallel$	$\parallel$	$\parallel$	$\parallel \parallel$	₩	∦	₩
25 - 10 18 30 48 25 25 25 25 25 25 25 25 25 25 25 25 25		3.60		JING		SW , locally cemented	Black			23	25	23	25	48	$\mathbb{H}$	$\prod$	$\mathbb{H}$	#	$\prod$	$\coprod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
25 24.45 25	24_			YOL		(Sandstone) , Sand = 100 %,			24.0	24	10	10	20	40	Щ	Щ	Ш	#	╁	Щ	#	╫	Ш	Ш	Ш
CONTENUED	25	<u> </u>	<u> </u>							25	10	18	30	48	╟	H	$\  \ $	$\parallel$	₩		#		y	-	$\prod$



SOIL 8 MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Aterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: NS . 94-05

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E	E	u-)			VISUAL		ag i		( m-)	S	TAN		RD P							ļ	ES	·Τ	Ì
-	S	-			DESCRIPTION &		1 pa	9				( )	ASTN	۱ -	D	.1!	58	6	)				
_	THICKNESS	ا نـ	⊢	98	CLASSIFICATION	OR	Thin-Walled Tube	F.	I	ļ	N v	ALUE		_	— N	UN	 181	R (	OF	BL	OW	 /S	ᅱ
рертн	₽	G.W.L	Z	¥	02.100	COLO	튣	ا به ا	DEPTH	15	30	45	N		10		20		30		<b>ס</b>		
	F	٥	9	S	· · · · · · · · · · · · · · · · · · ·	0	T	25.50	Ω	Cm	Cm	Cm			4	ПТ	╁	П	╁	ᇳ	ЯΤТ	╫	$\mathbf{H}$
26	3.40		0		Hard; Silty Clay (Organic),	Blackish		5.16	26	10	16	20	36	H	#	Ш	Ш	Ш	Ш	മ	Ш		
27		٠.	N A		medium to high plasticity, CH	grey		25.95 27.00	27					-		H.		₩	$\ \cdot\ $	₩	#	-	Ш
			VULCANIC		, Clay = 70%, Silt = 30%.			S.17	-	8	13	23	36	$\parallel$	#	Ш	Ш	Ш	Ш	Щ	Ш	$\parallel \parallel$	
28_							•	27.45 28.50	28_					Щ	#	H	₩	₩	₩	₩	₩	₩	$\mathbb{H}$
29_			YOUNG		Hard ; Claystone , medium	Blackish		S.18	29_	60	-	-	>60	Ш	#	Ш	Щ	#	Щ	#	#	Щ	
30	2.25		γ		cemented.	grey		28.6 30.0	30	-				#	#	╫	#	₩	$\parallel \parallel$	₩	₩	##	$\mathbf{H}$
		<del>                                     </del>				ļ	<u> </u>	0.10	_	26	65		>60	#	#	#	#	#	Ħ	#	#	#	H
31_	l	'		E	ND OF BORE HOLE ( - 30.25	mt)		30.25	31_	1				#	#	₩	₩	₩	₩	₩	₩	₩	$\mathbb{H}$
32	1	ļ							32 _					$\parallel$	Щ	Щ	$\prod$	Щ	$\parallel$	Щ	$\prod$	$\coprod$	Щ
33 -									33	1			,	$\parallel$	H		$\prod$	H	H		$\coprod$		
-	1	i							34	1				$\parallel$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
34_	1					1		1	~	1				+	₩	₩	₩	₩	╫	H	+++	₩	₩
35_	1						Ì		35_	]					$\prod$	$\prod$	$\prod$	Щ	Щ	Щ	Щ	$\prod$	Щ
36	1								36	1			<u></u>		Ш	Ш	$\coprod$	Ш	Ш	Ш	Ш	Ш	
37	]								37	-				$\prod$	$\prod$	П	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
"-	1				·				-	1					$\prod$	$\coprod$	Ш	$\coprod$	#		Ш	$\parallel \parallel$	Ш
38_	]								38_	-				Щ	₩	₩	₩	-	Ш	Щ	Ш	╫	$\coprod$
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40	]	1	İ	1		1			40	-					$\prod$	₩	$\prod$		Н	HH	$\parallel \parallel \parallel$	$\mathbb{H}$	₩
	1					1.			-	1				Щ	Щ	∭	∭		Ш	Ш	Ш	##	Ш
41 _	-								41 -	-				₩	₩	H	₩	Щ	#	HH	HH	╫	₩
42	1								42_	1				Щ	Щ	Щ	#	Щ	Щ	Щ	Щ	Щ	Щ
43	-								43	1				₩	$\parallel \parallel$	$\parallel \parallel$	$\parallel$	Ш	#	$\parallel \parallel$	$\mathbb{H}$	$\mathbf{H}$	$\mathbb{H}$
-	1			1					44	]	1			$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	Ш	Ш	$\prod$	$\prod$
44 -	1								***-	1				₩	H	+	#	Н	H	₩	Ш	-#	+
45_	1								45_	1				$\prod$	$\prod$	Щ	$\prod$	Щ	$\prod$	Щ	Щ	Щ	Щ
46	1		1			1			46	_										$\coprod$	Ш	$\mathbb{H}^{1}$	
47	7							1	47	7									$\prod$				
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48 _	1		1						48	] .				$\prod$	$\prod$	-	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	Щ	
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50	]								50	-				$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	
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SOIL 8 MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

	·
F 6	On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area
г.э.	ON OLDSII WITCHEN VOSCI SYNCHII DEVOLUDINENI FIONECI IN VIIVALLE METI ODONICAN PARA

MB	No	: NS	. 94-06
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LOCATION	Manggala Wanabkati Buliding	DATE COMMENCED	February 11th 1994
COORDINATES		DATE COMPLETED	February 12th 1994
GROUND ELEVATION	11.99	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	30.25	CASSING	Ø 89 mm

1	2	3		4	5	6	7	8	9	10
( E	E	-					9		E-	STANDARD PENETRATION TEST
ш-)	<b>-</b>	E -			VISUAL		Thin-Walled Tube	ا ا	÷	( ASTM - D.1586 )
	THCKNESS	;	<b> </b>	0	DESCRIPTION &	æ	2	. <b>R</b> o.		
DEPTH	N N	G.W.L	-	20	CLASSIFICATION	070	<u> </u>	Р.Т	DEPTH	N VALUE NUMBER OF BLOWS
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1-								S.1 S.2	1-	10 20 25 45 1 1 1 10 10 20 1 1 1 1 1 1 1 1 1 1 1 1
2_	1						۱	\$.3	2_	7 8 10 18
3	6.00				Medium to Hard; Clay, medium to high plasticity, CH	Reddish	2.50 U.D.1	\$.4	3	4 5 6 11
4					, Clay = 100 %.	brown	3.00	S.5 S.6	- ا	3 3 6 9 4 6 7 <b>13</b>
-						,	4.50	8.7	`-	2 2 3 5
5_	-	6.00					UD.2	5.8	5_	2 3 3 6
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8 -	1		ROCK					S.12		3 4 4 8
°-	1		Ě					S.13 S.14	8_	3 8 12 <b>20</b>
9_	1		CANIC					S.15	9_	7 12 15 27
10	]		VULC		Medium to Hard; Tuffaceous			S.16 S.17	10	4 6 15 <b>21</b> 12 16 13 <b>29</b>
11.	9.17				Sandy Silt, low plasticity, ML	Brownish yellow		S.18 S.19	111	11 13 14 27 13 15 17 32
-	<u> </u>		OUNG		, Silt = 60 % , fine Sand = 40 %	усцом		S.20	_	15 40 20 60
12_	1		۶					S.21 S.22	12 -	20 56/10 >60 25 56/12 >60
13	1							S.23	13	27   52/10   >60
14	1	İ					ļ	S.24 S.25	14	35 50/10 >60 37 52/10 >60
15	]							S.26		55 >60
13-								S.27 S.28	15_	58 >60
16_	1.83				Very dense; Sand, fine to coarse grain, well graded, SW	Yeelowish	1	S.29	16_	44 51 >60
17_	<u> </u>	ļ			, Sand = 100%	grey		S.30	17	47 52/12 >60
18	1				Very dense, Tuffaceous Silty	Yellowih		\$.31	18	60 >60
_	3.00				Sandstone , Sand = 75 % , Silt	greyto		8.32	1 -	55/10 >60
19_	1		NO.	·	= 25 %.	Blackish grey		S.33	19	53/15 >60
20_	1_	-	FORMA TION	7 A	Very dense; Sand, medium grain, poorly graded, SP,		]		20	
21	1.35		OR		angular to sub angular grain	Black		S.34	21	45 40/3 >60
] ,,	1	-		a de la composição de l	shape, Sand = 100 %.	1		S.35	1 -	18 35 18/5 >60
22_	1		GENTENG				İ	8.36	22 _	17 19 35 >60
23_	]		GEN						23_	
24	1		Ĭ		Hard; Sandy Stilt, low plasticity, ML, Silt = 60 %,			S.37	24	21 42 15/3 >60
25	7.90				fine Sand = 40 %.	Brownish		S.38	25	40 52 >60
	1 7.90	1	1	mmmmm	Continued	yellow	(11)	Ц		
							<b>V</b> (17	10.	A-12	



SOIL 8 MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Aterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: NS. 94-06

1	2	3		4	5	6	7	8	. g	1.5%			1.79		0	٠.٠	i		. :			1.2	Hara Mary	2.5
C L	m )	)							( E-	S	TAN	DAF	RD P	ΕN	JF.	TR	A	TI	O N	j "	ΓF	ST	 Г	
( m-)	<b>-</b>	<b>m-)</b>			VISUAL		Thin-Walled Tube	ا ہ	Ū				ASTN									Ο.	•	
	THICKNESS		<b>⊢</b>	101	DESCRIPTION &	R	alled	. <b>N</b> o.				<del></del>						_			_		_	$\dashv$
DEPTH	CK	G.W.L.	- N	20.	CLASSIFICATION	010	Ņ-M	P. T	DEPTH	15	N V.	45	N		- N - 10		71B 20		30		LO 40	W\$ 51		
8	Ħ	9	э	>'s		ŏ	£	υ,	10	Ċm	Cm	Cm		11	_	т	4	<del>-11-</del>	1	т	$\bot$	႕	<u>_</u>	
26			NO NO					S.39	26		52/10	-	>60		Ш	Ш	1	Ш	Ш	$\coprod$	Ш	Ш	Ш	
27			MA T		Hard; Sandy Stit, low plasticity, ML, Silt = 60 %,	Brownish yellow		S.40	27	20	50/10		>60	+	╫	$\frac{1}{1}$	$\prod$	$\mathbb{H}$		₩		₩	┟┼┼	
1 -			FOR		fine Sand = 40 %.	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		S.41	28	22	53/13		>60		П	$\prod$	#	$\prod$		#	$\prod$	Щ	$\prod$	
28_			ENG		Very dense ; Sand , well			S.42		19	51/15		>60		Ш	#1	$\parallel$	Ш		╫		#	$\parallel$	Ш
29_			GENTE		graded , SW , rounded to			S.43	<sup>29</sup> –	17	31	22/5	>60	$\parallel$	╢	₩	╫	₩	$\frac{1}{1}$	₩	HH	+	H	$\mathbb{H}$
30_	1.00		GE		angular grain shape, Sand == 100 %.	Black		9.44	30		51/10		9			$\coprod$	$\coprod$	Ш		Щ	Щ	Ш	$\prod$	
31				. <b>F</b>	END OF BORE HOLE (- 30.25	m)		•••	31_		J 1/10		- 00	Щ	$\prod$	$\prod$				Щ		Щ	Щ	$\prod$
32		•							32						+	#	Ш	$\coprod$		Ш		Ш		-
33	}								33						$\left\{ \right\}$	#	$\mathbb{H}$	H	$\  \ $	Щ	Ш		$\ \cdot\ $	$\ $
-	1								34					Щ	$\prod$			П	#	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
34_									_						#	#			#	$\parallel \parallel$	ď	Ш	Ш	Ħ
35_	}			<u> </u>					35_	$\mathbf{I}$				Н	#	H	╫	╫	╫	Щ	+	Н	₩	Н
36_									36_	}				Н	$\prod$	$\prod$	Щ	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	П
37_	1								37_	1						Щ	Ш	Щ	#	Щ	Щ	Щ	Щ	Щ
38	-			1			ļ		38	1				Ш	Ш	Ш	Ш	$\prod$	#			$\coprod$		$\coprod$
39	-								39	}				H	$\prod$	$\prod$	$\prod$	₩			$\prod$	$\prod$	$\prod$	$\prod$
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40 -	1			1					-	1				#		╫	Ш	$\parallel$		丗	╫	╫	╫	Щ
41 -	-							1	41	1				$\parallel$	H	╫	╫	#	$\parallel$	₩	₩	₩	₩	$\mathbb{H}$
42_	1								42_	]				H	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	₩	$\prod$
43_	1		1						43_	1				#	Щ	Щ	Щ	#	Щ	#	#	$\parallel$	$\parallel \parallel$	$\sharp$
44	-								44_	1						Ш	∭	#		Ш	Ш	Ш	₩	Ш
45	}								45	-				$\ $	$\ $	₩	H			₩	$\prod$	₩	+   +	+
-	1								46	]				T		$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
46_	1	1							-	1					╫	╫	₩	#	╫	₩	$\parallel \parallel$	Щ	$\parallel$	$\parallel$
47.	-								47_	-				+	₩	₩	₩	╫	╫	₩	₩	₩	+	H
48	1					·			48	7				H	$\prod$	Щ	$\prod$	$\prod$	Щ	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
49	1			*:					49	1				H	╫	╫	#	Щ	╢	#	丗	#	#	Щ
50	-							]	50	1				$\parallel$	$\prod$	$\ $	#	Ш	$\prod$	Ш	$\coprod$	+		H



## Wira Nusantarabumi

#### **EXPLORATION BOR LOG**

F.S. On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No : NS . 94-07

LOCATION	Jl. Pattimura	DATE COMMENCED	February 13th 1994
COORDINATES		DATE COMPLETED	February 14th 1994
GROUND ELEVATION	17.05	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	YBM - YSO.1HE	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	24.10	CASSING	Ø 89 mm

Comparison   Com		2	3		4	5	6	7	8	9			10						
Cast   Cast	_	_	<b>^</b>			<u> </u>													
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1	E	품	3	-	Σ	CLASSIFICATION	<u> </u>	Ş	ا	F	<del></del>	45	1						i
1		₹	O		\ S	**	ပ	Ē .		DE		l Ni	'	0 2	у 3X 1	) 4	,0 !	50 1	-
Reddish   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   Clay   high plasticty   high pla		0.50				Very soft; Organic Sandy Clay	Black					<u> </u>	ПП	П	Ш	Ш	Ш	ПΠ	П
Plasticity , CH , Clay = 100 %   Vellowish UD.1   3	1 <sub>1</sub>			≨			5 111			1_			$\square$		Ш	Ш	Ш	Ш	Щ
Plasticity , Clf , Clay = 100 %   Vellowish   UD.1   3   3   4   4   10   12   22   1   5   5   6   10   16   5   7   15   20   35   5   6   10   16   5   7   15   20   35   15   35   15   35   15   35   15   35   3	2 -		1.90	100		≥ 80%, Sand = 20%	5			2 -				N		╫╫	╂╂╂	╫╢	$\mathbb{H}$
Plasticity CH, Clay = 100 %   Vellowish UD.1   3		2.95	÷	AL L		Soft to very Stiff; Clay, high	1	2.50		_	<del></del>		<del>                                     </del>	1116	1111	╫	╫╫	Ш	Ħ
Solid   Soli	3_			1		plasticity, CH, Clay = 100 %	1			3_				Ш	Ш	Ш	Щ		Ш
S	4	-	1				grey	3,00		4 -			$\{\{\}\}\}$	<del>-   </del>	<i>}</i>	╂╂	HH		Ш
Medium to Hard; Tuffaceous Sandy Silt, low plasticity, MI. Silt = 65 %, Sand = 35 %.   S.10	-	]		Š						-	<del></del>			ΗИ		╫╫	┟┼┼┼	╫╫	₩
Medium to Hard; Tuffaceous Sandy Sit; low plasticity, MI., Sih = 65 %, Sand = 35 %.   S.10	5_					. :				5_					Щ		Ш	Ш	$\parallel$
S.13   S.13   S.14   S.16   S.16   S.18   S.18   S.18   S.18   S.18   S.18   S.18   S.18   S.18   S.19   S.17   S.18   S.19   S.19   S.20   S.20   S.20   S.20   S.21   S.20   S.21   S.21   S.22   S.22   S.22   S.23   S.23   S.23   S.24   S.24   S.25   S.26   S.26   S.26   S.26   S.26   S.26   S.26   S.27   S.27   S.28   S.28   S.27   S.28   S.29   S.27   S.29	6	1		NIC	i	3.5.1°	Vellourish			6 -			<b>-</b>	-   - -		7	$\coprod$		Ш
S.13   S.13   S.14   S.16   S.16   S.18   S.18   S.18   S.18   S.18   S.18   S.18   S.18   S.18   S.19   S.17   S.18   S.19   S.19   S.20   S.20   S.20   S.20   S.21   S.20   S.21   S.21   S.22   S.22   S.22   S.23   S.23   S.23   S.24   S.24   S.25   S.26   S.26   S.26   S.26   S.26   S.26   S.26   S.27   S.27   S.28   S.28   S.27   S.28   S.29   S.27   S.29	-	5.85		CA							<del></del>			$\forall$	<del>     </del>	╫	HH	╂╂┼	₩
Sand   Sand   Sandstone   Sandstone   Sand	7_	]		VUI	1					7_	<del></del>		Ш				Ш		$\coprod$
Sand   Sandy   Siltstone   Medium to strongly cemented   Sand = 30 %   Sand stone   Sand   Sandy   Siltstone   Medium to strongly cemented   Sand = 30 %   Sand   Sandy   Siltstone   Medium to strongly cemented   Sand = 30 %   Sand   Sandy   Siltstone   Medium to strongly cemented   Sand = 30 %   Sand   Sandy   Siltstone   Medium to strongly cemented   Sand = 30 %   Sand   Sandy   Siltstone   Medium to strongly cemented   Sand = 30 %   Sand   Sandy   Siltstone   Medium to strongly cemented   Sand = 30 %   Sand   Sandy   Siltstone   Medium to strongly cemented   Sand = 30 %   Sand   Sandy   Siltstone   Sandy   Sand	8 -	ł		ڻ ق				,		8 -					$\parallel \parallel \parallel$		HHH	1111	Ш
Very dense   Sandstone   poorly graded   medium grain   weakly to medium cemented   Sand = 100%				NUC							<del> </del>			Ж	1111	╅╅┼	┟┼┼┼	₩	₩
10	9			ΥC					S.16	9_	<del></del>			Щ		Ш	Ш		Ш
11   2.02	10 -		1		111111111111111111111111111111111111111	Very dense ; Sandstone ,				10 -	<del></del>					$\prod$		Ħ	$\blacksquare$
11	-	2.02					Black			^~-						╫╫	╫		₩
Hard   Sandy Siltstone   medium plasticity   ML   weakly to medium cemented   Silt   Sold	11									11						Ш	Ш	Ш	Ш
13	12 -	113	1				Blockich		S.20	12.	18 40 1	5/12 >60	11111			Ш	Ш		Щ
13		1	ł			medium plasticity, ML,			S.21	12-	20 31	35 >60			++++	╫	₩	╫╫	++1
Hard; Tuffaccous Sitty Clay medium to high plasticity, CH   Clay = 70%, Sitt = 30%	13	0.85	1				Стсу			13								Ш	
Hard   Tuffaccous Sifty Clay   Black   S.23   53   >50	14 -					L	<b> </b>		S.22	l ,, .	20 55	>60		111		Ш	Ш	Щ	Ш
17		1	Į	폿				ļ	S.23	<b>-</b>	53	>50	╂┼┼┼		<del>┦┋</del> ┼┼┫	╫╫	╫╫	++++	+
17	15	2.80		Ĕ		,	Black			15						Ш	Ш		Ш
17	16	ł		2					\$.24	16.	51/10	>50		Щ	$\coprod$	Ш	Ш	Ш	$\prod$
18	-		1	æ	niákataan		ļ		S.25	10~	55/10	>50	╂┼┼┼		++++	╁╁╁	╂┼┼┼	HH	+
18   19   5.90   18   52/13   >50   19   53/10   >50   19   53/10   >50   19   53/10   >50   19   53/10   >50   19   53/10   >50   51/8	17_		1	iL.						17			<b>1</b> 1111			1111	Ш		Ш
19	18 -			Ş					S.26	19.	56	>50					Ш	$\prod$	$\prod$
Hard; Sandy Siltstone, low plasticity, ML, Silt = 70 %, Sand = 30 %.   Sand = 3	~~	1		Ή			Ì		S.27		52/13	>50	++++		╫╫	++++	╫	╫╫	+
Plasticity , ML , Silt = 70 % , Sand = 30 %.   Sa	19_	]				Herd Sandy Siltetone law	Blackish			19			<u> </u>						Ш
Sand = 30 %.   Blackish grey   S.29   S1/8   S50   S1/8   S.29   S1/10   S30   S30   S3/10   S60   S32   S3/10   S3/	20 -	5.90		Φ			1		S.28	<b>,</b> , .	53/10	<u>&gt;50</u>		Ш		Щ	Ш	Ш	$\prod$
21   S.30   28   51/10   >60	-~-	1					1		S.29		51/8	>50	╂┋┤┼┼			╫╫	₩₩	++++	+
22 23 2.10 Very dense, Sandstone, poorly graded, fine to medium grain, medium to strongly cemented, Sand = 100%  24 Sand = 100%  22 Sand = 30 53/10 >60 Sand = 35 53/13 >60 Sand = 300%	21_	]								21			╂┼┼┼			†##	$\dagger \dagger \dagger \dagger$	##	H
23 2.10 Vcry dense , Sandstone, poorly graded, fine to medium grain , medium to strongly cemented, Sand = 100%  Solution 100	,, -	1							8.30	]	28 51/10	>60	$\prod$		ЩП	$\prod$	Ш	$\prod$	$\prod$
23 2.10 graded, fine to medium grain , medium to strongly cemented, Sand = 100%  Black	-		┨			Very dense. Sandstone needy	<del> </del>	1	5 34	<sup>22</sup> -	30 53/10	<u> </u>	╂╫╫	$\coprod$	++++	<del>         </del>	₩	#	$\mathbb{H}$
medium to strongly cemented, S.32 35 53/13 >60 3 53/13 >60 5.33 53/10 >50 5.33 53/10 >50	23	2.10	1				Black			23	30 23/10	700	<b>1</b>		<del>             </del>	<del>+}}</del> }	HH	$\mathbf{H}$	#
5.33 24/10 230 (11) (11) (11)	7,4	-				medium to strongly cemented,			S.32		35 53/13	>60	Ш	Ш			ऻऻऻ	$\parallel \parallel$	$\parallel$
	<del></del>	<del>  -</del>	ļ			Sand = 100%			3 33	ł –	39/11/		Щ		ЩЩ	Щ	Щ	Щ	Щ
END OF BORE HOLE (-24.10 m)   25	25	1	<u> </u>		<u> </u>	; END OF BORE HOLE (-24.10)	m.)		<u> </u>	25	5770	120	╂┼┼┼┼			HH	₩	H	$\mathbb{H}$



SOIL & MAT INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

### EXPLORATION BOR LOG

F.S. On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area

MB	No	:	NS		94-08
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LOCATION	Jl. Prapanca	DATE COMMENCED	February 11th 1994
COORDINATES		DATE COMPLETED	February 11th 1994
GROUND ELEVATION	18.16	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	YBM - YSO.1HE	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	16.07	CASSING	Ø 89 mm

1	2	3			4	5	6	7	8	9			<u></u>		1	0	j								
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E -)	E )	ш-}		1	. ]	VISUAL		Thin-Walled Tube	٠			, , , , , , ,		STIV								•		•	
	SS				9	DESCRIPTION &	αĽ	ed ed	. No.							_	_	_	_					_	
Įᡓ∣	KNE	<u> </u>	=	:	ø.	CLASSIFICATION	10	N-I	P.T.	DEPTH			ALUE									3LC			
DEPTH	THICKNESS	B.W.L	=	- 1	λ		00	Ē	S.	DEF	15 Cm	30 Cm	45 Cm	N.		10	J	20	J	30	,	40 	•	50 	
	·	-				·										I	$\prod$	$\prod$	П	$\parallel$	$\prod$	Щ	$\prod$	П	$\prod$
1.							Reddish		<u>S.1</u>	1_	7	8	7	15	₩	H	H	#	H	╫	₩	₩	₩	₩	╁╁
2_	4.00					Soft to Stiff; Clay, high plasticity, CH, Clay = 100 %	prown		S.2	2	2	2	3	5		1	Щ	$\parallel$	Щ	$\prod$	$\prod$	$\prod$	Щ	$\prod$	Д
3		3.2				(Embankment)			8.3	3	4	4	4	8		H	╫	$\parallel$		$\parallel$	Ш	$\coprod$	$\coprod$	$\coprod$	Ш
_		¥	188							4	1	<u> </u>	2	3	Į,		П	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	
4 -	<b> </b>	==		2		Soft; Sandy Clay with a little			S.4		<u> </u>	1	2	3		H	$\mathbb{H}$	∄	Ш	Ш	Ш	$\prod$	+	#	Ш
5_	2.00			ALLUMUM		gravel, high plasticity, CH, Clay = 70%, Sand = 25%,	Reddish	<b>.</b> 4A	S.5	5_	1/30	2/20		2	$\mathbb{H}$	Щ	#	$\prod$	$\coprod$	#	$\coprod$	H	$\mathbb{H}$	H	₩
6 -	-			7		gravels = 5%	brown	5.50 UD.1		6_				<u>.</u>	Щ	Щ	#	Ш	#	Щ	Щ	$\parallel$	Ш	#	Щ
		1		¥				6.10	S.6	7	2	2	4	6		₩	╫	$\parallel$	#	$\parallel$	#	H	H	$\mathbb{H}$	H
7-	1			ROCK					<b>S.7</b>	1 -	2	3_	4	7		Ħ	#	Щ	$\parallel$	ļ	$\parallel$	$\parallel$	ľ		$\parallel$
8_	]			<u></u>		Medium to Hard; Tuffaceous	Yellowish grey	ļ	5.8	8_	12	22	34	56	₩	Н	#	$\prod$	F	Ħ	#	Ж	∦	╫	₩
9	6.00			CAN		Sandy Silt, low plasticity, ML, locally comented, Silt = 70%	to			9_			10		Щ	Щ	$\coprod$	Ш	$\prod$	Щ	$\parallel$	4	$\prod$	Щ	$\prod$
10	-		H	V.		, fine Sand = 30%.	BLackish grey		S.9	10	7	14	18	32	$\left\{ \right\}$		$\parallel$	$\prod$	Ш	+		+		Ш	#
-	1	1		ក្					S.10	1 1	11	23	27	50		$\prod$	$\prod$	$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	N	lacksquare
11 -	-			á					S.11	1 -	57	21/2		>60	₩	$\parallel$	Ш	$\parallel$	Ш	Ħ	Ш		Ħ	╫	
12_	1	_		_		Very dense; Sandstone, medium to well graded, SW,	<b></b>	4	S.12	12_	20	15	17	32	₩	H	Н	₩	╫	₩	$\parallel$	Ш	#	₩	#
13	2.00			NO.		locally medium to strongly	Greyish			] 13_					Ш	#	Ш	#	Щ	$\parallel$	Ц	Ì	Щ	Щ	Щ
1,	]	İ		FORMATION		cemented (at depth 12.00- 14.00 m) Sand = 100%.	black		S.13	14	29	30	20	50	╂	#	H	#	╫	#		₩	₩	N	H
14	+-	┨				Very dense; Sand, fine to	<del> </del>	1	S.14	<b>i</b> j -	50/1	0		>60		Ħ	Ħ	$\parallel$	Щ	#	Щ			$\parallel$	$\prod$
15_	2.07			GENTENG		coarse grain, well graded, SW	Black	1	8.10	15	50/1	3	<del> </del>	>60	╫	$\parallel$	₩	H	H	#	₩	$\parallel \parallel$	₩	₩	H
16	_			S.E.		, angular to sub rounded, grain shape, Sand = 100%.				16	1										$\prod$	Щ		$\coprod$	
17	1		٦			END OF BORE HOLE			3:11	17	30/			700	$\blacksquare$				$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
-	1		- [			( - 16.07 m )				18	-						$\prod$	$\prod$	$\prod$		$\  \ $	$\prod$		$\mathbb{H}$	$\coprod$
18	-		1							1	-				I		Ħ	Ш	#		$\parallel \parallel$	$\parallel$	$\parallel$	Щ	$\parallel \parallel$
19	1				,	i i				19	-				H	H	₩	#	#	$\coprod$	₩	H	H	₩	₩
20	4	1								20						Щ	$\parallel$	Ш	#	Щ	#	Щ	Щ	Щ	#
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	1		1							21	4						+	$\mathbb{H}$	#	+++	#	#	#	$\prod$	#
21	4	ĺ	ļ							'	_				#		Ħ	#	#	T I	#	$\parallel$	$\parallel$	$\parallel \parallel$	#
22	]		ļ							22	$\dashv$				H	-	H	#	H	#	╫	₩	$\parallel \parallel$	₩	+
23	1									23	1				ļ	ļļ.	#	#	Щ	$\parallel$	#	$\prod$	Щ	Щ	#
24	7									24	1				╟	+	╫	╢-	-	$\prod$	$\parallel \parallel$	$\prod$	$\ \cdot\ $	╫	H
	-			٠.						1 25	7				Ħ	$\prod$	$\prod$	$\prod$	П	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
25	1			<u> </u>	J		14)	104	<del>.   -</del>	25			Ц			Ш	Ш	11	Ш	11	i	ш	Щ	Ш	Ш



EXPLORATION BOR LOG

SOILS MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANT

F.S.	On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area	MB No : NS . 94-09
		 Cabarray 45th 4004

LOCATION	Jl. Cipete	DATE COMMENCED	February 15th 1994
COORDINATES		DATE COMPLETED	February 15th 1994
GROUND ELEVATION	27.57	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	YBM - YSO.1HE	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	16.16	CASSING	Ø 89 mm

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	9	-		اد	VISUAL		Thin-Walled Tube	No.	_			( /	ASTN	1 -	D	1	8	6	}				1
	ES		1	0	DESCRIPTION &	æ																	-
E	THICKNESS	9.W.L	- 1	20	CLASSIFICATION	10	ş	Р. Т	DEPTH	15	N V	ALUE 45			10		8E! 20	R C 30		3LO 40	)WS 5		
DEPTH	₹	0	2	S ¥		00	₽	s.	DE	Cm	Cm	Cm	N		ï	•	Ĭ	ĩ	•	ĩ	Ĭ		
	-													Ш	$\parallel$	Щ	Ш	$\prod$	$\prod$	Ш	Ш	Ш	1
1_	1							S.1	1 _	1	1	2	3	H	Щ		₩	₩	₩	₩	Н	+++	$\mathbb{H}$
2	1		2					S.2	2_	3	3	6	9	Ш	A	Ш	Ш	Ш	Ш	Ш	Ш		1
-	1	3.00	T. Salah		no com more contra		2.50		3 -					Щ	1	$\prod$	₩	$\coprod$	Щ,	#	$\prod$		$\mathbb{H}$
3_	ł	¥			Soft to stiff; Tuffaceous Silty Clay, high plasticity, CH,		UD.1	S.3		3	4	6	10	Ш	╫	H	₩	<b>##</b>	<del>         </del>	₩	₩	+++	H
4_	7.50	1			Clay = 80 %, Silt = 20 %, at	Reddish			4_					Ш	1	$\parallel$	Ш	Ш	Щ	Щ	Щ	Ш	
5	]				the top is consist pebble and sand	prown		S.4	5 -	3	4	4	8	Ш	1	+	111	+++	<del>/</del>	╫	₩	H	Н
'-	1				Salu			S.5	1 -	2	2	2	4	Щ	Ħ	#	Ш	$\parallel \parallel$	Ш	$\parallel \parallel$	$\prod$		Ħ
6_	1							S.6	6_		2	3	5	Ш	#	Н	Ш	Щ	Щ	$\mathbb{H}$	₩	₩	H
7	-		×					3.0	7 .	<u> </u>		3	3	H					Ш	Ш	Ш		Ш
-	1		ROCK				1	8.7	] _	1	2	3	5	Ш		Ш	$\prod$	Ш	Ш	$\prod$	П		$\prod$
8-	-		O		,			S.8	8-	1	1	3	4	₩	H	╫	Н	Ш	₩	H	₩	₩	H
9	1		VULCAN				Ī	1	9_					Ш	Щ	Щ	Щ	Щ	Ш	Ш	Щ	$\coprod$	Щ
٦, ٦	]		NCO		Soft to Stiff; Tuffaceous	Yellowish		5.9	10	3	4	6	10	₩	N	$\prod$	₩	╫	₩	$  \dots  $	-+++	╫	$\mathbb{H}$
10	5.50				Clayey Silt, low to medium plasticity, ML, with a little	brown	1	3.3	] ^``-		1 -	Ů	10	<u> </u>	1	Ш	Ш	Ш	Ш	Ш	Ш	Ш	Ш
11	1	1	OUNG	1.	Sand, Silt = $70 \%$ , Clay = $20$	ļ		8.10		1	5	5	10	Щ	$\prod$	Щ	$\prod$	Щ	#	Ш	Щ	₩	Щ
12	4		ν.		%, Sand = 10 %.		ŀ	S.11	12	3	+-	3	10	╂	Н	H	₩	##	$\dagger \dagger \dagger$		1	╫	$\mathbb{H}$
-	1						1	S.12		2	4	8	12	$\prod$	Щ	H	T	Щ	$\prod$	П			$\prod$
13	<b> </b>	-				<u> </u>	4	5.13	13	10	20	36	56	₩	₩	╫	₩	₩	₩	₩	₩	#	$\mathbb{H}$
14	1				Medium to very dense, silty	1			14			100		111	$\parallel$	Ш	Ш	Ш	$\coprod$	Щ	4	1	Ш
	]				Sand , poorly graded, SP ,	Yellowish	1	8.14	15	12	15	18	33	┩╢	Ш		╫	₩	₩	₩			₩
15	3,00				locally cemented, Sand = 60 %, Silt = 40 %.	brown		S.15		6	9	11	20	╫	Н	╫	₩	#	Ш	╫	₩		$\parallel$
16	1			Maria di San	, 511		<u>i</u>		16					Щ	I	Ш	Ш	Щ	Ш	$\coprod$	$\blacksquare$	#	#
17	1				END OF BORE HOLE			3.11	17	40	10/1		7200		$\ \cdot\ $		$\prod$	$\prod$	$\prod$	$\prod$	$\prod$		$\prod$
'	┪				( -16.16 m )			ŀ		]				П	I	$\prod$	$\prod$	Ш	$\prod$	Ш	Ш		$\prod$
18	_				1			1	18	-				Щ	╫	₩	₩	₩	H	₩	₩	$\parallel \parallel \parallel$	₩
19	_								19	1				Ш	#		Ш	Ш	Ш	Ш	Щ	Ш	Ш
30	7							1	20	-				$\mathbb{H}$	$\parallel$		Щ	$\mathbb{H}$	$\mathbb{H}$	$\coprod$	₩		H
20	-								~~.	-		Ì		H	#	#	$\dagger$	╅╫	╂╫	₩	╁	#	
21								1	21	]		-		Т	$\parallel$	$\parallel$	П	Ш	Щ	Щ	Щ	Щ	Ш
22	4								22	1				H	$\parallel \parallel$	₩	╫	$\mathbb{H}$	HH	╫	+++	╫	H
	_								1	1	1					$\parallel$	$\parallel$		$\prod$	Ш	$\parallel \parallel$	1	Ш
23	_			1			ĺ		23	-				$\parallel$	$\parallel \parallel$	$\ $	₩.	Щ'	$\parallel \parallel \mid$	╫╢	₩	₩	$\parallel \parallel$
24	+				,				24	1				$\parallel$	╟	╫			$\  \ $	<u> </u>		╫	<u> </u>
	1	-				1			25	7					$\prod$	$\prod$	П	$\prod$	Ш	Ш	Ш	$\prod$	Ш
25					<u> </u>	45			43	Ц			<u> </u>		Ш	Щ	Lil	Ш	Ш	للك	Ш	Ш	لللا



#### **EXPLORATION BOR LOG**

F.S.	On Urban Arterial Road S	iyatem Devolopment Pro	oject in Jakarta Metropolitan Area

MB	No	:	NS	94-10	0

TOTAL DEPTH (-m)	19.00	CASSING	Ø 89 mm
BOR MACHINE TIPE	YBM - YSO.1HE	SUPERVISOR	Yosuke Sasaki
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
GROUND ELEVATION		SOIL & MAT. ENGINEER	D. Sukarta Ir.
COORDINATES		DATE COMPLETED	January 19th 1994
LOCATION	Jl. Arteri Cilandak	DATE COMMENCED	January 18th 1994

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<u> </u>	- )	_					as.		-m )		TAB	ID A F	RD PI	- 6.1		'D	\ T	16		, -	Г.	:01	_	7
E	E .	Ë.			VISUAL		Thin-Walled Tube		ַ	3	HAN									!	1 6	. <b>5</b> I	í	
	တ္သ				DESCRIPTION &		L Pa	Š				( )	ASTM	-	D.	. 1 :	סכ	b	)					
_	(NE	. r.	<b> -</b> -	0 8	CLASSIFICATION	LOR	Nali	Τ.	<b>.</b>		N v	ALUF			NI	JM	BE	R	OF	В	LO	WS	<u> </u>	1
DEPTH	THICKNESS	G.W.L	Z	Σ >	OLAGON TOX TOX	10	ıin-1	<u>.</u>	DEPTH	15	30	45	N		10		20		30		10	50		
Ö	F		2	S		ပ	ᄪ	S	۵	Cm	Cm	Cm			1	117	L	11	Ļ	1	<u>.</u>	ᅰ	т.	┦
1 -	1.50	1.00			Embankment; Sandy Clay, high plasticity, CH, Soft, Clay	Brownish			1 -		1	Ì	ŀ	╫	Н	Н	H	╫	H	H	₩	╫	$\mathbf{H}$	H
^-		¥			= 95%, Sand = 5%	red	*:	1.50						Ш	П		Ħ	Щ	I	Щ	$\prod$	Щ	Ш	1
2	0.80				Medium ; Tuffaceous Sandy	Grey	2.50	S.1 1.95	<sup>2</sup> –	1	2	3	_5	₩	H	$\coprod$	₩	Щ	╫	Щ	₩	╫	╫	$\!$
3	0.70				Clay, high plasticity, CII.	Blackish		2.80	3 +					##	Ш	Ì	$\!$		Ħ			Ш	Ш	1
	0.60	1	WUTERATIO		Dense ; Sandstone , strongly/	grey /	3.00	S.2	4	16	16	14	30	$\prod$	$\prod$	$\prod$	$\prod$		F	$\prod$	$[\![]$	Щ		
4-	0.90	1	30163		cemented	Greyish		3.25 4,50	_"⊣				}	#	╫	₩	╫	₩	╫	₩	₩	₩	₩	H
5_				13513111(1)(E)()	Dense; Sand, well graded, sub rounded - rounded grain shape,	black		S.3	5_	19	40	23	>60	Щ	Щ	$\parallel$	$\parallel$	Щ	$\parallel$	Щ	$\prod$	Щ	Щ	1
6 -	-	1			sw.	Blackish brown /		4.85 6.00	6					₩		$\parallel$	╫		#	₩	$\left\{ \left  \cdot \right  \right $	<del> </del>	+H	+
-					Hard; Siltstone, medium to	\/		S.4		16	25	31	>60	$\parallel \parallel$		$\parallel$	$\parallel$	Ш	Ħ	⇈	Ш	#	Ш	#
7_					strongly cemented.			6.40 7.85	7_					╫	╫	$^{+}$	#	Н	$\mathbb{H}$	Ш	Щ	Ш	#	Н
8 -	1						1	S.5	8_	60	-		>60	$\parallel \parallel$		Ħ	Ħ		Ħ	Н	Ш	Ш	Ш	Ш
]		ļ					}	8.00	۔ و					$\prod$	ĮĮ	$\prod$	I	Ш	$\prod$		$\parallel$		Щ	Д
%-								9.00 S.6	-	30	60	_	>60	╫	╫	$^{\dagger}$	H	H	╫	╫	╫		/+++	Н
10		1	NO				İ	9.30	10 _					Ш	$\parallel$	Щ			Щ	Ш	$\parallel$	Щ	H	4
] <sub>11</sub> -	1		AA T			}		10.50 S.7	11	20	25	8	33	+++	╢	╫		╁	$\parallel$	И	H	$\mathbb{H}$	#	Н
-	<u> </u>		FORMATION					10.95							#		Ш	I			۲	TI	Ш	╣
12_	}	1			Very dense; Sandstone, with	Blackish		12.00 S.8	12_	16	40	25	>60	Ш	₩	H	₩	₩	Н	Н	#	+++	$\mathbb{A}$	H
13	14.50	ĺ	GENTENG		intercalated Siltstone, medium	brown		12.35	13	10	10		-00		$\dagger \dagger$	Ш		Ì		Ш	$\parallel$	Ш	Ш	Ш
, , -	]		EN.		to strongly cemented, fine - medium grain size.	to		13.50 <b>S.9</b>	14	15	30	32	>60		$\prod$			$\parallel$			$\parallel$			$\prod$
-14	┪	1	Ð	į	medium grain size.	black		13.95	l –	13	30	32	/00	╫╫	╫	╫	Ш	$\dagger \dagger$	Н	Н	$\dagger$	#	H +	H
15	1							15.00	15	<u> </u>			- 70	Щ	$\parallel$	Щ	Щ	$\prod$	Ц	Ш	$\downarrow \downarrow$	$\prod$	Щ	Щ
16	-					.[	1	S.10 15.40	16	22	34	30	>60		╫	₩	Н	╫		-	#	╫	╫	H
-	1					1		16.50			<u> </u>				$\parallel$		Ш	$\parallel$						$\prod$
17 -								S.11 16.80	17_	38	62		>60		╫	╫	₩	╫	Н	₩	H	₩	₩	Н
18_	1							S.12	18_	28	61		>60	Ш	Щ	Ш	Ш			1		Ш	Ш	Ш
	-	1						17.80	19 -	1		ļ		Ш	$\coprod$		H	#		#				11
19		十	T		END OF BORE HOLE	1		<del>                                     </del>	_	<u> </u>	ļ	ļ		╫	Ħ	Щ	╫	Ħ	Ħ	$\dagger$	Ħ	$\parallel \parallel$	Щ	Ħ
20_	1				( - 19.00 m )				20 _	]				Щ	Щ	Щ	$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	Щ	$\prod$
21	-								21					$\parallel \parallel$	$\parallel \parallel$	$\parallel \parallel$	H	$\parallel$	#	+	₩	+ + +	H	+
-	1									1				$\prod$		Щ	П	$\prod$			$\prod$	Ш	Ш	$\prod$
22_	-		٠ .					1	22_	-				₩	$\mathbb{H}$	₩	₩	$\mathbb{H}$	╫	$\parallel$	₩	₩	₩	#
23	1								23	1			ŀ	Ш	Ш	Ш	Ш	Щ			Щ	Ш	Ш	$\parallel$
24	]								24	1				$\mathbb{H}$	Щ	$\prod$	$\prod$	$\prod$	$\prod$	4		₩	₩	$\prod$
-	1								~~-	1				₩		╫	Ħ	$\parallel$	╫	$\parallel$	╫	₩	₩	#
25	1	<u>L</u>	<u> </u>	<u></u>		1	<u></u>	<u>L</u>	25	1	<u> </u>		<u> </u>		Ш	Ш						Ш	Ш	$\prod$
			•		(	16)	10/	۱-17																



EXPLORATION BOR LOG

EGIL & MAT. INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

F.S. On Urban Arterial I	Road System Devolopment Project	in Jakarta Metropolitan Area	MB No : EW . 94-01
LOCATION	Rawa Buaya	DATE COMMENCED	February 11th 1994
COORDINATES		DATE COMPLETED	February 14th 1994
GROUND ELEVATION	4.37	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	YBM - YSO.1HE	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	40.45	CASSING	Ø 89 mm

. 1	2	ે3		4	5	6	7	8	9	,	•	,		1	Λ.								
25%	- G				3	V	4.0							Ų	0.		∢	-					4
E-)	E	Ē					2		Ē	S	TAN	DAF	RD P	ĒΝ	Ē٦	ſŔ	ΑT	10	N.	T	ES	Т	-
٠	_	-			VISUAL		Tebe	ا ہا	ٺ				ASTIN										j
	SS	١.		10	DESCRIPTION &	œ	3	No.				, ,	10111		_		,,	•	,				
Ŧ	Ş		1 1	Ω0	CLASSIFICATION	0	₹	1.	Ŧ		N v	ALUE	:		N	UN	IRF	Rí	OF I	RI (		<u> </u>	ヿ
DEPTH	THICKNESS	G.W.L	Z	×		0.1	Thin-Walled	ا به ا	DEPTH	15	30	45			10		20	3		40		50	- }
۵	₽	Ø	n	Ś		ပ	F	σ l	ă	Cm	Cm	Cm	N		i		1	Ī	Ī.	Ī		Ī	
	0.50				Soft, Sandy Clay; High	Brown								$\prod$	$\prod$		$\prod$	$\prod$	$\prod$		$\prod$	$\coprod$	$\prod$
1 _					Plasticity, CH; Clay = 80 %,	*.		S.01	1_	2	3	5	8	Щ	N,	Щ	Щ	Щ	Щ	Щ	Щ	Щ	Щ
2 -					Sand = 20 %	Redish		S.02 S.03	2 -	3	6 7	8	14 15	₩	-	$\mathbb{H}$	Ш	-  -	Ш	#	-	Щ	₩
					· · · · · · · · · · · · · · · · · · ·	Grey		S.04		5	7	10	17	₩	╫	*	₩	+	╫╫	₩	+++	₩	Н
3_	4.50	1			Stiff, Sandy Tuffaceous Clay;	To	3.00	S.05	3	2	5	6	11		#	1	$\parallel$	#	Ш	#	#	#	Ш
, -					High Plasticity, CH; Clay =	Yellowish									7	$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	$\prod$	П
4_		ŀ			100 %.	Grey	3.60	S.06	4	3	3	5	8	Щ	4	Щ	Ш	Ш	Щ	Щ	Щ	Щ	Щ
5 -	1							S.07 S.08	5	2	3	5	7		V	$\mathbb{H}$	#	$\parallel \parallel$	HH	$\mathbb{H}$	+	₩	╁╂
	<u> </u>	1			·			5.09	~ <u> </u>	4	10	25	36	$\parallel \parallel \parallel$	Ŧ	#	₩	#	丗	Ш	╫	₩	₩
6	]							S.10	6	12	32	35/10	>60				$\parallel$	Ш	[[	Ħ	Ħ	$\dagger \dagger$	Ħ
7-		1						S.11		25	56		>60		$\prod$	Щ	$\prod$	$\prod$	Ш	Ш	$\prod$	$\prod$	Ш
′	1	7.30						S.12	7_	22	60		>60	Щ	#	Щ	#	Щ	Щ	Щ	Ш	Щ	Ш
8 -	1	=						S.13 S.14	8 -	39 31	53 40	15/3	>60 >60		╫	$\mathbb{H}$	Н	#	HHH	-	$\mathbb{H}$	+++	Ш
	1				Hard, Sandy Silt (Silt Stone);			S.15		10	30	30/10	>60	Ш	╫	Ш	#	++		Н	##	<b>†</b> #	₩
9_	8.0				Locally Cemented ; Medium	Yellowish		S.16	9_	25	40	18/5	>60				Ш			$\parallel \parallel$	Ш	##	Ш
10 -	ļ	Ì	×		Plasticity, ML; Clay = 70 %.	Grey		S.17	•••	25	60		>60		П	$\prod$	$\prod$		Ш	Ш	$\prod$	$\prod$	$\prod$
'"-	ł		ŏ		Six = 30 %.	ł		S.18 S.19	10_	24 15	41 22	22/10 40/10	>60	Ш	╁	Ш	#	Щ	Щ	Щ	Ш	Ш	Щ
11,	i	i	E					S.20	11 .	12	22	30	>60 52		∦	╫	╫	+			Ш	Щ	∦
-	1		0					S.21	_	34	31	35	>60	Ш	Ħ	╫	Ħ	+++	HH	Ш	H	Ħì	H
12_		1	ž				1	S.22	12	20	29	35	>60		1	Ш	Ш		Ш	Ш	Ш	Ш	1
13	-		8					S.23	12	9	18	28	46		Ц	$\prod$	Ш			Щ		17	Ш
′°′ –		1	VULCA			<del> </del>	ł	S.24 S.25	13_	8	12 10	12 13	24 23	Ш	₩	₩	Ш	1	Ш	$\parallel \parallel \parallel$	Щ	$\mathbb{H}$	Щ
14	1		>				ļ	S.26	14	7	8	12	20		╫	₩	K		$\  \ $	Ш	,++1	##	H
	]						l	S.27		7	8	12	20	Ш	1		#		Ш		H	$\dagger \dagger$	11
15_	┦		OUNG			1		S.28	15_	5	7	11	18	Ш	Щ	Ш	4		Ш	Ш	Ш	Ш	Ш
16	ł		悥			1		S.29	16	10	18	20	38	Щ	Щ	Ш	Щ	$\prod$		#	#	Щ	Щ
~~~	1		۶		·		1	S.30 S.31	^°-	12 20	30 35	35 30	>60 >60	HH	4	₩	₩	₩	╁┼┼	Щ	Щ	-##	Щ
17	1							5.32	17	18	30	37	>60	-	╫	╫	H		HH	H	rH	Н	
<u> </u>	]					i		S.33		6	10	13	23	H	1	Ш	Ħ	H	Ħ	Ħ	Ħ	11	Ħ
18_	4				·	İ		S.34	18	9	11	13	24	Щ	Щ	Щ	П	VI.	Ш	Ш	Ш	Ш	Ш
19	┨				Very Stiff to Hard; Tuffaceous	Yellowish		S.35	19	8	12	14	26	Ш	Ш	₩.		}.	Ш		Щ	Щ	4
-	13.0				Clay; High Plasticity, CH;	Grey	1	S.36	- `	7	11	14	25	$\parallel \parallel \parallel$	₩	╫	#		₩	Ш	₩	HH	₩
20	]				Clay = 100 %	1			20			1	40	1		$\parallel \parallel$	$\parallel \parallel$	#	₩		#	<u> </u>	#
] ,,							i	S.37	-	6	10	14	26	Ш		$\parallel \parallel$	$\prod$	1	$\parallel \parallel$	Ш	Щ		$\parallel$
21 _	1							0.00	21 _		1.2			Щ	Щ	Щ	Щ	Į.	Щ	Щ	$\prod$	Щ	Щ
22	1							S.38	22	8	12	15	27	Ш	$\mathbb{H}$	₩	╫	1	₩	₩		HH	1
-	j							S.39		8	12	17	29	╫	₩	₩	₩	╫	₩	╫	H	HH	#
23	]								23			<u> </u>		<b>1</b>	$\  \ $	╁	<b> </b>	/	<b> </b>   -		Ht		#
] ,, .	4	1.						S.40		6	13	14	27	$\prod$	Ш	$\prod$	Ш		$\prod$	$\prod$	$\prod$	Ш	$\prod$
24	1	1					1	6.44	24_	1 -	12	10	20	Щ.	Щ	Щ	Щ	Щ	Щ	Щ	Щ	Щ	Щ
25	1						1	S.41	25	7	12	18	30	╂┼	₩	₩	₩	H	₩		₩		44
			-		Continued				17)	<u></u>	L		<del></del>		ш	ш	ш	ш.	ш	Щ	Ш	Щ	Ш
					/!!!!!			١,	111				1.0										



SOIL & MAT. INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Aterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: EW . 94-01

1	2	3		4	5.	6	7	8	9				1	0							
-m)	m )	( E					2		-m)	STAN	IDAF	RD P	EN	E٦	rR/	ΑT	IO	N	TE	ES1	$\Gamma$
-	<b>)</b>	] -		,	VISUAL		Thin-Walled Tube	Š	÷			ASTIV									
	THICKNESS	ند	⊥	10	DESCRIPTION & CLASSIFICATION	OR	Valle	F.	x	N. V	ALUE					RF	R O	FF			-
DEPTH	HICK	G.W.L	Z	Y M B	CEASSII ICATION	0103	hin-V	ا ج ا	DEPTH	15 30	45	N		10		20	30		40	54	
	T	6	<b>-</b>	S	Very Stiff to Hard; Tuffaceous	0	-	υ S.42		Cm Cm 10 13	20	33	П	+	Ш	$\frac{1}{1}$	┰┪	NT	$\mathbf{h}$	П	TITI
26				egrumed a Jos	Clay; High Plasticity, CH; Clay=100%.			5.43	26 _	13 16	20	36		$\prod$	$\mathbb{H}$	$\prod$	$\coprod$	H	$\prod$	$\prod$	$\prod$
27_	2.00				Very Dense , Sand Poorly	Yellowish Grey		S.44	27_	18 25	36	>60	$\prod$	$\prod$	Ш	Щ	$\prod$	₩	$\prod$	#	##
28_					Graded, SP; Sand = 100 %	Gley			28_		.,0			#		╫	#	₩	#	Ш	
29								S.45	29_	25 62		>60	Ш	#	Ш	Ш	#	₩	╫	Ш	拙
30			ROCK		Very Hard , Tuffaceous Sady	Yellowish Grey to		S.46	30	11 18	22	40					$\coprod$	⊞	ľ	$\mathbb{H}$	$\blacksquare$
31	4.00		RC		Silt, Medium Plasticity, ML; Silt = 70 %, Sand = 30 %.	Blackish Yellow		S.47	31	18 25	38	>60		$\ $		$\prod$	$\prod$	$\prod$	$\prod$		+
32			ō					S.48	32	15 18	40	58		#	$\prod$		#	$\prod$	$\prod$	∭	$\mathbb{H}$
33		1	VULCANIC					5.49	33	9 14	21	35		#		$\parallel \parallel$		K	#	$\prod$	
-			VUL					S.50		11 17	22	39		#			#	Ш	X		
34_		•						S.51	34_	13 16	23	39		$\parallel$	$\prod$	Ш	$\coprod$	╫	H		
35_		ļ	YOUNG					S.52	35_	10 15	19	34	Н	#	Ш	H	H	H	₩		++++
36	8,45		ΥO		Very Hard, Tuffaceous Clay, High Plasticity, CH; Clay =	Yellowish		S.53	36_	11 14	19	33		$\coprod$		$\mathbb{H}$	$\prod$	$\blacksquare$	$\prod$	$\prod$	1111
37_					100 % .	Grey	<u> </u>	S.54	37	7 12	18	30	Щ	#	Щ	Ш		$A \parallel$	#	Щ	
38									38_					#	Ш		╨	Щ	#	Ш	Ш
39_								S.55	39	7 13	20	33		Ш	Ш			1			
40	ł							S.56	40	8 13	22	35		Ш	Ш	Ш	Ш		Ш	Ш	
41		-			END OF BORE HOLE	<del> </del>		S.57	41	11 19	22	41		H	₩		$\prod$		+	₩	$\mathbb{H}$
42	1				( 40.45 m )				42	]			$\prod$	-	$\prod$	$\prod$	$\prod$			$\prod$	
43	1								43	1				#	$\parallel$	#			#	$\parallel$	
7	1								-	1					#	#				#	
44_	1								44	1			#	$\parallel$	#	╫			$\parallel$	$\parallel \parallel$	
45_	}								45 ~	]	{		$\parallel \parallel$	₩	₩	₩	$\coprod$	H	$\coprod$	#	
46_	}								46_					$\prod$	$\prod$	$\prod$	$\prod$	$\mathbb{H}$	$\prod$	$\prod$	H
47_	1								47_	1				$\prod$	#	$\prod$	$\prod$	$\prod$	Щ	#	$\prod$
48_	1	1.							48_	1			Щ	Щ	#	#	##			<del>         </del>	╂╫╫
49	_		.						49_	1	"		Ш	Ш	Ш	╫	#	$\parallel \parallel$	Ш	Ш	Щ
50	1				· · · · · · · · · · · · · · · · · · ·	<u> </u>			50	1				$\coprod$	$\prod$				$\coprod$	$\coprod$	



SOIL & MAT. INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area

MB	No	:	<b>EW</b>		94-02	
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LOCATION	Cengkareng (Kembangan Village)	DATE COMMENCED	February 07th 1994
COORDINATES		DATE COMPLETED	February 10th 1994
GROUND ELEVATION	3.6	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	YBM - YSO.1HE	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	40.45	CASSING	Ø 89 mm

Care   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.   Fig.	1.	2	3		4	5	6	7	8	9					1	)								
1   2   3   5.00   1   1   1   2   3   3   5.00   3   5.00   5   5   5   5   5   5   5   5   5	( m -)	•	( m-)			·	<b>&amp;</b>	led Tube	No.	E	8	TAN									TE	.S1	Γ	
1   2   3   5.00   1   1   1   2   3   3   5.00   3   5.00   5   5   5   5   5   5   5   5   5	Ξ.	Š	1.1	<u>-</u>	œ.	CLASSIFICATION	0	¥-	•	E		N v	ALUE			N	M	BE	R O	FE	BLO	ws		1
1	DEP	THIC		ı	>			TINE.	•	DEP				N		10 	2	20 	30 	) .	40 	50 	0	
Siff to hard; Tuffaceous sandy   Siff to hard; Tuffaceous sandy   Siff to hard; Tuffaceous sandy   Siff to hard; Tuffaceous sandy   Siff to hard; Tuffaceous sandy   Siff to hard; Tuffaceous sandy   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to hard; Tuffaceous   Siff to ha	2 - 3 - 4 - 5 - 6 6		0.80	MILUVIUM		with a little Gravel , High Plasticity , CH ; Clay 97 % , Gravel = 3 %  Loose, Silty Sand with a little Gravel , poorly graded , SP ,	Grey	UD.1	\$.02 \$.03 \$.04 \$.06 \$.06 \$.07 \$.08 \$.09 \$.10 \$.11 \$.12	2	1 0 0/50 0/50 0 2 1 1 1 1 2	1 1 3 2 1 2 2 2 3	3 2 1 2 3 4	2 1 0 0 1 6 4 2 4 5										
Sandy Clay , medium to high plasticity , CH , Clay = 90 % , fine Sand = 10 %.	9 _ 10 _ 11 _ 12 _ 13 _ 13	6.00		VULCANIC		Stiff to hard; Tuffaceous sandy Stit, low plasticity, ML, locally cemented, Sitt = 75 %, find Sand = 20 %, Garvel = 5	Grey	UD.2	S.14 S.15 S.16 S.17 S.18 S.19 S.20 S.21 S.22 S.23 S.24 S.25	9	4 4 4 5 5 12 12 8 8 10 8	7 4 6 7 8 15 16 19 12 11 10	12 6 11 9 12 22 24 25 36 13 12	19 10 17 16 20 37 40 44 48 24 22 30										
Very dense , Sand stone , medium to strongly cemented , angular to sub roended grain shape.    19	16	3.00		YOUN		sandy Clay, medium to high plasticity, CH, Clay = 90 %,			S.27 S.28 S.29 S.30 S.31	16	6 4 5 7 6	7 4 7 15 9	9 10 10 18 18	16 14 17 33 28										
22   3.00   Very dense , Gravelly Sand , poorly graded , SP , Sand = 80   Grey   S.37   22   28   36   >60	19 _ 20 _	4.90		-ORMATION		medium to strongly cemented, angular to sub roended grain			S.33	18 19 20	60	65		>60 >60									†  - 	
	23	3.00			100 A 101 A 01	poorly graded, SP, Sand = 80			S.37	22 23 24	22	28	36	>60 >60										
	25	1_							5.39		30	62		>60	+	$\coprod$	$\prod$	Ш	Ш	Ш	$\prod$		$\coprod$	#



SOIL & MAT INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Aterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: EW . 94-02

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	٠	m->			VISUAL		Thin-Walled Tube	No.	÷				STN									1
	ESS	:	  -	OL	DESCRIPTION &	<b>K</b>	allec	Ž ⊢														$\dashv$
DEPTH	THICKNESS	G.W.L.	_	8 2	CLASSIFICATION	COLO	N-ri	۲.	DEPTH	15	N V/	45			NU 10	M E		OF 30	BL:		15 50	-
Ö	TH	Ö	5	λs		Ö	ᄩ	'n	٥	Cm		Cm	N	TT	1		TT	4		1311	1	
26								S. <b>4</b> 0	26	10	12	16	28	$\prod$		╫	H	₩	╫	HH		Ш
-								5.41	27	9	12	17	29	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$
27									_					Ш		$\parallel$	Ż	$^{\dagger\dagger}$		Ш	$\prod$	$\parallel$
28								S.42	28_	7	9	13	22	╫	╫	+	H	₩		₩	H	$\mathbb{H}$
29_								S.43	29_	10	13	20	33	$\prod$		Щ	Щ	4	igwedge	Щ		Щ
30							1	S.44	30_	14	19	24	43	#	Щ	Ш	Щ	#	曲	$^{\dagger \dagger}$	Ш	Щ
31	16.50		N.C					S.45	31	13	20	25	45	$\prod$	₩	₩	HH	₩	H	H	$\parallel \parallel \parallel$	H
-	10.70		FORMATION						32			24			$\prod$		$\prod$	$\parallel$	$\parallel \parallel$	<b>7</b> 1	$\prod$	$\blacksquare$
32 _	-		ORM		Very stiff to hard; Clay to medium high plasticity, CH,	Greyish		S.46	- 1	11	17		41				Ш	$\parallel \parallel$	И	$\coprod$		Ш
33	1				Clay = 100 %.	Brown		S.47	33	8	13	18	31	╫	₩	₩	HH	₩	$\mathbb{H}$	₩	$\frac{1}{1}$	Ж
34	1		TENG					S.48	34_	10	18	25	43	Ш			Ш	$\prod$		**	Ш	Щ
35	┨		GEN					S.49	35	10	16	23	39	Ш	$\coprod$	Ш	Ш	Ш		$\coprod$		Ш
36	1							S.50	36	10	13	17	30			$\prod$	$\prod$		$\langle   $	$\mathbb{H}$		$\mathbb{H}$
_	1							S.51	37	9	10	13	23	Ш	1			$\square$	##	$\parallel \parallel$		Ш
37_	-							S.52	1 -	9	11	13	23		╫	╫	Ш	+++	++++	+++	HH	HH
38_	1					,		S.53	38_	8	10	16	26		$\mathbb{H}$		₩	$\mathbb{H}$	₩	$\mathbb{H}$	₩	Ш
39	1								39						Щ		Ш	Щ	Ш	Щ	#	Щ
40	-							S.54	40	10	16	19	35					$\mathbb{H}$	$\Downarrow$		Ш	
	_	ļ			END OF BORE HOLE			S.55	41	- 11	20	27	47		11		$\prod$	Ш	$\blacksquare$		₩	$\prod$
41 -	1				( 40.45 )				] -	1						Ш	$\parallel \parallel$		$\parallel \parallel$	Ш	$\prod$	Ш
42 -	]								42 -	-				H	╫	₩	₩	HH	₩	Ш	╫	+++
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47	1								47.	-				$\ $	$\prod$	#	H	₩	HH	₩	HH	#
48	1				,				48_	1							$\parallel \parallel$	$\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	Ш	$\prod$	Ш	Щ
49	+								49	_				$\parallel$	∄	$\parallel$		$\coprod$		₩		$\prod$
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50						1	_L		1 30		Ц	Ь	L	ш	LL.	ш	للد	Ш	للللل	ساسلسا	لللنا	444



SOIL & MAT, INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: EW: 94-03

LOCATION	Green Garden	DATE COMMENCED	February 04 th 1994
COORDINATES		DATE COMPLETED	February 06th 1994
GROUND ELEVATION	2.05	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	YBM - YSO.1HE	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	35.45	CASSING	Ø 89 mm

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-	SS (	-		٠, ٦	VISUAL DESCRIPTION &		Thin-Walled Tube	No.	<b>ن</b> .			( )	ASTN	1 -	D.	15	86	6	)			
ᇀ	THICKNESS	<u>;</u>	<b>—</b>	MBO	CLASSIFICATION	O.R	Walk	٠٦.	Ξ	$\vdash$	N v	ALUE		<u> </u>	N	UM	BEI	R O	F B	LOV	vs	
рертн	王	չ Ծ	<b>₹</b>	SYR		COLO	Ė	S.P	DEPTH	15 Cm	30 Cm	45 Cm	N		10 1	2	20	30 I	٠ ،	40 i	50 !	
1		· ·						0.04	1					Ш	$\parallel$	Ш	Ш	П	Щ			П
	. :	2.00	SOIL					S.01 S.02	_	3	3	4	7 2	X	H	$\coprod$		Ш				
2		$\blacksquare$			Very soft to medium; Gravelly Clay, high plasticity, CH,	Brownish grey	2.35	S.03 S.04	2_	2	2	3	5	N	$\prod$		₩	$\prod$				
3_	5.50		ESIDUAL		Clay = $95\%$ , gravels = $5\%$ , at the top with dirt and gravels	to Yellowish	UD.1	S.05	3_	2	3	4	7	$\parallel \parallel$			$\prod$	Щ				
4_			RESI		thickness at 0.30 metre.	grey		S.06 S.07	4_	1	1	2	3	И		##	Ш			Щ	#	
5_			_		·			S.08	5_	1	1		1				Ш			Ш	╫	
6_	<u> </u>	1						S.09 S.10	6_	1	1	-	1				$\coprod$		***		$\coprod$	
7_								S.11 S.12	7	0/50 0/50			0			$\prod$	$\  \ $			$\prod$	$\prod$	$\prod$
8		İ				Blackish	\$.00	S.13 S.14	8	0/50 0/50			0							$\prod$		$\prod$
9-					Very soft, Organic Clay, high plasticity, CH, Clay = 100 %.		UD.2		9	0/30	1	-	-		1	#						Ш
10	6. <b>\$</b> 0				plasticity, Cri, Clay == 100 %.	Black	4.00	S.16	-	0/50	1		0		1		╫	╫				Ш
]								S.17	10_	0/50			0			╫	╫	₩				Ш
11								S.18	11 _	0/30	1		1					$\blacksquare$				$\prod$
12								S.19	12_	1	1	1	2	W	Ш	1	₩	₩		╫		Щ
13			Σ					S.20	13_	1	2	3	5		Ш	#	₩	╫				Щ
14	3.20		01/		Soft to medium, Peat layers, fine.	Black		S.21	14_	1	1	2	3			$\coprod$	Ш	╢				
15			ħ n		Inte.			S.22	15	<del>                                     </del>	2	2	4		#	+	$\ \cdot\ $	╢				
16		1	AL			ļ <u>-</u>	-	S.23	16	1	1	2	3		$\prod$							$\prod$
17								S.24	17	1	1	1	2		#			₩				$\prod$
18								S.25	18	1	1				#	##		<b>   </b>	Ш	<b>!</b>		Щ
19					Soft to medium; Organic Clay, medium to high plasticity, CH,	1			-			ı,	2	##	+	+	╫	╫	$\parallel \parallel$	╫		Ш
-	7.00				Clay = 100 %.	to		S.26	19_	1	1	1	2	H	$\parallel$	$\parallel$	╫	╢		╫		+++
20_						Grey		S.27	20_	1	i	2	3		$\parallel$		$\prod$	$\prod$		H		$\prod$
21_								S.28	21	1	2	2	4	Щ	#		₩	$\coprod$		$\prod$		<u> </u>
22_								S.29	22_	1	2	3	5	<b>   </b>			<b>#</b>	∭		$\prod$	Ш	Ш
23_		4	, ,					S.30	23_	1 1	3	3	6	Ш	$\parallel$		╢	Щ	Щ	$\coprod$	Ш	$\coprod$
24								S.31	24	4	4	5	9	$\prod$	$\bigvee$		$\prod$			$\prod$		+
25								S.32	25	4	5	8	13	$\left\{ \left\  \right\  \right\}$	I	$\blacksquare$				$\prod$		
				L	Continued	104-2		(21		•	•		<u> </u>					111		4.1.1.		لنب



**EXPLORATION BOR LOG** 

OIL & MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

F.S. On Urban Aterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: EW . 94-03

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Î	( E	_					ę		-m)	STAR	DARD	PENETRATION TEST
( m-)	-	m-)			VISUAL		Thin-Walled Tube	۱ .	)	0,7,1		M - D.1586 )
	THICKNESS	:		01	DESCRIPTION &	œ	E E	No.				T
DEPTH	CK	G.W.L	L   N	<b>8</b>	CLASSIFICATION	010	N-W	.P.T.	DEPTH	N V	ALUE 45	NUMBER OF BLOWS 10 20 30 40 50
DE	₽.	o	5	λS	,	CC	lut.	s	DE	Cm Cm	Cm N	
26								S.33	26	4 6	10 16	
-					Stiff to hard; Tuffaceous sandy Clay, high plasticity, CH,	Yellowish			27			
27_	7.00				Clay = $80 \%$ , Sand = $20 \%$ , the depth $28.00 - 28.55$ is hard	grey to		S.34		10 14	18 32	
28_	]		ROCK		die deput 20.00 * 20.55 is had	Brownish grey		S.35	28_	12 18	27 45	
29_						, ,		S.36	29	9 13	16 29	
30			ANK					S.37	30	9 12	15 27	
31	ļ		YOUNG VULCANIC					S.38	31	9 13	17 30	
-			S S			V 11 11 1		S.39	32	10 15		
32_	5.45		rour		Hard, Tuffaceous Clay, high plasticity, CH, Clay = 100 %.	Yellowish grey			_			
33_	-				placetory, ext, eray			S.40	33 _	10 15	26 41	
34	1							S.41	34_	10 17	24 41	
35	}							5.42	35_	11 18	25 43	
36	-	+			END OF BORE HOLE			S.43	36	10 19	21 40	
37	1				( 35.45 m )				37	1		
-	1	1								1		
38_	┨								38	1		
39_	1					Ì			39_	1		
40_	1								40_	1		
41	-								41	1		
42	1								42	1		
-	}							:	-	1		
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EXPLORATION BOR LOG

SOIL & MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

·s	On Urban Ateriai Road System Devolopment Project in Jakarta Metropolitan Area		MB No : EW . 94-04
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LOCATION	Prima Indah	DATE COMMENCED	February 01th 1994
COORDINATES		DATE COMPLETED	February 03th 1994
GROUND ELEVATION	2.45	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	YBM - YSO 1HE	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	35.45	CASSING	Ø 89 mm

TOTOTAL TOTAL TOTAL	10 ENETRATION TEST 1 - D.1586 )  NUMBER OF BLOWS 10 20 30 40 50
DESCRIPTION & CLASSIFICATION OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF	NUMBER OF BLOWS
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a	10 20 30 40 50
0 F Ø B Cm Cm Cm	
Soft Clay with slittle Sond Redish	<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>
1 1.00 Soft; Clay with alittle Sand; Redish High Plasticity, CH; Clay = 95 Brown 1	
%, Sand = 5 %.	
1 100 Brownish Brownish Grey 2.30 4 5 9 High Plasticity CH; Clay; Grey 2.50 1.95	
	+{ <b>/</b> }
100 %. 3.10 S.02 2 2 3 5	<del>                                      </del>
4	
5 ]	
4.95	
6.00 6 6	
7 7.90 Medium dense to dense ; Blackish UD.2 6.60 S.04 7 1 1 2 3	
Tulfaceous Clayey Sift; Medium Yellowish 7.05	
Clay = 30 %.	
9 -   S.05 9 9 12 12 <b>24</b>	
S.06 10 12 14 17 31	
11 _   9.95   11 -	
12 1.80 S Very dense; Sand; Poorly Black 11.36 12	
Graded , SP ; Sand = 100 % S.08 21 26 38 >60	
S.09 25 60 >60	
14 1330 14	
15 S.10 12 36 29 >60 1	
S.11 18 25 25 50	
16 15.45 16	<b>//</b>
Very dense; Tuffaceous Sandy S.12 12 18 25 43	
Sult; Low Plasticity, ML; Sult = 1540Wish 17   1645 17   17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645 17   1645	<del>                                      </del>
18 17.30 18	
S.14 1845 19 10 23 30 53	
S.15 12 14 14 28 1	
20 19.45 20	<u>                                     </u>
21 - S.16 7 15 15 30	
S.17 7 6 8 11 19	
22 21.45 22	<u>1                                    </u>
Very Stiff; Sitty Clay with a little Greyish S.18 6 8 10 18  Organic; High Plasticity, CH; Black 22.41 23	
23 3.50 Organic; High Plasticity, CH; Black 22.45 Clay = 70 %, Sitt = 30 % S.19 8 10 13 23	
24 2345 24 0 10 13 23	
25 - S.20 11 15 119 34	
Dense 2445 25 Continued	



SOIL & MAT INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Aterial Road System Devolopment Project In Jakarta Metropolitan Area

MB No: EW . 94-04

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1	ESS	.		10	DESCRIPTION &	œ	Thin-Wailed Tube	. No.		· · · · · · · · · · · · · · · · · · ·											_
Ŧ	THICKNESS	×.L	- X	8	CLASSIFICATION	Lo	-Va	۱ -	ОЕРТН		ALUE			NU							
DEPTH	₹	0	5	λS		၀၁	Ē	S.P	DE	15 30 Cm Cm	45 Cm	N		10 	20 	:	30 	40 	)	50 	
	<u> </u>	1			Dense ; Fine Sand ; Poorly			S.21	26	10 15	19	34	Ш	Ш	Щ	Ш	Ш	Ш	Щ	$\prod$	Ш
26	1.85				Graded, SP; Sand = 100 %	Стеу		25.45 S.22	<sup>26</sup>	10 16	20	36	╂╫┼	╁╫	╫		₩	₩	₩	₩	+++
27	1	1				<u> </u>		26.45	27_		30				Щ	Ш	$\prod$	#	X	$\prod$	Щ
28	1							S.23 27.45	28_	17 21		51	Ш		Ш	Ш	Ш	Ш	<u></u>	1	†††
29	1	1.	ROCK			.*		S.24 21.45	29	10 18	22	40			$\prod$			X	$\prod$	$\prod$	
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30	-		NIC		Hard to Very Hard; Tuffaceous			29.45 S,26	30_	8 11	13	24	Ш	Ш	₩	$\mathbb{H}$	H	,##	₩	₩	
31	9.15		VULCANIC		Clay; High Plasticity, CH; Clay	Yellowish		30.45	31				<b>1</b>	Ш	Щ		Ш	Щ	Щ	Щ	Щ
32	-				= 100 %	Grey		<b>S.27</b> 31.45	32	6 10	13	23	╂┼┋┼	$\left\{ \left\{ \right\} \right\}$	╫	HH	<b>.   </b>	╫	₩	╫	#
'	1 .		YOUNG			ļ		S.28	33	7 9	13	22	Ш		Щ	$\prod$	$\prod$	Ш	$\prod$	$\prod$	Щ
33	-		ΥOL		ħ			32.45 <b>S.29</b>	-	7 10	14	24	╂┼┼		╫	H	H	<del>    </del>	₩	$\parallel \parallel$	+++
34	1	1						33.45 S,30	34_	8 10	16	26	Ш		Ш	N	$\prod$	Ш	$\prod$	$\prod$	$\prod$
35								34.45	35_				<b>1</b>		₩		$\blacksquare$	Ш	Ш	╫	
36	┿	╁	-		END OF BORE HOLE	<del> </del>	-	S.31 35.45	36	10 15	19	34	╫	++	₩	++	Ħ	₩	₩	₩	#
	1				( - 35.45 m )				37	]			Щ	Щ	Щ	Щ	П		Щ	$\prod$	$\prod$
37	┨								-	1			$\parallel \parallel \parallel$	╫	╫	+	╫	<b>    </b>	#	╫	H
38	4								38_	]			$\prod$	$\prod$	Ш		$\prod$	Ш	$\prod$	$\prod$	
39			1			Į			39	1			Ш	Ш	Ш		Ш	Ш	Ш	Ш	Ш
40	7							ĺ	40	}			-	₩	╢	+	₩	$\coprod$	Ш	H	Ш
	┪				}					1					Щ	1		Ш	$\prod$		Ш
41	$\dashv$								41 -	}			$\parallel$	₩		╫	$\parallel$	HH	Н	H	HH
42	1								42	]			Щ	$\prod$	Щ	$\prod$	$\prod$	Ш	Ш	$\prod$	Щ
43		1			· ·				43	]			Ш	Ш	Ш	Ш	Ш	Ш	Ш	Ш	Ш
44	7	.							44	4 .					$\mathbb{H}$	₩	$\prod$		$\mathbb{H}$		$\coprod$
	1								-	]				##		$\parallel$	#	$\parallel \parallel$	$\parallel \parallel$	$\parallel \parallel$	Щ
45	-						1		45	1			H	╫		₩	₩	₩	₩	#	Ш
46			-						46_	]				$\parallel$	Щ	$\prod$	$\prod$	$\prod$	$\prod$	Щ	$\prod$
47	1								47	<u> </u>						#	₩	₩		∭	Ш
48	7								48	4					Щ	$\prod$	$\prod$	$\prod$	$\prod$	-	$\prod$
	_		1						-	1			$\parallel$	╫	Ш	#	$\parallel$	#	$\prod$	$\parallel \parallel$	╫
49	-								49 -	-			$\prod$		$\mathbb{H}$	-	#	#	₩	$\coprod$	$\prod$
50	1	<u> </u>				<u> </u>			50	<u> </u>				##		$\parallel$	<u> </u>	Ш	Ш	Ш	Ш



SOIL & MAT. INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

### **EXPLORATION BOR LOG**

F.S. On Urban Arterial	Road System Devolopment Projec	ct in Jakarta Metropolitan Area	MB No : EW . 94-05
LOCATION	Jembatan Besi	DATE COMMENCED	January 28th 1994
COORDINATES		DATE COMPLETED	January 30th 1994
GROUND ELEVATION	2.44	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	YBM - YSO,1HE	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	50.45	CASSING	Ø 89 mm

3 <b>)</b>	2	- 3		4	5.	6	7	8	9					1	0		J			Į	٦					
Ē	E	-m.)							( Ei-		TAN	ID A	RD P	- 1	,					_		7	-		_	
( w-)	-	- u			VISUAL		Thin-Walled Tube		u-)	3	IAr		ASTN									ı	Ŀ	S	ľ	
	THICKNESS	:		0	DESCRIPTION &	ac	2	No.					4511	ı -	L	). ·	10	ď	O		,			÷		
E	X	G.W.L	-	B ■	CLASSIFICATION	٥	S <sub>A</sub>	H	E		Νv	ALUE		_	7	ΙU	M	BE	R	0	F	BL	.0	W	 5	٦
DEPTH	Ĕ	3.	2	\ S		00	퉅	S.P	DEPTH	15	30	45	N		1	0	2	20		30	)	40	0	S	0	
	0.50	<b> </b>				Brownish	ļ			Cm	Cm	Cm		П	Щ	Т	Н	Н	Π	╬	П	┪	П	Н	Ш	ᆔ
1		:			Loose, Sand, gravels and pebbie, poorly graded, SP,	black			1_					Ш	Щ	#	Щ	Ц	Ш	I	Ш	#	#	Щ	Ш	Ш
2		2,50			Sand = 70 %, gravels = 20 %		2.50	S.01	2 -	1	2	3	5	-	╢	╫	Н	+	H	+	H	$\parallel$	H	╂	H	₩
3 -	5.50	<b>*</b>			pebble = 10 %.		UD.1		3					Į.	Ш	Ţ	$\parallel$	1	Ш	Ţ		1	#	Ħ	Ш	$\parallel$
_	3.50	_	_		Soft to medium ; Organic Clay		3.10	S.02	<i>"</i> –	1	l	1	2	#	╫	╫	H	╫	₩	H	H	╫	#	₩	╫	₩
4	}		13/		with a little mollucs, high	Greyish black			4_					$\prod$	Ш	I	Ш		Ш	Ш	Ш	1	Щ	₽	Щ	Щ
5_			ALLUVIUM		plasticility, CH , locally intercalated by fine Sand, Clay	DIACK		S.03	5_	1	1	2	3	₩	╢	$\parallel$	H	$\dagger \dagger$	₩	$\ $	$\  \ $	╫	#	₩	H	╢
6			<b>I</b>		= 90 %, Sand = 10 %.		6,00		6					N	$\prod$	$\prod$	П	1	П	П		$\parallel$	#	∄	Щ	$\prod$
	<u> </u>		COAS				UD.2		-					#	۱	╫	H	$\dagger$	₩	╁	╫	╫	#	₩	₩	₩
7_	1		ថ		Stiff, Sandy Silt, low plasticity	Brownish	6.69	S.04	7_	3	4	6	10	$\prod$	Д	$\prod$	$\prod$	H	П		Ш	$\prod$	$\parallel$	Щ	Щ	Щ
8_	3.95				, ML, Silt = 70 %, fine Saund				8_					$\parallel$	H		***	$\parallel$	H		H	╫	╫	+	Н	$\mathbb{H}$
9					= 30 %.			S.05	- و	2	5	6	_11	$\prod$	$\prod$	$\prod$		Ŧ	П	П	П	$\prod$	$\prod$	П	П	$\prod$
10														Н	$\parallel$	t	H	$\dag$	Н	Н	Н	╫	╫	Н	Н	Н
10_	<del> </del>				Vone diff a Tufference Class	<del> </del>		S.06	10	3	7	7	14	Н	Щ	I.	Д	H	Ш	Ш	Д	$\prod$	$\prod$	Щ	Щ	Щ
11	2.05				Very stiff; Tuffaceous Clay, high plasticity, CII, Clay ==	Yellowish			11							H	V	Ш	Ш	Ш				Ш	Ш	Ш
12					100 %.	дтеу		S.07	12	7	9	10	19	$\prod$		$\prod$	N	H		П	П	$\prod$	-		П	$\prod$
13					Very stiff to hard; clayey Silt				-						1	$\parallel$	H	$\parallel$	∄	Ш	Ш	Ħ	1	Н	Ш	Ш
13-	3.00				with a little sand, locally	Yellowish		S.08	13	7	8	11	19	Ш	#	#	Щ	H	Щ	Щ	$\mathbb{H}$	4	H	П	$\prod$	П
14_					cemented, Silt = 60 %, clay = 35 %, sand = 5 %.	grey			14_					Ш	Ш	Ħ	Ш		Ш	ď	$\blacksquare$	Ш	1	H	Ш	Ш
15								S.09	15	12	19	26	45	$\left  \cdot \right $	$\parallel$	$\parallel$	$\prod$	+	$\prod$	Ш	Ш	$\prod$	I	Ų	$\prod$	П
16			ROCK			·									#	Ħ	Щ	I	Ш	Щ	Щ	1	1	ď	M	Ш
-								S.10	16 _	25	30	30	60	╂╫	Н	₩	₩	$\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	Ш	Щ	Н	#	#	₩	$\mathbb{H}$	N
17_			VULCANIC		Dense to very dense; Sand				17_				-	Ш	Ш	#	Щ	II.	Ш	Ш	Ш	Ц	1	Ш	Ш	Ш
18	5.95		O I		stone intercalated with siltstone	Yellowish grey		S.11	18 -	19	32	32	>60		H	#	₩	$\parallel$	H	Н	H	╫	H	$\frac{1}{4}$	Н	₩
19 -					, weakly medium commented , medium to fine grain size.				19						Щ	Ħ	Ħ	I	Ш		İ	#	#	Ш	Ш	Ш
			YOUNG					S.12	19_	23	35	37	>60	#	Н	╫	₩	$\parallel$	Н	Н	1	╫	#	₩	Н	₩
20_			٧O						20				- VV	Ш	Щ	#	$\parallel$	II.	Ш	Ш		$\parallel$	#	Ш	Щ	Ш
21						L.		S.13	21 -	14	17	25	42	$\parallel$	H	H	₩	$\parallel$	H	H	1	$\parallel$		₩	1	$\coprod$
22							]		22					$\parallel \mid$	#	$\parallel$	Щ	ļ	Щ	ſΗ	1	#	1	Ш	Ш	$\parallel$
-					Very stiff to hard; Silty organic				22_					₩	H	₩	$\mathbb{H}$	$\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	╫	H	1	A	-	₩	H	$\parallel$
23_	4.05				Clay, high plasticity, CH, locally comented, Clay = 70 %,	Blackish		S.14	23	9	14	22	36	Ш	Ш	#	Щ	ļ	Ш	Ш	J	#	#	Щ	Ш	Ш
24					Silt = 30 %.	grey		S.15	24	8	12	18	30	$\parallel \parallel$	H	$\parallel$	$\mathbb{H}$	$\parallel$			4	$\prod$	-	$\prod$	$\prod$	$\prod$
25									-				~~		#	$\parallel$	Ħ.	Ц.	Ш	H	Ì	$\parallel$	$\parallel$	H	$\parallel \parallel$	$\parallel$
	<u> </u>			<u> </u>	CONTINUED	L	l	L	25	L		L		Ш	Ш	Ц	Ш	Ц	Ш	Ш	Ţ	Ш	Щ	Ш	Щ	Ш



SOIL & MAT. INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### EXPLORATION BOR LOG

F.S. On Urban Aterial Road System Devolopment Project in Jakarta Metropolitan Area

MB No: EW . 94-05

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🕹	-	J			VISUAL		Thin-Walled Tube		-	,		ASTI							1 63	<b>)</b> 1	
	ES	نـ	F	BOL	DESCRIPTION &	œ	alle	. No.		<u> </u>			··			_					
DEPTH	THICKNESS	G.W.L.	 Z	Σ	CLASSIFICATION	10	n-V	P. T.	DEPTH		VALUE	1						F BL			
DE	Ŧ	Ö	n	λs		00	ΨL	S.	DE	1 (	30 45 Cm Cm	N		10 	21	,	30 	4	0	50 	
26								S.016	26	5	8 12	30		$\prod$	П	$\prod$		П	Ш	$\prod$	Щ
					Very stiff', Organic Clay, high				_	1					Ш	1/	H	₩	#	#	
27_	5.00				plasticity, CH, Clay = 100 %.	Black		S.17	27	7	10 12	22	₩	HH	╢	₩	Щ	Ш	$\mathbb{H}$	#	
28_	٠							·· ··	28_				Щ		Щ	Ш	Ш	Ш	#	Ш	Ш
29								S.18	29_	6	9 11	20			╫	₩			#	$\prod$	$\mathbb{H}$
30									30							$\prod$			$\prod$		
31								S.19		9	10 11	21				$\prod$	$\parallel$	Ш	$\coprod$	₩	Ш
1. 7									31_	1			₩	HH	₩	₩	$\mathbb{H}$	$\coprod$	₩	₩	$\mathbb{H}$
32					Very stiff to hard , Sandy	Grey to		S.20	32_	7	10 12	22		$\prod$	Щ	$\parallel$		Щ	#	Ш	Щ
33					organic Clay, high plasticity, CH, Clay = 85 %, Sand = 15	Blackish			33						╢	N	$\parallel$	$\coprod$	$\prod$	Ш	$\prod$
34	7.00				%	grey		S.21	34 -	9	14 18	32			$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	$\prod$
35	· ·													Ш	╫			#	#	Ш	+
			χ					S.22	35_	8	12 18	30	╫╫	₩	₩	HH	N	-+++	₩	HH	Щ
36			ROCK					S.23	36	11	16 21	28			Щ	Ш	1	Щ	Ш	Ш	$\parallel$
37			NIC					3,23	37_	111	10 21	37			╫			V	₩	Ш	+++
38			VULCANIC		Hard; Tuffaceous Silty Clay,	Стеу		S.24	38	11	19 22	41		Ш	$\prod$	$\prod$		N	$\prod$	Ш	$\prod$
39	3.15		ΝN		high plasticity, CH, locally	to			 		17 22	71		Ш	╫			Ш	K		+
			YOUNG		compacted, Clay = $70\%$ , Sift = $30\%$ .	Yellowish grey			39_	1			HH	╫╢		╫╢			₩	$\mathbb{H}$	$\mathbb{H}$
40			YOL		TY 1 69 4 1	Blackish		S.25	40_	18	26 35	>60			Ш			Щ	#	Ш	$\parallel$
41	0.75				Hard, Claystone, medium to strongly comented.	grey			41_									Ш	壯	Ш	$\mathbb{K}$
42	,							S.26	42 -	14	23 27	50			₩		$\prod$	Ш	$\prod$	V	$\prod$
43									43						Щ		$\parallel \parallel$	#	#		$\parallel$
]													┟┼╁	╫	╫	HH	₩	₩	₩	HH	$\mathbb{H}$
44								S.27	44	14 :	21 29	50	Щ	$\prod$	$\prod$	Щ	$\prod$	$\prod$	Щ		Щ
45					U-4. T. C. C. C.				45	<u> </u>				Ш	#	Ш	Ш	Щ	Ш		$\parallel$
46	9.55				Hard; Tuffaceous Silty Clay, medium plasticity, CL, locally	Yellowish		S.28	46	17 2	22   30	52	$\mathbb{H}$		$\ \cdot\ $	H	$\parallel \parallel$	$\mathbf{H}$	₩		
47					cemented, Clay = 65 %, Silt = 35 %.	grey		6 30	47	17	22 20	<i>5</i> 0			$\parallel \parallel$	Щ	<b>1</b>	$\parallel \parallel$	#		$\parallel$
							-	S.29	_	17 2	23 29	52	$\mathbb{H}$	$\parallel \parallel$	╫	$\parallel \parallel$	H	₩	₩	₩	$\mathbb{H}$
48								S.30	48_	20	30 32	>60	Ш	$\prod$	$\prod$	Ш	$\prod$	#	$\prod$	Щ	X
49_		÷.						2.00	49_		32	<b>∕0</b> ∪			壯	Ш		Ш	╢	Ш	$\parallel$
50									50				Ш	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$		A
51					END OF BORE HOLE			S.31	51	18 /	24 30	54	Щ	#	Щ	Щ	#	#	#	Ш	Щ
					( 50.45 )				_												
52				لــــــا				Ll	52				Ш		Ш	Ш		1	Ш	Ш	Щ



SOIL & MAT INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Aterial	Road System Devolopment Proje	ct in Jakarta Metropolitan Area	MB No : EW . 94-06
LOCATION	Jl. Mangga Besar	DATE COMMENCED	January 21th 1994
COORDINATES		DATE COMPLETED	January 22th 1994
GROUND ELEVATION	0.52	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	KOKEN - OE.8L.	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (.m.)	22.70	CASSING	Ø 89 mm

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( u-)	( m )	( m-)		7	VISUAL DESCRIPTION &		Thin-Walled Tube	& Depth	(-m)	S	TAN		RD P								,	Tı	ES	ïΤ		$\left.  ight $
<u>_</u>	S	ند	1	ВО	CLASSIFICATION	OR	Wall		Ŧ		N v	ALUE			N	UN	— Ле	JE'	R	— 10	. E	LC.		 /S		1
DEPTH	THICKNESS	G.W.L	Z	ΥW		100	Hin.	SPT. No.	DEPTH	15	30	45	N		10		20			30		40		50		
	0.50	9	<b>-</b>	S	Embankment (Made Ground)	Brown		- 0,	<u>.</u>	Cm	Cm	Cm		111	┪	П	┪	Π	П	╁	П	╁	П	$\mathbf{h}$	П	╢
1_	1.0				Soft; Sandy Silt; Medium	Dark			1_	٠.				Щ	Ħ	Щ	$\parallel$	$\prod$	$\prod_{i=1}^{n}$	Ħ	Ţ	$\parallel$	$\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	Д	Щ	#
2		•	2		plasticity, ML; Silt = 75 %, Sand = 25 %	Brown		1.55 S.1	2 -	2	3	4	7	Ш,	1	$\parallel$	╫	$\dagger$	$\parallel$	╫	+	#	╫	H	H	H
		3,0	1		\	Grey to	2.50	2.00						Ш	$\parallel$	П	I	I	$\prod$	I	$\parallel$	T	Ţ	T	Ш	1
3_	2.5	<u></u>	70		Soft to mediu stiff; Tuffaceous Clay with a little Sand; High	Brownish Grey	U.D. 1 3.00	3.00 S.2	3_	1	2	2	4		╫	₩	₩	H	H	₩	H	╫	₩	╂	H	$\mathbb{H}$
4	<u> </u>		ALLI		plasticity, CH; Clay = 95 %,			3,45	4	Ť	-			Ш	1	Ш	#	$\parallel$	Щ	Ħ		1	#	#	Ш	1
5	1.0		<		Sand = 5 %	Blackish		4.55 <b>S.3</b>	5 -	2	3	4	7	$\parallel \parallel \rangle$	H		╢	Щ	Н	H	#	H	#	₩.		$\mathbb{H}$
	┢	1	Н		Loose ; Silty Sand ; Poorly	Brown		5.00	<u> </u>	_	,	-7	/_	Ш	#	$\ $	Ħ	Ħ	H	Ħ	H		$\parallel$	+	H	$\parallel$
6_	1		SO		graded, SP; Sand = 60 %, Silt = 40 %			6.00	6_	ļ				W	$\prod$	Щ	$\prod$	$\parallel$	Щ	$\prod$	$\ $	$\prod$	$\prod$	$\prod$	Щ	Д
7 -	3.5		Q Q		\	Grey		6.45	7 -	1	1_	1	2	Ш	$\parallel$	╫	$\ $	Н	Н	$\parallel$	$\parallel$	╫	$\parallel$	╫	H	H
-		'			Very soft to soft; Sandy Clay with a little Gravel; High	1		7.55		<u> </u>	<u> </u>			Ш		Ш		1	П	Ħ		П		I	П	П
8_	-				plasticity, CH; Clay = 70 %,		Ì	5.5	8_	1	1-	1	2_	H	Н	₩	#	Н	Н	H	$\parallel$	₩	#	₩	₩	Щ
9 -	$\vdash$	1			Sand = 20 %, Gravel = 10 %	<b>/</b>	1	9.00	9_		L			Ш	٧	Ш	$\dagger$	Ц	Ш	Ш	Ħ	Ш	Ш	#	I	Ш
	1							S.6	10	3	5	7_	12	Ш	Ţ	$\prod$	$\prod$	Ţ	П	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	
10_	┨		Ι×				]	9,45 10.50	10-	┨				#	Н	₩	Н	Н	Н	Н	╫	₩	#	╫	₩	Н
11_	1		ROCK			1		S.7	11	4	5	7	12	Ш	Щ	Ш	1	T	Ц	Ш	#	Ц,	Щ	#	$\parallel$	Ш
12 .	<b>1</b> .2				7. F. 11	Grey to		10.95 12.00	12	┨		ļ		₩	H	Щ	Ш	$\parallel$	₩	H	H	$\coprod$	$\prod_{i=1}^{n}$	#	₩	Н
1"-	- *.z		VULCANIC		Medium to very stiff; Tuffaceous Clay with a little Sand and Shell	Brownish		S.8		1	3_	3	6	╫	ľ	Ш	Н	lt	Ħ	Н	$\dagger$	╫	Н	Ħ	Ħ	H
13	1		E		Fragment; High plasticity, CH;	Grey		12.45	13_					$\prod$	N	$\prod$	$\prod$	F	$\prod$	Д	Щ	$\blacksquare$	Щ	$\prod$	$\prod$	Щ
14	1				Clay = 90 %, Sand & Shell Fragment = 10 %			13.50 S.9	14	3	5	7	12	╫	H	₩	₩	H	╫	Н	+	╫	H	$\parallel$	$^{\dagger\dagger}$	╫
	1		OUNG		Traginal 1070	1		13.95			1					N		I	I	П		$\parallel$	П	$\parallel$	1	Ш
15_	┨		γo			i		15.00 S.10	15_	6	9	12	21	₩	H	╫	1	H	╫	╫	H	∦	₩	H	#	₩
16	1					1		15.45	16	<u>                                     </u>	<del> </del>	12	21	╢		#			$\blacksquare$	ľ		#	Ш	$\coprod$		†††
17	_							16.50	17	8	17	47	>40	₩		$\parallel$	$\parallel$	$\parallel$	$\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	1	4	$\downarrow \downarrow$	H	$\prod$	$\parallel$	Ħ
*′′-	1.10	,			Very dense; Sand; Poorly	Black	•	S.11 16.95	┪ *′-	†°	1/		>60	₩	H	$\dagger$	H	Ħ	Ħ	╫	Н	#	╫	$\parallel$	H	₩
18	]	-	Š		graded, SP;		-	18.00	18	1_		<u> </u>	ļ	Щ	I			Ħ	ļ	I		#		$\blacksquare$	Щ	Ш
19	1.3		MA		Very dense; Sand Stone; Medium to strongly comented	Brownist Black	4	S.12	19	<del>  2</del>	3	4	7	╂╫	1	F						$\coprod$		╫	H	₩
-	<u> </u>	-	FORMA	184 1 1	WATER IN THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY OF THE PARTY	, Jack	-	19.50	] -	1_				_##	Ħ	Щ	Ħ	Ħ	$\parallel$	$\parallel$	Ħ	$\prod$	$\parallel$	#	勂	#
20_	-		1			<b>1</b> 011.±.1		S.13	20_	14	31	25/5	>60	Ш	H	Щ	$\prod$	H	$\coprod$	$\coprod$	4	$\coprod$	Щ	Щ	Щ	H
21	3.6	,	GENTENG		Very dense; Coarse Sand;	Blackist Grey	1	19.85 21.00	21	1				$\mathbb{H}$	+	$\parallel \parallel$	#	H	$\dagger \dagger$	#	$\parallel$		#	-		╁┠
-	1		N N		Poorly graded, SP;		1	S.14			60/10	j	>60	1		$\prod$	I	I		1			I	П	Ш	Ţ
22_	-		ပ					21.10 S.15		31	55/5		>60	Ш	H	Н	╫	H	H	#	#	$\mathbb{H}$	#	$\mathbb{H}$	$\mathbb{H}$	₩
23	1_	1				ļ	-	J.,,	22	##	73,7	-	- 50	##	#	H	#	#	#	#		Ш	#	Щ	H	#
3.4	1				END OF BORE HOLE				24	7				Ш	$\prod$	Щ	$\prod$	$\prod$	П	$\prod$	$\prod$	П	$\prod$	$\prod$	$\prod$	$\prod$
24 -	$\dashv$	-			( - 22.70 m )				***	1				$\parallel$	╢	₩	$^{\dagger}$	Ħ	H	₩	╫	╫	#	₩	╫	#
25	1_			<u> </u>				<u> </u>	25	1_	<u> </u>	<u> </u>	<u> </u>	Ш	11	Ш	1	1		#	Ħ	Ш	1	Ϊ	Ш	$\parallel$



**BOR MACHINE TIPE** 

TOTAL DEPTH (-m)

### PT. Wira Nusantarabumi

EXPLORATION BOR LOG

Yosuke Sasaki

Ø 89 mm

SOIL & MAT. INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

Koken

14.00

F.S. On Urban Arterial	Road System Devolopment Projec	t In Jakarta Metropolitan Area	MB No : EW . 94-07
LOCATION	Jl. Rajawali	DATE COMMENCED	January 23th 1994
COORDINATES		DATE COMPLETED	January 23th 1994
GROUND ELEVATION	0.38	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen

SUPERVISOR

CASSING

1 5 3 4 2 . W.L. (-m)  THICKNESS (m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)  O.W.L. (-m)	STANDARD PENETRATION TEST ( ASTM - D.1586 )
VISUAL DESCRIPTION & CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE CONTROL OF THE	( ASTM - D.1586 )
CKNESS  W. L. W. L. O CORNESS  COLOR O CORNESS  MACHINE DISCRIPTION & CLORESSIFICATION & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS & CLORESS	· · · · · · · · · · · · · · · · · · ·
HE TO SER CLASSIFICATION O O O O O O O O O O O O O O O O O O	N VALUE NUMBER OF BLOWS
	15 30 45 N 10 20 30 40 50 Cm Cm Cm
0.50 Soft , Embankmennt ; Sandy Reddish	
Clay with a little gravel	
2	2 3 5 8
3 4.45 Medium; Sandy Clay, high Yellowish UD.1 3	3 -
plasticity, CH, Clay = 95 %, grey 3.00 <b>S.2</b> Sand = 5 %.	2 3 4 7
- B - B - B - B - B - B - B - B - B - B	
5 7 8.3 5	5 1 2 3 5
6 Medium; Sandy Clay with a little molusca, medium to high Blackish	
2.55	
	B 5 8 11 <b>19</b>
with a little gravel, medium to Reddish	
9 2.00 high plasticity, Clay = 80 %, grcy Sand = 15 %, gravel = 5 %.	10 14 18 32
10 10	
11 2.65 Very dense ; Sandstone , Greyish S.7 11	1 60 >60
Very dense; Sandstone, Greyish black  11 2.65 Very dense; Sandstone black  12 12	2
Timel Tuffeesown city Sand	65 >60
1.85 Grey	
14 %, Sitt = 25 %. S.9 14  EN OF BORE HOLE	4 18 37 35/10 >60
15 (-14.00 m) 15	5 _
16   16	6 -
17   17	7-
	8
19   15	9-
20 _	o <u> </u>
21	
23 ]	<sup>23</sup> —
24	4 ]
25 -	·s -



**EXPLORATION BOR LOG** 

SOIL & MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

MD	No	. 61	w	94-0	١0
IVID	NO	: =	TT .	34-	ιО.

F.S. On Urban Arterial !	Road System Devolopment Projec	t In Jakarta Metropolitan Area	MB No : EW . 94-08
LOCATION	Kemayoran	DATE COMMENCED	January 24th 1994
COORDINATES		DATE COMPLETED	January 25th 1994
GROUND ELEVATION	1.12	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	15.41	CASSING	Ø 89 mm

. 1	2	3		4	5	6	7	8	9	10
TH (-m)	THICKNESS ( m )	G.W.L. (-m)	1 T	MBOL	VISUAL DESCRIPTION & CLASSIFICATION	OLOR	Thin-Walled Tube	.T. No.	ТН (-ш)	STANDARD PENETRATION TEST ( ASTM - D.1586 )  N VALUE NUMBER OF BLOWS
DEPTH	呈	ق	2	l ¥ l	·	00	Thir	S.P	DEPTH	15 30 45 N 10 20 30 40 50 Cm Cm Cm   N   1   1   1
1.	1.00				Hard, Concrete	Grey			1 -	
2 - 3 - 4 -	3.50	2.70	UVIUM		Medium to stiff, Sandy Salt with molusca, medium to low plasticity, ML, Sitt = 50 %, Sand = 35 %, molusca = 15 %	Blackish Grey	4.60 UD.1	1.55 S,01 2.00 3.00 S,02 3.45 4.50	2	2 6 7 13
5_ 6_ 7_ 8_ 9	4.50		COAST ALL		Soft to stiff, Sandy Clay with molusca, medium to high plasticity, CH, Clay = 70 %, fine sand = 25 %, molusca = 5 %.	Blackish Grey	4.50	S.03 4.95 6.00 S.04 6.45 S.05 7.95	5	1 1 1 2
10 _ 11 _ 12 _	4.30		FORMATION		Very dense , Sand stone , fine grain , medium strongly cemented.	Brownish yellow		9.30 11.00 S.07 11.12 S0.8	10	15 55/15 > <b>60</b> 55/15 > <b>60</b> 40 60/15 > <b>60</b>
13 14 15			GENTENG		Very dense, Sand, medium to fine sand, SP, poorly graded, shape of grain is rounded, Sand = 100 %.	Black		12.30 13.50 <b>S.09</b> 13.70 15.00	15	32 55/5 >60 32 20 30 68
16 17 18 19 20 21 22 23 24 25					END OF BORE HOLE ( 15.41 m )			13.41	16_ 17_ 18_ 19_ 20_ 21_ 22_ 23_ 24_ 25	



**EXPLORATION BOR LOG** 

SOIL & MAT. INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

F.S. On Urban Arterial	Road System Devolopment Project I	n Jakarta Metropolitan Area	MB No : EW . 94-09
LOCATION	Jl. Taman Sunter Indah	DATE COMMENCED	January 26th 1994
COORDINATES		DATE COMPLETED	January 26th 1994
GROUND ELEVATION	1.34	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	21 65	CASSING	Ø 89 mm

13.1s	- 2	3		- 4	5	6	7	8.	9		Ç.			• 1	0								
( - m )	( m )	( m-)		_1	VISUAL		1 Tube	No.	( -w )	S	TAN		RD P ASTN							Ţ	ES	ıΤ	
ОЕРТН	<b>THICKNESS</b>	G.W.L.	N I T	Y M B O	DESCRIPTION & CLASSIFICATION	OLOR	Thin-Walled Tube	.P.T.	DEPTH	15	N v	ALUE 45	N		N 10		/IBI		OF	BL 40	о <b>ч</b>	'S 50	1
	_	9	<b>-</b>	S	Loose, cable , pebble and sand.	ပ	-	S		Cm	Cm	Cm		Ш				Ш	Ш	П		$\prod$	$\mathbf{J}$
1	1.00 0.40	_				Black Reddish			1 _					$\mathbb{H}$	$\prod$			$\prod$	$\prod$			$\prod$	$\frac{1}{1}$
2 -		¥	E		Medium, Gravelly Clay, high plasticity, CH, Clay = 90 %	brown	2.50	S.1	2_	1	2	4	6	Н	$\prod$	Н	$\prod$	$\prod$	Ш	₩	$\prod$	##	$\parallel$
3-			7		\gravel = 10 %.		UD.1	S.2	3_	2	2	3	5		Щ		Щ	#	Щ	Ш		#114	$\parallel$
4_			กาา					<u> </u>	4_								Щ	₩	₩	╫		###	#
5_	7.20		∢		Soft to stiff, Silty Clay with a	Blackish		S.3	5 _	2	2	3	5	Ш			╫	╫	Ш	Щ		###	
6_			OAST		little sand, organic matter and molluscs, Clay = 60 %, Silt =	grey to			6_				_	1			Ш	<u>                                      </u>				<u> </u>	$\parallel$
7_			00		30 %, fine sand = 10 %.	Yellowish grey		S.4	7_	1	1	1	2	N			Ш	╫	Ш	Ш		$\prod$	
8_								S.5	8_	5	7	8	15			5		Ш	Ш	$\coprod$		Ш	
9 -					Medium ; Tuffaceous clayey		!		9 -	_					X			$\prod$	$\left. \left  \right  \right $	╢			
10	1.90				Silt with a little sand, low to	Yellowish white		S.6	10	0	2	3	5				$\prod$	$\prod$		$\prod$		$\prod$	
111			ROCK		medium plasticity, ML, Silt = 55%, Clay = 25%, Sand =	Yellowish		S.7	11	4	8	13	21			N	V	$\prod$				Ш	1
12	1.10		O		\\20%. \\ Medium , Silty Sand (fine),	brown			12								1	$\langle  $	$\parallel$	$\parallel$			#
13	2.40		CAN		poorly graded, SP, Sand = 80 %, fine sand = 20 %.			8.8	13	12	12	15	27			$\parallel \parallel$	Щ	N	$\parallel$	$\parallel$		<b>†</b> †††	#
14	2	: -	VUL		Very stiff to hard; Tuffaceous	Yellowish brown		6.0	14	6	28	26	> 60				H	#		╫		**	#
15		1	OUNG		clayey Silt with a little sand,	brown		S.9	15	0	48	36	>60					#		<del>       </del>		<u> </u>	#
-	2.65		γo		low to medium plasticity, ML, Silt = 55 %, clay = 25 %, sand			S.10	_	28	50/6		>60		H	╫	╢	₩		╫		<b>!</b>	$\dagger$
16			E		= 20 %, the bottom intercalated with fine sand (thickness 10-15	Yellowish grey			16						H	╫	Ш	╫	╢	╫		+++	$\frac{1}{1}$
17_			ATION		(cm).			S.11	17_	55			>60	₩	╫	╫	$\coprod$	#	$\ $		$\prod$	+	$\frac{1}{2}$
18_			MA		Hard; Tuffaceous Silty Clay with a little sand, low medium				18					$\coprod$	$\prod$	╫	₩	₩	$\prod$	$\prod$	₩	HH	H
19_			FORM		plasticity, CL, Clay = 60 %, Silt = 30 %, Sand = 10 %.				19					$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\mathbb{H}$	$\mathbb{H}$
20	5.00		ENG		177,500	Black to			20_					$\prod$	Ш		$\prod$	$\prod$	$\parallel$	₩	$\prod$		$\parallel$
21	1		GENTENG		Very dense; sandstone intercalated with silt stone.	Greyish black			21_					$\parallel$	$\prod$	$\prod$	#	#		$\prod$	$\parallel$	$\prod$	$\parallel$
-99-					fine grain, poorly graded, SP, medium to strongly cemented.	<del></del>			-22					Ħ	╫	╫		#	#		#	#	
23			٠.		END OF BORE HOLE				23_	İ				$\parallel$	╫	$\parallel$	#	$\parallel$		+	$\prod$		H
24_			1		(-21,65 m)				24_					Ш			$\parallel$	Щ		+	₩		Щ
25	<u> </u>	<u></u>					<u> </u>	<u> </u>	25	<u> </u>			<u> </u>					Ш		Ш		Ш	$\parallel$



SOIL & MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

**EXPLORATION BOR LOG** 

F.S. On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area

MB	No	: EW	. 94-10
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LOCATION	JI. Yos Sudarso	DATE COMMENCED	January 27th 1994
COORDINATES		DATE COMPLETED	January 27th 1994
GROUND ELEVATION	1.86	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	18.40	CASSING	Ø 89 mm

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( - m )	:SS ( m )	( m-) ·		OL	VISUAL DESCRIPTION &	R	Thin-Walled Tube	No.	(-m)	S	TAN		RD P						. <b>T</b>	ES	ST.	
≠	THICKNESS	G.W.L.	I T	M B	CLASSIFICATION	101	Ş	р. Т.	Ŧ		N v	ALUE			NU	ME	ER	OF	Bl	.OV	vs	
DEPTH	¥	0.7	N D	sΥ		00	퉅	S.P	DEPTH	15 Cm	30 Cm	45 Cm	N		10 	2	)	30 	4	o . 	50	
1	1.00	1.25	\ 		Soft; Tuffaceous Clay with a little sand, high plasticity, CH, Clay = 95 %, Sand = 5 %.  Medium; Silty Sand, poorly	Brownish black to Blackish grey	2.50	S.1	1	4	8	13	21			 						 
3_			ROCK		graded, SP, fine to medium/grain, Sand = 80%, Silt = 20%	Black	UD.1 3.10	S.2	3_	2	4	6	10		И						$\prod$	
5_	2.65		VULCANIC		Stiff; Clay intercalated with fine sand, high plasticity, CH, / Clay = 100 %, thickness of fine	Brownish black		5.3	4 5	1	1	2	3	1								#
6 1			G VU		sand 10-15 cm.			S.4	6	1	1	1	2				#	╫				
8 ] 9 ]	4.60		VOUN		Soft; Tuffaceous organic Clay, high plasticity, CH, Clay = 100 %.	Blackish grey		S.5	7	1	2	2	4									
10 11 12	3.55		TION		Medium to very dense; Fine Sand intercalated with Silt poorly graded, SP, Sand = 80 %, Silt = 20 %.	Brown		S.6 S.7	10	10	20	35	23 55 >60									
13	5.80		GENTENG FORMATION		Very dense , Sandstone , weakly to medium cemented , fine to medium grain , poorly graded , SP , locally not cemented , angular to sub angular grain shape	Black		8.9	13	50/10	30/3		>60									
19 20 21 22 23 24					END OF BORE HOLE (-18.40 m)				19													
25					(34)				25												#	



**EXPLORATION BOR LOG** 

		1	BAD No. CM 04 11
FS	On Urban Arterial Road System Devolopment Project In Jakarta Metropolitan Area	ı	MB No : EW . 94-11

LOCATION	Kelapa Gading	DATE COMMENCED	January 29th 1994
COORDINATES		DATE COMPLETED	January 30th 1994
GROUND ELEVATION	2.35	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	24.15	CASSING	Ø 89 mm

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-	_	Ξ			VISUAL	1	Thin-Walled Tube	No.	÷			( <i>F</i>	STM	-	D.	.1!	58	36	)					
	IES	٦.	<b>-</b>	BOL	DESCRIPTION &	OR	4 E	I . 1	_							_	_	_	_	_	_		_	_
ב ה	THICKNESS	3.	 z	∑	CLASSIFICATION	010	į.	.P.T	DEPTH	15	<b>N</b> VA	45	╌┤		N\ 10		1BI 20		30		8LO 40		5 50	
	HТ	Ö.	9	\ S	·	Ö	4	ဖ	ä	Cm	Cm	Cm	N		1	17	1		1		$\perp$		1	
1		1.00			Soft to medium, Clay, high plasticity, CH, Clay = 100 %	Reddish			1					╫		₩	H	₩	╫	╫	H		ł	
	2.30	-			at the top with organic meter	brown		0.4	2	2	3	4	7			$\prod$	$\prod$	$\prod$	П	$\prod$	$\prod$	$\prod$	Ī	
2-					(0.60 m)	<b>.</b>	2.50	8.1			.3	-4		Н	Ш	#	Ħ	$\forall \forall$	Ħ	H	$\parallel$	Ш	†	
3 ]	1.70				Stiff, Tuffaceous organic Clay.  high plasticity, CH, Clay =	Yellowih grey to	UD.1	S.2	3_	2	4	6	10	₩	H	₩	₩	#	$\mathbb{H}$	Щ	#	₩	1	
4 ]	1.79		**		100 %.	Blackish			4_					Ш	$\prod$	#	Щ	$\parallel$	Щ	Щ	#	Щ		
.5	1.00		- -		Very loose, Silty Sand (fine) poorly graded, SP, Sand = 70			8.3	5	1	1	1	2			+	$\parallel$	+		+	$\parallel$	$\prod$	-	
6		1	ŊΛ		%, Silt = 30 %.	grey /	1		6 -	-					$\ $	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$		
٠			L L		Very soft to medium; Sandy	,		5.4	_	0	-	1	1	Ш	Ш	#	Ħ	#	Ħ	#		Ш		
7_	3.30		٧		Sitt, low plasticity, ML, Silt =				7_	1				N	H	+	₩	+	₩	+	H	₩	H	
8_					70m %, fine sand = 30 %.			S.5	8_	2	3	3	6	1	Ų	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	ĺ	
9_			£						9					Ш			¥	Щ	Ш	Щ	Ш	Щ	Ĺ	
10			Reck		71 day 1 1 mm			S.6	10	5	13	16	29		+	H	╫	$\mathbb{H}$	N	╫	$\ \cdot\ $	H		l
_	4.30		AU C.ARK		Very stiff to hard; Tuffaceous sandy Silt, low plasticity, ML	Yellowish		<u>-</u>	11	1 12	14	20	34	$\prod$			$\prod$		#	V	$\prod$	$\prod$	-	Ì
11_	]	1	1. v.		Silt = 60 %, fine sand = 40 %.	) brown		S.7	-	12	14	20	34	Ш	#	Ш	$\parallel$	Ш	Ħ	$\parallel$	H	₩	-	I
12_			*COF					5.8	12_	32	43	15/5	>60	₩	$^{\!+\!\!\!\!+}$	₩	╫	₩	╫	₩	₩	$^{+}$	ł	ļ
13_	!					<b></b>	-		13_	-				Ш	#	#	#	Щ	#		Щ	#	ŀ	
14	1					•		8.9	14	57/10	<u> </u>		>60	Ш	$\parallel$	Ш	#	Ш	$\parallel$	Ш	Ш	Щ		
15	4.45				Hard; Siltstone, weakly to	Brownish			15	-					$\parallel$	$\mathbb{H}$	+	$\mathbb{H}$	#	Н	$\mathbb{H}$	#	ł	
_	"				medium cemented.	black		S.10	16	55	-	-	>60		#		#	П	#	Ш	$\parallel$	#	t	1
16			2			1									$\parallel$	Ш	$\sharp$	╫	#	╫	$\coprod$		l	
17_	1	-	RMATION		Many days a Candatana		-	S.11	17_	21	27	35	>60	Н	#	₩	#	₩	H	$\mathbb{H}$	₩	#		
18_	1.10		JRM		Very dense ; Sandstone weakly to medium comented	Black		2.15	18	1			> < 0		#	Щ	#	₩	#	#	₩	$\parallel$	1	
19	-	1	) <u>F</u>					S.12	19	137	-	-	>60		$\parallel$	∭	$\parallel$	Ш		Ш	╢	$\parallel$	l	1
20	]		FENC					S.13	20	18	41	20	>60	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod_{i=1}^{n}$	$\prod$	$\prod$	$\mathbb{H}$	-	)
_	1 .		GENTEN		Hard ; Sandy Siltstone , weakl			2,,0	21	1	ļ ·				#	$\parallel \parallel$	#	$\sharp \dagger$	#	#	#	$\parallel$	†	
21_	6.05				to medium cemented, Silt = 6			S.14	1 -	17	58/10		>60	+	╫	╫	#	╫	$\parallel$	╢	#	$\parallel$	1	
22_	7				%, fine sand = 40 %.				22 _					$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	+	
23	1							<u> </u>	23_	1						#	Щ	₩	Щ	Щ	$\parallel$	Щ	1	-
24	-							S.15	24	19	40	20/10	>60	$\  \ $	$\parallel \parallel$	H	H	₩	$\ $	₩	H	$\parallel \mid$	-	
25	<del> </del>	+	╫		FUD OF PORE HOLE / 24 45	<del>                                     </del>	+-	9.10	25	60/1			<del>&gt;60</del>		H	Ħ	Ħ	#	Ħ	Ħ	Ħ	H	1	
		1		1	END OF BORE HOLE ( 24.16	<u>"'')</u> 32)	٠	<del>1</del>	1		<del>)</del>	L	i	Щ	أللا	Щ	لملي	لبب	ш	ليلب	بللد	ш	ل	
	4			I			A-33																	



TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

#### **EXPLORATION BOR LOG**

F.S. On Urban Arterial I	Road System Devolopment Projec	t in Jakarta Metropolitan Area	MB No : EW . 94-12
LOCATION	Kelapa Gading	DATE COMMENCED	January 28th 1994
COORDINATES		DATE COMPLETED	January 29th 1994
GROUND ELEVATION	2.45	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	20.10	CASSING	Ø 89 mm

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1   1.75   Soft to medium; Silty Clay with a little sand h, high plasticity, Cl. (Clay = 70%, Sand = 5%)   Soft to medium; organio Clay with a little molluse; high plasticity, Clay = 80 %, Silt = 15 %, and loss = 5 %   Whitish grey; high plasticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planti	[		E .			VISUAL		T D		( - n	3	HAN										ıt	.5	j	
1   1.75   Soft to medium; Silty Clay with a little sand h, high plasticity, Cl. (Clay = 70%, Sand = 5%)   Soft to medium; organio Clay with a little molluse; high plasticity, Clay = 80 %, Silt = 15 %, and loss = 5 %   Whitish grey; high plasticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planti		SS			7	1	~	Pa	Š					49 I IV	•	U	. 1	JČ	סנ	)					
1   1.75   Soft to medium; Silty Clay with a little sand h, high plasticity, Cl. (Clay = 70%, Sand = 5%)   Soft to medium; organio Clay with a little molluse; high plasticity, Clay = 80 %, Silt = 15 %, and loss = 5 %   Whitish grey; high plasticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planti	🚅	KNE	, L.	_	80		0	-Val	F.	Ξ		N v	ALUE			N	UN	1B	ER	OI	B	LO	W		7
1   1.75   Soft to medium; Silty Clay with a little sand h, high plasticity, Cl. (Clay = 70%, Sand = 5%)   Soft to medium; organio Clay with a little molluse; high plasticity, Clay = 80 %, Silt = 15 %, and loss = 5 %   Whitish grey; high plasticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planticity, Clay = 100 %, and planti	EPT	ЯК	. W		<b>\</b>		0	hiņ	٠.	EP				N		10	ı	20		30	•	10	5	0	ı
1	P	_		2	S	C 0 1 0 1 0 1		-	<i>"</i>		Cm	Cm	Cm		П	╁	П	$^{+}$	П	╫	Ш	$\frac{1}{1}$	П	П	$\forall$
Section medium; crigation City with a little molluce, high plasticity, CI to the bottom with Sit. (Lay = 80 %, Sit = 5%)   Section medium; crigation City with a little molluce, high plasticity, CI to the bottom with Sit. (Lay = 80 %, Sit = 15%, molluce = 5 %.   Section medium; crigation City with a little molluce, high plasticity, CI to the bottom with Sit. (Lay = 80 %, Sit = 15%, molluce = 5 %.   Section medium; crigation City with a little state of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of the control of	1_1	1.75	1				Reddish			1_					Ш	1	1			1	Ш	#	#	Ш	#
Self to medium; organic Chy with a little molluce, high plasticity, Cl3 to the bettom with skit, Clay = 80 %, Six = 15 %, molluce = 5 %.   Self to medium plasticity, Cl3 to the bettom with skit, Clay = 80 %, Six = 15 %, molluce = 5 %.   Self to medium plasticity, Clay = 100 %, Six = 5 %.   Self to medium plasticity, Clay = 100 %, Six = 5 %.   Self to medium plasticity, Clay = 100 %, Six = 5 %.   Self to medium plasticity, Clay = 100 %, Six = 5 %.   Self to medium plasticity, ML, Six = 7 %, Six = 5 %.   Self to medium plasticity, ML is provided by the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity of the plasticity	, , -		=			plasticity, CH, Clay = 70%,	brown		9.1	· <sub>2</sub> -	1	2	3	-	╢	#	$\prod$	H	H	$\blacksquare$	$\prod$	╢	#	+++	$\mathbb{H}$
Section medium; regards: Clay with a little molluce, high plasticity, CH to the bottom with Silt, Clay = 80 %, Silt = 13 %, mediuse = 5 %.   Section 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-			-		Sult = $25\%$ , Sand = $5\%$	2		<u> </u>				Ť		İ	1	1	Ш	Щ	Ħ	1	$\parallel$	$\parallel$	Щ	#
with a little mollutes, high plasticity, Clay = 80 %, Sist = 13 %, mollutes = 5 %.  Very stiff , Tuffaccous Clay , sign grey to high plasticity, Clay = 100 %. Sist = 10 0.00  Very stiff , Tuffaccous Clay , sign grey to high plasticity, Clay = 100 %. Sist = 70 %, fine sand = 30 % Yellowish grey to medium plasticity , ML , Sist = 70 %, fine sand = 30 % Yellowish grey to medium galan , sand = 95 % , sist = 5 %.  Whitish grey to Yellowish grey to Yellowish grey to high plasticity, Clay = 100 %. Sist = 5 %.  Very dense : Sand with a little Sist, poorly graded , SP , fine to medium garan , Sand = 95 % , sist = 5 %.  Hard : Sandy Clay : locally counseted , fine to medium to strongly connected , fine to medium garan , angular to sub angular grain shape.  Very dense : Sandstone medium to strongly connected , fine to medium garan , angular to sub angular grain shape.  END OF BORE HOLE ( - 20.15 m )  Whitish grey to Whitish grey to Sist = 1 1 1 1 2 2 1 18 1 18 1 1 1 1 1 1 1 1 1	3_					Soft to medium : organic Ciny	'		S 2	3			1	2	$\mathbb{H}$	╫	Н	╫	$\mathbb{H}$	₩	₩	₩	$\parallel$	Щ	$\mathbb{H}$
S	4_	4.05				with a little mollucs, high	Greyish		0.2	4_					Ш	#	Ш	#	Щ	Ш	Щ	#			Ш
15 %, mollucs = 5 %.	, -						black		9.7	5	1	1	1	. ,	$\parallel$	$\parallel$	$\parallel \parallel$	1	$\mathbf{H}$	$\parallel \parallel$	$\parallel$	∦		$\mathbb{H}$	H
Very stiff   Tuffaceous Clay   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side   Side	~	<u> </u>							5.5	_	<u> </u>	-	•		Ì	1	Ш	#	Ħ	$\parallel$	$\parallel$	$\parallel$	Щ	Щ	Ш
Very stiff , Tuffaceous Clay   Signey to   Signey to   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey   Signey	6_		1				Whitish		SA	6_	3	R	10	19	$\parallel$	╢	H	╢	₩	#		$\parallel$	Щ	$\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	Щ
New   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section   Section	7.	j					ł		J4	7_	Ť	0	10	10		$\parallel$	Ш	#	Щ	∭	#		Ш	Щ	Ш
Very stiff; Sandy Slit, low to medium plasticity, ML, Slit = Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish grey   Yellowish g	, -	3.40				high plasticity, Clay = 100 %.			9.5	8	- 7	6	. 12	10	$\parallel \parallel$	$\parallel$		₩	$\mathbb{H}$	H	#	$\parallel$	Ш		H
10	"-	1		¥		V	B <sub>r,C</sub> y		J.5	-	<u>'</u>	<del>"</del>		10	Ш	1	Ш	١	Щ	$\parallel$	#	$\parallel$	Щ	$\parallel \parallel$	Щ
10	9-			ROC			Yellowink	1	80	9-	6	15	13	20	$\prod$	#	₩	#	H	$\mathbb{H}$	$\mathbb{H}$	$\mathbb{H}$	H	#	Щ
Sit, poorly graded, SP, time to medium grain , Sand = 95 %, Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5	10	0.80					1		<u> </u>	10	<u> </u>	1.7	1.3	40	$\parallel$	$\parallel$		$\parallel$	Ш	1	*	$\parallel$	Ш	Ш	Щ
Sit, poorly graded, SP, time to medium grain , Sand = 95 %, Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5	,, ,			CAN					87	11	15	28	30	58	#	$\prod$	$\ $	$\ $	$\mathbb{H}$	$\parallel$			$\parallel$	₩	$\prod$
Sit, poorly graded, SP, time to medium grain , Sand = 95 %, Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5 %.   Sit = 5		]		Ĭ,					J	1 -		40	1.20	J.G.	#	Щ	Щ	$\parallel$	Щ	#	Щ	Ш	Ш	$\parallel \parallel$	Щ
Hard   Sandy Clay   locally   cremented   Clay = 75%   Sand   Blackish   brown	12_	4,90						1	0.0	4 –	15	28	30	50	#	Н	₩	#	₩	#	Щ	$\parallel$	₩	₩	Щ
Hard   Sandy Clay   locally   cremented   Clay = 75%   Sand   Blackish   brown	13	1		Ş			Diack		3.6		13	26	30	36	$\dagger$		#	$\parallel$	$\parallel \parallel$	Ш				Ш	$\mathbb{H}$
Hard; Sandy Clay; locally cemented, Clay = 75%, Sand =   Blackish brown	14	]		7					0.0	14	29	52/5		>60			$\prod$			$\prod$				₩	₩
15	'"-	+	1			Hard ; Sandy Clay , locally			3.8	1 7	40	3413		-00	$\parallel$	Ш	$\parallel$	Ш	#	$\parallel$	#	H	Ш	₩	$\parallel$
16   17   18   5.00   19   16   17   18   16   17   17   18   17   18   19   19   19   19   19   19   19	15_	1,60				cemented, Clay = 75%, Sand =			9 10		50/1	<u></u>	<del> </del> -	>40	$\mathbb{H}$	$\mathbb{H}$	H	$\prod$	#	H	$\prod$	$\  \ $	$\parallel$	₩	₩
Very dense; Sandstone medium to strongly cemented, fine to medium grain, angular to sub angular grain shape.    17	16	<u> </u>				25%	DIOWIL	-		16					Щ	╽	$\parallel$	Ш	#	Щ	Ш	Ш	Ш	Ш	Щ
Very dense ; Sandstone , medium to strongly cemented , fine to medium grain , angular to sub angular grain shape.   S.12   18	17	-		Ŏ.			Brownick		S.11	17	50/1	5	-	>60	$\prod$		$\prod$	Щ	#	$\prod$	$\parallel \parallel$	$\prod$	#	$\parallel \parallel$	H
fine to medium grain , angular to sub angular grain shape.    19	<u>-</u>	_		RP#A 1			black		S.12	_	53/1	5	<u> </u>	>60	Ш	İ	$\parallel$	$\parallel$	$\parallel$	╫	##	Ш	$\dagger \dagger$	$\parallel \parallel$	$\parallel$
19	18	5.00		ű			1			18	55/1		ļ	>40	$\prod$	$\prod$		$\prod$	#	Щ	Ш	$\prod$	#	$\coprod$	Щ
20   21   END OF BORE HOLE ( - 20.15 m )   22   23   24   24   24   24   24   24	19			TENG			DIACA		L	<b>_</b> 19_			<u> </u>		Ш	#	╫	$\parallel$	#	Ш	$\parallel \parallel$	#	#	Ш	Ш
21 END OF BORE HOLE (-20.15 m)  END OF BORE HOLE (22 23 24 24 24 24 24 24 24 25 25 26 25 26 26 26 26 26 26 26 26 26 26 26 26 26	20	7		GEN					S.14	20	55/1	0	<u> </u>	>60	$\prod$	$\prod$	$\prod$	$\prod$	Щ	$\prod$	$\prod$	╬	-	H	H
21   END OF BORE HOLE ( - 20.15 m )   22   23   24   24	-	<del> </del>	+			<u> </u>	1	-	3.18	<del>]                                    </del>	33/1	J	-	>00	#	#	Ħ	H	Ħ	Ħ	#	#	#	#	#
22	21_	-				1					-				$\Pi$	$\ $	$\prod$	$\prod$	$\prod$	Щ	Щ	$\prod$		$\prod$	Щ
24 _	22	1				( - AU.15 m )				22	_						Ш		$\parallel \parallel$	╢	$\ \cdot\ $	$\parallel$	$\parallel$	Ш	Ш
24 _	72	7								72	]				$\prod$	I			$\prod$	$\prod$	$\prod$	$\prod$		$\prod$	
	43	+					;			2.5	-				Н	$\parallel$	₩	$\parallel$	H	₩	+	$\parallel$	$\parallel \parallel$	╫	HH
	24	1								24	]				Щ	$\prod$	Щ	$\prod$	Щ	Щ	$\parallel$	$\prod$	Щ	$\prod$	Ш
- 7 ~~ 1	25	1								25	1				$\parallel$	╫		╫	$\ $	╫	#	+	$\frac{1}{1}$	₩	HH



EXPLORATION BOR LOG

SOIL 8 MAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

	•	•	
F.S.	On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area	ļ	MB No : EW . 94-13

LOCATION	Pulo Gadung	DATE COMMENCED	February 01th 1994						
COORDINATES		DATE COMPLETED	February 01th 1994						
GROUND ELEVATION	3.72	SOIL & MAT. ENGINEER	D. Sukarta Ir.						
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen						
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki						
TOTAL DEPTH (-m)	21.30	CASSING	Ø 89 mm						

. 1	2	3		4	5	6	7	8	9					1	0									
	)	<u> </u>																	٦					
( E - )	E )	٤			VISUAL		Phin-Walled Tube		( m-)	STANDARD PENETRATION TEST														
		_		ب	DESCRIPTION &		ק	<u>9</u>	_	( ASTM - D.1586 )														
_				CLASSIFICATION	O.R.	New	<u></u>	_	N VALUE NUMBER OF BLOW										┥					
DEPTH	THICKNESS	G.W.L	_ Z	Σ	CLASSIFICATION	COLO	<del>}</del>	.P.T.	DEPTH	15	30	45			10		1151 20		Ur 30		40	993 5		
ä	<b>±</b>	Ø	7	. <b>X</b> S			F	Ŋ	ă	Cm	Cm Cn		N		Ī		Ī		Ï		Ĺ	Ĭ	Ľ	
1 -	0.60		:		Loose; Sand with gravels and pebble.	Grey			1 -						$\prod$		$\prod$	$\prod$	$\prod$	Ш	$\prod$		П	П
		·			people.	:		S.1	-	2	3	4	7	-	Ш	$\dagger$	╫	+	H	╫	₩	<del>       </del>	╫	H
2									2					Щ	Щ	$\prod$	Щ	Щ	Щ	Щ	Ш	Щ	Щ	Щ
3			歪つ		Medium to stiff; Clay, high plasticity, CH, Clay = 100 %, at the top is reddish brown.	Brownish grey to Blackish grey	4.00 UD.1 4.50	5.2	3 -	2	2	4	6		Ш	+	$\ \cdot\ $	$\parallel$	╫	##	H	- <b> - </b>	-	$\mathbb{H}$
4			٨١						4 -						Ш	$\prod$	П	$\prod$	T	$\prod$	$\prod$	$\prod$	Ш	
'-	6.90		ΠŢ						Ĩ-					Н,	Н	Ж	H	Н	╫	╫	₩	Ш	Ж	Н
5_			.⊤ ∀					S.3	5_	2	3	4	7		V	$\parallel$	П	Щ	Щ	Щ	$\prod$	Ш	Ш	Ш
6									6					$  \cdot  $	H	+++	$\  \ $	₩	╫	₩	╢	╫	Ш	$\mathbb{H}$
,								8.4	7	3	4	7	11			$\parallel$	Ħ	$\parallel \parallel$	$\parallel$	$\parallel$	$\parallel \parallel$			$\parallel$
'-		8.00							′					Н		Щ	H	₩	╫	╫	╫	Ш	Ш	Н
8		<u>¥</u>						8.5	8_	8	8	10	11		ŢŊ	Щ	Ш	$\parallel \parallel$	Щ	Ш	Ш	Ш	Ш	
9 -		_							9 -					$\mathbb{H}$	$\  \ $	$\prod$	H	₩	╢	$\coprod$	$\parallel \parallel$		1	$\mathbb{H}$
٦,, ا					Medium to very dense; Sandstone, fine medium grain,			5.6		10	15	22	37		$\parallel$	#	Щ	$\parallel$	Ì	H	$\parallel$	Ш	Ш	Ш
10	4.20				medium to strongly cemented.	Black			10 _					₩.	₩	#	₩	#	₩	₩	$\mathbb{H}$	H	+	$\mathbb{H}$
111_		1						<b>S.7</b>	11_	26	55		>60	$\parallel$	Ш	Ш	Ш	$\parallel$	I	Ш	Ш	Ш	Ш	
12				****************		L	_		12 -				!	Н	Ш	+		#	$\parallel$	$\prod$	₩	,44	$\prod$	$\prod$
			ē		Hard ; Tuffaceous <b>Siltstone</b> with a little Sand , weakly to medium			5.8	_	15	30	25/5	>60	#	Ш	#		#	I	Ш	H	##	††	Н
13			A T					S.9	13					Щ	Щ	#	Щ	$\coprod$	$\prod$	Щ	Щ	Щ	$\prod$	Щ
14			FORMATION						14_	14	40	20/5	>60	+	Ш	$\parallel$		Ш	$\parallel$	忇	111	+H		$\ $
15									15							$\prod$	П	$\prod$	$\prod$	П	$\prod$	Ш	$\prod$	$\prod$
-			GENTENG					S.10		53/1	-	-	>60	Н	₩	#	Н	$^{+}$	╫	1	₩	H	H	Н
16	9.60								16_						$\prod$	$\prod$	Щ	$\prod$	$\prod$	Ш	Ш		Щ	Щ
17_	/				cemented, Silt = 70 %, Sand =	Grey			17					-1+	$\parallel$	$\parallel$	$\  \ $		$\parallel$					Н
18	:				30 %.				18					$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$	$\prod$		$\prod$	
-								_					#	₩	$\dagger$	₩	$\dagger$	₩	₩	₩	╁╫┩	H	$\mathbb{H}$	
19_									19_					Ш	$\prod$	$\prod$	П	$\prod$	$\prod$	Щ	$\prod$	Щ	Щ	Щ
20									20 -	•				╫	₩	#	₩	#	-	₩	#	++	╂╫	H
21									21 -	]					$\parallel$	$\parallel$	П	T	$\parallel$	$\parallel$	1		Щ	$\parallel$
<u> </u>								S.11		20	55/5		>60	Ш	Ш	#	Ш	#	Ш	#	$\coprod$	-	Ш	$\mathbb{H}$
22_					END OF BORE HOLE				22					Щ			#	$\prod$	$\prod$	$\prod$			$\prod$	$\blacksquare$
23					( ~ 21.30 m )		1		23					╟	$\parallel$	H	##	#	╫	╫	$\parallel$	$\mathbb{H}$	₩	$\mathbb{H}$
-										1					#	$\parallel$	Ш	#	$\parallel \parallel$	$\parallel$	$\parallel$	Ш	Ш	Ш
24									24	1				╫	#	#	₩	1	₩	₩	#	#	₩	Щ
25		1.	<u> </u>	<u></u>	<u> </u>		<u> </u>	<u> </u>	25	<u>L</u>		<u> </u>	<u> </u>	Ш		Щ	Щ	世		$\coprod$	Ш	Ш	Ш	Ш



# PT. Wira Nusantarabumi

SOIL'S MAT INVESTIGATIONS . TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

## **EXPLORATION BOR LOG**

F.S. On Urban Arterial	MB No : EW . 94-14		
LOCATION	Penggilingan	DATE COMMENCED	February 02nd 1994
COORDINATES		DATE COMPLETED	February 02nd 1994
GROUND ELEVATION	4.93	SOIL & MAT. ENGINEER	D. Sukarta Ir.
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
TOTAL DEPTH (-m)	20.22	CASSING	Ø 89 mm

1_	2	3		4	5	6	7	8	9				10
	)	)				-				6		D	
(ш-)	E )	E-)			VISUAL		Thin-Walled Tube		E - )	STAI			ENETRATION TEST
	SS			0	DESCRIPTION &	oc ·	8	NO.				45 i N	A - D.1586 )
=	THICKNESS	G.W.L.	Ţį	₩ B.	CLASSIFICATION	al	Val	Τ.	E	N	/ALUE		NUMBER OF BLOWS
DEPTH	HC	3	N	SYA		COL	Ė	S.P	DEPTH	15 30	45	N	10 20 30 40 50
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1_			a. Y					1.00	1_				
2 -			a 31.5		ou'm mum ou 11.1		<b>S.1</b>	UD.1	2 -	3 5	7	12	
3	4,56		40.00		Stiff; Tuffaceous Clay, high plasticity, CH, Clay = 100 %.	Blackish	•	3.00	3				
		3.50	2 1 1 2 1 2			grey		3.00 UD.2	_				
4_		=	7				S.2	3,50	4_	5 6	9	15	
5_		1			Very dense ; Sandstone ,				5		<u> </u>		
6	1.50				weakly to strongly comented,	Brown	5.3		6 .	16 30	25	55	
<del>-</del>					poorly graded , SP , medium \grain size , Sand = 100 %.		<b>S.4</b>		<u>-</u>	40 52/5		>60	
7-	1	ļ			/		S.5	1	7_	25 40	25	>60	
8_	3.35				Hard, Tuffaceous Clay Stone,	Brownish		[	8_				
٠ و	1				weakly to medium cemented, Clay = 100 %.	grey	8.6	•	9 .	10 17	35	52	
10	ļ	ł				<u> </u>	<b>S.7</b>	]	10	35 55/1	-	>60	
10-	1		Z.				S.8		**-	55/15	-	>60	
11 _	]	1	ATION						11 _				
12_	j		FORMA.		Very dense; Sandstone, medium to strongly comented,		5.9	1	12_	57/15		>60	
13	5.75	ļ			poorly graded, SP, medium	Black		1	13	-			
-			ENG		grain size, Sand = 100 %.		ļ		-	1	ļ	<u> </u>	
14_	┨		GENTENG				\$.10	1	14_	52/15	<del>  •</del>	>60	
15_	1		ဗ				0.44		15_	1 1 50%			
16	1				Very dense , Sandstone ,		S.11	1	16	41 50/5	<del></del>	>60	
17	2.10				medium grain size , poorly graded , SP , Sand = 100 % ,	Black		l .	17	]			
-	<u> </u>	-			angular to sub rounded grain	<b> </b>	S.12		-	35 55/1	0	>60	
18_	+				shape.				18 -	-			
19_	3.02				Hard; Tuffaceous Siltstone	Blackish			19	1			
20	-				medium to strongly cemented.	grey	1		20	4			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
-	<del> </del>	+	+				0.10	1	+	32 32/		>00	
21	1				END OF BORE HOLE ( - 20.22 m )				21 -	-			
22	]								22_	]			
23	1								23	<u> </u>			
24	]								24	.			
'	1								'	1			
25	1	<u> </u>	1		(3)	<u> </u>			25	1 1		Т.	



# PT. Wira Nusantarabumi

SOIL KIMAT INVESTIGATIONS - TOPOGRAPHIC SURVEY AND ENGINEERING CONSULTANTS

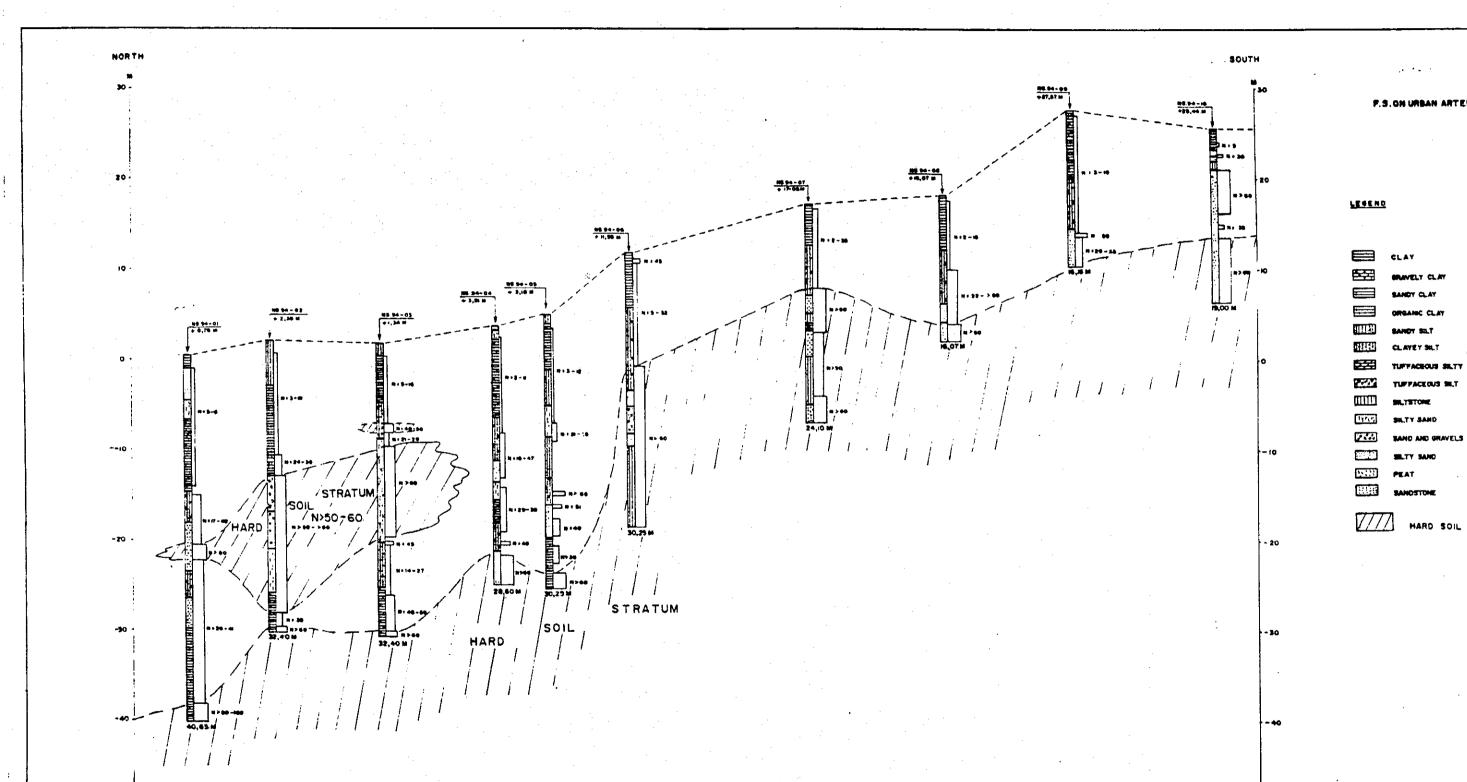
**EXPLORATION BOR LOG** 

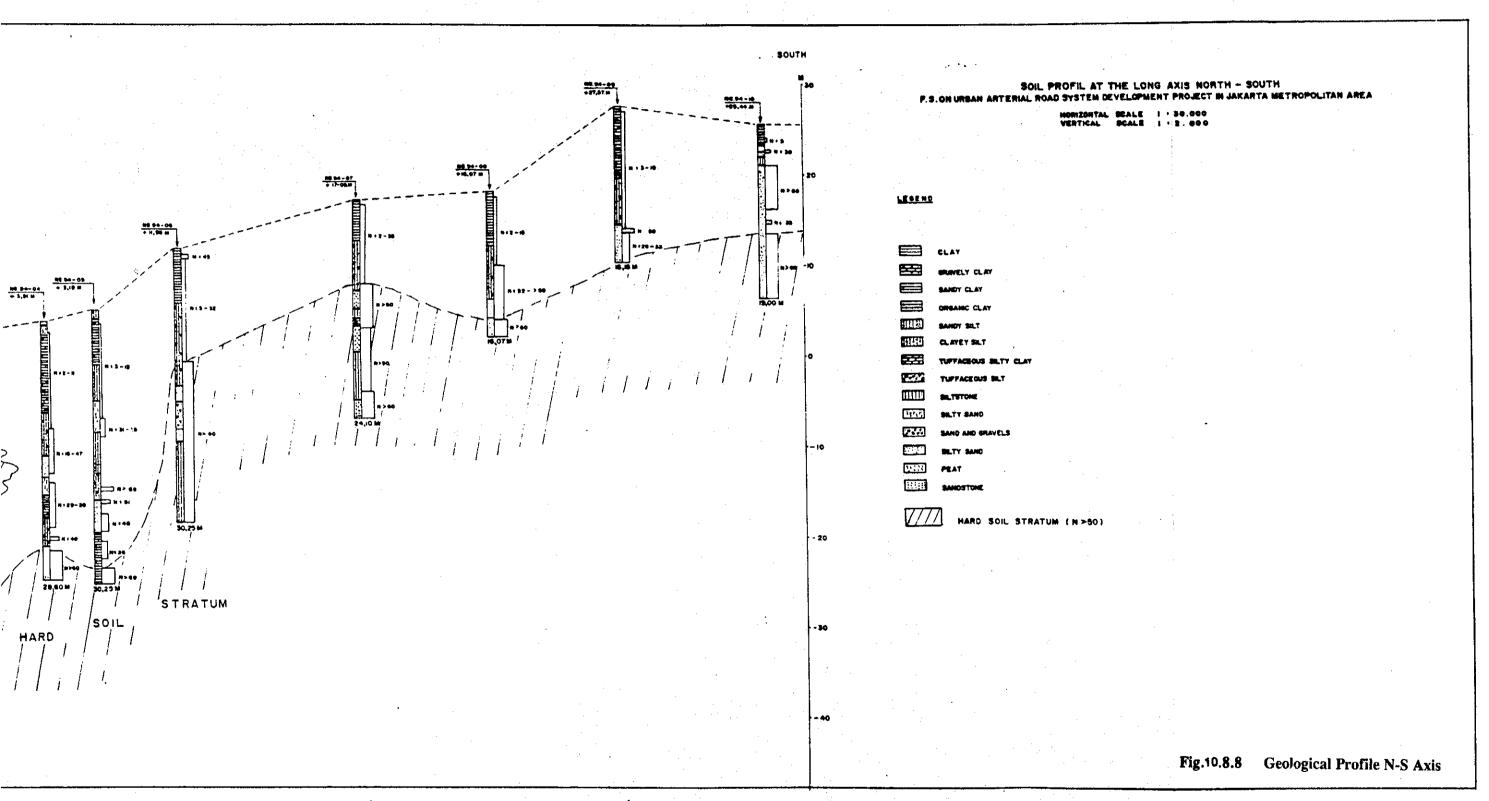
F.S. On Urban Arterial Road System Devolopment Project in Jakarta Metropolitan Area

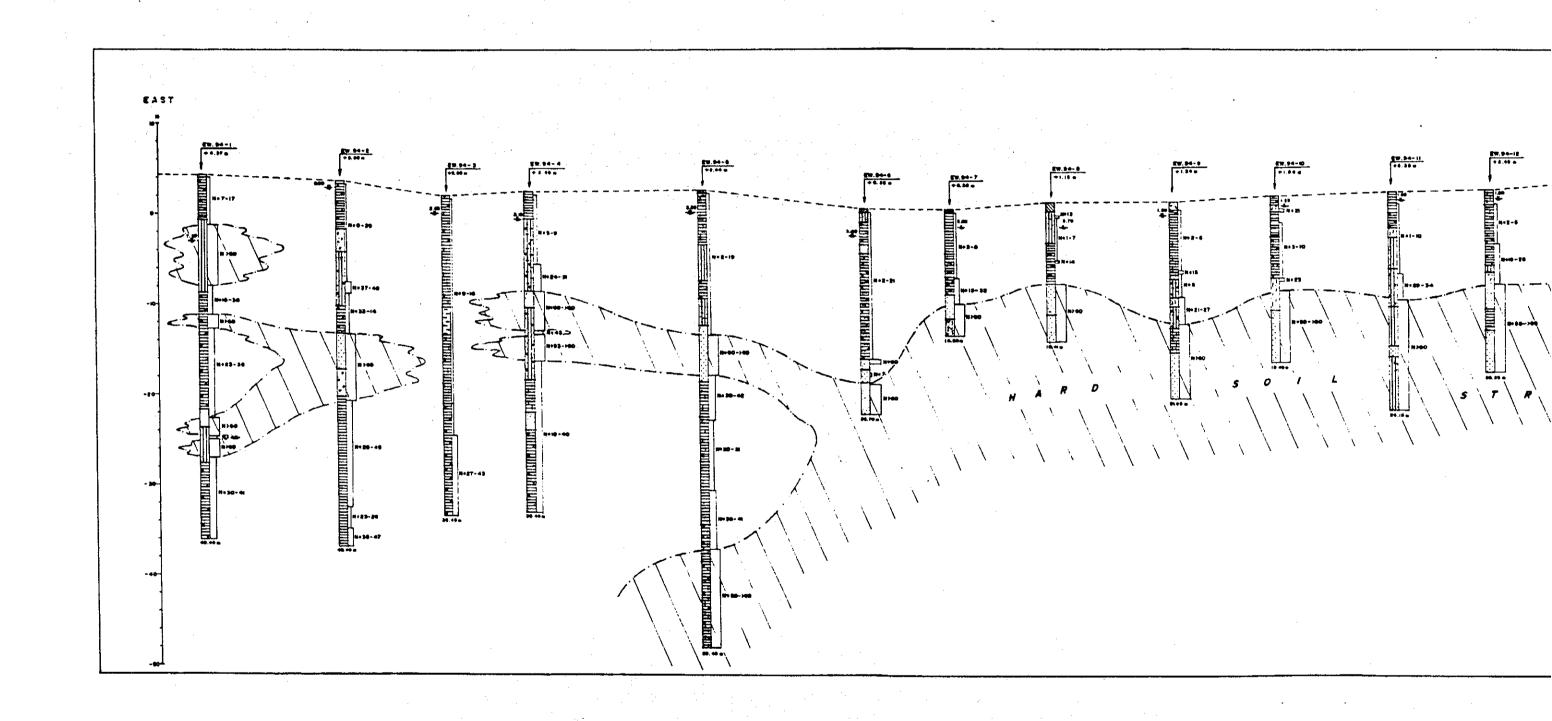
MB No: EW . 94 - 15

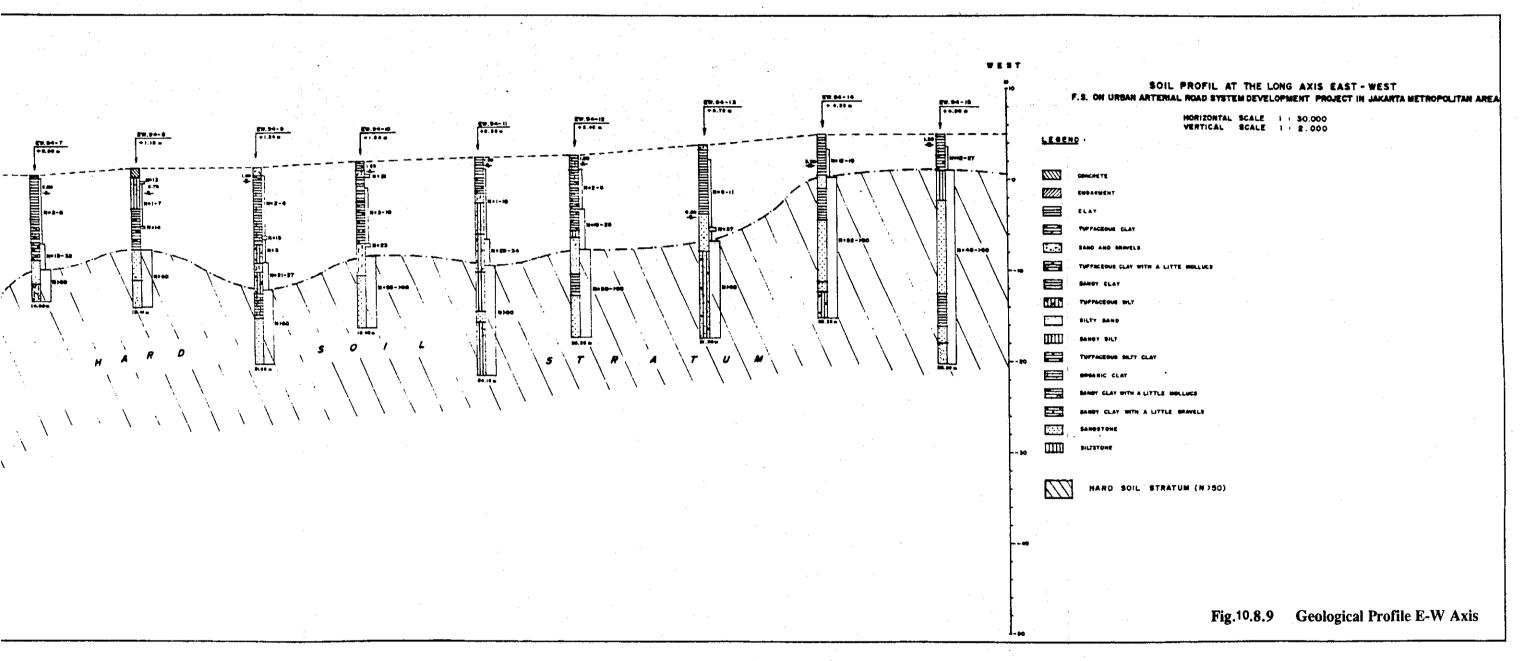
TOTAL DEPTH (-m)	25.35	CASSING	Ø 89 mm
BOR MACHINE TIPE	Koken	SUPERVISOR	Yosuke Sasaki
METHODE OF BORING	Rotary Core Drilling	BOR MASTER / DRILLER	Ismail / Uhen
GROUND ELEVATION	4.98	SOIL & MAT. ENGINEER	D. Sukarta Ir.
COORDINATES		DATE COMPLETED	February 04th 1994
LOCATION	Penggilingan	DATE COMMENCED	February 04th 1994

1	2	3		4	5	6	7	8	9			10	)						
-m)	ш )	ć		_					-m)	STANDAL	n P	FNI	ET P	ΔΤ	ΊΩ	N.	Tr	:21	_
-	u )	E-)			VISUAL		Thin-Walled Tube		<u>-</u>		ASTA							,	
	SS			10	DESCRIPTION &	œ	E	No.					· ·			<u> </u>			
E	X	-	-	æ ≅	CLASSIFICATION	L 0	-Va	₩.	Æ	N VALUE	<u>:</u>		NUI	/BE	RC	FE	iLO	WS	,
DEPTH	THICKNESS	G.W.L	2	SY		00	퉅	S.	DEPTH	15 30 45	N		10 f	20	34	0	40 I	50 I	,
<u> </u>		-		0,						Cm Cm Cm		Ш	ΙШ	т	m	Ш	ı	╖┤	$\mathbf{m}$
1_		125	ALLUVIUM		Stiff, Sandy Clay, high plasticity, CH at the top with	Brwon to			1_				Ш	Ш	Ш	Щ	Ш	Щ	Щ
2	2.45	¥	Ý		organic matter (0.20 m), Clay	Greyish brown	1.45 UD.1	S.1	2 -	9 4 8	12		N	╫		##	<del>                                     </del>	╢	
		ļ	₹		= 90%, Sand = 10%	OI OWII	2.00	S.2	_	4 6 11	17					Ш		$\coprod$	<u> </u>
3_			О		Very stiff, Tuffaceous Clay,	Grey to Brwonish	3.00	8.3	3_	4 6 10	16	Щ			Щ	₩	Ш	Ш	┼┼┼┩
4 -	1.55		ANK		high plasticity, CH, Clay = 100 %.	grey	3.50	<b>S.4</b>	4	4 6 9	15			Щ	Ш	$\coprod$		Ш	
		1	VULCANIC				]	8.5	5	5 14 36 14 33 20	50 53			$\prod$		$\prod$		11	$\prod$
5_	1				Hard; Tuffaceous Silit, low	Brownish		S.6 S.7	"-	14         33         20           20         30         37	>60		##	₩	╫	₩	##		HH
6_	3.35		OUNG		plasticity, ML, Silt = 100 %.	grey		S.8	6_	13 32 16	48	Щ	Ш	$\prod$	Щ	Щ		H	
7 -	ł	ŀ	ο×					S.9 S.10	7 .	10 21 32 17 23 28	53 51	╂┼┼	╫┼	╫	++	+++	╫		Ш
-	<u> </u>				<u> </u>		ļ	\$.11	] [	13 40 25	>60			$\parallel$			Ш		
8_	ł							S.12 S.13	8_	25 55/15 27 56/10	>60 >60	Ш		₩	$\mathbb{H}$	-	₩	┼┼╂	₩
9_	1					<u> </u>	1	S.14		40 51/5	>60			Ш	Ш	Ш	Ш	Ш	
10	1							S.15 S.16		53/10	>60 >60	┨┼┼		44	₩	-	₩		-
1"-	ļ					1		S.17	] -	60/13	>60	$\parallel \parallel$					Ш	H	
11 _	1							6.49	11_	58/15	>60	$\parallel \parallel$	$  \prod$	Щ	-	$\prod$	Щ	Ш	
12	1				Very dense ; Silty Sandstone ,	Brownish		S.18	12	38/13	>60	╅╫┼	╫╫	-11	╫	1	#		╁┼┼
	1				medium to strongly cemented,	grey to		S.19	13	40 50	>60		Ш			Щ		Ш	
13	9.88				Sand = 70 %, Silt = 30 %.	Blackish grey	l	S.20		35 52/10	>60	╫╫	╫╫	₩	₩	+++	╫	╫	┍┼┼┼┼
14	1		_			J 5-7			14_			1111	Щ	Щ	Щ	Щ	Щ	Щ	Ш
15	┨		ΙΟΥ				1	S.21	15	40 60	>60	╉┼┼┼	╂╂┼	$\mathbb{H}$			╫		
1 -	1		FORMATION			ĺ		5.22		32 38 23	>60		Ш		Ш	Ш	∭		Ш
16_	-	1	OR					S.23	16_	43 54	>60	╫╫	╫	$\mathbb{H}$	╫		₩	Щ	┟┼┼┼
17	1								17		-00	Ш	Ш	Ш	Ш		Ш	Ш	Ш
18	}	1	ENTENG		· · · · · · · · · · · · · · · · · · ·		<del> </del>	S.24	18	34 54/8	>60	$\parallel \parallel$	$\prod$	$\mathbb{H}$	₩	$\parallel \parallel \parallel$	$\prod$	$\prod$	$\coprod$
_	}		GEN					S.25	] -	27 56	>60	╅╫╅			$\coprod$			${\dagger\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!\!$	
19_	]		J		Very dense ; Tuffaceous	Blackish	İ		J 19_			$\prod$	$\prod$	Щ	$\prod$	$\prod$	$\prod$	#	
20	3.82				Claystone, medium to strongly cemented, Clay = 100 %.	grey to Black		S.26	20	40 58/10	>60	╅╁┼			∄	$\parallel \parallel \parallel$	╁╁		
-	1	1						S.27	] , [	45 55/10	>60	$\prod$	$\prod$		$\prod$	$\prod$	$\prod$	$\prod$	Ш
21 -	<b>├</b>	-			V 9	<u> </u>	<u> </u>	S.28	21_	47 57/15	>60	╂┼┼┼	╫	₩	╫	₩	+++	₩	HHH
22	1				Very dense; Sandstone, medium to strongly cemented,				22_			1111	Щ	Щ	Ш	Щ	Щ	Щ	Щ
23	2.00				poorly graded, SP, Sand =	Black		S.29	23	49 51/10	>60	╂╟╢	╁╂╁╂	$  \cdot   \cdot  $	-++}	H	$+\!\!+\!\!\!+\!\!\!+$	₩	HH
-	<b></b>	-			100%	<b> </b>	-	S.30	j -	45 50/5	>60	<u> </u>	***	$\parallel \parallel$	##		Ш	#	<u> </u>
24_	]				Very dense, Sand, medium grain size, poorly graded, SP,	Disate		Q 24	24_	25 55	><0	+ + + + + + + + + + + + + + + + + + +	$\coprod$	Ш		$\coprod$		$\mathbb{H}$	$\parallel\parallel\parallel$
25	2.30				Sand = 100 %.	Black		S.31	25	25 55	>60			Ш	Ш			Ш	<u> </u>
26	1	+			NIN OF BODE TOTAL	-	+	0.00	26	32 10 15/5	>60			Ħ		Ħ		#	###
26	ــــــــــــــــــــــــــــــــــــــ	1		<u> </u>	ND OF BORE HOLE ( - 25.35		<u> </u>	<del></del>	20	1 1 1	<del> </del>	Ш	ш	Ш.	Щ	Ш	Ш	Ш	للللل









### 10A-2 ROUTE DESCRIPTION

#### (1) Route Description of the North-South Axis

The selected route for North-South Axis starts in Kota where Jl. Pintu Besar/Jl. Gajah Mada/Hayam Wuruk and Jl. Moch. Mansyur work existing north-southward arterial roads. No direct connection to Jakarta Harbour Road is provided due to preservation of historical monuments in Kota and deliberation on traffic manoeuvre scheme of successive interchanges on Jakarta Harbour Road. To prevent missing link of tollway network, a north-southward arterial road with depressed structure should be taken into consideration in the future to increase traffic capacity in this section. Jl. Gajah Mada/Hayam Wuruk is located in the CBD with 60 m ROW and which is divided by the 15 m wide Kali Ciliwung in the center namely the north bound is Jl. Gajah Mada and the south bound is Jl. Hayam Wuruk. Since there exist densely developed commercial area along the road and the widening was taken place in a few decades ago, it is rather difficult to acquire additional land for the Project in the whole stretch. However, the space above the Kali Ciliwung seems available provided that the consent is obtained from the agencies concerned. It seems to be possible to acquire a localized area where a toll gate is deemed necessary. Nevertheless, an elevated toll gate would be constructed on viaduct.

The bed rock in Kota area lies 40 to 50 m in depth, according to soil investigations conducted through projects in Kota area such as Jakarta Harbour Road, Northern Extension of S-W Arc and Pasar Pagi Viaduct. However, 6 m to 8 m thick sandy soil strata with N-value of 40 sometimes are found 20 m in depth and such geological condition is regarded as structural bearing strata. Even though no intermediate bearing strata exists, cast-in-place concrete pile will be able to be constructed as bearing pile on the bed rock. East-westward arterial roads in the north of Monas are Jl. Bandengan from Teluk Gong, Jl. Pangeran Tubagus Angke/Jl. Mangga Dua, Jl. Mangga Besar, Jl. Zainul Arifin/Jl. Sukarjo Wiryopranoto, Jl. Kyai Tapa/Jl. Hasyim Asyhari from Grogol, Jl. Tomang Raya/Jl. Suryo Pranoto/Jl. Juanda/Veteran from Tomang to Pasar Baru.

The route runs southward in the west of Monas to cover the area where Jl. M.H. Thamrin and Jl. Mas Mansyur work existing north-southward arterial roads.

Jl. Abdul Muis is 4-lane undivided road and has the 10 m wide Kali Krukut and 20 m wide frontage road in the east. The land use along Jl. Abdul Muis is of governmental and institutional offices. A reconstruction of Jl. Abdul Muis will be able to create the space for elevated toll road and at-grade arterial road with On and Off ramps within the existing ROW.

Jl. Kebon Sirih is also 4-lane undivided road and has the 10 m wide Kali Cideng. This road will become a main access to and egress from Jl. M.H. Thamrin. A reconstruction of Jl. Kebon Sirih will be able to provide additional space for On and Off ramps, provided that the consent to utilize space above the Kali Cideng is obtained from the agencies concerned.

In the vicinity of intersection between Jl. Fakhrudin and Jl. Jati Baru, there are several plans of grade separation structure, such as Jl. Fakhrudin underpass and Jl. Jati Baru flyover. The eastern part of Jl. Jati Baru has been widened while the western in widening and

Tanah Abang flyover which is overpassing Western Railway Line is under construction. In the west of Jl. Jati Baru, the Western Banjir Kanal, high voltage power transmission line and Western Railway Line disrupt community and densely urbanized area with low cost housing are found along its corridor. Both Western Railway Line and Serpong Railway Line have overhead structures including recent Slipi flyover and on-going Tanah Abang flyover and it seems rational that no elevated railway is planned in future.

In the south of Kali Malang/Banjir Kanal, the route covers the area where Jl. Aipda K. Sasuit Tubun and Jl. Jend. Sudirman encompass. Jl. Pejompongan/Jl. Matraman is being improved and recently opened Jl. Mas Mansyur with Sudirman Flyover are designated eastwestward arterial roads and are supposed to be main access to North-South Axis.

The existing Pejompongan IC has presently at-grade railway crossing and a railway flyover will be provided by DKI's improvement plan. This flyover will create open space adjoining railway and make it available for On and Off ramps in the east of Jl. Gatot Subroto. In the west of Jl. Gatot Subroto, Simprug Bypass runs southward in both sides of the railway and Pal Merah railway station is located nearby the intersection with Jl. Gelora. In this stretch, the toll road will be strictly controlled by severe physical constraints such as Parliament Complex and relevant facilities. If the space above the railway is made available partially it will manage to pass this stretch by an elevated road on viaduct.

To encompass Senayan sports complex and Gelora legislative and administrative complex, the route crosses Jl. Gatot Subroto and toward Kebayoran Baru Subcenter. Existing north-southward arterial roads are Jl. Pejompongan-Pondok Pinang (Simpruk Bypass), Jl. Asia Afrika and Jl. Jend. Sudirman.

There exist senior high school, firing range and other institutional facilities along Jl. Gelora. The firing range has a plan to expand their field toward Graha Pemuda and it will make Jl. Gelora underpass. The toll road will also pass there by an elevated road on viaduct.

Statue Senayan is located in the center of the intersection between Jl. Jend. Sudirman and Jl. Senopati. This intersection is of socalled "round-about with multi legs" and seven connecting road links are Jl. Jend. Sudirman, Jl. Senopati, Jl. Pattimura, Jl. Singamangaraja, Jl. Hang Tuah, Jl. Hang Lekir and Jl. Asia Afrika clockwise. Furthermore, a new link is planned to connect this intersection with Simprug Bypass. The round-about has enough wide area and it is possible to form a modern channelized intersection in case that the statue shall be able to be relocated. In the surrounding, governmental offices and commercial buildings are found with sufficient setback.

In the vicinity of Kebayoran Baru Subcenter, Jl. Singamangaraja/Jl. Panglima Polim and Jl. Pattimura/Jl. Prapanca are the north-south arterial roads and Jl. Kyai Maja/Jl. Trunojoyo/Jl. Wolter Monginsidi is the east-westward arterial road. These cross arterial roads are connected each other by Jl. Senopati, Jl. Wijaya, Jl. Gandaria/Jl. Kramat Pela and Jl. Pakubuwono 6 clockwise to form a circumferential road.

Kebayoran Baru is established as Subcenter in Jakarta South, having Blok-M commercial center encompassed by residential area. Recent Kebayoran Baru is changing its structure as Metropolitan Jakarta commands its wider conurbation. Blok-M commercial center no more remains within Blok-M and expands toward its surrounding. Resulting convertion from residence to business and commercial building is ceaselessly in progress. Along Jl. Pattimura and Jl. Sultan Iskandarsyah, there are many offices converted from residence. Even along Jl. Prapanca new high-rise apartments with department store are under construction in residential area.

In the south of Kebayoran Baru Subcenter, four arterial roads are related to the route, namely Jl. Ciputat Raya, Jl. Metro Pondok Indah, Jl. Fatmawati and Jl. Pangeran Antasari from west. No major arterial road except Jl. Kemang exists in the east-westward connection.

JI. Pangeran Antasari is a divided 4-lane arterial road and has a future ROW of 30 m wide. The landuse along the road is few developed because it is either controlled by administration or discouraged physically due to its terrain. Therefore new development is limited outside of future ROW.

The terminus of route will be located at the intersection between Jakarta Outer Ring Road and Jl. Pangeran Antasari. In the east of the intersection, the Kali Krukut flows northward and its river side forms depressed wide area where open space remains undeveloped. Frontage roads of Jakarta Outer Ring Road have been open to public and are congested constantly. A toll road of Jakarta Outer Ring Road is scheduled to be completed by 1995. There will be two interchanges on Jakarta Outer Ring Road in the vicinity of the terminus, namely Fatmawati East IC and Ampera West IC. Both ICs are planned to be On and Off ramp type interchange and are distant enough far from the intersection between Jl. Pangeran Antasari and Jakarta Outer Ring Road. On the contrary, Jl. Metro Pondok Indah and Jl. Fatmawati are supposed to be main access roads and On/Off ramps of JORR are planned in short interval.

#### (2) Route Description of the East-West Axis

The selected route for the East-West Axis starts in the western section of Jakarta Outer Ring Road (JORR), of which the frontage roads have been completed and are open to the public but the toll road is not constructed yet. It will be completed by the year 1996. To keep good access to West primary center and to follow the city planning road (Route K) in principle, the corridor is located in the north of built-up housing complex of Taman Permata Buana, where the expansion of Taman Permata Buana is planned.

Future Taman Permata Buana housing complex will have the same ROW for this city planning road as that of Kosambi Baru housing complex in the north of existing Taman Permata Buana housing complex. As future ROW of Route K is supposed to be of 26 m wide, certain countermeasure to incorporate the scheme of East-West Axis is deemed necessary. Although the city planning road comes to an end at Jl. Kedoya Raya, the East-West Axis should find its own route to avert number of established housing complex in Kec. Kebon Jeruk.

Generally, mixed landuse of industry and commerce is predominant along Jl. Daan Mogot and densely developed residential landuse is widely spread in the corridor.

In the east of the Cengkareng Drain, there are many large-scaled established housing complex such as Green Garden, Sunrise Garden and Taman Ratu Indah. Although the masterplan of Jakarta 2005 has an arterial road to penetrate these housing complex to connect with Jl. S. Parman, the city planning road terminates on Jl. Kedoya Raya (Route F), according to District Plan (RBWK) of Kec. Kebon Jeruk and city planning road map in 2005 issued by City Planning Bureau of DKI Jakarta. Therefore, the East-West Axis should find its own

route in this area.

There are five north-southward arterial roads in between JORR and South-West Arc (S-W Arc). Among them, Jl. Perjuangan (Route D) which connects Jl. Daan Mogot with Jakarta-Merak Freeway (Tollway) and Kebayoran Baru sub-center is designated as north-southward major arterial road. No major arterial road except Jl. Daan Mogot and Jakarta-Merak Freeway exists in the east-westward direction.

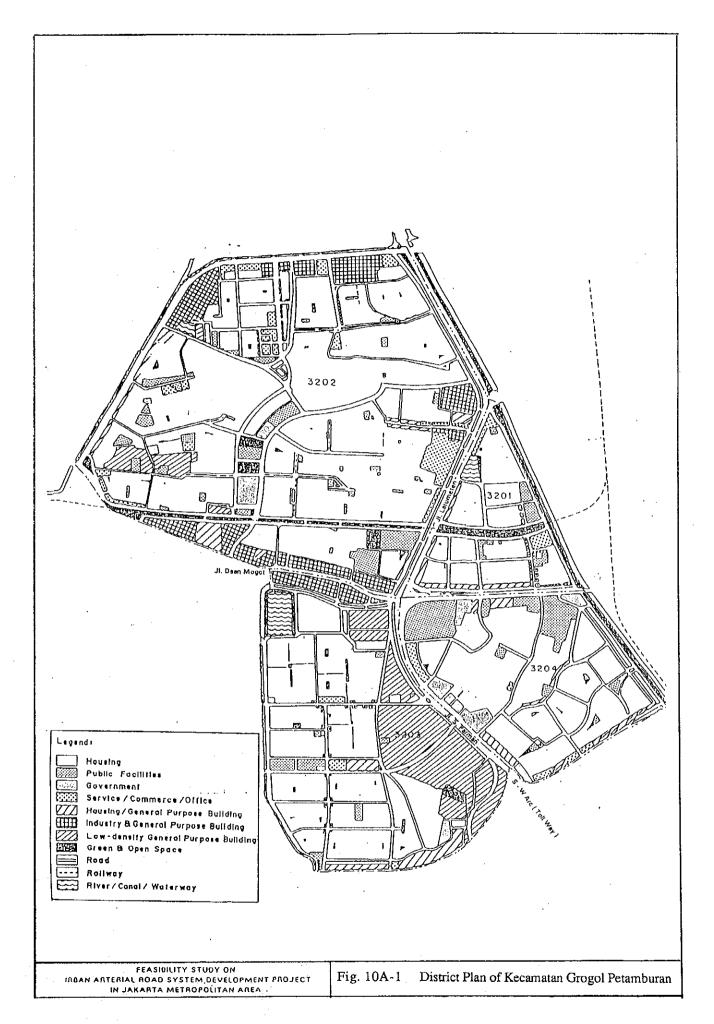
Jl. Daan Mogot which is classified primary arterial road caters considerable volume of east-westward traffic together with Jakarta-Merak Freeway.

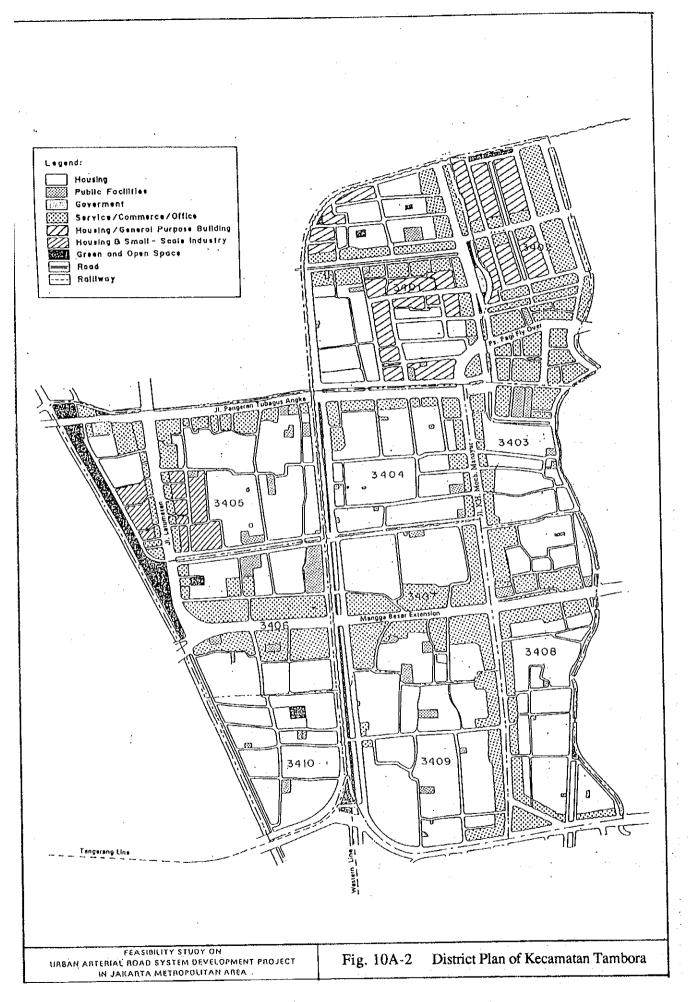
Since Grogol intersection on Jl. Daan Mogot and Tomang intersection at the terminus of Jakarta-Merak Freeway are located close each other, chronic traffic congestion take place on Jl. S. Parman.

In the vicinity of Grogol intersection, number of public facilities such as universities, hospital, hotels shopping centers governmental buildings and bus terminal exist to spur traffic congestion. City planning roads are planned in both sides of the Tangerang railway line to collect and distribute local traffic.

There are rather old housing complex with poor public facilities in Kec. Grogol Petamburan (Fig. 10A-1). However, the Jakarta 2005 categorizes the landuse along the corridor as urban betterment with the first priority and a city planning road is planned to pass the center of this area to connect Jl. Daan Mogot with Jl. Latumeten. Some redevelopment of old housing complex are found along Jl. Pangeran Tubagus Angke.

The route is planned to pass densely populated area in Kec. Tambora on Mangga Besar Extension. However, the District Plan of Kec. Tambora presented in Fig. 10A-2 claims public space and facilities, commerce and office buildings so much that it is very necessary to create such land area by certain land readjustment techniques.





The DKI's road improvement plan in Kota area consists of widening of existing roads, construction of new links and flyovers. According to the simulation of future traffic, the East-West Axis, Jl. Mangga Besar, Jl. Mangga Dua, Jl. Pangeran Tubagus Angke and Jl. Bandengan Utara/Selatan will become major arterial roads in the east-westward direction and Jl. Jembatan Dua, the new road link along the Western railway line, Jl. KH. Moch. Mansyur, Jl. Gajah Mada/Hayam Wuruk, the new road link along the Central railway line and Jl. Gunung Sahari will work as major arterial roads in Kota area. In particular, the East-West Axis including Jl. Mangga Besar will cater heavy traffic in the east-westward.

The central railway line has been elevated in the section from Kota to Manggarai but city planning roads along the railway are not developed yet. The Northern Extension of S-W Arc is to be completed by 1998 and simultaneously the improvement of Jl. Latumeten is planned.

Ex-Kemayoran Airport is designated the special area to be developed as an intensive sub-center of commerce and housing complex where north-south and east-west runways are converted to arterial roads and 120,000 population will work and live in the area of 454 ha. In the east of Ex-Kemayoran Airport, large-scaled housing complex of Sunter Agung in the north and Sunter Jaya in the south are established. A city planning road is located in the north of Sunter Jaya housing complex and is partially developed such as Jl. Taman Sunter Indah and Jl. Danau Indah Raya.

JI. Taman Sunter Indah and Jl. Danau Indah Raya which are city planning roads and have 36 m wide ROW have been partially completed but the remaining section is in densely populated area.

Elevated North-South Link (N-S Link) and its On/Off ramps are located at the intersecting point between Jl. Danau Indah Raya/Raya Barat Boulevard and Jl. Yos Sudarso.

The routine passes Kelapa Gading housing development on Raya Barat/Timur Boulevard. The road has enough wide ROW and commercial buildings along the road have been set back. In the east of Kelapa Gading housing development, medium industry has been settled along Jl. Pegangsaan Dua. High voltage transmission line and its pylons are also located along Jl. Pegangsaan Dua.

There are two city planning roads in the east of Pulogadung Industrial Estate, namely a new road along new freight railway line and the northern extension of Jl. Buaran Indah Raya (Route EE). Existing divided Jl. Pulogadung has 40 m ROW and large-scaled factories have been established along the road, while the extension of Jl. Buaran Indah Raya is partially under construction and will be located along Jl. Swadaya where densely populated area and large-scaled factories exist. High voltage transmission line and its pylons along Jl. Pegangsaan Dua run southward in parallel to Jl. Pulogadung in undeveloped industrial estate. According to the District Plan of Kec. Cakung, a new freight railway line was planned along the transmission line but no plan is given in the masterplan of Jakarta 2005.

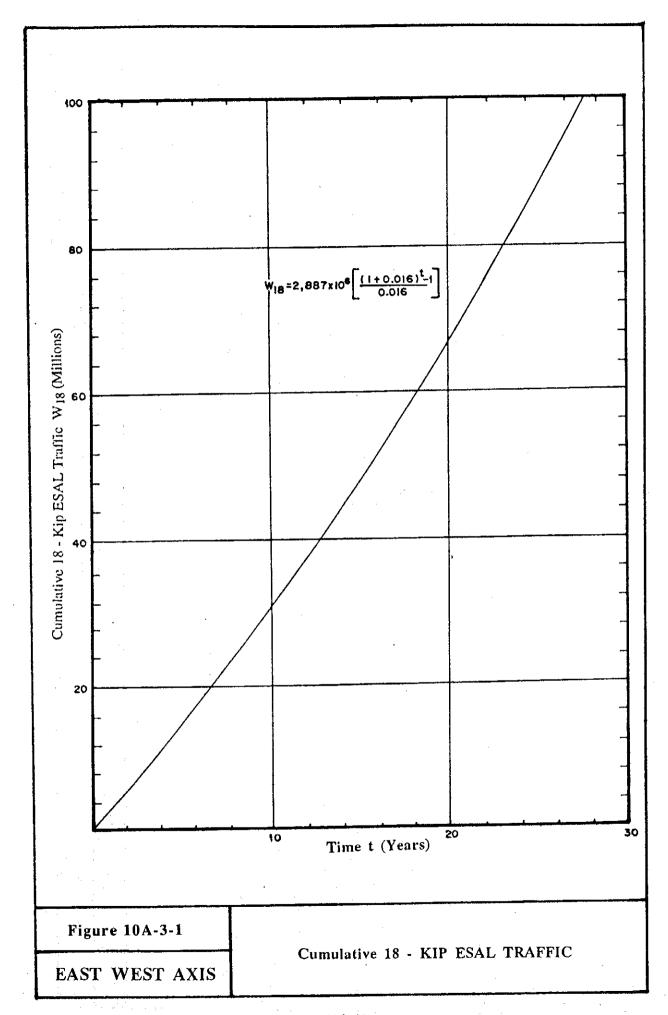
The original purpose of new railway line between Tg. Priok and Cibinong was solely for cement transport and the original location of route was located in the eastern end of Pulogadung Industrial Estate and ran parallel to Jl. Pegangsaan Dua northward. However, the revised scheme of this railway aims to be multipurpose operation such as commuting, inter regional traveling and freight transporting because the capacity of existing Bogor and Bekasi lines in Jabotabek is saturated by the commuter train operation. Simultaneously, the route location is revised to be located along JORR in order to avert industrial and residential development along the original route. Though the present district plans (RBWK) of Kec. Cakung and Kec. Cilincing present the scheme of this new railway, it is reasonable that the E-W Axis is able to select its own route in this area on the assumption that the route location of new railway presented in the district plans has already been set aside.

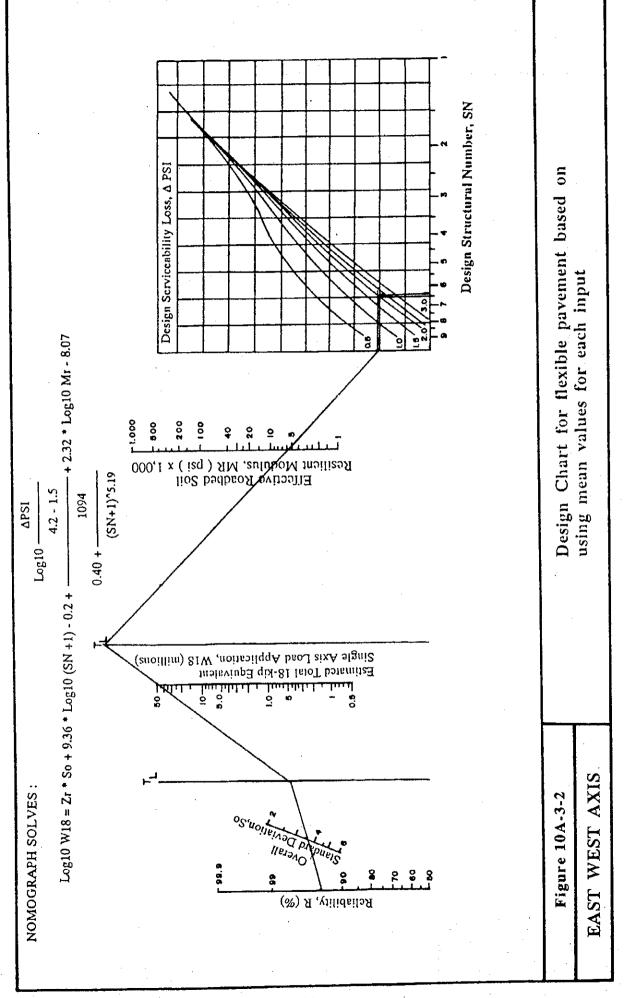
Along east-westward transmission lines towards Bekasi, two city planning roads (Route AA) are planned in both sides of the transmission line. These city planning roads will pass in between Taman Pulo Indah and Concord 2000.

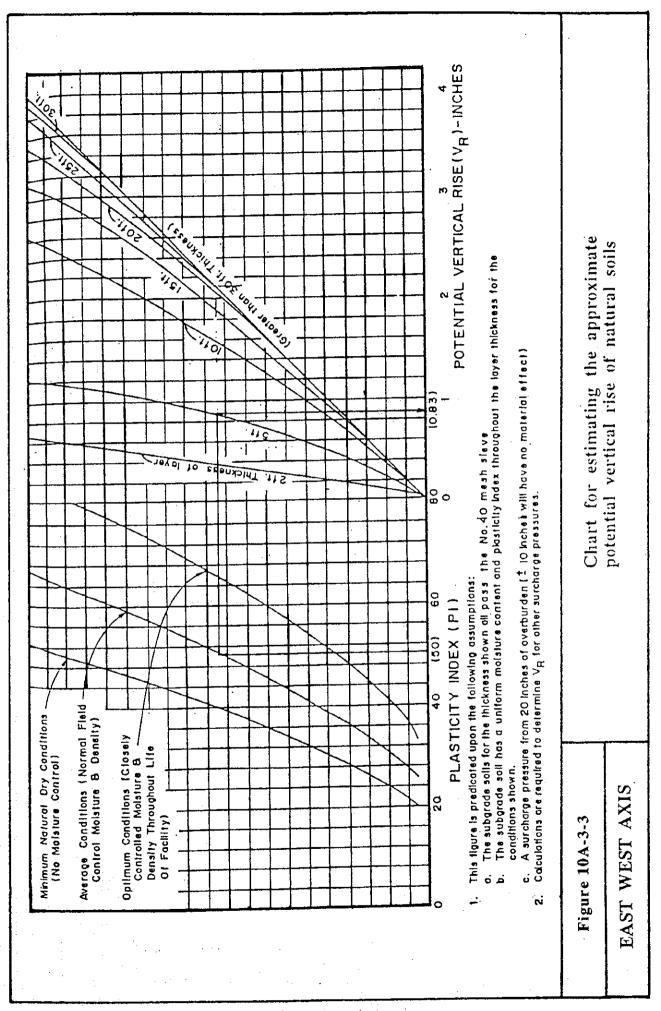
The eastern section of Jakarta Outer Ring Road (JORR) is operating temporary two ways on north-bound lanes of toll road in the stretch between Cikunir IC on Jakarta-Cikampek Freeway and Cakung IC with Jl. Bekasi Raya.

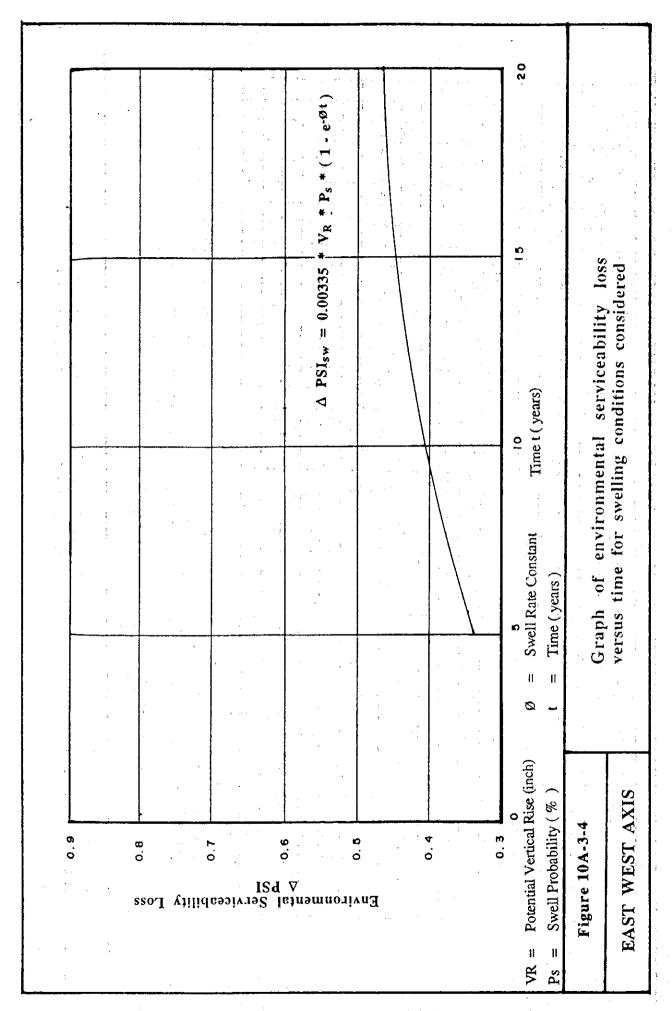
At the intersecting point with JORR, the selected corridor of East-West Axis will end. In the vicinity of intersecting point, a new bus terminal is planned to relocate the present Pulogadung bus terminal located at the intersection between Jl. Bekasi Raya and Jl. Perintis Kemerdekaan. The East primary center is located at the corner encompassed by JORR and Jl. I. Gusti Ngurah Rai and has own access road to JORR in the north. To keep good access to the East Primary Center, existing Jl. Penggilingan and frontage roads of JORR will be utilized.

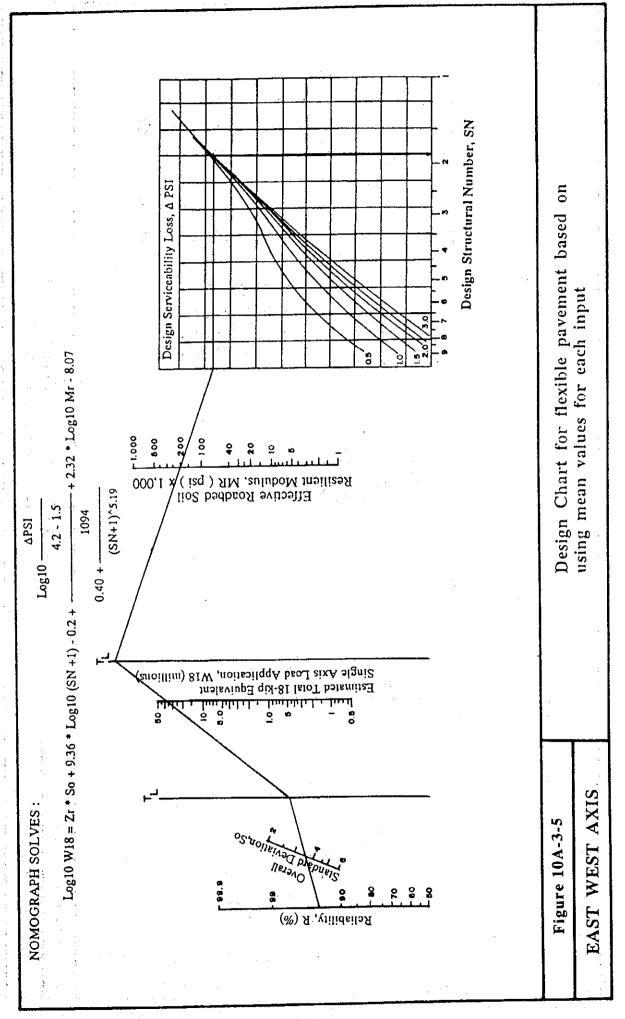
10A-3 PRELIMINARY DESIGN OF PAVEMENT

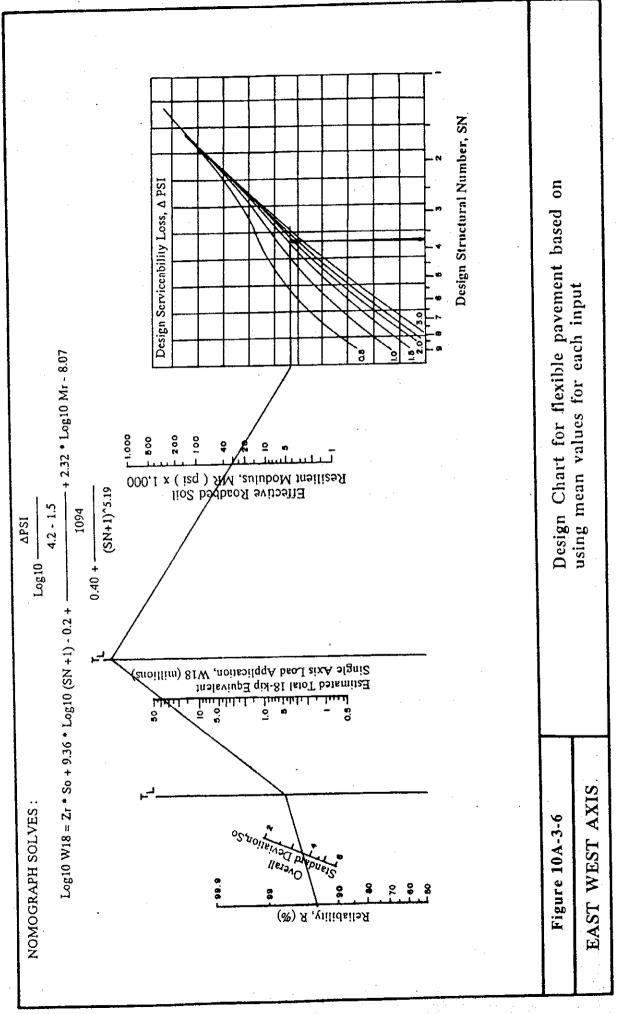


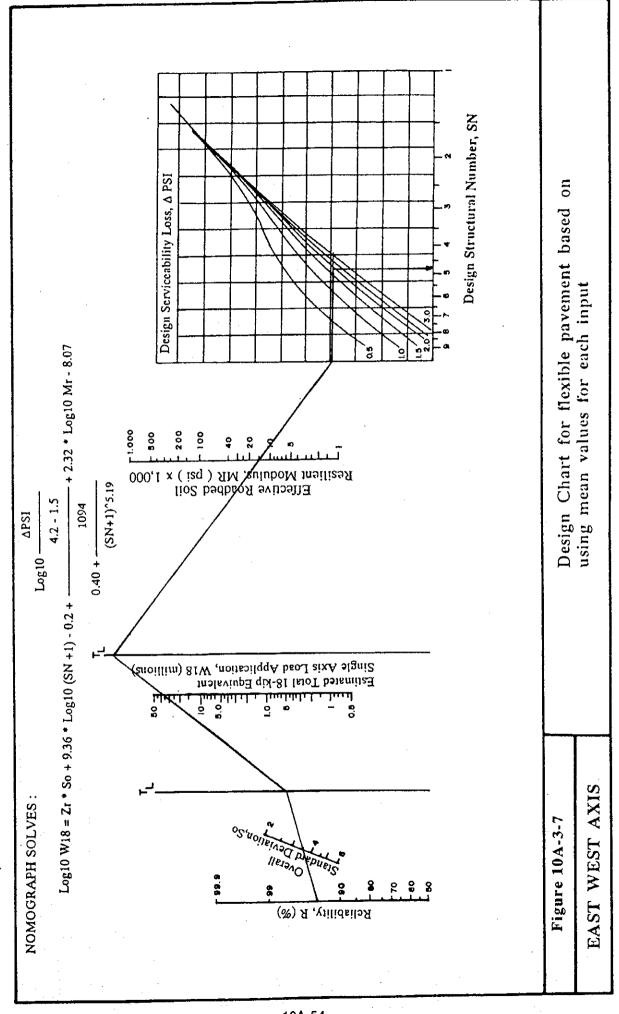


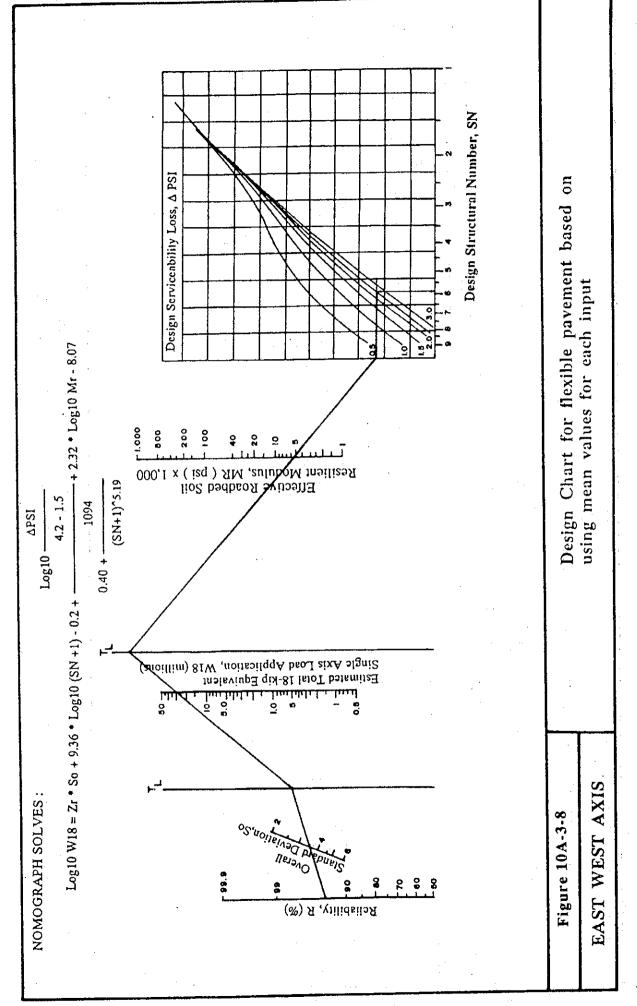


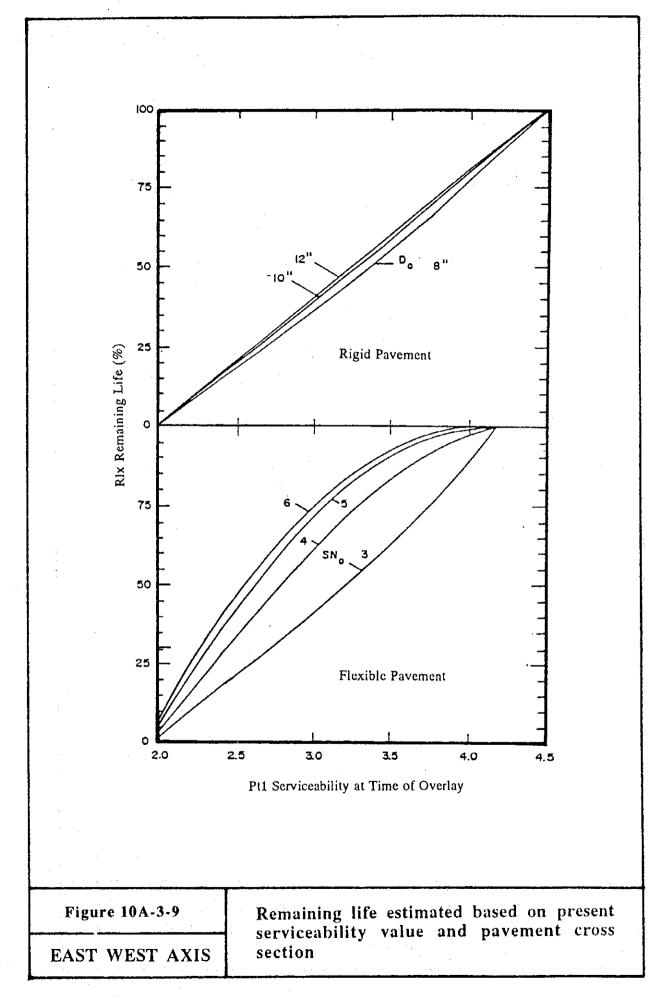












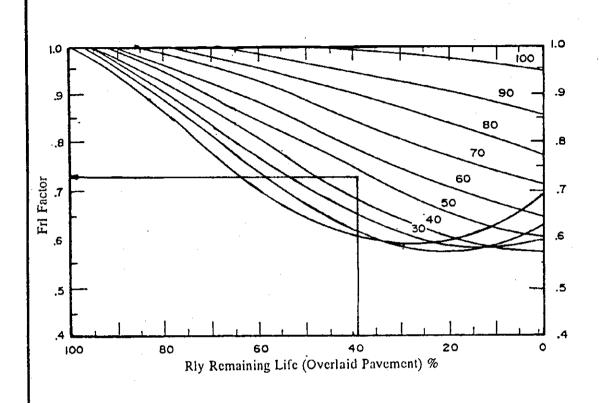
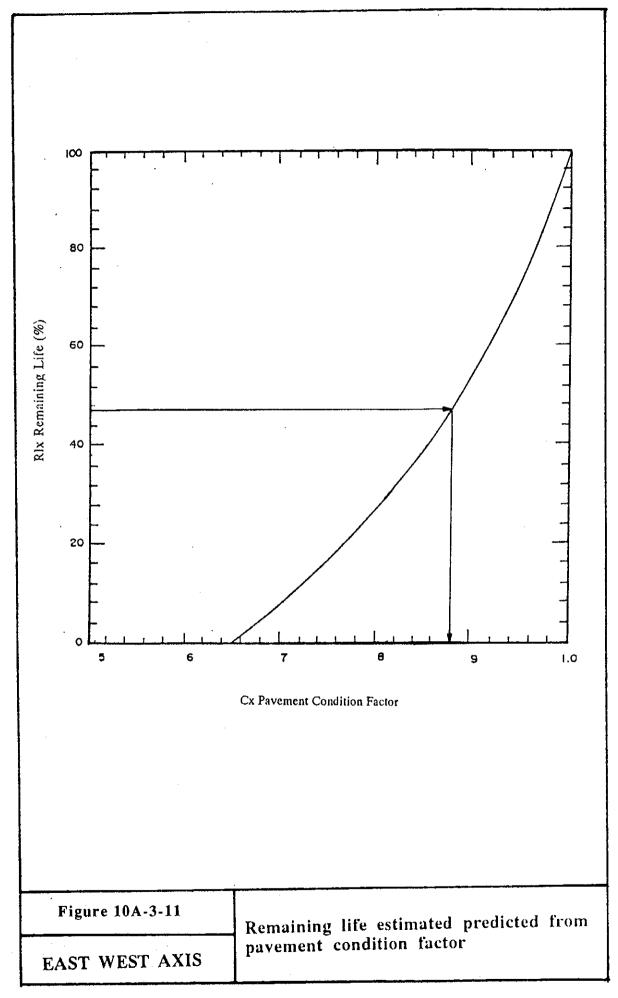


Figure 10A-3-10

EAST WEST AXIS

Remaining life factor as a function of remaining life of existing and overlaid pavements



### 10A-4 SUMMARY OF STRUCTURES

Table 10A-4 (1) Summary of Design Features of Bridges and Viaducts

EW-Axis Throughway

Name	Station	Length	Width (m)	Super Structure Type	Sub Structure Type	Span Arrengement
Bridge	0+960~ 1+099	139.0	2x16.25	PC-I	RC-D. PCP	17+3@35+17
Bridge	1+428~ 1+472	44.0	25.50	PC-I	RC-D. PCP	22+22
Bridge	3+370~ 3+655	285.0	2x12.75	PC-I	RC-D. PCP	5@35+40+2@35
Bridge	4+600~ 5+075	475.0	2x12.75	PC-I	RC-D. PCP	3@35+45+2@40+7@35
Bridge	5+225~ 5+258	33.0	25.50	PC-I	RC-D. PCP	33
Bridge	5+480~ 5+810	330.0	2x12.75	PC-I	RC-D. PCP	2@30+2@35+30+35+30+ 3@35
Bridge	6+040~ 6+083	43.0	25.50	PC-I	RC-D. PCP	10+23+10
Bridge	6+250~ 6+550	300.0	2x12.75	PC-I	RC-D. PCP	10@30
Bridge	6+970~ 7+255	285.0	2x12.75	PC-I	RC-D. PCP	3040+45+3040
Bridge	8+215~ 8+490	275.0	2x12.75	PC-I	RC-D. PCP	4@30+35+4@30
Bridge	9+320~ 9+802	482.0	25.50	PC-I	RC-D. PCP	10@35+40+27+30+35
Bridge	9+802~ 9+857	55.0	25.50	St-I	RC-D. PCP	55
Bridge	9+857~10+137	280.0	25.50	PC-I	RC-D. PCP	8@35
Bridge	10+405~10+710	305.0	2x12.75	PC-U	RC-B. PCP	4@35+25+4@35
Bridge	11+170~11+455	285.0	2x12.75	PC-U	RC-B. PCP	2@30+35+40+5@30
Bridge	11+744~11+766	22.0	25.50	PC-I	RC-B. PCP	22
Viaduct	11+958~12+253	295.0	18.50	PC-U	RC-CCP	5@35+4@30
Viaduct	12+253~12+418	165.0	18.50	St-B	RC-CCP	55+60+50
Viaduct	12+418~12+748	330.0	18.50	PC-U	RC-CCP	3@35+4@30+3@35
Viaduct	12+748~13+435	687.0	18.50	PC-U	RC-B. PCP	12@35+5@30+3@29+30
Viaduct	13+435~14+693	1258.0	18.50	PC-U	RC-B. PCP	2029+5030+14035+403 +2040+8035+2040
Viaduct	14+693~15+908	1215.0	18.50	PC-U	RC-B. PCP	24@35+3@30+40+7@35
Viaduct	16+640~18+450	1810.0	18.50	PC-I	RC-D. PCP	7035+40+3030+41035
Viaduct	18+450~20+633	2183.0	18.50	PC-I	RC-D. PCP	60@35+40+43
Viaduct	20+633~22+685	2052.0	18.50	PC-I	RC-D. PCP	56035+30+2031
Viaduct	22+685~24+450	1765.0	18.50	PC-I	RC-D. PCP	3@35+3@30+42@35+30+ 2@35
Bridge	25+767~26+057	290.0	2x12.75	PC-I	RC-D. PCP	3@30+35+40+35+3@30
Bridge	28+313~28+488	175.0	2x12.75	PC-I	RC-D. PCP	5035
Bridge	28+720~28+748	28.0	2x12.75	PC-I	RC-D. PCP	28
Bridge	29+435~29+680	245.0	2x12.75	PC-I	RC-D. PCP	7035
Bridge	30+610~31+150	540.0	2x12.75	PC-I	RC-D. PCP	25+30+2@37+30+7@35+ 2@40+30+26
		PC-I PC-U St-I St-B Total	. 5	75. Om 55. Om 55. Om		

### Table 10A-4 (2) Summary of Design Features of Bridges and Viaducts

EW-Axis Frontage Road

Name	Station	Length			Sub Structure Type	
U-Turn Flyover	W-JORR (North)	59.4			RC-D. PCP	13.2+33+13.2
U-Turn Flyover	W-JORR (South)	59.4			RC-D. PCP	13.2+33+13.2
Bridge	1+428~ 1+472		2x10.50		RC-D. PCP	2022
U-Turn Flyover	1+610	59.4	12.00		RC-D. PCP	13.2+33+13.2
Pedestrian Bridge	1+900	62.0	2.00	PC-I	RC-D. PCP	14+17+17+14
U-Turn Flyover	2+100	59.4	12.00	PC-I	RC-D. PCP	13.2+33+13.2
Pedestrian Bridge	2+450	62.0	2.00		RC-D. PCP	14+17+17+14
U-Turn Flyover	2.800	59.4	12.00	PC-I	RC-D. PCP	13.2+33+13.2
Pedestrian Bridge	3+150	62.0	2.00	PC-I	RC-D. PCP	14+17+17+14
Bridge	3+490~ 3+520	30.0	2x10.50	PC-I	RC-D. PCP	30
Bridge	3+538~ 3+598	60.0	2x10.50	PC-I	RC-D. PCP	15+30+15
Pedestrian Bridge	3+900	62.0	2.00	PC-I	RC-D. PCP	14+17+17+14
U-Turn Flyover	4+150	59.4	12.00	PC-I	RC-D. PCP	13.2+33+13.2
Pedestrian Bridge	4+350	62.0	2.00	PC-I	RC-D. PCP	14+17+17+14
Bridge	5+225~ 5+258	33.0	2x10.5	PC-I	RC-D. PCP	33
Pedestrian Bridge	5+300	62.0	2.00	PC-I	RC-D. PCP	14+17+17+14
Pedestrian Bridge	5+970	62.0		PC-I	RC-D. PCP	14+17+17+14
Bridge .	6+040~ 6+083		2x10.50	PC-I	RC-D. PCP	10+23+10
Pedestrian Bridge	6+800	62.0		PC-I	RC-D. PCP	14+17+17+14
Pedestrian Bridge	7+500	62.0		PC-I	RC-D. PCP	14+17+17+14
U-Turn Flyover	7+750	59.4	12.00	PC-I	RC-D. PCP	13.2+33+13.2
Pedestrian Bridge	8+000	62.0		PC-I	RC-D. PCP	14+17+17+14
Pedestrian Bridge	8+750	62.0	2.00	PC-I	RC-D. PCP	14+17+17+14
U-Turn Flyover	9+030	59.4	12.00		RC-D. PCP	13.2+33+13.2
Bridge	9+641~ 9+673		2x10.50		RC-D. PCP	32
Bridge	9+728~ 9+786		2x10.5	PC-I	RC-D. PCP	14+30+14
Pedestrian Bridge	10+270	62.0		PC-I	RC-D. PCP	14+17+17+14
Pedestrian Bridge	11+000	62.0	<del></del>		RC-D. PCP	14+17+17+14
Pedestrian Bridge	11+720	62.0			RC-D. PCP	14+17+17+14
Bridge	11+744~11+766		2x10.5	PC-I	RC-B. PCP	22
Bridge	13+940~13+970		2x13.5	PC-I	RC-B. PCP	30
Bridge	14+265~14+300		2x13.5	PC-I	RC-B. PCP	35
Bridge	15+130~15+145		2x13.5	PC-I	RC-B. PCP	15
Bridge	17+366~17+394		2x13.5	PC-I	RC-D. PCP	28
Bridge	20+633~20+664		2x13.5	PC-I	RC-D. PCP	31
Bridge	22+440~22+455		2x13.5	PC-I	RC-D. PCP	15
Pedestrian Bridge	24+750	62.0		<del> </del>	RC-D. PCP	14+17+17+14
U-Turn Flyover	25+100	59.4	<del></del>	<del></del>	RC-D. PCP	13.2+33+13.2
Pedestrian Bridge	25+430	62.0		<del> </del>	RC-D. PCP	14+17+17+14
Pedestrian Bridge	26+430	62.0	<del></del>		RC-D. PCP	14+17+17+14
U-Turn Flyover	26+800	59.4			RC-D. PCP	13.2+33+13.2
Pedestrian Bridge	27+150	62.0			RC-D. PCP	14+17+17+14
U-Turn Flyover	27+500	59.4	<del>+</del>	<del></del>	RC-D. PCP	13.2+33+13.2
Bridge	28+720~28+748		2x10.50		RC-D. PCP	28
Pedestrian Bridge	28+950	62.0	+···-		RC-D. PCP	14+17+17+14
Pedestrian Bridge	30+230	62.0			RC-D. PCP	14+17+17+14
Bridge	30+610~30+797		2x10.50		RC-D. PCP	25+30+2@37+30+28
U-Turn Flyover	W-JORR (North)		<del></del>		RC-D. PCP	13.2+33+13.2
U-Turn Flyover	W-JORR (South)	59.4	<del></del>		RC-D. PCP	13.2+33+13.2
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Table 10A-4 (3) Summary of Design Features of Bridges and Viaducts

EW-Axis Ramp Way

Name	Station	Length	Width (m)	Super Structure Type	Sub Structure Type	Span Arrengement			
Latumeten I.C Ramp	0+259~ 0+554	295.0	8.50	PC-I	RC-D. PCP	2@30+5@35+2@30			
Latumeten I.C Ramp	0+259~ 0+699	145.0	8.50	St-B	RC-D. PCP	50+45+50			
Latumeten I.C Ramp	0+699~ 1+030	331.0	8.50	PC-I	RC-D. PCP	6@35+3@30+31			
Mangga Besar I.C C-Ramp	0+208~ 0+443	235.0	7.00	PC-U	RC-CCP	5@35+2@30			
Mangga Besar I.C C-Ramp	0+443~ 0+532	89.0	7.00	St-B	RC-CCP	55+34			
Mangga Besar I.C C-Ramp	0+532~ 0+678	146.0	7.00	St-B	RC-CCP	50+46+50			
Mangga Besar I.C D-Ramp	0+020~ 0+280	260.0	7.00	PC-U	RC-CCP	35+4@30+3@35			
Mangga Besar I.C D-Ramp	0+280~ 0+368	88.0	7.00	St-B	RC-CCP	48+40			
Mangga On Ramp TYPE-2	12+500	210.0	7.00	PC-U	RC-CCP	6@35			
Mangga Off Ramp TYPE-2	12+500	200.0	7.00	PC-U	RC-CCP	2@30+4@35			
Gunung On Ramp TYPE-2	13+900	210.0	7.00	PC-U	RC-B. PCP	6035			
Gunung Off Ramp TYPE-2	13+900	200.0	7.00	PC-U	RC-B. PCP	2@30+4@35			
Gunung Sahari Ramp	0+085~ 0+295	210.0	8.50	PC-U	RC-B. PCP	6 <del>0</del> 35			
Gunung Sahari Ramp	0+295~ 0+450	155.0	8.50	St-B	RC-B. PCP	50+60+45			
Gunung Sahari Ramp	0+450~ 0+660	210.0	8.50	PC-U	RC-B. PCP	6035			
Gunung On Ramp TYPE-2	14+500	210.0	7.00	PC-U	RC-B. PCP	6035			
Gunung Off Ramp TYPE-2	14+500	200.0	7.00	PC-U	RC-B. PCP	2030+4035			
Kemayor On Ramp TYPE-2	15+400	210.0	7.00	PC-U	RC-B. PCP	6035			
Kemayor Off Ramp TYPE-2	15+400	200.0	7.00	PC-U	RC-B. PCP	2@30+4@35			
Kemayor On Ramp TYPE-2	17+200	210.0	7.00	PC-I	RC-D. PCP	6@35			
Kemayor Off Ramp TYPE-2	17+200	200.0	7.00	PC-I	RC-D. PCP	2930+4935			
Sunter On Ramp TYPE-2	20+150	210.0	7.00	PC-I	RC-D. PCP	6935			
Sunter Off Ramp TYPE-2	20+150	200.0	7.00	PC-I	RC-D. PCP	2@30+4 <del>@</del> 35			
Sunter On Ramp TYPE-2	21+000	210.0	7.00	PC-I	RC-D. PCP	6035			
Sunter Off Ramp TYPE-2	21+000	200.0	7.00	PC-I	RC-D. PCP	2030+4035			
Kelapa On Ramp TYPE-2	24+000	210.0	7.00	PC-I	RC-D. PCP	6 <b>9</b> 35			
Keiapa Off Ramp TYPE-2	24+000	200.0	7.00	PC-I	RC-D. PCP	2030+4035			
PC-I 2.266.0m PC-U 2.555.0m St-B 623.0m Total 5.444.0m									

Table 10A-4 (4) Summary of Design Features of Bridges and Viaducts

NS-Axis Throughway

Name	Station	Length (m)	Width (m)	Super Structure Type	Sub Structure Type	Span Arrengement
VIADUCT	1+118~ 1+293	175.0	18.50	PC-U	RC-CCP	5 <del>0</del> 35
VIADUCT	1+293~ 1+348	55.0	18.50	St-B	RC-CCP	55
VIADUCT	1+348~ 1+765	417.0	2x12.75	St-I	St-CCP	32+50+35+6@50
VIADUCT	1+765~ 1+990	225.0	2x 9.25	PC-U (R)	RC-CCP	4@30+3@35
VIADUCT	1+990~ 3+110	1120.0	2x 9.25	PC-U (R)	RC-B. PCP	32@35
VIADUCT	3+110~ 4+670	1560.0	18.50	PC-U	RC-B. PCP	42@35+3@30
VIADUCT (SOUTH BOUND)	4+670~ 5+365	695.0	9.25	PC-U	RC-B. PCP	13@35+30+6@35
VIADUCT (SOUTH BOUND)	5+365~ 5+560	195.0	12.75	PC-U	RC-B.PCP	4@35+25+30
VIADUCT (NORTH BOUND)	4+670~ 5+560	890.0	9.25	PC-U	RC-B. PCP	23@35+27+28+30
VIADUCT	5+560~ 7+133	1573.0	25.50	PC-I	RC-D. PCP	20@35+3@30+35+4@30+12 @35+26+45+32+35+2@35
VIADUCT	7+133~ 7+930	797.0	25.50	PC-I	RC-D. PCP	4@35+45+5@35+45+42+10 @35
VIADUCT	7+930~ 8+510	580.0	25.50	PC-I	RC-D. PCP	7035+2045+7035
VIADUCT	8+510~ 8+710	200.0	25.50	St-B	RC-D. PCP	60+80+60
VIADUCT	8+710~ 9+480	770.0	25.50	PC-I	RC-D. PCP	22@35
VIADUCT	9+480~11+453	1973.0	25.50	PC-U	RC-B. PCP	11@35+3@30+2@35+30+18 @35+33+21@35
VIADUCT	11+453~12+058	605.0	2x12.75	PC-U	RC-B. PCP	17@35.6
VIADUCT	12+058~12+520	462.0	25.50	PC-U	RC-B. PCP	6@35+38+2@37+4@35
VIADUCT	12+520~14+120	1600.0	2x12.75	St-I (R)	St-B.PCP	32 <b>9</b> 50
VIADUCT	14+120~17+470	3350.0	2x12.75	St-I (R)	St-D.PCP	67950 .
VIADUCT	17+470~17+995	525.0	2x12.75	PC-I	RC-D. PCP	15035
VIAD		4, 2				
·	PC-U St-I	7, 0: 5, 3				
	St-B		65m			
	Total	16, 8				·

Table 10A-4 (5) Summary of Design Features of Bridges and Viaducts

NS-Axis Ramp Way

					CL.	
Name	Station	Length (m)		Super Structure Type		Span Arrengement
Mangga Besar I.C A-Ramp	0+150~ 0+265	115.0	7.0	St-B	RC-CCP	58+57
Mangga Besar I.C A-Ramp	0+265~ 0+460	195.0	7.0	PC-U	RC-CCP	3@30+3@35
Mangga Besar I.C B-Ramp	0+252~ 0+307	55.0	7.0	St-B	RC-CCP	55
Mangga Besar I.C B-Ramp	0+307~ 0+435	128.0	7.0	St-B	RC-CCP	35+53+40
Mangga Besar I.C B-Ramp	0+435~ 0+548	113.0	7.0	St-B	RC-CCP	37+39+37
Mangga Besar I.C B-Ramp	0+548~ 0+708	160.0	7.0	St-B	RC-CCP	50+60+50
Mangga Besar I.C B-Ramp	0+708~ 0+743	35.0	7.0	PC-U	RC-CCP	35
Sukarjo On Ramp TYPE-2		210.0	7.0	PC-U	RC-B. PCP	6 <del>0</del> 35
Sukarjo Off Ramp TYPE-2		200.0	7.0	PC-U	RC-B. PCP	2@30+4@35
Abdul Mu On Ramp TYPE-2		210.0	7.0	PC-U	RC-B. PCP	6035
Abdul Mu Off Ramp TYPE-2		200.0	7.0	PC-U	RC-B. PCP	2@30+4@35
Kubon Sirih I.C On Ramp		317.0	7.0	PC-U	RC-B. PCP	3@35+40+3@35+32+35
Kubon Sirih I.C Off Ramp	0+137~ 0+793	658.0	7.0	PC-U	RC-B. PCP	33+2@30+8@35+40+7@35
Kubon Kacang IC On Ramp		735.0	7.0	PC-I	RC-D. PCP	3@35+40+30+12@35+33+ 20+3@25+30
Kubon Kacang IC Off Ramp	0+197~ 0+310	113.0	7.0	PC-I	RC-D. PCP	3@30+23
Kubon Kacang IC Off Ramp	0+310~ 0+490	180.0	7.0	St-B	RC-D. PCP	55+70+55
Kubon Kacang IC Off Ramp		630.0	7.0	PC-I	RC-D. PCP	13@35+30+40+3@35
Pal Merah On Ramp TYPE1		140.0	7.0	PC-I	RC-D. PCP	4@35
Pal Merah Off Ramp TYPE1		105.0	7.0	PC-I	RC-D. PCP	3@35
Senayan I.C On Ramp		400.0	7.0	PC-U	RC-B. PCP	3@35+5@25+30+4@35
Senayan I.C Off Ramp	0+347~ 0+452		7.0	PC-U	RC-B. PCP	30+3@25
Senayan I.C Off Ramp	0+452~ 0+647		7.0	St-B	RC-B. PCP	60+75+60
Senayan I.C Off Ramp	0+647~ 0+847	200.0	7.0	PC-U	RC-B. PCP	2030+4035
Senayan On Ramp TYPE-1	<u> </u>	140.0	7.0	PC-U	RC-B. PCP	4@35
Senayan Off Ramp TYPE-1		105.0	7.0	PC-U	RC-B, PCP	3@35
Kemang On Ramp TYPE-2		210.0	7.0	St-I	RC-B. PCP	3@50+2@30
Kemang Off Ramp TYPE-2		370.0	7.0	St-I	RC-B. PCP	6050+2035
South JORR I.C A-Ramp	0+280~ 0+420		8.5	PC-I	RC-D. PCP	4035
South JORR I.C A-Ramp	0+420~ 0+580		8.5	St-B	RC-D. PCP	2080
South JORR I.C A-Ramp	0+580~ 0+708		8.5	PC-I	RC-D. PCP	28+30+2@35
South JORR I.C A-Ramp	0+708~ 1+030		17.0	PC-I	RC-D. PCP	3@30+6@35+22
South JORR I.C B-Ramp	0+448~ 0+518		8.5	PC-I	RC-D. PCP	2035
South JORR I.C B-Ramp	0+518~ 0+672		8.5	St-B	RC-D. PCP	50+54+50
South JORR I.C B-Ramp	0+672~ 0+742		8.5	PC-I	RC-D. PCP	2035
South JORR I.C C-Ramp	0+090~ 0+520			PC-I	RC-D. PCP	23+30+4@35+27+6@35
South JORR I.C C-Ramp	0+520~ 0+720		7.0	St-B	RC-D. PCP	60+80+60
South JORR I.C C-Ramp	0+720~ 1+070		7.0	PC-I	RC-D. PCP	2@30+25+45+30+35+2@30 2@23+35+14
South JORR I.C D-Ramp	0+350~ 0+450	100.0	7.0	St-B	RC-D. PCP	2050
South JORR I.C D-Ramp	0+450~ 0+660		7.0	PC-I	RC-D. PCP	6@35
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	PC-I	3,443.	0m	<del></del>		
1	PC-U	2,975.				
· ·	St-I	580.				
	St-B	1,560.				
	Total	8,558.				
		2,000.				

Table 10A-4 (6) List of Box Culverts

Project Road	Station	Туре	Width x Height (m)	Length	Remarks
	0+920~ 1+118	Double	6.4x2.8	198.0	Kali Ciliwung
	3+185~ 3+250	Double	6.4x2.8	80.0	Kali Ciliwung
N-S Axis	3+580~ 3+670	Single	8.0x4.0	90.0	Kali Krukut
	Kebon Sirih I.C	Double	7.7x3.6	450.0	Kali Cideng
•					
	0+895	Single	7.0x6.0	8.0	Ramp
	1+155	Single	7.0x6.0	8.0	Ramp
	23+070	Single	6.0x2.5	10.0	Drainage
	23+850	Single	6.0x2.5	50.0	Drainage
E-W Axis	26+340	Single	4.0x2.0	70.0	Drainage
	27+025	Single	8.0x2.5	70.0	Drainage
	27+545	Single	8.0x2.5	70.0	Kali Cakung
,	W 7.7x3.6 w 6.4x2.8	1 Locat		0. Om 8. Om	
	8.0x4.0 8.0x2.5	1 Locat	ion 9	0. Om 0. Om	
	7.0x6.0 6.0x2.5	2 Locat	ions l	6. Om 0. Om	
	4.0x2.0	1 Locat	ion 7	0. Om	