F			Geo Paja NDU		no. 125 INDONI		1	THE DETAILED URBAN DRAINAGE ANI IN SEMARANG II	ECHANICS SURVEY FOR D DESIGN OF FLOOD CON ID WATER RESOURCES DI IN THE REPUBLIC OF INDO	FVFI	OPL	IENT	-~		BORING	LO)(
Lo	cation		URI	JAN I	Sheet DRAINA Dimeter	ĠĒ	x 1	Ground Water Level (GWL) · Coordinate x =				Date Date			9 - 10 - 1997 to 10 - 10 - 1997 Asep / Sobendi		_
Ē	- 3.0	1 : 1	•) meter			Angle Onting Machine YBM	. Bearing : I - 3ES			Log	ed by Trisor	:	Rudy Multanto-		
+	12	3	4	5	8	17	8	CLASSIFICATION	N AND DESCRIPTION OF	MA	TER	AL					-
]			1			1		Standard Penetration	13 14	1.15	18	17	18	19	St	2
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Date	Scale	Eimelion	Stratum Thickness	Copth(m)	Soul Profile	Clastication	כאר	DESCRIPTION	N-Value Number of Biows per 30 Cm Panetration 0 10 20 30 40 50	Geological Strata Multhod of Samoline	Spocific Granity	Water Content (%)	Unit Weight (Um3)	Void Retio. e	e Parkt Unit (%) [] Parkt Unit (%) A. Ugakt Unit (%) 0 40 80 120 1	Type	ngia memal
	1							0.00 - 4.20 m: SAND, grey, madium to very coarse grained, dense, well graded.				-					c .
-	2			-		SW			21 . 6/30	<u>ه</u> / ال							
OCTOBER 1997	3							2.20 - 3.20 m: MASONRY, gravels, sand, clay, and red break.	3 27/30								
9 0010	4	· · · ·		4 20 4 45		сн	-	4 20 - 4.45 m:	4								
	s_			\$ 30	· · · · · ·	sw	-	SANDY CLAY, grey, high plasticity, firm, moist 4.45 - 5.30 m: SAND, grey, medium to	5								
	8_							coarse grained, very kose, weil graded. 5.30 - 10.00 m;	6 3330								
	7					сн		SANDY CLAY, grey, high plasticity, very soft to firm, moist.	7 3/30								
10 OCTOBER 1997	8								8								
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Bore Loca			URF	ANG	Sheet RAINA	1 0	12	Grand Witer Level (GM)	meter					Data			5 - 10 - 1		- 10 - 19	97	<u> </u>	
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Cev		· · · · ·	!	455	meter			Driling Machine YBM						Supe	resor							
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Dete	Scale	Elevation	Stratum Thickney	Depth(m)	Soil Profile	Clastication	טאר	CESCRIPTION	N-Value Number of Blows per 30 Cm Penetrat 0 10 20 30 40	tion	Geological Strata	Method of Sampling	Specific Cravity	Water Content (%)	Unit Worgne (Ur	Void Ratio, e	1 (] Pasic In Li Uquator	ANC (%)	160	Type Angle internal	friction (*)
	1_					μL		0.00 - 1.60 m: SANDY SILT, black to brown, kow plasticity, very soft, wel to saturated.	1	0/30			2778								-	
Ì				1.60																		
	2			2.10		SP		1.60 - 2.10 m:			ıq	$\left[\right]$										
		\vdash	<u> </u>			1	-	SAND, dark grey, very fine to medium grained, poorly	2	6/30	B	Ы										
	È.	1.			55	СН		araded, very loose, moist														
	3	Ŀ		300				occationally gravels, with diameter up to 3.00 cm.		030		A	1		Ì	1						
		ł						2.10 - 3.00 m				١.		1		•						
]						SANDY CLAY, greyish														
	4_	1		ĺ.		SP		brown, high plasticity, stiff, moist		13/30		\square										
						·	· .								·							
		.						3.00 - 5.00 m: SANO, dark grey to grey,				國	i									
	5	<u> </u>		5 00				fine to coarse grained, poorly to moderately	s	21/30	As	Ц		·]		•						
		1			-:-:- -:-			graded, moderately dense.														
		1				ĺ		E 02 40 00														
	6_							5.00 - 16.90 m SANDY CLAY, grey, high	6	3/30			l		÷.							
							1	plasticity, soft to firm, moist; occationally					[·]	1						
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TABLE 2.1.1 (28/42) BORING LOG DB16 (2/2)

Bo Loc Bo	re Hoi cation ring C	la Nepth	08 UR	18 BAN (30 00	no. 125 INDON Sheet DRAINA	2		URBAN URAINAGE AND	DESIGN OF FLOOD CONTE WATER RESOURCES DEV THE REPUBLIC OF INDOM	/FLOPA	Date			BORING L 5-10-1997 to 7-10-1997 Asp/Sobards	U(
	10.00			1.455	meter			Onling Vachine YBM.			Log Suo	ged ty envisor		Rudy Vultario	<u> </u>
1	2	3	4	1 5	6	17	8	CLASSIFICATION	AND DESCRIPTION OF	MATER	IAL.		i		
_	1	1	1		1	+-		9	12 13 Standard Panetration	14 15	16	17	18	19	20
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	l I		- S	1				i ·	N-Value 3		E	କୁ		Pastelera (N)	T
		18	Stratum Thicknew	Ê	홏	Claufcation	1	DESCRIPTION	Number of Blows 50 per 30 Cm Penetration 70	Mutthod of Sam Specific Gravity	je j	Unit Weight (Um3)	•	 Perochore (%) A Liquistina (%) 	2
Date	Scolo	Elevation	tratur	Depth(m)	Soil Profile	art/c	U WL		0 10 20 30 40 50 8	12 S	15	Die A	Void Ratio.		nternal
	15	<u>μ</u>	Ø		Ň	Jð	Ö		16 8	Mutthod of Sampling Specific Gravity	Water Content	Š	De Vo	0 40 60 120 150 8	Angle
2601/5		1		1	1.7.7.			5.00 - 16.90 m;				<u> </u>			
570		1					1	SANDY CLAY, grey, high plasticity, soft to firm,			1	l ·]			[
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	17	}		<u> </u>	'- 	 	┢	·····	Ac				Ì		Í
		1	.		∷ <u>-</u>	SP		16.90 - 17.55 m: CLAYEY SAND							1
			┠╌┤	1 <u>7.55</u>	<u> </u>	<u> </u>	┢╌┤	CLAYEY SAND, grey, very fine to fine grained, poorly	·	Ê.					:
	18_				<u> </u>	1		graded, moderately dense.		Λ					
	-							17.55 - 27.95 m;	8						
								CLAY, brown high plasticity, very stiff to hard,							-
66	19_						•	moist.] [.			
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28	1				 	-				4		· [
	1	-		ŀ				27.95 - 29.00 m:			1		: [[ſ
	1	1			····	SP		SILTY SAND, brownish grey, very fine to fine		園			·]]		
23								grained, poorly graded,		4					
	Ī		1	-				very dense							
	1	.	ł	· []	==	ЭН		29.00 - 30.00 m: CLAY, brown, high			•		11		[
	1	F					50	plasticity, hard, moist		7	· 1		Í		- F

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TABLE 2.1.1 (29/42)BORING LOGDB17

Locatio Boring Elevatio	Cepth		8AN	DRA 0 me	INAG	1 o E	1	Ground Water Level (GWL) Coordinate y = Angle Drilling Machine YBM -	5*4	E REPUBLIC C					Dete Onte Logg	d by ed by		2 - 10 - 15 Asep / So Rudy Muk	bandi	10 - 1997		
								CLASSIFICATION		D DESCRIPTION	ON O	F N	IAT	ERL		ivisor	:					
Oate State	5	Stratum Thebreas	S (W)		Soil Profile	Claufication	8 C M L	9 DESCRIPTION		12 Standard Penetratu Test N- Value Number of Bious per 30 Cm Penetrat 0 10 20 30 40	on .	Geologicel Strata Ct	Method of Sampung	15	Water Content (%)	Unit Weight (Vm3)	Void Ratio, e		19 Vierberg 1 Protein J Protein Lipstein Lipstein 1 50	nii (%) 24 (%)	160 2	St
2 OCTOBER 1987	╾┭┈╍╸╸╸╸╻╴╷╴╴┝╸╸╸╋╺┑╵╋╺┓╴╋╸╸		1.4	,0,	:::: ~oo !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!			0.00 - 1.40 m: SANOY CLAY, black to grey, medium to high plasticity, very soft, moist to wet. 1.40 - 1.80 m: MASONRY. 1.80 - 2.10 m: SANOY CLAY, grey, high plasticity, very soft, moist.	1		0/30 50/3	rd8										
4			4.60				0.00	4.60 - 10.00 m;	3		3/30 3/30	<u>A</u> ,										
OCTOBER 1997 4 9						ъ		SANDY CLAY, grey, high plasticity, very soft, moist; occationally mollusca shells.	5 6 7		4/30 2/30											
67 8 8 9 10			10 00			-	0.00		8 9		1/30 0/30 3/30	Ac						seden 1199 etter after a desen en gans de syndage et etter etter etter etter etter etter etter etter etter ette				
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13 14_									13													

B	ye H	¢'e				. 125 DONE			SOIL ME THE DETAILED URBAN DRAINAGE AND IN SEMARANG IN COMMUNICATION	DES	IGN TER E RE	OF FL	OOD	CO ES (NTRO DEVE	LOP						RING	L	00
	kato Xing	n Dept	N	10	00 m	veet WINA veter	GE		Coordinate x = Angle			Y	*					ed by		6 - 10 Sudan	таб			
<u></u>	evate	<u>n</u>		0.45	5 m	ર્ક્ટ કર			Driting Machine : YBM -	JES	anng						Suc	and by erviso		Rudy I	/ starto	·		
- 1	2	3		5	1	6	17	18	CLASSIFICATION 9	<u>AN</u>	D D	LSCRI	PTIO	N O	P M/	TER	ЦL	,						
			Γ						· · · · · · · · · · · · · · · · · · ·	<u>†</u>	Stand	lard Pen	etration		11 1	4 15	16	17	18	<u> </u>		19		20 Stren
Date	Scale	Elevation	Stratum Thickness		h	Soi Profile	Claurication	CWL	DESCRIPTION		per 30	Test N - Vah mber of 6 Cm Per 20 30	Bows retration		Geological Siruta	Specific Gravity	Water Content (%)	Unit Weight (UmD)	Void Ratio, e	0	 Pud Pud	21g Limas 16 knot (%) 16 knot (%) 1 knot (%) 10 120 16	\vdash	Tes
		1		0.4	ωŀ		SP	<u>†</u>	0.00 - 0.40 m:	٩°	T		TT			ະ ທ ຊີ		>	>	╎╴╌			ĨĔ	153
		T	T	T	1-		СН	1	SAND, dark grey, fine to medium grained, loose,		l													1.
	1	1		1,1			0	Ι.	poorly graded, small amount of gravels,		1			5/30j	비	1								
		1		1			SW		diameter up to 1.50 cm.	`							1							İ.
		F	1-	15	÷.		<u> </u>	†	0.40 - 1.15 m;		1			ł	e p	3								1
	2.			23			СН	1 -	SILTY CLAY, fight brown, stiff, high plasticity, moist.	2				3/30	1/	<u>่</u>								
		}			1.			<u> </u>	1.15 - 1.55 m;															
1	3						ŚΡ		SILTY SAND, fight brown to greyish brown, medium						Ĩ	4								
	İ	{		1					to coarse grained, loose, well graded; occationally	3				1/30	k									
	l	\vdash	+	45	+		ļ. :		gravels with diameter up to					·]										
	4_	1		[[-				1.00 cm. 1.55 - 2.20 m;				1 3	/30	V	1							1	
766		1			-				SANDY CLAY, grevish															÷
19	s	1		11	[=				brown, high plasticity, firm, moist.															
OCTOBER 1997	-	1			1 -				2 20 - 3.55 m:	5			4	130	V N									
8						<u>.</u>			CLAYEY SAND, grey, very fine to fine grained, poorly						1			ļ						
9	6				-				graded, loose.					30	[7									
						<u>:-</u>]			3.55 - 10.00 m; SANDY CLAY, grey, high	6				~	in the second se			·	1					·
				1		;			plasticity, soft to firm		l													
	1						сн		moist; occationally molusca shells.	,			5	30	Ľ									
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2	25 25	1 2.0+					Coordinate x * Arg'e YBM-3 CLASSIFICATION 9 DESCRIPTION 0.00 - 2.50 m; SANDY CLAY, greyish brown, high plasticity, very soßt moist containing	AND DESCRIPTION OF MA	Specific Gravity Ct	16	ty contraction of the second s	Ratio, c c	7 - 10 - 1997 Ace K / Kosasah Rudy Mukranto 19 Atterborg Limes © Parke Und (%) [] Parke toda (%) [] Parke toda (%) [] Parke toda (%) [] A Load Lime (%)	20 Strengt Test
2 Scale	3	4	20 n 3 (w)(w) 00 0 0 0 0 0 0 0 0 0 0 0 0	Sol Profile	Claufication	8	Onling Methre YBH-3 CLASSIFICATION 9 DESCRIPTION 0.00 - 2.50 m; SANDY CLAY, greyish brown, high plasbioty, very soft, moist, containing	ES AND DESCRIPTION OF MA 12 13 1 Standard Peretration Test	Specific Gravity Ct	AL 15	nsor 17	Ratio, e 61	19 Atterborg Limits • Paste Unit (%) [] Paste toni (%) A tool Unit (%)	Streng Test
Scale 5	3	acknoss +	5 (w)tition 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Sol Picke	Claufication		CLASSIFICATION 9 DESCRIPTION 0.00 - 2.50 m; SANDY CLAY, greyish brown, high plasticity, very soft, moist, containing	AND DESCRIPTION OF MA	Specific Gravity Ct	AL 15	17	Ratio, e	Atterborg Limits Planc Unit (%) Planc Iona (%) A Lipid Unit (%)	Streng Test
Scale 1		pickness	(w)4;56	Sol Profite	Claufication		DESCRIPTION 0.00 - 2.50 m; SANDY CLAY, greyish brown, high plasticity, very soft, moist, containing	Standard Penetration Test	Specific Gravity			Ratio, e	Atterborg Limits Planc Unit (%) Planc Iona (%) A Lipid Unit (%)	Streng Test
1	Ebvauon	Straium Thickness	2 50			CWL	0.00 - 2.50 m; SANDY CLAY, greyish brown, high plasticity, very soft, moist, containing	Test 1 N - Value 1 Number of Blows 1 per 30 Cm Penetration 1 0 10 20 30 40 50 10 0 10 20 30 40 50 10 10	<u>si</u>	Water Content (%)	Jnt Weght (Vm3)	Ratio	 Paste Und (%) Paste toux (%) toud line (%) 	viernal
1	Elevation	Straium Thioknos	2 50			CWL	0.00 - 2.50 m; SANDY CLAY, greyish brown, high plasticity, very soft, moist, containing	N • Velve Number of Blown per 30 Cm Penetration 0 10 20 30 40 50 0	<u>si</u>	water Content (Jnd Weight (Um	Ratio	 Pasic hox (%) A tigud limit (%) 	internal
1			2 50				SANDY CLAY, greyish brown, high plasticity, very soft, moist; containing		<u>si</u>			> 1	0 40 60 120 160	8
2					сн		brown, high plasticity, very soft, moist; containing		2 277	1 1		-	in the second second second second second second second second second second second second second second second	-
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_					сн		anorganic materials and	1 0/30			ĺ			
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					SP		2.50 - 3.10 m: CLAYEY SAND, grey, fine	3 30/30 As	1					
		1 1					to medium grained, poorly graded, medium dense.		潮潮					
									7					
4_						·	3.10 · 7.35 m SANDY CLAY, grey, high	4 6/30						
	1				1		plasticity, very soft, moist.							
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]				SP		7,35 - 8.20 m: CLAYEY SAND, grey, fine		<u>**</u>	1				
8	-		3 20				to medium grained, poorly graded, very loose.	8 000						
Į		1.			-		8.20 - 10.00 m;							
9	1				~ .	ļ	SANDY CLAY, grey, high	0/30	Δ					
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 TABLE 2.1.1 (31/42)
 BORING LOG
 DB19

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TABLE 2.1.1 (32/42) BORING LOG DB20

·			<u> </u>		no. 125 NDONI			THE DETAILED URBAN DRAINAGE AND IN SEMARANG IN	CHANICS SURVEY FOR DESIGN OF FLOOD CONTROL, WATER RESOURCES DEVELOPMENT THE REPUBLIC OF INDONESIA		BORING L	ЭG
Loc	e Hole alcon	:	08 - URE	AN C	RAINA	GE (d 1	Ground Water Level (GWL) : Coordinate : x *	meter Date Date y * Drived i		5 - 10 - 1997 Ade K. J. Kosash	
Bori Eler	ng Di ation	ph:		10 00	meter meter			Angle : Onling Machine YBM -	Bearing Logged	104	Rudy Multanto	
									AND DESCRIPTION OF MATERIAL	-1.57	······································	
1	2	3	4	5	5	7	8	9		17 18	19	20
									Test		Atterberg Limits	Stery Tes
Date	Scale	Elevation	Stratum Thickness	Dep(n(m)	Soit Profile	Clerification	GWL	DESCRIPTION	NValue *<	Unit Weight (Um3) Void Ratio, e	 Precision (N) Присслова (N) Домобла (N) Домобла (N) 40 80 120 160 р. 	Angle internal
	1			0 20				0.00 - 0.20 m: SANDY SILT, black, low plasticity, very soft, moist occationally organic and anorganic materials.	1. 0/30			
	2								2			
	3		-			-		2:50 - 10:00 m: SANDY CLAY, grey, high plasticity, very soft, moist	3. 000			
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TABLE 2.1.1 (33/42) **BORING LOG DB21**

	L					10. 125 NDONE			THE DETAILED (URBAN ORAINAGE AND IN SEMARANG IN	CHANICS SURVEY FOR DESIGN OF FLOOD CONTROL, WATER RESOURCES DEVELOPMI THE REPUBLIC OF INDONESIA	ENT		BORING I	JOG
	loc	a Hok ation		08-	21 BAN C	Steel RAINAC	1 o SE	(1	Ground Water Level (GWL) :	meter	Oete		30 - 9 - 1997	
	Bor Eler	ng D ration	eoth:	_	10 00	meter meter			Angle	, Bearing :	Drifed Logged	by	Komardi Rudy Wultanto	
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)	Date	Scale	Elevation	Stratum Thicknee	Cepth(m)	Soil Profile	Classification	GWL	DESCRIPTION	N-Value N-Value Number of Bows per 30 Cm Penetration 0 10 20 30 40 50 00000000000000000000000000000	Water Content (%)	Void Ratio, a	 Paste Unit (N) Paste Ivita (N) Upst Unit (N) 	Type Angle internal Intetion (*) Conesion (ko/cm*)
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	1997	3_					СН			3 4 4				
22	SEPTEMBER 1997	5_	 		5 30					5 0730				
)	30 SE	6			5.60		SP		5.30 - 5.60 m: SAND, grey, very fine to medium grained, poorly graded, very loose.	6				
		7					сн СН		5.60 - 10.00 m; SILTY CLAY, grey, high plasticity, very soft to soft, moist to wet.	7 0030		•		
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TABLE 2.1.1 (34/42) BORING LOG DB22

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()	Date		ş	Stratum Thickness	Deptn(m)		Claufication	GWL	DESCRIPTION		Standard N	Test Value ar of Biow n Penetra	s stion	Geological Strata	Mellhod of Sumpling	Specific Gravity G	Water Content (%) 5	Uni Weight (Um3)	Void Ratio, e		Alterber Pasie Pasie	9 g Limts Umit (%) Index (%) Limit (%)			Angle internal friction (•)	
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			}	╞	0.50		sw 		0.00 - 0.50 m: SANO, light grey, fine to coarse grained, well graded, kose, wet.					Ì												
•		1							914060, 10059, Wet. 0.50 - 10.00 m: SILTY CLAY, dark brown to greyish brown, high plasticity, soft, moist; occationally mollusca shells in 6.00 m depth.	2			7730 3730 4730										()-11-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-			
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TABLE 2.1.1 (35/42) BORING LOG DB23

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TABLE 2.1.1 (37/42)BORING LOGDB25

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-	1					-	1	0.30 · 4.00 m; SANDY-CLAYEY SILT,	20										
	1] ·		grey, low to medium		- -				·]					
-	1							plasticity, very soft to soft, moist to wet; small amount			M								
	2				·	ML	1	of mollusca shells, and some plant roots.	2 1/3	2	[]								
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22		ĺ				SP		4.00 • 4.50 m;											
0C1085K1997	1			4.59	''	<u> </u>	╞─┤	CLAYEY SAND, grey, very fine to fine grained, poorty			ŝ.								
5 5	۶ <u>]</u> .	۰Í						graded, very loose; containing some amount	5 33						.				
3	-							of motivisca shells.			M	2 672 70	290 1		125	30 44			}
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ľ								4.50 - 18.00 m; SANDY CLAY, grey, high	6		Į.								
ŀ.		-						plasticity, soft to firm, moist; having some											
1				ļ				amount of mollusca shells.	, 3/30	[7				`				
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TABLE 2.1.1 (41/42) BORING LOG DB27 (1/2

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ocatio	n	1	JRB	ANC	RAINAC	ΞĒ	<u>, , , , , , , , , , , , , , , , , , , </u>	Ground Water Level (GWL) : Coordinate : 14	mete							Date Onne		:	22 - 10 - 1997 to Sudannacji	24 - 10 - 1997	· · · ·		
ormo eva:e	Depti on	<u>1:</u>	-	0040	metar meter			Angle	Be	ng :						Looo	ed by		Sudannada Rudy Multanto				
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			Stratum Thicknes			8		DESCRIPTION		Num	l - Valu ber of B	0.41	Core Barrel Type	Metthod of Sampling	È	Water Content (%)	(Cm/) MoeVV Jun	ç	() Person	ver (%)		~	ĺ
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								SANDY CLAY, grey, high						[X]	25-0 71	1820	1 575	1 \$73	25+ 065			1 952	,
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	1							plasticity, stiff to hard, moist.				i	li					· [l
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TABLE 2.1.2 (1/9)SUMMARY OF LABORATORY TEST RESULTS (1/9)FOUNDATION INVESTIGATION

PROJECT LOCATION FEATURE U D W R D (U.D.S.) SEMARANG, CENTRAL JAWA

AREA DESIGNATION :

		HOLE No.				D8 - 26	DB - 26	DB - 26	
NO		m) HT930	1)	· · · ·		the second second second second second second second second second second second second second second second s	14.00 - 14.60	08-26	DB - 27
		GROUP SYM	BOL	SYM BOL	UNIT	СН	CH	CH	5.00 - 5.60 CH
1		cific Gravity		G	-	2.667	2.761	2.615	2 670
2	Nati	Iral Water Conten	t	Wn	%	84.23		70.72	2.672
3	Unit	Weight, Natural S	late	γm	ťm^3	1.517	1.561		70.28
4	Dry	Unit Weight		γd	ťm^3	0.823		1.576	1.628
5		Iral Void Ratio		e			0.810	0.923	0.956
6		Iral Porosity		n	%	2.239	2.410	1.833	1.795
7		ree of Saturation			[69.125	70.674	64.698	64.219
8		ration of Water Co		Sr	%	100.000	100.000	100.000	100.000
9		and the second s		Wsat	%	84.230	92.790	70.720	70.280
10		ration Unit Weight		γsat	t/m^3	1.517	1.561	1.576	1.628
		onfined Compr. Str	rength	qu	kg/cm²			2.1	······································
11		sitivity		St	•				
12		d Limit	sec. d	LL	%	114.16	115.14	112.67	73.13
13	Plas	lic Limit		PL	%	35.22	33.65	32.29	
14	Plasi	licity Index		PI	%	78.93	81.48		29.57
15	Shrir	kage Limit		SL	%		01.40	80.38	43.56
16		assing 200 US Sta	nd Sieve		%				
		Triaxia		\$	deg	97.10 1.212	96.50	96.10	87.50
	<u>U.U.</u>	Compressio		C C	kg/cm ²	0.012		3.370	
17	.	Triaxial	Total		deg	0.012		0.027	•
_ s.	C.U.	Compression		С	kg/cm ²				
		Test	Effective		deg				
18	Cons	olidation Test		C	kg/cm²				an an an an
		and drong 1001		Cc Pc	kg/cm²		0.686	-	0.356
19	N Val	ue			blow		0.3683		0.8312
<u>c. dat</u>	a'cema0	7/lah'uds/DR						<u>era de la composición de la c</u>	an Alexandria

f: c:'data'ssmg97/lab'uds/DB

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TABLE 2.1.2 (1/9)SUMMARY OF LABORATORY TEST RESULTS (2/9)FOUNDATION INVESTIGATION

PROJECT LOCATION FEATURE

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U D W R D (U.D.S.) SEMARANG, CENTRAL JAWA

AREA DESIGNATION :

	HOLE No.		*****	وستعرف فيرتب والتربيات المستعرفات	DB - 27	DB - 27		i
NO	DEPTH (m			<u> </u>		15.00 - 15.70		1
	GROUP SYME	BOL	SYM BOL	UNIT	СН	СН		
1	Specific Gravity		G		2.759	2.640		
2	Natural Water Content	· · · ·	Wn	%	86.61	71.62		- <u>-</u>
3	Unit Weight, Natural S	tate	γm	t/m^3	1.501	1.576		
4	Dry Unit Weight		yd	t/m^3	0.804	0.918		
5	Natural Void Ratio		e		2.430	1.875		<u> </u>
6	Natural Porosity		n	%	70.846	65.216		
7	Degree of Saturation		Sr	%	98.332	100.000		
8	Saturation of Water Co	ontent	Wsat	%	88.079	71.620	· · · · · · · · · · · · · · · · · · ·	
9	Saturation Unit Weight		ysat	Vm^3	1.513	1.576	· · · · · · · · · · · · · · · · · · ·	
10	Unconfined Compr. Str	englh	qu	kg/cm²				<u> </u>
11	Sensitivity		St					
12	Liquid Limit		LL	%	97.94	93.92		
13	Plastic Limit	en de la composition de la composition de la composition de la composition de la composition de la composition	PL	%	34.09	28.85		
14	Plasticity Index	a parte da f	Ы	%	63.84	65.07		
15	Shrinkage Limit		SL	%				
16	% Passing 200 US Sta	nd Sieve		%	94,70	95.70		
	Triaxia		\$	deg	1.543	1.952		
	U.U. Compressio		С	kg/cm²	0.030	0.031		
17	Triaxial	Total	<u>\$</u>	deg				
	C.U. Compression		C	kg/cm²				[
	Test	Effective	\$	deg				
18	Consolidation Test		C	kg/cm ²		5-		
	Consolidation Test		Cc			<u> </u>	·····	
19	N Value		Pc	kĝ/cm²				
13				blow			·····	
(and a						1		

f: c:'data'ssmg97/lab uds DB

TABLE 2.1.2 (1/9)SUMMARY OF LABORATORY TEST RESULTS (3/9)FOUNDATION INVESTIGATION

PROJECT LOCATION FEATURE U D W R D (U.D.S.) SEMARANG, CENTRAL JAWA

AREA DESIGNATION :

		HOLE No.				08-7	DB - 8	D8-8	D8 - 8
NO		DEPTH (m)				15.00 - 15.70	5.00 - 5.70	10.00 - 10.70	
		GROUP SYMBO)L	SYM BOL	UNIT	СН	СН	СН	СН
1	Speci	fic Gravity		G	-	2.725	2.760	2.650	2.635
2	Natur	al Water Content		Wn	%	80.86	45.38	78.21	73.47
3	Unit V	Veight, Natural Sta	ate	γm	t/m^3	1.538	1.797	1.576	1.583
4	Dry U	Init Weight	······································	γd	t/m^3	0.850	1.236	0.884	0.913
5	Natur	al Void Ratio	· · · · ·	e	-	2.204	1.233	1.997	1.888
6	Natur	al Porosity	· · · · ·	n	%	68.793	55.215	66.628	65.368
7	Degre	ee of Saturation		Sr	%	99.954	100.000	100.000	100.000
8	Satur	ation of Water Cor	ntent	Wsat	%	80.897	45.380	78.210	73.470
9	Satur	ation Unit Weight		γsat	t/m^3	1.538	1.797	1.576	1.583
10	Unco	nfined Compr. Stre	ength	qu	kg/cm²				
11	Sens	itivity		St					
12	Liquid	d Limit		LL	%	113.09	74.39	97.94	126.15
13	Plast	ic Limit		PL	%	33.33	28.57	33.52	33.98
14	Plast	icity Index		P I	%	79.76	45.82	64.43	92.17
15	Shrin	kage Limit	· · · ·	SL	%			مرد کر جانب ر	
16	% Pa	ssing 200 US Star	nd Sieve	_ `	%	97.50	65.50	96.90	98,10
		Triaxia	1 A A A	¢	deg	1.108	10.206	1	5.574
	U.U.	Compression		c	kg/cm²	0.025	0.060	<u> </u>	0.039
17		Triaxial	Total	- ¢	deg	<u> </u>	· · · ·		
	C.U.	Compression		C	kg/cm²				
		Test	Effective	•	deg				
10	0.0	alidation Test	· · · · · · · · · · · · · · · · · · ·	C	kg/cm²		1. 1. 	0.015	
18	Cons	olidation Test		Cc		 	5	0.645	
19	N Va	luo.		Pc	kg/cm² blow			0.4564	
13									
	L	17/lab/uds-DB				1		<u> </u>	I

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TABLE 2.1.2 (1/9)SUMMARY OF LABORATORY TEST RESULTSFOUNDATION INVESTIGATION

PROJECT LOCATION FEATURE

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U D W R D (U.D.S.) SEMARANG, CENTRAL JAWA

AREA DESIGNATION :

[HOLE No.	عجندي يوجعانان الأرا		هوري بين بي من بين من بين الماني <mark>الماني</mark>	D8-9	DB-9	DB-9	
NO	DEPTH (m)	ويونيهم ومستعلمتها واليكال	· · · · · · ·		the survey of th		15.00 - 15.70	
	GROUP SYMBO	DL	SYM BOL	UNIT	СН	СН	CH	
1	Specific Gravity		G		2.667	2.690	2.651	
2	Natural Water Content		Wn	. %	92.66	62.60	83.43	
3	Unit Weight, Natural Sta	ite	γm	1/m^3	1.525	1.651	1.611	
4	Dry Unit Weight		γd	Vm^3	0.792	1.015	0.878	
5	Natural Void Ratio		e		2.369	1.649	2.018	
6	Natural Porosity		n	%	70.321	62.254	66.870	
7	Degree of Saturation	····	Sr	%	100.000	100.000	100.000	· · · · · · · · · · · · · · · · · · ·
8	Saturation of Water Con	itent	Wsat	%	92.660	62.600	83.430	
9	Saturation Unit Weight		ysat	t/m^3	1.525	1.651	1.611	
10	Unconfined Compr. Stre	ngth	qu	kg/cm²				
11	Sensitivity		St					· · ·
12	Liquid Limit		LL	%	83.71	100.25	87.14	
13	Plastic Limit		PL	%	31.18	26.09	31.37	
14	Plasticity Index		Ы	%	52.53	74.16	55.77	
15	Shrinkage Limit		SL	%			00.17	
16	% Passing 200 US Stan	d Sieve		%	96,10	95.40	97.40	
	Triaxial	······	¢	deg	0.969	2.773	57.40	
	U.U. Compression		С	kg/cm ²	0.015	0.033		
17	Triaxial	Total	ф	deg				
	C.U. Compression		C	kg/cm²		. **		
	Test	Effective	¢	deg				
			C	kg/cm ²				
18	Consolidation Test		Cc				0.675	
			Pc	kg/cm²			0.5430	
19	N Value		 	blow				
			:					

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TABLE 2.1.2 (1/9) SUMMARY OF LABORATORY TEST RESULTS (5/9) FOUNDATION INVESTIGATION

PROJECT LOCATION FEATURE

U D W R D (U.D.S.) SEMARANG, CENTRAL JAWA

AREA DESIGNATION :

		HOLE NO				D8 - 5	I DB-5	I DB-5	
NO		DEPTH (n	n)		· ·	5.00 - 5.60		15.00 - 15.60	DB • 6
	ļ.,	GROUP SYM	BOL	SYM BOL	UNIT	СН	CH	CH	5.00 - 5.60 CH
1		cific Gravily		G	-	2.517	2.553	2.517	2.531
2	Nat	ural Water Conten	t .	Wn	%	68.07	91.49	70.22	
3	Unit	Weight, Natural S	State	γm	1/m^3	1.504	1.498		80.12
4	Dry	Unit Weight		γd	ť/m^3	0.895	0.782	1.575	1.558
5	Nat	ural Void Ratio		e		1.813		0.925	0.865
6	Nati	ural Porosity		n	%	·	2.264	1.721	1.926
7		ree of Saturation				64.447	69.358	63.249	65.825
8		ration of Water Co		Sr	<u>%</u>	94.517	100.000	100.000	100.000
9				Wsat	%	72.019	91.490	70.220	80.120
10		ration Unit Weight		γsat	1/m^3	1.539	1.498	1.575	1.558
		onfined Compr. St	renglh	qu	kg/cm²			1.1.1.1	
11		sitivity		St	•				
12		id Limit		LL	%	128.96	122.27	105.44	92.39
13		tic Limit		PL	%	37.50	33.71	31.71	
14	Plas	licity Index	a a ta a a di	Ы	%	91,46	88.57	73.73	32.03
15	Shrir	nkage Limit		SL	%		00.57	13.13	60.36
16	% P	assing 200 US Sta	nd Sieve		%	89.20			and the second sec
		Triaxia		\$	deg	2.101	97.80	97.30	98.80
:	<u> </u>	Compressio	n Test	c	kg/cm ²	0.028		3.023	1.962
17	0.11	Triaxial	Total	. \$	deg	0.020		0.027	0.093
	C.U.	Compression		С	kg/cm ²				
- 14	1.1	Test	Effective	•	deg				
18	Cons	olidation Test		C CC	kg/cm²				
				Pc	kg/cm ²		0.735		- 1.
19	N Va	lue		···	blow		0.3765		
c: dai	ausmog	7:labiuds DB	l		<u> </u>				en en en en en en en en en en en en en e

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TABLE 2.1.2 (1/9) SUMMARY OF LABORATORY TEST RESULTS (6/9) FOUNDATION INVESTIGATION

PROJECT LOCATION FEATURE

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U D W R D (U.D.S.) SEMARANG, CENTRAL JAWA

AREA DESIGNATION :

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	HOLE No.			DB - 6	I DB-6	DB - 7	08-7
NO	DEPTH (m)			10.00 - 10.60	15.00 - 15.60	the state of the s	111.00 - 11.70
	GROUP SYMBOL	SYM BOL	UNIT	СН	СН	СН	СН
1	Specific Gravity	G	-	2.548	2.562	2.734	2.749
2	Natural Water Content	Wa	%	64.59	70.48	96.53	71.35
3	Unit Weight, Natural State	γm	t/m^3	1.609	1.552	1.560	1.623
4	Dry Unit Weight	γd	t/m^3	0.978	0.910	0.794	0.947
5	Natural Void Ratio	e		1.606	1.814	2.444	1.902
6	Natural Porosity	'n	%	61.633	64.466	70.967	65.544
7	Degree of Saturation	Sr	%	100.000	99.529	100.000	100.000
8	Saturation of Water Content	Wsat	%	64.590	70.813	96.530	71.350
9	Saturation Unit Weight	ysat	Vm^3	1.609	1.555	1.560	1.623
10	Unconfined Compr. Strength	qu	kg/cm²				1.023
11	Sensitivity	St	-				· .
12	Liquid Limit	LL	%	88.36	121.50	102.23	89.20
13	Plastic Limit	PL	%	27.49	34.48	36.08	26.32
14	Plasticity Index	PI	%	60.88	87.02	66.15	62.88
15	Shrinkage Limit	SL	%				
16	% Passing 200 US Stand Sieve	-	%	88,90	92.10	92.60	93.50
	Triaxial	¢.	deg	1.673		02.00	2.064
.	U.U. Compression Test	С	kg/cm²	0.014	I		0.012
17	Triaxial Total	¢	deg				
. 1	C.U. Compression	¢	kg/cm ²				
	Test Effective	¢	deg				
18	Consolidation Test	C Cc	kg/cm²				
		Pc	kg/cm ²		0.723	0.878	
19	N Value		blow		0.5741	0.5117	
- 1							
and a	a`ssmg97/lab'uds:DB						

f: c:`data`ssmg97/lab′uds:DB

TABLE 2.1.2 (1/9)SUMMARY OF LABORATORY TEST RESULTS (7/9)FOUNDATION INVESTIGATION

PROJECT LOCATION FEATURE U D W R D (U.D.S.) SEMARANG, CENTRAL JAWA

AREA DESIGNATION :

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10 11	Natu Unit Dry Natu	HOLE No DEPTH (r GROUP SYM cific Gravity ural Water Conten Weight, Natural S Unit Weight	າ) BOL t	SYM BOL G	UNIT	СН	DB - 2 15.00 - 15.55 CH	DB - 3 5.00 - 5.55 CH	DB - 3 10.00 - 10.55 CH
2 3 4 5 6 7 8 9 10 11	Natu Unit Dry Natu	cific Gravity ural Water Conten Weight, Natural S Unit Weight		BOL G	UNIT	СН		the second second second second second second second second second second second second second second second s	
2 3 4 5 6 7 8 9 10 11	Natu Unit Dry Natu	ural Water Conten Weight, Natural S Unit Weight		G			<u> </u>		
3 4 5 6 7 8 9 10 11	Unit Dry Natu	Weight, Natural S Unit Weight				2.743	0.704		
4 5 6 7 8 9 10 11	Unit Dry Natu	Weight, Natural S Unit Weight		[Wn	%		2.701	2.717	2.767
5 6 7 8 9 10 11	Dry Natu	Unit Weight	VISIO		10 1/m^3	93.10	85.05	48.11	81.59
6 7 8 9 10 11	Natu			γm		1.520	1.534	1.699	1.534
6 7 8 9 10 11		ural Void Ratio		γd	Vm^3	0.787	0.829	1.147	0.845
7 8 9 10 11		Iral Porosity		- e		2.485	2.258	1.369	2.275
8 9 10 11				n	%	71.303	69.309	57.780	69.470
9 10 11		ree of Saturation		Sr	%	100.000	100.000	95.514	99.214
10 11		ration of Water Co		Wsat	%	93.100	85.050	50.370	82.237
11		ration Unit Weight		ysat	Vm^3	1.520	1.534	1.725	1.539
	Unco	onfined Compr. St	rength	qu	kg/cm ²				1.539
12	Sens	sitivity		St					
14	Liqui	d Limit		LL	%	99.38			1
13	Plast	ic Limit		PL	%		102.94	55.89	90.77
14	Plast	icity Index			· · · · · · · · · · · · · · · · · · ·	39.26	34.38	28.70	30.65
		kage Limit			%	60.12	68.56	27.18	60.13
				SL	%				
		ssing 200 US Sta			%	98.00	97.20	54.40	97.10
1 N 1	U.U.	Triaxia Compressio		<u>\$</u>	deg		0.999	4.270	1.846
17		Triaxial	Total	C o	kg/cm²		0.012	0.030	0.028
	C.U.	Compression	. o.u.	C C	deg kg/cm²				
		Test	Effective	\$	deg				
18 (Cana			С	kg/cm ²				
	COUS	olidation Test		Cc	E. S. A.	0.715			
19 N	N Val			Pc	kġ/cm²	0.2305			
	- 10I	<u></u>		- 1 I	blow				
c: data'					UIUW		and a strategy of the		

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TABLE 2.1.2 (1/9) <u>SUMMARY OF LABORATORY TEST RESULTS</u> (8/9) FOUNDATION INVESTIGATION

PROJECT LOCATION FEATURE U D W R D (U.D.S.) SEMARANG, CENTRAL JAWA

AREA DESIGNATION :

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NO	HOLE No.				DB - 3	DB - 4	D8 - 4	D8 - 4
					15.00 - 15.55	5.00 - 5.60	10.00 - 10.60	
			SYM BOL	UNIT	СН	СН	СН	CH
1	Specific Gravity		G	-	2.644	2.744	2.737	2.742
2	Natural Water Content		Wn	%	71.76	56.36	76.94	
3	Unit Weight, Natural State		γm	Vm^3	1.543	1.668	1.553	68.56
4	Dry Unit Weight		γd	1/m^3	0.898	1.067		1.594
5	Natural Void Ratio		e		1,943	1.572	0.878	0.946
6	Natural Porosity			%	66.023		2.118	1.900
7	Degree of Saturation		Sr	%		61.124	67.932	65.512
8	Saturation of Water Content		Wsat		97.640	98.363	99.408	98.965
9	Saturation Unit Weight			%	73.494	57.298	77.398	69.277
10			γsat	t/m^3	1.559	1.678	1.557	1.601
11	Unconfined Compr. Strength		qu	kg/cm²				· · · · · · · · · · · · · · · · · · ·
12	Sensitivity	· · · · · · · · · · · · · · · · · · ·	St	•	<u> </u>			
	Liquid Limit		ԼԼ	· : % ·	111.49	60.41	90.53	99.70
13	Plastic Limit		PL	%	30.17	23,60	34.33	30.67
14	Plasticity Index		PI	%	81.33	36.82	56.20	69.02
15	Shrinkage Limit		SL	%				09.02
16	% Passing 200 US Stand Sieve			. %	97.10	59,90		93.40
	U.U. Compression		. ¢	deg			0.778	3.404
17	U.U. Compression Triaxial		C	kg/cm ²	i		0.025	0.013
	C.U. Compression	Total	<u> </u>	deg				
1	Test	Effective	C o	kg/cm² deg				
[C I	kg/cm ²				
18	Consolidation Test	1	Cc		0.673	0.230		
<u></u>	MAG		Pc	kg/cm²	0.6642	0.6395		
19	N Value			blow				
	a'ssmg97.1ab'uds DB							

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TABLE 2.1.2 (1/9)SUMMARY OF LABORATORY TEST RESULTS (9/9)FOUNDATION INVESTIGATION

PROJECT LOCATION FEATURE

UDWRD (U.D.S.) SEMARANG, CENTRAL JAWA

AREA DESIGNATION :

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	HOLE No.				DB-1	DB - 1	DB - 1	
NO	DEPTH (m)			ی <u>ے ایک دی منافع کے مس</u> احد			15.00 - 15.70	DB - 2
	GROUP SYM	BOL	SYM BOL	UNIT	СН	СН	CH	5.00 - 5.50 CH
1	Specific Gravity	G	-	2.746	2.580	2.659	2.741	
2	Natural Water Conten	Wn	%	90.06	72.63	78.86		
3	Unit Weight, Natural S	γm	t/m^3	1.506	1.589	1.605	71.27	
4	Dry Unit Weight	γd	Vm^3	0.792			1.513	
5	Natural Void Ratio	e		2.466	0.920	0.897	0.883	
6	Natural Porosity	n	%		1.803	1.963	2.103	
7	Degree of Saturation				71.144	64.323	66.252	67.771
8	Saturation of Water Content		Sr Wsat	%	100.000	100.000	100.000	92.901
9				%	90.060	72.630	78.860	76.7,16
10	Saturation Unit Weight		γsat	1/m^3	1.506	1.589	1.605	1.561
	Unconfined Compr. Strength		qu	kg/cm²				
11	Sensitivity		St					
12	Liquid Limit		LL	%	101.29	83.12	99.55	111.10
13	Plastic Limit		PL	%	27.59	24.44	31.71	
14	Plasticity Index Shrinkage Limit % Passing 200 US Stand Sieve		PI	%	73.70	58.67		30.95
15			SL	%		50.07	67.85	80.14
16				%				<u> </u>
	Triaxia		\$	deg	96.20	91.90	96.50	87.30
	U.U. Compressio		C V	kg/cm ²		2.035	1.849	2.387
17	Triaxial	Total	\$	deg		0.030	0.063	0.013
 	C.U. Compression	· · ·	С	kg/cm ²				
	Test	Effective		deg				
18	Consolidation Test		c Cc	kg/cm²				
		Pc	kg/cm ²	0.764				
19	9 N Value			blow	0.6154			
[· · · · · · · · · · · · · · · · · · ·			000		· · · · ·		
c:\dot	a'ssmg97 lab'uds DB				<u> </u>			

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