



YAYASAN PERGURUAN "CIKINI"  
**INSTITUT  
 SAINS DAN TEKNOLOGI  
 NASIONAL**

**FAKULTAS TEKNIK SIPIL  
 DAN PERENCANAAN  
JURUSAN TEKNIK SIPIL**

PENUGASAN  
 No : 6 -12/PM/LM/XII/95

Ketua Program Studi Teknik Sipil, Fakultas Teknik Sipil dan Perencanaan Institut Sains dan Teknologi Nasional Jakarta menugaskan kepada :

Ir. Idrus, MSc                      Staff Jurusan Teknik Sipil

Untuk melakukan pekerjaan Penyelidikan Tanah sebagai bentuk kegiatan :  
**Pengabdian Pada Masyarakat pada :**

Nama Pekerjaan        : Penyelidikan Tanah RUKO, BINTARO II  
 Lokasi                    : Bintaro Jaya  
 Pemberi Tugas         : PT. Karya Supra Politeknik

Dengan jadwal pelaksanaan pekerjaan selama 20 hari kerja ( 160Jam), 4 hari di lapangan dan 16 hari di Laboratorium

Kepada Ir. Idrus MSc diberikan kepercayaan penuh untuk melakukan pekerjaan Pengabdian Pada Masyarakat tersebut dan bertanggung jawab atas segala sesuatu mengenai pekerjaan tersebut

Kepada pelaksana tugas ini akan diberikan honorarium sesuai dengan ketentuan yang berlaku di Laboratorium Mekanika Tanah Institut Sains dan Teknologi Nasional.

Penugasan ini berlaku sejak dikeluarkan sampai dengan berakhirnya jangka waktu penyusunan Laporan Akhir (Final Report) diterima oleh pemberi kerja dengan baik.

Jakarta, 06 Desember 1995  
 Kaprodi Teknik Sipil

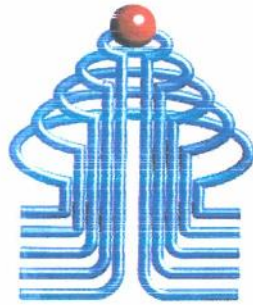


Ir. Ari Mulyo Diah Utami MT  
 NIP : 01.83332

Tembusan :

1. Dekan FTSP-ISTN ( sbg laporan )
2. Ka. Lab. Mekanika Tanah ISTN
3. Arsip

**LEMBAR PENGESAHAN  
PENGABDIAN PADA MASYARAKAT**



**ISTN**

**PENYELIDIKAN TANAH RUKO, BINTARO II  
Lokasi : Bintaro Jaya**

Oleh :  
Idrus Ir, M.Sc

Mengetahui :  
Ketua Jurusan Teknik Sipil



Ir. Arimulyo Diah Utami, M.T

**Program Studi Teknik Sipil  
Institut Sain dan Teknologi Nasional  
Jakarta 1995**

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**SURAT PERJANJIAN KERJASAMA**

**No: 04-12.1/KSP/XII/95**

Kami yang bertanda tangan di bawah ini :

I. N a m a : **PT. Karya Supra Polateknik**

Selanjutnya disebut **PIHAK PERTAMA.**

II. N a m a : **Ir. Idrus MSc**

Jabatan : **Kepala Laboratorium Mekanika Tanah ISTN**

Selanjutnya disebut **PIHAK KEDUA.**

Pihak Pertama telah sepakat untuk menunjuk Pihak Kedua dalam melakukan pekerjaan Penyelidikan Tanah (Soil Investigation) pada :

**Proyek : Ruko Bintaro II**

**Lokasi : Bintaro Jaya, Jakarta**

Demikian surat perjanjian kerja sama ini kami buat dengan sebenar-benarnya.

Jakarta, 04 Desember 1995

**PIHAK KEDUA**

Laboratorium Mekanika Tanah ISTN

**PIHAK PERTAMA**

PT. Karya Supra Polateknik

137/96 ok

# SOIL INVESTIGATION

## FINAL REPORT

PROJECT : RUKO , BINTARO II

LOCATION : BINTARO JAYA , JAKARTA

SOIL MECHANICS LABORATORY  
NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY  
JI. MOCH. KAHFI II, BHUMI SRENGSENG , JAKARTA SELATAN

PT. KARYASUPRA POLATEKNIK , in ass. with  
Soil Mechanics Lab. of I.S.T.N Jakarta

12/12

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Lampiran - Lampiran

FINAL REPORT  
SOIL INVESTIGATION

PROYEK : R U K O BINTARO II

LOKASI : BINTARO JAYA , JAKARTA

=====

I. PENDAHULUAN

Sehubungan permohonan penyelidikan tanah pada Proyek Bangunan RUKO Bintaro II di Bintaro Jaya oleh PT. KARYA SUPRA POLATEKNIK kepada Laboratorium Mekanika Tanah I.S.T.N Jakarta maka kami akan melaporkan hasil pekerjaan yang telah kami lakukan berupa pekerjaan lapangan dan pekerjaan laboratorium. (Final Report)

Pekerjaan lapangan berupa pekerjaan Sondir (Cone Penetration Test) sebanyak 5 (lima) titik dan pekerjaan Bor dalam sebanyak 3 (tiga) titik telah kami laksanakan tanggal 5 Desember hingga 12 Desember 1995.

Penyelidikan tanah ini meliputi hal-hal sbb :

1. Mengadakan penelitian dilapangan dan di laboratorium, untuk mengetahui konsistensi, sifat-sifat serta karakteristik / kekuatan tanah.
2. Menentukan kedalaman lapisan tanah keras dengan alat CPT test dan SPT test.
3. Memberikan saran tentang jenis pondasi yang dibutuhkan atas kondisi lapisan tanah yang didapat.

## II. PENYELIDIKAN DI LAPANGAN.

Pelaksanaan penyelidikan di lapangan pada proyek ini meliputi :

- . CPT (sondir) kapasitas 2,5 tonf
- . Deep Boring (bor dalam)
- . Undisturbed Sampling (pengambilan contoh tanah tidak terganggu)
- . Standard Penetration Test (SPT)

## 2.1. Peralatan.

- a. 1 (satu) mesin CPT (sondir) kapasitas 2.5 tonf lengkap.
- b. 1 (satu) unit alat bor dalam lengkap dengan mata bor Iwan serta Thin Walled Sampler (Tabung contoh) dengan diameter 75 mm panjang 75 cm serta tebal 2.00 mm.
- c. 1 (satu) unti alat SPT, lengkap.
- d. 1 (satu) unit alat pompa air.

## 2.2. Metode Pelaksanaan.

## a. CPT (sondir)

Konus yang digunakan adalah frictioncone (biconus) dengan suatu luas penampang 10 cm<sup>2</sup>, luas selimut geser 150 cm<sup>2</sup> dan luas penampang 10 cm<sup>2</sup>.

Sondir dilakukan secara terus menerus dengan interval 20 cm kedalaman (penetrasi) sampai menunjukkan jumlah tahanan konus dan geser maksimum 250 kg/cm<sup>2</sup>, atau



sampai kedalaman maksimum sebesar 30.0 meter.

Data yang disajikan dalam percobaan ini adalah nilai tahanan konus (ujung) dan total friksi serta ratio friction / conus resistance dari tiap kedalaman sampai kedalaman maksimum dari kapasitas alat sondir yang dipakai atau sampai 30.00 meter kedalaman.

b. Deep Boring.

Pengeboran dilakukan dengan cara Rotary Core Drilling dengan menggunakan single core barrel. Deskripsi tanah secara visual dilakukan terus menerus sepanjang lubang pengeboran. Semua contoh tanah hasil coring disimpan didalam kantong plastik tertutup, lengkap dengan keterangannya.

c. Undisturbed Sampling.

Pengambilan contoh tanah tak terganggu / asli dilakukan dengan menggunakan Single Core Barrel, dalam keadaan kering dan adakalanya dibutuhkan air.

Deskripsi tanah secara visual dilakukan terus menerus sepanjang lubang pengeboran.

Semua contoh tanah hasil coring disimpan dalam kantong plastik tertutup, lengkap dengan keterangannya.

Untuk mengatasi kelongsoran dinding tanah setelah dilakukan pengeboran, adakalanya dibunakan Casing (pipa pelindung) dengan diameter 100 mm.

d. Standard Penetration Test dilakukan dengan suatu hammer seberat 63,5 kgf dengan tinggi jatuh 75 cm dilakukan tiap interval kedalaman 2.00 meter. Test SPT ini mengacu pada Standard ASTM D1586, dimana nilai N SPT adalah jumlah pukulan hingga penetrasi 30 cm. Nilai Standard Penetration Resistance (N) adalah jumlah pukulan yang dibutuhkan untuk melakukan penetrasi sedalam 30 cm, dimana sebelumnya harus dilakukan penetrasi awal sedalam 15 cm, dan jumlah pukulannya diabaikan.

Pada lapisan tanah keras, SPT dihentikan jika sudah didapat nilai  $N > 50$ , dan kedalaman penetrasinya akan dicatat.

Dalam pelaksanaannya, SPT dilakukan sepanjang lubang bor dengan interval kedalaman tiap 2.00 meter atau sesuai dengan tingkat kebutuhan pemakaian.

## 2.3 Jumlah dan Hasil Penyelidikan

- C.P.T (sondir) sebanyak 5 titik.

Titik	Elevasi (m)	Kedalaman Max. qc >100kg/cm <sup>2</sup> dari MTA (m)	G.W.L dari MTA(m)	Tf kg/cm <sup>2</sup>
S1	-1.10	10.40	7.00	500
S2	-1.10	11.80	7.80	800
S3	-0.90	12.80	7.00	700
S4	-0.30	15.40	8.20	1100
S5	-0.10	15.40	9.40	1100

Bor Dalam sebanyak : 3 titik , kedalaman @ 20.00 meter.

Titik Bor	Elevasi (m)	Elevasi Muka Air Tanah (m)	Kedalaman Dari MTA (m)	SPT	UD Spl.
DB1	-1.10	- 7.85	-20.00	10	5
DB2	-0.90	- 8.00	-20.00	10	5
DB3	-0.10	- 7.70	-20.00	10	5

Catatan :

Elevasi 0.00 diambil pada elevasi permukaan jalan yang terdekat dengan titik S-5.

## III. PENELITIAN DI LABORATORIUM.

Penelitian di Laboratorium meliputi kondisi contoh tanah :

- Undisturbed Sample.

Yang berasal dari Thin Walled Tube Sampler dilakukan penelitian Index Properties dan Mechanical Properties Penelitian dari contoh tanah tidak terganggu (undisturb sample) dilakukan sesuai dengan persyaratan prosedur percobaan dari ASTM (American Standard for Testing Material), yang meliputi :

1. Penentuan kadar air asli ( $W_n$ )
2. Penentuan berat isi tanah ( $\gamma_n$ )
3. Penentuan berat isi kering ( $\gamma_d$ )
4. Penentuan specific gravity ( $G_s$ )
5. Penentuan Batas-batas Atterberg
6. Penentuan Gradasi butiran tanah.
7. Uji kuat geser dengan Triaxial UU Test
8. Uji konsolidasi test (Oedometer test)

## Jenis dan Jumlah Pengujian di Laboratorium :

Jenis Pengujian	Jumlah	Sampel
1. Index Properties	15 titik	Undisturbed
2. Grained Sizes Distribution	15 titik	Undisturbed
3. Atterberg limits	15 titik	Undisturbed
4. Triaxial Test	15 titik	Undisturbed
5. Consolidation Test	15 titik	Undisturbed

## IV. KESIMPULAN DAN REKOMENDASI

## 4.1. Kondisi Lapisan Tanah.

Dari hasil pengujian CPT test dan Bor dalam pada lokasi pekerjaan, dapat diterangkan kondisi lapisan tanah sebagai berikut :

- Dari permukaan tanah rata-rata sampai kedalaman -9.50 meter pada umumnya dijumpai suatu lapisan tanah coklat kemerahan berupa lempung kelanauan dengan stiff consistency dan pada kedalaman -5.00 meter dijumpai soft consistency, dengan plastisitas tinggi.
- Pada kedalaman -9.50 meter hingga kedalaman -16.00 meter dijumpai suatu lapisan Lanau kelempungan berwarna coklat dengan very stiff sampai hard consistency (pada kedalaman -16.00 meter). Khusus pada daerah disekitar titik DB-1 lapisan tanah berupa Pasir kelanauan dengan very hard consistency
- Pada kedalaman -16.00 meter hingga akhir pengeboran -20.00 meter dijumpai lapisan tanah berupa Lanau kelempungan yang bersementasi dengan very hard consistency.
- Permukaan air tanah pada umumnya dijumpai rata-rata pada kedalaman -8.00 meter dari permukaan tanah rata-rata.

#### 4.2. Rekomendasi

Dari kondisi lapisan tanah seperti dijelaskan pada 4.1 , maka kami menyarankan pemilihan penggunaan pondasi sebagai berikut :

##### A. Pondasi Dalam / Pondasi Pancang , dengan ketentuan sebagai berikut :

- Kedalaman Pemancangan Tiang antara 10.00 hingga 12.00 meter atau sampai dengan pemancangan dengan final set maksimum 1,00 cm / 10 pukulan terakhir.
- Daya dukung axial per tiang :

Tiang segitiga 28x28x28 cm	P all = 25.00 tonf
Tiang segitiga 32x32x32 cm	P all = 32,50 tonf
Mini pile 20x20 cm	P all = 25.00 tonf
Mini pile 25x25 cm	P all = 32,50 tonf
Tiang ukuran 30x30 cm	P all = 50,00 tonf
Tiang ukuran 35x35 cm	P all = 60,00 tonf
- Jarak tiang ke tiang (as ke as) untuk pile group dapat dilakukan dengan jarak 3 d, dimana d adalah diameter tiang atau lebar tiang yang digunakan.
- Design ketebalan kepala tiang harus diperhitungkan terhadap kemungkinan terjadinya keruntuhan geser.

B. Pondasi Dangkal , dengan ketentuan sebagai berikut :

- . Kedalaman pondasi -1.50 s/d 2.00 meter.
- . Ukuran pondasi lebar -2.00 meter
- . Diberikan lapisan sirtu padat dengan ketebalan 20 cm.
- . Daya dukung keseimbangan tanah yang diinkan pada kedalaman tersebut :

Pondasi setempat (B x B)  $\sigma_{all} = 0.70 \text{ kg/cm}^2$

Pondasi menerus  $\sigma_{all} = 0.65 \text{ kg/cm}^2$

- Diperlukan konstruksi pondasi dari beton bertulang yang cukup kaku, untuk menghindari kemungkinan terjadinya differential settlement.
- Harus diperhitungkan terhadap settlement akibat proses konsolidasi.

LABORATORIUM MEKANIKA TANAH I.S.T.N

Kepala

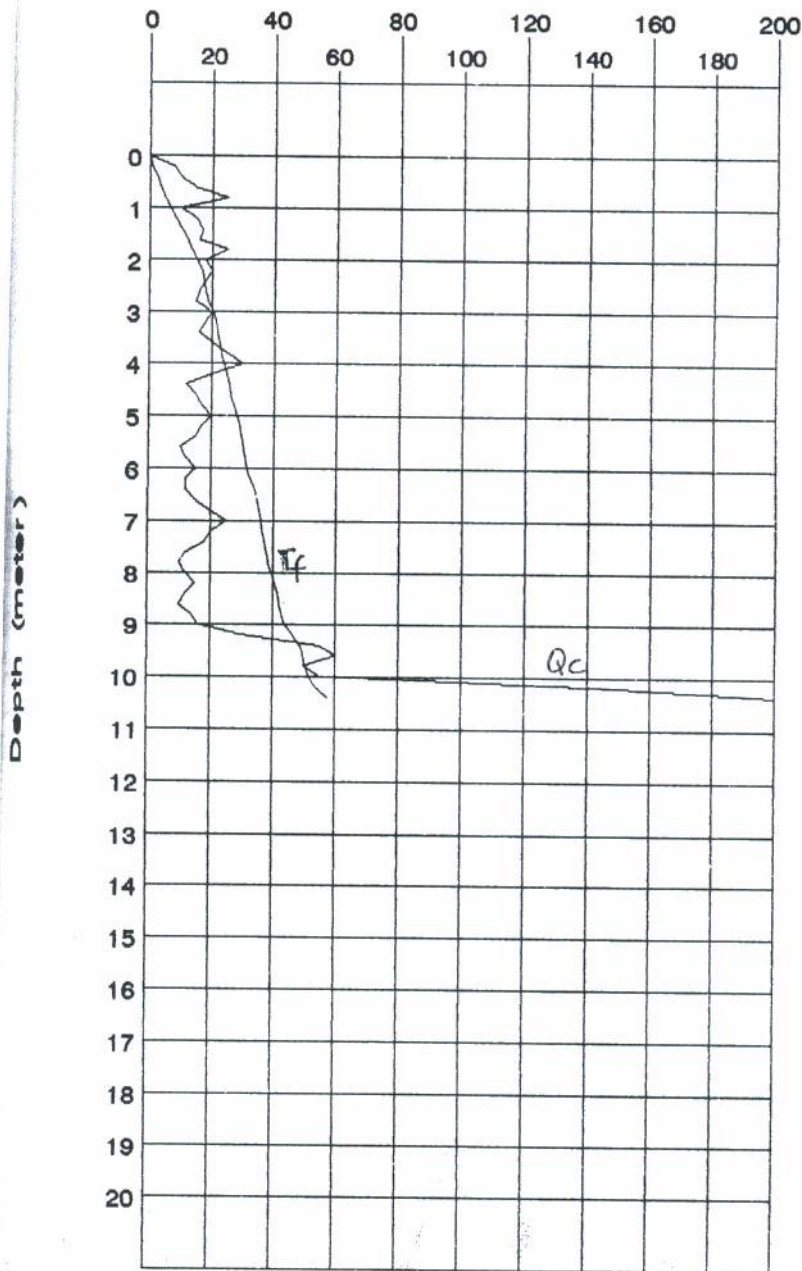
-----  
(Ir. Idrus MSc)  
-----  
Geotechnical Engineer



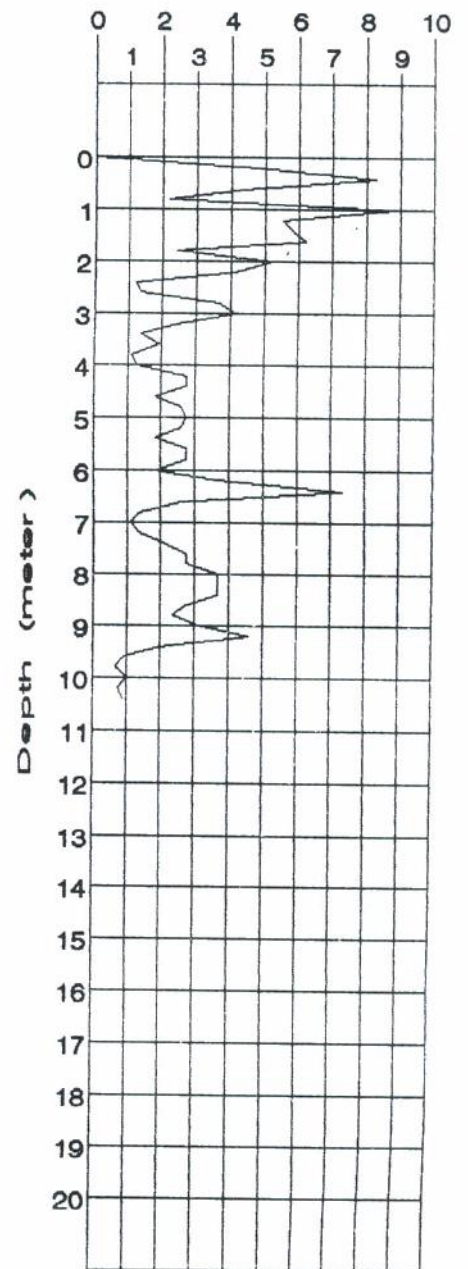
# CONE PENETRATION TEST

C.P.T NO : 81	Coordinate:
PROJECT : RUKO BINTARO JAYA	North
LOCATION : JL. Bintaro Utama I	East
Date of tested : December 5th. 1995	Elevation (m)
Tested by : Nean, Mr	G.W.L (m) 7.00
Checked by : Nana S ,Ir. Mr	

$Q_c$  (Kg/cm<sup>2</sup>) and  $T_f$  (Kg/cm<sup>2</sup> x 10)



Friction/Conus Resistance (%)

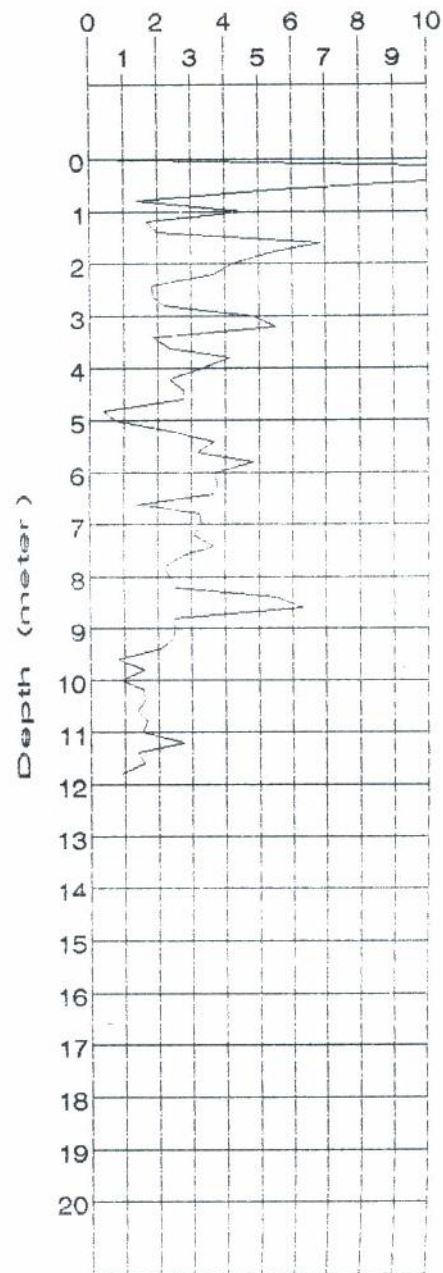
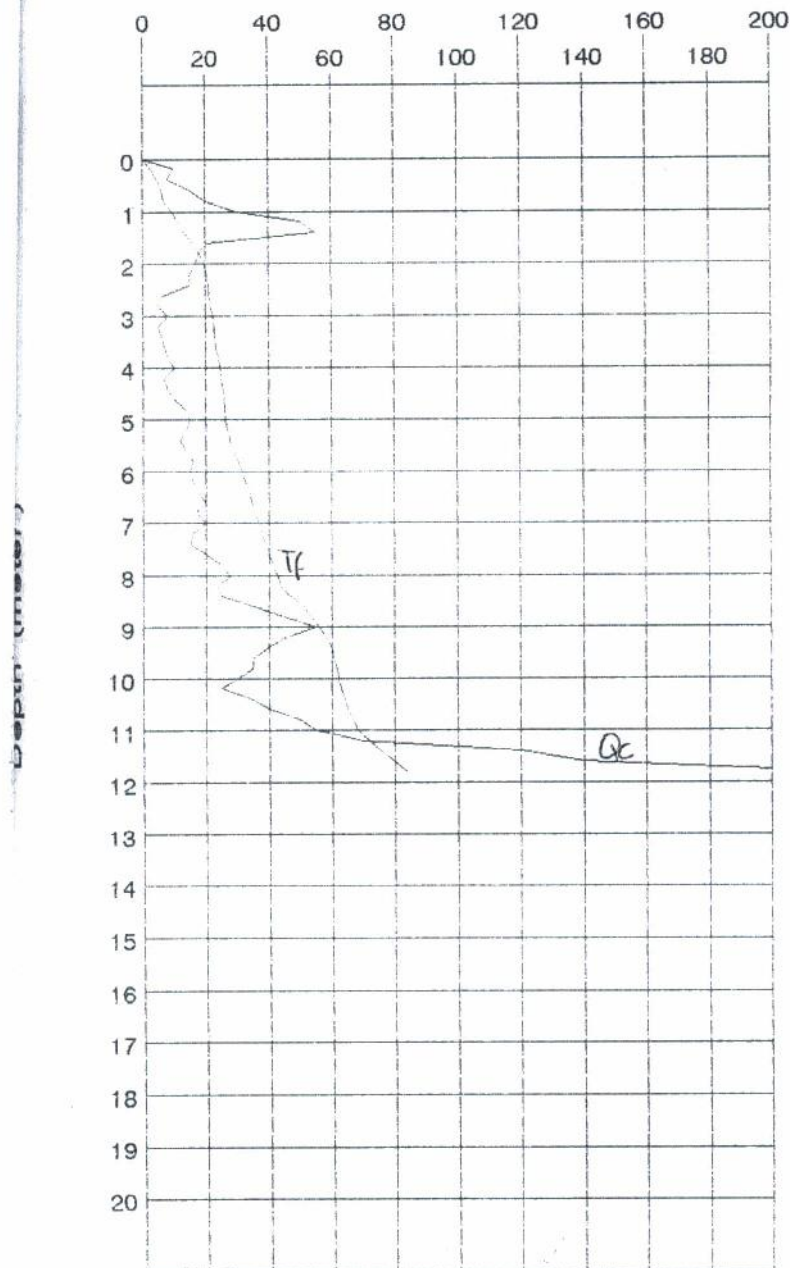


# CONE PENETRATION TEST

C.P.T NO	S 2	Coordinate
PROJECT	RUKO BINTARO JAYA	North -----
LOCATION	JL. Bintaro Utama I	East -----
Date of test	December 5th. 1995	Elevation (m) -----
Tested by	Nean Mr	G.W.L (m) 7.80
Checked by	Nana S Mr	

Qc (Kg/cm<sup>2</sup>) and Tf (Kg/cm<sup>2</sup> x 10)

Friction/Quonus Resistance (%)



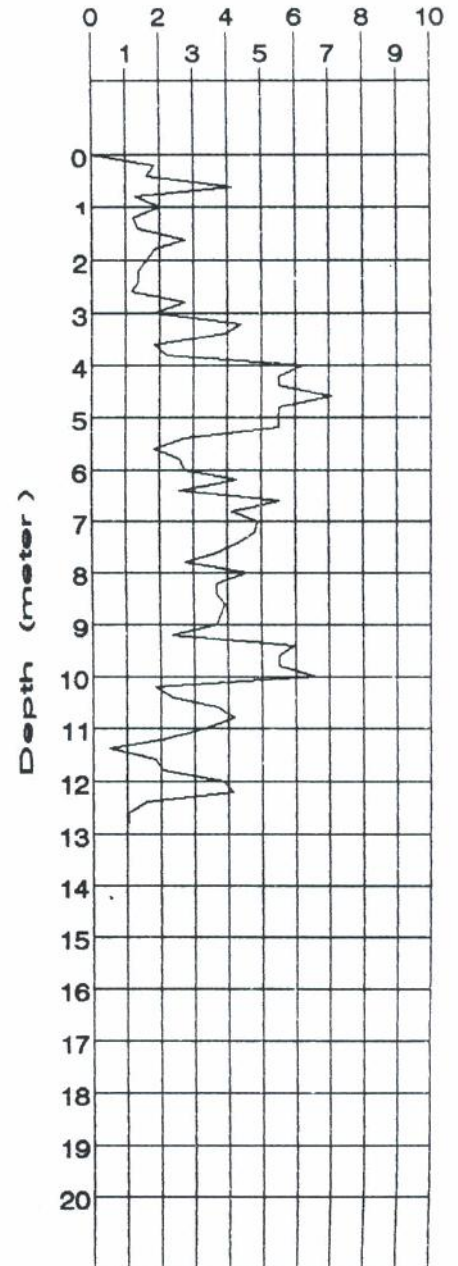
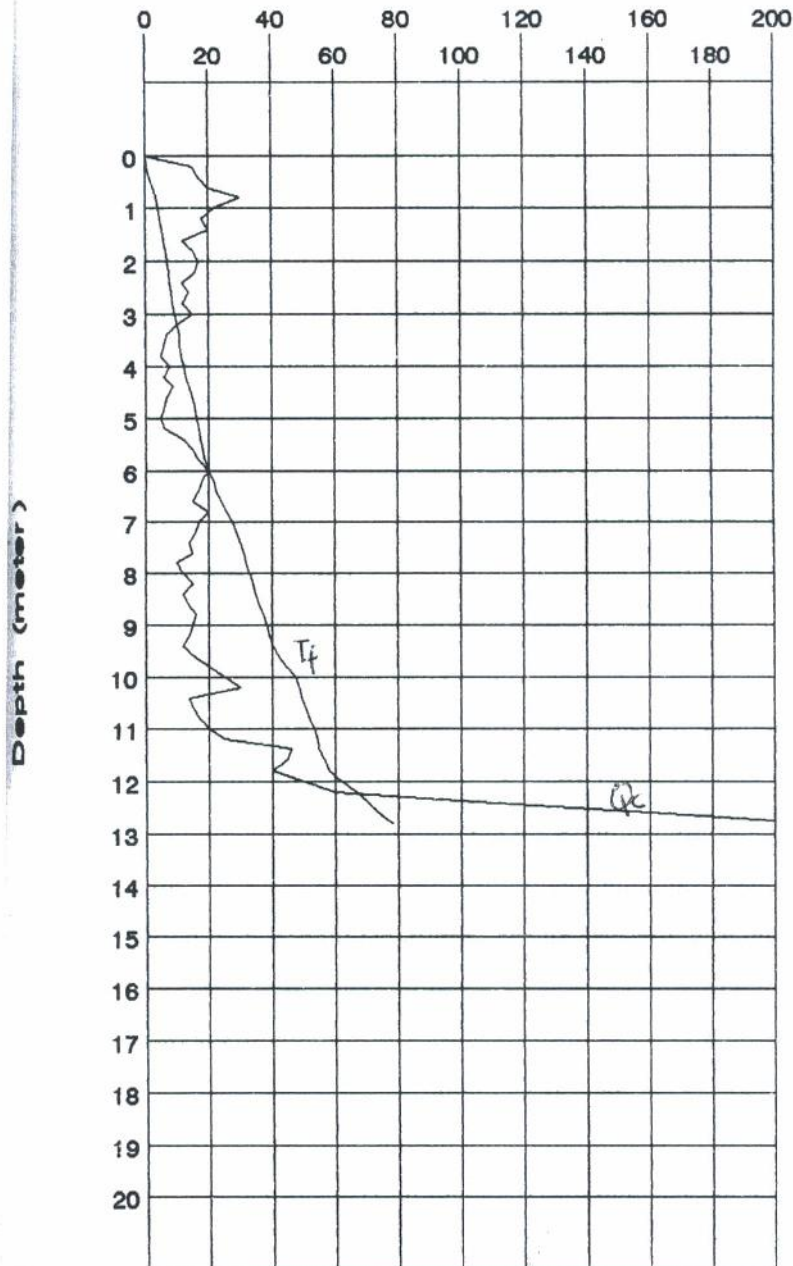
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# CONE PENETRATION TEST

C.P.T NO : S3	Coordinate
PROJECT : RUKO BINTARO JAYA	North
LOCATION : JL. Bintaro Utama I	East
Date of tested : December 5th. 1995	Elevation (m)
Tested by : Nana, Mr	G.W.L (m) 7.00
Checked by : Nana S ,lr, Mr	

Qc (Kg/cm<sup>2</sup>) and Tf (Kg/cm' x 10)

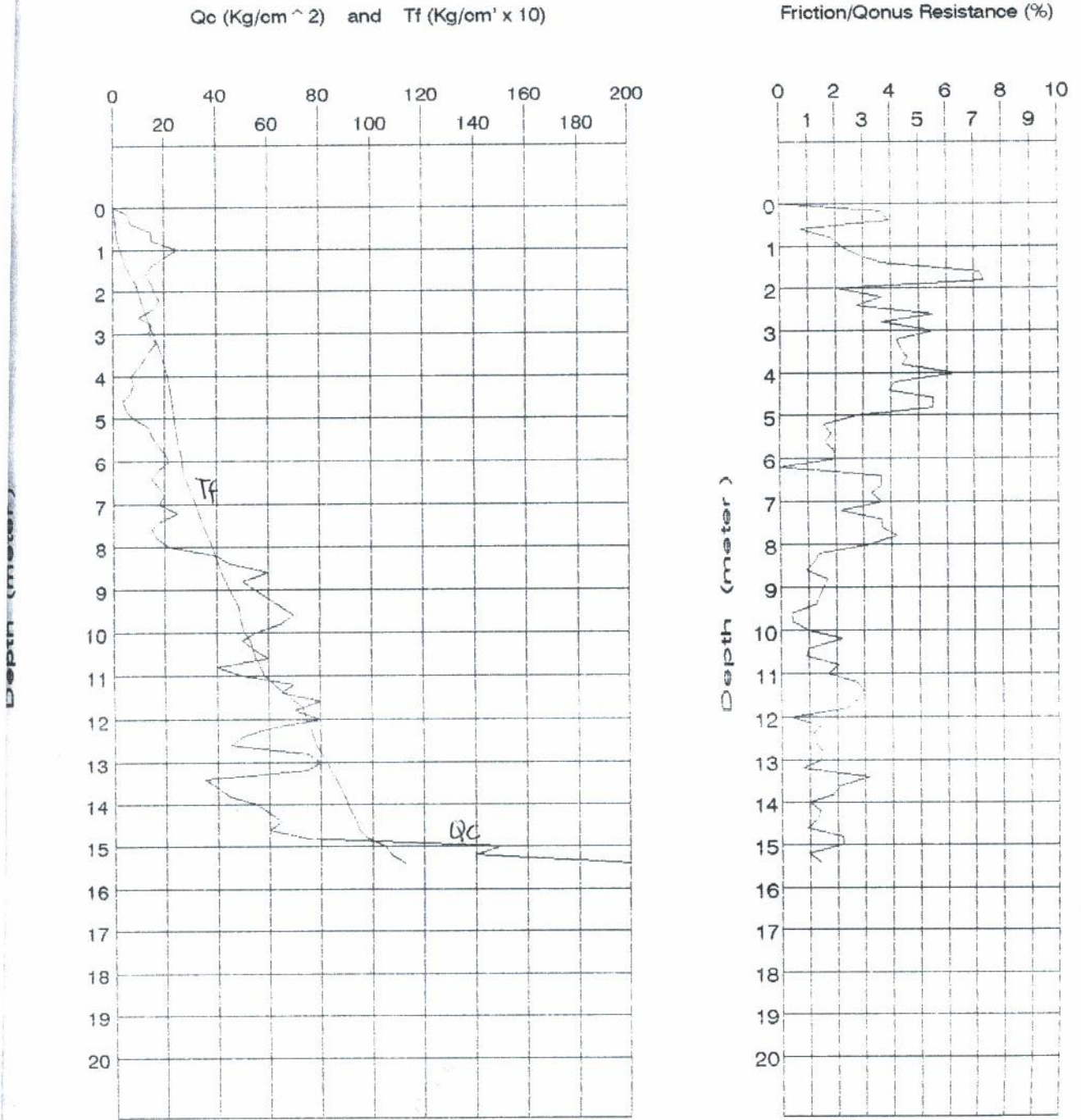
Friction/Qonus Resistance (%)



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# CONE PENETRATION TEST

C.P.T NO	S 4	Coordinate
PROJECT	RUKO BINTARO JAYA	North -----
LOCATION	JL. Bintaro Utama I	East -----
Date of test	December 5th. 1995	Elevation (m) -----
Tested by	Nean Mr	G.W.L (m) 8.20
Checked by	Nana S Mr	



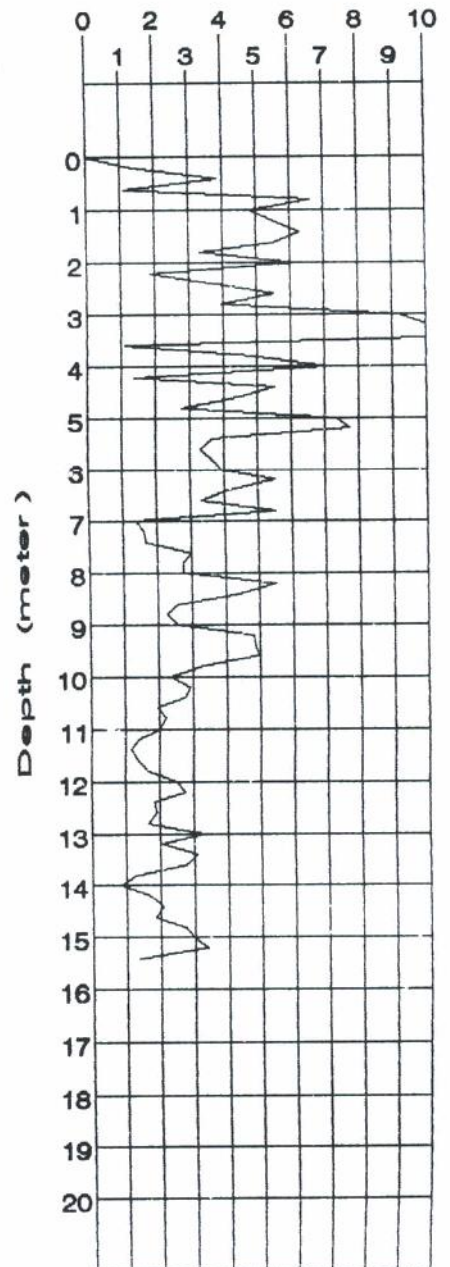
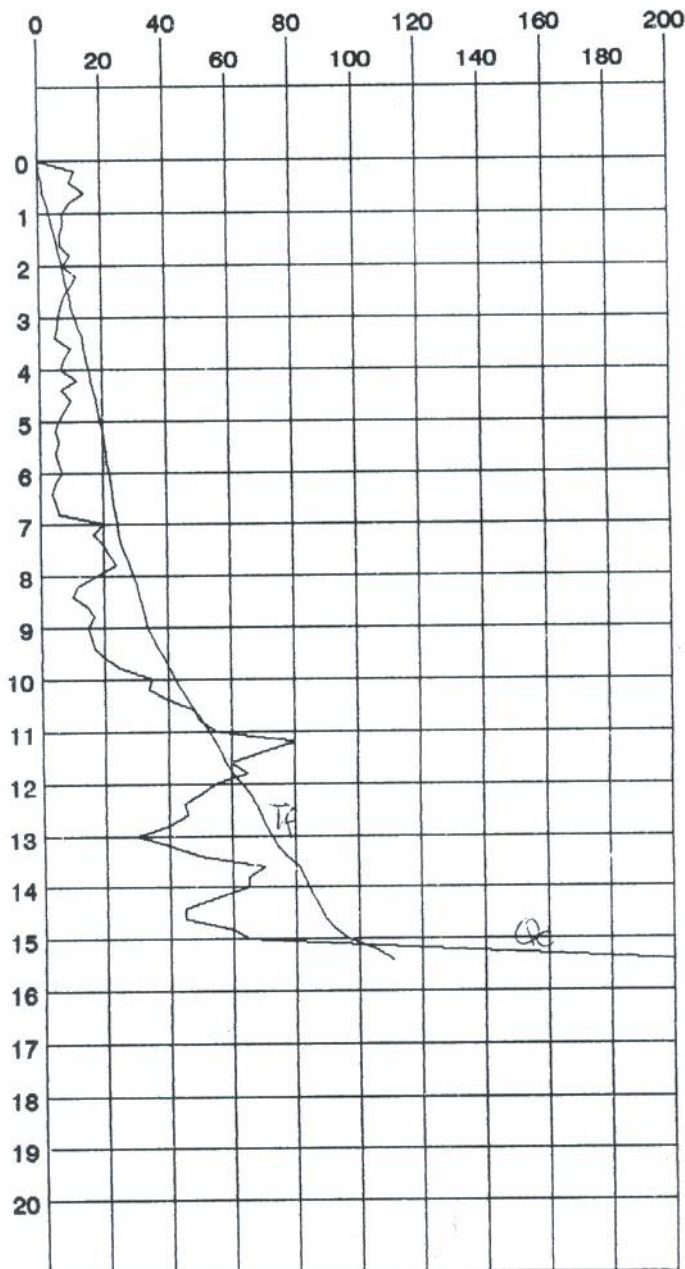
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# CONE PENETRATION TEST

C.P.T NO : 85	Coordinate
PROJECT : RUKO BINTARO JAYA	North
LOCATION : JL. Bintaro Utama I	East
Date of tested : December 5th. 1995	Elevation (m)
Tested by : Nean, Mr	G.W.L (m) 9.40
Checked by : Nana S., Jr. Mr	

Q<sub>c</sub> (Kg/cm<sup>2</sup>) and T<sub>f</sub> (Kg/cm' x 10)

Friction/Qonus Resistance (%)



# BORING LOG

page : 1

PROJECT	RUKO BINTARO	Elevation	-1.10 - meter	Av. G.W.T	7.85 meter from G.S	Bore Hole Number	
LOCATION	Bintaro Jaya Sektor I	Started	December 11th 1995	Drawn by	Mochamad Ir.		
TOTAL DEPTH	20.00 meter	Finished	December 12th 1995	Checked by	Mochamad Ir.		
		Tested by	Masdra Mr.	Approved by			DB-1

Scale	Depth	Elev.	Thickness	Soil Symbol	Soil Classification	Description	Sample U/D	Standard Penetration Test (N Value)												
								Number of Blows												
								Every 15 cm	30 Cm	10	20	30	40	50	50					
1	1	0.00	9.50 m	[Pattern]	CH	SILTY CLAY, reddish brown, stiff consistency high silt fraction  contains pockets of brown silt soft consistency  colour grey mottled brown, stiff consistency	U.1.50-2.00													
2	2											4	6	10						
3	3																			
4	4											U.3.50-4.00	5	6	11					
5	5																			
6	6											U.5.50-6.00	2	2	4					
7	7																			
8	8											U.7.50-8.00	4	6	10					
9	9																			
10	10		6.50 m	[Pattern]	SM	SILTY FINE SANDS, dark brown, partially cementation, very hard consistency	U.9.50-10.00	10.15	50++	50++										
11	11											10.30								
12	12											12.15	35	10+	50+					
13	13											12.34								
14	14											14.15	50++	50++						
15	15											14.22								
16	16											16.15	45	15+	60++					
17	17		4.00 m	[Pattern]	OH / OL	CEMENTED CLAYEY SILT, dark grey, very hard consistency		16.32												
18	18											18.15	21	45+	66+					
19	19											18.48								
20	20											20.15	25	45+	70+					
21	21									SP	CEMENTED FINE SAND, dark grey, very hard cons.		20.37							
						End of Boring Test														

Boring Machine Type : Y.B.M - YSO-1  
Capacity : 80 meter

REMARKS :

Clay		Organic	[Pattern]
Silt		Gravel	[Pattern]
Sand		Rock	[Pattern]

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# BORING LOG

page : 1

<b>PROJECT</b>	RUKO BINTARO	<b>Elevation</b>	= 0.90 meter	<b>Av. G.W.T</b>	8.00 meter from G.S
<b>LOCATION</b>	Bintaro Jaya Sektor I	<b>Started</b>	December 9th 1995	<b>Drawn by</b>	Mochamad Ir.
<b>TOTAL DEPTH</b>	20.00 meter	<b>Finished</b>	December 10th 1995	<b>Checked by</b>	Mochamad Ir.
		<b>Tested by</b>	Masdra Mr.	<b>Approved by</b>	
				<b>Bore Hole Number</b>	DB-2

Scale	Depth	Elev.	Thickness	Soil Symbol	Soil Classification	Description	Sample U/D	Standard Penetration Test (N Value)												
								Number of Blows												
								Every 15 cm	30 Cm	10	20	30	40	50	60					
1	1		9.50 m		CH	SILTY CLAY, reddish brown, stiff consistency high silt fraction	U.1.50-2.00													
2	2																			
3	3																			
4	4																			
5	5																			
6	6																			
7	7																			
8	8																			
9	9																			
10	10		8.50 m		MH-OH	CLAYEY SILT, brown, very stiff consistency	U.9.50-10.00													
11	11																			
12	12																			
13	13																			
14	14																			
15	15																			
16	16																			
17	17																			
18	18																			
19	19		2.00 m		ML-OL	CEMENTED SILT, dark brown, very hard consistency	18.15													
20	20																			
						End of Boring Test														

Boring Machine Type : Y.B.M - YSC-1  
Capacity : 80 meter

**REMARKS :**

Clay	Organic
Silt	Gravel
Sand	Rock

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# BORING LOG

page : 1

PROJECT	RUKO BINTARO	Elevation	-0.10 meter	Av. G.W.T	7.70 meter from G.S	Bore Hole	
LOCATION	Bintaro Jaya Sektor I	Started	December 6th 1995	Drawn by	Mochamad Ir.	Number	
TOTAL DEPTH	20.00 meter	Finished	December 7th 1995	Checked by	Mochamad Ir.		
		Tested by	Masdra Mr.	Approved by			DB-3

Scale	Depth	Elev.	Thickness	Soil Symbol	Soil Classification	Description	Sample U/D	Standard Penetration Test (N Value)											
								Number of Blows											
								Every 15 cm	30 Cm	10	20	30	40	50	60				
1	1		9.50 m	[Hatched]	CH	SILTY CLAY, brown, stiff consistency high silt fraction													
2	2					colours reddish brown	U.1.50-2.00	5	7	12									
3	3																		
4	4					colours brown with mottled light grey	U.3.50-4.00	5	8	14									
5	5																		
6	6					colour reddish brown with mottled light grey soft consistency	U.5.50-6.00	2	2	4									
7	7																		
8	8					colours light grey mottled brown colours dark brown, medium consistency	U.7.50-8.00	2	3	5									
9	9																		
10	10		6.50 m	[Hatched]	OH-MH	CLAYEY COARSE SILT, brown mottled light grey very stiff consistency	U.9.50-10.00	13	15	28									
11	11																		
12	12					light grey colours out													
13	13																		
14	14																		
15	15																		
16	16																		
17	17		4.00 m	[Hatched]	OL-ML	PARTIALLY CEMENTED CLAYEY SILT, dark grey, hard consistency													
18	18					colours greenish dark grey													
19	19																		
20	20					colours dark grey and dark blue													
						End of Boring Test													

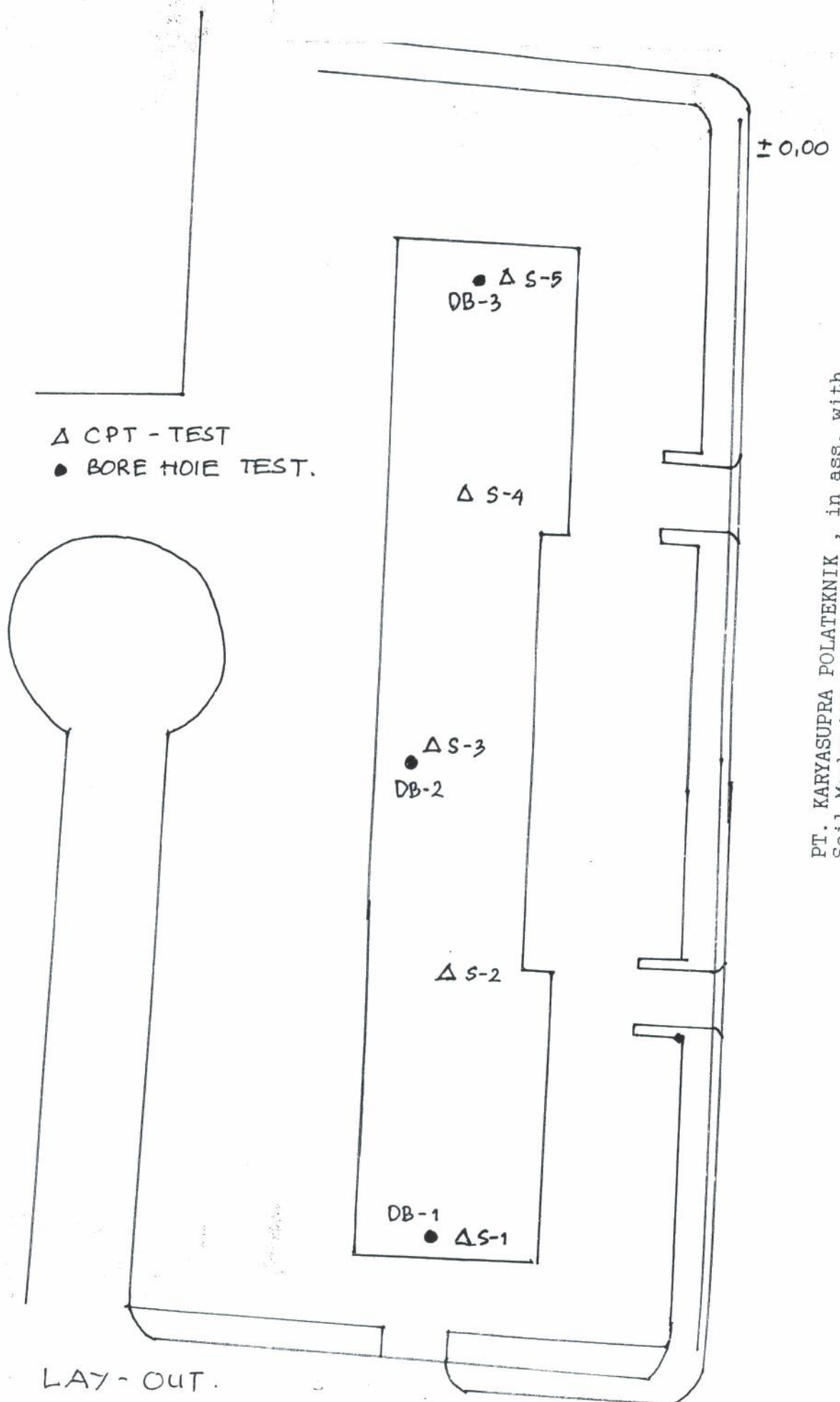
Boring Machine Type : Y.B.M - YSO-1  
Capacity : 80 meter

**REMARKS :**

Clay	Organic	[Symbol]
Silt	Gravel	[Symbol]
Sand	Rock	[Symbol]

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Δ CPT - TEST  
● BORE HOLE TEST.

LAY - OUT.

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# LABORATORY TESTING RESULTS

PROJECT: RUKO BINTARO II  
 LOCATION: BINTARO - JAKARTA SELATAN  
 BORING: DB - 1

Sample Depth meters	Sample Classification	Wt (%)	Liquid Limit	Plasticity Index	e	Gs	G <sub>s</sub>	INDEX PROPERTIES				SHEAR STRENGTH PARAMETERS				COMPRESSIBILITY				
								SI	PL	LL	P	Cu	Cc	Ph	phi	sigma-ut	Si	Cc	Cv	Cs
										Grain Size Sieve	Hydro kg/cm <sup>2</sup>									
DB-1																				
1,50-2,00	U	53,10	1,63	1,09	2,63	1,42	96,71	39,09	57,3	94,72	37,42	15	86	0,40	10,5			0,774	0,0669	0,034
3,50-4,00	U	72,24	1,56	0,90	2,62	1,90	99,62	15,13	31,46	94,08	62,62	8	92	0,52	11			0,94	0,00725	0,038
5,50-6,00	U	67,79	1,56	0,83	2,54	1,72	99,77	23,19	42,01	86,38	43,37	12	88	0,34	4			1,283	0,00547	0,049
7,50-8,00	U	107,84	1,41	0,67	2,59	2,84	97,91	17,18	27,126	59,7	32,58	3	97	0,30	8			2,65	0,00400	0,055
9,50-10,00	U	88,42	1,48	0,76	2,58	2,30	99,38	28,73	51,55	89,51	37,96	21	79	0,28	12			0,630	0,001265	0,069

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# LABORATORY TESTING RESULTS

PROJECT RUKOBINTARO II

LOCATION BINTARO - JAKARTA SELATAN

BORING DB - 2

Sample Depth meter	Sample Type U/D	Classif cation	W <sub>n</sub> (%)	g wet 1/m <sup>3</sup>	g dry 1/m <sup>3</sup>	G <sub>s</sub>	e	INDEX PROPERTIES					SHEAR STRENGTH PARAMETERS				COMPRESSIBILITY				
								SL	PL	LL	P	Sieve Size No. / mm	C <sub>u</sub> / C <sub>l</sub>	φ <sub>h</sub> , degree	q <sub>ult</sub>	SI	C <sub>c</sub>	C <sub>v</sub> C <sub>u</sub>	C <sub>v</sub> C <sub>u</sub>		
DB-2																					
1,50-2,00	U	CH	61,78	1,60	0,98	2,58	1,61	98,46	10,63	24,98	112,39	67,41	6	94	0,25	11			1,665	0,00484	0,0375
3,50-4,00	U	CH-MH	73,74	1,54	0,88	2,62	1,97	97,79	33,51	54,54	86,58	32,10	2	98	0,29	10			1,671	0,007886	0,045
5,50-6,00	U	CH-MH	83,58	1,49	0,79	2,62	2,31	94,68	48,79	76,47	104,57	28,10	4	96	0,44	8			0,84	0,00642	0,06
7,50-8,00	U	CH-MH	98,90	1,45	0,73	2,61	2,60	98,47	26,56	39,77	66,66	26,08	2	98	0,22	9			1,46	0,008757	0,026
9,50-10,00	U	CH	58,98	1,57	0,94	2,54	1,70	88,19	11,4	25	100,28	75,28	15	85	0,32	5			1,265	0,00765	0,072

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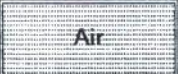
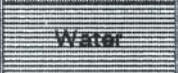

# LABORATORY TESTING RESULTS

PROJECT RUKO BINTARO II  
 LOCATION BINTARO, JAKARTA SELATAN  
 BORING DB - 3


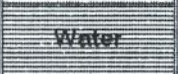

Sample Depth meter	Sample Class Type U/D	INDEX PROPERTIES										SHEAR STRENGTH PARAMETERS				COMPRESSIBILITY			
		Wt %	g wet M/m <sup>3</sup>	g dry M/m <sup>3</sup>	G <sub>s</sub>	e	S <sub>r</sub>	SL	PL	LL	PI	Grain Size Sieve No.	Cu/Cc kg/cm <sup>2</sup>	Phi degree	c-u kN	Sk	Cc	Cv	Cc cm <sup>2</sup> /sec
DB-3																			
1,50-2,00	U	52,41	1,69	1,10	2,64	1,39	99,67	23,6	46,15	97,07	50,92	3	97	0,25	13		1,118	0,001035	0,062
3,50-4,00	U	56,96	1,63	1,02	2,59	1,54	96,77	12,49	27,59	101,63	74,04	3	97	0,72	9		0,667	0,006722	0,053
5,50-6,00	U	62,71	1,59	0,97	2,56	1,65	97,72	22,67	42,266	90,6	47,74	7	93	0,30	11		1,06	0,00622	0,042
7,50-8,00	U	70,71	1,55	0,90	2,56	1,65	98,01	18,43	40,62	107,46	66,84	3	97	0,32	9		2,697	0,007996	0,09
9,50-10,00	U	91,90	1,42	0,88	2,58	2,79	85,03	15,97	37,11	112,93	75,82	4	96	0,20	8		0,699	0,001069	0,064

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## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 1.		Date of Tested : Des. 22th 1995			
Depth : 1.50–2.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight	1.67	gr/cm <sup>3</sup>			
Water Content	53.10	%			
Specific Gravity	2.63				
Unit Weight of Water	1.00	gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
V <sub>t</sub> = 2.42	V <sub>v</sub> = 1.42	V <sub>a</sub> = 0.02		W <sub>a</sub> = 0.00	W <sub>t</sub> = 4.03
		V <sub>w</sub> = 1.40		W <sub>w</sub> = 1.40	
	V <sub>s</sub> = 1.00			W <sub>s</sub> = 2.63	
Void ratio (e)		1.42			
Degree of saturation (S <sub>r</sub> )		98.71 %			
Porosity		0.59			
Dry unit weight		1.09 gr/cm <sup>3</sup>			
Saturated unit weight		1.68 gr/cm <sup>3</sup>			


## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 1.		Date of Tested : Des. 22th 1995			
Depth : 3.50–4.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight	1.56	gr/cm <sup>3</sup>			
Water Content	72.24	%			
Specific Gravity	2.62				
Unit Weight of Water	1.00	gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
V <sub>t</sub> = 2.90	V <sub>v</sub> = 1.90	V <sub>a</sub> = 0.01		W <sub>a</sub> = 0.00	W <sub>t</sub> = 4.52
		V <sub>w</sub> = 1.90		W <sub>w</sub> = 1.90	
	V <sub>s</sub> = 1.00			W <sub>s</sub> = 2.62	
Void ratio (e)		1.90			
Degree of saturation (S <sub>r</sub> )		99.62 %			
Porosity		0.66			
Dry unit weight		0.90 gr/cm <sup>3</sup>			
Saturated unit weight		1.56 gr/cm <sup>3</sup>			


## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 1.		Date of Tested : Des. 22th 1995	
Depth : 5.50–6.00 m		Tested By : RAHARDJO S	
<b>Input Data</b>			
Unit Weight	1.56	gr/cm <sup>3</sup>	
Water Content	67.79	%	
Specific Gravity	2.54		
Unit Weight of Water	1.00	gr/cm <sup>3</sup>	
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>	
Vt= 2.72	Vv= 1.72	Va= 0.00	W <sub>a</sub> = 0.00
		Vw= 1.72	W <sub>w</sub> = 1.72
	Vs= 1.00		W <sub>s</sub> = 2.54
			W <sub>t</sub> = 4.26
<b>Void ratio (e)</b>		1.72	
<b>Degree of saturation (Sr)</b>		99.77 %	
<b>Porosity</b>		0.63	
<b>Dry unit weight</b>		0.93 gr/cm <sup>3</sup>	
<b>Saturated unit weight</b>		1.56 gr/cm <sup>3</sup>	


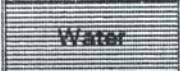

## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 1.		Date of Tested : Des. 22th 1995	
Depth : 7.50–8.00 m		Tested By : RAHARDJO S	
<b>Input Data</b>			
Unit Weight	1.40	gr/cm <sup>3</sup>	
Water Content	107.84	%	
Specific Gravity	2.58		
Unit Weight of Water	1.00	gr/cm <sup>3</sup>	
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>	
Vt= 3.84	Vv= 2.84	Va= 0.06	W <sub>a</sub> = 0.00
		Vw= 2.78	W <sub>w</sub> = 2.78
	Vs= 1.00		W <sub>s</sub> = 2.58
			W <sub>t</sub> = 5.36
<b>Void ratio (e)</b>		2.84	
<b>Degree of saturation (Sr)</b>		97.91 %	
<b>Porosity</b>		0.74	
<b>Dry unit weight</b>		0.67 gr/cm <sup>3</sup>	
<b>Saturated unit weight</b>		1.41 gr/cm <sup>3</sup>	

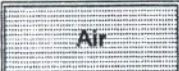


## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 1.		Date of Tested : Des. 22th. 1995		
Depth : 9.50–10.00		Tested By : RAHARDJO S		
<b>Input Data</b>				
Unit Weight		1.48 gr/cm <sup>3</sup>		
Water Content		88.42 %		
Specific Gravity		2.59		
Unit Weight of Water		1.00 gr/cm <sup>3</sup>		
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>		
Vt = 3.30	Va = 0.01		Wa = 0.00	
	Vv = 2.30		Ww = 2.29	Wt = 4.87
	Vw = 2.29		Ws = 2.59	
Vs = 1.00				
Void ratio (e)		2.30		
Degree of saturation (Sr)		99.38 %		
Porosity		0.70		
Dry unit weight		0.78 gr/cm <sup>3</sup>		
Saturated unit weight		1.48 gr/cm <sup>3</sup>		

## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 2.		Date of Tested : Des. 22th 1995			
Depth : 1.50–2.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight	1.59	gr/cm <sup>3</sup>			
Water Content	61.78	%			
Specific Gravity	2.56				
Unit Weight of Water	1.00	gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
V <sub>t</sub> = 2.61	V <sub>v</sub> = 1.61	V <sub>a</sub> = 0.02		W <sub>a</sub> = 0.00	W <sub>t</sub> = 4.15
		V <sub>w</sub> = 1.58		W <sub>w</sub> = 1.58	
	V <sub>s</sub> = 1.00			W <sub>s</sub> = 2.56	
Void ratio (e)		1.61			
Degree of saturation (Sr)		98.46 %			
Porosity		0.62			
Dry unit weight		0.98 gr/cm <sup>3</sup>			
Saturated unit weight		1.60 gr/cm <sup>3</sup>			

## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 2.		Date of Tested : Des. 22th 1995			
Depth : 3.50–4.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight	1.53	gr/cm <sup>3</sup>			
Water Content	73.74	%			
Specific Gravity	2.62				
Unit Weight of Water	1.00	gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
V <sub>t</sub> = 2.97	V <sub>v</sub> = 1.97	V <sub>a</sub> = 0.04		W <sub>a</sub> = 0.00	W <sub>t</sub> = 4.54
		V <sub>w</sub> = 1.93		W <sub>w</sub> = 1.93	
	V <sub>s</sub> = 1.00			W <sub>s</sub> = 2.62	
Void ratio (e)		1.97			
Degree of saturation (Sr)		97.79 %			
Porosity		0.66			
Dry unit weight		0.88 gr/cm <sup>3</sup>			
Saturated unit weight		1.54 gr/cm <sup>3</sup>			




## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 2.		Date of Tested : Des. 22th 1995			
Depth : 5.50–6.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight	1.45	gr/cm <sup>3</sup>			
Water Content	83.58	%			
Specific Gravity	2.62				
Unit Weight of Water	1.00	gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
Vt = 3.31	Vv = 2.31	Va = 0.12		Wa = 0.00	Wt = 4.80
		Vw = 2.19	Ww = 2.19		
	Vs = 1.00		Ws = 2.62		
Void ratio (e)		2.31			
Degree of saturation (Sr)		94.68 %			
Porosity		0.70			
Dry unit weight		0.79 gr/cm <sup>3</sup>			
Saturated unit weight		1.49 gr/cm <sup>3</sup>			

## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 2.		Date of Tested : Des. 22th 1995			
Depth : 7.50–8.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight	1.45	gr/cm <sup>3</sup>			
Water Content	98.80	%			
Specific Gravity	2.61				
Unit Weight of Water	1.00	gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
Vt = 3.60	Vv = 2.60	Va = 0.01		Wa = 0.00	Wt = 5.20
		Vw = 2.58	Ww = 2.58		
	Vs = 1.00		Ws = 2.61		
Void ratio (e)		2.60			
Degree of saturation (Sr)		99.47 %			
Porosity		0.72			
Dry unit weight		0.73 gr/cm <sup>3</sup>			
Saturated unit weight		1.45 gr/cm <sup>3</sup>			

## Weight – Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 2.		Date of Tested : Des. 22th. 1995	
Depth : 9.50 – 10.00		Tested By : RAHARDJO S	
<b>Input Data</b>			
Unit Weight		1.50	gr/cm <sup>3</sup>
Water Content		58.99	%
Specific Gravity		2.54	
Unit Weight of Water		1.00	gr/cm <sup>3</sup>
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>	
Vt = 2.70	Vv = 1.70	Va = 0.20	Wt = 4.04
		Vw = 1.50	
	Vs = 1.00		
		Wa = 0.00	Ww = 1.50
		Ws = 2.54	
Void ratio (e)		1.70	
Degree of saturation (Sr)		88.19 %	
Porosity		0.63	
Dry unit weight		0.94 gr/cm <sup>3</sup>	
Saturated unit weight		1.57 gr/cm <sup>3</sup>	


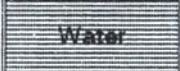

## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 3.		Date of Tested : Des. 22th 1995			
Depth : 1.50–2.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight		1.68 gr/cm <sup>3</sup>			
Water Content		52.41 %			
Specific Gravity		2.64			
Unit Weight of Water		1.00 gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
Vt= 2.39	Vv= 1.39	Va= 0.00		Wa= 0.00	Wt= 4.02
		Vw= 1.38	Water	Ww= 1.38	
	Vs= 1.00	Solid	Ws= 2.64		
Void ratio (e)		1.39			
Degree of saturation (Sr)		99.67 %			
Porosity		0.58			
Dry unit weight		1.10 gr/cm <sup>3</sup>			
Saturated unit weight		1.69 gr/cm <sup>3</sup>			


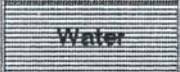

## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 3.		Date of Tested : Des. 22th 1995			
Depth : 3.50–4.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight		1.60 gr/cm <sup>3</sup>			
Water Content		56.95 %			
Specific Gravity		2.59			
Unit Weight of Water		1.00 gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
Vt= 2.54	Vv= 1.54	Va= 0.07		Wa= 0.00	Wt= 4.07
		Vw= 1.48	Water	Ww= 1.48	
	Vs= 1.00	Solid	Ws= 2.59		
Void ratio (e)		1.54			
Degree of saturation (Sr)		95.77 %			
Porosity		0.61			
Dry unit weight		1.02 gr/cm <sup>3</sup>			
Saturated unit weight		1.63 gr/cm <sup>3</sup>			


## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 3.		Date of Tested : Des. 22th 1995			
Depth : 5.50–6.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight		1.58 gr/cm <sup>3</sup>			
Water Content		62.71 %			
Specific Gravity		2.58			
Unit Weight of Water		1.00 gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
Vt = 2.65	Vv = 1.65	Va = 0.04		Wa = 0.00	Wt = 4.19
		Vw = 1.62		Ww = 1.62	
	Vs = 1.00			Ws = 2.58	
Void ratio (e)		1.65			
Degree of saturation (Sr)		97.72 %			
Porosity		0.62			
Dry unit weight		0.97 gr/cm <sup>3</sup>			
Saturated unit weight		1.59 gr/cm <sup>3</sup>			

## Weight–Volume Relationship of Unsaturated Soil

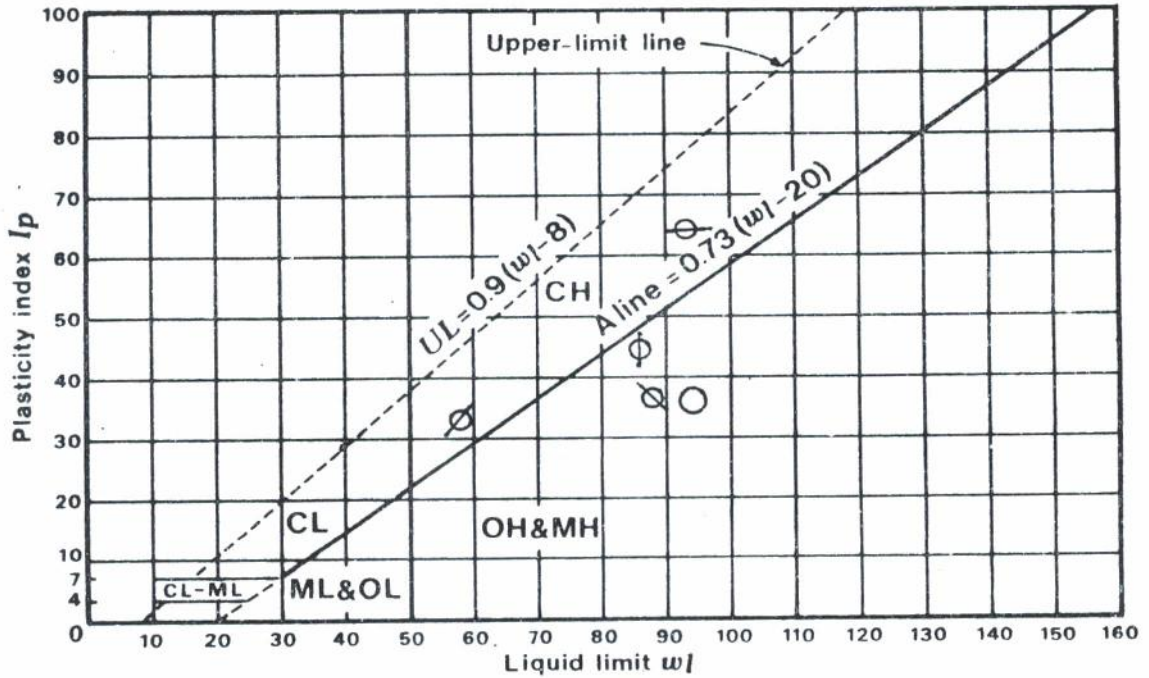
Boring No: RUKO BINTARO DB 3.		Date of Tested : Des. 22th 1995			
Depth : 7.50–8.00 m		Tested By : RAHARDJO S			
<b>Input Data</b>					
Unit Weight		1.54 gr/cm <sup>3</sup>			
Water Content		70.71 %			
Specific Gravity		2.56			
Unit Weight of Water		1.00 gr/cm <sup>3</sup>			
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>			
Vt = 2.85	Vv = 1.85	Va = 0.04		Wa = 0.00	Wt = 4.37
		Vw = 1.81		Ww = 1.81	
	Vs = 1.00			Ws = 2.56	
Void ratio (e)		1.85			
Degree of saturation (Sr)		98.01 %			
Porosity		0.65			
Dry unit weight		0.90 gr/cm <sup>3</sup>			
Saturated unit weight		1.55 gr/cm <sup>3</sup>			

## Weight–Volume Relationship of Unsaturated Soil

Boring No: RUKO BINTARO DB 3.		Date of Tested : Des. 22th. 1995	
Depth : 9.50–10.00		Tested By : RAHARDJO S	
<b>Input Data</b>			
Unit Weight		1.31	gr/cm <sup>3</sup>
Water Content		91.90	%
Specific Gravity		2.58	
Unit Weight of Water		1.00	gr/cm <sup>3</sup>
<b>Volume (Cm<sup>3</sup>)</b>		<b>Weight (Grm)</b>	
Vt= 3.79	Va= 0.42		Wa= 0.00
	Vw= 2.79		Ww= 2.37
	Vs= 1.00		Ws= 2.58
		Wt= 4.95	
Void ratio (e)		2.79	
Degree of saturation (Sr)		85.03 %	
Porosity		0.74	
Dry unit weight		0.68 gr/cm <sup>3</sup>	
Saturated unit weight		1.42 gr/cm <sup>3</sup>	

**Project** : RUKO BINTARO  
**Location** : BINTARO, JAK-SEL  
**Test By** : Ir. S Hanny E .  
**Date of Test** : Desember 1995 .

### PLASTICITY CHART



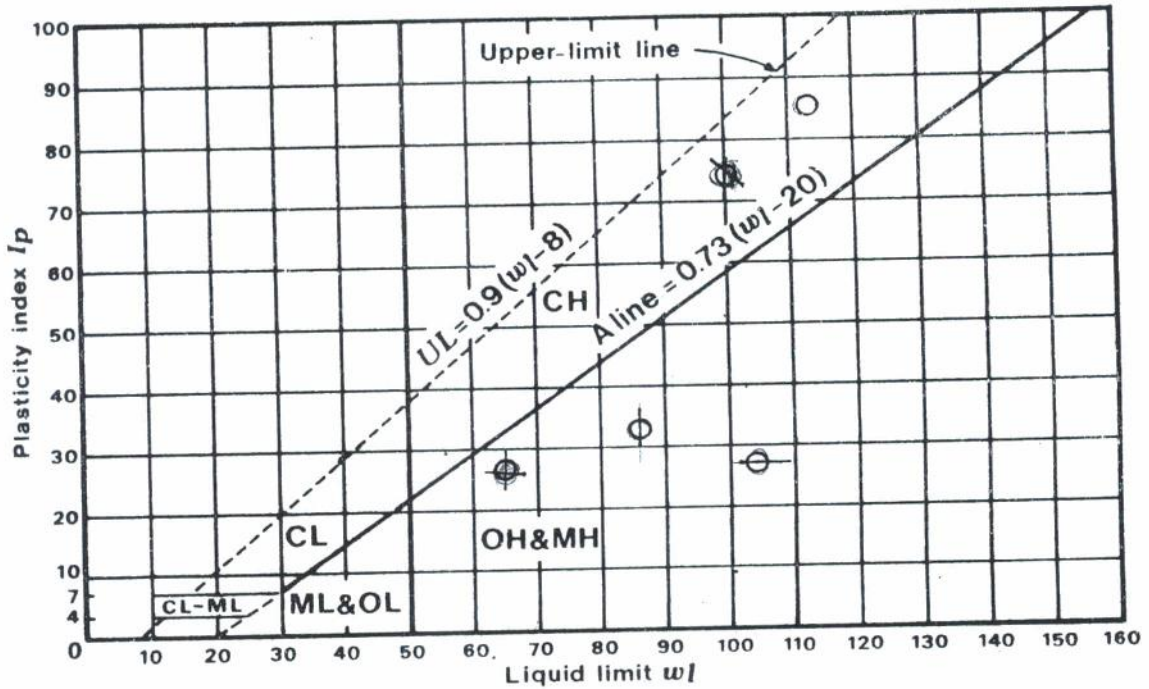
Boring No.	Depth ( M )	Symbol	WL (%)	WP (%)	IP (%)	Unified Classification
DB-1	150 - 200	○	94,72	57,3	37,42	OH & MH
	350 - 400	◐	94,08	31,46	62,62	CH
	550 - 600	◑	85,38	42,01	43,37	OH & MH
	750 - 800	◒	59,7	27,126	32,58	CH
	950 - 975	◓	89,51	51,55	37,96	OH & MH



**LABORATORIUM MEKANIKA TANAH**  
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**INSTITUT SAINS DAN TEKNOLOGI NASIONAL - JAKARTA**  
 Kampus ISTN Bhumi Srengseng Telp. 7270092

**Project** : RUKO BINTARO  
**Location** : BINTARO JAK - SEL  
**Test By** : Ir. S Hanny E  
**Date of Test** : Desember 1995 .

### PLASTICITY CHART



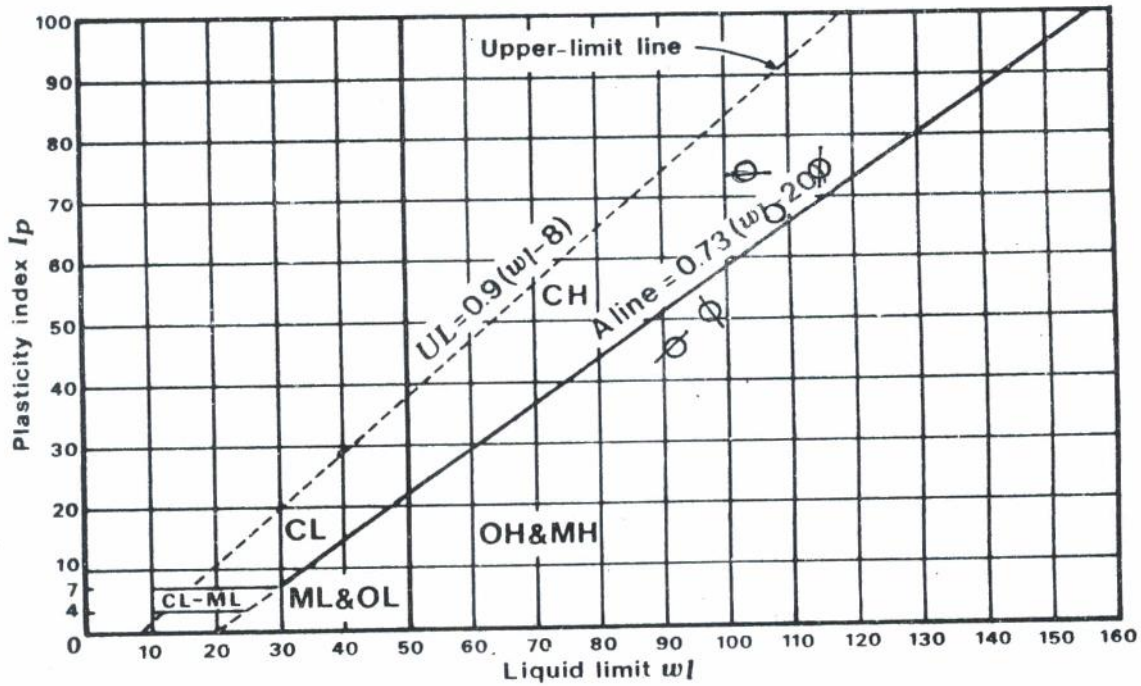
Boring No.	Depth ( M )	Symbol	WL (%)	WP (%)	IP (%)	Unified Classification
DB-2	150 - 200	○	112,39	24,98	87,41	CH
	350 - 400	⊕	86,58	54,54	32,04	OH & MH
	550 - 600	⊖	104,57	76,47	28,10	OH & MH
	750 - 800	⊗	65,85	39,77	26,08	OH & MH
	950 - 1000	⊘	100,28	25,	75,28	CH



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**Project** : RUKO BINTARO  
**Location** : BINTARO, JAK \* SEL .  
**Test By** : Ir. S Hanny E  
**Date of Test** : Desember 1995 .

### PLASTICITY CHART



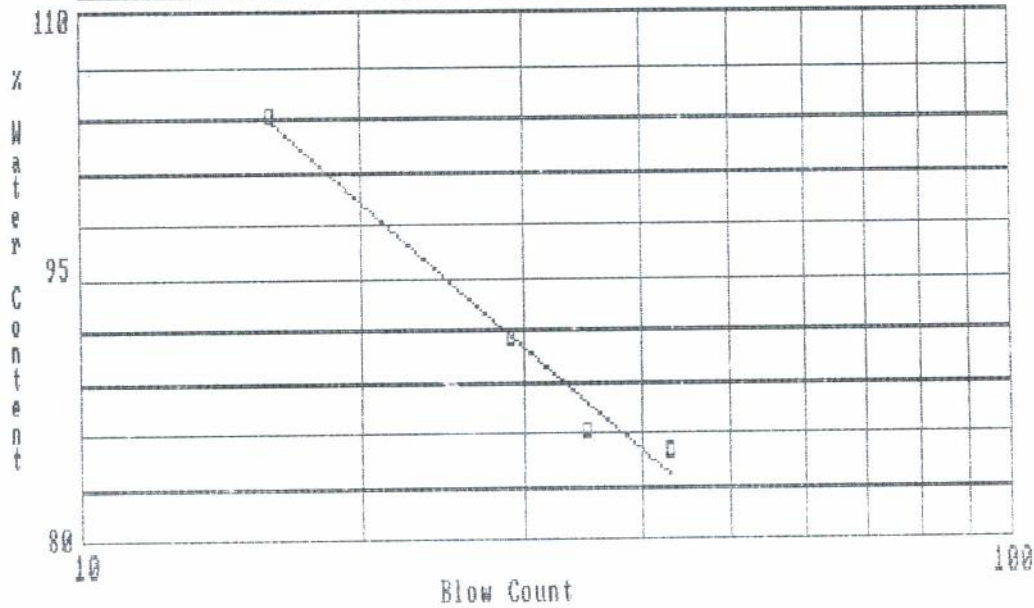
Boring No.	Depth (M)	Symbol	WL (%)	WP (%)	IP (%)	Unified Classification
DB-3	150 - 200	⊘	97,07	46,15	50,92	OH & MH
	350 - 400	⊖	101,63	27,59	74,04	CH
	550 - 600	⊘	90,6	42,286	47,74	OH & MH
	750 - 800	⊖	107,46	40,62	66,84	CH
	950 - 1000	⊕	112,93	37,11	75,82	CH



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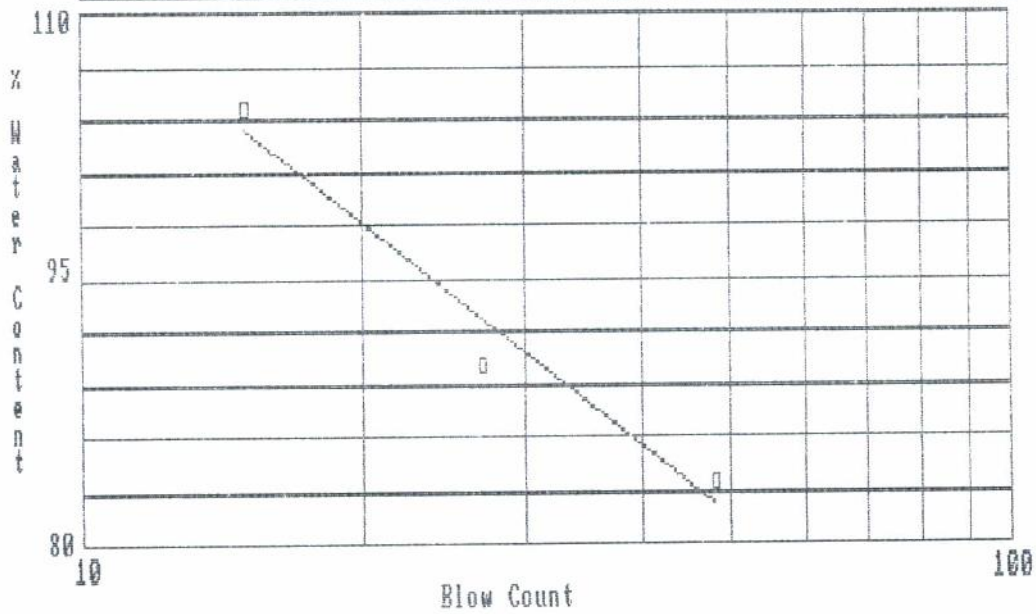
Boring No. = DB 1	Depth = 150-200	Number = RUKO BINTARO
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Sample no.	1	2	3	4					
% Water content	84.99	86.13	91.57	104.27					
Blow count	43	35	29	16					
Regression equation					Coefficient of determination				
$W = -47.2365 * \log N + 160.7508$					$R^2 = .9787$ ** Excellent Test				
Liquid limit = 94.72					Flow index = -47.24				
Input plastic limit = 57.3					Toughness index = -.79				
Plasticity index = 37.42					Shrinkage limit = 33.09				
Input natural water content = 53.1					Liquidity index = -.11				
Boring No. = DB 1			Depth = 150-200		Number = RUKO BINTARO				

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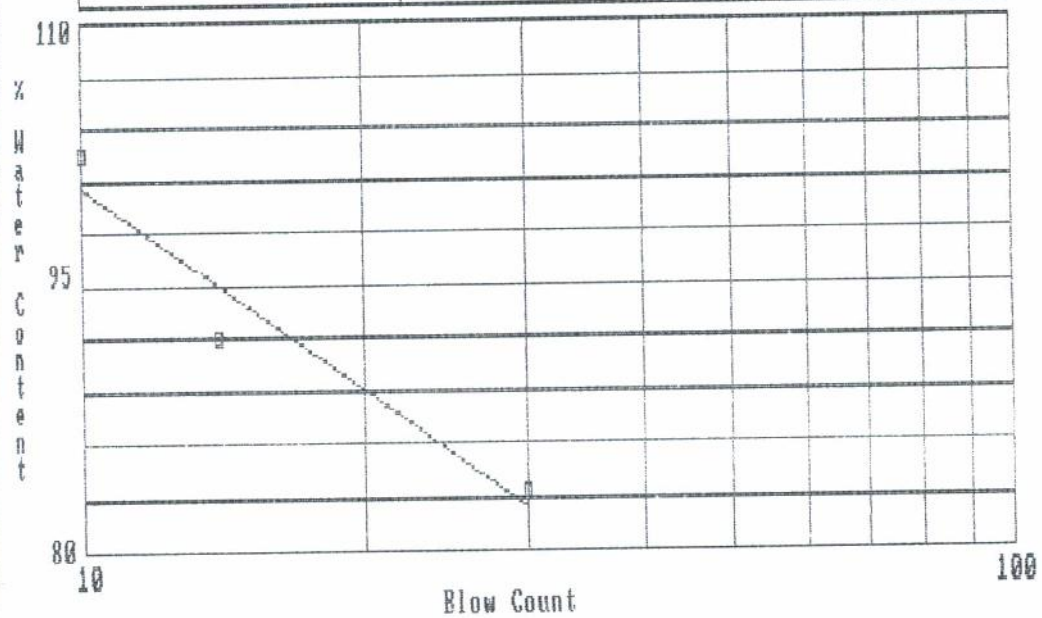
Boring No. = DB 1	Depth = 350-400	Number = RUKO BINTARO
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Sample no.	1	2	3						
% Water content	104.66	90.09	83.52						
Blow count	15	27	48						
Regression equation					Coefficient of determination				
$W = -41.902 * \log N + 152.6583$					$R^2 = .9569$ ** Excellent Test				
Liquid limit = 94.00					Flow index = -41.9				
Input plastic limit = 31.46					Toughness index = -1.49				
Plasticity index = 62.62					Shrinkage limit = 15.13				
Input natural water content = 72.24					Liquidity index = .65				
Boring No. = DB 1			Depth = 350-400			Number = RUKO BINTARO			

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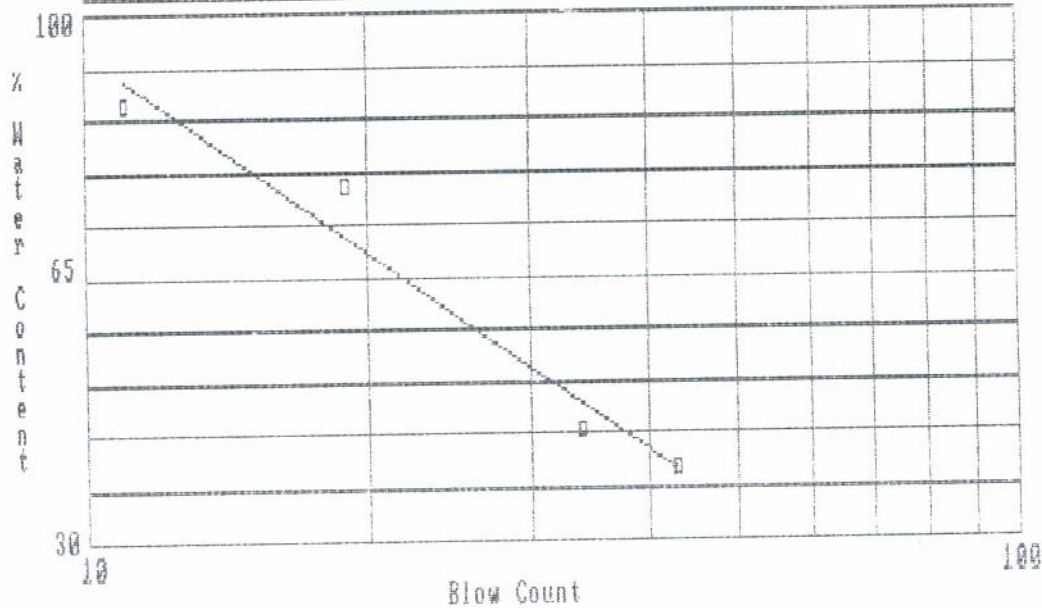
Boring No. = DB 1	Depth = 550-600	Number = RUKO BINTARO
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Sample no.	1	2	3						
% Water content	102.50	92.10	83.25						
Blow count	10	14	30						
Regression equation					Coefficient of determination				
$W = -38.8245 * \log N + 138.5389$					$R^2 = .9365$ ** Excellent Test				
Liquid limit = 95.38					Flow index = -38.02				
Input plastic limit = 42.01					Toughness index = -1.14				
Plasticity index = 43.37					Shrinkage limit = 23.19				
Input natural water content = 67.79					Liquidity index = .59				
Boring No. = DB 1			Depth = 550-600		Number = RUKO BINTARO				

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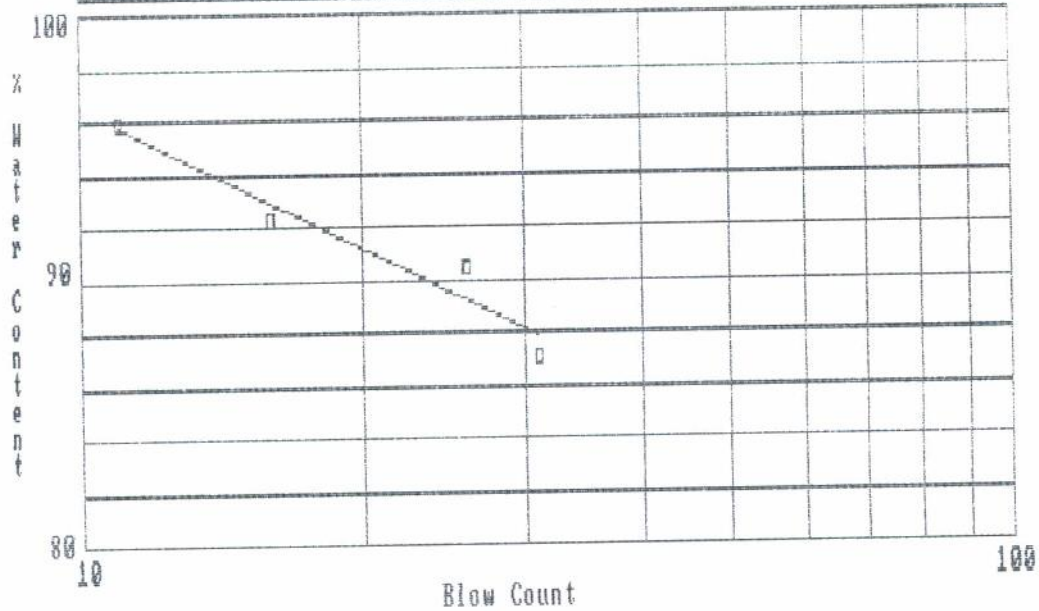
Boring No. = DB 1	Depth = 750-800	Number = RUKO BINTARO
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Sample no.	1	2	3	4				
% Water content	87.69	76.84	44.24	39.42				
Blow count	11	19	34	43				
Regression equation				Coefficient of determination				
$W = -87.8812 * \log N + 182.5545$				$R^2 = .9592$ ** Excellent Test				
Liquid limit = 59.7				Flow index = -87.88				
Input plastic limit = 27.126				Toughness index = -.37				
Plasticity index = 32.58				Shrinkage limit = 17.18				
Input natural water content = 107.84				Liquidity index = 2.48				
Boring No. = DB 1			Depth = 750-800		Number = RUKO BINTARO			

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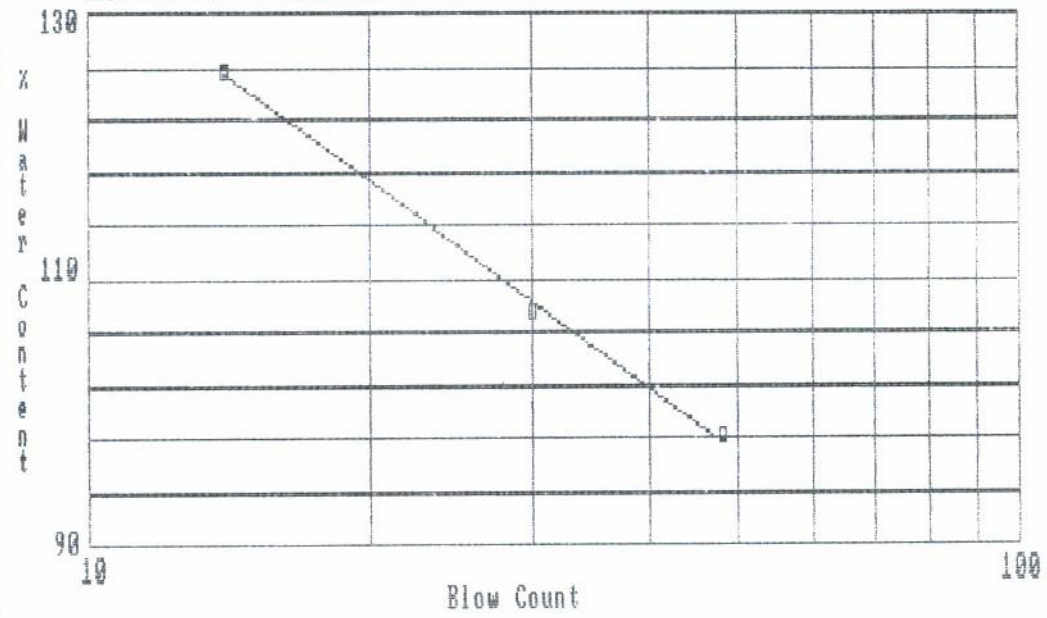
Boring No. = DB 1	Depth = 950-975	Number = RUKO BINTARO
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Sample no.	1	2	3	4				
% Water content	87.08	90.44	92.31	95.87				
Blow count	31	26	16	11				
Regression equation					Coefficient of determination			
$W = -17.3865 * \log N + 113.8174$					$R^2 = .9376$ ** Excellent Test			
Liquid limit = 89.51					Flow index = -17.39			
Input plastic limit = 51.55					Toughness index = -2.18			
Plasticity index = 37.96					Shrinkage limit = 29.73			
Input natural water content = 88.42					Liquidity index = .97			
Boring No. = DB 1			Depth = 950-975		Number = RUKO BINTARO			

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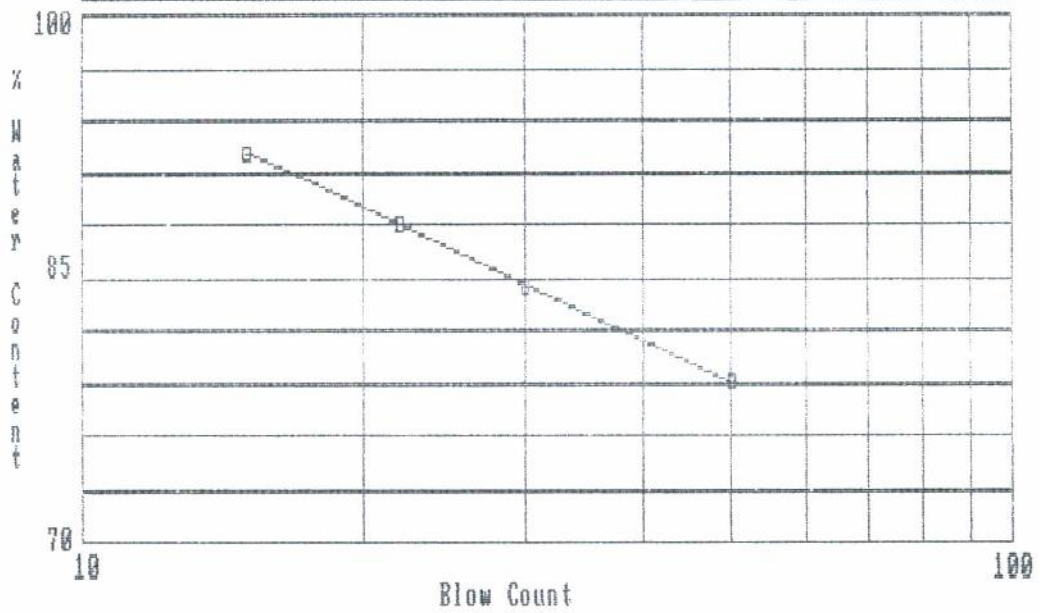
Boring No. = DB 2	Depth = 150-200	Number = RUKO BINTARO
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Sample no.	1	2	3						
% Water content	98.18	107.52	125.73						
Blow count	48	30	14						
Regression equation					Coefficient of determination				
$W = -51.8353 * \log N + 184.8499$					$R^2 = .9977$ ** Excellent Test				
Liquid limit = 112.39					Flow index = -51.84				
Input plastic limit = 24.98					Toughness index = -1.69				
Plasticity index = 87.41					Shrinkage limit = 10.63				
Input natural water content = 61.78					Liquidity index = .42				
Boring No. = DB 2			Depth = 150-200			Number = RUKO BINTARO			

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Soil Mechanics Lab. of I.S.T.N Jakarta

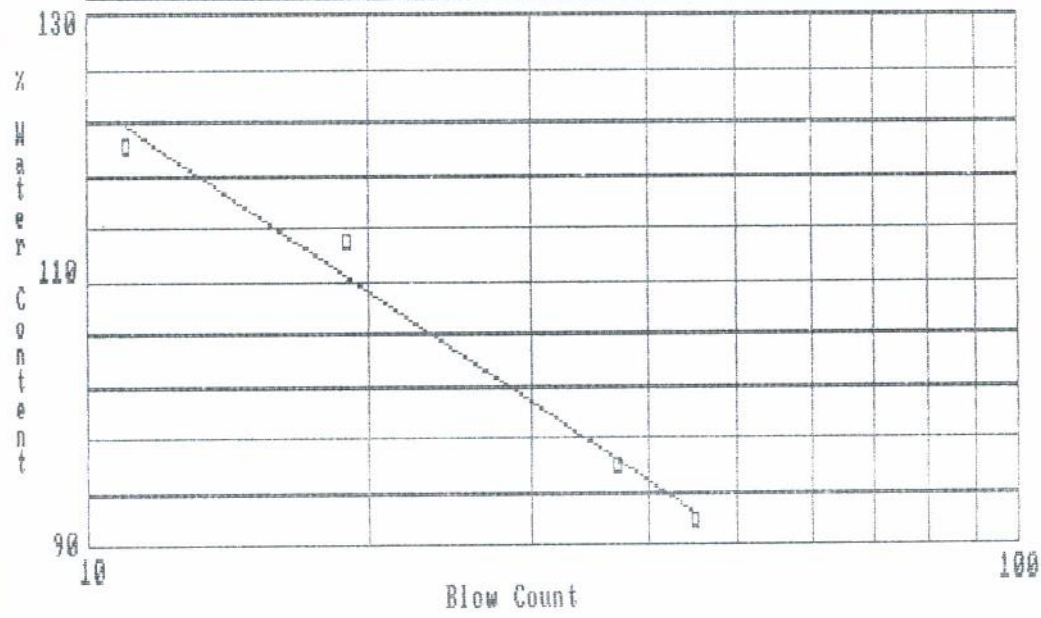
Boring No. = DB 2	Depth = 350-400	Number = RUKO BINTARO
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Sample no.	1	2	3	4					
% Water content	79.01	84.52	88.09	92.11					
Blow count	50	30	22	15					
Regression equation					Coefficient of determination				
$W = -25.1538 * \log N + 121.7442$					$R^2 = .9998$ ** Excellent Test				
Liquid limit = 86.58					Flow index = -25.15				
Input plastic limit = 54.54					Toughness index = -1.27				
Plasticity index = 32.04					Shrinkage limit = 33.51				
Input natural water content = 73.74					Liquidity index = .6				
Boring No. = DB 2			Depth = 350-400		Number = RUKO BINTARO				

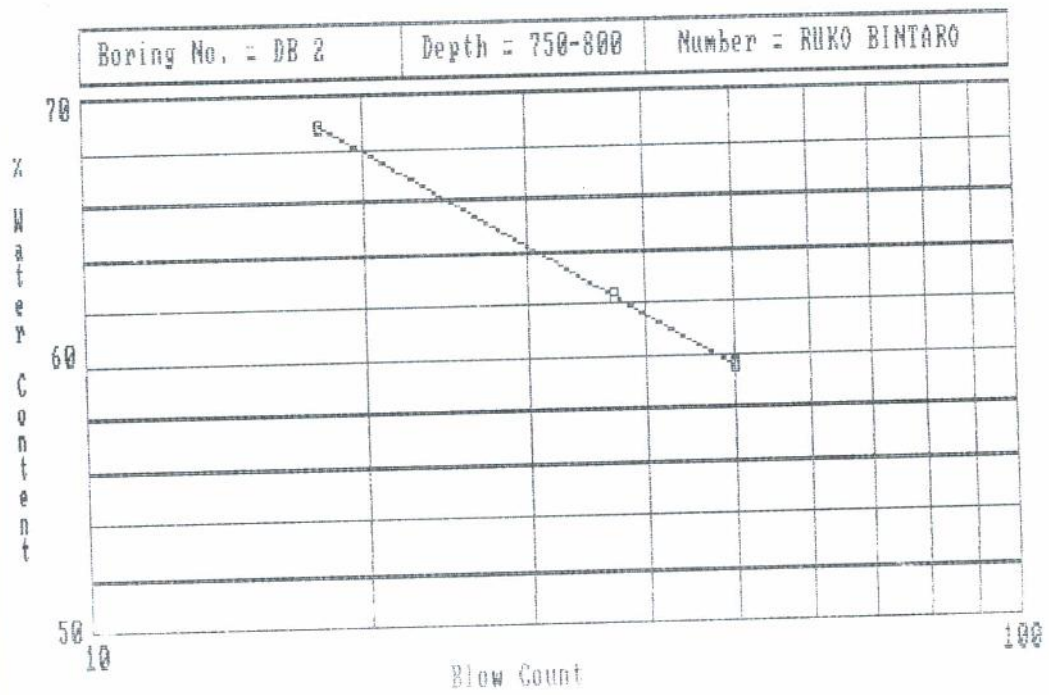
PT. KARYASUPRA POLATEKNIK , in ass. with  
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Boring No. = DB 2	Depth = 550-600	Number = RUKO BINTARO
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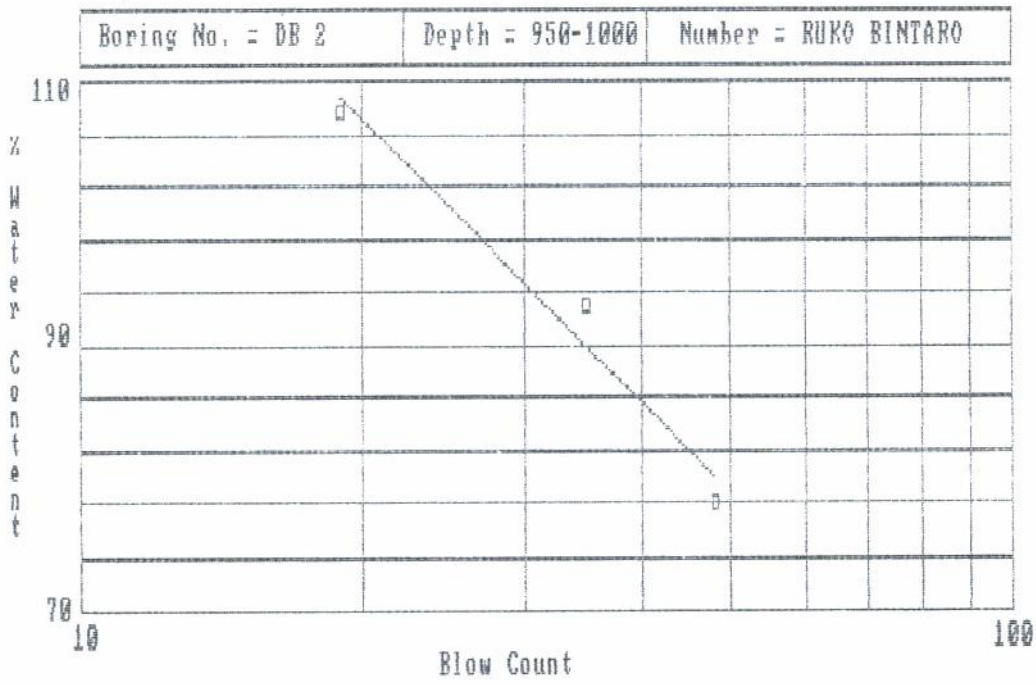
Sample no.	1	2	3	4				
% Water content	91.77	95.82	112.95	120.13				
Blow count	45	37	19	11				
Regression equation					Coefficient of determination			
$W = -47.9981 * \log N + 171.6643$					$R^2 = .9816$ ** Excellent Test			
Liquid limit = 104.57					Flow index = -48			
Input plastic limit = 76.47					Toughness index = -.59			
Plasticity index = 28.1					Shrinkage limit = 48.79			
Input natural water content = 83.58					Liquidity index = .25			
Boring No. = DB 2			Depth = 550-600		Number = RUKO BINTARO			





Sample no.	1	2	3				
% Water content	68.84	62.32	59.49				
Blow count	18	37	50				
Regression equation				Coefficient of determination			
W = -21.0207 * logN + 95.2397				R <sup>2</sup> = .9999    ** Excellent Test			
Liquid limit = 65.05				Flow index = -21.02			
Input plastic limit = 39.77				Toughness index = -1.24			
Plasticity index = 26.08				Shrinkage limit = 26.56			
Input natural water content = 98.0				Liquidity index = 2.26			
Boring No. = DB 2			Depth = 750-800		Number = RUKO BINTARO		

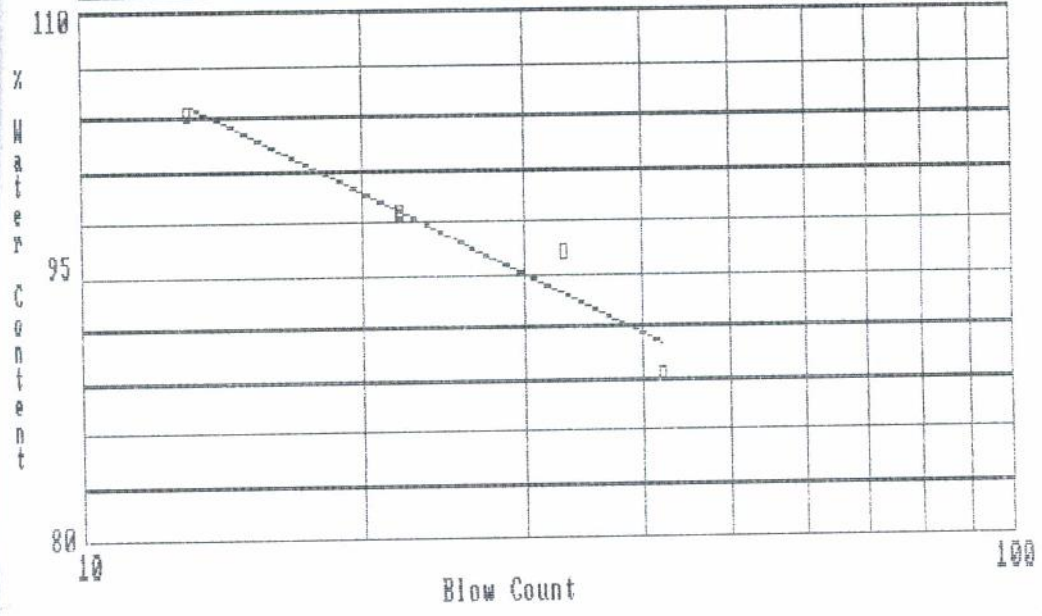
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Sample no.	1	2	3						
% Water content	77.92	92.94	107.75						
Blow count	48	35	19						
Regression equation					Coefficient of determination				
W = -71.6364 * logN + 200.425					R <sup>2</sup> = .9659    ** Excellent Test				
Liquid limit = 100.28					Flow index = -71.64				
Input plastic limit = 25					Toughness index = -1.05				
Plasticity index = 75.28					Shrinkage limit = 11.4				
Input natural water content = 58.99					Liquidity index = .45				
Boring No. = DB 2			Depth = 950-1000			Number = RUKO BINTARO			

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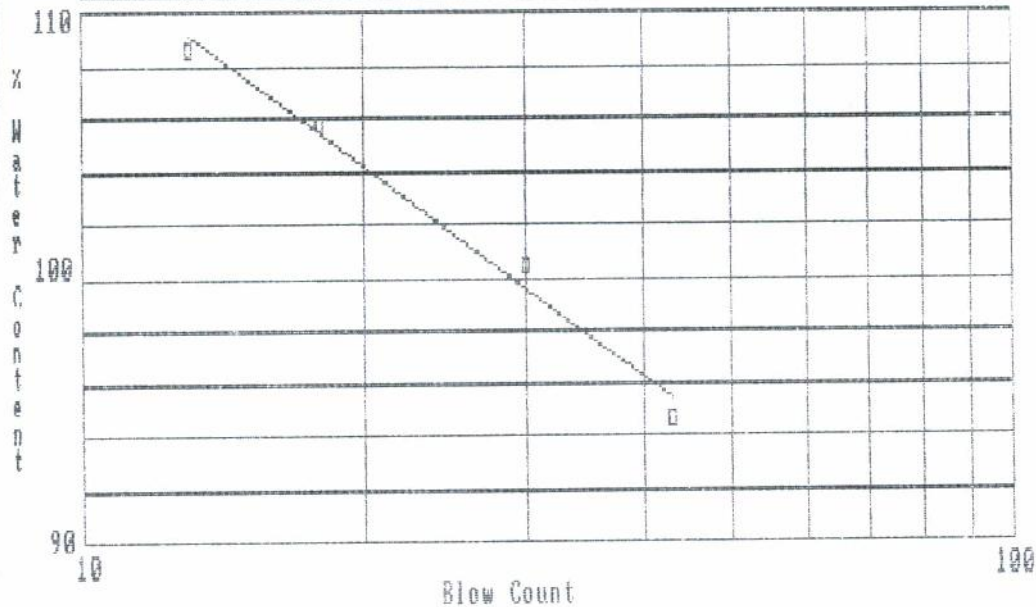
Boring No. = DB 3	Depth = 150-200	Number = RUKO BINTARO
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Sample no.	1	2	3	4				
% Water content	89.23	96.19	98.50	104.20				
Blow count	42	33	22	13				
Regression equation					Coefficient of determination			
$W = -26.677 * \log N + 134.365$					$R^2 = .9216$ ** Excellent Test			
Liquid limit = 97.07					Flow index = -26.68			
Input plastic limit = 46.15					Toughness index = -1.91			
Plasticity index = 50.92					Shrinkage limit = 23.6			
Input natural water content = 52.41					Liquidity index = .12			
Boring No. = DB 3			Depth = 150-200		Number = RUKO BINTARO			

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Soil Mechanics Lab. of I.S.T.N Jakarta

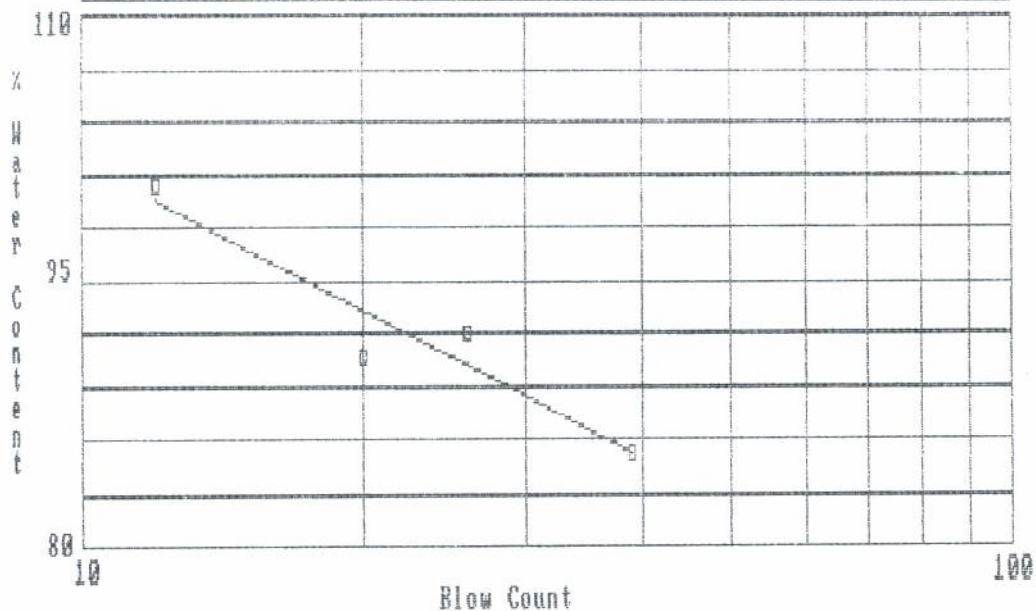
Boring No. = DB 3	Depth = 350-400	Number = RUKO BINTARO
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Sample no.	1	2	3	4				
% Water content	94.70	100.42	105.74	108.61				
Blow count	43	30	18	13				
Regression equation					Coefficient of determination			
$W = -26.3987 * \log N + 138.5341$					$R^2 = .9853$ ** Excellent Test			
Liquid limit = 101.63					Flow index = -26.4			
Input plastic limit = 27.59					Toughness index = -2.8			
Plasticity index = 74.04					Shrinkage limit = 12.49			
Input natural water content = 56.95					Liquidity index = .4			
Boring No. = DB 3			Depth = 350-400		Number = RUKO BINTARO			

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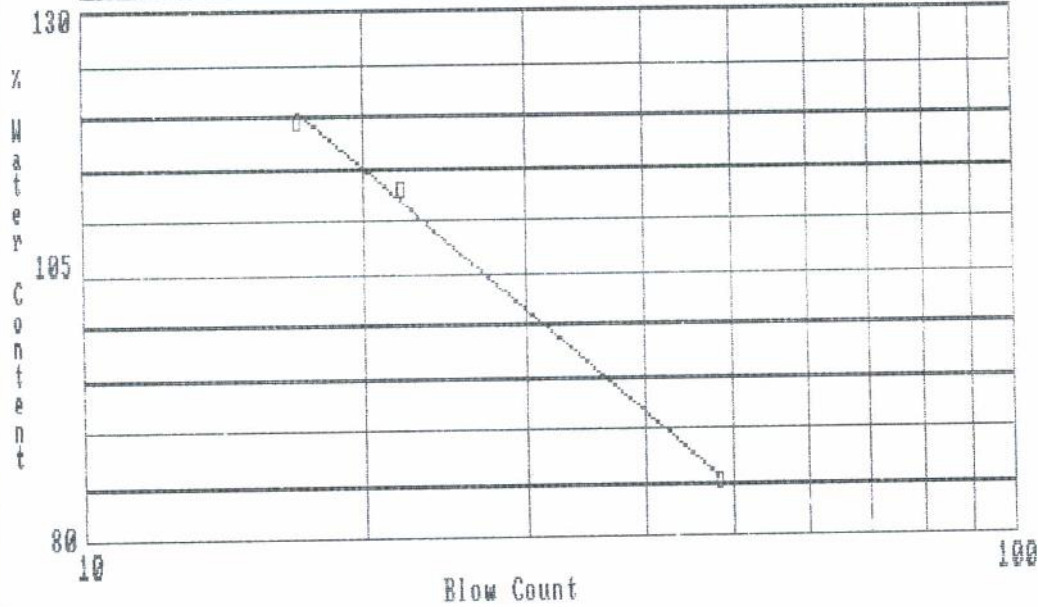
Boring No. = DB 3	Depth = 550-600	Number = RUKO BINTARO
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Sample no.	1	2	3	4				
% Water content	85.17	91.92	90.74	100.29				
Blow count	39	26	20	12				
Regression equation					Coefficient of determination			
W = -27.7895 * logN + 129.451					R <sup>2</sup> = .9108      ** Excellent Test			
Liquid limit = 90.6					Flow index = -27.79			
Input plastic limit = 42.86					Toughness index = -1.72			
Plasticity index = 47.74					Shrinkage limit = 22.67			
Input natural water content = 62.71					Liquidity index = .42			
Boring No. = DB 3			Depth = 550-600		Number = RUKO BINTARO			

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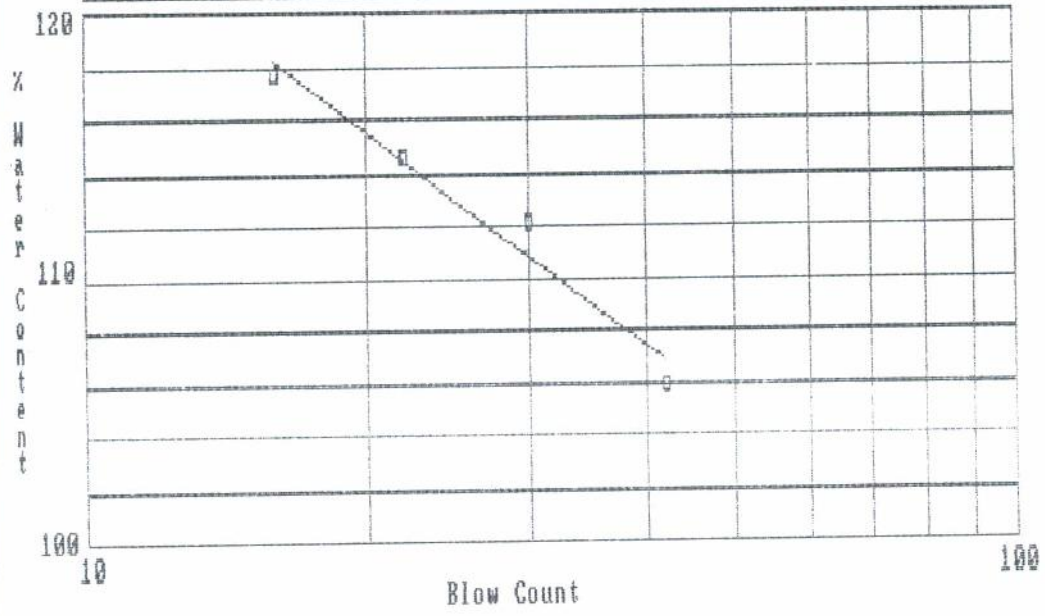
Boring No. = DB 3	Depth = 750-800	Number = RUKO BINTARO
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Sample no.	1	2	3					
% Water content	119.47	113.05	85.16					
Blow count	17	22	48					
Regression equation				Coefficient of determination				
$W = -77.5532 * \log N + 215.8698$				$R^2 = .9959$ ** Excellent Test				
Liquid limit = 107.46				Flow index = -77.55				
Input plastic limit = 40.62				Toughness index = -.86				
Plasticity index = 66.84				Shrinkage limit = 18.43				
Input natural water content = 70.71				Liquidity index = .45				
Boring No. = DB 3			Depth = 750-800		Number = RUKO BINTARO			

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Boring No. = DB 3	Depth = 950-1000	Number = RUKO BINTARO
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Sample no.	1	2	3	4				
% Water content	117.64	114.54	112.08	105.99				
Blow count	16	22	30	42				
Regression equation					Coefficient of determination			
$W = -26.9507 * \log N + 150.6079$					$R^2 = .9631$ ** Excellent Test			
Liquid limit = 112.93					Flow index = -26.95			
Input plastic limit = 37.11					Toughness index = -2.81			
Plasticity index = 75.82					Shrinkage limit = 15.97			
Input natural water content = 91.9					Liquidity index = .72			
Boring No. = DB 3			Depth = 950-1000		Number = RUKO BINTARO			

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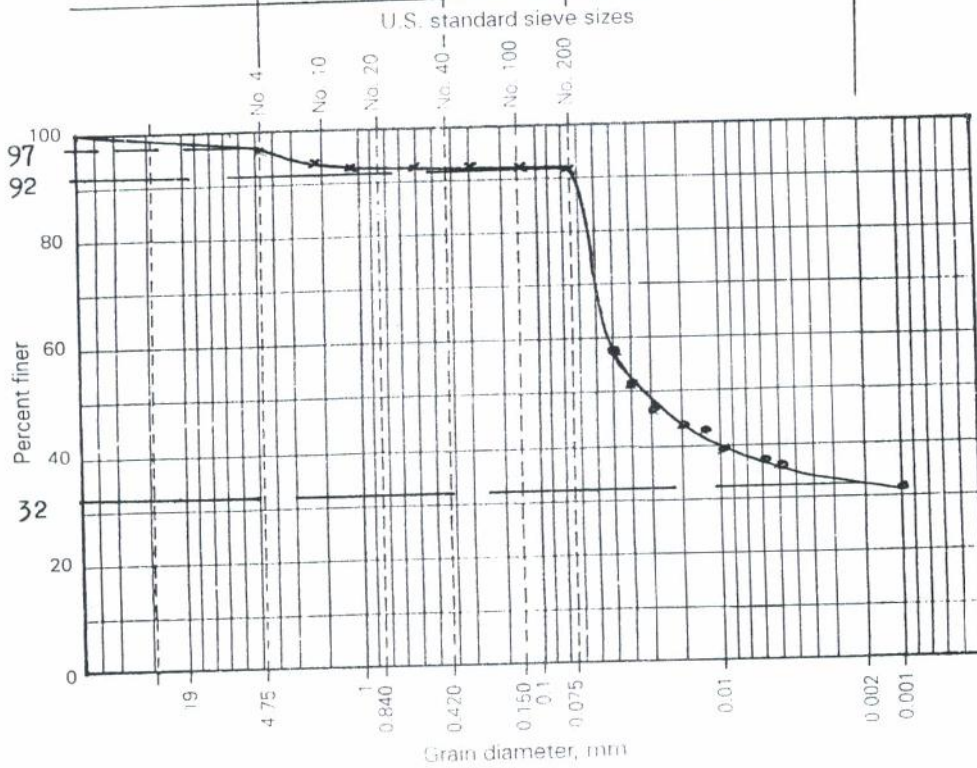




GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-1 Sample No. 2  
 Description of Soil \_\_\_\_\_ Depth of Sample 350 - 400  
 Tested By Ir. Rahardjo. S Date of Testing Desember 1995

Gravel	Sand		Silt	Clay
	Coarse to medium	Fine		



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_ System Hydrometer and sieve analysis

Gravel = 3 %  
 Sand = 5 %

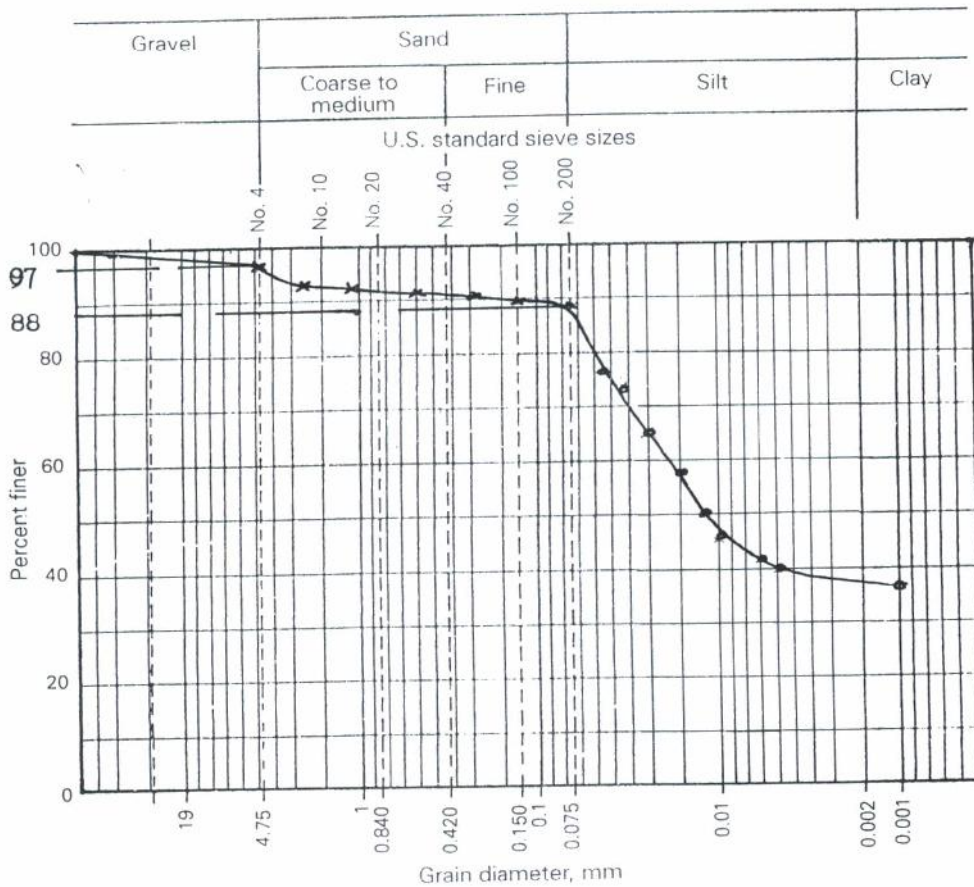
Silt = 60 %  
 Clay = 32 %



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GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-1 Sample No. 3  
 Description of Soil \_\_\_\_\_ Depth of Sample 550 - 600  
 Tested By Ir. Rahardjo. S Date of Testing Desember 1995



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_

System Hydrometer and sieve analysis

Gravel = 3 %.

Silt = 48 %.

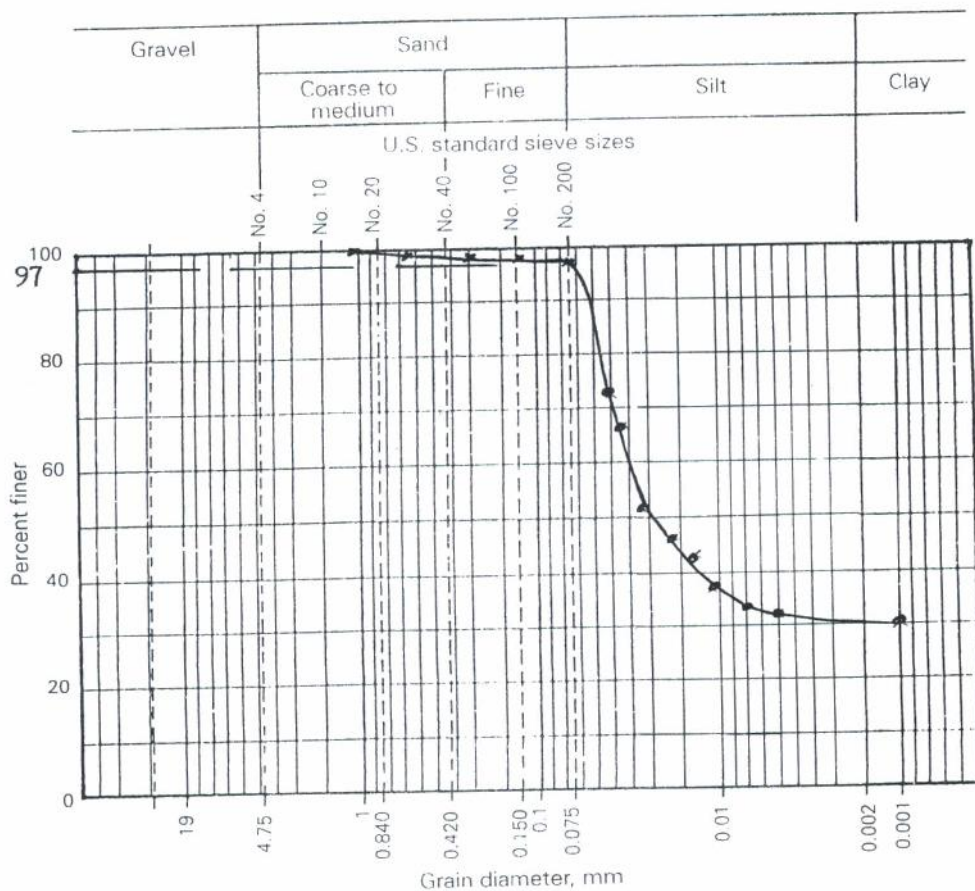
Sand = 9 %.

Clay = 40 %.



GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
Location of Project Bintaro Boring No. DB - 1 Sample No. 4  
Description of Soil \_\_\_\_\_ Depth of Sample 750 - 800  
Tested By Ir. Bhardjo S Date of Testing Desember 1995 .



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_ System Hydrometer and sieve analysis

Sand = 3 %.

Clay = 30 %.

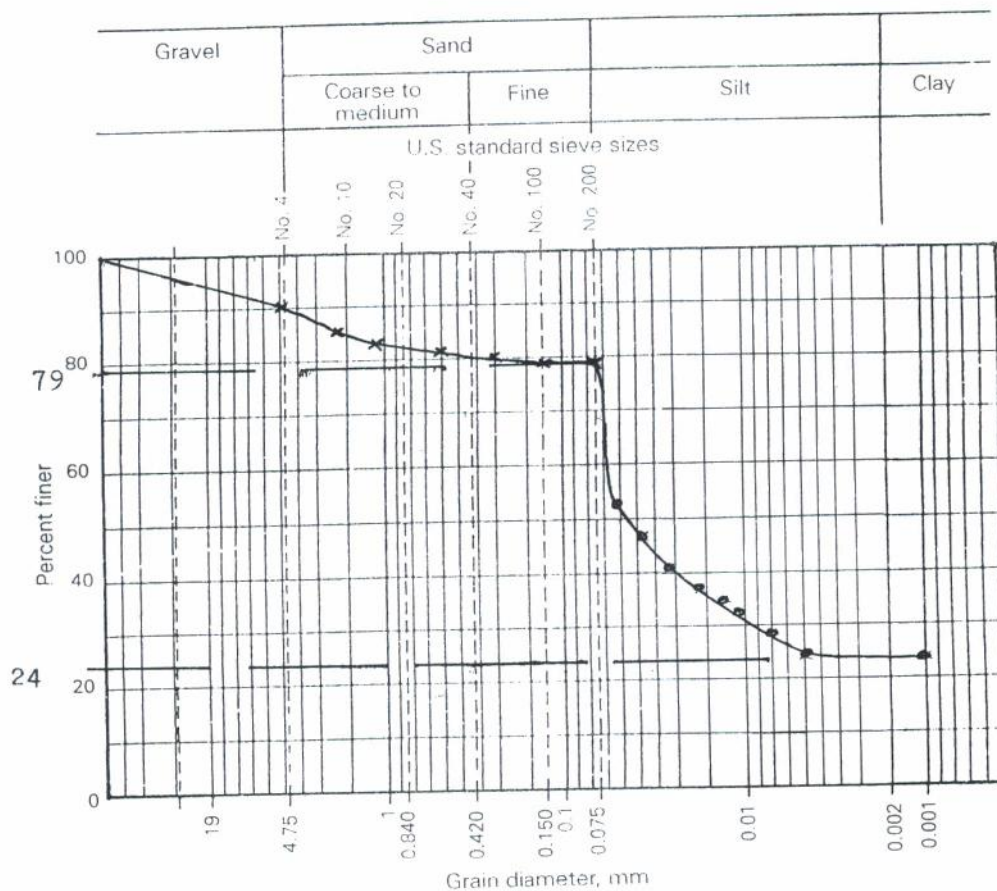
Silt = 67 %.



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GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-1 Sample No. 5  
 Description of Soil \_\_\_\_\_ Depth of Sample 950 - 1000 .  
 Tested By Ir. Rahardjo S Date of Testing \_\_\_\_\_



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_

System Hydrometer and sieve analysis

Gravel = 10 %.  
 Sand = 11 %.

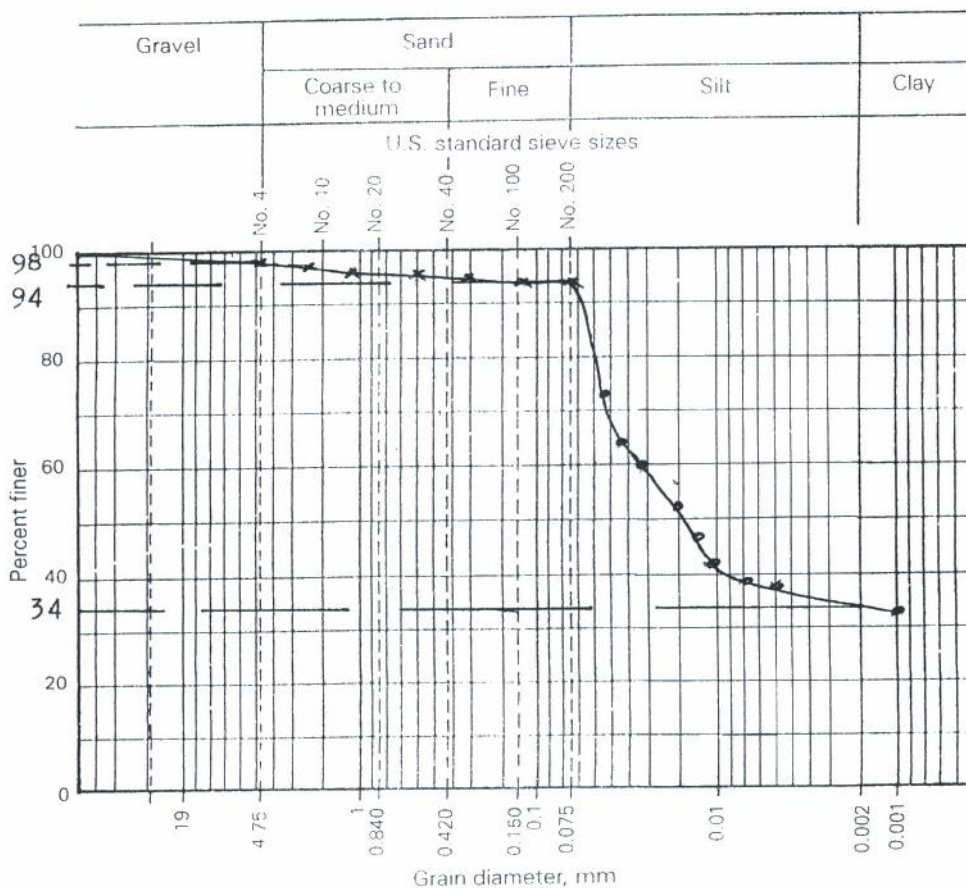
Silt = 55 %.  
 Clay = 24 %.



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GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-2 Sample No. 1  
 Description of Soil \_\_\_\_\_ Depth of Sample 150 - 200  
 Tested By Ir. Rahardjo S Date of Testing Desember 1995 .



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_

System Hydrometer and sieve analysis

Gravel = 2 %.

Silt = 60 %.

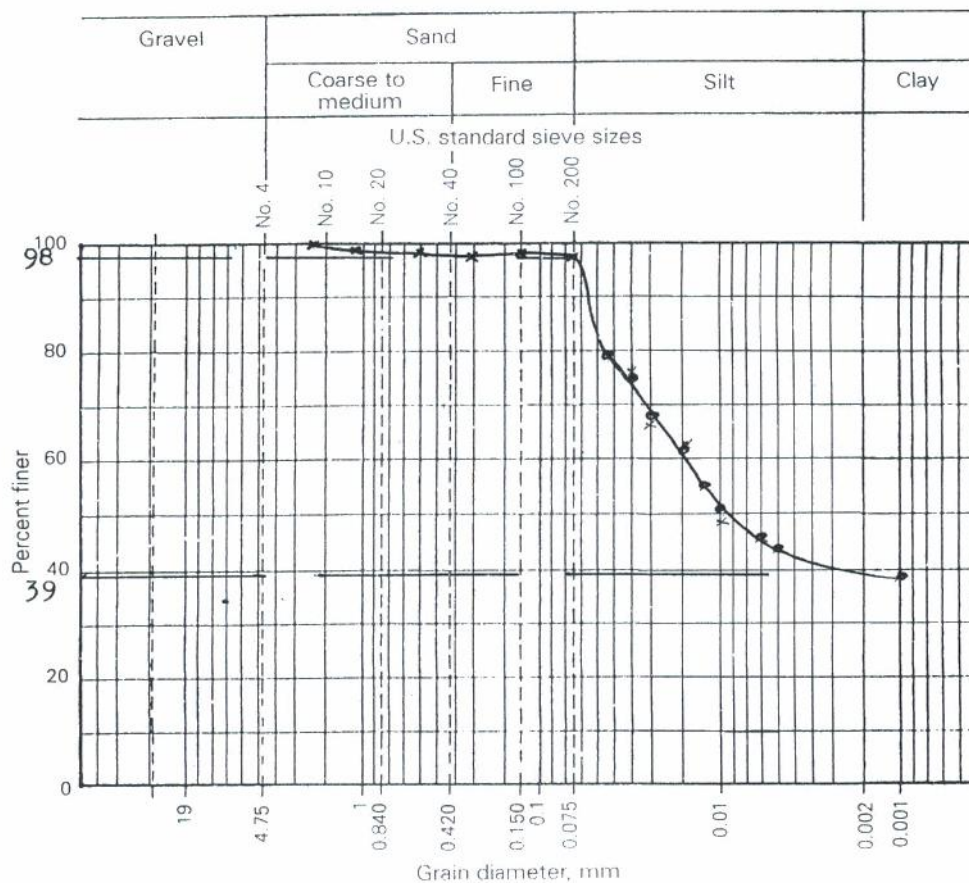
Sand = 4 %.

Clay = 34 %.



GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-2 Sample No. 2  
 Description of Soil \_\_\_\_\_ Depth of Sample 350 - 400  
 Tested By Ir. Rahardjo. S Date of Testing Desember 1995 .



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_ System Hydrometer and sieve analysis

Sand = 2 %.

Clay = 39 %.

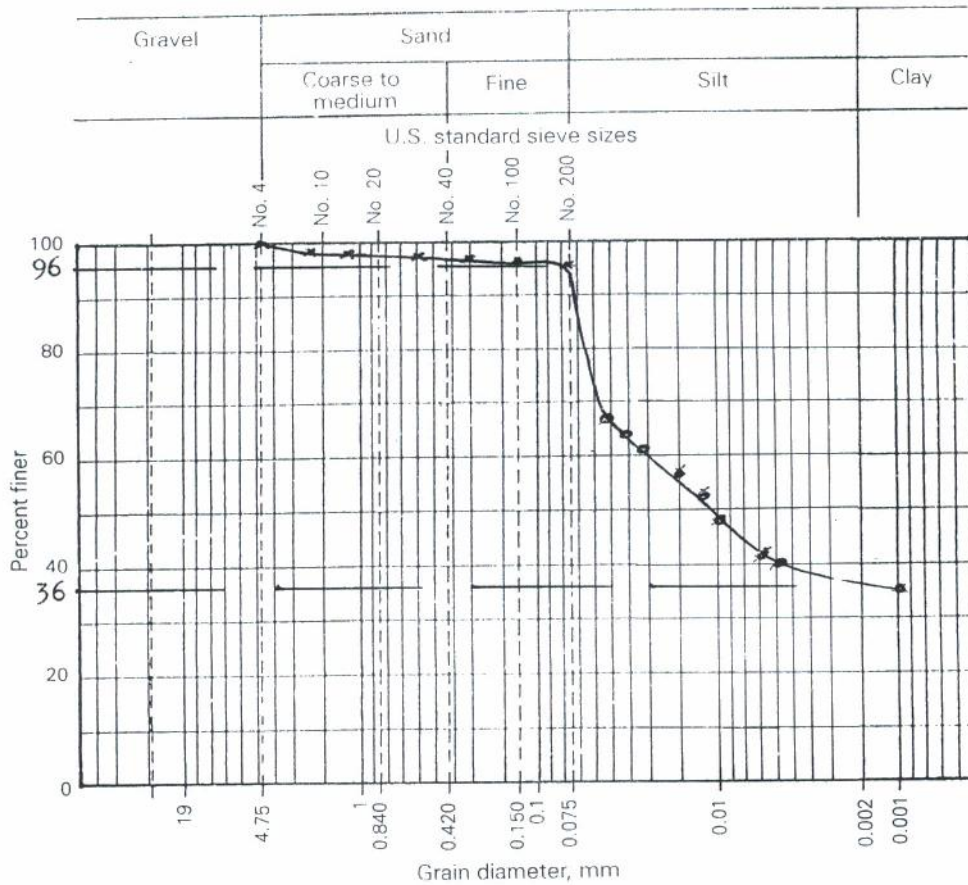
Silt = 59 %.



**LABORATORIUM MEKANIKA TANAH**  
**JURUSAN TEKNIK SIPIL - FTSP**  
**INSTITUT SAINS DAN TEKNOLOGI NASIONAL - JAKARTA**  
Kampus ISTN Bhumi Srengseng Telp. 7270092 Fax. 7270090

**GRAIN SIZE DISTRIBUTION**

Project R u k o Job No. \_\_\_\_\_  
Location of Project Bintaro Boring No. DB-2 Sample No. 3  
Description of Soil \_\_\_\_\_ Depth of Sample 550 - 600  
Tested By Ir. Rahardjo. S Date of Testing Desember 1995 .



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_

System Hydrometer and sieve analysis

Sand = 4 %.

Clay = 36 %.

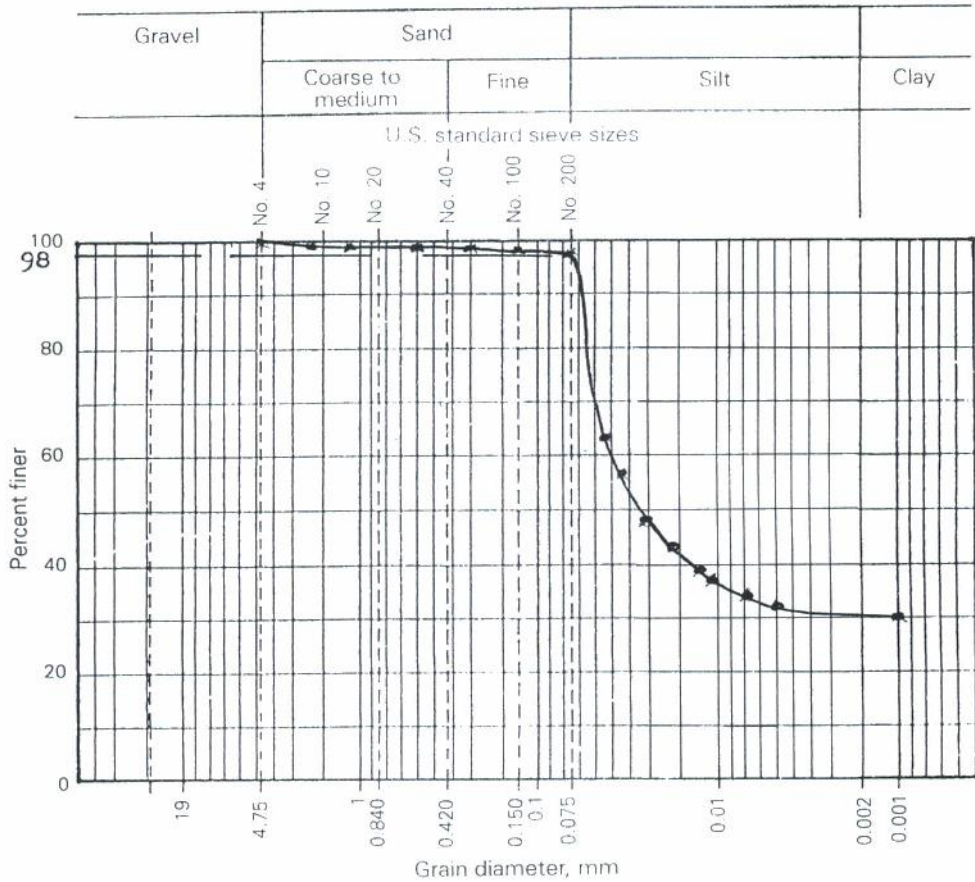
Silt = 60 %.



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**GRAIN SIZE DISTRIBUTION**

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-2 Sample No. 4  
 Description of Soil \_\_\_\_\_ Depth of Sample 750 - 800 .  
 Tested By Ir. Rahardjo S Date of Testing Desember 1995



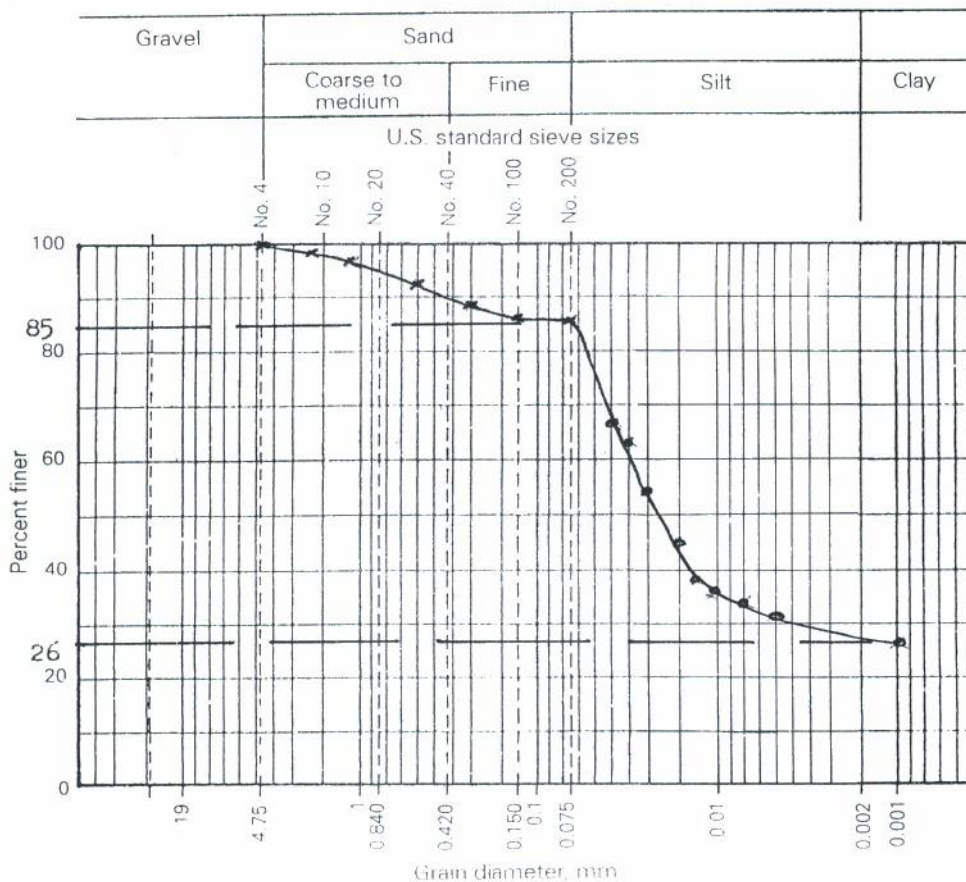




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GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-2 Sample No. 5  
 Description of Soil \_\_\_\_\_ Depth of Sample 950 - 1000 .  
 Tested By Ir. Rahardjo S Date of Testing Desember 1995 .



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_ System Hydrometer and sieve analysis

Sand = 15 %.

Clay = 26 %.

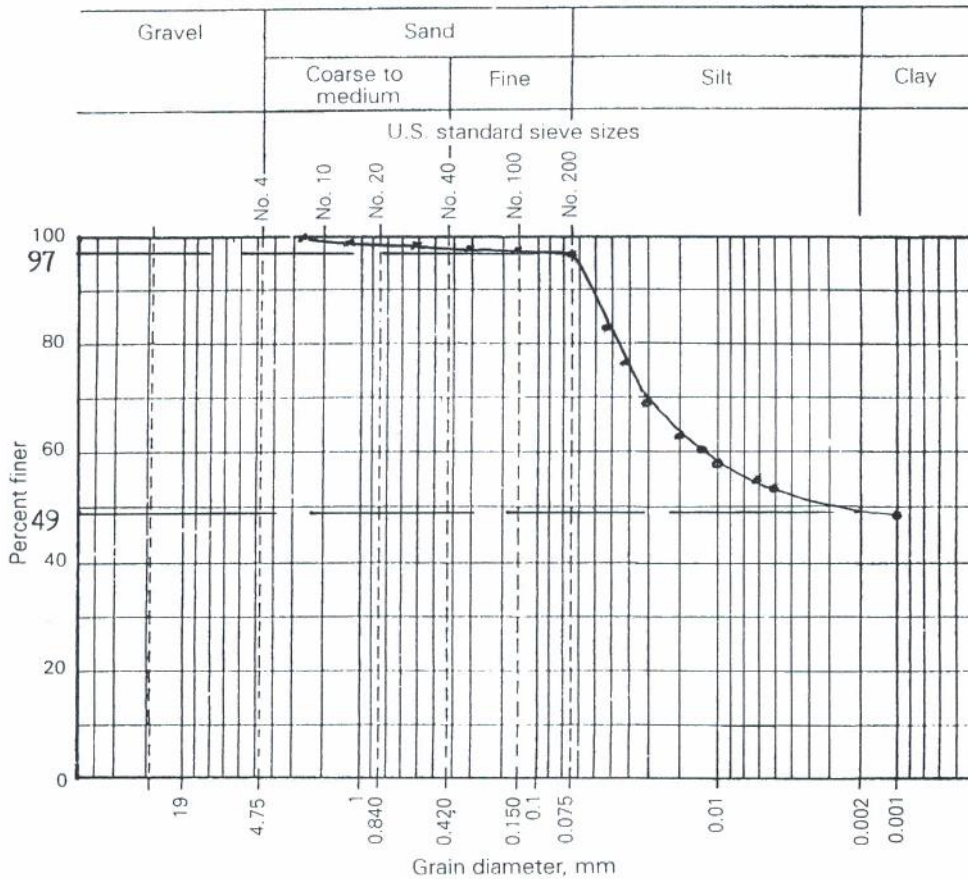
Silt = 59 %.



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GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
Location of Project Bintaro Boring No. DB-3 Sample No. 1  
Description of Soil \_\_\_\_\_ Depth of Sample 150' - 200  
Tested By Ir. Rahardjo S Date of Testing Desember 1995



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_

System Hydrometer and sieve analysis

Sand = 3 %.

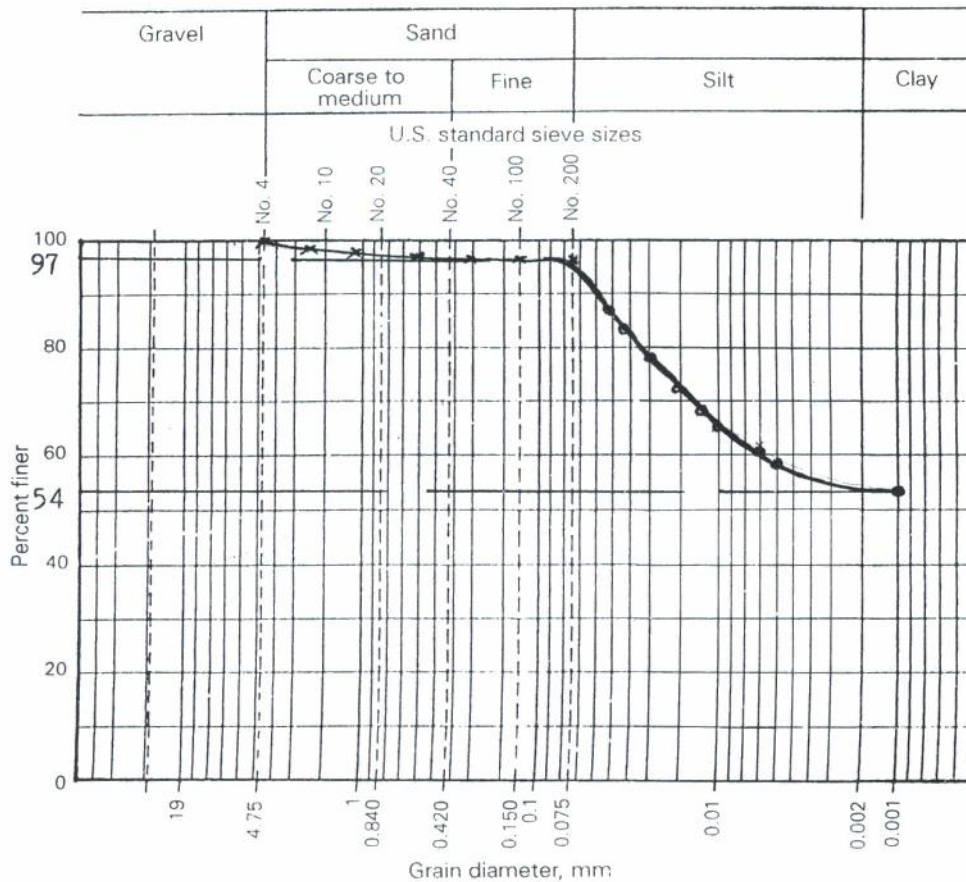
Clay = 49 %.

Silt = 48 %.



GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-3 Sample No. 2  
 Description of Soil \_\_\_\_\_ Depth of Sample 350 - 400  
 Tested By Ir. Rahardjo S Date of Testing Desember 1995



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_

System Hydrometer and sieve analysis

Sand = 3 %.

Silt = 43 %.

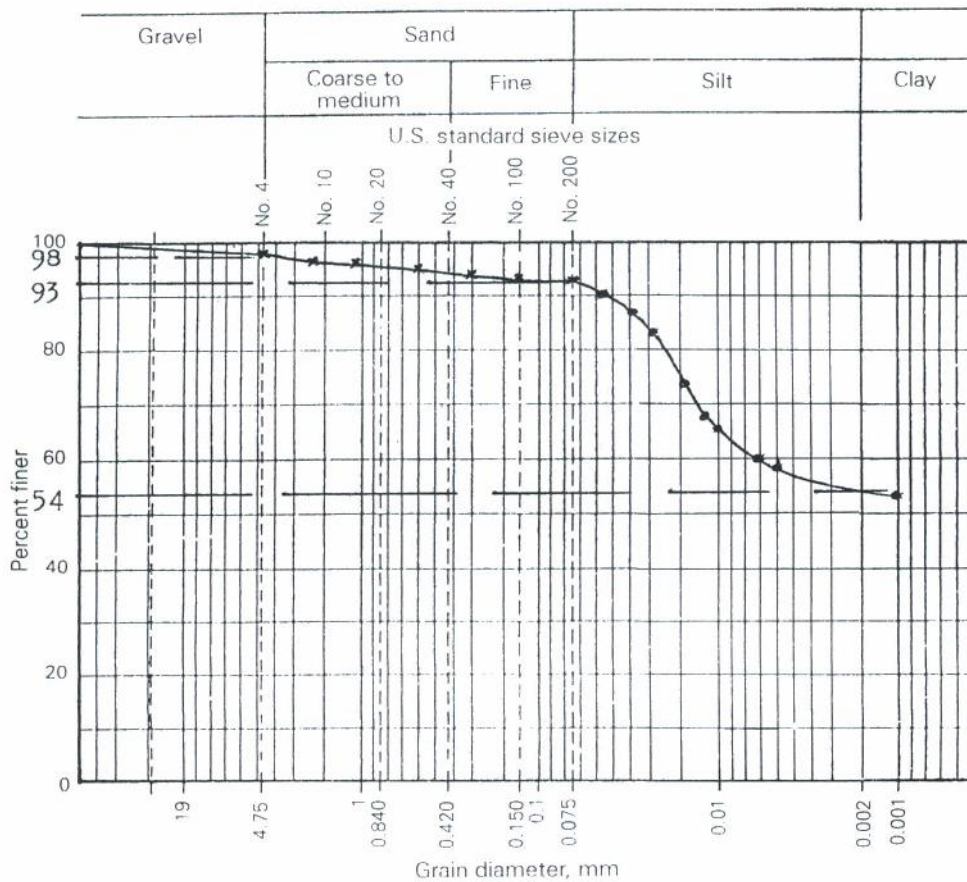
Clay = 54 %.



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GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-3 Sample No. 3  
 Description of Soil \_\_\_\_\_ Depth of Sample 550-600  
 Tested By Ir. Rahardjo S Date of Testing Desember 1995



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_

System Hydrometer and sieve analysis

Gravel = 2 %.

Silt = 39 %.

Sand = 5 %.

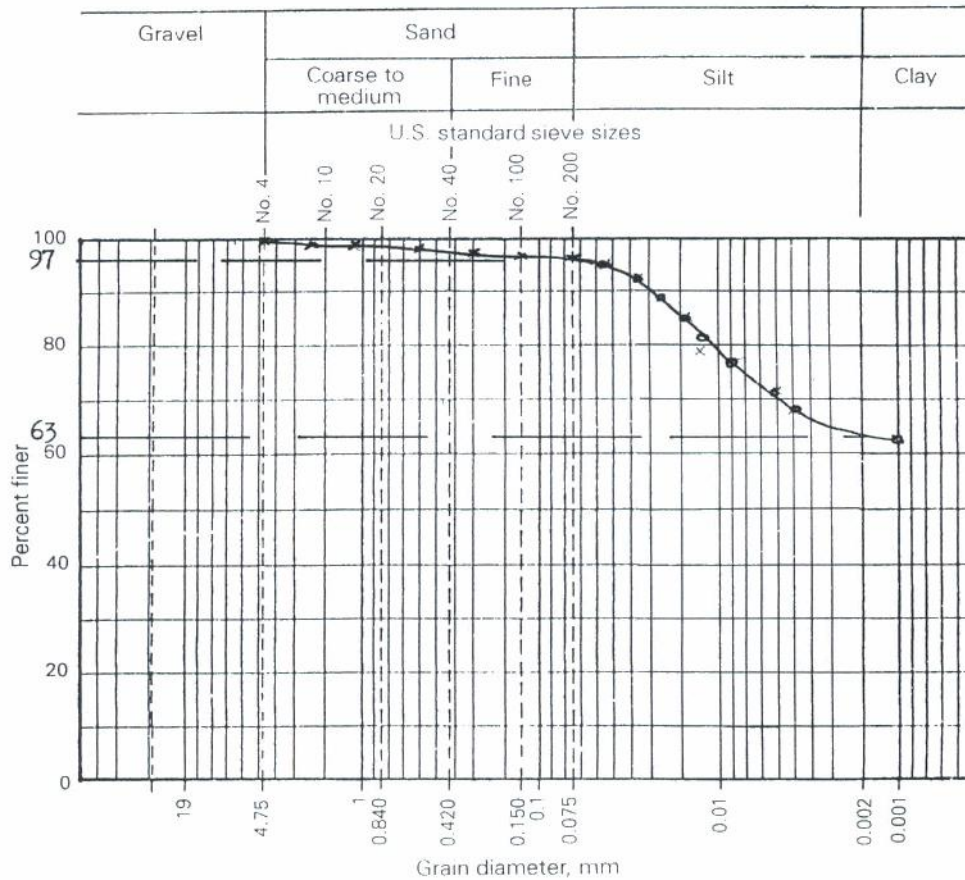
Clay = 54 %.



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GRAIN SIZE DISTRIBUTION

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-3 Sample No. 4  
 Description of Soil \_\_\_\_\_ Depth of Sample 750 - 800  
 Tested By Ir. Rahardjo S Date of Testing Desember 1995



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_  
 System Hydrometer and sieve analysis

Sand = 3 %.

Clay = 63 %.

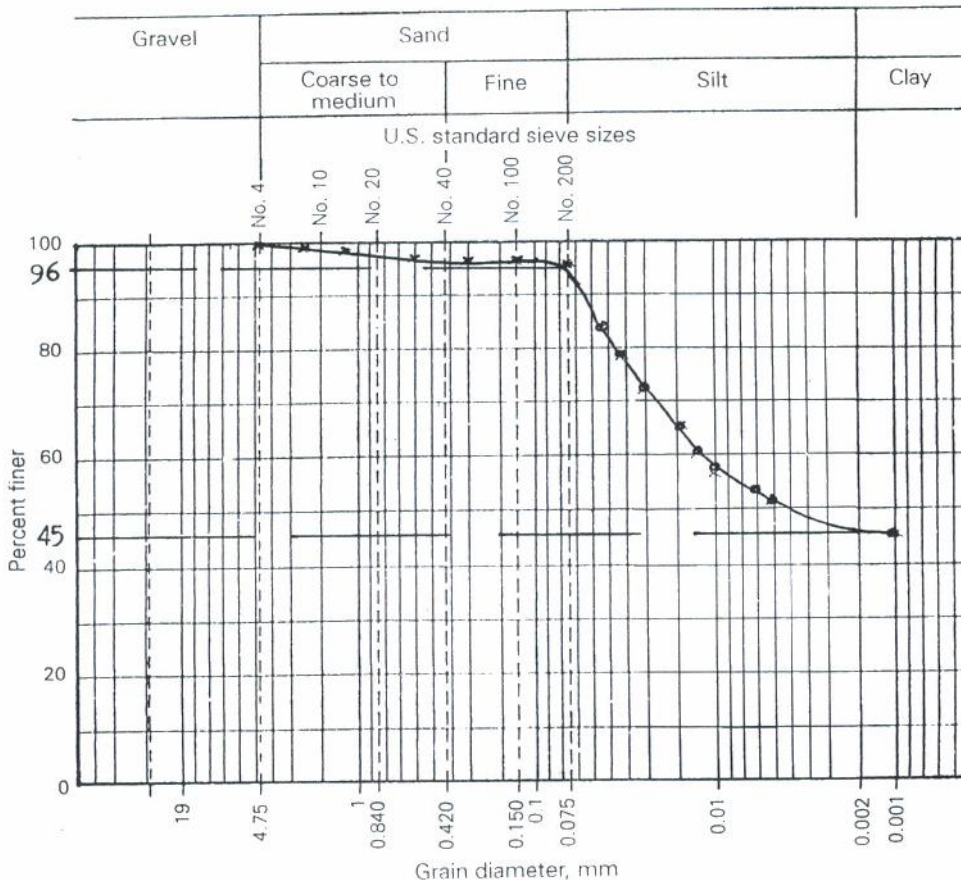
Silt = 34 %.



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**GRAIN SIZE DISTRIBUTION**

Project R u k o Job No. \_\_\_\_\_  
 Location of Project Bintaro Boring No. DB-3 Sample No. 5  
 Description of Soil \_\_\_\_\_ Depth of Sample 950 - 1000  
 Tested By Ir. Rahardjo S Date of Testing Desember 1995



Visual soil description \_\_\_\_\_

Soil classification \_\_\_\_\_ System Hydrometer and sieve analysis

Sand = 4 %                      Clay = 45 %  
 Silt = 51 %

## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 1	Checked by	NANA S
Depth	150 - 200 Cm	Approved by	

### Sample Data

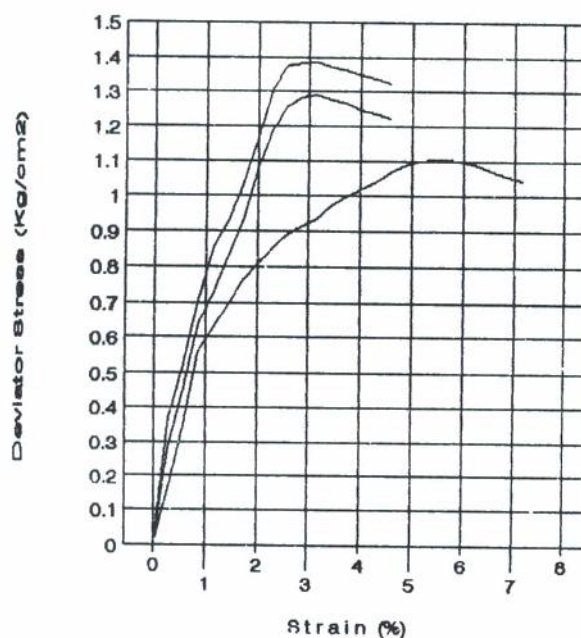
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.62522
Water content (%)	50.07
Dry density (gr/cm <sup>3</sup> )	1.08

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.30	0.60	0.90
Deviator	1.10	1.29	1.38
1	1.40	1.89	2.28
Pore water pressure	0.00	0.00	0.00

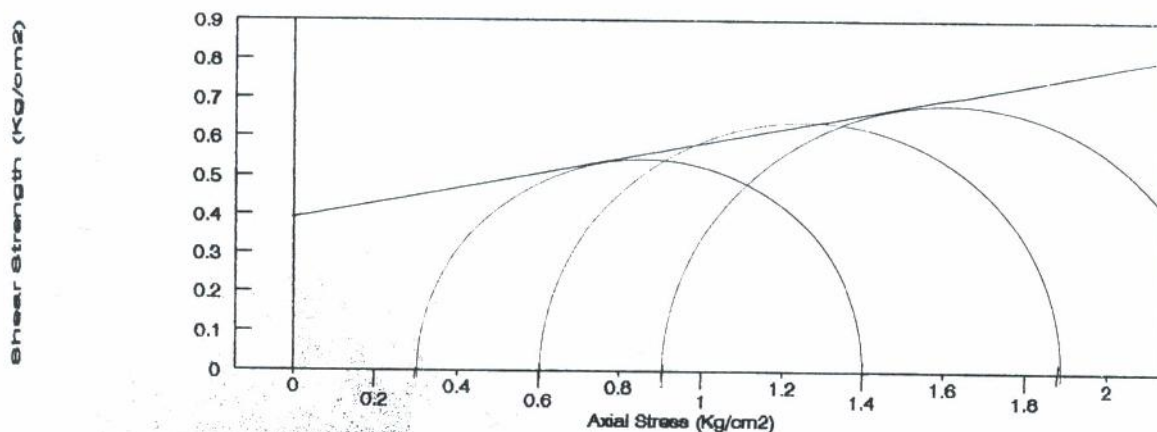
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,40
Internal Angle Friction (Degree)	10,5°

Stress-Strain Curve



Mohr Coulomb Curve



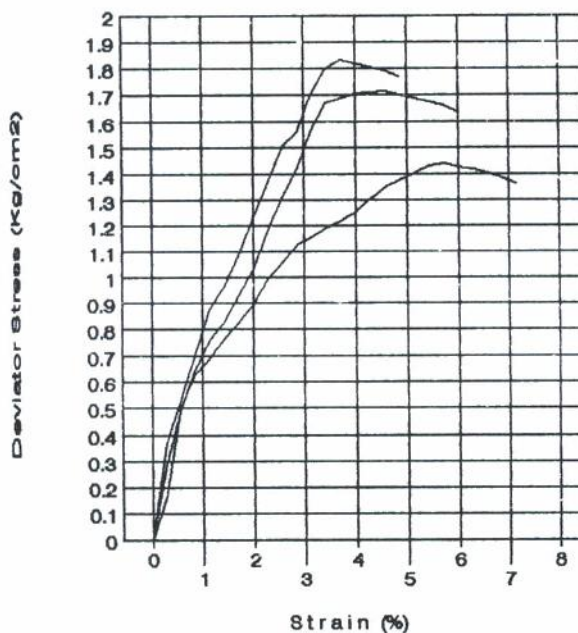
## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 1	Checked by	NANA S
Depth	350 - 400 Cm	Approved by	

### Sample Data

Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.67424
Water content (%)	46.74
Dry density (gr/cm <sup>3</sup> )	1.14

### Stress-Strain Curve

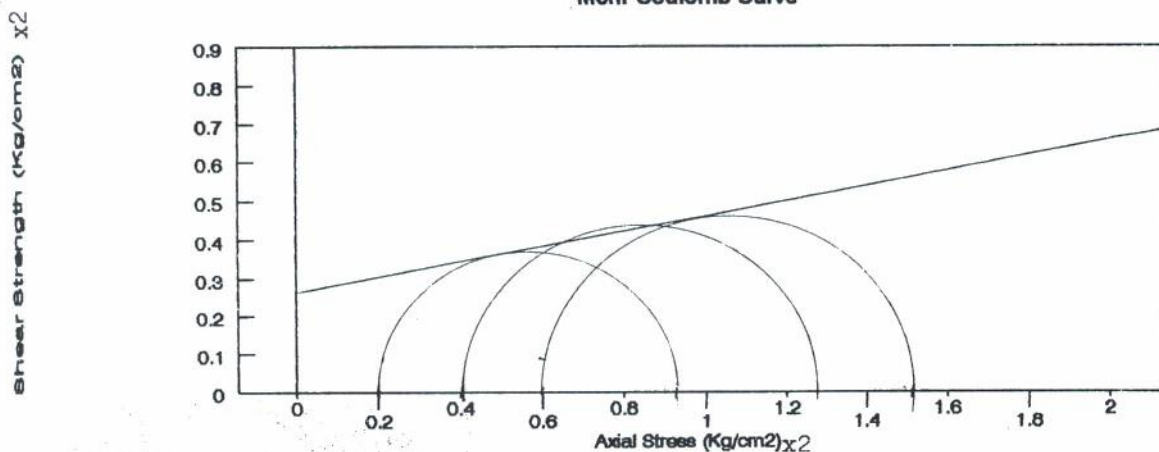


Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.40	0.80	1.20
Deviator	1.44	1.71	1.83
1	1.84	2.51	3.09
Pore water pressure	0.00	0.00	0.00

### Shear Strength Parameters

Cohesion Undrained (Cu), kg/cm <sup>2</sup>	0,52
Internal Angle Friction (Degree)	11

### Mohr Coulomb Curve



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## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 1	Checked by	NANA S
Depth	550 - 600 Cm	Approved by	

### Sample Data

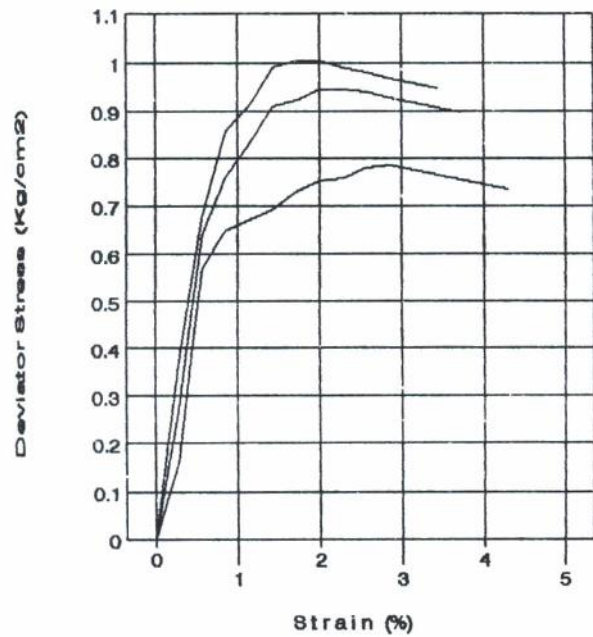
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.48112
Water content (%)	68.71
Dry density (gr/cm <sup>3</sup> )	0.90

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.50	1.00	1.50
Deviator	0.79	0.95	1.00
1	1.29	1.95	2.50
Pore water pressure	0.00	0.00	0.00

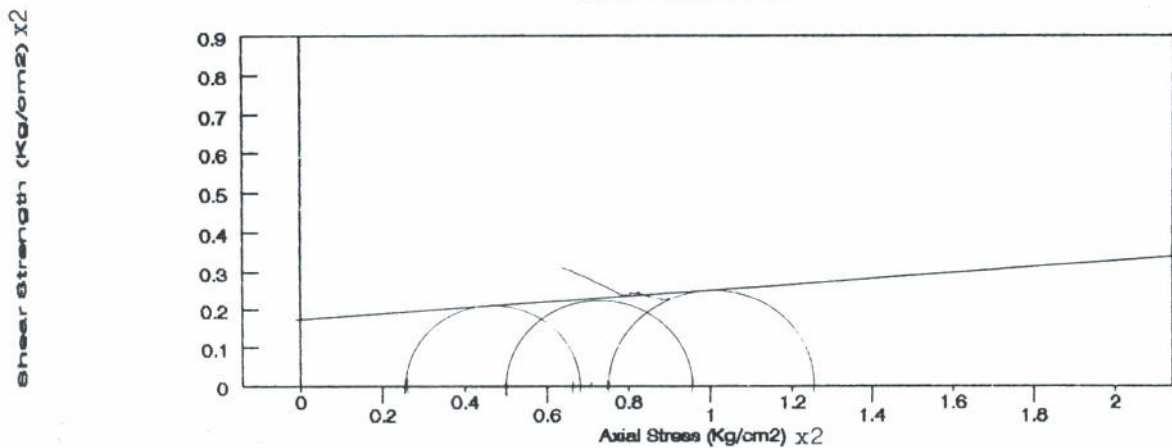
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,34
Internal Angle Friction (Degree)	4

Stress-Strain Curve



Mohr Coulomb Curve



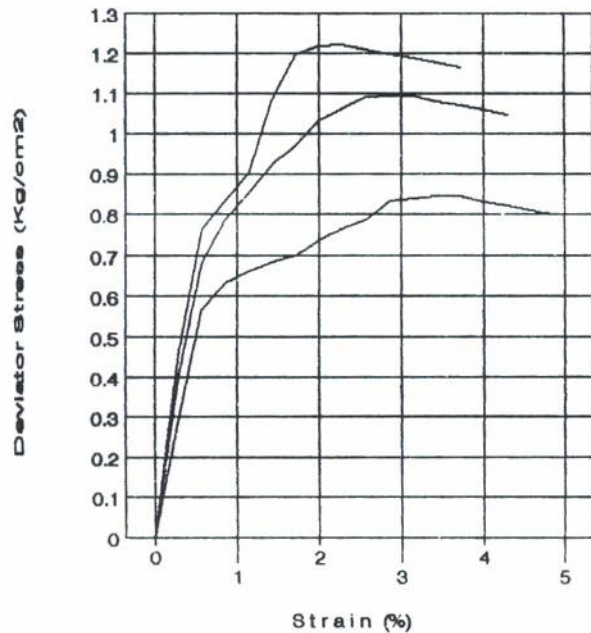
## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 1	Checked by	NANA S
Depth	750 - 800 Cm	Approved by	

### Sample Data

Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.48558
Water content (%)	68.63
Dry density (gr/cm <sup>3</sup> )	0.88

### Stress-Strain Curve

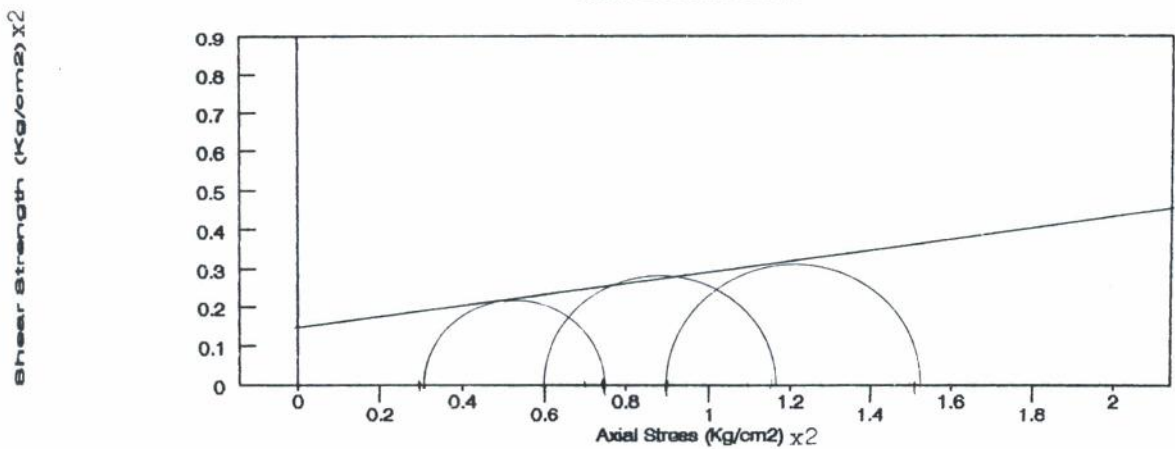


Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.60	1.20	1.80
Deviator	0.85	1.10	1.22
1	1.45	2.90	3.02
Pore water pressure	0.00	0.00	0.00

### Shear Strength Parameters

Cohesion Undrained (Cu), kg/cm <sup>2</sup>	0,30
Internal Angle Friction (Degree)	8°

### Mohr Coulomb Curve



## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 1	Checked by	NANA S
Depth	850 - 975 Cm	Approved by	

### Sample Data

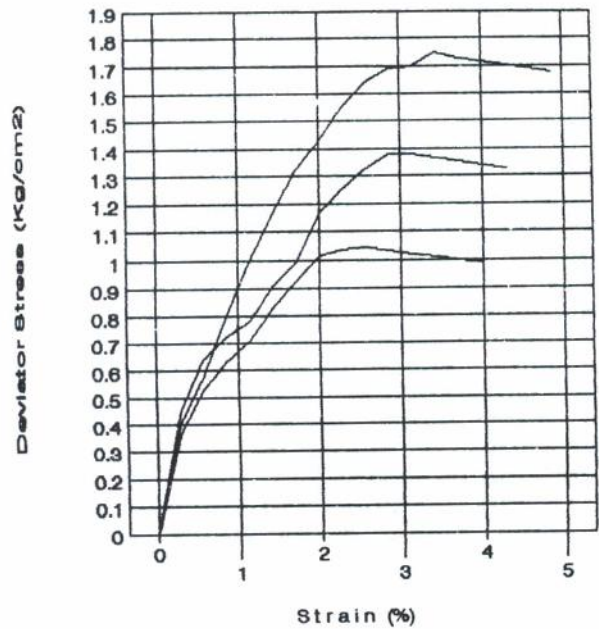
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.45586
Water content (%)	57.05
Dry density (gr/cm <sup>3</sup> )	0.93

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.70	1.40	2.10
Deviator	1.04	1.38	1.75
1	1.74	2.78	3.85
Pore water pressure	0.00	0.00	0.00

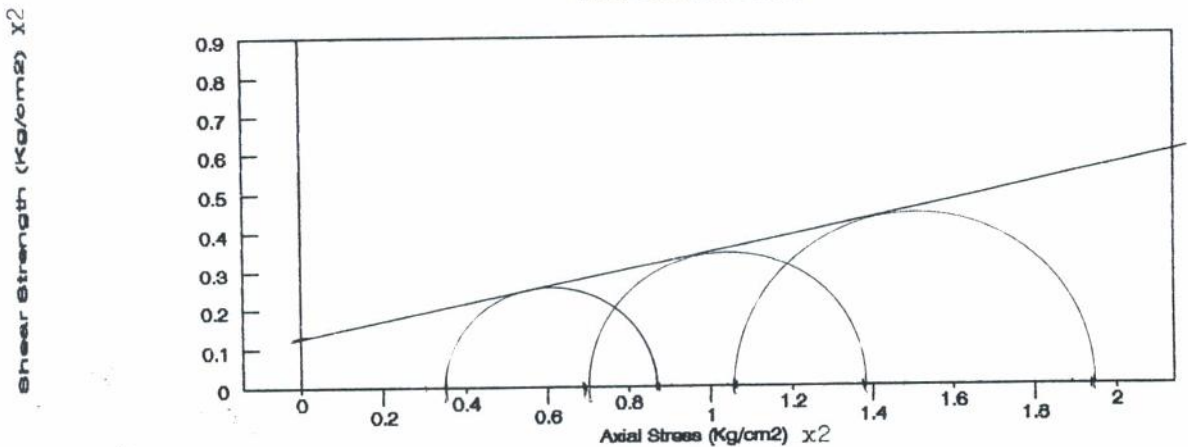
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,26
Internal Angle Friction (Degree)	12°

### Stress-Strain Curve



### Mohr Coulomb Curve



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## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 2	Checked by	NANA S
Depth	150 - 200 Cm	Approved by	

### Sample Data

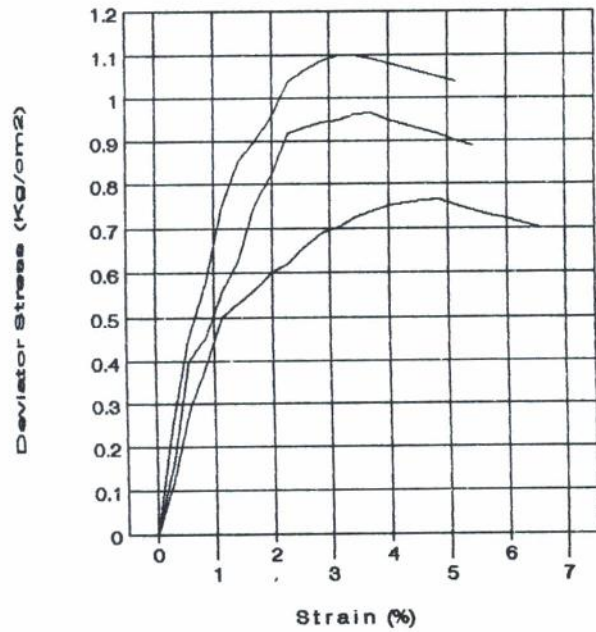
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.51529
Water content (%)	52.01
Dry density (gr/cm <sup>3</sup> )	1.00

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.30	0.60	0.90
Deviator	0.77	0.96	1.10
1	1.07	1.56	2.00
Pore water pressure	0.00	0.00	0.00

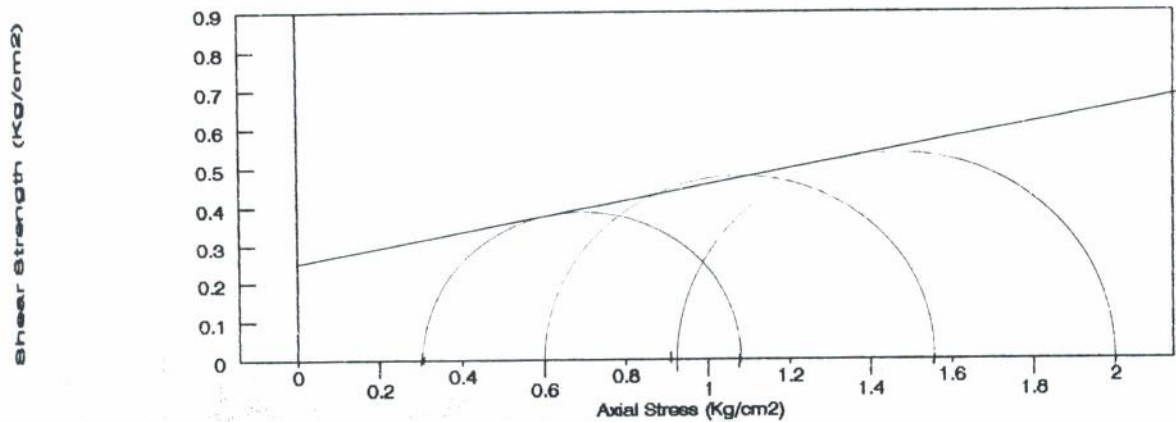
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,25
Internal Angle Friction (Degree)	11°

Stress-Strain Curve



Mohr Coulomb Curve



## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 2	Checked by	NANA S
Depth	350 - 400 Cm	Approved by	

### Sample Data

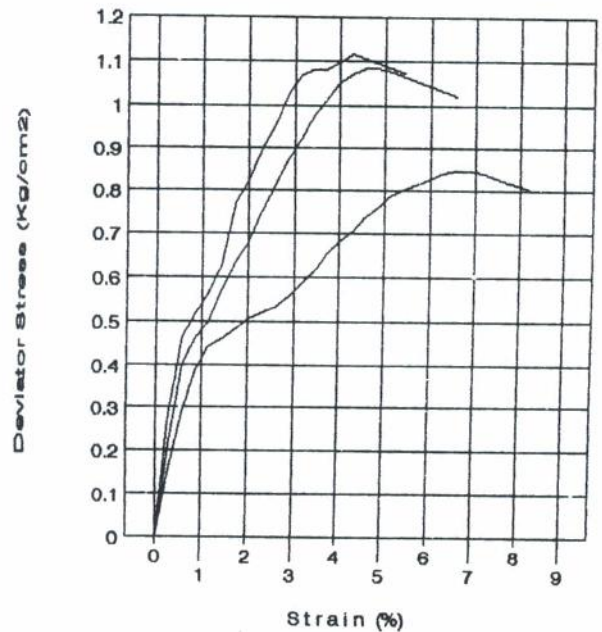
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.53311
Water content (%)	60.75
Dry density (gr/cm <sup>3</sup> )	0.95

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.40	0.80	1.20
Deviator	0.85	1.08	1.12
1	1.25	1.88	2.32
Pore water pressure	0.00	0.00	0.00

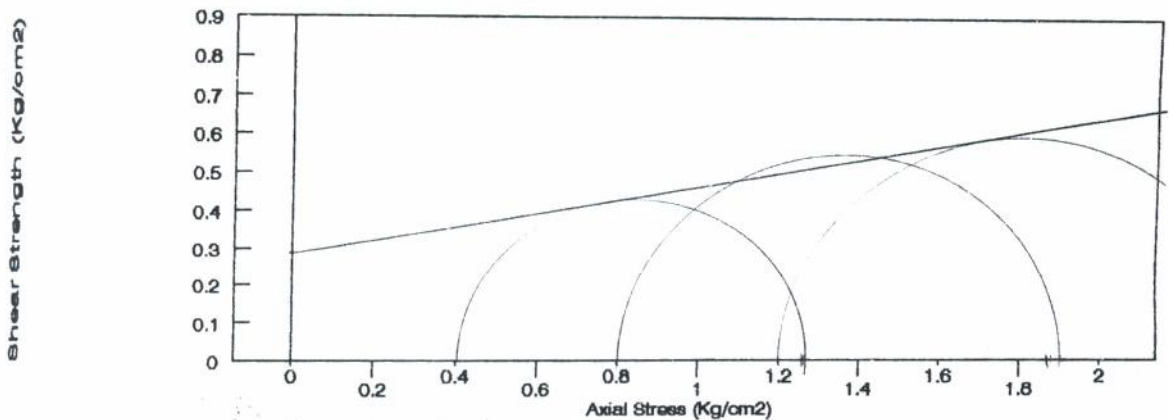
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,29
Internal Angle Friction (Degree)	10°

Stress-Strain Curve



Mohr Coulomb Curve



## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 2	Checked by	NANA S
Depth	550 - 600 Cm	Approved by	

### Sample Data

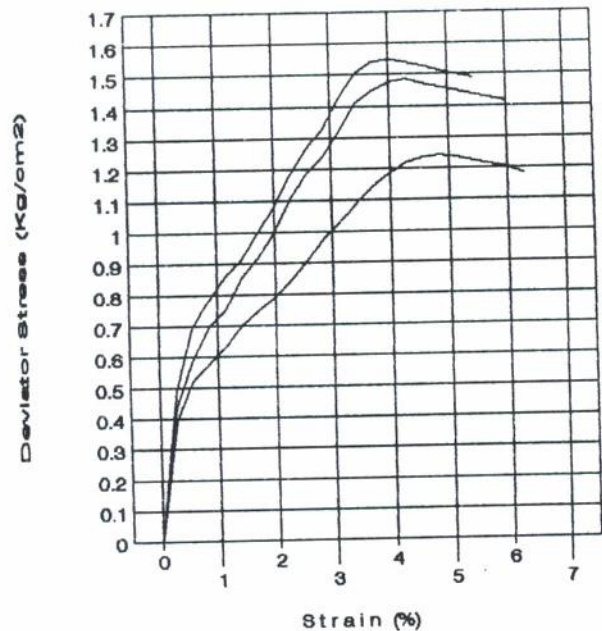
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.59699
Water content (%)	62.14
Dry density (gr/cm <sup>3</sup> )	0.98

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
σ	0.50	1.00	1.50
Deviator	1.24	1.48	1.54
τ	1.74	2.48	3.04
Pore water pressure	0.00	0.00	0.00

### Shear Strength Parameters

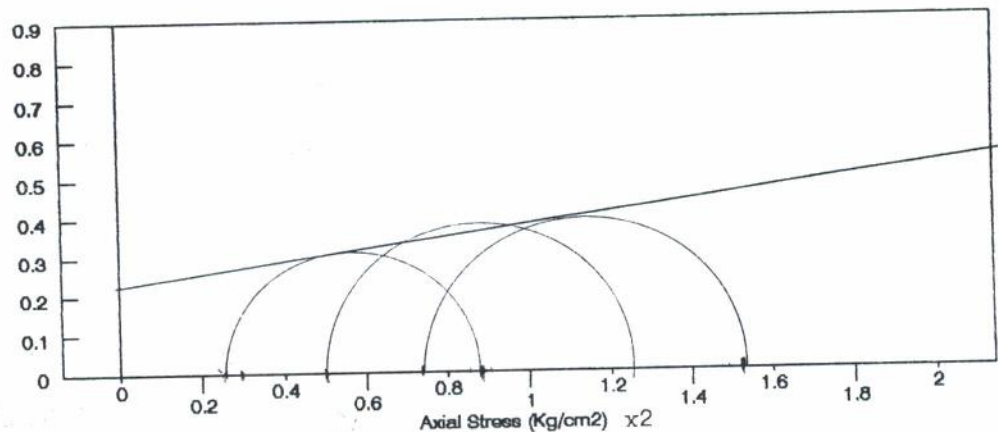
Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,44
Internal Angle Friction (Degree)	8°

Stress-Strain Curve



Mohr Coulomb Curve

Shear strength (Kg/cm<sup>2</sup>) x2



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## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 2	Checked by	NANA S
Depth	550 - 600 Cm	Approved by	

### Sample Data

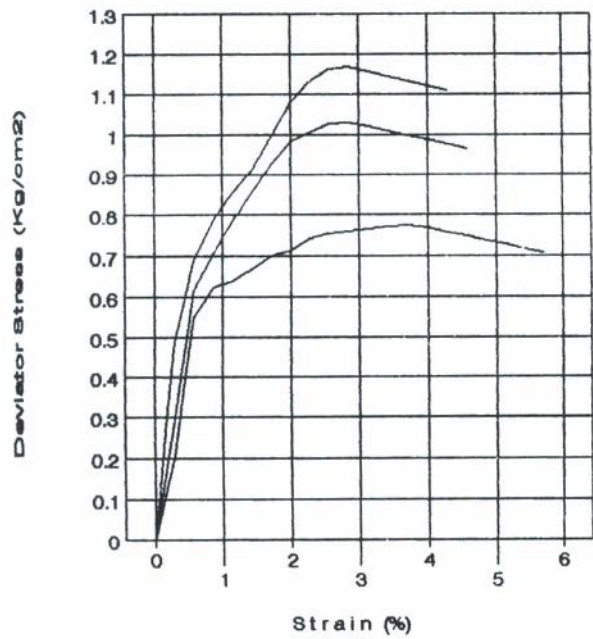
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.43358
Water content (%)	98.00
Dry density (gr/cm <sup>3</sup> )	0.74

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.60	1.20	1.80
Deviator	0.77	1.00	1.17
1	1.37	2.20	2.97
Pore water pressure	0.00	0.00	0.00

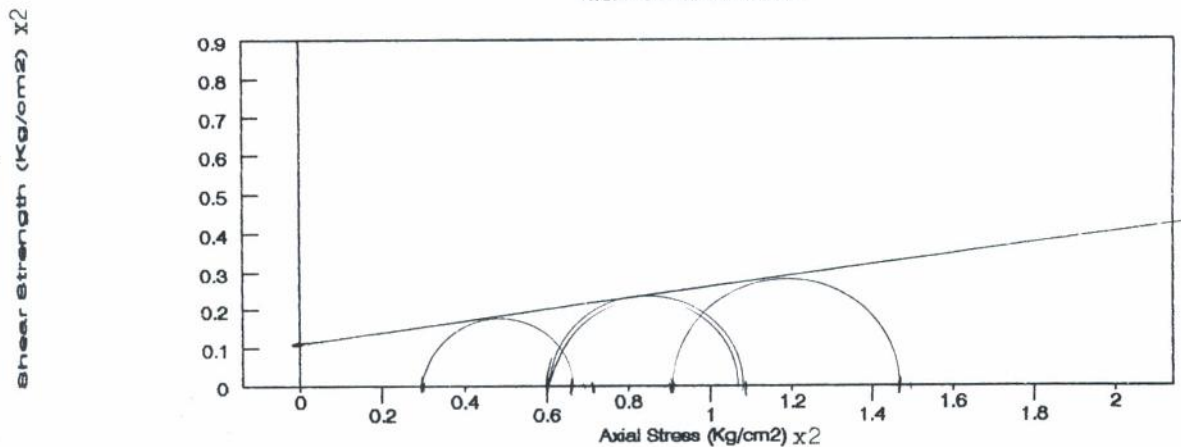
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,22
Internal Angle Friction (Degree)	9°

Stress-Strain Curve



Mohr Coulomb Curve



## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1996.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 2	Checked by	NANA S
Depth	750 - 1000 Cm	Approved by	

### Sample Data

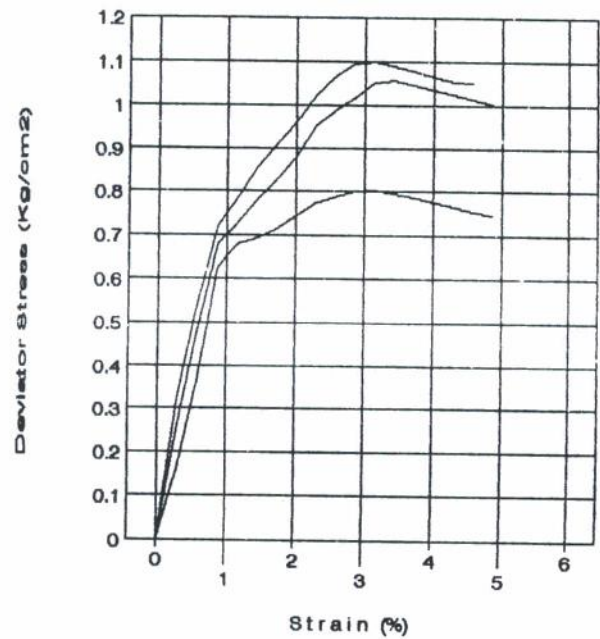
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.56728
Water content (%)	64.59
Dry density (gr/cm <sup>3</sup> )	0.95

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.70	1.40	2.10
Deviator	0.80	1.06	1.09
1	1.50	2.46	3.19
Pore water pressure	0.00	0.00	0.00

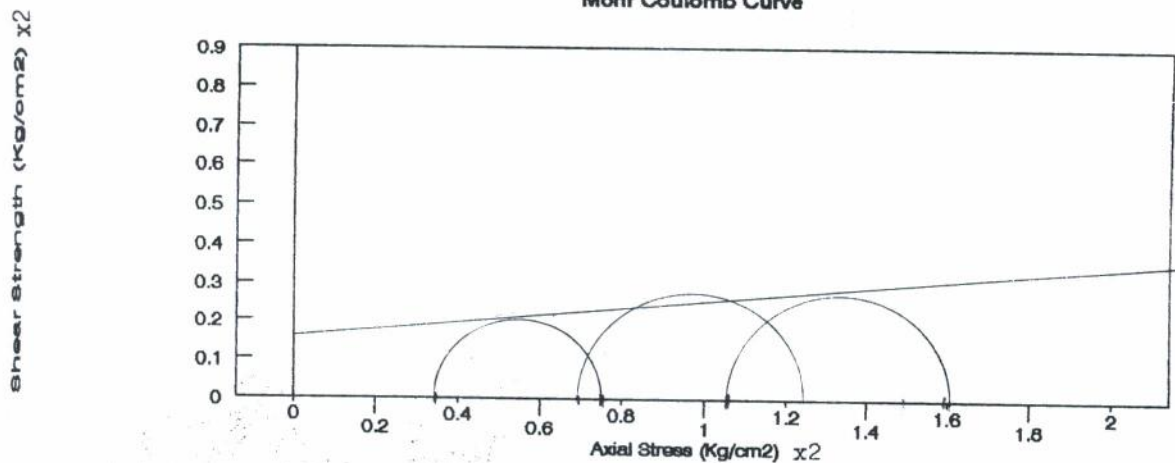
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,32
Internal Angle Friction (Degree)	5°

Stress-Strain Curve



Mohr Coulomb Curve



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## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 3	Checked by	NANA S
Depth	150 - 200 Cm	Approved by	

### Sample Data

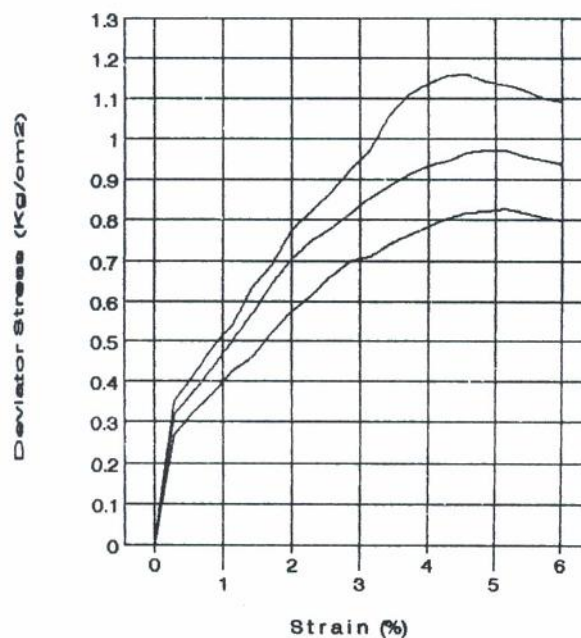
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.56728
Water content (%)	64.59
Dry density (gr/cm <sup>3</sup> )	0.95

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.30	0.60	0.90
Deviator	0.82	0.97	1.16
1	1.12	1.57	2.06
Pore water pressure	0.00	0.00	0.00

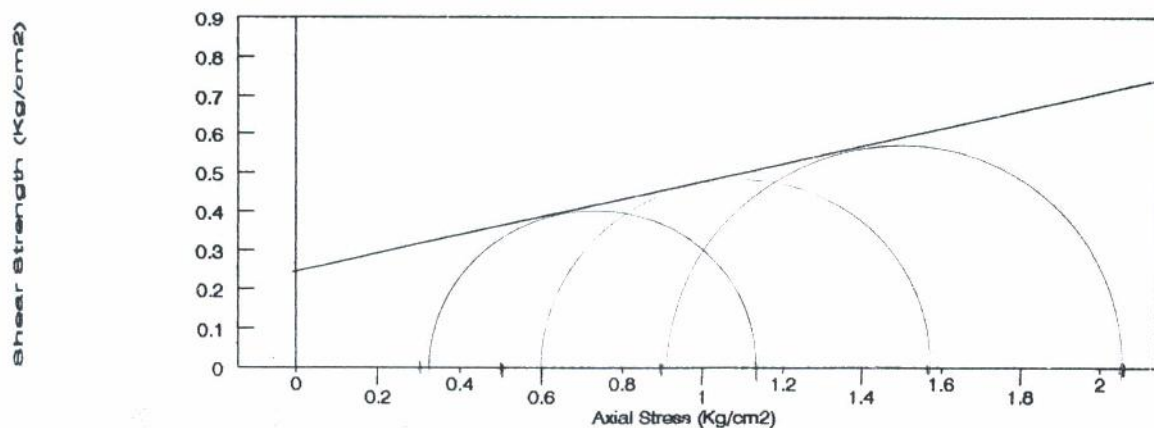
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,25
Internal Angle Friction (Degree)	13°

Stress-Strain Curve



Mohr Coulomb Curve



## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 3	Checked by	NANA S
Depth	350 - 400 Cm	Approved by	

### Sample Data

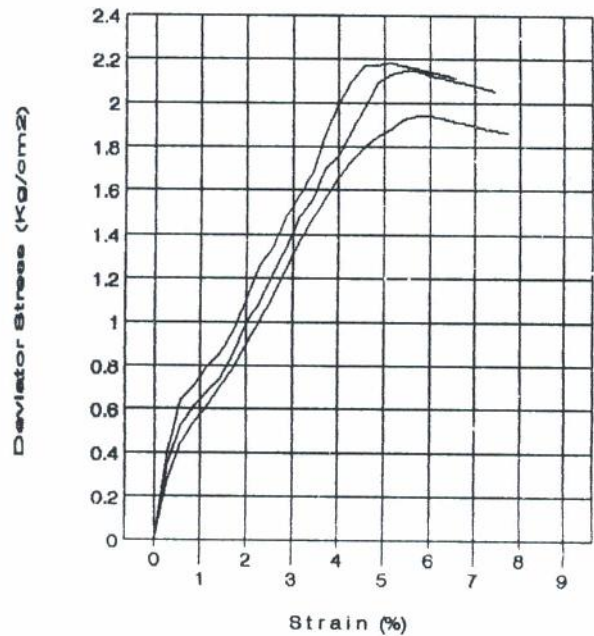
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.61482
Water content (%)	55.95
Dry density (gr/cm <sup>3</sup> )	1.04

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.40	0.80	1.20
Deviator	1.94	2.15	2.19
1	2.34	2.95	3.39
Pore water pressure	0.00	0.00	0.00

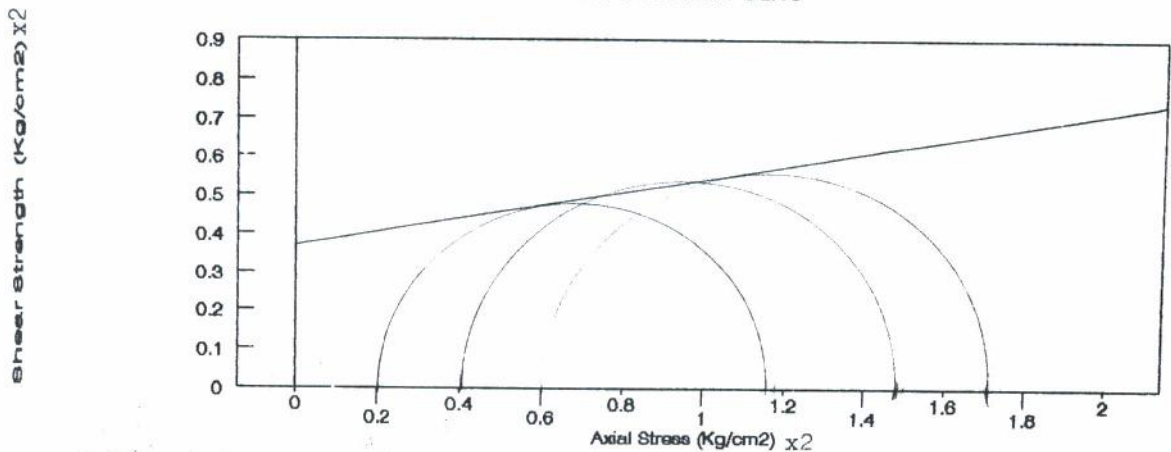
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,72
Internal Angle Friction (Degree)	9°

Stress-Strain Curve



Mohr Coulomb Curve



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## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 3	Checked by	NANA S
Depth	550 - 600 Cm	Approved by	

### Sample Data

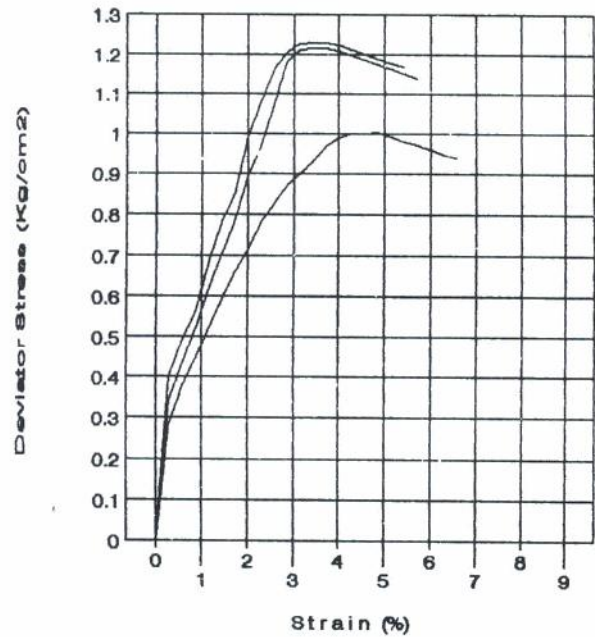
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.59402
Water content (%)	61.84
Dry density (gr/cm <sup>3</sup> )	0.98

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.50	1.00	1.20
Deviator	1.00	1.21	1.23
1	1.50	2.21	2.43
Pore water pressure	0.00	0.00	0.00

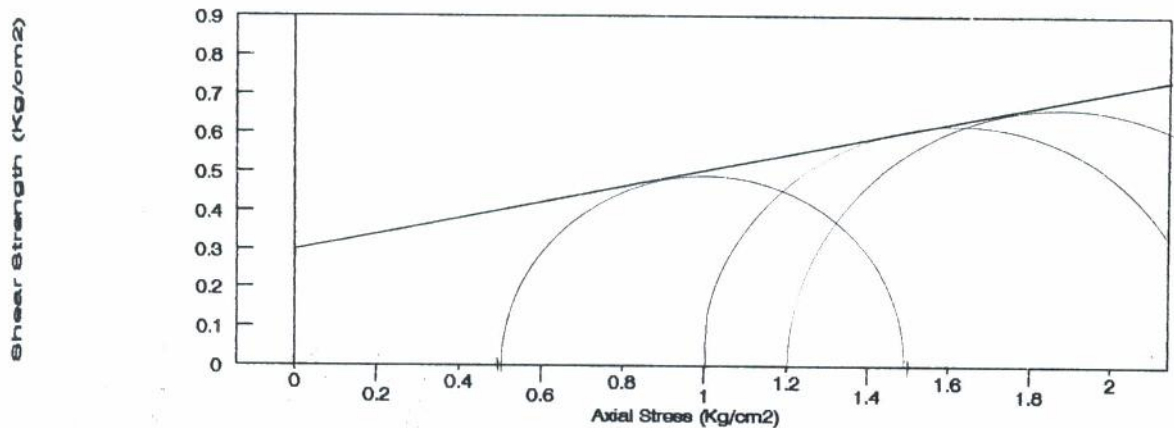
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,30
Internal Angle Friction (Degree)	11°

Stress-Strain Curve



Mohr Coulomb Curve



## TRIAXIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 3	Checked by	NANA S
Depth	750 - 800 Cm	Approved by	

### Sample Data

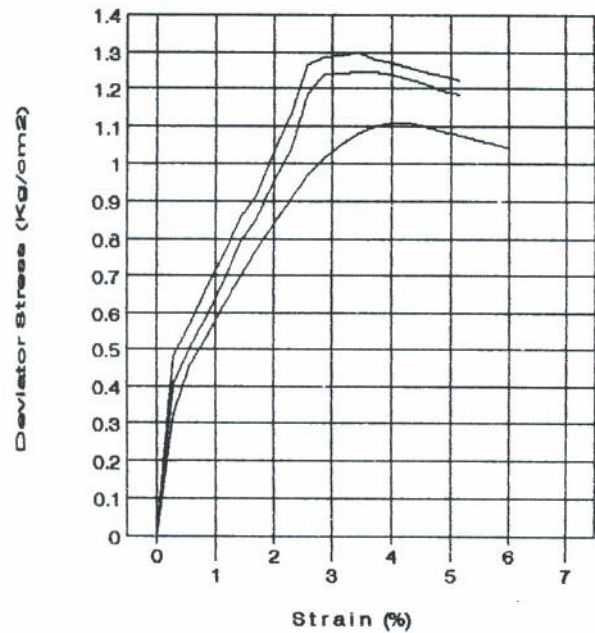
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.54951
Water content (%)	67.58
Dry density (gr/cm <sup>3</sup> )	0.92

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.60	1.20	1.80
Deviator	1.00	1.21	1.23
1	1.60	2.41	3.03
Pore water pressure	0.00	0.00	0.00

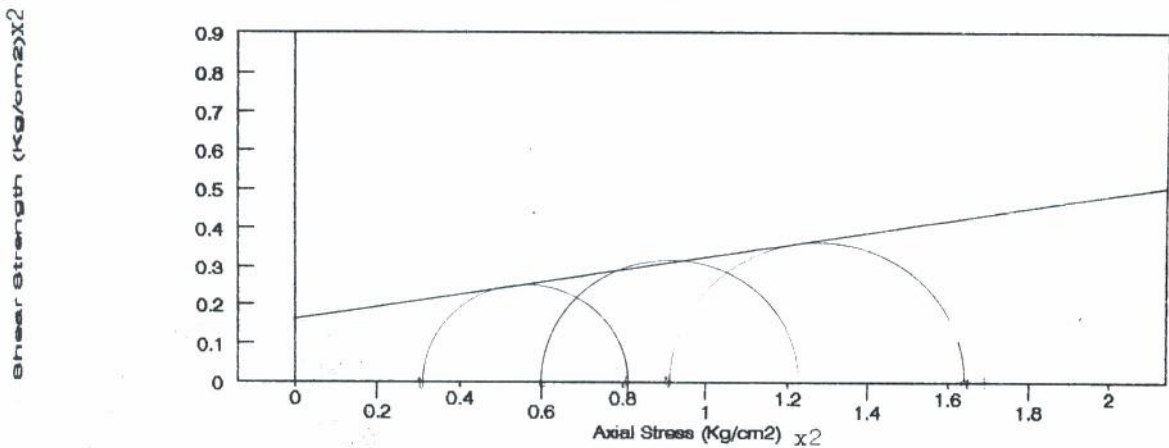
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,32
Internal Angle Friction (Degree)	9°

Stress-Strain Curve



Mohr Coulomb Curve



## TRIAxIAL U.U TEST

Project	RUKO	Date of test	DEC. 18th. 1995.
Location	BINTARO. WEST JAVA	Tested by	Amin Mr
Boring no	DB 3	Checked by	NANA S
Depth	950 - 1000 Cm	Approved by	

### Sample Data

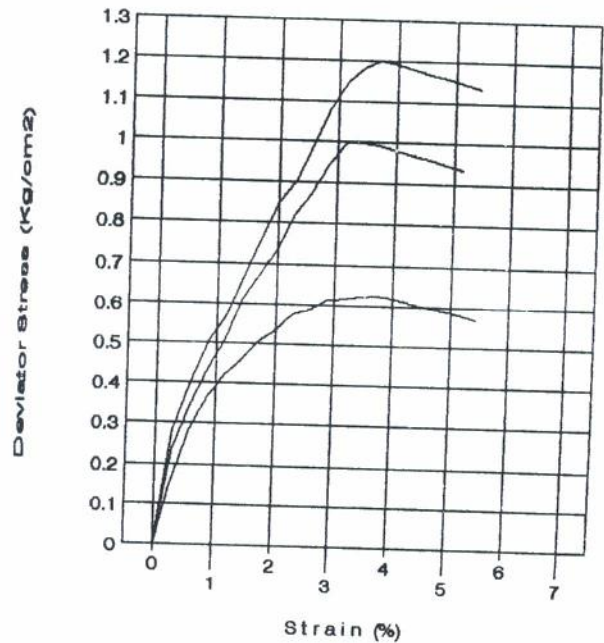
Diameter (cm)	3.50
Height (cm)	7.00
Wet density (gr/cm <sup>3</sup> )	1.37416
Water content (%)	41.22
Dry density (gr/cm <sup>3</sup> )	0.97

Stress (kg/cm <sup>2</sup> )	Sample		
	I	II	III
3	0.70	1.40	2.10
Deviator	0.62	0.99	1.20
1	1.32	2.39	3.30
Pore water pressure	0.00	0.00	0.00

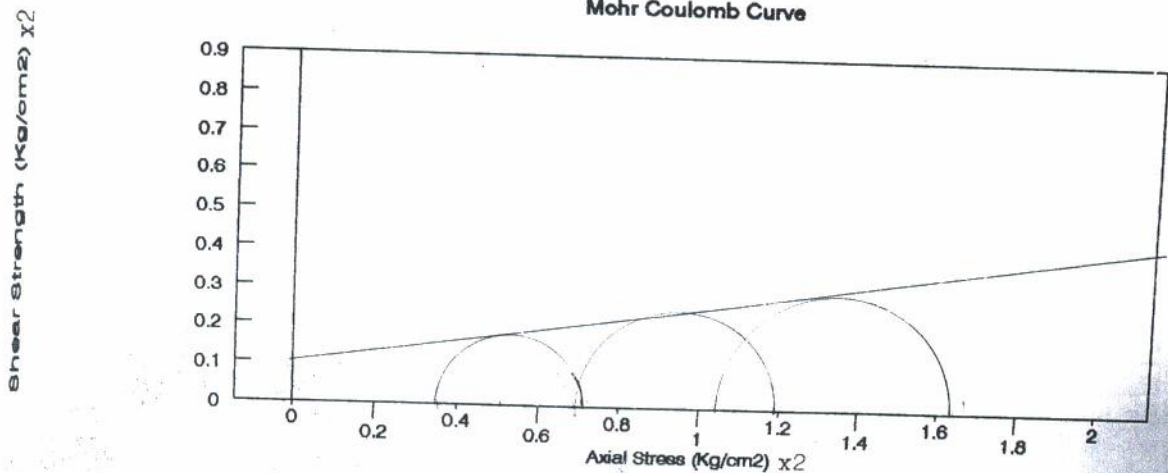
### Shear Strength Parameters

Cohesion Undrained (C <sub>u</sub> ), kg/cm <sup>2</sup>	0,20
Internal Angle Friction (Degree)	8°

Stress-Strain Curve



Mohr Coulomb Curve

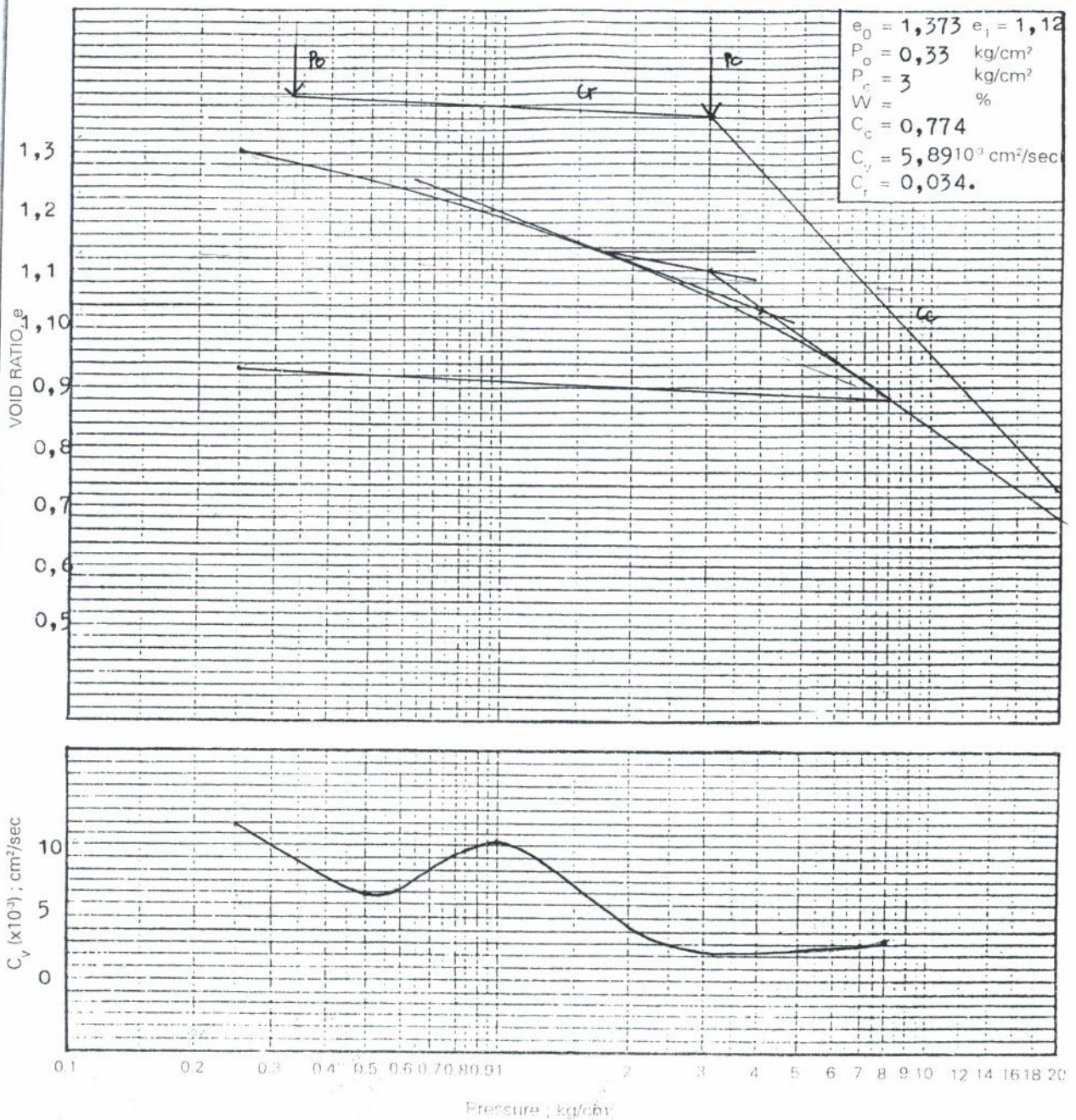


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### CONSOLIDATION TEST

Project : Ruko Bintaro                      Depth of Sample : 150 - 200 .  
Location : Bintaro, Jakarta Selatan      Date of test : Desember 1995 .  
Boring no. : DB - 1 .                      Test by : Rr Prihadini N

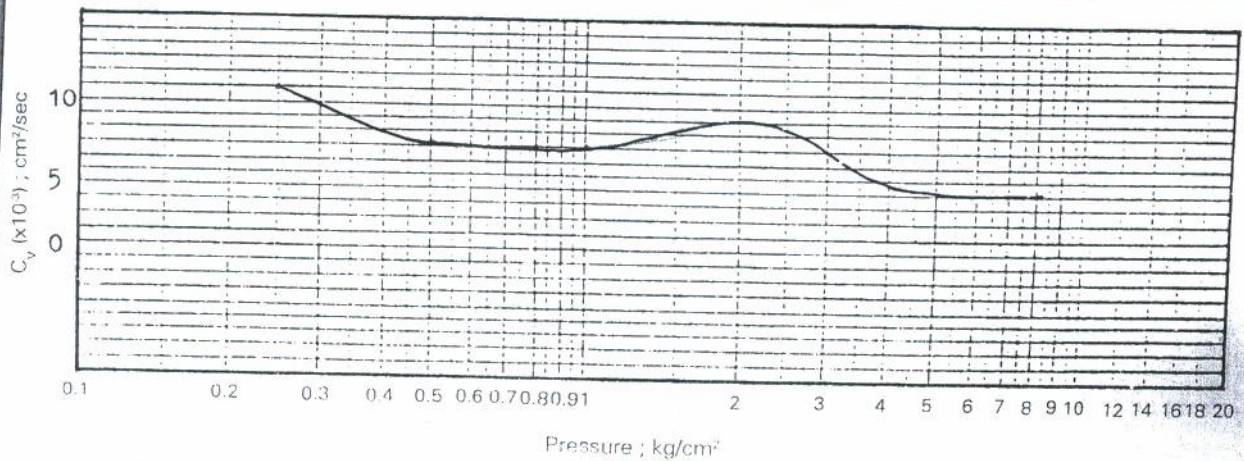
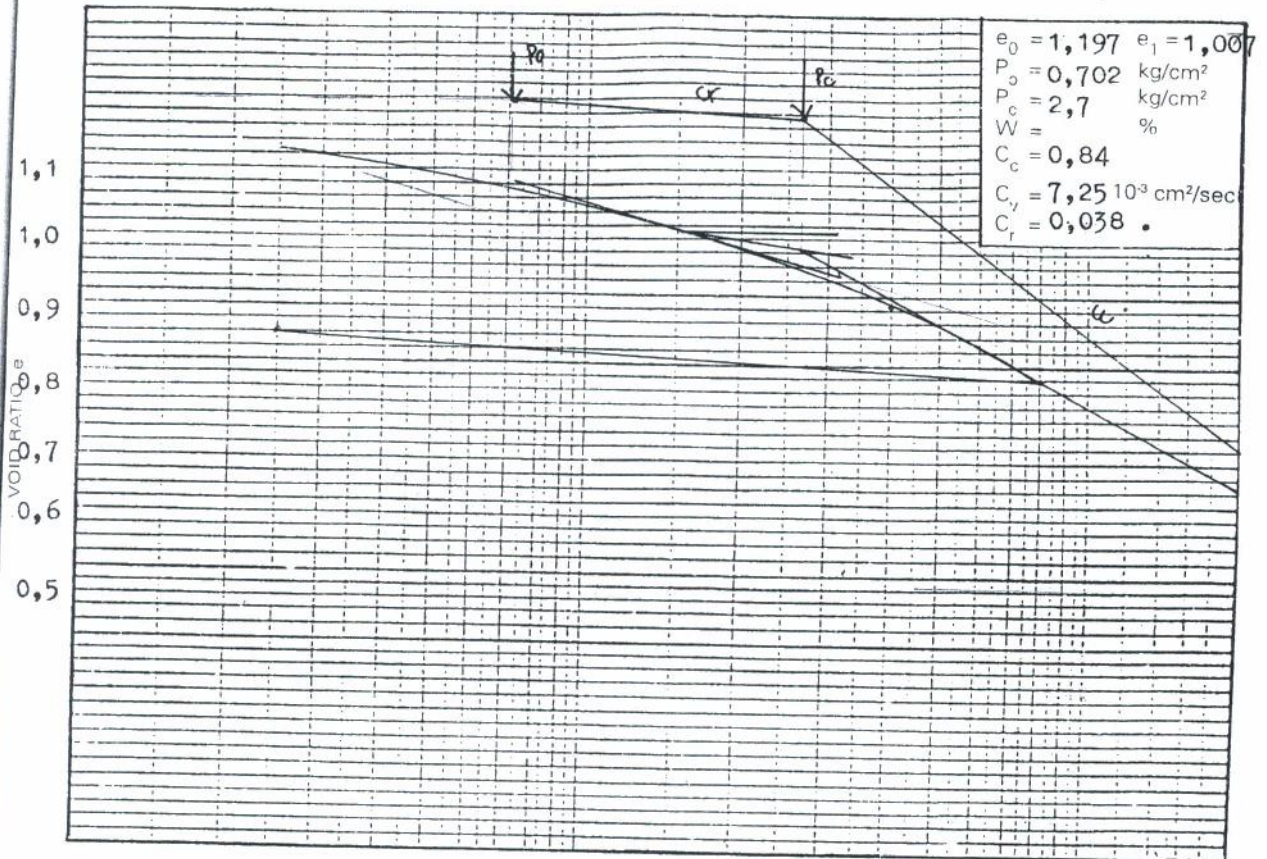




CONSOLIDATION TEST

Project : ~~Wako~~ Bintaro  
 Location : Bintaro, Jak-Sel .  
 Boring no. : DB - 1 .

Depth of Sample : 350 - 400 .  
 Date of test : Desember 1995 .  
 Test by : Rr Prihadini N



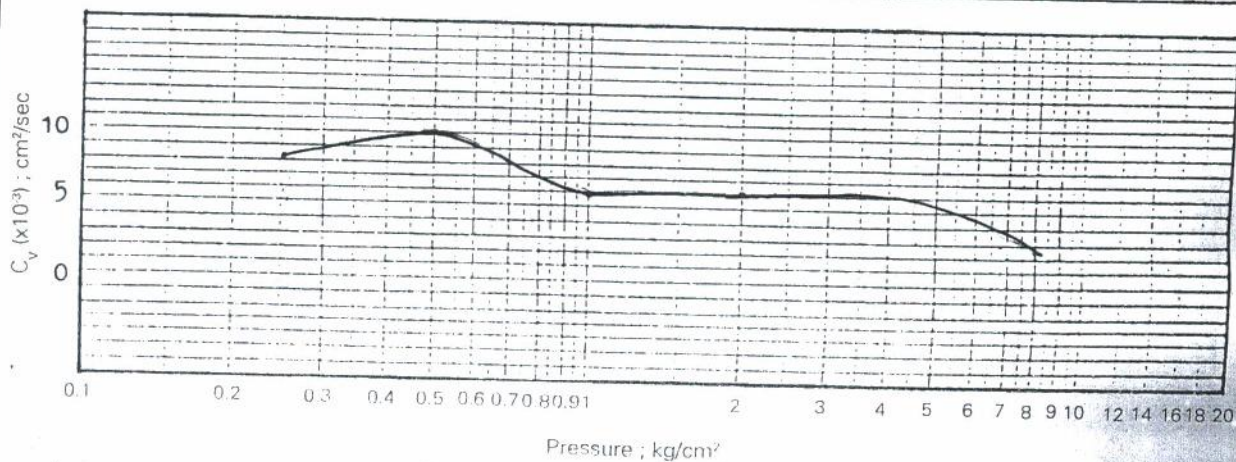
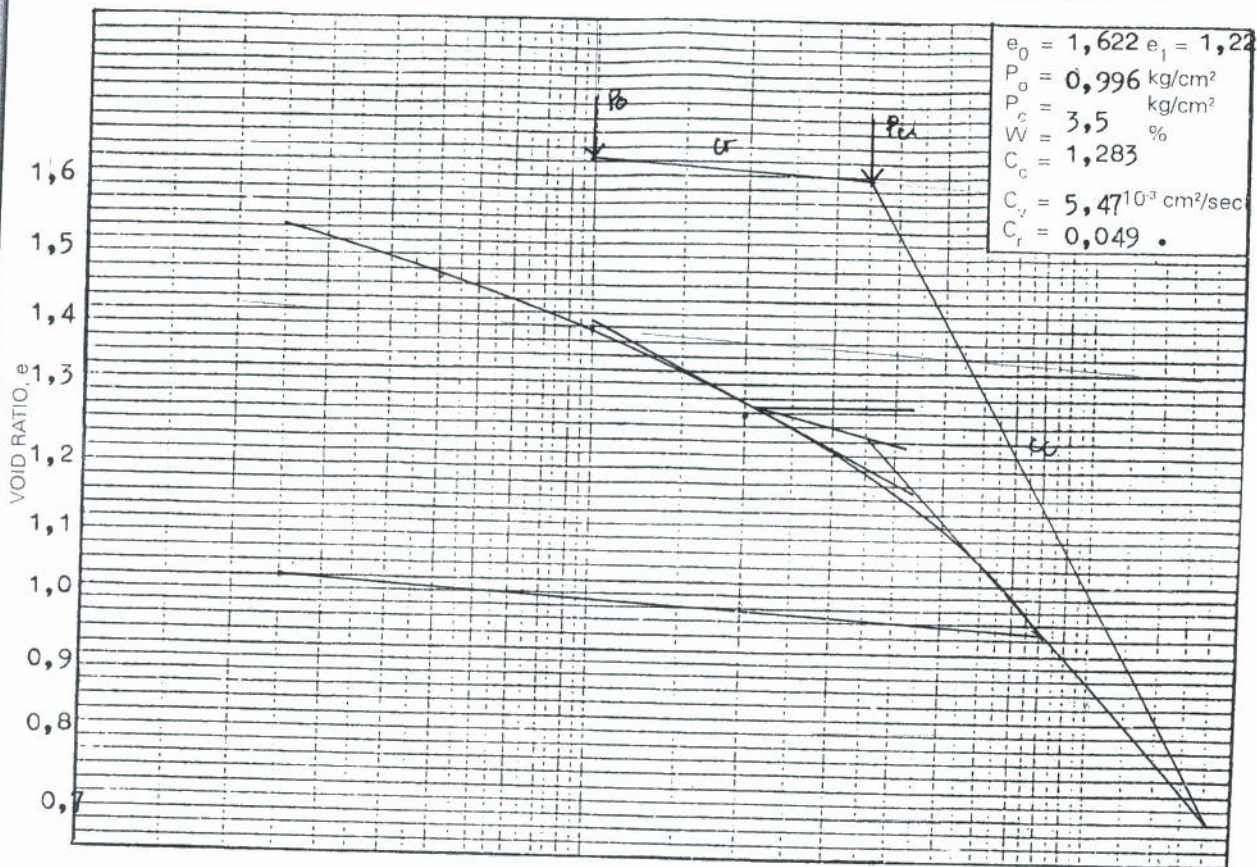


**LABORATORIUM MEKANIKA TANAH**  
**JURUSAN TEKNIK SIPIL - FTSP**  
**INSTITUT SAINS DAN TEKNOLOGI NASIONAL - JAKARTA**  
 Kampus ISTN Bhumi Srengseng Telp. 7270092 Fax. 7270090

CONSOLIDATION TEST

Project : **Ruko Bintaro**  
 Location : **Bintaro, Jak-Sel**  
 Boring no. : **DB - 1 .**

Depth of Sample : **550-600**  
 Date of test : **Desember 1995 .**  
 Test by : **Rr Prihadini N**





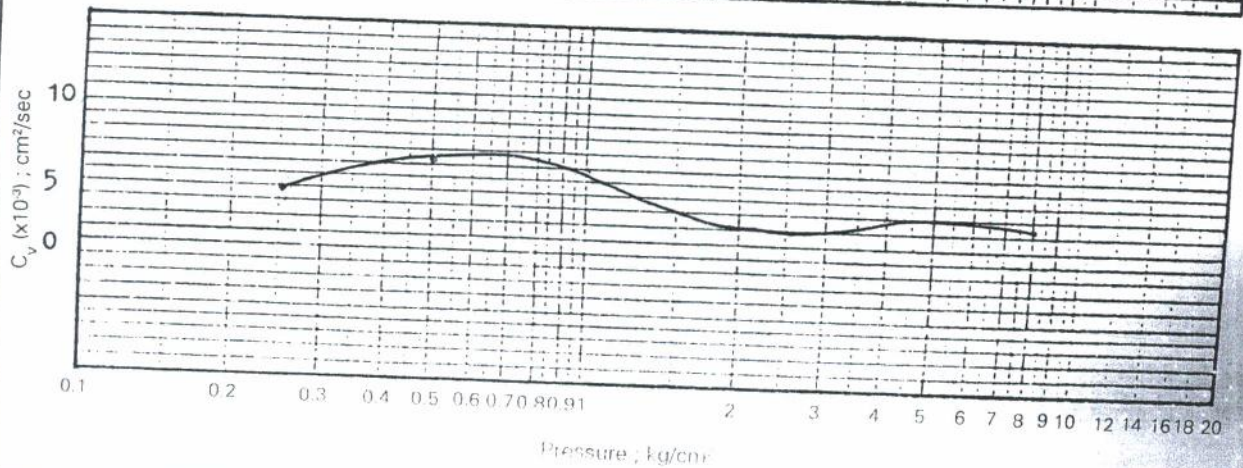
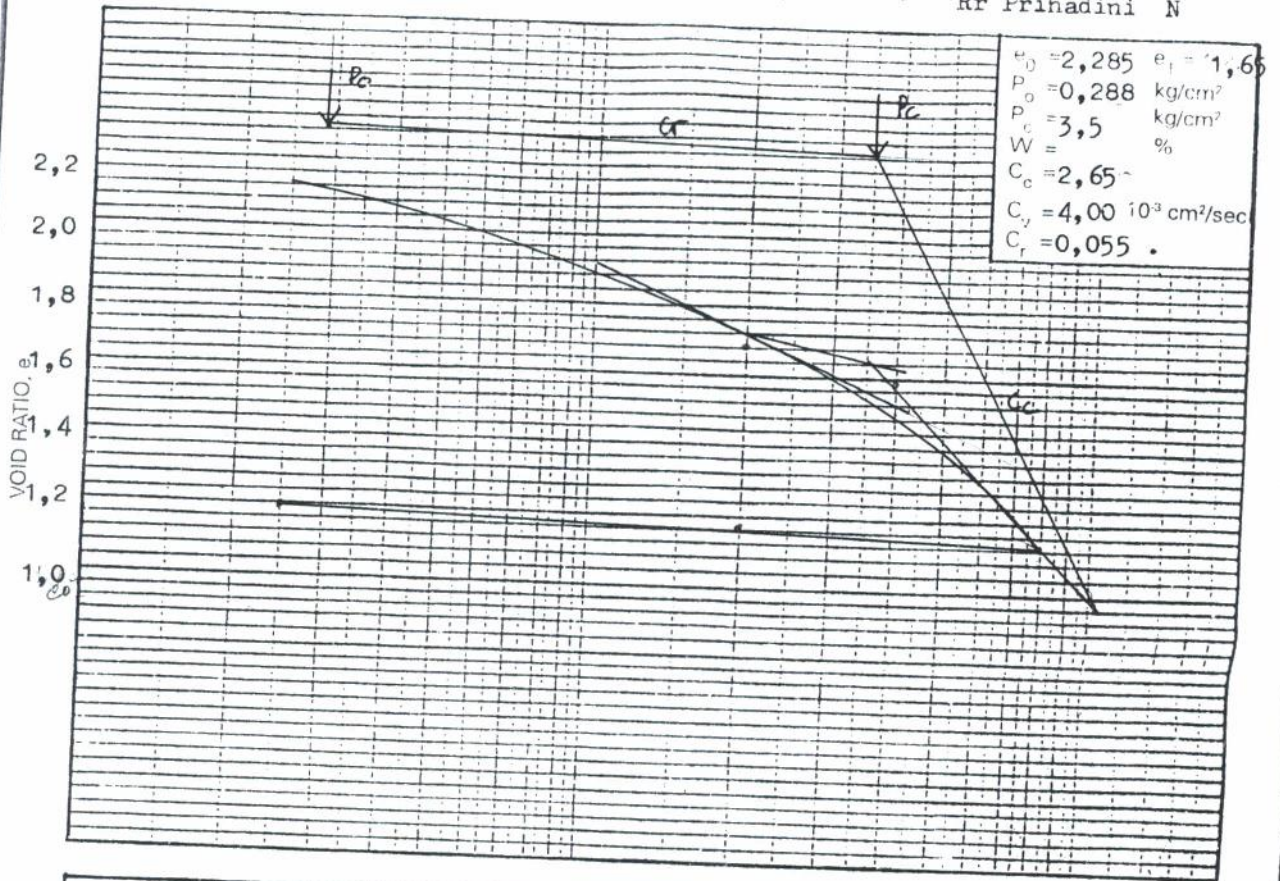


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 Kampus ISTN Bhumi Srengseng Telp. 7270092 Fax. 7270090

### CONSOLIDATION TEST

Project : **Ruko Bintaro**  
 Location : **Bintaro, Jak-Sel.**  
 Boring no. : **DB - 1 .**

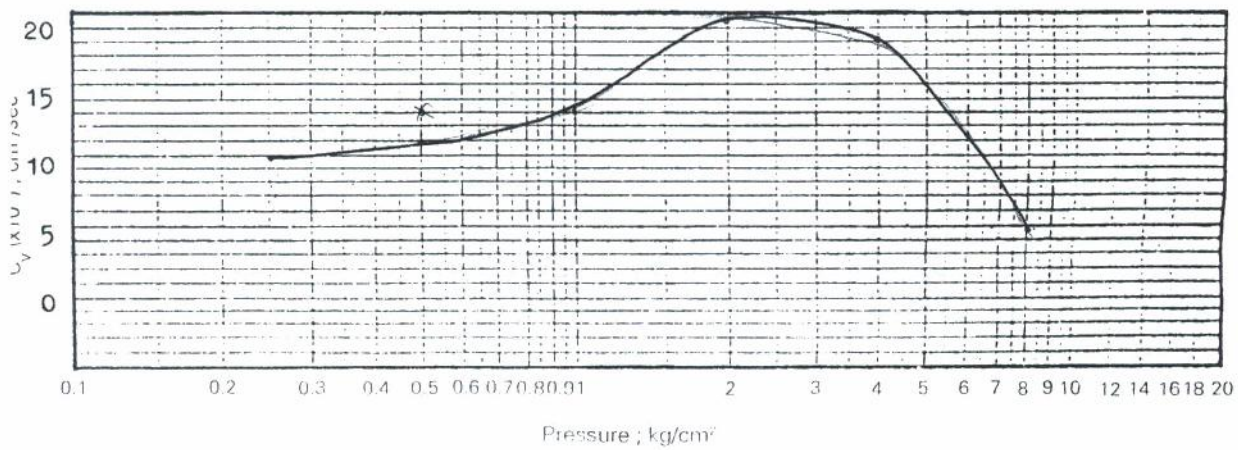
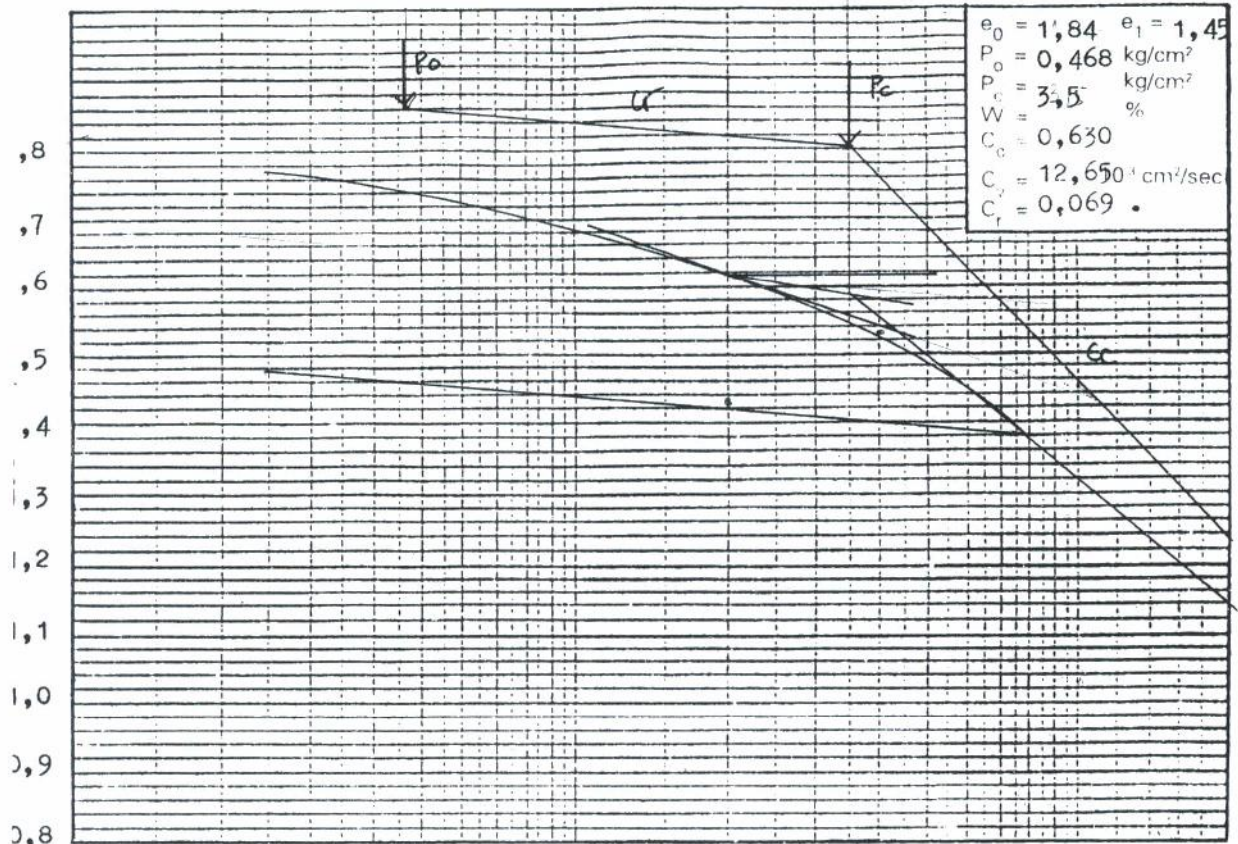
Depth of Sample : **750 - 800 .**  
 Date of test : **Desember 1995 .**  
 Test by : **Rr Prihadini N**





**CONSOLIDATION TEST**

Project : Ruko Bintaro                      Depth of Sample : 950 - 975 .  
 Location : Bintaro, Jak-Sel                Date of test : Desember 1995 .  
 Boring no. : DB # 1 .                        Test by : Rr Prihadini N

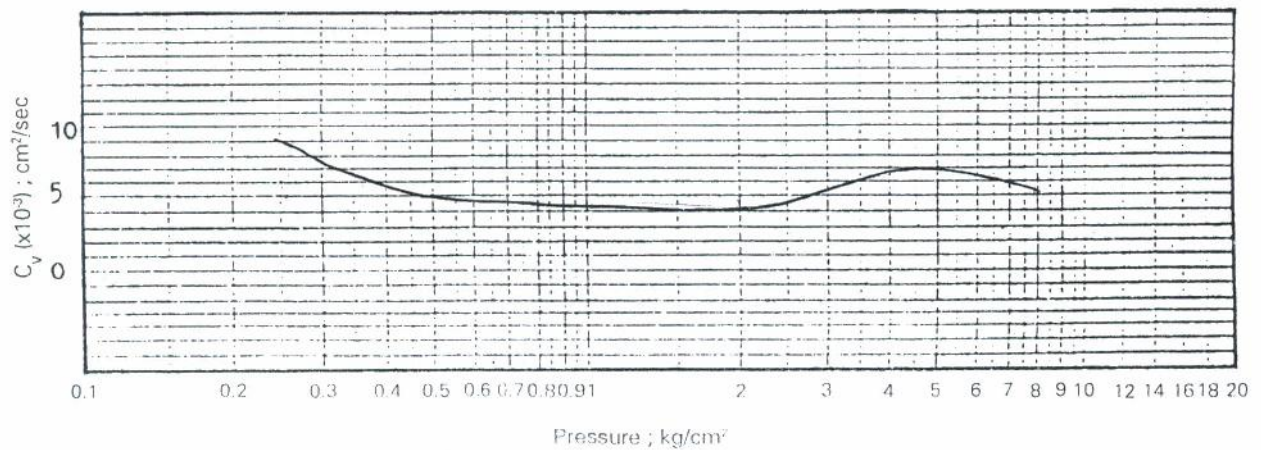
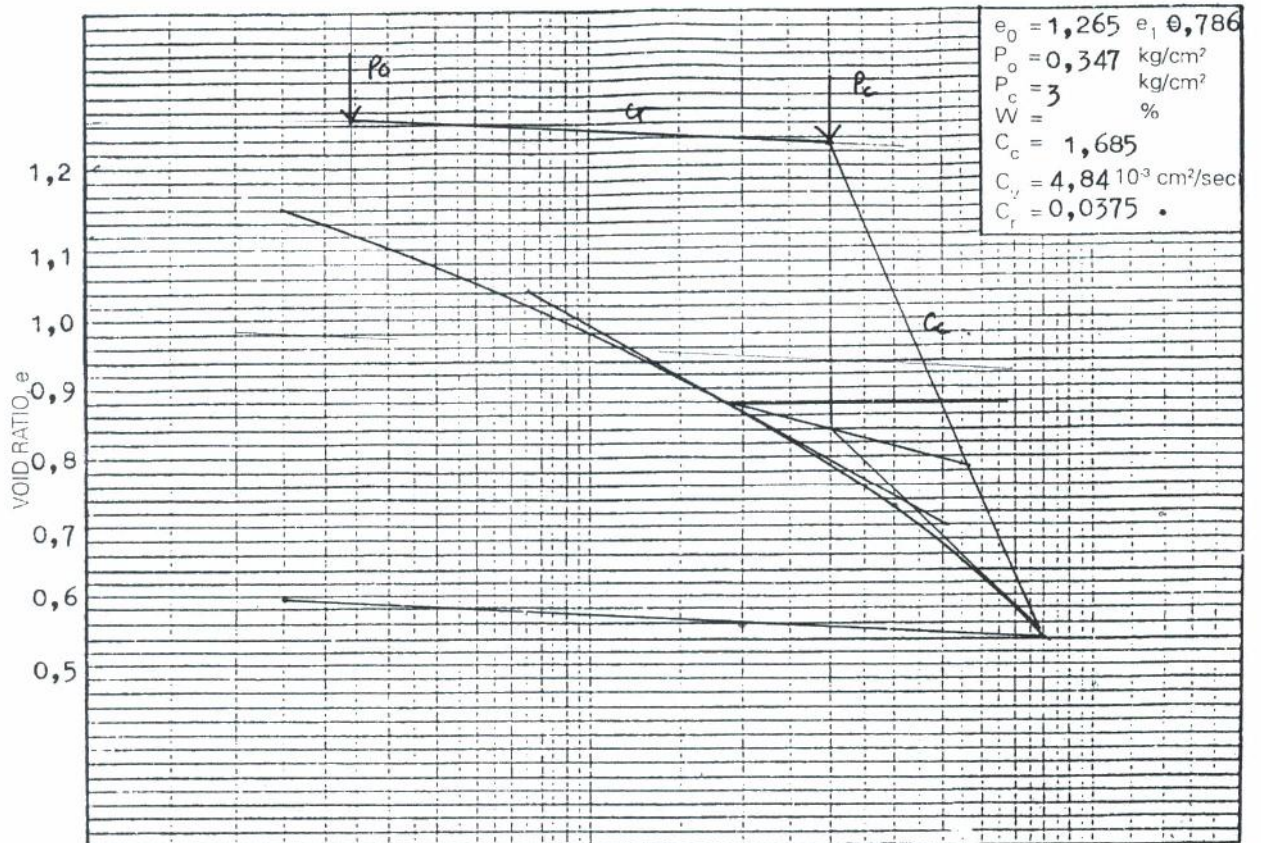




**CONSOLIDATION TEST**

Project : Ruko Bintaro  
 Location : Bintaro, Jak-Sel .  
 Boring no. : DB - 2 .

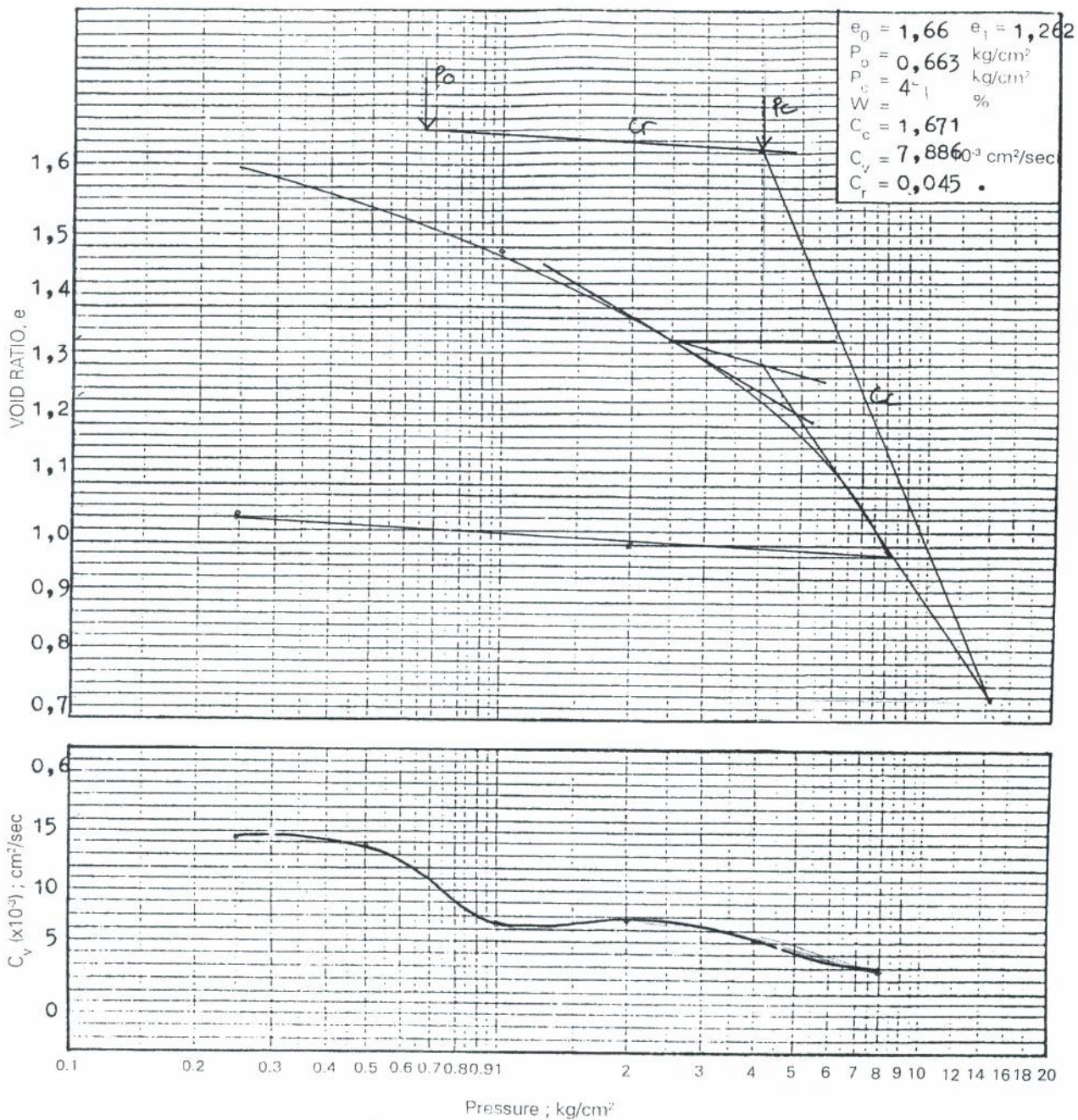
Depth of Sample : 150 - 200 .  
 Date of test : Desember 1995 .  
 Test by : Rr Prihadini N





CONSOLIDATION TEST

Project : Ruko Bintaro  
 Location : Bintaro, Jak-Sel  
 Boring no. : DB - 2  
 Depth of Sample : 350 - 400  
 Date of test : Desember 1995  
 Test by : Rr Prihadini N



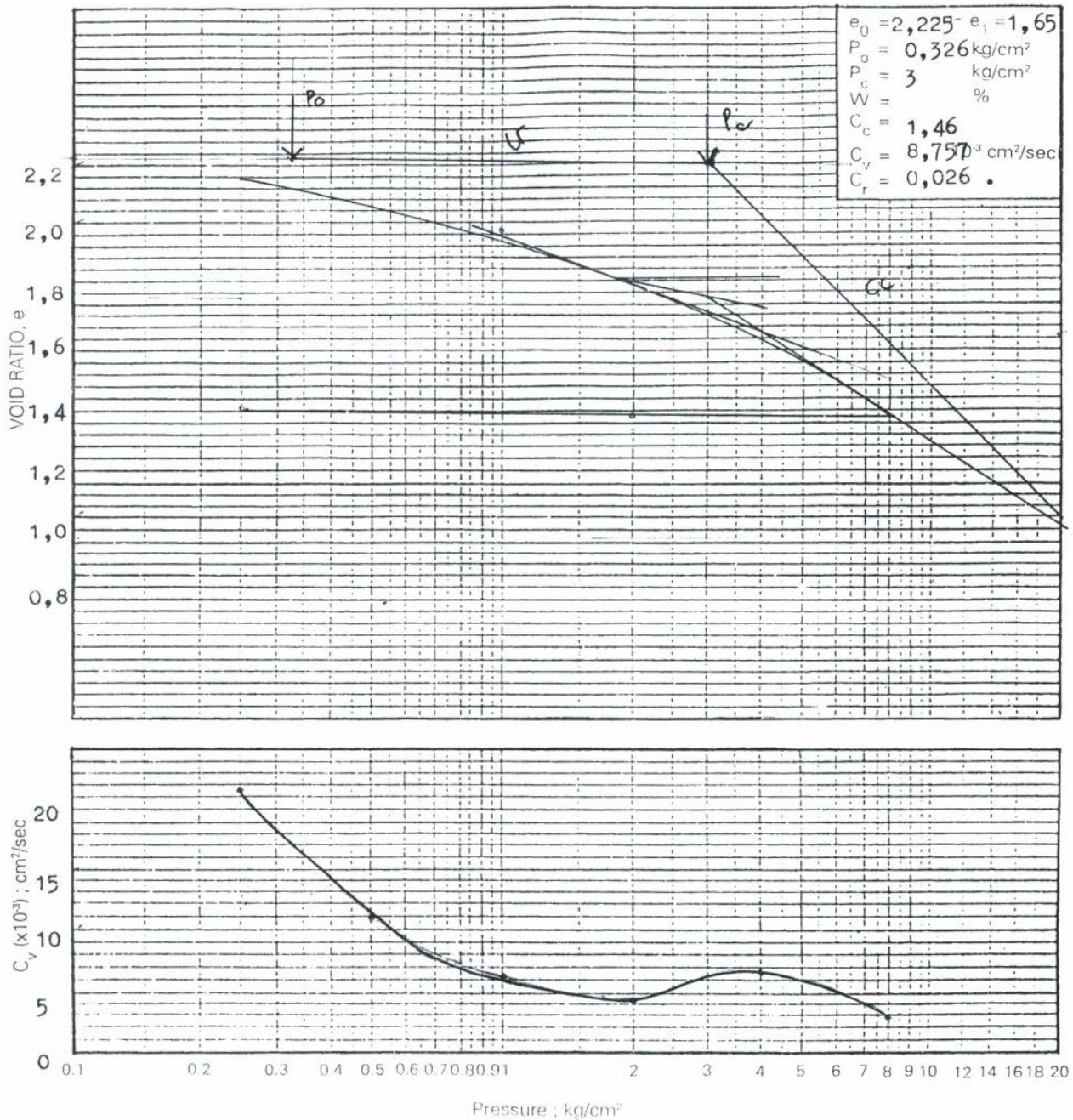




**CONSOLIDATION TEST**

Project : **Ruko Bintaro**  
 Location : **Bintaro, Jak-Sel.**  
 Boring no. : **DB - 2 .**

Depth of Sample : **750 - 800**  
 Date of test : **Desember 1995 .**  
 Test by : **Rr Prihadini N**

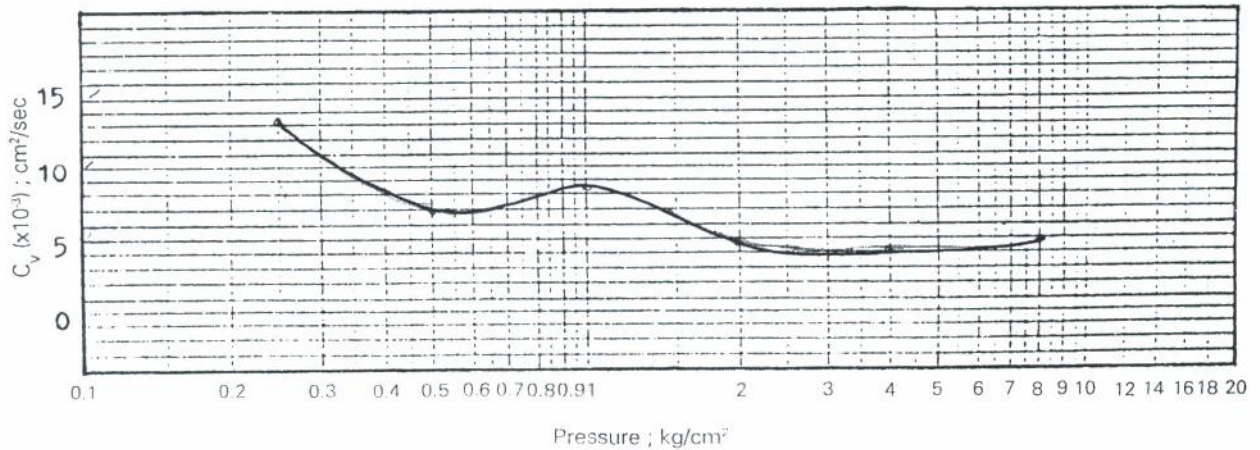
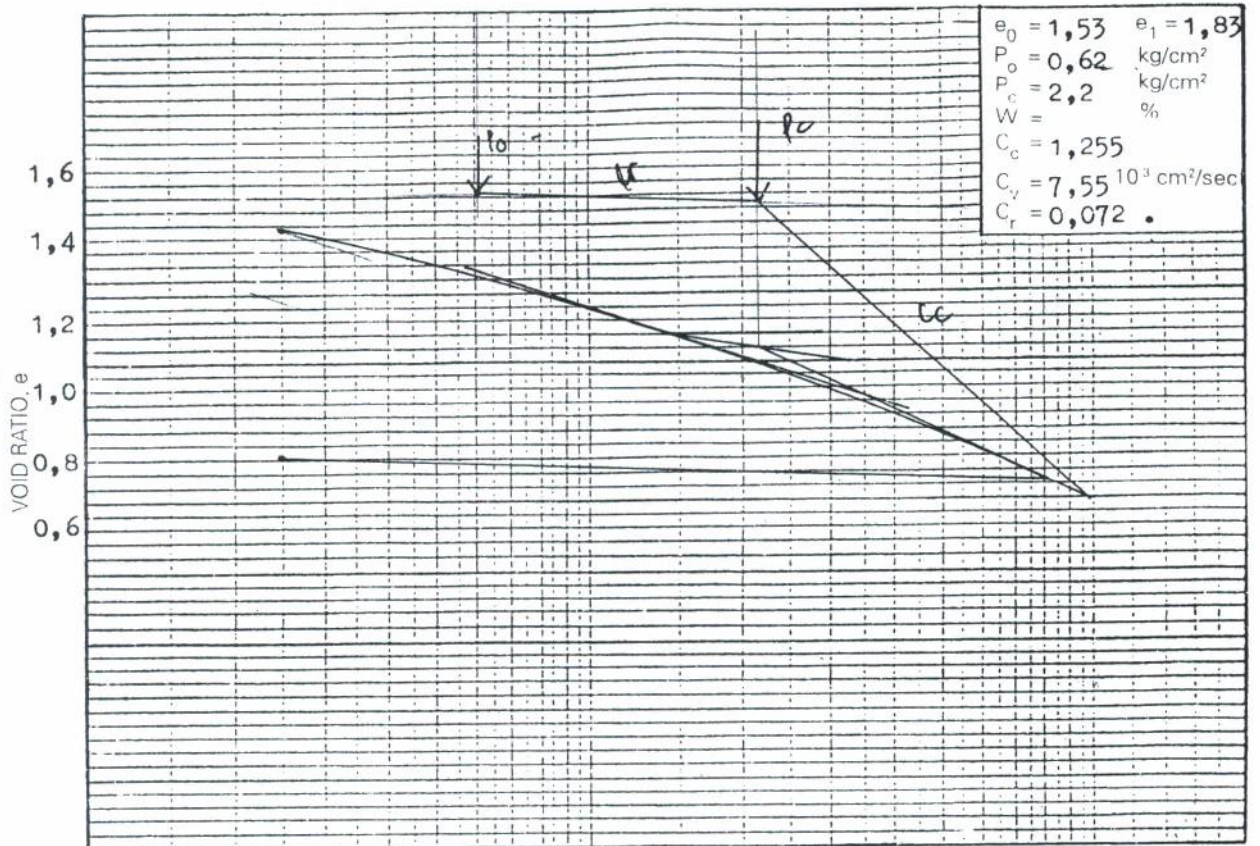




CONSOLIDATION TEST

Project : Ruko Bintaro  
 Location : Bintaro, Jak-Sel  
 Boring no. : DB-2

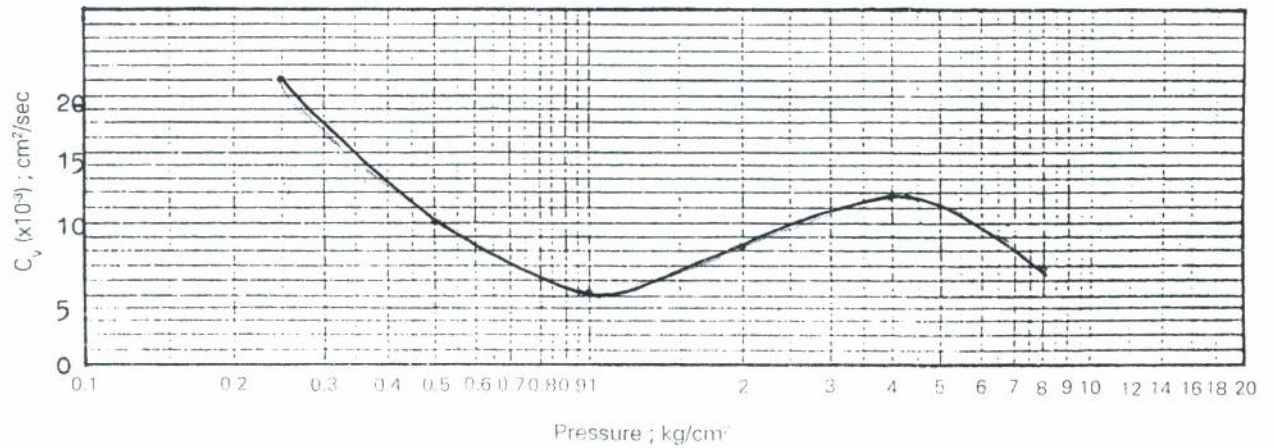
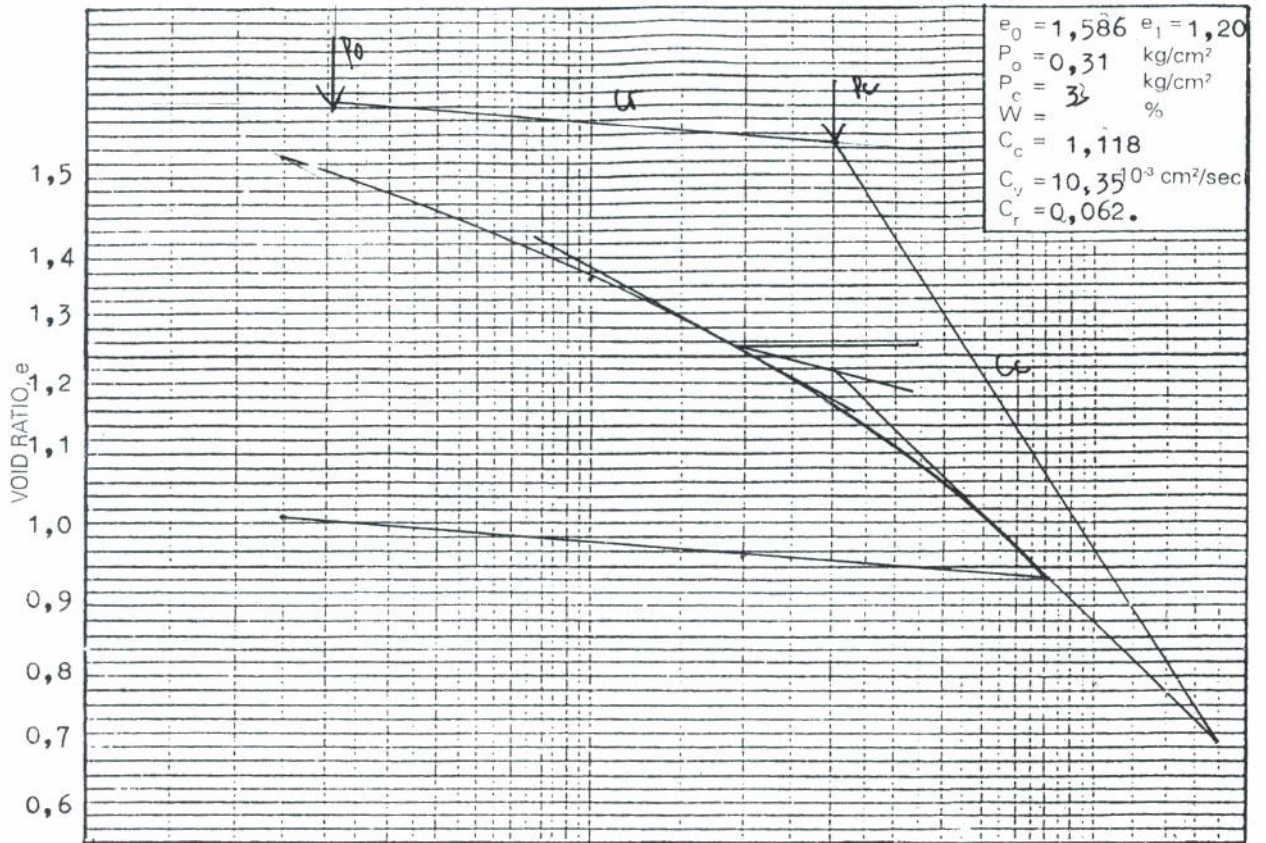
Depth of Sample : 950 - 1000 .  
 Date of test : Desember 1995 .  
 Test by : Rr Prihadini N





CONSOLIDATION TEST

Project : Ruko Bintaro                      Depth of Sample : 150 - 200 .  
 Location : Bintaro, Jak-Sel .              Date of test : Desember 1995 .  
 Boring no. : DB-3 .                          Test by : Rr Prihadini N



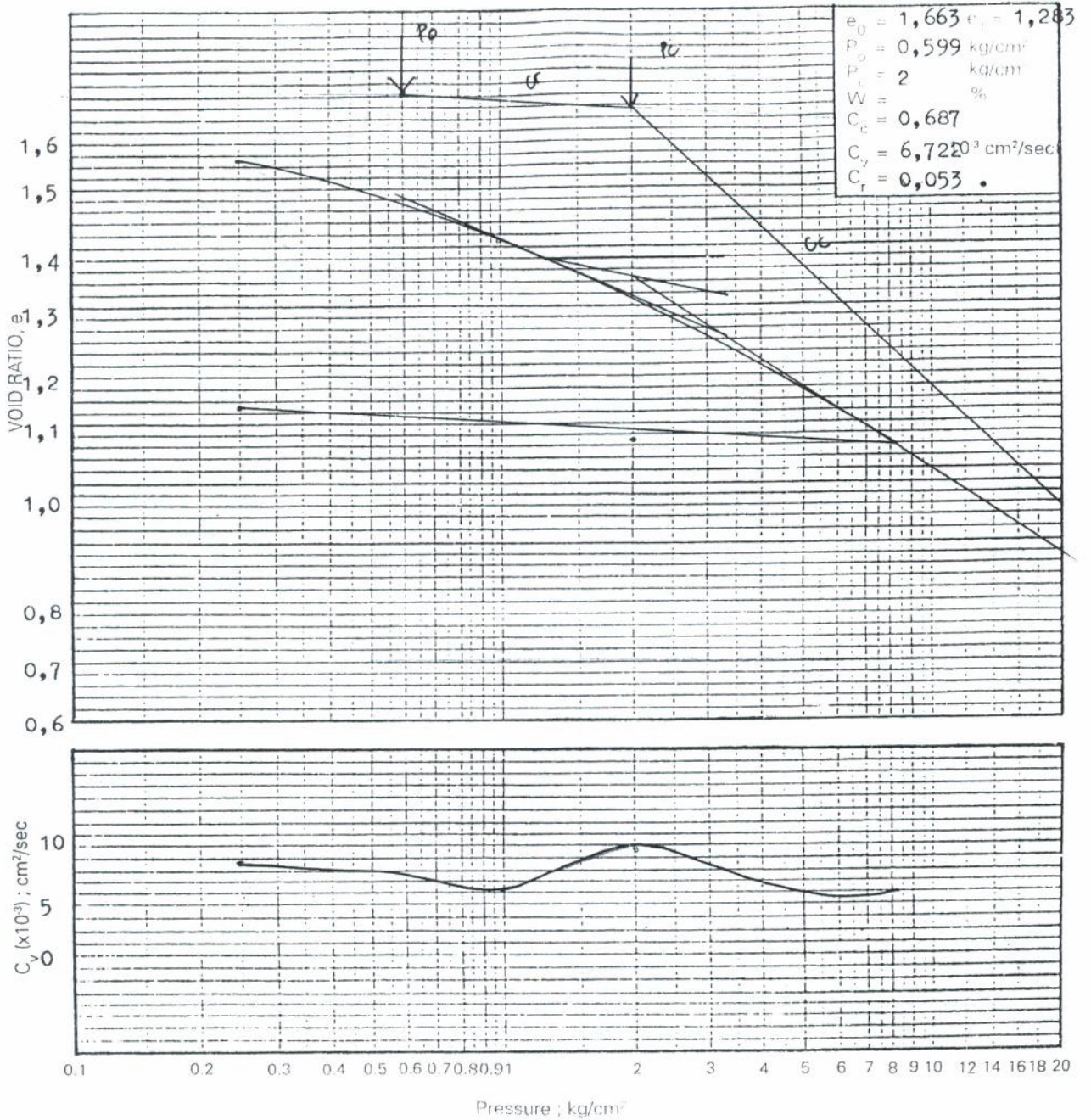




CONSOLIDATION TEST

Project : Ruko Bintaro  
 Location : Bintaró, Jak-Sel .  
 Boring no. : DB-3 .

Depth of Sample : 350-400 .  
 Date of test : Desember 1995.  
 Test by : Rr +rihadini N

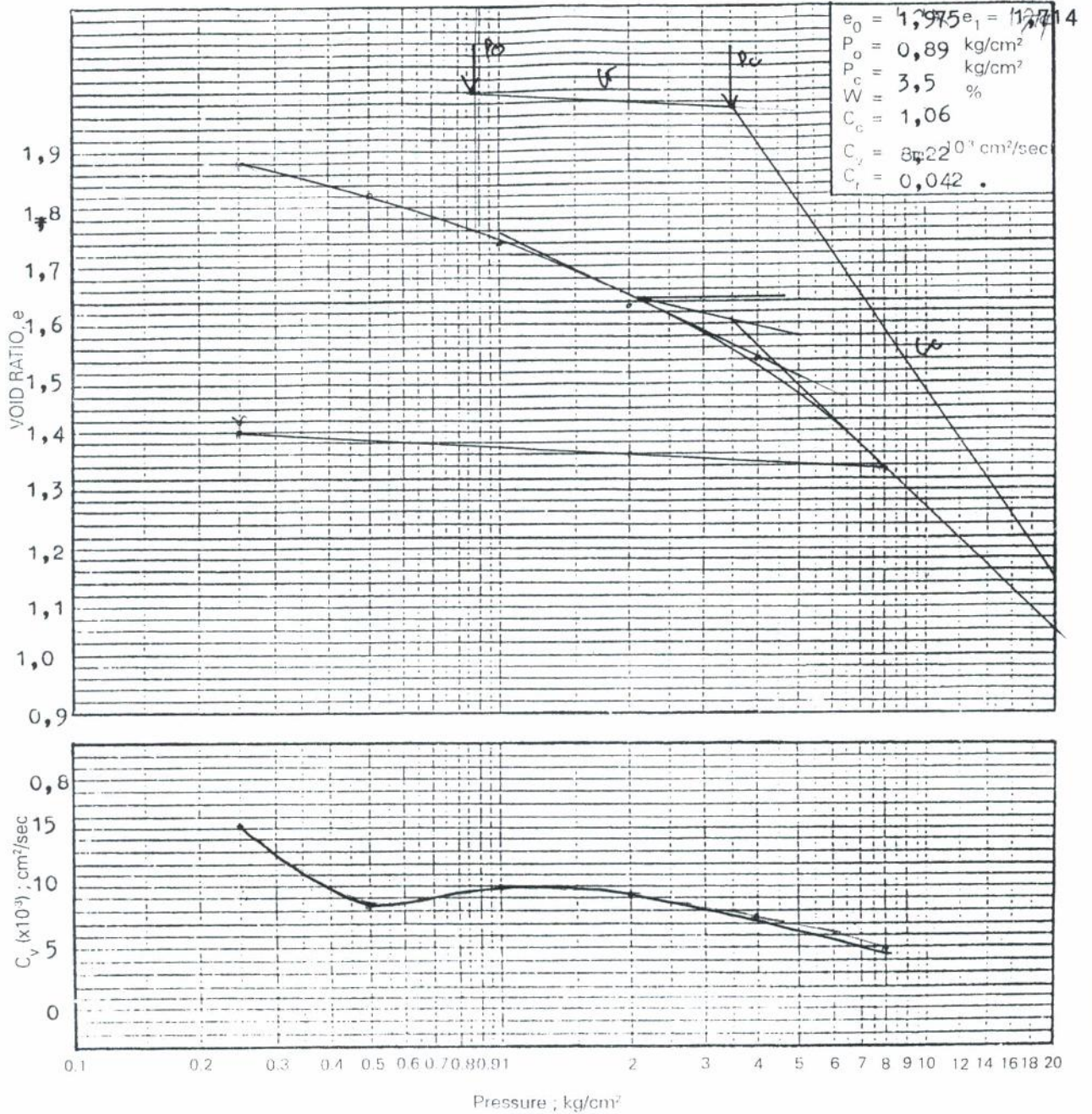




CONSOLIDATION TEST

Project : Ruko Bintaro  
 Location : Bintaro, Jak-Sel  
 Boring no. : DB - 3 .

Depth of Sample : 550 - 600  
 Date of test : Desember 1995 .  
 Test by : Rr Prihadini N

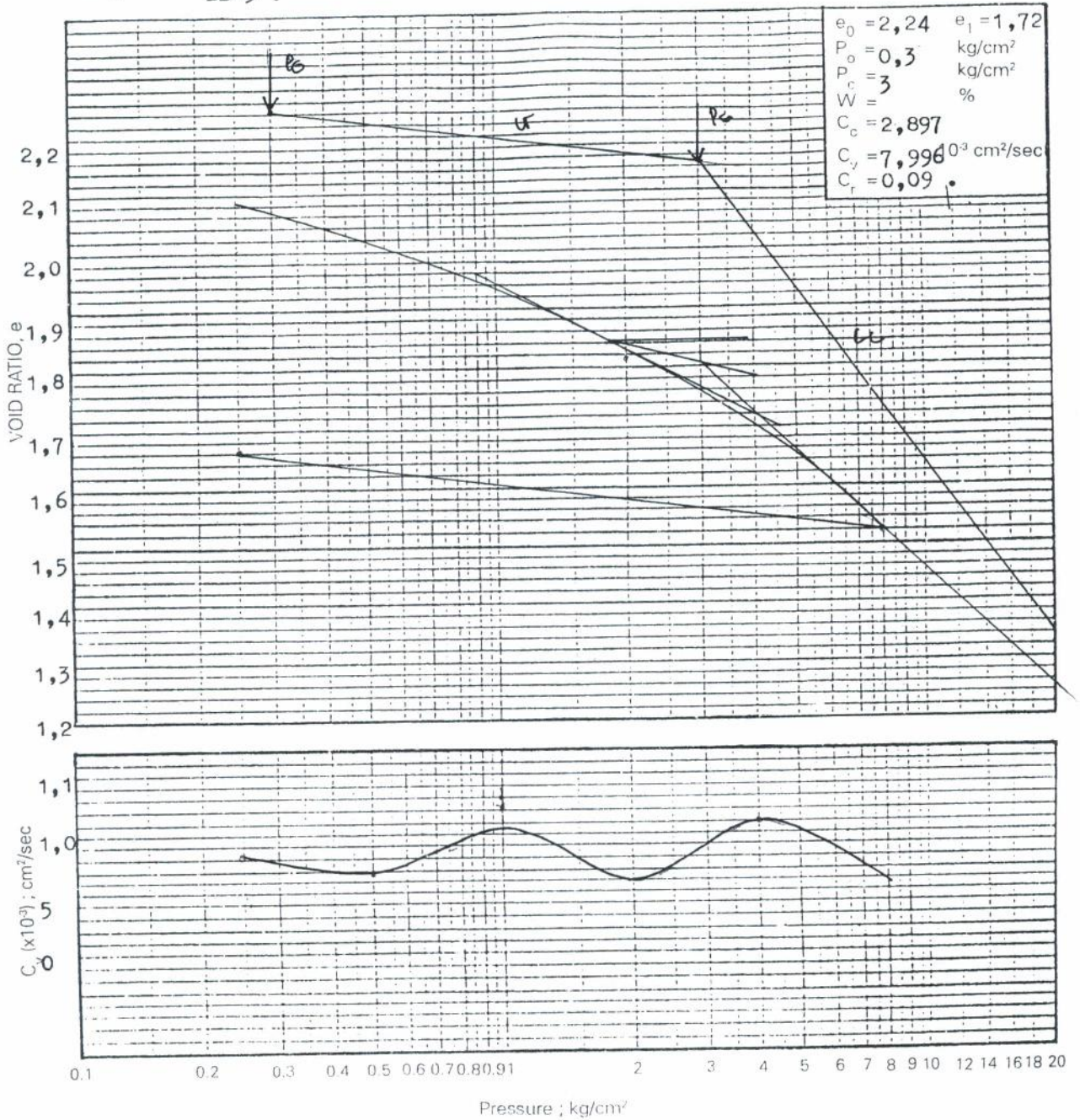




CONSOLIDATION TEST

Project : Bintaro Ruko .  
 Location : Bintaro, Jak-Sel .  
 Boring no. : DB-3 .

Depth of Sample : 750 - 800 .  
 Date of test : Desember 1995 .  
 Test by : Rr Prihadini N





CONSOLIDATION TEST

Project : Ruko Bintaro  
 Location : Bintaro, Jak-Sel .  
 Boring no. : DB-3 .

Depth of Sample : 950 - .1000 .  
 Date of test : Desember 1995 .  
 Test by : Rr Prihadini N

