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Lampiran 1 Data Borelog

GEOLOGICAL DRILLING LOG										BH 2										
Project : PERENCANAAN PEMBANGUNAN GEDUNG JEC ORBITA - MAKASSAR			Method of drilling : ROTARY DRILLING Inklination : VERTICAL Depth : 60.00 meter Elevation : 3.05 m			Drilling Machine : TOHO G2DJ Start : 10 Juni 2021 Finished : 20 Juni 2021 Scale :			Bormaster : E. Wahidin Logged by : Ir Hari Sudjman Checked by : Approved by :											
Location : Coordinate of Location : S = 5°1'56.92548" E = 119°25'38.17056"										GRAPHIC (N Value) 0 10 20 30 40 50 60 										
Date	Climate	Start	Finished	Depth	Depth of Layer	LITHOLOGICAL	DESCRIPTION	Progress	Length of Core	Core	Cutting	Not Recovered	R.Q.D (%)	Di. Core Barrel	Di. Casing	N 1	N 2	N 3	N = N 2 + N 3	SOIL SAMPLE
10 Juni 2021	Terang	-	1.70 m	0.0 - 1.70		Top soil, bahan timbunan teridri atas bongkah batuanmn, pasir kasar-halus, kerikilan, sedikit lanauan										1/15	1/15	1/15	2/30	UDS
11 Juni 2021	Terang	1.70 cm	1.74 cm	1.70 - 1.74		Pasir halus, sedikit lanauan, hitam, plastisitas rendah-non plastis,										3/15	3/15	3/15	6/30	UDS
12 Juni 2021	Terang	1.74 cm	2.00 cm	1.74 - 2.00		Pasir halus, sedikit lanauan, hitam, plastisitas rendah-non plastis,										4/15	9/15	7/15	16/30	UDS
12 Juni 2021	Terang	1.74 cm	2.00 cm	2.00 - 10.5		Lempung, abu-abu kehitaman, sangat lunak-lunak, plastisitas tinggi,										3/15	4/15	4/15	8/15	UDS
12 Juni 2021	Terang	1.74 cm	2.00 cm	10.5 - 15.0		Lempung, abu-abu kehitaman, sangat lunak-lunak, plastisitas tinggi,										2/15	3/15	3/15	6/30	UDS
12 Juni 2021	Terang	1.74 cm	2.00 cm	15.0 - 16.0		Lempung, abu-abu kehitaman, sangat lunak-lunak, plastisitas tinggi,										5/15	5/15	8/15	13/30	UDS
12 Juni 2021	Terang	1.74 cm	2.00 cm	16.0 - 18.5		Lempung, abu-abu kehitaman, sangat lunak-lunak, plastisitas tinggi,										3/15	9/15	6/15	15/30	UDS
12 Juni 2021	Terang	1.74 cm	2.00 cm	18.5 - 19.0		Lempung, abu-abu kehitaman, sangat lunak-lunak, plastisitas tinggi,										3/15	4/15	5/15	9/15	UDS
13 Juni 2021	Terang	2.00 cm	2.15 cm	19.0 - 21.5		Sisipan lanau, hitam, lunak,										4/15	8/15	6/15	12/30	UDS
13 Juni 2021	Terang	2.00 cm	2.15 cm	21.5 - 22.0		Batupasir, abu-abu, butir halus-kasar, keras,										7/15	50/14	-	>50	UDS
13 Juni 2021	Terang	2.00 cm	2.15 cm	22.0 - 24.5		Batupasir, abu-abu, butir halus-kasar, keras,										50/12	-	-	>50	UDS
13 Juni 2021	Terang	2.00 cm	2.15 cm	24.5 - 25.0		RQD = 0% - 87% SPT>50										76				UDS

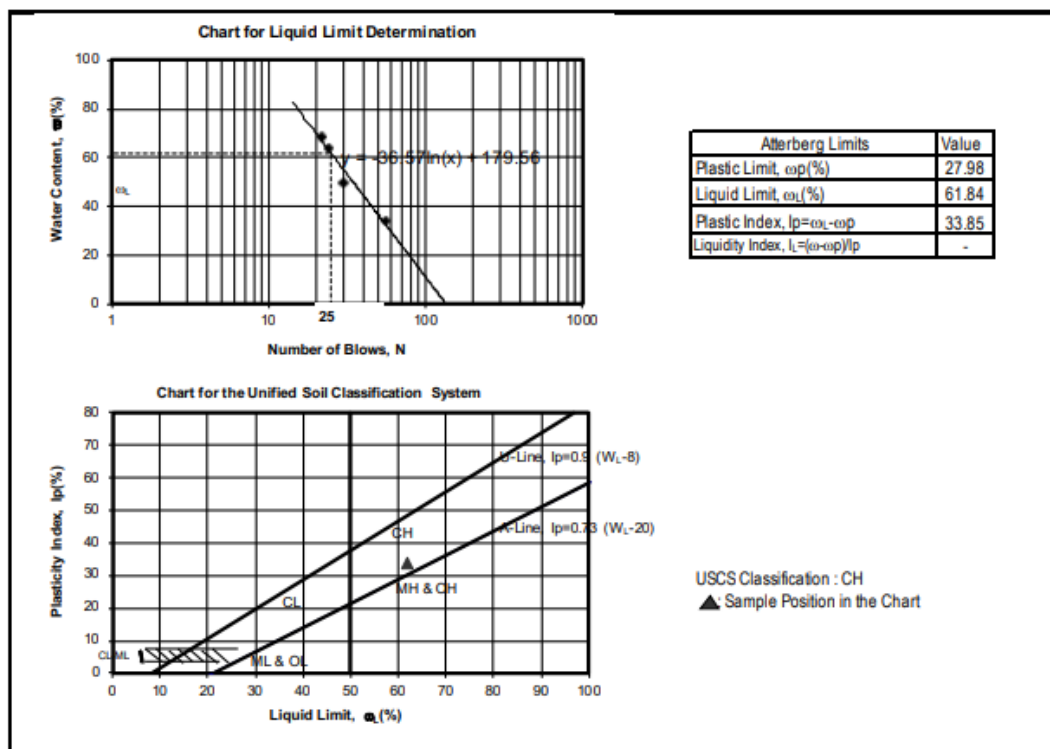
Lampiran 2 Data hasil pengujian *Unit Weight*

TEST RESULTS OF GENERAL PROPERTIES (Wet Density, Water Content, Dry Density, Porosity, & Degree of Saturation)											
PROJECT	: JEC-ORBITA										
LOCATION	: JL MESJID RAYA										
BORING NUMBER	: BH-2										
BORING DEPTH	Meter										
TESTING METHOD	: ASTM D 2216-(98), D 2937-(71), AASHTO T100-71										
	TESTED BY : Firmansyah Yusuf										
	DATE : Juni 2020										
Bore Hole No.	-	BH-2			BH-2			BH-2			KETERANGAN
Sample	-	1			2			3			
Sample Depth & Inclination	m	5,00 - 5,50			10,00 - 10,50			15,00 - 15,50			
Ring / Container Number	-	1	2	2	1	2	3	1	2	3	
Weight of Ring, (1)	Gram	66.21	66.21	66.21	66.21	66.21	66.21	66.21	66.21	66.21	
Weight of Container, (2)	Gram	13.17	14.76	10.80	12.56	11.56	11.57	8.79	10.89	13.29	
Weight of Ring+Container+Wet Soil, (3)	Gram	191.80	193.57	194.50	175.67	170.96	173.93	168.64	171.47	173.64	
Weight of Wet Soil, (4)=(3)-(2)-(1))	Gram	112.42	112.60	117.49	96.90	93.19	96.15	93.64	94.37	94.14	
Volume of Soil or Ring, (5)	cm ³	62.34	62.34	62.34	62.34	62.34	62.34	62.34	62.34	62.34	
Weight of Container+Dry Soil, (6)	Gram	24.23	29.77	25.87	21.26	18.37	19.35	13.50	16.59	18.56	
Weight of Dry Soil, (7)=(6)-(2))	Gram	11.06	15.01	15.07	8.70	6.81	7.78	4.71	5.70	5.27	
Weight of Water, (8)=(4)-(7)	Gram	2.62	3.65	3.87	2.24	1.43	1.55	0.80	1.41	0.94	
Specific Gravity, G _s	-	2.648	2.648	2.648	2.708	2.708	2.708	2.716	2.716	2.716	
Volume of Dry Soil, (9)=(7)/G _s	cm ³	32.40	32.19	32.98	26.57	27.18	28.43	28.62	26.15	28.48	
Volume of Pore, (10)=(5)-(9)	cm ³	29.94	30.15	29.36	35.78	35.16	33.91	33.72	36.19	33.86	
Wet Density, $\gamma_{wet} = (4)/(5)$	Gr/cm ³	1.80	1.81	1.88	1.55	1.49	1.54	1.50	1.51	1.51	
Water Content, $w=(8)/(7)*100\%$	%	23.69	24.32	25.68	25.75	21.00	19.92	16.99	24.74	17.84	
Dry Density, $\gamma_d = \gamma_{wet}/(1+w)$	Gr/cm ³	1.46	1.45	1.50	1.24	1.24	1.29	1.28	1.21	1.28	
Porosity, $n=(10)/(5)*100\%$	%	48.03	48.37	47.10	57.39	56.40	54.40	54.09	58.05	54.31	
Degree of Saturation, $S_r=(8)/(10)*100\%$	%	88.94	90.80	92.49	69.73	55.66	56.49	47.16	64.51	49.59	

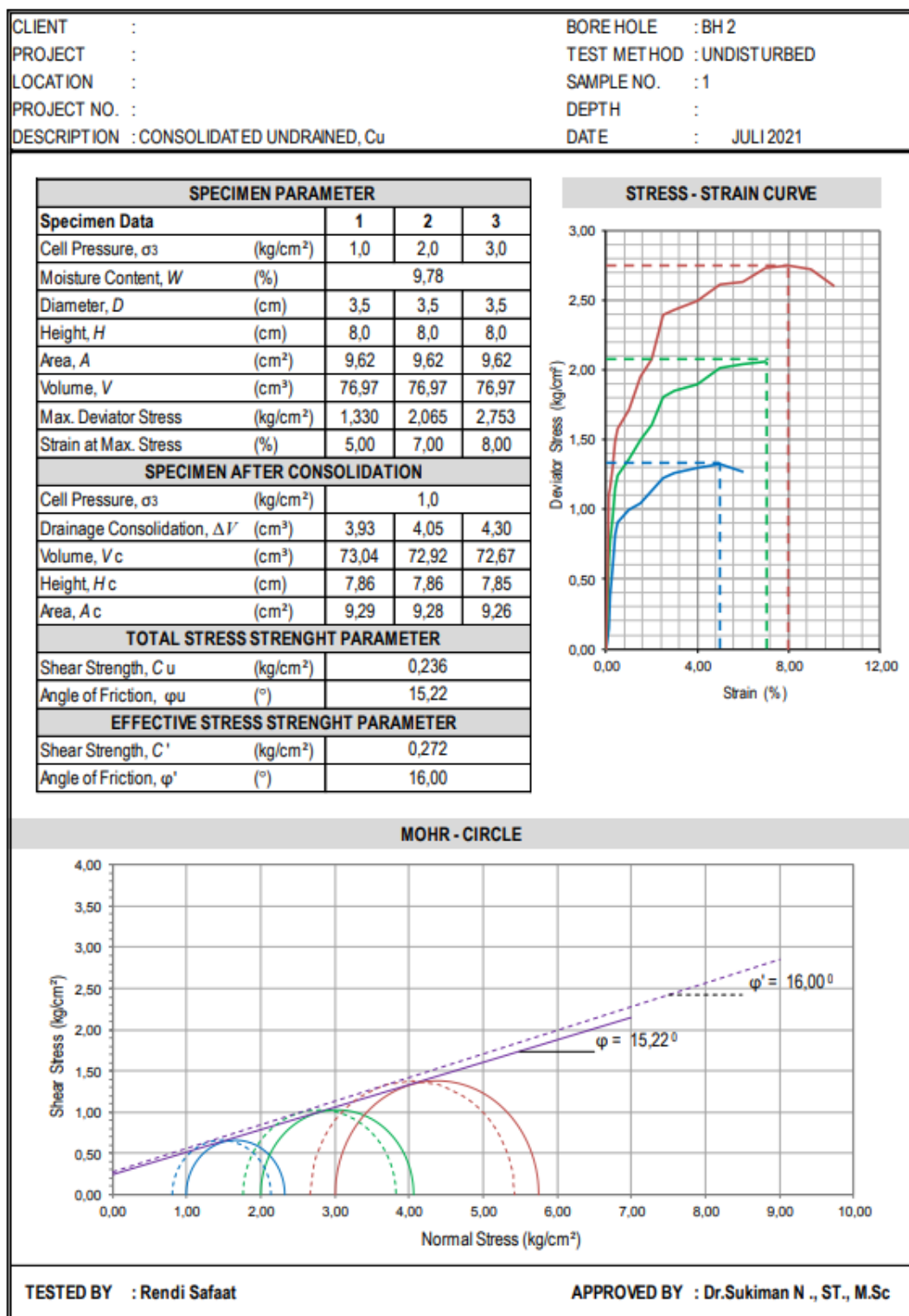
TEST RESULTS OF GENERAL PROPERTIES (Wet Density, Water Content, Dry Density, Porosity, & Degree of Saturation)				
PROJECT	: JEC-ORBITA			
LOCATION	: JL MESJID RAYA			
BORING NUMBER	: BH-2			
BORING DEPTH	Meter	: Firmansyah Yusuf		
TESTING METHOD	: ASTM D 2216-(98), D 2937-(71), AASHTO T100-71			: Juni 2020
Bore Hole No.	-	BH-2		
Sample	-	4		
Sample Depth & Inclination	m	20 - 20,50		
Ring / Container Number	-	1	2	2
Weight of Ring, (1)	Gram	66.21	66.21	66.21
Weight of Container, (2)	Gram	8.82	8.15	8.76
Weight of Ring+Container+Wet Soil, (3)	Gram	190.40	186.22	184.46
Weight of Wet Soil, (4)={(3)-(2)-(1)}	Gram	115.37	111.86	109.49
Volume of Soil or Ring, (5)	cm ³	62.34	62.34	62.34
Weight of Container+Dry Soil, (6)	Gram	20.00	15.93	19.60
Weight of Dry Soil, (7)={(6)-(2)}	Gram	11.18	7.78	10.84
Weight of Water, (8)=(4)-(7)	Gram	3.90	3.03	3.53
Specific Gravity, G _s	-	2.734	2.734	2.734
Volume of Dry Soil, (9)=(7)/G _s	cm ³	27.47	24.98	27.00
Volume of Pore, (10)=(5)-(9)	cm ³	34.87	37.36	35.34
Wet Density, $\gamma_{wet} = (4)/(5)$	Gr/cm ³	1.85	1.79	1.76
Water Content, $w=(8)/(7)*100\%$	%	34.88	38.95	32.56
Dry Density, $\gamma_d = \gamma_{wet}/(1+w)$	Gr/cm ³	1.37	1.29	1.32
Porosity, $n=(10)/(5)*100\%$	%	55.93	59.94	56.69
Degree of Saturation, $S_r=(8)/(10)*100\%$	%	98.10	95.61	98.88

Lampiran 3 Data hasil pengujian *Atterberg Limits*

ATTERBERG LIMITS TEST RESULTS							
(Unified Soil Classification System Chart)							
PROJECT	: JEC-ORBITA						
LOCATION	: BH-2 JL MESJID RAYA						
BORING NUMBER	:						
BORING DEPTH	: Meter 20,00 - 20,50				TESTED BY	: Firmansyah Yusuf	
TESTING METHOD	: ASTM D 424-59, D 4318-(00), AASHTO T89/T90				DATE	: Juni 2020	
Sample No.	3						
Depth of Sample	7,00 -7,55						
	Unit	Plastic Limit		Liquid Limit			
Test Number	-	1	2	1	2	3	4
Number of Blows	N	-	-	55.0	30.0	24.0	22.0
Container No. or Can No.	-	A	B	1	2	3	4
Weight of Wet Soil+Can, W1	gram	16.78	18.10	25.14	19.32	21.42	21.51
Weight of Dry Soil+Can, W2	gram	15.02	16.10	20.91	15.76	16.46	16.28
Weight of Water, Ww=W1-W2	gram	1.76	2.00	4.23	3.56	4.96	5.23
Weight of Can, W3	gram	8.75	8.93	8.68	8.68	8.76	8.68
Weight of Dry Soil, Ws=W2-W3	gram	6.27	7.17	12.23	7.08	7.70	7.60
Water Content, $w = Ww/Ws * 100\%$	%	28.07	27.89	34.59	50.28	64.42	68.82
Average of Water Content, w	%	27.98		34.59	50.28	64.42	68.82

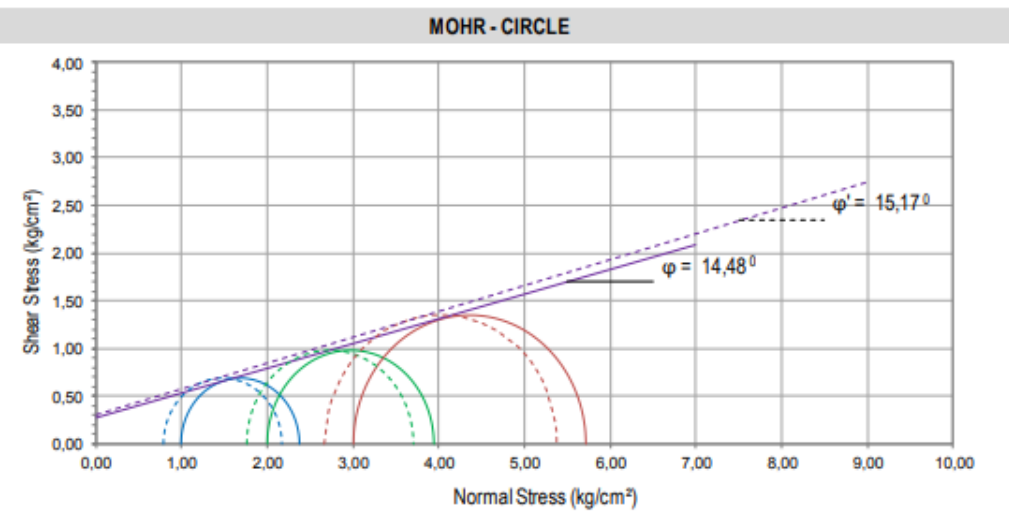
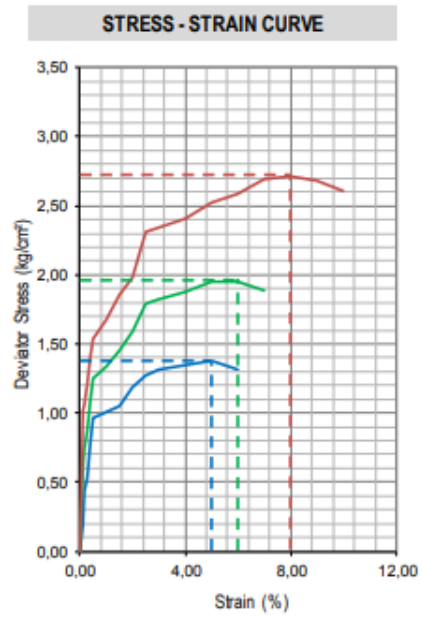


Lampiran 4 Data hasil pengujian *Triaxial* (CU)



CLIENT :	BORE HOLE : BH 2
PROJECT :	TEST METHOD : UNDISTURBED
LOCATION :	SAMPLE NO. : 2
PROJECT NO. :	DEPTH :
DESCRIPTION : CONSOLIDATED UNDRAINED, C_u	DATE : JULI 2021

SPECIMEN PARAMETER				
Specimen Data				
Cell Pressure, σ_3	(kg/cm ²)	1,0	2,0	3,0
Moisture Content, W	(%)	10,49		
Diameter, D	(cm)	3,5	3,5	3,5
Height, H	(cm)	8,0	8,0	8,0
Area, A	(cm ²)	9,62	9,62	9,62
Volume, V	(cm ³)	76,97	76,97	76,97
Max. Deviator Stress	(kg/cm ²)	1,376	1,951	2,709
Strain at Max. Stress	(%)	5,00	6,00	8,00
SPECIMEN AFTER CONSOLIDATION				
Cell Pressure, σ_3	(kg/cm ²)	1,0		
Drainage Consolidation, ΔV	(cm ³)	4,05	4,17	4,30
Volume, V_c	(cm ³)	72,92	72,80	72,67
Height, H_c	(cm)	7,86	7,85	7,85
Area, A_c	(cm ²)	9,28	9,27	9,26
TOTAL STRESS STRENGTH PARAMETER				
Shear Strength, C_u	(kg/cm ²)	0,275		
Angle of Friction, ϕ_u	(°)	14,48		
EFFECTIVE STRESS STRENGTH PARAMETER				
Shear Strength, C'	(kg/cm ²)	0,312		
Angle of Friction, ϕ'	(°)	15,17		



TESTED BY : Rendi Safaat	APPROVED BY : Dr.Sukiman N ., ST., M.Sc
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Lampiran 5 Summary data hasil pengujian laboratorium

SUMMARY OF LABORATORY TEST RESULTS						
PROJECT		: JEC ORBITA				
LOCATION		: JL. MASJID RAYA MAKASSAR				
BORING NUMBER		: BH 2				
BORING DEPTH		: Varies				
Bore Hole No.	-	BH 2	BH 2	BH 2	BH 2	Remark
Sample	-	1	2	3	4	
Sample Depth	m	5.00 - 5.50 m	10.00 - 10.50 m	15.00 - 15.50 m	20.00 - 20.50 m	
Specific Gravity (Gs)	-	2.65	2.71	2.72	2.73	
Dry Density (γ_d)	gr/cm ³	1.47	1.25	1.28	1.30	
Natural States (Undisturbed)	Water Content (w)	%	24.56	22.22	17.41	34.82
	Wet Density (γ_{wet})	gr/cm ³	1.83	1.53	1.51	1.75
	Void ratio (e)	-	0.92	1.28	1.18	1.42
	Porosity (n)	-	47.83	56.06	54.20	58.74
	Degree of Saturation (Sr)	%	90.74	60.62	48.38	93.54
Gradation Analysis	Gravel	%	0.00	0.00	0.00	0.00
	Sand	%	83.36	86.63	46.12	46.44
	Silt + Clay	%	16.64	13.37	53.88	53.56
	Clay	%	1.35	2.92	17.06	22.05
Atterberg Limits	Liquid Limit (LL)	%	17.61	39.64	45.75	66.57
	Plastic Limit (PL)	%	0.00	31.72	12.33	33.62
	Plasticity Index (PI)	%	NP	7.91	33.42	32.95
	Shrinkage Limit (SL)	%	-	-	-	-
Konsolidasi Test	Compressibility Index (cc)	Cc	0.043	0.228	0.531	0.636
	Swelling Index (Cr)	Cr	0.031	0.007	0.029	0.066
	Preconsolidation pressure	kPa	220	200	180	280
	Overconsolidated ratio (OCR)	-	4.624	1.720	1.002	1.004

NO.	URAIAN PEMERIKSAAN	SATUAN	HASIL PEMERIKSAAN			
			BH 01 UDS 1	BH 01 UDS 2	BH 02 UDS 1	BH 02 UDS 2
I.	INDEX PROPERTIES					
1	Berat Volume Basah, γ_b	gr/cm ³	1,15	1,11	1,01	0,92
2	Berat volume kering, γ_d	gr/cm ³	1,10	0,95	0,92	0,83
3	Moisture Content, W	%	5,01	16,76	9,78	10,49
II.	ENGINEERING PROPERTIES					
	TOTAL STRESS STRENGTH PARAMETER					
1	Shear Strength, C_u	kg/cm ²	0,090	0,133	0,236	0,275
2	Angle of Friction, ϕ_u	°	15,90	16,81	15,22	14,48
	EFFECTIVE STRESS STRENGTH PARAMETER					
1	Shear Strength, C'	kg/cm ²	0,133	0,175	0,272	0,312
2	Angle of Friction, ϕ'	°	16,26	17,58	16,00	15,17