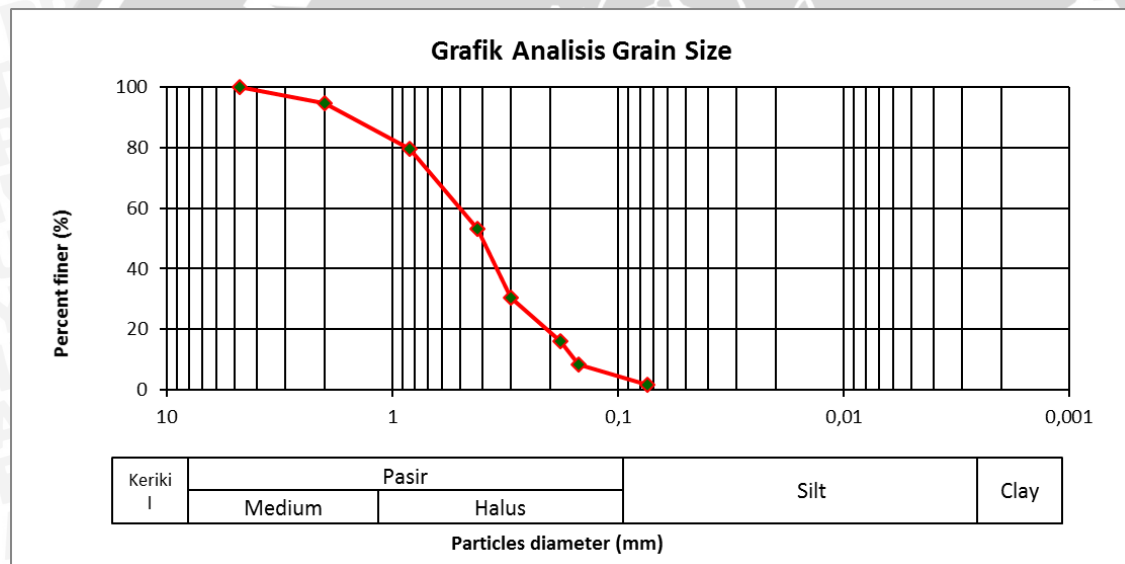


Lampiran 1

Hasil Analisis Gradasi Butiran Tanah

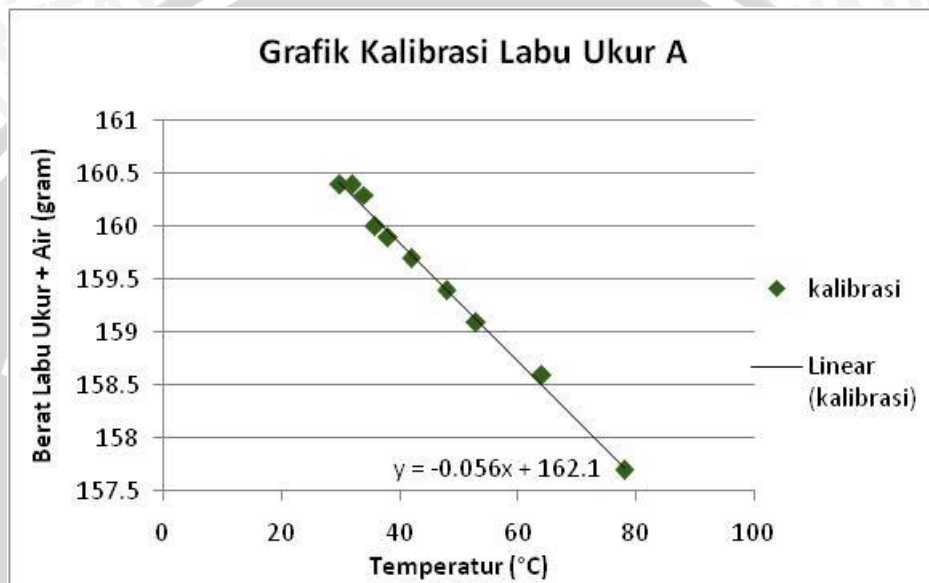
Nomor Ayakan	Diameter Ayakan (mm)	Berat Tertahan (gr)	Berat Kumulatif (gr)	Persen Tertahan (%)	Persen Lolos (%)
No. 4	4,75	0,0	0	0,00	100,00
No. 10	2	26,0	26	5,22	94,78
No. 20	0,84	75,9	101,9	20,44	79,56
No. 40	0,42	132,0	233,9	46,92	53,08
No. 50	0,3	112,2	346,1	69,43	30,57
No. 80	0,18	72,5	418,6	83,97	16,03
No. 100	0,149	37,5	456,1	91,49	8,51
No. 200	0,074	33,3	489,4	98,17	1,83
PAN		9,1	498,5	100,00	0,00



Lampiran 2

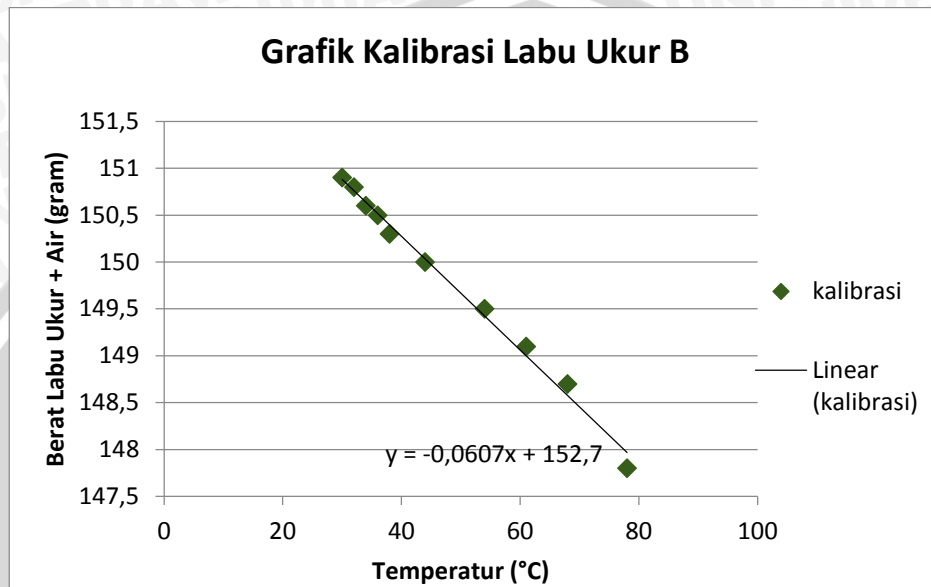
Hasil Analisis *Spesific Gravity* Tanah

Labu Ukur	A									
No. Pemeriksaan	1	2	3	4	5	6	7	8	9	10
Temperatur (°C)	78	64	53	48	42	38	36	34	32	30
Berat Labu Ukur + Air (gram)	158	158,6	159,1	159,4	160	160	160	160	160	160,4



Labu Ukur	A										
Berat Labu Ukur	gram	52,2									
Berat Tanah Kering (Ws)	gram	20									
Berat Labu Ukur + Air + Tanah (W1)	gram	170,5	170,9	171,2	171,9	172,3	172,6	172,7	173,1	173,4	173,4
Suhu	gram	82	76	70	62	53	45	42	37	34	30
Berat Labu Ukur + Air (W2)	(°C)	157,5	157,8	158,2	158,6	159,1	159,6	159,7	160,0	160,2	160,4
Berat Jenis Air (Gt)	gram/cm ³	0,971	0,974	0,978	0,982	0,986	0,99	0,992	0,993	0,994	0,995
Berat Jenis Tanah (Gs)	gram/cm ³	2,774	2,807	2,804	2,920	2,887	2,836	2,814	2,866	2,924	2,833
Rata-rata Berat Jenis	gram/cm ³	2,846									

Labu Ukur	B									
No. Pemeriksaan	1	2	3	4	5	6	7	8	9	10
Temperatur (°C)	78	68	61	54	44	38	36	34	32	30
Berat Labu Ukur + Air (gram)	148	148,7	149,1	149,5	150	150	151	151	151	150,9



Labu Ukur	B										
Berat Labu Ukur	gram	50,1									
Berat Tanah Kering (Ws)	gram	20									
Berat Labu Ukur + Air + Tanah (W1)	gram	160,8	161,3	161,5	162	162,2	162,6	163,1	163,3	163,5	163,7
Suhu	gram	82	75	71	64	61	50	45	40	33	30
Berat Labu Ukur + Air (W2)	(°C)	147,7	148,1	148,4	148,8	149,0	149,7	150,0	150,3	150,7	150,9
Berat Jenis Air (Gt)	gram/cm ³	0,971	0,975	0,977	0,981	0,983	0,988	0,99	0,992	0,995	0,995
Berat Jenis Tanah (Gs)	gram/cm ³	2,805	2,848	2,836	2,879	2,892	2,797	2,883	2,846	2,765	2,772
Rata-rata Berat Jenis	gram/cm ³	2,832									

Lampiran 3

Hasil Analisis Uji Geser Langsung (*Direct Shear*)

Data:

Kalibrasi alat : 0,358

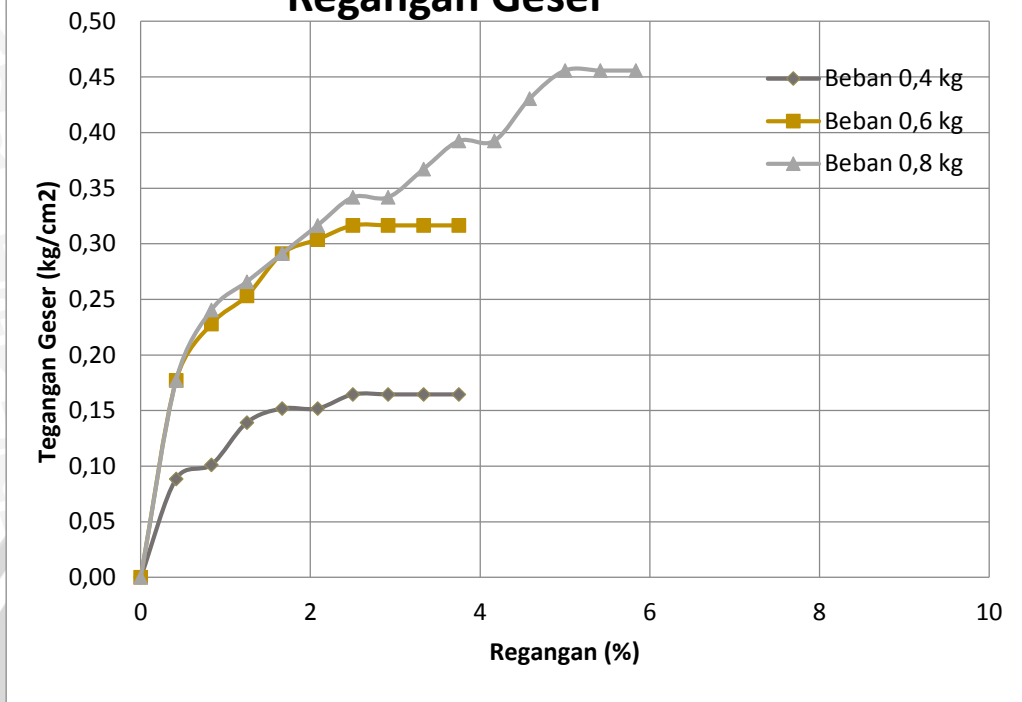
Tinggi Sampel : 2 cm

Diameter Sampel : 6 cm

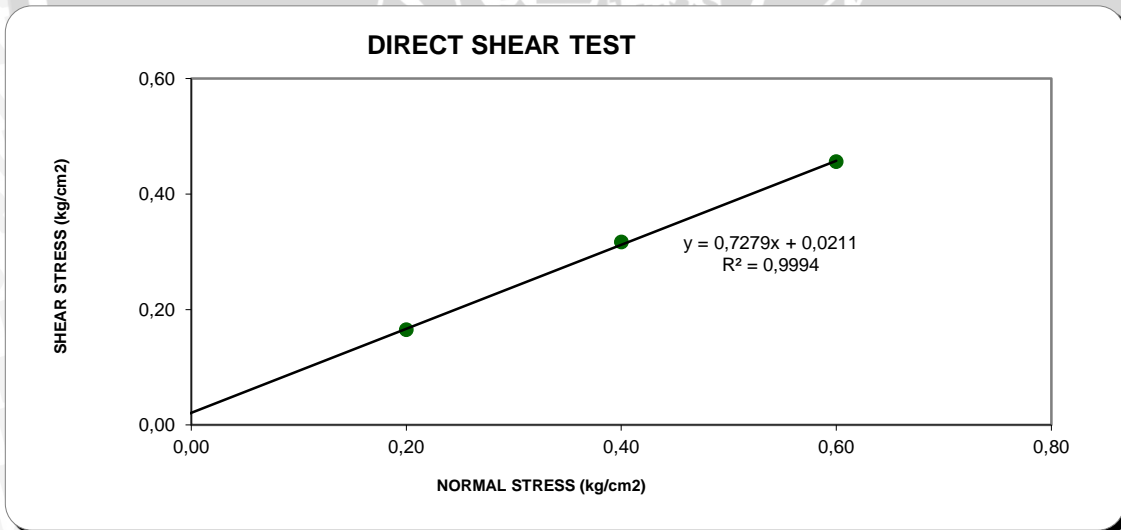
Luas Sampel : 28,274 cm²

NORMAL FORCE	P1 = 0,4 kg			P2 = 0,8 kg			P3 = 1,2 kg		
NORMAL STRESS	s1 = 0,20 kg/cm ²			s2 = 0,40 kg/cm ²			s3 = 0,60 kg/cm ²		
STRAIN	DIAL READING	SHEAR FORCE	SHEAR STRESS	DIAL READING	SHEAR FORCE	SHEAR STRESS	DIAL READING	SHEAR FORCE	SHEAR STRESS
0	0	0	0	0	0	0	0	0	0
25	7,0	2,506	0,089	14,0	5,012	0,177	14,0	5,012	0,177
50	8,0	2,864	0,101	18,0	6,444	0,228	19,0	6,802	0,241
75	11,0	3,938	0,139	20,0	7,160	0,253	21,0	7,518	0,266
100	12,0	4,296	0,152	23,0	8,234	0,291	23,0	8,234	0,291
125	12,0	4,296	0,152	24,0	8,592	0,304	25,0	8,950	0,317
150	13,0	4,654	0,165	25,0	8,950	0,317	27,0	9,666	0,342
175	13,0	4,654	0,165	25,0	8,950	0,317	27,0	9,666	0,342
200	13,0	4,654	0,165	25,0	8,950	0,317	29,0	10,382	0,367
225	13,0	4,654	0,165	25,0	8,950	0,317	31,0	11,098	0,393
250		0,000	0,000				31,0	11,098	0,393
275		0,000	0,000				34,0	12,172	0,431
300		0,000	0,000				36,0	12,888	0,456
325		0,000	0,000				36,0	12,888	0,456
350		0,000	0,000				36,0	12,888	0,456
375		0,000	0,000				36,0	12,888	0,456
400		0	0,000					0,0000	0,0000
425		0	0,000						
450		0	0,000						

Grafik Hubungan Tegangan dan Regangan Geser



DIRECT SHEAR TEST



C = 0.0000 kg/cm²

Ø = 33.007 °



Lampiran 4

Hasil Analisis Uji Pemadatan Standar (*compaction*)

Kadar Air

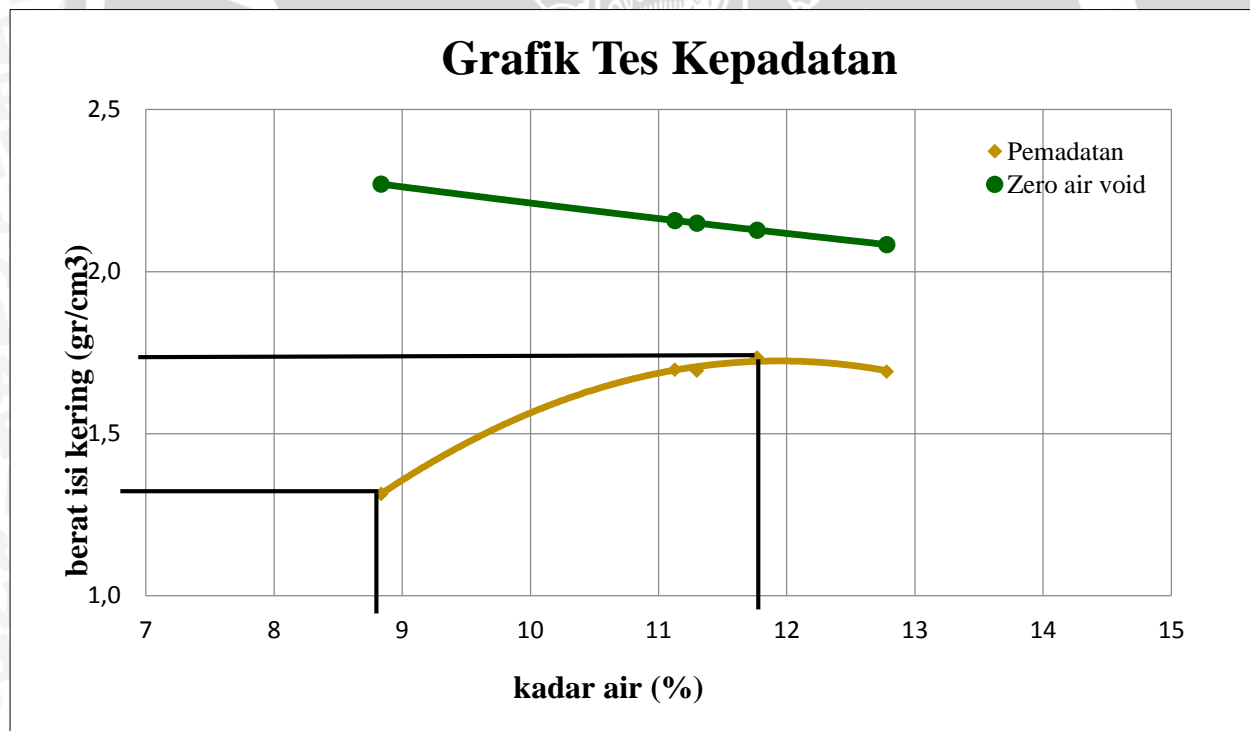
Penambahan air (ml)	ml	264			330			360			390			420		
Lapisan	gr	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah	Atas	Tengah	Bawah
Cawan No.	gr	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat cawan + berat tanah bas	gr	25,50	29,90	25,80	23,90	30,70	29,20	22,20	36,70	27,20	25,20	29,10	30,00	37,80	37,40	44,50
Berat cawan + berat tanah ker	gr	24,10	27,90	24,00	22,30	28,30	26,50	20,70	32,80	25,10	23,50	26,30	27,20	34,60	33,70	39,80
Berat air	gr	1,40	2,00	1,8	1,6	2,4	2,7	1,5	3,9	2,1	1,7	2,8	2,8	3,20	3,70	4,7
Berat cawan	gr	5,70	5,70	5,80	5,70	5,60	6,00	4,00	4,30	6,40	5,70	4,20	5,80	5,90	6,10	5,70
Berat tanah kering	gr	18,40	22,20	18,2	16,6	22,7	20,5	16,7	28,5	18,7	17,8	22,1	21,4	28,70	27,60	34,1
Kadar air w%	%	7,61	9,01	9,89	9,64	10,57	13,17	8,98	13,68	11,23	9,55	12,67	13,08	11,15	13,41	13,78
Rata-rata Kadar Air	%	8,8			11,1			11,3			11,8			12,8		

Kepadatan

Penambahan Air	ml	264	330	360	390	420
Berat tanah basah +cetakan	gram	5610	6040	6040	6090	6060
Berat cetakan	gram	4260	4260	4260	4260	4260
Berat tanah basah	gram	1350	1780	1780	1830	1800
Volume cetakan	cm ³	943,50	943,50	943,50	943,50	943,50
Berat isi basah (γ_w)	gr/cm ³	1,431	1,887	1,887	1,940	1,908
Berat isi kering (γ_d)	gr/cm ³	1,315	1,698	1,695	1,735	1,692

Zero Air Void

Penambahan Air	ml	264	330	360	390	420
Kadar air (wc)	%	8,84	11,13	11,30	11,77	12,78
Gs	gr/cm ³	2,839	2,839	2,839	2,839	2,839
Berat jenis air (gw)	gr/cm ³	1	1	1	1	1
ZAV	gr/cm ³	2,270	2,158	2,150	2,128	2,083

Grafik Tes Kepadatan

Lampiran 5

Hasil Analisis Pemadatan Model Lereng

γ_d rencana : $1.315 \text{ gr/cm}^3 = 1315 \text{ kg/m}^3$

Luas box : (Panjang box \times Lebar box) = $0,98 \text{ m} \times 1,15 \text{ m} = 1,13 \text{ m}^2$

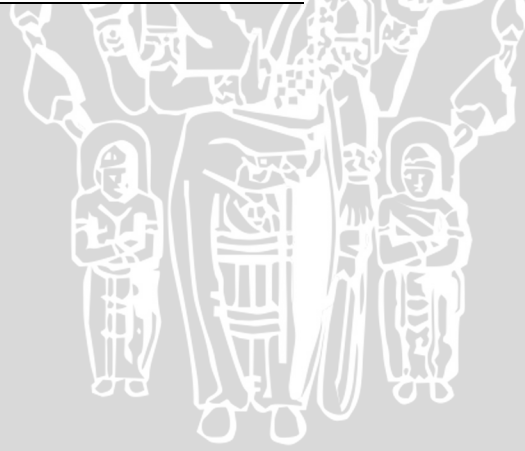
Berat tanah untuk tinggi rencana 10 cm : $1315 \times 0,113 = 148,595 \text{ kg}$

Berat tanah untuk tinggi rencana 3,6 cm : $1315 \times 0,041 = 53,915 \text{ kg}$

Berat tanah untuk tinggi rencana 3,2 cm : $1315 \times 0,036 = 47,34 \text{ kg}$

Hasil Pengujian Sand Cone

Berat galian (gram)	800
Berat pasir+kerucut (gram)	5900
Berat sisa pasir di kerucut (gram)	5120
Tanah di pelat (gram)	172
Berat isi kering lapangan	1,316
Berat isi kering maksimal di laboratorium	1,735
Rc (%)	75,84



Lampiran 6

Hasil Perhitungan Kadar Air dan Kepadatan Tanah

Sudut	46°	Jumlah Lapis	-
Lebar Pondasi	4	SV	-
Jarak Pondasi Ke Tepi Lereng	d/B = 1	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,50	18,70	18,40	18,50	18,70	18,40	18,50	18,70	18,40	18,50	18,30	18,40	18,50	18,70	18,40	18,50	18,30	18,40	18,50	18,30	18,40	18,40
Berat Tanah Basah + Ring	gr	34,10	34,40	34,00	34,20	34,10	33,90	34,20	34,60	34,30	34,00	33,90	33,80	34,30	34,60	34,10	34,20	33,90	34,30	34,00	33,70	34,50	34,50
Berat Tanah Basah	gr	15,60	15,70	15,60	15,70	15,40	15,50	15,70	15,90	15,90	15,50	15,60	15,40	15,80	15,90	15,70	15,70	15,60	15,90	15,50	15,40	16,10	16,10
Soil Unit Weight	gr/cm ³	1,44	1,45	1,44	1,45	1,43	1,43	1,45	1,47	1,47	1,43	1,44	1,43	1,46	1,47	1,45	1,45	1,44	1,47	1,43	1,43	1,49	1,49
Berat Tanah Kering + Ring	gr	32,70	33,00	32,70	32,90	32,80	32,60	32,90	33,30	33,00	32,80	32,70	32,60	33,00	33,20	32,80	33,00	32,70	33,00	32,80	32,50	33,20	33,20
Berat Tanah Kering	gr	14,20	14,30	14,30	14,40	14,10	14,20	14,40	14,60	14,60	14,30	14,40	14,20	14,50	14,50	14,40	14,50	14,40	14,60	14,30	14,20	14,80	14,80
Berat Air	gr	1,40	1,40	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,20	1,20	1,20	1,30	1,40	1,30	1,20	1,20	1,30	1,20	1,20	1,30	1,30
Kadar Air	%	9,86	9,79	9,09	9,03	9,22	9,15	9,03	8,90	8,90	8,39	8,33	8,45	8,97	9,66	9,03	8,28	8,33	8,90	8,39	8,45	8,78	8,78
Dry Density of Soil (γ _d)	gr/cm ³	1,314	1,323	1,323	1,333	1,305	1,314	1,333	1,351	1,351	1,323	1,333	1,314	1,342	1,342	1,333	1,342	1,333	1,351	1,323	1,314	1,370	1,370
γ _d Rata-Rata	gr/cm ³	1,332																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7			
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Berat Cawan + Tanah Basah	gram	21,30	21,40	21,20	21,40	20,80	21,40	21,70	20,10	20,10	21,20	19,80	21,00	21,80	21,60	21,30	21,40	21,40	21,50	19,60	19,30	20,10	20,10
Berat Cawan + Tanah Kering	gram	19,90	20,00	19,90	20,10	19,50	20,10	20,40	18,80	18,80	20,00	18,60	19,80	20,50	20,20	20,00	20,20	20,20	20,20	18,40	18,10	18,80	18,80
Berat Cawan	gram	5,7	5,7	5,6	5,7	5,4	5,9	6	4,2	4,2	5,7	4,2	5,6	6	5,7	5,6	5,7	5,8	5,6	4,1	3,9	4	4
Berat Tanah Kering	gram	14,2	14,3	14,3	14,4	14,1	14,2	14,4	14,6	14,6	14,3	14,4	14,2	14,5	14,5	14,4	14,5	14,4	14,6	14,3	14,2	14,8	14,8
Berat Air	gram	1,4	1,4	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,2	1,2	1,2	1,3	1,4	1,3	1,2	1,2	1,3	1,2	1,2	1,3	1,3
Kadar Air	%	9,86	9,79	9,09	9,03	9,22	9,15	9,03	8,90	8,90	8,39	8,33	8,45	8,97	9,66	9,03	8,28	8,33	8,90	8,39	8,45	8,78	8,78
Kadar Air Rata-Rata	%	8,90																					

Sudut	46°	Jumlah Lapis	-
Lebar Pondasi	4	SV	-
Jarak Pondasi Ke Tepi Lereng	d/B = 2	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,60
Berat Tanah Basah + Ring	gr	33,30	32,80	33,70	33,40	32,60	33,50	34,20	32,60	34,30	32,90	33,70	33,70	35,20	34,50	36,00	33,50	35,40	34,40	35,10	35,10	35,30	35,30
Berat Tanah Basah	gr	14,80	14,10	15,10	14,90	13,90	14,90	15,70	13,90	15,70	14,40	15,00	15,10	16,70	15,80	17,40	15,00	16,70	15,80	16,60	16,40	16,70	16,70
Soil Unit Weight	gr/cm ³	1,37	1,30	1,40	1,38	1,29	1,38	1,45	1,29	1,45	1,33	1,39	1,40	1,55	1,46	1,61	1,39	1,55	1,46	1,54	1,52	1,55	1,55
Berat Tanah Kering + Ring	gr	32,10	31,80	32,50	32,20	31,40	32,30	32,80	31,30	33,00	31,80	32,40	32,40	33,90	33,10	34,60	32,30	34,20	33,20	33,80	33,70	34,00	34,00
Berat Tanah Kering	gr	13,60	13,10	13,90	13,70	12,70	13,70	14,30	12,60	14,40	13,30	13,70	13,80	15,40	14,40	16,00	13,80	15,50	14,60	15,30	15,00	15,40	15,40
Berat Air	gr	1,20	1,00	1,20	1,20	1,20	1,20	1,40	1,30	1,30	1,10	1,30	1,30	1,30	1,40	1,40	1,20	1,20	1,20	1,30	1,40	1,30	1,30
Kadar Air	%	8,82	7,63	8,63	8,76	9,45	8,76	9,79	10,32	9,03	8,27	9,49	9,42	8,44	9,72	8,75	8,70	7,74	8,22	8,50	9,33	8,44	8,44
Dry Density of Soil (yd)	gr/cm ³	1,258	1,212	1,286	1,268	1,175	1,268	1,323	1,166	1,333	1,231	1,268	1,277	1,425	1,333	1,481	1,277	1,434	1,351	1,416	1,388	1,425	1,425
γd Rata-Rata	gr/cm ³	1,314																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	20,50	19,80	20,70	20,60	19,30	20,80	21,70	18,10	19,90	20,10	19,20	20,70	22,70	21,50	23,00	20,80	22,30	21,50	20,70	20,30	20,70
Berat Cawan + Tanah Kering	gram	19,30	18,80	19,50	19,40	18,10	19,60	20,30	16,80	18,60	19,00	17,90	19,40	21,40	20,10	21,60	19,60	21,10	20,30	19,40	18,90	19,40
Berat Cawan	gram	5,7	5,7	5,6	5,7	5,4	5,9	6	4,2	4,2	5,7	4,2	5,6	6	5,7	5,6	5,8	5,6	5,7	4,1	3,9	4
Berat Tanah Kering	gram	13,6	13,1	13,9	13,7	12,7	13,7	14,3	12,6	14,4	13,3	13,7	13,8	15,4	14,4	16	13,8	15,5	14,6	15,3	15	15,4
Berat Air	gram	1,2	1	1,2	1,2	1,2	1,2	1,4	1,3	1,3	1,1	1,3	1,3	1,3	1,4	1,4	1,2	1,2	1,2	1,3	1,4	1,3
Kadar Air	%	8,82	7,63	8,63	8,76	9,45	8,76	9,79	10,32	9,03	8,27	9,49	9,42	8,44	9,72	8,75	8,70	7,74	8,22	8,50	9,33	8,44
Kadar Air Rata-Rata	%	8,87																				

Sudut	46°	Jumlah Lapis	-
Lebar Pondasi	4	SV	-
Jarak Pondasi Ke Tepi Lereng	d/B = 3	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50
Berat Tanah Basah + Ring	gr	32,20	32,90	34,60	33,40	33,80	34,00	33,40	32,30	33,20	34,90	33,00	36,20	35,10	35,20	35,70	34,60	34,20	34,40	33,40	34,30	34,10	34,10
Berat Tanah Basah	gr	13,70	14,20	16,00	14,90	15,10	15,40	14,90	13,60	14,60	16,40	14,30	17,60	16,60	16,50	17,10	16,10	15,50	15,80	14,90	15,60	15,50	15,50
Soil Unit Weight	gr/cm ³	1,27	1,31	1,48	1,38	1,40	1,43	1,38	1,26	1,35	1,52	1,32	1,63	1,54	1,53	1,58	1,49	1,43	1,46	1,38	1,44	1,43	1,43
Berat Tanah Kering + Ring	gr	31,10	31,90	33,30	32,30	32,70	32,80	32,00	31,20	32,00	33,30	32,00	34,50	33,70	34,00	34,30	33,30	32,80	32,90	32,20	33,00	32,90	32,90
Berat Tanah Kering	gr	12,60	13,20	14,70	13,80	14,00	14,20	13,50	12,50	13,40	14,80	13,30	15,90	15,20	15,30	15,70	14,80	14,10	14,30	13,70	14,30	14,30	14,30
Berat Air	gr	1,10	1,00	1,30	1,10	1,10	1,20	1,40	1,10	1,20	1,60	1,00	1,70	1,40	1,20	1,40	1,30	1,40	1,50	1,20	1,30	1,20	1,20
Kadar Air	%	8,73	7,58	8,84	7,97	7,86	8,45	10,37	8,80	8,96	10,81	7,52	10,69	9,21	7,84	8,92	8,78	9,93	10,49	8,76	9,09	8,39	8,39
Dry Density of Soil (γ _d)	gr/cm ³	1,166	1,221	1,360	1,277	1,295	1,314	1,249	1,157	1,240	1,370	1,231	1,471	1,407	1,416	1,453	1,370	1,305	1,323	1,268	1,323	1,323	1,323
γ _d Rata-Rata	gr/cm ³	1,311																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	17,90	18,40	20,30	20,60	21,10	21,60	19,10	19,20	20,20	22,10	18,50	23,30	22,20	21,00	21,30	22,00	21,40	21,80	21,00	21,20	21,00
Berat Cawan + Tanah Kering	gram	16,80	17,40	19,00	19,50	20,00	20,40	17,70	18,10	19,00	20,50	17,50	21,60	20,80	19,80	19,90	20,70	20,00	20,30	19,80	19,90	19,80
Berat Cawan	gram	4,2	4,2	4,3	5,7	6	6,2	4,2	5,6	5,6	5,7	4,2	5,7	5,6	4,5	4,2	5,9	5,9	6	6,1	5,6	5,5
Berat Tanah Kering	gram	12,6	13,2	14,7	13,8	14	14,2	13,5	12,5	13,4	14,8	13,3	15,9	15,2	15,3	15,7	14,8	14,1	14,3	13,7	14,3	14,3
Berat Air	gram	1,1	1	1,3	1,1	1,1	1,2	1,4	1,1	1,2	1,6	1	1,7	1,4	1,2	1,4	1,3	1,4	1,5	1,2	1,3	1,2
Kadar Air	%	8,73	7,58	8,84	7,97	7,86	8,45	10,37	8,80	8,96	10,81	7,52	10,69	9,21	7,84	8,92	8,78	9,93	10,49	8,76	9,09	8,39
Kadar Air Rata-Rata	%	8,95																				

Sudut	46°	Jumlah Lapis	-
Lebar Pondasi	6	SV	-
Jarak Pondasi Ke Tepi Lereng	d/B = 1	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50
Berat Tanah Basah + Ring	gr	34,20	34,50	34,30	34,40	34,70	34,20	33,70	34,20	34,00	34,10	34,20	34,20	34,20	34,10	34,30	34,10	34,30	34,10	34,00	34,20	34,30	34,30
Berat Tanah Basah	gr	15,70	15,80	15,70	15,90	16,00	15,60	15,20	15,50	15,40	15,60	15,50	15,60	15,70	15,40	15,70	15,60	15,60	15,50	15,50	15,50	15,50	15,70
Soil Unit Weight	gr/cm ³	1,45	1,46	1,45	1,47	1,48	1,44	1,41	1,43	1,43	1,44	1,43	1,44	1,45	1,43	1,45	1,44	1,44	1,43	1,43	1,43	1,43	1,45
Berat Tanah Kering + Ring	gr	32,70	33,00	32,90	32,80	33,10	32,80	32,50	32,90	32,80	32,80	32,90	32,90	32,90	33,20	33,10	33,00	33,10	32,90	32,90	33,00	33,10	33,10
Berat Tanah Kering	gr	14,20	14,30	14,30	14,30	14,40	14,20	14,00	14,20	14,20	14,30	14,20	14,30	14,40	14,50	14,50	14,50	14,40	14,30	14,40	14,30	14,40	14,50
Berat Air	gr	1,50	1,50	1,40	1,60	1,60	1,40	1,20	1,30	1,20	1,30	1,30	1,30	1,30	0,90	1,20	1,10	1,20	1,20	1,10	1,20	1,20	1,20
Kadar Air	%	10,56	10,49	9,79	11,19	11,11	9,86	8,57	9,15	8,45	9,09	9,15	9,09	9,03	6,21	8,28	7,59	8,33	8,39	7,64	8,39	8,28	8,28
Dry Density of Soil (γd)	gr/cm ³	1,314	1,323	1,323	1,323	1,333	1,314	1,295	1,314	1,314	1,323	1,314	1,323	1,333	1,342	1,342	1,342	1,333	1,323	1,333	1,323	1,333	1,342
γd Rata-Rata	gr/cm ³	1,325																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7			
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Berat Cawan + Tanah Basah	gram	20,00	20,00	20,00	21,60	21,50	21,60	20,90	21,30	21,00	20,00	21,20	21,50	21,60	19,70	21,60	20,00	19,80	21,30	21,30	19,80	21,40	21,40
Berat Cawan + Tanah Kering	gram	18,50	18,50	18,60	20,00	19,90	20,20	19,70	20,00	19,80	18,70	19,90	20,20	20,30	18,80	20,40	18,90	18,60	20,10	20,20	18,60	20,20	20,20
Berat Cawan	gram	4,3	4,2	4,3	5,7	5,5	6	5,7	5,8	5,6	4,4	5,7	5,9	5,9	4,3	5,9	4,4	4,2	5,8	5,8	4,3	5,7	5,7
Berat Tanah Kering	gram	14,2	14,3	14,3	14,3	14,4	14,2	14	14,2	14,2	14,3	14,2	14,3	14,4	14,5	14,5	14,5	14,4	14,3	14,4	14,3	14,5	14,5
Berat Air	gram	1,5	1,5	1,4	1,6	1,6	1,4	1,2	1,3	1,2	1,3	1,3	1,3	1,3	0,9	1,2	1,1	1,2	1,2	1,1	1,2	1,2	1,2
Kadar Air	%	10,56	10,49	9,79	11,19	11,11	9,86	8,57	9,15	8,45	9,09	9,15	9,09	9,03	6,21	8,28	7,59	8,33	8,39	7,64	8,39	8,28	8,28
Kadar Air Rata-Rata	%	8,98																					

Sudut	46°	Jumlah Lapis	-
Lebar Pondasi	6	SV	-
Jarak Pondasi Ke Tepi Lereng	d/B = 2	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,60	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,60
Berat Tanah Basah + Ring	gr	33,80	33,90	33,90	34,60	33,40	33,80	34,50	33,90	33,70	33,70	33,80	34,30	33,90	34,30	33,50	33,80	33,10	33,60	33,80	34,70	34,20	34,20
Berat Tanah Basah	gr	15,30	15,20	15,30	16,10	14,70	15,20	16,00	15,20	15,10	15,20	15,20	15,70	15,40	15,60	14,90	15,30	14,40	15,00	15,30	16,00	15,60	15,60
Soil Unit Weight	gr/cm ³	1,42	1,41	1,42	1,49	1,36	1,41	1,48	1,41	1,40	1,41	1,41	1,45	1,43	1,44	1,38	1,42	1,33	1,39	1,42	1,48	1,44	1,44
Berat Tanah Kering + Ring	gr	32,50	32,70	32,70	33,30	32,20	32,60	33,20	32,70	32,50	32,50	32,60	33,10	32,60	33,00	32,30	32,60	32,00	32,30	32,50	33,30	33,00	33,00
Berat Tanah Kering	gr	14,00	14,00	14,10	14,80	13,50	14,00	14,70	14,00	13,90	14,00	14,00	14,50	14,10	14,30	13,70	14,10	13,30	13,70	14,00	14,60	14,40	14,40
Berat Air	gr	1,30	1,20	1,20	1,30	1,20	1,20	1,30	1,20	1,20	1,20	1,20	1,20	1,30	1,30	1,20	1,20	1,10	1,30	1,30	1,40	1,20	1,20
Kadar Air	%	9,29	8,57	8,51	8,78	8,89	8,57	8,84	8,57	8,63	8,57	8,57	8,28	9,22	9,09	8,76	8,51	8,27	9,49	9,29	9,59	8,33	8,33
Dry Density of Soil (γ _d)	gr/cm ³	1,295	1,295	1,305	1,370	1,249	1,295	1,360	1,295	1,286	1,295	1,295	1,342	1,305	1,323	1,268	1,305	1,231	1,268	1,295	1,351	1,333	1,333
γ _d Rata-Rata	gr/cm ³	1,303																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	20,30	20,80	20,50	21,20	20,30	20,70	21,10	20,50	20,90	20,50	20,90	20,80	20,70	20,80	20,50	20,50	20,30	20,60	20,40	21,20	21,00
Berat Cawan + Tanah Kering	gram	19,00	19,60	19,30	19,90	19,10	19,50	19,80	19,30	19,70	19,30	19,70	19,60	19,40	19,50	19,30	19,30	19,20	19,30	19,10	19,80	19,80
Berat Cawan	gram	5	5,6	5,2	5,1	5,6	5,5	5,1	5,3	5,8	5,3	5,7	5,1	5,3	5,2	5,6	5,2	5,9	5,6	5,1	5,2	5,4
Berat Tanah Kering	gram	14	14	14,1	14,8	13,5	14	14,7	14	13,9	14	14	14,5	14,1	14,3	13,7	14,1	13,3	13,7	14	14,6	14,4
Berat Air	gram	1,3	1,2	1,2	1,3	1,2	1,2	1,3	1,2	1,2	1,2	1,2	1,2	1,3	1,3	1,2	1,2	1,1	1,3	1,3	1,4	1,2
Kadar Air	%	9,29	8,57	8,51	8,78	8,89	8,57	8,84	8,57	8,63	8,57	8,57	8,28	9,22	9,09	8,76	8,51	8,27	9,49	9,29	9,59	8,33
Kadar Air Rata-Rata	%	8,79																				

Sudut	46°	Jumlah Lapis	-
Lebar Pondasi	6	SV	-
Jarak Pondasi Ke Tepi Lereng	d/B = 3	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,50	18,50	18,50	18,70	18,60	18,50	18,70	18,60	18,60
Berat Tanah Basah + Ring	gr	34,20	34,30	34,30	34,20	34,10	34,20	34,30	34,10	34,30	34,00	34,10	34,20	34,20	33,80	34,20	34,30	34,30	34,20	34,10	34,40	33,90	33,90
Berat Tanah Basah	gr	15,70	15,60	15,70	15,70	15,40	15,60	15,80	15,40	15,70	15,50	15,40	15,60	15,70	15,30	15,70	15,80	15,60	15,60	15,60	15,70	15,30	15,30
Soil Unit Weight	gr/cm ³	1,45	1,44	1,45	1,45	1,43	1,44	1,46	1,43	1,45	1,43	1,43	1,44	1,45	1,42	1,45	1,46	1,44	1,44	1,44	1,45	1,42	1,42
Berat Tanah Kering + Ring	gr	32,90	33,00	33,00	32,90	32,80	32,90	33,00	32,90	33,00	32,80	32,90	32,90	32,90	32,60	32,90	33,00	33,10	33,00	32,90	33,10	32,80	32,80
Berat Tanah Kering	gr	14,40	14,30	14,40	14,40	14,10	14,30	14,50	14,20	14,40	14,30	14,20	14,30	14,40	14,10	14,40	14,50	14,40	14,40	14,40	14,40	14,40	14,20
Berat Air	gr	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,20	1,30	1,20	1,20	1,30	1,30	1,20	1,30	1,30	1,20	1,20	1,20	1,30	1,10	1,10
Kadar Air	%	9,03	9,09	9,03	9,03	9,22	9,09	8,97	8,45	9,03	8,39	8,45	9,09	9,03	8,51	9,03	8,97	8,33	8,33	8,33	9,03	7,75	7,75
Dry Density of Soil (γ _d)	gr/cm ³	1,333	1,323	1,333	1,333	1,305	1,323	1,342	1,314	1,333	1,323	1,314	1,323	1,333	1,305	1,333	1,342	1,333	1,333	1,333	1,333	1,333	1,314
γ _d Rata-Rata	gr/cm ³	1,326																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7			
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Berat Cawan + Tanah Basah	gram	21,50	21,80	21,50	21,40	21,30	21,40	21,60	21,20	21,30	21,20	21,50	21,40	21,60	21,50	21,40	21,60	21,30	21,50	21,30	21,50	21,00	21,00
Berat Cawan + Tanah Kering	gram	20,20	20,50	20,20	20,10	20,00	20,10	20,30	20,00	20,00	20,00	20,30	20,10	20,30	20,30	20,10	20,30	20,10	20,30	20,10	20,20	19,90	19,90
Berat Cawan	gram	5,8	6,2	5,8	5,7	5,9	5,8	5,8	5,8	5,6	5,7	6,1	5,8	5,9	6,2	5,7	5,8	5,7	5,9	5,7	5,8	5,7	5,7
Berat Tanah Kering	gram	14,4	14,3	14,4	14,4	14,1	14,3	14,5	14,2	14,4	14,3	14,2	14,3	14,4	14,1	14,4	14,5	14,4	14,4	14,4	14,4	14,4	14,2
Berat Air	gram	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,2	1,3	1,2	1,2	1,3	1,3	1,2	1,3	1,3	1,2	1,2	1,2	1,3	1,1	1,1
Kadar Air	%	9,03	9,09	9,03	9,03	9,22	9,09	8,97	8,45	9,03	8,39	8,45	9,09	9,03	8,51	9,03	8,97	8,33	8,33	8,33	9,03	7,75	7,75
Kadar Air Rata-Rata	%	8,77																					

Sudut	46°	Jumlah Lapis	-
Lebar Pondasi	8	SV	-
Jarak Pondasi Ke Tepi Lereng	d/B = 1	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50
Berat Tanah Basah + Ring	gr	34,10	34,20	34,20	34,30	34,50	34,00	33,90	33,90	34,10	34,00	34,30	34,10	34,00	34,20	33,90	33,80	34,00	34,20	33,90	34,30	34,40	34,40
Berat Tanah Basah	gr	15,60	15,50	15,60	15,80	15,80	15,40	15,40	15,20	15,50	15,50	15,60	15,50	15,50	15,50	15,30	15,30	15,30	15,60	15,40	15,60	15,80	15,80
Soil Unit Weight	gr/cm ³	1,44	1,43	1,44	1,46	1,46	1,43	1,43	1,41	1,43	1,43	1,44	1,43	1,43	1,43	1,42	1,42	1,42	1,44	1,43	1,44	1,46	1,46
Berat Tanah Kering + Ring	gr	32,70	32,90	32,90	32,90	33,00	32,70	32,60	32,70	32,80	32,70	33,00	32,90	32,80	32,90	32,70	32,70	32,90	32,80	32,70	33,10	33,00	33,00
Berat Tanah Kering	gr	14,20	14,20	14,30	14,40	14,30	14,10	14,10	14,00	14,20	14,20	14,30	14,30	14,30	14,20	14,10	14,20	14,20	14,20	14,20	14,40	14,40	14,40
Berat Air	gr	1,40	1,30	1,30	1,40	1,50	1,30	1,30	1,20	1,30	1,30	1,30	1,20	1,20	1,30	1,20	1,10	1,10	1,40	1,20	1,20	1,40	1,40
Kadar Air	%	9,86	9,15	9,09	9,72	10,49	9,22	9,22	8,57	9,15	9,15	9,09	8,39	8,39	9,15	8,51	7,75	7,75	9,86	8,45	8,33	9,72	9,72
Dry Density of Soil (γ _d)	gr/cm ³	1,314	1,314	1,323	1,333	1,323	1,305	1,305	1,295	1,314	1,314	1,323	1,323	1,323	1,314	1,305	1,314	1,314	1,314	1,314	1,333	1,333	1,333
γ _d Rata-Rata	gr/cm ³	1,317																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	21,40	21,50	21,40	20,10	21,90	19,70	21,50	21,00	21,50	20,10	19,90	21,20	21,50	21,30	21,00	21,00	19,60	21,20	21,10	19,90	21,60
Berat Cawan + Tanah Kering	gram	20,00	20,20	20,10	18,70	20,40	18,40	20,20	19,80	20,20	18,80	18,60	20,00	20,30	20,00	19,80	19,90	18,50	19,80	19,90	18,70	20,20
Berat Cawan	gram	5,8	6	5,8	4,3	6,1	4,3	6,1	5,8	6	4,6	4,3	5,7	6	5,8	5,7	5,7	4,3	5,6	5,7	4,3	5,8
Berat Tanah Kering	gram	14,2	14,2	14,3	14,4	14,3	14,1	14,1	14	14,2	14,2	14,3	14,3	14,3	14,2	14,1	14,2	14,2	14,2	14,2	14,4	14,4
Berat Air	gram	1,4	1,3	1,3	1,4	1,5	1,3	1,3	1,2	1,3	1,3	1,3	1,2	1,2	1,3	1,2	1,1	1,1	1,4	1,2	1,2	1,4
Kadar Air	%	9,86	9,15	9,09	9,72	10,49	9,22	9,22	8,57	9,15	9,15	9,09	8,39	8,39	9,15	8,51	7,75	7,75	9,86	8,45	8,33	9,72
Kadar Air Rata-Rata	%	9,00																				

Sudut	46°	Jumlah Lapis	-
Lebar Pondasi	8	SV	-
Jarak Pondasi Ke Tepi Lereng	d/B = 2	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50
Berat Tanah Basah + Ring	gr	34,20	34,20	34,30	34,20	34,10	34,10	34,00	34,10	34,20	34,30	34,20	34,20	34,30	34,10	34,10	34,30	34,00	34,10	34,20	34,10	34,20	34,10
Berat Tanah Basah	gr	15,70	15,50	15,70	15,70	15,40	15,50	15,50	15,40	15,60	15,80	15,50	15,60	15,80	15,40	15,50	15,80	15,30	15,50	15,70	15,40	15,40	15,40
Soil Unit Weight	gr/cm ³	1,45	1,43	1,45	1,45	1,43	1,43	1,43	1,43	1,44	1,46	1,43	1,44	1,46	1,43	1,43	1,46	1,42	1,43	1,45	1,43	1,43	1,43
Berat Tanah Kering + Ring	gr	32,90	32,90	33,00	32,90	32,90	32,90	32,80	32,90	32,90	33,00	33,00	33,00	33,00	32,90	32,80	32,90	32,70	32,90	32,90	32,90	32,90	32,70
Berat Tanah Kering	gr	14,40	14,20	14,40	14,40	14,20	14,30	14,30	14,20	14,30	14,50	14,30	14,40	14,50	14,20	14,20	14,40	14,00	14,30	14,40	14,20	14,10	14,10
Berat Air	gr	1,30	1,30	1,30	1,30	1,20	1,20	1,20	1,20	1,30	1,30	1,20	1,20	1,30	1,20	1,30	1,40	1,30	1,20	1,30	1,20	1,30	1,30
Kadar Air	%	9,03	9,15	9,03	9,03	8,45	8,39	8,39	8,45	9,09	8,97	8,39	8,33	8,97	8,45	9,15	9,72	9,29	8,39	9,03	8,45	9,22	9,22
Dry Density of Soil (γ _d)	gr/cm ³	1,333	1,314	1,333	1,333	1,314	1,323	1,323	1,314	1,323	1,342	1,323	1,333	1,342	1,314	1,314	1,333	1,295	1,323	1,333	1,314	1,305	1,305
γ _d Rata-Rata	gr/cm ³	1,323																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	21,40	21,20	21,30	21,50	20,90	21,00	21,10	20,80	21,10	21,30	21,30	21,30	21,40	21,20	21,20	21,70	21,20	21,30	21,10	21,20	21,10
Berat Cawan + Tanah Kering	gram	20,10	19,90	20,00	20,20	19,70	19,80	19,90	19,60	19,80	20,00	20,10	20,10	20,10	20,00	19,90	20,30	19,90	20,10	19,80	20,00	19,80
Berat Cawan	gram	5,7	5,7	5,6	5,8	5,5	5,5	5,6	5,4	5,5	5,5	5,8	5,7	5,6	5,8	5,7	5,9	5,9	5,8	5,4	5,8	5,7
Berat Tanah Kering	gram	14,4	14,2	14,4	14,4	14,2	14,3	14,3	14,2	14,3	14,5	14,3	14,4	14,5	14,2	14,2	14,4	14	14,3	14,4	14,2	14,1
Berat Air	gram	1,3	1,3	1,3	1,3	1,2	1,2	1,2	1,2	1,3	1,3	1,2	1,2	1,3	1,2	1,3	1,4	1,3	1,2	1,3	1,2	1,3
Kadar Air	%	9,03	9,15	9,03	9,03	8,45	8,39	8,39	8,45	9,09	8,97	8,39	8,33	8,97	8,45	9,15	9,72	9,29	8,39	9,03	8,45	9,22
Kadar Air Rata-Rata	%	8,83																				

Sudut	46°	Jumlah Lapis	-
Lebar Pondasi	8	SV	-
Jarak Pondasi Ke Tepi Lereng	d/B = 3	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50	18,70	18,60	18,50
Berat Tanah Basah + Ring	gr	34,10	34,30	34,30	34,20	34,20	34,20	34,30	34,30	34,20	34,10	34,10	34,20	34,10	34,20	34,30	34,30	34,10	34,20	34,10	34,30	34,20	34,20
Berat Tanah Basah	gr	15,60	15,60	15,70	15,70	15,50	15,60	15,80	15,60	15,60	15,60	15,40	15,60	15,60	15,50	15,70	15,80	15,40	15,60	15,60	15,60	15,60	15,60
Soil Unit Weight	gr/cm ³	1,44	1,44	1,45	1,45	1,43	1,44	1,46	1,44	1,44	1,44	1,43	1,44	1,44	1,43	1,45	1,46	1,43	1,44	1,44	1,44	1,44	1,44
Berat Tanah Kering + Ring	gr	32,80	33,10	33,00	32,90	32,90	32,90	33,00	33,00	33,00	32,90	32,80	33,00	32,90	33,00	33,00	33,00	32,90	32,90	32,80	33,00	33,00	33,00
Berat Tanah Kering	gr	14,30	14,40	14,40	14,40	14,20	14,30	14,50	14,30	14,40	14,40	14,10	14,40	14,40	14,30	14,40	14,50	14,20	14,30	14,30	14,30	14,30	14,40
Berat Air	gr	1,30	1,20	1,30	1,30	1,30	1,30	1,30	1,30	1,20	1,20	1,30	1,20	1,20	1,30	1,30	1,30	1,20	1,30	1,30	1,30	1,30	1,20
Kadar Air	%	9,09	8,33	9,03	9,03	9,15	9,09	8,97	9,09	8,33	8,33	9,22	8,33	8,33	8,39	9,03	8,97	8,45	9,09	9,09	9,09	9,09	8,33
Dry Density of Soil (γ _d)	gr/cm ³	1,323	1,333	1,333	1,333	1,314	1,323	1,342	1,323	1,333	1,333	1,305	1,333	1,333	1,323	1,333	1,342	1,314	1,323	1,323	1,323	1,323	1,333
γ _d Rata-Rata	gr/cm ³	1,327																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7			
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Berat Cawan + Tanah Basah	gram	21,30	21,30	21,50	21,40	21,10	21,20	21,70	21,20	21,20	21,30	21,20	21,30	21,20	21,40	21,60	21,70	21,30	21,20	21,20	21,20	21,20	21,30
Berat Cawan + Tanah Kering	gram	20,00	20,10	20,20	20,10	19,80	19,90	20,40	19,90	20,00	20,10	19,90	20,10	20,00	20,20	20,30	20,40	20,10	19,90	19,90	19,90	19,90	20,10
Berat Cawan	gram	5,7	5,7	5,8	5,7	5,6	5,6	5,9	5,6	5,6	5,7	5,8	5,7	5,6	5,9	5,9	5,9	5,9	5,6	5,6	5,6	5,6	5,7
Berat Tanah Kering	gram	14,3	14,4	14,4	14,4	14,2	14,3	14,5	14,3	14,4	14,4	14,1	14,4	14,4	14,3	14,4	14,5	14,2	14,3	14,3	14,3	14,3	14,4
Berat Air	gram	1,3	1,2	1,3	1,3	1,3	1,3	1,3	1,3	1,2	1,2	1,3	1,2	1,2	1,2	1,3	1,3	1,2	1,3	1,3	1,3	1,3	1,2
Kadar Air	%	9,09	8,33	9,03	9,03	9,15	9,09	8,97	9,09	8,33	8,33	9,22	8,33	8,33	8,39	9,03	8,97	8,45	9,09	9,09	9,09	9,09	8,33
Kadar Air Rata-Rata	%	8,80																					

Sudut	46°	Jumlah Lapis	3
Lebar Pondasi	4	SV	3,2
Jarak Pondasi Ke Tepi Lereng	d/B = 1	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40
Berat Tanah Basah + Ring	gr	34,30	34,20	33,70	34,10	34,20	34,00	33,90	33,80	33,70	33,80	34,20	34,10	33,70	34,30	33,90	33,80	34,00	34,40	34,60	34,10	34,80	34,80
Berat Tanah Basah	gr	15,90	15,70	15,30	15,70	15,70	15,60	15,50	15,30	15,30	15,40	15,70	15,70	15,30	15,80	15,50	15,40	15,50	16,00	16,20	15,60	16,40	16,40
Soil Unit Weight	gr/cm ³	1,47	1,45	1,42	1,45	1,45	1,44	1,43	1,42	1,42	1,43	1,45	1,45	1,42	1,46	1,43	1,43	1,43	1,48	1,50	1,44	1,52	1,52
Berat Tanah Kering + Ring	gr	32,80	32,70	32,30	32,80	32,80	32,70	32,60	32,50	32,40	32,60	33,00	32,80	32,50	33,00	32,60	32,60	32,80	33,00	33,30	32,80	33,50	33,50
Berat Tanah Kering	gr	14,40	14,20	13,90	14,40	14,30	14,30	14,20	14,00	14,00	14,20	14,50	14,40	14,10	14,50	14,20	14,20	14,30	14,60	14,90	14,30	15,10	15,10
Berat Air	gr	1,50	1,50	1,40	1,30	1,40	1,30	1,30	1,30	1,30	1,20	1,20	1,30	1,20	1,30	1,30	1,20	1,20	1,40	1,30	1,30	1,30	1,30
Kadar Air	%	10,42	10,56	10,07	9,03	9,79	9,09	9,15	9,29	9,29	8,45	8,28	9,03	8,51	8,97	9,15	8,45	8,39	9,59	8,72	9,09	8,61	8,61
Dry Density of Soil (γ _d)	gr/cm ³	1,333	1,314	1,286	1,333	1,323	1,323	1,314	1,295	1,295	1,314	1,342	1,333	1,305	1,342	1,314	1,314	1,323	1,351	1,379	1,323	1,397	1,397
γ _d Rata-Rata	gr/cm ³	1,326																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7			
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Berat Cawan + Tanah Basah	gram	20,20	19,90	19,60	21,40	21,20	21,60	21,20	21,10	20,90	19,80	21,40	21,60	21,20	20,10	21,40	19,80	19,70	21,80	22,00	19,90	22,10	22,10
Berat Cawan + Tanah Kering	gram	18,70	18,40	18,20	20,10	19,80	20,30	19,90	19,80	19,60	18,60	20,20	20,30	20,00	18,80	20,10	18,60	18,50	20,40	20,70	18,60	20,80	20,80
Berat Cawan	gram	4,3	4,2	4,3	5,7	5,5	6	5,7	5,8	5,6	4,4	5,7	5,9	5,9	4,3	5,9	4,4	4,2	5,8	5,8	4,3	5,7	5,7
Berat Tanah Kering	gram	14,4	14,2	13,9	14,4	14,3	14,3	14,2	14	14	14,2	14,5	14,4	14,1	14,5	14,2	14,2	14,3	14,6	14,9	14,3	15,1	15,1
Berat Air	gram	1,5	1,5	1,4	1,3	1,4	1,3	1,3	1,3	1,3	1,2	1,2	1,3	1,2	1,3	1,3	1,2	1,2	1,4	1,3	1,3	1,3	1,3
Kadar Air	%	10,42	10,56	10,07	9,03	9,79	9,09	9,15	9,29	9,29	8,45	8,28	9,03	8,51	8,97	9,15	8,45	8,39	9,59	8,72	9,09	8,61	8,61
Kadar Air Rata-Rata	%	9,14																					

Sudut	46°	Jumlah Lapis	3
Lebar Pondasi	4 cm	SV	3,2 cm
Jarak Pondasi Ke Tepi Lereng	d/B = 2	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40
Berat Tanah Basah + Ring	gr	33,80	33,50	33,70	33,80	33,60	34,00	33,90	33,60	33,70	33,80	33,70	33,60	33,50	34,00	33,90	34,10	33,80	33,50	33,60	33,50	33,70	33,70
Berat Tanah Basah	gr	15,40	15,00	15,30	15,40	15,10	15,60	15,50	15,10	15,30	15,40	15,20	15,20	15,10	15,50	15,50	15,70	15,30	15,10	15,20	15,00	15,30	15,30
Soil Unit Weight	gr/cm ³	1,43	1,39	1,42	1,43	1,40	1,44	1,43	1,40	1,42	1,43	1,41	1,41	1,40	1,43	1,43	1,45	1,42	1,40	1,41	1,39	1,42	1,42
Berat Tanah Kering + Ring	gr	32,50	32,30	32,40	32,60	32,50	32,70	32,70	32,40	32,60	32,60	32,60	32,40	32,30	32,60	32,70	32,80	32,60	32,30	32,40	32,40	32,40	32,40
Berat Tanah Kering	gr	14,10	13,80	14,00	14,20	14,00	14,30	14,30	13,90	14,20	14,20	14,10	14,00	13,90	14,10	14,30	14,40	14,10	13,90	14,00	13,90	14,00	14,00
Berat Air	gr	1,30	1,20	1,30	1,20	1,10	1,30	1,20	1,20	1,10	1,20	1,10	1,20	1,20	1,40	1,20	1,30	1,20	1,20	1,20	1,20	1,10	1,30
Kadar Air	%	9,22	8,70	9,29	8,45	7,86	9,09	8,39	8,63	7,75	8,45	7,80	8,57	8,63	9,93	8,39	9,03	8,51	8,63	8,57	7,91	9,29	9,29
Dry Density of Soil (yd)	gr/cm ³	1,305	1,277	1,295	1,314	1,295	1,323	1,323	1,286	1,314	1,314	1,305	1,295	1,286	1,305	1,323	1,333	1,305	1,286	1,295	1,286	1,295	1,295
γd Rata-Rata	gr/cm ³	1,303																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	21,10	20,70	21,00	19,40	20,90	21,70	21,20	21,10	19,30	21,10	19,50	19,50	21,30	21,10	19,80	19,90	20,80	21,00	20,90	20,60	19,50
Berat Cawan + Tanah Kering	gram	19,80	19,50	19,70	18,20	19,80	20,40	20,00	19,90	18,20	19,90	18,40	18,30	20,10	19,70	18,60	18,60	19,60	19,80	19,70	19,50	18,20
Berat Cawan	gram	5,7	5,7	5,7	4	5,8	6,1	5,7	6	4	5,7	4,3	4,3	6,2	5,6	4,3	4,2	5,5	5,9	5,7	5,6	4,2
Berat Tanah Kering	gram	14,1	13,8	14	14,2	14	14,3	14,3	13,9	14,2	14,2	14,1	14	13,9	14,1	14,3	14,40	14,1	13,9	14	13,9	14
Berat Air	gram	1,3	1,2	1,3	1,2	1,1	1,3	1,2	1,2	1,1	1,2	1,1	1,2	1,2	1,4	1,2	1,3	1,2	1,2	1,2	1,1	1,3
Kadar Air	%	9,22	8,70	9,29	8,45	7,86	9,09	8,39	8,63	7,75	8,45	7,80	8,57	8,63	9,93	8,39	9,03	8,51	8,63	8,57	7,91	9,29
Kadar Air Rata-Rata	%	8,62																				

Sudut	46°	Jumlah Lapis	3
Lebar Pondasi	4 cm	SV	3,2 cm
Jarak Pondasi Ke Tepi Lereng	d/B = 3	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40
Berat Tanah Basah + Ring	gr	34,10	34,20	33,70	33,80	33,70	33,60	33,90	33,70	34,20	34,20	34,30	34,10	33,60	33,70	33,90	33,60	33,70	33,80	33,80	34,00	34,00	34,00
Berat Tanah Basah	gr	15,70	15,70	15,30	15,40	15,20	15,20	15,50	15,20	15,80	15,80	15,80	15,70	15,20	15,20	15,50	15,20	15,20	15,40	15,40	15,50	15,60	15,60
Soil Unit Weight	gr/cm ³	1,45	1,45	1,42	1,43	1,41	1,41	1,43	1,41	1,46	1,46	1,46	1,45	1,41	1,41	1,43	1,41	1,41	1,43	1,43	1,43	1,43	1,44
Berat Tanah Kering + Ring	gr	32,80	32,90	32,40	32,50	32,50	32,30	32,60	32,70	32,90	33,00	33,20	32,90	32,40	32,50	32,60	32,50	32,50	32,50	32,60	32,70	32,70	32,70
Berat Tanah Kering	gr	14,40	14,40	14,00	14,10	14,00	13,90	14,20	14,20	14,50	14,60	14,70	14,50	14,00	14,00	14,20	14,10	14,00	14,10	14,20	14,20	14,30	14,30
Berat Air	gr	1,30	1,30	1,30	1,30	1,20	1,30	1,30	1,00	1,30	1,20	1,10	1,20	1,20	1,20	1,30	1,10	1,20	1,30	1,20	1,30	1,20	1,30
Kadar Air	%	9,03	9,03	9,29	9,22	8,57	9,35	9,15	7,04	8,97	8,22	7,48	8,28	8,57	8,57	9,15	7,80	8,57	9,22	8,45	9,15	9,09	9,09
Dry Density of Soil (γ _d)	gr/cm ³	1,333	1,333	1,295	1,305	1,295	1,286	1,314	1,314	1,342	1,351	1,360	1,342	1,295	1,295	1,314	1,305	1,295	1,305	1,314	1,314	1,323	1,323
γ _d Rata-Rata	gr/cm ³	1,316																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	21,50	21,70	21,10	19,70	21,30	19,50	21,60	21,00	21,80	20,40	20,10	21,40	21,20	21,00	21,20	20,90	19,50	21,20	21,10	19,80	21,20
Berat Cawan + Tanah Kering	gram	20,20	20,40	19,80	18,40	20,10	18,20	20,30	20,00	20,50	19,20	19,00	20,20	20,00	19,80	19,90	19,80	18,30	19,90	19,90	18,50	19,90
Berat Cawan	gram	5,8	6	5,8	4,3	6,1	4,3	6,1	5,8	6	4,6	4,3	5,7	6	5,8	5,7	5,7	4,3	5,8	5,7	4,3	5,6
Berat Tanah Kering	gram	14,4	14,4	14	14,1	14	13,9	14,2	14,2	14,5	14,6	14,7	14,5	14	14	14,2	14,1	14	14,1	14,2	14,2	14,3
Berat Air	gram	1,3	1,3	1,3	1,3	1,2	1,3	1,3	1	1,3	1,2	1,1	1,2	1,2	1,2	1,3	1,1	1,2	1,3	1,2	1,3	1,3
Kadar Air	%	9,03	9,03	9,29	9,22	8,57	9,35	9,15	7,04	8,97	8,22	7,48	8,28	8,57	8,57	9,15	7,80	8,57	9,22	8,45	9,15	9,09
Kadar Air Rata-Rata	%	8,68																				

Sudut	46°	Jumlah Lapis	3
Lebar Pondasi	6 cm	SV	3,2 cm
Jarak Pondasi Ke Tepi Lereng	d/B = 1	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40
Berat Tanah Basah + Ring	gr	33,80	34,00	33,50	34,10	33,90	34,20	33,90	33,80	33,90	33,80	34,30	34,00	33,70	33,80	33,70	33,80	34,00	33,80	34,30	34,30	34,20	34,20
Berat Tanah Basah	gr	15,40	15,50	15,10	15,70	15,40	15,80	15,50	15,30	15,50	15,40	15,80	15,60	15,30	15,30	15,30	15,40	15,50	15,40	15,90	15,80	15,80	15,80
Soil Unit Weight	gr/cm ³	1,43	1,43	1,40	1,45	1,43	1,46	1,43	1,42	1,43	1,43	1,46	1,44	1,42	1,42	1,42	1,43	1,43	1,43	1,47	1,46	1,46	1,46
Berat Tanah Kering + Ring	gr	32,50	32,70	32,30	32,70	32,60	32,80	32,60	32,60	32,50	32,60	33,00	32,70	32,50	32,60	32,50	32,60	32,70	32,70	33,00	33,00	32,90	32,90
Berat Tanah Kering	gr	14,10	14,20	13,90	14,30	14,10	14,40	14,20	14,10	14,10	14,20	14,50	14,30	14,10	14,10	14,10	14,20	14,20	14,30	14,60	14,50	14,50	14,50
Berat Air	gr	1,30	1,30	1,20	1,40	1,30	1,40	1,30	1,20	1,40	1,20	1,30	1,30	1,20	1,20	1,20	1,20	1,30	1,10	1,30	1,30	1,30	1,30
Kadar Air	%	9,22	9,15	8,63	9,79	9,22	9,72	9,15	8,51	9,93	8,45	8,97	9,09	8,51	8,51	8,51	8,45	9,15	7,69	8,90	8,97	8,97	8,97
Dry Density of Soil (γ _d)	gr/cm ³	1,305	1,314	1,286	1,323	1,305	1,333	1,314	1,305	1,305	1,314	1,342	1,323	1,305	1,305	1,305	1,314	1,314	1,323	1,351	1,342	1,342	1,342
γ _d Rata-Rata	gr/cm ³	1,318																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	21,20	21,50	20,90	20,00	21,50	20,10	21,60	21,10	21,50	20,00	20,10	21,30	21,30	21,10	21,00	21,10	19,80	21,20	21,60	20,10	21,40
Berat Cawan + Tanah Kering	gram	19,90	20,20	19,70	18,60	20,20	18,70	20,30	19,90	20,10	18,80	18,80	20,00	20,10	19,90	19,80	19,90	18,50	20,10	20,30	18,80	20,10
Berat Cawan	gram	5,8	6	5,8	4,3	6,1	4,3	6,1	5,8	6	4,6	4,3	5,7	6	5,8	5,7	5,7	4,3	5,8	5,7	4,3	5,6
Berat Tanah Kering	gram	14,1	14,2	13,9	14,3	14,1	14,4	14,2	14,1	14,1	14,2	14,5	14,3	14,1	14,1	14,1	14,2	14,2	14,3	14,6	14,5	14,5
Berat Air	gram	1,3	1,3	1,2	1,4	1,3	1,4	1,3	1,2	1,4	1,2	1,3	1,3	1,2	1,2	1,2	1,2	1,3	1,1	1,3	1,3	1,3
Kadar Air	%	9,22	9,15	8,63	9,79	9,22	9,72	9,15	8,51	9,93	8,45	8,97	9,09	8,51	8,51	8,51	8,45	9,15	7,69	8,90	8,97	8,97
Kadar Air Rata-Rata	%	8,93																				

Sudut	46°	Jumlah Lapis	3
Lebar Pondasi	6 cm	SV	3,2 cm
Jarak Pondasi Ke Tepi Lereng	d/B = 2	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40
Berat Tanah Basah + Ring	gr	33,50	33,90	33,70	33,80	33,70	33,90	33,70	33,70	33,60	33,80	33,90	33,80	33,80	33,80	33,70	33,60	34,00	33,60	33,80	33,80	34,00	34,00
Berat Tanah Basah	gr	15,10	15,40	15,30	15,40	15,20	15,50	15,30	15,20	15,20	15,40	15,40	15,40	15,40	15,30	15,30	15,20	15,50	15,20	15,40	15,30	15,60	15,60
Soil Unit Weight	gr/cm ³	1,40	1,43	1,42	1,43	1,41	1,43	1,42	1,41	1,41	1,43	1,43	1,43	1,43	1,42	1,42	1,41	1,43	1,41	1,43	1,42	1,44	1,44
Berat Tanah Kering + Ring	gr	32,30	32,80	32,50	32,60	32,50	32,60	32,50	32,50	32,30	32,50	32,60	32,70	32,60	32,60	32,50	32,40	33,00	32,30	32,50	32,60	32,70	32,70
Berat Tanah Kering	gr	13,90	14,30	14,10	14,20	14,00	14,20	14,10	14,00	13,90	14,10	14,10	14,30	14,20	14,10	14,10	14,00	14,50	13,90	14,10	14,10	14,30	14,30
Berat Air	gr	1,20	1,10	1,20	1,20	1,20	1,30	1,20	1,20	1,30	1,30	1,30	1,10	1,20	1,20	1,20	1,20	1,00	1,30	1,30	1,20	1,30	1,30
Kadar Air	%	8,63	7,69	8,51	8,45	8,57	9,15	8,51	8,57	9,35	9,22	9,22	7,69	8,45	8,51	8,51	8,57	6,90	9,35	9,22	8,51	9,09	9,09
Dry Density of Soil (γ _d)	gr/cm ³	1,286	1,323	1,305	1,314	1,295	1,314	1,305	1,295	1,286	1,305	1,305	1,323	1,314	1,305	1,305	1,295	1,342	1,286	1,305	1,305	1,323	1,323
γ _d Rata-Rata	gr/cm ³	1,307																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	19,40	19,60	19,60	21,10	20,70	21,50	21,00	21,00	20,80	19,80	21,10	21,30	21,30	19,60	21,20	19,60	19,70	21,00	21,20	19,60	21,30
Berat Cawan + Tanah Kering	gram	18,20	18,50	18,40	19,90	19,50	20,20	19,80	19,80	19,50	18,50	19,80	20,20	20,10	18,40	20,00	18,40	18,70	19,70	19,90	18,40	20,00
Berat Cawan	gram	4,3	4,2	4,3	5,7	5,5	6	5,7	5,8	5,6	4,4	5,7	5,9	5,9	4,3	5,9	4,4	4,2	5,8	5,8	4,3	5,7
Berat Tanah Kering	gram	13,9	14,3	14,1	14,2	14	14,2	14,1	14	13,9	14,1	14,1	14,3	14,2	14,1	14,1	14	14,5	13,9	14,1	14,1	14,3
Berat Air	gram	1,2	1,1	1,2	1,2	1,2	1,3	1,2	1,2	1,3	1,3	1,3	1,1	1,2	1,2	1,2	1,2	1	1,3	1,3	1,2	1,3
Kadar Air	%	8,63	7,69	8,51	8,45	8,57	9,15	8,51	8,57	9,35	9,22	9,22	7,69	8,45	8,51	8,51	8,57	6,90	9,35	9,22	8,51	9,09
Kadar Air Rata-Rata	%	8,60																				

Sudut	46°	Jumlah Lapis	3
Lebar Pondasi	6 cm	SV	3,2 cm
Jarak Pondasi Ke Tepi Lereng	d/B = 3	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7				
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	
Berat Ring	gr	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	
Berat Tanah Basah + Ring	gr	33,80	33,80	33,70	34,00	34,40	33,90	33,70	33,70	34,20	34,20	34,00	34,10	33,60	33,70	33,80	33,60	34,00	33,60	33,80	33,80	33,90	33,90	
Berat Tanah Basah	gr	15,40	15,30	15,30	15,60	15,90	15,50	15,30	15,20	15,80	15,80	15,50	15,70	15,20	15,20	15,40	15,20	15,50	15,20	15,40	15,30	15,50	15,50	
Soil Unit Weight	gr/cm ³	1,43	1,42	1,42	1,44	1,47	1,43	1,42	1,41	1,46	1,46	1,43	1,45	1,41	1,41	1,43	1,41	1,43	1,41	1,43	1,42	1,43	1,43	
Berat Tanah Kering + Ring	gr	32,60	32,60	32,50	32,70	33,30	32,60	32,40	32,50	33,00	32,90	32,80	32,70	32,30	32,40	32,50	32,30	32,80	32,30	32,80	32,30	32,70	32,50	32,70
Berat Tanah Kering	gr	14,20	14,10	14,10	14,30	14,80	14,20	14,00	14,00	14,60	14,50	14,30	14,30	13,90	13,90	14,10	13,90	14,30	13,90	14,30	13,90	14,30	14,00	14,30
Berat Air	gr	1,20	1,20	1,20	1,30	1,10	1,30	1,30	1,20	1,20	1,30	1,20	1,40	1,30	1,30	1,30	1,30	1,20	1,30	1,10	1,30	1,20	1,20	1,20
Kadar Air	%	8,45	8,51	8,51	9,09	7,43	9,15	9,29	8,57	8,22	8,97	8,39	9,79	9,35	9,35	9,22	9,35	8,39	9,35	7,69	9,29	8,39	8,39	8,39
Dry Density of Soil (γ _d)	gr/cm ³	1,314	1,305	1,305	1,323	1,370	1,314	1,295	1,295	1,351	1,342	1,323	1,323	1,286	1,286	1,305	1,286	1,323	1,286	1,323	1,295	1,323	1,295	1,323
γ _d Rata-Rata	gr/cm ³	1,313																						

KADAR AIR

Lapisan		1			2			3			4			5			6			7			
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Berat Cawan + Tanah Basah	gram	21,40	21,50	21,30	21,80	22,00	21,70	21,20	20,80	21,80	21,80	21,50	21,70	21,20	21,20	21,40	20,60	21,00	20,60	20,90	20,80	21,00	21,00
Berat Cawan + Tanah Kering	gram	20,20	20,30	20,10	20,50	20,90	20,40	19,90	19,60	20,60	20,50	20,30	20,30	19,90	19,90	20,10	19,30	19,80	19,30	19,80	19,50	19,80	19,80
Berat Cawan	gram	6	6,2	6	6,2	6,1	6,2	5,9	5,6	6	6	6	6	6	6	5,4	5,5	5,4	5,5	5,5	5,5	5,5	5,5
Berat Tanah Kering	gram	14,2	14,1	14,1	14,3	14,8	14,2	14	14	14,6	14,5	14,3	14,3	13,9	13,9	14,1	13,9	14,3	13,9	14,3	14	14,3	14,3
Berat Air	gram	1,2	1,2	1,2	1,3	1,1	1,3	1,3	1,2	1,2	1,3	1,2	1,4	1,3	1,3	1,3	1,3	1,2	1,3	1,1	1,3	1,2	1,2
Kadar Air	%	8,45	8,51	8,51	9,09	7,43	9,15	9,29	8,57	8,22	8,97	8,39	9,79	9,35	9,35	9,22	9,35	8,39	9,35	7,69	9,29	8,39	8,39
Kadar Air Rata-Rata	%	8,80																					

Sudut	46°	Jumlah Lapis	3
Lebar Pondasi	8 cm	SV	3,2 cm
Jarak Pondasi Ke Tepi Lereng	d/B = 1	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40
Berat Tanah Basah + Ring	gr	34,20	34,20	34,10	34,00	34,10	34,20	34,30	34,30	33,90	34,10	34,20	34,30	34,30	33,80	34,00	33,90	34,50	33,80	33,70	33,80	33,80	33,80
Berat Tanah Basah	gr	15,80	15,70	15,70	15,60	15,60	15,80	15,90	15,80	15,50	15,70	15,70	15,90	15,90	15,30	15,60	15,50	16,00	15,40	15,30	15,30	15,40	15,40
Soil Unit Weight	gr/cm ³	1,46	1,45	1,45	1,44	1,44	1,46	1,47	1,46	1,43	1,45	1,45	1,47	1,47	1,42	1,44	1,43	1,48	1,43	1,42	1,42	1,43	1,43
Berat Tanah Kering + Ring	gr	32,70	32,80	32,80	32,60	32,70	32,70	33,00	33,00	32,70	32,90	32,90	32,90	33,00	32,60	32,80	32,70	33,20	32,50	32,50	32,70	32,80	32,80
Berat Tanah Kering	gr	14,30	14,30	14,40	14,20	14,20	14,30	14,60	14,50	14,30	14,50	14,40	14,50	14,60	14,10	14,40	14,30	14,70	14,10	14,10	14,20	14,40	14,40
Berat Air	gr	1,50	1,40	1,30	1,40	1,40	1,50	1,30	1,30	1,20	1,20	1,30	1,40	1,30	1,20	1,20	1,20	1,30	1,30	1,20	1,10	1,00	1,00
Kadar Air	%	10,49	9,79	9,03	9,86	9,86	10,49	8,90	8,97	8,39	8,28	9,03	9,66	8,90	8,51	8,33	8,39	8,84	9,22	8,51	7,75	6,94	6,94
Dry Density of Soil (γ _d)	gr/cm ³	1,323	1,323	1,333	1,314	1,314	1,323	1,351	1,342	1,323	1,342	1,333	1,342	1,351	1,305	1,333	1,323	1,360	1,305	1,305	1,314	1,333	1,333
γ _d Rata-Rata	gr/cm ³	1,328																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	21,80	21,90	21,70	21,80	21,70	22,00	21,50	21,70	21,50	21,70	21,70	21,90	21,90	21,30	21,60	20,90	21,50	20,80	20,80	20,80	20,90
Berat Cawan + Tanah Kering	gram	20,30	20,50	20,40	20,40	20,30	20,50	20,20	20,40	20,30	20,50	20,40	20,50	20,60	20,10	20,40	19,70	20,20	19,50	19,60	19,70	19,90
Berat Cawan	gram	6	6,2	6	6,2	6,1	6,2	5,6	5,9	6	6	6	6	6	6	6	5,4	5,5	5,4	5,5	5,5	5,5
Berat Tanah Kering	gram	14,3	14,3	14,4	14,2	14,2	14,3	14,6	14,5	14,3	14,5	14,4	14,5	14,6	14,1	14,4	14,3	14,7	14,1	14,1	14,2	14,4
Berat Air	gram	1,5	1,4	1,3	1,4	1,4	1,5	1,3	1,3	1,2	1,2	1,3	1,4	1,3	1,2	1,2	1,2	1,3	1,3	1,2	1,1	1
Kadar Air	%	10,49	9,79	9,03	9,86	9,86	10,49	8,90	8,97	8,39	8,28	9,03	9,66	8,90	8,51	8,33	8,39	8,84	9,22	8,51	7,75	6,94
Kadar Air Rata-Rata	%	8,96																				

Sudut	46°	Jumlah Lapis	3
Lebar Pondasi	8 cm	SV	3,2 cm
Jarak Pondasi Ke Tepi Lereng	d/B = 2	Keterangan	-

3

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40
Berat Tanah Basah + Ring	gr	33,50	33,80	33,60	33,90	33,70	34,00	33,70	33,70	33,60	33,90	33,50	34,00	33,60	33,40	33,40	33,60	33,90	33,60	33,80	33,80	34,00	34,00
Berat Tanah Basah	gr	15,10	15,30	15,20	15,50	15,20	15,60	15,30	15,20	15,20	15,50	15,00	15,60	15,20	14,90	15,00	15,20	15,40	15,20	15,40	15,30	15,60	15,60
Soil Unit Weight	gr/cm ³	1,40	1,42	1,41	1,43	1,41	1,44	1,42	1,41	1,41	1,43	1,39	1,44	1,41	1,38	1,39	1,41	1,43	1,41	1,43	1,42	1,44	1,44
Berat Tanah Kering + Ring	gr	32,30	32,60	32,40	32,80	32,60	32,70	32,50	32,50	32,50	32,20	32,30	33,00	32,40	32,20	32,20	32,40	32,70	32,30	32,50	32,60	32,80	32,80
Berat Tanah Kering	gr	13,90	14,10	14,00	14,40	14,10	14,30	14,10	14,00	14,10	13,80	13,80	14,60	14,00	13,70	13,80	14,00	14,20	13,90	14,10	14,10	14,40	14,40
Berat Air	gr	1,20	1,20	1,20	1,10	1,10	1,30	1,20	1,20	1,10	1,70	1,20	1,00	1,20	1,20	1,20	1,20	1,20	1,30	1,30	1,20	1,20	1,20
Kadar Air	%	8,63	8,51	8,57	7,64	7,80	9,09	8,51	8,57	7,80	12,32	8,70	6,85	8,57	8,76	8,70	8,57	8,45	9,35	9,22	8,51	8,33	8,33
Dry Density of Soil (γ _d)	gr/cm ³	1,286	1,305	1,295	1,333	1,305	1,323	1,305	1,295	1,305	1,277	1,277	1,351	1,295	1,268	1,277	1,295	1,314	1,286	1,305	1,305	1,333	1,333
γ _d Rata-Rata	gr/cm ³	1,302																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7			
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Berat Cawan + Tanah Basah	gram	20,90	21,30	21,00	19,80	21,30	19,90	21,40	21,00	21,20	20,10	19,30	21,30	21,20	20,70	20,70	20,90	19,70	21,00	21,10	19,60	21,20	21,20
Berat Cawan + Tanah Kering	gram	19,70	20,10	19,80	18,70	20,20	18,60	20,20	19,80	20,10	18,40	18,10	20,30	20,00	19,50	19,50	19,70	18,50	19,70	19,80	18,40	20,00	20,00
Berat Cawan	gram	5,8	6	5,8	4,3	6,1	4,3	6,1	5,8	6	4,6	4,3	5,7	6	5,8	5,7	5,7	4,3	5,8	5,7	4,3	5,6	5,6
Berat Tanah Kering	gram	13,9	14,1	14	14,4	14,1	14,3	14,1	14	14,1	13,8	13,8	14,6	14	13,7	13,8	14	14,2	13,9	14,1	14,1	14,4	14,4
Berat Air	gram	1,2	1,2	1,2	1,1	1,1	1,3	1,2	1,2	1,1	1,7	1,2	1	1,2	1,2	1,2	1,2	1,2	1,3	1,3	1,2	1,2	1,2
Kadar Air	%	8,63	8,51	8,57	7,64	7,80	9,09	8,51	8,57	7,80	12,32	8,70	6,85	8,57	8,76	8,70	8,57	8,45	9,35	9,22	8,51	8,33	8,33
Kadar Air Rata-Rata	%	8,64																					

Sudut	46°	Jumlah Lapis	3
Lebar Pondasi	8 cm	SV	3,2 cm
Jarak Pondasi Ke Tepi Lereng	d/B = 3	Keterangan	-

KEPADATAN

Lapisan		1			2			3			4			5			6			7			
Ring No.		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	
Tinggi Ring	cm	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60	2,60
Diameter Ring	cm	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
Volume Ring	cm ³	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81	10,81
Berat Ring	gr	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40	18,50	18,40	18,40
Berat Tanah Basah + Ring	gr	34,00	33,80	33,60	33,70	34,00	34,00	33,70	33,70	34,20	34,10	34,30	33,90	33,60	33,80	33,90	33,60	33,80	33,60	33,80	33,80	33,80	34,00
Berat Tanah Basah	gr	15,60	15,30	15,20	15,30	15,50	15,60	15,30	15,20	15,80	15,70	15,80	15,50	15,20	15,30	15,50	15,20	15,30	15,20	15,40	15,30	15,40	15,60
Soil Unit Weight	gr/cm ³	1,44	1,42	1,41	1,42	1,43	1,44	1,42	1,41	1,46	1,45	1,46	1,43	1,41	1,42	1,43	1,41	1,42	1,41	1,43	1,42	1,43	1,44
Berat Tanah Kering + Ring	gr	32,80	32,60	32,40	32,50	32,80	32,70	32,40	32,50	32,90	32,80	33,10	32,80	32,40	32,60	32,70	32,40	32,60	32,30	32,30	32,70	32,70	32,70
Berat Tanah Kering	gr	14,40	14,10	14,00	14,10	14,30	14,30	14,00	14,00	14,50	14,40	14,60	14,40	14,00	14,10	14,30	14,00	14,10	13,90	13,90	14,20	14,30	14,30
Berat Air	gr	1,20	1,20	1,20	1,20	1,20	1,30	1,30	1,20	1,30	1,30	1,20	1,10	1,20	1,20	1,20	1,20	1,20	1,30	1,50	1,10	1,30	1,30
Kadar Air	%	8,33	8,51	8,57	8,51	8,39	9,09	9,29	8,57	8,97	9,03	8,22	7,64	8,57	8,51	8,39	8,57	8,51	9,35	10,79	7,75	9,09	9,09
Dry Density of Soil (γ _d)	gr/cm ³	1,333	1,305	1,295	1,305	1,323	1,323	1,295	1,295	1,342	1,333	1,351	1,333	1,295	1,305	1,323	1,295	1,305	1,286	1,286	1,314	1,323	1,323
γ _d Rata-Rata	gr/cm ³	1,313																					

KADAR AIR

Lapisan		1			2			3			4			5			6			7		
Nomor Cawan		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Berat Cawan + Tanah Basah	gram	21,10	20,80	20,70	20,80	21,00	21,20	20,70	20,80	21,20	21,20	21,10	21,00	20,90	21,00	21,30	21,00	21,20	21,10	21,20	21,00	21,30
Berat Cawan + Tanah Kering	gram	19,90	19,60	19,50	19,60	19,80	19,90	19,40	19,60	19,90	19,90	19,90	19,90	19,70	19,80	20,10	19,80	20,00	19,80	19,70	19,90	20,00
Berat Cawan	gram	5,5	5,5	5,5	5,5	5,5	5,6	5,4	5,6	5,4	5,5	5,3	5,5	5,7	5,7	5,8	5,8	5,9	5,9	5,8	5,7	5,7
Berat Tanah Kering	gram	14,4	14,1	14	14,1	14,3	14,3	14	14	14,5	14,4	14,6	14,4	14	14,1	14,3	14	14,1	13,9	13,9	14,2	14,3
Berat Air	gram	1,2	1,2	1,2	1,2	1,2	1,3	1,3	1,2	1,3	1,3	1,2	1,1	1,2	1,2	1,2	1,2	1,2	1,3	1,5	1,1	1,3
Kadar Air	%	8,33	8,51	8,57	8,51	8,39	9,09	9,29	8,57	8,97	9,03	8,22	7,64	8,57	8,51	8,39	8,57	8,51	9,35	10,79	7,75	9,09
Kadar Air Rata-Rata	%	8,70																				

Lampiran 7**Perhitungan Daya Dukung Lereng Tanpa Perkuatan dengan Metode Analitik****A. Metode Meyerhof-Gamperline**

$$\gamma = 1.315 \text{ gr/cm}^3$$

$$\phi = \text{sudut geser dalam tanah} = 33,007^\circ$$

$$D = \text{kedalaman pondasi} = 0$$

$$L = \text{panjang pondasi} = \sim$$

1. Data (B=4 cm ; d/B =1)

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 4 \text{ cm} = 1,5748 \text{ inchi}$$

$$b = \text{Jarak pondasi ke puncak lereng} = 4 \text{ cm} = 1,5748 \text{ inchi}$$

$$f_\phi = 10^{(0,1159\phi - 2,386)} = 10^{(0,1159 \cdot 33,007 - 2,386)} = 27,5113$$

$$f_B = 10^{(0,34 - 0,2 \log B)} = 10^{(0,34 - 0,2 \log 1,5748)} = 1,9978$$

$$f_{D/B} = 1 + 0,65 (D/B) = 1 + 0,65 (0/1,5748) = 1$$

$$f_{B/L} = 1 - 0,27 (B/L) = 1 - 0,27 (1,5748/\sim) = 1$$

$$f_{D/B, B/L} = 1 + 0,39 (D/L) = 1 + 0,39 (0/\sim) = 1$$

$$\begin{aligned} f_{\alpha, b/B} &= 1 - 0,8 [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\ &= 1 - 0,8 [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (1,5748/1,5748)^2 \tan 46^\circ]\} \\ &= 0,9779 \end{aligned}$$

$$\begin{aligned} f_{\alpha, b/D, D/B} &= 1 + 0,6 (B/L) [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\ &= 1 + 0,6 (1,5748/\sim) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (1,5748/1,5748)^2 \tan 46^\circ]\} \\ &= 1 \end{aligned}$$

$$\begin{aligned} f_{\alpha, b/B, B/L} &= 1 + 0,33 (D/B) \tan \alpha \{2/[2 + (b/B)^2 \tan \alpha]\} \\ &= 1 + 0,33 (0/1,5748) \tan 46^\circ \{2/[2 + (1,5748/1,5748)^2 \tan 46^\circ]\} \\ &= 1 \end{aligned}$$

$$N_{\gamma q} = 27,5113 \times 1,9978 \times 1 \times 1 \times 1 \times 0,9779 \times 1 \times 1 = 53,7473$$

$$q_u = 0,5 \times \gamma \times B \times N_{\gamma q} = 0,5 \times 1,315 \times 4 \times 53,7473 = 141,36 \text{ gr/cm}^2$$

$$q_u = 14,136 \text{ kN/m}^2$$

2. Data (B=4 cm ; d/B = 2)

$$\gamma = 1.315 \text{ gr/cm}^3$$

$$\phi = \text{sudut geser dalam tanah} = 33,007^\circ$$

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 4 \text{ cm} = 1,5748 \text{ inchi}$$

$$\begin{aligned}
 D &= \text{kedalaman pondasi} = 0 \\
 L &= \text{panjang pondasi} = \sim \\
 b &= \text{Jarak pondasi ke puncak lereng} = 8 \text{ cm} = 3,1496 \text{ inchi} \\
 f_{\phi} &= 10^{(0,1159\phi-2,386)} = 10^{(0,1159,33,007-2,386)} = 27,5113 \\
 f_B &= 10^{(0,34-0,2 \log B)} = 10^{(0,34-0,2 \log 1,5748)} = 1,9978 \\
 f_{D/B} &= 1 + 0,65 (D/B) = 1 + 0,65 (0/1,5748) = 1 \\
 f_{B/L} &= 1 - 0,27 (B/L) = 1 - 0,27 (1,5748/\sim) = 1 \\
 f_{D/B, B/L} &= 1 + 0,39 (D/L) = 1 + 0,39 (0/\sim) = 1 \\
 f_{\alpha, b/B} &= 1 - 0,8 [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 - 0,8 [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (3,1496/1,5748)^2 \tan 46^\circ]\} \\
 &= 0,9783 \\
 f_{\alpha, b/D, D/B} &= 1 + 0,6 (B/L) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (b/B)^2 \tan 46^\circ]\} \\
 &= 1 + 0,6 (1,5748/\sim) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (3,1496/1,5748)^2 \tan 46^\circ]\} \\
 &= 1 \\
 f_{\alpha, b/B, B/L} &= 1 + 0,33 (D/B) \tan \alpha \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 + 0,33 (0/1,5748) \tan 46^\circ \{2/[2 + (3,1496/1,5748)^2 \tan 46^\circ]\} \\
 &= 1 \\
 N_{\gamma q} &= 27,5113 \times 1,9978 \times 1 \times 1 \times 1 \times 0,9783 \times 1 \times 1 = 53,7721 \\
 q_u &= 0,5 \times \gamma \times B \times N_{\gamma q} = 0,5 \times 1,315 \times 4 \times 53,7721 = 141,421 \text{ gr/cm}^2 \\
 q_u &= 14,142 \text{ kN/m}^2
 \end{aligned}$$

3. Data (B=4 cm ; d/B = 3)

$$\begin{aligned}
 \alpha &= \text{sudut kemiringan lereng} = 46^\circ \\
 B &= \text{lebar Pondasi} = 4 \text{ cm} = 1,5748 \text{ inchi} \\
 b &= \text{Jarak pondasi ke puncak lereng} = 12 \text{ cm} = 4,7244 \text{ inchi} \\
 f_{\phi} &= 10^{(0,1159\phi-2,386)} = 10^{(0,1159,33,007-2,386)} = 27,5113 \\
 f_B &= 10^{(0,34-0,2 \log B)} = 10^{(0,34-0,2 \log 1,5748)} = 1,9978 \\
 f_{D/B} &= 1 + 0,65 (D/B) = 1 + 0,65 (0/1,5748) = 1 \\
 f_{B/L} &= 1 - 0,27 (B/L) = 1 - 0,27 (1,5748/\sim) = 1 \\
 f_{D/B, B/L} &= 1 + 0,39 (D/L) = 1 + 0,39 (0/\sim) = 1 \\
 f_{\alpha, b/B} &= 1 - 0,8 [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 - 0,8 [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (4,7244/1,5748)^2 \tan 46^\circ]\} \\
 &= 0,9791 \\
 f_{\alpha, b/D, D/B} &= 1 + 0,6 (B/L) [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 + 0,6 (1,5748/\sim) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (4,7244/1,5748)^2 \tan 46^\circ]\}
 \end{aligned}$$

$$\begin{aligned}
 &= 1 \\
 f_{\alpha, b/B, B/L} &= 1 + 0,33 (D/B) \tan \alpha \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 + 0,33 (0/1,5478) \tan 46^\circ \{2/[2 + (4,7244/1,5748)^2 \tan 44^\circ]\} \\
 &= 1 \\
 N_{\gamma q} &= 27,5113 \times 1,9978 \times 1 \times 1 \times 1 \times 0,9791 \times 1 \times 1 = 53,8113 \\
 q_u &= 0,5 \times \gamma \times B \times N_{\gamma q} = 0,5 \times 1,315 \times 4 \times 53,8113 = 141,524 \text{ gr/cm}^2 \\
 q_u &= 14,152 \text{ kN/m}^2
 \end{aligned}$$

4. Data (B=6 cm ; d/B = 1)

$$\begin{aligned}
 \alpha &= \text{sudut kemiringan lereng} = 46^\circ \\
 B &= \text{lebar Pondasi} = 6 \text{ cm} = 2,3622 \text{ inchi} \\
 b &= \text{Jarak pondasi ke puncak lereng} = 6 \text{ cm} = 2,3622 \text{ inchi} \\
 f_\phi &= 10^{(0,1159\phi - 2,386)} = 10^{(0,1159,33,007 - 2,386)} = 27,5113 \\
 f_B &= 10^{(0,34 - 0,2 \log B)} = 10^{(0,34 - 0,2 \log 2,3622)} = 1,8422 \\
 f_{D/B} &= 1 + 0,65 (D/B) = 1 + 0,65 (0/2,3622) = 1 \\
 f_{B/L} &= 1 - 0,27 (B/L) = 1 - 0,27 (2,3622/\sim) = 1 \\
 f_{D/B, B/L} &= 1 + 0,39 (D/L) = 1 + 0,39 (0/\sim) = 1 \\
 f_{\alpha, b/B} &= 1 - 0,8 [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 - 0,8 [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (2,3622/2,3622)^2 \tan 46^\circ]\} \\
 &= 0,9779 \\
 f_{\alpha, b/D, D/B} &= 1 + 0,6 (B/L) [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 + 0,6 (1,5478/\sim) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (2,3622/2,3622)^2 \tan 46^\circ]\} \\
 &= 1 \\
 f_{\alpha, b/B, B/L} &= 1 + 0,33 (D/B) \tan \alpha \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 + 0,33 (0/2,3622) \tan 46^\circ \{2/[2 + (2,3622/2,3622)^2 \tan 46^\circ]\} \\
 &= 1 \\
 N_{\gamma q} &= 27,5113 \times 1,8422 \times 1 \times 1 \times 1 \times 0,9779 \times 1 \times 1 = 49,5608 \\
 q_u &= 0,5 \times \gamma \times B \times N_{\gamma q} = 0,5 \times 1,315 \times 6 \times 49,5608 = 195,51 \text{ gr/cm}^2 \\
 q_u &= 19,551 \text{ kN/m}^2
 \end{aligned}$$

5. Data (B=6 cm ; d/B = 2)

$$\begin{aligned}
 \alpha &= \text{sudut kemiringan lereng} = 46^\circ \\
 B &= \text{lebar Pondasi} = 6 \text{ cm} = 2,3622 \text{ inchi} \\
 b &= \text{Jarak pondasi ke puncak lereng} = 12 \text{ cm} = 4,7244 \text{ inchi} \\
 f_\phi &= 10^{(0,1159\phi - 2,386)} = 10^{(0,1159,33,007 - 2,386)} = 27,5113
 \end{aligned}$$

$$f_B = 10^{(0,34-0,2 \log B)} = 10^{(0,34-0,2 \log 2,3622)} = 1,8422$$

$$f_{D/B} = 1 + 0,65 (D/B) = 1 + 0,65 (0/2,3622) = 1$$

$$f_{B/L} = 1 - 0,27 (B/L) = 1 - 0,27 (2,3622/\sim) = 1$$

$$f_{D/B, B/L} = 1 + 0,39 (D/L) = 1 + 0,39 (0/\sim) = 1$$

$$\begin{aligned} f_{\alpha, b/B} &= 1 - 0,8 [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\ &= 1 - 0,8 [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (4,7244/2,3622)^2 \tan 46^\circ]\} \\ &= 0,9783 \end{aligned}$$

$$\begin{aligned} f_{\alpha, b/D, D/B} &= 1 + 0,6 (B/L) [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\ &= 1 + 0,6 (1,5478/\sim) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (4,7244/2,3622)^2 \tan 46^\circ]\} \\ &= 1 \end{aligned}$$

$$\begin{aligned} f_{\alpha, b/B, B/L} &= 1 + 0,33 (D/B) \tan \alpha \{2/[2 + (b/B)^2 \tan \alpha]\} \\ &= 1 + 0,33 (0/2,3622) \tan 46^\circ \{2/[2 + (4,7244/2,3622)^2 \tan 46^\circ]\} \\ &= 1 \end{aligned}$$

$$N_{\gamma q} = 27,5113 \times 1,8422 \times 1 \times 1 \times 1 \times 1 \times 0,9783 \times 1 \times 1 = 49,5837$$

$$q_u = 0,5 \times \gamma \times B \times N_{\gamma q} = 0,5 \times 1,315 \times 6 \times 49,5837 = 195,608 \text{ gr/cm}^2$$

$$q_u = 19,561 \text{ kN/m}^2$$

6. Data (B=6 cm ; d/B = 3)

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 6 \text{ cm} = 2,3622 \text{ inchi}$$

$$b = \text{Jarak pondasi ke puncak lereng} = 18 \text{ cm} = 7,0866 \text{ inchi}$$

$$f_\phi = 10^{(0,1159\phi-2,386)} = 10^{(0,1159 \cdot 33,007 - 2,386)} = 27,5113$$

$$f_B = 10^{(0,34-0,2 \log B)} = 10^{(0,34-0,2 \log 2,3622)} = 1,8422$$

$$f_{D/B} = 1 + 0,65 (D/B) = 1 + 0,65 (0/2,3622) = 1$$

$$f_{B/L} = 1 - 0,27 (B/L) = 1 - 0,27 (2,3622/\sim) = 1$$

$$f_{D/B, B/L} = 1 + 0,39 (D/L) = 1 + 0,39 (0/\sim) = 1$$

$$\begin{aligned} f_{\alpha, b/B} &= 1 - 0,8 [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\ &= 1 - 0,8 [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (7,0866/2,3622)^2 \tan 46^\circ]\} \\ &= 0,9791 \end{aligned}$$

$$\begin{aligned} f_{\alpha, b/D, D/B} &= 1 + 0,6 (B/L) [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\ &= 1 + 0,6 (1,5478/\sim) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (7,0866/2,3622)^2 \tan 46^\circ]\} \\ &= 1 \end{aligned}$$

$$\begin{aligned} f_{\alpha, b/B, B/L} &= 1 + 0,33 (D/B) \tan \alpha \{2/[2 + (b/B)^2 \tan \alpha]\} \\ &= 1 + 0,33 (0/2,3622) \tan 46^\circ \{2/[2 + (7,0866/2,3622)^2 \tan 46^\circ]\} \\ &= 1 \end{aligned}$$

$$N_{\gamma q} = 27,5113 \times 1,8422 \times 1 \times 1 \times 1 \times 0,9791 \times 1 \times 1 = 49,6199$$

$$q_u = 0,5 \times \gamma \times B \times N_{\gamma q} = 0,5 \times 1,315 \times 6 \times 49,3213 = 195,750 \text{ gr/cm}^2$$

$$q_u = 19,575 \text{ kN/m}^2$$

7. Data (B=8 cm ; d/B = 1)

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 8 \text{ cm} = 3,1492 \text{ inchi}$$

$$b = \text{Jarak pondasi ke puncak lereng} = 8 \text{ cm} = 3,1496 \text{ inchi}$$

$$f_\phi = 10^{(0,1159\phi - 2,386)} = 10^{(0,1159 \cdot 33,007 - 2,386)} = 27,5113$$

$$f_B = 10^{(0,34 - 0,2 \log B)} = 10^{(0,34 - 0,2 \log 3,1496)} = 1,7392$$

$$f_{D/B} = 1 + 0,65 (D/B) = 1 + 0,65 (0/3,1496) = 1$$

$$f_{B/L} = 1 - 0,27 (B/L) = 1 - 0,27 (3,1496/\sim) = 1$$

$$f_{D/B, B/L} = 1 + 0,39 (D/L) = 1 + 0,39 (0/\sim) = 1$$

$$f_{\alpha, b/B} = 1 - 0,8 [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\}$$

$$= 1 - 0,8 [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (3,1496/3,1496)^2 \tan 46^\circ]\}$$

$$= 0,9779$$

$$f_{\alpha, b/D, D/B} = 1 + 0,6 (B/L) [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\}$$

$$= 1 + 0,6 (1,5478/\sim) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (3,1496/3,1496)^2 \tan 46^\circ]\}$$

$$= 1$$

$$f_{\alpha, b/B, B/L} = 1 + 0,33 (D/B) \tan \alpha \{2/[2 + (b/B)^2 \tan \alpha]\}$$

$$= 1 + 0,33 (0/2,3622) \tan 46^\circ \{2/[2 + (3,1496/3,1496)^2 \tan 56^\circ]\}$$

$$= 1$$

$$N_{\gamma q} = 27,5113 \times 1,7392 \times 1 \times 1 \times 1 \times 0,9779 \times 1 \times 1 = 46,7897$$

$$q_u = 0,5 \times \gamma \times B \times N_{\gamma q} = 0,5 \times 1,315 \times 8 \times 46,7879 = 246,11 \text{ gr/cm}^2$$

$$q_u = 24,611 \text{ kN/m}^2$$

8. Data (B=8 cm ; d/B = 2)

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 8 \text{ cm} = 3,1492 \text{ inchi}$$

$$b = \text{Jarak pondasi ke puncak lereng} = 16 \text{ cm} = 6,2992 \text{ inchi}$$

$$f_\phi = 10^{(0,1159\phi - 2,386)} = 10^{(0,1159 \cdot 33,007 - 2,386)} = 27,5113$$

$$f_B = 10^{(0,34 - 0,2 \log B)} = 10^{(0,34 - 0,2 \log 3,1496)} = 1,7392$$

$$f_{D/B} = 1 + 0,65 (D/B) = 1 + 0,65 (0/3,1496) = 1$$

$$f_{B/L} = 1 - 0,27 (B/L) = 1 - 0,27 (3,1496/\sim) = 1$$

$$f_{D/B, B/L} = 1 + 0,39 (D/L) = 1 + 0,39 (0/\sim) = 1$$

$$\begin{aligned}
 f_{\alpha, b/B} &= 1 - 0,8 [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 - 0,8 [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (6,2992/3,1496)^2 \tan 46^\circ]\} \\
 &= 0,9783
 \end{aligned}$$

$$\begin{aligned}
 f_{\alpha, b/D, D/B} &= 1 + 0,6 (B/L) [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 + 0,6 (1,5478/\sim) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (6,2992/3,1496)^2 \tan 46^\circ]\} \\
 &= 1
 \end{aligned}$$

$$\begin{aligned}
 f_{\alpha, b/B, B/L} &= 1 + 0,33 (D/B) \tan \alpha \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 + 0,33 (0/2,3622) \tan 46^\circ \{2/[2 + (6,2992/3,1496)^2 \tan 46^\circ]\} \\
 &= 1
 \end{aligned}$$

$$N_{\gamma q} = 27,5113 \times 1,7392 \times 1 \times 1 \times 1 \times 1 \times 0,9783 \times 1 \times 1 = 46,8113$$

$$q_u = 0,5 \times \gamma \times B \times N_{\gamma q} = 0,5 \times 1,315 \times 8 \times 46,8113 = 246,288 \text{ gr/cm}^2$$

$$q_u = 24,623 \text{ kN/m}^2$$

9. Data (B=8 cm ; d/B = 3)

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 8 \text{ cm} = 3,1492 \text{ inchi}$$

$$b = \text{Jarak pondasi ke puncak lereng} = 24 \text{ cm} = 9,4488 \text{ inchi}$$

$$f_\phi = 10^{(0,1159\phi - 2,386)} = 10^{(0,1159 \cdot 33,007 - 2,386)} = 27,5113$$

$$f_B = 10^{(0,34 - 0,2 \log B)} = 10^{(0,34 - 0,2 \log 3,1496)} = 1,7392$$

$$f_{D/B} = 1 + 0,65 (D/B) = 1 + 0,65 (0/3,1496) = 1$$

$$f_{B/L} = 1 - 0,27 (B/L) = 1 - 0,27 (3,1496/\sim) = 1$$

$$f_{D/B, B/L} = 1 + 0,39 (D/L) = 1 + 0,39 (0/\sim) = 1$$

$$\begin{aligned}
 f_{\alpha, b/B} &= 1 - 0,8 [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 - 0,8 [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (9,4488/3,1496)^2 \tan 46^\circ]\} \\
 &= 0,9791
 \end{aligned}$$

$$\begin{aligned}
 f_{\alpha, b/D, D/B} &= 1 + 0,6 (B/L) [1 - (1 - \tan \alpha)^2] \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 + 0,6 (1,5478/\sim) [1 - (1 - \tan 46^\circ)^2] \{2/[2 + (9,4488/3,1496)^2 \tan 46^\circ]\} \\
 &= 1
 \end{aligned}$$

$$\begin{aligned}
 f_{\alpha, b/B, B/L} &= 1 + 0,33 (D/B) \tan \alpha \{2/[2 + (b/B)^2 \tan \alpha]\} \\
 &= 1 + 0,33 (0/2,3622) \tan 46^\circ \{2/[2 + (9,4488/3,1496)^2 \tan 46^\circ]\} \\
 &= 1
 \end{aligned}$$

$$N_{\gamma q} = 27,5113 \times 1,7392 \times 1 \times 1 \times 1 \times 1 \times 0,9791 \times 1 \times 1 = 46,8455$$

$$q_u = 0,5 \times \gamma \times B \times N_{\gamma q} = 0,5 \times 1,315 \times 8 \times 46,8455 = 246,407 \text{ gr/cm}^2$$

$$q_u = 24,641 \text{ kN/m}^2$$

B. Metode Hansen

$$\gamma = 1.315 \text{ gr/cm}^3$$

$$\phi = \text{sudut geser dalam tanah} = 33,007^\circ$$

$$D = \text{kedalaman pondasi} = 0$$

$$L = \text{panjang pondasi} = \sim$$

1. Data (B=4 cm ; d/B = 1)

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 4 \text{ cm}$$

$$b = \text{Jarak pondasi ke puncak lereng} = 4 \text{ cm}$$

Untuk d = 4B (Tanah Datar) :

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

Dengan mengasumsikan bahwa nilai $c = 0$ dan $D_f = 0$, maka diperoleh nilai daya dukung sebagai berikut;

$$q_u = (c \times N_c) + (D_f \times \gamma \times N_q) + \left(\gamma \times \frac{B}{2} \times N_\gamma \right)$$

$$q_u = (0 \times 38,62) + (0 \times 1,315 \times 26,0869) + \left(1,315 \times \frac{4}{2} \times 24,4439 \right)$$

$$q_u = 64,288 \text{ gr/cm}^2 = 6,429 \text{ kN/m}^2$$

Untuk Tanah Lereng :

$$q_u = (c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c) + (D_f \cdot \gamma \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q) + \left(\gamma \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma \right)$$

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

dimana;

$$d_c = d_q = d_\gamma = 1 \quad (\text{faktor kedalaman})$$

$$i_c = i_q = i_\gamma = 1 \quad (\text{faktor kemiringan beban})$$

$$s_c = s_q = s_\gamma = 1 \quad (\text{faktor bentuk pondasi})$$

$$b_c = b_q = b_\gamma = 1 \quad (\text{faktor kemiringan dasar pondasi})$$

untuk $d=0$ cm, maka;

$$g_q = g_\gamma = (1 - \tan \alpha)^2 = (1 - \tan 46^\circ)^2 = 0,9722$$

untuk $D_f = 0$ cm maka nilai daya dukung :

$$q_u = 1,315 \times \frac{4}{2} \times 24,4439 \times 0,9722 = 62,498 \text{ gr/cm}^2 = 6,250 \text{ kN/m}^2$$

Dengan menggunakan interpolasi, dihitung daya dukung pada kondisi $d = B$ (4 cm) :

$$d = 0 \rightarrow q_u = 6,250 \text{ kN/m}^2$$

$$d = 4B \text{ (16 cm)} \rightarrow q_u = 6,429 \text{ kN/m}^2$$

$$\frac{6,429 - 6,250}{16 - 0} = \frac{q_u - 6,250}{4 - 0}$$

$$0,716 = 16 q_u - 100$$

$$q_u = 6,295 \text{ kN/m}^2$$

2. Data (B=4 cm ; d/B = 2)

α = sudut kemiringan lereng = 46°

B = lebar Pondasi = 4 cm

b = Jarak pondasi ke puncak lereng = 8 cm

Untuk $d = 4B$ (Tanah Datar) :

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

Dengan mengasumsikan bahwa nilai $c = 0$ dan $D_f = 0$, maka diperoleh nilai daya dukung sebagai berikut;

$$q_u = (c \times N_c) + (D_f \times \gamma \times N_q) + \left(\gamma \times \frac{B}{2} \times N_\gamma \right)$$

$$q_u = (0 \times 38,62) + (0 \times 1,315 \times 26,0869) + \left(1,315 \times \frac{4}{2} \times 24,4439 \right)$$

$$q_u = 64,288 \text{ gr/cm}^2 = 6,429 \text{ kN/m}^2$$

Untuk Tanah Lereng :

$$q_u = (c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c) + (D_f \cdot \gamma \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q) + \left(\gamma \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma \right)$$

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

dimana;

$$d_c = d_q = d_\gamma = 1 \quad (\text{faktor kedalaman})$$

$$i_c = i_q = i_\gamma = 1 \quad (\text{faktor kemiringan beban})$$

$$s_c = s_q = s_\gamma = 1 \quad (\text{faktor bentuk pondasi})$$

$$b_c = b_q = b_\gamma = 1 \quad (\text{faktor kemiringan dasar pondasi})$$

untuk $d=0$ cm, maka;

$$g_q = g_\gamma = (1 - \tan \alpha)^2 = (1 - \tan 46^\circ)^2 = 0,9722$$

untuk $D_f = 0$ cm maka nilai daya dukung :

$$q_u = 1,315 \times \frac{4}{2} \times 24,4439 \times 0,9722 = 62.498 \text{ gr/cm}^2 = 6,250 \text{ kN/m}^2$$

Dengan menggunakan interpolasi, dihitung daya dukung pada kondisi $d = 2B$ (8 cm) :

$$d = 0 \rightarrow q_u = 6,250 \text{ kN/m}^2$$

$$d = 4B \text{ (16 cm)} \rightarrow q_u = 6,429 \text{ kN/m}^2$$

$$\frac{6,429 - 6,250}{16 - 0} = \frac{q_u - 6,250}{8 - 0}$$

$$1,432 = 16 q_u - 100$$

$$q_u = 6,339 \text{ kN/m}^2$$

3. Data (B=4 cm ; d/B = 3)

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 4 \text{ cm}$$

$$b = \text{Jarak pondasi ke puncak lereng} = 12 \text{ cm}$$

Untuk $d = 4B$ (Tanah Datar) :

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

Dengan mengasumsikan bahwa nilai $c = 0$ dan $D_f = 0$, maka diperoleh nilai daya dukung sebagai berikut;

$$q_u = (c \times N_c) + (D_f \times \gamma \times N_q) + \left(\gamma \times \frac{B}{2} \times N_\gamma \right)$$

$$q_u = (0 \times 38,62) + (0 \times 1,315 \times 26,0869) + \left(1,315 \times \frac{4}{2} \times 24,4439 \right)$$

$$q_u = 64,288 \text{ gr/cm}^2 = 6,429 \text{ kN/m}^2$$

Untuk Tanah Lereng :

$$q_u = (c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c) + (D_f \cdot \gamma \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q) + \left(\gamma \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma \right)$$

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

dimana;

$$d_c = d_q = d_\gamma = 1 \quad (\text{faktor kedalaman})$$

$$i_c = i_q = i_\gamma = 1 \quad (\text{faktor kemiringan beban})$$

$$s_c = s_q = s_\gamma = 1 \quad (\text{faktor bentuk pondasi})$$

$$b_c = b_q = b_\gamma = 1 \quad (\text{faktor kemiringan dasar pondasi})$$

untuk $d=0$ cm, maka;

$$g_q = g_\gamma = (1 - \tan \alpha)^2 = (1 - \tan 46^\circ)^2 = 0,9722$$

untuk $D_f = 0$ cm maka nilai daya dukung :

$$q_u = 1,315 \times \frac{4}{2} \times 24,4439 \times 0,9722 = 62,498 \text{ gr/cm}^2 = 6,250 \text{ kN/m}^2$$

Dengan menggunakan interpolasi, dihitung daya dukung pada kondisi $d = 3B$ (12 cm) :

$$d = 0 \rightarrow q_u = 6,250 \text{ kN/m}^2$$

$$d = 4B \text{ (16 cm)} \rightarrow q_u = 6,429 \text{ kN/m}^2$$

$$\frac{6,429 - 6,250}{16 - 0} = \frac{q_u - 6,250}{12 - 0}$$

$$2,148 = 16 q_u - 100$$

$$q_u = 6,384 \text{ kN/m}^2$$

4. Data (B=6 cm ; d/B = 1)

α = sudut kemiringan lereng = 46°

B = lebar Pondasi = 6 cm

b = Jarak pondasi ke puncak lereng = 6 cm

Untuk $d = 4B$ (Tanah Datar) :

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

Dengan mengasumsikan bahwa nilai $c = 0$ dan $D_f = 0$, maka diperoleh nilai daya dukung sebagai berikut;

$$q_u = (c \times N_c) + (D_f \times \gamma \times N_q) + \left(\gamma \times \frac{B}{2} \times N_\gamma\right)$$

$$q_u = (0 \times 38,62) + (0 \times 1,315 \times 26,0869) + \left(1,315 \times \frac{6}{2} \times 24,4439\right)$$

$$q_u = 96,431 \text{ gr/cm}^2 = 9,643 \text{ kN/m}^2$$

Untuk Tanah Lereng :

$$q_u = (c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c) + (D_f \cdot \gamma \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q) + \left(\gamma \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma\right)$$

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2}\right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2}\right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

dimana;

$$d_c = d_q = d_\gamma = 1 \quad (\text{faktor kedalaman})$$

$$i_c = i_q = i_\gamma = 1 \quad (\text{faktor kemiringan beban})$$

$$s_c = s_q = s_\gamma = 1 \quad (\text{faktor bentuk pondasi})$$

$$b_c = b_q = b_\gamma = 1 \quad (\text{faktor kemiringan dasar pondasi})$$

untuk $d=0$ cm, maka;

$$g_q = g_\gamma = (1 - \tan \alpha)^2 = (1 - \tan 46^\circ)^2 = 0,9722$$

untuk $D_f = 0$ cm maka nilai daya dukung :

$$q_u = 1,315 \times \frac{6}{2} \times 24,4439 \times 0,9722 = 93,748 \text{ gr/cm}^2 = 9,375 \text{ kN/m}^2$$

Dengan menggunakan interpolasi, dihitung daya dukung pada kondisi $d = B$ (6 cm) :

$$d = 0 \rightarrow q_u = 9,375 \text{ kN/m}^2$$

$$d = 4B \text{ (24 cm)} \rightarrow q_u = 9,643 \text{ kN/m}^2$$

$$\frac{9,643 - 9,375}{24 - 0} = \frac{q_u - 9,375}{6 - 0}$$

$$1,608 = 24 q_u - 225$$

$$q_u = 9,442 \text{ kN/m}^2$$

5. Data (B=6 cm ; d/B = 2)

- α = sudut kemiringan lereng = 46°
 B = lebar Pondasi = 6 cm
 b = Jarak pondasi ke puncak lereng = 12 cm

Untuk d = 4B (Tanah Datar) :

$$Nq = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$Nc = (Nq - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N\gamma = 1,5 (Nq - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

Dengan mengasumsikan bahwa nilai $c = 0$ dan $D_f = 0$, maka diperoleh nilai daya dukung sebagai berikut;

$$q_u = (c \times Nc) + (D_f \times \gamma \times Nq) + \left(\gamma \times \frac{B}{2} \times N\gamma \right)$$

$$q_u = (0 \times 38,62) + (0 \times 1,315 \times 26,0869) + \left(1,315 \times \frac{6}{2} \times 24,4439 \right)$$

$$q_u = 96,431 \text{ gr/cm}^2 = 9,643 \text{ kN/m}^2$$

Untuk Tanah Lereng :

$$q_u = (c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c) + (D_f \cdot \gamma \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q) + \left(\gamma \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma \right)$$

$$Nq = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$Nc = (Nq - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N\gamma = 1,5 (Nq - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

dimana;

$$d_c = d_q = d_\gamma = 1 \text{ (faktor kedalaman)}$$

$$i_c = i_q = i_\gamma = 1 \text{ (faktor kemiringan beban)}$$

$$s_c = s_q = s_\gamma = 1 \text{ (faktor bentuk pondasi)}$$

$$b_c = b_q = b_\gamma = 1 \text{ (faktor kemiringan dasar pondasi)}$$

untuk $d=0$ cm, maka;

$$g_q = g_\gamma = (1 - \tan \alpha)^2 = (1 - \tan 46^\circ)^2 = 0,9722$$

untuk $D_f = 0$ cm maka nilai daya dukung :

$$q_u = 1,315 \times \frac{6}{2} \times 24,4439 \times 0,9722 = 93,748 \text{ gr/cm}^2 = 9,375 \text{ kN/m}^2$$

Dengan menggunakan interpolasi, dihitung daya dukung pada kondisi $d = 2B$ (12 cm) :

$$d = 0 \rightarrow q_u = 9,375 \text{ kN/m}^2$$

$$d = 4B \text{ (24 cm)} \rightarrow q_u = 9,643 \text{ kN/m}^2$$

$$\frac{9,643 - 9,375}{24 - 0} = \frac{q_u - 9,375}{12 - 0}$$

$$3,216 = 24 q_u - 225$$

$$q_u = 9,509 \text{ kN/m}^2$$

6. Data (B=6 cm ; d/B = 3)

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 6 \text{ cm}$$

$$b = \text{Jarak pondasi ke puncak lereng} = 18 \text{ cm}$$

Untuk $d = 4B$ (Tanah Datar) :

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

Dengan mengasumsikan bahwa nilai $c = 0$ dan $D_f = 0$, maka diperoleh nilai daya dukung sebagai berikut;

$$q_u = (c \times N_c) + (D_f \times \gamma \times N_q) + \left(\gamma \times \frac{B}{2} \times N_\gamma \right)$$

$$q_u = (0 \times 38,62) + (0 \times 1,315 \times 26,0869) + \left(1,315 \times \frac{6}{2} \times 24,4439 \right)$$

$$q_u = 96,431 \text{ gr/cm}^2 = 9,643 \text{ kN/m}^2$$

Untuk Tanah Lereng :

$$q_u = (c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c) + (D_f \cdot \gamma \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q) + \left(\gamma \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma \right)$$

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

dimana;

$$d_c = d_q = d_\gamma = 1 \text{ (faktor kedalaman)}$$

$$i_c = i_q = i_\gamma = 1 \text{ (faktor kemiringan beban)}$$

$$s_c = s_q = s_\gamma = 1 \text{ (faktor bentuk pondasi)}$$

$b_c = b_q = b_\gamma = 1$ (faktor kemiringan dasar pondasi)

untuk $d=0$ cm, maka;

$$g_q = g_\gamma = (1 - \tan \alpha)^2 = (1 - \tan 46^\circ)^2 = 0,9722$$

untuk $D_f = 0$ cm maka nilai daya dukung :

$$q_u = 1,315 \times \frac{6}{2} \times 24,4439 \times 0,9722 = 93,748 \text{ gr/cm}^2 = 9,375 \text{ kN/m}^2$$

Dengan menggunakan interpolasi, dihitung daya dukung pada kondisi $d = 3B$ (18 cm) :

$$d = 0 \rightarrow q_u = 9,375 \text{ kN/m}^2$$

$$d = 4B \text{ (24 cm)} \rightarrow q_u = 9,643 \text{ kN/m}^2$$

$$\frac{9,643 - 9,375}{24 - 0} = \frac{q_u - 9,375}{18 - 0}$$

$$4,824 = 24 q_u - 225$$

$$q_u = 9,576 \text{ kN/m}^2$$

7. Data ($B=8$ cm ; $d/B = 1$)

α = sudut kemiringan lereng = 46°

B = lebar Pondasi = 8 cm

b = Jarak pondasi ke puncak lereng = 8 cm

Untuk $d = 4B$ (Tanah Datar) :

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

Dengan mengasumsikan bahwa nilai $c = 0$ dan $D_f = 0$, maka diperoleh nilai daya dukung sebagai berikut;

$$q_u = (c \times N_c) + (D_f \times \gamma \times N_q) + \left(\gamma \times \frac{B}{2} \times N_\gamma \right)$$

$$q_u = (0 \times 38,62) + (0 \times 1,315 \times 26,0869) + \left(1,315 \times \frac{8}{2} \times 24,4439 \right)$$

$$q_u = 128,575 \text{ gr/cm}^2 = 12,858 \text{ kN/m}^2$$

Untuk Tanah Lereng :

$$q_u = (c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c) + (D_f \cdot \gamma \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q) + \left(\gamma \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma \right)$$

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

dimana;

$$d_c = d_q = d_\gamma = 1 \quad (\text{faktor kedalaman})$$

$$i_c = i_q = i_\gamma = 1 \quad (\text{faktor kemiringan beban})$$

$$s_c = s_q = s_\gamma = 1 \quad (\text{faktor bentuk pondasi})$$

$$b_c = b_q = b_\gamma = 1 \quad (\text{faktor kemiringan dasar pondasi})$$

untuk $d=0$ cm, maka;

$$g_q = g_\gamma = (1 - \tan \alpha)^2 = (1 - \tan 46^\circ)^2 = 0,9722$$

untuk $D_f = 0$ cm maka nilai daya dukung :

$$q_u = 1,315 \times \frac{8}{2} \times 24,4439 \times 0,9722 = 124,997 \text{ gr/cm}^2 = 12,500 \text{ kN/m}^2$$

Dengan menggunakan interpolasi, dihitung daya dukung pada kondisi $d = B$ (8 cm) :

$$d = 0 \rightarrow q_u = 12,858 \text{ kN/m}^2$$

$$d = 4B \text{ (24 cm)} \rightarrow q_u = 12,500 \text{ kN/m}^2$$

$$\frac{12,858 - 12,500}{32 - 0} = \frac{q_u - 12,500}{8 - 0}$$

$$2,864 = 32 q_u - 400$$

$$q_u = 12,589 \text{ kN/m}^2$$

8. Data (B=8 cm ; d/B = 2)

$$\alpha = \text{sudut kemiringan lereng} = 46^\circ$$

$$B = \text{lebar Pondasi} = 8 \text{ cm}$$

$$b = \text{Jarak pondasi ke puncak lereng} = 16 \text{ cm}$$

Untuk $d = 4B$ (Tanah Datar) :

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

Dengan mengasumsikan bahwa nilai $c = 0$ dan $D_f = 0$, maka diperoleh nilai daya dukung sebagai berikut;

$$q_u = (c \times N_c) + (D_f \times \gamma \times N_q) + \left(\gamma \times \frac{B}{2} \times N_\gamma\right)$$

$$q_u = (0 \times 38,62) + (0 \times 1,315 \times 26,0869) + \left(1,315 \times \frac{8}{2} \times 24,4439\right)$$

$$q_u = 128,575 \text{ gr/cm}^2 = 12,858 \text{ kN/m}^2$$

Untuk Tanah Lereng :

$$q_u = (c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c) + (D_f \cdot \gamma \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q) + \left(\gamma \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma\right)$$

$$N_q = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2}\right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2}\right) = 26,0869$$

$$N_c = (N_q - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N_\gamma = 1,5 (N_q - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

dimana;

$$d_c = d_q = d_\gamma = 1 \text{ (faktor kedalaman)}$$

$$i_c = i_q = i_\gamma = 1 \text{ (faktor kemiringan beban)}$$

$$s_c = s_q = s_\gamma = 1 \text{ (faktor bentuk pondasi)}$$

$$b_c = b_q = b_\gamma = 1 \text{ (faktor kemiringan dasar pondasi)}$$

untuk $d=0$ cm, maka;

$$g_q = g_\gamma = (1 - \tan \alpha)^2 = (1 - \tan 46^\circ)^2 = 0,9722$$

untuk $D_f = 0$ cm maka nilai daya dukung :

$$q_u = 1,315 \times \frac{8}{2} \times 24,4439 \times 0,9722 = 124,997 \text{ gr/cm}^2 = 12,500 \text{ kN/m}^2$$

Dengan menggunakan interpolasi, dihitung daya dukung pada kondisi $d = 2B$ (16 cm) :

$$d = 0 \rightarrow q_u = 12,858 \text{ kN/m}^2$$

$$d = 4B \text{ (24 cm)} \rightarrow q_u = 12,500 \text{ kN/m}^2$$

$$\frac{12,858 - 12,500}{32 - 0} = \frac{q_u - 12,500}{16 - 0}$$

$$5,728 = 32 q_u - 400$$

$$q_u = 12,679 \text{ kN/m}^2$$

9. Data (B=8 cm ; d/B = 3)

- α = sudut kemiringan lereng = 46°
 B = lebar Pondasi = 8 cm
 b = Jarak pondasi ke puncak lereng = 24 cm

Untuk d = 4B (Tanah Datar) :

$$Nq = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$Nc = (Nq - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N\gamma = 1,5 (Nq - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

Dengan mengasumsikan bahwa nilai $c = 0$ dan $D_f = 0$, maka diperoleh nilai daya dukung sebagai berikut;

$$q_u = (c \times Nc) + (D_f \times \gamma \times Nq) + \left(\gamma \times \frac{B}{2} \times N\gamma \right)$$

$$q_u = (0 \times 38,62) + (0 \times 1,315 \times 26,0869) + \left(1,315 \times \frac{8}{2} \times 24,4439 \right)$$

$$q_u = 128,575 \text{ gr/cm}^2 = 12,858 \text{ kN/m}^2$$

Untuk Tanah Lereng :

$$q_u = (c \cdot N_c \cdot s_c \cdot d_c \cdot i_c \cdot g_c \cdot b_c) + (D_f \cdot \gamma \cdot N_q \cdot s_q \cdot d_q \cdot i_q \cdot g_q \cdot b_q) + \left(\gamma \cdot \frac{B}{2} \cdot N_\gamma \cdot s_\gamma \cdot d_\gamma \cdot i_\gamma \cdot g_\gamma \cdot b_\gamma \right)$$

$$Nq = e^{\pi \tan \phi} \cdot \tan^2 \left(45 + \frac{\phi}{2} \right) = e^{\pi \tan 33,007} \cdot \tan^2 \left(45 + \frac{33,007}{2} \right) = 26,0869$$

$$Nc = (Nq - 1) \cot \phi = (26,0869 - 1) \cot 33,007 = 38,62$$

$$N\gamma = 1,5 (Nq - 1) \tan \phi = 1,5 (26,0869 - 1) \tan 33,007 = 24,4439$$

dimana;

$$d_c = d_q = d_\gamma = 1 \text{ (faktor kedalaman)}$$

$$i_c = i_q = i_\gamma = 1 \text{ (faktor kemiringan beban)}$$

$$s_c = s_q = s_\gamma = 1 \text{ (faktor bentuk pondasi)}$$

$$b_c = b_q = b_\gamma = 1 \text{ (faktor kemiringan dasar pondasi)}$$

untuk $d=0$ cm, maka;

$$g_q = g_\gamma = (1 - \tan \alpha)^2 = (1 - \tan 46^\circ)^2 = 0,9722$$

untuk $D_f = 0$ cm maka nilai daya dukung :

$$q_u = 1,315 \times \frac{8}{2} \times 24,4439 \times 0,9722 = 124,997 \text{ gr/cm}^2 = 12,500 \text{ kN/m}^2$$

Dengan menggunakan interpolasi, dihitung daya dukung pada kondisi $d = 3B$ (24 cm) :

$$d = 0 \rightarrow q_u = 12,858 \text{ kN/m}^2$$

$$d = 4B \text{ (24 cm)} \rightarrow q_u = 12,500 \text{ kN/m}^2$$

$$\frac{12,858 - 12,500}{32 - 0} = \frac{q_u - 12,500}{24 - 0}$$

$$8,592 = 32 q_u - 400$$

$$q_u = 12,768 \text{ kN/m}^2$$



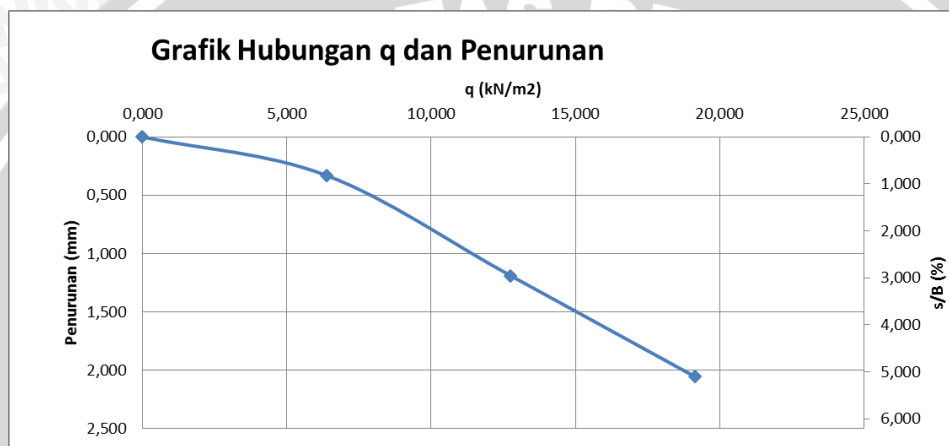
Lampiran 8

Hasil Analisis Daya Dukung Lereng dengan Metode Eksperimen

Lereng Tanpa Perkuatan

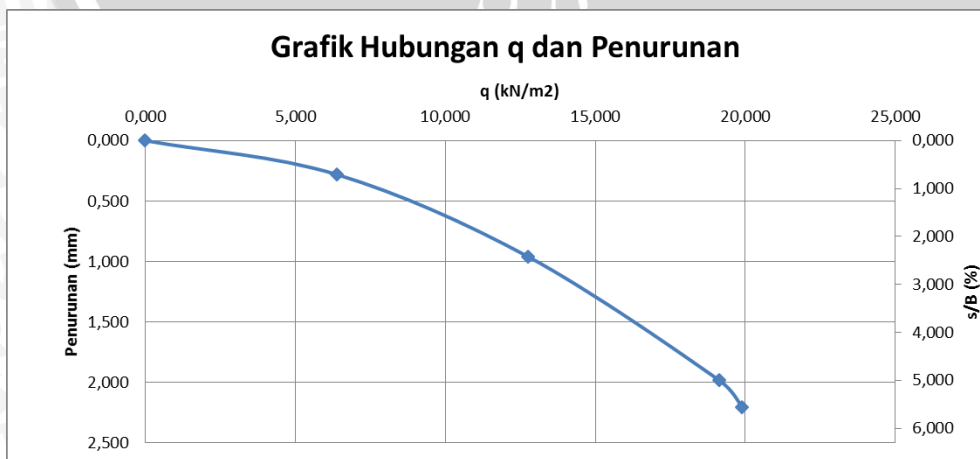
1. $\alpha=46^\circ$, $B=4\text{cm}$, $d/B=1$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	2806	0,000	0,000	0,000	0,000
25	2740	0,330	0,825	0,064	6,378
50	2568	1,190	2,975	0,128	12,755
75	2395	2,055	5,138	0,191	19,133
77	2370	2,180	5,450	0,196	19,643



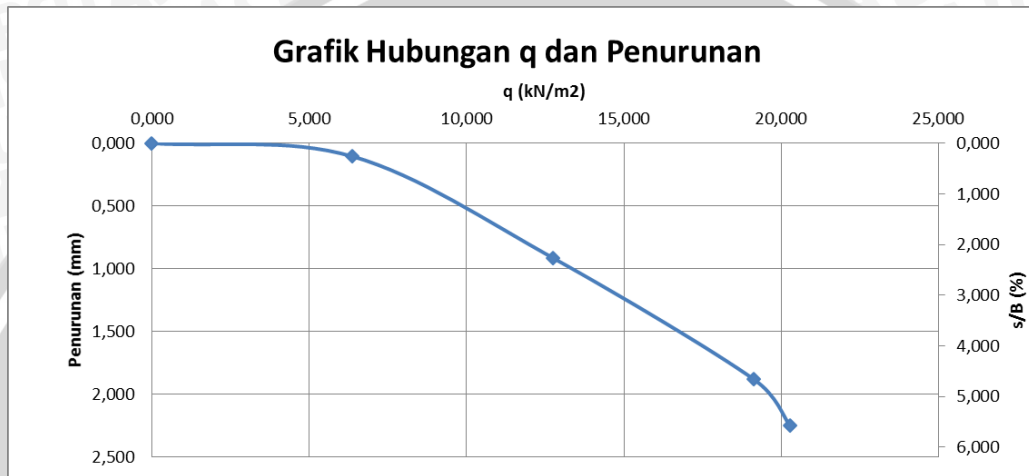
2. $\alpha=46^\circ$, $B=4\text{cm}$, $d/B=2$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	3626	0,000	0,000	0,000	0,000
25	3570	0,280	0,700	0,064	6,378
50	3434	0,960	2,400	0,128	12,755
75	3229	1,985	4,963	0,191	19,133
78	3184	2,210	5,525	0,199	19,898



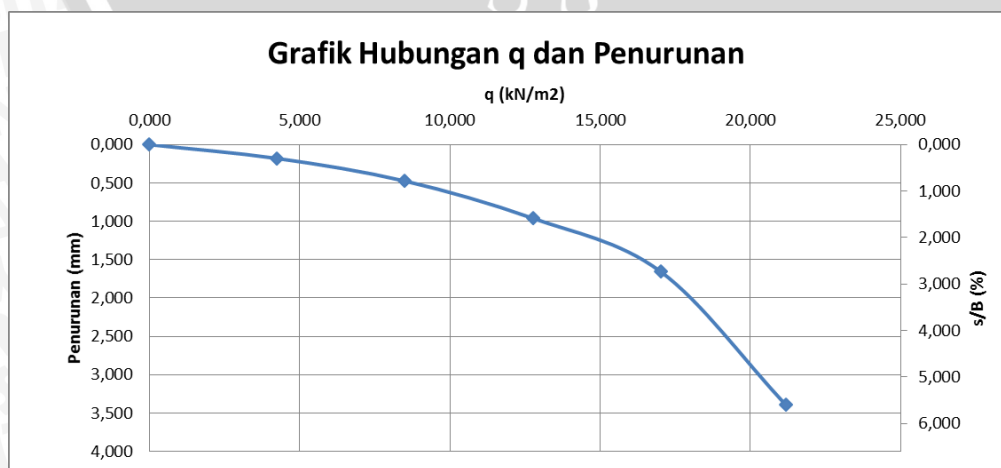
3. $\alpha=46^\circ$, $B=4\text{cm}$, $d/B=3$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	2050	0,000	0,000	0,000	0,000
25	2029	0,105	0,263	0,064	6,378
50	1867	0,915	2,288	0,128	12,755
75	1674	1,880	4,700	0,191	19,133
79,5	1600	2,250	5,625	0,203	20,281



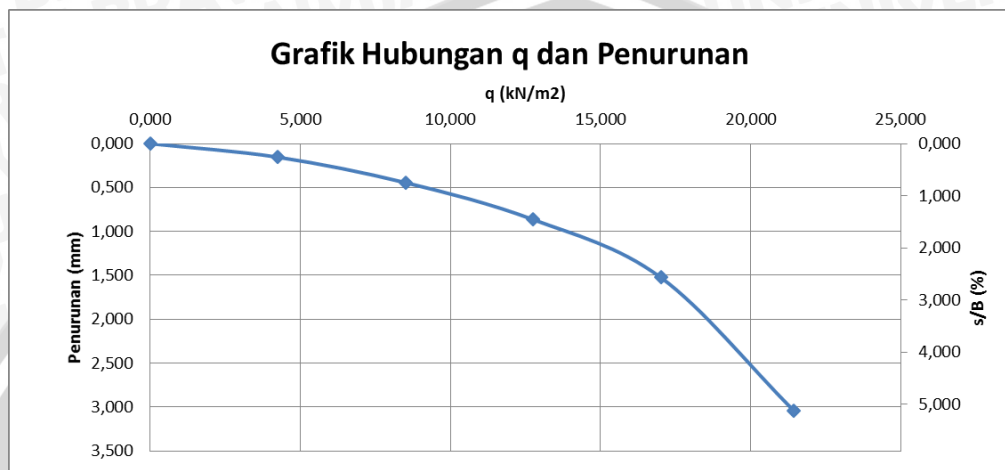
4. $\alpha=46^\circ$, $B=6\text{cm}$, $d/B=1$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	2789	0,000	0,000	0,000	0,000
25	2753	0,180	0,300	0,043	4,252
50	2694	0,475	0,792	0,085	8,503
75	2597	0,960	1,600	0,128	12,755
100	2458	1,655	2,758	0,170	17,007
124,5	2110	3,395	5,658	0,212	21,173



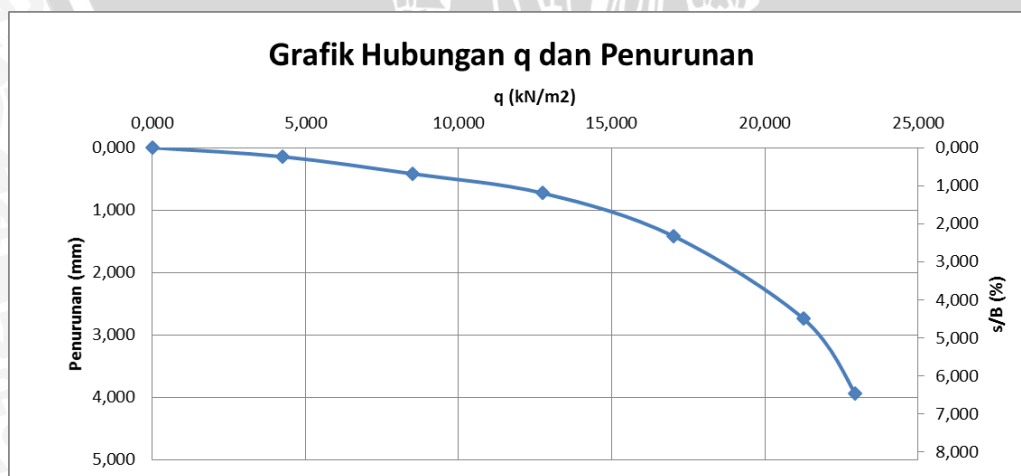
5. $\alpha=46^\circ$, $B=6\text{cm}$, $d/B=2$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	2933	0,000	0,000	0,000	0,000
25	2902	0,155	0,258	0,043	4,252
50	2844	0,445	0,742	0,085	8,503
75	2760	0,865	1,442	0,128	12,755
100	2628	1,525	2,542	0,170	17,007
126	2325	3,040	5,067	0,214	21,429



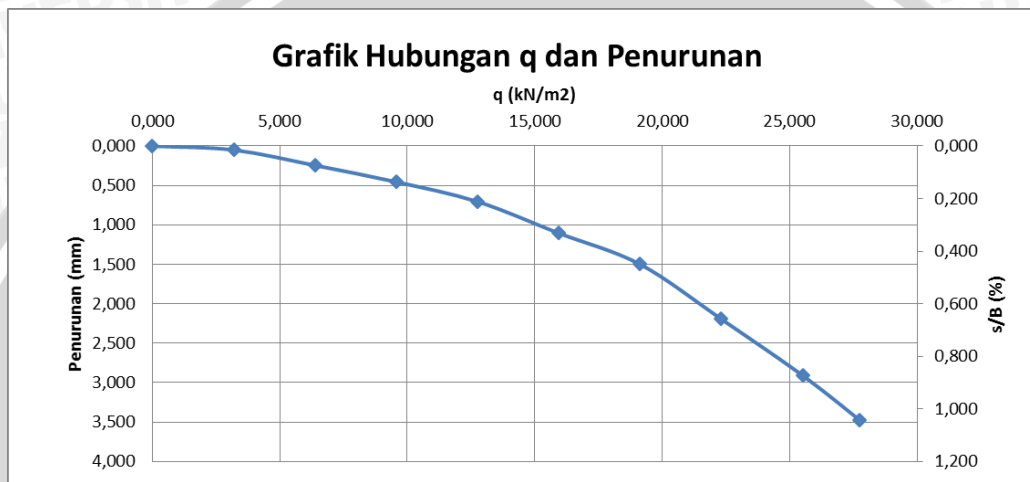
6. $\alpha=46^\circ$, $B=6\text{cm}$, $d/B=3$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	4220	0,000	0,000	0,000	0,000
25	4191	0,145	0,242	0,043	4,252
50	4136	0,420	0,700	0,085	8,503
75	4074	0,730	1,217	0,128	12,755
100	3937	1,415	2,358	0,170	17,007
125	3672	2,740	4,567	0,213	21,259
135	3432	3,940	6,567	0,230	22,959



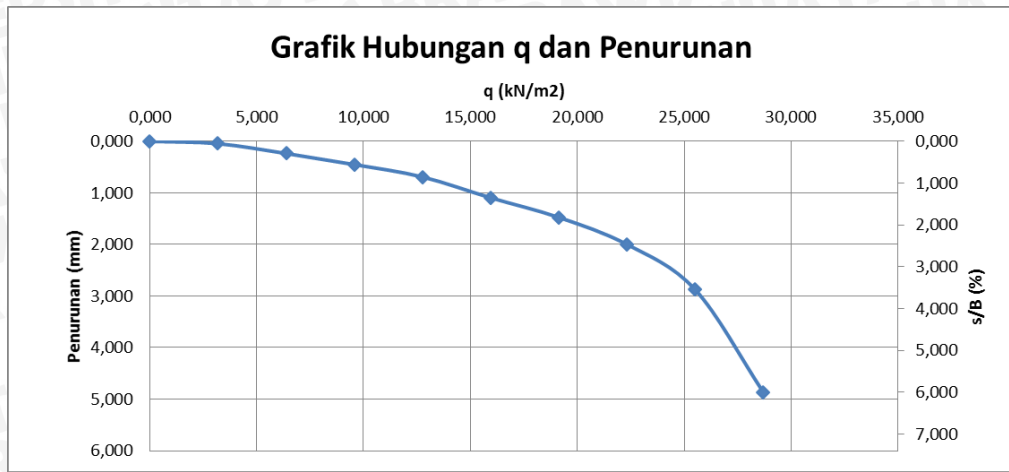
7. $\alpha=46^\circ$, $B=8\text{cm}$, $d/B=1$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	1539	0,000	0,000	0,000	0,000
25	1529	0,050	0,063	0,032	3,189
50	1490	0,245	0,306	0,064	6,378
75	1448	0,455	0,569	0,096	9,566
100	1398	0,705	0,881	0,128	12,755
125	1318	1,105	1,381	0,159	15,944
150	1239	1,500	1,875	0,191	19,133
175	1100	2,195	2,744	0,223	22,321
200	957	2,910	3,638	0,255	25,510
217,5	844	3,475	4,344	0,277	27,742



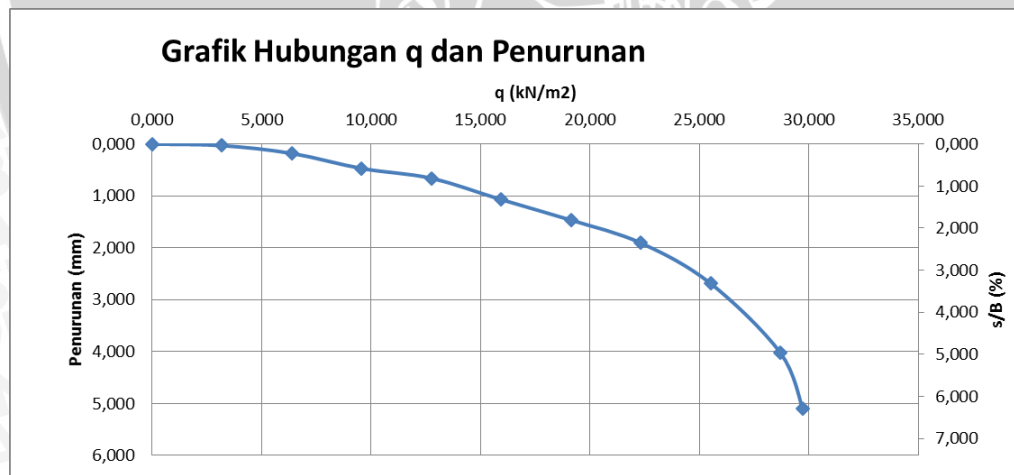
8. $\alpha=46^\circ$, $B=8\text{cm}$, $d/B=2$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	2735	0,000	0,000	0,000	0,000
25	2726	0,045	0,056	0,032	3,189
50	2688	0,235	0,294	0,064	6,378
75	2645	0,450	0,563	0,096	9,566
100	2597	0,690	0,863	0,128	12,755
125	2516	1,095	1,369	0,159	15,944
150	2440	1,475	1,844	0,191	19,133
175	2335	2,000	2,500	0,223	22,321
200	2160	2,875	3,594	0,255	25,510
225	1762	4,865	6,081	0,287	28,699



9. $\alpha=46^\circ$, $B=8\text{cm}$, $d/B=3$

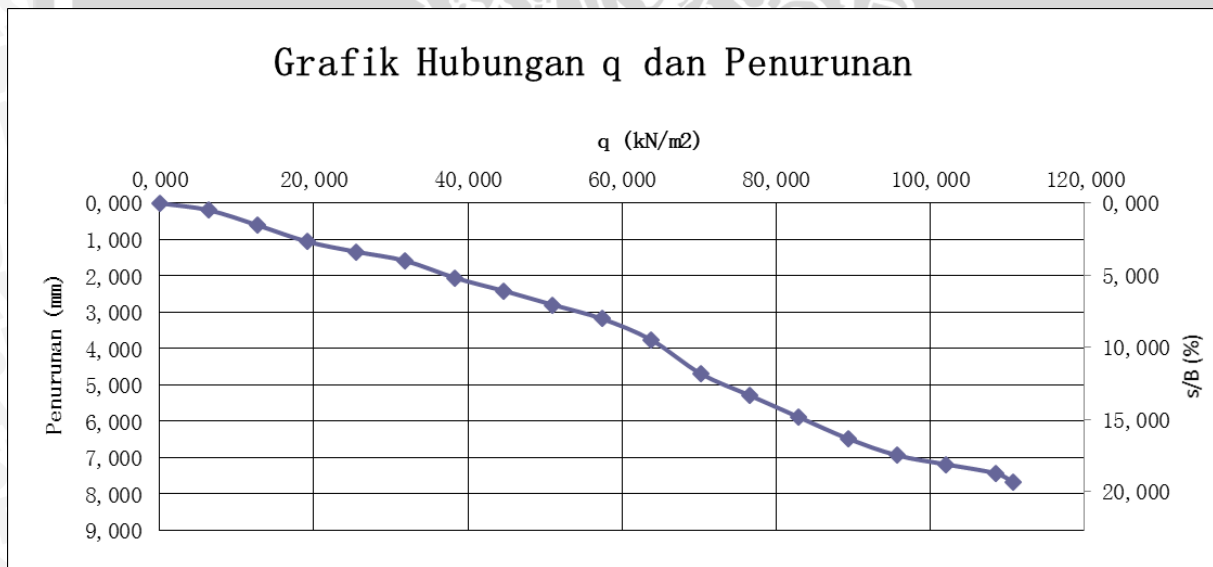
Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	4440	0,000	0,000	0,000	0,000
25	4434	0,030	0,038	0,032	3,189
50	4404	0,180	0,225	0,064	6,378
75	4346	0,470	0,588	0,096	9,566
100	4308	0,660	0,825	0,128	12,755
125	4226	1,070	1,338	0,159	15,944
150	4147	1,465	1,831	0,191	19,133
175	4059	1,905	2,381	0,223	22,321
200	3903	2,685	3,356	0,255	25,510
225	3636	4,020	5,025	0,287	28,699
233	3421	5,095	6,369	0,297	29,719



Lereng dengan Perkuatan Geotekstil ($n = 3$)

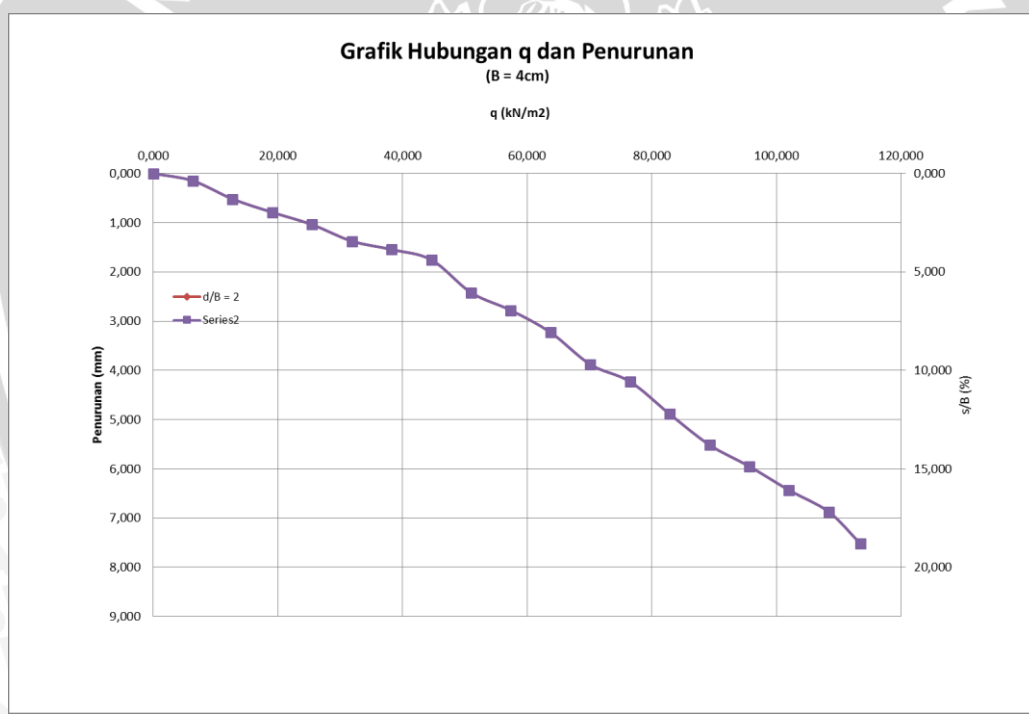
1. $\alpha=46^\circ$, $B=4\text{cm}$, $d/B=1$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	3199	0,000	0,000	0,000	0,000
25	3161	0,190	0,475	0,064	6,378
50	3077	0,610	1,525	0,128	12,755
75	2988	1,055	2,638	0,191	19,133
100	2932	1,335	3,338	0,255	25,510
125	2882	1,585	3,963	0,319	31,888
150	2789	2,050	5,125	0,383	38,265
175	2717	2,410	6,025	0,446	44,643
200	2640	2,795	6,988	0,510	51,020
225	2563	3,180	7,950	0,574	57,398
250	2447	3,760	9,400	0,638	63,776
275	2262	4,685	11,713	0,702	70,153
300	2142	5,285	13,213	0,765	76,531
325	2022	5,885	14,713	0,829	82,908
350	1904	6,475	16,188	0,893	89,286
375	1812	6,935	17,338	0,957	95,663
400	1762	7,185	17,963	1,020	102,041
425	1713	7,430	18,575	1,084	108,418
434	1665	7,670	19,175	1,107	110,714



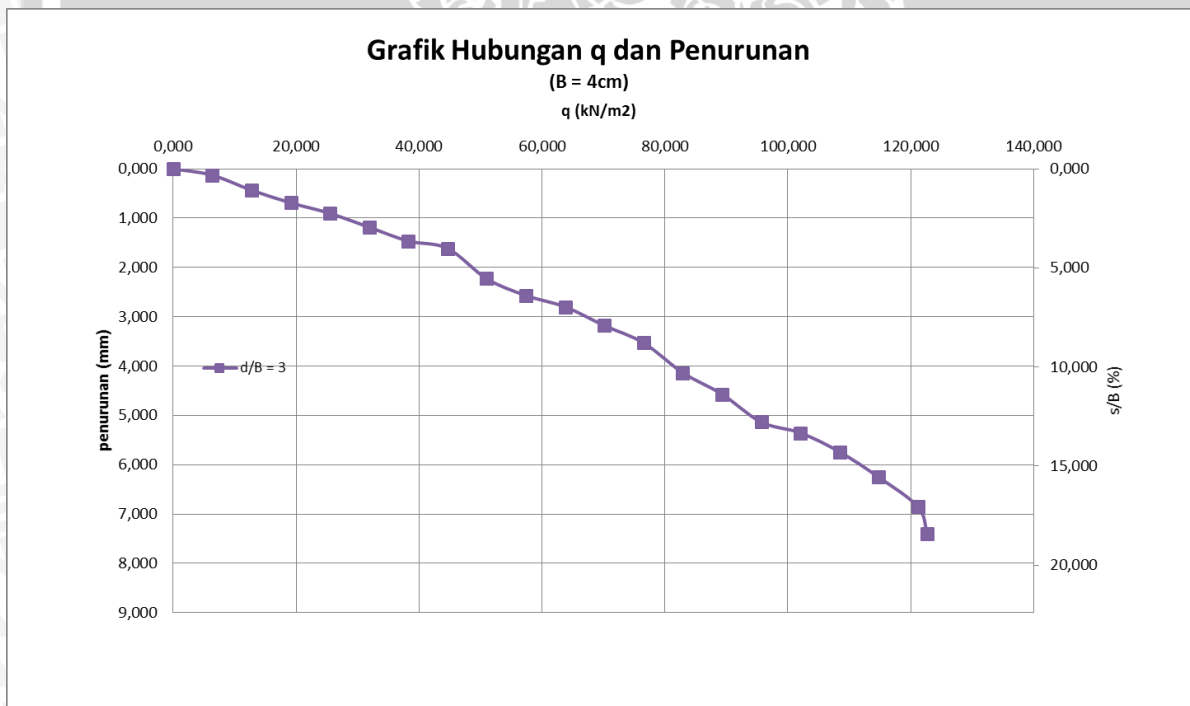
2. $\alpha=46^\circ$, $B=4\text{cm}$, $d/B=2$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	3207	0,000	0,000	0,000	0,000
25	3177	0,150	0,375	0,064	6,378
50	3103	0,520	1,300	0,128	12,755
75	3049	0,790	1,975	0,191	19,133
100	2999	1,040	2,600	0,255	25,510
125	2932	1,375	3,438	0,319	31,888
150	2898	1,545	3,863	0,383	38,265
175	2856	1,755	4,388	0,446	44,643
200	2723	2,420	6,050	0,510	51,020
225	2651	2,780	6,950	0,574	57,398
250	2561	3,230	8,075	0,638	63,776
275	2431	3,880	9,700	0,702	70,153
300	2361	4,230	10,575	0,765	76,531
325	2229	4,890	12,225	0,829	82,908
350	2104	5,515	13,788	0,893	89,286
375	2017	5,950	14,875	0,957	95,663
400	1920	6,435	16,088	1,020	102,041
425	1832	6,875	17,188	1,084	108,418
445	1702	7,525	18,813	1,135	113,520



3. $\alpha=46^\circ$, $B=4\text{cm}$, $d/B=3$

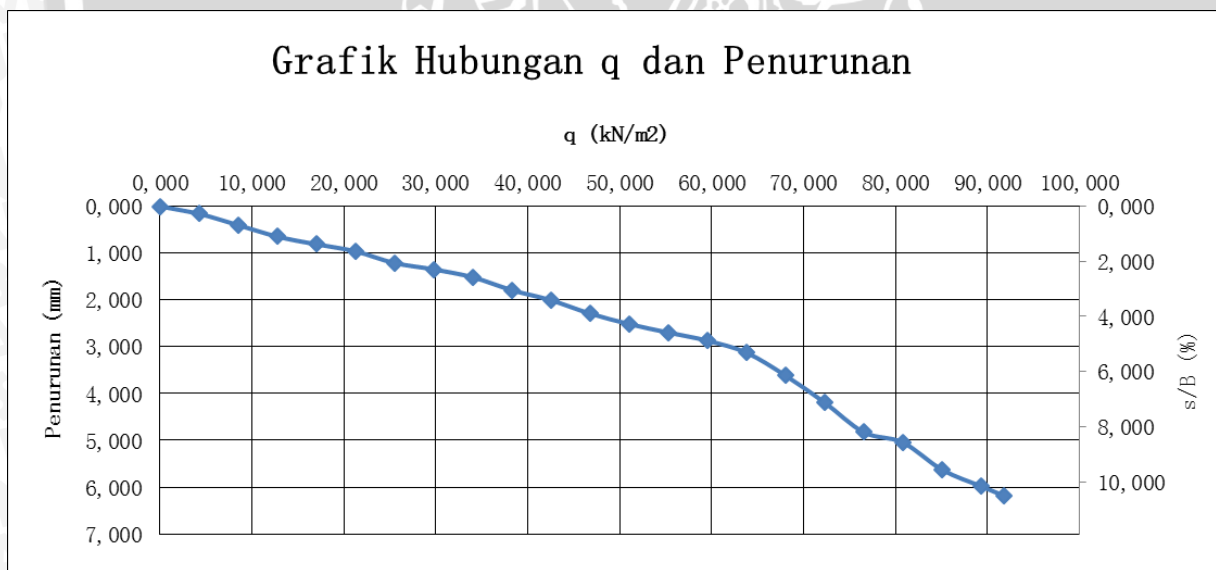
Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	2748	0,000	0,000	0,000	0,000
25	2722	0,130	0,325	0,064	6,378
50	2661	0,435	1,088	0,128	12,755
75	2610	0,690	1,725	0,191	19,133
100	2567	0,905	2,263	0,255	25,510
125	2511	1,185	2,963	0,319	31,888
150	2455	1,465	3,663	0,383	38,265
175	2425	1,615	4,038	0,446	44,643
200	2302	2,230	5,575	0,510	51,020
225	2234	2,570	6,425	0,574	57,398
250	2188	2,800	7,000	0,638	63,776
275	2112	3,180	7,950	0,702	70,153
300	2042	3,530	8,825	0,765	76,531
325	1921	4,135	10,338	0,829	82,908
350	1834	4,570	11,425	0,893	89,286
375	1721	5,135	12,838	0,957	95,663
400	1677	5,355	13,388	1,020	102,041
425	1600	5,740	14,350	1,084	108,418
450	1497	6,255	15,638	1,148	114,796
475	1377	6,855	17,138	1,212	121,173
481	1267	7,405	18,513	1,227	122,704



4. $\alpha=46^\circ$, $B=6\text{cm}$, $d/B=1$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	2181	0,000	0,000	0,000	0,000
25	2149	0,160	0,267	0,043	4,252
50	2101	0,400	0,667	0,085	8,503
75	2052	0,645	1,075	0,128	12,755
100	2019	0,810	1,350	0,170	17,007
125	1989	0,960	1,600	0,213	21,259
150	1939	1,210	2,017	0,255	25,510
175	1912	1,345	2,242	0,298	29,762
200	1878	1,515	2,525	0,340	34,014
225	1823	1,790	2,983	0,383	38,265
250	1780	2,005	3,342	0,425	42,517
275	1723	2,290	3,817	0,468	46,769
300	1678	2,515	4,192	0,510	51,020
325	1642	2,695	4,492	0,553	55,272
350	1607	2,870	4,783	0,595	59,524
375	1556	3,125	5,208	0,638	63,776
400	1458	3,615	6,025	0,680	68,027
425	1343	4,190	6,983	0,723	72,279
450	1216	4,825	8,042	0,765	76,531
475	1172	5,045	8,408	0,808	80,782
500	1056	5,625	9,375	0,850	85,034
525	985	5,980	9,967	0,893	89,286
540	944	6,185	10,308	0,918	91,837

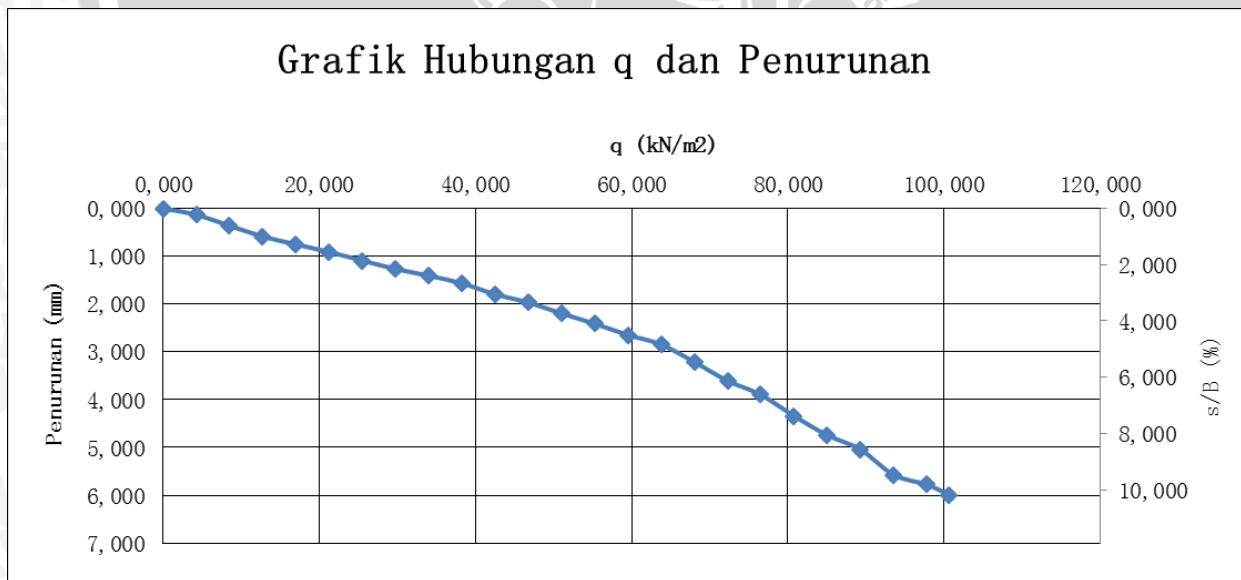
Grafik Hubungan q dan Penurunan



5. $\alpha=46^\circ$, $B=6\text{cm}$, $d/B=2$

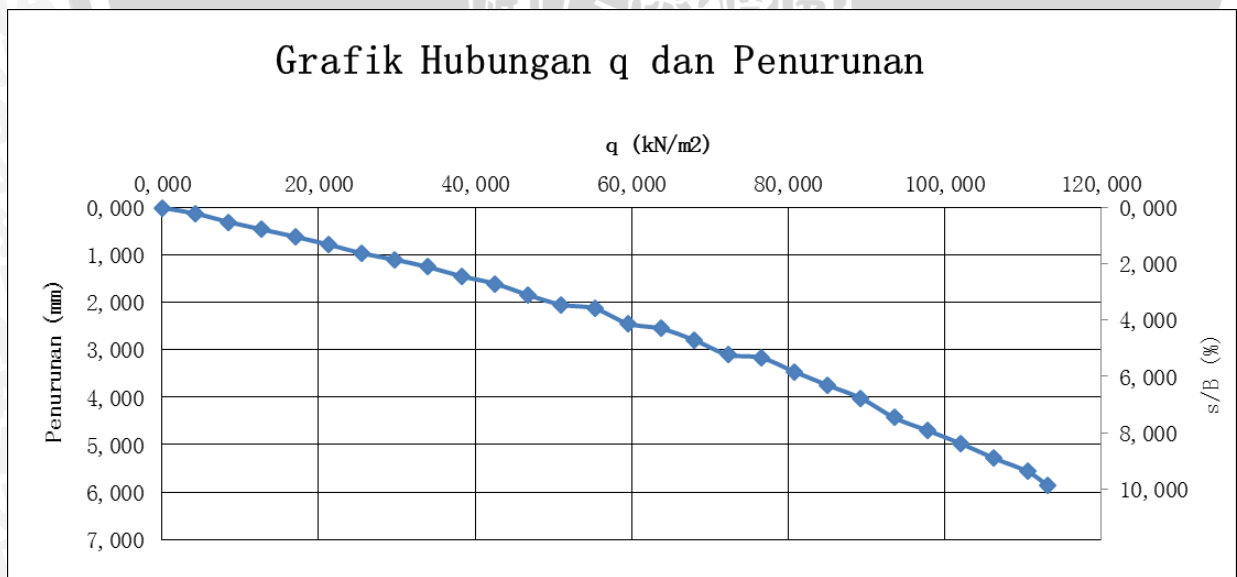
Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	2860	0,000	0,000	0,000	0,000
25	2834	0,130	0,217	0,043	4,252
50	2788	0,360	0,600	0,085	8,503
75	2743	0,585	0,975	0,128	12,755
100	2710	0,750	1,250	0,170	17,007
125	2678	0,910	1,517	0,213	21,259
150	2642	1,090	1,817	0,255	25,510
175	2607	1,265	2,108	0,298	29,762
200	2579	1,405	2,342	0,340	34,014
225	2547	1,565	2,608	0,383	38,265
250	2501	1,795	2,992	0,425	42,517
275	2467	1,965	3,275	0,468	46,769
300	2421	2,195	3,658	0,510	51,020
325	2378	2,410	4,017	0,553	55,272
350	2331	2,645	4,408	0,595	59,524
375	2291	2,845	4,742	0,638	63,776
400	2218	3,210	5,350	0,680	68,027
425	2139	3,605	6,008	0,723	72,279
450	2081	3,895	6,492	0,765	76,531
475	1992	4,340	7,233	0,808	80,782
500	1912	4,740	7,900	0,850	85,034
525	1852	5,040	8,400	0,893	89,286
550	1746	5,570	9,283	0,935	93,537
575	1705	5,775	9,625	0,978	97,789
592	1662	5,990	9,983	1,007	100,680

Grafik Hubungan q dan Penurunan



6. $\alpha=46^\circ$, $B=6\text{cm}$, $d/B=3$

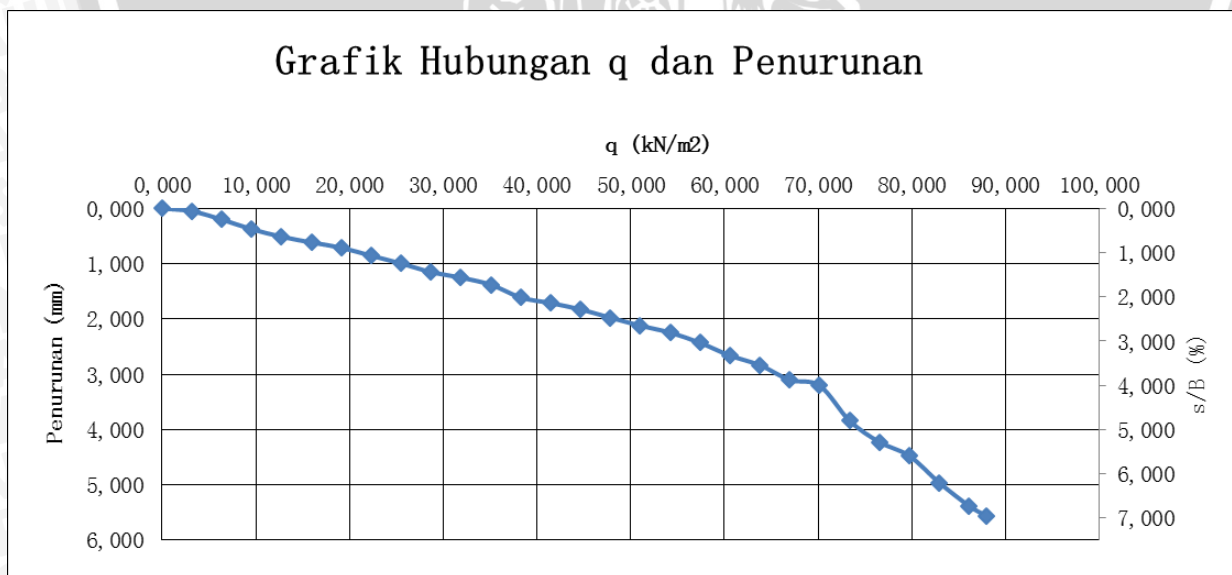
Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	3391	0,000	0,000	0,000	0,000
25	3367	0,120	0,200	0,043	4,252
50	3331	0,300	0,500	0,085	8,503
75	3300	0,455	0,758	0,128	12,755
100	3269	0,610	1,017	0,170	17,007
125	3236	0,775	1,292	0,213	21,259
150	3199	0,960	1,600	0,255	25,510
175	3172	1,095	1,825	0,298	29,762
200	3141	1,250	2,083	0,340	34,014
225	3102	1,445	2,408	0,383	38,265
250	3071	1,600	2,667	0,425	42,517
275	3023	1,840	3,067	0,468	46,769
300	2982	2,045	3,408	0,510	51,020
325	2966	2,125	3,542	0,553	55,272
350	2902	2,445	4,075	0,595	59,524
375	2881	2,550	4,250	0,638	63,776
400	2832	2,795	4,658	0,680	68,027
425	2771	3,100	5,167	0,723	72,279
450	2758	3,165	5,275	0,765	76,531
475	2699	3,460	5,767	0,808	80,782
500	2642	3,745	6,242	0,850	85,034
525	2587	4,020	6,700	0,893	89,286
550	2505	4,430	7,383	0,935	93,537
575	2451	4,700	7,833	0,978	97,789
600	2396	4,975	8,292	1,020	102,041
625	2334	5,285	8,808	1,063	106,293
650	2278	5,565	9,275	1,105	110,544
665	2220	5,855	9,758	1,131	113,095



7. $\alpha=46^\circ$, $B=8\text{cm}$, $d/B=1$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	4073	0,000	0,000	0,000	0,000
25	4063	0,050	0,063	0,032	3,189
50	4033	0,200	0,250	0,064	6,378
75	3998	0,375	0,469	0,096	9,566
100	3971	0,510	0,638	0,128	12,755
125	3950	0,615	0,769	0,159	15,944
150	3931	0,710	0,888	0,191	19,133
175	3902	0,855	1,069	0,223	22,321
200	3874	0,995	1,244	0,255	25,510
225	3843	1,150	1,438	0,287	28,699
250	3823	1,250	1,563	0,319	31,888
275	3797	1,380	1,725	0,351	35,077
300	3751	1,610	2,013	0,383	38,265
325	3731	1,710	2,138	0,415	41,454
350	3708	1,825	2,281	0,446	44,643
375	3678	1,975	2,469	0,478	47,832
400	3649	2,120	2,650	0,510	51,020
425	3624	2,245	2,806	0,542	54,209
450	3587	2,430	3,038	0,574	57,398
475	3541	2,660	3,325	0,606	60,587
500	3506	2,835	3,544	0,638	63,776
525	3453	3,100	3,875	0,670	66,964
550	3432	3,205	4,006	0,702	70,153
575	3305	3,840	4,800	0,733	73,342
600	3228	4,225	5,281	0,765	76,531
625	3178	4,475	5,594	0,797	79,719
650	3081	4,960	6,200	0,829	82,908
675	2997	5,380	6,725	0,861	86,097
689	2962	5,555	6,944	0,879	87,883

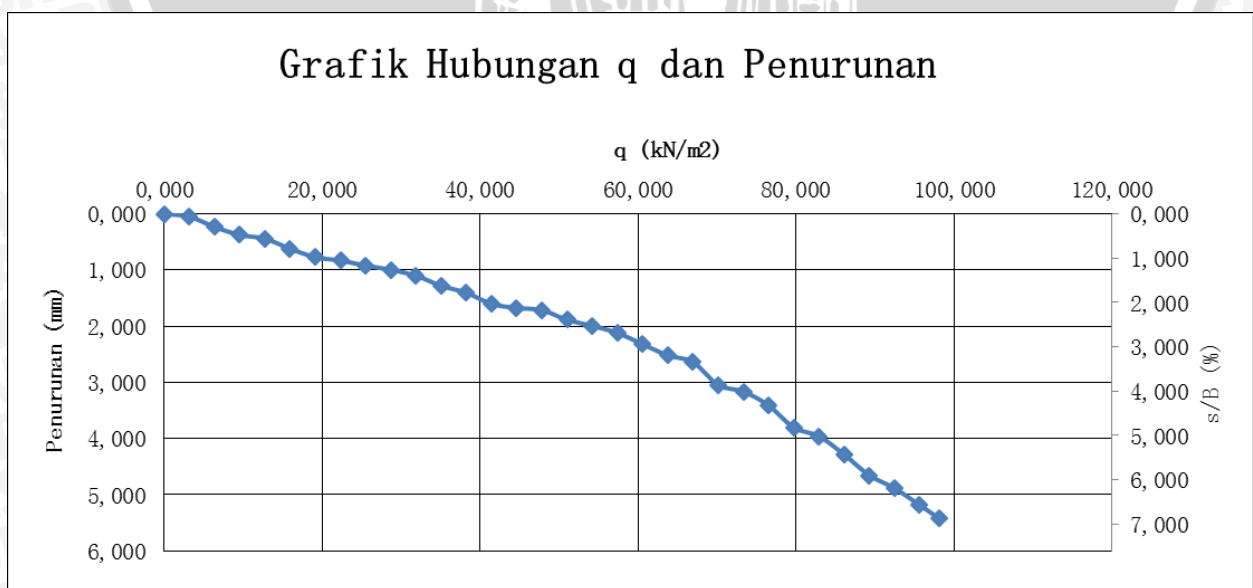
Grafik Hubungan q dan Penurunan



8. $\alpha=46^\circ$, $B=8\text{cm}$, $d/B=2$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	3276	0,000	0,000	0,000	0,000
25	3266	0,050	0,063	0,032	3,189
50	3230	0,230	0,288	0,064	6,378
75	3201	0,375	0,469	0,096	9,566
100	3188	0,440	0,550	0,128	12,755
125	3152	0,620	0,775	0,159	15,944
150	3122	0,770	0,963	0,191	19,133
175	3110	0,830	1,038	0,223	22,321
200	3092	0,920	1,150	0,255	25,510
225	3077	0,995	1,244	0,287	28,699
250	3056	1,100	1,375	0,319	31,888
275	3020	1,280	1,600	0,351	35,077
300	2995	1,405	1,756	0,383	38,265
325	2956	1,600	2,000	0,415	41,454
350	2941	1,675	2,094	0,446	44,643
375	2933	1,715	2,144	0,478	47,832
400	2899	1,885	2,356	0,510	51,020
425	2877	1,995	2,494	0,542	54,209
450	2852	2,120	2,650	0,574	57,398
475	2812	2,320	2,900	0,606	60,587
500	2772	2,520	3,150	0,638	63,776
525	2748	2,640	3,300	0,670	66,964
550	2667	3,045	3,806	0,702	70,153
575	2643	3,165	3,956	0,733	73,342
600	2594	3,410	4,263	0,765	76,531
625	2515	3,805	4,756	0,797	79,719
650	2484	3,960	4,950	0,829	82,908
675	2419	4,285	5,356	0,861	86,097
700	2345	4,655	5,819	0,893	89,286
725	2299	4,885	6,106	0,925	92,474
750	2239	5,185	6,481	0,957	95,663
769	2192	5,420	6,775	0,981	98,087

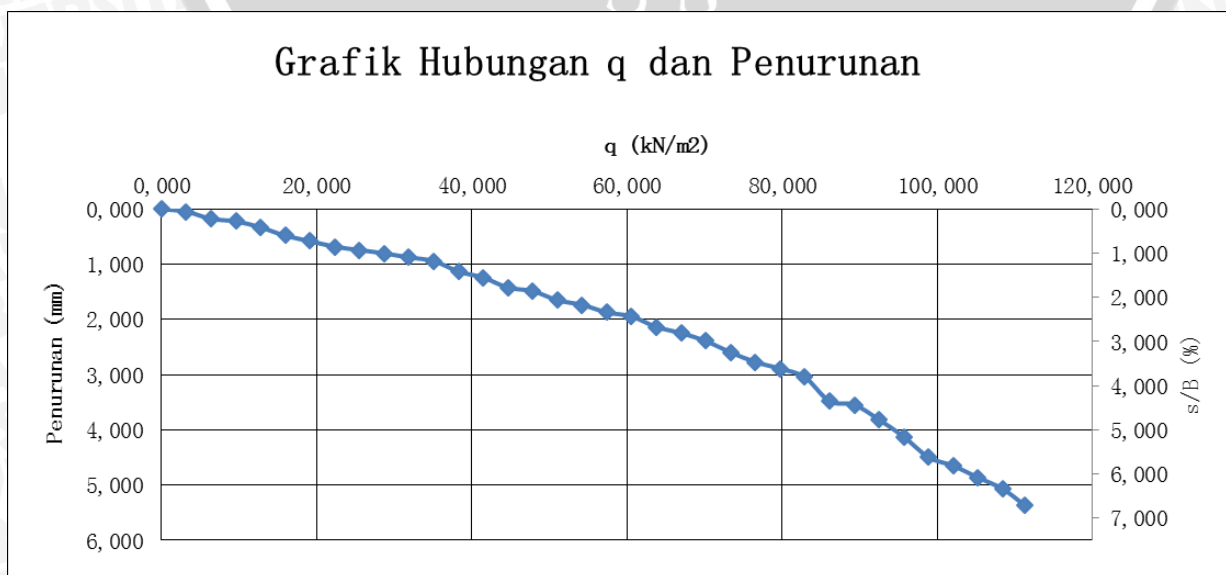
Grafik Hubungan q dan Penurunan



9. $\alpha=46^\circ$, $B=8\text{cm}$, $d/B=3$

Beban (kg)	LVDT	Penurunan (mm)	s/B (%)	q (kg/cm ²)	q (kN/m ²)
0	2697	0,000	0,000	0,000	0,000
25	2688	0,045	0,056	0,032	3,189
50	2662	0,175	0,219	0,064	6,378
75	2653	0,220	0,275	0,096	9,566
100	2631	0,330	0,413	0,128	12,755
125	2601	0,480	0,600	0,159	15,944
150	2581	0,580	0,725	0,191	19,133
175	2561	0,680	0,850	0,223	22,321
200	2549	0,740	0,925	0,255	25,510
225	2537	0,800	1,000	0,287	28,699
250	2522	0,875	1,094	0,319	31,888
275	2509	0,940	1,175	0,351	35,077
300	2471	1,130	1,413	0,383	38,265
325	2449	1,240	1,550	0,415	41,454
350	2413	1,420	1,775	0,446	44,643
375	2400	1,485	1,856	0,478	47,832
400	2367	1,650	2,063	0,510	51,020
425	2350	1,735	2,169	0,542	54,209
450	2323	1,870	2,338	0,574	57,398
475	2308	1,945	2,431	0,606	60,587
500	2270	2,135	2,669	0,638	63,776
525	2248	2,245	2,806	0,670	66,964
550	2219	2,390	2,988	0,702	70,153
575	2178	2,595	3,244	0,733	73,342
600	2143	2,770	3,463	0,765	76,531
625	2119	2,890	3,613	0,797	79,719
650	2088	3,045	3,806	0,829	82,908
675	2001	3,48	4,350	0,861	86,097
700	1988	3,545	4,431	0,893	89,286
725	1934	3,815	4,769	0,925	92,474
750	1872	4,125	5,156	0,957	95,663
775	1798	4,495	5,619	0,989	98,852
800	1767	4,65	5,813	1,020	102,041
825	1724	4,865	6,081	1,052	105,230
850	1683	5,07	6,338	1,084	108,418
872	1624	5,365	6,706	1,112	111,224

Grafik Hubungan q dan Penurunan



Lampiran 9

Perhitungan Daya Dukung pada Penurunan s/B : 2% dan 4%

Daya Dukung (q) diperoleh dengan interpolasi orde dua dengan rumus:

$$F(x_0) = b_0 + b_1 (x_0 - x_0) + b_2 (x_0 - x_0) (x_0 - x_1)$$

$$b_0 = f(x_0)$$

$$b_1 = \frac{f(x_1) - f(x_0)}{x_1 - x_0}$$

$$b_2 = \frac{\frac{f(x_2) - f(x_1)}{x_2 - x_1} - \frac{f(x_1) - f(x_0)}{x_1 - x_0}}{x_2 - x_0}$$

Lereng Tanpa Perkuatan

- $\alpha = 46^\circ$, $B = 4\text{cm}$, $d/B = 1$

s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
(x)	(x ₀ , x ₁ , x ₂)		[f(x ₀), f(x ₁), f(x ₂)]				f(x)
2	x ₀	0,825	f(x ₀)	6,378	2,966	-0,004	9,868
	x ₁	2,975	f(x ₁)	12,755			
	x ₂	5,138	f(x ₂)	19,133			
4	x ₀	0,825	f(x ₀)	6,378	2,966	-0,004	15,783
	x ₁	2,975	f(x ₁)	12,755			
	x ₂	5,138	f(x ₂)	19,133			

- $\alpha = 46^\circ$, $B = 4\text{cm}$, $d/B = 2$

s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
(x)	(x ₀ , x ₁ , x ₂)		[f(x ₀), f(x ₁), f(x ₂)]				f(x)
2	x ₀	0,700	f(x ₀)	6,378	3,752	-0,296	11,409
	x ₁	2,400	f(x ₁)	12,755			
	x ₂	4,963	f(x ₂)	19,133			
4	x ₀	0,700	f(x ₀)	6,378	3,752	-0,296	17,193
	x ₁	2,400	f(x ₁)	12,755			
	x ₂	4,963	f(x ₂)	19,133			

3. $\alpha=46^\circ$, $B=4\text{cm}$, $d/B=3$

s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
(x)	(x ₀ ,x ₁ ,x ₂)		[f(x ₀),f(x ₁),f(x ₂)]				f(x)
2	x ₀	0,263	f(x ₀)	6,378	3,149	-0,114	11,907
	x ₁	2,288	f(x ₁)	12,755			
	x ₂	4,700	f(x ₂)	19,133			
4	x ₀	0,263	f(x ₀)	6,378	3,149	-0,114	17,419
	x ₁	2,288	f(x ₁)	12,755			
	x ₂	4,700	f(x ₂)	19,133			

4. $\alpha=46^\circ$, $B=6\text{cm}$, $d/B=1$

s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
(x)	(x ₀ ,x ₁ ,x ₂)		[f(x ₀),f(x ₁),f(x ₂)]				f(x)
2	x ₀	0,792	f(x ₀)	8,503	5,260	-0,808	14,468
	x ₁	1,600	f(x ₁)	12,755			
	x ₂	2,758	f(x ₂)	17,007			
4	x ₀	1,600	f(x ₀)	12,755	3,671	-0,550	19,924
	x ₁	2,758	f(x ₁)	17,007			
	x ₂	5,658	f(x ₂)	21,173			

5. $\alpha=46^\circ$, $B=6\text{cm}$, $d/B=2$

s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
(x)	(x ₀ ,x ₁ ,x ₂)		[f(x ₀),f(x ₁),f(x ₂)]				f(x)
2	x ₀	0,742	f(x ₀)	8,503	6,074	-1,227	15,284
	x ₁	1,442	f(x ₁)	12,755			
	x ₂	2,542	f(x ₂)	17,007			
4	x ₀	1,442	f(x ₀)	12,755	3,865	-0,583	20,468
	x ₁	2,542	f(x ₁)	17,007			
	x ₂	5,067	f(x ₂)	21,429			

6. $\alpha=46^\circ$, $B=6\text{cm}$, $d/B=3$

s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
(x)	(x ₀ ,x ₁ ,x ₂)		[f(x ₀),f(x ₁),f(x ₂)]				f(x)
2	x ₀	0,700	f(x ₀)	8,503	8,229	-2,717	16,435
	x ₁	1,217	f(x ₁)	12,755			
	x ₂	2,358	f(x ₂)	17,007			
4	x ₀	1,217	f(x ₀)	12,755	3,724	-0,537	20,667
	x ₁	2,358	f(x ₁)	17,007			
	x ₂	4,567	f(x ₂)	21,259			

7. $\alpha=46^\circ$, B=8cm, d/B=1

s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
(x)	(x ₀ ,x ₁ ,x ₂)		[f(x ₀),f(x ₁),f(x ₂)]				f(x)
2	x ₀	1,381	f(x ₀)	15,944	6,458	-2,046	19,782
	x ₁	1,875	f(x ₁)	19,133			
	x ₂	2,744	f(x ₂)	22,321			
4	x ₀	2,744	f(x ₀)	22,321	3,568	-0,255	26,688
	x ₁	3,638	f(x ₁)	25,510			
	x ₂	4,344	f(x ₂)	27,742			

8. $\alpha=46^\circ$, B=8cm, d/B=2

s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
(x)	(x ₀ ,x ₁ ,x ₂)		[f(x ₀),f(x ₁),f(x ₂)]				f(x)
2	x ₀	1,844	f(x ₀)	19,133	4,859	-1,111	19,979
	x ₁	2,500	f(x ₁)	22,321			
	x ₂	3,594	f(x ₂)	25,510			
4	x ₀	2,500	f(x ₀)	22,321	2,915	-0,456	26,417
	x ₁	3,594	f(x ₁)	25,510			
	x ₂	6,081	f(x ₂)	28,699			

9. $\alpha=46^\circ$, B=8cm, d/B=3

s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
(x)	(x ₀ ,x ₁ ,x ₂)		[f(x ₀),f(x ₁),f(x ₂)]				f(x)
2	x ₀	1,831	f(x ₀)	19,133	5,798	-1,657	20,218
	x ₁	2,381	f(x ₁)	22,321			
	x ₂	3,356	f(x ₂)	25,510			
4	x ₀	2,381	f(x ₀)	22,321	3,271	-0,514	27,080
	x ₁	3,356	f(x ₁)	25,510			
	x ₂	5,025	f(x ₂)	28,699			

Lereng dengan Perkuatan geotekstil (n = 3) dengan Variasi Lebar Pondasi

d/B	B	s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
		(x)	(x ₀ , x ₁ , x ₂)		[f(x ₀), f(x ₁), f(x ₂)]				f(x)
1	4	2	x ₀	0,475	f(x ₀)	6,378	6,074	-0,158	15,526
			x ₁	1,525	f(x ₁)	12,755			
			x ₂	2,638	f(x ₂)	19,133			
	6		x ₀	1,350	f(x ₀)	17,007	17,007	-10,204	25,408
			x ₁	1,600	f(x ₁)	21,259			
			x ₂	2,017	f(x ₂)	25,510			
	8		x ₀	1,563	f(x ₀)	31,888	19,623	-18,960	38,192
			x ₁	1,725	f(x ₁)	35,077			
			x ₂	2,013	f(x ₂)	38,265			
2	4	x ₀	1,300	f(x ₀)	12,755	9,448	0,581	19,379	
		x ₁	1,975	f(x ₁)	19,133				
		x ₂	2,600	f(x ₂)	25,510				
	6	x ₀	1,517	f(x ₀)	21,259	14,172	0,684	28,169	
		x ₁	1,817	f(x ₁)	25,510				
		x ₂	2,108	f(x ₂)	29,762				
	8	x ₀	2,000	f(x ₀)	41,454	34,014	207,039	41,454	
		x ₁	2,094	f(x ₁)	44,643				
		x ₂	2,144	f(x ₂)	47,832				
3	4	x ₀	1,088	f(x ₀)	12,755	10,004	1,584	22,281	
		x ₁	1,725	f(x ₁)	19,133				
		x ₂	2,263	f(x ₂)	25,510				
	6	x ₀	1,600	f(x ₀)	25,510	18,896	-5,045	32,716	
		x ₁	1,825	f(x ₁)	29,762				
		x ₂	2,083	f(x ₂)	34,014				
	8	x ₀	1,892	f(x ₀)	41,454	38,265	-19,878	45,546	
		x ₁	1,975	f(x ₁)	44,643				
		x ₂	2,067	f(x ₂)	47,832				

d/B	B	s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
		(x)	(x ₀ , x ₁ , x ₂)		[f(x ₀), f(x ₁), f(x ₂)]				f(x)
1	4	4	x ₀	3,338	f(x ₀)	25,510	10,204	-2,639	32,205
			x ₁	3,963	f(x ₁)	31,888			
			x ₂	5,125	f(x ₂)	38,265			
	6		x ₀	3,342	f(x ₀)	42,517	8,951	2,808	48,749
			x ₁	3,817	f(x ₁)	46,769			
			x ₂	4,192	f(x ₂)	51,020			
	8		x ₀	3,544	f(x ₀)	63,776	9,626	31,717	69,976
			x ₁	3,875	f(x ₁)	66,964			
			x ₂	4,006	f(x ₂)	70,153			
2	4	4	x ₀	3,438	f(x ₀)	31,888	15,006	-3,009	40,096
			x ₁	3,863	f(x ₁)	38,265			
			x ₂	4,388	f(x ₂)	44,643			
	6		x ₀	3,658	f(x ₀)	51,020	11,865	-1,346	55,082
			x ₁	4,017	f(x ₁)	55,272			
			x ₂	4,408	f(x ₂)	59,524			
	8		x ₀	3,300	f(x ₀)	66,964	6,299	22,796	74,465
			x ₁	3,806	f(x ₁)	70,153			
			x ₂	3,956	f(x ₂)	73,342			
3	4	4	x ₀	2,963	f(x ₀)	31,888	9,111	7,345	43,912
			x ₁	3,663	f(x ₁)	38,265			
			x ₂	4,038	f(x ₂)	44,643			
	6		x ₀	3,542	f(x ₀)	55,272	7,972	23,045	58,134
			x ₁	4,075	f(x ₁)	59,524			
			x ₂	4,250	f(x ₂)	63,776			
	8		x ₀	3,683	f(x ₀)	70,153	29,435	0,000	79,474
			x ₁	3,792	f(x ₁)	73,342			
			x ₂	3,900	f(x ₂)	76,531			

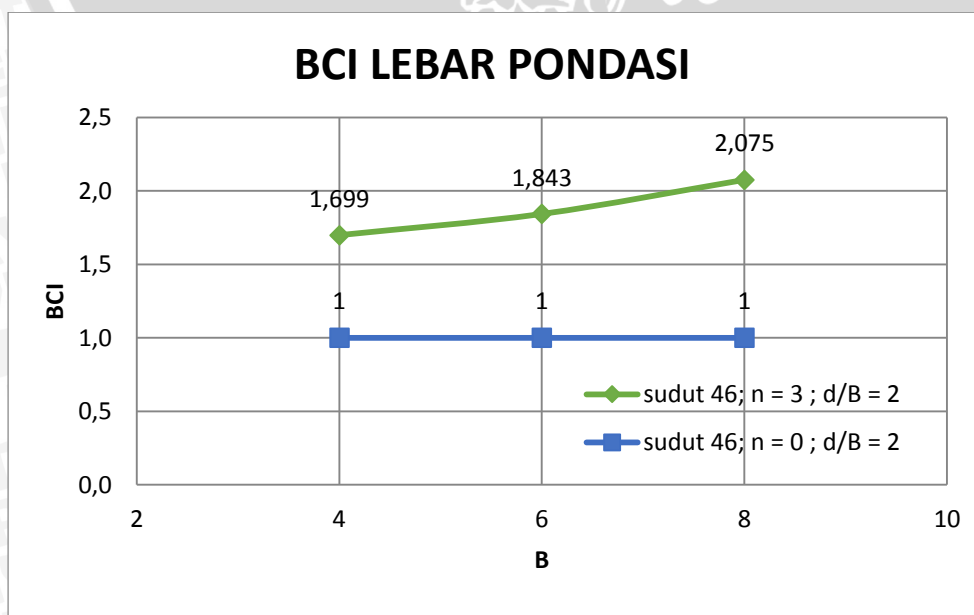
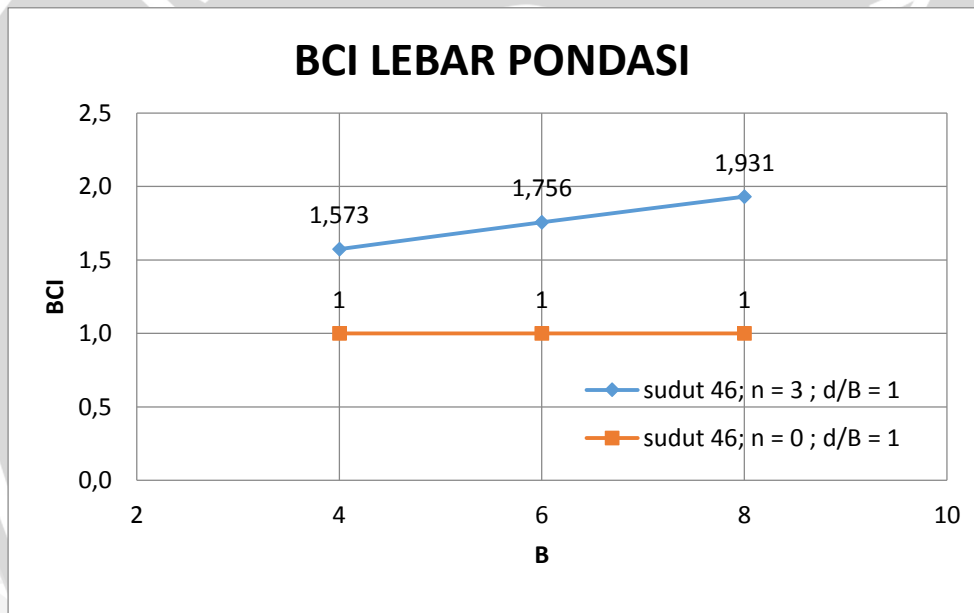
Mereng dengan Perkuatan geotekstil (n = 3) dengan Variasi Rasio Jarak Pondasi ke Tepi
Mereng dengan Lebar Pondasi

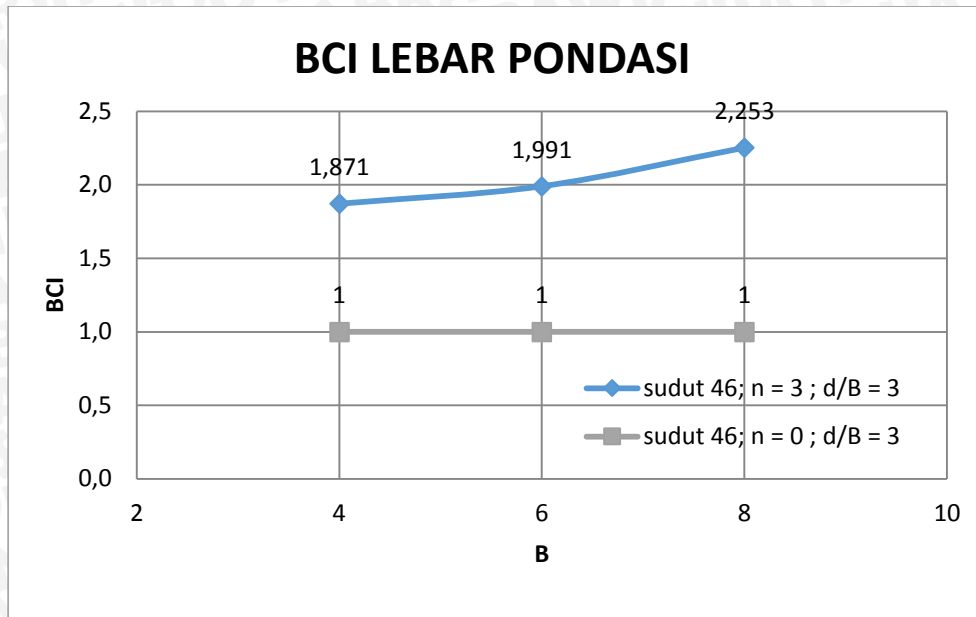
B	d/B	s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
		(x)	(x ₀ ,x ₁ ,x ₂)		[f(x ₀),f(x ₁),f(x ₂)]				f(x)
4	1	2	x ₀	0,475	f(x ₀)	6,378	6,074	-0,158	15,526
			x ₁	1,525	f(x ₁)	12,755			
			x ₂	2,638	f(x ₂)	19,133			
	2		x ₀	1,300	f(x ₀)	12,755	9,448	0,581	19,379
			x ₁	1,975	f(x ₁)	19,133			
			x ₂	2,600	f(x ₂)	25,510			
	3		x ₀	1,088	f(x ₀)	12,755	10,004	1,584	22,281
			x ₁	1,725	f(x ₁)	19,133			
			x ₂	2,263	f(x ₂)	25,510			
6	1	2	x ₀	1,350	f(x ₀)	17,007	17,007	-10,204	25,408
			x ₁	1,600	f(x ₁)	21,259			
			x ₂	2,017	f(x ₂)	25,510			
	2		x ₀	1,517	f(x ₀)	51,020	14,172	0,684	57,931
			x ₁	1,817	f(x ₁)	55,272			
			x ₂	2,108	f(x ₂)	59,524			
	3		x ₀	1,600	f(x ₀)	12,755	28,345	-7,567	23,563
			x ₁	1,825	f(x ₁)	19,133			
			x ₂	2,083	f(x ₂)	25,510			
8	1	2	x ₀	1,563	f(x ₀)	31,888	19,623	-18,960	38,192
			x ₁	1,725	f(x ₁)	35,077			
			x ₂	2,013	f(x ₂)	38,265			
	2		x ₀	2,000	f(x ₀)	41,454	34,014	207,039	41,454
			x ₁	2,094	f(x ₁)	44,643			
			x ₂	2,144	f(x ₂)	47,832			
	3		x ₀	1,892	f(x ₀)	41,454	38,265	-19,878	45,546
			x ₁	1,975	f(x ₁)	44,643			
			x ₂	2,067	f(x ₂)	47,832			

B	d/B	s/B(%)	s/B (%)		q (kN/m ²)		B ₁	B ₂	q (kN/m ²)
		(x)	(x ₀ ,x ₁ ,x ₂)		[f(x ₀),f(x ₁),f(x ₂)]				f(x)
4	1	4	x ₀	3,338	f(x ₀)	25,510	10,204	-2,639	32,205
			x ₁	3,963	f(x ₁)	31,888			
			x ₂	5,125	f(x ₂)	38,265			
	2		x ₀	3,438	f(x ₀)	31,888	15,006	-3,009	40,096
			x ₁	3,863	f(x ₁)	38,265			
			x ₂	4,388	f(x ₂)	44,643			
	3		x ₀	2,963	f(x ₀)	31,888	9,111	7,345	43,912
			x ₁	3,663	f(x ₁)	38,265			
			x ₂	4,038	f(x ₂)	44,643			
6	1	x ₀	3,342	f(x ₀)	42,517	8,951	2,808	48,749	
		x ₁	3,817	f(x ₁)	46,769				
		x ₂	4,192	f(x ₂)	51,020				
	2	x ₀	3,658	f(x ₀)	51,020	11,865	-1,346	55,082	
		x ₁	4,017	f(x ₁)	55,272				
		x ₂	4,408	f(x ₂)	59,524				
	3	x ₀	3,542	f(x ₀)	55,272	7,972	23,045	58,134	
		x ₁	4,075	f(x ₁)	59,524				
		x ₂	4,250	f(x ₂)	63,776				
8	1	x ₀	3,544	f(x ₀)	63,776	9,626	31,717	69,976	
		x ₁	3,875	f(x ₁)	66,964				
		x ₂	4,006	f(x ₂)	70,153				
	2	x ₀	3,300	f(x ₀)	66,964	6,299	22,796	74,465	
		x ₁	3,806	f(x ₁)	70,153				
		x ₂	3,956	f(x ₂)	73,342				
	3	x ₀	3,683	f(x ₀)	70,153	29,435	0,000	79,474	
		x ₁	3,792	f(x ₁)	73,342				
		x ₂	3,900	f(x ₂)	76,531				

BCI, 2% untuk Pemodelan Lereng dengan Perkuatan Geotekstil (n=3) dengan Variasi Lebar Pondasi

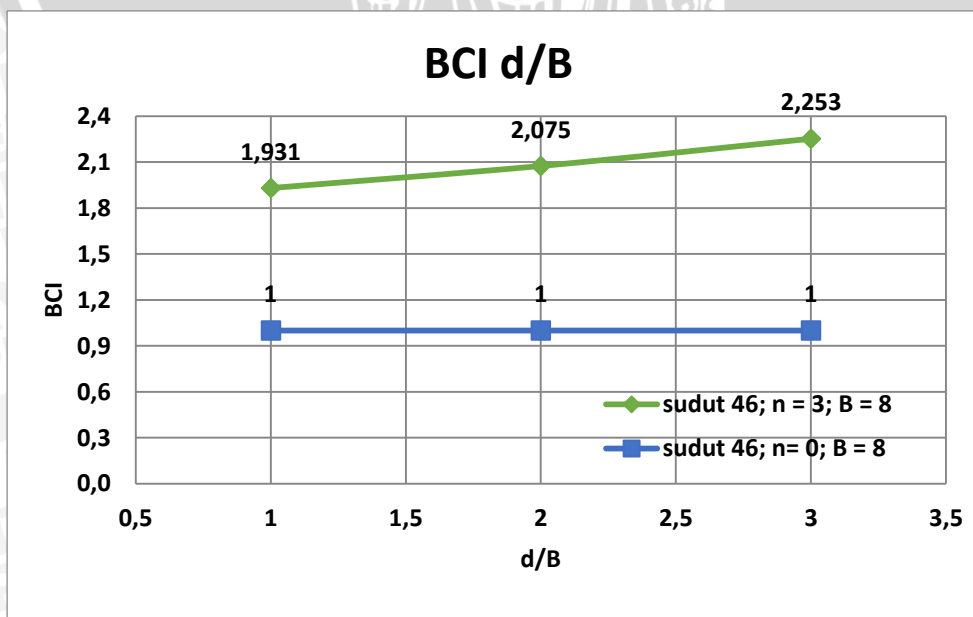
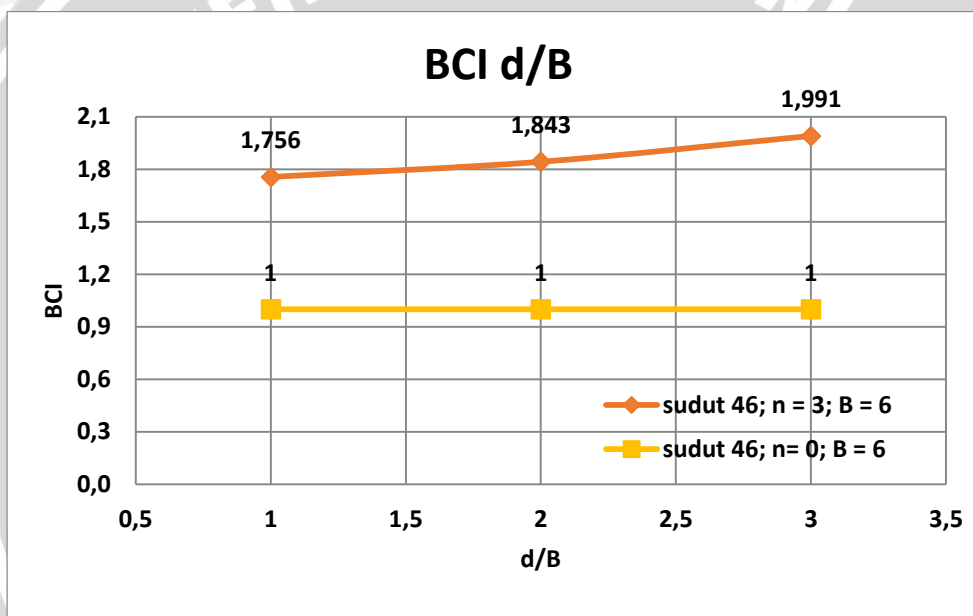
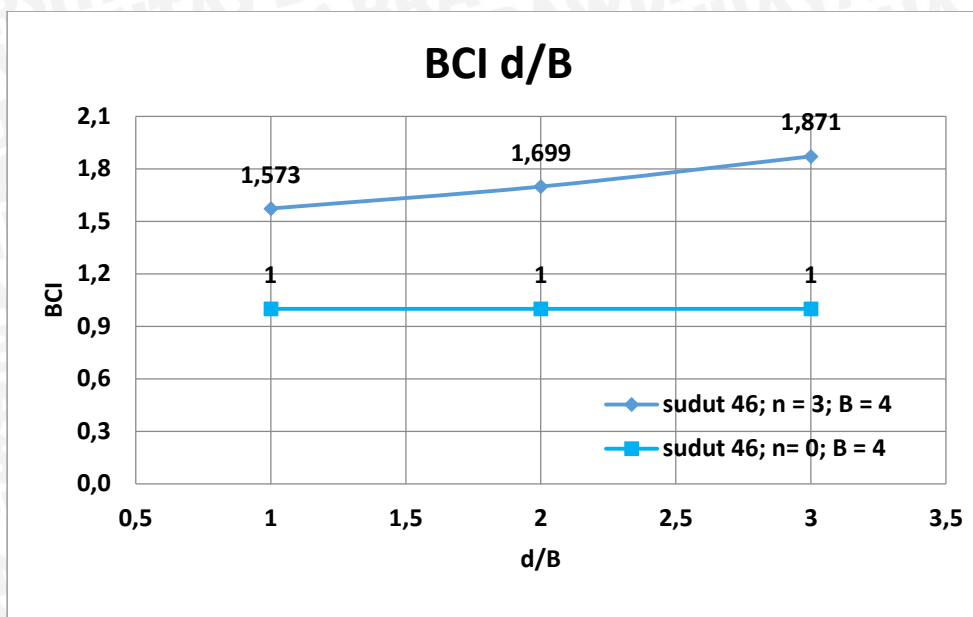
d/B	B (cm)	qu (kN/m ²)	qu Lereng Tanpa Perkuatan (kN/m ²)	BCI (s)
1	4	15,526	9,868	1,573
	6	25,408	14,468	1,756
	8	38,192	19,782	1,931
2	4	19,379	11,409	1,699
	6	28,169	15,284	1,843
	8	41,454	19,979	2,075
3	4	22,281	11,907	1,871
	6	32,716	16,435	1,991
	8	45,546	20,218	2,253





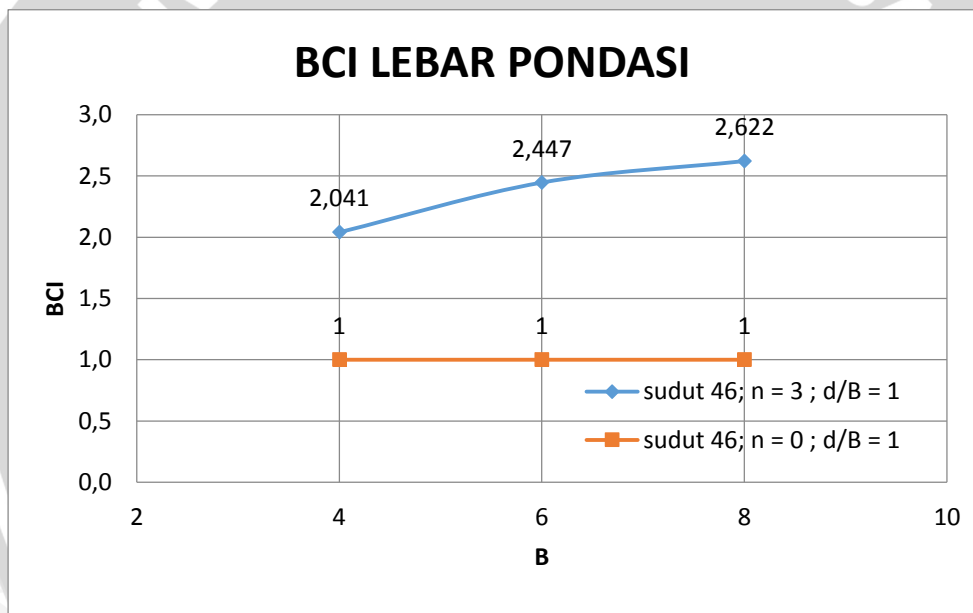
BCI_s 2% untuk Pemodelan Lereng dengan Perkuatan Geotekstil (n=3) dengan Variasi Rasio Jarak Pondasi ke Tepi Lereng dengan Lebar Pondasi

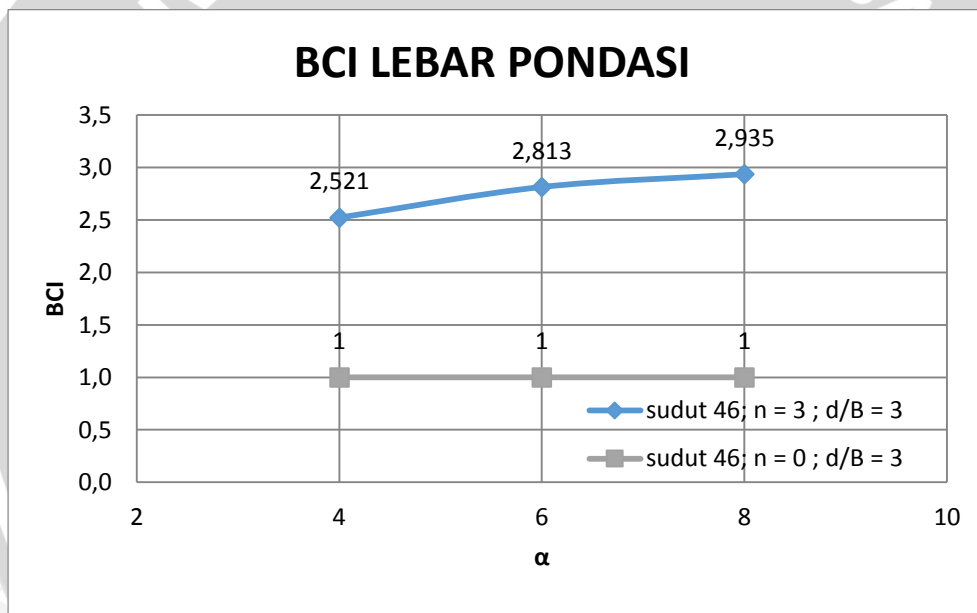
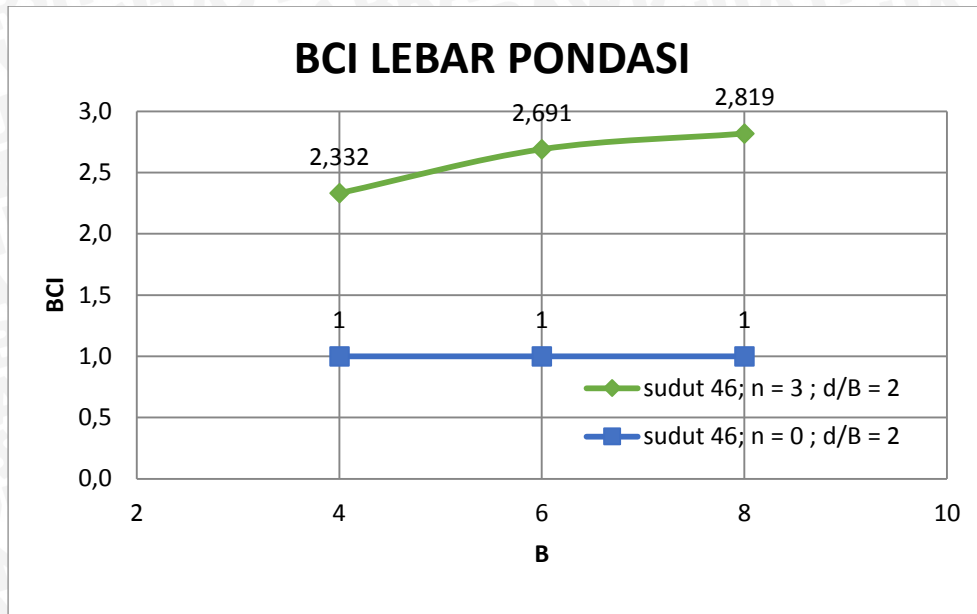
B	d/B	qu (kN/m ²)	qu Lereng Tanpa Perkuatan (kN/m ²)	BCI (s)
4	1	15,526	9,868	1,573
	2	19,379	11,409	1,699
	3	22,281	11,907	1,871
6	1	25,408	14,468	1,756
	2	28,169	15,284	1,843
	3	32,716	16,435	1,991
8	1	38,192	19,782	1,931
	2	41,454	19,979	2,075
	3	45,546	20,218	2,253



BCI, 4% untuk Pemodelan Lereng dengan Perkuatan Geotekstil (n=3) dengan Variasi Lebar Pondasi

d/B	B	qu (kN/m ²)	qu Lereng Tanpa Perkuatan (kN/m ²)	BCI (s)
1	4	32,205	15,783	2,041
	6	48,749	19,924	2,447
	8	69,976	26,688	2,622
2	4	40,096	17,193	2,332
	6	55,082	20,468	2,691
	8	74,465	26,417	2,819
3	4	43,912	17,419	2,521
	6	58,134	20,667	2,813
	8	79,474	27,080	2,935

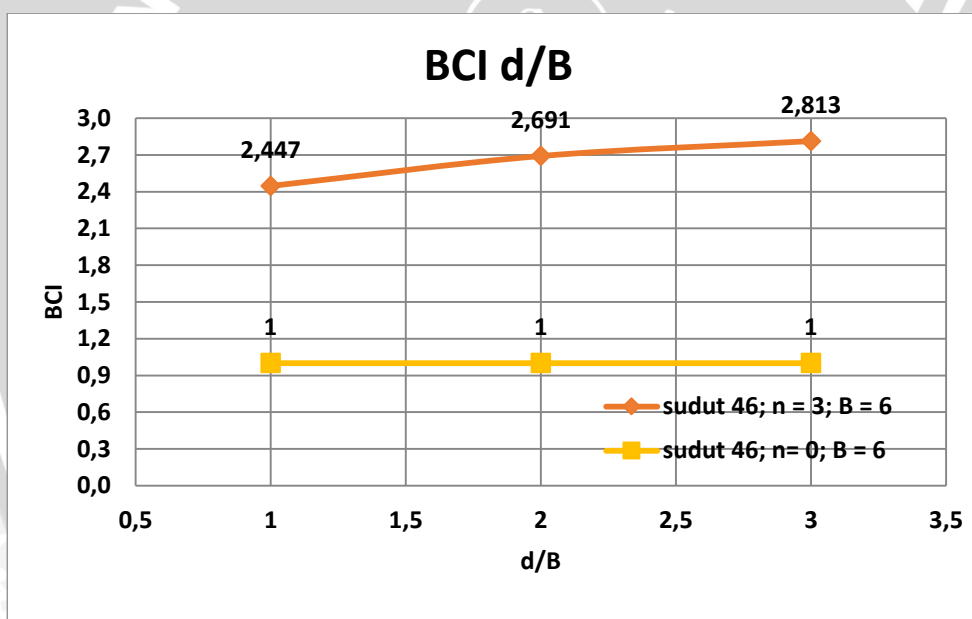
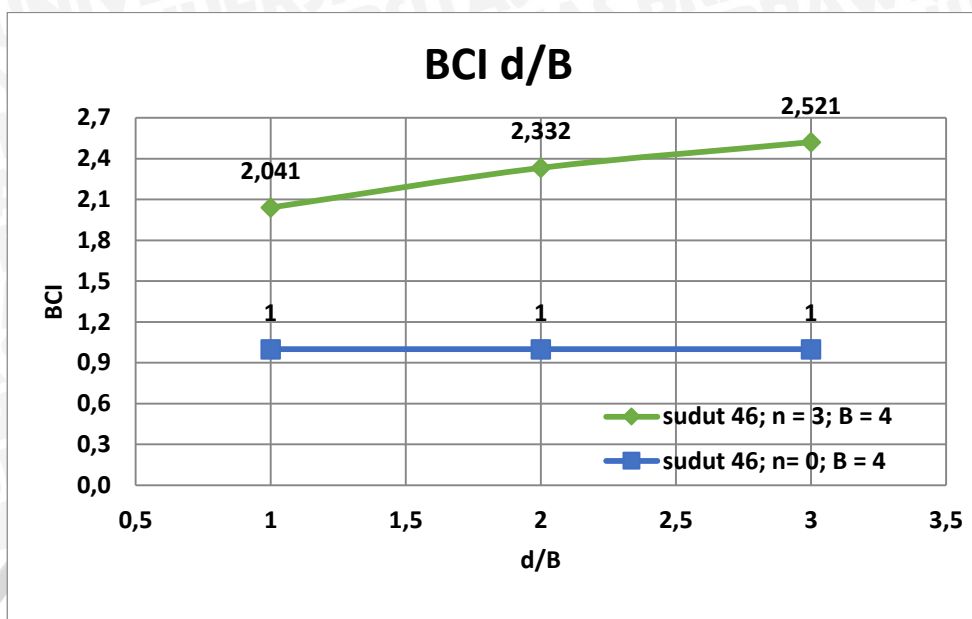


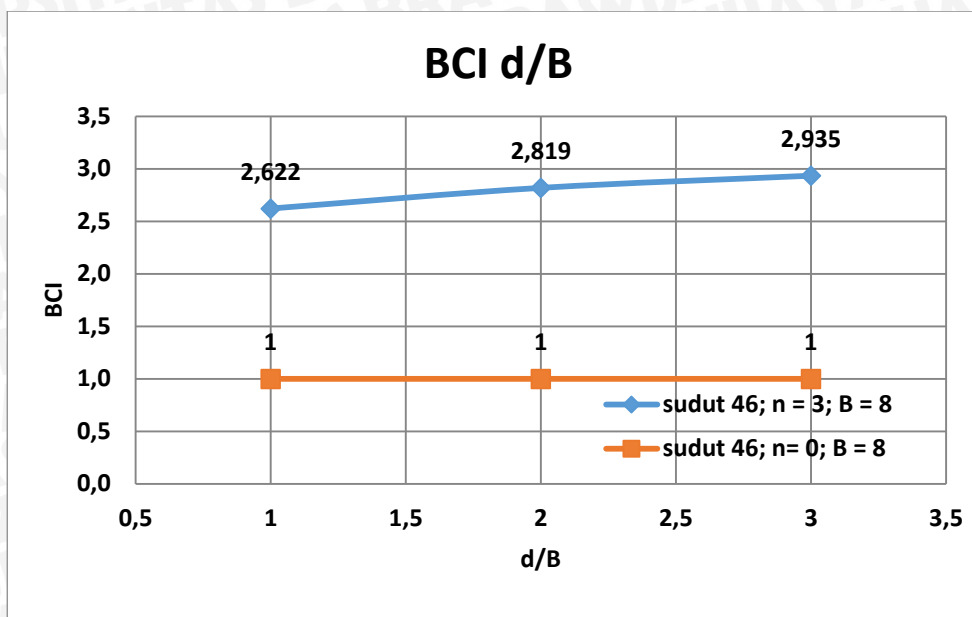


BCI_s 4% untuk Pemodelan Lereng dengan Perkuatan Geotekstil (n=3) dengan Variasi Rasio Jarak Pondasi ke Tepi Lereng dengan Lebar Pondasi

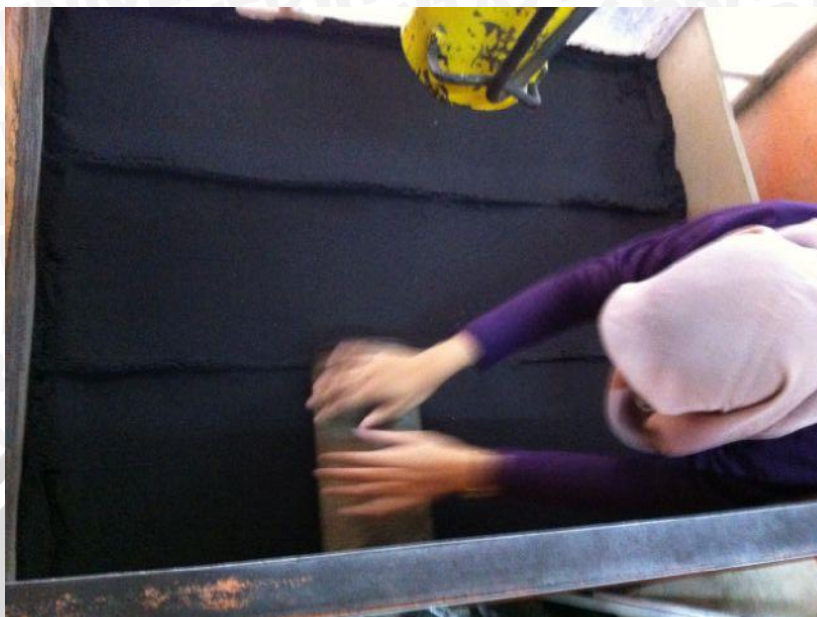
B (cm)	d/B	qu (kN/m ²)	qu Lereng Tanpa Perkuatan (kN/m ²)	BCI (s)
4	1	32,205	15,783	2,041
	2	40,096	17,193	2,332
	3	43,912	17,419	2,521
6	1	48,749	19,924	2,447
	2	55,082	20,468	2,691
	3	58,134	20,667	2,813
8	1	69,976	26,688	2,622
	2	74,465	26,417	2,819

3	79,474	27,080	2,935
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Lampiran 10
Dokumentasi Penelitian



(1)



(2)

(1) dan (2) : Pemasakan



(3) Pembentukan model lereng



(4) Proses pembebanan



(5) Pencatatan data dari load cell dan lvdt digital



(6) Lereng saat runtuh