



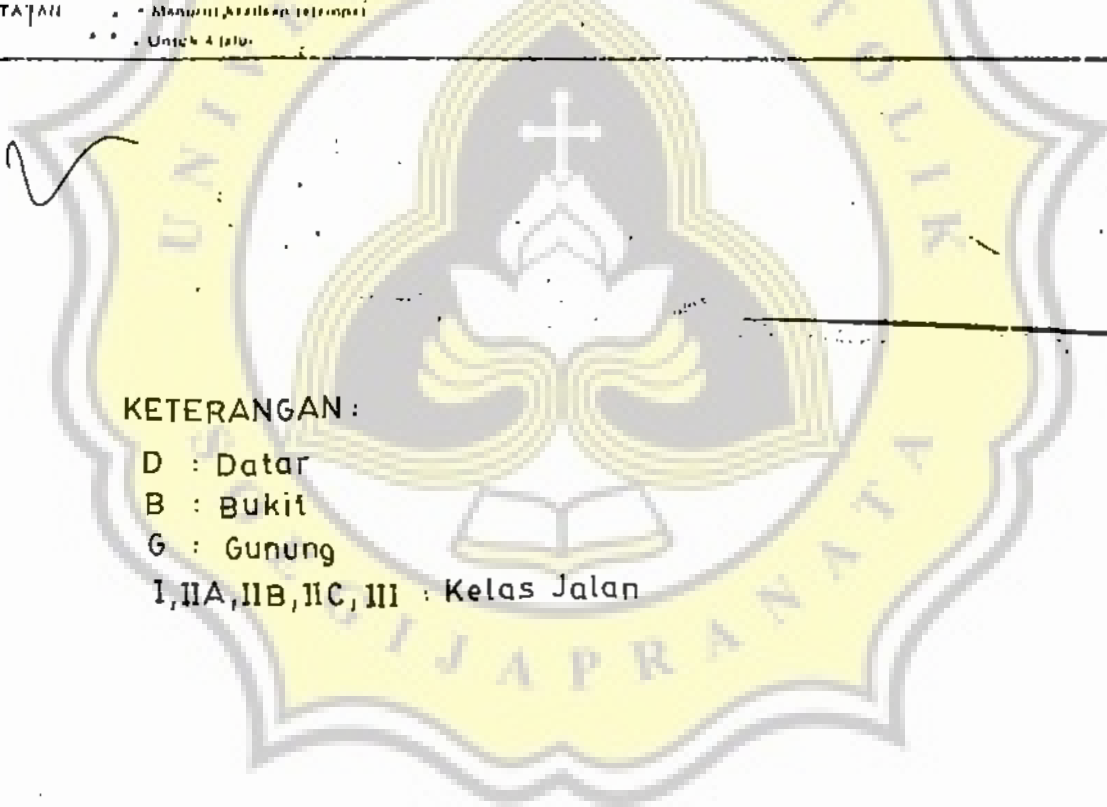
**LAMPIRAN**

DAFTAR I  
STANDARD PERENCANAAN GEOMETRIK

KLASIFIKASI JALAN	JALAN RAYA UTAMA			JALAN RAYA SEKUNDER						JALAN PENGHUBUNG					
	I			IIA			IIB			IIC			III		
KLASIFIKASI MEDAN	D	B	G	D	B	G	D	B	G	D	B	G	D	B	G
Lalu-lintas harian rata-rata (LHH) dalam Simp	> 20.000			6000-20.000			1500-6000			< 2000			-		
Kecepatan rencana (Km/jam)	120	100	80	100	80	60	60	60	40	60	40	30	30	40	30
Lebar daerah penguasaan minimum (Meter)	60	60	60	40	40	40	30	30	30	30	30	30	20	20	20
Lebar perkerasan (Meter)	Minimum 212x3,751			2x3,50 atau 2x(2x3,50)			2x3,50			2x3,0			3,5 6,00		
Lebar Median Minimum (Meter)	10			1,50*			-			-			-		
Lebar Jalur (Meter)	3,50	3,00	3,00	3,00	2,50	2,50	3,00	2,50	2,50	2,50	1,50	1,00	1,50-2,50*		
Lebar melintang perkerasan	2%			2%			2%			3%			6%		
Lebar melintang bahu	4%			4%			6%			6%			6%		
Jenis lapisan permukaan jalan	Aspal beton(hotmix)			Aspal beton			Pemerataan berganda atau interal			paving ringgit pemerataan tunggal			paving (ringgit) pelaburan dengan aspal		
Miring tikungan maksimum	10%			10%			10%			10%			10%		
Jari2 lengkung minimum (Meter)	150	150	210	350	210	115	210	115	50	115	50	30	115	50	30
Landai maksimum	3%	3%	6%	4%	6%	7%	5%	7%	8%	6%	8%	10%	8%	8%	12%

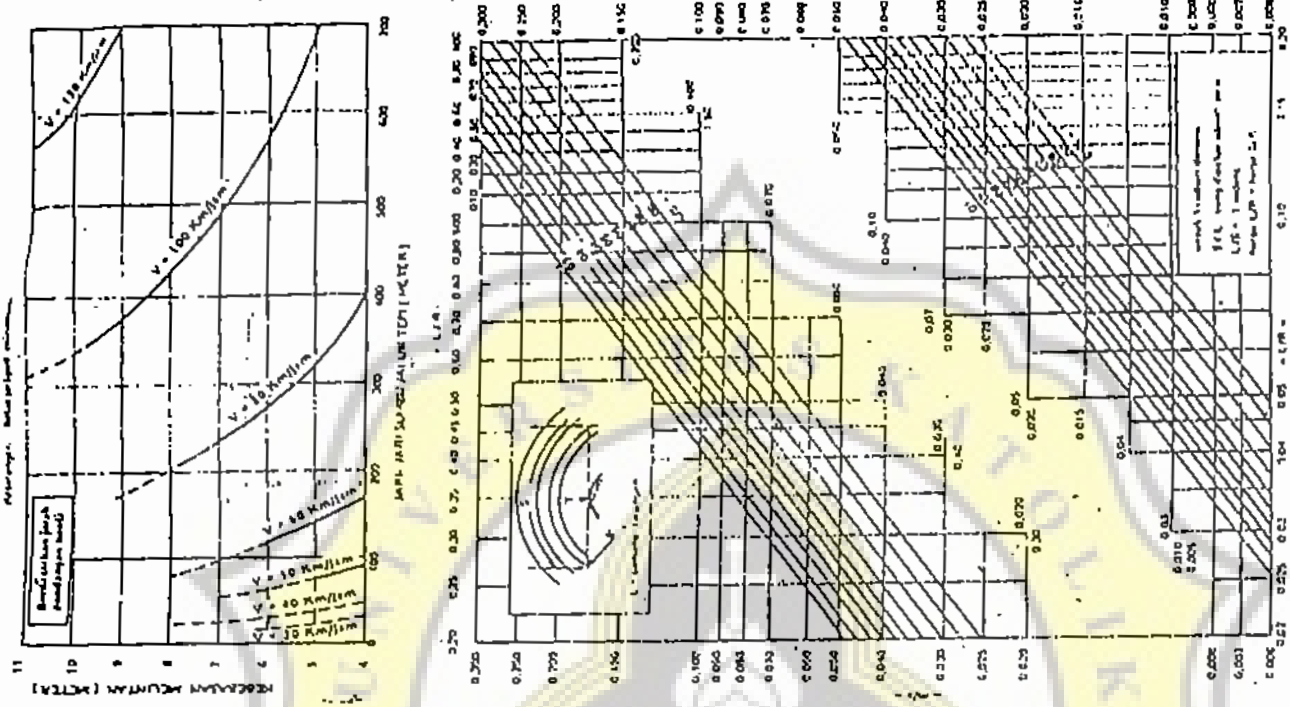
CATATAN  
 \* Menurut peraturan setempat  
 \* Untuk 4 jalur

KETERANGAN:  
 D : Datar  
 B : Bukit  
 G : Gunung  
 I, IIA, IIB, IIC, III : Kelas Jalan

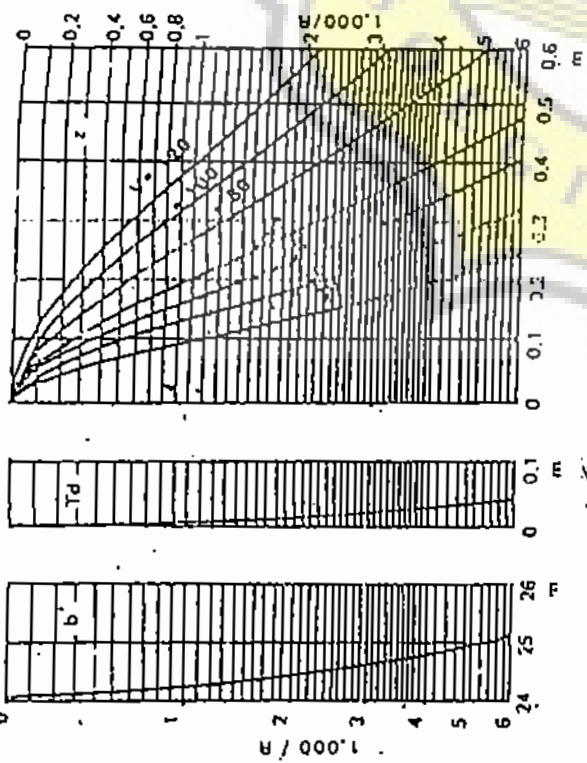


15

Gedae

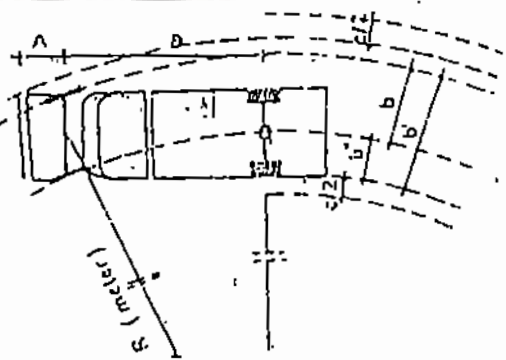


GRAFIK II. KEBEBASAN SAMPIG PADA TIKUNGAN

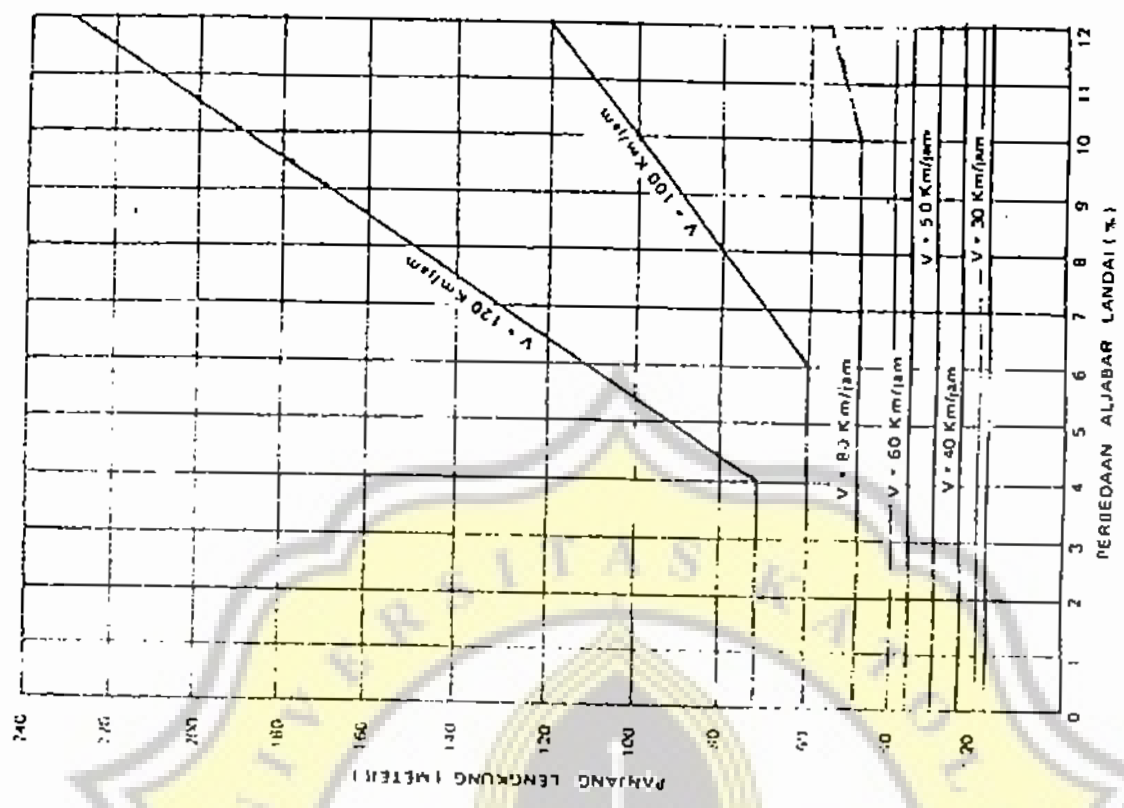


$$B = c + b' + (n-1)Td + z$$

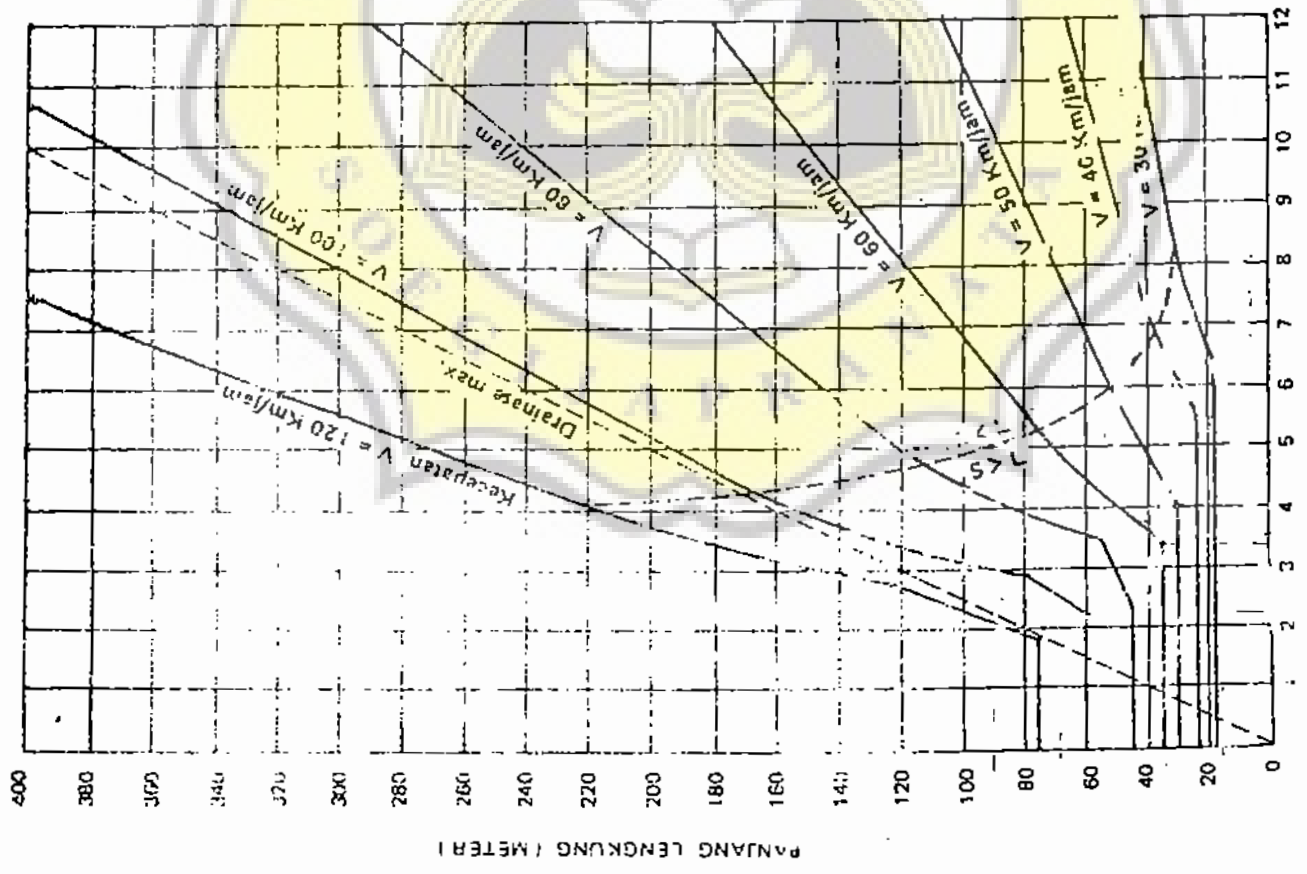
- B = lebar perkerasan (lebar bahu), (meter)
- n = jumlah jalur lalu lintas
- b' = lebar lintasan kendaraan truk pada tikungan (meter)
- Td = lebar melintang akibat suplaiangan depan (meter)
- z = lebar tambahan akibat kurva dalam menengruki (meter)
- c = kebebasan samping (meter, 0,80 meter)



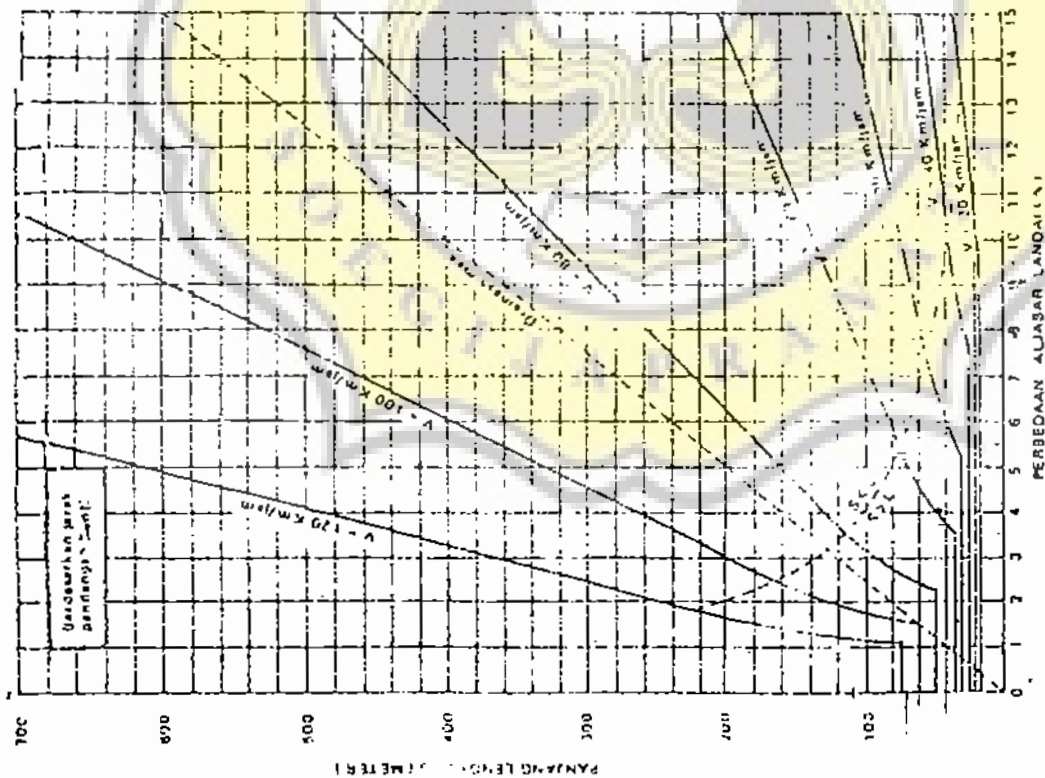
GRAFIK I. PELEBARAN PERKERASAN PADA TIKUNGAN



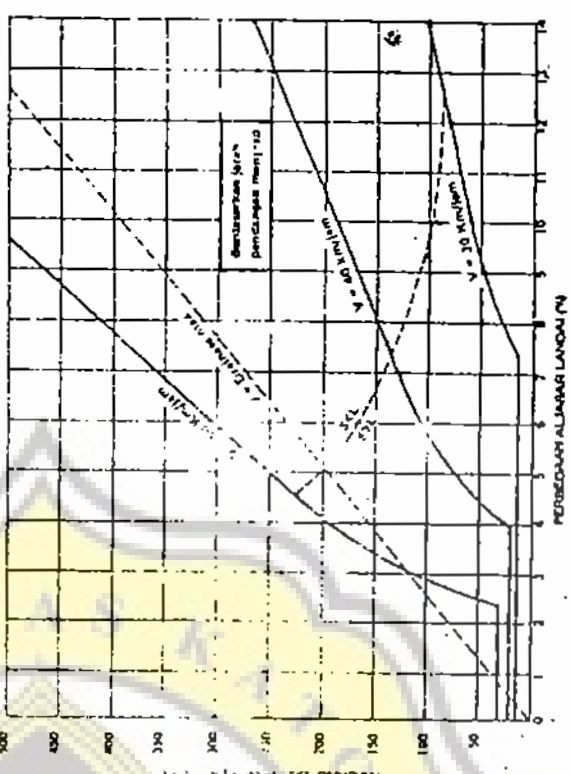
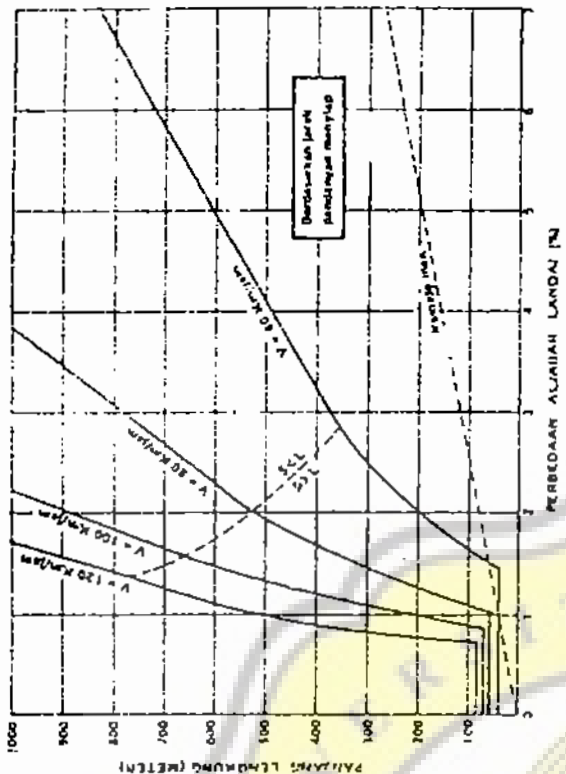
GRAFIK PANJANG LINGKUNG VERTIKAL CEKUNG PERBEDAAN ALJABAR LANDAI (%)



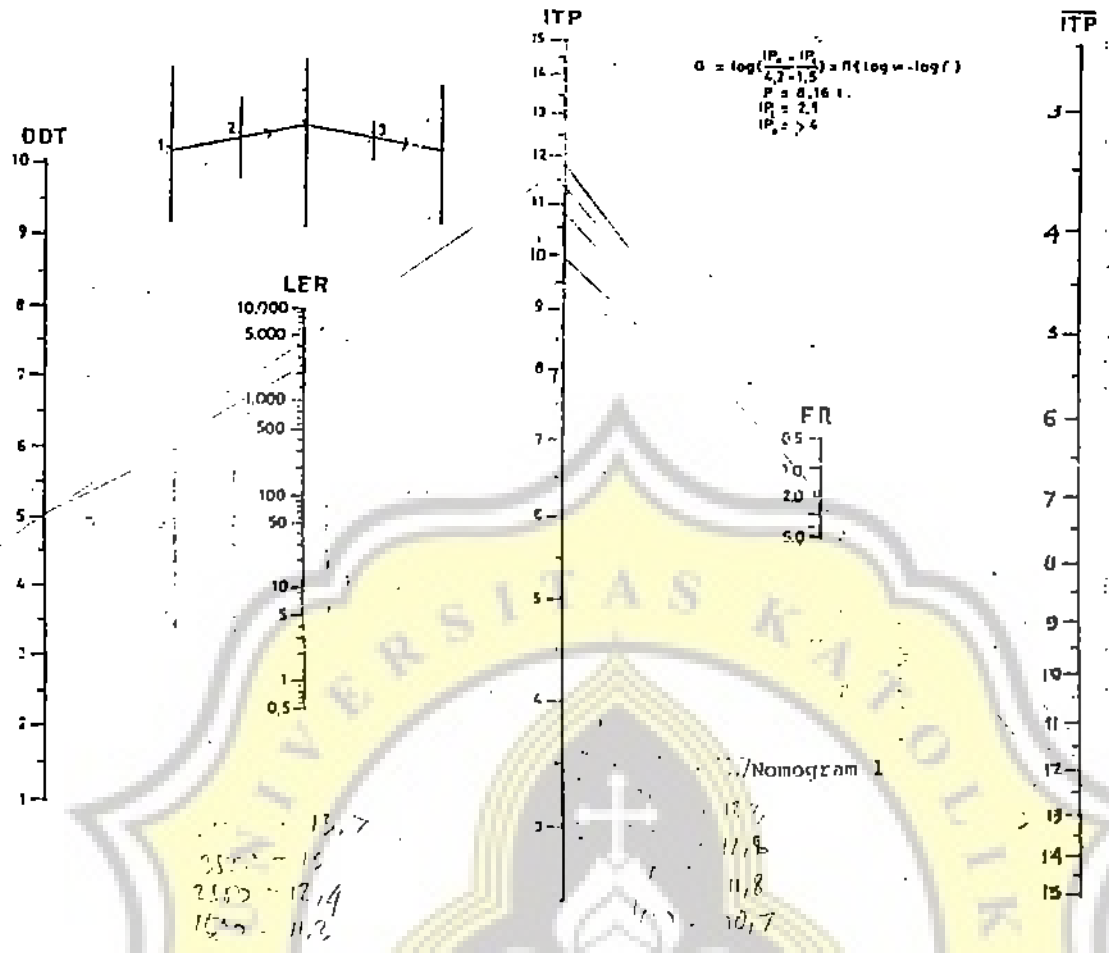
GRAFIK V. PANJANG LINGKUNG VERTIKAL CEKUNG PERBEDAAN ALJABAR LANDAI (%)



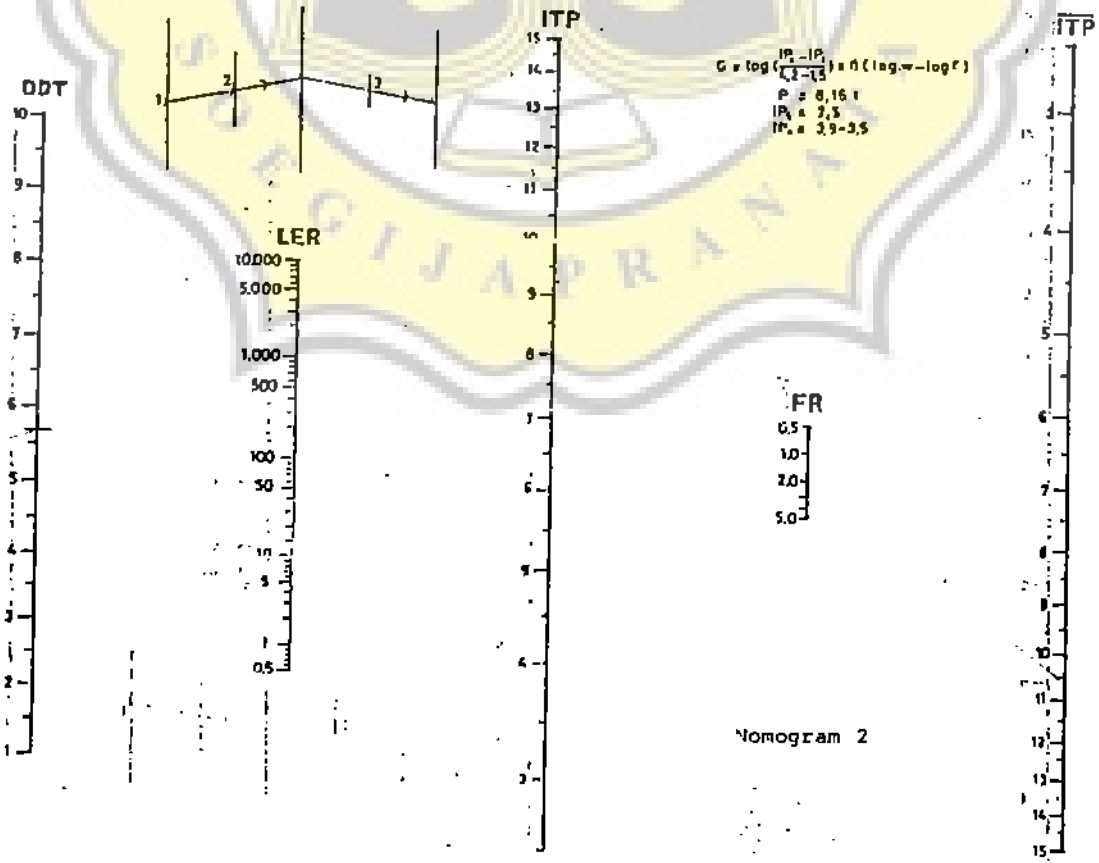
GRAFIK III. PANJANG LINGKUNG VERTIKAL CEMBUNG



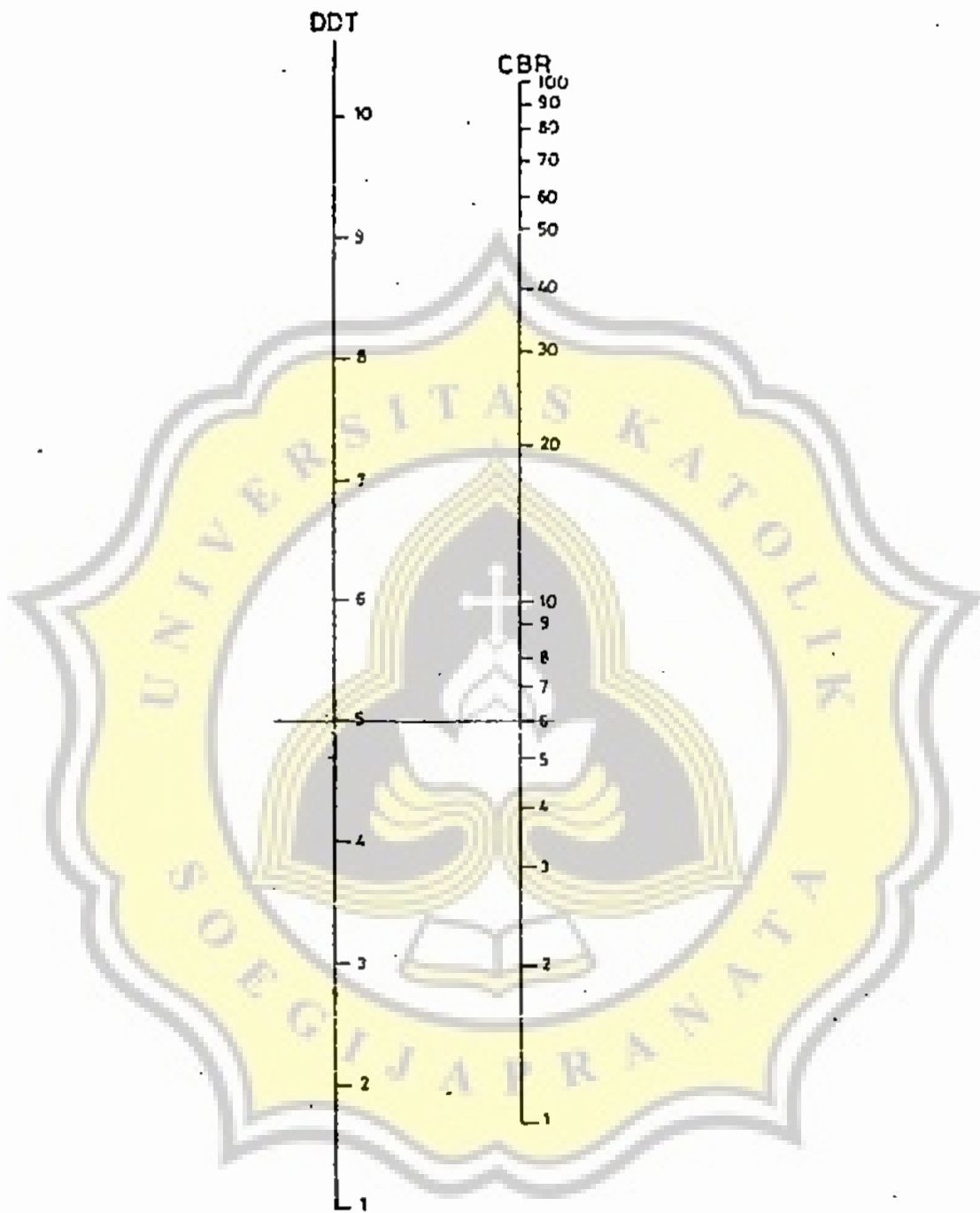
GRAFIK IV. PANJANG LINGKUNG VERTIKAL CEMBUNG (UNTUK JALAN RAYA DUA JALUR)



Lampiran 1 (1)



Lampiran 1 (2)



Gambar 1.  
KORELASI DDT DAN CBR

Catatan : Hubungan nilai CBR dengan garis mendatar  
kesebelah kiri diperoleh nilai DDT.

13 a.

$e_{maks} = 0,10$

Panjang minimum spiral dan kemiringan melintang :

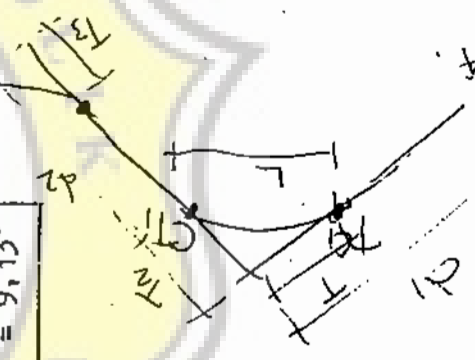
D	R meter	v = 50		v = 60		v = 70		v = 80		v = 90		v = 100		v = 110	
		e	L <sub>s</sub>	e	L <sub>s</sub>	e	L <sub>s</sub>	e	L <sub>s</sub>	e	L <sub>s</sub>	e	L <sub>s</sub>	e	L <sub>s</sub>
0° 15'	5730	LN	0	LN	0	LN	0	LN	0	LP	0	LP	50	LP	60
0° 30'	2864	LN	0	LN	0	LP	40	LP	50	LP	50	LP	60	LP	60
0° 45'	1910	LN	0	LP	40	LP	40	LP	50	LP	50	LP	60	LP	60
1° 00'	1432	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,025	60
1° 15'	1150	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,023	60
1° 30'	956	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,038	60
1° 45'	840	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,042	60
2° 00'	717	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,045	70
2° 30'	574	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,052	70
3° 00'	478	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,050	80
3° 30'	410	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,058	90
4° 00'	356	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,066	100
4° 30'	319	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	0,083	110
5° 00'	287	LP	30	LP	40	LP	40	LP	50	LP	50	LP	60	D <sub>maks</sub> = 3,34°	
6° 00'	239	LP	40	LP	50	LP	50	LP	60	LP	60	LP	70		
7° 00'	205	LP	40	LP	50	LP	50	LP	60	LP	60	LP	70		
8° 00'	180	LP	40	LP	50	LP	50	LP	60	LP	60	LP	70		
9° 00'	160	LP	50	LP	60	LP	60	LP	70	LP	70	LP	80		
10° 00'	143	LP	50	LP	60	LP	60	LP	70	LP	70	LP	80		
11° 00'	130	LP	50	LP	60	LP	60	LP	70	LP	70	LP	80		
12° 00'	120	LP	60	LP	70	LP	70	LP	80	LP	80	LP	90		
13° 00'	110	LP	60	LP	70	LP	70	LP	80	LP	80	LP	90		
14° 00'	103	LP	60	LP	70	LP	70	LP	80	LP	80	LP	90		
15° 00'	96	LP	60	LP	70	LP	70	LP	80	LP	80	LP	90		
16° 00'	90	LP	60	LP	70	LP	70	LP	80	LP	80	LP	90		
17° 00'	84	LP	60	LP	70	LP	70	LP	80	LP	80	LP	90		
18° 00'	80	LP	60	LP	70	LP	70	LP	80	LP	80	LP	90		
19° 00'	76	LP	60	LP	70	LP	70	LP	80	LP	80	LP	90		
			D <sub>maks</sub> = 18,85°		D <sub>maks</sub> = 12,79°		D <sub>maks</sub> = 9,13°		D <sub>maks</sub> = 6,83°		D <sub>maks</sub> = 5,26°		D <sub>maks</sub> = 4,15°		

Keterangan :

LN = lereng jalan normal

LP = lereng luar diputar sehingga pengerasan mendapat kemiringan melintang sebesar lereng jalan normal.

Spiral di atas garis-garis adalah harga yang dianjurkan, tapi tidak diharuskan.





TABEL untuk lengkung spiral - circle - spiral

$L_s = 30,00 \text{ m}$

R	$O_s$	P	k	x	y
500	1,719	0,0753	14,9997	29,9973	0,3000
475	1,809	0,0789	14,9997	29,9970	0,3159
450	1,910	0,0834	14,9994	29,9967	0,3333
425	2,022	0,0882	14,9994	29,9964	0,3528
400	2,149	0,0936	14,9994	29,9961	0,3750
390	2,204	0,0960	14,9991	29,9953	0,3846
380	2,262	0,0987	14,9991	29,9952	0,3948
370	2,323	0,1011	14,9991	29,9952	0,4053
360	2,387	0,1041	14,9991	29,9946	0,4167
350	2,455	0,1071	14,9991	29,9949	0,4284
340	2,528	0,1101	14,9991	29,9943	0,4410
330	2,604	0,1134	14,9988	29,9937	0,4542
320	2,686	0,1170	14,9988	29,9934	0,4689
310	2,772	0,1206	14,9988	29,9928	0,4842
300	2,865	0,1248	14,9988	29,9925	0,5001
290	2,964	0,1290	14,9985	29,9922	0,5169
280	3,069	0,1338	14,9985	29,9916	0,5355
270	3,183	0,1386	14,9982	29,9907	0,5555

$L_s = 50,00 \text{ m}$

R	$O_s$	P	k	x	y
1150	1,246	0,0905	24,9995	49,9975	0,3625
1100	1,293	0,0945	24,9995	49,9975	0,3760
1050	1,356	0,0990	24,9995	49,9970	0,3940
1000	1,424	0,1035	24,9995	49,9970	0,4140
950	1,499	0,1095	24,9995	49,9965	0,4360
900	1,583	0,1155	24,9995	49,9960	0,4605
850	1,677	0,1225	24,9995	49,9955	0,4880
800	1,782	0,1300	24,9995	49,9950	0,5185
750	1,901	0,1385	24,9990	49,9945	0,5590
700	2,038	0,1480	24,9990	49,9940	0,5925
650	2,195	0,1595	24,9985	49,9925	0,6385
600	2,379	0,1730	24,9985	49,9910	0,6920
550	2,596	0,1880	24,9980	49,9895	0,7550
500	2,865	0,2080	24,9980	49,9875	0,8335
475	3,016	0,2180	24,9975	49,9865	0,8770
450	3,150	0,2285	24,9975	49,9850	0,9160
425	3,370	0,2445	24,9970	49,9830	0,9800
400	3,580	0,2610	24,9965	49,9805	1,0410
375	3,820	0,2775	24,9965	49,9775	1,1160
350	4,091	0,2975	24,9955	49,9740	1,1890
325	4,407	0,3200	24,9950	49,9705	1,2815
300	4,776	0,3475	24,9940	49,9650	1,3885
275	5,209	0,3785	24,9920	49,9590	1,5140
250	5,730	0,4165	24,9920	49,9600	1,6655
240	5,969	0,4340	24,9910	49,9455	1,7350
230	6,228	0,4525	24,9905	49,9405	1,8040
220	6,510	0,4735	24,9895	49,9355	1,8920
210	6,821	0,4960	24,9880	49,9290	1,9820
200	7,162	0,5205	24,9865	49,9220	2,0810
190	7,539	0,5480	24,9855	49,9135	2,1905
180	7,958	0,5705	24,9835	49,9035	2,3119
170	8,426	0,6125	24,9820	49,8920	2,4470
160	8,953	0,6565	24,9795	49,8780	2,6060
150	9,544	0,6875	24,9770	49,8640	2,7445
140	10,230	0,7435	24,9735	49,8410	2,9690

$$L_s = 60,00 \text{ m.}$$

R	$\theta_s$	p	r	x	y
1450	1,086	0,0954	29,9994	59,9976	0,3792
1400	1,228	0,1074	29,9994	59,9970	0,4284
1350	1,274	0,1122	29,9994	59,9970	0,4452
1300	1,322	0,1158	29,9994	59,9970	0,4614
1250	1,375	0,1200	29,9994	59,9964	0,4794
1200	1,432	0,1254	29,9994	59,9964	0,4998
1150	1,494	0,1308	29,9994	59,9958	0,5214
1100	1562	0,1358	29,9994	59,9952	0,5454
1050	1637	0,1434	29,9994	59,9952	0,5712
1000	1718	0,1506	29,9994	59,9946	0,5994
950	1,810	0,1572	29,9994	59,9940	0,6318
900	1,910	0,1663	29,9988	59,9934	0,6666
850	2,022	0,1764	29,9988	59,9928	0,7056
800	2,148	0,1872	29,9988	59,9922	0,7488
750	2,292	0,1998	29,9982	59,9904	0,7998
700	2,456	0,2142	29,9982	59,9882	0,8574
650	2,644	0,2298	29,9976	59,9874	0,9228
600	2,864	0,2496	29,9976	59,9850	0,9996
550	3,126	0,2624	29,9970	59,9820	1,0908
500	3,438	0,2994	29,9964	59,9790	1,2000
475	3,618	0,3150	29,9958	59,9760	1,2624
450	3,820	0,3330	29,9958	59,9730	1,3392
425	4,044	0,3522	29,9952	59,9700	1,4234
400	4,296	0,3750	29,9946	59,9658	1,4988
375	4,584	0,4002	29,9934	59,9616	1,5996
350	4,910	0,4278	29,9928	59,9562	1,7130
325	5,289	0,4614	29,9916	59,9490	1,8456
300	5,730	0,4998	29,9904	59,9400	1,9986
275	6,250	0,5448	29,9886	59,9286	2,1714
250	6,880	0,6000	29,9856	59,9136	2,3988
240	7,162	0,6252	29,9838	59,9064	2,4977
230	7,473	0,6522	29,9826	59,8986	2,5986
220	7,812	0,6816	29,9814	59,8884	2,7234
210	8,186	0,7640	29,9790	59,8776	2,8536
200	8,600	0,7500	29,9772	59,8650	2,9940
190	9,047	0,7890	29,9754	59,8506	3,1534
180	9,550	0,8328	29,9724	59,8332	3,3270
170	10,111	0,8808	29,9688	59,8140	3,5214
160	10,743	0,9366	29,9652	59,7918	3,7410
150	11,460	0,9990	29,9598	59,7606	3,9900
140	12,284	1,0704	29,9538	59,7246	4,2738
130	13,224	1,1352	29,9466	59,6808	4,5984
120	14,324	1,2474	29,9382	59,6262	4,9776
110	15,625	1,3530	29,9256	59,5554	5,4252
100	17,189	1,4952	29,9100	59,4618	5,9616
90	19,100	1,6596	29,8890	59,3364	6,6144
80	21,186	1,8654	29,8596	59,1618	7,4250
70	24,557	2,1294	29,8170	58,9074	8,4600
60	28,648	2,4774	29,7516	58,5174	9,8226
50	34,378	2,9616	29,6636	57,8742	11,6946

$L_B = 80,00 \text{ m}$

R	$Q_B$	P	K	X	Y
750	3,056	0,3552	39,9960	79,9776	1,4116
700	3,274	0,3800	39,9952	79,9710	1,5224
650	3,526	0,4096	39,9952	79,9696	1,6408
600	3,820	0,4440	39,9944	79,9640	1,7856
550	4,167	0,4840	39,9928	79,9576	1,9392
500	4,584	0,5336	39,9912	79,9466	2,1328
475	4,816	0,5600	39,9904	79,9432	2,2400
450	5,093	0,5928	39,9896	79,9368	2,3688
425	5,394	0,6272	39,9880	79,9288	2,5088
400	5,730	0,6664	39,9872	79,9200	2,6648
375	6,112	0,7112	39,9858	79,9080	2,8424
350	6,548	0,7616	39,9832	79,8984	3,0456
325	7,032	0,8200	39,9792	79,8792	3,2934
300	7,641	0,8888	39,9750	79,8576	3,5504
275	8,334	0,9696	39,9720	79,8304	3,8228
250	9,109	1,0648	39,9690	79,7960	4,2244
230	9,540	1,1368	39,9672	79,7784	4,4320
230	9,964	1,1534	39,9592	79,7584	4,6264
220	10,417	1,2104	39,9560	79,7360	4,8368
210	10,913	1,2688	39,9520	79,7104	5,0564
200	11,459	1,3320	39,9464	79,6808	5,3200
190	12,062	1,4016	39,9408	79,6464	5,5960
180	12,731	1,4784	39,9344	79,6056	5,9048
170	13,481	1,5656	39,9264	79,5560	6,2496
160	14,324	1,6632	39,9176	79,5008	6,6368
150	15,276	1,7728	39,9056	79,4342	7,0736
140	16,370	1,8992	39,8912	79,3448	7,5936
130	17,630	2,0440	39,8736	79,2456	8,1504

$L_B = 70,00 \text{ m}$

R	$Q_B$	P	K	X	Y
900	2,228	0,2268	34,9979	69,9895	0,3272
850	2,359	0,2394	34,9979	69,9881	0,3604
800	2,507	0,2548	34,9979	69,9867	1,0206
750	2,674	0,2716	34,9972	69,9846	1,0892
700	2,865	0,2912	34,9972	69,9825	1,1669
650	3,085	0,3136	34,9965	69,9797	1,2558
600	3,342	0,3395	34,9958	69,9769	1,3601
550	3,646	0,3752	34,9951	69,9720	1,4874
500	4,011	0,4081	34,9944	69,9657	1,6324
475	4,222	0,4291	34,9937	69,9615	1,7185
450	4,456	0,4536	34,9930	69,9573	1,8137
425	4,742	0,4823	34,9923	69,9517	1,9291
400	5,013	0,5105	34,9909	69,9460	2,0205
375	5,309	0,5404	34,9902	69,9399	2,1609
350	5,730	0,5837	34,9888	69,9320	2,3317
325	6,170	0,6279	34,9867	69,9181	2,5109
300	6,621	0,6741	34,9846	69,9062	2,6936
275	7,292	0,7427	34,9811	69,8873	2,9657
250	7,964	0,8106	34,9769	69,8649	3,2393
240	8,355	0,8505	34,9748	69,8509	3,3977
230	8,719	0,8936	34,9727	69,8376	3,5448
220	9,116	0,9275	34,9705	69,8222	3,7156
210	9,539	0,9702	34,9678	69,8061	3,8765
200	9,970	1,0143	34,9643	69,7685	4,0509
190	10,555	1,0738	34,9601	69,7627	4,2882
180	11,141	1,1333	34,9566	69,7354	4,5241
170	11,796	1,1991	34,9503	69,7039	4,7894
160	12,534	1,2740	34,9440	69,6654	5,0869
150	13,300	1,3251	34,9370	69,5234	5,3956
140	14,324	1,4553	34,9279	69,5632	5,8072
130	15,427	1,5666	34,9160	69,4946	6,2496
120	16,710	1,6967	34,9013	69,4078	6,7627
110	18,232	1,8487	34,8817	69,2951	7,3710
100	20,054	2,0328	34,8579	69,1467	8,0948

$L_B = 90,00 \text{ m.}$

R	$e_s$	p	k	x	y
600	4,297	0,5625	44,9919	89,9487	2,2491
550	4,608	0,6129	44,9901	89,9308	2,4534
500	5,157	0,6750	44,9892	89,9271	2,6973
475	5,427	0,7101	44,9865	89,9190	2,8404
450	5,730	0,7497	44,9856	89,9100	2,9988
425	6,067	0,7938	44,9829	89,8992	3,1752
400	6,446	0,8334	44,9811	89,8857	3,3743
375	6,876	0,8991	44,9784	89,8700	3,5954
350	7,366	0,9639	44,9748	89,8513	3,8520
325	7,932	0,0386	44,9712	89,8272	4,1472
300	8,594	1,1421	44,9658	89,7975	4,4919
275	9,375	1,2204	44,9604	89,7615	4,8726
250	10,393	1,3491	44,9514	89,7093	5,3874
240	10,743	1,4049	44,9478	89,6841	5,6106
230	11,210	1,4661	44,9433	89,6553	5,8536
220	11,718	1,5318	44,9379	89,6238	6,1173
210	12,278	1,6047	44,9307	89,5851	6,4071
200	12,892	1,6848	44,9235	89,5446	6,7457

$L_S = 100,00 \text{ m.}$

R	$e_s$	p	k	x	y
500	5,730	0,8330	49,9840	99,9070	3,2860
475	6,032	0,8760	49,9820	99,8890	3,5020
450	6,300	0,9160	49,9800	99,8750	3,6620
425	6,740	0,9800	49,9770	99,8610	3,9170
400	7,160	1,0430	49,9730	99,8440	4,1600
390	7,346	1,0690	49,9730	99,8360	4,2690
380	7,539	1,0960	49,9710	99,8270	4,3810
370	7,743	1,1260	49,9690	99,8170	4,4990
360	7,961	1,1580	49,9670	99,8070	4,6250
350	8,182	1,1900	49,9650	99,7950	4,7550
340	8,421	1,2250	49,9640	99,7840	4,8940
330	8,681	1,2620	49,9610	99,7710	5,0420
320	8,953	1,3020	49,9490	99,6990	5,7770
310	9,241	1,3430	49,9570	99,7400	5,3650
300	9,552	1,3890	49,9530	99,7220	5,5460