



PREFEITURA MUNICIPAL DE VÁRZEA GRANDE

RODOVIA : ACESSO AO DISTRITO DE LIMPO GRANDE

TRECHO : ENTRº MT-351 – LIMPO GRANDE

EXTENSÃO: 4,0734 km

PROJETO EXECUTIVO DE IMPLANTAÇÃO E PAVIMENTAÇÃO

VOLUME 3B – NOTAS DE SERVIÇO E CÁLCULO DE VOLUMES

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ELABORAÇÃO :



: **ECP** – Empresa de Consultoria e Planejamento Ltda.

CONTRATO: :Nº 122/2017

RESP.TÉCNICO : Engº João Batista Domingues - CREA Nº 1205305661 - MT

A.R.T :2869090

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1 - APRESENTAÇÃO



1 – Apresentação

A Primeira Revisão do Volume 3B – **Notas de Serviço e Cálculo dos Volumes** referere-se ao Projeto Executivo de Implantação e pavimentação da rodovia de acesso ao Distrito de Limpo Grande, trecho: Entr.º MT-351 – Distrito de Limpo Grande, com extensão de 4,0734km.

O Projeto foi concebido seguindo as orientações estabelecidas no Termo de Referência.

Este Projeto Final é constituído dos seguintes Volumes:

Volume – 1: Relatório do Projeto e Documentos para Concorrência;

Volume – 2: Projeto de Execução;

Volume – 3: Memória Justificativa;

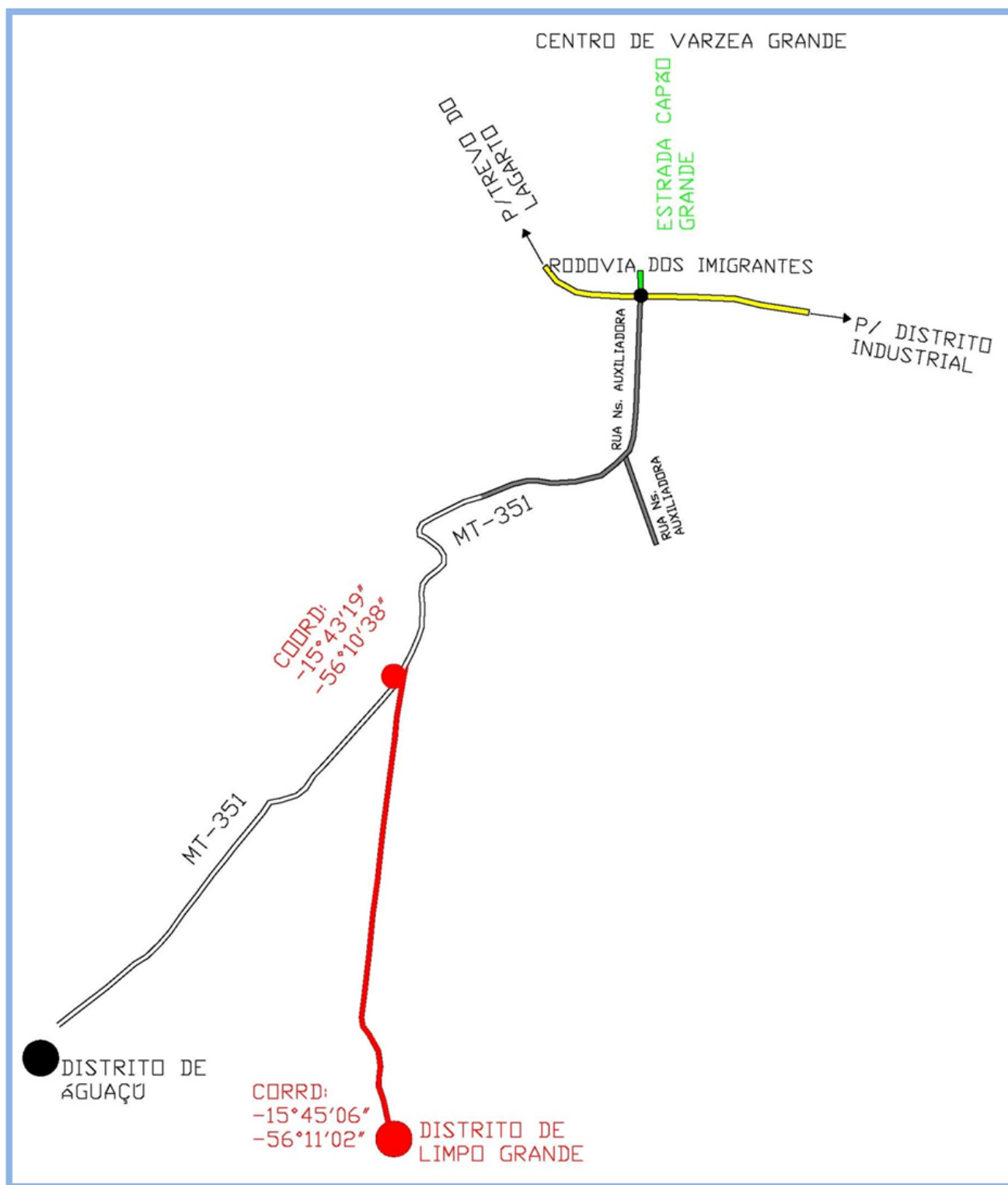
Volume – 3A: Estudos Geotécnicos;

Volume – 3B: Notas de Serviço e Cálculo de Volumes;

Volume – 4: Orçamento;



2- MAPA DE SITUAÇÃO





3 – MARCOS, RN's e COORDENADAS DO EIXO.



1. Marcos

QUADRO DE RN's						
RN	EST.(m)	DIST.(m)	LADO	COORD.		COTA
2	25+9,81	27,81	E	8.261.170,7396	588.083,3225	173,401
3	50+8,06	37,07	E	8.260.688,7129	587.954,4921	171,835
4	75+8,20	30,81	E	8.260.206,8682	587.825,6685	167,553
5	100+4,77	28,76	E	8.259.738,3443	587.673,0397	167,539
6	125+16,17	27,02	E	8.259.256,6488	587.678,7285	163,370
7	150+15,85	5,24	E	8.258.758,3598	587.681,9877	166,202

2. RN's

QUADRO DE RN's						
RN	EST.(m)	DIST.(m)	LADO	COORD.		COTA
2	25+9,81	27,81	E	8.261.170,7396	588.083,3225	173,401
3	50+8,06	37,07	E	8.260.688,7129	587.954,4921	171,835
4	75+8,20	30,81	E	8.260.206,8682	587.825,6685	167,553
5	100+4,77	28,76	E	8.259.738,3443	587.673,0397	167,539
6	125+16,17	27,02	E	8.259.256,6488	587.678,7285	163,370
7	150+15,85	5,24	E	8.258.758,3598	587.681,9877	166,202

3. Coordenadas do Eixo

COORDENADAS DO EIXO PROJETADO

Estaca	Descrição	Progressiva	Norte	Este	Cota	Azimute
0		0,000	8.261.668,5037	588.193,9055	170,530	119°15'15"
1		20,000	8.261.650,6982	588.184,8079	170,879	114°52'29"
2		40,000	8.261.632,2499	588.177,0965	171,156	110°29'43"
3		60,000	8.261.613,2666	588.170,8163	171,561	106°06'56"
3+8,566	PT1	68,566	8.261.604,9998	588.168,5737	171,557	104°14'24"
4		80,000	8.261.593,9170	588.165,7611	171,697	104°14'24"
5		100,000	8.261.574,5315	588.160,8415	172,045	104°14'24"
6	PCV1	120,000	8.261.555,1461	588.155,9218	172,676	104°14'24"
7		140,000	8.261.535,7606	588.151,0022	172,595	104°14'24"
8		160,000	8.261.516,3751	588.146,0825	172,781	104°14'24"
9		180,000	8.261.496,9896	588.141,1629	172,902	104°14'24"
10	PTV1	200,000	8.261.477,6041	588.136,2432	173,039	104°14'24"
11		220,000	8.261.458,2186	588.131,3236	173,163	104°14'24"
12		240,000	8.261.438,8332	588.126,4039	173,180	104°14'24"
13		260,000	8.261.419,4477	588.121,4843	173,263	104°14'24"
14	PCV2	280,000	8.261.400,0623	588.116,5646	173,346	104°14'24"
14		280,000	8.261.400,0622	588.116,5646	173,346	104°14'24"
15		300,000	8.261.380,6898	588.111,5936	173,479	104°32'36"
16	PTV2	320,000	8.261.361,3441	588.106,5201	173,397	104°50'49"
17		340,000	8.261.342,0255	588.101,3442	173,417	105°09'01"
17+10,161	PT2	350,161	8.261.332,2209	588.098,6753	173,412	105°18'16"
18		360,000	8.261.322,7311	588.096,0784	173,414	105°18'16"
19		380,000	8.261.303,4404	588.090,7994	173,454	105°18'16"
20		400,000	8.261.284,1497	588.085,5204	173,378	105°18'16"
21		420,000	8.261.264,8590	588.080,2415	173,445	105°18'16"
22		440,000	8.261.245,5682	588.074,9625	173,378	105°18'16"
23		460,000	8.261.226,2775	588.069,6835	173,347	105°18'16"
24		480,000	8.261.206,9868	588.064,4045	173,297	105°18'16"
25		500,000	8.261.187,6960	588.059,1255	173,189	105°18'16"
26		520,000	8.261.168,4053	588.053,8465	173,068	105°18'16"
27		540,000	8.261.149,1146	588.048,5675	172,972	105°18'16"
28		560,000	8.261.129,8238	588.043,2885	172,905	105°18'16"
29		580,000	8.261.110,5331	588.038,0095	172,829	105°18'16"
30		600,000	8.261.091,2424	588.032,7306	172,742	105°18'16"
31		620,000	8.261.071,9516	588.027,4516	172,683	105°18'16"
32		640,000	8.261.052,6609	588.022,1726	172,618	105°18'16"
33		660,000	8.261.033,3702	588.016,8936	172,531	105°18'16"
34		680,000	8.261.014,0795	588.011,6146	172,377	105°18'16"
35		700,000	8.260.994,7887	588.006,3356	172,406	105°18'16"
36		720,000	8.260.975,4980	588.001,0566	172,377	105°18'16"
37		740,000	8.260.956,2073	587.995,7776	172,349	105°18'16"
38		760,000	8.260.936,9165	587.990,4986	172,279	105°18'16"
39		780,000	8.260.917,6258	587.985,2197	172,229	105°18'16"
40		800,000	8.260.898,3351	587.979,9407	172,226	105°18'16"
41		820,000	8.260.879,0443	587.974,6617	172,186	105°18'16"
42		840,000	8.260.859,7536	587.969,3827	171,949	105°18'16"
43	PCV3	860,000	8.260.840,4629	587.964,1037	172,032	105°18'16"
44		880,000	8.260.821,1722	587.958,8247	171,868	105°18'16"
44+12,534	PC3	892,534	8.260.809,0828	587.955,5164	171,826	105°18'16"
45		900,000	8.260.801,8840	587.953,5364	171,793	105°27'09"
46		920,000	8.260.782,6255	587.948,1410	171,659	105°50'56"

COORDENADAS DO EIXO PROJETADO

Estaca	Descrição	Progressiva	Norte	Este	Cota	Azimute
47	PTV3	940,000	8.260.763,4049	587.942,6125	171,459	106°14'43"
48		960,000	8.260.744,2229	587.936,9512	171,256	106°38'30"
49		980,000	8.260.725,0806	587.931,1573	170,428	107°02'16"
50	PC4	1000,000	8.260.705,9785	587.925,2310	169,805	107°26'03"
51		1020,000	8.260.686,8668	587.919,3380	169,543	106°50'23"
52		1040,000	8.260.667,6947	587.913,6435	169,716	106°14'42"
53		1060,000	8.260.648,4645	587.908,1483	169,705	105°39'02"
54		1080,000	8.260.629,1783	587.902,8530	169,452	105°03'21"
55		1100,000	8.260.609,8383	587.897,7580	169,148	104°27'41"
55+0,078	PT4	1100,078	8.260.609,7629	587.897,7386	169,147	104°27'32"
56		1120,000	8.260.590,4717	587.892,7643	168,857	104°27'32"
57	PCV4	1140,000	8.260.571,1052	587.887,7705	168,620	104°27'32"
58		1160,000	8.260.551,7387	587.882,7768	168,376	104°27'32"
59		1180,000	8.260.532,3721	587.877,7831	168,189	104°27'32"
60		1200,000	8.260.513,0056	587.872,7893	168,031	104°27'32"
61	PTV4	1220,000	8.260.493,6391	587.867,7956	167,962	104°27'32"
62		1240,000	8.260.474,2725	587.862,8018	167,930	104°27'32"
63		1260,000	8.260.454,9060	587.857,8081	167,875	104°27'32"
64		1280,000	8.260.435,5395	587.852,8144	167,774	104°27'32"
65		1300,000	8.260.416,1729	587.847,8206	167,675	104°27'32"
66	PCV5	1320,000	8.260.396,8064	587.842,8269	167,634	104°27'32"
67		1340,000	8.260.377,4399	587.837,8331	167,612	104°27'32"
68	PTV5	1360,000	8.260.358,0734	587.832,8394	167,651	104°27'32"
69		1380,000	8.260.338,7068	587.827,8456	167,662	104°27'32"
70		1400,000	8.260.319,3403	587.822,8519	167,661	104°27'32"
71		1420,000	8.260.299,9738	587.817,8582	167,612	104°27'32"
72		1440,000	8.260.280,6072	587.812,8644	167,590	104°27'32"
73		1460,000	8.260.261,2407	587.807,8707	167,551	104°27'32"
74		1480,000	8.260.241,8742	587.802,8769	167,553	104°27'32"
75		1500,000	8.260.222,5076	587.797,8832	167,559	104°27'32"
76		1520,000	8.260.203,1411	587.792,8895	167,528	104°27'32"
77		1540,000	8.260.183,7746	587.787,8957	167,510	104°27'32"
78		1560,000	8.260.164,4080	587.782,9020	167,467	104°27'32"
79		1580,000	8.260.145,0415	587.777,9082	167,481	104°27'32"
80		1600,000	8.260.125,6750	587.772,9145	167,499	104°27'32"
81	PCV6	1620,000	8.260.106,3084	587.767,9207	167,464	104°27'32"
82		1640,000	8.260.086,9419	587.762,9270	167,454	104°27'32"
82+7,267		1647,267	8.260.079,9053	587.761,1126	167,459	104°27'32"
83		1660,000	8.260.067,5754	587.757,9333	167,487	104°27'32"
84		1680,000	8.260.048,2088	587.752,9395	167,489	104°27'32"
85	PTV6	1700,000	8.260.028,8423	587.747,9458	167,497	104°27'32"
86		1720,000	8.260.009,4758	587.742,9520	167,502	104°27'32"
87		1740,000	8.259.990,1093	587.737,9583	167,527	104°27'32"
88		1760,000	8.259.970,7427	587.732,9646	167,475	104°27'32"
89		1780,000	8.259.951,3762	587.727,9708	167,457	104°27'32"
90		1800,000	8.259.932,0097	587.722,9771	167,464	104°27'32"
91		1820,000	8.259.912,6431	587.717,9833	167,491	104°27'32"
92		1840,000	8.259.893,2766	587.712,9896	167,487	104°27'32"
93		1860,000	8.259.873,9101	587.707,9958	167,508	104°27'32"
94		1880,000	8.259.854,5435	587.703,0021	167,485	104°27'32"
95		1900,000	8.259.835,1770	587.698,0084	167,475	104°27'32"

COORDENADAS DO EIXO PROJETADO

Estaca	Descrição	Progressiva	Norte	Este	Cota	Azimute
96		1920,000	8.259.815,8105	587.693,0146	167,504	104°27'32"
97		1940,000	8.259.796,4439	587.688,0209	167,584	104°27'32"
98	PCV7	1960,000	8.259.777,0774	587.683,0271	167,683	104°27'32"
99		1980,000	8.259.757,7109	587.678,0334	167,664	104°27'32"
100		2000,000	8.259.738,3443	587.673,0397	167,752	104°27'32"
101		2020,000	8.259.718,9778	587.668,0459	167,826	104°27'32"
102	PTV7	2040,000	8.259.699,6113	587.663,0522	167,673	104°27'32"
103		2060,000	8.259.680,2447	587.658,0584	167,658	104°27'32"
104		2080,000	8.259.660,8782	587.653,0647	167,297	104°27'32"
105		2100,000	8.259.641,5117	587.648,0709	167,064	104°27'32"
106		2120,000	8.259.622,1452	587.643,0772	166,760	104°27'32"
107		2140,000	8.259.602,7786	587.638,0835	166,568	104°27'32"
108		2160,000	8.259.583,4121	587.633,0897	166,396	104°27'32"
109		2180,000	8.259.564,0456	587.628,0960	166,139	104°27'32"
110		2200,000	8.259.544,6790	587.623,1022	166,064	104°27'32"
111		2220,000	8.259.525,3125	587.618,1085	166,022	104°27'32"
112		2240,000	8.259.505,9460	587.613,1148	166,088	104°27'32"
113	PCV8	2260,000	8.259.486,5794	587.608,1210	166,130	104°27'32"
113+6,347	TE5	2266,347	8.259.480,4330	587.606,5361	166,096	104°27'32"
114		2280,000	8.259.467,2029	587.603,1664	165,996	103°57'02"
115		2300,000	8.259.447,7048	587.598,7216	165,734	101°22'09"
116		2320,000	8.259.427,9661	587.595,5356	165,335	96°36'18"
116+6,347	EC5	2326,347	8.259.421,6497	587.594,9119	165,210	94°38'13"
117	PTV8	2340,000	8.259.408,0125	587.594,3399	164,920	90°10'01"
118		2360,000	8.259.388,0528	587.595,4233	164,689	83°37'08"
119		2380,000	8.259.368,3468	587.598,7759	164,623	77°04'15"
119+12,241	CE5	2392,241	8.259.356,5221	587.601,9295	164,404	73°03'47"
120		2400,000	8.259.349,1493	587.604,3468	164,268	70°41'13"
121	PCV9	2420,000	8.259.330,5846	587.611,7721	163,974	66°04'37"
122		2440,000	8.259.312,5071	587.620,3244	163,573	63°38'59"
122+12,241	ET5	2452,241	8.259.301,5644	587.625,8095	163,404	63°14'28"
123		2460,000	8.259.294,6359	587.629,3032	163,315	63°14'28"
124		2480,000	8.259.276,7777	587.638,3079	163,014	63°14'28"
125	PTV9	2500,000	8.259.258,9195	587.647,3127	162,281	63°14'28"
126		2520,000	8.259.241,0614	587.656,3174	161,501	63°14'28"
126+19,493	PC6	2539,493	8.259.223,6558	587.665,0940	161,431	63°14'28"
127		2540,000	8.259.223,2029	587.665,3215	161,429	63°25'01"
128		2560,000	8.259.204,8192	587.673,1668	161,291	70°21'43"
129	PCV10	2580,000	8.259.185,6217	587.678,7317	160,420	77°18'25"
130		2600,000	8.259.165,8922	587.681,9344	159,169	84°15'07"
131		2620,000	8.259.145,9202	587.682,7281	158,848	91°11'48"
132		2640,000	8.259.125,9988	587.681,1010	158,782	98°08'30"
132+2,850		2642,850	8.259.123,1810	587.680,6730	157,404	99°07'53"
133	PTV10	2660,000	8.259.106,4203	587.677,0771	158,388	105°05'12"
133+15,985	PT6	2675,985	8.259.091,2119	587.672,1760	158,805	110°38'15"
134		2680,000	8.259.087,4543	587.670,7609	158,806	110°38'15"
135		2700,000	8.259.068,7377	587.663,7118	158,724	110°38'15"
136	PCV11	2720,000	8.259.050,0211	587.656,6628	158,752	110°38'15"
136+8,037	PC7	2728,037	8.259.042,4996	587.653,8300	158,726	110°38'15"
136+9,800		2729,800	8.259.040,8464	587.653,2175	158,727	110°01'31"
137		2740,000	8.259.031,1617	587.650,0231	158,747	106°29'00"

COORDENADAS DO EIXO PROJETADO

Estaca	Descrição	Progressiva	Norte	Este	Cota	Azimute
138	PTV11	2760,000	8.259.011,6870	587.645,5231	158,834	99°32'18"
139	PCV12	2780,000	8.258.991,8112	587.643,4110	159,114	92°35'37"
140		2800,000	8.258.971,8258	587.643,7176	159,789	85°38'55"
140+19,390	PT7	2819,390	8.258.952,6220	587.646,3202	160,729	78°54'55"
141		2820,000	8.258.952,0239	587.646,4374	160,753	78°54'55"
142		2840,000	8.258.932,3970	587.650,2826	161,486	78°54'55"
143	PCCV13	2860,000	8.258.912,7701	587.654,1278	162,033	78°54'55"
144		2880,000	8.258.893,1432	587.657,9730	162,802	78°54'55"
145	PTV13	2900,000	8.258.873,5163	587.661,8182	163,589	78°54'55"
146		2920,000	8.258.853,8895	587.665,6635	164,190	78°54'55"
147	PCV14	2940,000	8.258.834,2626	587.669,5087	164,583	78°54'55"
148		2960,000	8.258.814,6357	587.673,3539	165,041	78°54'55"
148+10,805	PC8	2970,805	8.258.804,0326	587.675,4312	165,235	78°54'55"
149	PTV14	2980,000	8.258.794,9572	587.676,9010	165,318	82°41'07"
150		3000,000	8.258.775,0057	587.678,0216	165,506	90°53'08"
151	PCV15	3020,000	8.258.755,0984	587.676,2850	165,665	99°05'08"
152		3040,000	8.258.735,6423	587.671,7267	166,049	107°17'09"
153	PTV15	3060,000	8.258.717,0353	587.664,4400	166,685	115°29'09"
153+18,393	PI9	3078,393	8.258.700,9999	587.655,4573	166,765	123°01'38"
154		3080,000	8.258.699,6527	587.654,5815	166,751	123°01'38"
155		3100,000	8.258.682,8845	587.643,6808	166,896	123°01'38"
156	PCV16	3120,000	8.258.666,1163	587.632,7800	167,155	123°01'38"
157		3140,000	8.258.649,3481	587.621,8793	167,425	123°01'38"
158	PTV16	3160,000	8.258.632,5798	587.610,9785	167,731	123°01'38"
159		3180,000	8.258.615,8116	587.600,0777	167,981	123°01'38"
160		3200,000	8.258.599,0434	587.589,1770	168,193	123°01'38"
161	PCV17	3220,000	8.258.582,2751	587.578,2762	168,320	123°01'38"
161+12,180	PI10	3232,180	8.258.572,0630	587.571,6375	168,495	122°19'08"
162		3240,000	8.258.565,4035	587.567,5388	168,432	121°36'38"
163	PTV17	3260,000	8.258.548,3709	587.557,0560	168,533	121°36'38"
164		3280,000	8.258.531,3383	587.546,5731	168,690	121°36'38"
165		3300,000	8.258.514,3057	587.536,0903	168,692	121°36'38"
166		3320,000	8.258.497,2731	587.525,6074	168,639	121°36'38"
167	PCV18	3340,000	8.258.480,2405	587.515,1246	168,540	121°36'38"
168		3360,000	8.258.463,2079	587.504,6417	168,444	121°36'38"
169	PTV18	3380,000	8.258.446,1752	587.494,1589	168,434	121°36'38"
170		3400,000	8.258.429,1426	587.483,6760	168,232	121°36'38"
171		3420,000	8.258.412,1100	587.473,1931	167,775	121°36'38"
172	PCV19	3440,000	8.258.395,0774	587.462,7103	167,461	121°36'38"
173		3460,000	8.258.378,0448	587.452,2274	167,142	121°36'38"
174	PTV19	3480,000	8.258.361,0122	587.441,7446	166,609	121°36'38"
175		3500,000	8.258.343,9796	587.431,2617	166,256	121°36'38"
175+10,000		3510,000	8.258.335,4630	587.426,0201	166,230	121°36'38"
175+14,647	PI-11	3514,647	8.258.331,5061	587.423,5848	166,211	121°36'38"

COORDENADAS DO EIXO PROJETADO

Estaca	Descrição	Progressiva	Norte	Este	Cota	Azimute
0	PC1	0,000	8.258.380,9430	587.454,0111	167,325	121°36'38"
0+12,767	PT1	12,767	8.258.374,9816	587.443,3421	167,310	180°00'00"
1		20,000	8.258.374,9816	587.436,1090	167,387	180°00'00"
1+8,214	PC2	28,214	8.258.374,9816	587.427,8949	167,477	180°00'00"
2		40,000	8.258.369,4526	587.418,0665	167,261	121°16'47"
2+6,278	PC3	46,278	8.258.363,4816	587.416,3949	167,083	90°00'00"
3		60,000	8.258.352,7917	587.423,6549	166,855	21°38'07"
3+4,342	PT3	64,342	8.258.351,9816	587.427,8949	166,803	0°00'00"
3+5,634	PC4	65,634	8.258.351,9816	587.429,1866	166,755	0°00'00"
3+18,401	PI-5	78,401	8.258.357,9430	587.439,8556	166,601	301°36'38"

COORDENADAS DO EIXO PROJETADO

Estaca	Descrição	Progressiva	Norte	Este	Cota	Azimute
0		0,000	8.258.696,2702	587.652,3826	166,794	46°33'22"
1		20,000	8.258.681,7492	587.666,1355	166,868	46°33'22"
2		40,000	8.258.667,2283	587.679,8884	166,689	46°33'22"
3		60,000	8.258.652,7074	587.693,6413	166,703	46°33'22"
4		80,000	8.258.638,1864	587.707,3942	166,693	46°33'22"
4+10,605	PI1	90,605	8.258.630,4866	587.714,6868	166,594	54°43'44"
5	PCV1	100,000	8.258.622,1230	587.718,9663	166,536	62°54'07"
5+12,000	PI2	112,000	8.258.611,4406	587.724,4323	166,440	85°03'45"
6		120,000	8.258.603,7990	587.722,0635	166,466	107°13'22"
7	PTV1	140,000	8.258.584,6958	587.716,1418	166,548	107°13'22"
7+17,754	PI3	157,754	8.258.567,7379	587.710,8851	166,719	105°42'28"
8		160,000	8.258.565,5604	587.710,3344	166,741	104°11'35"
9	PCV2	180,000	8.258.546,1709	587.705,4306	166,723	104°11'35"
10		200,000	8.258.526,7814	587.700,5267	166,807	104°11'35"
10+4,612	PC4	204,612	8.258.522,3101	587.699,3959	166,826	104°11'35"
11	PTV2	220,000	8.258.507,2378	587.700,5690	166,866	66°54'22"
11+8,384	PT4	228,384	8.258.500,2631	587.705,1422	166,752	46°35'24"
12		240,000	8.258.491,8248	587.713,1247	166,692	46°35'24"
12+8,659	PC5	248,659	8.258.485,5342	587.719,0755	166,573	46°35'24"
13	PCV3	260,000	8.258.476,2895	587.725,5756	166,462	63°11'14"
14		280,000	8.258.456,9514	587.729,7487	166,453	92°27'27"
15	PTV3	300,000	8.258.438,0420	587.723,9340	166,346	121°43'40"
15+3,498	PT5	303,498	8.258.435,1532	587.721,9644	166,346	126°50'48"
16	PCV4	320,000	8.258.421,9473	587.712,0683	166,402	126°50'48"
17		340,000	8.258.405,9424	587.700,0748	166,267	126°50'48"
18		360,000	8.258.389,9375	587.688,0812	166,172	126°50'48"
19		380,000	8.258.373,9327	587.676,0877	165,944	126°50'48"
20	PTV4	400,000	8.258.357,9278	587.664,0942	165,836	126°50'48"
21		420,000	8.258.341,9229	587.652,1007	165,426	126°50'48"
21+5,000	V5	425,000	8.258.337,9221	587.649,1026	165,364	126°50'48"



4 – NOTAS DE SERVIÇO DE TERRAPLENAGEM

Nota de Serviço de Terraplenagem

Lado Esquerdo					Eixo					Lado Direito				
Estaca	Offset		Lateral		Bordo		Cota		Vermelha	Cota		Bordo		Offset
	Distância	Altura	Distância	Cota	Distância	Cota	%	Terreno		Projeto	Cota	Distância	Cota	
0	6,2647	170,752	-0,243	5,9000	170,995	171,067	-3,00	170,530	171,172	-0,642	3,5000	171,277	5,9000	171,349
1	6,4104	170,985	-0,062	6,3167	171,047	171,179	-5,50	170,879	171,395	-0,516	3,9167	171,610	6,3167	171,742
2	6,4311	171,213	-0,021	6,4000	171,234	171,378	-6,00	171,156	171,618	-0,462	4,0000	171,858	6,4000	172,002
3	6,6629	171,348	-0,261	6,2714	171,609	171,698	-3,68	171,561	171,840	-0,279	3,8714	171,983	6,2714	172,071
3+8,566	6,7765	171,366	-0,384	6,2000	171,750	171,822	-3,00	171,557	171,936	-0,379	3,8000	172,027	6,2000	172,084
4	6,6475	171,518	-0,362	6,1047	171,880	171,952	-3,00	171,697	172,063	-0,366	3,7047	172,088	6,1047	172,105
5	6,4631	171,758	-0,350	5,9381	172,108	172,180	-3,00	172,045	172,286	-0,241	3,5381	172,204	5,9381	172,148
6	6,4840	172,916	0,584	5,9000	172,332	172,404	-3,00	172,676	172,509	0,167	3,5000	172,404	5,9000	172,332
7	5,9208	172,563	0,021	5,9000	172,542	172,614	-3,00	172,595	172,719	-0,124	3,5000	172,614	5,9000	172,542
8	6,2559	173,086	0,356	5,9000	172,730	172,802	-3,00	172,781	172,907	-0,126	3,5000	172,802	5,9000	172,730
9	6,0315	172,806	-0,088	5,9000	172,894	172,966	-3,00	172,902	173,071	-0,169	3,5000	172,966	5,9000	172,894
10	6,2766	173,411	0,377	5,9000	173,034	173,106	-3,00	173,039	173,211	-0,172	3,5000	173,106	5,9000	173,034
11	6,3895	173,653	0,490	5,9000	173,163	173,235	-3,00	173,163	173,340	-0,177	3,5000	173,235	5,9000	173,163
12	5,9460	173,373	0,046	5,9000	173,327	173,385	-2,40	173,180	173,469	-0,289	3,5000	173,364	5,9000	173,292
13	6,0539	173,698	0,154	5,9000	173,544	173,566	-0,90	173,263	173,598	-0,335	3,5000	173,493	5,9000	173,421
14	5,9597	173,822	0,060	5,9000	173,762	173,747	0,60	173,346	173,726	-0,380	3,5000	173,621	5,9000	173,549
14	5,9597	173,822	0,060	5,9000	173,762	173,747	0,60	173,346	173,726	-0,380	3,5000	173,621	5,9000	173,549
15	6,1977	173,738	-0,198	5,9000	173,936	173,885	2,10	173,479	173,812	-0,333	3,5000	173,707	5,9000	173,635
16	6,5239	173,563	-0,416	5,9000	173,979	173,911	2,86	173,397	173,811	-0,414	3,5000	173,706	5,9000	173,634
17	6,5483	173,414	-0,432	5,9000	173,846	173,814	1,36	173,417	173,766	-0,349	3,5000	173,661	5,9000	173,589
17+10,16	6,5048	173,376	-0,403	5,9000	173,779	173,765	0,60	173,412	173,744	-0,332	3,5000	173,639	5,9000	173,567
18	6,3326	173,426	-0,288	5,9000	173,714	173,717	-0,14	173,414	173,722	-0,308	3,5000	173,617	5,9000	173,545
19	5,9983	173,515	-0,066	5,9000	173,581	173,620	-1,64	173,454	173,677	-0,223	3,5000	173,572	5,9000	173,500
20	5,9971	173,553	0,097	5,9000	173,456	173,528	-3,00	173,378	173,633	-0,255	3,5000	173,528	5,9000	173,456

Nota de Serviço de Terraplenagem

	Lado Esquerdo							Eixo			Lado Direito							
	Offset		Lateral		Bordo			Cota	Terreno	Projeto	Vermelha	Distância	Bordo		Lateral		Offset	
Estaca	Distância	Cota	Altura	Distância	Cota	Distância	Cota	%										
20	5,9971	173,553	0,097	5,9000	173,456	3,5000	173,528	-3,00	173,378	173,633	-0,255	3,5000	173,528	-3,00	5,9000	173,456	6,0082	173,564
21	5,9595	173,470	0,059	5,9000	173,411	3,5000	173,483	-3,00	173,445	173,588	-0,143	3,5000	173,483	-3,00	5,9000	173,411	5,9943	173,505
22	5,9111	173,360	-0,007	5,9000	173,367	3,5000	173,439	-3,00	173,378	173,544	-0,166	3,5000	173,439	-3,00	5,9000	173,367	5,9878	173,455
23	6,0790	173,502	0,179	5,9000	173,323	3,5000	173,395	-3,00	173,347	173,500	-0,153	3,5000	173,395	-3,00	5,9000	173,323	5,9652	173,388
24	6,0717	173,450	0,172	5,9000	173,278	3,5000	173,350	-3,00	173,297	173,455	-0,158	3,5000	173,350	-3,00	5,9000	173,278	6,0630	173,441
25	5,9845	173,318	0,084	5,9000	173,234	3,5000	173,306	-3,00	173,189	173,411	-0,222	3,5000	173,306	-3,00	5,9000	173,234	6,0536	173,388
26	5,9833	173,272	0,083	5,9000	173,189	3,5000	173,261	-3,00	173,068	173,366	-0,298	3,5000	173,261	-3,00	5,9000	173,189	5,9849	173,274
27	5,9293	173,174	0,029	5,9000	173,145	3,5000	173,217	-3,00	172,972	173,322	-0,350	3,5000	173,217	-3,00	5,9000	173,145	5,9427	173,188
28	5,9929	173,038	-0,062	5,9000	173,100	3,5000	173,172	-3,00	172,905	173,277	-0,372	3,5000	173,172	-3,00	5,9000	173,100	5,9804	173,046
29	5,9728	173,007	-0,049	5,9000	173,056	3,5000	173,128	-3,00	172,829	173,233	-0,404	3,5000	173,128	-3,00	5,9000	173,056	5,9184	173,044
30	6,0796	172,892	-0,120	5,9000	173,012	3,5000	173,084	-3,00	172,742	173,189	-0,447	3,5000	173,084	-3,00	5,9000	173,012	6,0641	172,903
31	6,1266	172,816	-0,151	5,9000	172,967	3,5000	173,039	-3,00	172,683	173,144	-0,461	3,5000	173,039	-3,00	5,9000	172,967	6,0557	172,863
32	6,0669	172,812	-0,111	5,9000	172,923	3,5000	172,995	-3,00	172,618	173,100	-0,482	3,5000	172,995	-3,00	5,9000	172,923	6,3224	172,641
33	6,1074	172,740	-0,138	5,9000	172,878	3,5000	172,950	-3,00	172,531	173,055	-0,524	3,5000	172,950	-3,00	5,9000	172,878	6,3744	172,562
34	6,1188	172,688	-0,146	5,9000	172,834	3,5000	172,906	-3,00	172,377	173,011	-0,634	3,5000	172,906	-3,00	5,9000	172,834	6,3363	172,543
35	6,3026	172,521	-0,268	5,9000	172,789	3,5000	172,861	-3,00	172,406	172,966	-0,560	3,5000	172,861	-3,00	5,9000	172,789	6,2677	172,544
36	6,3529	172,443	-0,302	5,9000	172,745	3,5000	172,817	-3,00	172,377	172,922	-0,545	3,5000	172,817	-3,00	5,9000	172,745	6,2124	172,537
37	6,4409	172,339	-0,361	5,9000	172,700	3,5000	172,772	-3,00	172,349	172,877	-0,528	3,5000	172,772	-3,00	5,9000	172,700	6,4816	172,312
38	6,5032	172,254	-0,402	5,9000	172,656	3,5000	172,728	-3,00	172,279	172,833	-0,554	3,5000	172,728	-3,00	5,9000	172,656	6,6020	172,188
39	6,4707	172,232	-0,380	5,9000	172,612	3,5000	172,684	-3,00	172,229	172,789	-0,560	3,5000	172,684	-3,00	5,9000	172,612	6,6308	172,125
40	6,3022	172,299	-0,268	5,9000	172,567	3,5000	172,639	-3,00	172,226	172,744	-0,518	3,5000	172,639	-3,00	5,9000	172,567	6,6835	172,045
41	6,2682	172,278	-0,245	5,9000	172,523	3,5000	172,595	-3,00	172,186	172,700	-0,514	3,5000	172,595	-3,00	5,9000	172,523	6,5764	172,072
42	6,2923	172,216	-0,262	5,9000	172,478	3,5000	172,550	-3,00	171,949	172,655	-0,706	3,5000	172,550	-3,00	5,9000	172,478	6,6062	172,007
43	6,5730	172,053	-0,449	5,9000	172,502	3,5000	172,546	-1,84	172,032	172,611	-0,579	3,5000	172,506	-3,00	5,9000	172,434	6,4140	172,091
44	6,5472	172,093	-0,431	5,9000	172,524	3,5000	172,532	-0,34	171,868	172,544	-0,676	3,5000	172,439	-3,00	5,9000	172,367	6,5683	171,921
44+12,53	6,5881	172,055	-0,459	5,9000	172,514	3,5000	172,499	0,60	171,826	172,478	-0,652	3,5000	172,373	-3,00	5,9000	172,301	6,5307	171,881
45	6,5343	172,076	-0,423	5,9000	172,499	3,5000	172,472	1,16	171,793	172,431	-0,638	3,5000	172,326	-3,00	5,9000	172,254	6,3538	171,951
46	6,6291	171,944	-0,486	5,9000	172,430	3,5000	172,366	2,66	171,659	172,273	-0,614	3,5000	172,168	-3,00	5,9000	172,096	5,9276	172,124
47	6,4754	171,862	-0,384	5,9000	172,246	3,5000	172,174	3,00	171,459	172,069	-0,610	3,5000	171,964	-3,00	5,9000	171,892	6,0370	172,029
48	6,2145	171,809	-0,210	5,9000	172,019	3,5000	171,947	3,00	171,256	171,842	-0,586	3,5000	171,737	-3,00	5,9000	171,665	6,1175	171,882
49	6,9412	171,032	-0,694	5,9000	171,726	3,5000	171,681	1,88	170,428	171,616	-1,188	3,5000	171,550	-1,88	5,9000	171,505	6,5417	171,077

Nota de Serviço de Terraplenagem

Lado Esquerdo										Eixo				Lado Direito							
Offset					Lateral			Bordo		Cota		Cota		Bordo		Lateral		Offset			
Estaca	Distância	Cota	Altura	Distância	Cota	Distância	Cota	%	Terreno	Projeto	Vermelha	Distância	Cota	%	Distância	Cota	Distância	Cota	Altura		
50	7,4693	170,343	-1,046	5,9000	171,389	3,5000	171,389	0,00	169,805	171,389	-1,584	3,5000	171,389	0,00	5,9000	171,389	7,8052	170,119	-1,270		
51	7,5211	169,971	-1,081	5,9000	171,052	3,5000	171,097	-1,88	169,543	171,163	-1,620	3,5000	171,228	1,88	5,9000	171,273	7,5730	170,158	-1,115		
52	6,4565	170,388	-0,371	5,9000	170,759	3,5000	170,831	-3,00	169,716	170,936	-1,220	3,5000	171,041	3,00	5,9000	171,113	6,8365	170,489	-0,624		
53	6,0513	170,431	-0,101	5,9000	170,532	3,5000	170,604	-3,00	169,705	170,709	-1,004	3,5000	170,814	3,00	5,9000	170,886	6,4542	170,517	-0,369		
54	6,8414	169,678	-0,628	5,9000	170,306	3,5000	170,378	-3,00	169,452	170,483	-1,031	3,5000	170,557	2,11	5,9000	170,607	7,0112	169,866	-0,741		
55	6,7028	169,544	-0,535	5,9000	170,079	3,5000	170,151	-3,00	169,148	170,256	-1,108	3,5000	170,277	0,61	5,9000	170,292	7,3166	169,348	-0,944		
55+0,078	6,7030	169,543	-0,535	5,9000	170,078	3,5000	170,150	-3,00	169,147	170,255	-1,108	3,5000	170,276	0,60	5,9000	170,291	7,3170	169,346	-0,945		
56	6,9307	169,166	-0,687	5,9000	169,853	3,5000	169,925	-3,00	168,857	170,030	-1,173	3,5000	169,998	-0,89	5,9000	169,977	7,6256	168,827	-1,150		
57	7,3540	168,657	-0,969	5,9000	169,626	3,5000	169,698	-3,00	168,620	169,803	-1,183	3,5000	169,719	-2,39	5,9000	169,662	7,7103	168,455	-1,207		
58	7,6879	168,227	-1,192	5,9000	169,419	3,5000	169,491	-3,00	168,376	169,596	-1,220	3,5000	169,491	-3,00	5,9000	169,419	7,6947	168,223	-1,196		
59	7,6009	168,118	-1,134	5,9000	169,252	3,5000	169,324	-3,00	168,189	169,429	-1,240	3,5000	169,324	-3,00	5,9000	169,252	7,7425	168,024	-1,228		
60	7,8058	167,853	-1,271	5,9000	169,124	3,5000	169,196	-3,00	168,031	169,301	-1,270	3,5000	169,196	-3,00	5,9000	169,124	7,7118	167,916	-1,208		
61	7,9391	167,677	-1,359	5,9000	169,036	3,5000	169,108	-3,00	167,962	169,213	-1,251	3,5000	169,108	-3,00	5,9000	169,036	7,9130	167,694	-1,342		
62	7,9586	167,595	-1,372	5,9000	168,967	3,5000	169,039	-3,00	167,930	169,144	-1,214	3,5000	169,039	-3,00	5,9000	168,967	7,8365	167,676	-1,291		
63	8,1068	167,427	-1,471	5,9000	168,898	3,5000	168,970	-3,00	167,875	169,075	-1,200	3,5000	168,970	-3,00	5,9000	168,898	8,1020	167,430	-1,468		
64	7,8817	167,508	-1,321	5,9000	168,829	3,5000	168,901	-3,00	167,774	169,006	-1,232	3,5000	168,901	-3,00	5,9000	168,829	8,0308	167,408	-1,421		
65	7,8282	167,476	-1,285	5,9000	168,761	3,5000	168,833	-3,00	167,675	168,938	-1,263	3,5000	168,833	-3,00	5,9000	168,761	7,8959	167,430	-1,331		
66	7,9282	167,340	-1,352	5,9000	168,692	3,5000	168,764	-3,00	167,634	168,869	-1,235	3,5000	168,764	-3,00	5,9000	168,692	7,9503	167,325	-1,367		
67	7,8465	167,339	-1,298	5,9000	168,637	3,5000	168,709	-3,00	167,612	168,814	-1,202	3,5000	168,709	-3,00	5,9000	168,637	7,9549	167,267	-1,370		
68	7,9816	167,223	-1,388	5,9000	168,611	3,5000	168,683	-3,00	167,651	168,788	-1,137	3,5000	168,683	-3,00	5,9000	168,611	7,9625	167,236	-1,375		
69	7,4828	167,544	-1,055	5,9000	168,599	3,5000	168,671	-3,00	167,662	168,776	-1,114	3,5000	168,671	-3,00	5,9000	168,599	7,8514	167,298	-1,301		
70	7,5927	167,459	-1,128	5,9000	168,587	3,5000	168,659	-3,00	167,661	168,764	-1,103	3,5000	168,659	-3,00	5,9000	168,587	7,4312	167,566	-1,021		
71	7,6816	167,388	-1,188	5,9000	168,576	3,5000	168,648	-3,00	167,612	168,753	-1,141	3,5000	168,648	-3,00	5,9000	168,576	7,4210	167,562	-1,014		
72	7,6516	167,396	-1,168	5,9000	168,564	3,5000	168,636	-3,00	167,590	168,741	-1,151	3,5000	168,636	-3,00	5,9000	168,564	7,6849	167,374	-1,190		
73	7,7053	167,348	-1,204	5,9000	168,552	3,5000	168,624	-3,00	167,551	168,729	-1,178	3,5000	168,624	-3,00	5,9000	168,552	7,7849	167,295	-1,257		
74	7,6859	167,349	-1,191	5,9000	168,540	3,5000	168,612	-3,00	167,553	168,717	-1,164	3,5000	168,612	-3,00	5,9000	168,540	7,8154	167,263	-1,277		
75	7,6440	167,365	-1,163	5,9000	168,528	3,5000	168,600	-3,00	167,559	168,705	-1,146	3,5000	168,600	-3,00	5,9000	168,528	7,7718	167,280	-1,248		
76	7,5830	167,394	-1,122	5,9000	168,516	3,5000	168,588	-3,00	167,528	168,693	-1,165	3,5000	168,588	-3,00	5,9000	168,516	7,7541	167,280	-1,236		
77	7,2278	167,619	-0,885	5,9000	168,504	3,5000	168,576	-3,00	167,510	168,681	-1,171	3,5000	168,576	-3,00	5,9000	168,504	7,6801	167,317	-1,187		
78	7,5215	167,411	-1,081	5,9000	168,492	3,5000	168,564	-3,00	167,467	168,669	-1,202	3,5000	168,564	-3,00	5,9000	168,492	7,7464	167,261	-1,231		
79	7,8290	167,195	-1,286	5,9000	168,481	3,5000	168,553	-3,00	167,481	168,658	-1,177	3,5000	168,553	-3,00	5,9000	168,481	7,8549	167,178	-1,303		

Nota de Serviço de Terraplenagem

Lado Esquerdo										Eixo				Lado Direito										
Estaca	Offset			Lateral			Bordo			%	Terreno	Projeto	Cota	Vermelha	Cota	Bordo			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota		Distância	Cota								Distância	Cota	%	Distância	Cota	Distância	Cota	Altura	
80	7,9350	167,112	-1,357	5,9000	168,469	3,5000	168,541	-3,00	167,499	168,646	-1,147	3,5000	168,541	-3,00	5,9000	168,469	8,0271	167,051	-1,418					
81	8,0078	167,052	-1,405	5,9000	168,457	3,5000	168,529	-3,00	167,464	168,634	-1,170	3,5000	168,529	-3,00	5,9000	168,457	7,9644	167,081	-1,376					
82	7,9915	167,053	-1,394	5,9000	168,447	3,5000	168,519	-3,00	167,454	168,624	-1,170	3,5000	168,519	-3,00	5,9000	168,447	7,9514	167,079	-1,368					
82+7,267	7,9567	167,074	-1,371	5,9000	168,445	3,5000	168,517	-3,00	167,459	168,622	-1,163	3,5000	168,517	-3,00	5,9000	168,445	7,9625	167,070	-1,375					
83	7,7983	167,177	-1,266	5,9000	168,443	3,5000	168,515	-3,00	167,487	168,620	-1,133	3,5000	168,515	-3,00	5,9000	168,443	8,0040	167,040	-1,403					
84	7,8844	167,120	-1,323	5,9000	168,443	3,5000	168,515	-3,00	167,489	168,620	-1,131	3,5000	168,515	-3,00	5,9000	168,443	7,9961	167,046	-1,399					
85	7,7607	167,208	-1,241	5,9000	168,449	3,5000	168,521	-3,00	167,497	168,626	-1,129	3,5000	168,521	-3,00	5,9000	168,449	7,9821	167,061	-1,388					
86	7,7224	167,242	-1,215	5,9000	168,457	3,5000	168,529	-3,00	167,502	168,634	-1,132	3,5000	168,529	-3,00	5,9000	168,457	7,9735	167,075	-1,382					
87	8,0066	167,061	-1,404	5,9000	168,465	3,5000	168,537	-3,00	167,527	168,642	-1,115	3,5000	168,537	-3,00	5,9000	168,465	7,9235	167,116	-1,349					
88	8,0044	167,070	-1,403	5,9000	168,473	3,5000	168,545	-3,00	167,475	168,650	-1,175	3,5000	168,545	-3,00	5,9000	168,473	7,9072	167,135	-1,338					
89	7,9153	167,137	-1,344	5,9000	168,481	3,5000	168,553	-3,00	167,457	168,658	-1,201	3,5000	168,553	-3,00	5,9000	168,481	8,1213	167,000	-1,481					
90	8,0186	167,077	-1,412	5,9000	168,489	3,5000	168,561	-3,00	167,464	168,666	-1,202	3,5000	168,561	-3,00	5,9000	168,489	8,0145	167,079	-1,410					
91	8,2210	166,950	-1,547	5,9000	168,497	3,5000	168,569	-3,00	167,491	168,674	-1,183	3,5000	168,569	-3,00	5,9000	168,497	8,0447	167,067	-1,430					
92	8,2074	166,966	-1,538	5,9000	168,504	3,5000	168,576	-3,00	167,487	168,681	-1,194	3,5000	168,576	-3,00	5,9000	168,504	8,1756	166,987	-1,517					
93	8,1849	166,989	-1,523	5,9000	168,512	3,5000	168,584	-3,00	167,508	168,689	-1,181	3,5000	168,584	-3,00	5,9000	168,512	8,2295	166,959	-1,553					
94	8,1688	167,007	-1,513	5,9000	168,520	3,5000	168,592	-3,00	167,485	168,697	-1,212	3,5000	168,592	-3,00	5,9000	168,520	7,6977	167,322	-1,198					
95	7,9171	167,183	-1,345	5,9000	168,528	3,5000	168,600	-3,00	167,475	168,705	-1,230	3,5000	168,600	-3,00	5,9000	168,528	7,9875	167,136	-1,392					
96	7,9806	167,149	-1,387	5,9000	168,536	3,5000	168,608	-3,00	167,504	168,713	-1,209	3,5000	168,608	-3,00	5,9000	168,536	7,9829	167,147	-1,389					
97	7,8068	167,273	-1,271	5,9000	168,544	3,5000	168,616	-3,00	167,584	168,721	-1,137	3,5000	168,616	-3,00	5,9000	168,544	7,6161	167,400	-1,144					
98	7,5991	167,419	-1,133	5,9000	168,552	3,5000	168,624	-3,00	167,683	168,729	-1,046	3,5000	168,624	-3,00	5,9000	168,552	7,3228	167,603	-0,949					
99	7,4197	167,529	-1,013	5,9000	168,542	3,5000	168,614	-3,00	167,664	168,719	-1,055	3,5000	168,614	-3,00	5,9000	168,542	7,0627	167,767	-0,775					
100	7,0111	167,754	-0,741	5,9000	168,495	3,5000	168,567	-3,00	167,752	168,672	-0,920	3,5000	168,567	-3,00	5,9000	168,495	7,0416	167,734	-0,761					
101	6,6550	167,910	-0,503	5,9000	168,413	3,5000	168,485	-3,00	167,826	168,590	-0,764	3,5000	168,485	-3,00	5,9000	168,413	6,6734	167,897	-0,516					
102	6,4681	167,914	-0,379	5,9000	168,293	3,5000	168,365	-3,00	167,673	168,470	-0,797	3,5000	168,365	-3,00	5,9000	168,293	6,5240	167,877	-0,416					
103	6,5619	167,715	-0,441	5,9000	168,156	3,5000	168,228	-3,00	167,658	168,333	-0,675	3,5000	168,228	-3,00	5,9000	168,156	6,5736	167,707	-0,449					
104	6,5942	167,556	-0,463	5,9000	168,019	3,5000	168,091	-3,00	167,297	168,196	-0,899	3,5000	168,091	-3,00	5,9000	168,019	6,5190	167,606	-0,413					
105	6,7537	167,312	-0,569	5,9000	167,881	3,5000	167,953	-3,00	167,064	168,058	-0,994	3,5000	167,953	-3,00	5,9000	167,881	6,7571	167,310	-0,571					
106	6,8752	167,094	-0,650	5,9000	167,744	3,5000	167,816	-3,00	166,760	167,921	-1,161	3,5000	167,816	-3,00	5,9000	167,744	7,0314	166,990	-0,754					
107	7,3106	166,667	-0,940	5,9000	167,607	3,5000	167,679	-3,00	166,568	167,784	-1,216	3,5000	167,679	-3,00	5,9000	167,607	7,4650	166,564	-1,043					
108	7,7034	166,267	-1,202	5,9000	167,469	3,5000	167,541	-3,00	166,396	167,646	-1,250	3,5000	167,541	-3,00	5,9000	167,469	7,7200	166,256	-1,213					
109	8,0468	165,901	-1,431	5,9000	167,332	3,5000	167,404	-3,00	166,139	167,509	-1,370	3,5000	167,404	-3,00	5,9000	167,332	8,0567	165,894	-1,438					

Nota de Serviço de Terraplenagem

Lado Esquerdo										Eixo				Lado Direito											
	Offset			Lateral			Bordo			%	Cota	Terreno	Projeto	Vermelha	Cota	Bordo			Lateral			Offset			
	Distância	Cota	Altura	Distância	Cota		Distância	Cota								Distância	Cota	%	Distância	Cota	Distância	Cota	Distância	Cota	Altura
Estaca	Distância	Cota	Altura	Distância	Cota		Distância	Cota		%	Cota	Terreno	Projeto	Vermelha	Cota		Distância	Cota	%	Distância	Cota	Distância	Cota	Altura	
1110	8,0433	165,766	-1,429	5,9000	167,195		3,5000	167,267		-3,00	166,064	167,372	167,372	-1,308	3,5000	167,267		3,5000	167,195	-3,00	5,9000	167,195	8,4481	165,496	-1,699
1111	7,9324	165,702	-1,355	5,9000	167,057		3,5000	167,129		-3,00	166,022	167,234	167,234	-1,212	3,5000	167,129		3,5000	167,057	-3,00	5,9000	167,057	8,1668	165,546	-1,511
1112	7,6388	165,761	-1,159	5,9000	166,920		3,5000	166,992		-3,00	166,088	167,097	167,097	-1,009	3,5000	166,992		3,5000	166,920	-3,00	5,9000	166,920	7,6756	165,736	-1,184
1113	7,6051	165,727	-1,052	6,0273	166,779		3,6273	166,851		-3,00	166,130	166,960	166,960	-0,830	3,6273	166,929		3,6273	166,909	-0,85	6,0273	166,909	7,8914	165,666	-1,243
1113+6,34	7,5624	165,742	-0,990	6,0773	166,732		3,6773	166,804		-3,00	166,096	166,914	166,914	-0,818	3,6773	166,914		3,6773	166,914	0,00	6,0773	166,914	7,8792	165,713	-1,201
1114	7,3972	165,810	-0,808	6,1848	166,618		3,7848	166,690		-3,00	165,996	166,803	166,803	-0,807	3,7848	166,872		3,7848	166,916	1,82	6,1848	166,916	7,8224	165,824	-1,092
1115	6,7796	166,034	-0,291	6,3424	166,325		3,9424	166,432		-4,49	165,734	166,609	166,609	-0,875	3,9424	166,786		3,9424	166,894	4,49	6,3424	166,894	7,8457	165,892	-1,002
1116	7,0328	165,557	-0,355	6,5000	165,912		4,1000	166,084		-7,15	165,335	166,377	166,377	-1,042	4,1000	166,671		4,1000	166,842	7,15	6,5000	166,842	8,4143	165,566	-1,276
1116+6,34	7,0029	165,470	-0,302	6,5500	165,772		4,1500	165,964		-8,00	165,210	166,296	166,296	-1,086	4,1500	166,628		4,1500	166,820	8,00	6,5500	166,820	8,7930	165,325	-1,495
1117	6,8602	165,377	-0,207	6,5500	165,584		4,1500	165,776		-8,00	164,920	166,108	166,108	-1,188	4,1500	166,440		4,1500	166,632	8,00	6,5500	166,632	8,8722	165,084	-1,548
1118	6,6031	165,260	-0,035	6,5500	165,295		4,1500	165,487		-8,00	164,689	165,819	165,819	-1,130	4,1500	166,151		4,1500	166,343	8,00	6,5500	166,343	8,8998	164,776	-1,567
1119	6,6890	165,146	0,139	6,5500	165,007		4,1500	165,199		-8,00	164,623	165,531	165,531	-0,908	4,1500	165,863		4,1500	166,055	8,00	6,5500	166,055	8,7704	164,575	-1,480
1119+12,2	6,5916	164,872	0,042	6,5500	164,830		4,1500	165,022		-8,00	164,404	165,354	165,354	-0,950	4,1500	165,686		4,1500	165,878	8,00	6,5500	165,878	8,6398	164,485	-1,393
1120	6,6136	164,707	-0,083	6,4889	164,790		4,0889	164,957		-6,97	164,268	165,242	165,242	-0,974	4,0889	165,527		4,0889	165,694	6,97	6,4889	165,694	8,4835	164,364	-1,330
1121	6,9619	164,261	-0,420	6,3313	164,681		3,9313	164,784		-4,30	163,974	164,953	164,953	-0,979	3,9313	165,122		3,9313	165,225	4,30	6,3313	165,225	8,3982	163,847	-1,378
1122	7,2096	163,768	-0,691	6,1737	164,459		3,7737	164,531		-3,00	163,573	164,645	164,645	-1,072	3,7737	164,706		3,7737	164,745	1,63	6,1737	164,745	7,7361	163,703	-1,042
1122+12,2	7,2767	163,453	-0,800	6,0773	164,253		3,6773	164,325		-3,00	163,404	164,436	164,436	-1,032	3,6773	164,436		3,6773	164,436	0,00	6,0773	164,436	7,5319	163,466	-0,970
1123	7,1705	163,345	-0,770	6,0161	164,115		3,6161	164,187		-3,00	163,315	164,296	164,296	-0,981	3,6161	164,258		3,6161	164,233	-1,03	6,0161	164,233	7,3352	163,354	-0,879
1124	6,5293	163,310	-0,419	5,9000	163,729		3,5000	163,801		-3,00	163,014	163,906	163,906	-0,892	3,5000	163,801		3,5000	163,729	-3,00	5,9000	163,729	6,8033	163,127	-0,602
1125	6,4756	162,916	-0,384	5,9000	163,300		3,5000	163,372		-3,00	162,281	163,477	163,477	-1,196	3,5000	163,372		3,5000	163,300	-3,00	5,9000	163,300	6,9145	162,624	-0,676
1126	6,8283	162,505	-0,504	6,0719	163,009		3,6719	163,017		-0,30	161,501	163,028	163,028	-1,527	3,6719	162,917		3,6719	162,845	-3,00	6,0719	162,845	7,4301	161,940	-0,905
1126+19,4	7,4620	162,056	-0,761	6,3200	162,817		3,9200	162,731		3,60	161,431	162,589	162,589	-1,158	3,9200	162,448		3,9200	162,362	-3,60	6,3200	162,362	8,1464	161,144	-1,218
1127	7,4855	162,039	-0,773	6,3265	162,812		3,9265	162,723		3,70	161,429	162,578	162,578	-1,149	3,9265	162,433		3,9265	162,344	-3,70	6,3265	162,344	8,1721	161,114	-1,230
1128	8,4596	161,383	-1,252	6,5810	162,635		4,1810	162,450		7,70	161,291	162,129	162,129	-0,838	4,1810	161,807		4,1810	161,622	-7,70	6,5810	161,622	8,5910	160,282	-1,340
1129	9,0106	160,600	-1,607	6,6000	162,207		4,2000	162,015		8,00	160,420	161,679	161,679	-1,259	4,2000	161,343		4,2000	161,151	-8,00	6,6000	161,151	8,5450	159,854	-1,297
1130	10,3190	159,332	-2,479	6,6000	161,811		4,2000	161,619		8,00	159,169	161,283	161,283	-2,114	4,2000	160,947		4,2000	160,755	-8,00	6,6000	160,755	9,0331	159,133	-1,622
1131	11,2779	158,404	-3,119	6,6000	161,523		4,2000	161,331		8,00	158,848	160,995	160,995	-2,147	4,2000	160,659		4,2000	160,467	-8,00	6,6000	160,467	9,2195	158,721	-1,746
1132	13,1245	156,992	-4,350	6,6000	161,342		4,2000	161,150		8,00	158,782	160,814	160,814	-2,032	4,2000	160,478		4,2000	160,286	-8,00	6,6000	160,286	10,1967	157,888	-2,398
1132+2,85	13,4000	156,792	-4,533	6,6000	161,325		4,2000	161,133		8,00	157,404	160,797	160,797	-3,393	4,2000	160,461		4,2000	160,269	-8,00	6,6000	160,269	10,5566	157,631	-2,638
1133	13,9686	156,226	-4,971	6,5123	161,197		4,1123	161,029		7,00	158,388	160,741	160,741	-2,353	4,1123	160,454		4,1123	160,286	-7,00	6,5123	160,286	13,1668	155,850	-4,436
1133+15,9	12,5952	156,787	-4,211	6,2793	160,998		3,8793	160,894		4,34	158,805	160,726	160,726	-1,921	3,8793	160,558		3,8793	160,454	-4,34	6,2793	160,454	13,5813	155,586	-4,868

Nota de Serviço de Terraplenagem

	Lado Esquerdo										Eixo				Lado Direito						
	Offset			Lateral			Bordo				Cota	Terreno	Projeto	Vermelha	Bordo		%	Lateral		Offset	
Estaca	Distância	Cota	Altura	Distância	Cota	%	Distância	Cota							Distância	Cota		Distância	Cota	Distância	Altura
134	12,5132	156,755	-4,195	6,2208	160,950	3,67	3,8208	160,862		158,806	160,722	-1,916	3,8208	160,582	-3,67	6,2208	160,494	13,6715	155,527		-4,967
135	12,2088	156,537	-4,186	5,9293	160,723	0,33	3,5293	160,714		158,724	160,703	-1,979	3,5293	160,691	-0,33	5,9293	160,683	13,7939	155,440		-5,243
136	12,5202	156,260	-4,239	6,1622	160,499	-3,00	3,7622	160,571		158,752	160,683	-1,931	3,7622	160,796	3,00	6,1622	160,868	14,3838	155,387		-5,481
136+8,03	12,2664	156,416	-3,991	6,2793	160,407	-4,34	3,8793	160,511		158,726	160,679	-1,953	3,8793	160,847	4,34	6,2793	160,951	14,3266	155,586		-5,365
137	11,7104	156,771	-3,504	6,4537	160,275	-6,33	4,0537	160,427		158,747	160,684	-1,937	4,0537	160,940	6,33	6,4537	161,092	13,6979	156,262		-4,830
138	10,3087	157,724	-2,472	6,6000	160,196	-8,00	4,2000	160,388		158,834	160,724	-1,890	4,2000	161,060	8,00	6,6000	161,252	12,4619	157,344		-3,908
139	8,8890	158,730	-1,526	6,6000	160,256	-8,00	4,2000	160,448		159,114	160,784	-1,670	4,2000	161,120	8,00	6,6000	161,312	9,5113	159,371		-1,941
140	6,8716	160,714	0,305	6,5668	160,409	-7,48	4,1668	160,588		159,789	160,900	-1,111	4,1668	161,212	7,48	6,5668	161,391	8,7746	159,919		-1,472
140+19,3	7,1406	161,715	0,821	6,3200	160,894	-3,60	3,9200	160,980		160,729	161,121	-0,392	3,9200	161,262	3,60	6,3200	161,349	7,2350	160,739		-0,610
141	7,1014	161,699	0,789	6,3122	160,910	-3,48	3,9122	160,994		160,753	161,130	-0,377	3,9122	161,266	3,48	6,3122	161,349	7,1833	160,768		-0,581
142	4,1577	161,632	0,283	4,1577	161,349	-3,00	3,6577	161,364		161,486	161,473	0,013	3,6577	161,454	-0,52	4,1577	161,452	4,1577	162,175		0,723
143	4,0000	162,246	0,436	4,0000	161,810	-3,00	3,5000	161,825		162,033	161,930	0,103	3,5000	161,825	-3,00	4,0000	161,810	4,0000	163,134		1,324
144	4,0000	163,102	0,770	4,0000	162,332	-3,00	3,5000	162,347		162,802	162,452	0,350	3,5000	162,347	-3,00	4,0000	162,332	4,0000	163,091		0,759
145	4,0000	163,551	0,680	4,0000	162,871	-3,00	3,5000	162,886		163,589	162,991	0,598	3,5000	162,886	-3,00	4,0000	162,871	4,0000	163,894		1,023
146	4,0000	164,155	0,736	4,0000	163,419	-3,00	3,5000	163,434		164,190	163,539	0,651	3,5000	163,434	-3,00	4,0000	163,419	4,0000	164,250		0,831
147	4,0000	164,745	0,728	4,0000	164,017	-1,71	3,5000	164,026		164,583	164,086	0,497	3,5000	163,981	-3,00	4,0000	163,966	4,0000	164,935		0,969
148	4,0000	165,166	0,611	4,0000	164,555	-0,21	3,5000	164,556		165,041	164,563	0,478	3,5000	164,458	-3,00	4,0000	164,443	4,0000	165,209		0,766
148+10,8	4,0000	165,205	0,418	4,0000	164,787	0,60	3,5000	164,784		165,235	164,763	0,472	3,5000	164,658	-3,00	4,0000	164,643	4,0000	165,397		0,754
149	4,0000	165,331	0,379	4,0000	164,952	1,29	3,5000	164,946		165,318	164,901	0,417	3,5000	164,796	-3,00	4,0000	164,781	4,0000	165,342		0,561
150	4,0000	165,627	0,347	4,0000	165,280	2,79	3,5000	165,266		165,506	165,169	0,337	3,5000	165,064	-3,00	4,0000	165,049	4,0000	165,625		0,576
151	4,0000	165,840	0,284	4,0000	165,556	3,00	3,5000	165,541		165,665	165,436	0,229	3,5000	165,331	-3,00	4,0000	165,316	4,0000	165,933		0,617
152	4,0000	166,540	0,715	4,0000	165,825	3,00	3,5000	165,810		166,049	165,705	0,344	3,5000	165,600	-3,00	4,0000	165,585	4,4470	165,287		-0,298
153	4,0000	166,726	0,869	4,0000	165,857	-3,00	3,5000	165,872		166,685	165,977	0,708	3,5000	165,872	-3,00	4,0000	165,857	4,0000	166,231		0,374
153+18,3	4,0000	166,807	0,698	4,0000	166,109	-3,00	3,5000	166,124		166,765	166,229	0,536	3,5000	166,124	-3,00	4,0000	166,109	4,0000	166,969		0,860
154	4,0000	166,797	0,666	4,0000	166,131	-3,00	3,5000	166,146		166,751	166,251	0,500	3,5000	166,146	-3,00	4,0000	166,131	4,0000	166,868		0,737
155	4,0000	166,949	0,545	4,0000	166,404	-3,00	3,5000	166,419		166,896	166,524	0,372	3,5000	166,419	-3,00	4,0000	166,404	4,0000	166,975		0,571
156	4,0000	167,234	0,556	4,0000	166,678	-3,00	3,5000	166,693		167,155	166,798	0,357	3,5000	166,693	-3,00	4,0000	166,678	4,0000	167,437		0,759
157	4,0000	167,514	0,577	4,0000	166,937	-3,00	3,5000	166,952		167,425	167,057	0,368	3,5000	166,952	-3,00	4,0000	166,937	4,0000	167,585		0,648
158	4,0000	167,740	0,573	4,0000	167,167	-3,00	3,5000	167,182		167,731	167,287	0,444	3,5000	167,182	-3,00	4,0000	167,167	4,0000	167,755		0,588
159	4,0000	167,892	0,509	4,0000	167,383	-3,00	3,5000	167,398		167,981	167,503	0,478	3,5000	167,398	-3,00	4,0000	167,383	4,0000	168,036		0,653
160	4,0000	168,205	0,606	4,0000	167,599	-3,00	3,5000	167,614		168,193	167,719	0,474	3,5000	167,614	-3,00	4,0000	167,599	4,0000	168,272		0,673

Nota de Serviço de Terraplenagem

Lado Esquerdo										Eixo				Lado Direito															
Estaca	Offset			Lateral			Bordo			Cota		Terreno	Projeto		Vermelha	Cota		Bordo			%			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	Distância	Cota	%	Cota	Projeto	Distância		Cota	Distância		Cota	Distância	Cota	Distância	Cota	Distância	Cota	Distância	Cota	Altura				
161	4,0000	168,328	0,513	4,0000	167,815	3,5000	167,830	-3,00	168,320	167,935	0,385	3,5000	167,830	-3,00	4,0000	167,815	4,0000	167,830	-3,00	4,0000	167,815	4,0000	168,330	0,515					
161+12,1	4,0000	168,458	0,532	4,0000	167,926	3,5000	167,941	-3,00	168,495	168,046	0,449	3,5000	167,941	-3,00	4,0000	167,926	4,0000	167,941	-3,00	4,0000	167,926	4,0000	168,532	0,606					
162	4,0000	168,364	0,388	4,0000	167,976	3,5000	167,991	-3,00	168,432	168,096	0,336	3,5000	167,991	-3,00	4,0000	167,976	4,0000	167,991	-3,00	4,0000	167,976	4,0000	168,508	0,532					
163	4,0000	168,537	0,509	4,0000	168,028	3,5000	168,043	-3,00	168,533	168,148	0,385	3,5000	168,043	-3,00	4,0000	168,028	4,0000	168,043	-3,00	4,0000	168,028	4,0000	168,644	0,616					
164	4,0000	168,578	0,553	4,0000	168,025	3,5000	168,040	-3,00	168,690	168,145	0,545	3,5000	168,040	-3,00	4,0000	168,025	4,0000	168,040	-3,00	4,0000	168,025	4,0000	168,701	0,676					
165	4,0000	168,612	0,590	4,0000	168,022	3,5000	168,037	-3,00	168,692	168,142	0,550	3,5000	168,037	-3,00	4,0000	168,022	4,0000	168,037	-3,00	4,0000	168,022	4,0000	168,725	0,703					
166	4,0000	168,551	0,533	4,0000	168,018	3,5000	168,033	-3,00	168,639	168,138	0,501	3,5000	168,033	-3,00	4,0000	168,018	4,0000	168,033	-3,00	4,0000	168,018	4,0000	168,625	0,607					
167	4,0000	168,445	0,430	4,0000	168,015	3,5000	168,030	-3,00	168,540	168,135	0,405	3,5000	168,030	-3,00	4,0000	168,015	4,0000	168,030	-3,00	4,0000	168,015	4,0000	168,531	0,516					
168	4,0000	168,320	0,359	4,0000	167,961	3,5000	167,976	-3,00	168,444	168,081	0,363	3,5000	167,976	-3,00	4,0000	167,961	4,0000	167,976	-3,00	4,0000	167,961	4,0000	168,629	0,668					
169	4,0000	168,320	0,515	4,0000	167,805	3,5000	167,820	-3,00	168,434	167,925	0,509	3,5000	167,820	-3,00	4,0000	167,805	4,0000	167,820	-3,00	4,0000	167,805	4,0000	168,317	0,512					
170	4,0000	168,153	0,555	4,0000	167,598	3,5000	167,613	-3,00	168,232	167,718	0,514	3,5000	167,613	-3,00	4,0000	167,598	4,0000	167,613	-3,00	4,0000	167,598	4,0000	168,207	0,609					
171	4,0000	167,700	0,309	4,0000	167,391	3,5000	167,406	-3,00	167,775	167,511	0,284	3,5000	167,406	-3,00	4,0000	167,391	4,0000	167,406	-3,00	4,0000	167,391	4,0000	167,902	0,511					
172	4,0000	167,554	0,370	4,0000	167,184	3,5000	167,199	-3,00	167,461	167,304	0,157	3,5000	167,199	-3,00	4,0000	167,184	4,0000	167,199	-3,00	4,0000	167,184	4,0000	167,593	0,409					
173	4,0000	167,411	0,500	4,0000	166,911	3,5000	166,926	-3,00	167,142	167,031	0,111	3,5000	166,926	-3,00	4,0000	166,911	4,0000	166,926	-3,00	4,0000	166,911	4,0000	167,271	0,360					
174	4,0000	166,760	0,253	4,0000	166,507	3,5000	166,522	-3,00	166,609	166,627	-0,018	3,5000	166,522	-3,00	4,0000	166,507	4,0000	166,522	-3,00	4,0000	166,507	4,0000	166,819	0,312					
175	4,0000	166,245	0,209	4,0000	166,036	3,5000	166,051	-3,00	166,256	166,156	0,100	3,5000	166,051	-3,00	4,0000	166,036	4,0000	166,051	-3,00	4,0000	166,036	4,0000	166,481	0,445					
175+10,0	4,0000	166,187	0,386	4,0000	165,801	3,5000	165,816	-3,00	166,230	165,921	0,309	3,5000	165,816	-3,00	4,0000	165,801	4,0000	165,816	-3,00	4,0000	165,801	4,0000	166,310	0,509					

Nota de Serviço de Terraplenagem

Lado Esquerdo										Eixo					Lado Direito							
Estaca	Offset			Lateral			Bordo		Cota		Terreno	Projeto	Vermelha	Bordo		Lateral		Offset				
	Distância	Cota	Altura	Distância	Cota	%	Distância	Cota	Distância	Cota				Distância	Cota	Distância	Cota	Distância	Cota	Altura		
0	4,0000	167,461	0,494	4,0000	166,967	166,982	-3,00	167,325	167,087	0,238	3,5000	166,982	-3,00	4,0000	166,967	4,0000	167,429	0,462				
0+12,767	4,0000	167,237	0,172	4,0000	167,065	167,080	-3,00	167,310	167,185	0,125	3,5000	167,080	-3,00	4,0000	167,065	4,0000	167,382	0,317				
1	4,0000	167,280	0,192	4,0000	167,088	167,103	-3,00	167,387	167,208	0,179	3,5000	167,103	-3,00	4,0000	167,088	4,0000	167,464	0,376				
1+8,214	4,0000	167,384	0,297	4,0000	167,087	167,102	-3,00	167,477	167,207	0,270	3,5000	167,102	-3,00	4,0000	167,087	4,0000	167,546	0,459				
2	4,0000	167,204	0,172	4,0000	167,032	167,047	-3,00	167,261	167,152	0,109	3,5000	167,047	-3,00	4,0000	167,032	4,0000	167,350	0,318				
2+6,278	4,0000	167,048	0,071	4,0000	166,977	166,992	-3,00	167,083	167,097	-0,014	3,5000	166,992	-3,00	4,0000	166,977	4,0000	167,178	0,201				
3	4,0000	166,882	0,086	4,0000	166,796	166,811	-3,00	166,855	166,916	-0,061	3,5000	166,811	-3,00	4,0000	166,796	4,0000	166,842	0,046				
3+4,342	4,0000	166,853	0,132	4,0000	166,721	166,736	-3,00	166,803	166,841	-0,038	3,5000	166,736	-3,00	4,0000	166,721	4,2086	166,582	-0,139				
3+5,634	4,0000	166,848	0,150	4,0000	166,698	166,713	-3,00	166,755	166,818	-0,063	3,5000	166,713	-3,00	4,0000	166,698	4,2825	166,510	-0,188				
3+18,401	4,0000	166,725	0,303	4,0000	166,422	166,437	-3,00	166,601	166,542	0,059	3,5000	166,437	-3,00	4,0000	166,422	4,0000	166,682	0,260				

Nota de Serviço de Terraplenagem

Lado Esquerdo										Eixo				Lado Direito											
Offset					Bordo					Cota		Cota		Bordo				Lateral				Offset			
Estaca	Distância	Cota	Altura	Distância	Cota	Distância	Cota	%	Terreno	Projeto	Cota	Vermelha	Distância	Cota	%	Distância	Cota	Distância	Cota	Distância	Cota	Altura			
0	4,0000	166,778	0,592	4,0000	166,186	3,5000	166,201	-3,00	166,794	166,306	0,488	3,5000	166,201	-3,00	4,0000	166,186	4,0000	166,186	4,0000	166,799	0,613				
1	4,0000	166,853	0,717	4,0000	166,136	3,5000	166,151	-3,00	166,868	166,256	0,612	3,5000	166,151	-3,00	4,0000	166,136	4,0000	166,136	4,0000	166,870	0,734				
2	4,0000	166,661	0,575	4,0000	166,086	3,5000	166,101	-3,00	166,689	166,206	0,483	3,5000	166,101	-3,00	4,0000	166,086	4,0000	166,086	4,0000	166,766	0,680				
3	4,0000	166,702	0,666	4,0000	166,036	3,5000	166,051	-3,00	166,703	166,156	0,547	3,5000	166,051	-3,00	4,0000	166,036	4,0000	166,036	4,0000	166,685	0,649				
4	4,0000	166,689	0,704	4,0000	165,985	3,5000	166,000	-3,00	166,693	166,105	0,588	3,5000	166,000	-3,00	4,0000	165,985	4,0000	165,985	4,0000	166,697	0,712				
4+10,605	4,0000	166,609	0,650	4,0000	165,959	3,5000	165,974	-3,00	166,594	166,079	0,515	3,5000	165,974	-3,00	4,0000	165,959	4,0000	165,959	4,0000	166,652	0,693				
5	4,0000	166,498	0,563	4,0000	165,935	3,5000	165,950	-3,00	166,536	166,055	0,481	3,5000	165,950	-3,00	4,0000	165,935	4,0000	165,935	4,0000	166,629	0,694				
5+12,000	4,0000	166,449	0,529	4,0000	165,920	3,5000	165,935	-3,00	166,440	166,040	0,400	3,5000	165,935	-3,00	4,0000	165,920	4,0000	165,920	4,0000	166,607	0,687				
6	4,0000	166,372	0,445	4,0000	165,927	3,5000	165,942	-3,00	166,466	166,047	0,419	3,5000	165,942	-3,00	4,0000	165,927	4,0000	165,927	4,0000	166,601	0,674				
7	4,0000	166,470	0,466	4,0000	166,004	3,5000	166,019	-3,00	166,548	166,124	0,424	3,5000	166,019	-3,00	4,0000	166,004	4,0000	166,004	4,0000	166,607	0,603				
7+17,754	4,0000	166,679	0,570	4,0000	166,109	3,5000	166,124	-3,00	166,719	166,229	0,490	3,5000	166,124	-3,00	4,0000	166,109	4,0000	166,109	4,0000	166,755	0,646				
8	4,0000	166,667	0,544	4,0000	166,123	3,5000	166,138	-3,00	166,741	166,243	0,498	3,5000	166,138	-3,00	4,0000	166,123	4,0000	166,123	4,0000	166,778	0,655				
9	4,0000	166,648	0,407	4,0000	166,241	3,5000	166,256	-3,00	166,723	166,361	0,362	3,5000	166,256	-3,00	4,0000	166,241	4,0000	166,241	4,0000	166,726	0,485				
10	4,0000	166,684	0,374	4,0000	166,310	3,5000	166,325	-3,00	166,807	166,430	0,377	3,5000	166,325	-3,00	4,0000	166,310	4,0000	166,310	4,0000	167,183	0,873				
10+4,612	4,0000	166,684	0,373	4,0000	166,311	3,5000	166,326	-3,00	166,826	166,431	0,395	3,5000	166,326	-3,00	4,0000	166,311	4,0000	166,311	4,0000	167,282	0,971				
11	4,0000	166,709	0,432	4,0000	166,277	3,5000	166,292	-3,00	166,866	166,397	0,469	3,5000	166,292	-3,00	4,0000	166,277	4,0000	166,277	4,0000	166,987	0,710				
11+8,384	4,0000	166,670	0,427	4,0000	166,243	3,5000	166,258	-3,00	166,752	166,363	0,389	3,5000	166,258	-3,00	4,0000	166,243	4,0000	166,243	4,0000	166,910	0,667				
12	4,0000	166,599	0,404	4,0000	166,195	3,5000	166,210	-3,00	166,692	166,315	0,377	3,5000	166,210	-3,00	4,0000	166,195	4,0000	166,195	4,0000	166,846	0,651				
12+8,659	4,0000	166,568	0,409	4,0000	166,159	3,5000	166,174	-3,00	166,573	166,279	0,294	3,5000	166,174	-3,00	4,0000	166,159	4,0000	166,159	4,0000	166,790	0,631				
13	4,0000	166,507	0,395	4,0000	166,112	3,5000	166,127	-3,00	166,462	166,232	0,230	3,5000	166,127	-3,00	4,0000	166,112	4,0000	166,112	4,0000	166,662	0,550				
14	4,0000	166,415	0,393	4,0000	166,022	3,5000	166,037	-3,00	166,453	166,142	0,311	3,5000	166,037	-3,00	4,0000	166,022	4,0000	166,022	4,0000	166,546	0,524				
15	4,0000	166,362	0,445	4,0000	165,917	3,5000	165,932	-3,00	166,346	166,037	0,309	3,5000	165,932	-3,00	4,0000	165,917	4,0000	165,917	4,0000	166,322	0,405				
15+3,498	4,0000	166,357	0,460	4,0000	165,897	3,5000	165,912	-3,00	166,346	166,017	0,329	3,5000	165,912	-3,00	4,0000	165,897	4,0000	165,897	4,0000	166,337	0,440				
16	4,0000	166,525	0,721	4,0000	165,804	3,5000	165,819	-3,00	166,402	165,924	0,478	3,5000	165,819	-3,00	4,0000	165,804	4,0000	165,804	4,0000	166,548	0,744				
17	4,0000	166,342	0,665	4,0000	165,677	3,5000	165,692	-3,00	166,267	165,797	0,470	3,5000	165,692	-3,00	4,0000	165,677	4,0000	165,677	4,0000	166,352	0,675				
18	4,0000	166,215	0,693	4,0000	165,522	3,5000	165,537	-3,00	166,172	165,642	0,530	3,5000	165,537	-3,00	4,0000	165,522	4,0000	165,522	4,0000	166,125	0,603				
19	4,0000	165,943	0,604	4,0000	165,339	3,5000	165,354	-3,00	165,944	165,459	0,485	3,5000	165,354	-3,00	4,0000	165,339	4,0000	165,339	4,0000	166,009	0,670				
20	4,0000	165,854	0,727	4,0000	165,127	3,5000	165,142	-3,00	165,836	165,247	0,589	3,5000	165,142	-3,00	4,0000	165,127	4,0000	165,127	4,0000	166,018	0,891				
21	4,0000	165,461	0,560	4,0000	164,901	3,5000	164,916	-3,00	165,426	165,021	0,405	3,5000	164,916	-3,00	4,0000	164,901	4,0000	164,901	4,0000	165,513	0,612				
21+5,000	4,0000	165,413	0,569	4,0000	164,844	3,5000	164,859	-3,00	165,364	164,964	0,400	3,5000	164,859	-3,00	4,0000	164,844	4,0000	164,844	4,0000	165,445	0,601				



5 – CÁLCULO DOS VOLUMES

Grande Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0	0,000	0,000	8,731	8,731					
1	0,000	0,000	7,444	16,175	10,000	0,000	0,000	161,750	161,750
2	0,000	0,000	7,807	23,982	10,000	0,000	0,000	152,510	314,260
3	0,000	0,000	6,383	30,365					
3+8,566	0,000	0,000	6,841	37,206	4,283	0,000	0,000	56,638	512,798
4	0,000	0,000	6,126	43,332	5,717	0,000	0,000	74,132	586,930
5	0,000	0,000	4,088	47,420	10,000	0,000	0,000	102,140	689,070
6	1,718	1,718	0,000	47,420	10,000	17,180	17,180	40,880	729,950
7	0,000	1,718	2,027	49,447	10,000	17,180	34,360	20,270	750,220
8	0,000	1,718	2,817	52,264	10,000	0,000	34,360	48,440	798,660
9	0,014	1,732	3,470	55,734	10,000	0,140	34,500	62,870	861,530
10	0,077	1,809	2,595	58,329	10,000	0,910	35,410	60,650	922,180
11	0,231	2,040	2,644	60,973	10,000	3,080	38,490	52,390	974,570
12	0,027	2,067	4,067	65,040	10,000	2,580	41,070	67,110	1.041,680
13	0,125	2,192	3,823	68,863	10,000	1,520	42,590	78,900	1.120,580
14	0,039	2,231	4,745	73,608	10,000	1,640	44,230	85,680	1.206,260

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto										
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.	
14	0,039	2,231	4,745	73,608						
					0,000	0,000	44,230	0,000	1.206,260	
14	0,039	2,270	4,745	78,353						
					10,000	0,390	44,620	110,210	1.316,470	
15	0,000	2,270	6,276	84,629						
					10,000	0,000	44,620	129,470	1.445,940	
16	0,000	2,270	6,671	91,300						
					10,000	0,000	44,620	127,720	1.573,660	
17	0,000	2,270	6,101	97,401						
					5,081	0,000	44,620	60,524	1.634,184	
17+10,161	0,000	2,270	5,812	103,213						
					4,920	0,000	44,620	54,833	1.689,017	
18	0,000	2,270	5,334	108,547						
					10,000	0,000	44,620	90,680	1.779,697	
19	0,000	2,270	3,734	112,281						
					10,000	0,000	44,620	62,740	1.842,437	
20	0,000	2,270	2,540	114,821						

	Corte	Aterro
Áreas	2,2700 m²	114,821 m²
Volumes	44,620 m3	1.842,437 m3

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
20	0,000	0,000	2,540	2,540					
21	0,000	0,000	3,304	5,844	10,000	0,000	0,000	58,440	58,440
22	0,000	0,000	3,007	8,851	10,000	0,000	0,000	63,110	121,550
23	0,000	0,000	2,681	11,532	10,000	0,000	0,000	56,880	178,430
24	0,000	0,000	2,685	14,217	10,000	0,000	0,000	53,660	232,090
25	0,000	0,000	2,761	16,978	10,000	0,000	0,000	54,460	286,550
26	0,011	0,011	3,633	20,611	10,000	0,110	0,110	63,940	350,490
27	0,013	0,024	4,641	25,252	10,000	0,240	0,350	82,740	433,230
28	0,000	0,024	5,081	30,333	10,000	0,130	0,480	97,220	530,450
29	0,000	0,024	4,711	35,044	10,000	0,000	0,480	97,920	628,370
30	0,000	0,024	6,331	41,375	10,000	0,000	0,480	110,420	738,790
31	0,000	0,024	6,108	47,483	10,000	0,000	0,480	124,390	863,180
32	0,000	0,024	6,749	54,232	10,000	0,000	0,480	128,570	991,750
33	0,000	0,024	7,154	61,386	10,000	0,000	0,480	139,030	1.130,780
34	0,000	0,024	7,002	68,388	10,000	0,000	0,480	141,560	1.272,340
35	0,000	0,024	7,857	76,245	10,000	0,000	0,480	148,590	1.420,930

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto									
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
35	0,000	0,024	7,857	76,245					
					10,000	0,000	0,480	154,430	1.575,360
36	0,000	0,024	7,586	83,831					
					10,000	0,000	0,480	159,210	1.734,570
37	0,000	0,024	8,335	92,166					
					10,000	0,000	0,480	164,220	1.898,790
38	0,000	0,024	8,087	100,253					
					10,000	0,000	0,480	169,590	2.068,380
39	0,000	0,024	8,872	109,125					
					10,000	0,000	0,480	171,220	2.239,600
40	0,000	0,024	8,250	117,375					
					10,000	0,000	0,480	160,410	2.400,010
41	0,000	0,024	7,791	125,166					
					10,000	0,000	0,480	165,830	2.565,840
42	0,000	0,024	8,792	133,958					
					10,000	0,000	0,480	167,350	2.733,190
43	0,000	0,024	7,943	141,901					
					10,000	0,000	0,480	170,550	2.903,740
44	0,000	0,024	9,112	151,013					
					6,267	0,000	0,480	114,448	3.018,188
44+12,534	0,000	0,024	9,150	160,163					
					3,733	0,000	0,480	65,417	3.083,605
45	0,000	0,024	8,374	168,537					
					10,000	0,070	0,550	166,480	3.250,085
46	0,007	0,031	8,274	176,811					
					10,000	1,010	1,560	152,840	3.402,925
47	0,094	0,125	7,010	183,821					
					10,000	2,630	4,190	137,750	3.540,675
48	0,169	0,294	6,765	190,586					
					10,000	1,690	5,880	209,800	3.750,475
49	0,000	0,294	14,215	204,801					

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto									
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
49	0,000	0,294	14,215	204,801					
50	0,000	0,294	22,612	227,413	10,000	0,000	5,880	368,270	4.118,745
51	0,000	0,294	20,104	247,517	10,000	0,000	5,880	427,160	4.545,905
52	0,000	0,294	14,400	261,917	10,000	0,000	5,880	345,040	4.890,945
53	0,000	0,294	10,529	272,446	10,000	0,000	5,880	249,290	5.140,235
54	0,000	0,294	14,116	286,562	10,000	0,000	5,880	246,450	5.386,685
55	0,000	0,294	14,817	301,379	10,000	0,000	5,880	289,330	5.676,015
55+0,078	0,000	0,294	14,817	316,196	0,039	0,000	5,880	1,156	5.677,171
56	0,000	0,294	16,126	332,322	9,961	0,000	5,880	308,223	5.985,394
57	0,000	0,294	17,539	349,861	10,000	0,000	5,880	336,650	6.322,044
58	0,000	0,294	18,558	368,419	10,000	0,000	5,880	360,970	6.683,014
59	0,000	0,294	18,729	387,148	10,000	0,000	5,880	372,870	7.055,884
60	0,000	0,294	18,920	406,068	10,000	0,000	5,880	376,490	7.432,374
61	0,000	0,294	19,635	425,703	10,000	0,000	5,880	385,550	7.817,924
62	0,000	0,294	19,127	444,830	10,000	0,000	5,880	387,620	8.205,544
63	0,000	0,294	20,138	464,968	10,000	0,000	5,880	392,650	8.598,194

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
63	0,000	0,294	20,138	484,968					
64	0,000	0,294	19,813	484,781	10,000	0,000	5,880	399,510	8.997,704
65	0,000	0,294	19,683	504,464	10,000	0,000	5,880	394,960	9.392,664
66	0,000	0,294	19,516	523,980	10,000	0,000	5,880	391,990	9.784,654
67	0,000	0,294	19,347	543,327	10,000	0,000	5,880	388,630	10.173,284
68	0,000	0,294	18,840	562,167	10,000	0,000	5,880	381,870	10.555,154
69	0,000	0,294	17,462	579,629	10,000	0,000	5,880	363,020	10.918,174
70	0,000	0,294	16,981	596,610	10,000	0,000	5,880	344,430	11.262,604
71	0,000	0,294	17,522	614,132	10,000	0,000	5,880	345,030	11.607,634
72	0,000	0,294	17,960	632,092	10,000	0,000	5,880	354,820	11.962,454
73	0,000	0,294	18,773	650,865	10,000	0,000	5,880	367,330	12.329,784
74	0,000	0,294	18,539	669,404	10,000	0,000	5,880	373,120	12.702,904
75	0,000	0,294	18,226	687,630	10,000	0,000	5,880	367,650	13.070,554
76	0,000	0,294	17,958	705,588	10,000	0,000	5,880	361,840	13.432,394
77	0,000	0,294	17,470	723,058	10,000	0,000	5,880	354,280	13.786,674
78	0,000	0,294	17,972	741,030	10,000	0,000	5,880	354,420	14.141,094

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto									
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
78	0,000	0,294	17,972	741,030					
					10,000	0,000	5,880	367,330	14.508,424
79	0,000	0,294	18,761	759,791					
					10,000	0,000	5,880	382,940	14.891,364
80	0,000	0,294	19,533	779,324					
					10,000	0,000	5,880	388,990	15.280,354
81	0,000	0,294	19,366	798,690					
					10,000	0,000	5,880	386,710	15.667,064
82	0,000	0,294	19,305	817,995					
					3,634	0,000	5,880	140,337	15.807,401
82+7,267	0,000	0,294	19,318	837,313					
					6,367	0,000	5,880	244,760	16.052,161
83	0,000	0,294	19,127	856,440					
					10,000	0,000	5,880	380,640	16.432,801
84	0,000	0,294	18,937	875,377					
					10,000	0,000	5,880	375,800	16.808,601
85	0,000	0,294	18,643	894,020					
					10,000	0,000	5,880	373,840	17.182,441
86	0,000	0,294	18,741	912,761					
					10,000	0,000	5,880	374,300	17.556,741
87	0,000	0,294	18,689	931,450					
					10,000	0,000	5,880	382,120	17.938,861
88	0,000	0,294	19,523	950,973					
					10,000	0,000	5,880	394,360	18.333,221
89	0,000	0,294	19,913	970,886					
					10,000	0,000	5,880	398,580	18.731,801
90	0,000	0,294	19,945	990,831					
					10,000	0,000	5,880	401,850	19.133,651
91	0,000	0,294	20,240	1.011,071					
					10,000	0,000	5,880	399,360	19.533,011
92	0,000	0,294	19,696	1.030,767					

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
92	0,000	0,294	19,696	1,030,767					
93	0,000	0,294	20,291	1,051,058	10,000	0,000	5,880	399,870	19.932,881
94	0,000	0,294	19,986	1,071,044	10,000	0,000	5,880	402,770	20.335,651
95	0,000	0,294	19,825	1,090,869	10,000	0,000	5,880	398,110	20.733,761
96	0,000	0,294	19,599	1,110,468	10,000	0,000	5,880	394,240	21.128,001
97	0,000	0,294	18,359	1,128,827	10,000	0,000	5,880	379,580	21.507,581
98	0,000	0,294	16,430	1,145,257	10,000	0,000	5,880	347,890	21.855,471
99	0,000	0,294	14,753	1,160,010	10,000	0,000	5,880	311,830	22.167,301
100	0,000	0,294	12,774	1,172,784	10,000	0,000	5,880	275,270	22.442,571
101	0,000	0,294	10,418	1,183,202	10,000	0,000	5,880	231,920	22.674,491
102	0,000	0,294	9,412	1,192,614	10,000	0,000	5,880	198,300	22.872,791
103	0,000	0,294	8,940	1,201,554	10,000	0,000	5,880	183,520	23.056,311
104	0,000	0,294	10,777	1,212,331	10,000	0,000	5,880	197,170	23.253,481
105	0,000	0,294	12,439	1,224,770	10,000	0,000	5,880	232,160	23.485,641
106	0,000	0,294	15,114	1,239,884	10,000	0,000	5,880	275,530	23.761,171
107	0,000	0,294	17,517	1,257,401	10,000	0,000	5,880	326,310	24.087,481

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
107	0,000	0,294	17,517	1.257,401					
108	0,000	0,294	19,004	1.276,405	10,000	0,000	5,880	365,210	24.452,691
109	0,000	0,294	21,389	1.297,794	10,000	0,000	5,880	403,930	24.856,621
110	0,000	0,294	21,581	1.319,375	10,000	0,000	5,880	429,700	25.286,321
111	0,000	0,294	20,065	1.339,440	10,000	0,000	5,880	416,460	25.702,781
112	0,000	0,294	16,539	1.355,979	10,000	0,000	5,880	366,040	26.068,821
113	0,000	0,294	15,426	1.371,405	10,000	0,000	5,880	319,650	26.388,471
113+6,347	0,000	0,294	15,151	1.386,556	3,174	0,000	5,880	97,036	26.485,507
114	0,000	0,294	14,661	1.401,217	6,827	0,000	5,880	203,512	26.689,019
115	0,000	0,294	13,258	1.414,475	10,000	0,000	5,880	279,190	26.968,209
116	0,000	0,294	16,730	1.431,205	10,000	0,000	5,880	299,880	27.268,089
116+6,347	0,000	0,294	17,629	1.448,834	3,174	0,000	5,880	109,038	27.377,127
117	0,000	0,294	17,290	1.466,124	6,827	0,000	5,880	238,375	27.615,502
118	0,000	0,294	15,327	1.481,451	10,000	0,000	5,880	326,170	27.941,672
119	0,102	0,396	14,134	1.495,585	10,000	1,020	6,900	294,610	28.236,282
119+12,241	0,009	0,405	14,940	1.510,525	6,121	0,679	7,579	177,947	28.414,229

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto										
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.	
119+12,241	0,009	0,405	14,940	1.510,525						
					3,880	0,035	7,614	115,314	28.529,543	
120	0,000	0,405	14,784	1.525,309						
					10,000	0,000	7,614	311,510	28.841,053	
121	0,000	0,405	16,367	1.541,676						
					10,000	0,000	7,614	322,260	29.163,313	
122	0,000	0,405	15,859	1.557,535						
					6,121	0,000	7,614	188,683	29.351,996	
122+12,241	0,000	0,405	14,969	1.572,504						
					3,880	0,000	7,614	111,978	29.463,974	
123	0,000	0,405	13,895	1.586,399						
					10,000	0,000	7,614	253,200	29.717,174	
124	0,000	0,405	11,425	1.597,824						
					10,000	0,000	7,614	257,600	29.974,774	
125	0,000	0,405	14,335	1.612,159						
					10,000	0,000	7,614	308,690	30.283,464	
126	0,000	0,405	16,534	1.628,693						
					9,747	0,000	7,614	336,898	30.620,362	
126+19,493	0,000	0,405	18,032	1.646,725						
					0,254	0,000	7,614	9,147	30.629,509	
127	0,000	0,405	18,049	1.664,774						
					10,000	0,000	7,614	367,710	30.997,219	
128	0,000	0,405	18,722	1.683,496						
					10,000	0,000	7,614	439,370	31.436,589	
129	0,000	0,405	25,215	1.708,711						
					10,000	0,000	7,614	626,860	32.063,449	
130	0,000	0,405	37,471	1.746,182						
					10,000	0,000	7,614	789,590	32.853,039	
131	0,000	0,405	41,488	1.787,670						
					10,000	0,000	7,614	975,640	33.828,679	
132	0,000	0,405	56,076	1.843,746						

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto									
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
132	0,000	0,405	56,076	1.843,746					
					1,425	0,000	7,614	189,712	34.018,391
132+2,850	0,000	0,405	77,055	1.920,801					
					8,575	0,000	7,614	1.210,233	35.228,624
133	0,000	0,405	64,080	1.984,881					
					7,993	0,000	7,614	952,290	36.180,914
133+15,985	0,000	0,405	55,068	2.039,949					
					2,008	0,000	7,614	222,473	36.403,387
134	0,000	0,405	55,753	2.095,702					
					10,000	0,000	7,614	1.121,840	37.525,227
135	0,000	0,405	56,431	2.152,133					
					10,000	0,000	7,614	1.207,780	38.733,007
136	0,000	0,405	64,347	2.216,480					
					4,019	0,000	7,614	506,524	39.239,531
136+8,037	0,000	0,405	61,701	2.278,181					
					5,982	0,000	7,614	674,247	39.913,778
137	0,000	0,405	51,021	2.329,202					
					10,000	0,000	7,614	904,990	40.818,768
138	0,000	0,405	39,478	2.368,680					
					10,000	0,000	7,614	684,450	41.503,218
139	0,000	0,405	28,967	2.397,647					
					10,000	2,320	9,934	445,490	41.948,708
140	0,232	0,637	15,582	2.413,229					
					9,695	10,383	20,317	219,282	42.167,990
140+19,390	0,839	1,476	7,036	2.420,265					
					0,305	0,498	20,815	4,218	42.172,208
141	0,793	2,269	6,792	2.427,057					
					10,000	17,130	37,945	68,100	42.240,308
142	0,920	3,189	0,018	2.427,075					
					10,000	40,880	78,825	0,180	42.240,488
143	3,168	6,357	0,000	2.427,075					

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto										
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.	
143	3,168	6,357	0,000	2.427,075						
					10,000	75,790	154,615	0,000		42.240,488
144	4,411	10,768	0,000	2.427,075						
					10,000	98,370	252,985	0,000		42.240,488
145	5,426	16,194	0,000	2.427,075						
					10,000	109,500	362,485	0,000		42.240,488
146	5,524	21,718	0,000	2.427,075						
					10,000	104,110	466,595	0,000		42.240,488
147	4,887	26,605	0,000	2.427,075						
					10,000	95,280	561,875	0,000		42.240,488
148	4,641	31,246	0,000	2.427,075						
					5,403	47,283	609,158	0,000		42.240,488
148+10,805	4,111	35,357	0,000	2.427,075						
					4,598	34,693	643,851	0,000		42.240,488
149	3,435	38,792	0,000	2.427,075						
					10,000	63,730	707,581	0,000		42.240,488
150	2,938	41,730	0,000	2.427,075						
					10,000	52,750	760,331	0,000		42.240,488
151	2,337	44,067	0,000	2.427,075						
					10,000	44,870	805,201	12,000		42.252,488
152	2,150	46,217	1,200	2.428,275						
					10,000	78,730	883,931	12,000		42.264,488
153	5,723	51,940	0,000	2.428,275						
					9,197	99,938	983,869	0,000		42.264,488
153+18,393	5,144	57,084	0,000	2.428,275						
					0,804	7,854	991,723	0,000		42.264,488
154	4,631	61,715	0,000	2.428,275						
					10,000	82,410	1.074,133	0,000		42.264,488
155	3,610	65,325	0,000	2.428,275						
					10,000	72,990	1.147,123	0,000		42.264,488
156	3,689	69,014	0,000	2.428,275						

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto									
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
156	3,689	69,014	0,000	2.428,275					
					10,000	73,450	1.220,573	0,000	42.264,488
157	3,656	72,670	0,000	2.428,275					
					10,000	76,870	1.297,443	0,000	42.264,488
158	4,031	76,701	0,000	2.428,275					
					10,000	81,130	1.378,573	0,000	42.264,488
159	4,082	80,783	0,000	2.428,275					
					10,000	83,580	1.462,153	0,000	42.264,488
160	4,276	85,059	0,000	2.428,275					
					10,000	76,610	1.538,763	0,000	42.264,488
161	3,385	88,444	0,000	2.428,275					
					6,090	45,413	1.584,176	0,000	42.264,488
161+12,180	4,072	92,516	0,000	2.428,275					
					3,910	28,191	1.612,367	0,000	42.264,488
162	3,138	95,654	0,000	2.428,275					
					10,000	68,240	1.680,607	0,000	42.264,488
163	3,686	99,340	0,000	2.428,275					
					10,000	83,720	1.764,327	0,000	42.264,488
164	4,686	104,026	0,000	2.428,275					
					10,000	95,190	1.859,517	0,000	42.264,488
165	4,833	108,859	0,000	2.428,275					
					10,000	91,510	1.951,027	0,000	42.264,488
166	4,318	113,177	0,000	2.428,275					
					10,000	79,040	2.030,067	0,000	42.264,488
167	3,586	116,763	0,000	2.428,275					
					10,000	71,370	2.101,437	0,000	42.264,488
168	3,551	120,314	0,000	2.428,275					
					10,000	77,850	2.179,287	0,000	42.264,488
169	4,234	124,548	0,000	2.428,275					
					10,000	86,570	2.265,857	0,000	42.264,488
170	4,423	128,971	0,000	2.428,275					

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto										
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.	
170	4,423	128,971	0,000	2.428,275	10,000	71,420	2.337,277	0,000	42.264,488	
171	2,719	131,690	0,000	2.428,275	10,000	46,750	2.384,027	0,000	42.264,488	
172	1,956	133,646	0,000	2.428,275	10,000	43,860	2.427,887	0,000	42.264,488	
173	2,430	136,076	0,000	2.428,275	10,000	31,130	2.459,017	0,200	42.264,688	
174	0,683	136,759	0,020	2.428,295	10,000	21,850	2.480,867	0,200	42.264,888	
175	1,502	138,261	0,000	2.428,295	5,000	22,275	2.503,142	0,000	42.264,888	
175+10,000	2,953	141,214	0,000	2.428,295						

	Corte	Aterro
Áreas	141,2140 m²	2.428,295 m²
Volumes	2.503,142 m3	42.264,888 m3

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto									
Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0	2,366	2,366	0,000	0,000					
0+12,767	1,478	3,844	0,000	0,000	6,384	24,538	24,538	0,000	0,000
1	1,861	5,705	0,000	0,000	3,617	12,075	36,613	0,000	0,000
1+8,214	2,615	8,320	0,000	0,000	4,107	18,383	54,996	0,000	0,000
2	1,384	9,704	0,000	0,000	5,893	23,566	78,562	0,000	0,000
2+6,278	0,450	10,154	0,012	0,012	3,139	5,757	84,319	0,038	0,038
3	0,112	10,266	0,173	0,185	6,861	3,856	88,175	1,269	1,307
3+4,342	0,183	10,449	0,234	0,419	2,171	0,640	88,815	0,884	2,191
3+5,634	0,211	10,660	0,396	0,815	0,646	0,255	89,070	0,407	2,598
3+18,401	1,453	12,113	0,000	0,815	6,384	10,622	99,692	2,528	5,126

	Corte	Aterro
Áreas	12,1130 m²	0,815 m²
Volumes	99,692 m3	5,126 m3

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
0	4,372	4,372	0,000	0,000					
1	5,357	9,729	0,000	0,000	10,000	97,290	97,290	0,000	0,000
2	4,181	13,910	0,000	0,000	10,000	95,380	192,670	0,000	0,000
3	4,830	18,740	0,000	0,000	10,000	90,110	282,780	0,000	0,000
4	5,182	23,922	0,000	0,000	10,000	100,120	382,900	0,000	0,000
4+10,605	4,733	28,655	0,000	0,000	5,303	52,574	435,474	0,000	0,000
5	4,407	33,062	0,000	0,000	4,698	42,935	478,409	0,000	0,000
5+12,000	3,933	36,995	0,000	0,000	6,000	50,040	528,449	0,000	0,000
6	3,909	40,904	0,000	0,000	4,000	31,368	559,817	0,000	0,000
7	3,834	44,738	0,000	0,000	10,000	77,430	637,247	0,000	0,000
7+17,754	4,401	49,139	0,000	0,000	8,877	73,102	710,349	0,000	0,000
8	4,338	53,477	0,000	0,000	1,123	9,814	720,163	0,000	0,000
9	3,171	56,648	0,000	0,000	10,000	75,090	795,253	0,000	0,000
10	3,834	60,482	0,000	0,000	10,000	70,050	865,303	0,000	0,000
10+4,612	4,202	64,684	0,000	0,000	2,306	18,531	883,834	0,000	0,000
11	4,187	68,871	0,000	0,000	7,694	64,545	948,379	0,000	0,000

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área Corte	Á.C. Acum.	Área Aterro	Á. A. Acum.	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
11	4,187	68,871	0,000	0,000					
11+8,384	3,653	72,524	0,000	0,000	4,192	32,865	981,244	0,000	0,000
12	3,551	76,075	0,000	0,000	5,808	41,841	1,023,085	0,000	0,000
12+8,659	3,305	79,380	0,000	0,000	4,330	29,683	1,052,768	0,000	0,000
13	2,980	82,360	0,000	0,000	5,671	35,639	1,088,407	0,000	0,000
14	2,977	85,337	0,000	0,000	10,000	59,570	1,147,977	0,000	0,000
15	2,896	88,233	0,000	0,000	10,000	58,730	1,206,707	0,000	0,000
15+3,498	3,017	91,250	0,000	0,000	1,749	10,342	1,217,049	0,000	0,000
16	4,736	95,986	0,000	0,000	8,251	63,970	1,281,019	0,000	0,000
17	4,279	100,265	0,000	0,000	10,000	90,150	1,371,169	0,000	0,000
18	4,721	104,986	0,000	0,000	10,000	90,000	1,461,169	0,000	0,000
19	4,468	109,454	0,000	0,000	10,000	91,890	1,553,059	0,000	0,000
20	5,491	114,945	0,000	0,000	10,000	99,590	1,652,649	0,000	0,000
21	3,841	118,786	0,000	0,000	10,000	93,320	1,745,969	0,000	0,000
21+5,000	3,893	122,679	0,000	0,000	2,500	19,335	1,765,304	0,000	0,000

Volume de Terraplenagem

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

	Corte	Aterro
Áreas	122,6790 m²	0,000 m²
Volumes	1.765.304 m3	0,000 m3