Rodovia: Vicinal Bem Querer CAI 338
Trecho: Entronc. BR-174 (Km 0,00) x CAI-338 (Km 10,78)
Serviço: Eliminação de pontos críticos, reparos e recuperação
Extensão: 10,78 Km
Município: Caracaraí
ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO

DMT de 200 a 400 **P=** 6,00 **Empolamento:** 20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
0	0,932	0,510				
			10,000	11,460	11,460	13,752
1	0,636	1,146				-
			10,000	15,560	27,020	32,424
2	0,92	2,066				-
			10,000	21,270	48,290	57,948
3	1,207	3,273				-
			10,000	23,260	71,550	85,860
4	1,119	4,392				-
			10,000	21,510	93,060	111,672
5	1,032	5,424				-
		-	10,000	19,770	112,830	135,396
6	0,945	6,369				-
		-	10,000	20,390	133,220	159,864
7	1,094	7,463				-
		-	10,000	22,570	155,790	186,948
8	1,163	8,626				-
		-	10,000	23,200	178,990	214,788
9	1,157	9,783				-
		-	10,000	22,320	201,310	241,572
10	1,075	10,858				-
		-	10,000	39,890	241,200	289,440
11	2,914	13,772				-
		-	10,000	58,400	299,600	359,520
12	2,926	16,698				-
		-	10,000	58,640	358,240	429,888
13	2,938	19,636				-
		-	10,000	58,890	417,130	500,556
14	2,951	22,587				-
		-	10,000	58,890	476,020	571,224
15	2,938	25,525				-
		-	10,000	58,700	534,720	641,664
16	2,932	28,457				-
		-	10,000	59,140	593,860	712,632
17	2,982	31,439				-
		-	10,000	40,640	634,500	761,400
18	1,082	32,521				-
		-	10,000	23,200	657,700	789,240
19	1,238	33,759				-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
		-	10,000	26,850	684,550	821,460
20	1,447	35,206				-
		-	10,000	33,610	718,160	861,792
21	1,914	37,120				-
		-	10,000	43,690	761,850	914,220
22	2,455	39,575				-
		-	10,000	52,410	814,260	977,112
23	2,786	42,361				-
		-	10,000	57,240	871,500	1.045,800
24	2,938	45,299				-
		-	10,000	68,160	939,660	1.127,592
25	3,878	49,177				-
		-	10,000	77,940	1.017,600	1.221,120
26	3,916	53,093				-
		-	10,000	66,080	1.083,680	1.300,416
27	2,692	55,785				-
		-	10,000	52,050	1.135,730	1.362,876
28	2,513	58,298				-
		-	10,000	47,840	1.183,570	1.420,284
29	2,271	60,569				-
		-	10,000	42,490	1.226,060	1.471,272
30	1,978	62,547				-
		-	10,000	35,960	1.262,020	1.514,424
31	1,618	64,165				-
		-	10,000	28,310	1.290,330	1.548,396
32	1,213	65,378				-
		-	10,000	21,580	1.311,910	1.574,292
33	0,945	66,323				-
		-	10,000	20,370	1.332,280	1.598,736
34	1,092	67,415				-
		-	10,000	30,430	1.362,710	1.635,252
35	1,951	69,366				-
		-	10,000	39,270	1.401,980	1.682,376
36	1,976	71,342				-
		-	10,000	40,630	1.442,610	1.731,132
37	2,087	73,429				-
		-	10,000	41,000	1.483,610	1.780,332
38	2,013	75,442				-
		-	10,000	40,410	1.524,020	1.828,824
39	2,028	77,470				-
		-	10,000	40,750	1.564,770	1.877,724
40	2,047	79,517				-
		-	10,000	41,220	1.605,990	1.927,188
41	2,075	81,592				-
		-	10,000	49,330	1.655,320	1.986,384

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
42	2,858	84,450				-
		-	10,000	56,290	1.711,610	2.053,932
43	2,771	87,221				-
		-	10,000	55,720	1.767,330	2.120,796
44	2,801	90,022				-
		-	10,000	51,260	1.818,590	2.182,308
45	2,325	92,347				-
		-	10,000	42,920	1.861,510	2.233,812
46	1,967	94,314				-
		-	10,000	33,120	1.894,630	2.273,556
47	1,345	95,659				-
		-	10,000	27,920	1.922,550	2.307,060
48	1,447	97,106				-
		-	10,000	29,380	1.951,930	2.342,316
49	1,491	98,597				-
		-	10,000	29,690	1.981,620	2.377,944
50	1,478	100,075				-
		-	10,000	28,870	2.010,490	2.412,588
51	1,409	101,484				-
		-	10,000	26,910	2.037,400	2.444,880
52	1,282	102,766				-
		-	10,000	23,890	2.061,290	2.473,548
53	1,107	103,873				-
		-	10,000	19,770	2.081,060	2.497,272
54	0,87	104,743				-
		-	10,000	15,300	2.096,360	2.515,632
55	0,66	105,403				-
		-	10,000	11,980	2.108,340	2.530,008
56	0,538	105,941				-
		-	10,000	10,510	2.118,850	2.542,620
57	0,513	106,454				-
		-	10,000	10,940	2.129,790	2.555,748
58	0,581	107,035				-
		-	10,000	16,250	2.146,040	2.575,248
59	1,044	108,079				-
		-	10,000	27,770	2.173,810	2.608,572
60	1,733	109,812				-
		-	10,000	38,670	2.212,480	2.654,976
61	2,134	111,946				-
		-	10,000	43,720	2.256,200	2.707,440
62	2,238	114,184				-
		-	10,000	42,810	2.299,010	2.758,812
63	2,043	116,227				-
		-	10,000	38,790	2.337,800	2.805,360
64	1,836	118,063				-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
		-	10,000	37,580	2.375,380	2.850,456
65	1,922	119,985				-
		-	10,000	40,100	2.415,480	2.898,576
66	2,088	122,073				-
		-	10,000	43,260	2.458,740	2.950,488
67	2,238	124,311				-
		-	10,000	45,940	2.504,680	3.005,616
68	2,356	126,667				-
		-	10,000	47,900	2.552,580	3.063,096
69	2,434	129,101				-
		-	10,000	49,080	2.601,660	3.121,992
70	2,474	131,575				-
		-	10,000	49,610	2.651,270	3.181,524
71	2,487	134,062				-
		-	10,000	49,540	2.700,810	3.240,972
72	2,467	136,529				-
		-	10,000	48,820	2.749,630	3.299,556
73	2,415	138,944				-
		-	10,000	47,440	2.797,070	3.356,484
74	2,329	141,273				-
		-	10,000	45,340	2.842,410	3.410,892
75	2,205	143,478				-
		-	10,000	41,960	2.884,370	3.461,244
76	1,991	145,469				-
		-	10,000	35,970	2.920,340	3.504,408
77	1,606	147,075				-
		-	10,000	28,630	2.948,970	3.538,764
78	1,257	148,332				-
		-	10,000	23,820	2.972,790	3.567,348
79	1,125	149,457				-
		-	10,000	22,820	2.995,610	3.594,732
80	1,157	150,614				-
		-	10,000	21,580	3.017,190	3.620,628
81	1,001	151,615				-
		-	10,000	19,390	3.036,580	3.643,896
82	0,938	152,553				-
		-	10,000	18,270	3.054,850	3.665,820
83	0,889	153,442				-
		-	10,000	18,270	3.073,120	3.687,744
84	0,938	154,380				-
		-	10,000	17,340	3.090,460	3.708,552
85	0,796	155,176				-
		-	10,000	15,490	3.105,950	3.727,140
86	0,753	155,929				-
		-	10,000	15,610	3.121,560	3.745,872

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400			**P=** 6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**		
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**
87	0,808	156,737				-
		-	10,000	17,650	3.139,210	3.767,052
88	0,957	157,694				-
		-	10,000	18,460	3.157,670	3.789,204
89	0,889	158,583				-
		-	10,000	18,340	3.176,010	3.811,212
90	0,945	159,528				-
		-	10,000	18,210	3.194,220	3.833,064
91	0,876	160,404				-
		-	10,000	18,210	3.212,430	3.854,916
92	0,945	161,349				-
		-	10,000	17,720	3.230,150	3.876,180
93	0,827	162,176				-
		-	10,000	17,720	3.247,870	3.897,444
94	0,945	163,121				-
		-	10,000	20,330	3.268,200	3.921,840
95	1,088	164,209				-
		-	10,000	20,200	3.288,400	3.946,080
96	0,932	165,141				-
		-	10,000	17,340	3.305,740	3.966,888
97	0,802	165,943				-
		-	10,000	17,220	3.322,960	3.987,552
98	0,92	166,863				-
		-	10,000	17,650	3.340,610	4.008,732
99	0,845	167,708				-
		-	10,000	17,830	3.358,440	4.030,128
100	0,938	168,646				-
		-	10,000	17,090	3.375,530	4.050,636
101	0,771	169,417				-
		-	10,000	15,420	3.390,950	4.069,140
102	0,771	170,188				-
		-	10,000	17,090	3.408,040	4.089,648
103	0,938	171,126				-
		-	10,000	21,200	3.429,240	4.115,088
104	1,182	172,308				-
		-	10,000	25,780	3.455,020	4.146,024
105	1,396	173,704				-
		-	10,000	29,820	3.484,840	4.181,808
106	1,586	175,290				-
		-	10,000	33,450	3.518,290	4.221,948
107	1,759	177,049				-
		-	10,000	36,790	3.555,080	4.266,096
108	1,92	178,969				-
		-	10,000	39,630	3.594,710	4.313,652
109	2,043	181,012				-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO							
DMT de	200 a 400			**P=**	6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**			
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**	
		-	10,000	41,900	3.636,610	4.363,932	
110	2,147	183,159				-	
		-	10,000	42,940	3.679,550	4.415,460	
111	2,147	185,306				-	
		-	10,000	41,250	3.720,800	4.464,960	
112	1,978	187,284				-	
		-	10,000	37,880	3.758,680	4.510,416	
113	1,81	189,094				-	
		-	10,000	36,330	3.795,010	4.554,012	
114	1,823	190,917				-	
		-	10,000	38,270	3.833,280	4.599,936	
115	2,004	192,921				-	
		-	10,000	41,510	3.874,790	4.649,748	
116	2,147	195,068				-	
		-	10,000	41,770	3.916,560	4.699,872	
117	2,03	197,098				-	
		-	10,000	36,870	3.953,430	4.744,116	
118	1,657	198,755				-	
		-	10,000	26,950	3.980,380	4.776,456	
119	1,038	199,793				-	
		-	10,000	25,330	4.005,710	4.806,852	
120	1,495	201,288				-	
		-	10,000	28,200	4.033,910	4.840,692	
121	1,325	202,613				-	
		-	10,000	28,930	4.062,840	4.875,408	
122	1,568	204,181				-	
		-	10,000	33,660	4.096,500	4.915,800	
123	1,798	205,979				-	
		-	10,000	36,250	4.132,750	4.959,300	
124	1,827	207,806				-	
		-	10,000	34,750	4.167,500	5.001,000	
125	1,648	209,454				-	
		-	10,000	33,150	4.200,650	5.040,780	
126	1,667	211,121				-	
		-	10,000	36,360	4.237,010	5.084,412	
127	1,969	213,090				-	
		-	10,000	42,570	4.279,580	5.135,496	
128	2,288	215,378				-	
		-	10,000	42,450	4.322,030	5.186,436	
129	1,957	217,335				-	
		-	10,000	38,210	4.360,240	5.232,288	
130	1,864	219,199				-	
		-	10,000	34,140	4.394,380	5.273,256	
131	1,55	220,749				-	
		-	10,000	32,120	4.426,500	5.311,800	

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**		
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**
132	1,662	222,411				-
		-	10,000	34,460	4.460,960	5.353,152
133	1,784	224,195				-
		-	10,000	34,970	4.495,930	5.395,116
134	1,713	225,908				-
		-	10,000	24,160	4.520,090	5.424,108
135	0,703	226,611				-
		-	10,000	14,560	4.534,650	5.441,580
136	0,753	227,364				-
		-	10,000	16,110	4.550,760	5.460,912
137	0,858	228,222				-
		-	10,000	19,080	4.569,840	5.483,808
138	1,05	229,272				-
		-	10,000	23,760	4.593,600	5.512,320
139	1,326	230,598				-
		-	10,000	25,520	4.619,120	5.542,944
140	1,226	231,824				-
		-	10,000	22,890	4.642,010	5.570,412
141	1,063	232,887				-
		-	10,000	21,950	4.663,960	5.596,752
142	1,132	234,019				-
		-	10,000	20,830	4.684,790	5.621,748
143	0,951	234,970				-
		-	10,000	16,540	4.701,330	5.641,596
144	0,703	235,673				-
		-	10,000	22,530	4.723,860	5.668,632
145	1,55	237,223				-
		-	10,000	30,390	4.754,250	5.705,100
146	1,489	238,712				-
		-	10,000	30,150	4.784,400	5.741,280
147	1,526	240,238				-
		-	10,000	31,880	4.816,280	5.779,536
148	1,662	241,900				-
		-	10,000	24,330	4.840,610	5.808,732
149	0,771	242,671				-
		-	10,000	15,110	4.855,720	5.826,864
150	0,74	243,411				-
		-	10,000	14,190	4.869,910	5.843,892
151	0,679	244,090				-
		-	10,000	13,580	4.883,490	5.860,188
152	0,679	244,769				-
		-	10,000	14,260	4.897,750	5.877,300
153	0,747	245,516				-
		-	10,000	16,610	4.914,360	5.897,232
154	0,914	246,430				-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
		-	10,000	19,890	4.934,250	5.921,100
155	1,075	247,505				-
		-	10,000	21,870	4.956,120	5.947,344
156	1,112	248,617				-
		-	10,000	20,880	4.977,000	5.972,400
157	0,976	249,593				-
		-	10,000	21,270	4.998,270	5.997,924
158	1,151	250,744				-
		-	10,000	24,020	5.022,290	6.026,748
159	1,251	251,995				-
		-	10,000	26,030	5.048,320	6.057,984
160	1,352	253,347				-
		-	10,000	28,050	5.076,370	6.091,644
161	1,453	254,800				-
		-	10,000	32,380	5.108,750	6.130,500
162	1,785	256,585				-
		-	10,000	38,600	5.147,350	6.176,820
163	2,075	258,660				-
		-	10,000	43,910	5.191,260	6.229,512
164	2,316	260,976				-
		-	10,000	48,230	5.239,490	6.287,388
165	2,507	263,483				-
		-	10,000	51,590	5.291,080	6.349,296
166	2,652	266,135				-
		-	10,000	50,540	5.341,620	6.409,944
167	2,402	268,537				-
		-	10,000	45,100	5.386,720	6.464,064
168	2,108	270,645				-
		-	10,000	38,730	5.425,450	6.510,540
169	1,765	272,410				-
		-	10,000	31,420	5.456,870	6.548,244
170	1,377	273,787				-
		-	10,000	23,280	5.480,150	6.576,180
171	0,951	274,738				-
		-	10,000	15,680	5.495,830	6.594,996
172	0,617	275,355				-
		-	10,000	11,370	5.507,200	6.608,640
173	0,52	275,875				-
		-	10,000	10,430	5.517,630	6.621,156
174	0,523	276,398				-
		-	10,000	11,960	5.529,590	6.635,508
175	0,673	277,071				-
		-	10,000	16,110	5.545,700	6.654,840
176	0,938	278,009				-
		-	10,000	17,590	5.563,290	6.675,948

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400			**P=** 6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**		
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**
177	0,821	278,830				-
		-	10,000	17,530	5.580,820	6.696,984
178	0,932	279,762				-
		-	10,000	17,460	5.598,280	6.717,936
179	0,814	280,576				-
		-	10,000	17,360	5.615,640	6.738,768
180	0,922	281,498				-
		-	10,000	17,360	5.633,000	6.759,600
181	0,814	282,312				-
		-	10,000	17,520	5.650,520	6.780,624
182	0,938	283,250				-
		-	10,000	16,290	5.666,810	6.800,172
183	0,691	283,941				-
		-	10,000	13,700	5.680,510	6.816,612
184	0,679	284,620				-
		-	10,000	14,630	5.695,140	6.834,168
185	0,784	285,404				-
		-	10,000	16,980	5.712,120	6.854,544
186	0,914	286,318				-
		-	10,000	17,970	5.730,090	6.876,108
187	0,883	287,201				-
		-	10,000	17,470	5.747,560	6.897,072
188	0,864	288,065				-
		-	10,000	17,340	5.764,900	6.917,880
189	0,87	288,935				-
		-	10,000	17,590	5.782,490	6.938,988
190	0,889	289,824				-
		-	10,000	18,210	5.800,700	6.960,840
191	0,932	290,756				-
		-	10,000	18,580	5.819,280	6.983,136
192	0,926	291,682				-
		-	10,000	18,580	5.837,860	7.005,432
193	0,932	292,614				-
		-	10,000	20,570	5.858,430	7.030,116
194	1,125	293,739				-
		-	10,000	25,840	5.884,270	7.061,124
195	1,459	295,198				-
		-	10,000	41,730	5.926,000	7.111,200
196	2,714	297,912				-
		-	10,000	47,520	5.973,520	7.168,224
197	2,038	299,950				-
		-	10,000	41,650	6.015,170	7.218,204
198	2,127	302,077				-
		-	10,000	43,580	6.058,750	7.270,500
199	2,231	304,308				-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
		-	10,000	45,020	6.103,770	7.324,524
200	2,271	306,579				-
		-	10,000	46,330	6.150,100	7.380,120
201	2,362	308,941				-
		-	10,000	50,010	6.200,110	7.440,132
202	2,639	311,580				-
		-	10,000	55,640	6.255,750	7.506,900
203	2,925	314,505				-
		-	10,000	59,370	6.315,120	7.578,144
204	3,012	317,517				-
		-	10,000	59,240	6.374,360	7.649,232
205	2,912	320,429				-
		-	10,000	55,310	6.429,670	7.715,604
206	2,619	323,048				-
		-	10,000	47,590	6.477,260	7.772,712
207	2,14	325,188				-
		-	10,000	36,250	6.513,510	7.816,212
208	1,485	326,673				-
		-	10,000	23,860	6.537,370	7.844,844
209	0,901	327,574				-
		-	10,000	15,180	6.552,550	7.863,060
210	0,617	328,191				-
		-	10,000	12,530	6.565,080	7.878,096
211	0,636	328,827				-
		-	10,000	15,740	6.580,820	7.896,984
212	0,938	329,765				-
		-	10,000	21,700	6.602,520	7.923,024
213	1,232	330,997				-
		-	10,000	24,510	6.627,030	7.952,436
214	1,219	332,216				-
		-	10,000	31,080	6.658,110	7.989,732
215	1,889	334,105				-
		-	10,000	45,250	6.703,360	8.044,032
216	2,636	336,741				-
		-	10,000	49,050	6.752,410	8.102,892
217	2,269	339,010				-
		-	10,000	46,180	6.798,590	8.158,308
218	2,349	341,359				-
		-	10,000	56,450	6.855,040	8.226,048
219	3,296	344,655				-
		-	10,000	74,090	6.929,130	8.314,956
220	4,113	348,768		-	-	-
		-	10,000	88,650	7.017,780	8.421,336
221	4,752	353,520		-	-	-
		-	10,000	98,370	7.116,150	8.539,380

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
222	5,085	358,605		-	-	-
		-	10,000	115,560	7.231,710	8.678,052
223	6,471	365,076		-	-	-
		-	10,000	130,220	7.361,930	8.834,316
224	6,551	371,627		-	-	-
		-	10,000	123,890	7.485,820	8.982,984
225	5,838	377,465		-	-	-
		-	10,000	107,430	7.593,250	9.111,900
226	4,905	382,370		-	-	-
		-	10,000	95,760	7.689,010	9.226,812
227	4,671	387,041		-	-	-
		-	10,000	97,740	7.786,750	9.344,100
228	5,103	392,144		-	-	-
		-	10,000	118,000	7.904,750	9.485,700
229	6,697	398,841		-	-	-
		-	10,000	133,720	8.038,470	9.646,164
230	6,675	405,516		-	-	-
		-	10,000	126,580	8.165,050	9.798,060
231	5,983	411,499		-	-	-
		-	10,000	115,780	8.280,830	9.936,996
232	5,595	417,094		-	-	-
		-	10,000	107,770	8.388,600	10.066,320
233	5,182	422,276		-	-	-
		-	10,000	96,310	8.484,910	10.181,892
234	4,449	426,725		-	-	-
		-	10,000	78,670	8.563,580	10.276,296
235	3,418	430,143		-	-	-
		-	10,000	55,450	8.619,030	10.342,836
236	2,127	432,270		-	-	-
		-	10,000	31,840	8.650,870	10.381,044
237	1,057	433,327		-	-	-
		-	10,000	16,740	8.667,610	10.401,132
238	0,617	433,944		-	-	-
		-	10,000	11,490	8.679,100	10.414,920
239	0,532	434,476		-	-	-
		-	10,000	10,760	8.689,860	10.427,832
240	0,544	435,020		-	-	-
		-	10,000	11,980	8.701,840	10.442,208
241	0,654	435,674		-	-	-
		-	10,000	15,180	8.717,020	10.460,424
242	0,864	436,538		-	-	-
		-	10,000	18,020	8.735,040	10.482,048
243	0,938	437,476		-	-	-
		-	10,000	16,290	8.751,330	10.501,596
244	0,691	438,167		-	-	-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO							
DMT de	200 a 400			**P=**	6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**			
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**	
		-	10,000	12,350	8.763,680	10.516,416	
245	0,544	438,711		-	-	-	
		-	10,000	10,390	8.774,070	10.528,884	
246	0,495	439,206		-	-	-	
		-	10,000	10,390	8.784,460	10.541,352	
247	0,544	439,750		-	-	-	
		-	10,000	12,350	8.796,810	10.556,172	
248	0,691	440,441		-	-	-	
		-	10,000	16,290	8.813,100	10.575,720	
249	0,938	441,379		-	-	-	
		-	10,000	18,760	8.831,860	10.598,232	
250	0,938	442,317		-	-	-	
		-	10,000	18,270	8.850,130	10.620,156	
251	0,889	443,206		-	-	-	
		-	10,000	18,270	8.868,400	10.642,080	
252	0,938	444,144		-	-	-	
		-	10,000	18,270	8.886,670	10.664,004	
253	0,889	445,033		-	-	-	
		-	10,000	18,270	8.904,940	10.685,928	
254	0,938	445,971		-	-	-	
		-	10,000	17,900	8.922,840	10.707,408	
255	0,852	446,823		-	-	-	
		-	10,000	17,970	8.940,810	10.728,972	
256	0,945	447,768		-	-	-	
		-	10,000	17,970	8.958,780	10.750,536	
257	0,852	448,620		-	-	-	
		-	10,000	17,900	8.976,680	10.772,016	
258	0,938	449,558		-	-	-	
		-	10,000	17,960	8.994,640	10.793,568	
259	0,858	450,416		-	-	-	
		-	10,000	18,030	9.012,670	10.815,204	
260	0,945	451,361		-	-	-	
		-	10,000	18,030	9.030,700	10.836,840	
261	0,858	452,219		-	-	-	
		-	10,000	18,030	9.048,730	10.858,476	
262	0,945	453,164		-	-	-	
		-	10,000	17,900	9.066,630	10.879,956	
263	0,845	454,009		-	-	-	
		-	10,000	17,710	9.084,340	10.901,208	
264	0,926	454,935		-	-	-	
		-	10,000	16,790	9.101,130	10.921,356	
265	0,753	455,688		-	-	-	
		-	10,000	15,060	9.116,190	10.939,428	
266	0,753	456,441		-	-	-	
		-	10,000	16,790	9.132,980	10.959,576	

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**		
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**
267	0,926	457,367		-	-	-
		-	10,000	16,790	9.149,770	10.979,724
268	0,753	458,120		-	-	-
		-	10,000	15,000	9.164,770	10.997,724
269	0,747	458,867		-	-	-
		-	10,000	16,670	9.181,440	11.017,728
270	0,92	459,787		-	-	-
		-	10,000	16,730	9.198,170	11.037,804
271	0,753	460,540		-	-	-
		-	10,000	15,120	9.213,290	11.055,948
272	0,759	461,299		-	-	-
		-	10,000	17,040	9.230,330	11.076,396
273	0,945	462,244		-	-	-
		-	10,000	17,590	9.247,920	11.097,504
274	0,814	463,058		-	-	-
		-	10,000	15,730	9.263,650	11.116,380
275	0,759	463,817		-	-	-
		-	10,000	15,550	9.279,200	11.135,040
276	0,796	464,613		-	-	-
		-	10,000	17,030	9.296,230	11.155,476
277	0,907	465,520		-	-	-
		-	10,000	17,900	9.314,130	11.176,956
278	0,883	466,403		-	-	-
		-	10,000	18,150	9.332,280	11.198,736
279	0,932	467,335		-	-	-
		-	10,000	21,390	9.353,670	11.224,404
280	1,207	468,542		-	-	-
		-	10,000	30,240	9.383,910	11.260,692
281	1,817	470,359		-	-	-
		-	10,000	42,840	9.426,750	11.312,100
282	2,467	472,826		-	-	-
		-	10,000	53,920	9.480,670	11.376,804
283	2,925	475,751		-	-	-
		-	10,000	61,460	9.542,130	11.450,556
284	3,221	478,972		-	-	-
		-	10,000	66,050	9.608,180	11.529,816
285	3,384	482,356		-	-	-
		-	10,000	67,680	9.675,860	11.611,032
286	3,384	485,740		-	-	-
		-	10,000	66,250	9.742,110	11.690,532
287	3,241	488,981		-	-	-
		-	10,000	61,800	9.803,910	11.764,692
288	2,939	491,920		-	-	-
		-	10,000	54,390	9.858,300	11.829,960
289	2,5	494,420		-	-	-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO								
DMT de	200 a 400			**P=**	6,00	**Empolamento:**	20,00%	
Estacas	**Área**		**Semi-Distância (m)**	**Volume**				
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**		
		-	10,000	44,130	9.902,430	11.882,916		
290	1,913	496,333		-	-	-		
		-	10,000	31,260	9.933,690	11.920,428		
291	1,213	497,546		-	-	-		
		-	10,000	20,890	9.954,580	11.945,496		
292	0,876	498,422		-	-	-		
		-	10,000	18,330	9.972,910	11.967,492		
293	0,957	499,379		-	-	-		
		-	10,000	19,580	9.992,490	11.990,988		
294	1,001	500,380		-	-	-		
		-	10,000	19,890	10.012,380	12.014,856		
295	0,988	501,368		-	-	-		
		-	10,000	18,640	10.031,020	12.037,224		
296	0,876	502,244		-	-	-		
		-	10,000	18,270	10.049,290	12.059,148		
297	0,951	503,195		-	-	-		
		-	10,000	20,760	10.070,050	12.084,060		
298	1,125	504,320		-	-	-		
		-	10,000	22,750	10.092,800	12.111,360		
299	1,15	505,470		-	-	-		
		-	10,000	22,750	10.115,550	12.138,660		
300	1,125	506,595		-	-	-		
		-	10,000	21,940	10.137,490	12.164,988		
301	1,069	507,664		-	-	-		
		-	10,000	20,510	10.158,000	12.189,600		
302	0,982	508,646		-	-	-		
		-	10,000	18,270	10.176,270	12.211,524		
303	0,845	509,491		-	-	-		
		-	10,000	14,070	10.190,340	12.228,408		
304	0,562	510,053		-	-	-		
		-	10,000	10,150	10.200,490	12.240,588		
305	0,453	510,506		-	-	-		
		-	10,000	11,200	10.211,690	12.254,028		
306	0,667	511,173		-	-	-		
		-	10,000	15,930	10.227,620	12.273,144		
307	0,926	512,099		-	-	-		
		-	10,000	21,640	10.249,260	12.299,112		
308	1,238	513,337		-	-	-		
		-	10,000	28,630	10.277,890	12.333,468		
309	1,625	514,962		-	-	-		
		-	10,000	37,260	10.315,150	12.378,180		
310	2,101	517,063		-	-	-		
		-	10,000	46,410	10.361,560	12.433,872		
311	2,54	519,603		-	-	-		
		-	10,000	53,120	10.414,680	12.497,616		

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
312	2,772	522,375		-	-	-
		-	10,000	55,700	10.470,380	12.564,456
313	2,798	525,173		-	-	-
		-	10,000	54,170	10.524,550	12.629,460
314	2,619	527,792		-	-	-
		-	10,000	48,570	10.573,120	12.687,744
315	2,238	530,030		-	-	-
		-	10,000	39,010	10.612,130	12.734,556
316	1,663	531,693		-	-	-
		-	10,000	25,640	10.637,770	12.765,324
317	0,901	532,594		-	-	-
		-	10,000	12,870	10.650,640	12.780,768
318	0,386	532,980		-	-	-
		-	10,000	6,810	10.657,450	12.788,940
319	0,295	533,275		-	-	-
		-	10,000	6,750	10.664,200	12.797,040
320	0,38	533,655		-	-	-
		-	10,000	8,570	10.672,770	12.807,324
321	0,477	534,132		-	-	-
		-	10,000	9,300	10.682,070	12.818,484
322	0,453	534,585		-	-	-
		-	10,000	8,750	10.690,820	12.828,984
323	0,422	535,007		-	-	-
		-	10,000	8,810	10.699,630	12.839,556
324	0,459	535,466		-	-	-
		-	10,000	9,600	10.709,230	12.851,076
325	0,501	535,967		-	-	-
		-	10,000	9,780	10.719,010	12.862,812
326	0,477	536,444		-	-	-
		-	10,000	10,150	10.729,160	12.874,992
327	0,538	536,982		-	-	-
		-	10,000	9,720	10.738,880	12.886,656
328	0,434	537,416		-	-	-
		-	10,000	9,960	10.748,840	12.898,608
329	0,562	537,978		-	-	-
		-	10,000	14,880	10.763,720	12.916,464
330	0,926	538,904		-	-	-
		-	10,000	17,400	10.781,120	12.937,344
331	0,814	539,718		-	-	-
		-	10,000	17,520	10.798,640	12.958,368
332	0,938	540,656		-	-	-
		-	10,000	23,720	10.822,360	12.986,832
333	1,434	542,090		-	-	-
		-	10,000	35,350	10.857,710	13.029,252
334	2,101	544,191		-	-	-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO								
DMT de	200 a 400			**P=**	6,00	**Empolamento:**	20,00%	
Estacas	**Área**		**Semi-Distância (m)**	**Volume**				
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**		
		-	10,000	47,070	10.904,780	13.085,736		
335	2,606	546,797		-	-	-		
		-	10,000	55,580	10.960,360	13.152,432		
336	2,952	549,749		-	-	-		
		-	10,000	60,650	11.021,010	13.225,212		
337	3,113	552,862		-	-	-		
		-	10,000	63,140	11.084,150	13.300,980		
338	3,201	556,063		-	-	-		
		-	10,000	65,240	11.149,390	13.379,268		
339	3,323	559,386		-	-	-		
		-	10,000	67,890	11.217,280	13.460,736		
340	3,466	562,852		-	-	-		
		-	10,000	70,480	11.287,760	13.545,312		
341	3,582	566,434		-	-	-		
		-	10,000	71,770	11.359,530	13.631,436		
342	3,595	570,029		-	-	-		
		-	10,000	71,080	11.430,610	13.716,732		
343	3,513	573,542		-	-	-		
		-	10,000	68,490	11.499,100	13.798,920		
344	3,336	576,878		-	-	-		
		-	10,000	63,950	11.563,050	13.875,660		
345	3,059	579,937		-	-	-		
		-	10,000	57,580	11.620,630	13.944,756		
346	2,699	582,636		-	-	-		
		-	10,000	49,630	11.670,260	14.004,312		
347	2,264	584,900		-	-	-		
		-	10,000	41,070	11.711,330	14.053,596		
348	1,843	586,743		-	-	-		
		-	10,000	33,400	11.744,730	14.093,676		
349	1,497	588,240		-	-	-		
		-	10,000	27,230	11.771,960	14.126,352		
350	1,226	589,466		-	-	-		
		-	10,000	22,510	11.794,470	14.153,364		
351	1,025	590,491		-	-	-		
		-	10,000	19,200	11.813,670	14.176,404		
352	0,895	591,386		-	-	-		
		-	10,000	16,660	11.830,330	14.196,396		
353	0,771	592,157		-	-	-		
		-	10,000	13,460	11.843,790	14.212,548		
354	0,575	592,732		-	-	-		
		-	10,000	9,910	11.853,700	14.224,440		
355	0,416	593,148		-	-	-		
		-	10,000	7,900	11.861,600	14.233,920		
356	0,374	593,522		-	-	-		
		-	10,000	8,510	11.870,110	14.244,132		

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO							
DMT de	200 a 400			**P=**	6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**			
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**	
357	0,477	593,999		-	-	-	
		-	10,000	11,870	11.881,980	14.258,376	
358	0,71	594,709		-	-	-	
		-	10,000	18,040	11.900,020	14.280,024	
359	1,094	595,803		-	-	-	
		-	10,000	23,260	11.923,280	14.307,936	
360	1,232	597,035		-	-	-	
		-	10,000	23,510	11.946,790	14.336,148	
361	1,119	598,154		-	-	-	
		-	10,000	22,820	11.969,610	14.363,532	
362	1,163	599,317		-	-	-	
		-	10,000	25,340	11.994,950	14.393,940	
363	1,371	600,688		-	-	-	
		-	10,000	31,110	12.026,060	14.431,272	
364	1,74	602,428		-	-	-	
		-	10,000	39,320	12.065,380	14.478,456	
365	2,192	604,620		-	-	-	
		-	10,000	48,050	12.113,430	14.536,116	
366	2,613	607,233		-	-	-	
		-	10,000	56,320	12.169,750	14.603,700	
367	3,019	610,252		-	-	-	
		-	10,000	64,160	12.233,910	14.680,692	
368	3,397	613,649		-	-	-	
		-	10,000	70,400	12.304,310	14.765,172	
369	3,643	617,292		-	-	-	
		-	10,000	72,790	12.377,100	14.852,520	
370	3,636	620,928		-	-	-	
		-	10,000	70,270	12.447,370	14.936,844	
371	3,391	624,319		-	-	-	
		-	10,000	62,900	12.510,270	15.012,324	
372	2,899	627,218		-	-	-	
		-	10,000	52,090	12.562,360	15.074,832	
373	2,31	629,528		-	-	-	
		-	10,000	40,630	12.602,990	15.123,588	
374	1,753	631,281		-	-	-	
		-	10,000	29,720	12.632,710	15.159,252	
375	1,219	632,500		-	-	-	
		-	10,000	20,520	12.653,230	15.183,876	
376	0,833	633,333		-	-	-	
		-	10,000	15,240	12.668,470	15.202,164	
377	0,691	634,024		-	-	-	
		-	10,000	13,640	12.682,110	15.218,532	
378	0,673	634,697		-	-	-	
		-	10,000	13,270	12.695,380	15.234,456	
379	0,654	635,351		-	-	-	

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO								
DMT de	200 a 400			**P=**	6,00	**Empolamento:**	20,00%	
Estacas	**Área**		**Semi-Distância (m)**	**Volume**				
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**		
		-	10,000	12,960	12.708,340	15.250,008		
380	0,642	635,993		-	-	-		
		-	10,000	12,780	12.721,120	15.265,344		
381	0,636	636,629		-	-	-		
		-	10,000	12,720	12.733,840	15.280,608		
382	0,636	637,265		-	-	-		
		-	10,000	12,720	12.746,560	15.295,872		
383	0,636	637,901		-	-	-		
		-	10,000	12,780	12.759,340	15.311,208		
384	0,642	638,543		-	-	-		
		-	10,000	14,130	12.773,470	15.328,164		
385	0,771	639,314		-	-	-		
		-	10,000	19,150	12.792,620	15.351,144		
386	1,144	640,458		-	-	-		
		-	10,000	29,160	12.821,780	15.386,136		
387	1,772	642,230		-	-	-		
		-	10,000	41,740	12.863,520	15.436,224		
388	2,402	644,632		-	-	-		
		-	10,000	50,740	12.914,260	15.497,112		
389	2,672	647,304		-	-	-		
		-	10,000	51,850	12.966,110	15.559,332		
390	2,513	649,817		-	-	-		
		-	10,000	46,660	13.012,770	15.615,324		
391	2,153	651,970		-	-	-		
		-	10,000	39,570	13.052,340	15.662,808		
392	1,804	653,774		-	-	-		
		-	10,000	32,820	13.085,160	15.702,192		
393	1,478	655,252		-	-	-		
		-	10,000	26,540	13.111,700	15.734,040		
394	1,176	656,428		-	-	-		
		-	10,000	20,770	13.132,470	15.758,964		
395	0,901	657,329		-	-	-		
		-	10,000	15,250	13.147,720	15.777,264		
396	0,624	657,953		-	-	-		
		-	10,000	13,520	13.161,240	15.793,488		
397	0,728	658,681		-	-	-		
		-	10,000	14,870	13.176,110	15.811,332		
398	0,759	659,440		-	-	-		
		-	10,000	14,620	13.190,730	15.828,876		
399	0,703	660,143		-	-	-		
		-	10,000	11,680	13.202,410	15.842,892		
400	0,465	660,608		-	-	-		
		-	10,000	8,870	13.211,280	15.853,536		
401	0,422	661,030		-	-	-		
		-	10,000	10,580	13.221,860	15.866,232		

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**		
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**
402	0,636	661,666		-	-	-
		-	10,000	15,250	13.237,110	15.884,532
403	0,889	662,555		-	-	-
		-	10,000	23,040	13.260,150	15.912,180
404	1,415	663,970		-	-	-
		-	10,000	38,690	13.298,840	15.958,608
405	2,454	666,424		-	-	-
		-	10,000	56,820	13.355,660	16.026,792
406	3,228	669,652		-	-	-
		-	10,000	61,000	13.416,660	16.099,992
407	2,872	672,524		-	-	-
		-	10,000	48,240	13.464,900	16.157,880
408	1,952	674,476		-	-	-
		-	10,000	29,590	13.494,490	16.193,388
409	1,007	675,483		-	-	-
		-	10,000	14,840	13.509,330	16.211,196
410	0,477	675,960		-	-	-
		-	10,000	9,360	13.518,690	16.222,428
411	0,459	676,419		-	-	-
		-	10,000	8,020	13.526,710	16.232,052
412	0,343	676,762		-	-	-
		-	10,000	7,590	13.534,300	16.241,160
413	0,416	677,178		-	-	-
		-	10,000	7,830	13.542,130	16.250,556
414	0,367	677,545		-	-	-
		-	10,000	8,800	13.550,930	16.261,116
415	0,513	678,058		-	-	-
		-	10,000	8,930	13.559,860	16.271,832
416	0,38	678,438		-	-	-
		-	10,000	8,140	13.568,000	16.281,600
417	0,434	678,872		-	-	-
		-	10,000	8,740	13.576,740	16.292,088
418	0,44	679,312		-	-	-
		-	10,000	10,640	13.587,380	16.304,856
419	0,624	679,936		-	-	-
		-	10,000	11,370	13.598,750	16.318,500
420	0,513	680,449		-	-	-
		-	10,000	11,060	13.609,810	16.331,772
421	0,593	681,042		-	-	-
		-	10,000	10,090	13.619,900	16.343,880
422	0,416	681,458		-	-	-
		-	10,000	8,440	13.628,340	16.354,008
423	0,428	681,886		-	-	-
		-	10,000	10,580	13.638,920	16.366,704
424	0,63	682,516		-	-	-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO							
DMT de	200 a 400			**P=**	6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**			
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**	
		-	10,000	11,500	13.650,420	16.380,504	
425	0,52	683,036		-	-	-	
		-	10,000	11,190	13.661,610	16.393,932	
426	0,599	683,635		-	-	-	
		-	10,000	10,330	13.671,940	16.406,328	
427	0,434	684,069		-	-	-	
		-	10,000	8,930	13.680,870	16.417,044	
428	0,459	684,528		-	-	-	
		-	10,000	8,200	13.689,070	16.426,884	
429	0,361	684,889		-	-	-	
		-	10,000	8,010	13.697,080	16.436,496	
430	0,44	685,329		-	-	-	
		-	10,000	7,650	13.704,730	16.445,676	
431	0,325	685,654		-	-	-	
		-	10,000	7,230	13.711,960	16.454,352	
432	0,398	686,052		-	-	-	
		-	10,000	16,870	13.728,830	16.474,596	
433	1,289	687,341		-	-	-	
		-	10,000	26,630	13.755,460	16.506,552	
434	1,374	688,715		-	-	-	
		-	10,000	27,230	13.782,690	16.539,228	
435	1,349	690,064		-	-	-	
		-	10,000	28,620	13.811,310	16.573,572	
436	1,513	691,577		-	-	-	
		-	10,000	25,510	13.836,820	16.604,184	
437	1,038	692,615		-	-	-	
		-	10,000	31,720	13.868,540	16.642,248	
438	2,134	694,749		-	-	-	
		-	10,000	54,570	13.923,110	16.707,732	
439	3,323	698,072		-	-	-	
		-	10,000	73,800	13.996,910	16.796,292	
440	4,057	702,129		-	-	-	
		-	10,000	83,580	14.080,490	16.896,588	
441	4,301	706,430		-	-	-	
		-	10,000	84,910	14.165,400	16.998,480	
442	4,19	710,620		-	-	-	
		-	10,000	80,600	14.246,000	17.095,200	
443	3,87	714,490		-	-	-	
		-	10,000	72,130	14.318,130	17.181,756	
444	3,343	717,833		-	-	-	
		-	10,000	59,750	14.377,880	17.253,456	
445	2,632	720,465		-	-	-	
		-	10,000	45,790	14.423,670	17.308,404	
446	1,947	722,412		-	-	-	
		-	10,000	29,790	14.453,460	17.344,152	

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
447	1,032	723,444		-	-	-
		-	10,000	25,700	14.479,160	17.374,992
448	1,538	724,982		-	-	-
		-	10,000	28,620	14.507,780	17.409,336
449	1,324	726,306		-	-	-
		-	10,000	28,560	14.536,340	17.443,608
450	1,532	727,838		-	-	-
		-	10,000	25,060	14.561,400	17.473,680
451	0,974	728,812		-	-	-
		-	10,000	20,180	14.581,580	17.497,896
452	1,044	729,856		-	-	-
		-	10,000	25,450	14.607,030	17.528,436
453	1,501	731,357		-	-	-
		-	10,000	33,340	14.640,370	17.568,444
454	1,833	733,190		-	-	-
		-	10,000	37,770	14.678,140	17.613,768
455	1,944	735,134		-	-	-
		-	10,000	44,250	14.722,390	17.666,868
456	2,481	737,615		-	-	-
		-	10,000	52,860	14.775,250	17.730,300
457	2,805	740,420		-	-	-
		-	10,000	54,040	14.829,290	17.795,148
458	2,599	743,019		-	-	-
		-	10,000	47,910	14.877,200	17.852,640
459	2,192	745,211		-	-	-
		-	10,000	40,800	14.918,000	17.901,600
460	1,888	747,099		-	-	-
		-	10,000	35,770	14.953,770	17.944,524
461	1,689	748,788		-	-	-
		-	10,000	32,750	14.986,520	17.983,824
462	1,586	750,374		-	-	-
		-	10,000	31,150	15.017,670	18.021,204
463	1,529	751,903		-	-	-
		-	10,000	29,950	15.047,620	18.057,144
464	1,466	753,369		-	-	-
		-	10,000	28,560	15.076,180	18.091,416
465	1,39	754,759		-	-	-
		-	10,000	33,280	15.109,460	18.131,352
466	1,938	756,697		-	-	-
		-	10,000	41,570	15.151,030	18.181,236
467	2,219	758,916		-	-	-
		-	10,000	45,310	15.196,340	18.235,608
468	2,312	761,228		-	-	-
		-	10,000	45,470	15.241,810	18.290,172
469	2,235	763,463		-	-	-

ART: RR20230130232

TERRAPLENAGEM - MAPA DE CUBAÇÃO							
DMT de	200 a 400			**P=**	6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**			
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**	
		-	10,000	51,730	15.293,540	18.352,248	
470	2,938	766,401		-	-	-	
		-	10,000	58,640	15.352,180	18.422,616	
471	2,926	769,327		-	-	-	
		-	10,000	58,020	15.410,200	18.492,240	
472	2,876	772,203		-	-	-	
		-	10,000	58,270	15.468,470	18.562,164	
473	2,951	775,154		-	-	-	
		-	10,000	60,640	15.529,110	18.634,932	
474	3,113	778,267		-	-	-	
		-	10,000	63,320	15.592,430	18.710,916	
475	3,219	781,486		-	-	-	
		-	10,000	54,930	15.647,360	18.776,832	
476	2,274	783,760		-	-	-	
		-	10,000	45,470	15.692,830	18.831,396	
477	2,273	786,033		-	-	-	
		-	10,000	44,800	15.737,630	18.885,156	
478	2,207	788,240		-	-	-	
		-	10,000	46,650	15.784,280	18.941,136	
479	2,458	790,698		-	-	-	
		-	10,000	47,530	15.831,810	18.998,172	
480	2,295	792,993		-	-	-	
		-	10,000	48,300	15.880,110	19.056,132	
481	2,535	795,528		-	-	-	
		-	10,000	53,520	15.933,630	19.120,356	
482	2,817	798,345		-	-	-	
		-	10,000	58,790	15.992,420	19.190,904	
483	3,062	801,407		-	-	-	
		-	10,000	63,130	16.055,550	19.266,660	
484	3,251	804,658		-	-	-	
		-	10,000	76,360	16.131,910	19.358,292	
485	4,385	809,043		-	-	-	
		-	10,000	83,690	16.215,600	19.458,720	
486	3,984	813,027		-	-	-	
		-	10,000	65,260	16.280,860	19.537,032	
487	2,542	815,569		-	-	-	
		-	10,000	50,290	16.331,150	19.597,380	
488	2,487	818,056		-	-	-	
		-	10,000	49,810	16.380,960	19.657,152	
489	2,494	820,550		-	-	-	
		-	10,000	48,890	16.429,850	19.715,820	
490	2,395	822,945		-	-	-	
		-	10,000	46,390	16.476,240	19.771,488	
491	2,244	825,189		-	-	-	
		-	10,000	43,000	16.519,240	19.823,088	

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TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
492	2,056	827,245		-	-	-
		-	10,000	38,730	16.557,970	19.869,564
493	1,817	829,062		-	-	-
		-	10,000	33,460	16.591,430	19.909,716
494	1,529	830,591		-	-	-
		-	10,000	27,920	16.619,350	19.943,220
495	1,263	831,854		-	-	-
		-	10,000	22,140	16.641,490	19.969,788
496	0,951	832,805		-	-	-
		-	10,000	28,890	16.670,380	20.004,456
497	1,938	834,743		-	-	-
		-	10,000	38,760	16.709,140	20.050,968
498	1,938	836,681		-	-	-
		-	10,000	40,850	16.749,990	20.099,988
499	2,147	838,828		-	-	-
		-	10,000	46,840	16.796,830	20.156,196
500	2,537	841,365		-	-	-
		-	10,000	57,390	16.854,220	20.225,064
501	3,202	844,567		-	-	-
		-	10,000	64,190	16.918,410	20.302,092
502	3,217	847,784		-	-	-
		-	10,000	64,920	16.983,330	20.379,996
503	3,275	851,059		-	-	-
		-	10,000	72,630	17.055,960	20.467,152
504	3,988	855,047		-	-	-
		-	10,000	82,060	17.138,020	20.565,624
505	4,218	859,265		-	-	-
		-	10,000	91,850	17.229,870	20.675,844
506	4,967	864,232		-	-	-
		-	10,000	92,950	17.322,820	20.787,384
507	4,328	868,560		-	-	-
		-	10,000	93,560	17.416,380	20.899,656
508	5,028	873,588		-	-	-
		-	10,000	119,420	17.535,800	21.042,960
509	6,914	880,502		-	-	-
		-	10,000	133,910	17.669,710	21.203,652
510	6,477	886,979		-	-	-
		-	10,000	129,990	17.799,700	21.359,640
511	6,522	893,501		-	-	-
		-	10,000	130,660	17.930,360	21.516,432
512	6,544	900,045		-	-	-
		-	10,000	121,310	18.051,670	21.662,004
513	5,587	905,632		-	-	-
		-	10,000	112,500	18.164,170	21.797,004
514	5,663	911,295		-	-	-

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TERRAPLENAGEM - MAPA DE CUBAÇÃO						
DMT de	200 a 400		**P=**	6,00	**Empolamento:**	20,00%

Estacas	Área		Semi-Distância (m)	Volume		
	Aterro (m²)	Acum. Aterro (m²)		Aterro (m³)	Acum. Aterro (m³)	Empolado (m³)
		-	10,000	124,610	18.288,780	21.946,536
515	6,798	918,093		-	-	-
		-	10,000	147,340	18.436,120	22.123,344
516	7,936	926,029		-	-	-
		-	10,000	161,730	18.597,850	22.317,420
517	8,237	934,266		-	-	-
		-	10,000	152,150	18.750,000	22.500,000
518	6,978	941,244		-	-	-
		-	10,000	120,640	18.870,640	22.644,768
519	5,086	946,330		-	-	-
		-	10,000	99,650	18.970,290	22.764,348
520	4,879	951,209		-	-	-
		-	10,000	92,340	19.062,630	22.875,156
521	4,355	955,564		-	-	-
		-	10,000	75,210	19.137,840	22.965,408
522	3,166	958,730		-	-	-
		-	10,000	59,740	19.197,580	23.037,096
523	2,808	961,538		-	-	-
		-	10,000	51,330	19.248,910	23.098,692
524	2,325	963,863		-	-	-
		-	10,000	45,490	19.294,400	23.153,280
525	2,224	966,087		-	-	-
		-	10,000	51,510	19.345,910	23.215,092
526	2,927	969,014		-	-	-
		-	10,000	53,520	19.399,430	23.279,316
527	2,425	971,439		-	-	-
		-	10,000	48,830	19.448,260	23.337,912
528	2,458	973,897		-	-	-
		-	10,000	47,830	19.496,090	23.395,308
529	2,325	976,222		-	-	-
		-	10,000	44,620	19.540,710	23.448,852
530	2,137	978,359		-	-	-
		-	10,000	39,890	19.580,600	23.496,720
531	1,852	980,211		-	-	-
		-	10,000	35,740	19.616,340	23.539,608
532	1,722	981,933		-	-	-
		-	10,000	32,970	19.649,310	23.579,172
533	1,575	983,508		-	-	-
		-	10,000	27,880	19.677,190	23.612,628
534	1,213	984,721		-	-	-
		-	10,000	23,250	19.700,440	23.640,528
535	1,112	985,833		-	-	-
		-	10,000	23,770	19.724,210	23.669,052
536	1,265	987,098		-	-	-
		-	10,000	24,090	19.748,300	23.697,960

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TERRAPLENAGEM - MAPA DE CUBAÇÃO							
DMT de	200 a 400			**P=**	6,00	**Empolamento:**	20,00%
Estacas	**Área**		**Semi-Distância (m)**	**Volume**			
	Aterro (m²)	**Acum. Aterro (m²)**		**Aterro (m³)**	**Acum. Aterro (m³)**	**Empolado (m³)**	
537	1,144	988,242		-	-	-	
		-	10,000	20,400	19.768,100	23.721,720	
538	0,896	989,138		-	-	-	
		-	10,000	16,280	19.784,380	23.741,256	
539	0,732	989,870			-	-	
			10,000	7,320	**19.791,700**	23.750,040	

ÁREA DEGRADADA A SER RECUPERADA					
Volume Explorado (m³)	**Camada Explorada (m)**	**Volume de Regularização (m³)**			
		Larg. (m)	**Comp. (m)**	**Altura (m)**	**Volume (m³)**
22.760,46	1,00	150,86	150,86	0,20	4.551,00