FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
47	5,445	1,321	11,250	18,016																				
48	22,387	4,810	21,555	48,752	278,32	61,31	328,05	667,68			278,32	61,31	328,05	667,68	222,66	53,31	385,94	661,91						661,91
49	9,983	2,216	8,044	20,243	323,70	70,26	295,99	689,95			602,02	131,57	624,04	1.357,63	481,62	114,41	734,16	1.330,19						1.330,19
50	6,513	0,791	0,847	8,151	164,96	30,07	88,91	283,94			766,98	161,64	712,95	1.641,57	613,58	140,56	838,76	1.592,90						1.592,91
51					65,13	7,91	8,47	81,51	23,799	237,99	832,11	169,55	721,42	1.723,08	665,69	147,43	848,73	1.661,85	237,99	52,10	6,88	9,96	68,94	1.423,87
52	3,250	0,308	0,089	3,647	32,50	3,08	0,89	36,47	2,521	263,20	864,61	172,63	722,31	1.759,55	691,69	150,11	849,78	1.691,58	501,19	26,00	2,68	1,05	29,73	1.190,40
53	16,359	1,814	3,667	21,840	196,09	21,22	37,56	254,87		25,21	1.060,70	193,85	759,87	2.014,42	848,56	168,57	893,96	1.911,09	526,40	25,21			25,21	1.384,70
54	20,470	4,071	6,393	30,934	368,29	58,85	100,60	527,74			1.428,99	252,70	860,47	2.542,16	1.143,19	219,74	1.012,32	2.375,25						1.848,86
55	25,450	5,262	18,560	49,272	459,20	93,33	249,53	802,06			1.888,19	346,03	1.110,00	3.344,22	1.510,55	300,90	1.305,88	3.117,33						2.590,94
56	46,353	9,490	35,635	91,478	718,03	147,52	541,95	1.407,50			2.606,22	493,55	1.651,95	4.751,72	2.084,98	429,17	1.943,47	4.457,62						3.931,23
57	69,334	14,632	66,340	150,306	1.156,87	241,22	1.019,75	2.417,84			3.763,09	734,77	2.671,70	7.169,56	3.010,47	638,93	3.143,18	6.792,58						6.266,19
58	35,729	8,321	87,495	131,545	1.050,63	229,53	1.538,35	2.818,51			4.813,72	964,30	4.210,05	9.988,07	3.850,98	838,52	4.953,00	9.642,50						9.116,11
59	46,468	10,915	121,176	178,559	821,97	192,36	2.086,71	3.101,04			5.635,69	1.156,66	6.296,76	13.089,11	4.508,55	1.005,79	7.407,95	12.922,29						12.395,91
60	40,923	9,910	152,181	203,014	873,91	208,25	2.733,57	3.815,73			6.509,60	1.364,91	9.030,33	16.904,84	5.207,68	1.186,88	10.623,92	17.018,48						16.492,09
61	35,560	8,777	168,682	213,019	764,83	186,87	3.208,63	4.160,33			7.274,43	1.551,78	12.238,96	21.065,17	5.819,54	1.349,37	14.398,78	21.567,69						21.041,31
62	34,920	8,662	180,366	223,948	704,80	174,39	3.490,48	4.369,67			7.979,23	1.726,17	15.729,44	25.434,84	6.383,38	1.501,02	18.505,22	26.389,62						25.863,24
63	29,090	7,247	153,868	190,205	640,10	159,09	3.342,34	4.141,53			8.619,33	1.885,26	19.071,78	29.576,37	6.895,46	1.639,36	22.437,39	30.972,21						30.445,82
64	36,891	8,711	104,774	150,376	659,81	159,58	2.586,42	3.405,81			9.279,14	2.044,84	21.658,20	32.982,18	7.423,31	1.778,12	25.480,24	34.681,67						34.155,28
65	7,981	2,174	82,238	92,393	448,72	108,85	1.870,12	2.427,69			9.727,86	2.153,69	23.528,32	35.409,87	7.782,29	1.872,77	27.680,38	37.335,44						36.809,05
66	37,983	7,887	32,129	77,999	459,64	100,61	1.143,67	1.703,92			10.187,50	2.254,30	24.671,99	37.113,79	8.150,00	1.960,26	29.025,87	39.136,13						38.609,74
67	22,066	4,785	25,670	52,521	600,49	126,72	577,99	1.305,20			10.787,99	2.381,02	25.249,98	38.418,99	8.630,39	2.070,45	29.705,86	40.406,70						39.880,31
68	4,794	1,232	22,189	28,215	268,60	60,17	478,59	807,36			11.056,59	2.441,19	25.728,57	39.226,35	8.845,27	2.122,77	30.268,91	41.236,95						40.710,56
69	3,953	0,999	8,672	13,624	87,47	22,31	308,61	418,39			11.144,06	2.463,50	26.037,18	39.644,74	8.915,25	2.142,17	30.631,98	41.689,40						41.163,01
70	4,616	0,866	0,138	5,620	85,69	18,65	88,10	192,44			11.229,75	2.482,15	26.125,28	39.837,18	8.983,80	2.158,39	30.735,62	41.877,81						41.351,43
71	0,184			0,184	48,00	8,66	1,38	58,04	6,326	63,26	11.277,75	2.490,81	26.126,66	39.895,22	9.022,20	2.165,92	30.737,25	41.925,37	63,26	38,40	7,53	1,62	47,55	41.335,72
72					1,84			1,84	17,557	238,83	11.279,59			11.279,59	9.023,67			9.023,67	302,09	1,47			1,47	41.098,36
73									24,796	423,53									725,62					40.674,83
74									28,339	531,35									1.256,97					40.143,48
75	12,178	1,115	0,561	13,854	121,78	11,15	5,61	138,54		283,39	121,78	11,15	5,61	138,54	97,42	9,70	6,60	113,72	1.540,36	97,42	9,70	6,60	113,72	39.973,81
76	15,507	1,637	2,776	19,920	276,85	27,52	33,37	337,74			398,63	38,67	38,98	476,28	318,90	33,63	45,86	398,39						40.258,48
77	13,042	1,315	1,469	15,826	285,49	29,52	42,45	357,46			684,12	68,19	81,43	833,74	547,30	59,30	95,80	702,40						40.562,48
78	3,570	0,458	0,182	4,210	166,12	17,73	16,51	200,36	0,167	1,67	850,24	85,92	97,94	1.034,10	680,19	74,71	115,22	870,12	1,67	1,67			1,67	40.728,55
79	2,922			2,922	64,92	4,58	1,82	71,32	4,459	46,26	915,16	90,50	99,76	1.105,42	732,13	78,70	117,36	928,19	47,93	46,26			46,26	40.740,35
80	1,123			1,123	40,45			40,45	11,753	162,12	955,61			955,61	764,49			764,49	210,05	32,36			32,36	40.610,59
81					11,23			11,23	27,899	396,52	966,84			966,84	773,47			773,47	606,57	8,98			8,98	40.223,05
82	0,844			0,844	8,44			8,44	12,115	400,14	975,28			975,28	780,22			780,22	1.006,71	6,75			6,75	39.829,66
83	10,588	1,400	5,249	17,237	114,32	14,00	52,49	180,81		121,15	1.089,60	14,00	52,49	1.156,09	871,68	12,17	61,75	945,60	1.127,86	91,46	12,17	17,52	121,15	39.873,89
84	30,263	5,805	9,188	45,256	408,51	72,05	144,37	624,93			1.498,11	86,05	196,86	1.781,02	1.198,49	74,83	231,60	1.504,92						40.433,20
85	39,796	8,087	27,863	75,746	700,59	138,92	370,51	1.210,02			2.198,70	224,97	567,37	2.991,04	1.758,96	195,63	667,49	2.622,08						41.550,37
86	36,572	7,896	44,349	88,817	763,68	159,83	722,12	1.645,63			2.962,38	384,80	1.289,49	4.636,67	2.369,90	334,61	1.517,05	4.221,56						43.149,85
87	33,177	7,376	52,509	93,062	697,49	152,72	968,58	1.818,79			3.659,87	537,52	2.258,07	6.455,46	2.927,90	467,41	2.656,55	6.051,86						44.980,15
88	30,517	6,838	52,072	89,427	636,94	142,14	1.045,81	1.824,89			4.296,81	679,66	3.303,88	8.280,35	3.437,45	591,01	3.886,92	7.915,38						46.843,67
89	30,622	6,867	53,288	90,777	611,39	137,05	1.053,60	1.802,04			4.908,20	816,71	4.357,48	10.082,39	3.926,56	710,18	5.126,45	9.763,19						48.691,49
90	18,646	4,333	45,757	68,736	492,68	112,00	990,45	1.595,13			5.400,88	928,71	5.347,93	11.677,52	4.320,70	807,57	6.291,68	11.419,95						50.348,26
91	14,088	3,251	30,439	47,778	327,34	75,84	761,96	1.165,14			5.728,22	1.004,55	6.109,89	12.842,66	4.582,58	873,52	7.188,11	12.644,21						51.572,50
92	22,200	4,475	10,313	36,988	362,88	77,26	407,52	847,66			6.091,10	1.081,81	6.517,41	13.690,32	4.872,88	940,70	7.667,54	13.481,12						52.409,42
93	17,010	0,894	0,295	18,199	392,10	53,69	106,08	551,87			6.483,20	1.135,50	6.623,49	14.242,19	5.186,56	987,39	7.792,34	13.966,29						52.894,59

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
94	1,558			1,558	185,68	8,94	2,95	197,57			6.668,88	1.144,44	6.626,44	14.439,76	5.335,10	995,17	7.795,81	14.126,08						53.054,38
95					15,58			15,58	13,153	131,53	6.684,46			6.684,46	5.347,57			5.347,57	131,53	12,46			12,46	52.935,31
96									33,338	464,91									596,44					52.470,40
97									72,219	1.055,57									1.652,01					51.414,83
98									102,733	1.749,52									3.401,53					49.665,31
99									152,714	2.554,47									5.956,00					47.110,84
100									191,530	3.442,44									9.398,44					43.668,40
101									150,197	3.417,27									12.815,71					40.251,13
102									115,248	2.654,45									15.470,16					37.596,68
103									99,774	2.150,22									17.620,38					35.446,46
104									85,880	1.856,54									19.476,92					33.589,92
105									72,137	1.580,17									21.057,09					32.009,75
106									68,595	1.407,32									22.464,41					30.602,43
107									64,883	1.334,78									23.799,19					29.267,65
108									64,008	1.288,91									25.088,10					27.978,74
109									45,482	1.094,90									26.183,00					26.883,84
110									42,468	879,50									27.062,50					26.004,34
111									45,233	877,01									27.939,51					25.127,33
112									39,650	848,83									28.788,34					24.278,50
113									20,895	605,45									29.393,79					23.673,05
114	6,505	0,601	0,117	7,223	65,05	6,01	1,17	72,23		208,95	65,05	6,01	1,17	72,23	52,04	5,23	1,38	58,65	29.602,74	52,04	5,23	1,38	58,65	23.522,74
115	40,924	2,428	0,349	43,701	474,29	30,29	4,66	509,24			539,34	36,30	5,83	581,47	431,47	31,57	6,86	469,90						23.933,99
116	42,343	6,891	0,180	49,414	832,67	93,19	5,29	931,15			1.372,01	129,49	11,12	1.512,62	1.097,61	112,60	13,08	1.223,29						24.687,38
117	47,359	8,499	9,826	65,684	897,02	153,90	100,06	1.150,98			2.269,03	283,39	111,18	2.663,60	1.815,22	246,43	130,80	2.192,45						25.656,54
118	42,014	8,465	27,620	78,099	893,73	169,64	374,46	1.437,83			3.162,76	453,03	485,64	4.101,43	2.530,21	393,94	571,34	3.495,49						26.959,58
119	48,598	9,876	34,968	93,442	906,12	183,41	625,88	1.715,41			4.068,88	636,44	1.111,52	5.816,84	3.255,10	553,43	1.307,67	5.116,20						28.580,29
120	56,322	11,487	42,125	109,934	1.049,20	213,63	770,93	2.033,76			5.118,08	850,07	1.882,45	7.850,60	4.094,46	739,19	2.214,65	7.048,30						30.512,39
121	54,459	11,456	51,788	117,703	1.107,81	229,43	939,13	2.276,37			6.225,89	1.079,50	2.821,58	10.126,97	4.980,71	938,70	3.319,51	9.238,92						32.703,00
122	55,232	11,725	56,624	123,581	1.096,91	231,81	1.084,12	2.412,84			7.322,80	1.311,31	3.905,70	12.539,81	5.858,24	1.140,27	4.594,94	11.593,45						35.057,54
123	53,656	11,502	59,626	124,784	1.088,88	232,27	1.162,50	2.483,65			8.411,68	1.543,58	5.068,20	15.023,46	6.729,34	1.342,24	5.962,59	14.034,17						37.498,26
124	56,874	12,096	58,819	127,789	1.105,30	235,98	1.184,45	2.525,73			9.516,98	1.779,56	6.252,65	17.549,19	7.613,58	1.547,44	7.356,06	16.517,08						39.981,17
125	47,996	10,457	61,518	119,971	1.048,70	225,53	1.203,37	2.477,60			10.565,68	2.005,09	7.456,02	20.026,79	8.452,54	1.743,56	8.771,79	18.967,89						42.431,97
126	40,302	8,999	65,246	114,547	882,98	194,56	1.267,64	2.345,18			11.448,66	2.199,65	8.723,66	22.371,97	9.158,93	1.912,74	10.263,13	21.334,80						44.798,88
127	43,182	9,578	65,454	118,214	834,84	185,77	1.307,00	2.327,61			12.283,50	2.385,42	10.030,66	24.699,58	9.826,80	2.074,28	11.800,78	23.701,86						47.165,94
128	39,589	8,898	68,580	117,067	827,71	184,76	1.340,34	2.352,81			13.111,21	2.570,18	11.371,00	27.052,39	10.488,97	2.234,94	13.377,65	26.101,56						49.565,64
129	35,702	8,160	72,746	116,608	752,91	170,58	1.413,26	2.336,75			13.864,12	2.740,76	12.784,26	29.389,14	11.091,30	2.383,27	15.040,31	28.514,88						51.978,96
130	55,150	11,982	68,422	135,554	908,52	201,42	1.411,68	2.521,62			14.772,64	2.942,18	14.195,94	31.910,76	11.818,11	2.558,42	16.701,11	31.077,64						54.541,72
131	44,699	9,928	68,168	122,795	998,49	219,10	1.365,90	2.583,49			15.771,13	3.161,28	15.561,84	34.494,25	12.616,90	2.748,94	18.308,05	33.673,89						57.137,97
132	38,947	8,782	69,210	116,939	836,46	187,10	1.373,78	2.397,34			16.607,59	3.348,38	16.935,62	36.891,59	13.286,07	2.911,63	19.924,26	36.121,96						59.586,05
133	47,022	10,280	62,059	119,361	859,69	190,62	1.312,69	2.363,00			17.467,28	3.539,00	18.248,31	39.254,59	13.973,82	3.077,39	21.468,60	38.519,81						61.983,90
134	63,489	13,220	55,444	132,153	1.105,11	235,00	1.175,03	2.515,14			18.572,39	3.774,00	19.423,34	41.769,73	14.857,91	3.281,74	22.850,99	40.990,64						64.454,72
135	70,696	14,519	55,121	140,336	1.341,85	277,39	1.105,65	2.724,89			19.914,24	4.051,39	20.528,99	44.494,62	15.931,39	3.522,95	24.151,75	43.606,09						67.070,17
136	59,468	12,588	59,187	131,243	1.301,64	271,07	1.143,08	2.715,79			21.215,88	4.322,46	21.672,07	47.210,41	16.972,70	3.758,66	25.496,55	46.227,91						69.692,00
137	50,030	10,970	67,677	128,677	1.094,98	235,58	1.268,64	2.599,20			22.310,86	4.558,04	22.940,71	49.809,61	17.848,69	3.963,51	26.989,07	48.801,27						72.265,35
138	25,921	6,186	84,092	116,199	759,51	171,56	1.517,69	2.448,76			23.070,37	4.729,60	24.458,40	52.258,37	18.456,30	4.112,70	28.774,59	51.343,59						74.807,66
139	12,491	3,230	90,682	106,403	384,12	94,16	1.747,74	2.226,02			23.454,49	4.823,76	26.206,14	54.484,39	18.763,59	4.194,57	30.830,75	53.788,91						77.253,00
140		0,254	91,760	92,014	124,91	34,84	1.824,42	1.984,17			23.579,40	4.858,60	28.030,56	56.468,56	18.863,52	4.224,87	32.977,13	56.065,52						79.529,60

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
141		0,099	91,857	91,956		3,53	1.836,17	1.839,70				4.862,13	29.866,73	34.728,86		4.227,94	35.137,33	39.365,27						81.692,87
142		0,098	90,275	90,373		1,97	1.821,32	1.823,29				4.864,10	31.688,05	36.552,15		4.229,65	37.280,06	41.509,71						83.837,31
143			89,472	89,472		0,98	1.797,47	1.798,45	0,015	0,15		4.865,08	33.485,52	38.350,60		4.230,50	39.394,73	43.625,23	0,15		0,15		0,15	85.952,68
144	0,583	0,375	103,646	104,604	5,83	3,75	1.931,18	1.940,76		0,15	5,83	4.868,83	35.416,70	40.291,36	4,66	4.233,77	41.666,71	45.905,14	0,30	0,15			0,15	88.232,43
145		0,257	102,240	102,497	5,83	6,32	2.058,86	2.071,01			11,66	4.875,15	37.475,56	42.362,37	9,33	4.239,26	44.088,89	48.337,48						90.664,78
146	0,348	0,424	97,631	98,403	3,48	6,81	1.998,71	2.009,00			15,14	4.881,96	39.474,27	44.371,37	12,11	4.245,18	46.440,32	50.697,61						93.024,91
147	1,002	0,570	93,928	95,500	13,50	9,94	1.915,59	1.939,03			28,64	4.891,90	41.389,86	46.310,40	22,91	4.253,83	48.693,95	52.970,69						95.297,99
148	0,098	0,317	96,558	96,973	11,00	8,87	1.904,86	1.924,73			39,64	4.900,77	43.294,72	48.235,13	31,71	4.261,54	50.934,96	55.228,21						97.555,51
149	1,998	0,830	102,541	105,369	20,96	11,47	1.990,99	2.023,42			60,60	4.912,24	45.285,71	50.258,55	48,48	4.271,51	53.277,31	57.597,30						99.924,59
150			136,369	136,369	19,98	8,30	2.389,10	2.417,38			80,58	4.920,54	47.674,81	52.675,93	64,46	4.278,73	56.088,01	60.431,20						102.758,50
151	2,388	0,720	109,885	112,993	23,88	7,20	2.462,54	2.493,62			104,46	4.927,74	50.137,35	55.169,55	83,57	4.284,99	58.985,12	63.353,68						105.680,97
152	3,070	0,975	52,594	56,639	54,58	16,95	1.624,79	1.696,32			159,04	4.944,69	51.762,14	56.865,87	127,23	4.299,73	60.896,64	65.323,60						107.650,89
153	0,883	0,314	1,404	2,601	39,53	12,89	539,98	592,40			198,57	4.957,58	52.302,12	57.458,27	158,86	4.310,94	61.531,91	66.001,71						108.328,99
154					8,83	3,14	14,04	26,01	33,055	330,55	207,40	4.960,72	52.316,16	57.484,28	165,92	4.313,67	61.548,42	66.028,01	330,55	7,06	2,73	16,52	26,31	108.024,75
155									81,022	1.140,77									1.471,32					106.883,98
156									213,391	2.944,13									4.415,45					103.939,85
157									273,303	4.866,94									9.282,39					99.072,91
158									251,755	5.250,58									14.532,97					93.822,33
159									107,036	3.587,91									18.120,88					90.234,42
160									40,769	1.478,05									19.598,93					88.756,37
161	1,295			1,295	12,95			12,95	9,502	502,71	12,95			12,95	10,36			10,36	20.101,64	10,36			10,36	88.264,02
162	0,831			0,831	21,26			21,26	11,354	208,56	34,21			34,21	27,37			27,37	20.310,20	17,01			17,01	88.072,47
163	0,651			0,651	14,82			14,82	13,818	251,72	49,03			49,03	39,22			39,22	20.561,92	11,86			11,86	87.832,61
164					6,51			6,51	28,157	419,75	55,54			55,54	44,43			44,43	20.981,67	5,21			5,21	87.418,07
165									67,379	955,36									21.937,03					86.462,71
166									49,841	1.172,20									23.109,23					85.290,51
167									72,907	1.227,48									24.336,71					84.063,03
168									52,405	1.253,12									25.589,83					82.809,91
169									61,785	1.141,90									26.731,73					81.668,01
170									80,065	1.418,50									28.150,23					80.249,51
171									79,484	1.595,49									29.745,72					78.654,02
172									94,256	1.737,40									31.483,12					76.916,62
173									77,142	1.713,98									33.197,10					75.202,64
174									64,591	1.417,33									34.614,43					73.785,31
175									48,418	1.130,09									35.744,52					72.655,22
176									35,853	842,71									36.587,23					71.812,51
177									26,155	620,08									37.207,31					71.192,43
178									22,694	488,49									37.695,80					70.703,94
179									8,689	313,83									38.009,63					70.390,11
180									10,615	193,04									38.202,67					70.197,07
181									10,986	216,01									38.418,68					69.981,06
182									9,333	203,19									38.621,87					69.777,87
183									4,540	138,73									38.760,60					69.639,14
184									2,613	71,53									38.832,13					69.567,61
185	1,468			1,468	14,68			14,68		26,13	14,68			14,68	11,74			11,74	38.858,26	11,74			11,74	69.553,22
186	3,328			3,328	47,96			47,96			62,64			62,64	50,11			50,11						69.591,59
187	4,159			4,159	74,87			74,87			137,51			137,51	110,01			110,01						69.651,49

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
188	5,545	0,020		5,565	97,04	0,20		97,24			234,55	0,20		234,75	187,64	0,17		187,81						69.729,30
189	13,014	1,591	4,759	19,364	185,59	16,11	47,59	249,29			420,14	16,31	47,59	484,04	336,11	14,18	55,99	406,28						69.947,77
190	10,739	1,789	0,054	12,582	237,53	33,80	48,13	319,46			657,67	50,11	95,72	803,50	526,14	43,57	112,61	682,32						70.223,81
191	7,480	1,585	4,110	13,175	182,19	33,74	41,64	257,57			839,86	83,85	137,36	1.061,07	671,89	72,91	161,60	906,40						70.447,89
192	5,550	1,266	7,658	14,474	130,30	28,51	117,68	276,49			970,16	112,36	255,04	1.337,56	776,13	97,70	300,05	1.173,88						70.715,37
193	5,893	1,358	10,682	17,933	114,43	26,24	183,40	324,07			1.084,59	138,60	438,44	1.661,63	867,67	120,52	515,81	1.504,00						71.045,50
194	6,477	1,488	13,212	21,177	123,70	28,46	238,94	391,10			1.208,29	167,06	677,38	2.052,73	966,63	145,27	796,92	1.908,82						71.450,31
195	3,188	0,860	20,973	25,021	96,65	23,48	341,85	461,98			1.304,94	190,54	1.019,23	2.514,71	1.043,95	165,69	1.199,09	2.408,73						71.950,22
196	3,362	0,899	21,136	25,397	65,50	17,59	421,09	504,18			1.370,44	208,13	1.440,32	3.018,89	1.096,35	180,98	1.694,49	2.971,82						72.513,32
197	7,042	1,697	28,680	37,419	104,04	25,96	498,16	628,16			1.474,48	234,09	1.938,48	3.647,05	1.179,58	203,56	2.280,56	3.663,70						73.205,20
198	13,289	3,038	37,536	53,863	203,31	47,35	662,16	912,82			1.677,79	281,44	2.600,64	4.559,87	1.342,23	244,73	3.059,58	4.646,54						74.188,03
199	18,969	4,146	34,565	57,680	322,58	71,84	721,01	1.115,43			2.000,37	353,28	3.321,65	5.675,30	1.600,30	307,20	3.907,82	5.815,32						75.356,81
200	14,153	3,186	34,154	51,493	331,22	73,32	687,19	1.091,73			2.331,59	426,60	4.008,84	6.767,03	1.865,27	370,96	4.716,28	6.952,51						76.494,00
201	10,041	2,300	27,480	39,821	241,94	54,86	616,34	913,14			2.573,53	481,46	4.625,18	7.680,17	2.058,82	418,66	5.441,39	7.918,87						77.460,36
202	10,108	2,139	8,132	20,379	201,49	44,39	356,12	602,00			2.775,02	525,85	4.981,30	8.282,17	2.220,02	457,26	5.860,35	8.537,63						78.079,12
203	14,487	0,143		14,630	245,95	22,82	81,32	350,09			3.020,97	548,67	5.062,62	8.632,26	2.416,78	477,10	5.956,02	8.849,90						78.391,39
204	31,627	2,962		34,589	461,14	31,05		492,19			3.482,11	579,72		4.061,83	2.785,69	504,10		3.289,79						78.787,30
205	24,757	4,951	11,479	41,187	563,84	79,13	114,79	757,76			4.045,95	658,85	114,79	4.819,59	3.236,76	572,91	135,05	3.944,72						79.442,23
206	25,977	5,502	24,930	56,409	507,34	104,53	364,09	975,96			4.553,29	763,38	478,88	5.795,55	3.642,63	663,81	563,39	4.869,83						80.367,34
207	27,741	5,948	30,596	64,285	537,18	114,50	555,26	1.206,94			5.090,47	877,88	1.034,14	7.002,49	4.072,38	763,37	1.216,64	6.052,39						81.549,90
208	24,655	5,449	36,472	66,576	523,96	113,97	670,68	1.308,61			5.614,43	991,85	1.704,82	8.311,10	4.491,54	862,48	2.005,67	7.359,69						82.857,21
209	34,263	7,337	38,234	79,834	589,18	127,86	747,06	1.464,10			6.203,61	1.119,71	2.451,88	9.775,20	4.962,89	973,66	2.884,56	8.821,11						84.318,63
210	25,449	5,729	45,820	76,998	597,12	130,66	840,54	1.568,32			6.800,73	1.250,37	3.292,42	11.343,52	5.440,58	1.087,28	3.873,44	10.401,30						85.898,81
211	20,127	4,697	52,540	77,364	455,76	104,26	983,60	1.543,62			7.256,49	1.354,63	4.276,02	12.887,14	5.805,19	1.177,94	5.030,61	12.013,74						87.511,26
212	23,623	5,445	53,356	82,424	437,50	101,42	1.058,96	1.597,88			7.693,99	1.456,05	5.334,98	14.485,02	6.155,19	1.266,13	6.276,45	13.697,77						89.195,29
213	22,834	5,316	57,808	85,958	464,57	107,61	1.111,64	1.683,82			8.158,56	1.563,66	6.446,62	16.168,84	6.526,85	1.359,70	7.584,26	15.470,81						90.968,33
214	25,763	5,930	57,879	89,572	485,97	112,46	1.156,87	1.755,30			8.644,53	1.676,12	7.603,49	17.924,14	6.915,62	1.457,50	8.945,28	17.318,40						92.815,92
215	24,162	5,605	58,741	88,508	499,25	115,35	1.166,20	1.780,80			9.143,78	1.791,47	8.769,69	19.704,94	7.315,02	1.557,80	10.317,28	19.190,10						94.687,62
216	22,302	5,249	62,822	90,373	464,64	108,54	1.215,63	1.788,81			9.608,42	1.900,01	9.985,32	21.493,75	7.686,74	1.652,18	11.747,44	21.086,36						96.583,87
217	20,731	4,905	62,250	87,886	430,33	101,54	1.250,72	1.782,59			10.038,75	2.001,55	11.236,04	23.276,34	8.031,00	1.740,48	13.218,87	22.990,35						98.487,86
218	25,611	5,926	61,142	92,679	463,42	108,31	1.233,92	1.805,65			10.502,17	2.109,86	12.469,96	25.081,99	8.401,74	1.834,66	14.670,54	24.906,94						100.404,45
219	27,142	6,244	60,728	94,114	527,53	121,70	1.218,70	1.867,93			11.029,70	2.231,56	13.688,66	26.949,92	8.823,76	1.940,49	16.104,31	26.868,56						102.366,06
220	21,167	5,023	63,589	89,779	483,09	112,67	1.243,17	1.838,93			11.512,79	2.344,23	14.931,83	28.788,85	9.210,23	2.038,46	17.566,86	28.815,55						104.313,06
221	17,607	4,257	65,822	87,686	387,74	92,80	1.294,11	1.774,65			11.900,53	2.437,03	16.225,94	30.563,50	9.520,42	2.119,16	19.089,34	30.728,92						106.226,43
222	15,375	3,753	63,899	83,027	329,82	80,10	1.297,21	1.707,13			12.230,35	2.517,13	17.523,15	32.270,63	9.784,28	2.188,81	20.615,47	32.588,56						108.086,07
223	25,154	5,854	62,792	93,800	405,29	96,07	1.266,91	1.768,27			12.635,64	2.613,20	18.790,06	34.038,90	10.108,51	2.272,35	22.105,95	34.486,81						109.984,32
224	32,422	7,275	56,028	95,725	575,76	131,29	1.188,20	1.895,25			13.211,40	2.744,49	19.978,26	35.934,15	10.569,12	2.386,51	23.503,84	36.459,47						111.956,98
225	17,947	4,307	64,198	86,452	503,69	115,82	1.202,26	1.821,77			13.715,09	2.860,31	21.180,52	37.755,92	10.972,07	2.487,23	24.918,26	38.377,56						113.875,07
226	19,465	4,632	63,265	87,362	374,12	89,39	1.274,63	1.738,14			14.089,21	2.949,70	22.455,15	39.494,06	11.271,37	2.564,96	26.417,82	40.254,15						115.751,66
227	22,196	5,227	62,370	89,793	416,61	98,59	1.256,35	1.771,55			14.505,82	3.048,29	23.711,50	41.265,61	11.604,66	2.650,69	27.895,88	42.151,23						117.648,74
228	16,601	4,024	63,800	84,425	387,97	92,51	1.261,70	1.742,18			14.893,79	3.140,80	24.973,20	43.007,79	11.915,03	2.731,13	29.380,24	44.026,40						119.523,91
229	20,785	4,928	63,925	89,638	373,86	89,52	1.277,25	1.740,63			15.267,65	3.230,32	26.250,45	44.748,42	12.214,12	2.808,97	30.882,88	45.905,97						121.403,49
230	19,632	4,684	62,976	87,292	404,17	96,12	1.269,01	1.769,30			15.671,82	3.326,44	27.519,46	46.517,72	12.537,46	2.892,56	32.375,84	47.805,86						123.303,36
231	21,938	5,133	58,824	85,895	415,70	98,17	1.218,00	1.731,87			16.087,52	3.424,61	28.737,46	48.249,59	12.870,02	2.977,92	33.808,78	49.656,72						125.154,23
232	26,102	5,957	54,195	86,254	480,40	110,90	1.130,19	1.721,49			16.567,92	3.535,51	29.867,65	49.971,08	13.254,34	3.074,36	35.138,41	51.467,11						126.964,62
233	22,563	5,194	51,139	78,896	486,65	111,51	1.053,34	1.651,50			17.054,57	3.647,02	30.920,99	51.622,58	13.643,66	3.171,32	36.377,64	53.192,62						128.690,13
234	24,100	5,468	46,701	76,269	466,63	106,62	978,40	1.551,65			17.521,20	3.753,64	31.899,39	53.174,23	14.016,96	3.264,03	37.528,69	54.809,68						130.307,21

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
235	18,197	4,204	43,313	65,714	422,97	96,72	900,14	1.419,83			17.944,17	3.850,36	32.799,53	54.594,06	14.355,34	3.348,14	38.587,68	56.291,16						131.788,68
236	20,818	4,700	37,964	63,482	390,15	89,04	812,77	1.291,96			18.334,32	3.939,40	33.612,30	55.886,02	14.667,46	3.425,57	39.543,88	57.636,91						133.134,43
237	16,661	3,845	37,365	57,871	374,79	85,45	753,29	1.213,53			18.709,11	4.024,85	34.365,59	57.099,55	14.967,29	3.499,87	40.430,11	58.897,27						134.394,79
238	10,759	2,620	38,855	52,234	274,20	64,65	762,20	1.101,05			18.983,31	4.089,50	35.127,79	58.200,60	15.186,65	3.556,09	41.326,81	60.069,55						135.567,07
239	11,418	2,739	37,473	51,630	221,77	53,59	763,28	1.038,64			19.205,08	4.143,09	35.891,07	59.239,24	15.364,06	3.602,69	42.224,79	61.191,54						136.689,06
240	9,933	2,432	38,890	51,255	213,51	51,71	763,63	1.028,85			19.418,59	4.194,80	36.654,70	60.268,09	15.534,87	3.647,65	43.123,18	62.305,70						137.803,22
241	7,814	1,973	40,182	49,969	177,47	44,05	790,72	1.012,24			19.596,06	4.238,85	37.445,42	61.280,33	15.676,85	3.685,96	44.053,44	63.416,25						138.913,76
242	7,768	1,979	41,388	51,135	155,82	39,52	815,70	1.011,04			19.751,88	4.278,37	38.261,12	62.291,37	15.801,50	3.720,32	45.013,08	64.534,90						140.032,43
243	14,528	3,418	39,874	57,820	222,96	53,97	812,62	1.089,55			19.974,84	4.332,34	39.073,74	63.380,92	15.979,87	3.767,25	45.969,11	65.716,23						141.213,75
244	15,519	3,629	40,024	59,172	300,47	70,47	798,98	1.169,92			20.275,31	4.402,81	39.872,72	64.550,84	16.220,25	3.828,53	46.909,08	66.957,86						142.455,38
245	17,941	4,117	38,728	60,786	334,60	77,46	787,52	1.199,58			20.609,91	4.480,27	40.660,24	65.750,42	16.487,93	3.895,89	47.835,58	68.219,40						143.716,91
246	18,163	4,177	39,800	62,140	361,04	82,94	785,28	1.229,26			20.970,95	4.563,21	41.445,52	66.979,68	16.776,76	3.968,01	48.759,44	69.504,21						145.001,72
247	18,401	4,220	39,376	61,997	365,64	83,97	791,76	1.241,37			21.336,59	4.647,18	42.237,28	68.221,05	17.069,27	4.041,03	49.690,92	70.801,22						146.298,73
248	16,962	3,940	41,463	62,365	353,63	81,60	808,39	1.243,62			21.690,22	4.728,78	43.045,67	69.464,67	17.352,18	4.111,98	50.641,96	72.106,12						147.603,64
249	18,134	4,174	40,210	62,518	350,96	81,14	816,73	1.248,83			22.041,18	4.809,92	43.862,40	70.713,50	17.632,94	4.182,54	51.602,82	73.418,30						148.915,82
250	16,330	3,799	39,876	60,005	344,64	79,73	800,86	1.225,23			22.385,82	4.889,65	44.663,26	71.938,73	17.908,66	4.251,87	52.545,01	74.705,54						150.203,05
251	15,187	3,562	40,259	59,008	315,17	73,61	801,35	1.190,13			22.700,99	4.963,26	45.464,61	73.128,86	18.160,79	4.315,88	53.487,78	75.964,45						151.461,96
252	12,156	2,922	40,125	55,203	273,43	64,84	803,84	1.142,11			22.974,42	5.028,10	46.268,45	74.270,97	18.379,54	4.372,26	54.433,47	77.185,27						152.682,78
253	14,823	3,484	39,876	58,183	269,79	64,06	800,01	1.133,86			23.244,21	5.092,16	47.068,46	75.404,83	18.595,37	4.427,97	55.374,66	78.398,00						153.895,50
254	14,401	3,384	38,354	56,139	292,24	68,68	782,30	1.143,22			23.536,45	5.160,84	47.850,76	76.548,05	18.829,16	4.487,69	56.295,01	79.611,86						155.109,37
255	12,678	3,042	41,266	56,986	270,79	64,26	796,20	1.131,25			23.807,24	5.225,10	48.646,96	77.679,30	19.045,79	4.543,57	57.231,72	80.821,08						156.318,59
256	13,675	3,233	39,045	55,953	263,53	62,75	803,11	1.129,39			24.070,77	5.287,85	49.450,07	78.808,69	19.256,62	4.598,13	58.176,55	82.031,30						157.528,81
257	15,123	3,533	38,552	57,208	287,98	67,66	775,97	1.131,61			24.358,75	5.355,51	50.226,04	79.940,30	19.487,00	4.656,97	59.089,46	83.233,43						158.730,93
258	11,424	2,759	39,220	53,403	265,47	62,92	777,72	1.106,11			24.624,22	5.418,43	51.003,76	81.046,41	19.699,38	4.711,68	60.004,42	84.415,48						159.912,98
259	11,987	2,873	38,852	53,712	234,11	56,32	780,72	1.071,15			24.858,33	5.474,75	51.784,48	82.117,56	19.886,66	4.760,65	60.922,92	85.570,23						161.067,74
260	11,429	2,755	38,856	53,040	234,16	56,28	777,08	1.067,52			25.092,49	5.531,03	52.561,56	83.185,08	20.073,99	4.809,59	61.837,13	86.720,71						162.218,22
261	9,009	2,238	41,287	52,534	204,38	49,93	801,43	1.055,74			25.296,87	5.580,96	53.362,99	84.240,82	20.237,50	4.853,01	62.779,99	87.870,50						163.368,00
262	6,690	1,727	40,732	49,149	156,99	39,65	820,19	1.016,83			25.453,86	5.620,61	54.183,18	85.257,65	20.363,09	4.887,49	63.744,92	88.995,50						164.493,00
263			45,954	45,954	66,90	17,27	866,86	951,03	4,298	42,98	25.520,76	5.637,88	55.050,04	86.208,68	20.416,61	4.902,50	64.764,75	90.083,86	42,98	42,98			42,98	165.538,39
264	4,904	1,347	43,985	50,236	49,04	13,47	899,39	961,90		42,98	25.569,80	5.651,35	55.949,43	87.170,58	20.455,84	4.914,22	65.822,86	91.192,92	85,96	39,23	3,75		42,98	166.604,46
265	2,379	0,777	42,863	46,019	72,83	21,24	868,48	962,55			25.642,63	5.672,59	56.817,91	88.133,13	20.514,10	4.932,69	66.844,60	92.291,39						167.702,93
266	0,524	0,348	41,788	42,660	29,03	11,25	846,51	886,79			25.671,66	5.683,84	57.664,42	89.019,92	20.537,33	4.942,47	67.840,49	93.320,29						168.731,83
267			44,875	44,875	5,24	3,48	866,63	875,35			25.676,90	5.687,32	58.531,05	89.895,27	20.541,52	4.945,50	68.860,06	94.347,08						169.758,61
268			41,294	41,294			861,69	861,69					59.392,74	59.392,74			69.873,81	69.873,81						170.772,36
269		0,168	40,019	40,187		1,68	813,13	814,81				1,68	60.205,87	60.207,55		1,46	70.830,44	70.831,90						171.730,44
270		0,071	38,793	38,864		2,39	788,12	790,51				4,07	60.993,99	60.998,06		3,54	71.757,64	71.761,18						172.659,72
271			37,576	37,576		0,71	763,69	764,40				4,78	61.757,68	61.762,46		4,16	72.656,09	72.660,25						173.558,80
272			38,266	38,266			758,42	758,42					62.516,10	62.516,10			73.548,35	73.548,35						174.451,06
273			38,453	38,453			767,19	767,19					63.283,29	63.283,29			74.450,93	74.450,93						175.353,64
274	12,257	2,848	27,857	42,962	122,57	28,48	663,10	814,15			122,57	28,48	63.946,39	64.097,44	98,06	24,77	75.231,05	75.353,88						176.256,58
275	11,260	2,634	26,407	40,301	235,17	54,82	542,64	832,63			357,74	83,30	64.489,03	64.930,07	286,19	72,43	75.869,45	76.228,07						177.130,79
276	10,484	2,491	28,419	41,394	217,44	51,25	548,26	816,95			575,18	134,55	65.037,29	65.747,02	460,14	117,00	76.514,46	77.091,60						177.994,32
277	15,676	3,550	28,181	47,407	261,60	60,41	566,00	888,01			836,78	194,96	65.603,29	66.635,03	669,42	169,53	77.180,34	78.019,29						178.922,01
278	19,489	4,299	27,254	51,042	351,65	78,49	554,35	984,49			1.188,43	273,45	66.157,64	67.619,52	950,74	237,78	77.832,52	79.021,04						179.923,76
279	21,519	4,705	28,001	54,225	410,08	90,04	552,55	1.052,67			1.598,51	363,49	66.710,19	68.672,19	1.278,81	316,08	78.482,58	80.077,47						180.980,18
280	21,205	4,685	30,627	56,517	427,24	93,90	586,28	1.107,42			2.025,75	457,39	67.296,47	69.779,61	1.620,60	397,73	79.172,32	81.190,65						182.093,37
281	15,229	3,532	35,312	54,073	364,34	82,17	659,39	1.105,90			2.390,09	539,56	67.955,86	70.885,51	1.912,07	469,18	79.948,07	82.329,32						183.232,05

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
282	12,225	2,914	36,598	51,737	274,54	64,46	719,10	1.058,10			2.664,63	604,02	68.674,96	71.943,61	2.131,70	525,23	80.794,07	83.451,00						184.353,73
283	16,010	3,672	33,332	53,014	282,35	65,86	699,30	1.047,51			2.946,98	669,88	69.374,26	72.991,12	2.357,58	582,50	81.616,78	84.556,86						185.459,59
284	12,935	3,007	30,819	46,761	289,45	66,79	641,51	997,75			3.236,43	736,67	70.015,77	73.988,87	2.589,14	640,58	82.371,49	85.601,21						186.503,95
285	13,666	3,189	33,892	50,747	266,01	61,96	647,11	975,08			3.502,44	798,63	70.662,88	74.963,95	2.801,95	694,46	83.132,80	86.629,21						187.531,94
286	16,284	3,733	33,910	53,927	299,50	69,22	678,02	1.046,74			3.801,94	867,85	71.340,90	76.010,69	3.041,55	754,65	83.930,47	87.726,67						188.629,40
287	15,164	3,512	34,679	53,355	314,48	72,45	685,89	1.072,82			4.116,42	940,30	72.026,79	77.083,51	3.293,14	817,65	84.737,40	88.848,19						189.750,91
288	13,242	3,112	35,068	51,422	284,06	66,24	697,47	1.047,77			4.400,48	1.006,54	72.724,26	78.131,28	3.520,38	875,25	85.557,95	89.953,58						190.856,31
289	11,523	2,742	34,409	48,674	247,65	58,54	694,77	1.000,96			4.648,13	1.065,08	73.419,03	79.132,24	3.718,50	926,16	86.375,33	91.019,99						191.922,71
290	12,113	2,860	33,173	48,146	236,36	56,02	675,82	968,20			4.884,49	1.121,10	74.094,85	80.100,44	3.907,59	974,87	87.170,41	92.052,87						192.955,59
291	15,519	3,517	27,859	46,895	276,32	63,77	610,32	950,41			5.160,81	1.184,87	74.705,17	81.050,85	4.128,65	1.030,32	87.888,44	93.047,41						193.950,12
292	8,682	2,081	24,684	35,447	242,01	55,98	525,43	823,42			5.402,82	1.240,85	75.230,60	81.874,27	4.322,26	1.079,00	88.506,59	93.907,85						194.810,56
293	6,125	1,529	22,997	30,651	148,07	36,10	476,81	660,98			5.550,89	1.276,95	75.707,41	82.535,25	4.440,71	1.110,39	89.067,54	94.618,64						195.521,36
294	5,650	1,410	19,845	26,905	117,75	29,39	428,42	575,56			5.668,64	1.306,34	76.135,83	83.110,81	4.534,91	1.135,95	89.571,56	95.242,42						196.145,14
295	2,029	0,622	18,344	20,995	76,79	20,32	381,89	479,00			5.745,43	1.326,66	76.517,72	83.589,81	4.596,34	1.153,62	90.020,85	95.770,81						196.673,52
296	4,640	1,152	11,384	17,176	66,69	17,74	297,28	381,71			5.812,12	1.344,40	76.815,00	83.971,52	4.649,70	1.169,04	90.370,59	96.189,33						197.092,04
297	6,787	1,662	11,993	20,442	114,27	28,14	233,77	376,18			5.926,39	1.372,54	77.048,77	84.347,70	4.741,11	1.193,51	90.645,61	96.580,23						197.482,95
298	4,449	1,162	12,511	18,122	112,36	28,24	245,04	385,64			6.038,75	1.400,78	77.293,81	84.733,34	4.831,00	1.218,07	90.933,89	96.982,96						197.885,68
299	2,211	0,685	14,341	17,237	66,60	18,47	268,52	353,59			6.105,35	1.419,25	77.562,33	85.086,93	4.884,28	1.234,13	91.249,80	97.368,21						198.270,93
300	4,562	1,198	14,883	20,643	67,73	18,83	292,24	378,80			6.173,08	1.438,08	77.854,57	85.465,73	4.938,46	1.250,50	91.593,61	97.782,57						198.685,30
301	5,429	1,390	16,162	22,981	99,91	25,88	310,45	436,24			6.272,99	1.463,96	78.165,02	85.901,97	5.018,39	1.273,01	91.958,85	98.250,25						199.152,97
302	2,067	0,664	19,647	22,378	74,96	20,54	358,09	453,59			6.347,95	1.484,50	78.523,11	86.355,56	5.078,36	1.290,87	92.380,13	98.749,36						199.652,08
303	4,564	1,215	20,138	25,917	66,31	18,79	397,85	482,95			6.414,26	1.503,29	78.920,96	86.838,51	5.131,41	1.307,21	92.848,19	99.286,81						200.189,53
304	10,611	2,488	16,641	29,740	151,75	37,03	367,79	556,57			6.566,01	1.540,32	79.288,75	87.395,08	5.252,81	1.339,41	93.280,88	99.873,10						200.775,82
305	15,780	3,494	12,415	31,689	263,91	59,82	290,56	614,29			6.829,92	1.600,14	79.579,31	88.009,37	5.463,94	1.391,43	93.622,72	100.478,09						201.380,80
306	16,502	3,625	12,025	32,152	322,82	71,19	244,40	638,41			7.152,74	1.671,33	79.823,71	88.647,78	5.722,19	1.453,33	93.910,25	101.085,77						201.988,49
307	15,300	3,394	12,214	30,908	318,02	70,19	242,39	630,60			7.470,76	1.741,52	80.066,10	89.278,38	5.976,61	1.514,37	94.195,41	101.686,39						202.589,11
308	14,986	3,403	13,649	32,038	302,86	67,97	258,63	629,46			7.773,62	1.809,49	80.324,73	89.907,84	6.218,90	1.573,47	94.499,68	102.292,05						203.194,77
309	15,350	3,540	13,470	32,360	303,36	69,43	271,19	643,98			8.076,98	1.878,92	80.595,92	90.551,82	6.461,58	1.633,84	94.818,73	102.914,15						203.816,88
310	12,861	3,077	15,456	31,394	282,11	66,17	289,26	637,54			8.359,09	1.945,09	80.885,18	91.189,36	6.687,27	1.691,38	95.159,04	103.537,69						204.440,41
311	13,235	2,921	11,706	27,862	260,96	59,98	271,62	592,56			8.620,05	2.005,07	81.156,80	91.781,92	6.896,04	1.743,54	95.478,59	104.118,17						205.020,89
312	15,403	3,640	11,968	31,011	286,38	65,61	236,74	588,73			8.906,43	2.070,68	81.393,54	92.370,65	7.125,14	1.800,59	95.757,11	104.682,84						205.585,56
313	17,039	4,019	9,861	30,919	324,42	76,59	218,29	619,30			9.230,85	2.147,27	81.611,83	92.989,95	7.384,68	1.867,19	96.013,92	105.265,79						206.168,51
314	16,384	3,951	9,105	29,440	334,23	79,70	189,66	603,59			9.565,08	2.226,97	81.801,49	93.593,54	7.652,06	1.936,50	96.237,05	105.825,61						206.728,33
315	15,682	3,852	5,582	25,116	320,66	78,03	146,87	545,56			9.885,74	2.305,00	81.948,36	94.139,10	7.908,59	2.004,35	96.409,84	106.322,78						207.225,50
316	10,799	0,701	2,045	13,545	264,81	45,53	76,27	386,61			10.150,55	2.350,53	82.024,63	94.525,71	8.120,44	2.043,94	96.499,56	106.663,94						207.566,67
317	4,516	0,786	3,567	8,869	153,15	14,87	56,12	224,14			10.303,70	2.365,40	82.080,75	94.749,85	8.242,96	2.056,87	96.565,59	106.865,42						207.768,14
318	3,833	0,870	2,031	6,734	83,49	16,56	55,98	156,03			10.387,19	2.381,96	82.136,73	94.905,88	8.309,75	2.071,27	96.631,45	107.012,47						207.915,19
319	1,590	0,406	0,825	2,821	54,23	12,76	28,56	95,55	13,411	134,11	10.441,42	2.394,72	82.165,29	95.001,43	8.353,14	2.082,37	96.665,05	107.100,56	134,11	43,38	11,10	33,60	88,08	207.869,16
320	1,870	0,275	0,115	2,260	34,60	6,81	9,40	50,81	17,561	309,72	10.476,02	2.401,53	82.174,69	95.052,24	8.380,82	2.088,29	96.676,11	107.145,22	443,83	27,68	5,92	11,06	44,66	207.604,10
321	1,091			1,091	29,61	2,75	1,15	33,51	24,782	423,43	10.505,63	2.404,28	82.175,84	95.085,75	8.404,50	2.090,68	96.677,46	107.172,64	867,26	23,69	2,39	1,35	27,43	207.208,10
322	0,144			0,144	12,35			12,35	34,278	590,60	10.517,98			10.517,98	8.414,38			8.414,38	1.457,86	9,88			9,88	206.627,38
323					1,44			1,44	45,094	793,72	10.519,42			10.519,42	8.415,54			8.415,54	2.251,58	1,15			1,15	205.834,81
324									49,257	943,51									3.195,09					204.891,30
325									65,856	1.151,13									4.346,22					203.740,17
326									70,804	1.366,60									5.712,82					202.373,57
327									63,257	1.340,61									7.053,43					201.032,96
328									72,218	1.354,75									8.408,18					199.678,21

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
329									78,081	1.502,99									9.911,17					198.175,22
330									94,143	1.722,24									11.633,41					196.452,98
331									105,533	1.996,76									13.630,17					194.456,22
332									120,698	2.262,31									15.892,48					192.193,91
333									143,870	2.645,68									18.538,16					189.548,23
334									181,346	3.252,16									21.790,32					186.296,07
335									217,832	3.991,78									25.782,10					182.304,29
336									245,725	4.635,57									30.417,67					177.668,72
337									273,861	5.195,86									35.613,53					172.472,86
338									312,485	5.863,46									41.476,99					166.609,40
339									375,918	6.884,03									48.361,02					159.725,37
340									420,911	7.968,29									56.329,31					151.757,08
341									464,630	8.855,41									65.184,72					142.901,67
342									479,296	9.439,26									74.623,98					133.462,41
343									491,520	9.708,16									84.332,14					123.754,25
344									612,345	11.038,65									95.370,79					112.715,60
345									506,233	11.185,78									106.556,57					101.529,82
346									472,793	9.790,26									116.346,83					91.739,56
347									359,294	8.320,87									124.667,70					83.418,69
348									303,805	6.630,99									131.298,69					76.787,70
349									290,740	5.945,45									137.244,14					70.842,25
350									262,921	5.536,61									142.780,75					65.305,64
351									246,643	5.095,64									147.876,39					60.210,00
352									232,264	4.789,07									152.665,46					55.420,93
353									202,143	4.344,07									157.009,53					51.076,86
354									215,844	4.179,87									161.189,40					46.896,99
355									205,789	4.216,33									165.405,73					42.680,66
356									196,341	4.021,30									169.427,03					38.659,36
357									187,113	3.834,54									173.261,57					34.824,82
358									179,400	3.665,13									176.926,70					31.159,69
359									184,437	3.638,37									180.565,07					27.521,32
360									194,801	3.792,38									184.357,45					23.728,94
361									169,771	3.645,72									188.003,17					20.083,22
362									221,082	3.908,53									191.911,70					16.174,69
363									259,027	4.801,09									196.712,79					11.373,60
364									273,747	5.327,74									202.040,53					6.045,86
365									235,156	5.089,03									207.129,56					956,83
366									201,712	4.368,68									211.498,24					-3.411,85
367									168,201	3.699,13									215.197,37					-7.110,98
368									145,667	3.138,68									218.336,05					-10.249,66
369									120,468	2.661,35									220.997,40					-12.911,01
370									109,960	2.304,28									223.301,68					-15.215,29
371									92,850	2.028,10									225.329,78					-17.243,39
372									87,525	1.803,75									227.133,53					-19.047,14
373									73,945	1.614,70									228.748,23					-20.661,84
374									64,994	1.389,39									230.137,62					-22.051,23
375									57,405	1.223,99									231.361,61					-23.275,22

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
376									55,896	1.133,01									232.494,62					-24.408,23
377									54,174	1.100,70									233.595,32					-25.508,93
378									53,951	1.081,25									234.676,57					-26.590,18
379									48,153	1.021,04									235.697,61					-27.611,22
380									47,547	957,00									236.654,61					-28.568,22
381									46,673	942,20									237.596,81					-29.510,42
382									45,027	917,00									238.513,81					-30.427,42
383									45,417	904,44									239.418,25					-31.331,86
384									46,698	921,15									240.339,40					-32.253,01
385									47,745	944,43									241.283,83					-33.197,44
386									49,127	968,72									242.252,55					-34.166,16
387									49,558	986,85									243.239,40					-35.153,01
388									57,102	1.066,60									244.306,00					-36.219,61
389									68,741	1.258,43									245.564,43					-37.478,04
390									74,606	1.433,47									246.997,90					-38.911,51
391									84,727	1.593,33									248.591,23					-40.504,84
392									107,020	1.917,47									250.508,70					-42.422,31
393									130,879	2.378,99									252.887,69					-44.801,30
394									151,855	2.827,34									255.715,03					-47.628,64
395									175,931	3.277,86									258.992,89					-50.906,50
396									203,034	3.789,65									262.782,54					-54.696,15
397									226,716	4.297,50									267.080,04					-58.993,65
398									246,344	4.730,60									271.810,64					-63.724,25
399									263,232	5.095,76									276.906,40					-68.820,01
400									279,718	5.429,50									282.335,90					-74.249,51
401									271,664	5.513,82									287.849,72					-79.763,33
402									281,517	5.531,81									293.381,53					-85.295,14
403									357,699	6.392,16									299.773,69					-91.687,30
404									343,592	7.012,91									306.786,60					-98.700,21
405									329,813	6.734,05									313.520,65					-105.434,26
406									316,589	6.464,02									319.984,67					-111.898,28
407									340,224	6.568,13									326.552,80					-118.466,41
408									322,767	6.629,91									333.182,71					-125.096,32
409									314,084	6.368,51									339.551,22					-131.464,83
410									316,434	6.305,18									345.856,40					-137.770,01
411									294,990	6.114,24									351.970,64					-143.884,25
412									248,637	5.436,27									357.406,91					-149.320,52
413									214,079	4.627,16									362.034,07					-153.947,68
414									195,767	4.098,46									366.132,53					-158.046,14
415									183,826	3.795,93									369.928,46					-161.842,07
416									172,987	3.568,13									373.496,59					-165.410,20
417									165,353	3.383,40									376.879,99					-168.793,60
418									158,821	3.241,74									380.121,73					-172.035,34
419									145,964	3.047,85									383.169,58					-175.083,19
420									130,909	2.768,73									385.938,31					-177.851,92
421									135,099	2.660,08									388.598,39					-180.512,00
422									96,655	2.317,54									390.915,93					-182.829,54

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
423									78,641	1.752,96									392.668,89					-184.582,50
424									72,868	1.515,09									394.183,98					-186.097,59
425									75,711	1.485,79									395.669,77					-187.583,38
426									85,635	1.613,46									397.283,23					-189.196,84
427									99,015	1.846,50									399.129,73					-191.043,34
428									102,593	2.016,08									401.145,81					-193.059,42
429									79,767	1.823,60									402.969,41					-194.883,02
430									73,521	1.532,88									404.502,29					-196.415,90
431									111,128	1.846,49									406.348,78					-198.262,39
432									96,953	2.080,81									408.429,59					-200.343,20
433									138,777	2.357,30									410.786,89					-202.700,50
434									124,472	2.632,49									413.419,38					-205.332,99
435									125,626	2.500,98									415.920,36					-207.833,97
436									122,008	2.476,34									418.396,70					-210.310,31
437									122,371	2.443,79									420.840,49					-212.754,10
438									107,756	2.301,27									423.141,76					-215.055,37
439									84,573	1.923,29									425.065,05					-216.978,66
440									64,726	1.492,99									426.558,04					-218.471,65
441									49,776	1.145,02									427.703,06					-219.616,67
442									37,213	869,89									428.572,95					-220.486,56
443									27,465	646,78									429.219,73					-221.133,34
444									21,113	485,78									429.705,51					-221.619,12
445	0,335			0,335	3,35			3,35	14,933	360,46	3,35			3,35	2,68			2,68	430.065,97	2,68			2,68	-221.976,90
446	1,515			1,515	18,50			18,50	8,852	237,85	21,85			21,85	17,48			17,48	430.303,82	14,80			14,80	-222.199,95
447	2,955	0,093		3,048	44,70	0,93		45,63	3,549	124,01	66,55	0,93		67,48	53,24	0,81		54,05	430.427,83	35,76	0,81		36,57	-222.287,39
448	6,495	0,467	0,066	7,028	94,50	5,60	0,66	100,76		35,49	161,05	6,53	0,66	168,24	128,84	5,68	0,78	135,30	430.463,32	35,49			35,49	-222.241,63
449	10,774	1,114	1,042	12,930	172,69	15,81	11,08	199,58			333,74	22,34	11,74	367,82	266,99	19,43	13,81	300,23						-222.076,69
450	13,378	1,506	3,025	17,909	241,52	26,20	40,67	308,39			575,26	48,54	52,41	676,21	460,21	42,21	61,66	564,08						-221.812,84
451	14,427	1,840	4,628	20,895	278,05	33,46	76,53	388,04			853,31	82,00	128,94	1.064,25	682,65	71,30	151,69	905,64						-221.471,27
452	7,180	1,602	3,017	11,799	216,07	34,42	76,45	326,94			1.069,38	116,42	205,39	1.391,19	855,50	101,23	241,64	1.198,37						-221.178,54
453	8,671	1,891	3,427	13,989	158,51	34,93	64,44	257,88			1.227,89	151,35	269,83	1.649,07	982,31	131,61	317,45	1.431,37						-220.945,55
454	10,878	2,307	3,514	16,699	195,49	41,98	69,41	306,88			1.423,38	193,33	339,24	1.955,95	1.138,70	168,11	399,11	1.705,92						-220.670,99
455	11,090	2,373	5,406	18,869	219,68	46,80	89,20	355,68			1.643,06	240,13	428,44	2.311,63	1.314,45	208,81	504,05	2.027,31						-220.349,61
456	11,938	2,535	5,783	20,256	230,28	49,08	111,89	391,25			1.873,34	289,21	540,33	2.702,88	1.498,67	251,49	635,68	2.385,84						-219.991,07
457	12,973	2,739	6,479	22,191	249,11	52,74	122,62	424,47			2.122,45	341,95	662,95	3.127,35	1.697,96	297,35	779,94	2.775,25						-219.601,66
458	12,567	2,664	6,702	21,933	255,40	54,03	131,81	441,24			2.377,85	395,98	794,76	3.568,59	1.902,28	344,33	935,01	3.181,62						-219.195,29
459	13,131	2,766	6,291	22,188	256,98	54,30	129,93	441,21			2.634,83	450,28	924,69	4.009,80	2.107,86	391,55	1.087,87	3.587,28						-218.789,63
460	10,271	2,241	6,931	19,443	234,02	50,07	132,22	416,31			2.868,85	500,35	1.056,91	4.426,11	2.295,08	435,09	1.243,42	3.973,59						-218.403,32
461	8,779	1,948	6,648	17,375	190,50	41,89	135,79	368,18			3.059,35	542,24	1.192,70	4.794,29	2.447,48	471,51	1.403,18	4.322,17						-218.054,74
462	6,995	1,594	6,188	14,777	157,74	35,42	128,36	321,52			3.217,09	577,66	1.321,06	5.115,81	2.573,67	502,31	1.554,19	4.630,17						-217.746,74
463	6,768	1,539	5,138	13,445	137,63	31,33	113,26	282,22			3.354,72	608,99	1.434,32	5.398,03	2.683,78	529,56	1.687,44	4.900,78						-217.476,15
464	5,931	1,368	4,467	11,766	126,99	29,07	96,05	252,11			3.481,71	638,06	1.530,37	5.650,14	2.785,37	554,83	1.800,44	5.140,64						-217.236,28
465	6,280	1,418	2,289	9,987	122,11	27,86	67,56	217,53			3.603,82	665,92	1.597,93	5.867,67	2.883,06	579,06	1.879,92	5.342,04						-217.034,88
466	4,476	0,584	0,077	5,137	107,56	20,02	23,66	151,24			3.711,38	685,94	1.621,59	6.018,91	2.969,10	596,47	1.907,75	5.473,32						-216.903,59
467	4,439	0,204	0,152	4,795	89,15	7,88	2,29	99,32			3.800,53	693,82	1.623,88	6.118,23	3.040,42	603,32	1.910,45	5.554,19						-216.822,72
468	1,181	0,017		1,198	56,20	2,21	1,52	59,93			3.856,73	696,03	1.625,40	6.178,16	3.085,38	605,24	1.912,24	5.602,86						-216.774,05
469	0,315			0,315	14,96	0,17		15,13	4,732	47,32	3.871,69	696,20		4.567,89	3.097,35	605,39		3.702,74	47,32	11,97	0,15		12,12	-216.809,25

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
470	0,299			0,299	6,14			6,14	3,687	84,19	3.877,83			3.877,83	3.102,26			3.102,26	131,51	4,91			4,91	-216.888,53
471	0,347			0,347	6,46			6,46	4,277	79,64	3.884,29			3.884,29	3.107,43			3.107,43	211,15	5,17			5,17	-216.963,00
472	0,232			0,232	5,79			5,79	5,911	101,88	3.890,08			3.890,08	3.112,06			3.112,06	313,03	4,63			4,63	-217.060,25
473	0,030			0,030	2,62			2,62	8,381	142,92	3.892,70			3.892,70	3.114,16			3.114,16	455,95	2,10			2,10	-217.201,07
474					0,30			0,30	14,294	226,75	3.893,00			3.893,00	3.114,40			3.114,40	682,70	0,24			0,24	-217.427,58
475									31,429	457,23									1.139,93					-217.884,81
476	1,760	0,331	0,273	2,364	17,60	3,31	2,73	23,64	5,516	369,45	17,60	3,31	2,73	23,64	14,08	2,88	3,21	20,17	1.509,38	14,08	2,88	3,21	20,17	-218.234,09
477	2,203	0,619	2,501	5,323	39,63	9,50	27,74	76,87		55,16	57,23	12,81	30,47	100,51	45,78	11,14	35,85	92,77	1.564,54	31,70	8,26	15,20	55,16	-218.216,65
478	6,702	1,001	5,513	13,216	89,05	16,20	80,14	185,39			146,28	29,01	110,61	285,90	117,02	25,23	130,13	272,38						-218.037,04
479	23,875	2,966	3,221	30,062	305,77	39,67	87,34	432,78			452,05	68,68	197,95	718,68	361,64	59,72	232,88	654,24						-217.655,18
480	13,388	2,720	1,481	17,589	372,63	56,86	47,02	476,51			824,68	125,54	244,97	1.195,19	659,74	109,17	288,20	1.057,11						-217.252,31
481	15,256	3,133	5,357	23,746	286,44	58,53	68,38	413,35			1.111,12	184,07	313,35	1.608,54	888,90	160,06	368,65	1.417,61						-216.891,82
482	14,421	3,088	11,363	28,872	296,77	62,21	167,20	526,18			1.407,89	246,28	480,55	2.134,72	1.126,31	214,16	565,35	1.905,82						-216.403,60
483	17,314	3,718	16,576	37,608	317,35	68,06	279,39	664,80			1.725,24	314,34	759,94	2.799,52	1.380,19	273,34	894,05	2.547,58						-215.761,84
484	21,198	4,486	18,785	44,469	385,12	82,04	353,61	820,77			2.110,36	396,38	1.113,55	3.620,29	1.688,29	344,68	1.310,06	3.343,03						-214.966,39
485	21,889	4,719	24,339	50,947	430,87	92,05	431,24	954,16			2.541,23	488,43	1.544,79	4.574,45	2.032,98	424,72	1.817,40	4.275,10						-214.034,31
486	22,030	4,841	30,620	57,491	439,19	95,60	549,59	1.084,38			2.980,42	584,03	2.094,38	5.658,83	2.384,34	507,85	2.463,98	5.356,17						-212.953,25
487	23,577	5,211	34,938	63,726	456,07	100,52	655,58	1.212,17			3.436,49	684,55	2.749,96	6.871,00	2.749,19	595,26	3.235,25	6.579,70						-211.729,71
488	23,677	5,295	39,684	68,656	472,54	105,06	746,22	1.323,82			3.909,03	789,61	3.496,18	8.194,82	3.127,22	686,62	4.113,15	7.926,99						-210.382,42
489	28,132	6,214	42,066	76,412	518,09	115,09	817,50	1.450,68			4.427,12	904,70	4.313,68	9.645,50	3.541,70	786,70	5.074,92	9.403,32						-208.906,11
490	32,456	7,079	42,947	82,482	605,88	132,93	850,13	1.588,94			5.033,00	1.037,63	5.163,81	11.234,44	4.026,40	902,29	6.075,07	11.003,76						-207.305,66
491	30,282	6,717	47,172	84,171	627,38	137,96	901,19	1.666,53			5.660,38	1.175,59	6.065,00	12.900,97	4.528,30	1.022,25	7.135,29	12.685,84						-205.623,57
492	27,521	6,213	51,193	84,927	578,03	129,30	983,65	1.690,98			6.238,41	1.304,89	7.048,65	14.591,95	4.990,73	1.134,69	8.292,53	14.417,95						-203.891,48
493	24,111	5,556	55,071	84,738	516,32	117,69	1.062,64	1.696,65			6.754,73	1.422,58	8.111,29	16.288,60	5.403,78	1.237,03	9.542,69	16.183,50						-202.125,92
494	20,069	4,744	59,152	83,965	441,80	103,00	1.142,23	1.687,03			7.196,53	1.525,58	9.253,52	17.975,63	5.757,22	1.326,59	10.886,49	17.970,30						-200.339,11
495	15,285	3,730	62,802	81,817	353,54	84,74	1.219,54	1.657,82			7.550,07	1.610,32	10.473,06	19.633,45	6.040,06	1.400,28	12.321,25	19.761,59						-198.547,84
496	11,170	2,836	66,268	80,274	264,55	65,66	1.290,70	1.620,91			7.814,62	1.675,98	11.763,76	21.254,36	6.251,70	1.457,37	13.839,72	21.548,79						-196.760,63
497	10,183	2,614	65,850	78,647	213,53	54,50	1.321,18	1.589,21			8.028,15	1.730,48	13.084,94	22.843,57	6.422,52	1.504,77	15.394,05	23.321,34						-194.988,09
498	12,993	3,238	64,177	80,408	231,76	58,52	1.300,27	1.590,55			8.259,91	1.789,00	14.385,21	24.434,12	6.607,93	1.555,65	16.923,78	25.087,36						-193.222,07
499	15,072	3,693	63,556	82,321	280,65	69,31	1.277,33	1.627,29			8.540,56	1.858,31	15.662,54	26.061,41	6.832,45	1.615,92	18.426,52	26.874,89						-191.434,54
500	16,030	3,897	63,234	83,161	311,02	75,90	1.267,90	1.654,82			8.851,58	1.934,21	16.930,44	27.716,23	7.081,26	1.681,92	19.918,16	28.681,34						-189.628,08
501	16,342	3,960	62,401	82,703	323,72	78,57	1.256,35	1.658,64			9.175,30	2.012,78	18.186,79	29.374,87	7.340,24	1.750,24	21.396,22	30.486,70						-187.822,72
502	19,376	4,595	59,788	83,759	357,18	85,55	1.221,89	1.664,62			9.532,48	2.098,33	19.408,68	31.039,49	7.625,98	1.824,63	22.833,74	32.284,35						-186.025,07
503	20,143	4,750	57,225	82,118	395,19	93,45	1.170,13	1.658,77			9.927,67	2.191,78	20.578,81	32.698,26	7.942,14	1.905,90	24.210,36	34.058,40						-184.251,03
504	19,739	4,646	55,435	79,820	398,82	93,96	1.126,60	1.619,38			10.326,49	2.285,74	21.705,41	34.317,64	8.261,19	1.987,60	25.535,78	35.784,57						-182.524,86
505	19,219	4,516	53,177	76,912	389,58	91,62	1.086,12	1.567,32			10.716,07	2.377,36	22.791,53	35.884,96	8.572,86	2.067,27	26.813,56	37.453,69						-180.855,74
506	21,922	5,030	47,581	74,533	411,41	95,46	1.007,58	1.514,45			11.127,48	2.472,82	23.799,11	37.399,41	8.901,98	2.150,28	27.998,95	39.051,21						-179.258,22
507	20,235	4,663	45,601	70,499	421,57	96,93	931,82	1.450,32			11.549,05	2.569,75	24.730,93	38.849,73	9.239,24	2.234,57	29.095,21	40.569,02						-177.740,42
508	19,469	4,472	42,085	66,026	397,04	91,35	876,86	1.365,25			11.946,09	2.661,10	25.607,79	40.214,98	9.556,87	2.314,00	30.126,81	41.997,68						-176.311,75
509	16,838	3,870	36,215	56,923	363,07	83,42	783,00	1.229,49			12.309,16	2.744,52	26.390,79	41.444,47	9.847,33	2.386,54	31.047,99	43.281,86						-175.027,58
510	11,591	2,756	33,271	47,618	284,29	66,26	694,86	1.045,41			12.593,45	2.810,78	27.085,65	42.489,88	10.074,76	2.444,16	31.865,47	44.384,39						-173.925,05
511	11,440	2,663	26,058	40,161	230,31	54,19	593,29	877,79			12.823,76	2.864,97	27.678,94	43.367,67	10.259,01	2.491,28	32.563,46	45.313,75						-172.995,69
512	8,907	2,075	17,807	28,789	203,47	47,38	438,65	689,50			13.027,23	2.912,35	28.117,59	44.057,17	10.421,78	2.532,48	33.079,52	46.033,78						-172.275,66
513	9,378	2,079	8,350	19,807	182,85	41,54	261,57	485,96			13.210,08	2.953,89	28.379,16	44.543,13	10.568,06	2.568,60	33.387,25	46.523,91						-171.785,53
514	14,983	1,680	3,917	20,580	243,61	37,59	122,67	403,87			13.453,69	2.991,48	28.501,83	44.947,00	10.762,95	2.601,29	33.531,56	46.895,80						-171.413,64
515	1,840	0,508	0,864	3,212	168,23	21,88	47,81	237,92	2,518	25,18	13.621,92	3.013,36	28.549,64	45.184,92	10.897,54	2.620,31	33.587,81	47.105,66	25,18	25,18			25,18	-171.228,96
516	0,704	0,001		0,705	25,44	5,09	8,64	39,17	12,428	149,46	13.647,36	3.018,45	28.558,28	45.224,09	10.917,89	2.624,74	33.597,98	47.140,61	174,64	20,35	4,43	10,16	34,94	-171.343,48

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
517					7,04	0,01		7,05	26,636	390,64	13.654,40	3.018,46		16.672,86	10.923,52	2.624,75		13.548,27	565,28	5,63	0,01		5,64	-171.728,48
518									43,118	697,54									1.262,82					-172.426,02
519									65,453	1.085,71									2.348,53					-173.511,73
520									104,988	1.704,41									4.052,94					-175.216,14
521									121,051	2.260,39									6.313,33					-177.476,53
522									98,533	2.195,84									8.509,17					-179.672,37
523									76,076	1.746,09									10.255,26					-181.418,46
524									57,010	1.330,86									11.586,12					-182.749,32
525									40,219	972,29									12.558,41					-183.721,61
526									22,941	631,60									13.190,01					-184.353,21
527									10,156	330,97									13.520,98					-184.684,18
528	0,616			0,616	6,16			6,16	0,029	101,85	6,16			6,16	4,93			4,93	13.622,83	4,93			4,93	-184.781,10
529	13,392	2,747	2,722	18,861	140,08	27,47	27,22	194,77		0,29	146,24	27,47	27,22	200,93	116,99	23,89	32,02	172,90	13.623,12	0,29			0,29	-184.613,42
530	17,719	3,717	12,300	33,736	311,11	64,64	150,22	525,97			457,35	92,11	177,44	726,90	365,88	80,10	208,75	654,73						-184.131,59
531	45,517	9,211	30,893	85,621	632,36	129,28	431,93	1.193,57			1.089,71	221,39	609,37	1.920,47	871,77	192,51	716,91	1.781,19						-183.005,13
532	44,836	9,766	58,098	112,700	903,53	189,77	889,91	1.983,21			1.993,24	411,16	1.499,28	3.903,68	1.594,59	357,53	1.763,86	3.715,98						-181.070,34
533	20,309	4,940	82,673	107,922	651,45	147,06	1.407,71	2.206,22			2.644,69	558,22	2.906,99	6.109,90	2.115,75	485,41	3.419,99	6.021,15						-178.765,17
534	31,559	7,447	90,407	129,413	518,68	123,87	1.730,80	2.373,35			3.163,37	682,09	4.637,79	8.483,25	2.530,70	593,12	5.456,22	8.580,04						-176.206,28
535	48,425	11,136	101,219	160,780	799,84	185,83	1.916,26	2.901,93			3.963,21	867,92	6.554,05	11.385,18	3.170,57	754,71	7.710,65	11.635,93						-173.150,39
536	38,783	9,203	118,119	166,105	872,08	203,39	2.193,38	3.268,85			4.835,29	1.071,31	8.747,43	14.654,03	3.868,23	931,57	10.291,09	15.090,89						-169.695,42
537	54,564	12,755	127,748	195,067	933,47	219,58	2.458,67	3.611,72			5.768,76	1.290,89	11.206,10	18.265,75	4.615,01	1.122,51	13.183,65	18.921,17						-165.865,15
538	54,426	12,733	141,925	209,084	1.089,90	254,88	2.696,73	4.041,51			6.858,66	1.545,77	13.902,83	22.307,26	5.486,93	1.344,15	16.356,27	23.187,35						-161.598,97
539	60,978	14,340	155,314	230,632	1.154,04	270,73	2.972,39	4.397,16			8.012,70	1.816,50	16.875,22	26.704,42	6.410,16	1.579,57	19.853,20	27.842,93						-156.943,39
540	53,402	12,474	164,431	230,307	1.143,80	268,14	3.197,45	4.609,39			9.156,50	2.084,64	20.072,67	31.313,81	7.325,20	1.812,73	23.614,91	32.752,84						-152.033,48
541	54,240	12,653	171,650	238,543	1.076,42	251,27	3.360,81	4.688,50			10.232,92	2.335,91	23.433,48	36.002,31	8.186,34	2.031,23	27.568,80	37.786,37						-146.999,95
542	47,563	11,188	172,933	231,684	1.018,03	238,41	3.445,83	4.702,27			11.250,95	2.574,32	26.879,31	40.704,58	9.000,76	2.238,54	31.622,72	42.862,02						-141.924,30
543	54,821	13,131	178,402	246,354	1.023,84	243,19	3.513,35	4.780,38			12.274,79	2.817,51	30.392,66	45.484,96	9.819,83	2.450,01	35.756,07	48.025,91						-136.760,41
544	47,918	11,606	186,396	245,920	1.027,39	247,37	3.647,98	4.922,74			13.302,18	3.064,88	34.040,64	50.407,70	10.641,74	2.665,11	40.047,81	53.354,66						-131.431,65
545	45,839	11,134	192,163	249,136	937,57	227,40	3.785,59	4.950,56			14.239,75	3.292,28	37.826,23	55.358,26	11.391,80	2.862,85	44.501,45	58.756,10						-126.030,22
546	45,320	11,121	196,623	253,064	911,59	222,55	3.887,86	5.022,00			15.151,34	3.514,83	41.714,09	60.380,26	12.121,07	3.056,37	49.075,40	64.252,84						-120.533,47
547	52,014	12,398	199,609	264,021	973,34	235,19	3.962,32	5.170,85			16.124,68	3.750,02	45.676,41	65.551,11	12.899,74	3.260,89	53.736,95	69.897,58						-114.888,73
548	50,664	12,120	202,286	265,070	1.026,78	245,18	4.018,95	5.290,91			17.151,46	3.995,20	49.695,36	70.842,02	13.721,17	3.474,09	58.465,13	75.660,39						-109.125,93
549	52,628	12,483	203,791	268,902	1.032,92	246,03	4.060,77	5.339,72			18.184,38	4.241,23	53.756,13	76.181,74	14.547,50	3.688,03	63.242,51	81.478,04						-103.308,28
550	52,759	12,490	205,272	270,521	1.053,87	249,73	4.090,63	5.394,23			19.238,25	4.490,96	57.846,76	81.575,97	15.390,60	3.905,18	68.055,01	87.350,79						-97.435,52
551	53,043	12,567	207,863	273,473	1.058,02	250,57	4.131,35	5.439,94			20.296,27	4.741,53	61.978,11	87.015,91	16.237,02	4.123,07	72.915,42	93.275,51						-91.510,81
552	49,279	11,925	210,346	271,550	1.023,22	244,92	4.182,09	5.450,23			21.319,49	4.986,45	66.160,20	92.466,14	17.055,59	4.336,04	77.835,53	99.227,16						-85.559,15
553	50,253	12,092	208,626	270,971	995,32	240,17	4.189,72	5.425,21			22.314,81	5.226,62	70.349,92	97.891,35	17.851,85	4.544,89	82.764,61	105.161,35						-79.624,97
554	43,777	10,657	212,567	267,001	940,30	227,49	4.211,93	5.379,72			23.255,11	5.454,11	74.561,85	103.271,07	18.604,09	4.742,70	87.719,82	111.066,61						-73.719,70
555	41,123	9,966	219,127	270,216	849,00	206,23	4.316,94	5.372,17			24.104,11	5.660,34	78.878,79	108.643,24	19.283,29	4.922,03	92.798,58	117.003,90						-67.782,42
556	32,137	7,730	233,388	273,255	732,60	176,96	4.525,15	5.434,71			24.836,71	5.837,30	83.403,94	114.077,95	19.869,37	5.075,91	98.122,28	123.067,56						-61.718,76
557	25,053	6,521	251,589	283,163	571,90	142,51	4.849,77	5.564,18			25.408,61	5.979,81	88.253,71	119.642,13	20.326,89	5.199,83	103.827,89	129.354,61						-55.431,71
558	52,511	12,379	250,310	315,200	775,64	189,00	5.018,99	5.983,63			26.184,25	6.168,81	93.272,70	125.625,76	20.947,40	5.364,18	109.732,59	136.044,17						-48.742,16
559	19,866	5,285	249,608	274,759	723,77	176,64	4.999,18	5.899,59			26.908,02	6.345,45	98.271,88	131.525,35	21.526,42	5.517,78	115.613,98	142.658,18						-42.128,16
560	29,310	6,249	219,590	255,149	491,76	115,34	4.691,98	5.299,08			27.399,78	6.460,79	102.963,86	136.824,43	21.919,82	5.618,08	121.133,95	148.671,85						-36.114,48
561	28,290	7,097	190,941	226,328	576,00	133,46	4.105,31	4.814,77			27.975,78	6.594,25	107.069,17	141.639,20	22.380,62	5.734,13	125.963,73	154.078,48						-30.707,85
562	49,298	11,623	156,059	216,980	775,88	187,20	3.470,00	4.433,08			28.751,66	6.781,45	110.539,17	146.072,28	23.001,33	5.896,91	130.046,08	158.944,32						-25.842,01
563	60,670	13,834	129,552	204,056	1.099,68	254,57	2.856,11	4.210,36			29.851,34	7.036,02	113.395,28	150.282,64	23.881,07	6.118,28	133.406,21	163.405,56						-21.380,77

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
564	52,394	12,239	129,813	194,446	1.130,64	260,73	2.593,65	3.985,02			30.981,98	7.296,75	115.988,93	154.267,66	24.785,58	6.345,00	136.457,56	167.588,14						-17.198,18
565	36,443	8,639	109,269	154,351	888,37	208,78	2.390,82	3.487,97			31.870,35	7.505,53	118.379,75	157.755,63	25.496,28	6.526,55	139.270,29	171.293,12						-13.493,21
566	23,077	5,581	87,001	115,659	595,20	142,20	1.962,70	2.700,10			32.465,55	7.647,73	120.342,45	160.455,73	25.972,44	6.650,20	141.579,35	174.201,99						-10.584,34
567	24,571	5,723	60,104	90,398	476,48	113,04	1.471,05	2.060,57			32.942,03	7.760,77	121.813,50	162.516,30	26.353,62	6.748,50	143.310,00	176.412,12						-8.374,21
568	23,071	5,179	32,708	60,958	476,42	109,02	928,12	1.513,56			33.418,45	7.869,79	122.741,62	164.029,86	26.734,76	6.843,30	144.401,91	177.979,97						-6.806,37
569	19,004	4,078	8,644	31,726	420,75	92,57	413,52	926,84			33.839,20	7.962,36	123.155,14	164.956,70	27.071,36	6.923,79	144.888,40	178.883,55						-5.902,78
570	11,085	0,771	1,301	13,157	300,89	48,49	99,45	448,83			34.140,09	8.010,85	123.254,59	165.405,53	27.312,07	6.965,96	145.005,40	179.283,43						-5.502,90
571	3,893			3,893	149,78	7,71	13,01	170,50	2,328	23,28	34.289,87	8.018,56	123.267,60	165.576,03	27.431,90	6.972,66	145.020,71	179.425,27	23,28	23,28			23,28	-5.384,35
572	2,051			2,051	59,44			59,44	5,431	77,59	34.349,31			34.349,31	27.479,45			27.479,45	100,87	47,55			47,55	-5.414,39
573	0,081			0,081	21,32			21,32	16,723	221,54	34.370,63			34.370,63	27.496,50			27.496,50	322,41	17,06			17,06	-5.618,87
574	1,986	0,195	0,019	2,200	20,67	1,95	0,19	22,81	2,904	196,27	34.391,30	1,95	0,19	34.393,44	27.513,04	1,70	0,22	27.514,96	518,68	16,54	1,70	0,22	18,46	-5.796,68
575	6,287	1,486	10,864	18,637	82,73	16,81	108,83	208,37		29,04	34.474,03	18,76	109,02	34.601,81	27.579,22	16,31	128,26	27.723,79	547,72	29,04			29,04	-5.616,88
576	2,471	0,730	22,588	25,789	87,58	22,16	334,52	444,26			34.561,61	40,92	443,54	35.046,07	27.649,29	35,58	521,81	28.206,68						-5.133,99
577			27,283	27,283	24,71	7,30	498,71	530,72			34.586,32	48,22	942,25	35.576,79	27.669,06	41,93	1.108,53	28.819,52						-4.521,16
578	9,412	2,187	18,799	30,398	94,12	21,87	460,82	576,81			34.680,44	70,09	1.403,07	36.153,60	27.744,35	60,95	1.650,67	29.455,97						-3.884,71
579	0,980	0,390	20,310	21,680	103,92	25,77	391,09	520,78			34.784,36	95,86	1.794,16	36.674,38	27.827,49	83,36	2.110,78	30.021,63						-3.319,06
580			15,069	15,069	9,80	3,90	353,79	367,49			34.794,16	99,76	2.147,95	37.041,87	27.835,33	86,75	2.527,00	30.449,08						-2.891,61
581			5,202	5,202			202,71	202,71					2.350,66	2.350,66			2.765,48	2.765,48						-2.653,13
582	0,189			0,189	1,89		52,02	53,91			1,89		2.402,68	2.404,57	1,51		2.826,68	2.828,19						-2.590,42
583					1,89			1,89	9,473	94,73	3,78			3,78	3,02			3,02	94,73	1,51			1,51	-2.683,64
584									16,607	260,80									355,53					-2.944,44
585									32,161	487,68									843,21					-3.432,12
586									55,060	872,21									1.715,42					-4.304,33
587									89,480	1.445,40									3.160,82					-5.749,73
588									181,763	2.712,43									5.873,25					-8.462,16
589									387,046	5.688,09									11.561,34					-14.150,25
590									494,789	8.818,35									20.379,69					-22.968,60
591									514,673	10.094,62									30.474,31					-33.063,22
592									493,860	10.085,33									40.559,64					-43.148,55
593									360,986	8.548,46									49.108,10					-51.697,01
594									356,350	7.173,36									56.281,46					-58.870,37
595									320,522	6.768,72									63.050,18					-65.639,09
596									294,494	6.150,16									69.200,34					-71.789,25
597									255,774	5.502,68									74.703,02					-77.291,93
598									245,414	5.011,88									79.714,90					-82.303,81
599									237,558	4.829,72									84.544,62					-87.133,53
600									216,815	4.543,73									89.088,35					-91.677,26
601									197,299	4.141,14									93.229,49					-95.818,40
602									163,360	3.606,59									96.836,08					-99.424,99
603									136,762	3.001,22									99.837,30					-102.426,21
604									101,100	2.378,62									102.215,92					-104.804,83
605									51,071	1.521,71									103.737,63					-106.326,54
606	1,440			1,440	14,40			14,40	10,955	620,26	14,40			14,40	11,52			11,52	104.357,89	11,52			11,52	-106.935,28
607	17,066			17,066	185,06			185,06		109,55	199,46			199,46	159,57			159,57	104.467,44	109,55			109,55	-106.896,78
608	17,957			17,957	350,23			350,23			549,69			549,69	439,75			439,75						-106.616,60
609	8,541			8,541	264,98			264,98			814,67			814,67	651,74			651,74						-106.404,62
610	11,089			11,089	196,30			196,30			1.010,97			1.010,97	808,78			808,78						-106.247,58

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
611	5,039			5,039	161,28			161,28	0,039	0,39	1.172,25			1.172,25	937,80			937,80	0,39	0,39			0,39	-106.118,95
612	4,802			4,802	98,41			98,41	1,534	15,73	1.270,66			1.270,66	1.016,53			1.016,53	16,12	15,73			15,73	-106.055,95
613	1,063			1,063	58,65			58,65	11,882	134,16	1.329,31			1.329,31	1.063,45			1.063,45	150,28	46,92			46,92	-106.143,19
614					10,63			10,63	31,098	429,80	1.339,94			1.339,94	1.071,95			1.071,95	580,08	8,50			8,50	-106.564,49
615									33,486	645,84									1.225,92					-107.210,33
616									43,187	766,73									1.992,65					-107.977,06
617									36,538	797,25									2.789,90					-108.774,31
618									21,610	581,48									3.371,38					-109.355,79
619	0,177			0,177	1,77			1,77	7,471	290,81	1,77			1,77	1,42			1,42	3.662,19	1,42			1,42	-109.645,18
620	6,914	0,001		6,915	70,91	0,01		70,92		74,71	72,68	0,01		72,69	58,14	0,01		58,15	3.736,90	56,73	0,01		56,74	-109.663,15
621	16,892	3,568	12,314	32,774	238,06	35,69	123,14	396,89			310,74	35,70	123,14	469,58	248,59	31,04	144,87	424,50						-109.296,80
622	23,985	5,275	33,031	62,291	408,77	88,43	453,45	950,65			719,51	124,13	576,59	1.420,23	575,61	107,94	678,34	1.361,89						-108.359,42
623	17,831	4,187	47,941	69,959	418,16	94,62	809,72	1.322,50			1.137,67	218,75	1.386,31	2.742,73	910,14	190,22	1.630,95	2.731,31						-106.990,00
624	47,422	10,325	59,876	117,623	652,53	145,12	1.078,17	1.875,82			1.790,20	363,87	2.464,48	4.618,55	1.432,16	316,41	2.899,39	4.647,96						-105.073,35
625	30,026	7,095	86,293	123,414	774,48	174,20	1.461,69	2.410,37			2.564,68	538,07	3.926,17	7.028,92	2.051,74	467,89	4.619,02	7.138,65						-102.582,65
626			121,495	121,495	300,26	70,95	2.077,88	2.449,09	0,520	5,20	2.864,94	609,02	6.004,05	9.478,01	2.291,95	529,58	7.063,59	9.885,12	5,20	5,20			5,20	-99.841,38
627			149,292	149,292			2.707,87	2.707,87		5,20			8.711,92	8.711,92			10.249,32	10.249,32	10,40			5,20	5,20	-96.660,85
628	89,444	20,057	137,268	246,769	894,44	200,57	2.865,60	3.960,61			894,44	200,57	11.577,52	12.672,53	715,55	174,41	13.620,61	14.510,57						-92.399,60
629	69,293	15,806	165,410	250,509	1.587,37	358,63	3.026,78	4.972,78			2.481,81	559,20	14.604,30	17.645,31	1.985,45	486,26	17.181,53	19.653,24						-87.256,93
630	48,691	11,578	176,370	236,639	1.179,84	273,84	3.417,80	4.871,48			3.661,65	833,04	18.022,10	22.516,79	2.929,32	724,38	21.202,47	24.856,17						-82.054,00
631	59,081	13,854	172,919	245,854	1.077,72	254,32	3.492,89	4.824,93			4.739,37	1.087,36	21.514,99	27.341,72	3.791,50	945,53	25.311,75	30.048,78						-76.861,39
632	71,160	16,287	165,973	253,420	1.302,41	301,41	3.388,92	4.992,74			6.041,78	1.388,77	24.903,91	32.334,46	4.833,42	1.207,63	29.298,72	35.339,77						-71.570,40
633	53,945	12,872	155,385	222,202	1.251,05	291,59	3.213,58	4.756,22			7.292,83	1.680,36	28.117,49	37.090,68	5.834,26	1.461,18	33.079,40	40.374,84						-66.535,32
634	44,101	10,459	132,030	186,590	980,46	233,31	2.874,15	4.087,92			8.273,29	1.913,67	30.991,64	41.178,60	6.618,63	1.664,06	36.460,75	44.743,44						-62.166,72
635	51,940	11,953	108,975	172,868	960,41	224,12	2.410,05	3.594,58			9.233,70	2.137,79	33.401,69	44.773,18	7.386,96	1.858,95	39.296,11	48.542,02						-58.368,15
636	56,662	12,320	70,149	139,131	1.086,02	242,73	1.791,24	3.119,99			10.319,72	2.380,52	35.192,93	47.893,17	8.255,78	2.070,02	41.403,45	51.729,25						-55.180,92
637	33,989	7,585	55,354	96,928	906,51	199,05	1.255,03	2.360,59			11.226,23	2.579,57	36.447,96	50.253,76	8.980,98	2.243,10	42.879,95	54.104,03						-52.806,12
638	49,344	10,630	62,274	122,248	833,33	182,15	1.176,28	2.191,76			12.059,56	2.761,72	37.624,24	52.445,52	9.647,65	2.401,50	44.263,81	56.312,96						-50.597,21
639	56,083	12,463	88,690	157,236	1.054,27	230,93	1.509,64	2.794,84			13.113,83	2.992,65	39.133,88	55.240,36	10.491,06	2.602,30	46.039,86	59.133,22						-47.776,94
640	76,862	16,993	110,009	203,864	1.329,45	294,56	1.986,99	3.611,00			14.443,28	3.287,21	41.120,87	58.851,36	11.554,62	2.858,44	48.377,49	62.790,55						-44.119,61
641	80,437	18,097	134,010	232,544	1.572,99	350,90	2.440,19	4.364,08			16.016,27	3.638,11	43.561,06	63.215,44	12.813,02	3.163,57	51.248,31	67.224,90						-39.685,28
642	54,955	12,791	144,986	212,732	1.353,92	308,88	2.789,96	4.452,76			17.370,19	3.946,99	46.351,02	67.668,20	13.896,15	3.432,17	54.530,61	71.858,93						-35.051,25
643	46,175	10,839	133,418	190,432	1.011,30	236,30	2.784,04	4.031,64			18.381,49	4.183,29	49.135,06	71.699,84	14.705,19	3.637,64	57.805,95	76.148,78						-30.761,39
644	24,282	5,942	111,698	141,922	704,57	167,81	2.451,16	3.323,54			19.086,06	4.351,10	51.586,22	75.023,38	15.268,85	3.783,57	60.689,67	79.742,09						-27.168,09
645	14,392	3,567	77,719	95,678	386,74	95,09	1.894,17	2.376,00			19.472,80	4.446,19	53.480,39	77.399,38	15.578,24	3.866,25	62.918,11	82.362,60						-24.547,58
646	19,890	4,609	53,307	77,806	342,82	81,76	1.310,26	1.734,84			19.815,62	4.527,95	54.790,65	79.134,22	15.852,50	3.937,35	64.459,59	84.249,44						-22.660,75
647	16,867	3,939	50,229	71,035	367,57	85,48	1.035,36	1.488,41			20.183,19	4.613,43	55.826,01	80.622,63	16.146,55	4.011,68	65.677,66	85.835,89						-21.074,29
648	17,237	3,956	50,904	72,097	341,04	78,95	1.011,33	1.431,32			20.524,23	4.692,38	56.837,34	82.053,95	16.419,38	4.080,33	66.867,46	87.367,17						-19.543,01
649	19,055	4,330	50,545	73,930	362,92	82,86	1.014,49	1.460,27			20.887,15	4.775,24	57.851,83	83.514,22	16.709,72	4.152,38	68.060,98	88.923,08						-17.987,10
650	23,318	5,260	57,161	85,739	423,73	95,90	1.077,06	1.596,69			21.310,88	4.871,14	58.928,89	85.110,91	17.048,70	4.235,77	69.328,11	90.612,58						-16.297,60
651	35,132	7,691	67,975	110,798	584,50	129,51	1.251,36	1.965,37			21.895,38	5.000,65	60.180,25	87.076,28	17.516,30	4.348,39	70.800,29	92.664,98						-14.245,19
652	46,697	10,136	77,864	134,697	818,29	178,27	1.458,39	2.454,95			22.713,67	5.178,92	61.638,64	89.531,23	18.170,94	4.503,41	72.516,05	95.190,40						-11.719,79
653	46,100	10,146	88,433	144,679	927,97	202,82	1.662,97	2.793,76			23.641,64	5.381,74	63.301,61	92.324,99	18.913,31	4.679,77	74.472,48	98.065,56						-8.844,61
654	42,442	9,376	86,510	138,328	885,42	195,22	1.749,43	2.830,07			24.527,06	5.576,96	65.051,04	95.155,06	19.621,65	4.849,53	76.530,64	101.001,82						-5.908,36
655	57,759	11,969	64,201	133,929	1.002,01	213,45	1.507,11	2.722,57			25.529,07	5.790,41	66.558,15	97.877,63	20.423,26	5.035,14	78.303,71	103.762,11						-3.148,07
656	55,742	11,479	59,545	126,766	1.135,01	234,48	1.237,46	2.606,95			26.664,08	6.024,89	67.795,61	100.484,58	21.331,26	5.239,03	79.759,54	106.329,83						-580,33
657	44,789	9,496	62,382	116,667	1.005,31	209,75	1.219,27	2.434,33			27.669,39	6.234,64	69.014,88	102.918,91	22.135,51	5.421,43	81.193,98	108.750,92						1.840,74

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
658	31,146	6,877	66,424	104,447	759,35	163,73	1.288,06	2.211,14			28.428,74	6.398,37	70.302,94	105.130,05	22.742,99	5.563,80	82.709,34	111.016,13						4.105,96
659	26,108	5,880	69,638	101,626	572,54	127,57	1.360,62	2.060,73			29.001,28	6.525,94	71.663,56	107.190,78	23.201,02	5.674,73	84.310,07	113.185,82						6.275,65
660	39,390	8,619	75,059	123,068	654,98	144,99	1.446,97	2.246,94			29.656,26	6.670,93	73.110,53	109.437,72	23.725,01	5.800,81	86.012,39	115.538,21						8.628,03
661	67,771	14,299	84,860	166,930	1.071,61	229,18	1.599,19	2.899,98			30.727,87	6.900,11	74.709,72	112.337,70	24.582,30	6.000,10	87.893,79	118.476,19						11.566,00
662	60,321	13,265	110,533	184,119	1.280,92	275,64	1.953,93	3.510,49			32.008,79	7.175,75	76.663,65	115.848,19	25.607,03	6.239,78	90.192,53	122.039,34						15.129,16
663	57,749	12,927	136,756	207,432	1.180,70	261,92	2.472,89	3.915,51			33.189,49	7.437,67	79.136,54	119.763,70	26.551,59	6.467,54	93.101,81	126.120,94						19.210,76
664	49,854	11,376	144,631	205,861	1.076,03	243,03	2.813,87	4.132,93			34.265,52	7.680,70	81.950,41	123.896,63	27.412,42	6.678,87	96.412,25	130.503,54						23.593,35
665	68,066	15,064	138,730	221,860	1.179,20	264,40	2.833,61	4.277,21			35.444,72	7.945,10	84.784,02	128.173,84	28.355,78	6.908,78	99.745,91	135.010,47						28.100,28
666	40,855	9,265	130,469	180,589	1.089,21	243,29	2.691,99	4.024,49			36.533,93	8.188,39	87.476,01	132.198,33	29.227,14	7.120,34	102.912,95	139.260,43						32.350,25
667	35,733	8,265	112,490	156,488	765,88	175,30	2.429,59	3.370,77			37.299,81	8.363,69	89.905,60	135.569,10	29.839,85	7.272,77	105.771,29	142.883,91						35.973,73
668	61,739	13,462	93,651	168,852	974,72	217,27	2.061,41	3.253,40			38.274,53	8.580,96	91.967,01	138.822,50	30.619,62	7.461,70	108.196,48	146.277,80						39.367,62
669	39,400	8,837	84,392	132,629	1.011,39	222,99	1.780,43	3.014,81			39.285,92	8.803,95	93.747,44	141.837,31	31.428,74	7.655,61	110.291,11	149.375,46						42.465,26
670	40,493	8,694	63,000	112,187	798,93	175,31	1.473,92	2.448,16			40.084,85	8.979,26	95.221,36	144.285,47	32.067,88	7.808,05	112.025,13	151.901,06						44.990,87
671	32,457	6,739	40,598	79,794	729,50	154,33	1.035,98	1.919,81			40.814,35	9.133,59	96.257,34	146.205,28	32.651,48	7.942,25	113.243,93	153.837,66						46.927,47
672	15,840	3,275	17,449	36,564	482,97	100,14	580,47	1.163,58			41.297,32	9.233,73	96.837,81	147.368,86	33.037,86	8.029,33	113.926,84	154.994,03						48.083,83
673	4,914	0,324	0,198	5,436	207,54	35,99	176,47	420,00			41.504,86	9.269,72	97.014,28	147.788,86	33.203,89	8.060,63	114.134,45	155.398,97						48.488,77
674	7,744	0,701	0,525	8,970	126,58	10,25	7,23	144,06			41.631,44	9.279,97	97.021,51	147.932,92	33.305,15	8.069,54	114.142,95	155.517,64						48.607,45
675	10,330	2,353	8,553	21,236	180,74	30,54	90,78	302,06			41.812,18	9.310,51	97.112,29	148.234,98	33.449,74	8.096,10	114.249,75	155.795,59						48.885,40
676	10,887	2,564	12,890	26,341	212,17	49,17	214,43	475,77			42.024,35	9.359,68	97.326,72	148.710,75	33.619,48	8.138,85	114.502,02	156.260,35						49.350,16
677	11,512	2,733	19,192	33,437	223,99	52,97	320,82	597,78			42.248,34	9.412,65	97.647,54	149.308,53	33.798,67	8.184,91	114.879,46	156.863,04						49.952,85
678	17,438	4,022	28,632	50,092	289,50	67,55	478,24	835,29			42.537,84	9.480,20	98.125,78	150.143,82	34.030,27	8.243,65	115.442,09	157.716,01						50.805,82
679	11,168	2,623	17,159	30,950	286,06	66,45	457,91	810,42			42.823,90	9.546,65	98.583,69	150.954,24	34.259,12	8.301,43	115.980,81	158.541,36						51.631,17
680	15,399	1,997	2,535	19,931	265,67	46,20	196,94	508,81			43.089,57	9.592,85	98.780,63	151.463,05	34.471,66	8.341,61	116.212,51	159.025,78						52.115,57
681	2,417	0,584	2,155	5,156	178,16	25,81	46,90	250,87	0,430	4,30	43.267,73	9.618,66	98.827,53	151.713,92	34.614,18	8.364,05	116.267,68	159.245,91	4,30	4,30			4,30	52.331,42
682	0,373	0,045	0,079	0,497	27,90	6,29	22,34	56,53	16,785	172,15	43.295,63	9.624,95	98.849,87	151.770,45	34.636,50	8.369,52	116.293,96	159.299,98	176,45	22,32	5,47	26,28	54,07	52.213,34
683					3,73	0,45	0,79	4,97	36,581	533,66	43.299,36	9.625,40	98.850,66	151.775,42	34.639,49	8.369,91	116.294,89	159.304,29	710,11	2,98	0,39	0,93	4,30	51.683,98
684									55,113	916,94									1.627,05					50.767,04
685									63,299	1.184,12									2.811,17					49.582,92
686									76,252	1.395,51									4.206,68					48.187,41
687									101,166	1.774,18									5.980,86					46.413,23
688									141,011	2.421,77									8.402,63					43.991,46
689									232,931	3.739,42									12.142,05					40.252,04
690									320,874	5.538,05									17.680,10					34.713,99
691									401,762	7.226,36									24.906,46					27.487,63
692									440,329	8.420,91									33.327,37					19.066,72
693									489,002	9.293,31									42.620,68					9.773,41
694									573,020	10.620,22									53.240,90					-846,81
695									526,543	10.995,63									64.236,53					-11.842,44
696									523,067	10.496,10									74.732,63					-22.338,54
697																								-22.338,54
698									496,516															-22.338,54
699									452,929	9.494,45									9.494,45					-31.832,99
700									461,041	9.139,70									18.634,15					-40.972,69
701									473,482	9.345,23									27.979,38					-50.317,92
702									470,685	9.441,67									37.421,05					-59.759,59
703									468,648	9.393,33									46.814,38					-69.152,92
704									455,696	9.243,44									56.057,82					-78.396,36

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
705									416,639	8.723,35									64.781,17					-87.119,71
706									396,356	8.129,95									72.911,12					-95.249,66
707									331,497	7.278,53									80.189,65					-102.528,19
708									258,399	5.898,96									86.088,61					-108.427,15
709									198,225	4.566,24									90.654,85					-112.993,39
710									121,996	3.202,21									93.857,06					-116.195,60
711									59,200	1.811,96									95.669,02					-118.007,56
712									42,667	1.018,67									96.687,69					-119.026,23
713									30,172	728,39									97.416,08					-119.754,62
714									36,158	663,30									98.079,38					-120.417,92
715									44,308	804,66									98.884,04					-121.222,58
716									41,539	858,47									99.742,51					-122.081,05
717									47,704	892,43									100.634,94					-122.973,48
718									45,303	930,07									101.565,01					-123.903,55
719									45,532	908,35									102.473,36					-124.811,90
720									41,251	867,83									103.341,19					-125.679,73
721									35,730	769,81									104.111,00					-126.449,54
722									31,153	668,83									104.779,83					-127.118,37
723									25,669	568,22									105.348,05					-127.686,59
724	0,352			0,352	3,52			3,52	15,813	414,82	3,52			3,52	2,82			2,82	105.762,87	2,82			2,82	-128.098,59
725	1,663			1,663	20,15			20,15	9,187	250,00	23,67			23,67	18,94			18,94	106.012,87	16,12			16,12	-128.332,47
726	3,471	0,388	0,162	4,021	51,34	3,88	1,62	56,84	2,666	118,53	75,01	3,88	1,62	80,51	60,01	3,37	1,91	65,29	106.131,40	41,07	3,37	1,91	46,35	-128.404,65
727	13,937	0,781	0,092	14,810	174,08	11,69	2,54	188,31		26,66	249,09	15,57	4,16	268,82	199,27	13,54	4,89	217,70	106.158,06	26,66			26,66	-128.278,89
728	16,306	1,635	2,268	20,209	302,43	24,16	23,60	350,19			551,52	39,73	27,76	619,01	441,22	34,55	32,66	508,43						-127.988,17
729	17,935	2,461	1,990	22,386	342,41	40,96	42,58	425,95			893,93	80,69	70,34	1.044,96	715,14	70,17	82,75	868,06						-127.628,53
730	10,352	2,495	12,927	25,774	282,87	49,56	149,17	481,60			1.176,80	130,25	219,51	1.526,56	941,44	113,26	258,25	1.312,95						-127.183,64
731	12,635	3,024	19,003	34,662	229,87	55,19	319,30	604,36			1.406,67	185,44	538,81	2.130,92	1.125,34	161,25	633,89	1.920,48						-126.576,11
732	5,554	1,509	28,443	35,506	181,89	45,33	474,46	701,68			1.588,56	230,77	1.013,27	2.832,60	1.270,85	200,67	1.192,08	2.663,60						-125.832,99
733	7,885	2,048	30,308	40,241	134,39	35,57	587,51	757,47			1.722,95	266,34	1.600,78	3.590,07	1.378,36	231,60	1.883,27	3.493,23						-125.003,36
734	5,992	1,655	38,989	46,636	138,77	37,03	692,97	868,77			1.861,72	303,37	2.293,75	4.458,84	1.489,38	263,80	2.698,53	4.451,71						-124.044,89
735	0,398	0,345	46,939	47,682	63,90	20,00	859,28	943,18			1.925,62	323,37	3.153,03	5.402,02	1.540,50	281,19	3.709,45	5.531,14						-122.965,46
736	0,062	0,236	47,220	47,518	4,60	5,81	941,59	952,00			1.930,22	329,18	4.094,62	6.354,02	1.544,18	286,24	4.817,20	6.647,62						-121.848,97
737			45,015	45,015	0,62	2,36	922,35	925,33			1.930,84	331,54	5.016,97	7.279,35	1.544,67	288,30	5.902,32	7.735,29						-120.761,30
738			45,382	45,382			903,97	903,97					5.920,94	5.920,94			6.965,81	6.965,81						-119.697,81
739	1,345	0,567	45,089	47,001	13,45	5,67	904,71	923,83			13,45	5,67	6.825,65	6.844,77	10,76	4,93	8.030,18	8.045,87						-118.617,75
740	0,416	0,358	49,431	50,205	17,61	9,25	945,20	972,06			31,06	14,92	7.770,85	7.816,83	24,85	12,97	9.142,18	9.180,00						-117.483,62
741	2,618	0,891	50,551	54,060	30,34	12,49	999,82	1.042,65			61,40	27,41	8.770,67	8.859,48	49,12	23,83	10.318,44	10.391,39						-116.272,23
742	0,066	0,255	50,061	50,382	26,84	11,46	1.006,12	1.044,42			88,24	38,87	9.776,79	9.903,90	70,59	33,80	11.502,11	11.606,50						-115.057,12
743			42,727	42,727	0,66	2,55	927,88	931,09			88,90	41,42	10.704,67	10.834,99	71,12	36,02	12.593,73	12.700,87						-113.962,75
744	2,110	0,766	48,761	51,637	21,10	7,66	914,88	943,64			110,00	49,08	11.619,55	11.778,63	88,00	42,68	13.670,06	13.800,74						-112.862,88
745	9,976	2,607	49,272	61,855	120,86	33,73	980,33	1.134,92			230,86	82,81	12.599,88	12.913,55	184,69	72,01	14.823,39	15.080,09						-111.583,53
746	6,859	1,921	59,350	68,130	168,35	45,28	1.086,22	1.299,85			399,21	128,09	13.686,10	14.213,40	319,37	111,38	16.101,29	16.532,04						-110.131,57
747	7,863	2,127	54,011	64,001	147,22	40,48	1.133,61	1.321,31			546,43	168,57	14.819,71	15.534,71	437,14	146,58	17.434,95	18.018,67						-108.644,94
748		0,115	43,672	43,787	78,63	22,42	976,83	1.077,88			625,06	190,99	15.796,54	16.612,59	500,05	166,08	18.584,16	19.250,29						-107.413,33
749	3,688	1,135	45,176	49,999	36,88	12,50	888,48	937,86			661,94	203,49	16.685,02	17.550,45	529,55	176,95	19.629,44	20.335,94						-106.327,69
750	2,691	0,917	53,562	57,170	63,79	20,52	987,38	1.071,69			725,73	224,01	17.672,40	18.622,14	580,58	194,79	20.791,06	21.566,43						-105.097,19
751	3,942	1,230	63,131	68,303	66,33	21,47	1.166,93	1.254,73			792,06	245,48	18.839,33	19.876,87	633,65	213,46	22.163,92	23.011,03						-103.652,60

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
752	8,410	2,328	76,025	86,763	123,52	35,58	1.391,56	1.550,66			915,58	281,06	20.230,89	21.427,53	732,46	244,40	23.801,05	24.777,91						-101.885,72
753	0,587	0,501	98,609	99,697	89,97	28,29	1.746,34	1.864,60			1.005,55	309,35	21.977,23	23.292,13	804,44	269,00	25.855,56	26.929,00						-99.734,63
754	0,974	0,455	160,727	162,156	15,61	9,56	2.593,36	2.618,53	0,187	1,87	1.021,16	318,91	24.570,59	25.910,66	816,93	277,31	28.906,58	30.000,82	1,87	1,87			1,87	-96.664,69
755		0,228	136,273	136,501	9,74	6,83	2.970,00	2.986,57		1,87	1.030,90	325,74	27.540,59	28.897,23	824,72	283,25	32.400,69	33.508,66	3,74	1,87			1,87	-93.158,71
756	1,825	0,876	141,037	143,738	18,25	11,04	2.773,10	2.802,39			1.049,15	336,78	30.313,69	31.699,62	839,32	292,85	35.663,16	36.795,33						-89.872,04
757		0,180	168,928	169,108	18,25	10,56	3.099,65	3.128,46			1.067,40	347,34	33.413,34	34.828,08	853,92	302,03	39.309,81	40.465,76						-86.201,61
758	4,495		197,318	201,813	44,95	1,80	3.662,46	3.709,21	0,075	0,75	1.112,35	349,14	37.075,80	38.537,29	889,88	303,60	43.618,59	44.812,07	0,75	0,75			0,75	-81.856,06
759	3,663		190,300	193,963	81,58		3.876,18	3.957,76	0,010	0,85	1.193,93		40.951,98	42.145,91	955,14		48.178,80	49.133,94	1,60	0,85			0,85	-77.231,43
760	25,538	4,768	174,324	204,630	292,01	47,68	3.646,24	3.985,93		0,10	1.485,94	47,68	44.598,22	46.131,84	1.188,75	41,46	52.468,49	53.698,70	1,70	0,10			0,10	-72.666,77
761	10,708	1,152	177,538	189,398	362,46	59,20	3.518,62	3.940,28			1.848,40	106,88	48.116,84	50.072,12	1.478,72	92,94	56.608,05	58.179,71						-68.185,77
762	9,564	0,961	173,537	184,062	202,72	21,13	3.510,75	3.734,60			2.051,12	128,01	51.627,59	53.806,72	1.640,90	111,31	60.738,34	62.490,55						-63.874,93
763	3,558		178,367	181,925	131,22	9,61	3.519,04	3.659,87	0,005	0,05	2.182,34	137,62	55.146,63	57.466,59	1.745,87	119,67	64.878,39	66.743,93	0,05	0,05			0,05	-59.621,60
764	3,733		200,290	204,023	72,91		3.786,57	3.859,48	0,027	0,32	2.255,25		58.933,20	61.188,45	1.804,20		69.333,18	71.137,38	0,37	0,32			0,32	-55.108,80
765	8,066	0,320	207,278	215,664	117,99	3,20	4.075,68	4.196,87		0,27	2.373,24	3,20	63.008,88	65.385,32	1.898,59	2,78	74.128,09	76.029,46	0,64	0,27			0,27	-50.216,98
766	5,177		203,812	208,989	132,43	3,20	4.110,90	4.246,53	0,027	0,27	2.505,67	6,40	67.119,78	69.631,85	2.004,54	5,57	78.964,45	80.974,56	0,91	0,27			0,27	-45.272,17
767	4,750		205,540	210,290	99,27		4.093,52	4.192,79	0,018	0,45	2.604,94		71.213,30	73.818,24	2.083,95		83.780,35	85.864,30	1,36	0,45			0,45	-40.377,30
768	10,701	0,868	210,295	221,864	154,51	8,68	4.158,35	4.321,54		0,18	2.759,45	8,68	75.371,65	78.139,78	2.207,56	7,55	88.672,53	90.887,64	1,54	0,18			0,18	-35.354,15
769	1,571	0,697	207,154	209,422	122,72	15,65	4.174,49	4.312,86			2.882,17	24,33	79.546,14	82.452,64	2.305,74	21,16	93.583,69	95.910,59						-30.331,20
770	18,782	5,037	209,684	233,503	203,53	57,34	4.168,38	4.429,25			3.085,70	81,67	83.714,52	86.881,89	2.468,56	71,02	98.487,67	101.027,25						-25.214,54
771	11,442	2,749	224,410	238,601	302,24	77,86	4.340,94	4.721,04			3.387,94	159,53	88.055,46	91.602,93	2.710,35	138,72	103.594,66	106.443,73						-19.798,06
772	7,832	2,297	241,325	251,454	192,74	50,46	4.657,35	4.900,55			3.580,68	209,99	92.712,81	96.503,48	2.864,54	182,60	109.073,89	112.121,03						-14.120,75
773	25,934	6,863	243,119	275,916	337,66	91,60	4.844,44	5.273,70			3.918,34	301,59	97.557,25	101.777,18	3.134,67	262,25	114.773,24	118.170,16						-8.071,63
774	6,610	2,212	258,328	267,150	325,44	90,75	5.014,47	5.430,66			4.243,78	392,34	102.571,72	107.207,84	3.395,02	341,17	120.672,61	124.408,80						-1.832,99
775	18,373	5,059	257,350	280,782	249,83	72,71	5.156,78	5.479,32			4.493,61	465,05	107.728,50	112.687,16	3.594,89	404,39	126.739,41	130.738,69						4.496,90
776	29,337	7,700	256,336	293,373	477,10	127,59	5.136,86	5.741,55			4.970,71	592,64	112.865,36	118.428,71	3.976,57	515,34	132.782,78	137.274,69						11.032,89
777	15,871	4,435	261,692	281,998	452,08	121,35	5.180,28	5.753,71			5.422,79	713,99	118.045,64	124.182,42	4.338,23	620,86	138.877,22	143.836,31						17.594,52
778	8,532	2,329	256,041	266,902	244,03	67,64	5.177,33	5.489,00			5.666,82	781,63	123.222,97	129.671,42	4.533,46	679,68	144.968,20	150.181,34						23.939,54
779	2,097	0,855	249,289	252,241	106,29	31,84	5.053,30	5.191,43			5.773,11	813,47	128.276,27	134.862,85	4.618,49	707,37	150.913,26	156.239,12						29.997,32
780	7,898	1,733	238,608	248,239	99,95	25,88	4.878,97	5.004,80			5.873,06	839,35	133.155,24	139.867,65	4.698,45	729,87	156.653,22	162.081,54						35.839,75
781	14,664	3,882	221,612	240,158	225,62	56,15	4.602,20	4.883,97			6.098,68	895,50	137.757,44	144.751,62	4.878,94	778,70	162.067,58	167.725,22						41.483,43
782	11,457	3,186	209,509	224,152	261,21	70,68	4.311,21	4.643,10			6.359,89	966,18	142.068,65	149.394,72	5.087,91	840,16	167.139,59	173.067,66						46.825,87
783	9,048	2,623	195,597	207,268	205,05	58,09	4.051,06	4.314,20			6.564,94	1.024,27	146.119,71	153.708,92	5.251,95	890,67	171.905,54	178.048,16						51.806,38
784	2,072	0,963	183,804	186,839	111,20	35,86	3.794,01	3.941,07			6.676,14	1.060,13	149.913,72	157.649,99	5.340,91	921,85	176.369,08	182.631,84						56.390,06
785	1,317	0,612	153,113	155,042	33,89	15,75	3.369,17	3.418,81			6.710,03	1.075,88	153.282,89	161.068,80	5.368,02	935,55	180.332,81	186.636,38						60.394,60
786	11,227	3,009	136,862	151,098	125,44	36,21	2.899,75	3.061,40			6.835,47	1.112,09	156.182,64	164.130,20	5.468,38	967,03	183.744,28	190.179,69						63.937,91
787	20,199	4,976	116,184	141,359	314,26	79,85	2.530,46	2.924,57			7.149,73	1.191,94	158.713,10	167.054,77	5.719,78	1.036,47	186.721,29	193.477,54						67.235,76
788	25,959	6,263	102,991	135,213	461,58	112,39	2.191,75	2.765,72			7.611,31	1.304,33	160.904,85	169.820,49	6.089,05	1.134,20	189.299,82	196.523,07						70.281,28
789	25,343	5,927	82,577	113,847	513,02	121,90	1.855,68	2.490,60			8.124,33	1.426,23	162.760,53	172.311,09	6.499,46	1.240,20	191.482,98	199.222,64						72.980,85
790	18,529	4,397	71,915	94,841	438,72	103,24	1.544,92	2.086,88			8.563,05	1.529,47	164.305,45	174.397,97	6.850,44	1.329,97	193.300,53	201.480,94						75.239,15
791	10,301	2,573	64,841	77,715	288,30	69,70	1.367,56	1.725,56			8.851,35	1.599,17	165.673,01	176.123,53	7.081,08	1.390,58	194.909,42	203.381,08						77.139,29
792	3,662	1,063	46,964	51,689	139,63	36,36	1.118,05	1.294,04			8.990,98	1.635,53	166.791,06	177.417,57	7.192,78	1.422,20	196.224,78	204.839,76						78.597,96
793	8,739	2,138	43,367	54,244	124,01	32,01	903,31	1.059,33			9.114,99	1.667,54	167.694,37	178.476,90	7.291,99	1.450,03	197.287,49	206.029,51						79.787,72
794	3,428	0,974	36,992	41,394	121,67	31,12	803,59	956,38			9.236,66	1.698,66	168.497,96	179.433,28	7.389,33	1.477,10	198.232,89	207.099,32						80.857,52
795	12,670	2,827	25,720	41,217	160,98	38,01	627,12	826,11			9.397,64	1.736,67	169.125,08	180.259,39	7.518,11	1.510,15	198.970,68	207.998,94						81.757,14
796	4,017	0,970	19,634	24,621	166,87	37,97	453,54	658,38			9.564,51	1.774,64	169.578,62	180.917,77	7.651,61	1.543,17	199.504,26	208.699,04						82.457,23
797	5,339	1,239	21,888	28,466	93,56	22,09	415,22	530,87			9.658,07	1.796,73	169.993,84	181.448,64	7.726,46	1.562,37	199.992,75	209.281,58						83.039,78
798	0,653	0,333	28,518	29,504	59,92	15,72	504,06	579,70			9.717,99	1.812,45	170.497,90	182.028,34	7.774,39	1.576,04	200.585,76	209.936,19						83.694,40

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
799	2,884	0,824	39,633	43,341	35,37	11,57	681,51	728,45			9.753,36	1.824,02	171.179,41	182.756,79	7.802,69	1.586,10	201.387,54	210.776,33						84.534,53
800	17,611	3,957	47,970	69,538	204,95	47,81	876,03	1.128,79			9.958,31	1.871,83	172.055,44	183.885,58	7.966,65	1.627,68	202.418,16	212.012,49						85.770,69
801	0,632	0,398	56,596	57,626	182,43	43,55	1.045,66	1.271,64			10.140,74	1.915,38	173.101,10	185.157,22	8.112,59	1.665,55	203.648,35	213.426,49						87.184,69
802		0,034	41,584	41,618	6,32	4,32	981,80	992,44			10.147,06	1.919,70	174.082,90	186.149,66	8.117,65	1.669,30	204.803,41	214.590,36						88.348,56
803		0,060	27,326	27,386		0,94	689,10	690,04				1.920,64	174.772,00	176.692,64		1.670,12	205.614,12	207.284,24						89.160,08
804		0,137	21,028	21,165		1,97	483,54	485,51				1.922,61	175.255,54	177.178,15		1.671,83	206.182,99	207.854,82						89.730,66
805		0,077	13,816	13,893		2,14	348,44	350,58				1.924,75	175.603,98	177.528,73		1.673,70	206.592,92	208.266,62						90.142,45
806	3,619	0,842	2,530	6,991	36,19	9,19	163,46	208,84			36,19	1.933,94	175.767,44	177.737,57	28,95	1.681,69	206.785,22	208.495,86						90.371,70
807	1,762	0,501	0,980	3,243	53,81	13,43	35,10	102,34	0,989	9,89	90,00	1.947,37	175.802,54	177.839,91	72,00	1.693,37	206.826,52	208.591,89	9,89	9,89			9,89	90.457,83
808	0,603			0,603	23,65	5,01	9,80	38,46	13,817	148,06	113,65	1.952,38	175.812,34	177.878,37	90,92	1.697,72	206.838,05	208.626,69	157,95	18,92	4,36	11,53	34,81	90.344,58
809					6,03			6,03	25,258	390,75	119,68			119,68	95,74			95,74	548,70	4,82			4,82	89.958,65
810									23,620	488,78									1.037,48					89.469,87
811	0,037			0,037	0,37			0,37	19,048	426,68	0,37			0,37	0,30			0,30	1.464,16	0,30			0,30	89.043,49
812	0,038			0,038	0,75			0,75	21,748	407,96	1,12			1,12	0,90			0,90	1.872,12	0,60			0,60	88.636,13
813	0,441			0,441	4,79			4,79	15,873	376,21	5,91			5,91	4,73			4,73	2.248,33	3,83			3,83	88.263,75
814	0,399			0,399	8,40			8,40	18,190	340,63	14,31			14,31	11,45			11,45	2.588,96	6,72			6,72	87.929,84
815	0,355			0,355	7,54			7,54	19,771	379,61	21,85			21,85	17,48			17,48	2.968,57	6,03			6,03	87.556,26
816	0,256			0,256	6,11			6,11	21,027	407,98	27,96			27,96	22,37			22,37	3.376,55	4,89			4,89	87.153,17
817	0,251			0,251	5,07			5,07	18,840	398,67	33,03			33,03	26,42			26,42	3.775,22	4,06			4,06	86.758,56
818	0,350			0,350	6,01			6,01	18,830	376,70	39,04			39,04	31,23			31,23	4.151,92	4,81			4,81	86.386,67
819	0,873			0,873	12,23			12,23	13,080	319,10	51,27			51,27	41,02			41,02	4.471,02	9,78			9,78	86.077,35
820	1,263			1,263	21,36			21,36	10,458	235,38	72,63			72,63	58,10			58,10	4.706,40	17,09			17,09	85.859,06
821	0,790			0,790	20,53			20,53	12,893	233,51	93,16			93,16	74,53			74,53	4.939,91	16,42			16,42	85.641,97
822	0,327			0,327	11,17			11,17	17,496	303,89	104,33			104,33	83,46			83,46	5.243,80	8,94			8,94	85.347,02
823					3,27			3,27	27,957	454,53	107,60			107,60	86,08			86,08	5.698,33	2,62			2,62	84.895,11
824									36,642	645,99									6.344,32					84.249,12
825									27,797	644,39									6.988,71					83.604,73
826									12,217	400,14									7.388,85					83.204,59
827	0,040			0,040	0,40			0,40	7,762	199,79	0,40			0,40	0,32			0,32	7.588,64	0,32			0,32	83.005,12
828	0,164			0,164	2,04			2,04	6,341	141,03	2,44			2,44	1,95			1,95	7.729,67	1,63			1,63	82.865,72
829	0,155			0,155	3,19			3,19	6,490	128,31	5,63			5,63	4,50			4,50	7.857,98	2,55			2,55	82.739,96
830	0,247			0,247	4,02			4,02	5,115	116,05	9,65			9,65	7,72			7,72	7.974,03	3,22			3,22	82.627,13
831	0,278			0,278	5,25			5,25	5,033	101,48	14,90			14,90	11,92			11,92	8.075,51	4,20			4,20	82.529,85
832					2,78			2,78	0,002	50,35	17,68			17,68	14,14			14,14	8.125,86	2,22			2,22	82.481,72
833	3,934	0,214	0,133	4,281	39,34	2,14	1,33	42,81		0,02	57,02	2,14	1,33	60,49	45,62	1,86	1,56	49,04	8.125,88	0,02			0,02	82.516,60
834	4,919	0,900	0,403	6,222	88,53	11,14	5,36	105,03			145,55	13,28	6,69	165,52	116,44	11,55	7,87	135,86						82.603,42
835	3,456	0,869	4,721	9,046	83,75	17,69	51,24	152,68			229,30	30,97	57,93	318,20	183,44	26,93	68,15	278,52						82.746,08
836	1,479	0,460	6,473	8,412	49,35	13,29	111,94	174,58			278,65	44,26	169,87	492,78	222,92	38,49	199,85	461,26						82.928,81
837	0,724	0,306	8,360	9,390	22,03	7,66	148,33	178,02			300,68	51,92	318,20	670,80	240,54	45,15	374,35	660,04						83.127,60
838	2,889	0,773	9,089	12,751	36,13	10,79	174,49	221,41			336,81	62,71	492,69	892,21	269,45	54,53	579,64	903,62						83.371,17
839	0,537	0,267	9,028	9,832	34,26	10,40	181,17	225,83			371,07	73,11	673,86	1.118,04	296,86	63,57	792,78	1.153,21						83.620,76
840	2,241	0,631	8,347	11,219	27,78	8,98	173,75	210,51			398,85	82,09	847,61	1.328,55	319,08	71,38	997,19	1.387,65						83.855,20
841	3,704	0,922	5,404	10,030	59,45	15,53	137,51	212,49			458,30	97,62	985,12	1.541,04	366,64	84,89	1.158,96	1.610,49						84.078,04
842	2,648	0,694	3,905	7,247	63,52	16,16	93,09	172,77			521,82	113,78	1.078,21	1.713,81	417,46	98,94	1.268,48	1.784,88						84.252,43
843	9,340	1,296	5,290	15,926	119,88	19,90	91,95	231,73			641,70	133,68	1.170,16	1.945,54	513,36	116,24	1.376,66	2.006,26						84.473,81
844	7,952	1,067	2,136	11,155	172,92	23,63	74,26	270,81			814,62	157,31	1.244,42	2.216,35	651,70	136,79	1.464,02	2.252,51						84.720,06
845	2,315	0,641	1,035	3,991	102,67	17,08	31,71	151,46	0,375	3,75	917,29	174,39	1.276,13	2.367,81	733,83	151,64	1.501,33	2.386,80	3,75	3,75			3,75	84.850,60

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
846	3,224			3,224	55,39	6,41	10,35	72,15	1,701	20,76	972,68	180,80	1.286,48	2.439,96	778,14	157,22	1.513,51	2.448,87	24,51	20,76			20,76	84.891,90
847	1,093			1,093	43,17			43,17	9,865	115,66	1.015,85			1.015,85	812,68			812,68	140,17	34,54			34,54	84.810,78
848					10,93			10,93	24,423	342,88	1.026,78			1.026,78	821,42			821,42	483,05	8,74			8,74	84.476,64
849									38,231	626,54									1.109,59					83.850,10
850									55,788	940,19									2.049,78					82.909,91
851									75,813	1.316,01									3.365,79					81.593,90
852									93,260	1.690,73									5.056,52					79.903,17
853									118,989	2.122,49									7.179,01					77.780,68
854									149,635	2.686,24									9.865,25					75.094,44
855									169,029	3.186,64									13.051,89					71.907,80
856									188,670	3.576,99									16.628,88					68.330,81
857									186,968	3.756,38									20.385,26					64.574,43
858									197,760	3.847,28									24.232,54					60.727,15
859									184,185	3.819,45									28.051,99					56.907,70
860									180,441	3.646,26									31.698,25					53.261,44
861									184,972	3.654,13									35.352,38					49.607,31
862									186,006	3.709,78									39.062,16					45.897,53
863									182,320	3.683,26									42.745,42					42.214,27
864									172,306	3.546,26									46.291,68					38.668,01
865									166,445	3.387,51									49.679,19					35.280,50
866									159,485	3.259,30									52.938,49					32.021,20
867									151,677	3.111,62									56.050,11					28.909,58
868									148,034	2.997,11									59.047,22					25.912,47
869									137,541	2.855,75									61.902,97					23.056,72
870									126,771	2.643,12									64.546,09					20.413,60
871									104,294	2.310,65									66.856,74					18.102,95
872									88,226	1.925,20									68.781,94					16.177,75
873									32,232	1.204,58									69.986,52					14.973,17
874	1,266	0,207	0,294	1,767	12,66	2,07	2,94	17,67		322,32	12,66	2,07	2,94	17,67	10,13	1,80	3,46	15,39	70.308,84	10,13	1,80	3,46	15,39	14.666,24
875	0,721	0,325	16,963	18,009	19,87	5,32	172,57	197,76			32,53	7,39	175,51	215,43	26,02	6,43	206,48	238,93						14.889,79
876	3,267	0,897	20,444	24,608	39,88	12,22	374,07	426,17			72,41	19,61	549,58	641,60	57,93	17,05	646,56	721,54						15.372,40
877	7,405	1,775	18,519	27,699	106,72	26,72	389,63	523,07			179,13	46,33	939,21	1.164,67	143,30	40,29	1.104,95	1.288,54						15.939,40
878		0,103	18,032	18,135	74,05	18,78	365,51	458,34			253,18	65,11	1.304,72	1.623,01	202,54	56,62	1.534,96	1.794,12						16.444,98
879	6,500	1,617	24,788	32,905	65,00	17,20	428,20	510,40			318,18	82,31	1.732,92	2.133,41	254,54	71,57	2.038,73	2.364,84						17.015,70
880	9,582	2,311	30,333	42,226	160,82	39,28	551,21	751,31			479,00	121,59	2.284,13	2.884,72	383,20	105,73	2.687,21	3.176,14						17.826,99
881	12,792	3,012	33,926	49,730	223,74	53,23	642,59	919,56			702,74	174,82	2.926,72	3.804,28	562,19	152,02	3.443,20	4.157,41						18.808,26
882	4,368	1,178	29,824	35,370	171,60	41,90	637,50	851,00			874,34	216,72	3.564,22	4.655,28	699,47	188,45	4.193,20	5.081,12						19.731,97
883	0,539	0,267	9,685	10,491	49,07	14,45	395,09	458,61			923,41	231,17	3.959,31	5.113,89	738,73	201,02	4.658,01	5.597,76						20.248,60
884	0,437	0,425	3,241	4,103	9,76	6,92	129,26	145,94	0,342	3,42	933,17	238,09	4.088,57	5.259,83	746,54	207,03	4.810,08	5.763,65	3,42	3,42			3,42	20.411,08
885	1,047	0,255	0,699	2,001	14,84	6,80	39,40	61,04	6,895	72,37	948,01	244,89	4.127,97	5.320,87	758,41	212,95	4.856,44	5.827,80	75,79	11,87	5,91	46,35	64,13	20.402,85
886	2,079			2,079	31,26	2,55	6,99	40,80	6,073	129,68	979,27	247,44	4.134,96	5.361,67	783,42	215,17	4.864,66	5.863,25	205,47	25,01	2,22	8,22	35,45	20.308,62
887					20,79			20,79	22,554	286,27	1.000,06			1.000,06	800,05			800,05	491,74	16,63			16,63	20.038,98
888									56,724	792,78									1.284,52					19.246,20
889									98,213	1.549,37									2.833,89					17.696,83
890									75,405	1.736,18									4.570,07					15.960,65
891									66,885	1.422,90									5.992,97					14.537,75
892									33,688	1.005,73									6.998,70					13.532,02

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
893									19,572	532,60									7.531,30					12.999,42
894	0,150			0,150	1,50			1,50	6,581	261,53	1,50			1,50	1,20			1,20	7.792,83	1,20			1,20	12.739,09
895		0,021	0,423	0,444	1,50	0,21	4,23	5,94		65,81	3,00	0,21	4,23	7,44	2,40	0,18	4,98	7,56	7.858,64	1,20	0,18	4,98	6,36	12.679,64
896		0,022	8,467	8,489		0,43	88,90	89,33				0,64	93,13	93,77		0,56	109,56	110,12						12.784,60
897			6,890	6,890		0,22	153,57	153,79				0,86	246,70	247,56		0,75	290,24	290,99						12.965,46
898	4,293	0,827	4,318	9,438	42,93	8,27	112,08	163,28			42,93	9,13	358,78	410,84	34,34	7,94	422,09	464,37						13.138,85
899	9,331	1,114	1,898	12,343	136,24	19,41	62,16	217,81			179,17	28,54	420,94	628,65	143,34	24,82	495,22	663,38						13.337,85
900	10,386	0,790	0,325	11,501	197,17	19,04	22,23	238,44			376,34	47,58	443,17	867,09	301,07	41,37	521,38	863,82						13.538,30
901	2,511	0,136		2,647	128,97	9,26	3,25	141,48	3,067	30,67	505,31	56,84	446,42	1.008,57	404,25	49,43	525,20	978,88	30,67	30,67			30,67	13.622,68
902	0,563			0,563	30,74	1,36		32,10	12,743	158,10	536,05	58,20		594,25	428,84	50,61		479,45	188,77	24,59	1,18		25,77	13.490,35
903					5,63			5,63	22,265	350,08	541,68			541,68	433,34			433,34	538,85	4,50			4,50	13.144,77
904									28,688	509,53									1.048,38					12.635,24
905									41,479	701,67									1.750,05					11.933,57
906									47,600	890,79									2.640,84					11.042,78
907									52,446	1.000,46									3.641,30					10.042,32
908									62,275	1.147,21									4.788,51					8.895,11
909									61,951	1.242,26									6.030,77					7.652,85
910									71,025	1.329,76									7.360,53					6.323,09
911									93,553	1.645,78									9.006,31					4.677,31
912									113,998	2.075,51									11.081,82					2.601,80
913									139,358	2.533,56									13.615,38					68,24
914									154,547	2.939,05									16.554,43					-2.870,81
915																								-2.870,81
916																								-2.870,81
917																								-2.870,81
918									177,370															-2.870,81
919									176,996	3.543,66									3.543,66					-6.414,47
920									193,277	3.702,73									7.246,39					-10.117,20
921									199,322	3.925,99									11.172,38					-14.043,19
922									192,680	3.920,02									15.092,40					-17.963,21
923									210,471	4.031,51									19.123,91					-21.994,72
924									210,007	4.204,78									23.328,69					-26.199,50
925									221,554	4.315,61									27.644,30					-30.515,11
926									231,383	4.529,37									32.173,67					-35.044,48
927									208,753	4.401,36									36.575,03					-39.445,84
928									214,228	4.229,81									40.804,84					-43.675,65
929									201,423	4.156,51									44.961,35					-47.832,16
930									206,997	4.084,20									49.045,55					-51.916,36
931									272,409	4.794,06									53.839,61					-56.710,42
932									315,407	5.878,16									59.717,77					-62.588,58
933									283,808	5.992,15									65.709,92					-68.580,73
934									245,030	5.288,38									70.998,30					-73.869,11
935									218,676	4.637,06									75.635,36					-78.506,17
936									190,681	4.093,57									79.728,93					-82.599,74
937									168,663	3.593,44									83.322,37					-86.193,18
938									150,763	3.194,26									86.516,63					-89.387,44
939									120,137	2.709,00									89.225,63					-92.096,44

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
940									102,415	2.225,52									91.451,15					-94.321,96
941									67,524	1.699,39									93.150,54					-96.021,35
942									41,169	1.086,93									94.237,47					-97.108,28
943									21,207	623,76									94.861,23					-97.732,04
944	0,393	0,276	2,010	2,679	3,93	2,76	20,10	26,79	4,221	254,28	3,93	2,76	20,10	26,79	3,14	2,40	23,65	29,19	95.115,51	3,14	2,40	23,65	29,19	-97.957,13
945	2,917	0,743	2,189	5,849	33,10	10,19	41,99	85,28		42,21	37,03	12,95	62,09	112,07	29,62	11,26	73,05	113,93	95.157,72	26,48	8,86	6,87	42,21	-97.914,60
946	7,261	1,692	11,502	20,455	101,78	24,35	136,91	263,04			138,81	37,30	199,00	375,11	111,05	32,43	234,12	377,60						-97.650,93
947	1,595	0,529	19,354	21,478	88,56	22,21	308,56	419,33			227,37	59,51	507,56	794,44	181,90	51,75	597,13	830,78						-97.197,76
948	2,751	0,820	29,298	32,869	43,46	13,49	486,52	543,47			270,83	73,00	994,08	1.337,91	216,66	63,48	1.169,51	1.449,65						-96.578,89
949	17,016	3,839	29,507	50,362	197,67	46,59	588,05	832,31			468,50	119,59	1.582,13	2.170,22	374,80	103,99	1.861,33	2.340,12						-95.688,42
950	14,784	3,404	31,600	49,788	318,00	72,43	611,07	1.001,50			786,50	192,02	2.193,20	3.171,72	629,20	166,97	2.580,24	3.376,41						-94.652,13
951	10,230	2,433	28,814	41,477	250,14	58,37	604,14	912,65			1.036,64	250,39	2.797,34	4.084,37	829,31	217,73	3.290,99	4.338,03						-93.690,51
952	7,470	1,812	22,806	32,088	177,00	42,45	516,20	735,65			1.213,64	292,84	3.313,54	4.820,02	970,91	254,64	3.898,28	5.123,83						-92.904,70
953	4,873	1,160	5,240	11,273	123,43	29,72	280,46	433,61			1.337,07	322,56	3.594,00	5.253,63	1.069,66	280,49	4.228,24	5.578,39						-92.450,16
954					48,73	11,60	52,40	112,73	9,861	98,61	1.385,80	334,16	3.646,40	5.366,36	1.108,64	290,57	4.289,88	5.689,09	98,61	38,98	10,09	49,54	98,61	-92.438,05
955									47,114	569,75									668,36					-93.007,80
956									95,581	1.426,95									2.095,31					-94.434,75
957									166,955	2.625,36									4.720,67					-97.060,11
958									163,049	3.300,04									8.020,71					-100.360,15
959									126,271	2.893,20									10.913,91					-103.253,35
960									69,947	1.962,18									12.876,09					-105.215,53
961									36,462	1.064,09									13.940,18					-106.279,62
962									27,067	635,29									14.575,47					-106.914,91
963	0,062			0,062	0,62			0,62	18,631	456,98	0,62			0,62	0,50			0,50	15.032,45	0,50			0,50	-107.371,39
964	0,720			0,720	7,82			7,82	12,707	313,38	8,44			8,44	6,75			6,75	15.345,83	6,26			6,26	-107.678,51
965	1,516	0,003		1,519	22,36	0,03		22,39	8,828	215,35	30,80	0,03		30,83	24,64	0,03		24,67	15.561,18	17,89	0,03		17,92	-107.875,95
966	0,869	0,163	0,592	1,624	23,85	1,66	5,92	31,43	9,062	178,90	54,65	1,69	5,92	62,26	43,72	1,47	6,96	52,15	15.740,08	19,08	1,44	6,96	27,48	-108.027,36
967		0,102	2,198	2,300	8,69	2,65	27,90	39,24	6,556	156,18	63,34	4,34	33,82	101,50	50,67	3,77	39,79	94,23	15.896,26	6,95	2,30	32,82	42,07	-108.141,46
968		0,053	4,453	4,506		1,55	66,51	68,06	2,431	89,87		5,89	100,33	106,22		5,12	118,04	123,16	15.986,13		1,35	78,25	79,60	-108.151,74
969	1,289	0,411	4,835	6,535	12,89	4,64	92,88	110,41		24,31	12,89	10,53	193,21	216,63	10,31	9,16	227,31	246,78	16.010,44	10,31	4,03	9,97	24,31	-108.052,43
970	3,347	0,837	2,874	7,058	46,36	12,48	77,09	135,93			59,25	23,01	270,30	352,56	47,40	20,01	318,00	385,41						-107.913,80
971	2,010	0,599	13,530	16,139	53,57	14,36	164,04	231,97			112,82	37,37	434,34	584,53	90,26	32,50	510,99	633,75						-107.665,47
972	4,198	1,127	26,121	31,446	62,08	17,26	396,51	475,85			174,90	54,63	830,85	1.060,38	139,92	47,50	977,47	1.164,89						-107.134,31
973	13,264	3,062	27,925	44,251	174,62	41,89	540,46	756,97			349,52	96,52	1.371,31	1.817,35	279,62	83,93	1.613,31	1.976,86						-106.322,35
974	14,656	3,296	23,140	41,092	279,20	63,58	510,65	853,43			628,72	160,10	1.881,96	2.670,78	502,98	139,22	2.214,07	2.856,27						-105.442,94
975	14,289	3,177	19,664	37,130	289,45	64,73	428,04	782,22			918,17	224,83	2.310,00	3.453,00	734,54	195,50	2.717,65	3.647,69						-104.651,52
976	3,156	0,857	14,643	18,656	174,45	40,34	343,07	557,86			1.092,62	265,17	2.653,07	4.010,86	874,10	230,58	3.121,26	4.225,94						-104.073,27
977	3,212	0,808	2,891	6,911	63,68	16,65	175,34	255,67			1.156,30	281,82	2.828,41	4.266,53	925,04	245,06	3.327,54	4.497,64						-103.801,57
978	0,106			0,106	33,18	8,08	28,91	70,17	7,639	76,39	1.189,48	289,90	2.857,32	4.336,70	951,58	252,09	3.361,55	4.565,22	76,39	26,54	7,03	34,01	67,58	-103.810,38
979					1,06			1,06	28,405	360,44	1.190,54			1.190,54	952,43			952,43	436,83	0,85			0,85	-104.169,97
980									55,356	837,61									1.274,44					-105.007,58
981									73,858	1.292,14									2.566,58					-106.299,72
982									93,047	1.669,05									4.235,63					-107.968,77
983									118,382	2.114,29									6.349,92					-110.083,06
984									163,673	2.820,55									9.170,47					-112.903,61
985									184,237	3.479,10									12.649,57					-116.382,71
986									156,789	3.410,26									16.059,83					-119.792,97

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
987									145,413	3.022,02									19.081,85					-122.814,99
988									149,972	2.953,85									22.035,70					-125.768,84
989									131,874	2.818,46									24.854,16					-128.587,30
990									117,068	2.489,42									27.343,58					-131.076,72
991									104,996	2.220,64									29.564,22					-133.297,36
992									102,202	2.071,98									31.636,20					-135.369,34
993									96,769	1.989,71									33.625,91					-137.359,05
994									106,079	2.028,48									35.654,39					-139.387,53
995									93,623	1.997,02									37.651,41					-141.384,55
996									82,359	1.759,82									39.411,23					-143.144,37
997									70,538	1.528,97									40.940,20					-144.673,34
998									56,089	1.266,27									42.206,47					-145.939,61
999									48,435	1.045,24									43.251,71					-146.984,85
1.000									42,098	905,33									44.157,04					-147.890,18
1.001									38,299	803,97									44.961,01					-148.694,15
1.002									34,332	726,31									45.687,32					-149.420,46
1.003	0,123			0,123	1,23			1,23	21,447	557,79	1,23			1,23	0,98			0,98	46.245,11	0,98			0,98	-149.977,27
1.004	1,712	0,168	0,004	1,884	18,35	1,68	0,04	20,07	9,175	306,22	19,58	1,68	0,04	21,30	15,66	1,46	0,05	17,17	46.551,33	14,68	1,46	0,05	16,19	-150.267,30
1.005	0,546	0,362	2,435	3,343	22,58	5,30	24,39	52,27	2,173	113,48	42,16	6,98	24,43	73,57	33,73	6,07	28,74	68,54	46.664,81	18,06	4,61	28,69	51,36	-150.329,41
1.006	3,362	0,836	2,367	6,565	39,08	11,98	48,02	99,08		21,73	81,24	18,96	72,45	172,65	64,99	16,49	85,24	166,72	46.686,54	21,73			21,73	-150.252,96
1.007			11,929	11,929	33,62	8,36	142,96	184,94			114,86	27,32	215,41	357,59	91,89	23,76	253,42	369,07						-150.050,61
1.008		0,124	16,408	16,532		1,24	283,37	284,61				28,56	498,78	527,34		24,83	586,80	611,63						-149.716,16
1.009			13,344	13,344		1,24	297,52	298,76				29,80	796,30	826,10		25,91	936,82	962,73						-149.365,06
1.010		0,020	1,935	1,955		0,20	152,79	152,99				30,00	949,09	979,09		26,09	1.116,58	1.142,67						-149.185,13
1.011	0,168	0,215	22,016	22,399	1,68	2,35	239,51	243,54			1,68	32,35	1.188,60	1.222,63	1,34	28,13	1.398,35	1.427,82						-148.899,97
1.012	8,633	2,071	24,323	35,027	88,01	22,86	463,39	574,26			89,69	55,21	1.651,99	1.796,89	71,75	48,01	1.943,52	2.063,28						-148.264,52
1.013	21,761	4,685	23,791	50,237	303,94	67,56	481,14	852,64			393,63	122,77	2.133,13	2.649,53	314,90	106,76	2.509,56	2.931,22						-147.396,57
1.014	19,996	4,441	30,450	54,887	417,57	91,26	542,41	1.051,24			811,20	214,03	2.675,54	3.700,77	648,96	186,11	3.147,69	3.982,76						-146.345,03
1.015	24,074	5,443	45,268	74,785	440,70	98,84	757,18	1.296,72			1.251,90	312,87	3.432,72	4.997,49	1.001,52	272,06	4.038,49	5.312,07						-145.015,72
1.016	15,030	3,645	57,634	76,309	391,04	90,88	1.029,02	1.510,94			1.642,94	403,75	4.461,74	6.508,43	1.314,35	351,09	5.249,11	6.914,55						-143.413,25
1.017	13,920	3,429	62,247	79,596	289,50	70,74	1.198,81	1.559,05			1.932,44	474,49	5.660,55	8.067,48	1.545,95	412,60	6.659,47	8.618,02						-141.709,77
1.018	20,133	4,789	64,351	89,273	340,53	82,18	1.265,98	1.688,69			2.272,97	556,67	6.926,53	9.756,17	1.818,38	484,06	8.148,86	10.451,30						-139.876,50
1.019	17,490	4,249	69,452	91,191	376,23	90,38	1.338,03	1.804,64			2.649,20	647,05	8.264,56	11.560,81	2.119,36	562,65	9.723,01	12.405,02						-137.922,77
1.020	12,994	3,259	69,787	86,040	304,84	75,08	1.392,39	1.772,31			2.954,04	722,13	9.656,95	13.333,12	2.363,23	627,94	11.361,12	14.352,29						-135.975,51
1.021	15,418	3,796	69,713	88,927	284,12	70,55	1.395,00	1.749,67			3.238,16	792,68	11.051,95	15.082,79	2.590,53	689,29	13.002,29	16.282,11						-134.045,69
1.022	16,906	4,117	67,157	88,180	323,24	79,13	1.368,70	1.771,07			3.561,40	871,81	12.420,65	16.853,86	2.849,12	758,10	14.612,53	18.219,75						-132.108,05
1.023	8,676	2,236	53,903	64,815	255,82	63,53	1.210,60	1.529,95			3.817,22	935,34	13.631,25	18.383,81	3.053,78	813,34	16.036,76	19.903,88						-130.423,92
1.024	9,475	2,350	41,299	53,124	181,51	45,86	952,02	1.179,39			3.998,73	981,20	14.583,27	19.563,20	3.198,98	853,22	17.156,79	21.208,99						-129.118,81
1.025	5,494	1,454	36,904	43,852	149,69	38,04	782,03	969,76			4.148,42	1.019,24	15.365,30	20.532,96	3.318,74	886,30	18.076,82	22.281,86						-128.045,94
1.026	3,639	1,011	26,603	31,253	91,33	24,65	635,07	751,05			4.239,75	1.043,89	16.000,37	21.284,01	3.391,80	907,73	18.823,96	23.123,49						-127.204,30
1.027	3,848	0,968	8,409	13,225	74,87	19,79	350,12	444,78			4.314,62	1.063,68	16.350,49	21.728,79	3.451,70	924,94	19.235,87	23.612,51						-126.715,29
1.028	3,277	0,444	0,219	3,940	71,25	14,12	86,28	171,65	0,103	1,03	4.385,87	1.077,80	16.436,77	21.900,44	3.508,70	937,22	19.337,38	23.783,30	1,03	1,03			1,03	-126.545,54
1.029	0,048			0,048	33,25	4,44	2,19	39,88	19,861	199,64	4.419,12	1.082,24	16.438,96	21.940,32	3.535,30	941,08	19.339,95	23.816,33	200,67	26,60	3,86	2,58	33,04	-126.712,14
1.030	5,597	0,090		5,687	56,45	0,90		57,35		198,61	4.475,57	1.083,14		5.558,71	3.580,46	941,86		4.522,32	399,28	45,16	0,78		45,94	-126.864,81
1.031	10,952	1,317	3,139	15,408	165,49	14,07	31,39	210,95			4.641,06	1.097,21	31,39	5.769,66	3.712,85	954,10	36,93	4.703,88						-126.683,25
1.032	15,482	1,641	1,715	18,838	264,34	29,58	48,54	342,46			4.905,40	1.126,79	79,93	6.112,12	3.924,32	979,82	94,04	4.998,18						-126.388,95
1.033	16,996	3,770	10,952	31,718	324,78	54,11	126,67	505,56			5.230,18	1.180,90	206,60	6.617,68	4.184,14	1.026,87	243,06	5.454,07						-125.933,05

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.034	10,759	2,618	24,368	37,745	277,55	63,88	353,20	694,63			5.507,73	1.244,78	559,80	7.312,31	4.406,18	1.082,42	658,59	6.147,19						-125.239,93
1.035	16,835	3,971	32,583	53,389	275,94	65,89	569,51	911,34			5.783,67	1.310,67	1.129,31	8.223,65	4.626,94	1.139,71	1.328,60	7.095,25						-124.291,87
1.036	29,828	6,684	36,809	73,321	466,63	106,55	693,92	1.267,10			6.250,30	1.417,22	1.823,23	9.490,75	5.000,24	1.232,37	2.144,98	8.377,59						-123.009,54
1.037	32,641	7,361	44,394	84,396	624,69	140,45	812,03	1.577,17			6.874,99	1.557,67	2.635,26	11.067,92	5.499,99	1.354,50	3.100,31	9.954,80						-121.432,33
1.038	18,698	4,566	62,250	85,514	513,39	119,27	1.066,44	1.699,10			7.388,38	1.676,94	3.701,70	12.767,02	5.910,70	1.458,21	4.354,94	11.723,85						-119.663,27
1.039	12,709	3,264	71,033	87,006	314,07	78,30	1.332,83	1.725,20			7.702,45	1.755,24	5.034,53	14.492,22	6.161,96	1.526,30	5.922,98	13.611,24						-117.775,89
1.040	15,203	3,846	74,391	93,440	279,12	71,10	1.454,24	1.804,46			7.981,57	1.826,34	6.488,77	16.296,68	6.385,26	1.588,12	7.633,85	15.607,23						-115.779,90
1.041	22,098	5,390	74,218	101,706	373,01	92,36	1.486,09	1.951,46			8.354,58	1.918,70	7.974,86	18.248,14	6.683,66	1.668,43	9.382,19	17.734,28						-113.652,84
1.042	25,344	6,109	75,229	106,682	474,42	114,99	1.494,47	2.083,88			8.829,00	2.033,69	9.469,33	20.332,02	7.063,20	1.768,43	11.140,39	19.972,02						-111.415,11
1.043	31,558	7,453	74,785	113,796	569,02	135,62	1.500,14	2.204,78			9.398,02	2.169,31	10.969,47	22.536,80	7.518,42	1.886,36	12.905,26	22.310,04						-109.077,09
1.044	33,144	7,815	76,890	117,849	647,02	152,68	1.516,75	2.316,45			10.045,04	2.321,99	12.486,22	24.853,25	8.036,03	2.019,12	14.689,67	24.744,82						-106.642,30
1.045	30,921	7,369	81,774	120,064	640,65	151,84	1.586,64	2.379,13			10.685,69	2.473,83	14.072,86	27.232,38	8.548,55	2.151,16	16.556,31	27.256,02						-104.131,11
1.046	26,406	6,417	87,395	120,218	573,27	137,86	1.691,69	2.402,82			11.258,96	2.611,69	15.764,55	29.635,20	9.007,17	2.271,03	18.546,53	29.824,73						-101.562,39
1.047	25,885	6,318	90,400	122,603	522,91	127,35	1.777,95	2.428,21			11.781,87	2.739,04	17.542,50	32.063,41	9.425,50	2.381,77	20.638,24	32.445,51						-98.941,62
1.048	18,037	4,581	97,663	120,281	439,22	108,99	1.880,63	2.428,84			12.221,09	2.848,03	19.423,13	34.492,25	9.776,87	2.476,55	22.850,74	35.104,16						-96.282,96
1.049	18,909	4,788	99,694	123,391	369,46	93,69	1.973,57	2.436,72			12.590,55	2.941,72	21.396,70	36.928,97	10.072,44	2.558,02	25.172,59	37.803,05						-93.584,08
1.050	21,041	5,283	100,812	127,136	399,50	100,71	2.005,06	2.505,27			12.990,05	3.042,43	23.401,76	39.434,24	10.392,04	2.645,59	27.531,48	40.569,11						-90.818,01
1.051	24,042	5,960	101,661	131,663	450,83	112,43	2.024,73	2.587,99			13.440,88	3.154,86	25.426,49	42.022,23	10.752,70	2.743,36	29.913,52	43.409,58						-87.977,55
1.052	31,050	7,525	100,293	138,868	550,92	134,85	2.019,54	2.705,31			13.991,80	3.289,71	27.446,03	44.727,54	11.193,44	2.860,62	32.289,45	46.343,51						-85.043,62
1.053	25,490	6,306	104,855	136,651	565,40	138,31	2.051,48	2.755,19			14.557,20	3.428,02	29.497,51	47.482,73	11.645,76	2.980,89	34.702,95	49.329,60						-82.057,52
1.054	25,248	6,263	107,348	138,859	507,38	125,69	2.122,03	2.755,10			15.064,58	3.553,71	31.619,54	50.237,83	12.051,66	3.090,18	37.199,46	52.341,30						-79.045,81
1.055	27,516	6,776	107,645	141,937	527,64	130,39	2.149,93	2.807,96			15.592,22	3.684,10	33.769,47	53.045,79	12.473,78	3.203,57	39.728,79	55.406,14						-75.980,99
1.056	27,205	6,707	108,372	142,284	547,21	134,83	2.160,17	2.842,21			16.139,43	3.818,93	35.929,64	55.888,00	12.911,54	3.320,81	42.270,16	58.502,51						-72.884,60
1.057	22,988	5,774	112,710	141,472	501,93	124,81	2.210,82	2.837,56			16.641,36	3.943,74	38.140,46	58.725,56	13.313,09	3.429,34	44.871,13	61.613,56						-69.773,56
1.058	32,112	7,792	109,560	149,464	551,00	135,66	2.222,70	2.909,36			17.192,36	4.079,40	40.363,16	61.634,92	13.753,89	3.547,30	47.486,07	64.787,26						-66.599,85
1.059	28,065	6,884	112,120	147,069	601,77	146,76	2.216,80	2.965,33			17.794,13	4.226,16	42.579,96	64.600,25	14.235,30	3.674,92	50.094,07	68.004,29						-63.382,82
1.060	30,103	7,371	112,114	149,588	581,68	142,55	2.242,34	2.966,57			18.375,81	4.368,71	44.822,30	67.566,82	14.700,65	3.798,88	52.732,12	71.231,65						-60.155,47
1.061	31,642	7,711	110,780	150,133	617,45	150,82	2.228,94	2.997,21			18.993,26	4.519,53	47.051,24	70.564,03	15.194,61	3.930,03	55.354,40	74.479,04						-56.908,08
1.062	29,561	7,209	113,341	150,111	612,03	149,20	2.241,21	3.002,44			19.605,29	4.668,73	49.292,45	73.566,47	15.684,23	4.059,77	57.991,12	77.735,12						-53.652,00
1.063	29,972	7,297	113,696	150,965	595,33	145,06	2.270,37	3.010,76			20.200,62	4.813,79	51.562,82	76.577,23	16.160,50	4.185,90	60.662,14	81.008,54						-50.378,57
1.064	35,266	8,462	112,333	156,061	652,38	157,59	2.260,29	3.070,26			20.853,00	4.971,38	53.823,11	79.647,49	16.682,40	4.322,94	63.321,31	84.326,65						-47.060,47
1.065	31,267	7,530	113,880	152,677	665,33	159,92	2.262,13	3.087,38			21.518,33	5.131,30	56.085,24	82.734,87	17.214,66	4.462,00	65.982,64	87.659,30						-43.727,82
1.066	32,865	8,009	113,671	154,545	641,32	155,39	2.275,51	3.072,22			22.159,65	5.286,69	58.360,75	85.807,09	17.727,72	4.597,12	68.659,71	90.984,55						-40.402,57
1.067	32,303	7,870	111,613	151,786	651,68	158,79	2.252,84	3.063,31			22.811,33	5.445,48	60.613,59	88.870,40	18.249,06	4.735,20	71.310,11	94.294,37						-37.092,75
1.068	28,591	7,053	113,244	148,888	608,94	149,23	2.248,57	3.006,74			23.420,27	5.594,71	62.862,16	91.877,14	18.736,22	4.864,97	73.955,48	97.556,67						-33.830,46
1.069	28,610	7,039	112,310	147,959	572,01	140,92	2.255,54	2.968,47			23.992,28	5.735,63	65.117,70	94.845,61	19.193,82	4.987,50	76.609,06	100.790,38						-30.596,74
1.070	30,799	7,513	108,923	147,235	594,09	145,52	2.212,33	2.951,94			24.586,37	5.881,15	67.330,03	97.797,55	19.669,10	5.114,04	79.211,80	103.994,94						-27.392,19
1.071	26,368	6,283	106,069	138,720	571,67	137,96	2.149,92	2.859,55			25.158,04	6.019,11	69.479,95	100.657,10	20.126,43	5.234,01	81.741,12	107.101,56						-24.285,57
1.072	26,003	6,402	101,815	134,220	523,71	126,85	2.078,84	2.729,40			25.681,75	6.145,96	71.558,79	103.386,50	20.545,40	5.344,31	84.186,81	110.076,52						-21.310,60
1.073	32,508	7,812	94,375	134,695	585,11	142,14	1.961,90	2.689,15			26.266,86	6.288,10	73.520,69	106.075,65	21.013,49	5.467,91	86.494,93	112.976,33						-18.410,79
1.074	35,049	8,326	88,465	131,840	675,57	161,38	1.828,40	2.665,35			26.942,43	6.449,48	75.349,09	108.741,00	21.553,94	5.608,24	88.645,99	115.808,17						-15.578,94
1.075	27,698	6,688	86,599	120,985	627,47	150,14	1.750,64	2.528,25			27.569,90	6.599,62	77.099,73	111.269,25	22.055,92	5.738,80	90.705,56	118.500,28						-12.886,83
1.076	22,795	5,576	84,491	112,862	504,93	122,64	1.710,90	2.338,47			28.074,83	6.722,26	78.810,63	113.607,72	22.459,86	5.845,44	92.718,39	121.023,69						-10.363,42
1.077	16,331	4,117	82,261	102,709	391,26	96,93	1.667,52	2.155,71			28.466,09	6.819,19	80.478,15	115.763,43	22.772,87	5.929,73	94.680,18	123.382,78						-8.004,34
1.078	14,662	3,737	77,607	96,006	309,93	78,54	1.598,68	1.987,15			28.776,02	6.897,73	82.076,83	117.750,58	23.020,82	5.998,03	96.560,98	125.579,83						-5.807,30
1.079	17,361	4,314	68,563	90,238	320,23	80,51	1.461,70	1.862,44			29.096,25	6.978,24	83.538,53	119.613,02	23.277,00	6.068,03	98.280,62	127.625,65						-3.761,46
1.080	22,190	5,323	59,322	86,835	395,51	96,37	1.278,85	1.770,73			29.491,76	7.074,61	84.817,38	121.383,75	23.593,41	6.151,83	99.785,15	129.530,39						-1.856,72

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.081	20,387	4,882	52,545	77,814	425,77	102,05	1.118,67	1.646,49			29.917,53	7.176,66	85.936,05	123.030,24	23.934,02	6.240,57	101.101,24	131.275,83						-111,28
1.082	18,340	4,405	47,638	70,383	387,27	92,87	1.001,83	1.481,97			30.304,80	7.269,53	86.937,88	124.512,21	24.243,84	6.321,33	102.279,86	132.845,03						1.457,92
1.083	15,552	3,769	43,187	62,508	338,92	81,74	908,25	1.328,91			30.643,72	7.351,27	87.846,13	125.841,12	24.514,98	6.392,41	103.348,39	134.255,78						2.868,66
1.084	16,726	3,974	35,519	56,219	322,78	77,43	787,06	1.187,27			30.966,50	7.428,70	88.633,19	127.028,39	24.773,20	6.459,74	104.274,34	135.507,28						4.120,17
1.085	15,756	3,722	29,702	49,180	324,82	76,96	652,21	1.053,99			31.291,32	7.505,66	89.285,40	128.082,38	25.033,06	6.526,66	105.041,65	136.601,37						5.214,25
1.086	13,659	3,240	25,020	41,919	294,15	69,62	547,22	910,99			31.585,47	7.575,28	89.832,62	128.993,37	25.268,38	6.587,20	105.685,44	137.541,02						6.153,90
1.087	14,342	3,351	20,606	38,299	280,01	65,91	456,26	802,18			31.865,48	7.641,19	90.288,88	129.795,55	25.492,38	6.644,51	106.222,21	138.359,10						6.972,00
1.088	15,478	3,536	16,262	35,276	298,20	68,87	368,68	735,75			32.163,68	7.710,06	90.657,56	130.531,30	25.730,94	6.704,40	106.655,95	139.091,29						7.704,19
1.089	12,444	2,728	12,608	27,780	279,22	62,64	288,70	630,56			32.442,90	7.772,70	90.946,26	131.161,86	25.954,32	6.758,87	106.995,60	139.708,79						8.321,68
1.090	11,004	2,479	15,608	29,091	234,48	52,07	282,16	568,71			32.677,38	7.824,77	91.228,42	131.730,57	26.141,90	6.804,15	107.327,55	140.273,60						8.886,50
1.091	10,714	2,439	17,447	30,600	217,18	49,18	330,55	596,91			32.894,56	7.873,95	91.558,97	132.327,48	26.315,65	6.846,91	107.716,44	140.879,00						9.491,89
1.092	14,905	3,265	17,102	35,272	256,19	57,04	345,49	658,72			33.150,75	7.930,99	91.904,46	132.986,20	26.520,60	6.896,51	108.122,89	141.540,00						10.152,90
1.093	17,354	3,747	17,831	38,932	322,59	70,12	349,33	742,04			33.473,34	8.001,11	92.253,79	133.728,24	26.778,67	6.957,49	108.533,87	142.270,03						10.882,92
1.094	15,506	3,475	23,934	42,915	328,60	72,22	417,65	818,47			33.801,94	8.073,33	92.671,44	134.546,71	27.041,55	7.020,29	109.025,22	143.087,06						11.699,95
1.095	17,412	3,867	25,550	46,829	329,18	73,42	494,84	897,44			34.131,12	8.146,75	93.166,28	135.444,15	27.304,90	7.084,13	109.607,39	143.996,42						12.609,30
1.096	21,004	4,566	25,545	51,115	384,16	84,33	510,95	979,44			34.515,28	8.231,08	93.677,23	136.423,59	27.612,22	7.157,46	110.208,51	144.978,19						13.591,08
1.097	23,238	4,985	25,119	53,342	442,42	95,51	506,64	1.044,57			34.957,70	8.326,59	94.183,87	137.468,16	27.966,16	7.240,51	110.804,55	146.011,22						14.624,12
1.098	18,200	4,085	30,590	52,875	414,38	90,70	557,09	1.062,17			35.372,08	8.417,29	94.740,96	138.530,33	28.297,66	7.319,38	111.459,95	147.076,99						15.689,89
1.099	16,642	3,804	33,512	53,958	348,42	78,89	641,02	1.068,33			35.720,50	8.496,18	95.381,98	139.598,66	28.576,40	7.387,98	112.214,09	148.178,47						16.791,37
1.100	15,339	3,575	38,043	56,957	319,81	73,79	715,55	1.109,15			36.040,31	8.569,97	96.097,53	140.707,81	28.832,25	7.452,15	113.055,92	149.340,32						17.953,21
1.101	13,603	3,228	41,105	57,936	289,42	68,03	791,48	1.148,93			36.329,73	8.638,00	96.889,01	141.856,74	29.063,78	7.511,30	113.987,07	150.562,15						19.175,06
1.102	12,541	3,022	43,087	58,650	261,44	62,50	841,92	1.165,86			36.591,17	8.700,50	97.730,93	143.022,60	29.272,94	7.565,65	114.977,56	151.816,15						20.429,05
1.103	17,374	4,029	41,653	63,056	299,15	70,51	847,40	1.217,06			36.890,32	8.771,01	98.578,33	144.239,66	29.512,26	7.626,97	115.974,51	153.113,74						21.726,62
1.104	20,694	4,709	41,136	66,539	380,68	87,38	827,89	1.295,95			37.271,00	8.858,39	99.406,22	145.535,61	29.816,80	7.702,95	116.948,49	154.468,24						23.081,13
1.105	28,422	6,240	39,774	74,436	491,16	109,49	809,10	1.409,75			37.762,16	8.967,88	100.215,32	146.945,36	30.209,73	7.798,16	117.900,38	155.908,27						24.521,15
1.106	28,101	6,210	42,062	76,373	565,23	124,50	818,36	1.508,09			38.327,39	9.092,38	101.033,68	148.453,45	30.661,91	7.906,42	118.863,15	157.431,48						26.044,37
1.107	25,387	5,731	46,657	77,775	534,88	119,41	887,19	1.541,48			38.862,27	9.211,79	101.920,87	149.994,93	31.089,82	8.010,25	119.906,91	159.006,98						27.619,86
1.108	22,257	5,127	50,230	77,614	476,44	108,58	968,87	1.553,89			39.338,71	9.320,37	102.889,74	151.548,82	31.470,97	8.104,67	121.046,75	160.622,39						29.235,28
1.109	18,309	4,321	52,458	75,088	405,66	94,48	1.026,88	1.527,02			39.744,37	9.414,85	103.916,62	153.075,84	31.795,50	8.186,83	122.254,85	162.237,18						30.850,06
1.110	13,909	3,400	57,367	74,676	322,18	77,21	1.098,25	1.497,64			40.066,55	9.492,06	105.014,87	154.573,48	32.053,24	8.253,97	123.546,91	163.854,12						32.467,00
1.111	8,739	2,251	56,366	67,356	226,48	56,51	1.137,33	1.420,32			40.293,03	9.548,57	106.152,20	155.993,80	32.234,42	8.303,10	124.884,94	165.422,46						34.035,36
1.112	11,181	2,771	52,494	66,446	199,20	50,22	1.088,60	1.338,02			40.492,23	9.598,79	107.240,80	157.331,82	32.393,78	8.346,77	126.165,65	166.906,20						35.519,10
1.113	13,446	3,239	47,229	63,914	246,27	60,10	997,23	1.303,60			40.738,50	9.658,89	108.238,03	158.635,42	32.590,80	8.399,03	127.338,86	168.328,69						36.941,59
1.114	12,173	2,945	44,184	59,302	256,19	61,84	914,13	1.232,16			40.994,69	9.720,73	109.152,16	159.867,58	32.795,75	8.452,81	128.414,31	169.662,87						38.275,76
1.115	11,724	2,822	39,352	53,898	238,97	57,67	835,36	1.132,00			41.233,66	9.778,40	109.987,52	160.999,58	32.986,93	8.502,96	129.397,08	170.886,97						39.499,86
1.116	9,200	2,245	33,951	45,396	209,24	50,67	733,03	992,94			41.442,90	9.829,07	110.720,55	161.992,52	33.154,32	8.547,02	130.259,47	171.960,81						40.573,70
1.117	7,580	1,866	28,058	37,504	167,80	41,11	620,09	829,00			41.610,70	9.870,18	111.340,64	162.821,52	33.288,56	8.582,77	130.988,99	172.860,32						41.473,21
1.118	7,496	1,826	24,186	33,508	150,76	36,92	522,44	710,12			41.761,46	9.907,10	111.863,08	163.531,64	33.409,17	8.614,87	131.603,62	173.627,66						42.240,56
1.119	7,217	1,754	21,740	30,711	147,13	35,80	459,26	642,19			41.908,59	9.942,90	112.322,34	164.173,83	33.526,87	8.646,00	132.143,93	174.316,80						42.929,70
1.120	4,619	1,182	18,896	24,697	118,36	29,36	406,36	554,08			42.026,95	9.972,26	112.728,70	164.727,91	33.621,56	8.671,53	132.622,00	174.915,09						43.527,99
1.121	0,547	0,269	10,806	11,622	51,66	14,51	297,02	363,19			42.078,61	9.986,77	113.025,72	165.091,10	33.662,89	8.684,15	132.971,44	175.318,48						43.931,37
1.122	0,770	0,142	0,223	1,135	13,17	4,11	110,29	127,57			42.091,78	9.990,88	113.136,01	165.218,67	33.673,42	8.687,72	133.101,19	175.462,33						44.075,23
1.123	0,071			0,071	8,41	1,42	2,23	12,06	7,622	76,22	42.100,19	9.992,30	113.138,24	165.230,73	33.680,15	8.688,96	133.103,81	175.472,92	76,22	6,73	1,23	2,62	10,58	44.009,60
1.124					0,71			0,71	13,941	215,63	42.100,90			42.100,90	33.680,72			33.680,72	291,85	0,57			0,57	43.794,54
1.125									16,382	303,23									595,08					43.491,31
1.126									16,243	326,25									921,33					43.165,06
1.127									18,829	350,72									1.272,05					42.814,34

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.128									34,641	534,70									1.806,75					42.279,64
1.129									34,991	696,32									2.503,07					41.583,32
1.130									50,361	853,52									3.356,59					40.729,80
1.131									67,729	1.180,90									4.537,49					39.548,90
1.132									96,436	1.641,65									6.179,14					37.907,25
1.133									125,082	2.215,18									8.394,32					35.692,07
1.134									163,135	2.882,17									11.276,49					32.809,90
1.135									204,690	3.678,25									14.954,74					29.131,65
1.136									256,210	4.609,00									19.563,74					24.522,65
1.137									312,302	5.685,12									25.248,86					18.837,53
1.138									377,021	6.893,23									32.142,09					11.944,30
1.139									450,118	8.271,39									40.413,48					3.672,91
1.140									539,228	9.893,46									50.306,94					-6.220,55
1.141									518,972	10.582,00									60.888,94					-16.802,55
1.142									503,542	10.225,14									71.114,08					-27.027,69
1.143									477,410	9.809,52									80.923,60					-36.837,21
1.144									446,002	9.234,12									90.157,72					-46.071,33
1.145									407,104	8.531,06									98.688,78					-54.602,39
1.146									387,375	7.944,79									106.633,57					-62.547,18
1.147									366,455	7.538,30									114.171,87					-70.085,48
1.148									355,676	7.221,31									121.393,18					-77.306,79
1.149									348,601	7.042,77									128.435,95					-84.349,56
1.150									344,551	6.931,52									135.367,47					-91.281,08
1.151									340,121	6.846,72									142.214,19					-98.127,80
1.152									362,253	7.023,74									149.237,93					-105.151,54
1.153									359,087	7.213,40									156.451,33					-112.364,94
1.154									319,579	6.786,66									163.237,99					-119.151,60
1.155									245,317	5.648,96									168.886,95					-124.800,56
1.156									198,294	4.436,11									173.323,06					-129.236,67
1.157									138,926	3.372,20									176.695,26					-132.608,87
1.158									102,781	2.417,07									179.112,33					-135.025,94
1.159									75,158	1.779,39									180.891,72					-136.805,33
1.160									47,464	1.226,22									182.117,94					-138.031,55
1.161									31,887	793,51									182.911,45					-138.825,06
1.162									20,901	527,88									183.439,33					-139.352,94
1.163	1,288			1,288	12,88			12,88	10,266	311,67	12,88			12,88	10,30			10,30	183.751,00	10,30			10,30	-139.654,31
1.164	0,194			0,194	14,82			14,82	6,710	169,76	27,70			27,70	22,16			22,16	183.920,76	11,86			11,86	-139.812,21
1.165	1,329			1,329	15,23			15,23		67,10	42,93			42,93	34,34			34,34	183.987,86	12,18			12,18	-139.867,13
1.166	4,956			4,956	62,85			62,85			105,78			105,78	84,62			84,62						-139.816,85
1.167	9,350			9,350	143,06			143,06			248,84			248,84	199,07			199,07						-139.702,40
1.168	9,698			9,698	190,48			190,48			439,32			439,32	351,46			351,46						-139.550,02
1.169	10,523			10,523	202,21			202,21			641,53			641,53	513,22			513,22						-139.388,25
1.170	10,247	0,255		10,502	207,70	2,55		210,25			849,23	2,55		851,78	679,38	2,22		681,60						-139.219,87
1.171	10,330	1,187	0,787	12,304	205,77	14,42	7,87	228,06			1.055,00	16,97	7,87	1.079,84	844,00	14,76	9,26	868,02						-139.033,46
1.172	1,265	0,411	5,533	7,209	115,95	15,98	63,20	195,13			1.170,95	32,95	71,07	1.274,97	936,76	28,65	83,61	1.049,02						-138.852,45
1.173	2,732	0,737	8,661	12,130	39,97	11,48	141,94	193,39			1.210,92	44,43	213,01	1.468,36	968,74	38,63	250,60	1.257,97						-138.643,50
1.174	2,692	0,742	11,665	15,099	54,24	14,79	203,26	272,29			1.265,16	59,22	416,27	1.740,65	1.012,13	51,50	489,73	1.553,36						-138.348,12

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.175	5,061	1,239	11,118	17,418	77,53	19,81	227,83	325,17			1.342,69	79,03	644,10	2.065,82	1.074,15	68,72	757,76	1.900,63						-138.000,83
1.176	10,860	2,442	14,488	27,790	159,21	36,81	256,06	452,08			1.501,90	115,84	900,16	2.517,90	1.201,52	100,73	1.059,01	2.361,26						-137.540,21
1.177	3,391	0,898	13,669	17,958	142,51	33,40	281,57	457,48			1.644,41	149,24	1.181,73	2.975,38	1.315,53	129,77	1.390,27	2.835,57						-137.065,90
1.178	3,551	0,936	13,739	18,226	69,42	18,34	274,08	361,84			1.713,83	167,58	1.455,81	3.337,22	1.371,06	145,72	1.712,72	3.229,50						-136.671,97
1.179	0,038	0,162	11,807	12,007	35,89	10,98	255,46	302,33			1.749,72	178,56	1.711,27	3.639,55	1.399,78	155,27	2.013,26	3.568,31						-136.333,17
1.180	1,542	0,482	9,035	11,059	15,80	6,44	208,42	230,66			1.765,52	185,00	1.919,69	3.870,21	1.412,42	160,87	2.258,46	3.831,75						-136.069,73
1.181	4,801	1,144	4,732	10,677	63,43	16,26	137,67	217,36			1.828,95	201,26	2.057,36	4.087,57	1.463,16	175,01	2.420,42	4.058,59						-135.842,88
1.182	8,542	1,586	0,067	10,195	133,43	27,30	47,99	208,72			1.962,38	228,56	2.105,35	4.296,29	1.569,90	198,75	2.476,88	4.245,53						-135.655,94
1.183	11,265	0,439	0,463	12,167	198,07	20,25	5,30	223,62			2.160,45	248,81	2.110,65	4.519,91	1.728,36	216,36	2.483,12	4.427,84						-135.473,64
1.184	9,615	0,255	0,019	9,889	208,80	6,94	4,82	220,56			2.369,25	255,75	2.115,47	4.740,47	1.895,40	222,39	2.488,79	4.606,58						-135.294,89
1.185	8,331	0,132		8,463	179,46	3,87	0,19	183,52			2.548,71	259,62	2.115,66	4.923,99	2.038,97	225,76	2.489,01	4.753,74						-135.147,73
1.186	8,214			8,214	165,45	1,32		166,77			2.714,16	260,94		2.975,10	2.171,33	226,90		2.398,23						-135.014,22
1.187	9,023	0,001		9,024	172,37	0,01		172,38			2.886,53	260,95		3.147,48	2.309,22	226,91		2.536,13						-134.876,32
1.188	9,864	0,023		9,887	188,87	0,24		189,11			3.075,40	261,19		3.336,59	2.460,32	227,12		2.687,44						-134.725,02
1.189	13,611	0,052		13,663	234,75	0,75		235,50			3.310,15	261,94		3.572,09	2.648,12	227,77		2.875,89						-134.536,57
1.190	15,238	0,127		15,365	288,49	1,79		290,28			3.598,64	263,73		3.862,37	2.878,91	229,33		3.108,24						-134.304,22
1.191	16,243	0,195		16,438	314,81	3,22		318,03			3.913,45	266,95		4.180,40	3.130,76	232,13		3.362,89						-134.049,57
1.192	17,859	0,422	0,085	18,366	341,02	6,17	0,85	348,04			4.254,47	273,12	0,85	4.528,44	3.403,58	237,50	1,00	3.642,08						-133.770,39
1.193	20,841	2,907	4,413	28,161	387,00	33,29	44,98	465,27			4.641,47	306,41	45,83	4.993,71	3.713,18	266,44	53,92	4.033,54						-133.378,92
1.194	18,299	3,575	5,751	27,625	391,40	64,82	101,64	557,86			5.032,87	371,23	147,47	5.551,57	4.026,30	322,81	173,49	4.522,60						-132.889,86
1.195	11,086	2,350	3,836	17,272	293,85	59,25	95,87	448,97			5.326,72	430,48	243,34	6.000,54	4.261,38	374,33	286,28	4.921,99						-132.490,47
1.196	11,155	2,392	5,856	19,403	222,41	47,42	96,92	366,75			5.549,13	477,90	340,26	6.367,29	4.439,30	415,57	400,31	5.255,18						-132.157,28
1.197	15,799	3,322	9,924	29,045	269,54	57,14	157,80	484,48			5.818,67	535,04	498,06	6.851,77	4.654,94	465,25	585,95	5.706,14						-131.706,31
1.198	16,968	3,532	9,604	30,104	327,67	68,54	195,28	591,49			6.146,34	603,58	693,34	7.443,26	4.917,07	524,85	815,69	6.257,61						-131.154,83
1.199	20,215	4,192	13,192	37,599	371,83	77,24	227,96	677,03			6.518,17	680,82	921,30	8.120,29	5.214,54	592,02	1.083,88	6.890,44						-130.522,01
1.200	19,127	4,028	14,764	37,919	393,42	82,20	279,56	755,18			6.911,59	763,02	1.200,86	8.875,47	5.529,27	663,50	1.412,78	7.605,55						-129.806,90
1.201	20,985	4,326	12,830	38,141	401,12	83,54	275,94	760,60			7.312,71	846,56	1.476,80	9.636,07	5.850,17	736,14	1.737,41	8.323,72						-129.088,73
1.202	18,597	3,853	11,007	33,457	395,82	81,79	238,37	715,98			7.708,53	928,35	1.715,17	10.352,05	6.166,82	807,26	2.017,85	8.991,93						-128.420,52
1.203	16,890	3,539	10,986	31,415	354,87	73,92	219,93	648,72			8.063,40	1.002,27	1.935,10	11.000,77	6.450,72	871,54	2.276,59	9.598,85						-127.813,60
1.204	19,476	3,982	9,765	33,223	363,66	75,21	207,51	646,38			8.427,06	1.077,48	2.142,61	11.647,15	6.741,65	936,94	2.520,72	10.199,31						-127.213,14
1.205	15,932	3,339	9,451	28,722	354,08	73,21	192,16	619,45			8.781,14	1.150,69	2.334,77	12.266,60	7.024,91	1.000,60	2.746,79	10.772,30						-126.640,14
1.206	16,295	3,347	6,664	26,306	322,27	66,86	161,15	550,28			9.103,41	1.217,55	2.495,92	12.816,88	7.282,73	1.058,74	2.936,38	11.277,85						-126.134,60
1.207	15,414	3,160	5,241	23,815	317,09	65,07	119,05	501,21			9.420,50	1.282,62	2.614,97	13.318,09	7.536,40	1.115,32	3.076,44	11.728,16						-125.684,29
1.208	11,859	1,942	0,218	14,019	272,73	51,02	54,59	378,34			9.693,23	1.333,64	2.669,56	13.696,43	7.754,58	1.159,69	3.140,66	12.054,93						-125.357,52
1.209	19,206	1,657	1,191	22,054	310,65	35,99	14,09	360,73			10.003,88	1.369,63	2.683,65	14.057,16	8.003,10	1.190,98	3.157,24	12.351,32						-125.061,13
1.210	2,815	0,139		2,954	220,21	17,96	11,91	250,08	2,207	22,07	10.224,09	1.387,59	2.695,56	14.307,24	8.179,27	1.206,60	3.171,25	12.557,12	22,07	22,07			22,07	-124.877,40
1.211	0,131			0,131	29,46	1,39		30,85	16,199	184,06	10.253,55	1.388,98		11.642,53	8.202,84	1.207,81		9.410,65	206,13	23,57	1,21		24,78	-125.036,68
1.212					1,31			1,31	42,424	586,23	10.254,86			10.254,86	8.203,89			8.203,89	792,36	1,05			1,05	-125.621,86
1.213									67,229	1.096,53									1.888,89					-126.718,39
1.214									105,117	1.723,46									3.612,35					-128.441,85
1.215									115,097	2.202,14									5.814,49					-130.643,99
1.216									101,741	2.168,38									7.982,87					-132.812,37
1.217									73,992	1.757,33									9.740,20					-134.569,70
1.218									54,976	1.289,68									11.029,88					-135.859,38
1.219									42,518	974,94									12.004,82					-136.834,32
1.220									39,951	824,69									12.829,51					-137.659,01
1.221									42,371	823,22									13.652,73					-138.482,23

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.222									46,063	884,34									14.537,07					-139.366,57
1.223									53,925	999,88									15.536,95					-140.366,45
1.224									51,194	1.051,19									16.588,14					-141.417,64
1.225									56,216	1.074,10									17.662,24					-142.491,74
1.226									52,800	1.090,16									18.752,40					-143.581,90
1.227									35,510	883,10									19.635,50					-144.465,00
1.228	0,089			0,089	0,89			0,89	6,816	423,26	0,89			0,89	0,71			0,71	20.058,76	0,71			0,71	-144.887,55
1.229	7,476			7,476	75,65			75,65		68,16	76,54			76,54	61,23			61,23	20.126,92	60,52			60,52	-144.895,19
1.230	27,205			27,205	346,81			346,81			423,35			423,35	338,68			338,68						-144.617,74
1.231	44,149			44,149	713,54			713,54			1.136,89			1.136,89	909,51			909,51						-144.046,91
1.232	61,209	4,555	0,061	65,825	1.053,58	45,55	0,61	1.099,74			2.190,47	45,55	0,61	2.236,63	1.752,38	39,61	0,72	1.792,71						-143.163,72
1.233	50,899	9,101	10,995	70,995	1.121,08	136,56	110,56	1.368,20			3.311,55	182,11	111,17	3.604,83	2.649,24	158,36	130,79	2.938,39						-142.018,04
1.234	40,139	8,169	28,648	76,956	910,38	172,70	396,43	1.479,51			4.221,93	354,81	507,60	5.084,34	3.377,54	308,53	597,18	4.283,25						-140.673,17
1.235	34,031	7,354	41,057	82,442	741,70	155,23	697,05	1.593,98			4.963,63	510,04	1.204,65	6.678,32	3.970,90	443,51	1.417,24	5.831,65						-139.124,77
1.236	20,875	4,912	58,692	84,479	549,06	122,66	997,49	1.669,21			5.512,69	632,70	2.202,14	8.347,53	4.410,15	550,17	2.590,75	7.551,07						-137.405,34
1.237	34,187	7,813	70,465	112,465	550,62	127,25	1.291,57	1.969,44			6.063,31	759,95	3.493,71	10.316,97	4.850,65	660,83	4.110,25	9.621,73						-135.334,70
1.238	31,234	7,357	88,134	126,725	654,21	151,70	1.585,99	2.391,90			6.717,52	911,65	5.079,70	12.708,87	5.374,02	792,74	5.976,12	12.142,88						-132.813,55
1.239	38,709	9,037	96,748	144,494	699,43	163,94	1.848,82	2.712,19			7.416,95	1.075,59	6.928,52	15.421,06	5.933,56	935,30	8.151,20	15.020,06						-129.936,37
1.240	41,400	9,741	111,937	163,078	801,09	187,78	2.086,85	3.075,72			8.218,04	1.263,37	9.015,37	18.496,78	6.574,43	1.098,58	10.606,32	18.279,33						-126.677,09
1.241	32,102	7,751	130,285	170,138	735,02	174,92	2.422,22	3.332,16			8.953,06	1.438,29	11.437,59	21.828,94	7.162,45	1.250,69	13.455,99	21.869,13						-123.087,30
1.242	56,227	13,208	139,571	209,006	883,29	209,59	2.698,56	3.791,44			9.836,35	1.647,88	14.136,15	25.620,38	7.869,08	1.432,94	16.630,76	25.932,78						-119.023,64
1.243	37,492	9,163	157,398	204,053	937,19	223,71	2.969,69	4.130,59			10.773,54	1.871,59	17.105,84	29.750,97	8.618,83	1.627,47	20.124,52	30.370,82						-114.585,60
1.244	49,658	11,935	167,240	228,833	871,50	210,98	3.246,38	4.328,86			11.645,04	2.082,57	20.352,22	34.079,83	9.316,03	1.810,93	23.943,79	35.070,75						-109.885,67
1.245	69,280	16,261	174,162	259,703	1.189,38	281,96	3.414,02	4.885,36			12.834,42	2.364,53	23.766,24	38.965,19	10.267,54	2.056,11	27.960,28	40.283,93						-104.672,49
1.246	85,428	19,831	176,940	282,199	1.547,08	360,92	3.511,02	5.419,02			14.381,50	2.725,45	27.277,26	44.384,21	11.505,20	2.369,96	32.090,89	45.966,05						-98.990,37
1.247	96,507	21,901	184,371	302,779	1.819,35	417,32	3.613,11	5.849,78			16.200,85	3.142,77	30.890,37	50.233,99	12.960,68	2.732,84	36.341,61	52.035,13						-92.921,29
1.248	69,551	16,612	206,007	292,170	1.660,58	385,13	3.903,78	5.949,49			17.861,43	3.527,90	34.794,15	56.183,48	14.289,14	3.067,74	40.934,29	58.291,17						-86.665,25
1.249	60,556	14,602	219,273	294,431	1.301,07	312,14	4.252,80	5.866,01			19.162,50	3.840,04	39.046,95	62.049,49	15.330,00	3.339,17	45.937,59	64.606,76						-80.349,67
1.250	42,293	10,267	236,895	289,455	1.028,49	248,69	4.561,68	5.838,86			20.190,99	4.088,73	43.608,63	67.888,35	16.152,79	3.555,42	51.304,27	71.012,48						-73.943,94
1.251	36,282	8,962	249,651	294,895	785,75	192,29	4.865,46	5.843,50			20.976,74	4.281,02	48.474,09	73.731,85	16.781,39	3.722,63	57.028,34	77.532,36						-67.424,06
1.252	53,016	12,959	254,442	320,417	892,98	219,21	5.040,93	6.153,12			21.869,72	4.500,23	53.515,02	79.884,97	17.495,78	3.913,24	62.958,85	84.367,87						-60.588,55
1.253	53,617	11,694	249,428	314,739	1.066,33	246,53	5.038,70	6.351,56			22.936,05	4.746,76	58.553,72	86.236,53	18.348,84	4.127,62	68.886,73	91.363,19						-53.593,23
1.254	61,852	13,231	243,903	318,986	1.154,69	249,25	4.933,31	6.337,25			24.090,74	4.996,01	63.487,03	92.573,78	19.272,59	4.344,36	74.690,62	98.307,57						-46.648,84
1.255	67,488	15,426	234,755	317,669	1.293,40	286,57	4.786,58	6.366,55			25.384,14	5.282,58	68.273,61	98.940,33	20.307,31	4.593,55	80.321,89	105.222,75						-39.733,66
1.256	57,577	13,901	232,106	303,584	1.250,65	293,27	4.668,61	6.212,53			26.634,79	5.575,85	72.942,22	105.152,86	21.307,83	4.848,57	85.814,38	111.970,78						-32.985,64
1.257	54,281	13,190	238,651	306,122	1.118,58	270,91	4.707,57	6.097,06			27.753,37	5.846,76	77.649,79	111.249,92	22.202,70	5.084,14	91.352,69	118.639,53						-26.316,88
1.258	40,473	9,461	252,374	302,308	947,54	226,51	4.910,25	6.084,30			28.700,91	6.073,27	82.560,04	117.334,22	22.960,73	5.281,10	97.129,46	125.371,29						-19.585,12
1.259	59,757	14,317	262,857	336,931	1.002,30	237,78	5.152,31	6.392,39			29.703,21	6.311,05	87.712,35	123.726,61	23.762,57	5.487,87	103.191,00	132.441,44						-12.514,97
1.260	73,453	17,636	267,769	358,858	1.332,10	319,53	5.306,26	6.957,89			31.035,31	6.630,58	93.018,61	130.684,50	24.828,25	5.765,72	109.433,66	140.027,63						-4.928,78
1.261	88,829	21,113	272,262	382,204	1.622,82	387,49	5.400,31	7.410,62			32.658,13	7.018,07	98.418,92	138.095,12	26.126,50	6.102,67	115.786,96	148.016,13						3.059,73
1.262	77,983	18,050	267,936	363,969	1.668,12	391,63	5.401,98	7.461,73			34.326,25	7.409,70	103.820,90	145.556,85	27.461,00	6.443,22	122.142,24	156.046,46						11.090,04
1.263	61,585	14,983	270,368	346,936	1.395,68	330,33	5.383,04	7.109,05			35.721,93	7.740,03	109.203,94	152.665,90	28.577,54	6.730,46	128.475,22	163.783,22						18.826,82
1.264	50,669	12,491	269,367	332,527	1.122,54	274,74	5.397,35	6.794,63			36.844,47	8.014,77	114.601,29	159.460,53	29.475,58	6.969,37	134.825,05	171.270,00						26.313,58
1.265	18,799	4,580	259,882	283,261	694,68	170,71	5.292,49	6.157,88			37.539,15	8.185,48	119.893,78	165.618,41	30.031,32	7.117,81	141.051,51	178.200,64						33.244,23
1.266	43,095	10,294	246,833	300,222	618,94	148,74	5.067,15	5.834,83			38.158,09	8.334,22	124.960,93	171.453,24	30.526,47	7.247,15	147.012,86	184.786,48						39.830,07
1.267	41,659	8,876	229,306	279,841	847,54	191,70	4.761,39	5.800,63			39.005,63	8.525,92	129.722,32	177.253,87	31.204,50	7.413,84	152.614,49	191.232,83						46.276,43
1.268	39,532	9,767	222,374	271,673	811,91	186,43	4.516,80	5.515,14			39.817,54	8.712,35	134.239,12	182.769,01	31.854,03	7.575,96	157.928,38	197.358,37						52.401,95

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.269	37,377	8,664	225,154	271,195	769,09	184,31	4.475,28	5.428,68			40.586,63	8.896,66	138.714,40	188.197,69	32.469,30	7.736,23	163.193,41	203.398,94						58.442,53
1.270	59,144	14,503	232,028	305,675	965,21	231,67	4.571,82	5.768,70			41.551,84	9.128,33	143.286,22	193.966,39	33.241,47	7.937,68	168.572,02	209.751,17						64.794,76
1.271	93,390	22,339	245,568	361,297	1.525,34	368,42	4.775,96	6.669,72			43.077,18	9.496,75	148.062,18	200.636,11	34.461,74	8.258,04	174.190,80	216.910,58						71.954,17
1.272	99,765	23,857	262,251	385,873	1.931,55	461,96	5.078,19	7.471,70			45.008,73	9.958,71	153.140,37	208.107,81	36.006,98	8.659,75	180.165,14	224.831,87						79.875,46
1.273	90,173	21,643	289,143	400,959	1.899,38	455,00	5.513,94	7.868,32			46.908,11	10.413,71	158.654,31	215.976,13	37.526,49	9.055,40	186.652,13	233.234,02						88.277,60
1.274	94,359	22,580	293,058	409,997	1.845,32	442,23	5.822,01	8.109,56			48.753,43	10.855,94	164.476,32	224.085,69	39.002,74	9.439,95	193.501,55	241.944,24						96.987,83
1.275	104,488	24,795	284,526	413,809	1.988,47	473,75	5.775,84	8.238,06			50.741,90	11.329,69	170.252,16	232.323,75	40.593,52	9.851,90	200.296,66	250.742,08						105.785,67
1.276	99,547	23,604	273,693	396,844	2.040,35	483,99	5.582,19	8.106,53			52.782,25	11.813,68	175.834,35	240.430,28	42.225,80	10.272,77	206.863,94	259.362,51						114.406,09
1.277	80,454	19,346	271,197	370,997	1.800,01	429,50	5.448,90	7.678,41			54.582,26	12.243,18	181.283,25	248.108,69	43.665,81	10.646,24	213.274,41	267.586,46						122.630,05
1.278	60,844	14,867	264,253	339,964	1.412,98	342,13	5.354,50	7.109,61			55.995,24	12.585,31	186.637,75	255.218,30	44.796,19	10.943,75	219.573,82	275.313,76						130.357,35
1.279	52,795	12,982	254,643	320,420	1.136,39	278,49	5.188,96	6.603,84			57.131,63	12.863,80	191.826,71	261.822,14	45.705,30	11.185,91	225.678,48	282.569,69						137.613,29
1.280	38,108	9,544	238,063	285,715	909,03	225,26	4.927,06	6.061,35			58.040,66	13.089,06	196.753,77	267.883,49	46.432,53	11.381,79	231.475,02	289.289,34						144.332,93
1.281	13,434	3,649	217,963	235,046	515,42	131,93	4.560,26	5.207,61			58.556,08	13.220,99	201.314,03	273.091,10	46.844,86	11.496,51	236.840,04	295.181,41						150.225,00
1.282	19,125	4,787	204,501	228,413	325,59	84,36	4.224,64	4.634,59			58.881,67	13.305,35	205.538,67	277.725,69	47.105,34	11.569,87	241.810,20	300.485,41						155.528,99
1.283	26,236	6,695	198,510	231,441	453,61	114,82	4.030,11	4.598,54			59.335,28	13.420,17	209.568,78	282.324,23	47.468,22	11.669,71	246.551,51	305.689,44						160.733,03
1.284	38,206	9,427	191,869	239,502	644,42	161,22	3.903,79	4.709,43			59.979,70	13.581,39	213.472,57	287.033,66	47.983,76	11.809,90	251.144,20	310.937,86						165.981,45
1.285	55,438	13,243	178,748	247,429	936,44	226,70	3.706,17	4.869,31			60.916,14	13.808,09	217.178,74	291.902,97	48.732,91	12.007,03	255.504,40	316.244,34						171.287,93
1.286	43,287	10,491	170,806	224,584	987,25	237,34	3.495,54	4.720,13			61.903,39	14.045,43	220.674,28	296.623,10	49.522,71	12.213,42	259.616,80	321.352,93						176.396,51
1.287	58,419	13,750	156,508	228,677	1.017,06	242,41	3.273,14	4.532,61			62.920,45	14.287,84	223.947,42	301.155,71	50.336,36	12.424,21	263.467,55	326.228,12						181.271,70
1.288	71,635	16,409	139,286	227,330	1.300,54	301,59	2.957,94	4.560,07			64.220,99	14.589,43	226.905,36	305.715,78	51.376,79	12.686,46	266.947,48	331.010,73						186.054,31
1.289	60,059	13,860	129,394	203,313	1.316,94	302,69	2.686,80	4.306,43			65.537,93	14.892,12	229.592,16	310.022,21	52.430,34	12.949,67	270.108,42	335.488,43						190.532,01
1.290	56,822	12,991	111,642	181,455	1.168,81	268,51	2.410,36	3.847,68			66.706,74	15.160,63	232.002,52	313.869,89	53.365,39	13.183,16	272.944,14	339.492,69						194.536,26
1.291	62,699	13,895	89,583	166,177	1.195,21	268,86	2.012,25	3.476,32			67.901,95	15.429,49	234.014,77	317.346,21	54.321,56	13.416,95	275.311,49	343.050,00						198.093,57
1.292	31,387	7,375	84,415	123,177	940,86	212,70	1.739,98	2.893,54			68.842,81	15.642,19	235.754,75	320.239,75	55.074,25	13.601,90	277.358,53	346.034,68						201.078,25
1.293	44,959	10,149	77,481	132,589	763,46	175,24	1.618,96	2.557,66			69.606,27	15.817,43	237.373,71	322.797,41	55.685,02	13.754,29	279.263,19	348.702,50						203.746,06
1.294	32,571	7,479	66,729	106,779	775,30	176,28	1.442,10	2.393,68			70.381,57	15.993,71	238.815,81	325.191,09	56.305,26	13.907,57	280.959,78	351.172,61						206.216,18
1.295	27,951	6,358	50,671	84,980	605,22	138,37	1.174,00	1.917,59			70.986,79	16.132,08	239.989,81	327.108,68	56.789,43	14.027,90	282.340,95	353.158,28						208.201,85
1.296	27,445	6,006	29,956	63,407	553,96	123,64	806,27	1.483,87			71.540,75	16.255,72	240.796,08	328.592,55	57.232,60	14.135,41	283.289,51	354.657,52						209.701,08
1.297	25,036	5,319	15,651	46,006	524,81	113,25	456,07	1.094,13			72.065,56	16.368,97	241.252,15	329.686,68	57.652,45	14.233,89	283.826,06	355.712,40						210.755,96
1.298	19,068	4,007	4,480	27,555	441,04	93,26	201,31	735,61			72.506,60	16.462,23	241.453,46	330.422,29	58.005,28	14.314,98	284.062,89	356.383,15						211.426,72
1.299	4,029	0,627	3,722	8,378	230,97	46,34	82,02	359,33			72.737,57	16.508,57	241.535,48	330.781,62	58.190,06	14.355,28	284.159,39	356.704,73						211.748,29
1.300	0,181			0,181	42,10	6,27	37,22	85,59	15,699	156,99	72.779,67	16.514,84	241.572,70	330.867,21	58.223,74	14.360,73	284.203,18	356.787,65	156,99	33,68	5,45	43,79	82,92	211.674,22
1.301					1,81			1,81	43,857	595,56	72.781,48			72.781,48	58.225,18			58.225,18	752,55	1,45			1,45	211.080,11
1.302									61,768	1.056,25									1.808,80					210.023,86
1.303									86,183	1.479,51									3.288,31					208.544,35
1.304									96,079	1.822,62									5.110,93					206.721,73
1.305									114,280	2.103,59									7.214,52					204.618,14
1.306									125,226	2.395,06									9.609,58					202.223,08
1.307									109,549	2.347,75									11.957,33					199.875,33
1.308									59,844	1.693,93									13.651,26					198.181,40
1.309									44,034	1.038,78									14.690,04					197.142,62
1.310									40,179	842,13									15.532,17					196.300,49
1.311									32,776	729,55									16.261,72					195.570,94
1.312									34,951	677,27									16.938,99					194.893,67
1.313									34,187	691,38									17.630,37					194.202,29
1.314									36,912	710,99									18.341,36					193.491,30
1.315									38,879	757,91									19.099,27					192.733,39

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.316									37,255	761,34									19.860,61					191.972,05
1.317									42,704	799,59									20.660,20					191.172,46
1.318									49,944	926,48									21.586,68					190.245,98
1.319									53,406	1.033,50									22.620,18					189.212,48
1.320									58,780	1.121,86									23.742,04					188.090,62
1.321									67,894	1.266,74									25.008,78					186.823,88
1.322									69,427	1.373,21									26.381,99					185.450,67
1.323									85,515	1.549,42									27.931,41					183.901,25
1.324									102,183	1.876,98									29.808,39					182.024,27
1.325									121,219	2.234,02									32.042,41					179.790,25
1.326									135,370	2.565,89									34.608,30					177.224,36
1.327									164,425	2.997,95									37.606,25					174.226,41
1.328									184,835	3.492,60									41.098,85					170.733,81
1.329									217,250	4.020,85									45.119,70					166.712,96
1.330									287,604	5.048,54									50.168,24					161.664,42
1.331									440,977	7.285,81									57.454,05					154.378,61
1.332									541,692	9.826,69									67.280,74					144.551,92
1.333									502,215	10.439,07									77.719,81					134.112,85
1.334									464,833	9.670,48									87.390,29					124.442,37
1.335									352,264	8.170,97									95.561,26					116.271,40
1.336									284,790	6.370,54									101.931,80					109.900,86
1.337									208,593	4.933,83									106.865,63					104.967,03
1.338									150,685	3.592,78									110.458,41					101.374,25
1.339									106,824	2.575,09									113.033,50					98.799,16
1.340									61,736	1.685,60									114.719,10					97.113,56
1.341									30,369	921,05									115.640,15					96.192,51
1.342									21,068	514,37									116.154,52					95.678,14
1.343									27,076	481,44									116.635,96					95.196,70
1.344									27,212	542,88									117.178,84					94.653,82
1.345									31,967	591,79									117.770,63					94.062,03
1.346									37,966	699,33									118.469,96					93.362,70
1.347									42,447	804,13									119.274,09					92.558,57
1.348									53,879	963,26									120.237,35					91.595,31
1.349									64,079	1.179,58									121.416,93					90.415,73
1.350									75,470	1.395,49									122.812,42					89.020,24
1.351									80,447	1.559,17									124.371,59					87.461,07
1.352									92,333	1.727,80									126.099,39					85.733,27
1.353									107,492	1.998,25									128.097,64					83.735,02
1.354									129,031	2.365,23									130.462,87					81.369,79
1.355									137,713	2.667,44									133.130,31					78.702,35
1.356									135,071	2.727,84									135.858,15					75.974,51
1.357									160,204	2.952,75									138.810,90					73.021,76
1.358									200,673	3.608,77									142.419,67					69.412,99
1.359									272,510	4.731,83									147.151,50					64.681,16
1.360									496,616	7.691,26									154.842,76					56.989,90
1.361									381,569	8.781,85									163.624,61					48.208,05
1.362									403,724	7.852,93									171.477,54					40.355,12

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.363									392,124	7.958,48									179.436,02					32.396,64
1.364									372,089	7.642,13									187.078,15					24.754,51
1.365									341,285	7.133,74									194.211,89					17.620,77
1.366									246,334	5.876,19									200.088,08					11.744,58
1.367									207,823	4.541,57									204.629,65					7.203,01
1.368									175,390	3.832,13									208.461,78					3.370,88
1.369									135,606	3.109,96									211.571,74					260,92
1.370									119,883	2.554,89									214.126,63					-2.293,97
1.371									116,648	2.365,31									216.491,94					-4.659,28
1.372									95,102	2.117,50									218.609,44					-6.776,78
1.373									74,739	1.698,41									220.307,85					-8.475,19
1.374									60,715	1.354,54									221.662,39					-9.829,73
1.375									50,434	1.111,49									222.773,88					-10.941,22
1.376									47,408	978,42									223.752,30					-11.919,64
1.377									45,849	932,57									224.684,87					-12.852,21
1.378									44,330	901,79									225.586,66					-13.754,00
1.379									45,271	896,01									226.482,67					-14.650,01
1.380									46,320	915,91									227.398,58					-15.565,92
1.381									45,687	920,07									228.318,65					-16.485,99
1.382									37,561	832,48									229.151,13					-17.318,47
1.383									33,260	708,21									229.859,34					-18.026,68
1.384									31,306	645,66									230.505,00					-18.672,34
1.385									27,499	588,05									231.093,05					-19.260,39
1.386									23,321	508,20									231.601,25					-19.768,59
1.387	0,013			0,013	0,13			0,13	17,651	409,72	0,13			0,13	0,10			0,10	232.010,97	0,10			0,10	-20.178,21
1.388	0,415			0,415	4,28			4,28	13,999	316,50	4,41			4,41	3,53			3,53	232.327,47	3,42			3,42	-20.491,29
1.389	0,617			0,617	10,32			10,32	12,948	269,47	14,73			14,73	11,78			11,78	232.596,94	8,26			8,26	-20.752,50
1.390	1,534			1,534	21,51			21,51	8,853	218,01	36,24			36,24	28,99			28,99	232.814,95	17,21			17,21	-20.953,30
1.391	1,320			1,320	28,54			28,54	8,964	178,17	64,78			64,78	51,82			51,82	232.993,12	22,83			22,83	-21.108,64
1.392	1,628			1,628	29,48			29,48	8,460	174,24	94,26			94,26	75,41			75,41	233.167,36	23,58			23,58	-21.259,30
1.393	1,678			1,678	33,06			33,06	8,241	167,01	127,32			127,32	101,86			101,86	233.334,37	26,45			26,45	-21.399,86
1.394	1,627			1,627	33,05			33,05	8,616	168,57	160,37			160,37	128,30			128,30	233.502,94	26,44			26,44	-21.541,99
1.395	2,429			2,429	40,56			40,56	5,296	139,12	200,93			200,93	160,74			160,74	233.642,06	32,45			32,45	-21.648,66
1.396	2,566			2,566	49,95			49,95	4,993	102,89	250,88			250,88	200,70			200,70	233.744,95	39,96			39,96	-21.711,59
1.397	2,977			2,977	55,43			55,43	3,564	85,57	306,31			306,31	245,05			245,05	233.830,52	44,34			44,34	-21.752,82
1.398	3,621	0,243		3,864	65,98	2,43		68,41		35,64	372,29	2,43		374,72	297,83	2,11		299,94	233.866,16	35,64			35,64	-21.733,56
1.399	9,724	0,905	0,428	11,057	133,45	11,48	4,28	149,21			505,74	13,91	4,28	523,93	404,59	12,10	5,04	421,73						-21.611,78
1.400	13,304	1,286	1,095	15,685	230,28	21,91	15,23	267,42			736,02	35,82	19,51	791,35	588,82	31,15	22,95	642,92						-21.390,59
1.401	18,537	1,629	1,195	21,361	318,41	29,15	22,90	370,46			1.054,43	64,97	42,41	1.161,81	843,54	56,50	49,89	949,93						-21.083,57
1.402	21,404	1,989	1,934	25,327	399,41	36,18	31,29	466,88			1.453,84	101,15	73,70	1.628,69	1.163,07	87,96	86,71	1.337,74						-20.695,77
1.403	20,533	2,161	3,675	26,369	419,37	41,50	56,09	516,96			1.873,21	142,65	129,79	2.145,65	1.498,57	124,04	152,69	1.775,30						-20.258,20
1.404	21,675	2,274	3,753	27,702	422,08	44,35	74,28	540,71			2.295,29	187,00	204,07	2.686,36	1.836,23	162,61	240,08	2.238,92						-19.794,58
1.405	22,634	2,315	3,439	28,388	443,09	45,89	71,92	560,90			2.738,38	232,89	275,99	3.247,26	2.190,70	202,51	324,69	2.717,90						-19.315,59
1.406	24,741	2,237	1,946	28,924	473,75	45,52	53,85	573,12			3.212,13	278,41	329,84	3.820,38	2.569,70	242,10	388,05	3.199,85						-18.833,65
1.407	26,692	2,237	1,467	30,396	514,33	44,74	34,13	593,20			3.726,46	323,15	363,97	4.413,58	2.981,17	281,00	428,20	3.690,37						-18.343,13
1.408	26,349	2,204	1,425	29,978	530,41	44,41	28,92	603,74			4.256,87	367,56	392,89	5.017,32	3.405,50	319,62	462,22	4.187,34						-17.846,16
1.409	27,363	2,219	1,294	30,876	537,12	44,23	27,19	608,54			4.793,99	411,79	420,08	5.625,86	3.835,19	358,08	494,21	4.687,48						-17.346,01

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.410	26,360	1,900	0,723	28,983	537,23	41,19	20,17	598,59			5.331,22	452,98	440,25	6.224,45	4.264,98	393,90	517,94	5.176,82						-16.856,68
1.411	26,165	1,749	0,483	28,397	525,25	36,49	12,06	573,80			5.856,47	489,47	452,31	6.798,25	4.685,18	425,63	532,13	5.642,94						-16.390,56
1.412	28,148	1,768	0,353	30,269	543,13	35,17	8,36	586,66			6.399,60	524,64	460,67	7.384,91	5.119,68	456,21	541,96	6.117,85						-15.915,64
1.413	25,122	1,560	0,284	26,966	532,70	33,28	6,37	572,35			6.932,30	557,92	467,04	7.957,26	5.545,84	485,15	549,46	6.580,45						-15.453,05
1.414	24,331	1,481	0,238	26,050	494,53	30,41	5,22	530,16			7.426,83	588,33	472,26	8.487,42	5.941,46	511,59	555,60	7.008,65						-15.024,84
1.415	21,667	1,455	0,374	23,496	459,98	29,36	6,12	495,46			7.886,81	617,69	478,38	8.982,88	6.309,45	537,12	562,80	7.409,37						-14.624,13
1.416	20,951	0,995		21,946	426,18	24,50	3,74	454,42			8.312,99	642,19	482,12	9.437,30	6.650,39	558,43	567,20	7.776,02						-14.257,48
1.417	19,485	0,444		19,929	404,36	14,39		418,75			8.717,35	656,58		9.373,93	6.973,88	570,94		7.544,82						-13.921,48
1.418	15,151			15,151	346,36	4,44		350,80			9.063,71	661,02		9.724,73	7.250,97	574,80		7.825,77						-13.640,53
1.419	11,527			11,527	266,78			266,78			9.330,49			9.330,49	7.464,39			7.464,39						-13.427,11
1.420	3,985			3,985	155,12			155,12	0,053	0,53	9.485,61			9.485,61	7.588,49			7.588,49	0,53	0,53			0,53	-13.303,54
1.421	3,799			3,799	77,84			77,84	1,824	18,77	9.563,45			9.563,45	7.650,76			7.650,76	19,30	18,77			18,77	-13.260,04
1.422	1,500			1,500	52,99			52,99	7,593	94,17	9.616,44			9.616,44	7.693,15			7.693,15	113,47	42,39			42,39	-13.311,82
1.423					15,00			15,00	34,252	418,45	9.631,44			9.631,44	7.705,15			7.705,15	531,92	12,00			12,00	-13.718,27
1.424									91,934	1.261,86									1.793,78					-14.980,13
1.425									102,161	1.940,95									3.734,73					-16.921,08
1.426									47,565	1.497,26									5.231,99					-18.418,34
1.427	0,249			0,249	2,49			2,49	15,548	631,13	2,49			2,49	1,99			1,99	5.863,12	1,99			1,99	-19.047,48
1.428	1,366			1,366	16,15			16,15	9,629	251,77	18,64			18,64	14,91			14,91	6.114,89	12,92			12,92	-19.286,33
1.429	1,863			1,863	32,29			32,29	7,777	174,06	50,93			50,93	40,74			40,74	6.288,95	25,83			25,83	-19.434,56
1.430	1,725			1,725	35,88			35,88	9,510	172,87	86,81			86,81	69,45			69,45	6.461,82	28,70			28,70	-19.578,73
1.431	1,497			1,497	32,22			32,22	9,870	193,80	119,03			119,03	95,22			95,22	6.655,62	25,78			25,78	-19.746,75
1.432	1,069			1,069	25,66			25,66	11,515	213,85	144,69			144,69	115,75			115,75	6.869,47	20,53			20,53	-19.940,07
1.433	1,004			1,004	20,73			20,73	10,870	223,85	165,42			165,42	132,34			132,34	7.093,32	16,58			16,58	-20.147,34
1.434	0,785			0,785	17,89			17,89	12,466	233,36	183,31			183,31	146,65			146,65	7.326,68	14,31			14,31	-20.366,39
1.435	0,395			0,395	11,80			11,80	14,518	269,84	195,11			195,11	156,09			156,09	7.596,52	9,44			9,44	-20.626,79
1.436	0,137			0,137	5,32			5,32	16,793	313,11	200,43			200,43	160,34			160,34	7.909,63	4,26			4,26	-20.935,64
1.437	0,251			0,251	3,88			3,88	15,284	320,77	204,31			204,31	163,45			163,45	8.230,40	3,10			3,10	-21.253,31
1.438	0,130			0,130	3,81			3,81	18,379	336,63	208,12			208,12	166,50			166,50	8.567,03	3,05			3,05	-21.586,89
1.439	0,067			0,067	1,97			1,97	20,673	390,52	210,09			210,09	168,07			168,07	8.957,55	1,58			1,58	-21.975,83
1.440					0,67			0,67	22,148	428,21	210,76			210,76	168,61			168,61	9.385,76	0,54			0,54	-22.403,50
1.441									35,856	580,04									9.965,80					-22.983,54
1.442									62,950	988,06									10.953,86					-23.971,60
1.443									108,319	1.712,69									12.666,55					-25.684,29
1.444									175,812	2.841,31									15.507,86					-28.525,60
1.445									255,886	4.316,98									19.824,84					-32.842,58
1.446									301,665	5.575,51									25.400,35					-38.418,09
1.447									330,698	6.323,63									31.723,98					-44.741,72
1.448									248,183	5.788,81									37.512,79					-50.530,53
1.449									212,857	4.610,40									42.123,19					-55.140,93
1.450									170,327	3.831,84									45.955,03					-58.972,77
1.451									118,577	2.889,04									48.844,07					-61.861,81
1.452									116,362	2.349,39									51.193,46					-64.211,20
1.453									76,383	1.927,45									53.120,91					-66.138,65
1.454									43,947	1.203,30									54.324,21					-67.341,95
1.455									32,366	763,13									55.087,34					-68.105,08
1.456									20,006	523,72									55.611,06					-68.628,80

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.457	0,482			0,482	4,82			4,82	13,273	332,79	4,82			4,82	3,86			3,86	55.943,85	3,86			3,86	-68.957,73
1.458	2,252	0,003		2,255	27,34	0,03		27,37	6,209	194,82	32,16	0,03		32,19	25,73	0,03		25,76	56.138,67	21,87	0,03		21,90	-69.130,65
1.459	3,869	0,488	0,083	4,440	61,21	4,91	0,83	66,95	0,059	62,68	93,37	4,94	0,83	99,14	74,70	4,30	0,98	79,98	56.201,35	48,97	4,27	0,98	54,22	-69.139,12
1.460	14,143	1,591	3,231	18,965	180,12	20,79	33,14	234,05		0,59	273,49	25,73	33,97	333,19	218,79	22,37	39,96	281,12	56.201,94	0,59			0,59	-68.938,55
1.461	14,413	3,165	4,817	22,395	285,56	47,56	80,48	413,60			559,05	73,29	114,45	746,79	447,24	63,73	134,65	645,62						-68.574,06
1.462	10,380	2,416	11,053	23,849	247,93	55,81	158,70	462,44			806,98	129,10	273,15	1.209,23	645,58	112,26	321,35	1.079,19						-68.140,48
1.463	7,892	1,936	18,429	28,257	182,72	43,52	294,82	521,06			989,70	172,62	567,97	1.730,29	791,76	150,10	668,20	1.610,06						-67.609,61
1.464	11,617	2,541	20,492	34,650	195,09	44,77	389,21	629,07			1.184,79	217,39	957,18	2.359,36	947,83	189,03	1.126,09	2.262,95						-66.956,71
1.465	15,130	3,325	23,078	41,533	267,47	58,66	435,70	761,83			1.452,26	276,05	1.392,88	3.121,19	1.161,81	240,04	1.638,68	3.040,53						-66.179,14
1.466	25,004	5,407	29,717	60,128	401,34	87,32	527,95	1.016,61			1.853,60	363,37	1.920,83	4.137,80	1.482,88	315,97	2.259,80	4.058,65						-65.161,02
1.467	25,810	5,680	37,326	68,816	508,14	110,87	670,43	1.289,44			2.361,74	474,24	2.591,26	5.427,24	1.889,39	412,38	3.048,54	5.350,31						-63.869,36
1.468	26,896	5,976	46,281	79,153	527,06	116,56	836,07	1.479,69			2.888,80	590,80	3.427,33	6.906,93	2.311,04	513,74	4.032,15	6.856,93						-62.362,74
1.469	25,757	5,861	58,395	90,013	526,53	118,37	1.046,76	1.691,66			3.415,33	709,17	4.474,09	8.598,59	2.732,26	616,67	5.263,64	8.612,57						-60.607,10
1.470	24,802	5,781	70,913	101,496	505,59	116,42	1.293,08	1.915,09			3.920,92	825,59	5.767,17	10.513,68	3.136,74	717,90	6.784,91	10.639,55						-58.580,12
1.471	27,162	6,383	80,270	113,815	519,64	121,64	1.511,83	2.153,11			4.440,56	947,23	7.279,00	12.666,79	3.552,45	823,68	8.563,53	12.939,66						-56.280,01
1.472	30,535	7,129	82,939	120,603	576,97	135,12	1.632,09	2.344,18			5.017,53	1.082,35	8.911,09	15.010,97	4.014,02	941,17	10.483,64	15.438,83						-53.780,83
1.473	32,883	7,640	84,512	125,035	634,18	147,69	1.674,51	2.456,38			5.651,71	1.230,04	10.585,60	17.467,35	4.521,37	1.069,60	12.453,65	18.044,62						-51.175,05
1.474	39,120	8,965	84,926	133,011	720,03	166,05	1.694,38	2.580,46			6.371,74	1.396,09	12.279,98	20.047,81	5.097,39	1.213,99	14.447,04	20.758,42						-48.461,25
1.475	39,654	9,193	93,331	142,178	787,74	181,58	1.782,57	2.751,89			7.159,48	1.577,67	14.062,55	22.799,70	5.727,58	1.371,89	16.544,18	23.643,65						-45.576,02
1.476	33,119	7,829	102,914	143,862	727,73	170,22	1.962,45	2.860,40			7.887,21	1.747,89	16.025,00	25.660,10	6.309,77	1.519,90	18.852,94	26.682,61						-42.537,05
1.477	28,955	6,937	107,471	143,363	620,74	147,66	2.103,85	2.872,25			8.507,95	1.895,55	18.128,85	28.532,35	6.806,36	1.648,30	21.328,06	29.782,72						-39.436,94
1.478	8,925	2,440	99,690	111,055	378,80	93,77	2.071,61	2.544,18			8.886,75	1.989,32	20.200,46	31.076,53	7.109,40	1.729,84	23.765,25	32.604,49						-36.615,17
1.479	18,968	4,699	99,623	123,290	278,93	71,39	1.993,13	2.343,45			9.165,68	2.060,71	22.193,59	33.419,98	7.332,54	1.791,92	26.110,11	35.234,57						-33.985,09
1.480	9,108	2,505	90,090	101,703	280,76	72,04	1.897,13	2.249,93			9.446,44	2.132,75	24.090,72	35.669,91	7.557,15	1.854,57	28.342,02	37.753,74						-31.465,92
1.481	14,178	3,083	79,028	96,289	232,86	55,88	1.691,18	1.979,92			9.679,30	2.188,63	25.781,90	37.649,83	7.743,44	1.903,16	30.331,65	39.978,25						-29.241,42
1.482	12,496	3,224	86,870	102,590	266,74	63,07	1.658,98	1.988,79			9.946,04	2.251,70	27.440,88	39.638,62	7.956,83	1.958,00	32.283,39	42.198,22						-27.021,44
1.483	17,328	4,364	93,246	114,938	298,24	75,88	1.801,16	2.175,28			10.244,28	2.327,58	29.242,04	41.813,90	8.195,42	2.023,98	34.402,40	44.621,80						-24.597,85
1.484	10,611	2,855	95,789	109,255	279,39	72,19	1.890,35	2.241,93			10.523,67	2.399,77	31.132,39	44.055,83	8.418,94	2.086,76	36.626,34	47.132,04						-22.087,62
1.485	24,806	6,096	113,412	144,314	354,17	89,51	2.092,01	2.535,69			10.877,84	2.489,28	33.224,40	46.591,52	8.702,27	2.164,59	39.087,53	49.954,39						-19.265,26
1.486	31,294	7,670	143,271	182,235	561,00	137,66	2.566,83	3.265,49			11.438,84	2.626,94	35.791,23	49.857,01	9.151,07	2.284,30	42.107,33	53.542,70						-15.676,96
1.487	15,678	4,196	189,423	209,297	469,72	118,66	3.326,94	3.915,32			11.908,56	2.745,60	39.118,17	53.772,33	9.526,85	2.387,48	46.021,38	57.935,71						-11.283,95
1.488	25,935	6,330	204,825	237,090	416,13	105,26	3.942,48	4.463,87			12.324,69	2.850,86	43.060,65	58.236,20	9.859,75	2.479,01	50.659,59	62.998,35						-6.221,30
1.489	56,839	13,348	205,459	275,646	827,74	196,78	4.102,84	5.127,36			13.152,43	3.047,64	47.163,49	63.363,56	10.521,94	2.650,12	55.486,46	68.658,52						-561,12
1.490	84,210	19,310	216,386	319,906	1.410,49	326,58	4.218,45	5.955,52			14.562,92	3.374,22	51.381,94	69.319,08	11.650,34	2.934,10	60.449,34	75.033,78						5.814,14
1.491	95,748	22,145	226,689	344,582	1.799,58	414,55	4.430,75	6.644,88			16.362,50	3.788,77	55.812,69	75.963,96	13.090,00	3.294,58	65.661,99	82.046,57						12.826,93
1.492	98,124	22,541	247,085	367,750	1.938,72	446,86	4.737,74	7.123,32			18.301,22	4.235,63	60.550,43	83.087,28	14.640,98	3.683,16	71.235,80	89.559,94						20.340,29
1.493	89,059	21,034	268,712	378,805	1.871,83	435,75	5.157,97	7.465,55			20.173,05	4.671,38	65.708,40	90.552,83	16.138,44	4.062,07	77.304,00	97.504,51						28.284,87
1.494	78,539	18,044	287,205	383,788	1.675,98	390,78	5.559,17	7.625,93			21.849,03	5.062,16	71.267,57	98.178,76	17.479,22	4.401,88	83.844,20	105.725,30						36.505,66
1.495	68,323	16,183	308,393	392,899	1.468,62	342,27	5.955,98	7.766,87			23.317,65	5.404,43	77.223,55	105.945,63	18.654,12	4.699,50	90.851,24	114.204,86						44.985,22
1.496	41,753	10,447	338,345	390,545	1.100,76	266,30	6.467,38	7.834,44			24.418,41	5.670,73	83.690,93	113.780,07	19.534,73	4.931,07	98.459,92	122.925,72						53.706,08
1.497	43,523	10,284	351,166	404,973	852,76	207,31	6.895,11	7.955,18			25.271,17	5.878,04	90.586,04	121.735,25	20.216,94	5.111,34	106.571,81	131.900,09						62.680,45
1.498	44,076	10,483	352,458	407,017	875,99	207,67	7.036,24	8.119,90			26.147,16	6.085,71	97.622,28	129.855,15	20.917,73	5.291,92	114.849,74	141.059,39						71.839,75
1.499	29,183	6,718	358,003	393,904	732,59	172,01	7.104,61	8.009,21			26.879,75	6.257,72	104.726,89	137.864,36	21.503,80	5.441,50	123.208,11	150.153,41						80.933,76
1.500	31,507	6,866	357,322	395,695	606,90	135,84	7.153,25	7.895,99			27.486,65	6.393,56	111.880,14	145.760,35	21.989,32	5.559,62	131.623,69	159.172,63						89.952,99
1.501	19,182	5,180	356,019	380,381	506,89	120,46	7.133,41	7.760,76			27.993,54	6.514,02	119.013,55	153.521,11	22.394,83	5.664,37	140.015,94	168.075,14						98.855,50
1.502	26,810	6,348	337,200	370,358	459,92	115,28	6.932,19	7.507,39			28.453,46	6.629,30	125.945,74	161.028,50	22.762,77	5.764,61	148.171,46	176.698,84						107.479,20
1.503	45,250	10,618	286,503	342,371	720,60	169,66	6.237,03	7.127,29			29.174,06	6.798,96	132.182,77	168.155,79	23.339,25	5.912,14	155.509,14	184.760,53						115.540,89

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.504	51,721	12,245	249,108	313,074	969,71	228,63	5.356,11	6.554,45			30.143,77	7.027,59	137.538,88	174.710,24	24.115,02	6.110,95	161.810,45	192.036,42						122.816,77
1.505	24,989	6,226	222,518	253,733	767,10	184,71	4.716,26	5.668,07			30.910,87	7.212,30	142.255,14	180.378,31	24.728,70	6.271,57	167.358,99	198.359,26						129.139,61
1.506	24,986	5,977	183,932	214,895	499,75	122,03	4.064,50	4.686,28			31.410,62	7.334,33	146.319,64	185.064,59	25.128,50	6.377,68	172.140,75	203.646,93						134.427,29
1.507	43,133	9,837	148,589	201,559	681,19	158,14	3.325,21	4.164,54			32.091,81	7.492,47	149.644,85	189.229,13	25.673,45	6.515,19	176.052,76	208.241,40						139.021,77
1.508	25,034	5,850	114,932	145,816	681,67	156,87	2.635,21	3.473,75			32.773,48	7.649,34	152.280,06	192.702,88	26.218,78	6.651,60	179.153,01	212.023,39						142.803,76
1.509	5,084	1,490	103,222	109,796	301,18	73,40	2.181,54	2.556,12			33.074,66	7.722,74	154.461,60	195.259,00	26.459,73	6.715,43	181.719,53	214.894,69						145.675,05
1.510	17,195	4,063	86,492	107,750	222,79	55,53	1.897,14	2.175,46			33.297,45	7.778,27	156.358,74	197.434,46	26.637,96	6.763,71	183.951,46	217.353,13						148.133,50
1.511	16,033	3,790	73,786	93,609	332,28	78,53	1.602,78	2.013,59			33.629,73	7.856,80	157.961,52	199.448,05	26.903,78	6.832,00	185.837,08	219.572,86						150.353,23
1.512	23,223	5,026	29,990	58,239	392,56	88,16	1.037,76	1.518,48			34.022,29	7.944,96	158.999,28	200.966,53	27.217,83	6.908,66	187.057,98	221.184,47						151.964,83
1.513	15,339	1,382	2,487	19,208	385,62	64,08	324,77	774,47			34.407,91	8.009,04	159.324,05	201.741,00	27.526,33	6.964,38	187.440,06	221.930,77						152.711,13
1.514					153,39	13,82	24,87	192,08	28,965	289,65	34.561,30	8.022,86	159.348,92	201.933,08	27.649,04	6.976,40	187.469,32	222.094,76	289,65	122,71	12,02	29,26	163,99	152.585,47
1.515									79,067	1.080,32									1.369,97					151.505,15
1.516									128,186	2.072,53									3.442,50					149.432,62
1.517									145,551	2.737,37									6.179,87					146.695,25
1.518									137,013	2.825,64									9.005,51					143.869,61
1.519									100,941	2.379,54									11.385,05					141.490,07
1.520									39,436	1.403,77									12.788,82					140.086,30
1.521	3,025			3,025	30,25			30,25	5,773	452,09	30,25			30,25	24,20			24,20	13.240,91	24,20			24,20	139.658,41
1.522	30,362			30,362	333,87			333,87		57,73	364,12			364,12	291,30			291,30	13.298,64	57,73			57,73	139.867,78
1.523	52,404			52,404	827,66			827,66			1.191,78			1.191,78	953,42			953,42						140.529,91
1.524	66,597			66,597	1.190,01			1.190,01			2.381,79			2.381,79	1.905,43			1.905,43						141.481,92
1.525	91,565	0,875		92,440	1.581,62	8,75		1.590,37			3.963,41	8,75		3.972,16	3.170,73	7,61		3.178,34						142.754,82
1.526	139,276	1,744		141,020	2.308,41	26,19		2.334,60			6.271,82	34,94		6.306,76	5.017,46	30,38		5.047,84						144.624,32
1.527	100,797	14,891	3,643	119,331	2.400,73	166,35	36,43	2.603,51			8.672,55	201,29	36,43	8.910,27	6.938,04	175,03	42,86	7.155,93						146.732,41
1.528	91,186	16,808	17,246	125,240	1.919,83	316,99	208,89	2.445,71			10.592,38	518,28	245,32	11.355,98	8.473,90	450,68	288,61	9.213,19						148.789,67
1.529	59,178	11,813	30,624	101,615	1.503,64	286,21	478,70	2.268,55			12.096,02	804,49	724,02	13.624,53	9.676,82	699,56	851,79	11.228,17						150.804,64
1.530	91,191	18,052	56,367	165,610	1.503,69	298,65	869,91	2.672,25			13.599,71	1.103,14	1.593,93	16.296,78	10.879,77	959,25	1.875,21	13.714,23						153.290,71
1.531	30,899	6,797	70,128	107,824	1.220,90	248,49	1.264,95	2.734,34			14.820,61	1.351,63	2.858,88	19.031,12	11.856,49	1.175,33	3.363,39	16.395,21						155.971,68
1.532	52,094	11,575	122,793	186,462	829,93	183,72	1.929,21	2.942,86			15.650,54	1.535,35	4.788,09	21.973,98	12.520,43	1.335,09	5.633,05	19.488,57						159.065,04
1.533	48,918	11,333	188,433	248,684	1.010,12	229,08	3.112,26	4.351,46			16.660,66	1.764,43	7.900,35	26.325,44	13.328,53	1.534,29	9.294,53	24.157,35						163.733,82
1.534	30,315	7,455	244,744	282,514	792,33	187,88	4.331,77	5.311,98			17.452,99	1.952,31	12.232,12	31.637,42	13.962,39	1.697,66	14.390,73	30.050,78						169.627,26
1.535	49,716	11,713	268,472	329,901	800,31	191,68	5.132,16	6.124,15			18.253,30	2.143,99	17.364,28	37.761,57	14.602,64	1.864,34	20.428,56	36.895,54						176.472,02
1.536	46,990	11,272	298,815	357,077	967,06	229,85	5.672,87	6.869,78			19.220,36	2.373,84	23.037,15	44.631,35	15.376,29	2.064,21	27.102,53	44.543,03						184.119,50
1.537	44,454	10,823	318,910	374,187	914,44	220,95	6.177,25	7.312,64			20.134,80	2.594,79	29.214,40	51.943,99	16.107,84	2.256,34	34.369,88	52.734,06						192.310,54
1.538	35,178	8,843	318,922	362,943	796,32	196,66	6.378,32	7.371,30			20.931,12	2.791,45	35.592,72	59.315,29	16.744,90	2.427,35	41.873,79	61.046,04						200.622,51
1.539	28,971	7,482	315,662	352,115	641,49	163,25	6.345,84	7.150,58			21.572,61	2.954,70	41.938,56	66.465,87	17.258,09	2.569,30	49.339,48	69.166,87						208.743,35
1.540	23,058	5,488	314,541	343,087	520,29	129,70	6.302,03	6.952,02			22.092,90	3.084,40	48.240,59	73.417,89	17.674,32	2.682,09	56.753,64	77.110,05						216.686,52
1.541	31,315	7,953	304,129	343,397	543,73	134,41	6.186,70	6.864,84			22.636,63	3.218,81	54.427,29	80.282,73	18.109,30	2.798,97	64.032,11	84.940,38						224.516,85
1.542	36,962	8,645	305,549	351,156	682,77	165,98	6.096,78	6.945,53			23.319,40	3.384,79	60.524,07	87.228,26	18.655,52	2.943,30	71.204,79	92.803,61						232.380,08
1.543	32,838	8,152	332,149	373,139	698,00	167,97	6.376,98	7.242,95			24.017,40	3.552,76	66.901,05	94.471,21	19.213,92	3.089,36	78.707,12	101.010,40						240.586,87
1.544	27,232	7,199	363,355	397,786	600,70	153,51	6.955,04	7.709,25			24.618,10	3.706,27	73.856,09	102.180,46	19.694,48	3.222,84	86.889,52	109.806,84						249.383,32
1.545	21,896	5,928	366,501	394,325	491,28	131,27	7.298,56	7.921,11			25.109,38	3.837,54	81.154,65	110.101,57	20.087,50	3.336,99	95.476,06	118.900,55						258.477,03
1.546	29,321	6,942	343,193	379,456	512,17	128,70	7.096,94	7.737,81			25.621,55	3.966,24	88.251,59	117.839,38	20.497,24	3.448,90	103.825,40	127.771,54						267.348,02
1.547	10,423	2,633	323,102	336,158	397,44	95,75	6.662,95	7.156,14			26.018,99	4.061,99	94.914,54	124.995,52	20.815,19	3.532,17	111.664,16	136.011,52						275.588,00
1.548	10,280	3,072	295,492	308,844	207,03	57,05	6.185,94	6.450,02			26.226,02	4.119,04	101.100,48	131.445,54	20.980,82	3.581,77	118.941,74	143.504,33						283.080,81
1.549	27,724	7,153	259,368	294,245	380,04	102,25	5.548,60	6.030,89			26.606,06	4.221,29	106.649,08	137.476,43	21.284,85	3.670,69	125.469,51	150.425,05						290.001,52
1.550	33,282	8,205	224,860	266,347	610,06	153,58	4.842,28	5.605,92			27.216,12	4.374,87	111.491,36	143.082,35	21.772,90	3.804,23	131.166,31	156.743,44						296.319,92

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.551	17,747	4,671	202,924	225,342	510,29	128,76	4.277,84	4.916,89			27.726,41	4.503,63	115.769,20	147.999,24	22.181,13	3.916,20	136.199,06	162.296,39						301.872,87
1.552	15,020	4,005	169,751	188,776	327,67	86,76	3.726,75	4.141,18			28.054,08	4.590,39	119.495,95	152.140,42	22.443,26	3.991,64	140.583,47	167.018,37						306.594,86
1.553	24,481	6,064	124,165	154,710	395,01	100,69	2.939,16	3.434,86			28.449,09	4.691,08	122.435,11	155.575,28	22.759,27	4.079,20	144.041,31	170.879,78						310.456,26
1.554	31,958	7,437	72,375	111,770	564,39	135,01	1.965,40	2.664,80			29.013,48	4.826,09	124.400,51	158.240,08	23.210,78	4.196,60	146.353,54	173.760,92						313.337,41
1.555	15,593	3,427	50,464	69,484	475,51	108,64	1.228,39	1.812,54			29.488,99	4.934,73	125.628,90	160.052,62	23.591,19	4.291,07	147.798,71	175.680,97						315.257,45
1.556	29,995	6,234	45,099	81,328	455,88	96,61	955,63	1.508,12			29.944,87	5.031,34	126.584,53	161.560,74	23.955,90	4.375,08	148.922,98	177.253,96						316.830,43
1.557	45,504	9,514	75,393	130,411	754,99	157,48	1.204,92	2.117,39			30.699,86	5.188,82	127.789,45	163.678,13	24.559,89	4.512,02	150.340,53	179.412,44						318.988,91
1.558	36,791	8,198	125,432	170,421	822,95	177,12	2.008,25	3.008,32			31.522,81	5.365,94	129.797,70	166.686,45	25.218,25	4.666,03	152.703,18	182.587,46						322.163,93
1.559	27,331	6,388	153,360	187,079	641,22	145,86	2.787,92	3.575,00			32.164,03	5.511,80	132.585,62	170.261,45	25.731,22	4.792,87	155.983,08	186.507,17						326.083,65
1.560	51,889	11,415	163,206	226,510	792,20	178,03	3.165,66	4.135,89			32.956,23	5.689,83	135.751,28	174.397,34	26.364,98	4.947,68	159.707,39	191.020,05						330.596,52
1.561	36,671	8,545	207,170	252,386	885,60	199,60	3.703,76	4.788,96			33.841,83	5.889,43	139.455,04	179.186,30	27.073,46	5.121,24	164.064,75	196.259,45						335.835,93
1.562	28,983	6,898	245,944	281,825	656,54	154,43	4.531,14	5.342,11			34.498,37	6.043,86	143.986,18	184.528,41	27.598,70	5.255,53	169.395,51	202.249,74						341.826,20
1.563	25,127	5,525	274,076	304,728	541,10	124,23	5.200,20	5.865,53			35.039,47	6.168,09	149.186,38	190.393,94	28.031,58	5.363,56	175.513,39	208.908,53						348.484,99
1.564	16,964	3,945	293,246	314,155	420,91	94,70	5.673,22	6.188,83			35.460,38	6.262,79	154.859,60	196.582,77	28.368,30	5.445,90	182.187,76	216.001,96						355.578,44
1.565	17,279	4,335	301,839	323,453	342,43	82,80	5.950,85	6.376,08			35.802,81	6.345,59	160.810,45	202.958,85	28.642,25	5.517,90	189.188,76	223.348,91						362.925,38
1.566	20,668	5,037	312,544	338,249	379,47	93,72	6.143,83	6.617,02			36.182,28	6.439,31	166.954,28	209.575,87	28.945,82	5.599,40	196.416,80	230.962,02						370.538,49
1.567	13,707	3,748	323,095	340,550	343,75	87,85	6.356,39	6.787,99			36.526,03	6.527,16	173.310,67	216.363,86	29.220,82	5.675,79	203.894,91	238.791,52						378.367,99
1.568	18,009	4,553	324,801	347,363	317,16	83,01	6.478,96	6.879,13			36.843,19	6.610,17	179.789,63	223.242,99	29.474,55	5.747,97	211.517,21	246.739,73						386.316,21
1.569	19,935	4,723	325,163	349,821	379,44	92,76	6.499,64	6.971,84			37.222,63	6.702,93	186.289,27	230.214,83	29.778,10	5.828,63	219.163,85	254.770,58						394.347,06
1.570	14,480	3,934	327,271	345,685	344,15	86,57	6.524,34	6.955,06			37.566,78	6.789,50	192.813,61	237.169,89	30.053,42	5.903,91	226.839,54	262.796,87						402.373,35
1.571	15,312	4,099	311,350	330,761	297,92	80,33	6.386,21	6.764,46			37.864,70	6.869,83	199.199,82	243.934,35	30.291,76	5.973,77	234.352,73	270.618,26						410.194,73
1.572	21,896	5,535	282,201	309,632	372,08	96,34	5.935,51	6.403,93			38.236,78	6.966,17	205.135,33	250.338,28	30.589,42	6.057,54	241.335,68	277.982,64						417.559,12
1.573	18,317	4,674	249,862	272,853	402,13	102,09	5.320,63	5.824,85			38.638,91	7.068,26	210.455,96	256.163,13	30.911,13	6.146,31	247.595,25	284.652,69						424.229,16
1.574	22,559	5,324	209,581	237,464	408,76	99,98	4.594,43	5.103,17			39.047,67	7.168,24	215.050,39	261.266,30	31.238,14	6.233,25	253.000,46	290.471,85						430.048,32
1.575	23,796	5,547	162,303	191,646	463,55	108,71	3.718,84	4.291,10			39.511,22	7.276,95	218.769,23	265.557,40	31.608,98	6.327,78	257.375,56	295.312,32						434.888,80
1.576	15,633	3,916	137,025	156,574	394,29	94,63	2.993,28	3.482,20			39.905,51	7.371,58	221.762,51	269.039,60	31.924,41	6.410,07	260.897,07	299.231,55						438.808,02
1.577	11,401	2,860	90,147	104,408	270,34	67,76	2.271,72	2.609,82			40.175,85	7.439,34	224.034,23	271.649,42	32.140,68	6.468,99	263.569,68	302.179,35						441.755,83
1.578	8,502	2,122	49,643	60,267	199,03	49,82	1.397,90	1.646,75			40.374,88	7.489,16	225.432,13	273.296,17	32.299,90	6.512,31	265.214,27	304.026,48						443.602,96
1.579	9,503	2,151	4,464	16,118	180,05	42,73	541,07	763,85			40.554,93	7.531,89	225.973,20	274.060,02	32.443,94	6.549,47	265.850,82	304.844,23						444.420,71
1.580	1,635			1,635	111,38	21,51	44,64	177,53	23,883	238,83	40.666,31	7.553,40	226.017,84	274.237,55	32.533,05	6.568,17	265.903,34	305.004,56	238,83	89,10	18,70	52,52	160,32	444.342,21
1.581					16,35			16,35	77,774	1.016,57	40.682,66			40.682,66	32.546,13			32.546,13	1.255,40	13,08			13,08	443.338,72
1.582									143,475	2.212,49									3.467,89					441.126,23
1.583									229,385	3.728,60									7.196,49					437.397,63
1.584									372,831	6.022,16									13.218,65					431.375,47
1.585									569,638	9.424,69									22.643,34					421.950,78
1.586									597,618	11.672,56									34.315,90					410.278,22
1.587									479,174	10.767,92									45.083,82					399.510,30
1.588									357,425	8.365,99									53.449,81					391.144,31
1.589									261,397	6.188,22									59.638,03					384.956,09
1.590									172,593	4.339,90									63.977,93					380.616,19
1.591									159,096	3.316,89									67.294,82					377.299,30
1.592									180,758	3.398,54									70.693,36					373.900,76
1.593									248,793	4.295,51									74.988,87					369.605,25
1.594									315,864	5.646,57									80.635,44					363.958,68
1.595									354,788	6.706,52									87.341,96					357.252,16
1.596									432,376	7.871,64									95.213,60					349.380,52
1.597									401,651	8.340,27									103.553,87					341.040,25

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.598									411,444	8.130,95									111.684,82					332.909,30
1.599									444,900	8.563,44									120.248,26					324.345,86
1.600									470,522	9.154,22									129.402,48					315.191,64
1.601									495,797	9.663,19									139.065,67					305.528,45
1.602									564,924	10.607,21									149.672,88					294.921,24
1.603									677,518	12.424,42									162.097,30					282.496,82
1.604									802,766	14.802,84									176.900,14					267.693,98
1.605									891,131	16.938,97									193.839,11					250.755,01
1.606									997,294	18.884,25									212.723,36					231.870,76
1.607									1.129,687	21.269,81									233.993,17					210.600,95
1.608									1.007,161	21.368,48									255.361,65					189.232,47
1.609									665,911	16.730,72									272.092,37					172.501,75
1.610									388,485	10.543,96									282.636,33					161.957,79
1.611									240,206	6.286,91									288.923,24					155.670,88
1.612									150,056	3.902,62									292.825,86					151.768,26
1.613									79,117	2.291,73									295.117,59					149.476,53
1.614									40,904	1.200,21									296.317,80					148.276,32
1.615	0,723			0,723	7,23			7,23	11,907	528,11	7,23			7,23	5,78			5,78	296.845,91	5,78			5,78	147.753,99
1.616	5,175	0,733	0,721	6,629	58,98	7,33	7,21	73,52		119,07	66,21	7,33	7,21	80,75	52,97	6,37	8,48	67,82	296.964,98	47,18	6,37	8,48	62,03	147.696,96
1.617	12,255	2,069	0,443	14,767	174,30	28,02	11,64	213,96			240,51	35,35	18,85	294,71	192,41	30,74	22,18	245,33						147.874,46
1.618	12,427	2,750	14,401	29,578	246,82	48,19	148,44	443,45			487,33	83,54	167,29	738,16	389,86	72,64	196,81	659,31						148.288,46
1.619	12,724	2,950	28,415	44,089	251,51	57,00	428,16	736,67			738,84	140,54	595,45	1.474,83	591,07	122,21	700,53	1.413,81						149.042,95
1.620	11,427	2,780	42,500	56,707	241,51	57,30	709,15	1.007,96			980,35	197,84	1.304,60	2.482,79	784,28	172,03	1.534,82	2.491,13						150.120,28
1.621	11,779	2,922	55,157	69,858	232,06	57,02	976,57	1.265,65			1.212,41	254,86	2.281,17	3.748,44	969,93	221,62	2.683,73	3.875,28						151.504,42
1.622	11,029	2,807	65,459	79,295	228,08	57,29	1.206,16	1.491,53			1.440,49	312,15	3.487,33	5.239,97	1.152,39	271,43	4.102,74	5.526,56						153.155,71
1.623	10,224	2,667	74,423	87,314	212,53	54,74	1.398,82	1.666,09			1.653,02	366,89	4.886,15	6.906,06	1.322,42	319,03	5.748,41	7.389,86						155.019,00
1.624	10,045	2,647	82,223	94,915	202,69	53,14	1.566,46	1.822,29			1.855,71	420,03	6.452,61	8.728,35	1.484,57	365,24	7.591,31	9.441,12						157.070,25
1.625	12,835	3,328	91,685	107,848	228,80	59,75	1.739,08	2.027,63			2.084,51	479,78	8.191,69	10.755,98	1.667,61	417,20	9.637,28	11.722,09						159.351,22
1.626	13,092	3,398	96,685	113,175	259,27	67,26	1.883,70	2.210,23			2.343,78	547,04	10.075,39	12.966,21	1.875,02	475,69	11.853,40	14.204,11						161.833,24
1.627	14,057	3,649	103,729	121,435	271,49	70,47	2.004,14	2.346,10			2.615,27	617,51	12.079,53	15.312,31	2.092,22	536,97	14.211,21	16.840,40						164.469,52
1.628	18,010	4,564	105,728	128,302	320,67	82,13	2.094,57	2.497,37			2.935,94	699,64	14.174,10	17.809,68	2.348,75	608,38	16.675,41	19.632,54						167.261,67
1.629	10,523	2,815	102,126	115,464	285,33	73,79	2.078,54	2.437,66			3.221,27	773,43	16.252,64	20.247,34	2.577,02	672,55	19.120,75	22.370,32						169.999,44
1.630	9,030	2,443	92,227	103,700	195,53	52,58	1.943,53	2.191,64			3.416,80	826,01	18.196,17	22.438,98	2.733,44	718,27	21.407,26	24.858,97						172.488,09
1.631	9,014	2,389	76,314	87,717	180,44	48,32	1.685,41	1.914,17			3.597,24	874,33	19.881,58	24.353,15	2.877,79	760,29	23.390,09	27.028,17						174.657,29
1.632	15,068	3,605	49,209	67,882	240,82	59,94	1.255,23	1.555,99			3.838,06	934,27	21.136,81	25.909,14	3.070,45	812,41	24.866,84	28.749,70						176.378,81
1.633	9,173	2,217	28,611	40,001	242,41	58,22	778,20	1.078,83			4.080,47	992,49	21.915,01	26.987,97	3.264,38	863,03	25.782,36	29.909,77						177.538,89
1.634	5,448	1,295	7,690	14,433	146,21	35,12	363,01	544,34			4.226,68	1.027,61	22.278,02	27.532,31	3.381,34	893,57	26.209,44	30.484,35						178.113,47
1.635	1,103	0,115	0,019	1,237	65,51	14,10	77,09	156,70	13,494	134,94	4.292,19	1.041,71	22.355,11	27.689,01	3.433,75	905,83	26.300,13	30.639,71	134,94	52,41	12,26	70,27	134,94	178.133,89
1.636					11,03	1,15	0,19	12,37	66,812	803,06	4.303,22	1.042,86	22.355,30	27.701,38	3.442,58	906,83	26.300,35	30.649,76	938,00	8,82	1,00	0,22	10,04	177.340,88
1.637									28,449	952,61									1.890,61					176.388,27
1.638	11,485	0,562	0,004	12,051	114,85	5,62	0,04	120,51		284,49	114,85	5,62	0,04	120,51	91,88	4,89	0,05	96,82	2.175,10	91,88	4,89	0,05	96,82	176.200,59
1.639	8,078	2,038	39,570	49,686	195,63	26,00	395,74	617,37			310,48	31,62	395,78	737,88	248,38	27,50	465,62	741,50						176.845,28
1.640	19,255	4,744	85,864	109,863	273,33	67,82	1.254,34	1.595,49			583,81	99,44	1.650,12	2.333,37	467,05	86,47	1.941,32	2.494,84						178.598,61
1.641	23,122	4,865	145,714	173,701	423,77	96,09	2.315,78	2.835,64			1.007,58	195,53	3.965,90	5.169,01	806,06	170,03	4.665,76	5.641,85						181.745,63
1.642	28,226	7,261	216,081	251,568	513,48	121,26	3.617,95	4.252,69			1.521,06	316,79	7.583,85	9.421,70	1.216,85	275,47	8.922,18	10.414,50						186.518,27
1.643	32,272	8,221	275,057	315,550	604,98	154,82	4.911,38	5.671,18			2.126,04	471,61	12.495,23	15.092,88	1.700,83	410,10	14.700,27	16.811,20						192.914,97
1.644	21,976	6,003	332,572	360,551	542,48	142,24	6.076,29	6.761,01			2.668,52	613,85	18.571,52	21.853,89	2.134,82	533,78	21.848,85	24.517,45						200.621,22

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.645	28,604	7,664	383,871	420,139	505,80	136,67	7.164,43	7.806,90			3.174,32	750,52	25.735,95	29.660,79	2.539,46	652,63	30.277,59	33.469,68						209.573,44
1.646	33,858	8,779	432,760	475,397	624,62	164,43	8.166,31	8.955,36			3.798,94	914,95	33.902,26	38.616,15	3.039,15	795,61	39.885,01	43.719,77						219.823,54
1.647	29,762	6,630	485,795	522,187	636,20	154,09	9.185,55	9.975,84			4.435,14	1.069,04	43.087,81	48.591,99	3.548,11	929,60	50.691,54	55.169,25						231.273,02
1.648	25,568	5,503	513,675	544,746	553,30	121,33	9.994,70	10.669,33			4.988,44	1.190,37	53.082,51	59.261,32	3.990,75	1.035,10	62.450,01	67.475,86						243.579,63
1.649	25,493	5,801	518,220	549,514	510,61	113,04	10.318,95	10.942,60			5.499,05	1.303,41	63.401,46	70.203,92	4.399,24	1.133,40	74.589,95	80.122,59						256.226,35
1.650	27,297	6,685	519,868	553,850	527,90	124,86	10.380,88	11.033,64			6.026,95	1.428,27	73.782,34	81.237,56	4.821,56	1.241,97	86.802,75	92.866,28						268.970,04
1.651	33,299	8,249	518,881	560,429	605,96	149,34	10.387,49	11.142,79			6.632,91	1.577,61	84.169,83	92.380,35	5.306,33	1.371,83	99.023,33	105.701,49						281.805,25
1.652	21,885	4,746	491,923	518,554	551,84	129,95	10.108,04	10.789,83			7.184,75	1.707,56	94.277,87	103.170,18	5.747,80	1.484,83	110.915,14	118.147,77						294.251,53
1.653	45,835	11,461	439,763	497,059	677,20	162,07	9.316,86	10.156,13			7.861,95	1.869,63	103.594,73	113.326,31	6.289,56	1.625,77	121.876,15	129.791,48						305.895,23
1.654	4,382	1,832	409,784	415,998	502,17	132,93	8.495,47	9.130,57			8.364,12	2.002,56	112.090,20	122.456,88	6.691,30	1.741,36	131.870,82	140.303,48						316.407,23
1.655	5,009	1,927	359,908	366,844	93,91	37,59	7.696,92	7.828,42			8.458,03	2.040,15	119.787,12	130.285,30	6.766,42	1.774,04	140.926,02	149.466,48						325.570,24
1.656	16,190	3,580	305,147	324,917	211,99	55,07	6.650,55	6.917,61			8.670,02	2.095,22	126.437,67	137.202,91	6.936,02	1.821,93	148.750,20	157.508,15						333.611,90
1.657	30,031	6,681	242,995	279,707	462,21	102,61	5.481,42	6.046,24			9.132,23	2.197,83	131.919,09	143.249,15	7.305,78	1.911,16	155.198,93	164.415,87						340.519,62
1.658	16,614	4,025	190,719	211,358	466,45	107,06	4.337,14	4.910,65			9.598,68	2.304,89	136.256,23	148.159,80	7.678,94	2.004,25	160.301,45	169.984,64						346.088,39
1.659	18,366	4,692	149,096	172,154	349,80	87,17	3.398,15	3.835,12			9.948,48	2.392,06	139.654,38	151.994,92	7.958,78	2.080,05	164.299,27	174.338,10						350.441,85
1.660	11,702	3,084	115,482	130,268	300,68	77,76	2.645,78	3.024,22			10.249,16	2.469,82	142.300,16	155.019,14	8.199,33	2.147,67	167.411,95	177.758,95						353.862,69
1.661	5,705	1,613	78,735	86,053	174,07	46,97	1.942,17	2.163,21			10.423,23	2.516,79	144.242,33	157.182,35	8.338,58	2.188,51	169.696,86	180.223,95						356.327,70
1.662	11,032	2,707	56,702	70,441	167,37	43,20	1.354,37	1.564,94			10.590,60	2.559,99	145.596,70	158.747,29	8.472,48	2.226,08	171.290,24	181.988,80						358.092,54
1.663	6,750	1,763	41,359	49,872	177,82	44,70	980,61	1.203,13			10.768,42	2.604,69	146.577,31	159.950,42	8.614,74	2.264,95	172.443,89	183.323,58						359.427,32
1.664	6,552	1,607	15,793	23,952	133,02	33,70	571,52	738,24			10.901,44	2.638,39	147.148,83	160.688,66	8.721,15	2.294,25	173.116,27	184.131,67						360.235,42
1.665	0,934			0,934	74,86	16,07	157,93	248,86	11,370	113,70	10.976,30	2.654,46	147.306,76	160.937,52	8.781,04	2.308,23	173.302,07	184.391,34	113,70	59,89	13,97	39,84	113,70	360.381,38
1.666					9,34			9,34	27,641	390,11	10.985,64			10.985,64	8.788,51			8.788,51	503,81	7,47			7,47	359.998,74
1.667	0,968			0,968	9,68			9,68	9,957	375,98	10.995,32			10.995,32	8.796,26			8.796,26	879,79	7,74			7,74	359.630,50
1.668	11,053	2,169	3,714	16,936	120,21	21,69	37,14	179,04		99,57	11.115,53	21,69	37,14	11.174,36	8.892,42	18,86	43,69	8.954,97	979,36	96,17	3,40		99,57	359.689,65
1.669	6,940	1,709	24,022	32,671	179,93	38,78	277,36	496,07			11.295,46	60,47	314,50	11.670,43	9.036,37	52,58	370,00	9.458,95						360.193,62
1.670	13,121	3,076	32,950	49,147	200,61	47,85	569,72	818,18			11.496,07	108,32	884,22	12.488,61	9.196,86	94,19	1.040,26	10.331,31						361.065,98
1.671	12,038	2,962	50,464	65,464	251,59	60,38	834,14	1.146,11			11.747,66	168,70	1.718,36	13.634,72	9.398,13	146,70	2.021,60	11.566,43						362.301,10
1.672	11,336	2,915	75,508	89,759	233,74	58,77	1.259,72	1.552,23			11.981,40	227,47	2.978,08	15.186,95	9.585,12	197,80	3.503,62	13.286,54						364.021,22
1.673		0,112	104,445	104,557	113,36	30,27	1.799,53	1.943,16			12.094,76	257,74	4.777,61	17.130,11	9.675,81	224,12	5.620,72	15.520,65						366.255,32
1.674		0,094	117,737	117,831		2,06	2.221,82	2.223,88				259,80	6.999,43	7.259,23		225,91	8.234,62	8.460,53						368.871,02
1.675	3,362	1,130	117,146	121,638	33,62	12,24	2.348,83	2.394,69			33,62	272,04	9.348,26	9.653,92	26,90	236,56	10.997,95	11.261,41						371.671,89
1.676	4,596	1,459	112,754	118,809	79,58	25,89	2.299,00	2.404,47			113,20	297,93	11.647,26	12.058,39	90,56	259,07	13.702,66	14.052,29						374.462,77
1.677	7,413	2,111	108,941	118,465	120,09	35,70	2.216,95	2.372,74			233,29	333,63	13.864,21	14.431,13	186,63	290,11	16.310,84	16.787,58						377.198,06
1.678	6,697	1,930	104,955	113,582	141,10	40,41	2.138,96	2.320,47			374,39	374,04	16.003,17	16.751,60	299,51	325,25	18.827,26	19.452,02						379.862,50
1.679	12,415	3,228	95,034	110,677	191,12	51,58	1.999,89	2.242,59			565,51	425,62	18.003,06	18.994,19	452,41	370,10	21.180,07	22.002,58						382.413,06
1.680	12,127	3,152	92,437	107,716	245,42	63,80	1.874,71	2.183,93			810,93	489,42	19.877,77	21.178,12	648,74	425,58	23.385,61	24.459,93						384.870,42
1.681	9,268	2,478	87,482	99,228	213,95	56,30	1.799,19	2.069,44			1.024,88	545,72	21.676,96	23.247,56	819,90	474,54	25.502,31	26.796,75						387.207,23
1.682	9,038	2,384	75,071	86,493	183,06	48,62	1.625,53	1.857,21			1.207,94	594,34	23.302,49	25.104,77	966,35	516,82	27.414,69	28.897,86						389.308,34
1.683	5,234	1,483	63,986	70,703	142,72	38,67	1.390,57	1.571,96			1.350,66	633,01	24.693,06	26.676,73	1.080,53	550,44	29.050,66	30.681,63						391.092,11
1.684	9,168	2,294	44,238	55,700	144,02	37,77	1.082,24	1.264,03			1.494,68	670,78	25.775,30	27.940,76	1.195,74	583,29	30.323,88	32.102,91						392.513,39
1.685	8,046	1,977	29,873	39,896	172,14	42,71	741,11	955,96			1.666,82	713,49	26.516,41	28.896,72	1.333,46	620,43	31.195,78	33.149,67						393.560,14
1.686	6,390	1,562	18,752	26,704	144,36	35,39	486,25	666,00			1.811,18	748,88	27.002,66	29.562,72	1.448,94	651,20	31.767,84	33.867,98						394.278,46
1.687	4,026	0,999	7,355	12,380	104,16	25,61	261,07	390,84			1.915,34	774,49	27.263,73	29.953,56	1.532,27	673,47	32.074,98	34.280,72						394.691,20
1.688	5,383	0,783	3,628	9,794	94,09	17,82	109,83	221,74			2.009,43	792,31	27.373,56	30.175,30	1.607,54	688,97	32.204,19	34.500,70						394.911,18
1.689	0,708	0,324	1,578	2,610	60,91	11,07	52,06	124,04	4,123	41,23	2.070,34	803,38	27.425,62	30.299,34	1.656,27	698,59	32.265,44	34.620,30	41,23	41,23			41,23	394.989,55
1.690	0,340			0,340	10,48	3,24	15,78	29,50	16,405	205,28	2.080,82	806,62	27.441,40	30.328,84	1.664,66	701,41	32.284,00	34.650,07	246,51	8,38	2,82	18,56	29,76	394.814,04
1.691					3,40			3,40	35,433	518,38	2.084,22			2.084,22	1.667,38			1.667,38	764,89	2,72			2,72	394.298,38

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.692									57,383	928,16									1.693,05					393.370,22
1.693									31,518	889,01									2.582,06					392.481,21
1.694	0,077			0,077	0,77			0,77	22,665	541,83	0,77			0,77	0,62			0,62	3.123,89	0,62			0,62	391.940,00
1.695	0,094			0,094	1,71			1,71	21,782	444,47	2,48			2,48	1,98			1,98	3.568,36	1,37			1,37	391.496,90
1.696	0,366	0,108	1,193	1,667	4,60	1,08	11,93	17,61	8,707	304,89	7,08	1,08	11,93	20,09	5,66	0,94	14,04	20,64	3.873,25	3,68	0,94	14,04	18,66	391.210,66
1.697	2,941	0,581	4,371	7,893	33,07	6,89	55,64	95,60		87,07	40,15	7,97	67,57	115,69	32,12	6,93	79,49	118,54	3.960,32	26,46	5,99	54,62	87,07	391.221,50
1.698	2,284	0,639	8,193	11,116	52,25	12,20	125,64	190,09			92,40	20,17	193,21	305,78	73,92	17,54	227,31	318,77						391.421,72
1.699	6,132	1,486	15,247	22,865	84,16	21,25	234,40	339,81			176,56	41,42	427,61	645,59	141,25	36,02	503,07	680,34						391.783,29
1.700	9,382	2,158	16,454	27,994	155,14	36,44	317,01	508,59			331,70	77,86	744,62	1.154,18	265,36	67,70	876,02	1.209,08						392.312,04
1.701	14,292	3,191	20,498	37,981	236,74	53,49	369,52	659,75			568,44	131,35	1.114,14	1.813,93	454,75	114,22	1.310,75	1.879,72						392.982,67
1.702	5,934	1,545	34,920	42,399	202,26	47,36	554,18	803,80			770,70	178,71	1.668,32	2.617,73	616,56	155,40	1.962,73	2.734,69						393.837,64
1.703	2,335	0,757	40,303	43,395	82,69	23,02	752,23	857,94			853,39	201,73	2.420,55	3.475,67	682,71	175,42	2.847,71	3.705,84						394.808,79
1.704	3,841	1,111	44,409	49,361	61,76	18,68	847,12	927,56			915,15	220,41	3.267,67	4.403,23	732,12	191,66	3.844,32	4.768,10						395.871,05
1.705	4,033	1,169	49,388	54,590	78,74	22,80	937,97	1.039,51			993,89	243,21	4.205,64	5.442,74	795,11	211,49	4.947,81	5.954,41						397.057,36
1.706	4,149	1,204	52,934	58,287	81,82	23,73	1.023,22	1.128,77			1.075,71	266,94	5.228,86	6.571,51	860,57	232,12	6.151,60	7.244,29						398.347,24
1.707	2,102	0,736	53,224	56,062	62,51	19,40	1.061,58	1.143,49			1.138,22	286,34	6.290,44	7.715,00	910,58	248,99	7.400,52	8.560,09						399.663,04
1.708	2,014	0,706	48,837	51,557	41,16	14,42	1.020,61	1.076,19			1.179,38	300,76	7.311,05	8.791,19	943,50	261,53	8.601,24	9.806,27						400.909,22
1.709	4,529	1,259	42,065	47,853	65,43	19,65	909,02	994,10			1.244,81	320,41	8.220,07	9.785,29	995,85	278,62	9.670,67	10.945,14						402.048,09
1.710	2,697	0,830	37,522	41,049	72,26	20,89	795,87	889,02			1.317,07	341,30	9.015,94	10.674,31	1.053,66	296,78	10.606,99	11.957,43						403.060,38
1.711	2,554	0,783	32,049	35,386	52,51	16,13	695,71	764,35			1.369,58	357,43	9.711,65	11.438,66	1.095,66	310,81	11.425,47	12.831,94						403.934,90
1.712	4,459	1,172	23,785	29,416	70,13	19,55	558,34	648,02			1.439,71	376,98	10.269,99	12.086,68	1.151,77	327,81	12.082,34	13.561,92						404.664,87
1.713	3,834	1,020	19,202	24,056	82,93	21,92	429,87	534,72			1.522,64	398,90	10.699,86	12.621,40	1.218,11	346,87	12.588,07	14.153,05						405.256,00
1.714			15,794	15,794	38,34	10,20	349,96	398,50			1.560,98	409,10	11.049,82	13.019,90	1.248,78	355,74	12.999,79	14.604,31						405.707,26
1.715	0,842	0,331	9,381	10,554	8,42	3,31	251,75	263,48			1.569,40	412,41	11.301,57	13.283,38	1.255,52	358,62	13.295,96	14.910,10						406.013,05
1.716			9,507	9,507	8,42	3,31	188,88	200,61			1.577,82	415,72	11.490,45	13.483,99	1.262,26	361,50	13.518,18	15.141,94						406.244,88
1.717			1,864	1,864			113,71	113,71					11.604,16	11.604,16			13.651,95	13.651,95						406.378,66
1.718		0,022	2,930	2,952		0,22	47,94	48,16	5,150	51,50		0,22	11.652,10	11.652,32		0,19	13.708,35	13.708,54	51,50		0,19	51,31	51,50	406.383,75
1.719	0,237	0,008	0,053	0,298	2,37	0,30	29,83	32,50	14,529	196,79	2,37	0,52	11.681,93	11.684,82	1,90	0,45	13.743,45	13.745,80	248,29	1,90	0,26	35,09	37,25	406.224,21
1.720					2,37	0,08	0,53	2,98	30,045	445,74	4,74	0,60	11.682,46	11.687,80	3,79	0,52	13.744,07	13.748,38	694,03	1,90	0,07	0,62	2,59	405.781,06
1.721									59,530	895,75									1.589,78					404.885,31
1.722									84,809	1.443,39									3.033,17					403.441,92
1.723									100,118	1.849,27									4.882,44					401.592,65
1.724									119,952	2.200,70									7.083,14					399.391,95
1.725									142,170	2.621,22									9.704,36					396.770,73
1.726									155,307	2.974,77									12.679,13					393.795,96
1.727									154,265	3.095,72									15.774,85					390.700,24
1.728									101,804	2.560,69									18.335,54					388.139,55
1.729									75,115	1.769,19									20.104,73					386.370,36
1.730									54,874	1.299,89									21.404,62					385.070,47
1.731									43,634	985,08									22.389,70					384.085,39
1.732									36,711	803,45									23.193,15					383.281,94
1.733									32,923	696,34									23.889,49					382.585,60
1.734									31,414	643,37									24.532,86					381.942,23
1.735									31,304	627,18									25.160,04					381.315,05
1.736									35,137	664,41									25.824,45					380.650,64
1.737									43,444	785,81									26.610,26					379.864,83
1.738									50,069	935,13									27.545,39					378.929,70

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.739									128,247	1.783,16									29.328,55					377.146,54
1.740									193,102	3.213,49									32.542,04					373.933,05
1.741									244,994	4.380,96									36.923,00					369.552,09
1.742									306,003	5.509,97									42.432,97					364.042,12
1.743									364,768	6.707,71									49.140,68					357.334,41
1.744									383,137	7.479,05									56.619,73					349.855,36
1.745									352,395	7.355,32									63.975,05					342.500,04
1.746									319,229	6.716,24									70.691,29					335.783,80
1.747									318,265	6.374,94									77.066,23					329.408,86
1.748									335,170	6.534,35									83.600,58					322.874,51
1.749									352,794	6.879,64									90.480,22					315.994,87
1.750									382,155	7.349,49									97.829,71					308.645,38
1.751									432,562	8.147,17									105.976,88					300.498,21
1.752									480,598	9.131,60									115.108,48					291.366,61
1.753									492,927	9.735,25									124.843,73					281.631,36
1.754									486,088	9.790,15									134.633,88					271.841,21
1.755									474,947	9.610,35									144.244,23					262.230,86
1.756									454,086	9.290,33									153.534,56					252.940,53
1.757									448,346	9.024,32									162.558,88					243.916,21
1.758									451,508	8.998,54									171.557,42					234.917,67
1.759									442,377	8.938,85									180.496,27					225.978,82
1.760									438,057	8.804,34									189.300,61					217.174,48
1.761									426,274	8.643,31									197.943,92					208.531,17
1.762									416,807	8.430,81									206.374,73					200.100,36
1.763									455,914	8.727,21									215.101,94					191.373,15
1.764									515,056	9.709,70									224.811,64					181.663,45
1.765									536,241	10.512,97									235.324,61					171.150,48
1.766																								171.150,48
1.767																								171.150,48
1.768																								171.150,48
1.769																								171.150,48
1.770																								171.150,48
1.771																								171.150,48
1.772																								171.150,48
1.773									366,247															171.150,48
1.774									344,655	7.109,02									7.109,02					164.041,46
1.775									341,952	6.866,07									13.975,09					157.175,39
1.776									327,151	6.691,03									20.666,12					150.484,36
1.777									310,832	6.379,83									27.045,95					144.104,53
1.778									292,999	6.038,31									33.084,26					138.066,22
1.779									267,325	5.603,24									38.687,50					132.462,98
1.780									248,655	5.159,80									43.847,30					127.303,18
1.781									233,889	4.825,44									48.672,74					122.477,74
1.782									219,300	4.531,89									53.204,63					117.945,85
1.783									205,630	4.249,30									57.453,93					113.696,55
1.784									192,045	3.976,75									61.430,68					109.719,80
1.785									169,991	3.620,36									65.051,04					106.099,44

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.786									148,284	3.182,75									68.233,79					102.916,69
1.787									133,417	2.817,01									71.050,80					100.099,68
1.788									121,168	2.545,85									73.596,65					97.553,83
1.789									101,768	2.229,36									75.826,01					95.324,47
1.790									86,859	1.886,27									77.712,28					93.438,20
1.791									66,943	1.538,02									79.250,30					91.900,18
1.792									52,923	1.198,66									80.448,96					90.701,52
1.793									39,912	928,35									81.377,31					89.773,17
1.794									32,410	723,22									82.100,53					89.049,95
1.795									27,719	601,29									82.701,82					88.448,66
1.796									21,675	493,94									83.195,76					87.954,72
1.797	0,008			0,008	0,08			0,08	19,126	408,01	0,08			0,08	0,06			0,06	83.603,77	0,06			0,06	87.546,77
1.798					0,08			0,08	21,598	407,24	0,16			0,16	0,13			0,13	84.011,01	0,06			0,06	87.139,59
1.799									23,996	455,94									84.466,95					86.683,65
1.800									35,394	593,90									85.060,85					86.089,75
1.801									52,575	879,69									85.940,54					85.210,06
1.802									68,602	1.211,77									87.152,31					83.998,29
1.803									63,380	1.319,82									88.472,13					82.678,47
1.804									65,326	1.287,06									89.759,19					81.391,41
1.805									52,355	1.176,81									90.936,00					80.214,60
1.806									41,513	938,68									91.874,68					79.275,92
1.807									33,271	747,84									92.622,52					78.528,08
1.808									22,463	557,34									93.179,86					77.970,74
1.809	2,028	0,371	0,215	2,614	20,28	3,71	2,15	26,14	3,287	257,50	20,28	3,71	2,15	26,14	16,22	3,23	2,53	21,98	93.437,36	16,22	3,23	2,53	21,98	77.735,22
1.810	5,332	0,780	4,951	11,063	73,60	11,51	51,66	136,77		32,87	93,88	15,22	53,81	162,91	75,10	13,23	63,31	151,64	93.470,23	32,87			32,87	77.832,02
1.811	5,116	1,197	9,480	15,793	104,48	19,77	144,31	268,56			198,36	34,99	198,12	431,47	158,69	30,43	233,08	422,20						78.102,57
1.812	6,296	1,472	15,179	22,947	114,12	26,69	246,59	387,40			312,48	61,68	444,71	818,87	249,98	53,63	523,19	826,80						78.507,18
1.813	4,044	1,071	27,084	32,199	103,40	25,43	422,63	551,46			415,88	87,11	867,34	1.370,33	332,70	75,75	1.020,40	1.428,85						79.109,22
1.814	8,038	1,956	36,455	46,449	120,82	30,27	635,39	786,48			536,70	117,38	1.502,73	2.156,81	429,36	102,07	1.767,92	2.299,35						79.979,72
1.815	12,372	2,878	38,264	53,514	204,10	48,34	747,19	999,63			740,80	165,72	2.249,92	3.156,44	592,64	144,10	2.646,96	3.383,70						81.064,08
1.816	10,020	2,388	39,015	51,423	223,92	52,66	772,79	1.049,37			964,72	218,38	3.022,71	4.205,81	771,78	189,90	3.556,13	4.517,81						82.198,17
1.817	7,955	1,960	40,276	50,191	179,75	43,48	792,91	1.016,14			1.144,47	261,86	3.815,62	5.221,95	915,58	227,70	4.488,96	5.632,24						83.312,61
1.818	7,657	1,896	40,774	50,327	156,12	38,56	810,50	1.005,18			1.300,59	300,42	4.626,12	6.227,13	1.040,47	261,23	5.442,49	6.744,19						84.424,57
1.819	8,588	2,088	39,751	50,427	162,45	39,84	805,25	1.007,54			1.463,04	340,26	5.431,37	7.234,67	1.170,43	295,88	6.389,85	7.856,16						85.536,53
1.820	9,737	2,329	38,353	50,419	183,25	44,17	781,04	1.008,46			1.646,29	384,43	6.212,41	8.243,13	1.317,03	334,29	7.308,72	8.960,04						86.640,41
1.821	10,928	2,559	35,461	48,948	206,65	48,88	738,14	993,67			1.852,94	433,31	6.950,55	9.236,80	1.482,35	376,79	8.177,12	10.036,26						87.716,63
1.822	10,164	2,385	34,120	46,669	210,92	49,44	695,81	956,17			2.063,86	482,75	7.646,36	10.192,97	1.651,09	419,78	8.995,72	11.066,59						88.746,96
1.823	8,757	2,096	34,022	44,875	189,21	44,81	681,42	915,44			2.253,07	527,56	8.327,78	11.108,41	1.802,46	458,75	9.797,39	12.058,60						89.738,96
1.824	20,113	4,450	39,031	63,594	288,70	65,46	730,53	1.084,69			2.541,77	593,02	9.058,31	12.193,10	2.033,42	515,67	10.656,84	13.205,93						90.886,29
1.825	12,403	2,857	35,398	50,658	325,16	73,07	744,29	1.142,52			2.866,93	666,09	9.802,60	13.335,62	2.293,54	579,21	11.532,47	14.405,22						92.085,59
1.826	14,605	3,316	36,006	53,927	270,08	61,73	714,04	1.045,85			3.137,01	727,82	10.516,64	14.381,47	2.509,61	632,89	12.372,52	15.515,02						93.195,38
1.827	16,788	3,770	38,059	58,617	313,93	70,86	740,65	1.125,44			3.450,94	798,68	11.257,29	15.506,91	2.760,75	694,50	13.243,87	16.699,12						94.379,49
1.828	18,289	4,094	39,932	62,315	350,77	78,64	779,91	1.209,32			3.801,71	877,32	12.037,20	16.716,23	3.041,37	762,89	14.161,41	17.965,67						95.646,03
1.829	24,877	5,332	35,444	65,653	431,66	94,26	753,76	1.279,68			4.233,37	971,58	12.790,96	17.995,91	3.386,70	844,85	15.048,19	19.279,74						96.960,10
1.830	30,145	6,414	31,241	67,800	550,22	117,46	666,85	1.334,53			4.783,59	1.089,04	13.457,81	19.330,44	3.826,87	946,99	15.832,72	20.606,58						98.286,94
1.831	26,749	5,803	32,911	65,463	568,94	122,17	641,52	1.332,63			5.352,53	1.211,21	14.099,33	20.663,07	4.282,02	1.053,23	16.587,45	21.922,70						99.603,06
1.832	27,757	5,993	33,058	66,808	545,06	117,96	659,69	1.322,71			5.897,59	1.329,17	14.759,02	21.985,78	4.718,07	1.155,80	17.363,55	23.237,42						100.917,79

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.833	22,421	4,965	33,567	60,953	501,78	109,58	666,25	1.277,61			6.399,37	1.438,75	15.425,27	23.263,39	5.119,50	1.251,09	18.147,38	24.517,97						102.198,32
1.834	19,675	4,430	34,344	58,449	420,96	93,95	679,11	1.194,02			6.820,33	1.532,70	16.104,38	24.457,41	5.456,26	1.332,78	18.946,33	25.735,37						103.415,74
1.835	20,569	4,604	34,118	59,291	402,44	90,34	684,62	1.177,40			7.222,77	1.623,04	16.789,00	25.634,81	5.778,22	1.411,34	19.751,76	26.941,32						104.621,68
1.836	18,581	4,234	36,354	59,169	391,50	88,38	704,72	1.184,60			7.614,27	1.711,42	17.493,72	26.819,41	6.091,42	1.488,19	20.580,85	28.160,46						105.840,81
1.837	21,167	4,769	37,927	63,863	397,48	90,03	742,81	1.230,32			8.011,75	1.801,45	18.236,53	28.049,73	6.409,40	1.566,48	21.454,74	29.430,62						107.110,98
1.838	23,572	5,223	35,929	64,724	447,39	99,92	738,56	1.285,87			8.459,14	1.901,37	18.975,09	29.335,60	6.767,31	1.653,37	22.323,64	30.744,32						108.424,67
1.839	21,546	4,820	35,758	62,124	451,18	100,43	716,87	1.268,48			8.910,32	2.001,80	19.691,96	30.604,08	7.128,26	1.740,70	23.167,01	32.035,97						109.716,32
1.840	11,820	2,824	36,511	51,155	333,66	76,44	722,69	1.132,79			9.243,98	2.078,24	20.414,65	31.736,87	7.395,18	1.807,17	24.017,24	33.219,59						110.899,94
1.841	15,732	3,635	36,130	55,497	275,52	64,59	726,41	1.066,52			9.519,50	2.142,83	21.141,06	32.803,39	7.615,60	1.863,33	24.871,84	34.350,77						112.031,12
1.842	20,586	4,578	31,918	57,082	363,18	82,13	680,48	1.125,79			9.882,68	2.224,96	21.821,54	33.929,18	7.906,14	1.934,75	25.672,40	35.513,29						113.193,65
1.843	24,977	5,408	30,358	60,743	455,63	99,86	622,76	1.178,25			10.338,31	2.324,82	22.444,30	35.107,43	8.270,65	2.021,58	26.405,06	36.697,29						114.377,65
1.844	26,432	5,629	27,099	59,160	514,09	110,37	574,57	1.199,03			10.852,40	2.435,19	23.018,87	36.306,46	8.681,92	2.117,56	27.081,02	37.880,50						115.560,86
1.845	29,825	6,191	24,044	60,060	562,57	118,20	511,43	1.192,20			11.414,97	2.553,39	23.530,30	37.498,66	9.131,98	2.220,34	27.682,71	39.035,03						116.715,38
1.846	26,486	5,558	23,201	55,245	563,11	117,49	472,45	1.153,05			11.978,08	2.670,88	24.002,75	38.651,71	9.582,46	2.322,50	28.238,53	40.143,49						117.823,86
1.847	22,685	4,828	22,229	49,742	491,71	103,86	454,30	1.049,87			12.469,79	2.774,74	24.457,05	39.701,58	9.975,83	2.412,82	28.773,00	41.161,65						118.842,01
1.848	19,146	4,123	20,181	43,450	418,31	89,51	424,10	931,92			12.888,10	2.864,25	24.881,15	40.633,50	10.310,48	2.490,65	29.271,94	42.073,07						119.753,43
1.849	12,797	2,849	16,686	32,332	319,43	69,72	368,67	757,82			13.207,53	2.933,97	25.249,82	41.391,32	10.566,02	2.551,28	29.705,67	42.822,97						120.503,33
1.850	8,039	1,825	8,670	18,534	208,36	46,74	253,56	508,66			13.415,89	2.980,71	25.503,38	41.899,98	10.732,71	2.591,92	30.003,98	43.328,61						121.008,97
1.851	9,226	1,968	1,324	12,518	172,65	37,93	99,94	310,52			13.588,54	3.018,64	25.603,32	42.210,50	10.870,83	2.624,90	30.121,55	43.617,28						121.297,65
1.852	5,286	0,245	0,380	5,911	145,12	22,13	17,04	184,29			13.733,66	3.040,77	25.620,36	42.394,79	10.986,93	2.644,15	30.141,60	43.772,68						121.453,04
1.853	0,217			0,217	55,03	2,45	3,80	61,28	6,505	65,05	13.788,69	3.043,22	25.624,16	42.456,07	11.030,95	2.646,28	30.146,07	43.823,30	65,05	44,02	2,13	4,47	50,62	121.438,62
1.854					2,17			2,17	16,054	225,59	13.790,86			13.790,86	11.032,69			11.032,69	290,64	1,74			1,74	121.214,77
1.855									26,571	426,25									716,89					120.788,52
1.856									36,279	628,50									1.345,39					120.160,02
1.857									38,685	749,64									2.095,03					119.410,38
1.858									58,136	968,21									3.063,24					118.442,17
1.859									83,450	1.415,86									4.479,10					117.026,31
1.860									127,515	2.109,65									6.588,75					114.916,66
1.861									180,824	3.083,39									9.672,14					111.833,27
1.862									277,630	4.584,54									14.256,68					107.248,73
1.863									353,911	6.315,41									20.572,09					100.933,32
1.864									361,233	7.151,44									27.723,53					93.781,88
1.865									227,828	5.890,61									33.614,14					87.891,27
1.866									145,717	3.735,45									37.349,59					84.155,82
1.867									89,918	2.356,35									39.705,94					81.799,47
1.868									33,071	1.229,89									40.935,83					80.569,58
1.869	0,212			0,212	2,12			2,12	15,489	485,60	2,12			2,12	1,70			1,70	41.421,43	1,70			1,70	80.085,68
1.870	2,740	0,463	0,175	3,378	29,52	4,63	1,75	35,90	2,079	175,68	31,64	4,63	1,75	38,02	25,31	4,03	2,06	31,40	41.597,11	23,62	4,03	2,06	29,71	79.939,70
1.871	14,672	1,523	2,024	18,219	174,12	19,86	21,99	215,97		20,79	205,76	24,49	23,74	253,99	164,61	21,30	27,93	213,84	41.617,90	20,79			20,79	80.101,35
1.872	13,528	2,697	0,512	16,737	282,00	42,20	25,36	349,56			487,76	66,69	49,10	603,55	390,21	57,99	57,76	505,96						80.393,48
1.873	9,343	2,117	12,013	23,473	228,71	48,14	125,25	402,10			716,47	114,83	174,35	1.005,65	573,18	99,85	205,12	878,15						80.765,66
1.874	15,991	3,487	18,061	37,539	253,34	56,04	300,74	610,12			969,81	170,87	475,09	1.615,77	775,85	148,58	558,93	1.483,36						81.370,87
1.875	18,854	4,093	21,636	44,583	348,45	75,80	396,97	821,22			1.318,26	246,67	872,06	2.436,99	1.054,61	214,50	1.025,95	2.295,06						82.182,57
1.876	26,262	5,488	21,777	53,527	451,16	95,81	434,13	981,10			1.769,42	342,48	1.306,19	3.418,09	1.415,54	297,81	1.536,69	3.250,04						83.137,55
1.877	30,893	6,332	22,161	59,386	571,55	118,20	439,38	1.129,13			2.340,97	460,68	1.745,57	4.547,22	1.872,78	400,59	2.053,61	4.326,98						84.214,49
1.878	32,826	6,742	24,441	64,009	637,19	130,74	466,02	1.233,95			2.978,16	591,42	2.211,59	5.781,17	2.382,53	514,28	2.601,87	5.498,68						85.386,19
1.879	30,801	6,407	25,716	62,924	636,27	131,49	501,57	1.269,33			3.614,43	722,91	2.713,16	7.050,50	2.891,54	628,62	3.191,95	6.712,11						86.599,63

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.880	24,628	5,276	26,433	56,337	554,29	116,83	521,49	1.192,61			4.168,72	839,74	3.234,65	8.243,11	3.334,98	730,21	3.805,47	7.870,66						87.758,17
1.881	19,870	4,346	25,199	49,415	444,98	96,22	516,32	1.057,52			4.613,70	935,96	3.750,97	9.300,63	3.690,96	813,88	4.412,91	8.917,75						88.805,26
1.882	21,744	4,579	18,180	44,503	416,14	89,25	433,79	939,18			5.029,84	1.025,21	4.184,76	10.239,81	4.023,87	891,49	4.923,25	9.838,61						89.726,12
1.883	11,215	2,498	13,398	27,111	329,59	70,77	315,78	716,14			5.359,43	1.095,98	4.500,54	10.955,95	4.287,54	953,03	5.294,75	10.535,32						90.422,84
1.884	6,843	1,553	4,908	13,304	180,58	40,51	183,06	404,15			5.540,01	1.136,49	4.683,60	11.360,10	4.432,01	988,25	5.510,12	10.930,38						90.817,89
1.885	2,745	0,245	0,836	3,826	95,88	17,98	57,44	171,30			5.635,89	1.154,47	4.741,04	11.531,40	4.508,71	1.003,89	5.577,69	11.090,29						90.977,81
1.886		0,059	0,319	0,378	27,45	3,04	11,55	42,04	3,177	31,77	5.663,34	1.157,51	4.752,59	11.573,44	4.530,67	1.006,53	5.591,28	11.128,48	31,77	21,96	2,64	7,17	31,77	90.984,23
1.887						0,59	3,19	3,78	11,760	149,37		1.158,10	4.755,78	5.913,88		1.007,04	5.595,04	6.602,08	181,14		0,51	3,75	4,26	90.839,13
1.888									31,831	435,91									617,05					90.403,22
1.889									58,468	902,99									1.520,04					89.500,23
1.890									74,354	1.328,22									2.848,26					88.172,01
1.891									105,472	1.798,26									4.646,52					86.373,75
1.892									55,124	1.605,96									6.252,48					84.767,79
1.893									22,313	774,37									7.026,85					83.993,42
1.894	1,839			1,839	18,39			18,39	7,570	298,83	18,39			18,39	14,71			14,71	7.325,68	14,71			14,71	83.709,30
1.895	4,978	0,821	1,675	7,474	68,17	8,21	16,75	93,13		75,70	86,56	8,21	16,75	111,52	69,25	7,14	19,71	96,10	7.401,38	54,54	7,14	14,02	75,70	83.714,98
1.896	4,682	1,100	2,070	7,852	96,60	19,21	37,45	153,26			183,16	27,42	54,20	264,78	146,53	23,84	63,76	234,13						83.853,02
1.897	1,334	0,438	8,977	10,749	60,16	15,38	110,47	186,01			243,32	42,80	164,67	450,79	194,66	37,22	193,73	425,61						84.044,49
1.898	0,878	0,349	12,299	13,526	22,12	7,87	212,76	242,75			265,44	50,67	377,43	693,54	212,35	44,06	444,04	700,45						84.319,34
1.899	2,673	0,747	14,809	18,229	35,51	10,96	271,08	317,55			300,95	61,63	648,51	1.011,09	240,76	53,59	762,95	1.057,30						84.676,20
1.900	5,582	1,381	17,171	24,134	82,55	21,28	319,80	423,63			383,50	82,91	968,31	1.434,72	306,80	72,10	1.139,19	1.518,09						85.136,98
1.901	4,805	1,235	20,952	26,992	103,87	26,16	381,23	511,26			487,37	109,07	1.349,54	1.945,98	389,90	94,84	1.587,69	2.072,43						85.691,33
1.902	7,756	1,874	22,743	32,373	125,61	31,09	436,95	593,65			612,98	140,16	1.786,49	2.539,63	490,38	121,88	2.101,75	2.714,01						86.332,91
1.903	8,750	2,111	27,138	37,999	165,06	39,85	498,81	703,72			778,04	180,01	2.285,30	3.243,35	622,43	156,53	2.688,59	3.467,55						87.086,45
1.904	11,665	2,735	28,494	42,894	204,15	48,46	556,32	808,93			982,19	228,47	2.841,62	4.052,28	785,75	198,67	3.343,08	4.327,50						87.946,40
1.905	14,854	3,392	28,914	47,160	265,19	61,27	574,08	900,54			1.247,38	289,74	3.415,70	4.952,82	997,90	251,95	4.018,47	5.268,32						88.887,22
1.906	11,622	2,755	33,013	47,390	264,76	61,47	619,27	945,50			1.512,14	351,21	4.034,97	5.898,32	1.209,71	305,40	4.747,02	6.262,13						89.881,03
1.907	12,291	2,913	34,788	49,992	239,13	56,68	678,01	973,82			1.751,27	407,89	4.712,98	6.872,14	1.401,02	354,69	5.544,68	7.300,39						90.919,28
1.908	12,358	2,948	38,535	53,841	246,49	58,61	733,23	1.038,33			1.997,76	466,50	5.446,21	7.910,47	1.598,21	405,65	6.407,31	8.411,17						92.030,06
1.909	11,292	2,753	43,711	57,756	236,50	57,01	822,46	1.115,97			2.234,26	523,51	6.268,67	9.026,44	1.787,41	455,23	7.374,91	9.617,55						93.236,43
1.910	11,768	2,876	46,487	61,131	230,60	56,29	901,98	1.188,87			2.464,86	579,80	7.170,65	10.215,31	1.971,89	504,17	8.436,06	10.912,12						94.531,01
1.911	12,901	3,129	48,057	64,087	246,69	60,05	945,44	1.252,18			2.711,55	639,85	8.116,09	11.467,49	2.169,24	556,39	9.548,34	12.273,97						95.892,86
1.912	11,764	2,887	49,109	63,760	246,65	60,16	971,66	1.278,47			2.958,20	700,01	9.087,75	12.745,96	2.366,56	608,70	10.691,47	13.666,73						97.285,62
1.913	12,337	2,994	46,082	61,413	241,01	58,81	951,91	1.251,73			3.199,21	758,82	10.039,66	13.997,69	2.559,37	659,84	11.811,36	15.030,57						98.649,46
1.914	16,743	3,907	42,632	63,282	290,80	69,01	887,14	1.246,95			3.490,01	827,83	10.926,80	15.244,64	2.792,01	719,85	12.855,06	16.366,92						99.985,80
1.915	16,858	3,903	38,915	59,676	336,01	78,10	815,47	1.229,58			3.826,02	905,93	11.742,27	16.474,22	3.060,82	787,77	13.814,44	17.663,03						101.281,90
1.916	14,347	3,329	34,135	51,811	312,05	72,32	730,50	1.114,87			4.138,07	978,25	12.472,77	17.589,09	3.310,46	850,65	14.673,85	18.834,96						102.453,84
1.917	10,392	2,469	28,631	41,492	247,39	57,98	627,66	933,03			4.385,46	1.036,23	13.100,43	18.522,12	3.508,37	901,07	15.412,27	19.821,71						103.440,59
1.918	5,515	1,412	26,018	32,945	159,07	38,81	546,49	744,37			4.544,53	1.075,04	13.646,92	19.266,49	3.635,62	934,82	16.055,20	20.625,64						104.244,52
1.919	7,403	1,800	22,693	31,896	129,18	32,12	487,11	648,41			4.673,71	1.107,16	14.134,03	19.914,90	3.738,97	962,75	16.628,27	21.329,99						104.948,87
1.920	11,614	2,620	17,291	31,525	190,17	44,20	399,84	634,21			4.863,88	1.151,36	14.533,87	20.549,11	3.891,10	1.001,18	17.098,67	21.990,95						105.609,84
1.921	4,907	1,207	10,742	16,856	165,21	38,27	280,33	483,81			5.029,09	1.189,63	14.814,20	21.032,92	4.023,27	1.034,46	17.428,47	22.486,20						106.105,09
1.922	3,041	0,624	3,156	6,821	79,48	18,31	138,98	236,77			5.108,57	1.207,94	14.953,18	21.269,69	4.086,86	1.050,38	17.591,98	22.729,22						106.348,10
1.923	0,046			0,046	30,87	6,24	31,56	68,67	22,026	220,26	5.139,44	1.214,18	14.984,74	21.338,36	4.111,55	1.055,81	17.629,11	22.796,47	220,26	24,70	5,43	37,13	67,26	106.195,09
1.924	4,164	0,052		4,216	42,10	0,52		42,62		220,26	5.181,54	1.214,70		6.396,24	4.145,23	1.056,26		5.201,49	440,52	33,68	0,45		34,13	106.008,96
1.925	6,429	0,936	2,069	9,434	105,93	9,88	20,69	136,50			5.287,47	1.224,58	20,69	6.532,74	4.229,98	1.064,85	24,34	5.319,17						106.126,64
1.926	2,582	0,661	5,594	8,837	90,11	15,97	76,63	182,71			5.377,58	1.240,55	97,32	6.715,45	4.302,06	1.078,74	114,49	5.495,29						106.302,77

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.927	4,591	0,786	3,311	8,688	71,73	14,47	89,05	175,25			5.449,31	1.255,02	186,37	6.890,70	4.359,45	1.091,32	219,26	5.670,03						106.477,50
1.928	2,792	0,752	6,548	10,092	73,83	15,38	98,59	187,80			5.523,14	1.270,40	284,96	7.078,50	4.418,51	1.104,70	335,25	5.858,46						106.665,93
1.929	0,846	0,384	14,043	15,273	36,38	11,36	205,91	253,65			5.559,52	1.281,76	490,87	7.332,15	4.447,62	1.114,57	577,49	6.139,68						106.947,16
1.930	6,953	1,752	24,204	32,909	77,99	21,36	382,47	481,82			5.637,51	1.303,12	873,34	7.813,97	4.510,01	1.133,15	1.027,46	6.670,62						107.478,09
1.931	14,970	3,465	28,023	46,458	219,23	52,17	522,27	793,67			5.856,74	1.355,29	1.395,61	8.607,64	4.685,39	1.178,51	1.641,89	7.505,79						108.313,27
1.932	13,090	3,132	38,494	54,716	280,60	65,97	665,17	1.011,74			6.137,34	1.421,26	2.060,78	9.619,38	4.909,87	1.235,88	2.424,45	8.570,20						109.377,67
1.933	16,016	3,823	46,195	66,034	291,06	69,55	846,89	1.207,50			6.428,40	1.490,81	2.907,67	10.826,88	5.142,72	1.296,36	3.420,79	9.859,87						110.667,34
1.934	15,692	3,809	56,494	75,995	317,08	76,32	1.026,89	1.420,29			6.745,48	1.567,13	3.934,56	12.247,17	5.396,38	1.362,72	4.628,89	11.387,99						112.195,48
1.935	11,670	2,945	64,273	78,888	273,62	67,54	1.207,67	1.548,83			7.019,10	1.634,67	5.142,23	13.796,00	5.615,28	1.421,45	6.049,68	13.086,41						113.893,89
1.936	21,091	5,036	70,483	96,610	327,61	79,81	1.347,56	1.754,98			7.346,71	1.714,48	6.489,79	15.550,98	5.877,37	1.490,85	7.635,05	15.003,27						115.810,74
1.937	16,415	4,078	80,047	100,540	375,06	91,14	1.505,30	1.971,50			7.721,77	1.805,62	7.995,09	17.522,48	6.177,42	1.570,10	9.405,99	17.153,51						117.960,98
1.938	17,439	4,246	85,967	107,652	338,54	83,24	1.660,14	2.081,92			8.060,31	1.888,86	9.655,23	19.604,40	6.448,25	1.642,49	11.359,09	19.449,83						120.257,30
1.939	21,134	5,165	90,943	117,242	385,73	94,11	1.769,10	2.248,94			8.446,04	1.982,97	11.424,33	21.853,34	6.756,83	1.724,32	13.440,39	21.921,54						122.729,01
1.940	36,732	8,344	95,737	140,813	578,66	135,09	1.866,80	2.580,55			9.024,70	2.118,06	13.291,13	24.433,89	7.219,76	1.841,79	15.636,62	24.698,17						125.505,64
1.941	28,859	6,768	103,744	139,371	655,91	151,12	1.994,81	2.801,84			9.680,61	2.269,18	15.285,94	27.235,73	7.744,49	1.973,20	17.983,46	27.701,15						128.508,61
1.942	46,008	10,447	106,661	163,116	748,67	172,15	2.104,05	3.024,87			10.429,28	2.441,33	17.389,99	30.260,60	8.343,42	2.122,90	20.458,81	30.925,13						131.732,59
1.943	14,169	3,693	119,658	137,520	601,77	141,40	2.263,19	3.006,36			11.031,05	2.582,73	19.653,18	33.266,96	8.824,84	2.245,85	23.121,39	34.192,08						134.999,54
1.944	14,394	3,758	119,879	138,031	285,63	74,51	2.395,37	2.755,51			11.316,68	2.657,24	22.048,55	36.022,47	9.053,34	2.310,64	25.939,47	37.303,45						138.110,92
1.945	17,652	4,435	119,999	142,086	320,46	81,93	2.398,78	2.801,17			11.637,14	2.739,17	24.447,33	38.823,64	9.309,71	2.381,89	28.761,56	40.453,16						141.260,63
1.946	14,209	3,599	122,478	140,286	318,61	80,34	2.424,77	2.823,72			11.955,75	2.819,51	26.872,10	41.647,36	9.564,60	2.451,75	31.614,24	43.630,59						144.438,05
1.947	15,881	3,961	120,925	140,767	300,90	75,60	2.434,03	2.810,53			12.256,65	2.895,11	29.306,13	44.457,89	9.805,32	2.517,49	34.477,80	46.800,61						147.608,07
1.948	11,635	3,096	118,521	133,252	275,16	70,57	2.394,46	2.740,19			12.531,81	2.965,68	31.700,59	47.198,08	10.025,45	2.578,85	37.294,81	49.899,11						150.706,57
1.949	13,849	3,597	116,507	133,953	254,84	66,93	2.350,28	2.672,05			12.786,65	3.032,61	34.050,87	49.870,13	10.229,32	2.637,05	40.059,85	52.926,22						153.733,68
1.950	25,930	6,300	110,409	142,639	397,79	98,97	2.269,16	2.765,92			13.184,44	3.131,58	36.320,03	52.636,05	10.547,55	2.723,11	42.729,45	56.000,11						156.807,57
1.951	20,885	4,911	97,774	123,570	468,15	112,11	2.081,83	2.662,09			13.652,59	3.243,69	38.401,86	55.298,14	10.922,07	2.820,60	45.178,66	58.921,33						159.728,79
1.952	21,555	5,053	95,104	121,712	424,40	99,64	1.928,78	2.452,82			14.076,99	3.343,33	40.330,64	57.750,96	11.261,59	2.907,24	47.447,81	61.616,64						162.424,11
1.953	22,468	5,288	93,707	121,463	440,23	103,41	1.888,11	2.431,75			14.517,22	3.446,74	42.218,75	60.182,71	11.613,78	2.997,17	49.669,12	64.280,07						165.087,52
1.954	24,090	5,601	88,937	118,628	465,58	108,89	1.826,44	2.400,91			14.982,80	3.555,63	44.045,19	62.583,62	11.986,24	3.091,85	51.817,87	66.895,96						167.703,42
1.955	22,233	5,185	85,304	112,722	463,23	107,86	1.742,41	2.313,50			15.446,03	3.663,49	45.787,60	64.897,12	12.356,82	3.185,64	53.867,76	69.410,22						170.217,69
1.956	16,960	3,990	82,495	103,445	391,93	91,75	1.677,99	2.161,67			15.837,96	3.755,24	47.465,59	67.058,79	12.670,37	3.265,43	55.841,87	71.777,67						172.585,12
1.957	17,707	4,180	76,869	98,756	346,67	81,70	1.593,64	2.022,01			16.184,63	3.836,94	49.059,23	69.080,80	12.947,70	3.336,47	57.716,74	74.000,91						174.808,37
1.958	18,213	3,651	77,522	99,386	359,20	78,31	1.543,91	1.981,42			16.543,83	3.915,25	50.603,14	71.062,22	13.235,06	3.404,57	59.533,11	76.172,74						176.980,19
1.959	15,010	3,614	74,338	92,962	332,23	72,65	1.518,60	1.923,48			16.876,06	3.987,90	52.121,74	72.985,70	13.500,85	3.467,74	61.319,69	78.288,28						179.095,74
1.960	23,886	5,376	63,783	93,045	388,96	89,90	1.381,21	1.860,07			17.265,02	4.077,80	53.502,95	74.845,77	13.812,02	3.545,91	62.944,65	80.302,58						181.110,03
1.961	23,314	5,197	62,337	90,848	472,00	105,73	1.261,20	1.838,93			17.737,02	4.183,53	54.764,15	76.684,70	14.189,62	3.637,85	64.428,41	82.255,88						183.063,33
1.962	24,637	5,487	59,891	90,015	479,51	106,84	1.222,28	1.808,63			18.216,53	4.290,37	55.986,43	78.493,33	14.573,22	3.730,76	65.866,39	84.170,37						184.977,82
1.963	26,436	5,844	59,411	91,691	510,73	113,31	1.193,02	1.817,06			18.727,26	4.403,68	57.179,45	80.310,39	14.981,81	3.829,29	67.269,94	86.081,04						186.888,49
1.964	25,744	5,699	58,680	90,123	521,80	115,43	1.180,91	1.818,14			19.249,06	4.519,11	58.360,36	82.128,53	15.399,25	3.929,66	68.659,25	87.988,16						188.795,61
1.965	24,994	5,539	57,701	88,234	507,38	112,38	1.163,81	1.783,57			19.756,44	4.631,49	59.524,17	83.912,10	15.805,15	4.027,38	70.028,44	89.860,97						190.668,42
1.966	24,443	5,390	54,409	84,242	494,37	109,29	1.121,10	1.724,76			20.250,81	4.740,78	60.645,27	85.636,86	16.200,65	4.122,42	71.347,38	91.670,45						192.477,89
1.967	22,757	5,033	52,002	79,792	472,00	104,23	1.064,11	1.640,34			20.722,81	4.845,01	61.709,38	87.277,20	16.578,25	4.213,05	72.599,27	93.390,57						194.198,02
1.968	25,973	5,639	49,159	80,771	487,30	106,72	1.011,61	1.605,63			21.210,11	4.951,73	62.720,99	88.882,83	16.968,09	4.305,85	73.789,40	95.063,34						195.870,79
1.969	24,287	5,298	48,082	77,667	502,60	109,37	972,41	1.584,38			21.712,71	5.061,10	63.693,40	90.467,21	17.370,17	4.400,96	74.933,41	96.704,54						197.511,99
1.970	22,436	4,905	45,749	73,090	467,23	102,03	938,31	1.507,57			22.179,94	5.163,13	64.631,71	91.974,78	17.743,95	4.489,68	76.037,31	98.270,94						199.078,39
1.971	17,749	3,956	44,301	66,006	401,85	88,61	900,50	1.390,96			22.581,79	5.251,74	65.532,21	93.365,74	18.065,43	4.566,73	77.096,72	99.728,88						200.536,33
1.972	14,963	3,392	43,797	62,152	327,12	73,48	880,98	1.281,58			22.908,91	5.325,22	66.413,19	94.647,32	18.327,13	4.630,63	78.133,16	101.090,92						201.898,37
1.973	20,430	4,457	40,466	65,353	353,93	78,49	842,63	1.275,05			23.262,84	5.403,71	67.255,82	95.922,37	18.610,27	4.698,88	79.124,49	102.433,64						203.241,10

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
1.974	22,232	4,783	32,611	59,626	426,62	92,40	730,77	1.249,79			23.689,46	5.496,11	67.986,59	97.172,16	18.951,57	4.779,23	79.984,22	103.715,02						204.522,47
1.975	25,642	5,360	28,684	59,686	478,74	101,43	612,95	1.193,12			24.168,20	5.597,54	68.599,54	98.365,28	19.334,56	4.867,43	80.705,34	104.907,33						205.714,78
1.976	20,457	4,370	27,802	52,629	460,99	97,30	564,86	1.123,15			24.629,19	5.694,84	69.164,40	99.488,43	19.703,35	4.952,03	81.369,88	106.025,26						206.832,72
1.977	17,763	3,784	25,110	46,657	382,20	81,54	529,12	992,86			25.011,39	5.776,38	69.693,52	100.481,29	20.009,11	5.022,94	81.992,38	107.024,43						207.831,88
1.978	21,786	4,622	27,859	54,267	395,49	84,06	529,69	1.009,24			25.406,88	5.860,44	70.223,21	101.490,53	20.325,50	5.096,03	82.615,54	108.037,07						208.844,53
1.979	13,505	3,066	33,019	49,590	352,91	76,88	608,78	1.038,57			25.759,79	5.937,32	70.831,99	102.529,10	20.607,83	5.162,89	83.331,75	109.102,47						209.909,92
1.980	11,536	2,659	32,797	46,992	250,41	57,25	658,16	965,82			26.010,20	5.994,57	71.490,15	103.494,92	20.808,16	5.212,67	84.106,06	110.126,89						210.934,34
1.981	13,176	2,994	32,822	48,992	247,12	56,53	656,19	959,84			26.257,32	6.051,10	72.146,34	104.454,76	21.005,86	5.261,83	84.878,05	111.145,74						211.953,18
1.982	12,942	2,951	32,936	48,829	261,18	59,45	657,58	978,21			26.518,50	6.110,55	72.803,92	105.432,97	21.214,80	5.313,52	85.651,67	112.179,99						212.987,44
1.983	16,083	3,571	32,296	51,950	290,25	65,22	652,32	1.007,79			26.808,75	6.175,77	73.456,24	106.440,76	21.447,00	5.370,23	86.419,11	113.236,34						214.043,79
1.984	14,151	3,176	30,918	48,245	302,34	67,47	632,14	1.001,95			27.111,09	6.243,24	74.088,38	107.442,71	21.688,87	5.428,90	87.162,80	114.280,57						215.088,03
1.985	14,586	3,253	29,866	47,705	287,37	64,29	607,84	959,50			27.398,46	6.307,53	74.696,22	108.402,21	21.918,77	5.484,81	87.877,91	115.281,49						216.088,94
1.986	13,815	3,105	30,593	47,513	284,01	63,58	604,59	952,18			27.682,47	6.371,11	75.300,81	109.354,39	22.145,98	5.540,10	88.589,19	116.275,27						217.082,72
1.987	18,658	4,054	30,009	52,721	324,73	71,59	606,02	1.002,34			28.007,20	6.442,70	75.906,83	110.356,73	22.405,76	5.602,35	89.302,15	117.310,26						218.117,72
1.988	8,436	2,025	27,319	37,780	270,94	60,79	573,28	905,01			28.278,14	6.503,49	76.480,11	111.261,74	22.622,51	5.655,21	89.976,60	118.254,32						219.061,78
1.989	25,884	5,350	24,750	55,984	343,20	73,75	520,69	937,64			28.621,34	6.577,24	77.000,80	112.199,38	22.897,07	5.719,34	90.589,18	119.205,59						220.013,05
1.990	27,248	5,650	24,116	57,014	531,32	110,00	488,66	1.129,98			29.152,66	6.687,24	77.489,46	113.329,36	23.322,13	5.814,99	91.164,07	120.301,19						221.108,65
1.991	28,227	5,876	26,810	60,913	554,75	115,26	509,26	1.179,27			29.707,41	6.802,50	77.998,72	114.508,63	23.765,93	5.915,22	91.763,20	121.444,35						222.251,81
1.992	30,235	6,310	29,467	66,012	584,62	121,86	562,77	1.269,25			30.292,03	6.924,36	78.561,49	115.777,88	24.233,62	6.021,18	92.425,28	122.680,08						223.487,55
1.993	32,032	6,656	30,342	69,030	622,67	129,66	598,09	1.350,42			30.914,70	7.054,02	79.159,58	117.128,30	24.731,76	6.133,93	93.128,92	123.994,61						224.802,07
1.994	29,091	6,157	32,720	67,968	611,23	128,13	630,62	1.369,98			31.525,93	7.182,15	79.790,20	118.498,28	25.220,74	6.245,35	93.870,82	125.336,91						226.144,38
1.995	29,074	6,238	32,262	67,574	581,65	123,95	649,82	1.355,42			32.107,58	7.306,10	80.440,02	119.853,70	25.686,06	6.353,13	94.635,32	126.674,51						227.481,98
1.996	28,756	6,141	30,861	65,758	578,30	123,79	631,23	1.333,32			32.685,88	7.429,89	81.071,25	121.187,02	26.148,70	6.460,77	95.377,94	127.987,41						228.794,89
1.997	27,929	5,962	29,645	63,536	566,85	121,03	605,06	1.292,94			33.252,73	7.550,92	81.676,31	122.479,96	26.602,18	6.566,02	96.089,78	129.257,98						230.065,45
1.998	25,864	5,562	29,085	60,511	537,93	115,24	587,30	1.240,47			33.790,66	7.666,16	82.263,61	123.720,43	27.032,53	6.666,23	96.780,72	130.479,48						231.286,94
1.999	29,763	6,240	26,608	62,611	556,27	118,02	556,93	1.231,22			34.346,93	7.784,18	82.820,54	124.951,65	27.477,54	6.768,85	97.435,93	131.682,32						232.489,79
2.000	23,999	5,203	29,159	58,361	537,62	114,43	557,67	1.209,72			34.884,55	7.898,61	83.378,21	126.161,37	27.907,64	6.868,36	98.092,01	132.868,01						233.675,47
2.001	21,452	4,713	29,159	55,324	454,51	99,16	583,18	1.136,85			35.339,06	7.997,77	83.961,39	127.298,22	28.271,25	6.954,58	98.778,11	134.003,94						234.811,40
2.002	23,641	5,085	26,190	54,916	450,93	97,98	553,49	1.102,40			35.789,99	8.095,75	84.514,88	128.400,62	28.631,99	7.039,78	99.429,27	135.101,04						235.908,51
2.003	23,308	4,964	23,111	51,383	469,49	100,49	493,01	1.062,99			36.259,48	8.196,24	85.007,89	129.463,61	29.007,58	7.127,17	100.009,28	136.144,03						236.951,50
2.004	23,598	4,999	22,056	50,653	469,06	99,63	451,67	1.020,36			36.728,54	8.295,87	85.459,56	130.483,97	29.382,83	7.213,80	100.540,66	137.137,29						237.944,76
2.005	21,204	4,537	21,529	47,270	448,02	95,36	435,85	979,23			37.176,56	8.391,23	85.895,41	131.463,20	29.741,25	7.296,72	101.053,42	138.091,39						238.898,86
2.006	17,273	3,810	23,096	44,179	384,77	83,47	446,25	914,49			37.561,33	8.474,70	86.341,66	132.377,69	30.049,06	7.369,30	101.578,42	138.996,78						239.804,26
2.007	17,229	3,772	21,155	42,156	345,02	75,82	442,51	863,35			37.906,35	8.550,52	86.784,17	133.241,04	30.325,08	7.435,23	102.099,02	139.859,33						240.666,81
2.008	20,389	4,324	18,432	43,145	376,18	80,96	395,87	853,01			38.282,53	8.631,48	87.180,04	134.094,05	30.626,02	7.505,63	102.564,75	140.696,40						241.503,88
2.009	17,772	3,816	17,238	38,826	381,61	81,40	356,70	819,71			38.664,14	8.712,88	87.536,74	134.913,76	30.931,31	7.576,42	102.984,40	141.492,13						242.299,60
2.010	17,752	3,802	16,705	38,259	355,24	76,18	339,43	770,85			39.019,38	8.789,06	87.876,17	135.684,61	31.215,50	7.642,66	103.383,73	142.241,89						243.049,36
2.011	16,806	3,631	16,944	37,381	345,58	74,33	336,49	756,40			39.364,96	8.863,39	88.212,66	136.441,01	31.491,97	7.707,30	103.779,60	142.978,87						243.786,33
2.012	16,452	3,550	16,313	36,315	332,58	71,81	332,57	736,96			39.697,54	8.935,20	88.545,23	137.177,97	31.758,03	7.769,74	104.170,86	143.698,63						244.506,10
2.013	15,259	3,296	14,626	33,181	317,11	68,46	309,39	694,96			40.014,65	9.003,66	88.854,62	137.872,93	32.011,72	7.829,27	104.534,85	144.375,84						245.183,31
2.014	13,297	2,929	15,534	31,760	285,56	62,25	301,60	649,41			40.300,21	9.065,91	89.156,22	138.522,34	32.240,17	7.883,40	104.889,67	145.013,24						245.820,71
2.015	13,577	2,980	14,975	31,532	268,74	59,09	305,09	632,92			40.568,95	9.125,00	89.461,31	139.155,26	32.455,16	7.934,78	105.248,60	145.638,54						246.446,01
2.016	15,365	3,304	13,668	32,337	289,42	62,84	286,43	638,69			40.858,37	9.187,84	89.747,74	139.793,95	32.686,70	7.989,43	105.585,58	146.261,71						247.069,17
2.017	17,446	3,659	11,776	32,881	328,11	69,63	254,44	652,18			41.186,48	9.257,47	90.002,18	140.446,13	32.949,18	8.049,97	105.884,92	146.884,07						247.691,55
2.018	16,516	3,452	9,985	29,953	339,62	71,11	217,61	628,34			41.526,10	9.328,58	90.219,79	141.074,47	33.220,88	8.111,81	106.140,93	147.473,62						248.281,09
2.019	21,671	4,304	7,434	33,409	381,87	77,56	174,19	633,62			41.907,97	9.406,14	90.393,98	141.708,09	33.526,38	8.179,25	106.345,86	148.051,49						248.858,96
2.020	25,660	4,886	4,800	35,346	473,31	91,90	122,34	687,55			42.381,28	9.498,04	90.516,32	142.395,64	33.905,02	8.259,17	106.489,79	148.653,98						249.461,45

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.021	26,577	4,942	2,537	34,056	522,37	98,28	73,37	694,02			42.903,65	9.596,32	90.589,69	143.089,66	34.322,92	8.344,63	106.576,11	149.243,66						250.051,12
2.022	24,330	4,583	2,484	31,397	509,07	95,25	50,21	654,53			43.412,72	9.691,57	90.639,90	143.744,19	34.730,18	8.427,45	106.635,18	149.792,81						250.600,27
2.023	23,464	4,420	1,898	29,782	477,94	90,03	43,82	611,79			43.890,66	9.781,60	90.683,72	144.355,98	35.112,53	8.505,74	106.686,73	150.305,00						251.112,46
2.024	25,456	4,348	0,126	29,930	489,20	87,68	20,24	597,12			44.379,86	9.869,28	90.703,96	144.953,10	35.503,89	8.581,98	106.710,54	150.796,41						251.603,88
2.025	24,207	3,527		27,734	496,63	78,75	1,26	576,64			44.876,49	9.948,03	90.705,22	145.529,74	35.901,19	8.650,46	106.712,02	151.263,67						252.071,14
2.026	23,759	3,490		27,249	479,66	70,17		549,83			45.356,15	10.018,20		55.374,35	36.284,92	8.711,48		44.996,40						252.515,89
2.027	23,775	3,604		27,379	475,34	70,94		546,28			45.831,49	10.089,14		55.920,63	36.665,19	8.773,17		45.438,36						252.957,85
2.028	19,221	1,759		20,980	429,96	53,63		483,59			46.261,45	10.142,77		56.404,22	37.009,16	8.819,80		45.828,96						253.348,45
2.029	16,009	1,133		17,142	352,30	28,92		381,22			46.613,75	10.171,69		56.785,44	37.291,00	8.844,95		46.135,95						253.655,44
2.030	14,383	0,446	0,238	15,067	303,92	15,79	2,38	322,09			46.917,67	10.187,48	2,38	57.107,53	37.534,14	8.858,68	2,80	46.395,62						253.915,11
2.031	11,137	0,270	0,018	11,425	255,20	7,16	2,56	264,92			47.172,87	10.194,64	4,94	57.372,45	37.738,30	8.864,90	5,81	46.609,01						254.128,51
2.032	6,455	0,022		6,477	175,92	2,92	0,18	179,02			47.348,79	10.197,56	5,12	57.551,47	37.879,03	8.867,44	6,02	46.752,49						254.272,00
2.033	3,856			3,856	103,11	0,22		103,33			47.451,90	10.197,78		57.649,68	37.961,52	8.867,63		46.829,15						254.354,68
2.034	2,029			2,029	58,85			58,85			47.510,75			47.510,75	38.008,60			38.008,60						254.401,76
2.035	0,098			0,098	21,27			21,27	0,006	0,06	47.532,02			47.532,02	38.025,62			38.025,62	0,06	0,06			0,06	254.418,72
2.036					0,98			0,98	0,341	3,47	47.533,00			47.533,00	38.026,40			38.026,40	3,53	0,78			0,78	254.416,03
2.037	0,153			0,153	1,53			1,53	1,872	22,13	47.534,53			47.534,53	38.027,62			38.027,62	25,66	1,22			1,22	254.395,12
2.038	3,668			3,668	38,21			38,21	1,142	30,14	47.572,74			47.572,74	38.058,19			38.058,19	55,80	30,14			30,14	254.395,55
2.039	3,253			3,253	69,21			69,21	2,807	39,49	47.641,95			47.641,95	38.113,56			38.113,56	95,29	39,49			39,49	254.411,43
2.040	3,031			3,031	62,84			62,84	3,119	59,26	47.704,79			47.704,79	38.163,83			38.163,83	154,55	50,27			50,27	254.402,44
2.041	2,703			2,703	57,34			57,34	4,195	73,14	47.762,13			47.762,13	38.209,70			38.209,70	227,69	45,87			45,87	254.375,17
2.042	2,761			2,761	54,64			54,64	3,939	81,34	47.816,77			47.816,77	38.253,42			38.253,42	309,03	43,71			43,71	254.337,54
2.043	2,498			2,498	52,59			52,59	5,068	90,07	47.869,36			47.869,36	38.295,49			38.295,49	399,10	42,07			42,07	254.289,54
2.044	2,430			2,430	49,28			49,28	4,901	99,69	47.918,64			47.918,64	38.334,91			38.334,91	498,79	39,42			39,42	254.229,27
2.045	2,609			2,609	50,39			50,39	4,387	92,88	47.969,03			47.969,03	38.375,22			38.375,22	591,67	40,31			40,31	254.176,70
2.046	2,483			2,483	50,92			50,92	5,257	96,44	48.019,95			48.019,95	38.415,96			38.415,96	688,11	40,74			40,74	254.121,00
2.047	2,199			2,199	46,82			46,82	5,832	110,89	48.066,77			48.066,77	38.453,42			38.453,42	799,00	37,46			37,46	254.047,57
2.048	2,196			2,196	43,95			43,95	6,265	120,97	48.110,72			48.110,72	38.488,58			38.488,58	919,97	35,16			35,16	253.961,76
2.049	2,335			2,335	45,31			45,31	5,462	117,27	48.156,03			48.156,03	38.524,82			38.524,82	1.037,24	36,25			36,25	253.880,74
2.050	2,122			2,122	44,57			44,57	6,989	124,51	48.200,60			48.200,60	38.560,48			38.560,48	1.161,75	35,66			35,66	253.791,89
2.051	2,107			2,107	42,29			42,29	6,692	136,81	48.242,89			48.242,89	38.594,31			38.594,31	1.298,56	33,83			33,83	253.688,91
2.052	2,087			2,087	41,94			41,94	6,545	132,37	48.284,83			48.284,83	38.627,86			38.627,86	1.430,93	33,55			33,55	253.590,09
2.053	1,644			1,644	37,31			37,31	8,795	153,40	48.322,14			48.322,14	38.657,71			38.657,71	1.584,33	29,85			29,85	253.466,54
2.054	1,760			1,760	34,04			34,04	7,611	164,06	48.356,18			48.356,18	38.684,94			38.684,94	1.748,39	27,23			27,23	253.329,71
2.055	1,729			1,729	34,89			34,89	7,721	153,32	48.391,07			48.391,07	38.712,86			38.712,86	1.901,71	27,91			27,91	253.204,30
2.056	1,732			1,732	34,61			34,61	8,146	158,67	48.425,68			48.425,68	38.740,54			38.740,54	2.060,38	27,69			27,69	253.073,32
2.057	1,723			1,723	34,55			34,55	7,724	158,70	48.460,23			48.460,23	38.768,18			38.768,18	2.219,08	27,64			27,64	252.942,26
2.058	1,768			1,768	34,91			34,91	7,948	156,72	48.495,14			48.495,14	38.796,11			38.796,11	2.375,80	27,93			27,93	252.813,47
2.059	1,711			1,711	34,79			34,79	8,064	160,12	48.529,93			48.529,93	38.823,94			38.823,94	2.535,92	27,83			27,83	252.681,18
2.060	1,534			1,534	32,45			32,45	8,503	165,67	48.562,38			48.562,38	38.849,90			38.849,90	2.701,59	25,96			25,96	252.541,47
2.061	1,893			1,893	34,27			34,27	6,757	152,60	48.596,65			48.596,65	38.877,32			38.877,32	2.854,19	27,42			27,42	252.416,29
2.062	1,581			1,581	34,74			34,74	8,209	149,66	48.631,39			48.631,39	38.905,11			38.905,11	3.003,85	27,79			27,79	252.294,42
2.063	1,620			1,620	32,01			32,01	8,326	165,35	48.663,40			48.663,40	38.930,72			38.930,72	3.169,20	25,61			25,61	252.154,68
2.064	1,408			1,408	30,28			30,28	9,362	176,88	48.693,68			48.693,68	38.954,94			38.954,94	3.346,08	24,22			24,22	252.002,02
2.065	1,626			1,626	30,34			30,34	8,883	182,45	48.724,02			48.724,02	38.979,22			38.979,22	3.528,53	24,27			24,27	251.843,84
2.066	1,408			1,408	30,34			30,34	9,867	187,50	48.754,36			48.754,36	39.003,49			39.003,49	3.716,03	24,27			24,27	251.680,61
2.067	1,592			1,592	30,00			30,00	9,448	193,15	48.784,36			48.784,36	39.027,49			39.027,49	3.909,18	24,00			24,00	251.511,46

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.068	1,578			1,578	31,70			31,70	8,758	182,06	48.816,06			48.816,06	39.052,85			39.052,85	4.091,24	25,36			25,36	251.354,76
2.069	1,493			1,493	30,71			30,71	9,058	178,16	48.846,77			48.846,77	39.077,42			39.077,42	4.269,40	24,57			24,57	251.201,17
2.070	1,811			1,811	33,04			33,04	7,979	170,37	48.879,81			48.879,81	39.103,85			39.103,85	4.439,77	26,43			26,43	251.057,23
2.071	1,898			1,898	37,09			37,09	7,529	155,08	48.916,90			48.916,90	39.133,52			39.133,52	4.594,85	29,67			29,67	250.931,82
2.072	2,155			2,155	40,53			40,53	6,035	135,64	48.957,43			48.957,43	39.165,94			39.165,94	4.730,49	32,42			32,42	250.828,60
2.073	1,644			1,644	37,99			37,99	8,474	145,09	48.995,42			48.995,42	39.196,34			39.196,34	4.875,58	30,39			30,39	250.713,90
2.074	1,650			1,650	32,94			32,94	9,050	175,24	49.028,36			49.028,36	39.222,69			39.222,69	5.050,82	26,35			26,35	250.565,01
2.075	1,217			1,217	28,67			28,67	11,086	201,36	49.057,03			49.057,03	39.245,62			39.245,62	5.252,18	22,94			22,94	250.386,59
2.076	1,284			1,284	25,01			25,01	10,665	217,51	49.082,04			49.082,04	39.265,63			39.265,63	5.469,69	20,01			20,01	250.189,09
2.077	1,224			1,224	25,08			25,08	10,456	211,21	49.107,12			49.107,12	39.285,70			39.285,70	5.680,90	20,06			20,06	249.997,94
2.078	0,821			0,821	20,45			20,45	12,636	230,92	49.127,57			49.127,57	39.302,06			39.302,06	5.911,82	16,36			16,36	249.783,38
2.079	0,695			0,695	15,16			15,16	12,972	256,08	49.142,73			49.142,73	39.314,18			39.314,18	6.167,90	12,13			12,13	249.539,43
2.080	0,924			0,924	16,19			16,19	11,404	243,76	49.158,92			49.158,92	39.327,14			39.327,14	6.411,66	12,95			12,95	249.308,62
2.081	0,942			0,942	18,66			18,66	11,586	229,90	49.177,58			49.177,58	39.342,06			39.342,06	6.641,56	14,93			14,93	249.093,65
2.082	0,435			0,435	13,77			13,77	13,941	255,27	49.191,35			49.191,35	39.353,08			39.353,08	6.896,83	11,02			11,02	248.849,40
2.083	0,018			0,018	4,53			4,53	17,768	317,09	49.195,88			49.195,88	39.356,70			39.356,70	7.213,92	3,62			3,62	248.535,93
2.084					0,18			0,18	20,997	387,65	49.196,06			49.196,06	39.356,85			39.356,85	7.601,57	0,14			0,14	248.148,42
2.085									25,338	463,35									8.064,92					247.685,07
2.086									28,982	543,20									8.608,12					247.141,87
2.087									31,391	603,73									9.211,85					246.538,14
2.088									30,971	623,62									9.835,47					245.914,52
2.089									30,233	612,04									10.447,51					245.302,48
2.090									27,581	578,14									11.025,65					244.724,34
2.091									26,540	541,21									11.566,86					244.183,13
2.092									22,593	491,33									12.058,19					243.691,80
2.093	0,583	0,075	0,189	0,847	5,83	0,75	1,89	8,47	12,529	351,22	5,83	0,75	1,89	8,47	4,66	0,65	2,22	7,53	12.409,41	4,66	0,65	2,22	7,53	243.348,12
2.094	2,152	0,645	1,404	4,201	27,35	7,20	15,93	50,48	0,227	127,56	33,18	7,95	17,82	58,95	26,54	6,91	20,96	54,41	12.536,97	21,88	6,26	18,74	46,88	243.267,44
2.095	10,466	1,219	2,367	14,052	126,18	18,64	37,71	182,53		2,27	159,36	26,59	55,53	241,48	127,49	23,12	65,33	215,94	12.539,24	2,27			2,27	243.426,69
2.096	14,676	1,602	3,580	19,858	251,42	28,21	59,47	339,10			410,78	54,80	115,00	580,58	328,62	47,65	135,29	511,56						243.722,32
2.097	17,139	1,826	3,581	22,546	318,15	34,28	71,61	424,04			728,93	89,08	186,61	1.004,62	583,14	77,46	219,54	880,14						244.090,90
2.098	10,664	1,319	4,379	16,362	278,03	31,45	79,60	389,08			1.006,96	120,53	266,21	1.393,70	805,57	104,81	313,19	1.223,57						244.434,32
2.099	12,435	1,441	3,348	17,224	230,99	27,60	77,27	335,86			1.237,95	148,13	343,48	1.729,56	990,36	128,81	404,09	1.523,26						244.734,02
2.100	6,103	0,942	3,766	10,811	185,38	23,83	71,14	280,35			1.423,33	171,96	414,62	2.009,91	1.138,66	149,53	487,79	1.775,98						244.986,74
2.101	5,601	0,903	3,847	10,351	117,04	18,45	76,13	211,62			1.540,37	190,41	490,75	2.221,53	1.232,30	165,57	577,35	1.975,22						245.185,98
2.102	6,109	0,946	3,370	10,425	117,10	18,49	72,17	207,76			1.657,47	208,90	562,92	2.429,29	1.325,98	181,65	662,26	2.169,89						245.380,64
2.103	2,191	0,630	1,483	4,304	83,00	15,76	48,53	147,29	0,182	1,82	1.740,47	224,66	611,45	2.576,58	1.392,38	195,36	719,35	2.307,09	1,82	1,82			1,82	245.516,02
2.104	1,673	0,183	0,155	2,011	38,64	8,13	16,38	63,15	7,961	81,43	1.779,11	232,79	627,83	2.639,73	1.423,29	202,43	738,62	2.364,34	83,25	30,91	7,07	19,27	57,25	245.491,84
2.105	0,150			0,150	18,23	1,83	1,55	21,61	17,906	258,67	1.797,34	234,62	629,38	2.661,34	1.437,87	204,02	740,45	2.382,34	341,92	14,58	1,59	1,82	17,99	245.251,17
2.106					1,50			1,50	37,846	557,52	1.798,84			1.798,84	1.439,07			1.439,07	899,44	1,20			1,20	244.694,85
2.107									23,724	615,70									1.515,14					244.079,15
2.108	0,092			0,092	0,92			0,92	16,715	404,39	0,92			0,92	0,74			0,74	1.919,53	0,74			0,74	243.675,50
2.109	0,651			0,651	7,43			7,43	12,729	294,44	8,35			8,35	6,68			6,68	2.213,97	5,94			5,94	243.387,00
2.110	2,405			2,405	30,56			30,56	5,369	180,98	38,91			38,91	31,13			31,13	2.394,95	24,45			24,45	243.230,47
2.111	3,639			3,639	60,44			60,44	1,436	68,05	99,35			99,35	79,48			79,48	2.463,00	48,35			48,35	243.210,77
2.112	4,013			4,013	76,52			76,52	0,291	17,27	175,87			175,87	140,70			140,70	2.480,27	17,27			17,27	243.254,72
2.113	6,247			6,247	102,60			102,60		2,91	278,47			278,47	222,78			222,78	2.483,18	2,91			2,91	243.333,89
2.114	9,597			9,597	158,44			158,44			436,91			436,91	349,53			349,53						243.460,64

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.115	12,536			12,536	221,33			221,33			658,24			658,24	526,59			526,59						243.637,70
2.116	12,723			12,723	252,59			252,59			910,83			910,83	728,66			728,66						243.839,77
2.117	14,293			14,293	270,16			270,16			1.180,99			1.180,99	944,79			944,79						244.055,90
2.118	13,638			13,638	279,31			279,31			1.460,30			1.460,30	1.168,24			1.168,24						244.279,35
2.119	15,103			15,103	287,41			287,41			1.747,71			1.747,71	1.398,17			1.398,17						244.509,28
2.120	15,224			15,224	303,27			303,27			2.050,98			2.050,98	1.640,78			1.640,78						244.751,90
2.121	15,525			15,525	307,49			307,49			2.358,47			2.358,47	1.886,78			1.886,78						244.997,89
2.122	17,331			17,331	328,56			328,56			2.687,03			2.687,03	2.149,62			2.149,62						245.260,74
2.123	19,566			19,566	368,97			368,97			3.056,00			3.056,00	2.444,80			2.444,80						245.555,92
2.124	20,172			20,172	397,38			397,38			3.453,38			3.453,38	2.762,70			2.762,70						245.873,82
2.125	20,338			20,338	405,10			405,10			3.858,48			3.858,48	3.086,78			3.086,78						246.197,90
2.126	19,839			19,839	401,77			401,77			4.260,25			4.260,25	3.408,20			3.408,20						246.519,32
2.127	21,117			21,117	409,56			409,56			4.669,81			4.669,81	3.735,85			3.735,85						246.846,97
2.128	21,707			21,707	428,24			428,24			5.098,05			5.098,05	4.078,44			4.078,44						247.189,56
2.129	21,500			21,500	432,07			432,07			5.530,12			5.530,12	4.424,10			4.424,10						247.535,22
2.130	21,014			21,014	425,14			425,14			5.955,26			5.955,26	4.764,21			4.764,21						247.875,33
2.131	19,932			19,932	409,46			409,46			6.364,72			6.364,72	5.091,78			5.091,78						248.202,90
2.132	19,818			19,818	397,50			397,50			6.762,22			6.762,22	5.409,78			5.409,78						248.520,90
2.133	19,220			19,220	390,38			390,38			7.152,60			7.152,60	5.722,08			5.722,08						248.833,20
2.134	19,935			19,935	391,55			391,55			7.544,15			7.544,15	6.035,32			6.035,32						249.146,44
2.135	19,547			19,547	394,82			394,82			7.938,97			7.938,97	6.351,18			6.351,18						249.462,30
2.136	21,191	0,450		21,641	407,38	4,50		411,88			8.346,35	4,50		8.350,85	6.677,08	3,91		6.680,99						249.792,12
2.137	18,054	1,365	0,536	19,955	392,45	18,15	5,36	415,96			8.738,80	22,65	5,36	8.766,81	6.991,04	19,70	6,31	7.017,05						250.128,17
2.138	17,548	1,713	1,917	21,178	356,02	30,78	24,53	411,33			9.094,82	53,43	29,89	9.178,14	7.275,86	46,46	35,16	7.357,48						250.468,61
2.139	14,504	1,636	3,826	19,966	320,52	33,49	57,43	411,44			9.415,34	86,92	87,32	9.589,58	7.532,27	75,58	102,73	7.710,58						250.821,71
2.140	13,118	2,049	5,236	20,403	276,22	36,85	90,62	403,69			9.691,56	123,77	177,94	9.993,27	7.753,25	107,63	209,34	8.070,22						251.181,34
2.141	9,659	2,112	2,526	14,297	227,77	41,61	77,62	347,00			9.919,33	165,38	255,56	10.340,27	7.935,46	143,81	300,66	8.379,93						251.491,06
2.142	7,263	1,720	5,717	14,700	169,22	38,32	82,43	289,97			10.088,55	203,70	337,99	10.630,24	8.070,84	177,13	397,64	8.645,61						251.756,73
2.143	6,728	1,613	6,629	14,970	139,91	33,33	123,46	296,70			10.228,46	237,03	461,45	10.926,94	8.182,77	206,11	542,88	8.931,76						252.042,89
2.144	7,770	1,841	8,576	18,187	144,98	34,54	152,05	331,57			10.373,44	271,57	613,50	11.258,51	8.298,75	236,15	721,76	9.256,66						252.367,79
2.145	6,486	1,581	10,106	18,173	142,56	34,22	186,82	363,60			10.516,00	305,79	800,32	11.622,11	8.412,80	265,90	941,55	9.620,25						252.731,38
2.146	5,430	1,363	11,668	18,461	119,16	29,44	217,74	366,34			10.635,16	335,23	1.018,06	11.988,45	8.508,13	291,50	1.197,72	9.997,35						253.108,47
2.147	5,588	1,402	12,089	19,079	110,18	27,65	237,57	375,40			10.745,34	362,88	1.255,63	12.363,85	8.596,27	315,55	1.477,21	10.389,03						253.500,15
2.148	5,658	1,424	13,019	20,101	112,46	28,26	251,08	391,80			10.857,80	391,14	1.506,71	12.755,65	8.686,24	340,12	1.772,60	10.798,96						253.910,08
2.149	7,275	1,767	13,454	22,496	129,33	31,91	264,73	425,97			10.987,13	423,05	1.771,44	13.181,62	8.789,70	367,87	2.084,05	11.241,62						254.352,74
2.150	7,768	1,875	14,676	24,319	150,43	36,42	281,30	468,15			11.137,56	459,47	2.052,74	13.649,77	8.910,05	399,54	2.414,99	11.724,58						254.835,69
2.151	9,055	2,149	15,003	26,207	168,23	40,24	296,79	505,26			11.305,79	499,71	2.349,53	14.155,03	9.044,63	434,53	2.764,15	12.243,31						255.354,43
2.152	13,654	3,077	13,431	30,162	227,09	52,26	284,34	563,69			11.532,88	551,97	2.633,87	14.718,72	9.226,30	479,97	3.098,67	12.804,94						255.916,06
2.153	15,273	3,394	13,113	31,780	289,27	64,71	265,44	619,42			11.822,15	616,68	2.899,31	15.338,14	9.457,72	536,24	3.410,95	13.404,91						256.516,03
2.154	13,360	3,027	14,535	30,922	286,33	64,21	276,48	627,02			12.108,48	680,89	3.175,79	15.965,16	9.686,78	592,08	3.736,22	14.015,08						257.126,20
2.155	12,444	2,595	12,827	27,866	258,04	56,22	273,62	587,88			12.366,52	737,11	3.449,41	16.553,04	9.893,22	640,97	4.058,13	14.592,32						257.703,42
2.156	13,791	2,866	14,336	30,993	262,35	54,61	271,63	588,59			12.628,87	791,72	3.721,04	17.141,63	10.103,10	688,45	4.377,69	15.169,24						258.280,35
2.157	14,618	3,060	13,836	31,514	284,09	59,26	281,72	625,07			12.912,96	850,98	4.002,76	17.766,70	10.330,37	739,98	4.709,13	15.779,48						258.890,59
2.158	15,114	3,172	15,092	33,378	297,32	62,32	289,28	648,92			13.210,28	913,30	4.292,04	18.415,62	10.568,22	794,17	5.049,46	16.411,85						259.522,97
2.159	15,532	3,248	14,821	33,601	306,46	64,20	299,13	669,79			13.516,74	977,50	4.591,17	19.085,41	10.813,39	850,00	5.401,38	17.064,77						260.175,88
2.160	14,099	2,992	15,842	32,933	296,31	62,40	306,63	665,34			13.813,05	1.039,90	4.897,80	19.750,75	11.050,44	904,26	5.762,12	17.716,82						260.827,93
2.161	14,828	3,124	15,228	33,180	289,27	61,16	310,70	661,13			14.102,32	1.101,06	5.208,50	20.411,88	11.281,86	957,44	6.127,65	18.366,95						261.478,06

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.162	16,657	3,471	15,772	35,900	314,85	65,95	310,00	690,80			14.417,17	1.167,01	5.518,50	21.102,68	11.533,74	1.014,79	6.492,35	19.040,88						262.151,99
2.163	13,759	2,949	17,177	33,885	304,16	64,20	329,49	697,85			14.721,33	1.231,21	5.847,99	21.800,53	11.777,06	1.070,62	6.879,99	19.727,67						262.838,78
2.164	14,785	3,131	16,613	34,529	285,44	60,80	337,90	684,14			15.006,77	1.292,01	6.185,89	22.484,67	12.005,42	1.123,49	7.277,52	20.406,43						263.517,53
2.165	17,684	3,650	15,176	36,510	324,69	67,81	317,89	710,39			15.331,46	1.359,82	6.503,78	23.195,06	12.265,17	1.182,45	7.651,51	21.099,13						264.210,24
2.166	19,721	4,001	14,322	38,044	374,05	76,51	294,98	745,54			15.705,51	1.436,33	6.798,76	23.940,60	12.564,41	1.248,98	7.998,54	21.811,93						264.923,05
2.167	17,654	3,637	14,897	36,188	373,75	76,38	292,19	742,32			16.079,26	1.512,71	7.090,95	24.682,92	12.863,41	1.315,40	8.342,29	22.521,10						265.632,22
2.168	16,226	3,396	16,102	35,724	338,80	70,33	309,99	719,12			16.418,06	1.583,04	7.400,94	25.402,04	13.134,45	1.376,56	8.706,99	23.218,00						266.329,11
2.169	16,389	3,418	15,560	35,367	326,15	68,14	316,62	710,91			16.744,21	1.651,18	7.717,56	26.112,95	13.395,37	1.435,81	9.079,48	23.910,66						267.021,78
2.170	18,505	3,770	13,806	36,081	348,94	71,88	293,66	714,48			17.093,15	1.723,06	8.011,22	26.827,43	13.674,52	1.498,31	9.424,96	24.597,79						267.708,92
2.171	22,002	4,377	13,151	39,530	405,07	81,47	269,57	756,11			17.498,22	1.804,53	8.280,79	27.583,54	13.998,58	1.569,16	9.742,11	25.309,85						268.420,96
2.172	17,178	3,546	14,762	35,486	391,80	79,23	279,13	750,16			17.890,02	1.883,76	8.559,92	28.333,70	14.312,02	1.638,05	10.070,49	26.020,56						269.131,68
2.173	15,741	3,282	14,580	33,603	329,19	68,28	293,42	690,89			18.219,21	1.952,04	8.853,34	29.024,59	14.575,37	1.697,43	10.415,69	26.688,49						269.799,61
2.174	19,374	3,899	12,574	35,847	351,15	71,81	271,54	694,50			18.570,36	2.023,85	9.124,88	29.719,09	14.856,29	1.759,87	10.735,15	27.351,31						270.462,43
2.175	22,441	4,408	11,243	38,092	418,15	83,07	238,17	739,39			18.988,51	2.106,92	9.363,05	30.458,48	15.190,81	1.832,10	11.015,35	28.038,26						271.149,38
2.176	19,662	3,950	12,447	36,059	421,03	83,58	236,90	741,51			19.409,54	2.190,50	9.599,95	31.199,99	15.527,63	1.904,78	11.294,06	28.726,47						271.837,59
2.177	16,667	3,417	12,816	32,900	363,29	73,67	252,63	689,59			19.772,83	2.264,17	9.852,58	31.889,58	15.818,26	1.968,84	11.591,27	29.378,37						272.489,49
2.178	17,339	3,625	11,033	31,997	340,06	70,42	238,49	648,97			20.112,89	2.334,59	10.091,07	32.538,55	16.090,31	2.030,08	11.871,85	29.992,24						273.103,35
2.179	15,159	3,195	9,605	27,959	324,98	68,20	206,38	599,56			20.437,87	2.402,79	10.297,45	33.138,11	16.350,30	2.089,38	12.114,65	30.554,33						273.665,44
2.180	12,027	2,583	7,996	22,606	271,86	57,78	176,01	505,65			20.709,73	2.460,57	10.473,46	33.643,76	16.567,78	2.139,63	12.321,72	31.029,13						274.140,24
2.181	9,544	2,133	9,798	21,475	215,71	47,16	177,94	440,81			20.925,44	2.507,73	10.651,40	34.084,57	16.740,35	2.180,63	12.531,06	31.452,04						274.563,16
2.182	9,277	2,081	9,984	21,342	188,21	42,14	197,82	428,17			21.113,65	2.549,87	10.849,22	34.512,74	16.890,92	2.217,28	12.763,79	31.871,99						274.983,10
2.183	10,812	2,358	8,169	21,339	200,89	44,39	181,53	426,81			21.314,54	2.594,26	11.030,75	34.939,55	17.051,63	2.255,88	12.977,35	32.284,86						275.395,98
2.184	7,814	1,771	7,682	17,267	186,26	41,29	158,51	386,06			21.500,80	2.635,55	11.189,26	35.325,61	17.200,64	2.291,78	13.163,84	32.656,26						275.767,37
2.185	8,325	1,859	6,669	16,853	161,39	36,30	143,51	341,20			21.662,19	2.671,85	11.332,77	35.666,81	17.329,75	2.323,35	13.332,67	32.985,77						276.096,88
2.186	9,699	2,097	4,281	16,077	180,24	39,56	109,50	329,30			21.842,43	2.711,41	11.442,27	35.996,11	17.473,94	2.357,75	13.461,49	33.293,18						276.404,30
2.187	11,626	2,407	1,546	15,579	213,25	45,04	58,27	316,56			22.055,68	2.756,45	11.500,54	36.312,67	17.644,54	2.396,91	13.530,05	33.571,50						276.682,62
2.188	14,782	0,989	0,395	16,166	264,08	33,96	19,41	317,45			22.319,76	2.790,41	11.519,95	36.630,12	17.855,81	2.426,44	13.552,88	33.835,13						276.946,25
2.189	13,289	0,325	0,047	13,661	280,71	13,14	4,42	298,27			22.600,47	2.803,55	11.524,37	36.928,39	18.080,38	2.437,87	13.558,08	34.076,33						277.187,44
2.190	8,648	0,038		8,686	219,37	3,63	0,47	223,47			22.819,84	2.807,18	11.524,84	37.151,86	18.255,87	2.441,03	13.558,64	34.255,54						277.366,65
2.191	3,680			3,680	123,28	0,38		123,66			22.943,12	2.807,56		25.750,68	18.354,50	2.441,36		20.795,86						277.465,60
2.192	0,225			0,225	39,05			39,05	0,008	0,08	22.982,17			22.982,17	18.385,74			18.385,74	0,08	0,08			0,08	277.496,76
2.193	0,039			0,039	2,64			2,64	1,559	15,67	22.984,81			22.984,81	18.387,85			18.387,85	15,75	2,11			2,11	277.483,20
2.194	0,313			0,313	3,52			3,52	4,384	59,43	22.988,33			22.988,33	18.390,66			18.390,66	75,18	2,82			2,82	277.426,59
2.195	0,129			0,129	4,42			4,42	6,998	113,82	22.992,75			22.992,75	18.394,20			18.394,20	189,00	3,54			3,54	277.316,31
2.196	0,027			0,027	1,56			1,56	7,939	149,37	22.994,31			22.994,31	18.395,45			18.395,45	338,37	1,25			1,25	277.168,19
2.197					0,27			0,27	10,598	185,37	22.994,58			22.994,58	18.395,66			18.395,66	523,74	0,22			0,22	276.983,04
2.198									12,127	227,25									750,99					276.755,79
2.199									13,571	256,98									1.007,97					276.498,81
2.200									14,116	276,87									1.284,84					276.221,94
2.201									15,627	297,43									1.582,27					275.924,51
2.202									17,008	326,35									1.908,62					275.598,16
2.203									17,101	341,09									2.249,71					275.257,07
2.204									18,742	358,43									2.608,14					274.898,64
2.205									21,087	398,29									3.006,43					274.500,35
2.206									23,756	448,43									3.454,86					274.051,92
2.207									24,130	478,86									3.933,72					273.573,06
2.208									27,081	512,11									4.445,83					273.060,95

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.209									27,964	550,45									4.996,28					272.510,50
2.210									30,583	585,47									5.581,75					271.925,03
2.211									35,022	656,05									6.237,80					271.268,98
2.212									42,081	771,03									7.008,83					270.497,95
2.213									52,751	948,32									7.957,15					269.549,63
2.214									58,038	1.107,89									9.065,04					268.441,74
2.215									62,406	1.204,44									10.269,48					267.237,30
2.216									61,878	1.242,84									11.512,32					265.994,46
2.217									62,569	1.244,47									12.756,79					264.749,99
2.218									60,624	1.231,93									13.988,72					263.518,06
2.219									61,696	1.223,20									15.211,92					262.294,86
2.220									62,060	1.237,56									16.449,48					261.057,30
2.221									66,890	1.289,50									17.738,98					259.767,80
2.222									60,293	1.271,83									19.010,81					258.495,97
2.223									62,293	1.225,86									20.236,67					257.270,11
2.224									60,629	1.229,22									21.465,89					256.040,89
2.225									58,861	1.194,90									22.660,79					254.845,99
2.226									56,632	1.154,93									23.815,72					253.691,06
2.227									52,394	1.090,26									24.905,98					252.600,80
2.228									49,771	1.021,65									25.927,63					251.579,15
2.229									47,342	971,13									26.898,76					250.608,02
2.230									46,263	936,05									27.834,81					249.671,97
2.231									43,152	894,15									28.728,96					248.777,82
2.232									39,154	823,06									29.552,02					247.954,76
2.233									36,940	760,94									30.312,96					247.193,82
2.234									34,714	716,54									31.029,50					246.477,28
2.235									30,931	656,45									31.685,95					245.820,83
2.236									27,913	588,44									32.274,39					245.232,39
2.237									28,661	565,74									32.840,13					244.666,65
2.238									25,711	543,72									33.383,85					244.122,93
2.239									22,244	479,55									33.863,40					243.643,38
2.240									20,568	428,12									34.291,52					243.215,26
2.241									19,042	396,10									34.687,62					242.819,16
2.242									17,620	366,62									35.054,24					242.452,54
2.243									15,896	335,16									35.389,40					242.117,38
2.244									15,115	310,11									35.699,51					241.807,27
2.245									13,886	290,01									35.989,52					241.517,26
2.246									12,441	263,27									36.252,79					241.253,99
2.247									10,456	228,97									36.481,76					241.025,02
2.248	0,004			0,004	0,04			0,04	8,311	187,67	0,04			0,04	0,03			0,03	36.669,43	0,03			0,03	240.837,38
2.249	0,091			0,091	0,95			0,95	7,516	158,27	0,99			0,99	0,79			0,79	36.827,70	0,76			0,76	240.679,87
2.250	0,182			0,182	2,73			2,73	6,124	136,40	3,72			3,72	2,98			2,98	36.964,10	2,18			2,18	240.545,65
2.251	0,263			0,263	4,45			4,45	4,176	103,00	8,17			8,17	6,54			6,54	37.067,10	3,56			3,56	240.446,21
2.252	0,230			0,230	4,93			4,93	2,844	70,20	13,10			13,10	10,48			10,48	37.137,30	3,94			3,94	240.379,95
2.253	0,424			0,424	6,54			6,54	0,053	28,97	19,64			19,64	15,71			15,71	37.166,27	5,23			5,23	240.356,21
2.254	3,486			3,486	39,10			39,10		0,53	58,74			58,74	46,99			46,99	37.166,80	0,53			0,53	240.386,96
2.255	11,017	1,306	2,891	15,214	145,03	13,06	28,91	187,00			203,77	13,06	28,91	245,74	163,02	11,36	34,01	208,39						240.548,35

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.256	7,014	1,545	1,250	9,809	180,31	28,51	41,41	250,23			384,08	41,57	70,32	495,97	307,26	36,15	82,73	426,14						240.766,11
2.257	12,032	2,503	2,578	17,113	190,46	40,48	38,28	269,22			574,54	82,05	108,60	765,19	459,63	71,35	127,76	658,74						240.998,71
2.258	15,436	3,152	4,702	23,290	274,68	56,55	72,80	404,03			849,22	138,60	181,40	1.169,22	679,38	120,52	213,41	1.013,31						241.353,27
2.259	18,675	3,730	5,300	27,705	341,11	68,82	100,02	509,95			1.190,33	207,42	281,42	1.679,17	952,26	180,37	331,08	1.463,71						241.803,67
2.260	20,329	4,080	7,642	32,051	390,04	78,10	129,42	597,56			1.580,37	285,52	410,84	2.276,73	1.264,30	248,28	483,34	1.995,92						242.335,87
2.261	19,973	4,096	10,761	34,830	403,02	81,76	184,03	668,81			1.983,39	367,28	594,87	2.945,54	1.586,71	319,37	699,85	2.605,93						242.945,89
2.262	21,082	4,298	11,007	36,387	410,55	83,94	217,68	712,17			2.393,94	451,22	812,55	3.657,71	1.915,15	392,37	955,94	3.263,46						243.603,42
2.263	24,977	4,947	9,936	39,860	460,59	92,45	209,43	762,47			2.854,53	543,67	1.021,98	4.420,18	2.283,62	472,76	1.202,33	3.958,71						244.298,67
2.264	27,131	5,262	8,542	40,935	521,08	102,09	184,78	807,95			3.375,61	645,76	1.206,76	5.228,13	2.700,49	561,53	1.419,72	4.681,74						245.021,70
2.265	30,365	5,678	5,812	41,855	574,96	109,40	143,54	827,90			3.950,57	755,16	1.350,30	6.056,03	3.160,46	656,66	1.588,59	5.405,71						245.745,67
2.266	31,726	5,896	5,911	43,533	620,91	115,74	117,23	853,88			4.571,48	870,90	1.467,53	6.909,91	3.657,18	757,30	1.726,51	6.140,99						246.480,96
2.267	31,631	5,900	6,268	43,799	633,57	117,96	121,79	873,32			5.205,05	988,86	1.589,32	7.783,23	4.164,04	859,88	1.869,79	6.893,71						247.233,67
2.268	29,962	5,714	8,177	43,853	615,93	116,14	144,45	876,52			5.820,98	1.105,00	1.733,77	8.659,75	4.656,78	960,87	2.039,73	7.657,38						247.997,35
2.269	30,103	5,778	9,187	45,068	600,65	114,92	173,64	889,21			6.421,63	1.219,92	1.907,41	9.548,96	5.137,30	1.060,80	2.244,01	8.442,11						248.782,08
2.270	33,546	6,255	7,422	47,223	636,49	120,33	166,09	922,91			7.058,12	1.340,25	2.073,50	10.471,87	5.646,50	1.165,43	2.439,41	9.251,34						249.591,31
2.271	32,260	6,108	8,652	47,020	658,06	123,63	160,74	942,43			7.716,18	1.463,88	2.234,24	11.414,30	6.172,94	1.272,94	2.628,52	10.074,40						250.414,37
2.272	30,462	5,889	10,583	46,934	627,22	119,97	192,35	939,54			8.343,40	1.583,85	2.426,59	12.353,84	6.674,72	1.377,26	2.854,81	10.906,79						251.246,76
2.273	31,736	6,087	10,134	47,957	621,98	119,76	207,17	948,91			8.965,38	1.703,61	2.633,76	13.302,75	7.172,30	1.481,40	3.098,54	11.752,24						252.092,21
2.274	37,474	6,816	6,526	50,816	692,10	129,03	166,60	987,73			9.657,48	1.832,64	2.800,36	14.290,48	7.725,98	1.593,60	3.294,54	12.614,12						252.954,09
2.275	38,609	6,982	6,378	51,969	760,83	137,98	129,04	1.027,85			10.418,31	1.970,62	2.929,40	15.318,33	8.334,65	1.713,58	3.446,35	13.494,58						253.834,55
2.276	37,364	6,925	8,904	53,193	759,73	139,07	152,82	1.051,62			11.178,04	2.109,69	3.082,22	16.369,95	8.942,43	1.834,51	3.626,14	14.403,08						254.743,05
2.277	39,764	7,172	6,683	53,619	771,28	140,97	155,87	1.068,12			11.949,32	2.250,66	3.238,09	17.438,07	9.559,46	1.957,10	3.809,52	15.326,08						255.666,03
2.278	39,735	7,221	7,659	54,615	794,99	143,93	143,42	1.082,34			12.744,31	2.394,59	3.381,51	18.520,41	10.195,45	2.082,25	3.978,25	16.255,95						256.595,91
2.279	45,246	7,962	6,278	59,486	849,81	151,83	139,37	1.141,01			13.594,12	2.546,42	3.520,88	19.661,42	10.875,30	2.214,28	4.142,21	17.231,79						257.571,75
2.280	45,300	7,887	5,117	58,304	905,46	158,49	113,95	1.177,90			14.499,58	2.704,91	3.634,83	20.839,32	11.599,66	2.352,10	4.276,27	18.228,03						258.567,99
2.281	47,150	8,171	5,401	60,722	924,50	160,58	105,18	1.190,26			15.424,08	2.865,49	3.740,01	22.029,58	12.339,26	2.491,73	4.400,01	19.231,00						259.570,97
2.282	47,275	8,318	7,229	62,822	944,25	164,89	126,30	1.235,44			16.368,33	3.030,38	3.866,31	23.265,02	13.094,66	2.635,11	4.548,60	20.278,37						260.618,34
2.283	45,551	8,219	9,684	63,454	928,26	165,37	169,13	1.262,76			17.296,59	3.195,75	4.035,44	24.527,78	13.837,27	2.778,91	4.747,58	21.363,76						261.703,72
2.284	43,188	7,990	11,942	63,120	887,39	162,09	216,26	1.265,74			18.183,98	3.357,84	4.251,70	25.793,52	14.547,18	2.919,86	5.002,00	22.469,04						262.809,00
2.285	43,015	7,977	12,262	63,254	862,03	159,67	242,04	1.263,74			19.046,01	3.517,51	4.493,74	27.057,26	15.236,81	3.058,70	5.286,75	23.582,26						263.922,22
2.286	45,209	8,230	10,741	64,180	882,24	162,07	230,03	1.274,34			19.928,25	3.679,58	4.723,77	28.331,60	15.942,60	3.199,63	5.557,38	24.699,61						265.039,57
2.287	46,241	8,317	9,593	64,151	914,50	165,47	203,34	1.283,31			20.842,75	3.845,05	4.927,11	29.614,91	16.674,20	3.343,52	5.796,60	25.814,32						266.154,28
2.288	49,810	8,636	6,570	65,016	960,51	169,53	161,63	1.291,67			21.803,26	4.014,58	5.088,74	30.906,58	17.442,61	3.490,94	5.986,75	26.920,30						267.260,26
2.289	49,465	8,514	5,598	63,577	992,75	171,50	121,68	1.285,93			22.796,01	4.186,08	5.210,42	32.192,51	18.236,81	3.640,07	6.129,91	28.006,79						268.346,74
2.290	43,806	7,788	6,889	58,483	932,71	163,02	124,87	1.220,60			23.728,72	4.349,10	5.335,29	33.413,11	18.982,98	3.781,83	6.276,81	29.041,62						269.381,57
2.291	42,636	7,590	6,503	56,729	864,42	153,78	133,92	1.152,12			24.593,14	4.502,88	5.469,21	34.565,23	19.674,51	3.915,55	6.434,36	30.024,42						270.364,38
2.292	43,387	7,540	4,057	54,984	860,23	151,30	105,60	1.117,13			25.453,37	4.654,18	5.574,81	35.682,36	20.362,70	4.047,11	6.558,60	30.968,41						271.308,36
2.293	39,741	6,981	3,567	50,289	831,28	145,21	76,24	1.052,73			26.284,65	4.799,39	5.651,05	36.735,09	21.027,72	4.173,38	6.648,29	31.849,39						272.189,35
2.294	38,864	6,490	0,690	46,044	786,05	134,71	42,57	963,33			27.070,70	4.934,10	5.693,62	37.698,42	21.656,56	4.290,52	6.698,38	32.645,46						272.985,41
2.295	34,537	4,825		39,362	734,01	113,15	6,90	854,06			27.804,71	5.047,25	5.700,52	38.552,48	22.243,77	4.388,91	6.706,49	33.339,17						273.679,13
2.296	30,186	4,064		34,250	647,23	88,89		736,12			28.451,94	5.136,14		33.588,08	22.761,55	4.466,21		27.227,76						274.274,21
2.297	28,898	3,696		32,594	590,84	77,60		668,44			29.042,78	5.213,74		34.256,52	23.234,22	4.533,69		27.767,91						274.814,36
2.298	26,339	3,193		29,532	552,37	68,89		621,26			29.595,15	5.282,63		34.877,78	23.676,12	4.593,59		28.269,71						275.316,16
2.299	30,886	5,144	4,816	40,846	572,25	83,37	48,16	703,78			30.167,40	5.366,00	48,16	35.581,56	24.133,92	4.666,09	56,66	28.856,67						275.903,11
2.300	32,529	3,920	3,710	40,159	634,15	90,64	85,26	810,05			30.801,55	5.456,64	133,42	36.391,61	24.641,24	4.744,90	156,96	29.543,10						276.589,55
2.301	30,737	4,720	4,543	40,000	632,66	86,40	82,53	801,59			31.434,21	5.543,04	215,95	37.193,20	25.147,37	4.820,03	254,06	30.221,46						277.267,90
2.302	33,702	3,645	3,387	40,734	644,39	83,65	79,30	807,34			32.078,60	5.626,69	295,25	38.000,54	25.662,88	4.892,77	347,35	30.903,00						277.949,45

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.303	34,519	3,654	3,256	41,429	682,21	72,99	66,43	821,63			32.760,81	5.699,68	361,68	38.822,17	26.208,65	4.956,24	425,51	31.590,40						278.636,84
2.304	37,529	3,386	2,548	43,463	720,48	70,40	58,04	848,92			33.481,29	5.770,08	419,72	39.671,09	26.785,03	5.017,46	493,79	32.296,28						279.342,72
2.305	36,166	3,152	2,242	41,560	736,95	65,38	47,90	850,23			34.218,24	5.835,46	467,62	40.521,32	27.374,59	5.074,31	550,14	32.999,04						280.045,49
2.306	34,332	3,105	2,582	40,019	704,98	62,57	48,24	815,79			34.923,22	5.898,03	515,86	41.337,11	27.938,58	5.128,72	606,89	33.674,19						280.720,64
2.307	34,215	2,898	1,927	39,040	685,47	60,03	45,09	790,59			35.608,69	5.958,06	560,95	42.127,70	28.486,95	5.180,92	659,94	34.327,81						281.374,26
2.308	33,161	2,903	2,177	38,241	673,76	58,01	41,04	772,81			36.282,45	6.016,07	601,99	42.900,51	29.025,96	5.231,37	708,22	34.965,55						282.011,99
2.309	32,931	2,576	1,289	36,796	660,92	54,79	34,66	750,37			36.943,37	6.070,86	636,65	43.650,88	29.554,70	5.279,01	749,00	35.582,71						282.629,15
2.310	33,251	2,437	0,977	36,665	661,82	50,13	22,66	734,61			37.605,19	6.120,99	659,31	44.385,49	30.084,15	5.322,60	775,66	36.182,41						283.228,86
2.311	31,480	2,748	1,952	36,180	647,31	51,85	29,29	728,45			38.252,50	6.172,84	688,60	45.113,94	30.602,00	5.367,69	810,12	36.779,81						283.826,25
2.312	29,587	2,358	1,307	33,252	610,67	51,06	32,59	694,32			38.863,17	6.223,90	721,19	45.808,26	31.090,54	5.412,09	848,46	37.351,09						284.397,53
2.313	27,017	1,888	0,642	29,547	566,04	42,46	19,49	627,99			39.429,21	6.266,36	740,68	46.436,25	31.543,37	5.449,01	871,39	37.863,77						284.910,21
2.314	24,375	1,835	0,849	27,059	513,92	37,23	14,91	566,06			39.943,13	6.303,59	755,59	47.002,31	31.954,50	5.481,38	888,93	38.324,81						285.371,26
2.315	21,152	1,779	1,189	24,120	455,27	36,14	20,38	511,79			40.398,40	6.339,73	775,97	47.514,10	32.318,72	5.512,81	912,91	38.744,44						285.790,88
2.316	16,650	1,470	1,072	19,192	378,02	32,49	22,61	433,12			40.776,42	6.372,22	798,58	47.947,22	32.621,14	5.541,06	939,51	39.101,71						286.148,15
2.317	12,281	1,214	1,080	14,575	289,31	26,84	21,52	337,67			41.065,73	6.399,06	820,10	48.284,89	32.852,58	5.564,40	964,82	39.381,80						286.428,25
2.318	5,987	0,891	1,628	8,506	182,68	21,05	27,08	230,81			41.248,41	6.420,11	847,18	48.515,70	32.998,73	5.582,70	996,68	39.578,11						286.624,56
2.319	2,604	0,653	1,143	4,400	85,91	15,44	27,71	129,06			41.334,32	6.435,55	874,89	48.644,76	33.067,46	5.596,13	1.029,28	39.692,87						286.739,31
2.320	2,003	0,517	0,745	3,265	46,07	11,70	18,88	76,65	2,445	24,45	41.380,39	6.447,25	893,77	48.721,41	33.104,31	5.606,30	1.051,49	39.762,10	24,45	24,45			24,45	286.784,10
2.321	1,753	0,229	0,085	2,067	37,56	7,46	8,30	53,32	7,711	101,56	41.417,95	6.454,71	902,07	48.774,73	33.134,36	5.612,79	1.061,26	39.808,41	126,01	30,05	6,49	9,76	46,30	286.728,84
2.322	1,476	0,008		1,484	32,29	2,37	0,85	35,51	8,825	165,36	41.450,24	6.457,08	902,92	48.810,24	33.160,19	5.614,85	1.062,26	39.837,30	291,37	25,83	2,06	1,00	28,89	286.592,37
2.323	0,357			0,357	18,33	0,08		18,41	14,431	232,56	41.468,57	6.457,16		47.925,73	33.174,86	5.614,92		38.789,78	523,93	14,66	0,07		14,73	286.374,54
2.324					3,57			3,57	21,174	356,05	41.472,14			41.472,14	33.177,71			33.177,71	879,98	2,86			2,86	286.021,35
2.325									26,864	480,38									1.360,36					285.540,97
2.326									30,337	572,01									1.932,37					284.968,96
2.327									32,621	629,58									2.561,95					284.339,38
2.328									29,201	618,22									3.180,17					283.721,16
2.329									37,177	663,78									3.843,95					283.057,38
2.330									30,005	671,82									4.515,77					282.385,56
2.331									25,685	556,90									5.072,67					281.828,66
2.332									23,665	493,50									5.566,17					281.335,16
2.333									28,593	522,58									6.088,75					280.812,58
2.334									24,371	529,64									6.618,39					280.282,94
2.335									25,168	495,39									7.113,78					279.787,55
2.336									22,579	477,47									7.591,25					279.310,08
2.337									23,119	456,98									8.048,23					278.853,10
2.338									22,664	457,83									8.506,06					278.395,27
2.339									22,221	448,85									8.954,91					277.946,42
2.340									20,930	431,51									9.386,42					277.514,91
2.341									20,440	413,70									9.800,12					277.101,21
2.342									18,422	388,62									10.188,74					276.712,59
2.343									17,610	360,32									10.549,06					276.352,27
2.344	0,060			0,060	0,60			0,60	16,861	344,71	0,60			0,60	0,48			0,48	10.893,77	0,48			0,48	276.008,04
2.345	0,103			0,103	1,63			1,63	16,551	334,12	2,23			2,23	1,78			1,78	11.227,89	1,30			1,30	275.675,22
2.346	0,250	0,011	0,007	0,268	3,53	0,11	0,07	3,71	15,064	316,15	5,76	0,11	0,07	5,94	4,61	0,10	0,08	4,79	11.544,04	2,82	0,10	0,08	3,00	275.362,07
2.347	0,190		0,552	0,742	4,40	0,11	5,59	10,10	12,108	271,72	10,16	0,22	5,66	16,04	8,13	0,19	6,66	14,98	11.815,76	3,52	0,10	6,58	10,20	275.100,54
2.348	0,205	0,018	0,775	0,998	3,95	0,18	13,27	17,40	11,042	231,50	14,11	0,40	18,93	33,44	11,29	0,35	22,27	33,91	12.047,26	3,16	0,16	15,61	18,93	274.887,97
2.349	0,040		1,077	1,117	2,45	0,18	18,52	21,15	10,468	215,10	16,56	0,58	37,45	54,59	13,25	0,50	44,06	57,81	12.262,36	1,96	0,16	21,79	23,91	274.696,77

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.350	0,819	0,148	0,362	1,329	8,59	1,48	14,39	24,46	9,675	201,43	25,15	2,06	51,84	79,05	20,12	1,79	60,99	82,90	12.463,79	6,87	1,29	16,93	25,09	274.520,43
2.351	1,336			1,336	21,55	1,48	3,62	26,65	9,577	192,52	46,70	3,54	55,46	105,70	37,36	3,08	65,25	105,69	12.656,31	17,24	1,29	4,26	22,79	274.350,70
2.352	1,570			1,570	29,06			29,06	8,374	179,51	75,76			75,76	60,61			60,61	12.835,82	23,25			23,25	274.194,44
2.353	2,166			2,166	37,36			37,36	6,321	146,95	113,12			113,12	90,50			90,50	12.982,77	29,89			29,89	274.077,38
2.354	2,486			2,486	46,52			46,52	4,815	111,36	159,64			159,64	127,71			127,71	13.094,13	37,22			37,22	274.003,24
2.355	2,872			2,872	53,58			53,58	3,715	85,30	213,22			213,22	170,58			170,58	13.179,43	42,86			42,86	273.960,80
2.356	3,135			3,135	60,07			60,07	2,703	64,18	273,29			273,29	218,63			218,63	13.243,61	48,06			48,06	273.944,68
2.357	3,434			3,434	65,69			65,69	1,842	45,45	338,98			338,98	271,18			271,18	13.289,06	45,45			45,45	273.951,78
2.358	3,573			3,573	70,07			70,07	0,506	23,48	409,05			409,05	327,24			327,24	13.312,54	23,48			23,48	273.984,36
2.359	4,571			4,571	81,44			81,44		5,06	490,49			490,49	392,39			392,39	13.317,60	5,06			5,06	274.044,45
2.360	5,488			5,488	100,59			100,59			591,08			591,08	472,86			472,86						274.124,92
2.361	5,401			5,401	108,89			108,89			699,97			699,97	559,98			559,98						274.212,03
2.362	5,575			5,575	109,76			109,76			809,73			809,73	647,78			647,78						274.299,84
2.363	6,021			6,021	115,96			115,96			925,69			925,69	740,55			740,55						274.392,61
2.364	7,965			7,965	139,86			139,86			1.065,55			1.065,55	852,44			852,44						274.504,50
2.365	8,916			8,916	168,81			168,81			1.234,36			1.234,36	987,49			987,49						274.639,55
2.366	9,430			9,430	183,46			183,46			1.417,82			1.417,82	1.134,26			1.134,26						274.786,32
2.367	10,788			10,788	202,18			202,18			1.620,00			1.620,00	1.296,00			1.296,00						274.948,06
2.368	11,954			11,954	227,42			227,42			1.847,42			1.847,42	1.477,94			1.477,94						275.130,00
2.369	12,699			12,699	246,53			246,53			2.093,95			2.093,95	1.675,16			1.675,16						275.327,22
2.370	13,312			13,312	260,11			260,11			2.354,06			2.354,06	1.883,25			1.883,25						275.535,31
2.371	12,942			12,942	262,54			262,54			2.616,60			2.616,60	2.093,28			2.093,28						275.745,34
2.372	12,052			12,052	249,94			249,94			2.866,54			2.866,54	2.293,23			2.293,23						275.945,29
2.373	8,585			8,585	206,37			206,37			3.072,91			3.072,91	2.458,33			2.458,33						276.110,39
2.374	7,122			7,122	157,07			157,07			3.229,98			3.229,98	2.583,98			2.583,98						276.236,05
2.375	6,919			6,919	140,41			140,41			3.370,39			3.370,39	2.696,31			2.696,31						276.348,38
2.376	6,592			6,592	135,11			135,11			3.505,50			3.505,50	2.804,40			2.804,40						276.456,47
2.377	7,304			7,304	138,96			138,96			3.644,46			3.644,46	2.915,57			2.915,57						276.567,64
2.378	7,844			7,844	151,48			151,48			3.795,94			3.795,94	3.036,75			3.036,75						276.688,82
2.379	8,167			8,167	160,11			160,11			3.956,05			3.956,05	3.164,84			3.164,84						276.816,91
2.380	8,673			8,673	168,40			168,40			4.124,45			4.124,45	3.299,56			3.299,56						276.951,63
2.381	8,129			8,129	168,02			168,02			4.292,47			4.292,47	3.433,98			3.433,98						277.086,05
2.382	8,870			8,870	169,99			169,99			4.462,46			4.462,46	3.569,97			3.569,97						277.222,04
2.383	8,019			8,019	168,89			168,89			4.631,35			4.631,35	3.705,08			3.705,08						277.357,15
2.384	9,304			9,304	173,23			173,23			4.804,58			4.804,58	3.843,66			3.843,66						277.495,73
2.385	10,832			10,832	201,36			201,36			5.005,94			5.005,94	4.004,75			4.004,75						277.656,82
2.386	11,074			11,074	219,06			219,06			5.225,00			5.225,00	4.180,00			4.180,00						277.832,07
2.387	12,488			12,488	235,62			235,62			5.460,62			5.460,62	4.368,50			4.368,50						278.020,57
2.388	13,638			13,638	261,26			261,26			5.721,88			5.721,88	4.577,50			4.577,50						278.229,58
2.389	13,893			13,893	275,31			275,31			5.997,19			5.997,19	4.797,75			4.797,75						278.449,83
2.390	14,456			14,456	283,49			283,49			6.280,68			6.280,68	5.024,54			5.024,54						278.676,62
2.391	13,837			13,837	282,93			282,93			6.563,61			6.563,61	5.250,89			5.250,89						278.902,96
2.392	12,498			12,498	263,35			263,35			6.826,96			6.826,96	5.461,57			5.461,57						279.113,64
2.393	10,150			10,150	226,48			226,48			7.053,44			7.053,44	5.642,75			5.642,75						279.294,82
2.394	7,140			7,140	172,90			172,90			7.226,34			7.226,34	5.781,07			5.781,07						279.433,14
2.395	4,049			4,049	111,89			111,89	0,009	0,09	7.338,23			7.338,23	5.870,58			5.870,58	0,09	0,09			0,09	279.522,56
2.396	3,384			3,384	74,33			74,33	2,081	20,90	7.412,56			7.412,56	5.930,05			5.930,05	20,99	20,90			20,90	279.561,12

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.397	2,396			2,396	57,80			57,80	5,495	75,76	7.470,36			7.470,36	5.976,29			5.976,29	96,75	46,24			46,24	279.531,60
2.398	1,617			1,617	40,13			40,13	8,228	137,23	7.510,49			7.510,49	6.008,39			6.008,39	233,98	32,10			32,10	279.426,47
2.399	0,952			0,952	25,69			25,69	11,200	194,28	7.536,18			7.536,18	6.028,94			6.028,94	428,26	20,55			20,55	279.252,74
2.400	0,426			0,426	13,78			13,78	13,826	250,26	7.549,96			7.549,96	6.039,97			6.039,97	678,52	11,02			11,02	279.013,50
2.401	0,473			0,473	8,99			8,99	12,872	266,98	7.558,95			7.558,95	6.047,16			6.047,16	945,50	7,19			7,19	278.753,71
2.402					4,73			4,73	18,731	316,03	7.563,68			7.563,68	6.050,94			6.050,94	1.261,53	3,78			3,78	278.441,46
2.403									20,022	387,53									1.649,06					278.053,93
2.404									20,394	404,16									2.053,22					277.649,77
2.405									20,150	405,44									2.458,66					277.244,33
2.406									21,784	419,34									2.878,00					276.824,99
2.407									21,886	436,70									3.314,70					276.388,29
2.408									20,330	422,16									3.736,86					275.966,13
2.409	0,051			0,051	0,51			0,51	17,344	376,74	0,51			0,51	0,41			0,41	4.113,60	0,41			0,41	275.589,80
2.410	0,337			0,337	3,88			3,88	14,601	319,45	4,39			4,39	3,51			3,51	4.433,05	3,10			3,10	275.273,45
2.411	0,572			0,572	9,09			9,09	13,218	278,19	13,48			13,48	10,78			10,78	4.711,24	7,27			7,27	275.002,53
2.412	0,860			0,860	14,32			14,32	11,784	250,02	27,80			27,80	22,24			22,24	4.961,26	11,46			11,46	274.763,97
2.413	1,082			1,082	19,42			19,42	10,735	225,19	47,22			47,22	37,78			37,78	5.186,45	15,54			15,54	274.554,32
2.414	1,468			1,468	25,50			25,50	8,928	196,63	72,72			72,72	58,18			58,18	5.383,08	20,40			20,40	274.378,09
2.415	1,816			1,816	32,84			32,84	7,607	165,35	105,56			105,56	84,45			84,45	5.548,43	26,27			26,27	274.239,01
2.416	2,448			2,448	42,64			42,64	5,008	126,15	148,20			148,20	118,56			118,56	5.674,58	34,11			34,11	274.146,97
2.417	2,938			2,938	53,86			53,86	3,610	86,18	202,06			202,06	161,65			161,65	5.760,76	43,09			43,09	274.103,88
2.418	3,476			3,476	64,14			64,14	1,689	52,99	266,20			266,20	212,96			212,96	5.813,75	51,31			51,31	274.102,20
2.419	3,664			3,664	71,40			71,40	1,277	29,66	337,60			337,60	270,08			270,08	5.843,41	29,66			29,66	274.129,66
2.420	3,505			3,505	71,69			71,69	0,781	20,58	409,29			409,29	327,43			327,43	5.863,99	20,58			20,58	274.166,43
2.421	3,705			3,705	72,10			72,10	0,501	12,82	481,39			481,39	385,11			385,11	5.876,81	12,82			12,82	274.211,29
2.422	3,862			3,862	75,67			75,67	0,011	5,12	557,06			557,06	445,65			445,65	5.881,93	5,12			5,12	274.266,71
2.423	3,778			3,778	76,40			76,40	0,479	4,90	633,46			633,46	506,77			506,77	5.886,83	4,90			4,90	274.322,93
2.424	3,802			3,802	75,80			75,80	0,273	7,52	709,26			709,26	567,41			567,41	5.894,35	7,52			7,52	274.376,05
2.425	3,385			3,385	71,87			71,87	0,966	12,39	781,13			781,13	624,90			624,90	5.906,74	12,39			12,39	274.421,16
2.426	3,221			3,221	66,06			66,06	1,524	24,90	847,19			847,19	677,75			677,75	5.931,64	24,90			24,90	274.449,11
2.427	3,605			3,605	68,26			68,26	1,711	32,35	915,45			915,45	732,36			732,36	5.963,99	32,35			32,35	274.471,37
2.428	2,917			2,917	65,22			65,22	3,751	54,62	980,67			980,67	784,54			784,54	6.018,61	52,18			52,18	274.468,93
2.429	2,108			2,108	50,25			50,25	6,553	103,04	1.030,92			1.030,92	824,74			824,74	6.121,65	40,20			40,20	274.406,09
2.430	1,101			1,101	32,09			32,09	10,542	170,95	1.063,01			1.063,01	850,41			850,41	6.292,60	25,67			25,67	274.260,81
2.431	0,393			0,393	14,94			14,94	14,464	250,06	1.077,95			1.077,95	862,36			862,36	6.542,66	11,95			11,95	274.022,70
2.432	0,038			0,038	4,31			4,31	18,168	326,32	1.082,26			1.082,26	865,81			865,81	6.868,98	3,45			3,45	273.699,83
2.433					0,38			0,38	21,821	399,89	1.082,64			1.082,64	866,11			866,11	7.268,87	0,30			0,30	273.300,24
2.434									25,992	478,13									7.747,00					272.822,11
2.435									30,941	569,33									8.316,33					272.252,78
2.436									34,476	654,17									8.970,50					271.598,61
2.437									41,306	757,82									9.728,32					270.840,79
2.438									49,427	907,33									10.635,65					269.933,46
2.439									53,893	1.033,20									11.668,85					268.900,26
2.440									57,404	1.112,97									12.781,82					267.787,29
2.441									55,562	1.129,66									13.911,48					266.657,63
2.442									53,469	1.090,31									15.001,79					265.567,32
2.443									47,374	1.008,43									16.010,22					264.558,89

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.444									39,800	871,74									16.881,96					263.687,15
2.445									32,377	721,77									17.603,73					262.965,38
2.446									24,402	567,79									18.171,52					262.397,59
2.447									18,374	427,76									18.599,28					261.969,83
2.448									12,348	307,22									18.906,50					261.662,61
2.449	0,026			0,026	0,26			0,26	7,998	203,46	0,26			0,26	0,21			0,21	19.109,96	0,21			0,21	261.459,36
2.450		0,008	0,276	0,284	0,26	0,08	2,76	3,10	3,695	116,93	0,52	0,08	2,76	3,36	0,42	0,07	3,25	3,74	19.226,89	0,21	0,07	3,25	3,53	261.345,95
2.451						0,08	2,76	2,84	0,064	37,59		0,16	5,52	5,68		0,14	6,49	6,63	19.264,48		0,07	3,25	3,32	261.311,68
2.452			0,803	0,803			8,03	8,03		0,64			13,55	13,55			15,94	15,94	19.265,12			0,64	0,64	261.320,49
2.453	1,821	0,493	0,350	2,664	18,21	4,93	11,53	34,67			18,21	4,93	25,08	48,22	14,57	4,29	29,51	48,37						261.352,91
2.454	3,046	0,583	0,115	3,744	48,67	10,76	4,65	64,08			66,88	15,69	29,73	112,30	53,50	13,64	34,98	102,12						261.406,67
2.455	5,404	0,184		5,588	84,50	7,67	1,15	93,32			151,38	23,36	30,88	205,62	121,10	20,31	36,33	177,74						261.482,29
2.456	10,324	1,247	2,717	14,288	157,28	14,31	27,17	198,76			308,66	37,67	58,05	404,38	246,93	32,76	68,29	347,98						261.652,52
2.457	13,528	1,360	1,469	16,357	238,52	26,07	41,86	306,45			547,18	63,74	99,91	710,83	437,74	55,43	117,54	610,71						261.915,25
2.458	15,261	1,473	1,513	18,247	287,89	28,33	29,82	346,04			835,07	92,07	129,73	1.056,87	668,06	80,06	152,62	900,74						262.205,28
2.459	14,859	1,554	2,177	18,590	301,20	30,27	36,90	368,37			1.136,27	122,34	166,63	1.425,24	909,02	106,38	196,04	1.211,44						262.515,97
2.460	19,611	1,757	1,426	22,794	344,70	33,11	36,03	413,84			1.480,97	155,45	202,66	1.839,08	1.184,78	135,17	238,42	1.558,37						262.862,91
2.461	27,886	2,392	1,716	31,994	474,97	41,49	31,42	547,88			1.955,94	196,94	234,08	2.386,96	1.564,75	171,25	275,39	2.011,39						263.315,93
2.462	33,690	3,091	2,665	39,446	615,76	54,83	43,81	714,40			2.571,70	251,77	277,89	3.101,36	2.057,36	218,93	326,93	2.603,22						263.907,76
2.463	38,047	4,555	3,439	46,041	717,37	76,46	61,04	854,87			3.289,07	328,23	338,93	3.956,23	2.631,26	285,42	398,74	3.315,42						264.619,95
2.464	42,383	6,668	4,293	53,344	804,30	112,23	77,32	993,85			4.093,37	440,46	416,25	4.950,08	3.274,70	383,01	489,71	4.147,42						265.451,95
2.465	44,704	7,964	5,006	57,674	870,87	146,32	92,99	1.110,18			4.964,24	586,78	509,24	6.060,26	3.971,39	510,24	599,11	5.080,74						266.385,28
2.466	35,798	5,006		40,804	805,02	129,70	50,06	984,78			5.769,26	716,48	559,30	7.045,04	4.615,41	623,03	658,00	5.896,44						267.200,97
2.467	36,710	6,310	0,344	43,364	725,08	113,16	3,44	841,68			6.494,34	829,64	562,74	7.886,72	5.195,47	721,43	662,05	6.578,95						267.883,48
2.468	37,127	6,460	1,299	44,886	738,37	127,70	16,43	882,50			7.232,71	957,34	579,17	8.769,22	5.786,17	832,47	681,38	7.300,02						268.604,55
2.469	40,851	6,933	0,482	48,266	779,78	133,93	17,81	931,52			8.012,49	1.091,27	596,98	9.700,74	6.409,99	948,93	702,33	8.061,25						269.365,79
2.470	40,930	6,955	0,687	48,572	817,81	138,88	11,69	968,38			8.830,30	1.230,15	608,67	10.669,12	7.064,24	1.069,70	716,08	8.850,02						270.154,56
2.471	41,999	6,741	0,054	48,794	829,29	136,96	7,41	973,66			9.659,59	1.367,11	616,08	11.642,78	7.727,67	1.188,79	724,80	9.641,26						270.945,81
2.472	55,765	10,550	5,597	71,912	977,64	172,91	56,51	1.207,06			10.637,23	1.540,02	672,59	12.849,84	8.509,78	1.339,15	791,28	10.640,21						271.944,76
2.473	57,540	10,083	4,834	72,457	1.133,05	206,33	104,31	1.443,69			11.770,28	1.746,35	776,90	14.293,53	9.416,22	1.518,57	914,00	11.848,79						273.153,34
2.474	57,675	8,778	4,022	70,475	1.152,15	188,61	88,56	1.429,32			12.922,43	1.934,96	865,46	15.722,85	10.337,94	1.682,57	1.018,19	13.038,70						274.343,26
2.475	58,460	7,687	3,359	69,506	1.161,35	164,65	73,81	1.399,81			14.083,78	2.099,61	939,27	17.122,66	11.267,02	1.825,75	1.105,02	14.197,79						275.502,35
2.476	57,072	6,172	2,645	65,889	1.155,32	138,59	60,04	1.353,95			15.239,10	2.238,20	999,31	18.476,61	12.191,28	1.946,26	1.175,66	15.313,20						276.617,75
2.477	58,153	6,342	2,569	67,064	1.152,25	125,14	52,14	1.329,53			16.391,35	2.363,34	1.051,45	19.806,14	13.113,08	2.055,08	1.237,00	16.405,16						277.709,71
2.478	56,689	5,490	2,166	64,345	1.148,42	118,32	47,35	1.314,09			17.539,77	2.481,66	1.098,80	21.120,23	14.031,82	2.157,97	1.292,71	17.482,50						278.787,04
2.479	54,261	5,644	2,543	62,448	1.109,50	111,34	47,09	1.267,93			18.649,27	2.593,00	1.145,89	22.388,16	14.919,42	2.254,78	1.348,11	18.522,31						279.826,86
2.480	53,617	4,394	1,927	59,938	1.078,78	100,38	44,70	1.223,86			19.728,05	2.693,38	1.190,59	23.612,02	15.782,44	2.342,07	1.400,69	19.525,20						280.829,76
2.481	51,754	3,800	1,230	56,784	1.053,71	81,94	31,57	1.167,22			20.781,76	2.775,32	1.222,16	24.779,24	16.625,41	2.413,32	1.437,84	20.476,57						281.781,12
2.482	51,772	3,227	0,535	55,534	1.035,26	70,27	17,65	1.123,18			21.817,02	2.845,59	1.239,81	25.902,42	17.453,62	2.474,43	1.458,60	21.386,65						282.691,20
2.483	47,873	2,666	0,249	50,788	996,45	58,93	7,84	1.063,22			22.813,47	2.904,52	1.247,65	26.965,64	18.250,78	2.525,67	1.467,82	22.244,27						283.548,83
2.484	46,181			46,181	940,54	26,66	2,49	969,69			23.754,01	2.931,18	1.250,14	27.935,33	19.003,21	2.548,85	1.470,75	23.022,81						284.327,37
2.485	38,490			38,490	846,71			846,71			24.600,72			24.600,72	19.680,58			19.680,58						285.004,74
2.486	31,580			31,580	700,70			700,70			25.301,42			25.301,42	20.241,14			20.241,14						285.565,30
2.487	21,895			21,895	534,75			534,75			25.836,17			25.836,17	20.668,94			20.668,94						285.993,10
2.488	16,548			16,548	384,43			384,43			26.220,60			26.220,60	20.976,48			20.976,48						286.300,64
2.489	3,492			3,492	200,40			200,40	1,961	19,61	26.421,00			26.421,00	21.136,80			21.136,80	19,61	19,61			19,61	286.441,35
2.490	12,697			12,697	161,89			161,89		19,61	26.582,89			26.582,89	21.266,31			21.266,31	39,22	19,61			19,61	286.551,25

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.491	8,036			8,036	207,33			207,33			26.790,22			26.790,22	21.432,18			21.432,18						286.717,11
2.492	2,276			2,276	103,12			103,12	5,629	56,29	26.893,34			26.893,34	21.514,67			21.514,67	56,29	56,29			56,29	286.743,32
2.493	0,389			0,389	26,65			26,65	14,375	200,04	26.919,99			26.919,99	21.535,99			21.535,99	256,33	21,32			21,32	286.564,60
2.494					3,89			3,89	27,929	423,04	26.923,88			26.923,88	21.539,10			21.539,10	679,37	3,11			3,11	286.144,67
2.495									42,572	705,01									1.384,38					285.439,66
2.496									44,282	868,54									2.252,92					284.571,12
2.497									29,250	735,32									2.988,24					283.835,80
2.498									21,287	505,37									3.493,61					283.330,43
2.499	0,624			0,624	6,24			6,24	12,983	342,70	6,24			6,24	4,99			4,99	3.836,31	4,99			4,99	282.992,72
2.500	2,026			2,026	26,50			26,50	6,874	198,57	32,74			32,74	26,19			26,19	4.034,88	21,20			21,20	282.815,35
2.501	3,696			3,696	57,22			57,22	1,401	82,75	89,96			89,96	71,97			71,97	4.117,63	45,78			45,78	282.778,38
2.502	7,585			7,585	112,81			112,81		14,01	202,77			202,77	162,22			162,22	4.131,64	14,01			14,01	282.854,62
2.503	13,210			13,210	207,95			207,95			410,72			410,72	328,58			328,58						283.020,98
2.504	17,206			17,206	304,16			304,16			714,88			714,88	571,90			571,90						283.264,31
2.505	22,918			22,918	401,24			401,24			1.116,12			1.116,12	892,90			892,90						283.585,30
2.506	27,782			27,782	507,00			507,00			1.623,12			1.623,12	1.298,50			1.298,50						283.990,90
2.507	31,921			31,921	597,03			597,03			2.220,15			2.220,15	1.776,12			1.776,12						284.468,52
2.508	32,439			32,439	643,60			643,60			2.863,75			2.863,75	2.291,00			2.291,00						284.983,40
2.509	30,491			30,491	629,30			629,30			3.493,05			3.493,05	2.794,44			2.794,44						285.486,84
2.510	29,268			29,268	597,59			597,59			4.090,64			4.090,64	3.272,51			3.272,51						285.964,91
2.511	25,227			25,227	544,95			544,95			4.635,59			4.635,59	3.708,47			3.708,47						286.400,87
2.512	17,734			17,734	429,61			429,61			5.065,20			5.065,20	4.052,16			4.052,16						286.744,56
2.513	10,424			10,424	281,58			281,58			5.346,78			5.346,78	4.277,42			4.277,42						286.969,82
2.514	3,371			3,371	137,95			137,95	1,268	12,68	5.484,73			5.484,73	4.387,78			4.387,78	12,68	12,68			12,68	287.067,50
2.515	2,203			2,203	55,74			55,74	6,376	76,44	5.540,47			5.540,47	4.432,38			4.432,38	89,12	44,59			44,59	287.035,65
2.516	2,025			2,025	42,28			42,28	6,897	132,73	5.582,75			5.582,75	4.466,20			4.466,20	221,85	33,82			33,82	286.936,74
2.517	1,648			1,648	36,73			36,73	8,449	153,46	5.619,48			5.619,48	4.495,58			4.495,58	375,31	29,38			29,38	286.812,66
2.518	3,481			3,481	51,29			51,29	0,978	94,27	5.670,77			5.670,77	4.536,62			4.536,62	469,58	41,03			41,03	286.759,42
2.519	0,575			0,575	40,56			40,56	13,357	143,35	5.711,33			5.711,33	4.569,06			4.569,06	612,93	32,45			32,45	286.648,52
2.520	0,281			0,281	8,56			8,56	15,174	285,31	5.719,89			5.719,89	4.575,91			4.575,91	898,24	6,85			6,85	286.370,06
2.521	0,259			0,259	5,40			5,40	15,087	302,61	5.725,29			5.725,29	4.580,23			4.580,23	1.200,85	4,32			4,32	286.071,77
2.522	0,073			0,073	3,32			3,32	16,979	320,66	5.728,61			5.728,61	4.582,89			4.582,89	1.521,51	2,66			2,66	285.753,77
2.523					0,73			0,73	20,549	375,28	5.729,34			5.729,34	4.583,47			4.583,47	1.896,79	0,58			0,58	285.379,07
2.524									25,163	457,12									2.353,91					284.921,95
2.525									29,806	549,69									2.903,60					284.372,26
2.526									37,058	668,64									3.572,24					283.703,62
2.527									43,793	808,51									4.380,75					282.895,11
2.528									52,412	962,05									5.342,80					281.933,06
2.529									59,523	1.119,35									6.462,15					280.813,71
2.530									68,592	1.281,15									7.743,30					279.532,56
2.531									80,771	1.493,63									9.236,93					278.038,93
2.532									96,503	1.772,74									11.009,67					276.266,19
2.533									118,267	2.147,70									13.157,37					274.118,49
2.534									138,865	2.571,32									15.728,69					271.547,17
2.535									148,478	2.873,43									18.602,12					268.673,74
2.536									151,629	3.001,07									21.603,19					265.672,67
2.537									150,910	3.025,39									24.628,58					262.647,28

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.538									150,998	3.019,08									27.647,66					259.628,20
2.539									152,848	3.038,46									30.686,12					256.589,74
2.540									151,968	3.048,16									33.734,28					253.541,58
2.541									152,116	3.040,84									36.775,12					250.500,74
2.542									150,372	3.024,88									39.800,00					247.475,86
2.543									152,266	3.026,38									42.826,38					244.449,48
2.544									156,763	3.090,29									45.916,67					241.359,19
2.545									152,274	3.090,37									49.007,04					238.268,82
2.546									146,324	2.985,98									51.993,02					235.282,84
2.547									140,098	2.864,22									54.857,24					232.418,62
2.548									130,064	2.701,62									57.558,86					229.717,00
2.549									135,007	2.650,71									60.209,57					227.066,29
2.550									142,099	2.771,06									62.980,63					224.295,23
2.551									143,167	2.852,66									65.833,29					221.442,57
2.552									146,533	2.897,00									68.730,29					218.545,57
2.553									151,808	2.983,41									71.713,70					215.562,16
2.554									167,343	3.191,51									74.905,21					212.370,65
2.555									168,546	3.358,89									78.264,10					209.011,76
2.556									177,619	3.461,65									81.725,75					205.550,11
2.557									192,156	3.697,75									85.423,50					201.852,36
2.558									198,991	3.911,47									89.334,97					197.940,89
2.559									187,158	3.861,49									93.196,46					194.079,40
2.560									187,753	3.749,11									96.945,57					190.330,29
2.561									180,990	3.687,43									100.633,00					186.642,86
2.562									172,256	3.532,46									104.165,46					183.110,40
2.563									162,438	3.346,94									107.512,40					179.763,46
2.564									136,316	2.987,54									110.499,94					176.775,92
2.565									115,507	2.518,23									113.018,17					174.257,69
2.566									94,661	2.101,68									115.119,85					172.156,01
2.567									77,488	1.721,49									116.841,34					170.434,52
2.568									63,752	1.412,40									118.253,74					169.022,12
2.569									43,219	1.069,71									119.323,45					167.952,41
2.570									37,651	808,70									120.132,15					167.143,71
2.571									34,755	724,06									120.856,21					166.419,65
2.572									32,347	671,02									121.527,23					165.748,63
2.573									29,199	615,46									122.142,69					165.133,17
2.574	0,066			0,066	0,66			0,66	26,831	560,30	0,66			0,66	0,53			0,53	122.702,99	0,53			0,53	164.573,40
2.575	0,188			0,188	2,54			2,54	24,689	515,20	3,20			3,20	2,56			2,56	123.218,19	2,03			2,03	164.060,23
2.576	0,346			0,346	5,34			5,34	22,699	473,88	8,54			8,54	6,83			6,83	123.692,07	4,27			4,27	163.590,62
2.577	0,415			0,415	7,61			7,61	22,135	448,34	16,15			16,15	12,92			12,92	124.140,41	6,09			6,09	163.148,37
2.578	0,552			0,552	9,67			9,67	21,322	434,57	25,82			25,82	20,66			20,66	124.574,98	7,74			7,74	162.721,54
2.579	0,738			0,738	12,90			12,90	19,635	409,57	38,72			38,72	30,98			30,98	124.984,55	10,32			10,32	162.322,29
2.580	1,362			1,362	21,00			21,00	15,776	354,11	59,72			59,72	47,78			47,78	125.338,66	16,80			16,80	161.984,98
2.581	1,702			1,702	30,64			30,64	13,673	294,49	90,36			90,36	72,29			72,29	125.633,15	24,51			24,51	161.715,00
2.582	1,724			1,724	34,26			34,26	13,533	272,06	124,62			124,62	99,70			99,70	125.905,21	27,41			27,41	161.470,35
2.583	1,983			1,983	37,07			37,07	11,471	250,04	161,69			161,69	129,35			129,35	126.155,25	29,66			29,66	161.249,97
2.584	2,027			2,027	40,10			40,10	11,451	229,22	201,79			201,79	161,43			161,43	126.384,47	32,08			32,08	161.052,83

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.585	2,123			2,123	41,50			41,50	11,365	228,16	243,29			243,29	194,63			194,63	126.612,63	33,20			33,20	160.857,87
2.586	2,297			2,297	44,20			44,20	10,088	214,53	287,49			287,49	229,99			229,99	126.827,16	35,36			35,36	160.678,70
2.587	2,331			2,331	46,28			46,28	9,665	197,53	333,77			333,77	267,02			267,02	127.024,69	37,02			37,02	160.518,19
2.588	2,160			2,160	44,91			44,91	10,850	205,15	378,68			378,68	302,94			302,94	127.229,84	35,93			35,93	160.348,97
2.589	2,046			2,046	42,06			42,06	11,264	221,14	420,74			420,74	336,59			336,59	127.450,98	33,65			33,65	160.161,48
2.590	1,984			1,984	40,30			40,30	12,292	235,56	461,04			461,04	368,83			368,83	127.686,54	32,24			32,24	159.958,16
2.591	1,918			1,918	39,02			39,02	12,510	248,02	500,06			500,06	400,05			400,05	127.934,56	31,22			31,22	159.741,36
2.592	1,898			1,898	38,16			38,16	12,000	245,10	538,22			538,22	430,58			430,58	128.179,66	30,53			30,53	159.526,79
2.593	1,808			1,808	37,06			37,06	13,354	253,54	575,28			575,28	460,22			460,22	128.433,20	29,65			29,65	159.302,90
2.594	1,932			1,932	37,40			37,40	13,019	263,73	612,68			612,68	490,14			490,14	128.696,93	29,92			29,92	159.069,09
2.595	2,070			2,070	40,02			40,02	11,182	242,01	652,70			652,70	522,16			522,16	128.938,94	32,02			32,02	158.859,10
2.596	2,338			2,338	44,08			44,08	10,367	215,49	696,78			696,78	557,42			557,42	129.154,43	35,26			35,26	158.678,87
2.597	2,727			2,727	50,65			50,65	8,000	183,67	747,43			747,43	597,94			597,94	129.338,10	40,52			40,52	158.535,72
2.598	2,876			2,876	56,03			56,03	6,548	145,48	803,46			803,46	642,77			642,77	129.483,58	44,82			44,82	158.435,06
2.599	3,098			3,098	59,74			59,74	4,683	112,31	863,20			863,20	690,56			690,56	129.595,89	47,79			47,79	158.370,54
2.600	3,430			3,430	65,28			65,28	2,860	75,43	928,48			928,48	742,78			742,78	129.671,32	52,22			52,22	158.347,33
2.601	3,509			3,509	69,39			69,39	2,197	50,57	997,87			997,87	798,30			798,30	129.721,89	50,57			50,57	158.352,27
2.602	2,991			2,991	65,00			65,00	1,908	41,05	1.062,87			1.062,87	850,30			850,30	129.762,94	41,05			41,05	158.363,22
2.603	3,073			3,073	60,64			60,64	0,446	23,54	1.123,51			1.123,51	898,81			898,81	129.786,48	23,54			23,54	158.388,19
2.604	3,491			3,491	65,64			65,64	0,194	6,40	1.189,15			1.189,15	951,32			951,32	129.792,88	6,40			6,40	158.434,30
2.605	3,288			3,288	67,79			67,79	0,595	7,89	1.256,94			1.256,94	1.005,55			1.005,55	129.800,77	7,89			7,89	158.480,64
2.606	4,101			4,101	73,89			73,89	0,006	6,01	1.330,83			1.330,83	1.064,66			1.064,66	129.806,78	6,01			6,01	158.533,74
2.607	3,566			3,566	76,67			76,67	0,251	2,57	1.407,50			1.407,50	1.126,00			1.126,00	129.809,35	2,57			2,57	158.592,51
2.608	7,003			7,003	105,69			105,69		2,51	1.513,19			1.513,19	1.210,55			1.210,55	129.811,86	2,51			2,51	158.674,55
2.609	5,042			5,042	120,45			120,45			1.633,64			1.633,64	1.306,91			1.306,91						158.770,91
2.610	6,363			6,363	114,05			114,05			1.747,69			1.747,69	1.398,15			1.398,15						158.862,15
2.611	10,049			10,049	164,12			164,12			1.911,81			1.911,81	1.529,45			1.529,45						158.993,45
2.612	7,328			7,328	173,77			173,77			2.085,58			2.085,58	1.668,46			1.668,46						159.132,47
2.613	8,992			8,992	163,20			163,20			2.248,78			2.248,78	1.799,02			1.799,02						159.263,03
2.614	9,374			9,374	183,66			183,66			2.432,44			2.432,44	1.945,95			1.945,95						159.409,96
2.615	10,862			10,862	202,36			202,36			2.634,80			2.634,80	2.107,84			2.107,84						159.571,85
2.616	11,704			11,704	225,66			225,66			2.860,46			2.860,46	2.288,37			2.288,37						159.752,38
2.617	12,791			12,791	244,95			244,95			3.105,41			3.105,41	2.484,33			2.484,33						159.948,34
2.618	12,948			12,948	257,39			257,39			3.362,80			3.362,80	2.690,24			2.690,24						160.154,25
2.619	13,184			13,184	261,32			261,32			3.624,12			3.624,12	2.899,30			2.899,30						160.363,31
2.620	14,121			14,121	273,05			273,05			3.897,17			3.897,17	3.117,74			3.117,74						160.581,75
2.621	16,047			16,047	301,68			301,68			4.198,85			4.198,85	3.359,08			3.359,08						160.823,09
2.622	15,539			15,539	315,86			315,86			4.514,71			4.514,71	3.611,77			3.611,77						161.075,78
2.623	13,883			13,883	294,22			294,22			4.808,93			4.808,93	3.847,14			3.847,14						161.311,16
2.624	13,930			13,930	278,13			278,13			5.087,06			5.087,06	4.069,65			4.069,65						161.533,66
2.625	13,505			13,505	274,35			274,35			5.361,41			5.361,41	4.289,13			4.289,13						161.753,14
2.626	14,297			14,297	278,02			278,02			5.639,43			5.639,43	4.511,54			4.511,54						161.975,56
2.627	13,996			13,996	282,93			282,93			5.922,36			5.922,36	4.737,89			4.737,89						162.201,90
2.628	13,244			13,244	272,40			272,40			6.194,76			6.194,76	4.955,81			4.955,81						162.419,82
2.629	12,527			12,527	257,71			257,71			6.452,47			6.452,47	5.161,98			5.161,98						162.625,99
2.630	12,950			12,950	254,77			254,77			6.707,24			6.707,24	5.365,79			5.365,79						162.829,81
2.631	12,354			12,354	253,04			253,04			6.960,28			6.960,28	5.568,22			5.568,22						163.032,24

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.632	12,366			12,366	247,20			247,20			7.207,48			7.207,48	5.765,98			5.765,98						163.230,00
2.633	11,614			11,614	239,80			239,80			7.447,28			7.447,28	5.957,82			5.957,82						163.421,84
2.634	12,705			12,705	243,19			243,19			7.690,47			7.690,47	6.152,38			6.152,38						163.616,39
2.635	11,971			11,971	246,76			246,76			7.937,23			7.937,23	6.349,78			6.349,78						163.813,80
2.636	13,115			13,115	250,86			250,86			8.188,09			8.188,09	6.550,47			6.550,47						164.014,49
2.637	13,051			13,051	261,66			261,66			8.449,75			8.449,75	6.759,80			6.759,80						164.223,82
2.638	12,705			12,705	257,56			257,56			8.707,31			8.707,31	6.965,85			6.965,85						164.429,87
2.639	13,266			13,266	259,71			259,71			8.967,02			8.967,02	7.173,62			7.173,62						164.637,64
2.640	13,348			13,348	266,14			266,14			9.233,16			9.233,16	7.386,53			7.386,53						164.850,55
2.641	13,984			13,984	273,32			273,32			9.506,48			9.506,48	7.605,18			7.605,18						165.069,21
2.642	14,058			14,058	280,42			280,42			9.786,90			9.786,90	7.829,52			7.829,52						165.293,55
2.643	15,463			15,463	295,21			295,21			10.082,11			10.082,11	8.065,69			8.065,69						165.529,72
2.644	16,004			16,004	314,67			314,67			10.396,78			10.396,78	8.317,42			8.317,42						165.781,46
2.645	16,460			16,460	324,64			324,64			10.721,42			10.721,42	8.577,14			8.577,14						166.041,17
2.646	18,539			18,539	349,99			349,99			11.071,41			11.071,41	8.857,13			8.857,13						166.321,16
2.647	21,994			21,994	405,33			405,33			11.476,74			11.476,74	9.181,39			9.181,39						166.645,42
2.648	24,381			24,381	463,75			463,75			11.940,49			11.940,49	9.552,39			9.552,39						167.016,42
2.649	27,582			27,582	519,63			519,63			12.460,12			12.460,12	9.968,10			9.968,10						167.432,12
2.650	32,278			32,278	598,60			598,60			13.058,72			13.058,72	10.446,98			10.446,98						167.911,00
2.651	33,522			33,522	658,00			658,00			13.716,72			13.716,72	10.973,38			10.973,38						168.437,40
2.652	33,346			33,346	668,68			668,68			14.385,40			14.385,40	11.508,32			11.508,32						168.972,34
2.653	32,550			32,550	658,96			658,96			15.044,36			15.044,36	12.035,49			12.035,49						169.499,51
2.654	31,812			31,812	643,62			643,62			15.687,98			15.687,98	12.550,38			12.550,38						170.014,41
2.655	32,009			32,009	638,21			638,21			16.326,19			16.326,19	13.060,95			13.060,95						170.524,98
2.656	32,966			32,966	649,75			649,75			16.975,94			16.975,94	13.580,75			13.580,75						171.044,78
2.657	32,359			32,359	653,25			653,25			17.629,19			17.629,19	14.103,35			14.103,35						171.567,38
2.658	33,262			33,262	656,21			656,21			18.285,40			18.285,40	14.628,32			14.628,32						172.092,35
2.659	32,451			32,451	657,13			657,13			18.942,53			18.942,53	15.154,02			15.154,02						172.618,05
2.660	34,054			34,054	665,05			665,05			19.607,58			19.607,58	15.686,06			15.686,06						173.150,09
2.661	34,259			34,259	683,13			683,13			20.290,71			20.290,71	16.232,57			16.232,57						173.696,59
2.662	35,015			35,015	692,74			692,74			20.983,45			20.983,45	16.786,76			16.786,76						174.250,78
2.663	35,506			35,506	705,21			705,21			21.688,66			21.688,66	17.350,93			17.350,93						174.814,95
2.664	35,260			35,260	707,66			707,66			22.396,32			22.396,32	17.917,06			17.917,06						175.381,08
2.665	34,455			34,455	697,15			697,15			23.093,47			23.093,47	18.474,78			18.474,78						175.938,80
2.666	35,253			35,253	697,08			697,08			23.790,55			23.790,55	19.032,44			19.032,44						176.496,46
2.667	34,544			34,544	697,97			697,97			24.488,52			24.488,52	19.590,82			19.590,82						177.054,84
2.668	33,487			33,487	680,31			680,31			25.168,83			25.168,83	20.135,06			20.135,06						177.599,09
2.669	34,136			34,136	676,23			676,23			25.845,06			25.845,06	20.676,05			20.676,05						178.140,07
2.670	34,721			34,721	688,57			688,57			26.533,63			26.533,63	21.226,90			21.226,90						178.690,93
2.671	34,638			34,638	693,59			693,59			27.227,22			27.227,22	21.781,78			21.781,78						179.245,80
2.672	31,017			31,017	656,55			656,55			27.883,77			27.883,77	22.307,02			22.307,02						179.771,04
2.673	26,199			26,199	572,16			572,16			28.455,93			28.455,93	22.764,74			22.764,74						180.228,77
2.674	19,733			19,733	459,32			459,32			28.915,25			28.915,25	23.132,20			23.132,20						180.596,23
2.675	15,861			15,861	355,94			355,94			29.271,19			29.271,19	23.416,95			23.416,95						180.880,98
2.676	12,717			12,717	285,78			285,78			29.556,97			29.556,97	23.645,58			23.645,58						181.109,60
2.677	11,231			11,231	239,48			239,48			29.796,45			29.796,45	23.837,16			23.837,16						181.301,18
2.678	7,995			7,995	192,26			192,26			29.988,71			29.988,71	23.990,97			23.990,97						181.454,99

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.679	4,450			4,450	124,45			124,45	0,001	0,01	30.113,16			30.113,16	24.090,53			24.090,53	0,01	0,01			0,01	181.554,54
2.680	2,847			2,847	72,97			72,97	0,690	6,91	30.186,13			30.186,13	24.148,90			24.148,90	6,92	6,91			6,91	181.606,01
2.681	3,293			3,293	61,40			61,40	2,552	32,42	30.247,53			30.247,53	24.198,02			24.198,02	39,34	32,42			32,42	181.622,71
2.682	2,958			2,958	62,51			62,51	1,821	43,73	30.310,04			30.310,04	24.248,03			24.248,03	83,07	43,73			43,73	181.628,99
2.683	3,514			3,514	64,72			64,72	0,170	19,91	30.374,76			30.374,76	24.299,81			24.299,81	102,98	19,91			19,91	181.660,86
2.684	5,150			5,150	86,64			86,64		1,70	30.461,40			30.461,40	24.369,12			24.369,12	104,68	1,70			1,70	181.728,47
2.685	4,829			4,829	99,79			99,79			30.561,19			30.561,19	24.448,95			24.448,95						181.808,30
2.686	3,455			3,455	82,84			82,84	0,098	0,98	30.644,03			30.644,03	24.515,22			24.515,22	0,98	0,98			0,98	181.873,59
2.687	3,663			3,663	71,18			71,18	1,149	12,47	30.715,21			30.715,21	24.572,17			24.572,17	13,45	12,47			12,47	181.918,06
2.688	3,673			3,673	73,36			73,36	1,664	28,13	30.788,57			30.788,57	24.630,86			24.630,86	41,58	28,13			28,13	181.948,62
2.689	3,423			3,423	70,96			70,96	0,108	17,72	30.859,53			30.859,53	24.687,62			24.687,62	59,30	17,72			17,72	181.987,67
2.690	3,793			3,793	72,16			72,16	0,060	1,68	30.931,69			30.931,69	24.745,35			24.745,35	60,98	1,68			1,68	182.043,72
2.691	5,938			5,938	97,31			97,31		0,60	31.029,00			31.029,00	24.823,20			24.823,20	61,58	0,60			0,60	182.120,97
2.692	8,548			8,548	144,86			144,86			31.173,86			31.173,86	24.939,09			24.939,09						182.236,86
2.693	12,365			12,365	209,13			209,13			31.382,99			31.382,99	25.106,39			25.106,39						182.404,16
2.694	17,261			17,261	296,26			296,26			31.679,25			31.679,25	25.343,40			25.343,40						182.641,17
2.695	22,792			22,792	400,53			400,53			32.079,78			32.079,78	25.663,82			25.663,82						182.961,59
2.696	27,071			27,071	498,63			498,63			32.578,41			32.578,41	26.062,73			26.062,73						183.360,49
2.697	31,925	0,220		32,145	589,96	2,20		592,16			33.168,37	2,20		33.170,57	26.534,70	1,91		26.536,61						183.834,37
2.698	36,183	1,422	0,047	37,652	681,08	16,42	0,47	697,97			33.849,45	18,62	0,47	33.868,54	27.079,56	16,19	0,55	27.096,30						184.394,07
2.699	42,808	2,656	0,707	46,171	789,91	40,78	7,54	838,23			34.639,36	59,40	8,01	34.706,77	27.711,49	51,65	9,42	27.772,56						185.070,33
2.700	46,736	3,371	1,496	51,603	895,44	60,27	22,03	977,74			35.534,80	119,67	30,04	35.684,51	28.427,84	104,06	35,34	28.567,24						185.865,01
2.701	50,091	4,071	2,221	56,383	968,27	74,42	37,17	1.079,86			36.503,07	194,09	67,21	36.764,37	29.202,46	168,77	79,07	29.450,30						186.748,07
2.702	50,122	4,299	2,423	56,844	1.002,13	83,70	46,44	1.132,27			37.505,20	277,79	113,65	37.896,64	30.004,16	241,56	133,71	30.379,43						187.677,19
2.703	47,846	4,208	2,685	54,739	979,68	85,07	51,08	1.115,83			38.484,88	362,86	164,73	39.012,47	30.787,90	315,53	193,80	31.297,23						188.595,00
2.704	46,692	5,643	3,578	55,913	945,38	98,51	62,63	1.106,52			39.430,26	461,37	227,36	40.118,99	31.544,21	401,19	267,48	32.212,88						189.510,65
2.705	47,660	7,229	4,210	59,099	943,52	128,72	77,88	1.150,12			40.373,78	590,09	305,24	41.269,11	32.299,02	513,12	359,11	33.171,25						190.469,02
2.706	47,992	8,385	5,120	61,497	956,52	156,14	93,30	1.205,96			41.330,30	746,23	398,54	42.475,07	33.064,24	648,90	468,87	34.182,01						191.479,77
2.707	56,837	6,628	3,156	66,621	1.048,29	150,13	82,76	1.281,18			42.378,59	896,36	481,30	43.756,25	33.902,87	779,44	566,24	35.248,55						192.546,31
2.708	56,221	7,738	3,806	67,765	1.130,58	143,66	69,62	1.343,86			43.509,17	1.040,02	550,92	45.100,11	34.807,34	904,37	648,14	36.359,85						193.657,60
2.709	56,384	7,401	3,693	67,478	1.126,05	151,39	74,99	1.352,43			44.635,22	1.191,41	625,91	46.452,54	35.708,18	1.036,01	736,36	37.480,55						194.778,31
2.710	57,092	6,174	2,978	66,244	1.134,76	135,75	66,71	1.337,22			45.769,98	1.327,16	692,62	47.789,76	36.615,98	1.154,05	814,85	38.584,88						195.882,64
2.711	60,000	6,390	2,696	69,086	1.170,92	125,64	56,74	1.353,30			46.940,90	1.452,80	749,36	49.143,06	37.552,72	1.263,30	881,60	39.697,62						196.995,38
2.712	60,369	7,858	3,427	71,654	1.203,69	142,48	61,23	1.407,40			48.144,59	1.595,28	810,59	50.550,46	38.515,67	1.387,20	953,64	40.856,51						198.154,26
2.713	61,201	7,214	2,931	71,346	1.215,70	150,72	63,58	1.430,00			49.360,29	1.746,00	874,17	51.980,46	39.488,23	1.518,26	1.028,44	42.034,93						199.332,68
2.714	60,182	7,461	3,170	70,813	1.213,83	146,75	61,01	1.421,59			50.574,12	1.892,75	935,18	53.402,05	40.459,30	1.645,87	1.100,21	43.205,38						200.503,13
2.715	55,992	7,897	3,841	67,730	1.161,74	153,58	70,11	1.385,43			51.735,86	2.046,33	1.005,29	54.787,48	41.388,69	1.779,42	1.182,69	44.350,80						201.648,55
2.716	52,904	6,528	3,494	62,926	1.088,96	144,25	73,35	1.306,56			52.824,82	2.190,58	1.078,64	56.094,04	42.259,86	1.904,85	1.268,99	45.433,70						202.731,45
2.717	63,505	5,360	1,968	70,833	1.164,09	118,88	54,62	1.337,59			53.988,91	2.309,46	1.133,26	57.431,63	43.191,13	2.008,23	1.333,25	46.532,61						203.830,35
2.718	49,046	4,044	2,433	55,523	1.125,51	94,04	44,01	1.263,56			55.114,42	2.403,50	1.177,27	58.695,19	44.091,54	2.090,00	1.385,02	47.566,56						204.864,31
2.719	46,390	3,620	2,065	52,075	954,36	76,64	44,98	1.075,98			56.068,78	2.480,14	1.222,25	59.771,17	44.855,02	2.156,64	1.437,94	48.449,60						205.747,36
2.720	45,756	3,614	2,163	51,533	921,46	72,34	42,28	1.036,08			56.990,24	2.552,48	1.264,53	60.807,25	45.592,19	2.219,55	1.487,68	49.299,42						206.597,17
2.721	43,437	3,343	1,903	48,683	891,93	69,57	40,66	1.002,16			57.882,17	2.622,05	1.305,19	61.809,41	46.305,74	2.280,04	1.535,52	50.121,30						207.419,04
2.722	42,246	2,938	1,180	46,364	856,83	62,81	30,83	950,47			58.739,00	2.684,86	1.336,02	62.759,88	46.991,20	2.334,66	1.571,79	50.897,65						208.195,39
2.723	41,277	2,853	1,100	45,230	835,23	57,91	22,80	915,94			59.574,23	2.742,77	1.358,82	63.675,82	47.659,38	2.385,02	1.598,61	51.643,01						208.940,75
2.724	38,193	2,241	0,449	40,883	794,70	50,94	15,49	861,13			60.368,93	2.793,71	1.374,31	64.536,95	48.295,14	2.429,31	1.616,84	52.341,29						209.639,03
2.725	32,159	1,852	0,368	34,379	703,52	40,93	8,17	752,62			61.072,45	2.834,64	1.382,48	65.289,57	48.857,96	2.464,90	1.626,45	52.949,31						210.247,05

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.726	25,343	1,575	0,432	27,350	575,02	34,27	8,00	617,29			61.647,47	2.868,91	1.390,48	65.906,86	49.317,98	2.494,70	1.635,86	53.448,54						210.746,28
2.727	20,841	0,888	0,095	21,824	461,84	24,63	5,27	491,74			62.109,31	2.893,54	1.395,75	66.398,60	49.687,45	2.516,12	1.642,06	53.845,63						211.143,37
2.728	12,689	0,372		13,061	335,30	12,60	0,95	348,85			62.444,61	2.906,14	1.396,70	66.747,45	49.955,69	2.527,08	1.643,18	54.125,95						211.423,68
2.729	9,898	0,256		10,154	225,87	6,28		232,15			62.670,48	2.912,42		65.582,90	50.136,38	2.532,54		52.668,92						211.609,84
2.730	4,398	0,134		4,532	142,96	3,90		146,86	0,422	4,22	62.813,44	2.916,32		65.729,76	50.250,75	2.535,93		52.786,68	4,22	4,22			4,22	211.723,38
2.731	2,918	0,160		3,078	73,16	2,94		76,10	4,232	46,54	62.886,60	2.919,26		65.805,86	50.309,28	2.538,49		52.847,77	50,76	46,54			46,54	211.737,92
2.732	1,781			1,781	46,99	1,60		48,59	9,269	135,01	62.933,59	2.920,86		65.854,45	50.346,87	2.539,88		52.886,75	185,77	37,59	1,39		38,98	211.641,89
2.733	0,178			0,178	19,59			19,59	18,514	277,83	62.953,18			62.953,18	50.362,54			50.362,54	463,60	15,67			15,67	211.379,73
2.734					1,78			1,78	25,661	441,75	62.954,96			62.954,96	50.363,97			50.363,97	905,35	1,42			1,42	210.939,40
2.735									36,954	626,15									1.531,50					210.313,25
2.736									46,417	833,71									2.365,21					209.479,54
2.737									57,209	1.036,26									3.401,47					208.443,28
2.738									68,445	1.256,54									4.658,01					207.186,74
2.739									82,764	1.512,09									6.170,10					205.674,65
2.740									90,203	1.729,67									7.899,77					203.944,98
2.741									110,944	2.011,47									9.911,24					201.933,51
2.742									133,718	2.446,62									12.357,86					199.486,89
2.743									156,243	2.899,61									15.257,47					196.587,28
2.744									173,955	3.301,98									18.559,45					193.285,30
2.745									178,344	3.522,99									22.082,44					189.762,31
2.746									182,550	3.608,94									25.691,38					186.153,37
2.747									182,200	3.647,50									29.338,88					182.505,87
2.748									178,099	3.602,99									32.941,87					178.902,88
2.749									176,860	3.549,59									36.491,46					175.353,29
2.750									175,981	3.528,41									40.019,87					171.824,88
2.751									171,989	3.479,70									43.499,57					168.345,18
2.752									172,977	3.449,66									46.949,23					164.895,52
2.753									179,804	3.527,81									50.477,04					161.367,71
2.754									196,176	3.759,80									54.236,84					157.607,91
2.755									187,694	3.838,70									58.075,54					153.769,21
2.756																								153.769,21
2.757																								153.769,21
2.758																								153.769,21
2.759																								153.769,21
2.760									147,801															153.769,21
2.761									138,700	2.865,01									2.865,01					150.904,20
2.762									133,583	2.722,83									5.587,84					148.181,37
2.763									135,497	2.690,80									8.278,64					145.490,57
2.764									135,772	2.712,69									10.991,33					142.777,88
2.765									140,567	2.763,39									13.754,72					140.014,49
2.766									147,060	2.876,27									16.630,99					137.138,22
2.767									149,874	2.969,34									19.600,33					134.168,88
2.768									150,306	3.001,80									22.602,13					131.167,08
2.769									150,780	3.010,86									25.612,99					128.156,22
2.770									149,018	2.997,98									28.610,97					125.158,24
2.771									148,408	2.974,26									31.585,23					122.183,98
2.772									148,622	2.970,30									34.555,53					119.213,68

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.773									142,062	2.906,84									37.462,37					116.306,84
2.774									148,892	2.909,54									40.371,91					113.397,30
2.775									155,754	3.046,46									43.418,37					110.350,84
2.776									131,337	2.870,91									46.289,28					107.479,93
2.777									136,281	2.676,18									48.965,46					104.803,75
2.778									129,501	2.657,82									51.623,28					102.145,93
2.779									118,299	2.478,00									54.101,28					99.667,93
2.780									108,757	2.270,56									56.371,84					97.397,37
2.781									102,886	2.116,43									58.488,27					95.280,94
2.782									97,351	2.002,37									60.490,64					93.278,57
2.783									90,951	1.883,02									62.373,66					91.395,55
2.784									83,438	1.743,89									64.117,55					89.651,66
2.785									74,474	1.579,12									65.696,67					88.072,54
2.786									60,015	1.344,89									67.041,56					86.727,65
2.787									54,105	1.141,20									68.182,76					85.586,45
2.788									43,288	973,93									69.156,69					84.612,52
2.789									35,780	790,68									69.947,37					83.821,84
2.790									27,730	635,10									70.582,47					83.186,74
2.791									21,397	491,27									71.073,74					82.695,47
2.792	0,153			0,153	1,53			1,53	16,121	375,18	1,53			1,53	1,22			1,22	71.448,92	1,22			1,22	82.321,51
2.793	1,322			1,322	14,75			14,75	9,457	255,78	16,28			16,28	13,02			13,02	71.704,70	11,80			11,80	82.077,53
2.794	2,129	0,440	0,395	2,964	34,51	4,40	3,95	42,86	3,042	124,99	50,79	4,40	3,95	59,14	40,63	3,83	4,65	49,11	71.829,69	27,61	3,83	4,65	36,09	81.988,62
2.795	3,945	0,749	2,451	7,145	60,74	11,89	28,46	101,09		30,42	111,53	16,29	32,41	160,23	89,22	14,17	38,13	141,52	71.860,11	30,42			30,42	82.050,61
2.796	9,141	1,149	3,152	13,442	130,86	18,98	56,03	205,87			242,39	35,27	88,44	366,10	193,91	30,67	104,05	328,63						82.237,72
2.797	8,787	1,816	0,953	11,556	179,28	29,65	41,05	249,98			421,67	64,92	129,49	616,08	337,34	56,45	152,34	546,13						82.455,22
2.798	14,754	2,877	1,753	19,384	235,41	46,93	27,06	309,40			657,08	111,85	156,55	925,48	525,66	97,26	184,18	807,10						82.716,19
2.799	14,376	2,898	6,271	23,545	291,30	57,75	80,24	429,29			948,38	169,60	236,79	1.354,77	758,70	147,48	278,58	1.184,76						83.093,85
2.800	17,617	3,455	5,948	27,020	319,93	63,53	122,19	505,65			1.268,31	233,13	358,98	1.860,42	1.014,65	202,72	422,33	1.639,70						83.548,79
2.801	18,278	3,654	10,046	31,978	358,95	71,09	159,94	589,98			1.627,26	304,22	518,92	2.450,40	1.301,81	264,54	610,49	2.176,84						84.085,93
2.802	20,519	4,114	13,484	38,117	387,97	77,68	235,30	700,95			2.015,23	381,90	754,22	3.151,35	1.612,18	332,09	887,32	2.831,59						84.740,68
2.803	27,422	5,292	12,678	45,392	479,41	94,06	261,62	835,09			2.494,64	475,96	1.015,84	3.986,44	1.995,71	413,88	1.195,11	3.604,70						85.513,79
2.804	29,002	5,575	13,305	47,882	564,24	108,67	259,83	932,74			3.058,88	584,63	1.275,67	4.919,18	2.447,10	508,37	1.500,79	4.456,26						86.365,36
2.805	26,073	5,183	17,398	48,654	550,75	107,58	307,03	965,36			3.609,63	692,21	1.582,70	5.884,54	2.887,70	601,92	1.862,00	5.351,62						87.260,72
2.806	20,022	4,079	16,232	40,333	460,95	92,62	336,30	889,87			4.070,58	784,83	1.919,00	6.774,41	3.256,46	682,46	2.257,65	6.196,57						88.105,67
2.807	15,905	3,298	14,331	33,534	359,27	73,77	305,63	738,67			4.429,85	858,60	2.224,63	7.513,08	3.543,88	746,61	2.617,21	6.907,70						88.816,80
2.808	14,945	3,069	11,082	29,096	308,50	63,67	254,13	626,30			4.738,35	922,27	2.478,76	8.139,38	3.790,68	801,97	2.916,19	7.508,84						89.417,94
2.809	12,001	2,510	9,721	24,232	269,46	55,79	208,03	533,28			5.007,81	978,06	2.686,79	8.672,66	4.006,25	850,49	3.160,93	8.017,67						89.926,76
2.810	6,601	1,493	10,794	18,888	186,02	40,03	205,15	431,20			5.193,83	1.018,09	2.891,94	9.103,86	4.155,06	885,30	3.402,28	8.442,64						90.351,74
2.811	8,877	1,991	9,005	19,873	154,78	34,84	197,99	387,61			5.348,61	1.052,93	3.089,93	9.491,47	4.278,89	915,59	3.635,21	8.829,69						90.738,79
2.812	14,607	3,053	7,298	24,958	234,84	50,44	163,03	448,31			5.583,45	1.103,37	3.252,96	9.939,78	4.466,76	959,45	3.827,01	9.253,22						91.162,32
2.813	18,228	3,724	8,007	29,959	328,35	67,77	153,05	549,17			5.911,80	1.171,14	3.406,01	10.488,95	4.729,44	1.018,38	4.007,07	9.754,89						91.663,99
2.814	19,346	3,970	10,198	33,514	375,74	76,94	182,05	634,73			6.287,54	1.248,08	3.588,06	11.123,68	5.030,03	1.085,29	4.221,25	10.336,57						92.245,66
2.815	22,527	4,549	10,899	37,975	418,73	85,19	210,97	714,89			6.706,27	1.333,27	3.799,03	11.838,57	5.365,02	1.159,37	4.469,45	10.993,84						92.902,92
2.816	23,930	4,838	12,393	41,161	464,57	93,87	232,92	791,36			7.170,84	1.427,14	4.031,95	12.629,93	5.736,67	1.240,99	4.743,47	11.721,13						93.630,23
2.817	26,524	5,308	13,026	44,858	504,54	101,46	254,19	860,19			7.675,38	1.528,60	4.286,14	13.490,12	6.140,30	1.329,22	5.042,52	12.512,04						94.421,14
2.818	30,101	5,899	12,392	48,392	566,25	112,07	254,18	932,50			8.241,63	1.640,67	4.540,32	14.422,62	6.593,30	1.426,67	5.341,55	13.361,52						95.270,63
2.819	31,153	6,108	13,403	50,664	612,54	120,07	257,95	990,56			8.854,17	1.760,74	4.798,27	15.413,18	7.083,34	1.531,08	5.645,02	14.259,44						96.168,54

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.820	33,475	6,453	12,305	52,233	646,28	125,61	257,08	1.028,97			9.500,45	1.886,35	5.055,35	16.442,15	7.600,36	1.640,30	5.947,47	15.188,13						97.097,24
2.821	31,934	6,236	13,327	51,497	654,09	126,89	256,32	1.037,30			10.154,54	2.013,24	5.311,67	17.479,45	8.123,63	1.750,64	6.249,02	16.123,29						98.032,40
2.822	25,629	5,239	16,349	47,217	575,63	114,75	296,76	987,14			10.730,17	2.127,99	5.608,43	18.466,59	8.584,14	1.850,43	6.598,15	17.032,72						98.941,82
2.823	24,428	5,024	16,244	45,696	500,57	102,63	325,93	929,13			11.230,74	2.230,62	5.934,36	19.395,72	8.984,59	1.939,67	6.981,60	17.905,86						99.814,97
2.824	23,032	4,847	19,717	47,596	474,60	98,71	359,61	932,92			11.705,34	2.329,33	6.293,97	20.328,64	9.364,27	2.025,50	7.404,67	18.794,44						100.703,56
2.825	23,835	5,025	21,119	49,979	468,67	98,72	408,36	975,75			12.174,01	2.428,05	6.702,33	21.304,39	9.739,21	2.111,35	7.885,09	19.735,65						101.644,76
2.826	19,282	4,190	22,487	45,959	431,17	92,15	436,06	959,38			12.605,18	2.520,20	7.138,39	22.263,77	10.084,14	2.191,48	8.398,11	20.673,73						102.582,84
2.827	16,728	3,668	21,234	41,630	360,10	78,58	437,21	875,89			12.965,28	2.598,78	7.575,60	23.139,66	10.372,22	2.259,81	8.912,47	21.544,50						103.453,62
2.828	6,786	1,636	17,676	26,098	235,14	53,04	389,10	677,28			13.200,42	2.651,82	7.964,70	23.816,94	10.560,34	2.305,93	9.370,24	22.236,51						104.145,62
2.829			11,809	11,809	67,86	16,36	294,85	379,07			13.268,28	2.668,18	8.259,55	24.196,01	10.614,62	2.320,16	9.717,12	22.651,90						104.561,02
2.830		0,015	0,167	0,182		0,15	119,76	119,91	3,461	34,61		2.668,33	8.379,31	11.047,64		2.320,29	9.858,01	12.178,30	34,61		0,13	34,48	34,61	104.667,43
2.831	0,081			0,081	0,81	0,15	1,67	2,63	19,859	233,20	0,81	2.668,48	8.380,98	11.050,27	0,65	2.320,42	9.859,98	12.181,05	267,81	0,65	0,13	1,96	2,74	104.436,97
2.832	0,162	0,121	3,060	3,343	2,43	1,21	30,60	34,24	8,478	283,37	3,24	2.669,69	8.411,58	11.084,51	2,59	2.321,47	9.895,98	12.220,04	551,18	1,94	1,05	36,00	38,99	104.192,60
2.833		0,068	0,532	0,600	1,62	1,89	35,92	39,43		84,78	4,86	2.671,58	8.447,50	11.123,94	3,89	2.323,11	9.938,24	12.265,24	635,96	1,30	1,64	42,26	45,20	104.153,02
2.834	3,399	0,831	6,011	10,241	33,99	8,99	65,43	108,41			38,85	2.680,57	8.512,93	11.232,35	31,08	2.330,93	10.015,21	12.377,22						104.265,01
2.835	21,657			21,657	250,56	8,31	60,11	318,98			289,41	2.688,88	8.573,04	11.551,33	231,53	2.338,16	10.085,93	12.655,62						104.543,40
2.836	31,361	2,958		34,319	530,18	29,58		559,76			819,59	2.718,46		3.538,05	655,67	2.363,88		3.019,55						104.993,27
2.837	40,265	5,957	0,069	46,291	716,26	89,15	0,69	806,10			1.535,85	2.807,61	0,69	4.344,15	1.228,68	2.441,40	0,81	3.670,89						105.644,61
2.838	43,246	7,410	2,496	53,152	835,11	133,67	25,65	994,43			2.370,96	2.941,28	26,34	5.338,58	1.896,77	2.557,63	30,99	4.485,39						106.459,11
2.839	50,726	8,328	1,178	60,232	939,72	157,38	36,74	1.133,84			3.310,68	3.098,66	63,08	6.472,42	2.648,54	2.694,49	74,21	5.417,24						107.390,96
2.840	52,802	8,707	2,360	63,869	1.035,28	170,35	35,38	1.241,01			4.345,96	3.269,01	98,46	7.713,43	3.476,77	2.842,62	115,84	6.435,23						108.408,94
2.841	51,329	8,716	4,847	64,892	1.041,31	174,23	72,07	1.287,61			5.387,27	3.443,24	170,53	9.001,04	4.309,82	2.994,12	200,62	7.504,56						109.478,28
2.842	45,874	8,153	7,856	61,883	972,03	168,69	127,03	1.267,75			6.359,30	3.611,93	297,56	10.268,79	5.087,44	3.140,81	350,07	8.578,32						110.552,04
2.843	43,194	7,818	8,901	59,913	890,68	159,71	167,57	1.217,96			7.249,98	3.771,64	465,13	11.486,75	5.799,98	3.279,69	547,21	9.626,88						111.600,60
2.844	39,384	7,364	11,350	58,098	825,78	151,82	202,51	1.180,11			8.075,76	3.923,46	667,64	12.666,86	6.460,61	3.411,70	785,46	10.657,77						112.631,49
2.845	34,717	6,761	14,911	56,389	741,01	141,25	262,61	1.144,87			8.816,77	4.064,71	930,25	13.811,73	7.053,42	3.534,53	1.094,41	11.682,36						113.656,08
2.846	38,022	7,281	14,333	59,636	727,39	140,42	292,44	1.160,25			9.544,16	4.205,13	1.222,69	14.971,98	7.635,33	3.656,63	1.438,46	12.730,42						114.704,14
2.847	35,697	6,990	16,500	59,187	737,19	142,71	308,33	1.188,23			10.281,35	4.347,84	1.531,02	16.160,21	8.225,08	3.780,73	1.801,20	13.807,01						115.780,73
2.848	33,363	6,643	18,016	58,022	690,60	136,33	345,16	1.172,09			10.971,95	4.484,17	1.876,18	17.332,30	8.777,56	3.899,28	2.207,27	14.884,11						116.857,83
2.849	33,165	6,613	18,074	57,852	665,28	132,56	360,90	1.158,74			11.637,23	4.616,73	2.237,08	18.491,04	9.309,78	4.014,55	2.631,86	15.956,19						117.929,91
2.850	33,587	6,743	19,790	60,120	667,52	133,56	378,64	1.179,72			12.304,75	4.750,29	2.615,72	19.670,76	9.843,80	4.130,69	3.077,32	17.051,81						119.025,52
2.851	35,991	7,182	20,566	63,739	695,78	139,25	403,56	1.238,59			13.000,53	4.889,54	3.019,28	20.909,35	10.400,42	4.251,77	3.552,09	18.204,28						120.178,01
2.852	37,814	7,468	19,897	65,179	738,05	146,50	404,63	1.289,18			13.738,58	5.036,04	3.423,91	22.198,53	10.990,86	4.379,17	4.028,13	19.398,16						121.371,88
2.853	36,537	7,296	21,133	64,966	743,51	147,64	410,30	1.301,45			14.482,09	5.183,68	3.834,21	23.499,98	11.585,67	4.507,55	4.510,84	20.604,06						122.577,78
2.854	31,061	6,485	26,695	64,241	675,98	137,81	478,28	1.292,07			15.158,07	5.321,49	4.312,49	24.792,05	12.126,46	4.627,38	5.073,52	21.827,36						123.801,08
2.855	28,700	6,203	34,249	69,152	597,61	126,88	609,44	1.333,93			15.755,68	5.448,37	4.921,93	26.125,98	12.604,54	4.737,71	5.790,51	23.132,76						125.106,49
2.856	39,275	8,238	36,738	84,251	679,75	144,41	709,87	1.534,03			16.435,43	5.592,78	5.631,80	27.660,01	13.148,34	4.863,29	6.625,65	24.637,28						126.611,01
2.857	43,783	9,302	45,577	98,662	830,58	175,40	823,15	1.829,13			17.266,01	5.768,18	6.454,95	29.489,14	13.812,81	5.015,81	7.594,06	26.422,68						128.396,41
2.858	40,006	8,790	56,527	105,323	837,89	180,92	1.021,04	2.039,85			18.103,90	5.949,10	7.475,99	31.528,99	14.483,12	5.173,13	8.795,28	28.451,53						130.425,27
2.859	35,249	7,964	64,655	107,868	752,55	167,54	1.211,82	2.131,91			18.856,45	6.116,64	8.687,81	33.660,90	15.085,16	5.318,82	10.220,95	30.624,93						132.598,67
2.860	37,661	8,461	65,273	111,395	729,10	164,25	1.299,28	2.192,63			19.585,55	6.280,89	9.987,09	35.853,53	15.668,44	5.461,64	11.749,52	32.879,60						134.853,34
2.861	38,541	8,629	63,765	110,935	762,02	170,90	1.290,38	2.223,30			20.347,57	6.451,79	11.277,47	38.076,83	16.278,06	5.610,25	13.267,61	35.155,92						137.129,66
2.862	34,021	7,692	63,363	105,076	725,62	163,21	1.271,28	2.160,11			21.073,19	6.615,00	12.548,75	40.236,94	16.858,55	5.752,17	14.763,24	37.373,96						139.347,70
2.863	30,657	6,962	59,382	97,001	646,78	146,54	1.227,45	2.020,77			21.719,97	6.761,54	13.776,20	42.257,71	17.375,98	5.879,60	16.207,29	39.462,87						141.436,61
2.864	31,780	7,068	50,488	89,336	624,37	140,30	1.098,70	1.863,37			22.344,34	6.901,84	14.874,90	44.121,08	17.875,47	6.001,60	17.499,88	41.376,95						143.350,69
2.865	36,819	7,813	37,823	82,455	685,99	148,81	883,11	1.717,91			23.030,33	7.050,65	15.758,01	45.838,99	18.424,26	6.131,00	18.538,84	43.094,10						145.067,83
2.866	32,138	6,821	32,911	71,870	689,57	146,34	707,34	1.543,25			23.719,90	7.196,99	16.465,35	47.382,24	18.975,92	6.258,25	19.371,00	44.605,17						146.578,90

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.867	25,754	5,533	28,739	60,026	578,92	123,54	616,50	1.318,96			24.298,82	7.320,53	17.081,85	48.701,20	19.439,06	6.365,68	20.096,29	45.901,03						147.874,76
2.868	23,243	4,930	21,876	50,049	489,97	104,63	506,15	1.100,75			24.788,79	7.425,16	17.588,00	49.801,95	19.831,03	6.456,66	20.691,76	46.979,45						148.953,19
2.869	18,382	3,886	14,597	36,865	416,25	88,16	364,73	869,14			25.205,04	7.513,32	17.952,73	50.671,09	20.164,03	6.533,32	21.120,86	47.818,21						149.791,94
2.870	11,096	2,455	11,445	24,996	294,78	63,41	260,42	618,61			25.499,82	7.576,73	18.213,15	51.289,70	20.399,86	6.588,46	21.427,24	48.415,56						150.389,28
2.871	6,829	1,545	4,765	13,139	179,25	40,00	162,10	381,35			25.679,07	7.616,73	18.375,25	51.671,05	20.543,26	6.623,24	21.617,94	48.784,44						150.758,17
2.872	10,855	0,387	0,281	11,523	176,84	19,32	50,46	246,62			25.855,91	7.636,05	18.425,71	51.917,67	20.684,73	6.640,04	21.677,31	49.002,08						150.975,81
2.873	7,837	0,293	0,237	8,367	186,92	6,80	5,18	198,90			26.042,83	7.642,85	18.430,89	52.116,57	20.834,26	6.645,96	21.683,40	49.163,62						151.137,35
2.874	6,247	0,240	0,155	6,642	140,84	5,33	3,92	150,09			26.183,67	7.648,18	18.434,81	52.266,66	20.946,94	6.650,59	21.688,01	49.285,54						151.259,27
2.875	4,982	0,198	0,082	5,262	112,29	4,38	2,37	119,04			26.295,96	7.652,56	18.437,18	52.385,70	21.036,77	6.654,40	21.690,80	49.381,97						151.355,70
2.876	3,704			3,704	86,86	1,98	0,82	89,66			26.382,82	7.654,54	18.438,00	52.475,36	21.106,26	6.656,12	21.691,76	49.454,14						151.427,87
2.877	2,186			2,186	58,90			58,90			26.441,72			26.441,72	21.153,38			21.153,38						151.474,99
2.878	0,193			0,193	23,79			23,79	0,013	0,13	26.465,51			26.465,51	21.172,41			21.172,41	0,13	0,13			0,13	151.493,89
2.879	0,172			0,172	3,65			3,65	1,674	16,87	26.469,16			26.469,16	21.175,33			21.175,33	17,00	2,92			2,92	151.479,94
2.880	0,269			0,269	4,41			4,41	3,037	47,11	26.473,57			26.473,57	21.178,86			21.178,86	64,11	3,53			3,53	151.436,36
2.881	0,287			0,287	5,56			5,56	3,959	69,96	26.479,13			26.479,13	21.183,30			21.183,30	134,07	4,45			4,45	151.370,85
2.882	0,282			0,282	5,69			5,69	5,112	90,71	26.484,82			26.484,82	21.187,86			21.187,86	224,78	4,55			4,55	151.284,69
2.883	0,172			0,172	4,54			4,54	6,289	114,01	26.489,36			26.489,36	21.191,49			21.191,49	338,79	3,63			3,63	151.174,31
2.884	0,046			0,046	2,18			2,18	7,868	141,57	26.491,54			26.491,54	21.193,23			21.193,23	480,36	1,74			1,74	151.034,48
2.885					0,46			0,46	23,812	316,80	26.492,00			26.492,00	21.193,60			21.193,60	797,16	0,37			0,37	150.718,05
2.886	0,263			0,263	2,63			2,63	24,628	484,40	26.494,63			26.494,63	21.195,70			21.195,70	1.281,56	2,10			2,10	150.235,75
2.887	17,292			17,292	175,55			175,55		246,28	26.670,18			26.670,18	21.336,14			21.336,14	1.527,84	140,44			140,44	150.129,91
2.888	1,749			1,749	190,41			190,41	7,682	76,82	26.860,59			26.860,59	21.488,47			21.488,47	1.604,66	76,82			76,82	150.205,42
2.889	2,792			2,792	45,41			45,41	3,262	109,44	26.906,00			26.906,00	21.524,80			21.524,80	1.714,10	36,33			36,33	150.132,31
2.890	3,862			3,862	66,54			66,54	0,471	37,33	26.972,54			26.972,54	21.578,03			21.578,03	1.751,43	37,33			37,33	150.148,21
2.891	7,210			7,210	110,72			110,72		4,71	27.083,26			27.083,26	21.666,61			21.666,61	1.756,14	4,71			4,71	150.232,08
2.892	9,097			9,097	163,07			163,07			27.246,33			27.246,33	21.797,06			21.797,06						150.362,54
2.893	14,053			14,053	231,50			231,50			27.477,83			27.477,83	21.982,26			21.982,26						150.547,74
2.894	18,529			18,529	325,82			325,82			27.803,65			27.803,65	22.242,92			22.242,92						150.808,40
2.895	18,676			18,676	372,05			372,05			28.175,70			28.175,70	22.540,56			22.540,56						151.106,04
2.896	20,799			20,799	394,75			394,75			28.570,45			28.570,45	22.856,36			22.856,36						151.421,84
2.897	27,435			27,435	482,34			482,34			29.052,79			29.052,79	23.242,23			23.242,23						151.807,71
2.898	34,820			34,820	622,55			622,55			29.675,34			29.675,34	23.740,27			23.740,27						152.305,75
2.899	35,861	1,525	0,050	37,436	706,81	15,25	0,50	722,56			30.382,15	15,25	0,50	30.397,90	24.305,72	13,26	0,59	24.319,57						152.885,05
2.900	43,726	2,774	0,569	47,069	795,87	42,99	6,19	845,05			31.178,02	58,24	6,69	31.242,95	24.942,42	50,64	7,87	25.000,93						153.566,41
2.901	47,233	3,567	1,361	52,161	909,59	63,41	19,30	992,30			32.087,61	121,65	25,99	32.235,25	25.670,09	105,78	30,58	25.806,45						154.371,93
2.902	53,796	4,780	2,140	60,716	1.010,29	83,47	35,01	1.128,77			33.097,90	205,12	61,00	33.364,02	26.478,32	178,37	71,76	26.728,45						155.293,93
2.903	60,510	7,773	3,156	71,439	1.143,06	125,53	52,96	1.321,55			34.240,96	330,65	113,96	34.685,57	27.392,77	287,52	134,07	27.814,36						156.379,84
2.904	68,911	10,188	3,691	82,790	1.294,21	179,61	68,47	1.542,29			35.535,17	510,26	182,43	36.227,86	28.428,14	443,70	214,62	29.086,46						157.651,94
2.905	78,775	12,211	3,927	94,913	1.476,86	223,99	76,18	1.777,03			37.012,03	734,25	258,61	38.004,89	29.609,62	638,48	304,25	30.552,35						159.117,83
2.906	86,523	12,446	3,370	102,339	1.652,98	246,57	72,97	1.972,52			38.665,01	980,82	331,58	39.977,41	30.932,01	852,89	390,09	32.174,99						160.740,47
2.907	91,101	13,819	3,857	108,777	1.776,24	262,65	72,27	2.111,16			40.441,25	1.243,47	403,85	42.088,57	32.353,00	1.081,28	475,12	33.909,40						162.474,88
2.908	92,448	14,196	3,917	110,561	1.835,49	280,15	77,74	2.193,38			42.276,74	1.523,62	481,59	44.281,95	33.821,39	1.324,89	566,58	35.712,86						164.278,34
2.909	95,685	14,478	3,885	114,048	1.881,33	286,74	78,02	2.246,09			44.158,07	1.810,36	559,61	46.528,04	35.326,46	1.574,23	658,36	37.559,05						166.124,53
2.910	93,592	14,500	4,729	112,821	1.892,77	289,78	86,14	2.268,69			46.050,84	2.100,14	645,75	48.796,73	36.840,67	1.826,21	759,71	39.426,59						167.992,07
2.911	93,210	13,337	3,372	109,919	1.868,02	278,37	81,01	2.227,40			47.918,86	2.378,51	726,76	51.024,13	38.335,09	2.068,27	855,01	41.258,37						169.823,85
2.912	88,119	12,878	3,598	104,595	1.813,29	262,15	69,70	2.145,14			49.732,15	2.640,66	796,46	53.169,27	39.785,72	2.296,23	937,01	43.018,96						171.584,44
2.913	111,234	15,903	3,398	130,535	1.993,53	287,81	69,96	2.351,30			51.725,68	2.928,47	866,42	55.520,57	41.380,54	2.546,50	1.019,32	44.946,36						173.511,84

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.914	84,289	12,470	4,405	101,164	1.955,23	283,73	78,03	2.316,99			53.680,91	3.212,20	944,45	57.837,56	42.944,73	2.793,22	1.111,12	46.849,07						175.414,55
2.915	44,766	4,358	2,660	51,784	1.290,55	168,28	70,65	1.529,48			54.971,46	3.380,48	1.015,10	59.367,04	43.977,17	2.939,55	1.194,24	48.110,96						176.676,44
2.916	63,835	7,019	2,479	73,333	1.086,01	113,77	51,39	1.251,17			56.057,47	3.494,25	1.066,49	60.618,21	44.845,98	3.038,48	1.254,69	49.139,15						177.704,64
2.917	52,106	4,246	1,925	58,277	1.159,41	112,65	44,04	1.316,10			57.216,88	3.606,90	1.110,53	61.934,31	45.773,50	3.136,43	1.306,51	50.216,44						178.781,94
2.918	38,087	2,821	1,087	41,995	901,93	70,67	30,12	1.002,72			58.118,81	3.677,57	1.140,65	62.937,03	46.495,05	3.197,89	1.341,94	51.034,88						179.600,37
2.919	25,603	1,366	0,080	27,049	636,90	41,87	11,67	690,44			58.755,71	3.719,44	1.152,32	63.627,47	47.004,57	3.234,30	1.355,67	51.594,54						180.160,03
2.920	12,943	0,181		13,124	385,46	15,47	0,80	401,73			59.141,17	3.734,91	1.153,12	64.029,20	47.312,94	3.247,75	1.356,61	51.917,30						180.482,79
2.921	3,146			3,146	160,89	1,81		162,70	2,313	23,13	59.302,06	3.736,72		63.038,78	47.441,65	3.249,32		50.690,97	23,13	23,13			23,13	180.589,95
2.922	0,681			0,681	38,27			38,27	12,676	149,89	59.340,33			59.340,33	47.472,26			47.472,26	173,02	30,62			30,62	180.470,68
2.923					6,81			6,81	20,166	328,42	59.347,14			59.347,14	47.477,71			47.477,71	501,44	5,45			5,45	180.147,71
2.924									26,888	470,54									971,98					179.677,17
2.925									25,144	520,32									1.492,30					179.156,85
2.926									37,370	625,14									2.117,44					178.531,71
2.927									47,864	852,34									2.969,78					177.679,37
2.928									61,566	1.094,30									4.064,08					176.585,07
2.929									64,534	1.261,00									5.325,08					175.324,07
2.930									59,435	1.239,69									6.564,77					174.084,38
2.931									47,733	1.071,68									7.636,45					173.012,70
2.932									40,938	886,71									8.523,16					172.125,99
2.933									47,358	882,96									9.406,12					171.243,03
2.934									59,725	1.070,83									10.476,95					170.172,20
2.935									76,678	1.364,03									11.840,98					168.808,17
2.936									92,167	1.688,45									13.529,43					167.119,72
2.937									103,416	1.955,83									15.485,26					165.163,89
2.938									112,748	2.161,64									17.646,90					163.002,25
2.939									124,607	2.373,55									20.020,45					160.628,70
2.940									137,521	2.621,28									22.641,73					158.007,42
2.941									165,896	3.034,17									25.675,90					154.973,25
2.942									149,970	3.158,66									28.834,56					151.814,59
2.943									136,892	2.868,62									31.703,18					148.945,97
2.944									116,933	2.538,25									34.241,43					146.407,72
2.945									96,852	2.137,85									36.379,28					144.269,87
2.946									84,007	1.808,59									38.187,87					142.461,28
2.947									69,659	1.536,66									39.724,53					140.924,62
2.948									57,538	1.271,97									40.996,50					139.652,65
2.949									45,034	1.025,72									42.022,22					138.626,93
2.950									35,884	809,18									42.831,40					137.817,75
2.951									29,880	657,64									43.489,04					137.160,11
2.952									23,980	538,60									44.027,64					136.621,51
2.953									19,200	431,80									44.459,44					136.189,71
2.954	0,248			0,248	2,48			2,48	15,015	342,15	2,48			2,48	1,98			1,98	44.801,59	1,98			1,98	135.849,54
2.955	0,799			0,799	10,47			10,47	11,729	267,44	12,95			12,95	10,36			10,36	45.069,03	8,38			8,38	135.590,48
2.956	1,328			1,328	21,27			21,27	9,194	209,23	34,22			34,22	27,38			27,38	45.278,26	17,02			17,02	135.398,27
2.957	1,630			1,630	29,58			29,58	8,017	172,11	63,80			63,80	51,04			51,04	45.450,37	23,66			23,66	135.249,82
2.958	1,287			1,287	29,17			29,17	9,511	175,28	92,97			92,97	74,38			74,38	45.625,65	23,34			23,34	135.097,88
2.959	0,846			0,846	21,33			21,33	11,639	211,50	114,30			114,30	91,44			91,44	45.837,15	17,06			17,06	134.903,44
2.960	0,275			0,275	11,21			11,21	15,142	267,81	125,51			125,51	100,41			100,41	46.104,96	8,97			8,97	134.644,60

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
2.961	0,063			0,063	3,38			3,38	17,643	327,85	128,89			128,89	103,11			103,11	46.432,81	2,70			2,70	134.319,45
2.962	0,017			0,017	0,80			0,80	18,658	363,01	129,69			129,69	103,75			103,75	46.795,82	0,64			0,64	133.957,08
2.963					0,17			0,17	26,022	446,80	129,86			129,86	103,89			103,89	47.242,62	0,14			0,14	133.510,42
2.964									27,476	534,98									47.777,60					132.975,44
2.965									27,191	546,67									48.324,27					132.428,77
2.966									29,421	566,12									48.890,39					131.862,65
2.967									29,219	586,40									49.476,79					131.276,25
2.968									27,302	565,21									50.042,00					130.711,04
2.969									21,486	487,88									50.529,88					130.223,16
2.970	0,119			0,119	1,19			1,19	16,644	381,30	1,19			1,19	0,95			0,95	50.911,18	0,95			0,95	129.842,81
2.971	1,332			1,332	14,51			14,51	9,215	258,59	15,70			15,70	12,56			12,56	51.169,77	11,61			11,61	129.595,83
2.972	2,803			2,803	41,35			41,35	3,851	130,66	57,05			57,05	45,64			45,64	51.300,43	33,08			33,08	129.498,25
2.973	6,713			6,713	95,16			95,16		38,51	152,21			152,21	121,77			121,77	51.338,94	38,51			38,51	129.535,87
2.974	12,773			12,773	194,86			194,86			347,07			347,07	277,66			277,66						129.691,76
2.975	18,636			18,636	314,09			314,09			661,16			661,16	528,93			528,93						129.943,03
2.976	23,613			23,613	422,49			422,49			1.083,65			1.083,65	866,92			866,92						130.281,02
2.977	25,043			25,043	486,56			486,56			1.570,21			1.570,21	1.256,17			1.256,17						130.670,27
2.978	28,387			28,387	534,30			534,30			2.104,51			2.104,51	1.683,61			1.683,61						131.097,71
2.979	30,501			30,501	588,88			588,88			2.693,39			2.693,39	2.154,71			2.154,71						131.568,81
2.980	28,865			28,865	593,66			593,66			3.287,05			3.287,05	2.629,64			2.629,64						132.043,74
2.981	30,375			30,375	592,40			592,40			3.879,45			3.879,45	3.103,56			3.103,56						132.517,66
2.982	29,667			29,667	600,42			600,42			4.479,87			4.479,87	3.583,90			3.583,90						132.998,00
2.983	29,701			29,701	593,68			593,68			5.073,55			5.073,55	4.058,84			4.058,84						133.472,94
2.984	30,143			30,143	598,44			598,44			5.671,99			5.671,99	4.537,59			4.537,59						133.951,69
2.985	29,508			29,508	596,51			596,51			6.268,50			6.268,50	5.014,80			5.014,80						134.428,90
2.986	29,988			29,988	594,96			594,96			6.863,46			6.863,46	5.490,77			5.490,77						134.904,87
2.987	29,205			29,205	591,93			591,93			7.455,39			7.455,39	5.964,31			5.964,31						135.378,41
2.988	28,838			28,838	580,43			580,43			8.035,82			8.035,82	6.428,66			6.428,66						135.842,75
2.989	27,104			27,104	559,42			559,42			8.595,24			8.595,24	6.876,19			6.876,19						136.290,29
2.990	23,620			23,620	507,24			507,24			9.102,48			9.102,48	7.281,98			7.281,98						136.696,08
2.991	19,726			19,726	433,46			433,46			9.535,94			9.535,94	7.628,75			7.628,75						137.042,85
2.992	17,452			17,452	371,78			371,78			9.907,72			9.907,72	7.926,18			7.926,18						137.340,27
2.993	13,957			13,957	314,09			314,09			10.221,81			10.221,81	8.177,45			8.177,45						137.591,54
2.994	11,373			11,373	253,30			253,30			10.475,11			10.475,11	8.380,09			8.380,09						137.794,18
2.995	8,217			8,217	195,90			195,90			10.671,01			10.671,01	8.536,81			8.536,81						137.950,90
2.996	6,457			6,457	146,74			146,74			10.817,75			10.817,75	8.654,20			8.654,20						138.068,29
2.997	4,333			4,333	107,90			107,90	0,007	0,07	10.925,65			10.925,65	8.740,52			8.740,52	0,07	0,07			0,07	138.154,54
2.998	3,898			3,898	82,31			82,31	0,429	4,36	11.007,96			11.007,96	8.806,37			8.806,37	4,43	4,36			4,36	138.216,03
2.999	3,438			3,438	73,36			73,36	1,444	18,73	11.081,32			11.081,32	8.865,06			8.865,06	23,16	18,73			18,73	138.255,99
3.000	2,954			2,954	63,92			63,92	1,495	29,39	11.145,24			11.145,24	8.916,19			8.916,19	52,55	29,39			29,39	138.277,74
3.001	3,337			3,337	62,91			62,91	2,743	42,38	11.208,15			11.208,15	8.966,52			8.966,52	94,93	42,38			42,38	138.285,69
3.002	3,047			3,047	63,84			63,84	3,177	59,20	11.271,99			11.271,99	9.017,59			9.017,59	154,13	51,07			51,07	138.277,56
3.003	3,137			3,137	61,84			61,84	2,975	61,52	11.333,83			11.333,83	9.067,06			9.067,06	215,65	49,47			49,47	138.265,51
3.004	2,969			2,969	61,06			61,06	3,062	60,37	11.394,89			11.394,89	9.115,91			9.115,91	276,02	48,85			48,85	138.253,99
3.005	3,302			3,302	62,71			62,71	2,642	57,04	11.457,60			11.457,60	9.166,08			9.166,08	333,06	50,17			50,17	138.247,12
3.006	3,655			3,655	69,57			69,57	1,598	42,40	11.527,17			11.527,17	9.221,74			9.221,74	375,46	42,40			42,40	138.260,38
3.007	3,448	0,318	0,074	3,840	71,03	3,18	0,74	74,95	0,666	22,64	11.598,20	3,18	0,74	11.602,12	9.278,56	2,77	0,87	9.282,20	398,10	22,64			22,64	138.298,20

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.008	4,193	0,761	1,362	6,316	76,41	10,79	14,36	101,56		6,66	11.674,61	13,97	15,10	11.703,68	9.339,69	12,15	17,76	9.369,60	404,76	6,66			6,66	138.378,94
3.009	4,779	0,756	4,182	9,717	89,72	15,17	55,44	160,33			11.764,33	29,14	70,54	11.864,01	9.411,46	25,34	82,99	9.519,79						138.529,13
3.010	3,141	0,787	1,403	5,331	79,20	15,43	55,85	150,48			11.843,53	44,57	126,39	12.014,49	9.474,82	38,76	148,69	9.662,27						138.671,61
3.011	5,653	1,303	2,973	9,929	87,94	20,90	43,76	152,60			11.931,47	65,47	170,15	12.167,09	9.545,18	56,93	200,18	9.802,29						138.811,62
3.012	8,575	1,877	3,799	14,251	142,28	31,80	67,72	241,80			12.073,75	97,27	237,87	12.408,89	9.659,00	84,58	279,85	10.023,43						139.032,77
3.013	11,350	2,438	6,649	20,437	199,25	43,15	104,48	346,88			12.273,00	140,42	342,35	12.755,77	9.818,40	122,10	402,76	10.343,26						139.352,61
3.014	13,639	2,897	8,469	25,005	249,89	53,35	151,18	454,42			12.522,89	193,77	493,53	13.210,19	10.018,31	168,50	580,62	10.767,43						139.776,77
3.015	18,055	3,727	9,687	31,469	316,94	66,24	181,56	564,74			12.839,83	260,01	675,09	13.774,93	10.271,86	226,10	794,22	11.292,18						140.301,52
3.016	21,781	4,401	10,231	36,413	398,36	81,28	199,18	678,82			13.238,19	341,29	874,27	14.453,75	10.590,55	296,77	1.028,55	11.915,87						140.925,22
3.017	23,930	4,801	11,202	39,933	457,11	92,02	214,33	763,46			13.695,30	433,31	1.088,60	15.217,21	10.956,24	376,79	1.280,71	12.613,74						141.623,08
3.018	27,004	5,335	11,348	43,687	509,34	101,36	225,50	836,20			14.204,64	534,67	1.314,10	16.053,41	11.363,71	464,93	1.546,00	13.374,64						142.383,99
3.019	30,464	5,904	11,061	47,429	574,68	112,39	224,09	911,16			14.779,32	647,06	1.538,19	16.964,57	11.823,46	562,66	1.809,64	14.195,76						143.205,10
3.020	32,483	6,230	10,795	49,508	629,47	121,34	218,56	969,37			15.408,79	768,40	1.756,75	17.933,94	12.327,03	668,17	2.066,76	15.061,96						144.071,32
3.021	31,611	6,086	10,753	48,450	640,94	123,16	215,48	979,58			16.049,73	891,56	1.972,23	18.913,52	12.839,78	775,27	2.320,27	15.935,32						144.944,67
3.022	29,571	5,735	10,376	45,682	611,82	118,21	211,29	941,32			16.661,55	1.009,77	2.183,52	19.854,84	13.329,24	878,06	2.568,85	16.776,15						145.785,49
3.023	25,035	4,956	9,930	39,921	546,06	106,91	203,06	856,03			17.207,61	1.116,68	2.386,58	20.710,87	13.766,09	971,03	2.807,74	17.544,86						146.554,20
3.024	21,152	4,253	8,647	34,052	461,87	92,09	185,77	739,73			17.669,48	1.208,77	2.572,35	21.450,60	14.135,58	1.051,10	3.026,29	18.212,97						147.222,33
3.025	16,638	3,428	7,638	27,704	377,90	76,81	162,85	617,56			18.047,38	1.285,58	2.735,20	22.068,16	14.437,90	1.117,90	3.217,88	18.773,68						147.783,03
3.026	12,207	2,585	5,669	20,461	288,45	60,13	133,07	481,65			18.335,83	1.345,71	2.868,27	22.549,81	14.668,66	1.170,18	3.374,44	19.213,28						148.222,63
3.027	8,502	1,860	3,431	13,793	207,09	44,45	91,00	342,54			18.542,92	1.390,16	2.959,27	22.892,35	14.834,34	1.208,83	3.481,49	19.524,66						148.534,01
3.028	6,449	0,613	0,766	7,828	149,51	24,73	41,97	216,21			18.692,43	1.414,89	3.001,24	23.108,56	14.953,94	1.230,34	3.530,87	19.715,15						148.724,50
3.029		0,054		0,054	64,49	6,67	7,66	78,82	0,713	7,13	18.756,92	1.421,56	3.008,90	23.187,38	15.005,54	1.236,14	3.539,88	19.781,56	7,13	7,13			7,13	148.783,77
3.030						0,54		0,54	13,204	139,17		1.422,10		1.422,10		1.236,61		1.236,61	146,30		0,47		0,47	148.645,07
3.031									24,168	373,72									520,02					148.271,35
3.032									31,555	557,23									1.077,25					147.714,12
3.033									41,332	728,87									1.806,12					146.985,25
3.034									50,470	918,02									2.724,14					146.067,23
3.035									53,907	1.043,77									3.767,91					145.023,46
3.036									55,208	1.091,15									4.859,06					143.932,31
3.037									56,173	1.113,81									5.972,87					142.818,50
3.038									54,779	1.109,52									7.082,39					141.708,98
3.039									54,051	1.088,30									8.170,69					140.620,68
3.040									50,336	1.043,87									9.214,56					139.576,81
3.041									46,271	966,07									10.180,63					138.610,74
3.042									42,624	888,95									11.069,58					137.721,79
3.043									37,997	806,21									11.875,79					136.915,58
3.044									32,468	704,65									12.580,44					136.210,93
3.045									29,950	624,18									13.204,62					135.586,75
3.046									26,089	560,39									13.765,01					135.026,36
3.047									22,233	483,22									14.248,23					134.543,14
3.048									20,464	426,97									14.675,20					134.116,17
3.049									19,727	401,91									15.077,11					133.714,26
3.050									21,008	407,35									15.484,46					133.306,91
3.051									21,191	421,99									15.906,45					132.884,92
3.052									22,155	433,46									16.339,91					132.451,46
3.053									25,554	477,09									16.817,00					131.974,37
3.054									28,701	542,55									17.359,55					131.431,82

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.055									26,351	550,52									17.910,07					130.881,30
3.056									25,266	516,17									18.426,24					130.365,13
3.057									26,908	521,74									18.947,98					129.843,39
3.058									29,240	561,48									19.509,46					129.281,91
3.059									31,299	605,39									20.114,85					128.676,52
3.060									31,419	627,18									20.742,03					128.049,34
3.061									32,115	635,34									21.377,37					127.414,00
3.062									33,981	660,96									22.038,33					126.753,04
3.063									31,557	655,38									22.693,71					126.097,66
3.064									25,081	566,38									23.260,09					125.531,28
3.065									22,700	477,81									23.737,90					125.053,47
3.066									27,081	497,81									24.235,71					124.555,66
3.067									27,617	546,98									24.782,69					124.008,68
3.068									27,740	553,57									25.336,26					123.455,11
3.069									25,867	536,07									25.872,33					122.919,04
3.070									21,253	471,20									26.343,53					122.447,84
3.071									20,129	413,82									26.757,35					122.034,02
3.072									19,367	394,96									27.152,31					121.639,06
3.073	0,130			0,130	1,30			1,30	16,239	356,06	1,30			1,30	1,04			1,04	27.508,37	1,04			1,04	121.284,04
3.074	0,349			0,349	4,79			4,79	14,567	308,06	6,09			6,09	4,87			4,87	27.816,43	3,83			3,83	120.979,81
3.075	0,378			0,378	7,27			7,27	15,018	295,85	13,36			13,36	10,69			10,69	28.112,28	5,82			5,82	120.689,78
3.076	0,865			0,865	12,43			12,43	11,781	267,99	25,79			25,79	20,63			20,63	28.380,27	9,94			9,94	120.431,73
3.077	0,884			0,884	17,49			17,49	11,313	230,94	43,28			43,28	34,62			34,62	28.611,21	13,99			13,99	120.214,78
3.078	1,024			1,024	19,08			19,08	10,782	220,95	62,36			62,36	49,89			49,89	28.832,16	15,26			15,26	120.009,09
3.079	1,445			1,445	24,69			24,69	8,732	195,14	87,05			87,05	69,64			69,64	29.027,30	19,75			19,75	119.833,70
3.080	1,356			1,356	28,01			28,01	9,557	182,89	115,06			115,06	92,05			92,05	29.210,19	22,41			22,41	119.673,22
3.081	0,924			0,924	22,80			22,80	11,440	209,97	137,86			137,86	110,29			110,29	29.420,16	18,24			18,24	119.481,49
3.082	1,082			1,082	20,06			20,06	10,882	223,22	157,92			157,92	126,34			126,34	29.643,38	16,05			16,05	119.274,32
3.083	1,584			1,584	26,66			26,66	8,729	196,11	184,58			184,58	147,66			147,66	29.839,49	21,33			21,33	119.099,54
3.084	2,726			2,726	43,10			43,10	4,270	129,99	227,68			227,68	182,14			182,14	29.969,48	34,48			34,48	119.004,03
3.085	3,474			3,474	62,00			62,00	1,697	59,67	289,68			289,68	231,74			231,74	30.029,15	49,60			49,60	118.993,96
3.086	3,605			3,605	70,79			70,79	0,666	23,63	360,47			360,47	288,38			288,38	30.052,78	23,63			23,63	119.026,96
3.087	3,817			3,817	74,22			74,22	0,059	7,25	434,69			434,69	347,75			347,75	30.060,03	7,25			7,25	119.079,09
3.088	5,630			5,630	94,47			94,47		0,59	529,16			529,16	423,33			423,33	30.060,62	0,59			0,59	119.154,08
3.089	7,128			7,128	127,58			127,58			656,74			656,74	525,39			525,39						119.256,14
3.090	8,124			8,124	152,52			152,52			809,26			809,26	647,41			647,41						119.378,16
3.091	8,453			8,453	165,77			165,77			975,03			975,03	780,02			780,02						119.510,78
3.092	10,084			10,084	185,37			185,37			1.160,40			1.160,40	928,32			928,32						119.659,08
3.093	12,234			12,234	223,18			223,18			1.383,58			1.383,58	1.106,86			1.106,86						119.837,62
3.094	12,243			12,243	244,77			244,77			1.628,35			1.628,35	1.302,68			1.302,68						120.033,44
3.095	13,633			13,633	258,76			258,76			1.887,11			1.887,11	1.509,69			1.509,69						120.240,45
3.096	14,059			14,059	276,92			276,92			2.164,03			2.164,03	1.731,22			1.731,22						120.461,99
3.097	13,703			13,703	277,62			277,62			2.441,65			2.441,65	1.953,32			1.953,32						120.684,09
3.098	13,558			13,558	272,61			272,61			2.714,26			2.714,26	2.171,41			2.171,41						120.902,18
3.099	12,718			12,718	262,76			262,76			2.977,02			2.977,02	2.381,62			2.381,62						121.112,39
3.100	12,698			12,698	254,16			254,16			3.231,18			3.231,18	2.584,94			2.584,94						121.315,72
3.101	12,219			12,219	249,17			249,17			3.480,35			3.480,35	2.784,28			2.784,28						121.515,06

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.102	13,187			13,187	254,06			254,06			3.734,41			3.734,41	2.987,53			2.987,53						121.718,31
3.103	10,355			10,355	235,42			235,42			3.969,83			3.969,83	3.175,86			3.175,86						121.906,65
3.104	6,725			6,725	170,80			170,80			4.140,63			4.140,63	3.312,50			3.312,50						122.043,29
3.105	3,506			3,506	102,31			102,31	0,591	5,91	4.242,94			4.242,94	3.394,35			3.394,35	5,91	5,91			5,91	122.119,23
3.106	1,676			1,676	51,82			51,82	8,410	90,01	4.294,76			4.294,76	3.435,81			3.435,81	95,92	41,46			41,46	122.070,68
3.107	0,061			0,061	17,37			17,37	18,083	264,93	4.312,13			4.312,13	3.449,70			3.449,70	360,85	13,90			13,90	121.819,65
3.108					0,61			0,61	30,726	488,09	4.312,74			4.312,74	3.450,19			3.450,19	848,94	0,49			0,49	121.332,05
3.109									43,055	737,81									1.586,75					120.594,24
3.110									57,285	1.003,40									2.590,15					119.590,84
3.111									50,673	1.079,58									3.669,73					118.511,26
3.112									52,897	1.035,70									4.705,43					117.475,56
3.113									61,293	1.141,90									5.847,33					116.333,66
3.114									47,473	1.087,66									6.934,99					115.246,00
3.115									52,442	999,15									7.934,14					114.246,85
3.116									51,403	1.038,45									8.972,59					113.208,40
3.117									51,458	1.028,61									10.001,20					112.179,79
3.118									45,258	967,16									10.968,36					111.212,63
3.119									48,359	936,17									11.904,53					110.276,46
3.120									49,567	979,26									12.883,79					109.297,20
3.121									51,621	1.011,88									13.895,67					108.285,32
3.122									52,299	1.039,20									14.934,87					107.246,12
3.123									53,539	1.058,38									15.993,25					106.187,74
3.124									52,995	1.065,34									17.058,59					105.122,40
3.125									53,692	1.066,87									18.125,46					104.055,53
3.126									53,158	1.068,50									19.193,96					102.987,03
3.127									51,672	1.048,30									20.242,26					101.938,73
3.128									51,495	1.031,67									21.273,93					100.907,06
3.129									52,835	1.043,30									22.317,23					99.863,76
3.130									52,154	1.049,89									23.367,12					98.813,87
3.131									50,853	1.030,07									24.397,19					97.783,80
3.132									50,820	1.016,73									25.413,92					96.767,07
3.133									48,015	988,35									26.402,27					95.778,72
3.134									44,038	920,53									27.322,80					94.858,19
3.135									34,984	790,22									28.113,02					94.067,97
3.136									31,652	666,36									28.779,38					93.401,61
3.137									25,521	571,73									29.351,11					92.829,88
3.138	0,243			0,243	2,43			2,43	16,490	420,11	2,43			2,43	1,94			1,94	29.771,22	1,94			1,94	92.411,71
3.139	1,610			1,610	18,53			18,53	8,608	250,98	20,96			20,96	16,77			16,77	30.022,20	14,82			14,82	92.175,55
3.140	3,014			3,014	46,24			46,24	1,561	101,69	67,20			67,20	53,76			53,76	30.123,89	36,99			36,99	92.110,85
3.141	7,743			7,743	107,57			107,57		15,61	174,77			174,77	139,82			139,82	30.139,50	15,61			15,61	92.181,30
3.142	15,561			15,561	233,04			233,04			407,81			407,81	326,25			326,25						92.367,73
3.143	22,554			22,554	381,15			381,15			788,96			788,96	631,17			631,17						92.672,65
3.144	29,489			29,489	520,43			520,43			1.309,39			1.309,39	1.047,51			1.047,51						93.088,99
3.145	34,286			34,286	637,75			637,75			1.947,14			1.947,14	1.557,71			1.557,71						93.599,19
3.146	41,551			41,551	758,37			758,37			2.705,51			2.705,51	2.164,41			2.164,41						94.205,89
3.147	45,932			45,932	874,83			874,83			3.580,34			3.580,34	2.864,27			2.864,27						94.905,75
3.148	48,801			48,801	947,33			947,33			4.527,67			4.527,67	3.622,14			3.622,14						95.663,61

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.149	50,304			50,304	991,05			991,05			5.518,72			5.518,72	4.414,98			4.414,98						96.456,45
3.150	50,685			50,685	1.009,89			1.009,89			6.528,61			6.528,61	5.222,89			5.222,89						97.264,36
3.151	48,439			48,439	991,24			991,24			7.519,85			7.519,85	6.015,88			6.015,88						98.057,35
3.152	48,336			48,336	967,75			967,75			8.487,60			8.487,60	6.790,08			6.790,08						98.831,55
3.153	47,441			47,441	957,77			957,77			9.445,37			9.445,37	7.556,30			7.556,30						99.597,77
3.154	48,370			48,370	958,11			958,11			10.403,48			10.403,48	8.322,78			8.322,78						100.364,26
3.155	46,686			46,686	950,56			950,56			11.354,04			11.354,04	9.083,23			9.083,23						101.124,71
3.156	46,360			46,360	930,46			930,46			12.284,50			12.284,50	9.827,60			9.827,60						101.869,08
3.157	44,420			44,420	907,80			907,80			13.192,30			13.192,30	10.553,84			10.553,84						102.595,32
3.158	44,349			44,349	887,69			887,69			14.079,99			14.079,99	11.263,99			11.263,99						103.305,47
3.159	43,270			43,270	876,19			876,19			14.956,18			14.956,18	11.964,94			11.964,94						104.006,42
3.160	43,335			43,335	866,05			866,05			15.822,23			15.822,23	12.657,78			12.657,78						104.699,26
3.161	41,517			41,517	848,52			848,52			16.670,75			16.670,75	13.336,60			13.336,60						105.378,08
3.162	42,217			42,217	837,34			837,34			17.508,09			17.508,09	14.006,47			14.006,47						106.047,95
3.163	41,577			41,577	837,94			837,94			18.346,03			18.346,03	14.676,82			14.676,82						106.718,30
3.164	42,294			42,294	838,71			838,71			19.184,74			19.184,74	15.347,79			15.347,79						107.389,27
3.165	43,480			43,480	857,74			857,74			20.042,48			20.042,48	16.033,98			16.033,98						108.075,46
3.166	43,251			43,251	867,31			867,31			20.909,79			20.909,79	16.727,83			16.727,83						108.769,31
3.167	42,605			42,605	858,56			858,56			21.768,35			21.768,35	17.414,68			17.414,68						109.456,16
3.168	42,883			42,883	854,88			854,88			22.623,23			22.623,23	18.098,58			18.098,58						110.140,06
3.169	41,985			41,985	848,68			848,68			23.471,91			23.471,91	18.777,53			18.777,53						110.819,00
3.170	41,735			41,735	837,20			837,20			24.309,11			24.309,11	19.447,29			19.447,29						111.488,76
3.171	41,259			41,259	829,94			829,94			25.139,05			25.139,05	20.111,24			20.111,24						112.152,71
3.172	37,691			37,691	789,50			789,50			25.928,55			25.928,55	20.742,84			20.742,84						112.784,31
3.173	38,108			38,108	757,99			757,99			26.686,54			26.686,54	21.349,23			21.349,23						113.390,70
3.174	33,390			33,390	714,98			714,98			27.401,52			27.401,52	21.921,22			21.921,22						113.962,68
3.175	33,204			33,204	665,94			665,94			28.067,46			28.067,46	22.453,97			22.453,97						114.495,43
3.176	28,073			28,073	612,77			612,77			28.680,23			28.680,23	22.944,18			22.944,18						114.985,65
3.177	25,807			25,807	538,80			538,80			29.219,03			29.219,03	23.375,22			23.375,22						115.416,69
3.178	22,245			22,245	480,52			480,52			29.699,55			29.699,55	23.759,64			23.759,64						115.801,11
3.179	18,213			18,213	404,58			404,58			30.104,13			30.104,13	24.083,30			24.083,30						116.124,77
3.180	13,397			13,397	316,10			316,10			30.420,23			30.420,23	24.336,18			24.336,18						116.377,65
3.181	9,454			9,454	228,51			228,51			30.648,74			30.648,74	24.518,99			24.518,99						116.560,46
3.182	3,809			3,809	132,63			132,63	1,470	14,70	30.781,37			30.781,37	24.625,10			24.625,10	14,70	14,70			14,70	116.651,86
3.183	3,344			3,344	71,53			71,53	1,650	31,20	30.852,90			30.852,90	24.682,32			24.682,32	45,90	31,20			31,20	116.677,88
3.184	2,980			2,980	63,24			63,24	2,092	37,42	30.916,14			30.916,14	24.732,91			24.732,91	83,32	37,42			37,42	116.691,05
3.185	2,345			2,345	53,25			53,25	5,323	74,15	30.969,39			30.969,39	24.775,51			24.775,51	157,47	42,60			42,60	116.659,50
3.186	1,309			1,309	36,54			36,54	10,162	154,85	31.005,93			31.005,93	24.804,74			24.804,74	312,32	29,23			29,23	116.533,88
3.187	0,380			0,380	16,89			16,89	14,535	246,97	31.022,82			31.022,82	24.818,26			24.818,26	559,29	13,51			13,51	116.300,42
3.188					3,80			3,80	18,766	333,01	31.026,62			31.026,62	24.821,30			24.821,30	892,30	3,04			3,04	115.970,45
3.189									21,127	398,93									1.291,23					115.571,52
3.190									22,359	434,86									1.726,09					115.136,66
3.191									23,022	453,81									2.179,90					114.682,85
3.192									23,441	464,63									2.644,53					114.218,22
3.193									22,897	463,38									3.107,91					113.754,84
3.194									23,170	460,67									3.568,58					113.294,17
3.195									22,735	459,05									4.027,63					112.835,12

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.196									21,539	442,74									4.470,37					112.392,38
3.197									19,808	413,47									4.883,84					111.978,91
3.198	0,042			0,042	0,42			0,42	18,101	379,09	0,42			0,42	0,34			0,34	5.262,93	0,34			0,34	111.600,16
3.199	0,191			0,191	2,33			2,33	16,033	341,34	2,75			2,75	2,20			2,20	5.604,27	1,86			1,86	111.260,68
3.200	0,776			0,776	9,67			9,67	12,082	281,15	12,42			12,42	9,94			9,94	5.885,42	7,74			7,74	110.987,27
3.201	1,813			1,813	25,89			25,89	7,420	195,02	38,31			38,31	30,65			30,65	6.080,44	20,71			20,71	110.812,96
3.202	1,854			1,854	36,67			36,67	7,477	148,97	74,98			74,98	59,98			59,98	6.229,41	29,34			29,34	110.693,33
3.203	1,309			1,309	31,63			31,63	9,819	172,96	106,61			106,61	85,29			85,29	6.402,37	25,30			25,30	110.545,67
3.204	0,939			0,939	22,48			22,48	11,528	213,47	129,09			129,09	103,27			103,27	6.615,84	17,98			17,98	110.350,18
3.205	0,904			0,904	18,43			18,43	11,947	234,75	147,52			147,52	118,02			118,02	6.850,59	14,74			14,74	110.130,17
3.206	1,336			1,336	22,40			22,40	9,997	219,44	169,92			169,92	135,94			135,94	7.070,03	17,92			17,92	109.928,65
3.207	2,297			2,297	36,33			36,33	5,923	159,20	206,25			206,25	165,00			165,00	7.229,23	29,06			29,06	109.798,51
3.208	3,373			3,373	56,70			56,70	2,429	83,52	262,95			262,95	210,36			210,36	7.312,75	45,36			45,36	109.760,35
3.209	3,124			3,124	64,97			64,97	3,954	63,83	327,92			327,92	262,34			262,34	7.376,58	51,98			51,98	109.748,50
3.210	2,767			2,767	58,91			58,91	4,035	79,89	386,83			386,83	309,46			309,46	7.456,47	47,13			47,13	109.715,74
3.211	1,938			1,938	47,05			47,05	7,047	110,82	433,88			433,88	347,10			347,10	7.567,29	37,64			37,64	109.642,56
3.212	1,239			1,239	31,77			31,77	10,106	171,53	465,65			465,65	372,52			372,52	7.738,82	25,42			25,42	109.496,45
3.213	0,946			0,946	21,85			21,85	11,511	216,17	487,50			487,50	390,00			390,00	7.954,99	17,48			17,48	109.297,76
3.214	0,593			0,593	15,39			15,39	13,236	247,47	502,89			502,89	402,31			402,31	8.202,46	12,31			12,31	109.062,60
3.215	0,269			0,269	8,62			8,62	15,357	285,93	511,51			511,51	409,21			409,21	8.488,39	6,90			6,90	108.783,57
3.216	0,126			0,126	3,95			3,95	16,305	316,62	515,46			515,46	412,37			412,37	8.805,01	3,16			3,16	108.470,11
3.217	0,003			0,003	1,29			1,29	18,681	349,86	516,75			516,75	413,40			413,40	9.154,87	1,03			1,03	108.121,28
3.218					0,03			0,03	19,261	379,42	516,78			516,78	413,42			413,42	9.534,29	0,02			0,02	107.741,88
3.219									19,282	385,43									9.919,72					107.356,45
3.220									20,874	401,56									10.321,28					106.954,89
3.221									23,929	448,03									10.769,31					106.506,86
3.222									26,840	507,69									11.277,00					105.999,17
3.223									28,729	555,69									11.832,69					105.443,48
3.224									30,875	596,04									12.428,73					104.847,44
3.225									34,152	650,27									13.079,00					104.197,17
3.226									34,763	689,15									13.768,15					103.508,02
3.227									31,168	659,31									14.427,46					102.848,71
3.228									26,784	579,52									15.006,98					102.269,19
3.229									26,246	530,30									15.537,28					101.738,89
3.230									24,720	509,66									16.046,94					101.229,23
3.231									27,466	521,86									16.568,80					100.707,37
3.232									30,758	582,24									17.151,04					100.125,13
3.233									30,505	612,63									17.763,67					99.512,50
3.234									32,335	628,40									18.392,07					98.884,10
3.235									28,133	604,68									18.996,75					98.279,42
3.236									21,009	491,42									19.488,17					97.788,00
3.237									19,990	409,99									19.898,16					97.378,01
3.238									23,161	431,51									20.329,67					96.946,50
3.239									20,161	433,22									20.762,89					96.513,28
3.240									19,892	400,53									21.163,42					96.112,75
3.241									20,033	399,25									21.562,67					95.713,50
3.242	0,018			0,018	0,18			0,18	18,602	386,35	0,18			0,18	0,14			0,14	21.949,02	0,14			0,14	95.327,29

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.243	0,085			0,085	1,03			1,03	18,326	369,28	1,21			1,21	0,97			0,97	22.318,30	0,82			0,82	94.958,83
3.244	0,210			0,210	2,95			2,95	16,091	344,17	4,16			4,16	3,33			3,33	22.662,47	2,36			2,36	94.617,02
3.245	0,135			0,135	3,45			3,45	17,027	331,18	7,61			7,61	6,09			6,09	22.993,65	2,76			2,76	94.288,60
3.246	0,065			0,065	2,00			2,00	17,237	342,64	9,61			9,61	7,69			7,69	23.336,29	1,60			1,60	93.947,56
3.247	0,014			0,014	0,79			0,79	18,508	357,45	10,40			10,40	8,32			8,32	23.693,74	0,63			0,63	93.590,74
3.248	0,050			0,050	0,64			0,64	18,063	365,71	11,04			11,04	8,83			8,83	24.059,45	0,51			0,51	93.225,54
3.249	0,107			0,107	1,57			1,57	17,673	357,36	12,61			12,61	10,09			10,09	24.416,81	1,26			1,26	92.869,44
3.250	0,236			0,236	3,43			3,43	15,867	335,40	16,04			16,04	12,83			12,83	24.752,21	2,74			2,74	92.536,78
3.251	0,352			0,352	5,88			5,88	14,813	306,80	21,92			21,92	17,54			17,54	25.059,01	4,70			4,70	92.234,68
3.252	0,533			0,533	8,85			8,85	13,242	280,55	30,77			30,77	24,62			24,62	25.339,56	7,08			7,08	91.961,21
3.253	0,617			0,617	11,50			11,50	13,036	262,78	42,27			42,27	33,82			33,82	25.602,34	9,20			9,20	91.707,63
3.254	0,906			0,906	15,23			15,23	11,865	249,01	57,50			57,50	46,00			46,00	25.851,35	12,18			12,18	91.470,80
3.255	0,728			0,728	16,34			16,34	12,264	241,29	73,84			73,84	59,07			59,07	26.092,64	13,07			13,07	91.242,58
3.256	2,040			2,040	27,68			27,68	6,263	185,27	101,52			101,52	81,22			81,22	26.277,91	22,14			22,14	91.079,45
3.257	2,830			2,830	48,70			48,70	5,155	114,18	150,22			150,22	120,18			120,18	26.392,09	38,96			38,96	91.004,23
3.258	3,681			3,681	65,11			65,11	0,313	54,68	215,33			215,33	172,26			172,26	26.446,77	52,09			52,09	91.001,64
3.259	6,299			6,299	99,80			99,80		3,13	315,13			315,13	252,10			252,10	26.449,90	3,13			3,13	91.078,35
3.260	10,595			10,595	168,94			168,94			484,07			484,07	387,26			387,26						91.213,50
3.261	13,636			13,636	242,31			242,31			726,38			726,38	581,10			581,10						91.407,35
3.262	17,043			17,043	306,79			306,79			1.033,17			1.033,17	826,54			826,54						91.652,78
3.263	17,821			17,821	348,64			348,64			1.381,81			1.381,81	1.105,45			1.105,45						91.931,69
3.264	20,409			20,409	382,30			382,30			1.764,11			1.764,11	1.411,29			1.411,29						92.237,53
3.265	21,288			21,288	416,97			416,97			2.181,08			2.181,08	1.744,86			1.744,86						92.571,11
3.266	19,884			19,884	411,72			411,72			2.592,80			2.592,80	2.074,24			2.074,24						92.900,49
3.267	18,154			18,154	380,38			380,38			2.973,18			2.973,18	2.378,54			2.378,54						93.204,79
3.268	15,643			15,643	337,97			337,97			3.311,15			3.311,15	2.648,92			2.648,92						93.475,17
3.269	10,569			10,569	262,12			262,12			3.573,27			3.573,27	2.858,62			2.858,62						93.684,87
3.270	7,157			7,157	177,26			177,26			3.750,53			3.750,53	3.000,42			3.000,42						93.826,68
3.271	3,388			3,388	105,45			105,45	1,838	18,38	3.855,98			3.855,98	3.084,78			3.084,78	18,38	18,38			18,38	93.892,66
3.272	1,771			1,771	51,59			51,59	7,385	92,23	3.907,57			3.907,57	3.126,06			3.126,06	110,61	41,27			41,27	93.841,70
3.273	0,314			0,314	20,85			20,85	14,613	219,98	3.928,42			3.928,42	3.142,74			3.142,74	330,59	16,68			16,68	93.638,40
3.274					3,14			3,14	20,324	349,37	3.931,56			3.931,56	3.145,25			3.145,25	679,96	2,51			2,51	93.291,54
3.275									28,332	486,56									1.166,52					92.804,98
3.276									30,700	590,32									1.756,84					92.214,66
3.277									33,216	639,16									2.396,00					91.575,50
3.278									36,110	693,26									3.089,26					90.882,24
3.279									40,288	763,98									3.853,24					90.118,26
3.280									42,080	823,68									4.676,92					89.294,58
3.281									40,830	829,10									5.506,02					88.465,48
3.282									36,265	770,95									6.276,97					87.694,53
3.283									32,226	684,91									6.961,88					87.009,62
3.284									29,500	617,26									7.579,14					86.392,36
3.285									23,295	527,95									8.107,09					85.864,41
3.286	0,293			0,293	2,93			2,93	14,895	381,90	2,93			2,93	2,34			2,34	8.488,99	2,34			2,34	85.484,85
3.287	1,490			1,490	17,83			17,83	8,282	231,77	20,76			20,76	16,61			16,61	8.720,76	14,26			14,26	85.267,34
3.288	3,543			3,543	50,33			50,33	2,068	103,50	71,09			71,09	56,87			56,87	8.824,26	40,26			40,26	85.204,10
3.289	6,468			6,468	100,11			100,11		20,68	171,20			171,20	136,96			136,96	8.844,94	20,68			20,68	85.263,51

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.290	5,495			5,495	119,63			119,63			290,83			290,83	232,66			232,66						85.359,21
3.291	4,199			4,199	96,94			96,94	0,034	0,34	387,77			387,77	310,22			310,22	0,34	0,34			0,34	85.436,42
3.292	4,116			4,116	83,15			83,15	0,369	4,03	470,92			470,92	376,74			376,74	4,37	4,03			4,03	85.498,91
3.293	3,416			3,416	75,32			75,32	1,258	16,27	546,24			546,24	436,99			436,99	20,64	16,27			16,27	85.542,90
3.294	3,646			3,646	70,62			70,62	1,531	27,89	616,86			616,86	493,49			493,49	48,53	27,89			27,89	85.571,51
3.295	3,138			3,138	67,84			67,84	3,281	48,12	684,70			684,70	547,76			547,76	96,65	48,12			48,12	85.577,66
3.296	2,833			2,833	59,71			59,71	4,034	73,15	744,41			744,41	595,53			595,53	169,80	47,77			47,77	85.552,28
3.297	2,630			2,630	54,63			54,63	4,658	86,92	799,04			799,04	639,23			639,23	256,72	43,70			43,70	85.509,06
3.298	2,287			2,287	49,17			49,17	6,090	107,48	848,21			848,21	678,57			678,57	364,20	39,34			39,34	85.440,92
3.299	1,781			1,781	40,68			40,68	7,620	137,10	888,89			888,89	711,11			711,11	501,30	32,54			32,54	85.336,36
3.300	1,261			1,261	30,42			30,42	10,341	179,61	919,31			919,31	735,45			735,45	680,91	24,34			24,34	85.181,09
3.301	0,830			0,830	20,91			20,91	12,007	223,48	940,22			940,22	752,18			752,18	904,39	16,73			16,73	84.974,34
3.302	0,285			0,285	11,15			11,15	15,507	275,14	951,37			951,37	761,10			761,10	1.179,53	8,92			8,92	84.708,12
3.303	0,052			0,052	3,37			3,37	18,286	337,93	954,74			954,74	763,79			763,79	1.517,46	2,70			2,70	84.372,89
3.304					0,52			0,52	19,229	375,15	955,26			955,26	764,21			764,21	1.892,61	0,42			0,42	83.998,16
3.305	0,033			0,033	0,33			0,33	18,517	377,46	955,59			955,59	764,47			764,47	2.270,07	0,26			0,26	83.620,96
3.306	0,098			0,098	1,31			1,31	17,797	363,14	956,90			956,90	765,52			765,52	2.633,21	1,05			1,05	83.258,87
3.307	0,191			0,191	2,89			2,89	16,560	343,57	959,79			959,79	767,83			767,83	2.976,78	2,31			2,31	82.917,61
3.308	0,252			0,252	4,43			4,43	15,665	322,25	964,22			964,22	771,38			771,38	3.299,03	3,54			3,54	82.598,90
3.309	0,237			0,237	4,89			4,89	16,165	318,30	969,11			969,11	775,29			775,29	3.617,33	3,91			3,91	82.284,51
3.310	0,175			0,175	4,12			4,12	17,286	334,51	973,23			973,23	778,58			778,58	3.951,84	3,30			3,30	81.953,30
3.311	0,052			0,052	2,27			2,27	18,134	354,20	975,50			975,50	780,40			780,40	4.306,04	1,82			1,82	81.600,92
3.312	0,034			0,034	0,86			0,86	18,511	366,45	976,36			976,36	781,09			781,09	4.672,49	0,69			0,69	81.235,16
3.313	0,030			0,030	0,64			0,64	18,577	370,88	977,00			977,00	781,60			781,60	5.043,37	0,51			0,51	80.864,79
3.314	0,120			0,120	1,50			1,50	16,444	350,21	978,50			978,50	782,80			782,80	5.393,58	1,20			1,20	80.515,78
3.315	0,052			0,052	1,72			1,72	17,505	339,49	980,22			980,22	784,18			784,18	5.733,07	1,38			1,38	80.177,67
3.316	0,053			0,053	1,05			1,05	17,598	351,03	981,27			981,27	785,02			785,02	6.084,10	0,84			0,84	79.827,48
3.317	0,078			0,078	1,31			1,31	17,040	346,38	982,58			982,58	786,06			786,06	6.430,48	1,05			1,05	79.482,15
3.318	0,035			0,035	1,13			1,13	17,808	348,48	983,71			983,71	786,97			786,97	6.778,96	0,90			0,90	79.134,57
3.319					0,35			0,35	20,200	380,08	984,06			984,06	787,25			787,25	7.159,04	0,28			0,28	78.754,77
3.320									22,229	424,29									7.583,33					78.330,48
3.321									25,501	477,30									8.060,63					77.853,18
3.322									27,174	526,75									8.587,38					77.326,43
3.323									28,410	555,84									9.143,22					76.770,59
3.324									30,771	591,81									9.735,03					76.178,78
3.325									35,615	663,86									10.398,89					75.514,92
3.326									41,282	768,97									11.167,86					74.745,95
3.327									43,892	851,74									12.019,60					73.894,21
3.328									44,269	881,61									12.901,21					73.012,60
3.329									42,946	872,15									13.773,36					72.140,45
3.330									42,048	849,94									14.623,30					71.290,51
3.331									39,599	816,47									15.439,77					70.474,04
3.332									39,903	795,02									16.234,79					69.679,02
3.333									40,318	802,21									17.037,00					68.876,81
3.334									42,952	832,70									17.869,70					68.044,11
3.335									45,473	884,25									18.753,95					67.159,86
3.336									47,456	929,29									19.683,24					66.230,57

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.337									49,525	969,81									20.653,05					65.260,76
3.338									53,076	1.026,01									21.679,06					64.234,75
3.339									58,026	1.111,02									22.790,08					63.123,73
3.340									62,826	1.208,52									23.998,60					61.915,21
3.341									69,328	1.321,54									25.320,14					60.593,67
3.342									75,826	1.451,54									26.771,68					59.142,13
3.343									79,719	1.555,45									28.327,13					57.586,68
3.344									89,325	1.690,44									30.017,57					55.896,24
3.345									95,863	1.851,88									31.869,45					54.044,36
3.346									94,765	1.906,28									33.775,73					52.138,08
3.347									82,537	1.773,02									35.548,75					50.365,06
3.348									82,988	1.655,25									37.204,00					48.709,81
3.349									83,294	1.662,82									38.866,82					47.046,99
3.350									84,817	1.681,11									40.547,93					45.365,88
3.351									87,142	1.719,59									42.267,52					43.646,29
3.352									80,078	1.672,20									43.939,72					41.974,09
3.353									68,257	1.483,35									45.423,07					40.490,74
3.354									54,650	1.229,07									46.652,14					39.261,67
3.355									46,978	1.016,28									47.668,42					38.245,39
3.356									38,330	853,08									48.521,50					37.392,31
3.357									28,255	665,85									49.187,35					36.726,46
3.358	0,034			0,034	0,34			0,34	19,272	475,27	0,34			0,34	0,27			0,27	49.662,62	0,27			0,27	36.251,46
3.359	1,148	0,155	0,267	1,570	11,82	1,55	2,67	16,04	9,287	285,59	12,16	1,55	2,67	16,38	9,73	1,35	3,14	14,22	49.948,21	9,46	1,35	3,14	13,95	35.979,82
3.360	3,535	0,711	2,713	6,959	46,83	8,66	29,80	85,29		92,87	58,99	10,21	32,47	101,67	47,19	8,88	38,20	94,27	50.041,08	37,46	7,53	35,06	80,05	35.967,00
3.361	6,916	1,494	3,536	11,946	104,51	22,05	62,49	189,05			163,50	32,26	94,96	290,72	130,80	28,05	111,72	270,57						36.143,30
3.362	10,008	2,177	12,481	24,666	169,24	36,71	160,17	366,12			332,74	68,97	255,13	656,84	266,19	59,97	300,15	626,31						36.499,05
3.363	12,823	2,822	22,144	37,789	228,31	49,99	346,25	624,55			561,05	118,96	601,38	1.281,39	448,84	103,44	707,51	1.259,79						37.132,52
3.364	17,522	3,878	33,773	55,173	303,45	67,00	559,17	929,62			864,50	185,96	1.160,55	2.211,01	691,60	161,70	1.365,35	2.218,65						38.091,39
3.365	23,398	5,141	41,969	70,508	409,20	90,19	757,42	1.256,81			1.273,70	276,15	1.917,97	3.467,82	1.018,96	240,13	2.256,44	3.515,53						39.388,26
3.366	31,435	6,816	49,028	87,279	548,33	119,57	909,97	1.577,87			1.822,03	395,72	2.827,94	5.045,69	1.457,62	344,10	3.326,99	5.128,71						41.001,45
3.367	34,569	7,578	58,830	100,977	660,04	143,94	1.078,58	1.882,56			2.482,07	539,66	3.906,52	6.928,25	1.985,66	469,27	4.595,91	7.050,84						42.923,56
3.368	37,632	8,464	65,885	111,981	722,01	160,42	1.247,15	2.129,58			3.204,08	700,08	5.153,67	9.057,83	2.563,26	608,77	6.063,14	9.235,17						45.107,90
3.369	37,064	8,488	77,102	122,654	746,96	169,52	1.429,87	2.346,35			3.951,04	869,60	6.583,54	11.404,18	3.160,83	756,17	7.745,34	11.662,34						47.535,08
3.370	36,068	8,370	86,243	130,681	731,32	168,58	1.633,45	2.533,35			4.682,36	1.038,18	8.216,99	13.937,53	3.745,89	902,77	9.667,05	14.315,71						50.188,43
3.371	37,301	8,678	93,400	139,379	733,69	170,48	1.796,43	2.700,60			5.416,05	1.208,66	10.013,42	16.638,13	4.332,84	1.051,01	11.780,49	17.164,34						53.037,07
3.372	41,384	9,585	97,513	148,482	786,85	182,63	1.909,13	2.878,61			6.202,90	1.391,29	11.922,55	19.516,74	4.962,32	1.209,82	14.026,53	20.198,67						56.071,39
3.373	42,959	9,961	102,968	155,888	843,43	195,46	2.004,81	3.043,70			7.046,33	1.586,75	13.927,36	22.560,44	5.637,06	1.379,78	16.385,13	23.401,97						59.274,70
3.374	49,801	11,265	101,757	162,823	927,60	212,26	2.047,25	3.187,11			7.973,93	1.799,01	15.974,61	25.747,55	6.379,14	1.564,36	18.793,66	26.737,16						62.609,88
3.375	42,965	10,115	111,798	164,878	927,66	213,80	2.135,55	3.277,01			8.901,59	2.012,81	18.110,16	29.024,56	7.121,27	1.750,27	21.306,07	30.177,61						66.050,33
3.376	55,022	12,059	109,090	176,171	979,87	221,74	2.208,88	3.410,49			9.881,46	2.234,55	20.319,04	32.435,05	7.905,17	1.943,09	23.904,75	33.753,01						69.625,73
3.377	57,594	12,781	111,992	182,367	1.126,16	248,40	2.210,82	3.585,38			11.007,62	2.482,95	22.529,86	36.020,43	8.806,10	2.159,09	26.505,72	37.470,91						73.343,62
3.378	61,977	14,000	113,218	189,195	1.195,71	267,81	2.252,10	3.715,62			12.203,33	2.750,76	24.781,96	39.736,05	9.762,66	2.391,97	29.155,25	41.309,88						77.182,60
3.379	60,946	13,884	111,596	186,426	1.229,23	278,84	2.248,14	3.756,21			13.432,56	3.029,60	27.030,10	43.492,26	10.746,05	2.634,43	31.800,12	45.180,60						81.053,32
3.380	65,200	14,739	109,444	189,383	1.261,46	286,23	2.210,40	3.758,09			14.694,02	3.315,83	29.240,50	47.250,35	11.755,22	2.883,33	34.400,59	49.039,14						84.911,85
3.381	63,298	14,330	108,313	185,941	1.284,98	290,69	2.177,57	3.753,24			15.979,00	3.606,52	31.418,07	51.003,59	12.783,20	3.136,10	36.962,44	52.881,74						88.754,45
3.382	63,938	14,223	105,896	184,057	1.272,36	285,53	2.142,09	3.699,98			17.251,36	3.892,05	33.560,16	54.703,57	13.801,09	3.384,39	39.482,54	56.668,02						92.540,73
3.383	58,845	13,347	106,512	178,704	1.227,83	275,70	2.124,08	3.627,61			18.479,19	4.167,75	35.684,24	58.331,18	14.783,35	3.624,13	41.981,46	60.388,94						96.261,65

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.384	58,475	13,244	103,643	175,362	1.173,20	265,91	2.101,55	3.540,66			19.652,39	4.433,66	37.785,79	61.871,84	15.721,91	3.855,36	44.453,87	64.031,14						99.903,85
3.385	46,513	10,714	105,065	162,292	1.049,88	239,58	2.087,08	3.376,54			20.702,27	4.673,24	39.872,87	65.248,38	16.561,82	4.063,69	46.909,26	67.534,77						103.407,47
3.386	44,307	10,254	103,402	157,963	908,20	209,68	2.084,67	3.202,55			21.610,47	4.882,92	41.957,54	68.450,93	17.288,38	4.246,02	49.361,81	70.896,21						106.768,91
3.387	39,465	9,098	99,369	147,932	837,72	193,52	2.027,71	3.058,95			22.448,19	5.076,44	43.985,25	71.509,88	17.958,55	4.414,30	51.747,35	74.120,20						109.992,91
3.388	40,430	9,229	92,941	142,600	798,95	183,27	1.923,10	2.905,32			23.247,14	5.259,71	45.908,35	74.415,20	18.597,71	4.573,66	54.009,82	77.181,19						113.053,91
3.389	40,632	9,341	86,274	136,247	810,62	185,70	1.792,15	2.788,47			24.057,76	5.445,41	47.700,50	77.203,67	19.246,21	4.735,14	56.118,24	80.099,59						115.972,30
3.390	33,066	7,639	84,269	124,974	736,98	169,80	1.705,43	2.612,21			24.794,74	5.615,21	49.405,93	79.815,88	19.835,79	4.882,79	58.124,62	82.843,20						118.715,92
3.391	36,405	8,276	77,991	122,672	694,71	159,15	1.622,60	2.476,46			25.489,45	5.774,36	51.028,53	82.292,34	20.391,56	5.021,18	60.033,56	85.446,30						121.319,02
3.392	29,237	6,730	75,737	111,704	656,42	150,06	1.537,28	2.343,76			26.145,87	5.924,42	52.565,81	84.636,10	20.916,70	5.151,67	61.842,13	87.910,50						123.783,21
3.393	26,063	6,041	69,170	101,274	553,00	127,71	1.449,07	2.129,78			26.698,87	6.052,13	54.014,88	86.765,88	21.359,10	5.262,72	63.546,92	90.168,74						126.041,45
3.394	28,358	6,524	61,460	96,342	544,21	125,65	1.306,30	1.976,16			27.243,08	6.177,78	55.321,18	88.742,04	21.794,46	5.371,98	65.083,74	92.250,18						128.122,90
3.395	27,187	6,183	54,635	88,005	555,45	127,07	1.160,95	1.843,47			27.798,53	6.304,85	56.482,13	90.585,51	22.238,82	5.482,48	66.449,56	94.170,86						130.043,58
3.396	22,720	5,228	51,446	79,394	499,07	114,11	1.060,81	1.673,99			28.297,60	6.418,96	57.542,94	92.259,50	22.638,08	5.581,70	67.697,58	95.917,36						131.790,07
3.397	12,567	3,054	47,153	62,774	352,87	82,82	985,99	1.421,68			28.650,47	6.501,78	58.528,93	93.681,18	22.920,38	5.653,72	68.857,56	97.431,66						133.304,37
3.398	19,561	4,462	40,305	64,328	321,28	75,16	874,58	1.271,02			28.971,75	6.576,94	59.403,51	94.952,20	23.177,40	5.719,08	69.886,48	98.782,96						134.655,67
3.399	18,442	4,173	33,432	56,047	380,03	86,35	737,37	1.203,75			29.351,78	6.663,29	60.140,88	96.155,95	23.481,42	5.794,17	70.753,98	100.029,57						135.902,28
3.400	11,522	2,719	30,545	44,786	299,64	68,92	639,77	1.008,33			29.651,42	6.732,21	60.780,65	97.164,28	23.721,14	5.854,10	71.506,65	101.081,89						136.954,59
3.401	8,788	2,103	24,395	35,286	203,10	48,22	549,40	800,72			29.854,52	6.780,43	61.330,05	97.965,00	23.883,62	5.896,03	72.153,00	101.932,65						137.805,35
3.402	10,251	2,322	14,395	26,968	190,39	44,25	387,90	622,54			30.044,91	6.824,68	61.717,95	98.587,54	24.035,93	5.934,50	72.609,35	102.579,78						138.452,49
3.403	8,415	1,890	7,736	18,041	186,66	42,12	221,31	450,09			30.231,57	6.866,80	61.939,26	99.037,63	24.185,26	5.971,13	72.869,72	103.026,11						138.898,81
3.404	10,509			10,509	189,24	18,90	77,36	285,50			30.420,81	6.885,70	62.016,62	99.323,13	24.336,65	5.987,57	72.960,73	103.284,95						139.157,65
3.405	0,094			0,094	106,03			106,03	1,370	13,70	30.526,84			30.526,84	24.421,47			24.421,47	13,70	13,70			13,70	139.228,77
3.406	0,101			0,101	1,95			1,95	8,318	96,88	30.528,79			30.528,79	24.423,03			24.423,03	110,58	1,56			1,56	139.133,45
3.407					1,01			1,01	15,157	234,75	30.529,80			30.529,80	24.423,84			24.423,84	345,33	0,81			0,81	138.899,51
3.408									23,396	385,53									730,86					138.513,98
3.409									33,112	565,08									1.295,94					137.948,90
3.410									41,706	748,18									2.044,12					137.200,72
3.411									53,641	953,47									2.997,59					136.247,25
3.412									71,668	1.253,09									4.250,68					134.994,16
3.413									75,115	1.467,83									5.718,51					133.526,33
3.414									79,992	1.551,07									7.269,58					131.975,26
3.415									73,905	1.538,97									8.808,55					130.436,29
3.416									57,713	1.316,18									10.124,73					129.120,11
3.417									48,819	1.065,32									11.190,05					128.054,79
3.418									40,897	897,16									12.087,21					127.157,63
3.419									32,734	736,31									12.823,52					126.421,32
3.420									24,874	576,08									13.399,60					125.845,24
3.421									20,467	453,41									13.853,01					125.391,83
3.422	0,774			0,774	7,74			7,74	15,590	360,57	7,74			7,74	6,19			6,19	14.213,58	6,19			6,19	125.037,45
3.423	1,925			1,925	26,99			26,99	11,476	270,66	34,73			34,73	27,78			27,78	14.484,24	21,59			21,59	124.788,38
3.424	3,260			3,260	51,85			51,85	8,242	197,18	86,58			86,58	69,26			69,26	14.681,42	41,48			41,48	124.632,68
3.425	5,421			5,421	86,81			86,81	4,390	126,32	173,39			173,39	138,71			138,71	14.807,74	69,45			69,45	124.575,81
3.426	6,286			6,286	117,07			117,07	2,541	69,31	290,46			290,46	232,37			232,37	14.877,05	69,31			69,31	124.600,16
3.427	6,689			6,689	129,75			129,75	1,027	35,68	420,21			420,21	336,17			336,17	14.912,73	35,68			35,68	124.668,28
3.428	9,987			9,987	166,76			166,76		10,27	586,97			586,97	469,58			469,58	14.923,00	10,27			10,27	124.791,42
3.429	12,903			12,903	228,90			228,90			815,87			815,87	652,70			652,70						124.974,54
3.430	15,099			15,099	280,02			280,02			1.095,89			1.095,89	876,71			876,71						125.198,56

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.431	16,135			16,135	312,34			312,34			1.408,23			1.408,23	1.126,58			1.126,58						125.448,43
3.432	17,456			17,456	335,91			335,91			1.744,14			1.744,14	1.395,31			1.395,31						125.717,16
3.433	16,948			16,948	344,04			344,04			2.088,18			2.088,18	1.670,54			1.670,54						125.992,39
3.434	15,588			15,588	325,36			325,36			2.413,54			2.413,54	1.930,83			1.930,83						126.252,68
3.435	12,307	0,119		12,426	278,95	1,19		280,14			2.692,49	1,19		2.693,68	2.153,99	1,03		2.155,02						126.476,87
3.436	10,830	0,434	0,056	11,320	231,37	5,53	0,56	237,46			2.923,86	6,72	0,56	2.931,14	2.339,09	5,84	0,66	2.345,59						126.667,43
3.437	9,675	0,620	0,316	10,611	205,05	10,54	3,72	219,31			3.128,91	17,26	4,28	3.150,45	2.503,13	15,01	5,04	2.523,18						126.845,01
3.438	8,433	0,710	0,631	9,774	181,08	13,30	9,47	203,85			3.309,99	30,56	13,75	3.354,30	2.647,99	26,57	16,18	2.690,74						127.012,58
3.439	4,171	0,552	0,787	5,510	126,04	12,62	14,18	152,84	1,292	12,92	3.436,03	43,18	27,93	3.507,14	2.748,82	37,55	32,86	2.819,23	12,92	12,92			12,92	127.128,15
3.440	3,138	0,544	1,383	5,065	73,09	10,96	21,70	105,75	1,286	25,78	3.509,12	54,14	49,63	3.612,89	2.807,30	47,08	58,39	2.912,77	38,70	25,78			25,78	127.195,90
3.441	4,085	0,626	1,814	6,525	72,23	11,70	31,97	115,90	0,027	13,13	3.581,35	65,84	81,60	3.728,79	2.865,08	57,25	96,00	3.018,33	51,83	13,13			13,13	127.288,34
3.442	5,500	0,702	2,085	8,287	95,85	13,28	38,99	148,12		0,27	3.677,20	79,12	120,59	3.876,91	2.941,76	68,80	141,87	3.152,43	52,10	0,27			0,27	127.422,17
3.443	3,450	0,577	2,790	6,817	89,50	12,79	48,75	151,04			3.766,70	91,91	169,34	4.027,95	3.013,36	79,92	199,22	3.292,50						127.562,24
3.444	6,885	0,755	4,314	11,954	103,35	13,32	71,04	187,71			3.870,05	105,23	240,38	4.215,66	3.096,04	91,50	282,80	3.470,34						127.740,08
3.445	6,701	0,251		6,952	135,86	10,06	43,14	189,06			4.005,91	115,29	283,52	4.404,72	3.204,73	100,25	333,55	3.638,53						127.908,27
3.446	9,314	1,075	0,019	10,408	160,15	13,26	0,19	173,60			4.166,06	128,55	283,71	4.578,32	3.332,85	111,78	333,78	3.778,41						128.048,14
3.447	10,112	2,120	0,665	12,897	194,26	31,95	6,84	233,05			4.360,32	160,50	290,55	4.811,37	3.488,26	139,57	341,82	3.969,65						128.239,38
3.448	10,885	2,297	2,755	15,937	209,97	44,17	34,20	288,34			4.570,29	204,67	324,75	5.099,71	3.656,23	177,97	382,06	4.216,26						128.486,00
3.449	12,424	2,597	3,874	18,895	233,09	48,94	66,29	348,32			4.803,38	253,61	391,04	5.448,03	3.842,70	220,53	460,05	4.523,28						128.793,02
3.450	11,574	2,468	5,716	19,758	239,98	50,65	95,90	386,53			5.043,36	304,26	486,94	5.834,56	4.034,69	264,57	572,87	4.872,13						129.141,87
3.451	12,485	2,657	6,846	21,988	240,59	51,25	125,62	417,46			5.283,95	355,51	612,56	6.252,02	4.227,16	309,14	720,66	5.256,96						129.526,70
3.452	13,543	2,860	7,387	23,790	260,28	55,17	142,33	457,78			5.544,23	410,68	754,89	6.709,80	4.435,38	357,11	888,11	5.680,60						129.950,34
3.453	12,532	2,707	9,562	24,801	260,75	55,67	169,49	485,91			5.804,98	466,35	924,38	7.195,71	4.643,98	405,52	1.087,51	6.137,01						130.406,75
3.454	11,458	2,507	10,267	24,232	239,90	52,14	198,29	490,33			6.044,88	518,49	1.122,67	7.686,04	4.835,90	450,86	1.320,79	6.607,55						130.877,29
3.455	14,682	3,131	10,837	28,650	261,40	56,38	211,04	528,82			6.306,28	574,87	1.333,71	8.214,86	5.045,02	499,89	1.569,07	7.113,98						131.383,72
3.456	16,287	3,412	9,931	29,630	309,69	65,43	207,68	582,80			6.615,97	640,30	1.541,39	8.797,66	5.292,78	556,78	1.813,40	7.662,96						131.932,70
3.457	13,277	2,867	11,103	27,247	295,64	62,79	210,34	568,77			6.911,61	703,09	1.751,73	9.366,43	5.529,29	611,38	2.060,86	8.201,53						132.471,27
3.458	12,093	2,639	10,896	25,628	253,70	55,06	219,99	528,75			7.165,31	758,15	1.971,72	9.895,18	5.732,25	659,26	2.319,67	8.711,18						132.980,92
3.459	11,172	2,455	10,252	23,879	232,65	50,94	211,48	495,07			7.397,96	809,09	2.183,20	10.390,25	5.918,37	703,56	2.568,47	9.190,40						133.460,14
3.460	8,415	1,912	10,311	20,638	195,87	43,67	205,63	445,17			7.593,83	852,76	2.388,83	10.835,42	6.075,06	741,53	2.810,39	9.626,98						133.896,73
3.461	6,925	1,614	10,197	18,736	153,40	35,26	205,08	393,74			7.747,23	888,02	2.593,91	11.229,16	6.197,78	772,19	3.051,66	10.021,63						134.291,38
3.462	7,182	1,643	7,757	16,582	141,07	32,57	179,54	353,18			7.888,30	920,59	2.773,45	11.582,34	6.310,64	800,51	3.262,88	10.374,03						134.643,78
3.463	8,924	1,948	4,116	14,988	161,06	35,91	118,73	315,70			8.049,36	956,50	2.892,18	11.898,04	6.439,49	831,74	3.402,56	10.673,79						134.943,54
3.464	10,271	2,434	7,098	19,803	191,95	43,82	112,14	347,91			8.241,31	1.000,32	3.004,32	12.245,95	6.593,05	869,84	3.534,49	10.997,38						135.267,13
3.465	10,906	2,584	9,166	22,656	211,77	50,18	162,64	424,59			8.453,08	1.050,50	3.166,96	12.670,54	6.762,46	913,48	3.725,84	11.401,78						135.671,52
3.466	10,207	2,463	12,394	25,064	211,13	50,47	215,60	477,20			8.664,21	1.100,97	3.382,56	13.147,74	6.931,37	957,37	3.979,48	11.868,22						136.137,96
3.467	12,940	3,065	16,282	32,287	231,47	55,28	286,76	573,51			8.895,68	1.156,25	3.669,32	13.721,25	7.116,54	1.005,43	4.316,85	12.438,82						136.708,57
3.468	15,548	3,669	23,054	42,271	284,88	67,34	393,36	745,58			9.180,56	1.223,59	4.062,68	14.466,83	7.344,45	1.063,99	4.779,62	13.188,06						137.457,81
3.469	21,688	5,022	30,338	57,048	372,36	86,91	533,92	993,19			9.552,92	1.310,50	4.596,60	15.460,02	7.642,34	1.139,57	5.407,76	14.189,67						138.459,41
3.470	26,552	6,140	40,345	73,037	482,40	111,62	706,83	1.300,85			10.035,32	1.422,12	5.303,43	16.760,87	8.028,26	1.236,63	6.239,33	15.504,22						139.773,96
3.471	37,571	8,487	47,804	93,862	641,23	146,27	881,49	1.668,99			10.676,55	1.568,39	6.184,92	18.429,86	8.541,24	1.363,82	7.276,38	17.181,44						141.451,18
3.472	50,425	11,168	54,568	116,161	879,96	196,55	1.023,72	2.100,23			11.556,51	1.764,94	7.208,64	20.530,09	9.245,21	1.534,73	8.480,75	19.260,69						143.530,44
3.473	55,572	12,403	65,726	133,701	1.059,97	235,71	1.202,94	2.498,62			12.616,48	2.000,65	8.411,58	23.028,71	10.093,18	1.739,70	9.895,98	21.728,86						145.998,60
3.474	66,063	14,629	74,238	154,930	1.216,35	270,32	1.399,64	2.886,31			13.832,83	2.270,97	9.811,22	25.915,02	11.066,26	1.974,76	11.542,61	24.583,63						148.853,38
3.475	74,834	16,540	82,123	173,497	1.408,97	311,69	1.563,61	3.284,27			15.241,80	2.582,66	11.374,83	29.199,29	12.193,44	2.245,79	13.382,15	27.821,38						152.091,13
3.476	77,388	17,338	95,913	190,639	1.522,22	338,78	1.780,36	3.641,36			16.764,02	2.921,44	13.155,19	32.840,65	13.411,22	2.540,38	15.476,69	31.428,29						155.698,04
3.477	76,445	17,420	112,156	206,021	1.538,33	347,58	2.080,69	3.966,60			18.302,35	3.269,02	15.235,88	36.807,25	14.641,88	2.842,63	17.924,56	35.409,07						159.678,82

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.478	78,281	17,999	126,178	222,458	1.547,26	354,19	2.383,34	4.284,79			19.849,61	3.623,21	17.619,22	41.092,04	15.879,69	3.150,62	20.728,49	39.758,80						164.028,55
3.479	82,588	19,050	140,123	241,761	1.608,69	370,49	2.663,01	4.642,19			21.458,30	3.993,70	20.282,23	45.734,23	17.166,64	3.472,78	23.861,45	44.500,87						168.770,62
3.480	80,951	18,907	155,571	255,429	1.635,39	379,57	2.956,94	4.971,90			23.093,69	4.373,27	23.239,17	50.706,13	18.474,95	3.802,84	27.340,20	49.617,99						173.887,75
3.481	80,369	18,804	166,501	265,674	1.613,20	377,11	3.220,72	5.211,03			24.706,89	4.750,38	26.459,89	55.917,16	19.765,51	4.130,77	31.129,28	55.025,56						179.295,31
3.482	83,035	19,619	177,199	279,853	1.634,04	384,23	3.437,00	5.455,27			26.340,93	5.134,61	29.896,89	61.372,43	21.072,74	4.464,88	35.172,81	60.710,43						184.980,18
3.483	86,896	20,443	186,071	293,410	1.699,31	400,62	3.632,70	5.732,63			28.040,24	5.535,23	33.529,59	67.105,06	22.432,19	4.813,24	39.446,58	66.692,01						190.961,76
3.484	82,553	19,669	194,782	297,004	1.694,49	401,12	3.808,53	5.904,14			29.734,73	5.936,35	37.338,12	73.009,20	23.787,78	5.162,04	43.927,20	72.877,02						197.146,78
3.485	84,817	20,060	197,525	302,402	1.673,70	397,29	3.923,07	5.994,06			31.408,43	6.333,64	41.261,19	79.003,26	25.126,74	5.507,51	48.542,58	79.176,83						203.446,59
3.486	74,388	17,586	204,333	296,307	1.592,05	376,46	4.018,58	5.987,09			33.000,48	6.710,10	45.279,77	84.990,35	26.400,38	5.834,87	53.270,32	85.505,57						209.775,33
3.487	76,659	18,106	203,255	298,020	1.510,47	356,92	4.075,88	5.943,27			34.510,95	7.067,02	49.355,65	90.933,62	27.608,76	6.145,23	58.065,47	91.819,46						216.089,22
3.488	62,656	14,797	205,909	283,362	1.393,15	329,03	4.091,64	5.813,82			35.904,10	7.396,05	53.447,29	96.747,44	28.723,28	6.431,35	62.879,16	98.033,79						222.303,55
3.489	73,479	17,046	197,078	287,603	1.361,35	318,43	4.029,87	5.709,65			37.265,45	7.714,48	57.477,16	102.457,09	29.812,36	6.708,24	67.620,19	104.140,79						228.410,55
3.490	74,807	17,678	189,151	281,636	1.482,86	347,24	3.862,29	5.692,39			38.748,31	8.061,72	61.339,45	108.149,48	30.998,65	7.010,19	72.164,06	110.172,90						234.442,66
3.491	72,353	16,970	183,468	272,791	1.471,60	346,48	3.726,19	5.544,27			40.219,91	8.408,20	65.065,64	113.693,75	32.175,93	7.311,48	76.547,81	116.035,22						240.304,98
3.492	78,379	18,279	173,064	269,722	1.507,32	352,49	3.565,32	5.425,13			41.727,23	8.760,69	68.630,96	119.118,88	33.381,78	7.617,99	80.742,31	121.742,08						246.011,84
3.493	75,474	17,571	166,132	259,177	1.538,53	358,50	3.391,96	5.288,99			43.265,76	9.119,19	72.022,92	124.407,87	34.612,61	7.929,73	84.732,85	127.275,19						251.544,94
3.494	54,605	13,155	163,283	231,043	1.300,79	307,26	3.294,15	4.902,20			44.566,55	9.426,45	75.317,07	129.310,07	35.653,24	8.196,91	88.608,32	132.458,47						256.728,23
3.495	69,302	16,104	146,854	232,260	1.239,07	292,59	3.101,37	4.633,03			45.805,62	9.719,04	78.418,44	133.943,10	36.644,50	8.451,34	92.256,99	137.352,83						261.622,58
3.496	63,339	14,595	136,554	214,488	1.326,41	306,99	2.834,08	4.467,48			47.132,03	10.026,03	81.252,52	138.410,58	37.705,62	8.718,29	95.591,20	142.015,11						266.284,87
3.497	63,252	14,608	125,331	203,191	1.265,91	292,03	2.618,85	4.176,79			48.397,94	10.318,06	83.871,37	142.587,37	38.718,35	8.972,23	98.672,20	146.362,78						270.632,54
3.498	52,695	12,375	119,356	184,426	1.159,47	269,83	2.446,87	3.876,17			49.557,41	10.587,89	86.318,24	146.463,54	39.645,93	9.206,86	101.550,87	150.403,66						274.673,42
3.499	48,545	11,375	110,863	170,783	1.012,40	237,50	2.302,19	3.552,09			50.569,81	10.825,39	88.620,43	150.015,63	40.455,85	9.413,38	104.259,33	154.128,56						278.398,32
3.500	48,523	11,305	100,499	160,327	970,68	226,80	2.113,62	3.311,10			51.540,49	11.052,19	90.734,05	153.326,73	41.232,39	9.610,60	106.745,94	157.588,93						281.858,69
3.501	55,547	12,589	86,853	154,989	1.040,70	238,94	1.873,52	3.153,16			52.581,19	11.291,13	92.607,57	156.479,89	42.064,95	9.818,37	108.950,08	160.833,40						285.103,17
3.502	51,870	11,759	82,514	146,143	1.074,17	243,48	1.693,67	3.011,32			53.655,36	11.534,61	94.301,24	159.491,21	42.924,29	10.030,10	110.942,64	163.897,03						288.166,78
3.503	50,971	11,530	76,280	138,781	1.028,41	232,89	1.587,94	2.849,24			54.683,77	11.767,50	95.889,18	162.340,45	43.747,02	10.232,61	112.810,80	166.790,43						291.060,19
3.504	48,394	10,876	73,428	132,698	993,65	224,06	1.497,08	2.714,79			55.677,42	11.991,56	97.386,26	165.055,24	44.541,94	10.427,44	114.572,07	169.541,45						293.811,22
3.505	46,843	10,597	70,621	128,061	952,37	214,73	1.440,49	2.607,59			56.629,79	12.206,29	98.826,75	167.662,83	45.303,83	10.614,17	116.266,76	172.184,76						296.454,53
3.506	45,938	10,384	68,790	125,112	927,81	209,81	1.394,11	2.531,73			57.557,60	12.416,10	100.220,86	170.194,56	46.046,08	10.796,61	117.906,89	174.749,58						299.019,35
3.507	46,495	10,470	66,269	123,234	924,33	208,54	1.350,59	2.483,46			58.481,93	12.624,64	101.571,45	172.678,02	46.785,54	10.977,95	119.495,82	177.259,31						301.529,08
3.508	58,803	11,966	64,030	134,799	1.052,98	224,36	1.302,99	2.580,33			59.534,91	12.849,00	102.874,44	175.258,35	47.627,93	11.173,04	121.028,75	179.829,72						304.099,49
3.509	59,872	12,097	61,186	133,155	1.186,75	240,63	1.252,16	2.679,54			60.721,66	13.089,63	104.126,60	177.937,89	48.577,33	11.382,29	122.501,88	182.461,50						306.731,26
3.510	61,954	12,291	55,552	129,797	1.218,26	243,88	1.167,38	2.629,52			61.939,92	13.333,51	105.293,98	180.567,41	49.551,94	11.594,36	123.875,27	185.021,57						309.291,33
3.511	64,051	12,579	52,773	129,403	1.260,05	248,70	1.083,25	2.592,00			63.199,97	13.582,21	106.377,23	183.159,41	50.559,98	11.810,62	125.149,68	187.520,28						311.790,04
3.512	64,032	12,444	47,806	124,282	1.280,83	250,23	1.005,79	2.536,85			64.480,80	13.832,44	107.383,02	185.696,26	51.584,64	12.028,21	126.332,96	189.945,81						314.215,58
3.513	66,172	12,658	43,455	122,285	1.302,04	251,02	912,61	2.465,67			65.782,84	14.083,46	108.295,63	188.161,93	52.626,27	12.246,49	127.406,62	192.279,38						316.549,15
3.514	73,650	13,479	34,543	121,672	1.398,22	261,37	779,98	2.439,57			67.181,06	14.344,83	109.075,61	190.601,50	53.744,85	12.473,77	128.324,25	194.542,87						318.812,63
3.515	77,694	13,896	29,716	121,306	1.513,44	273,75	642,59	2.429,78			68.694,50	14.618,58	109.718,20	193.031,28	54.955,60	12.711,81	129.080,24	196.747,65						321.017,41
3.516	71,474	12,741	26,179	110,394	1.491,68	266,37	558,95	2.317,00			70.186,18	14.884,95	110.277,15	195.348,28	56.148,94	12.943,43	129.737,82	198.830,19						323.099,97
3.517	68,024	12,108	23,859	103,991	1.394,98	248,49	500,38	2.143,85			71.581,16	15.133,44	110.777,53	197.492,13	57.264,93	13.159,51	130.326,51	200.750,95						325.020,71
3.518	66,891	11,664	19,005	97,560	1.349,15	237,72	428,64	2.015,51			72.930,31	15.371,16	111.206,17	199.507,64	58.344,25	13.366,23	130.830,79	202.541,27						326.811,03
3.519	66,404	11,141	11,928	89,473	1.332,95	228,05	309,33	1.870,33			74.263,26	15.599,21	111.515,50	201.377,97	59.410,61	13.564,53	131.194,71	204.169,85						328.439,61
3.520	71,401	11,469	5,944	88,814	1.378,05	226,10	178,72	1.782,87			75.641,31	15.825,31	111.694,22	203.160,84	60.513,05	13.761,14	131.404,96	205.679,15						329.948,92
3.521	67,462	10,695	2,707	80,864	1.388,63	221,64	86,51	1.696,78			77.029,94	16.046,95	111.780,73	204.857,62	61.623,95	13.953,87	131.506,74	207.084,56						331.354,33
3.522	89,026	10,742	3,865	103,633	1.564,88	214,37	65,72	1.844,97			78.594,82	16.261,32	111.846,45	206.702,59	62.875,86	14.140,28	131.584,06	208.600,20						332.869,96
3.523	94,029	4,640	0,558	99,227	1.830,55	153,82	44,23	2.028,60			80.425,37	16.415,14	111.890,68	208.731,19	64.340,30	14.274,03	131.636,09	210.250,42						334.520,19
3.524	92,029	2,272		94,301	1.860,58	69,12	5,58	1.935,28			82.285,95	16.484,26	111.896,26	210.666,47	65.828,76	14.334,14	131.642,66	211.805,56						336.075,32

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.525	92,959			92,959	1.849,88	22,72		1.872,60			84.135,83	16.506,98		100.642,81	67.308,66	14.353,90		81.662,56						337.574,98
3.526	87,027			87,027	1.799,86			1.799,86			85.935,69			85.935,69	68.748,55			68.748,55						339.014,87
3.527	81,013			81,013	1.680,40			1.680,40			87.616,09			87.616,09	70.092,87			70.092,87						340.359,19
3.528	72,265			72,265	1.532,78			1.532,78			89.148,87			89.148,87	71.319,10			71.319,10						341.585,41
3.529	65,767			65,767	1.380,32			1.380,32			90.529,19			90.529,19	72.423,35			72.423,35						342.689,67
3.530	59,779			59,779	1.255,46			1.255,46			91.784,65			91.784,65	73.427,72			73.427,72						343.694,04
3.531	52,998			52,998	1.127,77			1.127,77			92.912,42			92.912,42	74.329,94			74.329,94						344.596,26
3.532	47,367			47,367	1.003,65			1.003,65			93.916,07			93.916,07	75.132,86			75.132,86						345.399,18
3.533	39,744			39,744	871,11			871,11			94.787,18			94.787,18	75.829,74			75.829,74						346.096,07
3.534	33,103			33,103	728,47			728,47			95.515,65			95.515,65	76.412,52			76.412,52						346.678,85
3.535	24,826			24,826	579,29			579,29			96.094,94			96.094,94	76.875,95			76.875,95						347.142,28
3.536	19,363			19,363	441,89			441,89			96.536,83			96.536,83	77.229,46			77.229,46						347.495,79
3.537	13,497			13,497	328,60			328,60			96.865,43			96.865,43	77.492,34			77.492,34						347.758,67
3.538	8,978			8,978	224,75			224,75	0,884	8,84	97.090,18			97.090,18	77.672,14			77.672,14	8,84	8,84			8,84	347.929,63
3.539	6,020			6,020	149,98			149,98	6,528	74,12	97.240,16			97.240,16	77.792,13			77.792,13	82,96	74,12			74,12	347.975,49
3.540	5,699			5,699	117,19			117,19	9,540	160,68	97.357,35			97.357,35	77.885,88			77.885,88	243,64	93,75			93,75	347.908,56
3.541	4,455			4,455	101,54			101,54	15,159	246,99	97.458,89			97.458,89	77.967,11			77.967,11	490,63	81,23			81,23	347.742,80
3.542	3,530			3,530	79,85			79,85	19,205	343,64	97.538,74			97.538,74	78.030,99			78.030,99	834,27	63,88			63,88	347.463,04
3.543	1,736			1,736	52,66			52,66	19,765	389,70	97.591,40			97.591,40	78.073,12			78.073,12	1.223,97	42,13			42,13	347.115,47
3.544	0,550			0,550	22,86			22,86	24,424	441,89	97.614,26			97.614,26	78.091,41			78.091,41	1.665,86	18,29			18,29	346.691,87
3.545	0,018			0,018	5,68			5,68	29,903	543,27	97.619,94			97.619,94	78.095,95			78.095,95	2.209,13	4,54			4,54	346.153,14
3.546					0,18			0,18	35,841	657,44	97.620,12			97.620,12	78.096,10			78.096,10	2.866,57	0,14			0,14	345.495,84
3.547									43,545	793,86									3.660,43					344.701,98
3.548									50,145	936,90									4.597,33					343.765,08
3.549									59,973	1.101,18									5.698,51					342.663,90
3.550									71,021	1.309,94									7.008,45					341.353,96
3.551									83,483	1.545,04									8.553,49					339.808,92
3.552									97,139	1.806,22									10.359,71					338.002,70
3.553									113,997	2.111,36									12.471,07					335.891,34
3.554									128,240	2.422,37									14.893,44					333.468,97
3.555									150,919	2.791,59									17.685,03					330.677,38
3.556									171,973	3.228,92									20.913,95					327.448,46
3.557									192,725	3.646,98									24.560,93					323.801,48
3.558									219,122	4.118,47									28.679,40					319.683,01
3.559									247,372	4.664,94									33.344,34					315.018,07
3.560									283,714	5.310,86									38.655,20					309.707,21
3.561									310,867	5.945,81									44.601,01					303.761,40
3.562									335,889	6.467,56									51.068,57					297.293,84
3.563									348,211	6.841,00									57.909,57					290.452,84
3.564									356,177	7.043,88									64.953,45					283.408,96
3.565									340,972	6.971,49									71.924,94					276.437,47
3.566									324,942	6.659,14									78.584,08					269.778,33
3.567									334,516	6.594,58									85.178,66					263.183,75
3.568									348,254	6.827,70									92.006,36					256.356,05
3.569									373,605	7.218,59									99.224,95					249.137,46
3.570									408,501	7.821,06									107.046,01					241.316,40
3.571									521,346	9.298,47									116.344,48					232.017,93

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.572									489,120	10.104,66									126.449,14					221.913,27
3.573									489,815	9.789,35									136.238,49					212.123,92
3.574									454,532	9.443,47									145.681,96					202.680,45
3.575									428,771	8.833,03									154.514,99					193.847,42
3.576									405,655	8.344,26									162.859,25					185.503,16
3.577									382,256	7.879,11									170.738,36					177.624,05
3.578									360,559	7.428,15									178.166,51					170.195,90
3.579									343,185	7.037,44									185.203,95					163.158,46
3.580									329,355	6.725,40									191.929,35					156.433,06
3.581									326,994	6.563,49									198.492,84					149.869,57
3.582									325,459	6.524,53									205.017,37					143.345,04
3.583									331,726	6.571,85									211.589,22					136.773,19
3.584									343,100	6.748,26									218.337,48					130.024,93
3.585									350,813	6.939,13									225.276,61					123.085,80
3.586									348,351	6.991,64									232.268,25					116.094,16
3.587									351,472	6.998,23									239.266,48					109.095,93
3.588									358,295	7.097,67									246.364,15					101.998,26
3.589									390,043	7.483,38									253.847,53					94.514,88
3.590									450,993	8.410,36									262.257,89					86.104,52
3.591									468,043	9.190,36									271.448,25					76.914,16
3.592									478,537	9.465,80									280.914,05					67.448,36
3.593									479,696	9.582,33									290.496,38					57.866,03
3.594									477,097	9.567,93									300.064,31					48.298,10
3.595									469,673	9.467,70									309.532,01					38.830,40
3.596									459,564	9.292,37									318.824,38					29.538,03
3.597									451,752	9.113,16									327.937,54					20.424,87
3.598									448,173	8.999,25									336.936,79					11.425,62
3.599									452,679	9.008,52									345.945,31					2.417,10
3.600									448,110	9.007,89									354.953,20					-6.590,79
3.601									427,174	8.752,84									363.706,04					-15.343,63
3.602									411,905	8.390,79									372.096,83					-23.734,42
3.603									401,938	8.138,43									380.235,26					-31.872,85
3.604									393,621	7.955,59									388.190,85					-39.828,44
3.605									392,300	7.859,21									396.050,06					-47.687,65
3.606									401,616	7.939,16									403.989,22					-55.626,81
3.607									450,279	8.518,95									412.508,17					-64.145,76
3.608									509,242	9.595,21									422.103,38					-73.740,97
3.609									575,951	10.851,93									432.955,31					-84.592,90
3.610									624,567	12.005,18									444.960,49					-96.598,08
3.611									652,583	12.771,50									457.731,99					-109.369,58
3.612									669,416	13.219,99									470.951,98					-122.589,57
3.613									678,514	13.479,30									484.431,28					-136.068,87
3.614									675,659	13.541,73									497.973,01					-149.610,60
3.615									694,399	13.700,58									511.673,59					-163.311,18
3.616									670,926	13.653,25									525.326,84					-176.964,43
3.617									659,342	13.302,68									538.629,52					-190.267,11
3.618									667,362	13.267,04									551.896,56					-203.534,15

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.619									681,541	13.489,03									565.385,59					-217.023,18
3.620									690,486	13.720,27									579.105,86					-230.743,45
3.621									630,689	13.211,75									592.317,61					-243.955,20
3.622									562,959	11.936,48									604.254,09					-255.891,68
3.623									505,298	10.682,57									614.936,66					-266.574,25
3.624									451,267	9.565,65									624.502,31					-276.139,90
3.625									398,880	8.501,47									633.003,78					-284.641,37
3.626									357,994	7.568,74									640.572,52					-292.210,11
3.627									311,154	6.691,48									647.264,00					-298.901,59
3.628									278,415	5.895,69									653.159,69					-304.797,28
3.629									244,390	5.228,05									658.387,74					-310.025,33
3.630									216,821	4.612,11									662.999,85					-314.637,44
3.631									193,115	4.099,36									667.099,21					-318.736,80
3.632									170,753	3.638,68									670.737,89					-322.375,48
3.633									150,821	3.215,74									673.953,63					-325.591,22
3.634									131,079	2.819,00									676.772,63					-328.410,22
3.635									111,579	2.426,58									679.199,21					-330.836,80
3.636									86,097	1.976,76									681.175,97					-332.813,56
3.637									58,187	1.442,84									682.618,81					-334.256,40
3.638									37,104	952,91									683.571,72					-335.209,31
3.639	0,870			0,870	8,70			8,70	20,271	573,75	8,70			8,70	6,96			6,96	684.145,47	6,96			6,96	-335.776,10
3.640	2,959			2,959	38,29			38,29	6,957	272,28	46,99			46,99	37,59			37,59	684.417,75	30,63			30,63	-336.017,75
3.641	12,353	0,947	0,560	13,860	153,12	9,47	5,60	168,19		69,57	200,11	9,47	5,60	215,18	160,09	8,23	6,59	174,91	684.487,32	69,57			69,57	-335.950,00
3.642	26,470	1,925	1,743	30,138	388,23	28,72	23,03	439,98			588,34	38,19	28,63	655,16	470,67	33,21	33,68	537,56						-335.587,35
3.643	34,571	4,140		38,711	610,41	60,65	17,43	688,49			1.198,75	98,84	46,06	1.343,65	959,00	85,95	54,19	1.099,14						-335.025,78
3.644	39,182	7,685	6,145	53,012	737,53	118,25	61,45	917,23			1.936,28	217,09	107,51	2.260,88	1.549,02	188,77	126,48	1.864,27						-334.260,64
3.645	49,299	9,492	9,250	68,041	884,81	171,77	153,95	1.210,53			2.821,09	388,86	261,46	3.471,41	2.256,87	338,14	307,60	2.902,61						-333.222,31
3.646	54,313	10,538	17,071	81,922	1.036,12	200,30	263,21	1.499,63			3.857,21	589,16	524,67	4.971,04	3.085,77	512,31	617,26	4.215,34						-331.909,58
3.647	50,009	10,110	33,465	93,584	1.043,22	206,48	505,36	1.755,06			4.900,43	795,64	1.030,03	6.726,10	3.920,34	691,86	1.211,80	5.824,00						-330.300,91
3.648	48,744	10,089	46,232	105,065	987,53	201,99	796,97	1.986,49			5.887,96	997,63	1.827,00	8.712,59	4.710,37	867,50	2.149,41	7.727,28						-328.397,63
3.649	45,543	9,645	57,776	112,964	942,87	197,34	1.040,08	2.180,29			6.830,83	1.194,97	2.867,08	10.892,88	5.464,66	1.039,10	3.373,04	9.876,80						-326.248,11
3.650	46,393	9,888	64,074	120,355	919,36	195,33	1.218,50	2.333,19			7.750,19	1.390,30	4.085,58	13.226,07	6.200,15	1.208,96	4.806,56	12.215,67						-323.909,24
3.651	42,917	9,237	66,585	118,739	893,10	191,25	1.306,59	2.390,94			8.643,29	1.581,55	5.392,17	15.617,01	6.914,63	1.375,26	6.343,73	14.633,62						-321.491,29
3.652	38,456	8,294	61,163	107,913	813,73	175,31	1.277,48	2.266,52			9.457,02	1.756,86	6.669,65	17.883,53	7.565,62	1.527,70	7.846,65	16.939,97						-319.184,94
3.653	23,825	5,393	66,685	95,903	622,81	136,87	1.278,48	2.038,16			10.079,83	1.893,73	7.948,13	19.921,69	8.063,86	1.646,72	9.350,74	19.061,32						-317.063,58
3.654	29,727	6,663	73,607	109,997	535,52	120,56	1.402,92	2.059,00			10.615,35	2.014,29	9.351,05	21.980,69	8.492,28	1.751,56	11.001,24	21.245,08						-314.879,84
3.655	30,396	6,912	92,118	129,426	601,23	135,75	1.657,25	2.394,23			11.216,58	2.150,04	11.008,30	24.374,92	8.973,26	1.869,60	12.950,94	23.793,80						-312.331,11
3.656	29,835	6,904	112,296	149,035	602,31	138,16	2.044,14	2.784,61			11.818,89	2.288,20	13.052,44	27.159,53	9.455,11	1.989,74	15.355,81	26.800,66						-309.324,25
3.657	17,659	4,285	116,891	138,835	474,94	111,89	2.291,87	2.878,70			12.293,83	2.400,09	15.344,31	30.038,23	9.835,06	2.087,03	18.052,13	29.974,22						-306.150,68
3.658	23,817	5,610	117,536	146,963	414,76	98,95	2.344,27	2.857,98			12.708,59	2.499,04	17.688,58	32.896,21	10.166,87	2.173,08	20.810,09	33.150,04						-302.974,86
3.659			108,656	108,656	238,17	56,10	2.261,92	2.556,19	0,004	0,04	12.946,76	2.555,14	19.950,50	35.452,40	10.357,41	2.221,86	23.471,18	36.050,45	0,04	0,04			0,04	-300.074,50
3.660	24,463	6,081	134,032	164,576	244,63	60,81	2.426,88	2.732,32		0,04	13.191,39	2.615,95	22.377,38	38.184,72	10.553,11	2.274,74	26.326,33	39.154,18	0,08	0,04			0,04	-296.970,80
3.661	27,888	6,873	143,591	178,352	523,51	129,54	2.776,23	3.429,28			13.714,90	2.745,49	25.153,61	41.614,00	10.971,92	2.387,38	29.592,48	42.951,78						-293.173,20
3.662	30,727	7,486	153,806	192,019	586,15	143,59	2.973,97	3.703,71			14.301,05	2.889,08	28.127,58	45.317,71	11.440,84	2.512,24	33.091,27	47.044,35						-289.080,63
3.663	29,937	7,344	164,062	201,343	606,64	148,30	3.178,68	3.933,62			14.907,69	3.037,38	31.306,26	49.251,33	11.926,15	2.641,20	36.830,89	51.398,24						-284.726,74
3.664	29,838	7,464	173,472	210,774	597,75	148,08	3.375,34	4.121,17			15.505,44	3.185,46	34.681,60	53.372,50	12.404,35	2.769,97	40.801,88	55.976,20						-280.148,79
3.665	25,084	6,412	186,737	218,233	549,22	138,76	3.602,09	4.290,07			16.054,66	3.324,22	38.283,69	57.662,57	12.843,73	2.890,63	45.039,64	60.774,00						-275.351,00

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.666	21,513	5,572	197,441	224,526	465,97	119,84	3.841,78	4.427,59			16.520,63	3.444,06	42.125,47	62.090,16	13.216,50	2.994,83	49.559,38	65.770,71						-270.354,27
3.667	20,076	5,280	203,484	228,840	415,89	108,52	4.009,25	4.533,66			16.936,52	3.552,58	46.134,72	66.623,82	13.549,22	3.089,20	54.276,14	70.914,56						-265.210,43
3.668	23,159	5,839	207,792	236,790	432,35	111,19	4.112,76	4.656,30			17.368,87	3.663,77	50.247,48	71.280,12	13.895,10	3.185,89	59.114,68	76.195,67						-259.929,32
3.669	25,759	6,574	209,139	241,472	489,18	124,13	4.169,31	4.782,62			17.858,05	3.787,90	54.416,79	76.062,74	14.286,44	3.293,83	64.019,75	81.600,02						-254.524,97
3.670	25,126	6,088	211,645	242,859	508,85	126,62	4.207,84	4.843,31			18.366,90	3.914,52	58.624,63	80.906,05	14.693,52	3.403,93	68.970,15	87.067,60						-249.057,39
3.671	25,550	6,563	211,543	243,656	506,76	126,51	4.231,88	4.865,15			18.873,66	4.041,03	62.856,51	85.771,20	15.098,93	3.513,94	73.948,84	92.561,71						-243.563,29
3.672	24,983	6,428	209,771	241,182	505,33	129,91	4.213,14	4.848,38			19.378,99	4.170,94	67.069,65	90.619,58	15.503,19	3.626,90	78.905,47	98.035,56						-238.089,43
3.673	23,550	5,724	177,208	206,482	485,33	121,52	3.869,79	4.476,64			19.864,32	4.292,46	70.939,44	95.096,22	15.891,46	3.732,57	83.458,16	103.082,19						-233.042,80
3.674	22,563	5,539	170,307	198,409	461,13	112,63	3.475,15	4.048,91			20.325,45	4.405,09	74.414,59	99.145,13	16.260,36	3.830,51	87.546,58	107.637,45						-228.487,55
3.675	23,644	5,835	160,635	190,114	462,07	113,74	3.309,42	3.885,23			20.787,52	4.518,83	77.724,01	103.030,36	16.630,02	3.929,42	91.440,01	111.999,45						-224.125,55
3.676	22,620	5,767	154,445	182,832	462,64	116,02	3.150,80	3.729,46			21.250,16	4.634,85	80.874,81	106.759,82	17.000,13	4.030,30	95.146,84	116.177,27						-219.947,73
3.677	19,074	4,443	148,907	172,424	416,94	102,10	3.033,52	3.552,56			21.667,10	4.736,95	83.908,33	110.312,38	17.333,68	4.119,09	98.715,68	120.168,45						-215.956,55
3.678	17,431	4,408	139,731	161,570	365,05	88,51	2.886,38	3.339,94			22.032,15	4.825,46	86.794,71	113.652,32	17.625,72	4.196,05	102.111,42	123.933,19						-212.191,80
3.679	16,398	4,217	129,742	150,357	338,29	86,25	2.694,73	3.119,27			22.370,44	4.911,71	89.489,44	116.771,59	17.896,35	4.271,05	105.281,69	127.449,09						-208.675,90
3.680	16,790	4,307	123,297	144,394	331,88	85,24	2.530,39	2.947,51			22.702,32	4.996,95	92.019,83	119.719,10	18.161,86	4.345,17	108.258,62	130.765,65						-205.359,34
3.681	14,254	3,718	116,739	134,711	310,44	80,25	2.400,36	2.791,05			23.012,76	5.077,20	94.420,19	122.510,15	18.410,21	4.414,96	111.082,58	133.907,75						-202.217,25
3.682	15,079	3,888	110,295	129,262	293,33	76,06	2.270,34	2.639,73			23.306,09	5.153,26	96.690,53	125.149,88	18.644,87	4.481,10	113.753,56	136.879,53						-199.245,46
3.683	19,769	4,913	102,298	126,980	348,48	88,01	2.125,93	2.562,42			23.654,57	5.241,27	98.816,46	127.712,30	18.923,66	4.557,63	116.254,66	139.735,95						-196.389,05
3.684	21,258	5,209	95,551	122,018	410,27	101,22	1.978,49	2.489,98			24.064,84	5.342,49	100.794,95	130.202,28	19.251,87	4.645,64	118.582,29	142.479,80						-193.645,18
3.685	14,635	3,716	92,568	110,919	358,93	89,25	1.881,19	2.329,37			24.423,77	5.431,74	102.676,14	132.531,65	19.539,02	4.723,25	120.795,46	145.057,73						-191.067,26
3.686	16,486	4,103	85,269	105,858	311,21	78,19	1.778,37	2.167,77			24.734,98	5.509,93	104.454,51	134.699,42	19.787,98	4.791,24	122.887,66	147.466,88						-188.658,10
3.687	18,376	4,466	78,086	100,928	348,62	85,69	1.633,55	2.067,86			25.083,60	5.595,62	106.088,06	136.767,28	20.066,88	4.865,76	124.809,48	149.742,12						-186.382,87
3.688	17,003	4,152	71,243	92,398	353,79	86,18	1.493,29	1.933,26			25.437,39	5.681,80	107.581,35	138.700,54	20.349,91	4.940,70	126.566,29	151.856,90						-184.268,09
3.689	16,305	3,968	65,472	85,745	333,08	81,20	1.367,15	1.781,43			25.770,47	5.763,00	108.948,50	140.481,97	20.616,38	5.011,30	128.174,71	153.802,39						-182.322,61
3.690	17,729	4,224	57,034	78,987	340,34	81,92	1.225,06	1.647,32			26.110,81	5.844,92	110.173,56	142.129,29	20.888,65	5.082,54	129.615,95	155.587,14						-180.537,86
3.691	13,346	3,236	50,708	67,290	310,75	74,60	1.077,42	1.462,77			26.421,56	5.919,52	111.250,98	143.592,06	21.137,25	5.147,41	130.883,51	157.168,17						-178.956,84
3.692	12,670	3,033	41,520	57,223	260,16	62,69	922,28	1.245,13			26.681,72	5.982,21	112.173,26	144.837,19	21.345,38	5.201,92	131.968,54	158.515,84						-177.609,16
3.693	12,426	2,927	33,139	48,492	250,96	59,60	746,59	1.057,15			26.932,68	6.041,81	112.919,85	145.894,34	21.546,14	5.253,75	132.846,88	159.646,77						-176.478,22
3.694	12,588	2,871	23,036	38,495	250,14	57,98	561,75	869,87			27.182,82	6.099,79	113.481,60	146.764,21	21.746,26	5.304,17	133.507,76	160.558,19						-175.566,81
3.695	8,179	1,895	13,223	23,297	207,67	47,66	362,59	617,92			27.390,49	6.147,45	113.844,19	147.382,13	21.912,39	5.345,61	133.934,34	161.192,34						-174.932,65
3.696	6,629	1,519	6,160	14,308	148,08	34,14	193,83	376,05			27.538,57	6.181,59	114.038,02	147.758,18	22.030,86	5.375,30	134.162,38	161.568,54						-174.556,46
3.697	5,501	0,921	0,107	6,529	121,30	24,40	62,67	208,37			27.659,87	6.205,99	114.100,69	147.966,55	22.127,90	5.396,51	134.236,11	161.760,52						-174.364,47
3.698	2,973	0,149	0,168	3,290	84,74	10,70	2,75	98,19			27.744,61	6.216,69	114.103,44	148.064,74	22.195,69	5.405,82	134.239,34	161.840,85						-174.284,14
3.699	0,099			0,099	30,72	1,49	1,68	33,89	2,047	20,47	27.775,33	6.218,18	114.105,12	148.098,63	22.220,26	5.407,11	134.241,32	161.868,69	20,47	20,47			20,47	-174.276,76
3.700					0,99			0,99	9,059	111,06	27.776,32			27.776,32	22.221,06			22.221,06	131,53	0,79			0,79	-174.387,03
3.701									13,645	227,04									358,57					-174.614,07
3.702									17,023	306,68									665,25					-174.920,75
3.703									20,540	375,63									1.040,88					-175.296,38
3.704									21,726	422,66									1.463,54					-175.719,04
3.705									23,646	453,72									1.917,26					-176.172,76
3.706									24,694	483,40									2.400,66					-176.656,16
3.707									25,963	506,57									2.907,23					-177.162,73
3.708									26,267	522,30									3.429,53					-177.685,03
3.709									26,024	522,91									3.952,44					-178.207,94
3.710									24,194	502,18									4.454,62					-178.710,12
3.711									18,319	425,13									4.879,75					-179.135,25
3.712	1,111	0,155	0,078	1,344	11,11	1,55	0,78	13,44	9,529	278,48	11,11	1,55	0,78	13,44	8,89	1,35	0,92	11,16	5.158,23	8,89	1,35	0,92	11,16	-179.402,58

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.713	1,864	0,575	3,010	5,449	29,75	7,30	30,88	67,93		95,29	40,86	8,85	31,66	81,37	32,69	7,70	37,25	77,64	5.253,52	23,80	6,35	36,33	66,48	-179.431,39
3.714	7,809	1,690	0,397	9,896	96,73	22,65	34,07	153,45			137,59	31,50	65,73	234,82	110,07	27,39	77,33	214,79						-179.294,23
3.715	13,105	2,680	1,847	17,632	209,14	43,70	22,44	275,28			346,73	75,20	88,17	510,10	277,38	65,39	103,73	446,50						-179.062,52
3.716	15,021	3,065	4,003	22,089	281,26	57,45	58,50	397,21			627,99	132,65	146,67	907,31	502,39	115,35	172,55	790,29						-178.718,73
3.717	20,279	3,973	4,028	28,280	353,00	70,38	80,31	503,69			980,99	203,03	226,98	1.411,00	784,79	176,55	267,04	1.228,38						-178.280,65
3.718	21,499	4,202	4,891	30,592	417,78	81,75	89,19	588,72			1.398,77	284,78	316,17	1.999,72	1.119,02	247,63	371,96	1.738,61						-177.770,41
3.719	23,919	4,631	5,658	34,208	454,18	88,33	105,49	648,00			1.852,95	373,11	421,66	2.647,72	1.482,36	324,44	496,07	2.302,87						-177.206,15
3.720	24,668	4,749	5,465	34,882	485,87	93,80	111,23	690,90			2.338,82	466,91	532,89	3.338,62	1.871,06	406,01	626,93	2.904,00						-176.605,03
3.721	23,176	4,487	5,071	32,734	478,44	92,36	105,36	676,16			2.817,26	559,27	638,25	4.014,78	2.253,81	486,32	750,88	3.491,01						-176.018,01
3.722	21,108	4,152	5,408	30,668	442,84	86,39	104,79	634,02			3.260,10	645,66	743,04	4.648,80	2.608,08	561,44	874,16	4.043,68						-175.465,33
3.723	21,325	4,178	5,032	30,535	424,33	83,30	104,40	612,03			3.684,43	728,96	847,44	5.260,83	2.947,54	633,88	996,99	4.578,41						-174.930,61
3.724	24,528	4,725	5,473	34,726	458,53	89,03	105,05	652,61			4.142,96	817,99	952,49	5.913,44	3.314,37	711,30	1.120,58	5.146,25						-174.362,78
3.725	28,424	5,395	6,399	40,218	529,52	101,20	118,72	749,44			4.672,48	919,19	1.071,21	6.662,88	3.737,98	799,30	1.260,25	5.797,53						-173.711,49
3.726	29,776	5,705	8,779	44,260	582,00	111,00	151,78	844,78			5.254,48	1.030,19	1.222,99	7.507,66	4.203,58	895,82	1.438,81	6.538,21						-172.970,80
3.727	28,970	5,595	9,254	43,819	587,46	113,00	180,33	880,79			5.841,94	1.143,19	1.403,32	8.388,45	4.673,55	994,08	1.650,96	7.318,59						-172.190,42
3.728	30,544	5,785	7,645	43,974	595,14	113,80	168,99	877,93			6.437,08	1.256,99	1.572,31	9.266,38	5.149,66	1.093,03	1.849,78	8.092,47						-171.416,54
3.729	30,459	5,696	5,782	41,937	610,03	114,81	134,27	859,11			7.047,11	1.371,80	1.706,58	10.125,49	5.637,69	1.192,87	2.007,74	8.838,30						-170.670,72
3.730	31,802	5,873	5,133	42,808	622,61	115,69	109,15	847,45			7.669,72	1.487,49	1.815,73	10.972,94	6.135,78	1.293,47	2.136,15	9.565,40						-169.943,62
3.731	28,772	5,429	5,797	39,998	605,74	113,02	109,30	828,06			8.275,46	1.600,51	1.925,03	11.801,00	6.620,37	1.391,75	2.264,74	10.276,86						-169.232,16
3.732	28,463	5,348	5,099	38,910	572,35	107,77	108,96	789,08			8.847,81	1.708,28	2.033,99	12.590,08	7.078,25	1.485,46	2.392,93	10.956,64						-168.552,38
3.733	27,427	5,156	4,454	37,037	558,90	105,04	95,53	759,47			9.406,71	1.813,32	2.129,52	13.349,55	7.525,37	1.576,80	2.505,32	11.607,49						-167.901,53
3.734	26,447	4,983	4,067	35,497	538,74	101,39	85,21	725,34			9.945,45	1.914,71	2.214,73	14.074,89	7.956,36	1.664,97	2.605,56	12.226,89						-167.282,13
3.735	28,526	5,204	1,648	35,378	549,73	101,87	57,15	708,75			10.495,18	2.016,58	2.271,88	14.783,64	8.396,14	1.753,55	2.672,80	12.822,49						-166.686,53
3.736	26,590	4,912	1,830	33,332	551,16	101,16	34,78	687,10			11.046,34	2.117,74	2.306,66	15.470,74	8.837,07	1.841,51	2.713,72	13.392,30						-166.116,72
3.737	26,144	4,834	1,629	32,607	527,34	97,46	34,59	659,39			11.573,68	2.215,20	2.341,25	16.130,13	9.258,94	1.926,26	2.754,41	13.939,61						-165.569,41
3.738	21,907	4,208	3,040	29,155	480,51	90,42	46,69	617,62			12.054,19	2.305,62	2.387,94	16.747,75	9.643,35	2.004,89	2.809,34	14.457,58						-165.051,45
3.739	23,016	4,354	2,037	29,407	449,23	85,62	50,77	585,62			12.503,42	2.391,24	2.438,71	17.333,37	10.002,74	2.079,34	2.869,07	14.951,15						-164.557,88
3.740	22,967	4,320	1,380	28,667	459,83	86,74	34,17	580,74			12.963,25	2.477,98	2.472,88	17.914,11	10.370,60	2.154,77	2.909,27	15.434,64						-164.074,39
3.741	21,169	4,075	2,646	27,890	441,36	83,95	40,26	565,57			13.404,61	2.561,93	2.513,14	18.479,68	10.723,69	2.227,77	2.956,64	15.908,10						-163.600,94
3.742	21,337	4,108	2,746	28,191	425,06	81,83	53,92	560,81			13.829,67	2.643,76	2.567,06	19.040,49	11.063,74	2.298,92	3.020,07	16.382,73						-163.126,30
3.743	21,808	4,151	1,738	27,697	431,45	82,59	44,84	558,88			14.261,12	2.726,35	2.611,90	19.599,37	11.408,90	2.370,74	3.072,82	16.852,46						-162.656,57
3.744	18,843	3,693	2,771	25,307	406,51	78,44	45,09	530,04			14.667,63	2.804,79	2.656,99	20.129,41	11.734,10	2.438,95	3.125,87	17.298,92						-162.210,11
3.745	20,699	3,974	1,948	26,621	395,42	76,67	47,19	519,28			15.063,05	2.881,46	2.704,18	20.648,69	12.050,44	2.505,62	3.181,39	17.737,45						-161.771,59
3.746	21,485	4,106	2,059	27,650	421,84	80,80	40,07	542,71			15.484,89	2.962,26	2.744,25	21.191,40	12.387,91	2.575,88	3.228,53	18.192,32						-161.316,72
3.747	23,556	4,451	2,226	30,233	450,41	85,57	42,85	578,83			15.935,30	3.047,83	2.787,10	21.770,23	12.748,24	2.650,29	3.278,94	18.677,47						-160.831,57
3.748	26,610	4,912	1,756	33,278	501,66	93,63	39,82	635,11			16.436,96	3.141,46	2.826,92	22.405,34	13.149,57	2.731,70	3.325,79	19.207,06						-160.301,98
3.749	25,666	4,796	2,545	33,007	522,76	97,08	43,01	662,85			16.959,72	3.238,54	2.869,93	23.068,19	13.567,78	2.816,12	3.376,39	19.760,29						-159.748,75
3.750	26,345	4,888	2,149	33,382	520,11	96,84	46,94	663,89			17.479,83	3.335,38	2.916,87	23.732,08	13.983,86	2.900,33	3.431,61	20.315,80						-159.193,23
3.751	28,627	5,254	2,442	36,323	549,72	101,42	45,91	697,05			18.029,55	3.436,80	2.962,78	24.429,13	14.423,64	2.988,52	3.485,62	20.897,78						-158.611,25
3.752	31,733	5,734	2,502	39,969	603,60	109,88	49,44	762,92			18.633,15	3.546,68	3.012,22	25.192,05	14.906,52	3.084,07	3.543,79	21.534,38						-157.974,66
3.753	31,710	5,729	2,505	39,944	634,43	114,63	50,07	799,13			19.267,58	3.661,31	3.062,29	25.991,18	15.414,06	3.183,75	3.602,69	22.200,50						-157.308,53
3.754	38,037	6,559	0,810	45,406	697,47	122,88	33,15	853,50			19.965,05	3.784,19	3.095,44	26.844,68	15.972,04	3.290,60	3.641,69	22.904,33						-156.604,70
3.755	42,218	6,924	0,060	49,202	802,55	134,83	8,70	946,08			20.767,60	3.919,02	3.104,14	27.790,76	16.614,08	3.407,84	3.651,93	23.673,85						-155.835,18
3.756	68,963	9,506	4,564	83,033	1.111,81	164,30	46,24	1.322,35			21.879,41	4.083,32	3.150,38	29.113,11	17.503,53	3.550,71	3.706,33	24.760,57						-154.748,46
3.757	69,655	9,224	4,496	83,375	1.386,18	187,30	90,60	1.664,08			23.265,59	4.270,62	3.240,98	30.777,19	18.612,47	3.713,58	3.812,92	26.138,97						-153.370,06
3.758	71,555	7,974	3,453	82,982	1.412,10	171,98	79,49	1.663,57			24.677,69	4.442,60	3.320,47	32.440,76	19.742,15	3.863,13	3.906,44	27.511,72						-151.997,31
3.759	75,006	6,816	2,577	84,399	1.465,61	147,90	60,30	1.673,81			26.143,30	4.590,50	3.380,77	34.114,57	20.914,64	3.991,74	3.977,38	28.883,76						-150.625,27

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.760	79,849	5,210	1,552	86,611	1.548,55	120,26	41,29	1.710,10			27.691,85	4.710,76	3.422,06	35.824,67	22.153,48	4.096,31	4.025,95	30.275,74						-149.233,28
3.761	83,136	3,879	0,392	87,407	1.629,85	90,89	19,44	1.740,18			29.321,70	4.801,65	3.441,50	37.564,85	23.457,36	4.175,35	4.048,82	31.681,53						-147.827,49
3.762	83,210	2,904	0,011	86,125	1.663,46	67,83	4,03	1.735,32			30.985,16	4.869,48	3.445,53	39.300,17	24.788,13	4.234,33	4.053,56	33.076,02						-146.433,00
3.763	88,906			88,906	1.721,16	29,04	0,11	1.750,31			32.706,32	4.898,52	3.445,64	41.050,48	26.165,06	4.259,58	4.053,69	34.478,33						-145.030,69
3.764	91,505			91,505	1.804,11			1.804,11			34.510,43			34.510,43	27.608,34			27.608,34						-143.587,40
3.765	90,195			90,195	1.817,00			1.817,00			36.327,43			36.327,43	29.061,94			29.061,94						-142.133,80
3.766	89,970			89,970	1.801,65			1.801,65			38.129,08			38.129,08	30.503,26			30.503,26						-140.692,48
3.767	89,456			89,456	1.794,26			1.794,26			39.923,34			39.923,34	31.938,67			31.938,67						-139.257,07
3.768	88,835			88,835	1.782,91			1.782,91			41.706,25			41.706,25	33.365,00			33.365,00						-137.830,74
3.769	90,139			90,139	1.789,74			1.789,74			43.495,99			43.495,99	34.796,79			34.796,79						-136.398,95
3.770	89,076			89,076	1.792,15			1.792,15			45.288,14			45.288,14	36.230,51			36.230,51						-134.965,23
3.771	90,233			90,233	1.793,09			1.793,09			47.081,23			47.081,23	37.664,98			37.664,98						-133.530,76
3.772	90,283			90,283	1.805,16			1.805,16			48.886,39			48.886,39	39.109,11			39.109,11						-132.086,63
3.773	87,952			87,952	1.782,35			1.782,35			50.668,74			50.668,74	40.534,99			40.534,99						-130.660,75
3.774	85,715			85,715	1.736,67			1.736,67			52.405,41			52.405,41	41.924,33			41.924,33						-129.271,41
3.775	77,411			77,411	1.631,26			1.631,26			54.036,67			54.036,67	43.229,34			43.229,34						-127.966,40
3.776	71,651			71,651	1.490,62			1.490,62			55.527,29			55.527,29	44.421,83			44.421,83						-126.773,90
3.777	63,611			63,611	1.352,62			1.352,62			56.879,91			56.879,91	45.503,93			45.503,93						-125.691,80
3.778	48,099			48,099	1.117,10			1.117,10			57.997,01			57.997,01	46.397,61			46.397,61						-124.798,12
3.779	40,408			40,408	885,07			885,07			58.882,08			58.882,08	47.105,66			47.105,66						-124.090,06
3.780	37,890			37,890	782,98			782,98			59.665,06			59.665,06	47.732,05			47.732,05						-123.463,68
3.781	33,589			33,589	714,79			714,79			60.379,85			60.379,85	48.303,88			48.303,88						-122.891,85
3.782	25,725			25,725	593,14			593,14			60.972,99			60.972,99	48.778,39			48.778,39						-122.417,34
3.783	14,659			14,659	403,84			403,84			61.376,83			61.376,83	49.101,46			49.101,46						-122.094,27
3.784	7,405			7,405	220,64			220,64	1,099	10,99	61.597,47			61.597,47	49.277,98			49.277,98	10,99	10,99			10,99	-121.928,75
3.785	3,918			3,918	113,23			113,23	7,493	85,92	61.710,70			61.710,70	49.368,56			49.368,56	96,91	85,92			85,92	-121.924,09
3.786	1,979			1,979	58,97			58,97	11,886	193,79	61.769,67			61.769,67	49.415,74			49.415,74	290,70	47,18			47,18	-122.070,70
3.787	0,948			0,948	29,27			29,27	14,333	262,19	61.798,94			61.798,94	49.439,15			49.439,15	552,89	23,42			23,42	-122.309,47
3.788	0,816			0,816	17,64			17,64	14,515	288,48	61.816,58			61.816,58	49.453,26			49.453,26	841,37	14,11			14,11	-122.583,84
3.789	1,107			1,107	19,23			19,23	13,851	283,66	61.835,81			61.835,81	49.468,65			49.468,65	1.125,03	15,38			15,38	-122.852,12
3.790	1,377			1,377	24,84			24,84	13,213	270,64	61.860,65			61.860,65	49.488,52			49.488,52	1.395,67	19,87			19,87	-123.102,89
3.791	1,412			1,412	27,89			27,89	13,162	263,75	61.888,54			61.888,54	49.510,83			49.510,83	1.659,42	22,31			22,31	-123.344,33
3.792	1,609			1,609	30,21			30,21	12,485	256,47	61.918,75			61.918,75	49.535,00			49.535,00	1.915,89	24,17			24,17	-123.576,63
3.793	1,320			1,320	29,29			29,29	13,444	259,29	61.948,04			61.948,04	49.558,43			49.558,43	2.175,18	23,43			23,43	-123.812,49
3.794	1,011			1,011	23,31			23,31	13,990	274,34	61.971,35			61.971,35	49.577,08			49.577,08	2.449,52	18,65			18,65	-124.068,18
3.795	0,841			0,841	18,52			18,52	14,711	287,01	61.989,87			61.989,87	49.591,90			49.591,90	2.736,53	14,82			14,82	-124.340,37
3.796	0,818			0,818	16,59			16,59	14,352	290,63	62.006,46			62.006,46	49.605,17			49.605,17	3.027,16	13,27			13,27	-124.617,73
3.797	1,154			1,154	19,72			19,72	13,709	280,61	62.026,18			62.026,18	49.620,94			49.620,94	3.307,77	15,78			15,78	-124.882,56
3.798	1,761			1,761	29,15			29,15	11,535	252,44	62.055,33			62.055,33	49.644,26			49.644,26	3.560,21	23,32			23,32	-125.111,68
3.799	1,286			1,286	30,47			30,47	13,443	249,78	62.085,80			62.085,80	49.668,64			49.668,64	3.809,99	24,38			24,38	-125.337,08
3.800	1,100			1,100	23,86			23,86	14,057	275,00	62.109,66			62.109,66	49.687,73			49.687,73	4.084,99	19,09			19,09	-125.592,99
3.801	0,204			0,204	13,04			13,04	16,921	309,78	62.122,70			62.122,70	49.698,16			49.698,16	4.394,77	10,43			10,43	-125.892,34
3.802					2,04			2,04	20,460	373,81	62.124,74			62.124,74	49.699,79			49.699,79	4.768,58	1,63			1,63	-126.264,52
3.803									25,789	462,49									5.231,07					-126.727,01
3.804									26,796	525,85									5.756,92					-127.252,86
3.805									27,070	538,66									6.295,58					-127.791,52
3.806									27,732	548,02									6.843,60					-128.339,54

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.807									28,408	561,40									7.405,00					-128.900,94
3.808									27,329	557,37									7.962,37					-129.458,31
3.809									26,002	533,31									8.495,68					-129.991,62
3.810									24,162	501,64									8.997,32					-130.493,26
3.811	0,512			0,512	5,12			5,12	16,107	402,69	5,12			5,12	4,10			4,10	9.400,01	4,10			4,10	-130.891,85
3.812	3,762			3,762	42,74			42,74	6,871	229,78	47,86			47,86	38,29			38,29	9.629,79	34,19			34,19	-131.087,44
3.813	7,896			7,896	116,58			116,58	0,920	77,91	164,44			164,44	131,55			131,55	9.707,70	77,91			77,91	-131.072,09
3.814	18,400			18,400	262,96			262,96		9,20	427,40			427,40	341,92			341,92	9.716,90	9,20			9,20	-130.870,92
3.815	28,786			28,786	471,86			471,86			899,26			899,26	719,41			719,41						-130.493,43
3.816	33,197			33,197	619,83			619,83			1.519,09			1.519,09	1.215,27			1.215,27						-129.997,57
3.817	36,687			36,687	698,84			698,84			2.217,93			2.217,93	1.774,34			1.774,34						-129.438,50
3.818	38,306			38,306	749,93			749,93			2.967,86			2.967,86	2.374,29			2.374,29						-128.838,56
3.819	35,217			35,217	735,23			735,23			3.703,09			3.703,09	2.962,47			2.962,47						-128.250,38
3.820	40,157			40,157	753,74			753,74			4.456,83			4.456,83	3.565,46			3.565,46						-127.647,39
3.821	39,459			39,459	796,16			796,16			5.252,99			5.252,99	4.202,39			4.202,39						-127.010,46
3.822	36,141			36,141	756,00			756,00			6.008,99			6.008,99	4.807,19			4.807,19						-126.405,66
3.823	36,381			36,381	725,22			725,22			6.734,21			6.734,21	5.387,37			5.387,37						-125.825,48
3.824	40,683			40,683	770,64			770,64			7.504,85			7.504,85	6.003,88			6.003,88						-125.208,97
3.825	38,244			38,244	789,27			789,27			8.294,12			8.294,12	6.635,30			6.635,30						-124.577,55
3.826	40,945			40,945	791,89			791,89			9.086,01			9.086,01	7.268,81			7.268,81						-123.944,04
3.827	38,706			38,706	796,51			796,51			9.882,52			9.882,52	7.906,02			7.906,02						-123.306,83
3.828	35,295			35,295	740,01			740,01			10.622,53			10.622,53	8.498,02			8.498,02						-122.714,82
3.829	27,283			27,283	625,78			625,78			11.248,31			11.248,31	8.998,65			8.998,65						-122.214,20
3.830	22,509			22,509	497,92			497,92			11.746,23			11.746,23	9.396,98			9.396,98						-121.815,86
3.831	17,921			17,921	404,30			404,30			12.150,53			12.150,53	9.720,42			9.720,42						-121.492,42
3.832	13,194			13,194	311,15			311,15			12.461,68			12.461,68	9.969,34			9.969,34						-121.243,50
3.833	5,826			5,826	190,20			190,20	3,225	32,25	12.651,88			12.651,88	10.121,50			10.121,50	32,25	32,25			32,25	-121.123,59
3.834	7,158			7,158	129,84			129,84	1,924	51,49	12.781,72			12.781,72	10.225,38			10.225,38	83,74	51,49			51,49	-121.071,21
3.835	0,387			0,387	75,45			75,45	16,433	183,57	12.857,17			12.857,17	10.285,74			10.285,74	267,31	60,36			60,36	-121.194,42
3.836					3,87			3,87	22,540	389,73	12.861,04			12.861,04	10.288,83			10.288,83	657,04	3,10			3,10	-121.581,05
3.837	3,020			3,020	30,20			30,20	1,825	243,65	12.891,24			12.891,24	10.312,99			10.312,99	900,69	24,16			24,16	-121.800,54
3.838					30,20			30,20	18,905	207,30	12.921,44			12.921,44	10.337,15			10.337,15	1.107,99	24,16			24,16	-121.983,68
3.839	11,280	0,264		11,544	112,80	2,64		115,44		189,05	13.034,24	2,64		13.036,88	10.427,39	2,30		10.429,69	1.297,04	90,24	2,30		92,54	-122.080,19
3.840	25,720	1,285	0,447	27,452	370,00	15,49	4,47	389,96			13.404,24	18,13	4,47	13.426,84	10.723,39	15,77	5,26	10.744,42						-121.765,46
3.841	34,146	2,505	2,668	39,319	598,66	37,90	31,15	667,71			14.002,90	56,03	35,62	14.094,55	11.202,32	48,72	41,91	11.292,95						-121.216,93
3.842	41,166	3,002	2,804	46,972	753,12	55,07	54,72	862,91			14.756,02	111,10	90,34	14.957,46	11.804,82	96,61	106,28	12.007,71						-120.502,17
3.843	45,604	3,548	3,072	52,224	867,70	65,50	58,76	991,96			15.623,72	176,60	149,10	15.949,42	12.498,98	153,57	175,41	12.827,96						-119.681,92
3.844	47,867	4,664	3,479	56,010	934,71	82,12	65,51	1.082,34			16.558,43	258,72	214,61	17.031,76	13.246,74	224,97	252,48	13.724,19						-118.785,67
3.845	50,026	5,024	3,643	58,693	978,93	96,88	71,22	1.147,03			17.537,36	355,60	285,83	18.178,79	14.029,89	309,22	336,27	14.675,38						-117.834,49
3.846	46,520	5,226	4,324	56,070	965,46	102,50	79,67	1.147,63			18.502,82	458,10	365,50	19.326,42	14.802,26	398,35	430,00	15.630,61						-116.879,26
3.847	50,984	5,515	3,683	60,182	975,04	107,41	80,07	1.162,52			19.477,86	565,51	445,57	20.488,94	15.582,29	491,75	524,20	16.598,24						-115.911,63
3.848	48,902	4,753	3,572	57,227	998,86	102,68	72,55	1.174,09			20.476,72	668,19	518,12	21.663,03	16.381,38	581,03	609,55	17.571,96						-114.937,90
3.849	53,122	3,970	2,739	59,831	1.020,24	87,23	63,11	1.170,58			21.496,96	755,42	581,23	22.833,61	17.197,57	656,89	683,80	18.538,26						-113.971,61
3.850	51,754	2,935	1,237	55,926	1.048,76	69,05	39,76	1.157,57			22.545,72	824,47	620,99	23.991,18	18.036,58	716,93	730,58	19.484,09						-113.025,78
3.851	59,566	3,281	0,966	63,813	1.113,20	62,16	22,03	1.197,39			23.658,92	886,63	643,02	25.188,57	18.927,14	770,98	756,49	20.454,61						-112.055,25
3.852	62,395	2,687	0,245	65,327	1.219,61	59,68	12,11	1.291,40			24.878,53	946,31	655,13	26.479,97	19.902,82	822,88	770,74	21.496,44						-111.013,42
3.853	64,339	1,895		66,234	1.267,34	45,82	2,45	1.315,61			26.145,87	992,13	657,58	27.795,58	20.916,70	862,72	773,62	22.553,04						-109.956,82

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.854	69,673			69,673	1.340,12	18,95		1.359,07			27.485,99	1.011,08		28.497,07	21.988,79	879,20		22.867,99						-108.868,25
3.855	70,412			70,412	1.400,85			1.400,85			28.886,84			28.886,84	23.109,47			23.109,47						-107.747,57
3.856	68,415			68,415	1.388,27			1.388,27			30.275,11			30.275,11	24.220,09			24.220,09						-106.636,95
3.857	68,149			68,149	1.365,64			1.365,64			31.640,75			31.640,75	25.312,60			25.312,60						-105.544,44
3.858	65,482			65,482	1.336,31			1.336,31			32.977,06			32.977,06	26.381,65			26.381,65						-104.475,39
3.859	64,649			64,649	1.301,31			1.301,31			34.278,37			34.278,37	27.422,70			27.422,70						-103.434,34
3.860	63,810			63,810	1.284,59			1.284,59			35.562,96			35.562,96	28.450,37			28.450,37						-102.406,67
3.861	60,770			60,770	1.245,80			1.245,80			36.808,76			36.808,76	29.447,01			29.447,01						-101.410,03
3.862	58,984			58,984	1.197,54			1.197,54			38.006,30			38.006,30	30.405,04			30.405,04						-100.452,00
3.863	55,696			55,696	1.146,80			1.146,80			39.153,10			39.153,10	31.322,48			31.322,48						-99.534,56
3.864	51,225			51,225	1.069,21			1.069,21			40.222,31			40.222,31	32.177,85			32.177,85						-98.679,19
3.865	46,453			46,453	976,78			976,78			41.199,09			41.199,09	32.959,27			32.959,27						-97.897,77
3.866	39,014			39,014	854,67			854,67			42.053,76			42.053,76	33.643,01			33.643,01						-97.214,03
3.867	32,687			32,687	717,01			717,01			42.770,77			42.770,77	34.216,62			34.216,62						-96.640,42
3.868	15,407			15,407	480,94			480,94			43.251,71			43.251,71	34.601,37			34.601,37						-96.255,67
3.869	16,406			16,406	318,13			318,13			43.569,84			43.569,84	34.855,87			34.855,87						-96.001,17
3.870	6,637			6,637	230,43			230,43	1,945	19,45	43.800,27			43.800,27	35.040,22			35.040,22	19,45	19,45			19,45	-95.836,28
3.871	2,774			2,774	94,11			94,11	9,544	114,89	43.894,38			43.894,38	35.115,50			35.115,50	134,34	75,29			75,29	-95.875,88
3.872					27,74			27,74	21,525	310,69	43.922,12			43.922,12	35.137,70			35.137,70	445,03	22,19			22,19	-96.164,38
3.873									27,630	491,55									936,58					-96.655,93
3.874									35,270	629,00									1.565,58					-97.284,93
3.875									32,935	682,05									2.247,63					-97.966,98
3.876									28,711	616,46									2.864,09					-98.583,44
3.877									28,393	571,04									3.435,13					-99.154,48
3.878									27,327	557,20									3.992,33					-99.711,68
3.879									26,159	534,86									4.527,19					-100.246,54
3.880									25,921	520,80									5.047,99					-100.767,34
3.881									23,944	498,65									5.546,64					-101.265,99
3.882									23,682	476,26									6.022,90					-101.742,25
3.883									24,008	476,90									6.499,80					-102.219,15
3.884									22,005	460,13									6.959,93					-102.679,28
3.885									22,973	449,78									7.409,71					-103.129,06
3.886									24,001	469,74									7.879,45					-103.598,80
3.887									25,270	492,71									8.372,16					-104.091,51
3.888									26,313	515,83									8.887,99					-104.607,34
3.889									26,909	532,22									9.420,21					-105.139,56
3.890									27,110	540,19									9.960,40					-105.679,75
3.891									28,234	553,44									10.513,84					-106.233,19
3.892									31,879	601,13									11.114,97					-106.834,32
3.893									35,795	676,74									11.791,71					-107.511,06
3.894									36,218	720,13									12.511,84					-108.231,19
3.895									39,014	752,32									13.264,16					-108.983,51
3.896									40,212	792,26									14.056,42					-109.775,77
3.897									42,179	823,91									14.880,33					-110.599,68
3.898									40,634	828,13									15.708,46					-111.427,81
3.899									39,816	804,50									16.512,96					-112.232,31
3.900									39,454	792,70									17.305,66					-113.025,01

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.901									37,889	773,43									18.079,09					-113.798,44
3.902									37,260	751,49									18.830,58					-114.549,93
3.903									36,130	733,90									19.564,48					-115.283,83
3.904									34,690	708,20									20.272,68					-115.992,03
3.905									32,811	675,01									20.947,69					-116.667,04
3.906									30,806	636,17									21.583,86					-117.303,21
3.907									32,627	634,33									22.218,19					-117.937,54
3.908									31,380	640,07									22.858,26					-118.577,61
3.909									35,043	664,23									23.522,49					-119.241,84
3.910									35,038	700,81									24.223,30					-119.942,65
3.911									36,521	715,59									24.938,89					-120.658,24
3.912									36,012	725,33									25.664,22					-121.383,57
3.913									35,821	718,33									26.382,55					-122.101,90
3.914									35,378	711,99									27.094,54					-122.813,89
3.915									34,929	703,07									27.797,61					-123.516,96
3.916	1,819			1,819	18,19			18,19	12,136	470,65	18,19			18,19	14,55			14,55	28.268,26	14,55			14,55	-123.973,06
3.917	3,274			3,274	50,93			50,93	8,086	202,22	69,12			69,12	55,30			55,30	28.470,48	40,74			40,74	-124.134,54
3.918	5,817			5,817	90,91			90,91	3,417	115,03	160,03			160,03	128,02			128,02	28.585,51	72,73			72,73	-124.176,84
3.919	6,520			6,520	123,37			123,37	2,525	59,42	283,40			283,40	226,72			226,72	28.644,93	59,42			59,42	-124.137,56
3.920	7,831			7,831	143,51			143,51	0,672	31,97	426,91			426,91	341,53			341,53	28.676,90	31,97			31,97	-124.054,72
3.921	7,110			7,110	149,41			149,41	1,573	22,45	576,32			576,32	461,06			461,06	28.699,35	22,45			22,45	-123.957,64
3.922	7,068			7,068	141,78			141,78	1,663	32,36	718,10			718,10	574,48			574,48	28.731,71	32,36			32,36	-123.876,58
3.923	6,315			6,315	133,83			133,83	2,731	43,94	851,93			851,93	681,54			681,54	28.775,65	43,94			43,94	-123.813,46
3.924	6,149			6,149	124,64			124,64	2,939	56,70	976,57			976,57	781,26			781,26	28.832,35	56,70			56,70	-123.770,45
3.925	5,986			5,986	121,35			121,35	2,858	57,97	1.097,92			1.097,92	878,34			878,34	28.890,32	57,97			57,97	-123.731,34
3.926	5,462			5,462	114,48			114,48	4,014	68,72	1.212,40			1.212,40	969,92			969,92	28.959,04	68,72			68,72	-123.708,48
3.927	5,343			5,343	108,05			108,05	4,201	82,15	1.320,45			1.320,45	1.056,36			1.056,36	29.041,19	82,15			82,15	-123.704,19
3.928	4,867			4,867	102,10			102,10	5,081	92,82	1.422,55			1.422,55	1.138,04			1.138,04	29.134,01	81,68			81,68	-123.715,33
3.929	4,404			4,404	92,71			92,71	5,925	110,06	1.515,26			1.515,26	1.212,21			1.212,21	29.244,07	74,17			74,17	-123.751,22
3.930	3,983			3,983	83,87			83,87	6,748	126,73	1.599,13			1.599,13	1.279,30			1.279,30	29.370,80	67,10			67,10	-123.810,85
3.931	3,592			3,592	75,75			75,75	7,805	145,53	1.674,88			1.674,88	1.339,90			1.339,90	29.516,33	60,60			60,60	-123.895,78
3.932	2,773			2,773	63,65			63,65	9,445	172,50	1.738,53			1.738,53	1.390,82			1.390,82	29.688,83	50,92			50,92	-124.017,36
3.933	2,393			2,393	51,66			51,66	10,939	203,84	1.790,19			1.790,19	1.432,15			1.432,15	29.892,67	41,33			41,33	-124.179,87
3.934	2,727			2,727	51,20			51,20	9,712	206,51	1.841,39			1.841,39	1.473,11			1.473,11	30.099,18	40,96			40,96	-124.345,42
3.935	2,659			2,659	53,86			53,86	10,030	197,42	1.895,25			1.895,25	1.516,20			1.516,20	30.296,60	43,09			43,09	-124.499,75
3.936	2,441			2,441	51,00			51,00	10,633	206,63	1.946,25			1.946,25	1.557,00			1.557,00	30.503,23	40,80			40,80	-124.665,58
3.937	2,304			2,304	47,45			47,45	10,787	214,20	1.993,70			1.993,70	1.594,96			1.594,96	30.717,43	37,96			37,96	-124.841,82
3.938	2,172			2,172	44,76			44,76	11,316	221,03	2.038,46			2.038,46	1.630,77			1.630,77	30.938,46	35,81			35,81	-125.027,04
3.939	2,180			2,180	43,52			43,52	11,078	223,94	2.081,98			2.081,98	1.665,58			1.665,58	31.162,40	34,82			34,82	-125.216,16
3.940	0,182			0,182	23,62			23,62	17,532	286,10	2.105,60			2.105,60	1.684,48			1.684,48	31.448,50	18,90			18,90	-125.483,36
3.941	2,435			2,435	26,17			26,17	10,207	277,39	2.131,77			2.131,77	1.705,42			1.705,42	31.725,89	20,94			20,94	-125.739,81
3.942	2,454			2,454	48,89			48,89	10,384	205,91	2.180,66			2.180,66	1.744,53			1.744,53	31.931,80	39,11			39,11	-125.906,61
3.943	2,981			2,981	54,35			54,35	9,301	196,85	2.235,01			2.235,01	1.788,01			1.788,01	32.128,65	43,48			43,48	-126.059,98
3.944	3,700			3,700	66,81			66,81	7,463	167,64	2.301,82			2.301,82	1.841,46			1.841,46	32.296,29	53,45			53,45	-126.174,17
3.945	4,159			4,159	78,59			78,59	6,526	139,89	2.380,41			2.380,41	1.904,33			1.904,33	32.436,18	62,87			62,87	-126.251,19
3.946	4,948			4,948	91,07			91,07	4,926	114,52	2.471,48			2.471,48	1.977,18			1.977,18	32.550,70	72,86			72,86	-126.292,85
3.947	7,001			7,001	119,49			119,49	1,523	64,49	2.590,97			2.590,97	2.072,78			2.072,78	32.615,19	64,49			64,49	-126.261,75

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.948	9,883			9,883	168,84			168,84		15,23	2.759,81			2.759,81	2.207,85			2.207,85	32.630,42	15,23			15,23	-126.141,91
3.949	12,537			12,537	224,20			224,20			2.984,01			2.984,01	2.387,21			2.387,21						-125.962,55
3.950	13,859			13,859	263,96			263,96			3.247,97			3.247,97	2.598,38			2.598,38						-125.751,38
3.951	18,855			18,855	327,14			327,14			3.575,11			3.575,11	2.860,09			2.860,09						-125.489,67
3.952	21,113			21,113	399,68			399,68			3.974,79			3.974,79	3.179,83			3.179,83						-125.169,93
3.953	20,508			20,508	416,21			416,21			4.391,00			4.391,00	3.512,80			3.512,80						-124.836,96
3.954	19,595			19,595	401,03			401,03			4.792,03			4.792,03	3.833,62			3.833,62						-124.516,14
3.955	16,931			16,931	365,26			365,26			5.157,29			5.157,29	4.125,83			4.125,83						-124.223,93
3.956	13,405			13,405	303,36			303,36			5.460,65			5.460,65	4.368,52			4.368,52						-123.981,24
3.957	8,370			8,370	217,75			217,75	0,117	1,17	5.678,40			5.678,40	4.542,72			4.542,72	1,17	1,17			1,17	-123.808,21
3.958	6,247			6,247	146,17			146,17	2,714	28,31	5.824,57			5.824,57	4.659,66			4.659,66	29,48	28,31			28,31	-123.719,58
3.959	3,951			3,951	101,98			101,98	7,011	97,25	5.926,55			5.926,55	4.741,24			4.741,24	126,73	81,58			81,58	-123.735,25
3.960	1,921			1,921	58,72			58,72	11,372	183,83	5.985,27			5.985,27	4.788,22			4.788,22	310,56	46,98			46,98	-123.872,10
3.961	0,441			0,441	23,62			23,62	16,231	276,03	6.008,89			6.008,89	4.807,11			4.807,11	586,59	18,90			18,90	-124.129,23
3.962					4,41			4,41	19,164	353,95	6.013,30			6.013,30	4.810,64			4.810,64	940,54	3,53			3,53	-124.479,65
3.963									23,269	424,33									1.364,87					-124.903,98
3.964									31,656	549,25									1.914,12					-125.453,23
3.965									41,070	727,26									2.641,38					-126.180,49
3.966									43,334	844,04									3.485,42					-127.024,53
3.967									44,612	879,46									4.364,88					-127.903,99
3.968									43,017	876,29									5.241,17					-128.780,28
3.969									35,880	788,97									6.030,14					-129.569,25
3.970									25,687	615,67									6.645,81					-130.184,92
3.971	0,371			0,371	3,71			3,71	17,335	430,22	3,71			3,71	2,97			2,97	7.076,03	2,97			2,97	-130.612,17
3.972	0,376			0,376	7,47			7,47	17,922	352,57	11,18			11,18	8,94			8,94	7.428,60	5,98			5,98	-130.958,76
3.973					3,76			3,76	23,013	409,35	14,94			14,94	11,95			11,95	7.837,95	3,01			3,01	-131.365,10
3.974									26,060	490,73									8.328,68					-131.855,83
3.975									25,200	512,60									8.841,28					-132.368,43
3.976									22,403	476,03									9.317,31					-132.844,46
3.977	0,520			0,520	5,20			5,20	19,701	421,04	5,20			5,20	4,16			4,16	9.738,35	4,16			4,16	-133.261,34
3.978	1,013			1,013	15,33			15,33	16,573	362,74	20,53			20,53	16,42			16,42	10.101,09	12,26			12,26	-133.611,82
3.979	1,969			1,969	29,82			29,82	12,794	293,67	50,35			50,35	40,28			40,28	10.394,76	23,86			23,86	-133.881,63
3.980	4,004			4,004	59,73			59,73	7,033	198,27	110,08			110,08	88,06			88,06	10.593,03	47,78			47,78	-134.032,12
3.981	8,032			8,032	120,36			120,36	1,912	89,45	230,44			230,44	184,35			184,35	10.682,48	89,45			89,45	-134.025,28
3.982	21,007			21,007	290,39			290,39		19,12	520,83			520,83	416,66			416,66	10.701,60	19,12			19,12	-133.812,09
3.983	28,342			28,342	493,49			493,49			1.014,32			1.014,32	811,46			811,46						-133.417,30
3.984	37,908			37,908	662,50			662,50			1.676,82			1.676,82	1.341,46			1.341,46						-132.887,30
3.985	41,619			41,619	795,27			795,27			2.472,09			2.472,09	1.977,67			1.977,67						-132.251,08
3.986	46,330			46,330	879,49			879,49			3.351,58			3.351,58	2.681,26			2.681,26						-131.547,49
3.987	51,005			51,005	973,35			973,35			4.324,93			4.324,93	3.459,94			3.459,94						-130.768,81
3.988	57,276			57,276	1.082,81			1.082,81			5.407,74			5.407,74	4.326,19			4.326,19						-129.902,56
3.989	62,841			62,841	1.201,17			1.201,17			6.608,91			6.608,91	5.287,13			5.287,13						-128.941,62
3.990	68,015			68,015	1.308,56			1.308,56			7.917,47			7.917,47	6.333,98			6.333,98						-127.894,77
3.991	74,981			74,981	1.429,96			1.429,96			9.347,43			9.347,43	7.477,94			7.477,94						-126.750,80
3.992	81,918			81,918	1.568,99			1.568,99			10.916,42			10.916,42	8.733,14			8.733,14						-125.495,61
3.993	89,353			89,353	1.712,71			1.712,71			12.629,13			12.629,13	10.103,30			10.103,30						-124.125,44
3.994	86,838	7,030	0,219	94,087	1.761,91	70,30	2,19	1.834,40			14.391,04	70,30	2,19	14.463,53	11.512,83	61,13	2,58	11.576,54						-122.652,21

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
3.995	59,797	5,850	1,794	67,441	1.466,35	128,80	20,13	1.615,28			15.857,39	199,10	22,32	16.078,81	12.685,91	173,13	26,26	12.885,30						-121.343,45
3.996	94,125	9,372	2,543	106,040	1.539,22	152,22	43,37	1.734,81			17.396,61	351,32	65,69	17.813,62	13.917,29	305,50	77,28	14.300,07						-119.928,69
3.997	91,661	11,698	4,510	107,869	1.857,86	210,70	70,53	2.139,09			19.254,47	562,02	136,22	19.952,71	15.403,58	488,71	160,26	16.052,55						-118.176,21
3.998	88,776	12,004	4,906	105,686	1.804,37	237,02	94,16	2.135,55			21.058,84	799,04	230,38	22.088,26	16.847,07	694,82	271,04	17.812,93						-116.415,83
3.999	93,345	12,889	5,132	111,366	1.821,21	248,93	100,38	2.170,52			22.880,05	1.047,97	330,76	24.258,78	18.304,04	911,28	389,13	19.604,45						-114.624,31
4.000	91,696	14,558	7,054	113,308	1.850,41	274,47	121,86	2.246,74			24.730,46	1.322,44	452,62	26.505,52	19.784,37	1.149,95	532,49	21.466,81						-112.761,95
4.001	88,516	15,194	8,211	111,921	1.802,12	297,52	152,65	2.252,29			26.532,58	1.619,96	605,27	28.757,81	21.226,06	1.408,66	712,08	23.346,80						-110.881,95
4.002	93,606	16,320	8,425	118,351	1.821,22	315,14	166,36	2.302,72			28.353,80	1.935,10	771,63	31.060,53	22.683,04	1.682,70	907,80	25.273,54						-108.955,22
4.003	92,432	17,122	9,671	119,225	1.860,38	334,42	180,96	2.375,76			30.214,18	2.269,52	952,59	33.436,29	24.171,34	1.973,50	1.120,69	27.265,53						-106.963,22
4.004	89,680	17,875	12,087	119,642	1.821,12	349,97	217,58	2.388,67			32.035,30	2.619,49	1.170,17	35.824,96	25.628,24	2.277,82	1.376,67	29.282,73						-104.946,03
4.005	90,289	18,466	12,224	120,979	1.799,69	363,41	243,11	2.406,21			33.834,99	2.982,90	1.413,28	38.231,17	27.067,99	2.593,83	1.662,68	31.324,50						-102.904,26
4.006	90,914	18,304	11,541	120,759	1.812,03	367,70	237,65	2.417,38			35.647,02	3.350,60	1.650,93	40.648,55	28.517,62	2.913,57	1.942,27	33.373,46						-100.855,31
4.007	89,410	18,230	11,923	119,563	1.803,24	365,34	234,64	2.403,22			37.450,26	3.715,94	1.885,57	43.051,77	29.960,21	3.231,25	2.218,32	35.409,78						-98.818,98
4.008	90,815	17,119	9,720	117,654	1.802,25	353,49	216,43	2.372,17			39.252,51	4.069,43	2.102,00	45.423,94	31.402,01	3.538,63	2.472,94	37.413,58						-96.815,17
4.009	88,097	16,383	9,804	114,284	1.789,12	335,02	195,24	2.319,38			41.041,63	4.404,45	2.297,24	47.743,32	32.833,30	3.829,96	2.702,64	39.365,90						-94.862,86
4.010	88,772	15,655	8,627	113,054	1.768,69	320,38	184,31	2.273,38			42.810,32	4.724,83	2.481,55	50.016,70	34.248,26	4.108,55	2.919,47	41.276,28						-92.952,48
4.011	90,445	14,210	6,822	111,477	1.792,17	298,65	154,49	2.245,31			44.602,49	5.023,48	2.636,04	52.262,01	35.681,99	4.368,24	3.101,22	43.151,45						-91.077,30
4.012	89,495	13,113	6,094	108,702	1.799,40	273,23	129,16	2.201,79			46.401,89	5.296,71	2.765,20	54.463,80	37.121,51	4.605,83	3.253,18	44.980,52						-89.248,24
4.013	89,106	11,747	5,057	105,910	1.786,01	248,60	111,51	2.146,12			48.187,90	5.545,31	2.876,71	56.609,92	38.550,32	4.822,01	3.384,36	46.756,69						-87.472,07
4.014	91,047	10,190	3,636	104,873	1.801,53	219,37	86,93	2.107,83			49.989,43	5.764,68	2.963,64	58.717,75	39.991,54	5.012,77	3.486,64	48.490,95						-85.737,82
4.015	88,995	8,721	2,349	100,065	1.800,42	189,11	59,85	2.049,38			51.789,85	5.953,79	3.023,49	60.767,13	41.431,88	5.177,21	3.557,05	50.166,14						-84.062,63
4.016	88,910	7,454	0,506	96,870	1.779,05	161,75	28,55	1.969,35			53.568,90	6.115,54	3.052,04	62.736,48	42.855,12	5.317,86	3.590,64	51.763,62						-82.465,15
4.017	87,946	4,703		92,649	1.768,56	121,57	5,06	1.895,19			55.337,46	6.237,11	3.057,10	64.631,67	44.269,97	5.423,57	3.596,59	53.290,13						-80.938,64
4.018	87,405			87,405	1.753,51	47,03		1.800,54			57.090,97	6.284,14		63.375,11	45.672,78	5.464,47		51.137,25						-79.494,94
4.019	82,088			82,088	1.694,93			1.694,93			58.785,90			58.785,90	47.028,72			47.028,72						-78.139,00
4.020	75,738			75,738	1.578,26			1.578,26			60.364,16			60.364,16	48.291,33			48.291,33						-76.876,39
4.021	69,584			69,584	1.453,22			1.453,22			61.817,38			61.817,38	49.453,90			49.453,90						-75.713,81
4.022	64,052			64,052	1.336,36			1.336,36			63.153,74			63.153,74	50.522,99			50.522,99						-74.644,72
4.023	58,994			58,994	1.230,46			1.230,46			64.384,20			64.384,20	51.507,36			51.507,36						-73.660,35
4.024	52,959			52,959	1.119,53			1.119,53			65.503,73			65.503,73	52.402,98			52.402,98						-72.764,73
4.025	47,802			47,802	1.007,61			1.007,61			66.511,34			66.511,34	53.209,07			53.209,07						-71.958,64
4.026	41,436			41,436	892,38			892,38			67.403,72			67.403,72	53.922,98			53.922,98						-71.244,74
4.027	33,629			33,629	750,65			750,65			68.154,37			68.154,37	54.523,50			54.523,50						-70.644,22
4.028	24,235			24,235	578,64			578,64			68.733,01			68.733,01	54.986,41			54.986,41						-70.181,31
4.029	17,231			17,231	414,66			414,66			69.147,67			69.147,67	55.318,14			55.318,14						-69.849,58
4.030	10,759			10,759	279,90			279,90			69.427,57			69.427,57	55.542,06			55.542,06						-69.625,66
4.031	5,982			5,982	167,41			167,41	3,280	32,80	69.594,98			69.594,98	55.675,98			55.675,98	32,80	32,80			32,80	-69.524,53
4.032	2,850			2,850	88,32			88,32	10,194	134,74	69.683,30			69.683,30	55.746,64			55.746,64	167,54	70,66			70,66	-69.588,61
4.033	1,175			1,175	40,25			40,25	14,428	246,22	69.723,55			69.723,55	55.778,84			55.778,84	413,76	32,20			32,20	-69.802,63
4.034					11,75			11,75	19,108	335,36	69.735,30			69.735,30	55.788,24			55.788,24	749,12	9,40			9,40	-70.128,59
4.035									25,937	450,45									1.199,57					-70.579,04
4.036									33,045	589,82									1.789,39					-71.168,86
4.037									38,663	717,08									2.506,47					-71.885,94
4.038									41,416	800,79									3.307,26					-72.686,73
4.039									38,887	803,03									4.110,29					-73.489,76
4.040									45,141	840,28									4.950,57					-74.330,04
4.041									43,953	890,94									5.841,51					-75.220,98

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.042									44,510	884,63									6.726,14					-76.105,61
4.043									47,507	920,17									7.646,31					-77.025,78
4.044									43,520	910,27									8.556,58					-77.936,05
4.045									43,557	870,77									9.427,35					-78.806,82
4.046									44,944	885,01									10.312,36					-79.691,83
4.047									42,597	875,41									11.187,77					-80.567,24
4.048									36,356	789,53									11.977,30					-81.356,77
4.049									29,647	660,03									12.637,33					-82.016,80
4.050									24,608	542,55									13.179,88					-82.559,35
4.051									24,523	491,31									13.671,19					-83.050,66
4.052									23,630	481,53									14.152,72					-83.532,19
4.053									25,465	490,95									14.643,67					-84.023,14
4.054									31,755	572,20									15.215,87					-84.595,34
4.055									44,455	762,10									15.977,97					-85.357,44
4.056									54,756	992,11									16.970,08					-86.349,55
4.057									54,948	1.097,04									18.067,12					-87.446,59
4.058									52,865	1.078,13									19.145,25					-88.524,72
4.059									50,808	1.036,73									20.181,98					-89.561,45
4.060									49,164	999,72									21.181,70					-90.561,17
4.061									46,949	961,13									22.142,83					-91.522,30
4.062									44,627	915,76									23.058,59					-92.438,06
4.063									42,973	876,00									23.934,59					-93.314,06
4.064									39,697	826,70									24.761,29					-94.140,76
4.065									32,951	726,48									25.487,77					-94.867,24
4.066									26,918	598,69									26.086,46					-95.465,93
4.067									24,181	510,99									26.597,45					-95.976,92
4.068	0,203			0,203	2,03			2,03	15,503	396,84	2,03			2,03	1,62			1,62	26.994,29	1,62			1,62	-96.372,14
4.069	1,723			1,723	19,26			19,26	7,730	232,33	21,29			21,29	17,03			17,03	27.226,62	15,41			15,41	-96.589,06
4.070	3,372			3,372	50,95			50,95	0,919	86,49	72,24			72,24	57,79			57,79	27.313,11	40,76			40,76	-96.634,79
4.071	8,449			8,449	118,21			118,21		9,19	190,45			190,45	152,36			152,36	27.322,30	9,19			9,19	-96.549,41
4.072	10,523			10,523	189,72			189,72			380,17			380,17	304,14			304,14						-96.397,63
4.073	11,502			11,502	220,25			220,25			600,42			600,42	480,34			480,34						-96.221,43
4.074	9,081			9,081	205,83			205,83			806,25			806,25	645,00			645,00						-96.056,77
4.075	5,745			5,745	148,26			148,26			954,51			954,51	763,61			763,61						-95.938,16
4.076	4,589			4,589	103,34			103,34	0,179	1,79	1.057,85			1.057,85	846,28			846,28	1,79	1,79			1,79	-95.857,28
4.077	3,337			3,337	79,26			79,26	1,011	11,90	1.137,11			1.137,11	909,69			909,69	13,69	11,90			11,90	-95.805,77
4.078	3,032			3,032	63,69			63,69	2,866	38,77	1.200,80			1.200,80	960,64			960,64	52,46	38,77			38,77	-95.793,59
4.079	3,661			3,661	66,93			66,93	1,133	39,99	1.267,73			1.267,73	1.014,18			1.014,18	92,45	39,99			39,99	-95.780,04
4.080	3,137			3,137	67,98			67,98	3,144	42,77	1.335,71			1.335,71	1.068,57			1.068,57	135,22	42,77			42,77	-95.768,43
4.081	3,461			3,461	65,98			65,98	2,387	55,31	1.401,69			1.401,69	1.121,35			1.121,35	190,53	52,78			52,78	-95.770,96
4.082	3,273			3,273	67,34			67,34	1,158	35,45	1.469,03			1.469,03	1.175,22			1.175,22	225,98	35,45			35,45	-95.752,54
4.083	4,145			4,145	74,18			74,18	0,220	13,78	1.543,21			1.543,21	1.234,57			1.234,57	239,76	13,78			13,78	-95.706,98
4.084	5,514			5,514	96,59			96,59		2,20	1.639,80			1.639,80	1.311,84			1.311,84	241,96	2,20			2,20	-95.631,91
4.085	6,950			6,950	124,64			124,64			1.764,44			1.764,44	1.411,55			1.411,55						-95.532,20
4.086	9,280			9,280	162,30			162,30			1.926,74			1.926,74	1.541,39			1.541,39						-95.402,36
4.087	10,303			10,303	195,83			195,83			2.122,57			2.122,57	1.698,06			1.698,06						-95.245,70
4.088	14,489			14,489	247,92			247,92			2.370,49			2.370,49	1.896,39			1.896,39						-95.047,36

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.089	17,969			17,969	324,58			324,58			2.695,07			2.695,07	2.156,06			2.156,06						-94.787,70
4.090	20,835			20,835	388,04			388,04			3.083,11			3.083,11	2.466,49			2.466,49						-94.477,27
4.091	22,098			22,098	429,33			429,33			3.512,44			3.512,44	2.809,95			2.809,95						-94.133,81
4.092	25,232			25,232	473,30			473,30			3.985,74			3.985,74	3.188,59			3.188,59						-93.755,17
4.093	24,985			24,985	502,17			502,17			4.487,91			4.487,91	3.590,33			3.590,33						-93.353,43
4.094	25,705			25,705	506,90			506,90			4.994,81			4.994,81	3.995,85			3.995,85						-92.947,91
4.095	23,539			23,539	492,44			492,44			5.487,25			5.487,25	4.389,80			4.389,80						-92.553,96
4.096	42,311			42,311	658,50			658,50			6.145,75			6.145,75	4.916,60			4.916,60						-92.027,16
4.097	25,480			25,480	677,91			677,91			6.823,66			6.823,66	5.458,93			5.458,93						-91.484,83
4.098	26,803			26,803	522,83			522,83			7.346,49			7.346,49	5.877,19			5.877,19						-91.066,57
4.099	27,580			27,580	543,83			543,83			7.890,32			7.890,32	6.312,26			6.312,26						-90.631,51
4.100	27,659			27,659	552,39			552,39			8.442,71			8.442,71	6.754,17			6.754,17						-90.189,60
4.101	27,911			27,911	555,70			555,70			8.998,41			8.998,41	7.198,73			7.198,73						-89.745,04
4.102	27,004			27,004	549,15			549,15			9.547,56			9.547,56	7.638,05			7.638,05						-89.305,72
4.103	26,648			26,648	536,52			536,52			10.084,08			10.084,08	8.067,26			8.067,26						-88.876,50
4.104	27,899			27,899	545,47			545,47			10.629,55			10.629,55	8.503,64			8.503,64						-88.440,12
4.105	31,521			31,521	594,20			594,20			11.223,75			11.223,75	8.979,00			8.979,00						-87.964,76
4.106	32,856			32,856	643,77			643,77			11.867,52			11.867,52	9.494,02			9.494,02						-87.449,74
4.107	33,974			33,974	668,30			668,30			12.535,82			12.535,82	10.028,66			10.028,66						-86.915,10
4.108	34,890			34,890	688,64			688,64			13.224,46			13.224,46	10.579,57			10.579,57						-86.364,19
4.109	35,086			35,086	699,76			699,76			13.924,22			13.924,22	11.139,38			11.139,38						-85.804,38
4.110	36,385			36,385	714,71			714,71			14.638,93			14.638,93	11.711,14			11.711,14						-85.232,61
4.111	37,300			37,300	736,85			736,85			15.375,78			15.375,78	12.300,62			12.300,62						-84.643,13
4.112	37,490			37,490	747,90			747,90			16.123,68			16.123,68	12.898,94			12.898,94						-84.044,81
4.113	39,778			39,778	772,68			772,68			16.896,36			16.896,36	13.517,09			13.517,09						-83.426,67
4.114	41,926			41,926	817,04			817,04			17.713,40			17.713,40	14.170,72			14.170,72						-82.773,04
4.115	43,676			43,676	856,02			856,02			18.569,42			18.569,42	14.855,54			14.855,54						-82.088,22
4.116	45,758			45,758	894,34			894,34			19.463,76			19.463,76	15.571,01			15.571,01						-81.372,75
4.117	47,924			47,924	936,82			936,82			20.400,58			20.400,58	16.320,46			16.320,46						-80.623,29
4.118	48,453			48,453	963,77			963,77			21.364,35			21.364,35	17.091,48			17.091,48						-79.852,27
4.119	50,289			50,289	987,42			987,42			22.351,77			22.351,77	17.881,42			17.881,42						-79.062,33
4.120	52,510			52,510	1.027,99			1.027,99			23.379,76			23.379,76	18.703,81			18.703,81						-78.239,94
4.121	55,065			55,065	1.075,75			1.075,75			24.455,51			24.455,51	19.564,41			19.564,41						-77.379,34
4.122	58,900			58,900	1.139,65			1.139,65			25.595,16			25.595,16	20.476,13			20.476,13						-76.467,62
4.123	66,353			66,353	1.252,53			1.252,53			26.847,69			26.847,69	21.478,15			21.478,15						-75.465,60
4.124	72,365			72,365	1.387,18			1.387,18			28.234,87			28.234,87	22.587,90			22.587,90						-74.355,86
4.125	74,409			74,409	1.467,74			1.467,74			29.702,61			29.702,61	23.762,09			23.762,09						-73.181,67
4.126	77,778			77,778	1.521,87			1.521,87			31.224,48			31.224,48	24.979,58			24.979,58						-71.964,17
4.127	80,498			80,498	1.582,76			1.582,76			32.807,24			32.807,24	26.245,79			26.245,79						-70.697,96
4.128	83,113			83,113	1.636,11			1.636,11			34.443,35			34.443,35	27.554,68			27.554,68						-69.389,07
4.129	85,961			85,961	1.690,74			1.690,74			36.134,09			36.134,09	28.907,27			28.907,27						-68.036,48
4.130	86,515			86,515	1.724,76			1.724,76			37.858,85			37.858,85	30.287,08			30.287,08						-66.656,67
4.131	85,937			85,937	1.724,52			1.724,52			39.583,37			39.583,37	31.666,70			31.666,70						-65.277,05
4.132	85,467			85,467	1.714,04			1.714,04			41.297,41			41.297,41	33.037,93			33.037,93						-63.905,82
4.133	86,386			86,386	1.718,53			1.718,53			43.015,94			43.015,94	34.412,75			34.412,75						-62.531,00
4.134	86,155			86,155	1.725,41			1.725,41			44.741,35			44.741,35	35.793,08			35.793,08						-61.150,67
4.135	85,052			85,052	1.712,07			1.712,07			46.453,42			46.453,42	37.162,74			37.162,74						-59.781,01

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.136	84,425			84,425	1.694,77			1.694,77			48.148,19			48.148,19	38.518,55			38.518,55						-58.425,19
4.137	85,129			85,129	1.695,54			1.695,54			49.843,73			49.843,73	39.874,98			39.874,98						-57.068,76
4.138	83,254			83,254	1.683,83			1.683,83			51.527,56			51.527,56	41.222,05			41.222,05						-55.721,70
4.139	82,537			82,537	1.657,91			1.657,91			53.185,47			53.185,47	42.548,38			42.548,38						-54.395,37
4.140	82,870			82,870	1.654,07			1.654,07			54.839,54			54.839,54	43.871,63			43.871,63						-53.072,11
4.141	81,851			81,851	1.647,21			1.647,21			56.486,75			56.486,75	45.189,40			45.189,40						-51.754,34
4.142	81,353			81,353	1.632,04			1.632,04			58.118,79			58.118,79	46.495,03			46.495,03						-50.448,71
4.143	80,761			80,761	1.621,14			1.621,14			59.739,93			59.739,93	47.791,94			47.791,94						-49.151,80
4.144	76,702			76,702	1.574,63			1.574,63			61.314,56			61.314,56	49.051,65			49.051,65						-47.892,10
4.145	74,985			74,985	1.516,87			1.516,87			62.831,43			62.831,43	50.265,14			50.265,14						-46.678,60
4.146	73,553			73,553	1.485,38			1.485,38			64.316,81			64.316,81	51.453,45			51.453,45						-45.490,30
4.147	73,064			73,064	1.466,17			1.466,17			65.782,98			65.782,98	52.626,38			52.626,38						-44.317,36
4.148	72,638			72,638	1.457,02			1.457,02			67.240,00			67.240,00	53.792,00			53.792,00						-43.151,74
4.149	72,713			72,713	1.453,51			1.453,51			68.693,51			68.693,51	54.954,81			54.954,81						-41.988,93
4.150	72,240			72,240	1.449,53			1.449,53			70.143,04			70.143,04	56.114,43			56.114,43						-40.829,31
4.151	71,330			71,330	1.435,70			1.435,70			71.578,74			71.578,74	57.262,99			57.262,99						-39.680,75
4.152	73,532			73,532	1.448,62			1.448,62			73.027,36			73.027,36	58.421,89			58.421,89						-38.521,85
4.153	70,190			70,190	1.437,22			1.437,22			74.464,58			74.464,58	59.571,66			59.571,66						-37.372,07
4.154	68,026			68,026	1.382,16			1.382,16			75.846,74			75.846,74	60.677,39			60.677,39						-36.266,34
4.155	62,211			62,211	1.302,37			1.302,37			77.149,11			77.149,11	61.719,29			61.719,29						-35.224,44
4.156	60,982			60,982	1.231,93			1.231,93			78.381,04			78.381,04	62.704,83			62.704,83						-34.238,90
4.157	59,419			59,419	1.204,01			1.204,01			79.585,05			79.585,05	63.668,04			63.668,04						-33.275,69
4.158	56,801			56,801	1.162,20			1.162,20			80.747,25			80.747,25	64.597,80			64.597,80						-32.345,93
4.159	54,754			54,754	1.115,55			1.115,55			81.862,80			81.862,80	65.490,24			65.490,24						-31.453,49
4.160	51,472			51,472	1.062,26			1.062,26			82.925,06			82.925,06	66.340,05			66.340,05						-30.603,68
4.161	51,297			51,297	1.027,69			1.027,69			83.952,75			83.952,75	67.162,20			67.162,20						-29.781,53
4.162	44,270			44,270	955,67			955,67			84.908,42			84.908,42	67.926,74			67.926,74						-29.016,99
4.163	38,307			38,307	825,77			825,77			85.734,19			85.734,19	68.587,35			68.587,35						-28.356,37
4.164	33,195			33,195	715,02			715,02			86.449,21			86.449,21	69.159,37			69.159,37						-27.784,35
4.165	35,171			35,171	683,66			683,66			87.132,87			87.132,87	69.706,30			69.706,30						-27.237,42
4.166	40,919			40,919	760,90			760,90			87.893,77			87.893,77	70.315,02			70.315,02						-26.628,70
4.167	45,012			45,012	859,31			859,31			88.753,08			88.753,08	71.002,46			71.002,46						-25.941,25
4.168	43,034			43,034	880,46			880,46			89.633,54			89.633,54	71.706,83			71.706,83						-25.236,88
4.169	41,710			41,710	847,44			847,44			90.480,98			90.480,98	72.384,78			72.384,78						-24.558,93
4.170	41,358			41,358	830,68			830,68			91.311,66			91.311,66	73.049,33			73.049,33						-23.894,39
4.171	41,730			41,730	830,88			830,88			92.142,54			92.142,54	73.714,03			73.714,03						-23.229,69
4.172	38,922			38,922	806,52			806,52			92.949,06			92.949,06	74.359,25			74.359,25						-22.584,47
4.173	39,109			39,109	780,31			780,31			93.729,37			93.729,37	74.983,50			74.983,50						-21.960,22
4.174	38,701			38,701	778,10			778,10			94.507,47			94.507,47	75.605,98			75.605,98						-21.337,74
4.175	38,457			38,457	771,58			771,58			95.279,05			95.279,05	76.223,24			76.223,24						-20.720,48
4.176	37,321			37,321	757,78			757,78			96.036,83			96.036,83	76.829,46			76.829,46						-20.114,26
4.177	37,490			37,490	748,11			748,11			96.784,94			96.784,94	77.427,95			77.427,95						-19.515,77
4.178	38,429			38,429	759,19			759,19			97.544,13			97.544,13	78.035,30			78.035,30						-18.908,42
4.179	38,612			38,612	770,41			770,41			98.314,54			98.314,54	78.651,63			78.651,63						-18.292,09
4.180	39,966			39,966	785,78			785,78			99.100,32			99.100,32	79.280,26			79.280,26						-17.663,47
4.181	40,446			40,446	804,12			804,12			99.904,44			99.904,44	79.923,55			79.923,55						-17.020,17
4.182	41,805			41,805	822,51			822,51			100.726,95			100.726,95	80.581,56			80.581,56						-16.362,16

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.183	44,532			44,532	863,37			863,37			101.590,32			101.590,32	81.272,26			81.272,26						-15.671,46
4.184	47,023			47,023	915,55			915,55			102.505,87			102.505,87	82.004,70			82.004,70						-14.939,02
4.185	51,109			51,109	981,32			981,32			103.487,19			103.487,19	82.789,75			82.789,75						-14.153,96
4.186	52,120			52,120	1.032,29			1.032,29			104.519,48			104.519,48	83.615,58			83.615,58						-13.328,13
4.187	54,830			54,830	1.069,50			1.069,50			105.588,98			105.588,98	84.471,18			84.471,18						-12.472,53
4.188	54,500			54,500	1.093,30			1.093,30			106.682,28			106.682,28	85.345,82			85.345,82						-11.597,89
4.189	54,719			54,719	1.092,19			1.092,19			107.774,47			107.774,47	86.219,58			86.219,58						-10.724,14
4.190	54,559			54,559	1.092,78			1.092,78			108.867,25			108.867,25	87.093,80			87.093,80						-9.849,92
4.191	55,109			55,109	1.096,68			1.096,68			109.963,93			109.963,93	87.971,14			87.971,14						-8.972,58
4.192	53,682			53,682	1.087,91			1.087,91			111.051,84			111.051,84	88.841,47			88.841,47						-8.102,25
4.193	55,959			55,959	1.096,41			1.096,41			112.148,25			112.148,25	89.718,60			89.718,60						-7.225,12
4.194	55,163			55,163	1.111,22			1.111,22			113.259,47			113.259,47	90.607,58			90.607,58						-6.336,14
4.195	50,530			50,530	1.056,93			1.056,93			114.316,40			114.316,40	91.453,12			91.453,12						-5.490,60
4.196	40,581			40,581	911,11			911,11			115.227,51			115.227,51	92.182,01			92.182,01						-4.761,71
4.197	33,652			33,652	742,33			742,33			115.969,84			115.969,84	92.775,87			92.775,87						-4.167,85
4.198	35,645			35,645	692,97			692,97			116.662,81			116.662,81	93.330,25			93.330,25						-3.613,47
4.199	38,891			38,891	745,36			745,36			117.408,17			117.408,17	93.926,54			93.926,54						-3.017,18
4.200	39,134			39,134	780,25			780,25			118.188,42			118.188,42	94.550,74			94.550,74						-2.392,98
4.201	36,730			36,730	758,64			758,64			118.947,06			118.947,06	95.157,65			95.157,65						-1.786,07
4.202	30,426			30,426	671,56			671,56			119.618,62			119.618,62	95.694,90			95.694,90						-1.248,82
4.203	29,033			29,033	594,59			594,59			120.213,21			120.213,21	96.170,57			96.170,57						-773,15
4.204	23,896			23,896	529,29			529,29			120.742,50			120.742,50	96.594,00			96.594,00						-349,72
4.205	24,014			24,014	479,10			479,10			121.221,60			121.221,60	96.977,28			96.977,28						33,56
4.206	26,745			26,745	507,59			507,59			121.729,19			121.729,19	97.383,35			97.383,35						439,63
4.207	31,329			31,329	580,74			580,74			122.309,93			122.309,93	97.847,94			97.847,94						904,22
4.208	34,445			34,445	657,74			657,74			122.967,67			122.967,67	98.374,14			98.374,14						1.430,41
4.209	36,828			36,828	712,73			712,73			123.680,40			123.680,40	98.944,32			98.944,32						2.000,59
4.210	39,775			39,775	766,03			766,03			124.446,43			124.446,43	99.557,14			99.557,14						2.613,41
4.211	41,350			41,350	811,25			811,25			125.257,68			125.257,68	100.206,14			100.206,14						3.262,41
4.212	41,961			41,961	833,11			833,11			126.090,79			126.090,79	100.872,63			100.872,63						3.928,90
4.213	41,449			41,449	834,10			834,10			126.924,89			126.924,89	101.539,91			101.539,91						4.596,18
4.214	43,547			43,547	849,96			849,96			127.774,85			127.774,85	102.219,88			102.219,88						5.276,15
4.215	44,333			44,333	878,80			878,80			128.653,65			128.653,65	102.922,92			102.922,92						5.979,19
4.216	43,695			43,695	880,28			880,28			129.533,93			129.533,93	103.627,14			103.627,14						6.683,41
4.217	41,977			41,977	856,72			856,72			130.390,65			130.390,65	104.312,52			104.312,52						7.368,79
4.218	43,788			43,788	857,65			857,65			131.248,30			131.248,30	104.998,64			104.998,64						8.054,91
4.219	45,431			45,431	892,19			892,19			132.140,49			132.140,49	105.712,39			105.712,39						8.768,66
4.220	45,868			45,868	912,99			912,99			133.053,48			133.053,48	106.442,78			106.442,78						9.499,05
4.221	45,846			45,846	917,14			917,14			133.970,62			133.970,62	107.176,50			107.176,50						10.232,76
4.222	41,972			41,972	878,18			878,18			134.848,80			134.848,80	107.879,04			107.879,04						10.935,30
4.223	34,787			34,787	767,59			767,59			135.616,39			135.616,39	108.493,11			108.493,11						11.549,37
4.224	23,515			23,515	583,02			583,02			136.199,41			136.199,41	108.959,53			108.959,53						12.015,79
4.225	11,795			11,795	353,10			353,10			136.552,51			136.552,51	109.242,01			109.242,01						12.298,27
4.226	3,483			3,483	152,78			152,78	2,299	22,99	136.705,29			136.705,29	109.364,23			109.364,23	22,99	22,99			22,99	12.397,50
4.227	1,462			1,462	49,45			49,45	9,077	113,76	136.754,74			136.754,74	109.403,79			109.403,79	136,75	39,56			39,56	12.323,30
4.228	0,493			0,493	19,55			19,55	14,133	232,10	136.774,29			136.774,29	109.419,43			109.419,43	368,85	15,64			15,64	12.106,84
4.229	0,055			0,055	5,48			5,48	17,976	321,09	136.779,77			136.779,77	109.423,82			109.423,82	689,94	4,38			4,38	11.790,13

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.230					0,55			0,55	23,712	416,88	136.780,32			136.780,32	109.424,26			109.424,26	1.106,82	0,44			0,44	11.373,69
4.231									30,425	541,37									1.648,19					10.832,32
4.232									36,213	666,38									2.314,57					10.165,94
4.233									40,831	770,44									3.085,01					9.395,50
4.234									46,828	876,59									3.961,60					8.518,91
4.235									52,125	989,53									4.951,13					7.529,38
4.236									60,835	1.129,60									6.080,73					6.399,78
4.237									64,533	1.253,68									7.334,41					5.146,10
4.238									59,188	1.237,21									8.571,62					3.908,89
4.239									56,109	1.152,97									9.724,59					2.755,92
4.240									58,797	1.149,06									10.873,65					1.606,86
4.241									58,080	1.168,77									12.042,42					438,09
4.242									52,791	1.108,71									13.151,13					-670,62
4.243									54,526	1.073,17									14.224,30					-1.743,79
4.244									55,186	1.097,12									15.321,42					-2.840,91
4.245									60,939	1.161,25									16.482,67					-4.002,16
4.246									59,125	1.200,64									17.683,31					-5.202,80
4.247									56,352	1.154,77									18.838,08					-6.357,57
4.248									73,002	1.293,54									20.131,62					-7.651,11
4.249									47,630	1.206,32									21.337,94					-8.857,43
4.250									42,779	904,09									22.242,03					-9.761,52
4.251									39,099	818,78									23.060,81					-10.580,30
4.252									34,583	736,82									23.797,63					-11.317,12
4.253									26,306	608,89									24.406,52					-11.926,01
4.254									19,720	460,26									24.866,78					-12.386,27
4.255	0,089			0,089	0,89			0,89	16,775	364,95	0,89			0,89	0,71			0,71	25.231,73	0,71			0,71	-12.750,51
4.256	0,428			0,428	5,17			5,17	14,602	313,77	6,06			6,06	4,85			4,85	25.545,50	4,14			4,14	-13.060,14
4.257	0,896			0,896	13,24			13,24	11,664	262,66	19,30			19,30	15,44			15,44	25.808,16	10,59			10,59	-13.312,21
4.258	2,092			2,092	29,88			29,88	6,595	182,59	49,18			49,18	39,34			39,34	25.990,75	23,90			23,90	-13.470,90
4.259	4,122			4,122	62,14			62,14	0,387	69,82	111,32			111,32	89,06			89,06	26.060,57	49,71			49,71	-13.491,01
4.260	11,690			11,690	158,12			158,12		3,87	269,44			269,44	215,55			215,55	26.064,44	3,87			3,87	-13.368,38
4.261	19,247			19,247	309,37			309,37			578,81			578,81	463,05			463,05						-13.120,88
4.262	26,002			26,002	452,49			452,49			1.031,30			1.031,30	825,04			825,04						-12.758,89
4.263	38,773			38,773	647,75			647,75			1.679,05			1.679,05	1.343,24			1.343,24						-12.240,69
4.264	48,301			48,301	870,74			870,74			2.549,79			2.549,79	2.039,83			2.039,83						-11.544,10
4.265	58,624			58,624	1.069,25			1.069,25			3.619,04			3.619,04	2.895,23			2.895,23						-10.688,70
4.266	65,213			65,213	1.238,37			1.238,37			4.857,41			4.857,41	3.885,93			3.885,93						-9.698,00
4.267	71,444			71,444	1.366,57			1.366,57			6.223,98			6.223,98	4.979,18			4.979,18						-8.604,74
4.268	75,706			75,706	1.471,50			1.471,50			7.695,48			7.695,48	6.156,38			6.156,38						-7.427,54
4.269	79,138			79,138	1.548,44			1.548,44			9.243,92			9.243,92	7.395,14			7.395,14						-6.188,79
4.270	83,027			83,027	1.621,65			1.621,65			10.865,57			10.865,57	8.692,46			8.692,46						-4.891,47
4.271	85,169			85,169	1.681,96			1.681,96			12.547,53			12.547,53	10.038,02			10.038,02						-3.545,90
4.272	83,388			83,388	1.685,57			1.685,57			14.233,10			14.233,10	11.386,48			11.386,48						-2.197,44
4.273	90,877			90,877	1.742,65			1.742,65			15.975,75			15.975,75	12.780,60			12.780,60						-803,32
4.274	100,276			100,276	1.911,53			1.911,53			17.887,28			17.887,28	14.309,82			14.309,82						725,90
4.275	104,816			104,816	2.050,92			2.050,92			19.938,20			19.938,20	15.950,56			15.950,56						2.366,64
4.276	113,702			113,702	2.185,18			2.185,18			22.123,38			22.123,38	17.698,70			17.698,70						4.114,78

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.277	117,382			117,382	2.310,84			2.310,84			24.434,22			24.434,22	19.547,38			19.547,38						5.963,45
4.278	119,817			119,817	2.371,99			2.371,99			26.806,21			26.806,21	21.444,97			21.444,97						7.861,04
4.279	121,341			121,341	2.411,58			2.411,58			29.217,79			29.217,79	23.374,23			23.374,23						9.790,30
4.280	123,708			123,708	2.450,49			2.450,49			31.668,28			31.668,28	25.334,62			25.334,62						11.750,69
4.281	123,308			123,308	2.470,16			2.470,16			34.138,44			34.138,44	27.310,75			27.310,75						13.726,82
4.282	120,016			120,016	2.433,24			2.433,24			36.571,68			36.571,68	29.257,34			29.257,34						15.673,41
4.283	117,258			117,258	2.372,74			2.372,74			38.944,42			38.944,42	31.155,54			31.155,54						17.571,60
4.284	116,027			116,027	2.332,85			2.332,85			41.277,27			41.277,27	33.021,82			33.021,82						19.437,88
4.285	114,017			114,017	2.300,44			2.300,44			43.577,71			43.577,71	34.862,17			34.862,17						21.278,23
4.286	112,595			112,595	2.266,12			2.266,12			45.843,83			45.843,83	36.675,06			36.675,06						23.091,13
4.287	110,863			110,863	2.234,58			2.234,58			48.078,41			48.078,41	38.462,73			38.462,73						24.878,79
4.288	108,138			108,138	2.190,01			2.190,01			50.268,42			50.268,42	40.214,74			40.214,74						26.630,80
4.289	107,184			107,184	2.153,22			2.153,22			52.421,64			52.421,64	41.937,31			41.937,31						28.353,38
4.290	103,872			103,872	2.110,56			2.110,56			54.532,20			54.532,20	43.625,76			43.625,76						30.041,83
4.291	105,314			105,314	2.091,86			2.091,86			56.624,06			56.624,06	45.299,25			45.299,25						31.715,32
4.292	103,626			103,626	2.089,40			2.089,40			58.713,46			58.713,46	46.970,77			46.970,77						33.386,84
4.293	100,858			100,858	2.044,84			2.044,84			60.758,30			60.758,30	48.606,64			48.606,64						35.022,71
4.294	102,679			102,679	2.035,37			2.035,37			62.793,67			62.793,67	50.234,94			50.234,94						36.651,01
4.295	103,418			103,418	2.060,97			2.060,97			64.854,64			64.854,64	51.883,71			51.883,71						38.299,79
4.296	98,592			98,592	2.020,10			2.020,10			66.874,74			66.874,74	53.499,79			53.499,79						39.915,87
4.297	95,905			95,905	1.944,97			1.944,97			68.819,71			68.819,71	55.055,77			55.055,77						41.471,85
4.298	88,191			88,191	1.840,96			1.840,96			70.660,67			70.660,67	56.528,54			56.528,54						42.944,62
4.299	88,546			88,546	1.767,37			1.767,37			72.428,04			72.428,04	57.942,43			57.942,43						44.358,52
4.300	80,606			80,606	1.691,52			1.691,52			74.119,56			74.119,56	59.295,65			59.295,65						45.711,74
4.301	70,778			70,778	1.513,84			1.513,84			75.633,40			75.633,40	60.506,72			60.506,72						46.922,81
4.302	60,040			60,040	1.308,18			1.308,18			76.941,58			76.941,58	61.553,26			61.553,26						47.969,35
4.303	48,614			48,614	1.086,54			1.086,54			78.028,12			78.028,12	62.422,50			62.422,50						48.838,58
4.304	40,987			40,987	896,01			896,01			78.924,13			78.924,13	63.139,30			63.139,30						49.555,39
4.305	36,305			36,305	772,92			772,92			79.697,05			79.697,05	63.757,64			63.757,64						50.173,73
4.306	35,025			35,025	713,30			713,30			80.410,35			80.410,35	64.328,28			64.328,28						50.744,37
4.307	37,448			37,448	724,73			724,73			81.135,08			81.135,08	64.908,06			64.908,06						51.324,15
4.308	35,247			35,247	726,95			726,95			81.862,03			81.862,03	65.489,62			65.489,62						51.905,71
4.309	21,814			21,814	570,61			570,61			82.432,64			82.432,64	65.946,11			65.946,11						52.362,20
4.310	32,379			32,379	541,93			541,93			82.974,57			82.974,57	66.379,66			66.379,66						52.795,74
4.311	20,214			20,214	525,93			525,93			83.500,50			83.500,50	66.800,40			66.800,40						53.216,48
4.312	17,744			17,744	379,58			379,58			83.880,08			83.880,08	67.104,06			67.104,06						53.520,14
4.313	9,274			9,274	270,18			270,18			84.150,26			84.150,26	67.320,21			67.320,21						53.736,28
4.314	4,117			4,117	133,91			133,91	0,280	2,80	84.284,17			84.284,17	67.427,34			67.427,34	2,80	2,80			2,80	53.840,61
4.315	3,171			3,171	72,88			72,88	2,580	28,60	84.357,05			84.357,05	67.485,64			67.485,64	31,40	28,60			28,60	53.870,31
4.316	1,753			1,753	49,24			49,24	7,933	105,13	84.406,29			84.406,29	67.525,03			67.525,03	136,53	39,39			39,39	53.804,57
4.317	0,476			0,476	22,29			22,29	14,100	220,33	84.428,58			84.428,58	67.542,86			67.542,86	356,86	17,83			17,83	53.602,07
4.318					4,76			4,76	19,948	340,48	84.433,34			84.433,34	67.546,67			67.546,67	697,34	3,81			3,81	53.265,40
4.319									24,224	441,72									1.139,06					52.823,68
4.320									23,316	475,40									1.614,46					52.348,28
4.321									20,464	437,80									2.052,26					51.910,48
4.322	0,078			0,078	0,78			0,78	17,477	379,41	0,78			0,78	0,62			0,62	2.431,67	0,62			0,62	51.531,69
4.323	0,594			0,594	6,72			6,72	13,330	308,07	7,50			7,50	6,00			6,00	2.739,74	5,38			5,38	51.229,00

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.324	1,497			1,497	20,91			20,91	9,170	225,00	28,41			28,41	22,73			22,73	2.964,74	16,73			16,73	51.020,73
4.325	3,163			3,163	46,60			46,60	2,975	121,45	75,01			75,01	60,01			60,01	3.086,19	37,28			37,28	50.936,56
4.326	7,405			7,405	105,68			105,68		29,75	180,69			180,69	144,55			144,55	3.115,94	29,75			29,75	50.991,35
4.327	16,556			16,556	239,61			239,61			420,30			420,30	336,24			336,24						51.183,04
4.328	25,818			25,818	423,74			423,74			844,04			844,04	675,23			675,23						51.522,03
4.329	30,006			30,006	558,24			558,24			1.402,28			1.402,28	1.121,82			1.121,82						51.968,62
4.330	39,091			39,091	690,97			690,97			2.093,25			2.093,25	1.674,60			1.674,60						52.521,40
4.331	44,901			44,901	839,92			839,92			2.933,17			2.933,17	2.346,54			2.346,54						53.193,34
4.332	52,725			52,725	976,26			976,26			3.909,43			3.909,43	3.127,54			3.127,54						53.974,35
4.333	61,123			61,123	1.138,48			1.138,48			5.047,91			5.047,91	4.038,33			4.038,33						54.885,13
4.334	66,090			66,090	1.272,13			1.272,13			6.320,04			6.320,04	5.056,03			5.056,03						55.902,83
4.335	70,655			70,655	1.367,45			1.367,45			7.687,49			7.687,49	6.149,99			6.149,99						56.996,79
4.336	76,780			76,780	1.474,35			1.474,35			9.161,84			9.161,84	7.329,47			7.329,47						58.176,27
4.337	80,211			80,211	1.569,91			1.569,91			10.731,75			10.731,75	8.585,40			8.585,40						59.432,20
4.338	82,446			82,446	1.626,57			1.626,57			12.358,32			12.358,32	9.886,66			9.886,66						60.733,46
4.339	87,261			87,261	1.697,07			1.697,07			14.055,39			14.055,39	11.244,31			11.244,31						62.091,12
4.340	91,528			91,528	1.787,89			1.787,89			15.843,28			15.843,28	12.674,62			12.674,62						63.521,43
4.341	95,089			95,089	1.866,17			1.866,17			17.709,45			17.709,45	14.167,56			14.167,56						65.014,37
4.342	97,399			97,399	1.924,88			1.924,88			19.634,33			19.634,33	15.707,46			15.707,46						66.554,27
4.343	100,222			100,222	1.976,21			1.976,21			21.610,54			21.610,54	17.288,43			17.288,43						68.135,24
4.344	101,450			101,450	2.016,72			2.016,72			23.627,26			23.627,26	18.901,81			18.901,81						69.748,62
4.345	103,700			103,700	2.051,50			2.051,50			25.678,76			25.678,76	20.543,01			20.543,01						71.389,82
4.346	105,720			105,720	2.094,20			2.094,20			27.772,96			27.772,96	22.218,37			22.218,37						73.065,18
4.347	107,908			107,908	2.136,28			2.136,28			29.909,24			29.909,24	23.927,39			23.927,39						74.774,20
4.348	105,838			105,838	2.137,46			2.137,46			32.046,70			32.046,70	25.637,36			25.637,36						76.484,17
4.349	106,843			106,843	2.126,81			2.126,81			34.173,51			34.173,51	27.338,81			27.338,81						78.185,62
4.350	107,853			107,853	2.146,96			2.146,96			36.320,47			36.320,47	29.056,38			29.056,38						79.903,19
4.351	105,714			105,714	2.135,67			2.135,67			38.456,14			38.456,14	30.764,91			30.764,91						81.611,73
4.352	106,932			106,932	2.126,46			2.126,46			40.582,60			40.582,60	32.466,08			32.466,08						83.312,90
4.353	106,288			106,288	2.132,20			2.132,20			42.714,80			42.714,80	34.171,84			34.171,84						85.018,66
4.354	104,699			104,699	2.109,87			2.109,87			44.824,67			44.824,67	35.859,74			35.859,74						86.706,56
4.355	101,983			101,983	2.066,82			2.066,82			46.891,49			46.891,49	37.513,19			37.513,19						88.360,02
4.356	102,379			102,379	2.043,62			2.043,62			48.935,11			48.935,11	39.148,09			39.148,09						89.994,92
4.357	98,863			98,863	2.012,42			2.012,42			50.947,53			50.947,53	40.758,02			40.758,02						91.604,86
4.358	97,324			97,324	1.961,87			1.961,87			52.909,40			52.909,40	42.327,52			42.327,52						93.174,36
4.359	95,502			95,502	1.928,26			1.928,26			54.837,66			54.837,66	43.870,13			43.870,13						94.716,97
4.360	95,255			95,255	1.907,57			1.907,57			56.745,23			56.745,23	45.396,18			45.396,18						96.243,03
4.361	93,463			93,463	1.887,18			1.887,18			58.632,41			58.632,41	46.905,93			46.905,93						97.752,77
4.362	90,778			90,778	1.842,41			1.842,41			60.474,82			60.474,82	48.379,86			48.379,86						99.226,70
4.363	88,331			88,331	1.791,09			1.791,09			62.265,91			62.265,91	49.812,73			49.812,73						100.659,57
4.364	84,545			84,545	1.728,76			1.728,76			63.994,67			63.994,67	51.195,74			51.195,74						102.042,58
4.365	76,847			76,847	1.613,92			1.613,92			65.608,59			65.608,59	52.486,87			52.486,87						103.333,72
4.366	68,074			68,074	1.449,21			1.449,21			67.057,80			67.057,80	53.646,24			53.646,24						104.493,09
4.367	59,655			59,655	1.277,29			1.277,29			68.335,09			68.335,09	54.668,07			54.668,07						105.514,92
4.368	50,212			50,212	1.098,67			1.098,67			69.433,76			69.433,76	55.547,01			55.547,01						106.393,86
4.369	39,278			39,278	894,90			894,90			70.328,66			70.328,66	56.262,93			56.262,93						107.109,78
4.370	30,853			30,853	701,31			701,31			71.029,97			71.029,97	56.823,98			56.823,98						107.670,83

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.371	21,107			21,107	519,60			519,60			71.549,57			71.549,57	57.239,66			57.239,66						108.086,51
4.372	9,036			9,036	301,43			301,43			71.851,00			71.851,00	57.480,80			57.480,80						108.327,65
4.373	3,105			3,105	121,41			121,41	2,691	26,91	71.972,41			71.972,41	57.577,93			57.577,93	26,91	26,91			26,91	108.397,87
4.374	0,910			0,910	40,15			40,15	11,493	141,84	72.012,56			72.012,56	57.610,05			57.610,05	168,75	32,12			32,12	108.288,15
4.375					9,10			9,10	20,287	317,80	72.021,66			72.021,66	57.617,33			57.617,33	486,55	7,28			7,28	107.977,63
4.376									32,363	526,50									1.013,05					107.451,13
4.377									51,684	840,47									1.853,52					106.610,66
4.378									81,807	1.334,91									3.188,43					105.275,75
4.379									107,888	1.896,95									5.085,38					103.378,80
4.380									93,223	2.011,11									7.096,49					101.367,69
4.381									71,527	1.647,50									8.743,99					99.720,19
4.382									53,919	1.254,46									9.998,45					98.465,73
4.383									40,065	939,84									10.938,29					97.525,89
4.384									27,586	676,51									11.614,80					96.849,38
4.385	0,057			0,057	0,57			0,57	17,189	447,75	0,57			0,57	0,46			0,46	12.062,55	0,46			0,46	96.402,09
4.386	1,273			1,273	13,30			13,30	10,061	272,50	13,87			13,87	11,10			11,10	12.335,05	10,64			10,64	96.140,23
4.387	2,708			2,708	39,81			39,81	4,249	143,10	53,68			53,68	42,94			42,94	12.478,15	31,85			31,85	96.028,98
4.388	8,148			8,148	108,56			108,56		42,49	162,24			162,24	129,79			129,79	12.520,64	42,49			42,49	96.073,34
4.389	17,814			17,814	259,62			259,62			421,86			421,86	337,49			337,49						96.281,04
4.390	26,167			26,167	439,81			439,81			861,67			861,67	689,34			689,34						96.632,89
4.391	35,631			35,631	617,98			617,98			1.479,65			1.479,65	1.183,72			1.183,72						97.127,27
4.392	43,550			43,550	791,81			791,81			2.271,46			2.271,46	1.817,17			1.817,17						97.760,72
4.393	48,962			48,962	925,12			925,12			3.196,58			3.196,58	2.557,26			2.557,26						98.500,82
4.394	48,837			48,837	977,99			977,99			4.174,57			4.174,57	3.339,66			3.339,66						99.283,21
4.395	46,947			46,947	957,84			957,84			5.132,41			5.132,41	4.105,93			4.105,93						100.049,48
4.396	48,660			48,660	956,07			956,07			6.088,48			6.088,48	4.870,78			4.870,78						100.814,34
4.397	50,320			50,320	989,80			989,80			7.078,28			7.078,28	5.662,62			5.662,62						101.606,18
4.398	53,302			53,302	1.036,22			1.036,22			8.114,50			8.114,50	6.491,60			6.491,60						102.435,16
4.399	54,475			54,475	1.077,77			1.077,77			9.192,27			9.192,27	7.353,82			7.353,82						103.297,38
4.400	55,703			55,703	1.101,78			1.101,78			10.294,05			10.294,05	8.235,24			8.235,24						104.178,80
4.401	57,286			57,286	1.129,89			1.129,89			11.423,94			11.423,94	9.139,15			9.139,15						105.082,71
4.402	58,301			58,301	1.155,87			1.155,87			12.579,81			12.579,81	10.063,85			10.063,85						106.007,41
4.403	56,196			56,196	1.144,97			1.144,97			13.724,78			13.724,78	10.979,82			10.979,82						106.923,39
4.404	56,314			56,314	1.125,10			1.125,10			14.849,88			14.849,88	11.879,90			11.879,90						107.823,47
4.405	56,465			56,465	1.127,79			1.127,79			15.977,67			15.977,67	12.782,14			12.782,14						108.725,70
4.406	54,838			54,838	1.113,03			1.113,03			17.090,70			17.090,70	13.672,56			13.672,56						109.616,12
4.407	52,966			52,966	1.078,04			1.078,04			18.168,74			18.168,74	14.534,99			14.534,99						110.478,55
4.408	51,328			51,328	1.042,94			1.042,94			19.211,68			19.211,68	15.369,34			15.369,34						111.312,90
4.409	50,022			50,022	1.013,50			1.013,50			20.225,18			20.225,18	16.180,14			16.180,14						112.123,70
4.410	43,559			43,559	935,81			935,81			21.160,99			21.160,99	16.928,79			16.928,79						112.872,35
4.411	42,761			42,761	863,20			863,20			22.024,19			22.024,19	17.619,35			17.619,35						113.562,91
4.412	40,399			40,399	831,60			831,60			22.855,79			22.855,79	18.284,63			18.284,63						114.228,19
4.413	37,437			37,437	778,36			778,36			23.634,15			23.634,15	18.907,32			18.907,32						114.850,88
4.414	31,170			31,170	686,07			686,07			24.320,22			24.320,22	19.456,18			19.456,18						115.399,74
4.415	27,142			27,142	583,12			583,12			24.903,34			24.903,34	19.922,67			19.922,67						115.866,24
4.416	20,770			20,770	479,12			479,12			25.382,46			25.382,46	20.305,97			20.305,97						116.249,54
4.417	13,721			13,721	344,91			344,91			25.727,37			25.727,37	20.581,90			20.581,90						116.525,47

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.418	6,884			6,884	206,05			206,05			25.933,42			25.933,42	20.746,74			20.746,74						116.690,31
4.419	3,382			3,382	102,66			102,66	2,764	27,64	26.036,08			26.036,08	20.828,86			20.828,86	27,64	27,64			27,64	116.744,80
4.420	1,960			1,960	53,42			53,42	6,830	95,94	26.089,50			26.089,50	20.871,60			20.871,60	123,58	42,74			42,74	116.691,60
4.421	0,947			0,947	29,07			29,07	11,323	181,53	26.118,57			26.118,57	20.894,86			20.894,86	305,11	23,26			23,26	116.533,33
4.422	0,118			0,118	10,65			10,65	17,565	288,88	26.129,22			26.129,22	20.903,38			20.903,38	593,99	8,52			8,52	116.252,97
4.423					1,18			1,18	24,011	415,76	26.130,40			26.130,40	20.904,32			20.904,32	1.009,75	0,94			0,94	115.838,15
4.424									33,054	570,65									1.580,40					115.267,50
4.425									43,773	768,27									2.348,67					114.499,23
4.426									49,562	933,35									3.282,02					113.565,88
4.427									55,188	1.047,50									4.329,52					112.518,38
4.428									59,007	1.141,95									5.471,47					111.376,43
4.429									60,123	1.191,30									6.662,77					110.185,13
4.430									57,824	1.179,47									7.842,24					109.005,66
4.431									55,121	1.129,45									8.971,69					107.876,21
4.432									51,263	1.063,84									10.035,53					106.812,37
4.433									44,530	957,93									10.993,46					105.854,44
4.434									35,552	800,82									11.794,28					105.053,62
4.435									25,915	614,67									12.408,95					104.438,95
4.436	0,084			0,084	0,84			0,84	18,565	444,80	0,84			0,84	0,67			0,67	12.853,75	0,67			0,67	103.994,82
4.437	1,805			1,805	18,89			18,89	12,826	313,91	19,73			19,73	15,78			15,78	13.167,66	15,11			15,11	103.696,02
4.438	4,316			4,316	61,21			61,21	4,893	177,19	80,94			80,94	64,75			64,75	13.344,85	48,97			48,97	103.567,80
4.439	10,164			10,164	144,80			144,80		48,93	225,74			225,74	180,59			180,59	13.393,78	48,93			48,93	103.634,71
4.440	21,090			21,090	312,54			312,54			538,28			538,28	430,62			430,62						103.884,74
4.441	31,493			31,493	525,83			525,83			1.064,11			1.064,11	851,29			851,29						104.305,40
4.442	38,926			38,926	704,19			704,19			1.768,30			1.768,30	1.414,64			1.414,64						104.868,75
4.443	45,912			45,912	848,38			848,38			2.616,68			2.616,68	2.093,34			2.093,34						105.547,45
4.444	53,974			53,974	998,86			998,86			3.615,54			3.615,54	2.892,43			2.892,43						106.346,54
4.445	58,725			58,725	1.126,99			1.126,99			4.742,53			4.742,53	3.794,02			3.794,02						107.248,13
4.446	65,527			65,527	1.242,52			1.242,52			5.985,05			5.985,05	4.788,04			4.788,04						108.242,15
4.447	70,290			70,290	1.358,17			1.358,17			7.343,22			7.343,22	5.874,58			5.874,58						109.328,69
4.448	72,031			72,031	1.423,21			1.423,21			8.766,43			8.766,43	7.013,14			7.013,14						110.467,26
4.449	75,245			75,245	1.472,76			1.472,76			10.239,19			10.239,19	8.191,35			8.191,35						111.645,47
4.450	77,529			77,529	1.527,74			1.527,74			11.766,93			11.766,93	9.413,54			9.413,54						112.867,66
4.451	78,087			78,087	1.556,16			1.556,16			13.323,09			13.323,09	10.658,47			10.658,47						114.112,59
4.452	76,864			76,864	1.549,51			1.549,51			14.872,60			14.872,60	11.898,08			11.898,08						115.352,20
4.453	77,069			77,069	1.539,33			1.539,33			16.411,93			16.411,93	13.129,54			13.129,54						116.583,66
4.454	76,348			76,348	1.534,17			1.534,17			17.946,10			17.946,10	14.356,88			14.356,88						117.811,00
4.455	75,894			75,894	1.522,42			1.522,42			19.468,52			19.468,52	15.574,82			15.574,82						119.028,94
4.456	77,339			77,339	1.532,33			1.532,33			21.000,85			21.000,85	16.800,68			16.800,68						120.254,80
4.457	76,271			76,271	1.536,10			1.536,10			22.536,95			22.536,95	18.029,56			18.029,56						121.483,68
4.458	74,719			74,719	1.509,90			1.509,90			24.046,85			24.046,85	19.237,48			19.237,48						122.691,60
4.459	71,310			71,310	1.460,29			1.460,29			25.507,14			25.507,14	20.405,71			20.405,71						123.859,83
4.460	66,847			66,847	1.381,57			1.381,57			26.888,71			26.888,71	21.510,97			21.510,97						124.965,09
4.461	58,050			58,050	1.248,97			1.248,97			28.137,68			28.137,68	22.510,14			22.510,14						125.964,27
4.462	48,226			48,226	1.062,76			1.062,76			29.200,44			29.200,44	23.360,35			23.360,35						126.814,48
4.463	39,307			39,307	875,33			875,33			30.075,77			30.075,77	24.060,62			24.060,62						127.514,74
4.464	32,495			32,495	718,02			718,02			30.793,79			30.793,79	24.635,03			24.635,03						128.089,16

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.465	25,014			25,014	575,09			575,09			31.368,88			31.368,88	25.095,10			25.095,10						128.549,23
4.466	13,500			13,500	385,14			385,14			31.754,02			31.754,02	25.403,22			25.403,22						128.857,34
4.467	3,842			3,842	173,42			173,42	7,395	73,95	31.927,44			31.927,44	25.541,95			25.541,95	73,95	73,95			73,95	128.922,13
4.468	0,161			0,161	40,03			40,03	18,820	262,15	31.967,47			31.967,47	25.573,98			25.573,98	336,10	32,02			32,02	128.692,00
4.469	0,104			0,104	2,65			2,65	17,979	367,99	31.970,12			31.970,12	25.576,10			25.576,10	704,09	2,12			2,12	128.326,13
4.470	4,322			4,322	44,26			44,26	6,868	248,47	32.014,38			32.014,38	25.611,50			25.611,50	952,56	35,41			35,41	128.113,07
4.471	11,980			11,980	163,02			163,02		68,68	32.177,40			32.177,40	25.741,92			25.741,92	1.021,24	68,68			68,68	128.174,81
4.472	24,537			24,537	365,17			365,17			32.542,57			32.542,57	26.034,06			26.034,06						128.466,95
4.473	31,849			31,849	563,86			563,86			33.106,43			33.106,43	26.485,14			26.485,14						128.918,04
4.474	38,325			38,325	701,74			701,74			33.808,17			33.808,17	27.046,54			27.046,54						129.479,43
4.475	40,781			40,781	791,06			791,06			34.599,23			34.599,23	27.679,38			27.679,38						130.112,28
4.476	43,885			43,885	846,66			846,66			35.445,89			35.445,89	28.356,71			28.356,71						130.789,61
4.477	46,265			46,265	901,50			901,50			36.347,39			36.347,39	29.077,91			29.077,91						131.510,81
4.478	47,915			47,915	941,80			941,80			37.289,19			37.289,19	29.831,35			29.831,35						132.264,25
4.479	47,648			47,648	955,63			955,63			38.244,82			38.244,82	30.595,86			30.595,86						133.028,75
4.480	49,478			49,478	971,26			971,26			39.216,08			39.216,08	31.372,86			31.372,86						133.805,76
4.481	50,655			50,655	1.001,33			1.001,33			40.217,41			40.217,41	32.173,93			32.173,93						134.606,82
4.482	52,640			52,640	1.032,95			1.032,95			41.250,36			41.250,36	33.000,29			33.000,29						135.433,18
4.483	52,604			52,604	1.052,44			1.052,44			42.302,80			42.302,80	33.842,24			33.842,24						136.275,13
4.484	54,826			54,826	1.074,30			1.074,30			43.377,10			43.377,10	34.701,68			34.701,68						137.134,57
4.485	53,636			53,636	1.084,62			1.084,62			44.461,72			44.461,72	35.569,38			35.569,38						138.002,27
4.486	50,385			50,385	1.040,21			1.040,21			45.501,93			45.501,93	36.401,54			36.401,54						138.834,44
4.487	49,116			49,116	995,01			995,01			46.496,94			46.496,94	37.197,55			37.197,55						139.630,45
4.488	46,667			46,667	957,83			957,83			47.454,77			47.454,77	37.963,82			37.963,82						140.396,71
4.489	42,729			42,729	893,96			893,96			48.348,73			48.348,73	38.678,98			38.678,98						141.111,88
4.490	38,903			38,903	816,32			816,32			49.165,05			49.165,05	39.332,04			39.332,04						141.764,94
4.491	32,957			32,957	718,60			718,60			49.883,65			49.883,65	39.906,92			39.906,92						142.339,82
4.492	23,322			23,322	562,79			562,79			50.446,44			50.446,44	40.357,15			40.357,15						142.790,05
4.493	29,831			29,831	531,53			531,53			50.977,97			50.977,97	40.782,38			40.782,38						143.215,27
4.494	31,477			31,477	613,08			613,08			51.591,05			51.591,05	41.272,84			41.272,84						143.705,73
4.495	28,352			28,352	598,29			598,29			52.189,34			52.189,34	41.751,47			41.751,47						144.184,36
4.496	31,995			31,995	603,47			603,47			52.792,81			52.792,81	42.234,25			42.234,25						144.667,14
4.497	34,158			34,158	661,53			661,53			53.454,34			53.454,34	42.763,47			42.763,47						145.196,36
4.498	33,014			33,014	671,72			671,72			54.126,06			54.126,06	43.300,85			43.300,85						145.733,74
4.499	33,386			33,386	664,00			664,00			54.790,06			54.790,06	43.832,05			43.832,05						146.264,94
4.500	34,755			34,755	681,41			681,41			55.471,47			55.471,47	44.377,18			44.377,18						146.810,07
4.501	34,627			34,627	693,82			693,82			56.165,29			56.165,29	44.932,23			44.932,23						147.365,13
4.502	34,691			34,691	693,18			693,18			56.858,47			56.858,47	45.486,78			45.486,78						147.919,67
4.503	36,445			36,445	711,36			711,36			57.569,83			57.569,83	46.055,86			46.055,86						148.488,76
4.504	35,960			35,960	724,05			724,05			58.293,88			58.293,88	46.635,10			46.635,10						149.068,00
4.505	37,226			37,226	731,86			731,86			59.025,74			59.025,74	47.220,59			47.220,59						149.653,49
4.506	35,637			35,637	728,63			728,63			59.754,37			59.754,37	47.803,50			47.803,50						150.236,39
4.507	36,379			36,379	720,16			720,16			60.474,53			60.474,53	48.379,62			48.379,62						150.812,52
4.508	36,496			36,496	728,75			728,75			61.203,28			61.203,28	48.962,62			48.962,62						151.395,52
4.509	43,695			43,695	801,91			801,91			62.005,19			62.005,19	49.604,15			49.604,15						152.037,05
4.510	34,353			34,353	780,48			780,48			62.785,67			62.785,67	50.228,54			50.228,54						152.661,43
4.511	32,967			32,967	673,20			673,20			63.458,87			63.458,87	50.767,10			50.767,10						153.199,99

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.512	30,670			30,670	636,37			636,37			64.095,24			64.095,24	51.276,19			51.276,19						153.709,09
4.513	28,521			28,521	591,91			591,91			64.687,15			64.687,15	51.749,72			51.749,72						154.182,62
4.514	24,981			24,981	535,02			535,02			65.222,17			65.222,17	52.177,74			52.177,74						154.610,64
4.515	22,003			22,003	469,84			469,84			65.692,01			65.692,01	52.553,61			52.553,61						154.986,51
4.516	17,957			17,957	399,60			399,60			66.091,61			66.091,61	52.873,29			52.873,29						155.306,19
4.517	15,155			15,155	331,12			331,12			66.422,73			66.422,73	53.138,18			53.138,18						155.571,09
4.518	11,940			11,940	270,95			270,95			66.693,68			66.693,68	53.354,94			53.354,94						155.787,85
4.519	8,232			8,232	201,72			201,72	0,447	4,47	66.895,40			66.895,40	53.516,32			53.516,32	4,47	4,47			4,47	155.944,76
4.520	5,408			5,408	136,40			136,40	1,779	22,26	67.031,80			67.031,80	53.625,44			53.625,44	26,73	22,26			22,26	156.031,62
4.521	7,513			7,513	129,21			129,21	0,905	26,84	67.161,01			67.161,01	53.728,81			53.728,81	53,57	26,84			26,84	156.108,15
4.522	7,473			7,473	149,86			149,86	1,422	23,27	67.310,87			67.310,87	53.848,70			53.848,70	76,84	23,27			23,27	156.204,77
4.523	9,096			9,096	165,69			165,69	1,106	25,28	67.476,56			67.476,56	53.981,25			53.981,25	102,12	25,28			25,28	156.312,04
4.524	8,115			8,115	172,11			172,11	0,397	15,03	67.648,67			67.648,67	54.118,94			54.118,94	117,15	15,03			15,03	156.434,70
4.525	7,424			7,424	155,39			155,39	0,968	13,65	67.804,06			67.804,06	54.243,25			54.243,25	130,80	13,65			13,65	156.545,36
4.526	7,322			7,322	147,46			147,46	1,161	21,29	67.951,52			67.951,52	54.361,22			54.361,22	152,09	21,29			21,29	156.642,04
4.527	6,341			6,341	136,63			136,63	2,998	41,59	68.088,15			68.088,15	54.470,52			54.470,52	193,68	41,59			41,59	156.709,75
4.528	4,646			4,646	109,87			109,87	4,996	79,94	68.198,02			68.198,02	54.558,42			54.558,42	273,62	79,94			79,94	156.717,71
4.529	3,064			3,064	77,10			77,10	8,582	135,78	68.275,12			68.275,12	54.620,10			54.620,10	409,40	61,68			61,68	156.643,61
4.530	1,206			1,206	42,70			42,70	14,024	226,06	68.317,82			68.317,82	54.654,26			54.654,26	635,46	34,16			34,16	156.451,71
4.531					12,06			12,06	18,991	330,15	68.329,88			68.329,88	54.663,90			54.663,90	965,61	9,65			9,65	156.131,21
4.532									25,354	443,45									1.409,06					155.687,76
4.533									32,948	583,02									1.992,08					155.104,74
4.534									40,477	734,25									2.726,33					154.370,49
4.535									46,729	872,06									3.598,39					153.498,43
4.536									52,404	991,33									4.589,72					152.507,10
4.537									52,855	1.052,59									5.642,31					151.454,51
4.538									51,974	1.048,29									6.690,60					150.406,22
4.539									46,595	985,69									7.676,29					149.420,53
4.540									42,161	887,56									8.563,85					148.532,97
4.541									34,333	764,94									9.328,79					147.768,03
4.542									29,175	635,08									9.963,87					147.132,95
4.543									23,717	528,92									10.492,79					146.604,03
4.544	0,141			0,141	1,41			1,41	19,222	429,39	1,41			1,41	1,13			1,13	10.922,18	1,13			1,13	146.175,77
4.545	0,735			0,735	8,76			8,76	15,832	350,54	10,17			10,17	8,14			8,14	11.272,72	7,01			7,01	145.832,24
4.546	2,071			2,071	28,06			28,06	11,825	276,57	38,23			38,23	30,58			30,58	11.549,29	22,45			22,45	145.578,12
4.547	3,623			3,623	56,94			56,94	7,510	193,35	95,17			95,17	76,14			76,14	11.742,64	45,55			45,55	145.430,32
4.548	4,951			4,951	85,74			85,74	5,179	126,89	180,91			180,91	144,73			144,73	11.869,53	68,59			68,59	145.372,02
4.549	6,924			6,924	118,75			118,75	2,061	72,40	299,66			299,66	239,73			239,73	11.941,93	72,40			72,40	145.394,62
4.550	11,247			11,247	181,71			181,71		20,61	481,37			481,37	385,10			385,10	11.962,54	20,61			20,61	145.519,38
4.551	17,996			17,996	292,43			292,43			773,80			773,80	619,04			619,04						145.753,32
4.552	27,427			27,427	454,23			454,23			1.228,03			1.228,03	982,42			982,42						146.116,70
4.553	32,946			32,946	603,73			603,73			1.831,76			1.831,76	1.465,41			1.465,41						146.599,68
4.554	38,995			38,995	719,41			719,41			2.551,17			2.551,17	2.040,94			2.040,94						147.175,21
4.555	42,693			42,693	816,88			816,88			3.368,05			3.368,05	2.694,44			2.694,44						147.828,71
4.556	43,743			43,743	864,36			864,36			4.232,41			4.232,41	3.385,93			3.385,93						148.520,20
4.557	45,761			45,761	895,04			895,04			5.127,45			5.127,45	4.101,96			4.101,96						149.236,23
4.558	44,676			44,676	904,37			904,37			6.031,82			6.031,82	4.825,46			4.825,46						149.959,73

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.559	46,561			46,561	912,37			912,37			6.944,19			6.944,19	5.555,35			5.555,35						150.689,63
4.560	45,534			45,534	920,95			920,95			7.865,14			7.865,14	6.292,11			6.292,11						151.426,39
4.561	46,283			46,283	918,17			918,17			8.783,31			8.783,31	7.026,65			7.026,65						152.160,93
4.562	48,853			48,853	951,36			951,36			9.734,67			9.734,67	7.787,74			7.787,74						152.922,02
4.563	44,222			44,222	930,75			930,75			10.665,42			10.665,42	8.532,34			8.532,34						153.666,62
4.564	39,115			39,115	833,37			833,37			11.498,79			11.498,79	9.199,03			9.199,03						154.333,32
4.565	30,018			30,018	691,33			691,33			12.190,12			12.190,12	9.752,10			9.752,10						154.886,38
4.566	18,273			18,273	482,91			482,91			12.673,03			12.673,03	10.138,42			10.138,42						155.272,71
4.567	9,149			9,149	274,22			274,22	0,005	0,05	12.947,25			12.947,25	10.357,80			10.357,80	0,05	0,05			0,05	155.492,04
4.568	5,930			5,930	150,79			150,79	3,025	30,30	13.098,04			13.098,04	10.478,43			10.478,43	30,35	30,30			30,30	155.582,37
4.569	6,530			6,530	124,60			124,60	2,002	50,27	13.222,64			13.222,64	10.578,11			10.578,11	80,62	50,27			50,27	155.631,78
4.570	8,596			8,596	151,26			151,26		20,02	13.373,90			13.373,90	10.699,12			10.699,12	100,64	20,02			20,02	155.732,77
4.571	19,064			19,064	276,60			276,60			13.650,50			13.650,50	10.920,40			10.920,40						155.954,05
4.572	27,316			27,316	463,80			463,80			14.114,30			14.114,30	11.291,44			11.291,44						156.325,09
4.573	33,930			33,930	612,46			612,46			14.726,76			14.726,76	11.781,41			11.781,41						156.815,06
4.574	36,400			36,400	703,30			703,30			15.430,06			15.430,06	12.344,05			12.344,05						157.377,70
4.575	35,954			35,954	723,54			723,54			16.153,60			16.153,60	12.922,88			12.922,88						157.956,53
4.576	33,461			33,461	694,15			694,15			16.847,75			16.847,75	13.478,20			13.478,20						158.511,85
4.577	31,816			31,816	652,77			652,77			17.500,52			17.500,52	14.000,42			14.000,42						159.034,07
4.578	31,019			31,019	628,35			628,35			18.128,87			18.128,87	14.503,10			14.503,10						159.536,75
4.579	29,556			29,556	605,75			605,75			18.734,62			18.734,62	14.987,70			14.987,70						160.021,35
4.580	28,463			28,463	580,19			580,19			19.314,81			19.314,81	15.451,85			15.451,85						160.485,50
4.581	26,388			26,388	548,51			548,51			19.863,32			19.863,32	15.890,66			15.890,66						160.924,31
4.582	23,590			23,590	499,78			499,78			20.363,10			20.363,10	16.290,48			16.290,48						161.324,13
4.583	18,477			18,477	420,67			420,67			20.783,77			20.783,77	16.627,02			16.627,02						161.660,67
4.584	18,544			18,544	370,21			370,21			21.153,98			21.153,98	16.923,18			16.923,18						161.956,84
4.585	12,190			12,190	307,34			307,34			21.461,32			21.461,32	17.169,06			17.169,06						162.202,71
4.586	8,145			8,145	203,35			203,35	0,500	5,00	21.664,67			21.664,67	17.331,74			17.331,74	5,00	5,00			5,00	162.360,39
4.587	7,757			7,757	159,02			159,02	1,257	17,57	21.823,69			21.823,69	17.458,95			17.458,95	22,57	17,57			17,57	162.470,04
4.588	7,738			7,738	154,95			154,95	1,269	25,26	21.978,64			21.978,64	17.582,91			17.582,91	47,83	25,26			25,26	162.568,74
4.589	7,146			7,146	148,84			148,84	1,612	28,81	22.127,48			22.127,48	17.701,98			17.701,98	76,64	28,81			28,81	162.659,00
4.590	6,461			6,461	136,07			136,07	2,649	42,61	22.263,55			22.263,55	17.810,84			17.810,84	119,25	42,61			42,61	162.725,25
4.591	6,934			6,934	133,95			133,95	1,309	39,58	22.397,50			22.397,50	17.918,00			17.918,00	158,83	39,58			39,58	162.792,83
4.592	5,940			5,940	128,74			128,74	3,467	47,76	22.526,24			22.526,24	18.020,99			18.020,99	206,59	47,76			47,76	162.848,06
4.593	6,401			6,401	123,41			123,41	2,601	60,68	22.649,65			22.649,65	18.119,72			18.119,72	267,27	60,68			60,68	162.886,11
4.594	7,254			7,254	136,55			136,55	1,660	42,61	22.786,20			22.786,20	18.228,96			18.228,96	309,88	42,61			42,61	162.952,74
4.595	9,023			9,023	162,77			162,77	0,158	18,18	22.948,97			22.948,97	18.359,18			18.359,18	328,06	18,18			18,18	163.064,78
4.596	16,489			16,489	255,12			255,12		1,58	23.204,09			23.204,09	18.563,27			18.563,27	329,64	1,58			1,58	163.267,30
4.597	19,730			19,730	362,19			362,19			23.566,28			23.566,28	18.853,02			18.853,02						163.557,05
4.598	21,260			21,260	409,90			409,90			23.976,18			23.976,18	19.180,94			19.180,94						163.884,97
4.599	25,898			25,898	471,58			471,58			24.447,76			24.447,76	19.558,21			19.558,21						164.262,23
4.600	29,274			29,274	551,72			551,72			24.999,48			24.999,48	19.999,58			19.999,58						164.703,61
4.601	35,422			35,422	646,96			646,96			25.646,44			25.646,44	20.517,15			20.517,15						165.221,18
4.602	35,932			35,932	713,54			713,54			26.359,98			26.359,98	21.087,98			21.087,98						165.792,01
4.603	39,028			39,028	749,60			749,60			27.109,58			27.109,58	21.687,66			21.687,66						166.391,69
4.604	40,928			40,928	799,56			799,56			27.909,14			27.909,14	22.327,31			22.327,31						167.031,34
4.605	44,170			44,170	850,98			850,98			28.760,12			28.760,12	23.008,10			23.008,10						167.712,12

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.606	47,119			47,119	912,89			912,89			29.673,01			29.673,01	23.738,41			23.738,41						168.442,43
4.607	47,177			47,177	942,96			942,96			30.615,97			30.615,97	24.492,78			24.492,78						169.196,80
4.608	47,751			47,751	949,28			949,28			31.565,25			31.565,25	25.252,20			25.252,20						169.956,22
4.609	47,983			47,983	957,34			957,34			32.522,59			32.522,59	26.018,07			26.018,07						170.722,09
4.610	46,143			46,143	941,26			941,26			33.463,85			33.463,85	26.771,08			26.771,08						171.475,10
4.611	44,469			44,469	906,12			906,12			34.369,97			34.369,97	27.495,98			27.495,98						172.200,00
4.612	41,851			41,851	863,20			863,20			35.233,17			35.233,17	28.186,54			28.186,54						172.890,56
4.613	38,954			38,954	808,05			808,05			36.041,22			36.041,22	28.832,98			28.832,98						173.537,00
4.614	35,651			35,651	746,05			746,05			36.787,27			36.787,27	29.429,82			29.429,82						174.133,84
4.615	29,722			29,722	653,73			653,73			37.441,00			37.441,00	29.952,80			29.952,80						174.656,82
4.616	25,374			25,374	550,96			550,96			37.991,96			37.991,96	30.393,57			30.393,57						175.097,59
4.617	19,028			19,028	444,02			444,02			38.435,98			38.435,98	30.748,78			30.748,78						175.452,81
4.618	14,667			14,667	336,95			336,95			38.772,93			38.772,93	31.018,34			31.018,34						175.722,37
4.619	8,603			8,603	232,70			232,70	0,167	1,67	39.005,63			39.005,63	31.204,50			31.204,50	1,67	1,67			1,67	175.906,86
4.620	6,364			6,364	149,67			149,67	2,519	26,86	39.155,30			39.155,30	31.324,24			31.324,24	28,53	26,86			26,86	175.999,74
4.621	4,840			4,840	112,04			112,04	4,519	70,38	39.267,34			39.267,34	31.413,87			31.413,87	98,91	70,38			70,38	176.018,99
4.622	3,367			3,367	82,07			82,07	8,128	126,47	39.349,41			39.349,41	31.479,53			31.479,53	225,38	65,66			65,66	175.958,18
4.623	2,430			2,430	57,97			57,97	9,962	180,90	39.407,38			39.407,38	31.525,90			31.525,90	406,28	46,38			46,38	175.823,66
4.624	1,825			1,825	42,55			42,55	12,368	223,30	39.449,93			39.449,93	31.559,94			31.559,94	629,58	34,04			34,04	175.634,40
4.625	1,696			1,696	35,21			35,21	12,688	250,56	39.485,14			39.485,14	31.588,11			31.588,11	880,14	28,17			28,17	175.412,01
4.626	1,353			1,353	30,49			30,49	13,524	262,12	39.515,63			39.515,63	31.612,50			31.612,50	1.142,26	24,39			24,39	175.174,28
4.627	0,762			0,762	21,15			21,15	15,422	289,46	39.536,78			39.536,78	31.629,42			31.629,42	1.431,72	16,92			16,92	174.901,74
4.628	0,532			0,532	12,94			12,94	16,925	323,47	39.549,72			39.549,72	31.639,78			31.639,78	1.755,19	10,35			10,35	174.588,62
4.629	0,494			0,494	10,26			10,26	16,809	337,34	39.559,98			39.559,98	31.647,98			31.647,98	2.092,53	8,21			8,21	174.259,49
4.630	0,355			0,355	8,49			8,49	17,731	345,40	39.568,47			39.568,47	31.654,78			31.654,78	2.437,93	6,79			6,79	173.920,88
4.631	0,266			0,266	6,21			6,21	18,360	360,91	39.574,68			39.574,68	31.659,74			31.659,74	2.798,84	4,97			4,97	173.564,94
4.632	0,177			0,177	4,43			4,43	19,249	376,09	39.579,11			39.579,11	31.663,29			31.663,29	3.174,93	3,54			3,54	173.192,39
4.633					1,77			1,77	23,427	426,76	39.580,88			39.580,88	31.664,70			31.664,70	3.601,69	1,42			1,42	172.767,05
4.634									24,063	474,90									4.076,59					172.292,15
4.635									27,082	511,45									4.588,04					171.780,70
4.636									28,484	555,66									5.143,70					171.225,04
4.637									27,105	555,89									5.699,59					170.669,15
4.638									29,758	568,63									6.268,22					170.100,52
4.639									33,895	636,53									6.904,75					169.463,99
4.640									38,496	723,91									7.628,66					168.740,08
4.641									44,447	829,43									8.458,09					167.910,65
4.642									53,937	983,84									9.441,93					166.926,81
4.643									60,377	1.143,14									10.585,07					165.783,67
4.644									74,044	1.344,21									11.929,28					164.439,46
4.645									86,836	1.608,80									13.538,08					162.830,66
4.646									96,674	1.835,10									15.373,18					160.995,56
4.647									101,030	1.977,04									17.350,22					159.018,52
4.648									102,822	2.038,52									19.388,74					156.980,00
4.649									103,202	2.060,24									21.448,98					154.919,76
4.650									110,579	2.137,81									23.586,79					152.781,95
4.651									118,716	2.292,95									25.879,74					150.489,00
4.652									125,066	2.437,82									28.317,56					148.051,18

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.653									129,683	2.547,49									30.865,05					145.503,69
4.654									135,743	2.654,26									33.519,31					142.849,43
4.655									141,588	2.773,31									36.292,62					140.076,12
4.656									151,991	2.935,79									39.228,41					137.140,33
4.657									179,874	3.318,65									42.547,06					133.821,68
4.658									222,582	4.024,56									46.571,62					129.797,12
4.659									248,289	4.708,71									51.280,33					125.088,41
4.660									245,075	4.933,64									56.213,97					120.154,77
4.661									215,466	4.605,41									60.819,38					115.549,36
4.662									191,392	4.068,58									64.887,96					111.480,78
4.663									195,614	3.870,06									68.758,02					107.610,72
4.664									167,476	3.630,90									72.388,92					103.979,82
4.665									148,443	3.159,19									75.548,11					100.820,63
4.666									136,445	2.848,88									78.396,99					97.971,75
4.667									125,978	2.624,23									81.021,22					95.347,52
4.668									117,107	2.430,85									83.452,07					92.916,67
4.669									107,618	2.247,25									85.699,32					90.669,42
4.670									95,249	2.028,67									87.727,99					88.640,75
4.671									90,656	1.859,05									89.587,04					86.781,70
4.672									82,128	1.727,84									91.314,88					85.053,86
4.673									78,198	1.603,26									92.918,14					83.450,60
4.674									71,442	1.496,40									94.414,54					81.954,20
4.675									67,186	1.386,28									95.800,82					80.567,92
4.676									62,806	1.299,92									97.100,74					79.268,00
4.677									55,807	1.186,13									98.286,87					78.081,87
4.678									49,909	1.057,16									99.344,03					77.024,71
4.679									44,710	946,19									100.290,22					76.078,52
4.680									48,732	934,42									101.224,64					75.144,10
4.681									48,987	977,19									102.201,83					74.166,91
4.682									54,041	1.030,28									103.232,11					73.136,63
4.683									57,385	1.114,26									104.346,37					72.022,37
4.684									67,761	1.251,46									105.597,83					70.770,91
4.685									73,608	1.413,69									107.011,52					69.357,22
4.686									83,317	1.569,25									108.580,77					67.787,97
4.687									91,195	1.745,12									110.325,89					66.042,85
4.688									108,871	2.000,66									112.326,55					64.042,19
4.689									124,560	2.334,31									114.660,86					61.707,88
4.690									135,751	2.603,11									117.263,97					59.104,77
4.691									148,704	2.844,55									120.108,52					56.260,22
4.692			0,031	0,031			0,31	0,31	164,775	3.134,79			0,31	0,31			0,36	0,36	123.243,31			0,36	0,36	53.125,79
4.693							0,31	0,31	177,169	3.419,44			0,62	0,62			0,73	0,73	126.662,75			0,36	0,36	49.706,71
4.694									191,072	3.682,41									130.345,16					46.024,30
4.695									200,092	3.911,64									134.256,80					42.112,66
4.696									211,860	4.119,52									138.376,32					37.993,14
4.697									224,794	4.366,54									142.742,86					33.626,60
4.698									236,049	4.608,43									147.351,29					29.018,17
4.699									256,508	4.925,57									152.276,86					24.092,60

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.700									267,690	5.241,98									157.518,84					18.850,62
4.701									293,731	5.614,21									163.133,05					13.236,41
4.702									307,184	6.009,15									169.142,20					7.227,26
4.703									311,011	6.181,95									175.324,15					1.045,31
4.704									299,739	6.107,50									181.431,65					-5.062,19
4.705									262,133	5.618,72									187.050,37					-10.680,91
4.706									226,464	4.885,97									191.936,34					-15.566,88
4.707									200,725	4.271,89									196.208,23					-19.838,77
4.708									183,629	3.843,54									200.051,77					-23.682,31
4.709									158,996	3.426,25									203.478,02					-27.108,56
4.710									145,716	3.047,12									206.525,14					-30.155,68
4.711									133,421	2.791,37									209.316,51					-32.947,05
4.712									126,932	2.603,53									211.920,04					-35.550,58
4.713									127,981	2.549,13									214.469,17					-38.099,71
4.714									132,731	2.607,12									217.076,29					-40.706,83
4.715									60,838	1.935,69									219.011,98					-42.642,52
4.716									51,939	1.127,77									220.139,75					-43.770,29
4.717									41,424	933,63									221.073,38					-44.703,92
4.718									33,219	746,43									221.819,81					-45.450,35
4.719									27,841	610,60									222.430,41					-46.060,95
4.720	0,074			0,074	0,74			0,74	30,854	586,95	0,74			0,74	0,59			0,59	223.017,36	0,59			0,59	-46.647,31
4.721	0,462			0,462	5,36			5,36	28,533	593,87	6,10			6,10	4,88			4,88	223.611,23	4,29			4,29	-47.236,89
4.722	1,758			1,758	22,20			22,20	24,187	527,20	28,30			28,30	22,64			22,64	224.138,43	17,76			17,76	-47.746,33
4.723	3,262			3,262	50,20			50,20	16,770	409,57	78,50			78,50	62,80			62,80	224.548,00	40,16			40,16	-48.115,74
4.724	4,352			4,352	76,14			76,14	9,243	260,13	154,64			154,64	123,71			123,71	224.808,13	60,91			60,91	-48.314,96
4.725	12,809			12,809	171,61			171,61		92,43	326,25			326,25	261,00			261,00	224.900,56	92,43			92,43	-48.270,10
4.726	23,118			23,118	359,27			359,27			685,52			685,52	548,42			548,42						-47.982,68
4.727	36,686			36,686	598,04			598,04			1.283,56			1.283,56	1.026,85			1.026,85						-47.504,25
4.728	48,092			48,092	847,78			847,78			2.131,34			2.131,34	1.705,07			1.705,07						-46.826,03
4.729	60,884			60,884	1.089,76			1.089,76			3.221,10			3.221,10	2.576,88			2.576,88						-45.954,22
4.730	73,579			73,579	1.344,63			1.344,63			4.565,73			4.565,73	3.652,58			3.652,58						-44.878,52
4.731	82,976			82,976	1.565,55			1.565,55			6.131,28			6.131,28	4.905,02			4.905,02						-43.626,08
4.732	91,001			91,001	1.739,77			1.739,77			7.871,05			7.871,05	6.296,84			6.296,84						-42.234,26
4.733	97,597			97,597	1.885,98			1.885,98			9.757,03			9.757,03	7.805,62			7.805,62						-40.725,48
4.734	103,817			103,817	2.014,14			2.014,14			11.771,17			11.771,17	9.416,94			9.416,94						-39.114,17
4.735	107,670			107,670	2.114,87			2.114,87			13.886,04			13.886,04	11.108,83			11.108,83						-37.422,27
4.736	109,287			109,287	2.169,57			2.169,57			16.055,61			16.055,61	12.844,49			12.844,49						-35.686,61
4.737	108,201			108,201	2.174,88			2.174,88			18.230,49			18.230,49	14.584,39			14.584,39						-33.946,71
4.738	108,789			108,789	2.169,90			2.169,90			20.400,39			20.400,39	16.320,31			16.320,31						-32.210,79
4.739	106,073			106,073	2.148,62			2.148,62			22.549,01			22.549,01	18.039,21			18.039,21						-30.491,89
4.740	102,500			102,500	2.085,73			2.085,73			24.634,74			24.634,74	19.707,79			19.707,79						-28.823,31
4.741	98,088			98,088	2.005,88			2.005,88			26.640,62			26.640,62	21.312,50			21.312,50						-27.218,61
4.742	91,177			91,177	1.892,65			1.892,65			28.533,27			28.533,27	22.826,62			22.826,62						-25.704,49
4.743	91,167			91,167	1.823,44			1.823,44			30.356,71			30.356,71	24.285,37			24.285,37						-24.245,74
4.744	81,935			81,935	1.731,02			1.731,02			32.087,73			32.087,73	25.670,18			25.670,18						-22.860,92
4.745	76,060			76,060	1.579,95			1.579,95			33.667,68			33.667,68	26.934,14			26.934,14						-21.596,96
4.746	67,159			67,159	1.432,19			1.432,19			35.099,87			35.099,87	28.079,90			28.079,90						-20.451,21

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.747	56,603			56,603	1.237,62			1.237,62			36.337,49			36.337,49	29.069,99			29.069,99						-19.461,11
4.748	49,310			49,310	1.059,13			1.059,13			37.396,62			37.396,62	29.917,30			29.917,30						-18.613,81
4.749	38,026			38,026	873,36			873,36			38.269,98			38.269,98	30.615,98			30.615,98						-17.915,12
4.750	28,749			28,749	667,75			667,75			38.937,73			38.937,73	31.150,18			31.150,18						-17.380,92
4.751	17,909			17,909	466,58			466,58			39.404,31			39.404,31	31.523,45			31.523,45						-17.007,66
4.752	6,896			6,896	248,05			248,05	1,364	13,64	39.652,36			39.652,36	31.721,89			31.721,89	13,64	13,64			13,64	-16.822,86
4.753	4,491			4,491	113,87			113,87	12,724	140,88	39.766,23			39.766,23	31.812,98			31.812,98	154,52	91,10			91,10	-16.872,64
4.754	2,926			2,926	74,17			74,17	29,209	419,33	39.840,40			39.840,40	31.872,32			31.872,32	573,85	59,34			59,34	-17.232,63
4.755	1,465			1,465	43,91			43,91	42,311	715,20	39.884,31			39.884,31	31.907,45			31.907,45	1.289,05	35,13			35,13	-17.912,70
4.756					14,65			14,65	48,210	905,21	39.898,96			39.898,96	31.919,17			31.919,17	2.194,26	11,72			11,72	-18.806,19
4.757									58,539	1.067,49									3.261,75					-19.873,68
4.758									67,524	1.260,63									4.522,38					-21.134,31
4.759									69,208	1.367,32									5.889,70					-22.501,63
4.760									59,852	1.290,60									7.180,30					-23.792,23
4.761	0,279			0,279	2,79			2,79	55,973	1.158,25	2,79			2,79	2,23			2,23	8.338,55	2,23			2,23	-24.948,25
4.762	1,386			1,386	16,65			16,65	41,289	972,62	19,44			19,44	15,55			15,55	9.311,17	13,32			13,32	-25.907,55
4.763	3,066			3,066	44,52			44,52	26,800	680,89	63,96			63,96	51,17			51,17	9.992,06	35,62			35,62	-26.552,82
4.764	4,069			4,069	71,35			71,35	17,709	445,09	135,31			135,31	108,25			108,25	10.437,15	57,08			57,08	-26.940,83
4.765	5,405			5,405	94,74			94,74	8,626	263,35	230,05			230,05	184,04			184,04	10.700,50	75,79			75,79	-27.128,39
4.766	13,335			13,335	187,40			187,40		86,26	417,45			417,45	333,96			333,96	10.786,76	86,26			86,26	-27.064,73
4.767	20,475			20,475	338,10			338,10			755,55			755,55	604,44			604,44						-26.794,25
4.768	30,448			30,448	509,23			509,23			1.264,78			1.264,78	1.011,82			1.011,82						-26.386,87
4.769	36,482			36,482	669,30			669,30			1.934,08			1.934,08	1.547,26			1.547,26						-25.851,43
4.770	39,595			39,595	760,77			760,77			2.694,85			2.694,85	2.155,88			2.155,88						-25.242,81
4.771	43,837			43,837	834,32			834,32			3.529,17			3.529,17	2.823,34			2.823,34						-24.575,35
4.772	49,537			49,537	933,74			933,74			4.462,91			4.462,91	3.570,33			3.570,33						-23.828,36
4.773	57,137			57,137	1.066,74			1.066,74			5.529,65			5.529,65	4.423,72			4.423,72						-22.974,97
4.774	59,369			59,369	1.165,06			1.165,06			6.694,71			6.694,71	5.355,77			5.355,77						-22.042,92
4.775	57,974			57,974	1.173,43			1.173,43			7.868,14			7.868,14	6.294,51			6.294,51						-21.104,18
4.776	59,639			59,639	1.176,13			1.176,13			9.044,27			9.044,27	7.235,42			7.235,42						-20.163,28
4.777	58,673			58,673	1.183,12			1.183,12			10.227,39			10.227,39	8.181,91			8.181,91						-19.216,78
4.778	59,484			59,484	1.181,57			1.181,57			11.408,96			11.408,96	9.127,17			9.127,17						-18.271,52
4.779	60,582			60,582	1.200,66			1.200,66			12.609,62			12.609,62	10.087,70			10.087,70						-17.310,99
4.780	52,036			52,036	1.126,18			1.126,18			13.735,80			13.735,80	10.988,64			10.988,64						-16.410,05
4.781	49,696			49,696	1.017,32			1.017,32			14.753,12			14.753,12	11.802,50			11.802,50						-15.596,19
4.782	41,239			41,239	909,35			909,35			15.662,47			15.662,47	12.529,98			12.529,98						-14.868,71
4.783	31,840			31,840	730,79			730,79			16.393,26			16.393,26	13.114,61			13.114,61						-14.284,08
4.784	15,366			15,366	472,06			472,06			16.865,32			16.865,32	13.492,26			13.492,26						-13.906,43
4.785	6,576			6,576	219,42			219,42	6,913	69,13	17.084,74			17.084,74	13.667,79			13.667,79	69,13	69,13			69,13	-13.800,02
4.786	4,546			4,546	111,22			111,22	20,722	276,35	17.195,96			17.195,96	13.756,77			13.756,77	345,48	88,98			88,98	-13.987,39
4.787	2,235			2,235	67,81			67,81	35,521	562,43	17.263,77			17.263,77	13.811,02			13.811,02	907,91	54,25			54,25	-14.495,57
4.788	0,339			0,339	25,74			25,74	46,835	823,56	17.289,51			17.289,51	13.831,61			13.831,61	1.731,47	20,59			20,59	-15.298,54
4.789					3,39			3,39	63,215	1.100,50	17.292,90			17.292,90	13.834,32			13.834,32	2.831,97	2,71			2,71	-16.396,33
4.790									81,302	1.445,17									4.277,14					-17.841,50
4.791									104,832	1.861,34									6.138,48					-19.702,84
4.792									122,315	2.271,47									8.409,95					-21.974,31
4.793									143,959	2.662,74									11.072,69					-24.637,05

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.794									162,653	3.066,12									14.138,81					-27.703,17
4.795									176,285	3.389,38									17.528,19					-31.092,55
4.796									185,708	3.619,93									21.148,12					-34.712,48
4.797									190,613	3.763,21									24.911,33					-38.475,69
4.798									190,154	3.807,67									28.719,00					-42.283,36
4.799									184,420	3.745,74									32.464,74					-46.029,10
4.800									172,683	3.571,03									36.035,77					-49.600,13
4.801									165,447	3.381,30									39.417,07					-52.981,43
4.802									155,473	3.209,20									42.626,27					-56.190,63
4.803									121,093	2.765,66									45.391,93					-58.956,29
4.804									113,079	2.341,72									47.733,65					-61.298,01
4.805									99,435	2.125,14									49.858,79					-63.423,15
4.806									92,515	1.919,50									51.778,29					-65.342,65
4.807									77,810	1.703,25									53.481,54					-67.045,90
4.808									70,313	1.481,23									54.962,77					-68.527,13
4.809									62,591	1.329,04									56.291,81					-69.856,17
4.810									54,015	1.166,06									57.457,87					-71.022,23
4.811									48,280	1.022,95									58.480,82					-72.045,18
4.812									41,342	896,22									59.377,04					-72.941,40
4.813	0,303			0,303	3,03			3,03	36,313	776,55	3,03			3,03	2,42			2,42	60.153,59	2,42			2,42	-73.715,53
4.814	1,548			1,548	18,51			18,51	29,306	656,19	21,54			21,54	17,23			17,23	60.809,78	14,81			14,81	-74.356,91
4.815	3,333			3,333	48,81			48,81	20,736	500,42	70,35			70,35	56,28			56,28	61.310,20	39,05			39,05	-74.818,28
4.816	4,677			4,677	80,10			80,10	14,354	350,90	150,45			150,45	120,36			120,36	61.661,10	64,08			64,08	-75.105,10
4.817	5,885			5,885	105,62			105,62	7,758	221,12	256,07			256,07	204,86			204,86	61.882,22	84,50			84,50	-75.241,72
4.818	7,565			7,565	134,50			134,50	1,885	96,43	390,57			390,57	312,46			312,46	61.978,65	96,43			96,43	-75.230,55
4.819	10,974			10,974	185,39			185,39	0,004	18,89	575,96			575,96	460,77			460,77	61.997,54	18,89			18,89	-75.101,13
4.820	15,658			15,658	266,32			266,32		0,04	842,28			842,28	673,82			673,82	61.997,58	0,04			0,04	-74.888,11
4.821	19,291			19,291	349,49			349,49			1.191,77			1.191,77	953,42			953,42						-74.608,52
4.822	25,810			25,810	451,01			451,01			1.642,78			1.642,78	1.314,22			1.314,22						-74.247,71
4.823	34,167			34,167	599,77			599,77			2.242,55			2.242,55	1.794,04			1.794,04						-73.767,89
4.824	42,735			42,735	769,02			769,02			3.011,57			3.011,57	2.409,26			2.409,26						-73.152,67
4.825	47,223			47,223	899,58			899,58			3.911,15			3.911,15	3.128,92			3.128,92						-72.433,01
4.826	55,103			55,103	1.023,26			1.023,26			4.934,41			4.934,41	3.947,53			3.947,53						-71.614,40
4.827	61,433			61,433	1.165,36			1.165,36			6.099,77			6.099,77	4.879,82			4.879,82						-70.682,11
4.828	65,807			65,807	1.272,40			1.272,40			7.372,17			7.372,17	5.897,74			5.897,74						-69.664,19
4.829	70,377			70,377	1.361,84			1.361,84			8.734,01			8.734,01	6.987,21			6.987,21						-68.574,72
4.830	74,576			74,576	1.449,53			1.449,53			10.183,54			10.183,54	8.146,83			8.146,83						-67.415,10
4.831	78,263			78,263	1.528,39			1.528,39			11.711,93			11.711,93	9.369,54			9.369,54						-66.192,39
4.832	80,178			80,178	1.584,41			1.584,41			13.296,34			13.296,34	10.637,07			10.637,07						-64.924,86
4.833	87,041			87,041	1.672,19			1.672,19			14.968,53			14.968,53	11.974,82			11.974,82						-63.587,11
4.834	87,804			87,804	1.748,45			1.748,45			16.716,98			16.716,98	13.373,58			13.373,58						-62.188,35
4.835	87,285			87,285	1.750,89			1.750,89			18.467,87			18.467,87	14.774,30			14.774,30						-60.787,64
4.836	83,265			83,265	1.705,50			1.705,50			20.173,37			20.173,37	16.138,70			16.138,70						-59.423,24
4.837	79,311			79,311	1.625,76			1.625,76			21.799,13			21.799,13	17.439,30			17.439,30						-58.122,63
4.838	70,377			70,377	1.496,88			1.496,88			23.296,01			23.296,01	18.636,81			18.636,81						-56.925,13
4.839	56,297			56,297	1.266,74			1.266,74			24.562,75			24.562,75	19.650,20			19.650,20						-55.911,74
4.840	35,689			35,689	919,86			919,86			25.482,61			25.482,61	20.386,09			20.386,09						-55.175,85

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.841	15,214			15,214	509,03			509,03			25.991,64			25.991,64	20.793,31			20.793,31						-54.768,63
4.842	6,168			6,168	213,82			213,82	5,616	56,16	26.205,46			26.205,46	20.964,37			20.964,37	56,16	56,16			56,16	-54.653,73
4.843	5,467			5,467	116,35			116,35	11,668	172,84	26.321,81			26.321,81	21.057,45			21.057,45	229,00	93,08			93,08	-54.733,49
4.844	5,958			5,958	114,25			114,25	9,952	216,20	26.436,06			26.436,06	21.148,85			21.148,85	445,20	91,40			91,40	-54.858,29
4.845	7,707			7,707	136,65			136,65	2,938	128,90	26.572,71			26.572,71	21.258,17			21.258,17	574,10	109,32			109,32	-54.877,87
4.846	13,450			13,450	211,57			211,57		29,38	26.784,28			26.784,28	21.427,42			21.427,42	603,48	29,38			29,38	-54.737,99
4.847	35,495			35,495	489,45			489,45			27.273,73			27.273,73	21.818,98			21.818,98						-54.346,43
4.848	52,289			52,289	877,84			877,84			28.151,57			28.151,57	22.521,26			22.521,26						-53.644,16
4.849	68,659			68,659	1.209,48			1.209,48			29.361,05			29.361,05	23.488,84			23.488,84						-52.676,58
4.850	86,348			86,348	1.550,07			1.550,07			30.911,12			30.911,12	24.728,90			24.728,90						-51.436,52
4.851	107,028			107,028	1.933,76			1.933,76			32.844,88			32.844,88	26.275,90			26.275,90						-49.889,51
4.852	117,568			117,568	2.245,96			2.245,96			35.090,84			35.090,84	28.072,67			28.072,67						-48.092,74
4.853	131,113			131,113	2.486,81			2.486,81			37.577,65			37.577,65	30.062,12			30.062,12						-46.103,29
4.854	142,574			142,574	2.736,87			2.736,87			40.314,52			40.314,52	32.251,62			32.251,62						-43.913,79
4.855	154,291			154,291	2.968,65			2.968,65			43.283,17			43.283,17	34.626,54			34.626,54						-41.538,87
4.856	165,653			165,653	3.199,44			3.199,44			46.482,61			46.482,61	37.186,09			37.186,09						-38.979,32
4.857	170,895			170,895	3.365,48			3.365,48			49.848,09			49.848,09	39.878,47			39.878,47						-36.286,94
4.858	170,051			170,051	3.409,46			3.409,46			53.257,55			53.257,55	42.606,04			42.606,04						-33.559,37
4.859	162,899			162,899	3.329,50			3.329,50			56.587,05			56.587,05	45.269,64			45.269,64						-30.895,77
4.860	154,701			154,701	3.176,00			3.176,00			59.763,05			59.763,05	47.810,44			47.810,44						-28.354,97
4.861	148,028			148,028	3.027,29			3.027,29			62.790,34			62.790,34	50.232,27			50.232,27						-25.933,14
4.862	138,974			138,974	2.870,02			2.870,02			65.660,36			65.660,36	52.528,29			52.528,29						-23.637,12
4.863	127,456			127,456	2.664,30			2.664,30			68.324,66			68.324,66	54.659,73			54.659,73						-21.505,68
4.864	115,932			115,932	2.433,88			2.433,88			70.758,54			70.758,54	56.606,83			56.606,83						-19.558,58
4.865	106,492			106,492	2.224,24			2.224,24			72.982,78			72.982,78	58.386,22			58.386,22						-17.779,19
4.866	94,263			94,263	2.007,55			2.007,55			74.990,33			74.990,33	59.992,26			59.992,26						-16.173,15
4.867	81,169			81,169	1.754,32			1.754,32			76.744,65			76.744,65	61.395,72			61.395,72						-14.769,69
4.868	70,655			70,655	1.518,24			1.518,24			78.262,89			78.262,89	62.610,31			62.610,31						-13.555,10
4.869	65,191			65,191	1.358,46			1.358,46			79.621,35			79.621,35	63.697,08			63.697,08						-12.468,33
4.870	47,247			47,247	1.124,38			1.124,38			80.745,73			80.745,73	64.596,58			64.596,58						-11.568,83
4.871	37,775			37,775	850,22			850,22			81.595,95			81.595,95	65.276,76			65.276,76						-10.888,65
4.872	26,998			26,998	647,73			647,73			82.243,68			82.243,68	65.794,94			65.794,94						-10.370,47
4.873	13,355			13,355	403,53			403,53			82.647,21			82.647,21	66.117,77			66.117,77						-10.047,65
4.874	5,097			5,097	184,52			184,52	8,509	85,09	82.831,73			82.831,73	66.265,38			66.265,38	85,09	85,09			85,09	-9.985,12
4.875	4,230			4,230	93,27			93,27	22,248	307,57	82.925,00			82.925,00	66.340,00			66.340,00	392,66	74,62			74,62	-10.218,07
4.876	2,059			2,059	62,89			62,89	41,032	632,80	82.987,89			82.987,89	66.390,31			66.390,31	1.025,46	50,31			50,31	-10.800,56
4.877	0,844			0,844	29,03			29,03	48,067	890,99	83.016,92			83.016,92	66.413,54			66.413,54	1.916,45	23,22			23,22	-11.668,33
4.878					8,44			8,44	59,138	1.072,05	83.025,36			83.025,36	66.420,29			66.420,29	2.988,50	6,75			6,75	-12.733,63
4.879									62,695	1.218,33									4.206,83					-13.951,96
4.880	0,476			0,476	4,76			4,76	54,587	1.172,82	4,76			4,76	3,81			3,81	5.379,65	3,81			3,81	-15.120,97
4.881	1,695			1,695	21,71			21,71	46,169	1.007,56	26,47			26,47	21,18			21,18	6.387,21	17,37			17,37	-16.111,16
4.882	2,847			2,847	45,42			45,42	35,756	819,25	71,89			71,89	57,51			57,51	7.206,46	36,34			36,34	-16.894,07
4.883	4,065			4,065	69,12			69,12	23,277	590,33	141,01			141,01	112,81			112,81	7.796,79	55,30			55,30	-17.429,10
4.884	4,817			4,817	88,82			88,82	11,778	350,55	229,83			229,83	183,86			183,86	8.147,34	71,06			71,06	-17.708,59
4.885	7,837			7,837	126,54			126,54	1,059	128,37	356,37			356,37	285,10			285,10	8.275,71	101,23			101,23	-17.735,73
4.886	20,071			20,071	279,08			279,08		10,59	635,45			635,45	508,36			508,36	8.286,30	10,59			10,59	-17.523,06
4.887	27,554			27,554	476,25			476,25			1.111,70			1.111,70	889,36			889,36						-17.142,06

FERROVIA: TRANORDESTINA
TRECHO: PARNAMIRIM - ARARIPINA (PE)
LOTE: 3

PLANILHA DE VOLUMES (BRÜCKNER)
LINHA GERAL, PÁTIOS DE CRUZAMENTO E PÊRA FERROVIÁRIA

Estaca	Área de Corte Geométrico Parcial (m²)				Volume de Corte Geométrico Parcial (m³)				Área de Aterro Geométrico Parcial (m²)	Volume de Aterro Geométrico Parcial (m³)	Volume de Corte Geométrico Acumulado (m³)				Volume de Corte Equivalente Acumulado (m³)				Volume de Aterro Geométrico Acumulado (m³)	Volume de Compensação Lateral Geométrico Parcial (m³)				Ordenada Bruckner
	1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total			1ª Cat.	2ª Cat.	3ª Cat.	Total	1ª Cat.	2ª Cat.	3ª Cat.	Total		1ª Cat.	2ª Cat.	3ª Cat.	Total	
4.888	33,691			33,691	612,45			612,45			1.724,15			1.724,15	1.379,32			1.379,32						-16.652,10
4.889	45,941			45,941	796,32			796,32			2.520,47			2.520,47	2.016,38			2.016,38						-16.015,04
4.890	61,136			61,136	1.070,77			1.070,77			3.591,24			3.591,24	2.872,99			2.872,99						-15.158,42
4.891	68,741			68,741	1.298,77			1.298,77			4.890,01			4.890,01	3.912,01			3.912,01						-14.119,40
4.892	79,160			79,160	1.479,01			1.479,01			6.369,02			6.369,02	5.095,22			5.095,22						-12.936,19
4.893	83,528			83,528	1.626,88			1.626,88			7.995,90			7.995,90	6.396,72			6.396,72						-11.634,69
4.894	93,120			93,120	1.766,48			1.766,48			9.762,38			9.762,38	7.809,90			7.809,90						-10.221,51
4.895	98,998			98,998	1.921,18			1.921,18			11.683,56			11.683,56	9.346,85			9.346,85						-8.684,57
4.896	103,574			103,574	2.025,72			2.025,72			13.709,28			13.709,28	10.967,42			10.967,42						-7.063,99
4.897	106,649			106,649	2.102,23			2.102,23			15.811,51			15.811,51	12.649,21			12.649,21						-5.382,21
4.898	108,713			108,713	2.153,62			2.153,62			17.965,13			17.965,13	14.372,10			14.372,10						-3.659,31
4.899	112,162			112,162	2.208,75			2.208,75			20.173,88			20.173,88	16.139,10			16.139,10						-1.892,31
4.900	113,236			113,236	2.253,98			2.253,98			22.427,86			22.427,86	17.942,29			17.942,29						-89,13
4.901	114,202			114,202	2.274,38			2.274,38			24.702,24			24.702,24	19.761,79			19.761,79						1.730,37
4.902	113,893			113,893	2.280,95			2.280,95			26.983,19			26.983,19	21.586,55			21.586,55						3.555,13
4.903	111,973			111,973	2.258,66			2.258,66			29.241,85			29.241,85	23.393,48			23.393,48						5.362,06
4.904	107,303			107,303	2.192,76			2.192,76			31.434,61			31.434,61	25.147,69			25.147,69						7.116,27
4.905	101,178			101,178	2.084,81			2.084,81			33.519,42			33.519,42	26.815,54			26.815,54						8.784,12
4.906	94,565			94,565	1.957,43			1.957,43			35.476,85			35.476,85	28.381,48			28.381,48						10.350,06
4.907	83,336			83,336	1.779,01			1.779,01			37.255,86			37.255,86	29.804,69			29.804,69						11.773,27
4.908	71,650			71,650	1.549,86			1.549,86			38.805,72			38.805,72	31.044,58			31.044,58						13.013,16
4.909	59,784			59,784	1.314,34			1.314,34			40.120,06			40.120,06	32.096,05			32.096,05						14.064,63
4.910	43,506			43,506	1.032,90			1.032,90			41.152,96			41.152,96	32.922,37			32.922,37						14.890,95
4.911	26,956			26,956	704,62			704,62			41.857,58			41.857,58	33.486,06			33.486,06						15.454,65
4.912	22,442			22,442	493,98			493,98			42.351,56			42.351,56	33.881,25			33.881,25						15.849,83
4.913	14,277			14,277	367,19			367,19			42.718,75			42.718,75	34.175,00			34.175,00						16.143,58
4.914	4,012			4,012	182,89			182,89	9,411	94,11	42.901,64			42.901,64	34.321,31			34.321,31	94,11	94,11			94,11	16.195,78
4.915	2,617			2,617	66,29			66,29	19,120	285,31	42.967,93			42.967,93	34.374,34			34.374,34	379,42	53,03			53,03	15.963,50
4.916	1,323			1,323	39,40			39,40	24,311	434,31	43.007,33			43.007,33	34.405,86			34.405,86	813,73	31,52			31,52	15.560,71
4.917	0,203			0,203	15,26			15,26	26,396	507,07	43.022,59			43.022,59	34.418,07			34.418,07	1.320,80	12,21			12,21	15.065,85
4.918					2,03			2,03	22,946	493,42	43.024,62			43.024,62	34.419,70			34.419,70	1.814,22	1,62			1,62	14.574,05
4.919									28,589	515,35									2.329,57					14.058,70
4.920									35,706	642,95									2.972,52					13.415,75
4.921									45,386	810,92									3.783,44					12.604,83
4.922									56,794	1.021,80									4.805,24					11.583,03
TOTAL					1.745.471,61	176.163,63	2.069.778,92	3.991.414,16		3.973.014,11										19.714,29	337,18	1.325,82	21.377,29	