



ABC/IICA/BNB PROJETO DE COOPERAÇÃO TÉCNICA

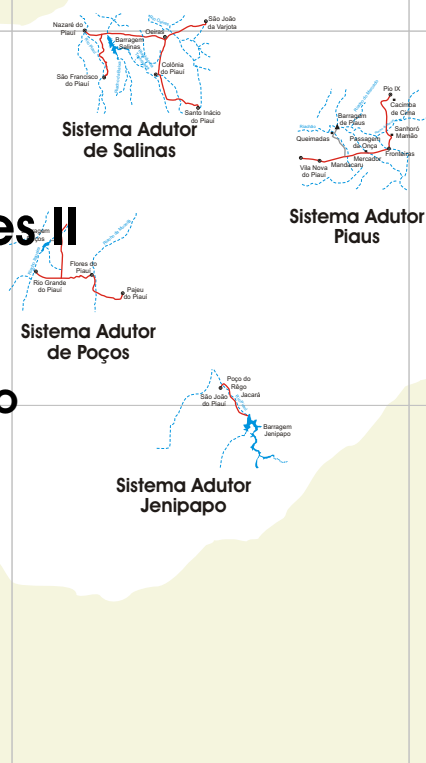
"COOPERAÇÃO PARA O FORTALECIMENTO DA
CAPACIDADE TÉCNICA, INSTITUCIONAL E
OPERACIONAL DO BANCO DO NORDESTE"

**ESTUDOS DE ALTERNATIVAS E DE VIABILIDADE, E ELABORAÇÃO DOS
PROJETOS BÁSICOS PARA IMPLANTAÇÃO DOS SISTEMAS ADUTORES DE
ALGODÕES II, JENIPAPO, PIAUS, POÇOS E SALINAS NO ESTADO DO PIAUÍ**

Sistema Adutor Algodões II Volume IV

PRODUTO 4 - Projeto Básico

Tomo IV.5 - Anexos



Abril/2006

Consórcio



**ESTUDOS DE ALTERNATIVAS E DE VIABILIDADE, E ELABORAÇÃO DOS
PROJETOS BÁSICOS PARA IMPLANTAÇÃO DOS SISTEMAS ADUTORES DE
ALGODÕES II, PIAUS, JENIPAPO, POÇOS E SALINAS NO ESTADO DO PIAUÍ**

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Volume IV

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Tomo IV.5 – Anexos

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1 APRESENTAÇÃO

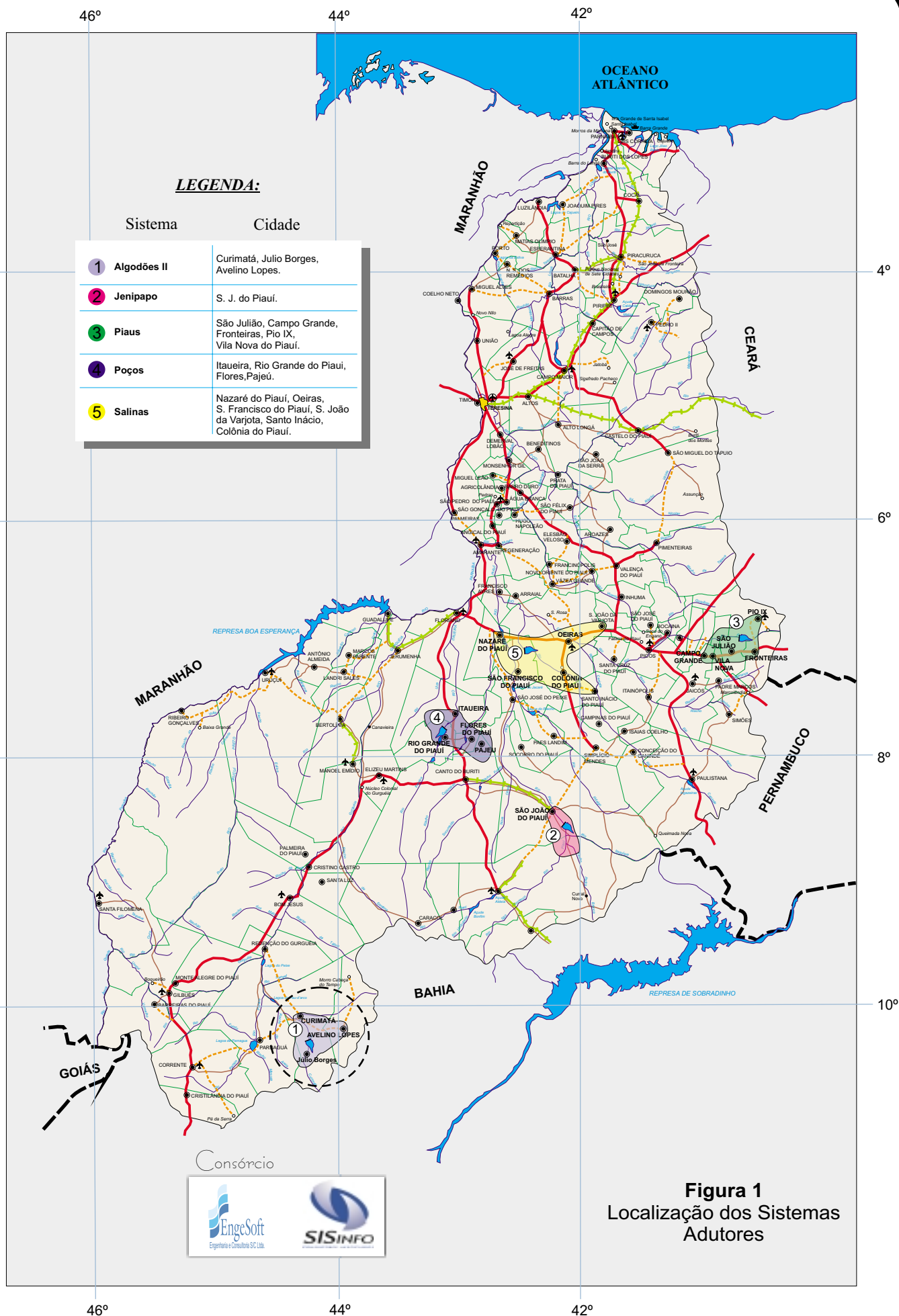
1 APRESENTAÇÃO

Este documento tem por objetivo apresentar o Volume IV - Produto 4 - Projeto Básico do Sistema Adutor Algodões II referente *aos Estudos de Alternativas e de Viabilidade, e Elaboração dos Projetos Básicos para Implantação dos Sistemas Adutores de Algodões II, Jenipapo, Piaus, Poços e Salinas no Estado do Piauí*, cuja elaboração é de responsabilidade do Consórcio ENGESOFT/SISINFO, no âmbito do Contrato n.º 204077, celebrado com o INSTITUTO INTERAMERICANO DE COOPERAÇÃO PARA A AGRICULTURA - IICA.

O Volume IV do Sistema Adutor Algodões II é composto pelos tomos a seguir. O presente documento refere-se ao Tomo VI.5 - Anexos.

- Tomo IV.1 – Memorial Descritivo
- Tomo IV.2 – Memórias de Cálculo
- Tomo IV.3 – Especificações Técnicas
- Tomo IV.4 – Quantitativos e Orçamento
- **Tomo IV.5 – Anexos**
- Tomo IV.6 – Desenhos

Na **Figura 1** estão apresentadas as localizações dos Sistemas Adutores no âmbito do Estado do Piauí, com destaque para o Sistema Adutor Algodões II.





2 SERVIÇOS TOPOGRÁFICOS



2.1 REFERÊNCIA DE NÍVEL - IBGE



CÓDIGO 874D NOME 874D
MUNICÍPIO Curimatá
CONEXÃO

TIPO Estação Altimétrica - RN
UF PI

Sistema Geodésico : SAD-69

DADOS PLANIMÉTRICOS

Latitude 10° 02' 10" S Altitude Ortométrica (m)
Longitude 44° 18' 17" W Fonte
Fonte Carta 1:100.000 Classe
Datum SAD-69 Datum
Data Medição 24/10/1973 Data Medição
Data Cálculo 24/10/1973 Data Cálculo
Sigma Latitude (m) Sigma Altitude (m)
Sigma Longitude (m)
UTM (N) 8.890.511
UTM (E) 576.193
MC -45

DADOS ALTIMÉTRICOS

328,9603 Gravidade (mGal)
Nivelamento Geométrico Sigma Gravidade (mGal)
Alta Precisão Ajustada Precisão
Imbituba Datum
24/10/1973 Data Medição
1/12/1992 Data Cálculo
Correção Topográfica
Anomalia Bouguer
Anomalia Ar-livre
Densidade (g/cm3)

DADOS GRAVIMÉTRICOS

PRINCIPAL Bom

SITUAÇÃO DOS MARCOS

ÚLTIMA VISITA 24/10/1973

CHAPA CRAVADA NA CALÇADA, LADO NORTE, DO PREDIO DA PREFEITURA MUNICIPAL.

LOCALIZAÇÃO

CHAPA PADRÃO IBGE

DESCRIÇÃO

ITINERÁRIO

OBSERVAÇÃO

Para entrar em contato conosco, utilize os recursos abaixo:
Fale conosco: 0800 218181 E-mail: <mailto:ibge@ibge.gov.br>



2.2 CADERNETAS DE CAMPO DA TOPOGRAFIA



2.2.1 TRECHO 1: Barragem - ETA

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 1 : BARRAGEM-ETA

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
0+000	8.872.428,944	584.996,294	395,583	158°15'44"
0+020	8.872.447,521	584.988,887	398,206	158°15'44"
0+040	8.872.466,099	584.981,480	400,827	158°15'44"
0+060	8.872.484,677	584.974,072	403,456	158°15'44"
0+080	8.872.503,255	584.966,665	406,077	158°15'44"
0+100	8.872.521,833	584.959,258	408,707	158°15'44"
0+120	8.872.534,878	584.964,619	411,668	248°35'19"
0+140	8.872.542,179	584.983,239	410,298	248°35'19"
0+160	8.872.553,051	584.993,681	409,618	158°35'19"
0+172.532	8.872.559,224	584.986,707	410,430	158°35'19"



2.2.2 TRECHO 2: ETA – Alto Alegre

Consórcio



MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
0+000	8.872.593,418	584.964,972	418,588	155°14'2"
0+020	8.872.611,541	584.957,134	414,658	212°46'49"
0+040	8.872.628,356	584.967,963	413,967	212°46'49"
0+060	8.872.645,171	584.978,791	413,275	212°46'49"
0+080	8.872.661,986	584.989,619	412,532	212°46'49"
0+100	8.872.678,801	585.000,448	411,845	212°46'49"
0+120	8.872.695,616	585.011,276	411,460	212°46'49"
0+140	8.872.712,431	585.022,104	410,718	212°46'49"
0+160	8.872.729,246	585.032,933	410,240	212°46'49"
0+180	8.872.746,061	585.043,761	409,496	212°46'49"
0+200	8.872.762,876	585.054,589	408,939	212°46'49"
0+220	8.872.779,692	585.065,418	408,194	212°46'49"
0+240	8.872.796,507	585.076,246	407,793	212°46'49"
0+260	8.872.813,322	585.087,075	407,436	212°46'49"
0+280	8.872.830,137	585.097,903	407,078	212°46'49"
0+300	8.872.846,952	585.108,731	406,721	212°46'49"
0+320	8.872.863,767	585.119,560	406,364	212°46'49"
0+340	8.872.880,582	585.130,388	405,675	212°46'49"
0+360	8.872.897,397	585.141,216	404,926	212°46'49"
0+380	8.872.914,212	585.152,045	404,208	212°46'49"
0+400	8.872.931,027	585.162,873	403,458	212°46'49"
0+420	8.872.947,842	585.173,702	402,740	212°46'49"
0+440	8.872.964,657	585.184,530	401,991	212°46'49"
0+460	8.872.981,472	585.195,358	401,271	212°46'49"
0+480	8.872.998,287	585.206,187	400,521	212°46'49"
0+500	8.873.015,102	585.217,015	399,788	212°46'49"
0+520	8.873.031,918	585.227,843	399,039	212°46'49"
0+540	8.873.048,733	585.238,672	398,304	212°46'49"
0+560	8.873.065,548	585.249,500	397,554	212°46'49"
0+580	8.873.082,363	585.260,328	396,820	212°46'49"
0+600	8.873.099,178	585.271,157	396,070	212°46'49"
0+620	8.873.115,993	585.281,985	395,335	212°46'49"
0+640	8.873.132,808	585.292,814	394,586	212°46'49"
0+660	8.873.149,623	585.303,642	393,850	212°46'49"
0+680	8.873.166,438	585.314,470	393,100	212°46'49"
0+700	8.873.183,253	585.325,299	392,364	212°46'49"
0+720	8.873.200,068	585.336,127	391,615	212°46'49"
0+740	8.873.216,883	585.346,955	390,878	212°46'49"
0+760	8.873.233,698	585.357,784	390,128	212°46'49"
0+780	8.873.250,513	585.368,612	389,375	212°46'49"
0+800	8.873.267,328	585.379,440	388,622	212°46'49"
0+820	8.873.284,144	585.390,269	387,869	212°46'49"
0+840	8.873.300,959	585.401,097	387,116	212°46'49"
0+860	8.873.317,774	585.411,926	386,362	212°46'49"
0+880	8.873.334,589	585.422,754	385,609	212°46'49"
0+900	8.873.351,404	585.433,582	384,856	212°46'49"
0+920	8.873.368,219	585.444,411	384,102	212°46'49"

Consórcio



MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
0+940	8.873.385,034	585.455,239	383,349	212°46'49"
0+960	8.873.401,849	585.466,067	382,596	212°46'49"
0+980	8.873.418,664	585.476,896	381,843	212°46'49"
1+000	8.873.435,479	585.487,724	381,089	212°46'49"
1+020	8.873.444,819	585.504,282	380,841	252°16'37"
1+040	8.873.450,907	585.523,333	380,813	252°16'37"
1+060	8.873.456,996	585.542,384	380,785	252°16'37"
1+080	8.873.463,084	585.561,435	380,756	252°16'37"
1+100	8.873.469,172	585.580,486	380,728	252°16'37"
1+120	8.873.475,261	585.599,536	380,700	252°16'37"
1+140	8.873.481,349	585.618,587	380,671	252°16'37"
1+160	8.873.487,437	585.637,638	380,643	252°16'37"
1+180	8.873.493,525	585.656,689	380,615	252°16'37"
1+200	8.873.499,614	585.675,740	380,586	252°16'37"
1+220	8.873.505,702	585.694,790	380,558	252°16'37"
1+240	8.873.511,790	585.713,841	380,536	252°16'37"
1+260	8.873.517,879	585.732,892	380,522	252°16'37"
1+280	8.873.523,967	585.751,943	380,509	252°16'37"
1+300	8.873.530,055	585.770,993	380,496	252°16'37"
1+320	8.873.536,143	585.790,044	380,484	252°16'37"
1+340	8.873.542,232	585.809,095	380,471	252°16'37"
1+360	8.873.548,320	585.828,146	380,458	252°16'37"
1+380	8.873.554,408	585.847,197	380,444	252°16'37"
1+400	8.873.560,497	585.866,247	380,431	252°16'37"
1+420	8.873.566,585	585.885,298	380,418	252°16'37"
1+440	8.873.572,673	585.904,349	380,405	252°16'37"
1+460	8.873.578,761	585.923,400	380,392	252°16'37"
1+480	8.873.584,850	585.942,451	380,412	252°16'37"
1+500	8.873.590,938	585.961,501	380,442	252°16'37"
1+520	8.873.597,026	585.980,552	380,472	252°16'37"
1+540	8.873.606,081	585.997,936	380,406	229°2'29"
1+560	8.873.619,191	586.013,039	380,209	229°2'29"
1+580	8.873.632,301	586.028,143	380,013	229°2'29"
1+600	8.873.645,412	586.043,247	379,816	229°2'29"
1+620	8.873.658,522	586.058,350	379,644	229°2'29"
1+640	8.873.671,632	586.073,454	379,486	229°2'29"
1+660	8.873.684,742	586.088,558	379,327	229°2'29"
1+680	8.873.697,853	586.103,661	379,169	229°2'29"
1+700	8.873.710,963	586.118,765	379,011	229°2'29"
1+720	8.873.724,073	586.133,869	378,852	229°2'29"
1+740	8.873.737,183	586.148,972	378,694	229°2'29"
1+760	8.873.750,294	586.164,076	378,535	229°2'29"
1+780	8.873.763,404	586.179,180	378,377	229°2'29"
1+800	8.873.776,514	586.194,284	378,218	229°2'29"
1+820	8.873.789,624	586.209,387	378,062	229°2'29"
1+840	8.873.802,735	586.224,491	377,914	229°2'29"
1+860	8.873.815,845	586.239,595	377,756	229°2'29"

Consórcio



MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
1+880	8.873.828,955	586.254,698	377,627	229º2'29"
1+900	8.873.842,065	586.269,802	377,536	229º2'29"
1+920	8.873.855,176	586.284,906	377,446	229º2'29"
1+940	8.873.868,286	586.300,009	377,344	229º2'29"
1+960	8.873.881,396	586.315,113	377,184	229º2'29"
1+980	8.873.894,507	586.330,217	377,025	229º2'29"
2+000	8.873.907,617	586.345,320	376,866	229º2'29"
2+020	8.873.920,727	586.360,424	376,706	229º2'29"
2+040	8.873.933,837	586.375,528	376,547	229º2'29"
2+060	8.873.946,948	586.390,631	376,406	229º2'29"
2+080	8.873.960,058	586.405,735	376,343	229º2'29"
2+100	8.873.973,168	586.420,839	376,280	229º2'29"
2+120	8.873.986,278	586.435,942	376,217	229º2'29"
2+140	8.873.999,389	586.451,046	376,149	229º2'29"
2+160	8.874.012,499	586.466,150	375,988	229º2'29"
2+180	8.874.025,609	586.481,253	375,827	229º2'29"
2+200	8.874.038,719	586.496,357	375,667	229º2'29"
2+220	8.874.051,830	586.511,461	375,506	229º2'29"
2+240	8.874.064,940	586.526,565	375,345	229º2'29"
2+260	8.874.078,050	586.541,668	375,184	229º2'29"
2+280	8.874.091,160	586.556,772	375,023	229º2'29"
2+300	8.874.104,271	586.571,876	374,862	229º2'29"
2+320	8.874.117,381	586.586,979	374,701	229º2'29"
2+340	8.874.130,491	586.602,083	374,528	229º2'29"
2+360	8.874.143,601	586.617,187	374,254	229º2'29"
2+380	8.874.156,712	586.632,290	373,981	229º2'29"
2+400	8.874.169,822	586.647,394	373,707	229º2'29"
2+420	8.874.182,932	586.662,498	373,434	229º2'29"
2+440	8.874.199,601	586.672,969	373,464	206º0'55"
2+460	8.874.217,574	586.681,741	373,606	206º0'55"
2+480	8.874.235,548	586.690,513	373,747	206º0'55"
2+500	8.874.253,521	586.699,285	373,889	206º0'55"
2+520	8.874.271,495	586.708,058	373,963	206º0'55"
2+540	8.874.289,468	586.716,830	373,986	206º0'55"
2+560	8.874.307,442	586.725,602	374,009	206º0'55"
2+580	8.874.325,415	586.734,374	374,032	206º0'55"
2+600	8.874.343,389	586.743,146	374,055	206º0'55"
2+620	8.874.361,363	586.751,919	374,078	206º0'55"
2+640	8.874.379,336	586.760,691	374,101	206º0'55"
2+660	8.874.397,310	586.769,463	374,124	206º0'55"
2+680	8.874.415,283	586.778,235	374,147	206º0'55"
2+700	8.874.433,257	586.787,007	374,170	206º0'55"
2+720	8.874.451,230	586.795,780	374,140	206º0'55"
2+740	8.874.469,204	586.804,552	374,064	206º0'55"
2+760	8.874.487,177	586.813,324	373,988	206º0'55"
2+780	8.874.505,151	586.822,096	373,912	206º0'55"
2+800	8.874.523,125	586.830,868	373,836	206º0'55"

Consórcio



MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
2+820	8.874.541,098	586.839,640	373,799	206°0'55"
2+840	8.874.559,072	586.848,413	373,824	206°0'55"
2+860	8.874.577,045	586.857,185	373,850	206°0'55"
2+880	8.874.595,019	586.865,957	373,878	206°0'55"
2+900	8.874.612,992	586.874,729	373,905	206°0'55"
2+920	8.874.630,966	586.883,501	373,933	206°0'55"
2+940	8.874.648,939	586.892,274	373,961	206°0'55"
2+960	8.874.666,913	586.901,046	373,989	206°0'55"
2+980	8.874.684,887	586.909,818	374,016	206°0'55"
3+000	8.874.702,860	586.918,590	374,044	206°0'55"
3+020	8.874.720,834	586.927,362	374,072	206°0'55"
3+040	8.874.738,807	586.936,135	374,100	206°0'55"
3+060	8.874.756,781	586.944,907	374,128	206°0'55"
3+080	8.874.774,754	586.953,679	374,155	206°0'55"
3+100	8.874.792,728	586.962,451	374,183	206°0'55"
3+120	8.874.809,590	586.973,045	374,117	216°45'26"
3+140	8.874.825,614	586.985,014	373,980	216°45'26"
3+160	8.874.841,637	586.996,982	373,844	216°45'26"
3+180	8.874.857,661	587.008,951	373,707	216°45'26"
3+200	8.874.873,684	587.020,919	373,571	216°45'26"
3+220	8.874.889,708	587.032,888	373,434	216°45'26"
3+240	8.874.905,731	587.044,856	373,297	216°45'26"
3+260	8.874.921,755	587.056,825	373,161	216°45'26"
3+280	8.874.937,778	587.068,793	373,024	216°45'26"
3+300	8.874.953,802	587.080,762	372,887	216°45'26"
3+320	8.874.969,826	587.092,730	372,751	216°45'26"
3+340	8.874.985,849	587.104,699	372,614	216°45'26"
3+360	8.875.001,873	587.116,667	372,478	216°45'26"
3+380	8.875.017,896	587.128,636	372,343	216°45'26"
3+400	8.875.033,920	587.140,605	372,218	216°45'26"
3+420	8.875.049,943	587.152,573	372,093	216°45'26"
3+440	8.875.065,967	587.164,542	371,968	216°45'26"
3+460	8.875.081,991	587.176,510	371,864	216°45'26"
3+480	8.875.098,014	587.188,479	371,771	216°45'26"
3+500	8.875.114,038	587.200,447	371,678	216°45'26"
3+520	8.875.130,061	587.212,416	371,585	216°45'26"
3+540	8.875.147,503	587.221,311	371,422	192°47'44"
3+560	8.875.167,007	587.225,741	371,158	192°47'44"
3+580	8.875.186,510	587.230,170	370,893	192°47'44"
3+600	8.875.206,013	587.234,600	370,629	192°47'44"
3+620	8.875.225,517	587.239,029	370,364	192°47'44"
3+640	8.875.245,020	587.243,458	370,121	192°47'44"
3+660	8.875.264,523	587.247,888	369,886	192°47'44"
3+680	8.875.284,026	587.252,317	369,654	192°47'44"
3+700	8.875.303,530	587.256,747	369,431	192°47'44"
3+720	8.875.323,033	587.261,176	369,196	192°47'44"
3+740	8.875.342,536	587.265,606	368,973	192°47'44"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
3+760	8.875.362,040	587.270,035	368,825	192º47'44"
3+780	8.875.381,543	587.274,465	368,676	192º47'44"
3+800	8.875.401,046	587.278,894	368,528	192º47'44"
3+820	8.875.420,550	587.283,324	368,379	192º47'44"
3+840	8.875.440,053	587.287,753	368,231	192º47'44"
3+860	8.875.459,556	587.292,183	368,082	192º47'44"
3+880	8.875.479,060	587.296,612	367,934	192º47'44"
3+900	8.875.498,563	587.301,041	367,785	192º47'44"
3+920	8.875.518,066	587.305,471	367,603	192º47'44"
3+940	8.875.537,570	587.309,900	367,365	192º47'44"
3+960	8.875.557,073	587.314,330	367,127	192º47'44"
3+980	8.875.576,576	587.318,759	366,890	192º47'44"
4+000	8.875.596,080	587.323,189	366,652	192º47'44"
4+020	8.875.615,583	587.327,618	366,414	192º47'44"
4+040	8.875.635,086	587.332,048	366,083	192º47'44"
4+060	8.875.654,590	587.336,477	365,653	192º47'44"
4+080	8.875.674,093	587.340,907	365,223	192º47'44"
4+100	8.875.693,603	587.343,897	364,884	167º42'25"
4+120	8.875.713,144	587.339,639	365,001	167º42'25"
4+140	8.875.732,686	587.335,381	365,118	167º42'25"
4+160	8.875.752,227	587.331,123	365,236	167º42'25"
4+180	8.875.771,768	587.326,864	365,353	167º42'25"
4+200	8.875.791,310	587.322,606	365,471	167º42'25"
4+220	8.875.810,851	587.318,348	365,588	167º42'25"
4+240	8.875.830,425	587.314,249	365,795	169º21'17"
4+260	8.875.850,081	587.310,554	366,232	169º21'17"
4+280	8.875.869,737	587.306,860	366,668	169º21'17"
4+300	8.875.889,392	587.303,165	367,104	169º21'17"
4+320	8.875.909,048	587.299,470	367,540	169º21'17"
4+340	8.875.928,704	587.295,776	367,977	169º21'17"
4+360	8.875.948,360	587.292,081	368,413	169º21'17"
4+380	8.875.968,016	587.288,387	368,849	169º21'17"
4+400	8.875.987,671	587.284,692	369,285	169º21'17"
4+420	8.876.007,294	587.280,830	369,498	168º6'0"
4+440	8.876.026,864	587.276,706	369,362	168º6'0"
4+460	8.876.046,434	587.272,582	369,227	168º6'0"
4+480	8.876.066,004	587.268,458	369,091	168º6'0"
4+500	8.876.085,574	587.264,334	368,955	168º6'0"
4+520	8.876.105,145	587.260,210	368,819	168º6'0"
4+540	8.876.124,715	587.256,086	368,683	168º6'0"
4+560	8.876.144,285	587.251,962	368,548	168º6'0"
4+580	8.876.164,179	587.251,969	368,999	182º55'53"
4+600	8.876.184,153	587.252,992	369,595	182º55'53"
4+620	8.876.204,127	587.254,015	370,191	182º55'53"
4+640	8.876.224,101	587.255,037	370,787	182º55'53"
4+660	8.876.244,075	587.256,060	371,383	182º55'53"
4+680	8.876.264,048	587.257,083	371,979	182º55'53"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
4+700	8.876.284,022	587.258,106	372,575	182°55'53"
4+720	8.876.303,996	587.259,129	373,171	182°55'53"
4+740	8.876.323,970	587.260,151	373,767	182°55'53"
4+760	8.876.343,944	587.261,174	374,363	182°55'53"
4+780	8.876.363,918	587.262,197	374,958	182°55'53"
4+800	8.876.383,891	587.263,220	375,554	182°55'53"
4+820	8.876.403,865	587.264,243	376,126	182°55'53"
4+840	8.876.423,839	587.265,265	376,662	182°55'53"
4+860	8.876.443,813	587.266,288	377,198	182°55'53"
4+880	8.876.463,787	587.267,311	377,733	182°55'53"
4+900	8.876.483,761	587.268,334	378,269	182°55'53"
4+920	8.876.503,734	587.269,357	378,877	182°55'53"
4+940	8.876.523,708	587.270,379	379,544	182°55'53"
4+960	8.876.543,682	587.271,402	380,368	182°55'53"
4+980	8.876.563,656	587.272,425	381,193	182°55'53"
5+000	8.876.583,630	587.273,448	382,017	182°55'53"
5+020	8.876.603,604	587.274,471	382,841	182°55'53"
5+040	8.876.623,577	587.275,493	383,666	182°55'53"
5+060	8.876.643,244	587.272,808	384,111	167°35'19"
5+080	8.876.662,776	587.268,510	384,392	167°35'19"
5+100	8.876.682,309	587.264,211	384,673	167°35'19"
5+120	8.876.701,841	587.259,912	384,954	167°35'19"
5+140	8.876.721,374	587.255,614	385,235	167°35'19"
5+160	8.876.740,907	587.251,315	385,516	167°35'19"
5+180	8.876.760,439	587.247,016	385,797	167°35'19"
5+200	8.876.779,972	587.242,718	386,078	167°35'19"
5+220	8.876.799,504	587.238,419	386,359	167°35'19"
5+240	8.876.819,037	587.234,121	386,640	167°35'19"
5+260	8.876.838,570	587.229,822	386,921	167°35'19"
5+280	8.876.858,102	587.225,523	387,202	167°35'19"
5+300	8.876.877,635	587.221,225	387,483	167°35'19"
5+320	8.876.896,604	587.214,907	385,701	161°15'45"
5+340	8.876.915,544	587.208,482	383,809	161°15'45"
5+360	8.876.934,484	587.202,057	381,917	161°15'45"
5+380	8.876.953,424	587.195,633	380,025	161°15'45"
5+400	8.876.972,364	587.189,208	378,133	161°15'45"
5+420	8.876.991,304	587.182,783	376,241	161°15'45"
5+440	8.877.010,244	587.176,359	374,350	161°15'45"
5+460	8.877.029,184	587.169,934	372,458	161°15'45"
5+480	8.877.048,124	587.163,509	370,566	161°15'45"
5+500	8.877.067,064	587.157,085	368,674	161°15'45"
5+520	8.877.085,955	587.150,517	367,390	160°19'7"
5+540	8.877.104,786	587.143,781	366,818	160°19'7"
5+560	8.877.123,618	587.137,045	366,246	160°19'7"
5+580	8.877.142,449	587.130,310	365,674	160°19'7"
5+600	8.877.161,281	587.123,574	365,102	160°19'7"
5+620	8.877.180,113	587.116,838	364,529	160°19'7"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
5+640	8.877.198,944	587.110,102	363,957	160°19'7"
5+660	8.877.217,776	587.103,366	363,385	160°19'7"
5+680	8.877.236,931	587.098,307	362,978	177°48'18"
5+700	8.877.256,917	587.097,541	362,959	177°48'18"
5+720	8.877.276,902	587.096,775	362,941	177°48'18"
5+740	8.877.296,887	587.096,009	362,923	177°48'18"
5+760	8.877.316,873	587.095,243	362,904	177°48'18"
5+780	8.877.336,858	587.094,477	362,886	177°48'18"
5+800	8.877.356,843	587.093,711	362,868	177°48'18"
5+820	8.877.376,797	587.092,652	363,167	169°39'52"
5+840	8.877.396,472	587.089,064	366,221	169°39'52"
5+860	8.877.416,147	587.085,476	369,275	169°39'52"
5+880	8.877.435,823	587.081,888	372,328	169°39'52"
5+900	8.877.455,498	587.078,300	375,382	169°39'52"
5+920	8.877.475,242	587.075,121	375,490	171°24'58"
5+940	8.877.495,018	587.072,136	374,225	171°24'58"
5+960	8.877.514,812	587.069,275	372,863	172°01'59"
5+980	8.877.534,619	587.066,503	371,430	172°01'59"
6+000	8.877.554,426	587.063,731	369,998	172°01'59"
6+020	8.877.574,270	587.061,259	368,807	174°06'39"
6+040	8.877.594,164	587.059,207	367,956	174°06'39"
6+060	8.877.614,058	587.057,155	367,104	174°06'39"
6+080	8.877.633,867	587.054,489	367,439	169°52'28"
6+100	8.877.653,555	587.050,973	369,415	169°52'28"
6+120	8.877.673,244	587.047,457	371,391	169°52'28"
6+140	8.877.692,932	587.043,941	373,367	169°52'28"
6+160	8.877.712,671	587.040,748	374,608	172°19'12"
6+180	8.877.732,492	587.038,075	374,671	172°19'12"
6+200	8.877.752,312	587.035,403	374,734	172°19'12"
6+220	8.877.772,133	587.032,730	374,796	172°19'12"
6+240	8.877.791,954	587.030,057	374,859	172°19'12"
6+260	8.877.811,774	587.027,384	374,922	172°19'12"
6+280	8.877.831,595	587.024,711	374,985	172°19'12"
6+300	8.877.851,415	587.022,039	375,047	172°19'12"
6+320	8.877.871,236	587.019,366	375,110	172°19'12"
6+340	8.877.891,057	587.016,693	375,173	172°19'12"
6+360	8.877.910,485	587.012,207	374,206	163°16'1"
6+380	8.877.929,638	587.006,449	372,515	163°16'1"
6+400	8.877.948,791	587.000,691	370,825	163°16'1"
6+420	8.877.967,944	586.994,933	369,134	163°16'1"
6+440	8.877.987,098	586.989,174	367,444	163°16'1"
6+460	8.878.006,748	586.986,933	366,873	180°38'12"
6+480	8.878.026,747	586.987,155	367,084	180°38'12"
6+500	8.878.046,746	586.987,377	367,296	180°38'12"
6+520	8.878.066,744	586.987,599	367,508	180°38'12"
6+540	8.878.086,743	586.987,822	367,719	180°38'12"
6+560	8.878.106,723	586.988,438	367,851	184°42'1"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
6+580	8.878.126,656	586.990,077	367,774	184°42'1"
6+600	8.878.146,589	586.991,716	367,697	184°42'1"
6+620	8.878.166,522	586.993,354	367,621	184°42'1"
6+640	8.878.186,454	586.994,993	367,544	184°42'1"
6+660	8.878.206,387	586.996,632	367,468	184°42'1"
6+680	8.878.226,320	586.998,271	367,391	184°42'1"
6+700	8.878.246,253	586.999,910	367,315	184°42'1"
6+720	8.878.266,185	587.001,549	367,240	184°42'1"
6+740	8.878.286,118	587.003,187	367,165	184°42'1"
6+760	8.878.306,051	587.004,826	367,090	184°42'1"
6+780	8.878.325,984	587.006,465	367,014	184°42'1"
6+800	8.878.345,916	587.008,104	366,939	184°42'1"
6+820	8.878.365,849	587.009,743	366,863	184°42'1"
6+840	8.878.385,782	587.011,382	366,788	184°42'1"
6+860	8.878.405,715	587.013,021	366,713	184°42'1"
6+880	8.878.425,647	587.014,659	366,637	184°42'1"
6+900	8.878.445,580	587.016,298	366,562	184°42'1"
6+920	8.878.465,513	587.017,937	366,487	184°42'1"
6+940	8.878.485,446	587.019,576	366,411	184°42'1"
6+960	8.878.505,378	587.021,215	366,335	184°42'1"
6+980	8.878.525,311	587.022,854	366,260	184°42'1"
7+000	8.878.545,244	587.024,492	366,185	184°42'1"
7+020	8.878.565,176	587.026,131	366,109	184°42'1"
7+040	8.878.585,109	587.027,770	366,033	184°42'1"
7+060	8.878.605,042	587.029,409	365,957	184°42'1"
7+080	8.878.624,975	587.031,048	365,881	184°42'1"
7+100	8.878.644,907	587.032,687	365,805	184°42'1"
7+120	8.878.664,840	587.034,326	365,729	184°42'1"
7+140	8.878.684,773	587.035,964	365,654	184°42'1"
7+160	8.878.704,706	587.037,603	365,578	184°42'1"
7+180	8.878.724,638	587.039,242	365,502	184°42'1"
7+200	8.878.744,571	587.040,881	365,426	184°42'1"
7+220	8.878.764,504	587.039,829	365,390	169°57'25"
7+240	8.878.784,437	587.036,341	365,389	169°57'25"
7+260	8.878.803,370	587.032,854	365,389	169°57'25"
7+280	8.878.823,303	587.029,366	365,388	169°57'25"
7+300	8.878.843,236	587.025,878	365,388	169°57'25"
7+320	8.878.862,169	587.022,390	365,387	169°57'25"
7+340	8.878.882,102	587.018,903	365,387	169°57'25"
7+360	8.878.902,035	587.015,415	365,386	169°57'25"
7+380	8.878.921,968	587.011,927	365,386	169°57'25"
7+400	8.878.941,901	587.008,440	365,386	169°57'25"
7+420	8.878.961,834	587.004,952	365,386	169°57'25"
7+440	8.878.981,767	587.001,464	365,385	169°57'25"
7+460	8.879.000,700	586.997,976	365,384	169°57'25"
7+480	8.879.020,633	586.994,489	365,383	169°57'25"
7+500	8.879.040,566	586.991,001	365,384	169°57'25"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
7+520	8.879.059,782	586.987,513	365,383	169°57'25"
7+540	8.879.079,475	586.984,025	365,383	169°57'25"
7+560	8.879.099,169	586.980,538	365,382	169°57'25"
7+580	8.879.118,862	586.977,050	365,381	169°57'25"
7+600	8.879.138,556	586.973,562	365,381	169°57'25"
7+620	8.879.158,249	586.970,075	365,381	169°57'25"
7+640	8.879.177,943	586.966,587	365,380	169°57'25"
7+660	8.879.197,636	586.963,099	365,380	169°57'25"
7+680	8.879.217,330	586.959,611	365,379	169°57'25"
7+700	8.879.237,023	586.956,124	365,379	169°57'25"
7+720	8.879.256,717	586.952,636	365,378	169°57'25"
7+740	8.879.276,411	586.949,148	365,378	169°57'25"
7+760	8.879.296,104	586.945,660	365,378	169°57'25"
7+780	8.879.315,798	586.942,173	365,377	169°57'25"
7+800	8.879.335,491	586.938,685	365,376	169°57'25"
7+820	8.879.355,185	586.935,197	365,376	169°57'25"
7+840	8.879.374,878	586.931,710	365,375	169°57'25"
7+860	8.879.394,572	586.928,222	365,375	169°57'25"
7+880	8.879.414,265	586.924,734	365,374	169°57'25"
7+900	8.879.433,959	586.921,246	365,374	169°57'25"
7+920	8.879.453,652	586.917,759	365,359	169°57'25"
7+940	8.879.473,346	586.914,271	365,238	169°57'25"
7+960	8.879.493,040	586.910,783	365,134	169°57'25"
7+980	8.879.512,733	586.907,295	365,135	169°57'25"
8+000	8.879.532,427	586.903,808	365,069	169°57'25"
8+020	8.879.552,120	586.900,320	364,994	169°57'25"
8+040	8.879.571,814	586.896,832	364,996	169°57'25"
8+060	8.879.591,507	586.893,345	364,998	169°57'25"
8+080	8.879.611,201	586.889,857	365,051	169°57'25"
8+100	8.879.630,894	586.886,369	365,182	169°57'25"
8+120	8.879.650,588	586.882,881	365,312	169°57'25"
8+140	8.879.668,698	586.875,403	365,157	146°45'43"
8+160	8.879.685,426	586.864,440	364,751	146°45'43"
8+180	8.879.702,154	586.853,478	364,346	146°45'43"
8+200	8.879.718,882	586.842,515	363,941	146°45'43"
8+220	8.879.735,610	586.831,553	363,535	146°45'43"
8+240	8.879.751,943	586.820,037	363,273	142°13'40"
8+260	8.879.767,752	586.807,787	363,198	142°13'40"
8+280	8.879.783,561	586.795,536	363,124	142°13'40"
8+300	8.879.799,370	586.783,286	363,049	142°13'40"
8+320	8.879.815,179	586.771,035	362,974	142°13'40"
8+340	8.879.830,988	586.758,785	362,842	142°13'40"
8+360	8.879.846,797	586.746,534	362,730	142°13'40"
8+380	8.879.862,606	586.734,284	362,642	142°13'40"
8+400	8.879.878,415	586.722,033	362,554	142°13'40"
8+420	8.879.894,224	586.709,783	362,465	142°13'40"
8+440	8.879.910,033	586.697,532	362,376	142°13'40"

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**MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO****SISTEMA ADUTOR ALGODÕES II****Trecho 2 : ETA - ALTO ALEGRE**

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
8+460	8.879.925,842	586.685,282	362,287	142°13'40"
8+480	8.879.941,651	586.673,031	362,198	142°13'40"
8+500	8.879.957,461	586.660,781	362,109	142°13'40"
8+520	8.879.973,270	586.648,530	362,020	142°13'40"
8+540	8.879.989,079	586.636,280	361,931	142°13'40"
8+560	8.880.004,888	586.624,029	361,842	142°13'40"
8+580	8.880.020,697	586.611,779	361,753	142°13'40"
8+600	8.880.036,506	586.599,528	361,665	142°13'40"
8+620	8.880.052,315	586.587,278	361,577	142°13'40"
8+640	8.880.068,124	586.575,027	361,489	142°13'40"
8+660	8.880.083,933	586.562,777	361,401	142°13'40"
8+680	8.880.099,742	586.550,526	361,313	142°13'40"
8+700	8.880.115,551	586.538,276	361,225	142°13'40"
8+720	8.880.132,370	586.527,566	361,281	151°16'32"
8+740	8.880.149,908	586.517,954	361,441	151°16'32"
8+760	8.880.167,447	586.508,342	361,600	151°16'32"
8+780	8.880.184,986	586.498,730	361,754	151°16'32"
8+800	8.880.202,525	586.489,118	361,905	151°16'32"
8+820	8.880.220,064	586.479,506	362,072	151°16'32"
8+840	8.880.237,603	586.469,894	362,222	151°16'32"
8+860	8.880.255,141	586.460,282	362,406	151°16'32"
8+880	8.880.271,527	586.449,118	362,802	135°29'51"
8+900	8.880.285,792	586.435,099	363,867	135°29'51"
8+920	8.880.300,056	586.421,081	364,932	135°29'51"
8+940	8.880.312,515	586.406,308	366,044	89°50'36"
8+960	8.880.312,461	586.386,308	365,376	89°50'36"
8+980	8.880.312,406	586.366,308	364,890	89°50'36"
9+000	8.880.312,351	586.346,308	364,419	89°50'36"
9+020	8.880.312,296	586.326,308	363,932	89°50'36"
9+040	8.880.312,242	586.306,308	363,556	89°50'36"
9+060	8.880.323,776	586.293,000	363,450	150°9'40"
9+080	8.880.341,124	586.283,048	363,422	150°9'40"
9+100	8.880.358,473	586.273,097	363,393	150°9'40"
9+120	8.880.375,822	586.263,146	363,365	150°9'40"
9+140	8.880.393,170	586.253,195	363,337	150°9'40"
9+160	8.880.410,519	586.243,244	363,309	150°9'40"
9+180	8.880.427,867	586.233,292	363,281	150°9'40"
9+200	8.880.445,216	586.223,341	363,254	150°9'40"
9+220	8.880.462,564	586.213,390	363,226	150°9'40"
9+240	8.880.479,913	586.203,439	363,198	150°9'40"
9+260	8.880.497,262	586.193,487	363,170	150°9'40"
9+280	8.880.514,610	586.183,536	363,143	150°9'40"
9+300	8.880.531,959	586.173,585	363,115	150°9'40"
9+320	8.880.549,307	586.163,634	363,087	150°9'40"
9+340	8.880.566,656	586.153,683	363,059	150°9'40"
9+360	8.880.584,004	586.143,731	363,032	150°9'40"
9+380	8.880.601,353	586.133,780	363,004	150°9'40"

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**MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO****SISTEMA ADUTOR ALGODÕES II****Trecho 2 : ETA - ALTO ALEGRE**

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
9+400	8.880.618,702	586.123,829	362,972	150°9'40"
9+420	8.880.636,050	586.113,878	362,944	150°9'40"
9+440	8.880.653,399	586.103,926	362,916	150°9'40"
9+460	8.880.670,747	586.093,975	362,889	150°9'40"
9+480	8.880.688,096	586.084,024	362,861	150°9'40"
9+500	8.880.705,444	586.074,073	362,835	150°9'40"
9+520	8.880.722,793	586.064,121	362,809	150°9'40"
9+540	8.880.740,142	586.054,170	362,783	150°9'40"
9+560	8.880.757,701	586.044,607	362,709	152°50'44"
9+580	8.880.775,496	586.035,479	362,583	152°50'44"
9+600	8.880.793,292	586.026,351	362,457	152°50'44"
9+620	8.880.811,088	586.017,224	362,331	152°50'44"
9+640	8.880.828,883	586.008,096	362,205	152°50'44"
9+660	8.880.846,679	585.998,968	362,082	152°50'44"
9+680	8.880.864,474	585.989,840	361,959	152°50'44"
9+700	8.880.882,270	585.980,712	361,836	152°50'44"
9+720	8.880.900,065	585.971,584	361,713	152°50'44"
9+740	8.880.917,861	585.962,456	361,589	152°50'44"
9+760	8.880.935,657	585.953,329	361,466	152°50'44"
9+780	8.880.953,452	585.944,201	361,343	152°50'44"
9+800	8.880.971,248	585.935,073	361,219	152°50'44"
9+820	8.880.989,043	585.925,945	361,096	152°50'44"
9+840	8.881.006,839	585.916,817	360,973	152°50'44"
9+860	8.881.024,634	585.907,689	360,849	152°50'44"
9+880	8.881.042,430	585.898,562	360,726	152°50'44"
9+900	8.881.060,226	585.889,434	360,603	152°50'44"
9+920	8.881.078,021	585.880,306	360,481	152°50'44"
9+940	8.881.095,817	585.871,178	360,361	152°50'44"
9+960	8.881.113,612	585.862,050	360,242	152°50'44"
9+980	8.881.131,408	585.852,922	360,123	152°50'44"
10+000	8.881.151,136	585.850,680	360,139	175°48'9"
10+020	8.881.171,082	585.849,216	360,171	175°48'9"
10+040	8.881.191,029	585.847,752	360,203	175°48'9"
10+060	8.881.210,975	585.846,289	360,234	175°48'9"
10+080	8.881.230,921	585.844,825	360,265	175°48'9"
10+100	8.881.250,868	585.843,361	360,296	175°48'9"
10+120	8.881.270,814	585.841,897	360,341	175°48'9"
10+140	8.881.290,760	585.840,433	360,444	175°48'9"
10+160	8.881.310,707	585.838,969	360,488	175°48'9"
10+180	8.881.330,653	585.837,505	360,517	175°48'9"
10+200	8.881.350,599	585.836,042	360,546	175°48'9"
10+220	8.881.370,546	585.834,578	360,567	175°48'9"
10+240	8.881.390,492	585.833,114	360,539	175°48'9"
10+260	8.881.409,889	585.829,048	360,641	160°19'57"
10+280	8.881.428,722	585.822,317	360,876	160°19'57"
10+300	8.881.447,555	585.815,586	361,101	160°19'57"
10+320	8.881.466,388	585.808,854	361,294	160°19'57"

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**MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO****SISTEMA ADUTOR ALGODÕES II****Trecho 2 : ETA - ALTO ALEGRE**

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
10+340	8.881.485,222	585.802,123	361,487	160°19'57"
10+360	8.881.504,055	585.795,392	361,615	160°19'57"
10+380	8.881.522,888	585.788,661	361,811	160°19'57"
10+400	8.881.541,721	585.781,929	362,005	160°19'57"
10+420	8.881.560,554	585.775,198	362,200	160°19'57"
10+440	8.881.579,388	585.768,467	362,394	160°19'57"
10+460	8.881.598,221	585.761,736	362,580	160°19'57"
10+480	8.881.617,090	585.755,259	362,772	183°33'44"
10+500	8.881.637,052	585.756,502	363,140	183°33'44"
10+520	8.881.657,013	585.757,745	363,508	183°33'44"
10+540	8.881.676,974	585.758,987	363,876	183°33'44"
10+560	8.881.696,936	585.760,230	364,244	183°33'44"
10+580	8.881.716,897	585.761,472	364,618	183°33'44"
10+600	8.881.736,858	585.762,715	365,005	183°33'44"
10+620	8.881.756,820	585.763,958	365,393	183°33'44"
10+640	8.881.776,781	585.765,200	365,780	183°33'44"
10+660	8.881.796,742	585.766,443	366,191	183°33'44"
10+680	8.881.816,630	585.766,517	366,553	169°11'24"
10+700	8.881.836,275	585.762,766	366,657	169°11'24"
10+720	8.881.855,920	585.759,015	366,798	169°11'24"
10+740	8.881.875,565	585.755,264	366,948	169°11'24"
10+760	8.881.895,210	585.751,513	367,097	169°11'24"
10+780	8.881.914,855	585.747,762	367,246	169°11'24"
10+800	8.881.934,500	585.744,011	367,450	169°11'24"
10+820	8.881.954,145	585.740,260	367,596	169°11'24"
10+840	8.881.973,790	585.736,509	367,743	169°11'24"
10+860	8.881.993,436	585.732,757	367,889	169°11'24"
10+880	8.882.013,081	585.729,006	368,036	169°11'24"
10+900	8.882.032,726	585.725,255	368,183	169°11'24"
10+920	8.882.052,371	585.721,504	368,329	169°11'24"
10+940	8.882.072,016	585.717,753	368,475	169°11'24"
10+960	8.882.091,661	585.714,002	368,620	169°11'24"
10+980	8.882.111,306	585.710,251	368,760	169°11'24"
11+000	8.882.123,353	585.724,508	369,387	236°33'48"
11+020	8.882.134,374	585.741,198	370,080	236°33'48"
11+040	8.882.145,394	585.757,888	370,774	236°33'48"
11+060	8.882.156,414	585.774,577	371,465	236°33'48"
11+080	8.882.167,434	585.791,267	372,157	236°33'48"
11+100	8.882.178,455	585.807,957	372,849	236°33'48"
11+120	8.882.189,475	585.824,647	373,541	236°33'48"
11+140	8.882.200,495	585.841,337	374,232	236°33'48"
11+160	8.882.211,516	585.858,027	374,924	236°33'48"
11+180	8.882.222,536	585.874,717	375,615	236°33'48"
11+200	8.882.233,556	585.891,407	376,308	236°33'48"
11+220	8.882.244,577	585.908,097	376,999	236°33'48"
11+240	8.882.255,597	585.924,786	377,690	236°33'48"
11+260	8.882.266,617	585.941,476	378,380	236°33'48"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 2 : ETA - ALTO ALEGRE

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
11+280	8.882.277,660	585.958,152	379,119	236°25'27"
11+300	8.882.288,721	585.974,815	379,896	236°25'27"
11+320	8.882.299,782	585.991,478	380,672	236°25'27"
11+340	8.882.310,842	586.008,141	381,449	236°25'27"
11+360	8.882.321,903	586.024,804	382,226	236°25'27"
11+380	8.882.332,964	586.041,467	383,003	236°25'27"
11+400	8.882.344,025	586.058,130	383,780	236°25'27"
11+420	8.882.355,086	586.074,793	384,560	236°25'27"
11+440	8.882.366,146	586.091,456	385,339	236°25'27"
11+460	8.882.377,207	586.108,119	386,119	236°25'27"
11+480	8.882.388,268	586.124,782	386,894	236°25'27"
11+500	8.882.399,329	586.141,445	387,673	236°25'27"
11+520	8.882.410,360	586.158,128	388,250	237°19'32"
11+540	8.882.421,158	586.174,963	387,515	237°19'32"
11+540.949	8.882.421,670	586.175,762	387.494,000	237°19'32"



2.2.3 TRECHO 3: Alto Alegre - Curimatá

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
0+000	8.882.443,942	586.172,700	386,785	116°28'44"
0+020	8.882.427,186	586.163,393	387,288	26°30'7"
0+040	8.882.419,660	586.147,247	387,600	83°48'9"
0+060	8.882.423,409	586.128,421	387,480	116°28'44"
0+080	8.882.432,327	586.110,519	387,146	116°28'44"
0+100	8.882.441,244	586.092,617	386,812	116°28'44"
0+120	8.882.450,161	586.074,715	386,478	116°28'44"
0+140	8.882.459,079	586.056,813	386,144	116°28'44"
0+160	8.882.467,996	586.038,911	385,811	116°28'44"
0+180	8.882.476,913	586.021,009	385,477	116°28'44"
0+200	8.882.485,823	586.003,103	385,143	116°24'35"
0+220	8.882.494,719	585.985,190	384,809	116°24'35"
0+240	8.882.503,614	585.967,278	384,475	116°24'35"
0+260	8.882.512,510	585.949,365	384,140	116°24'35"
0+280	8.882.521,406	585.931,452	383,806	116°24'35"
0+300	8.882.530,302	585.913,539	383,472	116°24'35"
0+320	8.882.539,197	585.895,627	383,137	116°24'35"
0+340	8.882.548,093	585.877,714	382,803	116°24'35"
0+360	8.882.556,989	585.859,801	382,469	116°24'35"
0+380	8.882.565,885	585.841,889	382,134	116°24'35"
0+400	8.882.574,780	585.823,976	381,800	116°24'35"
0+420	8.882.583,676	585.806,063	381,466	116°24'35"
0+440	8.882.592,572	585.788,150	381,131	116°24'35"
0+460	8.882.601,468	585.770,238	380,797	116°24'35"
0+480	8.882.610,363	585.752,325	380,463	116°24'35"
0+500	8.882.619,259	585.734,412	380,128	116°24'35"
0+520	8.882.628,155	585.716,500	379,794	116°24'35"
0+540	8.882.637,051	585.698,587	379,776	116°24'35"
0+560	8.882.646,221	585.680,813	379,948	117°24'59"
0+580	8.882.655,430	585.663,060	380,324	117°24'59"
0+600	8.882.664,639	585.645,306	380,808	117°24'59"
0+620	8.882.673,848	585.627,552	381,291	117°24'59"
0+640	8.882.683,057	585.609,799	381,774	117°24'59"
0+660	8.882.692,266	585.592,045	382,256	117°24'59"
0+680	8.882.701,476	585.574,291	382,739	117°24'59"
0+700	8.882.710,685	585.556,538	383,222	117°24'59"
0+720	8.882.719,894	585.538,784	383,705	117°24'59"
0+740	8.882.729,103	585.521,031	384,187	117°24'59"
0+760	8.882.738,312	585.503,277	384,670	117°24'59"
0+780	8.882.747,521	585.485,523	385,151	117°24'59"
0+800	8.882.756,730	585.467,770	385,634	117°24'59"
0+820	8.882.765,939	585.450,016	386,114	117°24'59"
0+840	8.882.775,148	585.432,262	386,597	117°24'59"
0+860	8.882.784,357	585.414,509	387,077	117°24'59"
0+880	8.882.793,567	585.396,755	387,559	117°24'59"
0+900	8.882.802,776	585.379,001	388,038	117°24'59"
0+920	8.882.811,985	585.361,248	388,521	117°24'59"
0+940	8.882.821,194	585.343,494	388,693	117°24'59"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
0+960	8.882.830,403	585.325,740	388,809	117°24'59"
0+980	8.882.839,612	585.307,987	388,925	117°24'59"
1+000	8.882.848,821	585.290,233	389,040	117°24'59"
1+020	8.882.858,030	585.272,479	389,156	117°24'59"
1+040	8.882.867,239	585.254,726	389,272	117°24'59"
1+060	8.882.876,487	585.236,992	389,075	118°35'19"
1+080	8.882.886,057	585.219,431	388,714	118°35'19"
1+100	8.882.895,627	585.201,869	388,352	118°35'19"
1+120	8.882.905,198	585.184,308	387,990	118°35'19"
1+140	8.882.914,768	585.166,746	387,628	118°35'19"
1+160	8.882.924,339	585.149,184	387,266	118°35'19"
1+180	8.882.933,909	585.131,623	386,889	118°35'19"
1+200	8.882.943,429	585.114,035	386,505	117°35'14"
1+220	8.882.952,691	585.096,309	386,092	117°35'14"
1+240	8.882.961,953	585.078,582	385,653	117°35'14"
1+260	8.882.971,215	585.060,856	385,215	117°35'14"
1+280	8.882.980,477	585.043,130	384,777	117°35'14"
1+300	8.882.989,739	585.025,404	384,338	117°35'14"
1+320	8.882.999,001	585.007,678	383,900	117°35'14"
1+340	8.883.008,263	584.989,952	383,461	117°35'14"
1+360	8.883.017,525	584.972,226	383,023	117°35'14"
1+380	8.883.026,787	584.954,500	382,585	117°35'14"
1+400	8.883.036,049	584.936,773	382,146	117°35'14"
1+420	8.883.045,311	584.919,047	381,708	117°35'14"
1+440	8.883.054,573	584.901,321	381,269	117°35'14"
1+460	8.883.063,835	584.883,595	380,831	117°35'14"
1+480	8.883.073,097	584.865,869	380,393	117°35'14"
1+500	8.883.082,359	584.848,143	379,954	117°35'14"
1+520	8.883.091,621	584.830,417	379,516	117°35'14"
1+540	8.883.100,883	584.812,690	379,077	117°35'14"
1+560	8.883.110,145	584.794,964	378,639	117°35'14"
1+580	8.883.119,407	584.777,238	378,201	117°35'14"
1+600	8.883.128,669	584.759,512	377,762	117°35'14"
1+620	8.883.137,931	584.741,786	377,324	117°35'14"
1+640	8.883.147,193	584.724,060	376,885	117°35'14"
1+660	8.883.156,455	584.706,334	376,447	117°35'14"
1+680	8.883.165,717	584.688,607	376,009	117°35'14"
1+700	8.883.174,979	584.670,881	375,570	117°35'14"
1+720	8.883.184,241	584.653,155	375,132	117°35'14"
1+740	8.883.193,503	584.635,429	374,693	117°35'14"
1+760	8.883.202,765	584.617,703	374,255	117°35'14"
1+780	8.883.212,027	584.599,977	373,817	117°35'14"
1+800	8.883.221,288	584.582,251	373,378	117°35'14"
1+820	8.883.230,550	584.564,525	372,940	117°35'14"
1+840	8.883.239,812	584.546,798	372,501	117°35'14"
1+860	8.883.249,079	584.529,075	372,223	117°55'2"
1+880	8.883.258,443	584.511,402	372,038	117°55'2"
1+900	8.883.267,807	584.493,730	371,921	117°55'2"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
1+920	8.883.277,171	584.476,057	371,842	117°55'2"
1+940	8.883.286,535	584.458,385	371,763	117°55'2"
1+960	8.883.295,898	584.440,712	371,684	117°55'2"
1+980	8.883.305,262	584.423,040	371,605	117°55'2"
2+000	8.883.314,626	584.405,367	371,526	117°55'2"
2+020	8.883.323,990	584.387,695	371,447	117°55'2"
2+040	8.883.333,354	584.370,022	371,368	117°55'2"
2+060	8.883.342,718	584.352,350	371,289	117°55'2"
2+080	8.883.352,082	584.334,677	371,210	117°55'2"
2+100	8.883.361,446	584.317,005	371,131	117°55'2"
2+120	8.883.370,810	584.299,332	371,053	117°55'2"
2+140	8.883.380,174	584.281,660	370,974	117°55'2"
2+160	8.883.389,538	584.263,987	370,895	117°55'2"
2+180	8.883.398,901	584.246,315	370,816	117°55'2"
2+200	8.883.408,265	584.228,642	370,737	117°55'2"
2+220	8.883.417,629	584.210,970	370,658	117°55'2"
2+240	8.883.426,993	584.193,297	370,579	117°55'2"
2+260	8.883.436,357	584.175,625	370,500	117°55'2"
2+280	8.883.445,721	584.157,952	370,421	117°55'2"
2+300	8.883.455,085	584.140,280	370,342	117°55'2"
2+320	8.883.464,449	584.122,607	370,263	117°55'2"
2+340	8.883.473,813	584.104,935	370,184	117°55'2"
2+360	8.883.483,177	584.087,262	370,105	117°55'2"
2+380	8.883.492,541	584.069,590	370,026	117°55'2"
2+400	8.883.501,905	584.051,917	369,947	117°55'2"
2+420	8.883.511,268	584.034,245	369,869	117°55'2"
2+440	8.883.520,632	584.016,572	369,790	117°55'2"
2+460	8.883.529,996	583.998,900	369,711	117°55'2"
2+480	8.883.539,360	583.981,227	369,632	117°55'2"
2+500	8.883.548,724	583.963,555	369,553	117°55'2"
2+520	8.883.558,088	583.945,882	369,474	117°55'2"
2+540	8.883.567,452	583.928,210	369,387	117°55'2"
2+560	8.883.576,816	583.910,537	369,296	117°55'2"
2+580	8.883.586,389	583.892,978	369,092	118°48'55"
2+600	8.883.596,029	583.875,454	368,823	118°48'55"
2+620	8.883.605,669	583.857,931	368,553	118°48'55"
2+640	8.883.615,308	583.840,407	368,284	118°48'55"
2+660	8.883.624,948	583.822,883	368,014	118°48'55"
2+680	8.883.634,588	583.805,360	367,745	118°48'55"
2+700	8.883.644,227	583.787,836	367,475	118°48'55"
2+720	8.883.653,867	583.770,313	367,206	118°48'55"
2+740	8.883.663,507	583.752,789	366,936	118°48'55"
2+760	8.883.673,146	583.735,266	366,667	118°48'55"
2+780	8.883.682,786	583.717,742	366,397	118°48'55"
2+800	8.883.692,426	583.700,218	366,128	118°48'55"
2+820	8.883.702,066	583.682,695	365,858	118°48'55"
2+840	8.883.711,705	583.665,171	365,589	118°48'55"
2+860	8.883.721,345	583.647,648	365,319	118°48'55"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
2+880	8.883.730,985	583.630,124	365,050	118°48'55"
2+900	8.883.740,624	583.612,600	364,780	118°48'55"
2+920	8.883.750,264	583.595,077	364,511	118°48'55"
2+940	8.883.761,313	583.578,456	364,839	126°28'37"
2+960	8.883.773,203	583.562,374	365,514	126°28'37"
2+980	8.883.785,093	583.546,292	366,191	126°28'37"
3+000	8.883.796,983	583.530,210	366,869	126°28'37"
3+020	8.883.808,873	583.514,128	367,548	126°28'37"
3+040	8.883.820,763	583.498,047	368,226	126°28'37"
3+060	8.883.832,653	583.481,965	368,852	126°28'37"
3+080	8.883.844,543	583.465,883	369,447	126°28'37"
3+100	8.883.861,009	583.455,017	369,502	150°59'54"
3+120	8.883.878,502	583.445,320	369,251	150°59'54"
3+140	8.883.895,994	583.435,624	369,000	150°59'54"
3+160	8.883.913,486	583.425,927	368,749	150°59'54"
3+180	8.883.930,978	583.416,230	368,498	150°59'54"
3+200	8.883.948,470	583.406,534	368,248	150°59'54"
3+220	8.883.965,962	583.396,837	367,997	150°59'54"
3+240	8.883.983,454	583.387,140	367,746	150°59'54"
3+260	8.884.000,946	583.377,444	367,495	150°59'54"
3+280	8.884.018,439	583.367,747	367,244	150°59'54"
3+300	8.884.035,931	583.358,050	366,993	150°59'54"
3+320	8.884.053,423	583.348,354	366,742	150°59'54"
3+340	8.884.070,915	583.338,657	366,491	150°59'54"
3+360	8.884.088,407	583.328,960	366,240	150°59'54"
3+380	8.884.105,899	583.319,264	365,989	150°59'54"
3+400	8.884.123,391	583.309,567	365,738	150°59'54"
3+420	8.884.140,884	583.299,870	365,487	150°59'54"
3+440	8.884.158,376	583.290,174	365,237	150°59'54"
3+460	8.884.175,868	583.280,477	364,986	150°59'54"
3+480	8.884.193,360	583.270,780	364,735	150°59'54"
3+500	8.884.210,852	583.261,084	364,484	150°59'54"
3+520	8.884.228,344	583.251,387	364,233	150°59'54"
3+540	8.884.245,836	583.241,690	363,982	150°59'54"
3+560	8.884.263,328	583.231,994	363,731	150°59'54"
3+580	8.884.280,821	583.222,297	363,480	150°59'54"
3+600	8.884.298,313	583.212,600	363,229	150°59'54"
3+620	8.884.315,805	583.202,904	362,978	150°59'54"
3+640	8.884.333,297	583.193,207	362,727	150°59'54"
3+660	8.884.350,789	583.183,510	362,476	150°59'54"
3+680	8.884.368,281	583.173,814	362,226	150°59'54"
3+700	8.884.385,773	583.164,117	361,975	150°59'54"
3+720	8.884.403,266	583.154,420	361,724	150°59'54"
3+740	8.884.420,758	583.144,724	361,473	150°59'54"
3+760	8.884.438,251	583.134,996	361,222	148°11'30"
3+780	8.884.455,743	583.124,454	360,971	148°11'30"
3+800	8.884.472,235	583.113,912	360,720	148°11'30"
3+820	8.884.489,727	583.103,371	360,469	148°11'30"

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SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
3+840	8.884.506,217	583.092,829	359,700	148°11'30"
3+860	8.884.523,213	583.082,288	359,321	148°11'30"
3+880	8.884.540,209	583.071,746	358,942	148°11'30"
3+900	8.884.557,206	583.061,204	358,562	148°11'30"
3+920	8.884.574,202	583.050,663	358,183	148°11'30"
3+940	8.884.591,198	583.040,121	357,845	148°11'30"
3+960	8.884.607,733	583.028,977	357,551	137°0'25"
3+980	8.884.622,362	583.015,338	357,447	137°0'25"
4+000	8.884.636,991	583.001,700	357,403	137°0'25"
4+020	8.884.651,620	582.988,062	357,360	137°0'25"
4+040	8.884.666,248	582.974,424	357,317	137°0'25"
4+060	8.884.680,877	582.960,785	357,274	137°0'25"
4+080	8.884.695,506	582.947,147	357,231	137°0'25"
4+100	8.884.710,134	582.933,509	357,188	137°0'25"
4+120	8.884.724,763	582.919,871	357,145	137°0'25"
4+140	8.884.739,392	582.906,232	357,102	137°0'25"
4+160	8.884.754,020	582.892,594	357,059	137°0'25"
4+180	8.884.768,649	582.878,956	357,016	137°0'25"
4+200	8.884.783,278	582.865,318	356,973	137°0'25"
4+220	8.884.797,906	582.851,680	356,930	137°0'25"
4+240	8.884.812,535	582.838,041	356,887	137°0'25"
4+260	8.884.827,164	582.824,403	356,844	137°0'25"
4+280	8.884.841,793	582.810,765	356,801	137°0'25"
4+300	8.884.856,421	582.797,127	356,757	137°0'25"
4+320	8.884.871,050	582.783,488	356,714	137°0'25"
4+340	8.884.885,679	582.769,850	356,671	137°0'25"
4+360	8.884.900,307	582.756,212	356,628	137°0'25"
4+380	8.884.915,251	582.743,005	356,583	150°43'8"
4+400	8.884.932,696	582.733,223	356,543	150°43'8"
4+420	8.884.950,140	582.723,441	356,501	150°43'8"
4+440	8.884.967,585	582.713,659	356,459	150°43'8"
4+460	8.884.985,029	582.703,877	356,417	150°43'8"
4+480	8.885.002,474	582.694,095	356,375	150°43'8"
4+500	8.885.019,919	582.684,314	356,333	150°43'8"
4+520	8.885.037,363	582.674,532	356,291	150°43'8"
4+540	8.885.054,808	582.664,750	356,249	150°43'8"
4+560	8.885.072,252	582.654,968	356,207	150°43'8"
4+580	8.885.089,697	582.645,186	356,165	150°43'8"
4+600	8.885.107,142	582.635,404	356,123	150°43'8"
4+620	8.885.124,586	582.625,622	356,081	150°43'8"
4+640	8.885.142,031	582.615,840	356,039	150°43'8"
4+660	8.885.159,475	582.606,058	355,997	150°43'8"
4+680	8.885.176,920	582.596,276	355,955	150°43'8"
4+700	8.885.194,365	582.586,494	355,913	150°43'8"
4+720	8.885.211,809	582.576,713	355,871	150°43'8"
4+740	8.885.229,254	582.566,931	355,828	150°43'8"
4+760	8.885.246,698	582.557,149	355,786	150°43'8"
4+780	8.885.264,143	582.547,367	355,744	150°43'8"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
4+800	8.885.281,588	582.537,585	355,702	150º43'8"
4+820	8.885.299,032	582.527,803	355,660	150º43'8"
4+840	8.885.316,477	582.518,021	355,618	150º43'8"
4+860	8.885.333,921	582.508,239	355,576	150º43'8"
4+880	8.885.351,366	582.498,457	355,534	150º43'8"
4+900	8.885.368,811	582.488,675	355,492	150º43'8"
4+920	8.885.386,255	582.478,893	355,450	150º43'8"
4+940	8.885.403,700	582.469,111	355,408	150º43'8"
4+960	8.885.421,144	582.459,330	355,366	150º43'8"
4+980	8.885.438,589	582.449,548	355,324	150º43'8"
5+000	8.885.456,034	582.439,766	355,282	150º43'8"
5+020	8.885.473,478	582.429,984	355,252	150º43'8"
5+040	8.885.490,975	582.420,297	355,230	152º7'33"
5+060	8.885.508,654	582.410,946	355,238	152º7'33"
5+080	8.885.526,334	582.401,596	355,264	152º7'33"
5+100	8.885.544,013	582.392,245	355,289	152º7'33"
5+120	8.885.561,693	582.382,894	355,315	152º7'33"
5+140	8.885.579,372	582.373,544	355,340	152º7'33"
5+160	8.885.597,052	582.364,193	355,366	152º7'33"
5+180	8.885.614,731	582.354,842	355,391	152º7'33"
5+200	8.885.632,411	582.345,492	355,417	152º7'33"
5+220	8.885.650,090	582.336,141	355,442	152º7'33"
5+240	8.885.667,770	582.326,790	355,468	152º7'33"
5+260	8.885.685,449	582.317,440	355,493	152º7'33"
5+280	8.885.703,129	582.308,089	355,519	152º7'33"
5+300	8.885.720,808	582.298,739	355,544	152º7'33"
5+320	8.885.738,488	582.289,388	355,570	152º7'33"
5+340	8.885.756,167	582.280,037	355,595	152º7'33"
5+360	8.885.773,847	582.270,687	355,621	152º7'33"
5+380	8.885.791,526	582.261,336	355,646	152º7'33"
5+400	8.885.809,206	582.251,985	355,671	152º7'33"
5+420	8.885.826,885	582.242,635	355,697	152º7'33"
5+440	8.885.844,565	582.233,284	355,722	152º7'33"
5+460	8.885.862,433	582.224,305	355,697	154º1'40"
5+480	8.885.880,413	582.215,546	355,643	154º1'40"
5+500	8.885.898,393	582.206,787	355,589	154º1'40"
5+520	8.885.916,373	582.198,029	355,534	154º1'40"
5+540	8.885.934,354	582.189,270	355,479	154º1'40"
5+560	8.885.952,334	582.180,511	355,425	154º1'40"
5+580	8.885.970,314	582.171,752	355,370	154º1'40"
5+600	8.885.988,294	582.162,994	355,315	154º1'40"
5+620	8.886.006,274	582.154,235	355,261	154º1'40"
5+640	8.886.024,254	582.145,476	355,206	154º1'40"
5+660	8.886.042,234	582.136,717	355,152	154º1'40"
5+680	8.886.060,214	582.127,959	355,097	154º1'40"
5+700	8.886.078,195	582.119,200	355,042	154º1'40"
5+720	8.886.096,175	582.110,441	354,988	154º1'40"
5+740	8.886.114,155	582.101,683	354,964	154º1'40"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
5+760	8.886.128,214	582.087,518	354,882	134º3'35"
5+780	8.886.142,122	582.073,146	354,813	134º3'35"
5+800	8.886.156,030	582.058,774	354,753	134º3'35"
5+820	8.886.169,938	582.044,401	354,692	134º3'35"
5+840	8.886.183,846	582.030,029	354,632	134º3'35"
5+860	8.886.197,755	582.015,657	354,572	134º3'35"
5+880	8.886.211,663	582.001,284	354,512	134º3'35"
5+900	8.886.225,571	581.986,912	354,451	134º3'35"
5+920	8.886.239,479	581.972,540	354,391	134º3'35"
5+940	8.886.253,387	581.958,167	354,331	134º3'35"
5+960	8.886.267,295	581.943,795	354,271	134º3'35"
5+980	8.886.281,203	581.929,423	354,211	134º3'35"
6+000	8.886.295,111	581.915,050	354,150	134º3'35"
6+020	8.886.309,020	581.900,678	354,136	134º3'35"
6+040	8.886.319,146	581.883,736	354,148	114º20'7"
6+060	8.886.327,387	581.865,513	354,202	114º20'7"
6+080	8.886.335,629	581.847,290	354,282	114º20'7"
6+100	8.886.343,870	581.829,067	354,361	114º20'7"
6+120	8.886.352,112	581.810,844	354,440	114º20'7"
6+140	8.886.360,353	581.792,621	354,519	114º20'7"
6+160	8.886.368,595	581.774,398	354,599	114º20'7"
6+180	8.886.376,836	581.756,175	354,678	114º20'7"
6+200	8.886.385,078	581.737,952	354,757	114º20'7"
6+220	8.886.393,319	581.719,729	354,837	114º20'7"
6+240	8.886.401,561	581.701,506	354,916	114º20'7"
6+260	8.886.409,802	581.683,283	354,995	114º20'7"
6+280	8.886.418,044	581.665,060	355,075	114º20'7"
6+300	8.886.426,285	581.646,837	355,154	114º20'7"
6+320	8.886.434,527	581.628,614	355,233	114º20'7"
6+340	8.886.442,529	581.610,289	355,278	111º49'18"
6+360	8.886.449,964	581.591,722	355,305	111º49'18"
6+380	8.886.457,398	581.573,155	355,325	111º49'18"
6+400	8.886.464,832	581.554,588	355,341	111º49'18"
6+420	8.886.472,267	581.536,021	355,357	111º49'18"
6+440	8.886.479,701	581.517,454	355,373	111º49'18"
6+460	8.886.487,135	581.498,887	355,389	111º49'18"
6+480	8.886.494,570	581.480,320	355,405	111º49'18"
6+500	8.886.502,004	581.461,753	355,420	111º49'18"
6+520	8.886.509,438	581.443,187	355,436	111º49'18"
6+540	8.886.516,873	581.424,620	355,452	111º49'18"
6+560	8.886.524,307	581.406,053	355,468	111º49'18"
6+580	8.886.531,741	581.387,486	355,484	111º49'18"
6+600	8.886.539,176	581.368,919	355,500	111º49'18"
6+620	8.886.546,610	581.350,352	355,516	111º49'18"
6+640	8.886.554,044	581.331,785	355,531	111º49'18"
6+660	8.886.561,479	581.313,218	355,547	111º49'18"
6+680	8.886.568,913	581.294,651	355,563	111º49'18"
6+700	8.886.576,347	581.276,084	355,579	111º49'18"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
6+720	8.886.583,782	581.257,517	355,595	111°49'18"
6+740	8.886.591,216	581.238,950	355,611	111°49'18"
6+760	8.886.598,650	581.220,383	355,626	111°49'18"
6+780	8.886.606,085	581.201,817	355,642	111°49'18"
6+800	8.886.613,519	581.183,250	355,658	111°49'18"
6+820	8.886.620,953	581.164,683	355,674	111°49'18"
6+840	8.886.628,388	581.146,116	355,690	111°49'18"
6+860	8.886.635,822	581.127,549	355,706	111°49'18"
6+880	8.886.643,256	581.108,982	355,721	111°49'18"
6+900	8.886.650,691	581.090,415	355,737	111°49'18"
6+920	8.886.658,125	581.071,848	355,753	111°49'18"
6+940	8.886.665,559	581.053,281	355,769	111°49'18"
6+960	8.886.672,994	581.034,714	355,785	111°49'18"
6+980	8.886.680,428	581.016,147	355,801	111°49'18"
7+000	8.886.687,862	580.997,580	355,817	111°49'18"
7+020	8.886.695,297	580.979,013	355,832	111°49'18"
7+040	8.886.702,731	580.960,447	355,848	111°49'18"
7+060	8.886.710,179	580.941,885	355,836	111°54'50"
7+080	8.886.717,643	580.923,330	355,809	111°54'50"
7+100	8.886.725,107	580.904,775	355,778	111°54'50"
7+120	8.886.732,572	580.886,220	355,745	111°54'50"
7+140	8.886.740,036	580.867,665	355,713	111°54'50"
7+160	8.886.747,500	580.849,110	355,681	111°54'50"
7+180	8.886.754,964	580.830,555	355,649	111°54'50"
7+200	8.886.762,429	580.812,001	355,616	111°54'50"
7+220	8.886.769,893	580.793,446	355,584	111°54'50"
7+240	8.886.777,357	580.774,891	355,552	111°54'50"
7+260	8.886.784,821	580.756,336	355,519	111°54'50"
7+280	8.886.792,286	580.737,781	355,487	111°54'50"
7+300	8.886.799,750	580.719,226	355,455	111°54'50"
7+320	8.886.807,214	580.700,671	355,422	111°54'50"
7+340	8.886.814,678	580.682,116	355,390	111°54'50"
7+360	8.886.822,142	580.663,561	355,358	111°54'50"
7+380	8.886.829,607	580.645,006	355,325	111°54'50"
7+400	8.886.837,071	580.626,451	355,293	111°54'50"
7+420	8.886.844,535	580.607,896	355,261	111°54'50"
7+440	8.886.851,999	580.589,341	355,228	111°54'50"
7+460	8.886.859,464	580.570,787	355,196	111°54'50"
7+480	8.886.866,928	580.552,232	355,164	111°54'50"
7+500	8.886.874,392	580.533,677	355,131	111°54'50"
7+520	8.886.881,856	580.515,122	355,099	111°54'50"
7+540	8.886.889,321	580.496,567	355,067	111°54'50"
7+560	8.886.896,785	580.478,012	355,034	111°54'50"
7+580	8.886.904,249	580.459,457	355,002	111°54'50"
7+600	8.886.911,713	580.440,902	354,970	111°54'50"
7+620	8.886.919,177	580.422,347	354,937	111°54'50"
7+640	8.886.926,642	580.403,792	354,905	111°54'50"
7+660	8.886.934,106	580.385,237	354,873	111°54'50"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
7+680	8.886.941,570	580.366,682	354,841	111°54'50"
7+700	8.886.949,034	580.348,127	354,818	111°54'50"
7+720	8.886.959,529	580.331,700	354,812	138°13'10"
7+740	8.886.974,443	580.318,374	354,839	138°13'10"
7+760	8.886.989,357	580.305,049	354,875	138°13'10"
7+780	8.887.004,271	580.291,723	354,910	138°13'10"
7+800	8.887.019,185	580.278,398	354,946	138°13'10"
7+820	8.887.034,100	580.265,072	354,981	138°13'10"
7+840	8.887.049,014	580.251,746	355,017	138°13'10"
7+860	8.887.063,928	580.238,421	355,052	138°13'10"
7+880	8.887.078,842	580.225,095	355,088	138°13'10"
7+900	8.887.093,756	580.211,769	355,123	138°13'10"
7+920	8.887.108,670	580.198,444	355,159	138°13'10"
7+940	8.887.123,584	580.185,118	355,195	138°13'10"
7+960	8.887.138,498	580.171,793	355,230	138°13'10"
7+980	8.887.153,412	580.158,467	355,266	138°13'10"
8+000	8.887.168,326	580.145,141	355,301	138°13'10"
8+020	8.887.183,240	580.131,816	355,337	138°13'10"
8+040	8.887.198,154	580.118,490	355,372	138°13'10"
8+060	8.887.213,068	580.105,165	355,408	138°13'10"
8+080	8.887.227,982	580.091,839	355,443	138°13'10"
8+100	8.887.242,896	580.078,513	355,479	138°13'10"
8+120	8.887.257,810	580.065,188	355,514	138°13'10"
8+140	8.887.272,724	580.051,862	355,550	138°13'10"
8+160	8.887.287,638	580.038,537	355,585	138°13'10"
8+180	8.887.302,552	580.025,211	355,621	138°13'10"
8+200	8.887.317,466	580.011,885	355,657	138°13'10"
8+220	8.887.332,380	579.998,560	355,692	138°13'10"
8+240	8.887.347,294	579.985,234	355,728	138°13'10"
8+260	8.887.362,208	579.971,909	355,763	138°13'10"
8+280	8.887.377,122	579.958,583	355,799	138°13'10"
8+300	8.887.392,036	579.945,257	355,834	138°13'10"
8+320	8.887.406,950	579.931,932	355,870	138°13'10"
8+340	8.887.421,864	579.918,606	355,874	138°13'10"
8+360	8.887.436,778	579.905,281	355,860	138°13'10"
8+380	8.887.451,692	579.891,955	355,817	138°13'10"
8+400	8.887.466,606	579.878,629	355,757	138°13'10"
8+420	8.887.481,520	579.865,304	355,697	138°13'10"
8+440	8.887.496,434	579.851,978	355,637	138°13'10"
8+460	8.887.511,348	579.838,653	355,577	138°13'10"
8+480	8.887.526,263	579.825,327	355,517	138°13'10"
8+500	8.887.541,177	579.812,001	355,457	138°13'10"
8+520	8.887.556,091	579.798,676	355,397	138°13'10"
8+540	8.887.571,005	579.785,350	355,337	138°13'10"
8+560	8.887.585,919	579.772,025	355,277	138°13'10"
8+580	8.887.600,833	579.758,699	355,217	138°13'10"
8+600	8.887.615,747	579.745,373	355,157	138°13'10"
8+620	8.887.630,661	579.732,048	355,097	138°13'10"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
8+640	8.887.645,575	579.718,722	355,037	138º13'10"
8+660	8.887.660,489	579.705,397	354,977	138º13'10"
8+680	8.887.675,403	579.692,071	354,917	138º13'10"
8+700	8.887.690,317	579.678,745	354,880	138º13'10"
8+720	8.887.705,390	579.665,600	354,859	139º4'40"
8+740	8.887.720,502	579.652,500	354,855	139º4'40"
8+760	8.887.735,614	579.639,399	354,860	139º4'40"
8+780	8.887.750,726	579.626,298	354,866	139º4'40"
8+800	8.887.765,838	579.613,198	354,871	139º4'40"
8+820	8.887.780,950	579.600,097	354,876	139º4'40"
8+840	8.887.796,062	579.586,996	354,882	139º4'40"
8+860	8.887.811,174	579.573,896	354,887	139º4'40"
8+880	8.887.826,286	579.560,795	354,893	139º4'40"
8+900	8.887.841,398	579.547,694	354,898	139º4'40"
8+920	8.887.856,510	579.534,593	354,904	139º4'40"
8+940	8.887.871,622	579.521,493	354,909	139º4'40"
8+960	8.887.886,734	579.508,392	354,914	139º4'40"
8+980	8.887.901,846	579.495,291	354,920	139º4'40"
9+000	8.887.916,958	579.482,191	354,925	139º4'40"
9+020	8.887.932,070	579.469,090	354,931	139º4'40"
9+040	8.887.947,181	579.455,989	354,936	139º4'40"
9+060	8.887.962,293	579.442,889	354,941	139º4'40"
9+080	8.887.977,405	579.429,788	354,947	139º4'40"
9+100	8.887.992,517	579.416,687	354,952	139º4'40"
9+120	8.888.007,629	579.403,587	354,958	139º4'40"
9+140	8.888.022,741	579.390,486	354,963	139º4'40"
9+160	8.888.037,853	579.377,385	354,968	139º4'40"
9+180	8.888.052,965	579.364,284	354,974	139º4'40"
9+200	8.888.068,077	579.351,184	354,979	139º4'40"
9+220	8.888.083,189	579.338,083	354,985	139º4'40"
9+240	8.888.098,301	579.324,982	354,990	139º4'40"
9+260	8.888.113,413	579.311,882	354,996	139º4'40"
9+280	8.888.128,525	579.298,781	355,001	139º4'40"
9+300	8.888.143,637	579.285,680	355,006	139º4'40"
9+320	8.888.158,749	579.272,580	355,012	139º4'40"
9+340	8.888.173,861	579.259,479	355,017	139º4'40"
9+360	8.888.188,973	579.246,378	355,023	139º4'40"
9+380	8.888.204,085	579.233,278	355,028	139º4'40"
9+400	8.888.219,197	579.220,177	355,033	139º4'40"
9+420	8.888.234,309	579.207,076	355,039	139º4'40"
9+440	8.888.249,421	579.193,976	355,044	139º4'40"
9+460	8.888.264,533	579.180,875	355,050	139º4'40"
9+480	8.888.279,645	579.167,774	355,055	139º4'40"
9+500	8.888.294,757	579.154,673	355,060	139º4'40"
9+520	8.888.309,869	579.141,573	355,066	139º4'40"
9+540	8.888.324,981	579.128,472	355,071	139º4'40"
9+560	8.888.340,093	579.115,371	355,077	139º4'40"
9+580	8.888.355,205	579.102,271	355,082	139º4'40"

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**MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO****SISTEMA ADUTOR ALGODÕES II****Trecho 3 : ALTO ALEGRE - CURIMATÁ**

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
9+600	8.888.370,317	579.089,170	355,088	139º4'40"
9+620	8.888.385,429	579.076,069	355,093	139º4'40"
9+640	8.888.400,541	579.062,969	355,098	139º4'40"
9+660	8.888.415,653	579.049,868	355,104	139º4'40"
9+680	8.888.430,765	579.036,767	355,109	139º4'40"
9+700	8.888.445,877	579.023,667	355,115	139º4'40"
9+720	8.888.460,989	579.010,566	355,120	139º4'40"
9+740	8.888.476,101	578.997,465	355,125	139º4'40"
9+760	8.888.491,213	578.984,364	355,131	139º4'40"
9+780	8.888.506,325	578.971,264	355,136	139º4'40"
9+800	8.888.521,437	578.958,163	355,142	139º4'40"
9+820	8.888.536,549	578.945,062	355,147	139º4'40"
9+840	8.888.551,661	578.931,962	355,153	139º4'40"
9+860	8.888.566,773	578.918,861	355,158	139º4'40"
9+880	8.888.581,885	578.905,760	355,163	139º4'40"
9+900	8.888.596,997	578.892,660	355,169	139º4'40"
9+920	8.888.612,109	578.879,559	355,174	139º4'40"
9+940	8.888.627,221	578.866,458	355,180	139º4'40"
9+960	8.888.642,333	578.853,358	355,185	139º4'40"
9+980	8.888.657,445	578.840,257	355,190	139º4'40"
10+000	8.888.672,557	578.827,156	355,196	139º4'40"
10+020	8.888.687,668	578.814,055	355,201	139º4'40"
10+040	8.888.702,780	578.800,955	355,207	139º4'40"
10+060	8.888.717,892	578.787,854	355,212	139º4'40"
10+080	8.888.733,004	578.774,753	355,217	139º4'40"
10+100	8.888.748,116	578.761,653	355,223	139º4'40"
10+120	8.888.763,228	578.748,552	355,228	139º4'40"
10+140	8.888.778,402	578.735,524	355,231	139º37'27"
10+160	8.888.793,639	578.722,568	355,232	139º37'27"
10+180	8.888.808,875	578.709,612	355,234	139º37'27"
10+200	8.888.824,111	578.696,656	355,235	139º37'27"
10+220	8.888.839,347	578.683,700	355,236	139º37'27"
10+240	8.888.854,584	578.670,744	355,237	139º37'27"
10+260	8.888.869,820	578.657,788	355,238	139º37'27"
10+280	8.888.885,056	578.644,832	355,239	139º37'27"
10+300	8.888.900,292	578.631,876	355,240	139º37'27"
10+320	8.888.915,529	578.618,920	355,241	139º37'27"
10+340	8.888.930,765	578.605,964	355,242	139º37'27"
10+360	8.888.946,001	578.593,008	355,243	139º37'27"
10+380	8.888.961,237	578.580,052	355,244	139º37'27"
10+400	8.888.976,474	578.567,096	355,246	139º37'27"
10+420	8.888.991,710	578.554,140	355,247	139º37'27"
10+440	8.889.006,946	578.541,184	355,248	139º37'27"
10+460	8.889.022,182	578.528,228	355,249	139º37'27"
10+480	8.889.037,419	578.515,272	355,250	139º37'27"
10+500	8.889.052,655	578.502,316	355,201	139º37'27"
10+520	8.889.067,825	578.489,283	355,121	139º18'50"
10+540	8.889.082,991	578.476,245	355,015	139º18'50"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
10+560	8.889.098,156	578.463,206	354,893	139º18'50"
10+580	8.889.113,322	578.450,168	354,771	139º18'50"
10+600	8.889.128,488	578.437,130	354,649	139º18'50"
10+620	8.889.143,654	578.424,091	354,527	139º18'50"
10+640	8.889.158,820	578.411,053	354,405	139º18'50"
10+660	8.889.173,986	578.398,015	354,284	139º18'50"
10+680	8.889.189,151	578.384,976	354,162	139º18'50"
10+700	8.889.204,317	578.371,938	354,040	139º18'50"
10+720	8.889.219,483	578.358,900	353,918	139º18'50"
10+740	8.889.234,649	578.345,861	353,796	139º18'50"
10+760	8.889.249,815	578.332,823	353,674	139º18'50"
10+780	8.889.264,981	578.319,785	353,553	139º18'50"
10+800	8.889.280,146	578.306,747	353,431	139º18'50"
10+820	8.889.295,312	578.293,708	353,309	139º18'50"
10+840	8.889.310,478	578.280,670	353,187	139º18'50"
10+860	8.889.325,644	578.267,632	353,065	139º18'50"
10+880	8.889.340,810	578.254,593	352,943	139º18'50"
10+900	8.889.355,976	578.241,555	352,822	139º18'50"
10+920	8.889.371,141	578.228,517	352,700	139º18'50"
10+940	8.889.386,287	578.215,455	352,761	139º4'11"
10+960	8.889.401,398	578.202,353	352,930	139º4'11"
10+980	8.889.416,508	578.189,250	353,129	139º4'11"
11+000	8.889.431,618	578.176,147	353,345	139º4'11"
11+020	8.889.446,728	578.163,044	353,560	139º4'11"
11+040	8.889.461,838	578.149,942	353,776	139º4'11"
11+060	8.889.476,948	578.136,839	353,992	139º4'11"
11+080	8.889.492,059	578.123,736	354,207	139º4'11"
11+100	8.889.507,169	578.110,633	354,423	139º4'11"
11+120	8.889.522,279	578.097,530	354,639	139º4'11"
11+140	8.889.537,389	578.084,428	354,854	139º4'11"
11+160	8.889.552,499	578.071,325	355,070	139º4'11"
11+180	8.889.567,609	578.058,222	355,286	139º4'11"
11+200	8.889.582,720	578.045,119	355,501	139º4'11"
11+220	8.889.597,830	578.032,016	355,717	139º4'11"
11+240	8.889.612,940	578.018,914	355,933	139º4'11"
11+260	8.889.628,050	578.005,811	356,148	139º4'11"
11+280	8.889.643,160	577.992,708	356,364	139º4'11"
11+300	8.889.658,270	577.979,605	356,575	139º4'11"
11+320	8.889.673,381	577.966,503	356,783	139º4'11"
11+340	8.889.688,552	577.953,471	356,971	139º20'29"
11+360	8.889.703,724	577.940,440	357,145	139º20'29"
11+380	8.889.718,896	577.927,409	357,320	139º20'29"
11+400	8.889.734,068	577.914,378	357,494	139º20'29"
11+420	8.889.749,240	577.901,347	357,669	139º20'29"
11+440	8.889.764,413	577.888,316	357,844	139º20'29"
11+460	8.889.779,585	577.875,285	358,018	139º20'29"
11+480	8.889.794,757	577.862,254	358,193	139º20'29"
11+500	8.889.809,929	577.849,223	358,368	139º20'29"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
11+520	8.889.825,101	577.836,192	358,542	139°20'29"
11+540	8.889.840,273	577.823,161	358,717	139°20'29"
11+560	8.889.855,445	577.810,130	358,891	139°20'29"
11+580	8.889.870,617	577.797,099	359,066	139°20'29"
11+600	8.889.885,790	577.784,068	359,241	139°20'29"
11+620	8.889.900,962	577.771,037	359,415	139°20'29"
11+640	8.889.916,134	577.758,006	359,590	139°20'29"
11+660	8.889.931,306	577.744,975	359,765	139°20'29"
11+680	8.889.946,478	577.731,944	359,939	139°20'29"
11+700	8.889.961,650	577.718,913	360,097	139°20'29"
11+720	8.889.976,822	577.705,882	360,246	139°20'29"
11+740	8.889.991,941	577.692,789	360,257	139°3'45"
11+760	8.890.007,049	577.679,684	360,189	139°3'45"
11+780	8.890.022,158	577.666,579	360,121	139°3'45"
11+800	8.890.037,266	577.653,474	360,053	139°3'45"
11+820	8.890.052,375	577.640,370	359,985	139°3'45"
11+840	8.890.067,483	577.627,265	359,917	139°3'45"
11+860	8.890.082,592	577.614,160	359,849	139°3'45"
11+880	8.890.097,700	577.601,056	359,781	139°3'45"
11+900	8.890.112,809	577.587,951	359,711	139°3'45"
11+920	8.890.127,919	577.574,848	359,639	139°7'53"
11+940	8.890.143,043	577.561,762	359,561	139°7'53"
11+960	8.890.158,167	577.548,675	359,479	139°7'53"
11+980	8.890.173,292	577.535,589	359,396	139°7'53"
12+000	8.890.188,416	577.522,502	359,314	139°7'53"
12+020	8.890.203,540	577.509,416	359,232	139°7'53"
12+040	8.890.218,664	577.496,329	359,149	139°7'53"
12+060	8.890.233,789	577.483,243	359,067	139°7'53"
12+080	8.890.248,913	577.470,156	358,984	139°7'53"
12+100	8.890.264,037	577.457,070	358,902	139°7'53"
12+120	8.890.279,161	577.443,983	358,820	139°7'53"
12+140	8.890.294,286	577.430,896	358,737	139°7'53"
12+160	8.890.309,410	577.417,810	358,655	139°7'53"
12+180	8.890.324,534	577.404,723	358,573	139°7'53"
12+200	8.890.339,658	577.391,637	358,490	139°7'53"
12+220	8.890.354,783	577.378,550	358,408	139°7'53"
12+240	8.890.369,907	577.365,464	358,325	139°7'53"
12+260	8.890.385,031	577.352,377	358,243	139°7'53"
12+280	8.890.400,155	577.339,291	358,161	139°7'53"
12+300	8.890.415,279	577.326,204	358,078	139°7'53"
12+320	8.890.430,404	577.313,118	357,996	139°7'53"
12+340	8.890.445,528	577.300,031	357,913	139°7'53"
12+360	8.890.460,652	577.286,945	357,831	139°7'53"
12+380	8.890.475,776	577.273,858	357,749	139°7'53"
12+400	8.890.488,096	577.258,314	357,717	123°18'34"
12+420	8.890.499,079	577.241,600	357,695	123°18'34"
12+440	8.890.510,062	577.224,886	357,665	123°18'34"
12+460	8.890.521,046	577.208,171	357,636	123°18'34"

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**MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO****SISTEMA ADUTOR ALGODÕES II****Trecho 3 : ALTO ALEGRE - CURIMATÁ**

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
12+480	8.890.532,029	577.191,457	357,607	123°18'34"
12+500	8.890.543,012	577.174,743	357,641	123°18'34"
12+520	8.890.553,720	577.157,924	357,721	98°11'54"
12+540	8.890.556,572	577.138,129	358,328	98°11'54"
12+560	8.890.559,424	577.118,333	359,081	98°11'54"
12+580	8.890.562,276	577.098,537	359,834	98°11'54"
12+600	8.890.565,129	577.078,742	360,587	98°11'54"
12+620	8.890.567,981	577.058,946	361,340	98°11'54"
12+640	8.890.570,833	577.039,151	362,093	98°11'54"
12+660	8.890.573,867	577.019,383	361,959	99°2'2"
12+680	8.890.577,008	576.999,631	361,312	99°2'2"
12+700	8.890.580,148	576.979,879	360,665	99°2'2"
12+720	8.890.583,288	576.960,127	360,018	99°2'2"
12+740	8.890.586,429	576.940,375	359,371	99°2'2"
12+760	8.890.589,569	576.920,623	358,724	99°2'2"
12+780	8.890.592,709	576.900,871	358,077	99°2'2"
12+800	8.890.595,850	576.881,119	357,430	99°2'2"
12+820	8.890.598,990	576.861,367	356,783	99°2'2"
12+840	8.890.602,131	576.841,615	356,136	99°2'2"
12+860	8.890.605,271	576.821,864	355,489	99°2'2"
12+880	8.890.608,411	576.802,112	354,842	99°2'2"
12+900	8.890.611,552	576.782,360	354,194	99°2'2"
12+920	8.890.614,692	576.762,608	353,547	99°2'2"
12+940	8.890.617,832	576.742,856	352,900	99°2'2"
12+960	8.890.620,973	576.723,104	352,253	99°2'2"
12+980	8.890.624,113	576.703,352	351,606	99°2'2"
13+000	8.890.627,253	576.683,600	350,959	99°2'2"
13+020	8.890.630,394	576.663,848	350,312	99°2'2"
13+040	8.890.633,534	576.644,096	349,665	99°2'2"
13+060	8.890.636,675	576.624,344	349,018	99°2'2"
13+080	8.890.643,668	576.610,077	348,507	190°47'35"
13+100	8.890.663,314	576.613,822	348,442	190°47'35"
13+120	8.890.682,960	576.617,567	348,378	190°47'35"
13+140	8.890.702,606	576.621,313	348,314	190°47'35"
13+160	8.890.722,252	576.625,058	348,249	190°47'35"
13+180	8.890.741,899	576.628,803	348,185	190°47'35"
13+200	8.890.761,545	576.632,548	348,116	190°47'35"
13+220	8.890.781,191	576.636,293	348,032	190°47'25"
13+240	8.890.800,837	576.640,037	347,945	190°47'25"
13+260	8.890.820,484	576.643,782	347,848	190°47'25"
13+280	8.890.840,130	576.647,526	347,752	190°47'25"
13+300	8.890.859,777	576.651,270	347,655	190°47'25"
13+320	8.890.879,423	576.655,015	347,558	190°47'25"
13+340	8.890.899,069	576.658,759	347,461	190°47'25"
13+360	8.890.918,716	576.662,503	347,357	190°47'25"
13+380	8.890.938,290	576.666,607	347,228	191°52'15"
13+400	8.890.957,862	576.670,721	347,098	191°52'15"
13+420	8.890.977,435	576.674,836	346,964	191°52'15"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
13+440	8.890.997,007	576.678,950	346,830	191°52'15"
13+460	8.891.016,579	576.683,064	346,696	191°52'15"
13+480	8.891.036,151	576.687,178	346,562	191°52'15"
13+500	8.891.055,724	576.691,292	346,428	191°52'15"
13+520	8.891.075,296	576.695,406	346,294	191°52'15"
13+540	8.891.094,868	576.699,520	346,160	191°52'15"
13+560	8.891.114,441	576.703,634	346,026	191°52'15"
13+580	8.891.134,013	576.707,749	345,892	191°52'15"
13+600	8.891.153,585	576.711,863	345,750	191°52'15"
13+620	8.891.173,157	576.715,977	345,583	191°52'15"
13+640	8.891.192,610	576.720,559	345,219	196°43'1"
13+660	8.891.211,735	576.726,401	344,210	200°30'25"
13+680	8.891.230,468	576.733,408	343,338	200°30'25"
13+700	8.891.249,200	576.740,414	342,915	200°30'25"
13+720	8.891.267,933	576.747,421	342,492	200°30'25"
13+740	8.891.286,665	576.754,427	342,070	200°30'25"
13+760	8.891.305,398	576.761,434	341,713	200°30'25"
13+780	8.891.324,157	576.768,370	341,575	200°15'41"
13+800	8.891.342,919	576.775,296	341,451	200°15'41"
13+820	8.891.361,681	576.782,222	341,375	200°15'41"
13+840	8.891.380,444	576.789,148	341,299	200°15'41"
13+860	8.891.399,206	576.796,074	341,223	200°15'41"
13+880	8.891.417,969	576.803,000	341,155	200°15'41"
13+900	8.891.436,731	576.809,926	341,112	200°15'41"
13+920	8.891.455,599	576.816,547	341,179	197°40'57"
13+940	8.891.474,654	576.822,622	341,617	197°40'57"
13+960	8.891.493,709	576.828,697	342,055	197°40'57"
13+980	8.891.512,764	576.834,772	342,492	197°40'57"
14+000	8.891.531,819	576.840,846	342,937	197°40'57"
14+020	8.891.550,636	576.847,619	343,406	200°0'2"
14+040	8.891.569,430	576.854,460	343,876	200°0'2"
14+060	8.891.588,223	576.861,301	344,350	200°0'2"
14+080	8.891.607,017	576.868,141	344,830	200°0'2"
14+100	8.891.625,892	576.874,752	345,313	198°45'57"
14+120	8.891.644,829	576.881,186	345,814	198°45'57"
14+140	8.891.663,766	576.887,620	346,402	198°45'57"
14+160	8.891.683,297	576.891,783	346,911	190°35'29"
14+180	8.891.702,956	576.895,459	347,580	190°35'29"
14+200	8.891.722,616	576.899,135	348,248	190°35'29"
14+220	8.891.742,275	576.902,811	348,917	190°35'29"
14+240	8.891.761,934	576.906,488	349,586	190°35'29"
14+260	8.891.781,593	576.910,164	350,255	190°35'29"
14+280	8.891.801,253	576.913,840	350,924	190°35'29"
14+300	8.891.820,912	576.917,516	351,592	190°35'29"
14+320	8.891.840,571	576.921,192	352,261	190°35'29"
14+340	8.891.860,231	576.924,868	352,930	190°35'29"
14+360	8.891.879,890	576.928,544	353,599	190°35'29"
14+380	8.891.899,549	576.932,220	354,268	190°35'29"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 3 : ALTO ALEGRE - CURIMATÁ

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
14+400	8.891.919,208	576.935,896	354,937	190°35'29"
14+420	8.891.938,868	576.939,572	355,605	190°35'29"
14+440	8.891.958,527	576.943,248	356,274	190°35'29"
14+460	8.891.978,186	576.946,924	356,943	190°35'29"
14+480	8.891.997,845	576.950,600	357,612	190°35'29"
14+491.954	8.892.009,596	576.952,797	358,012	190°35'29"



2.2.4 TRECHO 4: Alto Alegre - Avelino Lopes

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
0+000	8.882.418,779	586.195,702	387,583	296°28'44"
0+020	8.882.401,102	586.187,455	388,518	26°28'44"
0+040	8.882.387,902	586.194,039	389,905	299°46'17"
0+060	8.882.377,971	586.211,399	390,735	299°46'17"
0+080	8.882.368,040	586.228,759	391,565	299°46'17"
0+100	8.882.358,110	586.246,119	392,395	299°46'17"
0+120	8.882.348,179	586.263,480	393,225	299°46'17"
0+140	8.882.338,248	586.280,840	393,918	299°46'17"
0+160	8.882.328,585	586.298,349	393,407	298°18'59"
0+180	8.882.319,098	586.315,956	392,875	298°18'59"
0+200	8.882.309,611	586.333,562	391,933	298°18'59"
0+220	8.882.300,124	586.351,169	390,992	298°18'59"
0+240	8.882.290,638	586.368,776	390,050	298°18'59"
0+260	8.882.281,151	586.386,383	389,108	298°18'59"
0+280	8.882.271,664	586.403,990	388,166	298°18'59"
0+300	8.882.262,177	586.421,597	387,224	298°18'59"
0+320	8.882.252,690	586.439,204	386,282	298°18'59"
0+340	8.882.243,204	586.456,810	385,341	298°18'59"
0+360	8.882.233,717	586.474,417	384,399	298°18'59"
0+380	8.882.224,230	586.492,024	383,457	298°18'59"
0+400	8.882.214,743	586.509,631	382,515	298°18'59"
0+420	8.882.205,256	586.527,238	381,604	298°18'59"
0+440	8.882.199,695	586.546,402	381,104	284°58'43"
0+460	8.882.194,526	586.565,723	380,620	284°58'43"
0+480	8.882.189,356	586.585,043	380,166	284°58'43"
0+500	8.882.184,187	586.604,364	379,711	284°58'43"
0+520	8.882.179,018	586.623,684	379,256	284°58'43"
0+540	8.882.173,849	586.643,005	378,802	284°58'43"
0+560	8.882.168,680	586.662,325	378,347	284°58'43"
0+580	8.882.163,511	586.681,646	377,909	284°58'43"
0+600	8.882.158,342	586.700,966	377,619	284°58'43"
0+620	8.882.155,775	586.720,585	377,482	268°06'48"
0+640	8.882.156,434	586.740,574	378,143	268°06'48"
0+660	8.882.157,092	586.760,563	378,804	268°06'48"
0+680	8.882.157,751	586.780,553	379,465	268°06'48"
0+700	8.882.158,409	586.800,542	380,126	268°06'48"
0+720	8.882.159,068	586.820,531	380,787	268°06'48"
0+740	8.882.159,726	586.840,520	381,448	268°06'48"
0+760	8.882.160,385	586.860,509	382,109	268°06'48"
0+780	8.882.161,043	586.880,498	382,770	268°06'48"
0+800	8.882.161,702	586.900,488	383,431	268°06'48"
0+820	8.882.162,360	586.920,477	384,092	268°06'48"
0+840	8.882.163,019	586.940,466	384,753	268°06'48"
0+860	8.882.163,677	586.960,455	385,413	268°06'48"
0+880	8.882.164,336	586.980,444	386,074	268°06'48"
0+900	8.882.164,994	587.000,433	386,735	268°06'48"
0+920	8.882.165,653	587.020,422	387,396	268°06'48"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
0+940	8.882.166,311	587.040,412	388,057	268°6'48"
0+960	8.882.166,970	587.060,401	388,718	268°6'48"
0+980	8.882.167,628	587.080,390	389,379	268°6'48"
1+000	8.882.168,287	587.100,379	390,040	268°6'48"
1+020	8.882.168,945	587.120,368	390,701	268°6'48"
1+040	8.882.169,604	587.140,357	391,362	268°6'48"
1+060	8.882.170,262	587.160,347	392,023	268°6'48"
1+080	8.882.170,921	587.180,336	392,684	268°6'48"
1+100	8.882.171,579	587.200,325	393,334	268°6'48"
1+120	8.882.172,238	587.220,314	393,892	268°6'48"
1+140	8.882.172,704	587.240,308	394,418	268°44'31"
1+160	8.882.173,143	587.260,304	394,794	268°44'31"
1+180	8.882.173,582	587.280,299	395,171	268°44'31"
1+200	8.882.174,022	587.300,294	395,548	268°44'31"
1+220	8.882.174,461	587.320,289	395,925	268°44'31"
1+240	8.882.174,900	587.340,284	396,301	268°44'31"
1+260	8.882.175,339	587.360,280	396,678	268°44'31"
1+280	8.882.175,778	587.380,275	397,055	268°44'31"
1+300	8.882.176,217	587.400,270	397,432	268°44'31"
1+320	8.882.176,656	587.420,265	397,809	268°44'31"
1+340	8.882.177,096	587.440,260	398,185	268°44'31"
1+360	8.882.177,535	587.460,255	398,562	268°44'31"
1+380	8.882.177,974	587.480,251	398,939	268°44'31"
1+400	8.882.178,413	587.500,246	399,316	268°44'31"
1+420	8.882.178,852	587.520,241	399,692	268°44'31"
1+440	8.882.179,291	587.540,236	400,069	268°44'31"
1+460	8.882.179,730	587.560,231	400,446	268°44'31"
1+480	8.882.180,169	587.580,226	400,823	268°44'31"
1+500	8.882.180,609	587.600,222	401,199	268°44'31"
1+520	8.882.181,048	587.620,217	401,576	268°44'31"
1+540	8.882.181,487	587.640,212	401,953	268°44'31"
1+560	8.882.181,926	587.660,207	402,330	268°44'31"
1+580	8.882.182,365	587.680,202	402,706	268°44'31"
1+600	8.882.182,804	587.700,198	403,083	268°44'31"
1+620	8.882.183,243	587.720,193	403,460	268°44'31"
1+640	8.882.183,683	587.740,188	403,837	268°44'31"
1+660	8.882.184,122	587.760,183	404,214	268°44'31"
1+680	8.882.184,561	587.780,178	404,590	268°44'31"
1+700	8.882.185,000	587.800,173	404,967	268°44'31"
1+720	8.882.185,439	587.820,169	405,344	268°44'31"
1+740	8.882.185,878	587.840,164	405,721	268°44'31"
1+760	8.882.186,317	587.860,159	406,097	268°44'31"
1+780	8.882.186,757	587.880,154	406,460	268°44'31"
1+800	8.882.187,196	587.900,149	406,699	268°44'31"
1+820	8.882.187,653	587.920,144	406,887	268°38'38"
1+840	8.882.188,126	587.940,139	406,621	268°38'38"
1+860	8.882.188,600	587.960,133	406,355	268°38'38"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
1+880	8.882.189,073	587.980,127	406,088	268°38'38"
1+900	8.882.189,546	588.000,122	405,822	268°38'38"
1+920	8.882.190,020	588.020,116	405,556	268°38'38"
1+940	8.882.190,493	588.040,110	405,290	268°38'38"
1+960	8.882.190,966	588.060,105	405,024	268°38'38"
1+980	8.882.191,440	588.080,099	404,757	268°38'38"
2+000	8.882.191,913	588.100,094	404,491	268°38'38"
2+020	8.882.192,387	588.120,088	404,225	268°38'38"
2+040	8.882.192,860	588.140,082	403,959	268°38'38"
2+060	8.882.193,333	588.160,077	403,693	268°38'38"
2+080	8.882.193,807	588.180,071	403,426	268°38'38"
2+100	8.882.194,280	588.200,066	403,160	268°38'38"
2+120	8.882.194,753	588.220,060	402,894	268°38'38"
2+140	8.882.195,227	588.240,054	402,628	268°38'38"
2+160	8.882.195,700	588.260,049	402,362	268°38'38"
2+180	8.882.196,173	588.280,043	402,095	268°38'38"
2+200	8.882.196,647	588.300,038	401,829	268°38'38"
2+220	8.882.197,120	588.320,032	401,563	268°38'38"
2+240	8.882.197,594	588.340,026	401,297	268°38'38"
2+260	8.882.198,067	588.360,021	401,074	268°38'38"
2+280	8.882.198,610	588.380,013	401,240	268°09'11"
2+300	8.882.199,255	588.400,003	401,430	268°09'11"
2+320	8.882.199,899	588.419,993	401,826	268°09'11"
2+340	8.882.200,544	588.439,982	402,221	268°09'11"
2+360	8.882.201,189	588.459,972	402,617	268°09'11"
2+380	8.882.201,833	588.479,961	403,013	268°09'11"
2+400	8.882.202,478	588.499,951	403,408	268°09'11"
2+420	8.882.203,122	588.519,941	403,804	268°09'11"
2+440	8.882.203,767	588.539,930	404,199	268°09'11"
2+460	8.882.204,411	588.559,920	404,595	268°09'11"
2+480	8.882.205,056	588.579,909	404,991	268°09'11"
2+500	8.882.205,701	588.599,899	405,386	268°09'11"
2+520	8.882.206,345	588.619,889	405,782	268°09'11"
2+540	8.882.206,990	588.639,878	406,178	268°09'11"
2+560	8.882.207,634	588.659,868	406,573	268°09'11"
2+580	8.882.208,279	588.679,857	406,969	268°09'11"
2+600	8.882.208,924	588.699,847	407,364	268°09'11"
2+620	8.882.209,568	588.719,837	407,760	268°09'11"
2+640	8.882.210,213	588.739,826	408,156	268°09'11"
2+660	8.882.210,857	588.759,816	408,551	268°09'11"
2+680	8.882.211,502	588.779,805	408,947	268°09'11"
2+700	8.882.212,146	588.799,795	409,343	268°09'11"
2+720	8.882.212,791	588.819,785	409,738	268°09'11"
2+740	8.882.213,427	588.839,775	410,033	268°50'47"
2+760	8.882.213,830	588.859,770	409,422	268°50'47"
2+780	8.882.214,233	588.879,766	408,807	268°50'47"
2+800	8.882.214,635	588.899,762	408,162	268°50'47"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
2+820	8.882.215,038	588.919,758	407,517	268°50'47"
2+840	8.882.215,441	588.939,754	406,872	268°50'47"
2+860	8.882.215,843	588.959,750	406,226	268°50'47"
2+880	8.882.216,246	588.979,746	405,581	268°50'47"
2+900	8.882.216,649	588.999,742	404,936	268°50'47"
2+920	8.882.217,051	589.019,738	404,291	268°50'47"
2+940	8.882.217,454	589.039,734	403,646	268°50'47"
2+960	8.882.217,857	589.059,730	403,001	268°50'47"
2+980	8.882.218,260	589.079,726	402,477	268°50'47"
3+000	8.882.218,733	589.099,720	403,057	268°35'37"
3+020	8.882.219,224	589.119,714	403,658	268°35'37"
3+040	8.882.219,715	589.139,708	404,452	268°35'37"
3+060	8.882.220,206	589.159,702	405,245	268°35'37"
3+080	8.882.220,697	589.179,696	406,039	268°35'37"
3+100	8.882.221,188	589.199,690	406,832	268°35'37"
3+120	8.882.221,679	589.219,684	407,625	268°35'37"
3+140	8.882.222,169	589.239,678	408,419	268°35'37"
3+160	8.882.222,660	589.259,672	409,212	268°35'37"
3+180	8.882.223,151	589.279,666	410,006	268°35'37"
3+200	8.882.223,642	589.299,660	410,799	268°35'37"
3+220	8.882.224,133	589.319,654	411,511	268°35'37"
3+240	8.882.224,589	589.339,649	411,488	268°43'18"
3+260	8.882.225,036	589.359,644	411,450	268°43'18"
3+280	8.882.225,482	589.379,639	411,268	268°43'18"
3+300	8.882.225,928	589.399,634	411,087	268°43'18"
3+320	8.882.226,374	589.419,629	410,905	268°43'18"
3+340	8.882.226,821	589.439,624	410,724	268°43'18"
3+360	8.882.227,267	589.459,619	410,542	268°43'18"
3+380	8.882.227,713	589.479,614	410,360	268°43'18"
3+400	8.882.228,159	589.499,609	410,179	268°43'18"
3+420	8.882.228,605	589.519,604	410,037	268°43'18"
3+440	8.882.228,941	589.539,600	410,254	269°42'11"
3+460	8.882.229,045	589.559,600	410,489	269°42'11"
3+480	8.882.229,149	589.579,600	410,954	269°42'11"
3+500	8.882.229,252	589.599,600	411,419	269°42'11"
3+520	8.882.229,356	589.619,599	411,884	269°42'11"
3+540	8.882.229,460	589.639,599	412,350	269°42'11"
3+560	8.882.229,563	589.659,599	412,815	269°42'11"
3+580	8.882.229,667	589.679,599	413,280	269°42'11"
3+600	8.882.229,770	589.699,598	413,745	269°42'11"
3+620	8.882.229,874	589.719,598	414,210	269°42'11"
3+640	8.882.229,978	589.739,598	414,676	269°42'11"
3+660	8.882.230,081	589.759,598	415,141	269°42'11"
3+680	8.882.230,185	589.779,597	415,606	269°42'11"
3+700	8.882.230,289	589.799,597	416,071	269°42'11"
3+720	8.882.230,392	589.819,597	416,536	269°42'11"
3+740	8.882.230,496	589.839,596	417,002	269°42'11"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
3+760	8.882.230,600	589.859,596	417,467	269°42'11"
3+780	8.882.230,703	589.879,596	417,932	269°42'11"
3+800	8.882.230,807	589.899,596	418,397	269°42'11"
3+820	8.882.230,911	589.919,595	418,862	269°42'11"
3+840	8.882.231,014	589.939,595	419,328	269°42'11"
3+860	8.882.231,118	589.959,595	419,784	269°42'11"
3+880	8.882.231,221	589.979,595	420,161	269°42'11"
3+900	8.882.228,422	589.999,264	420,521	283°17'15"
3+920	8.882.223,825	590.018,728	420,659	283°17'15"
3+940	8.882.219,229	590.038,193	420,797	283°17'15"
3+960	8.882.214,632	590.057,658	420,935	283°17'15"
3+980	8.882.210,035	590.077,122	421,037	283°17'15"
4+000	8.882.205,438	590.096,587	420,820	283°17'15"
4+020	8.882.196,887	590.114,580	420,772	297°32'7"
4+040	8.882.187,641	590.132,314	420,232	297°32'7"
4+060	8.882.178,395	590.150,049	419,693	297°32'7"
4+080	8.882.169,149	590.167,783	419,153	297°32'7"
4+100	8.882.159,903	590.185,518	418,613	297°32'7"
4+120	8.882.150,657	590.203,252	418,074	297°32'7"
4+140	8.882.141,411	590.220,987	417,534	297°32'7"
4+160	8.882.132,166	590.238,721	416,995	297°32'7"
4+180	8.882.122,920	590.256,456	416,455	297°32'7"
4+200	8.882.113,674	590.274,190	415,915	297°32'7"
4+220	8.882.104,428	590.291,925	415,376	297°32'7"
4+240	8.882.095,182	590.309,659	414,836	297°32'7"
4+260	8.882.085,936	590.327,394	414,308	297°32'7"
4+280	8.882.076,690	590.345,129	413,886	297°32'7"
4+300	8.882.065,933	590.361,723	413,439	316°30'22"
4+320	8.882.051,424	590.375,489	413,671	316°30'22"
4+340	8.882.036,915	590.389,255	413,903	316°30'22"
4+360	8.882.022,406	590.403,020	414,136	316°30'22"
4+380	8.882.007,897	590.416,786	414,368	316°30'22"
4+400	8.881.993,388	590.430,551	414,600	316°30'22"
4+420	8.881.978,879	590.444,317	414,833	316°30'22"
4+440	8.881.964,370	590.458,082	415,065	316°30'22"
4+460	8.881.949,861	590.471,848	415,297	316°30'22"
4+480	8.881.935,352	590.485,613	415,530	316°30'22"
4+500	8.881.920,844	590.499,379	415,762	316°30'22"
4+520	8.881.906,335	590.513,144	415,994	316°30'22"
4+540	8.881.891,826	590.526,910	416,227	316°30'22"
4+560	8.881.877,317	590.540,675	416,459	316°30'22"
4+580	8.881.862,808	590.554,441	416,691	316°30'22"
4+600	8.881.848,299	590.568,206	416,923	316°30'22"
4+620	8.881.833,790	590.581,972	417,156	316°30'22"
4+640	8.881.819,281	590.595,737	417,388	316°30'22"
4+660	8.881.804,772	590.609,503	417,620	316°30'22"
4+680	8.881.790,263	590.623,269	417,853	316°30'22"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
4+700	8.881.775,754	590.637,034	418,085	316°30'22"
4+720	8.881.761,245	590.650,800	418,317	316°30'22"
4+740	8.881.746,736	590.664,565	418,550	316°30'22"
4+760	8.881.732,227	590.678,331	418,782	316°30'22"
4+780	8.881.717,718	590.692,096	419,014	316°30'22"
4+800	8.881.703,209	590.705,862	419,247	316°30'22"
4+820	8.881.688,700	590.719,627	419,433	316°30'22"
4+840	8.881.674,096	590.733,292	419,254	317°02'30"
4+860	8.881.659,459	590.746,921	419,081	317°02'30"
4+880	8.881.644,822	590.760,550	418,818	317°02'30"
4+900	8.881.630,185	590.774,180	418,555	317°02'30"
4+920	8.881.615,548	590.787,809	418,292	317°02'30"
4+940	8.881.600,911	590.801,438	418,083	317°02'30"
4+960	8.881.586,247	590.815,038	418,368	317°03'123"
4+980	8.881.571,496	590.828,544	418,697	317°03'123"
5+000	8.881.556,745	590.842,050	419,394	317°03'123"
5+020	8.881.541,994	590.855,555	420,091	317°03'123"
5+040	8.881.527,243	590.869,061	420,787	317°03'123"
5+060	8.881.512,492	590.882,567	421,484	317°03'123"
5+080	8.881.497,741	590.896,073	422,181	317°03'123"
5+100	8.881.482,990	590.909,579	422,787	317°03'123"
5+120	8.881.468,287	590.923,138	422,578	317°018'52"
5+140	8.881.453,586	590.936,697	422,364	317°018'52"
5+160	8.881.438,884	590.950,257	422,102	317°018'52"
5+180	8.881.424,182	590.963,816	421,841	317°018'52"
5+200	8.881.409,481	590.977,376	421,580	317°018'52"
5+220	8.881.394,779	590.990,935	421,318	317°018'52"
5+240	8.881.380,077	591.004,495	421,057	317°018'52"
5+260	8.881.365,375	591.018,054	420,796	317°018'52"
5+280	8.881.350,674	591.031,614	420,534	317°018'52"
5+300	8.881.335,972	591.045,173	420,326	317°018'52"
5+320	8.881.321,255	591.058,716	420,603	317°023'16"
5+340	8.881.306,535	591.072,256	420,886	317°023'16"
5+360	8.881.291,816	591.085,797	421,220	317°023'16"
5+380	8.881.277,097	591.099,338	421,553	317°023'16"
5+400	8.881.262,378	591.112,878	421,887	317°023'16"
5+420	8.881.247,659	591.126,419	422,221	317°023'16"
5+440	8.881.232,940	591.139,960	422,554	317°023'16"
5+460	8.881.218,221	591.153,500	422,888	317°023'16"
5+480	8.881.203,502	591.167,041	423,222	317°023'16"
5+500	8.881.188,783	591.180,582	423,556	317°023'16"
5+520	8.881.174,064	591.194,122	423,889	317°023'16"
5+540	8.881.159,345	591.207,663	424,223	317°023'16"
5+560	8.881.144,626	591.221,204	424,557	317°023'16"
5+580	8.881.129,907	591.234,744	424,890	317°023'16"
5+600	8.881.115,188	591.248,285	425,224	317°023'16"
5+620	8.881.100,469	591.261,826	425,558	317°023'16"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
5+640	8.881.085,750	591.275,366	425,892	317°23'16"
5+660	8.881.071,031	591.288,907	426,225	317°23'16"
5+680	8.881.056,312	591.302,448	426,559	317°23'16"
5+700	8.881.041,593	591.315,989	426,893	317°23'16"
5+720	8.881.026,874	591.329,529	427,226	317°23'16"
5+740	8.881.012,155	591.343,070	427,560	317°23'16"
5+760	8.880.997,436	591.356,611	427,894	317°23'16"
5+780	8.880.982,716	591.370,151	428,207	317°39'25"
5+800	8.880.967,934	591.383,622	428,340	317°39'25"
5+820	8.880.953,151	591.397,093	428,471	317°39'25"
5+840	8.880.938,369	591.410,565	428,594	317°39'25"
5+860	8.880.923,586	591.424,036	428,717	317°39'25"
5+880	8.880.908,804	591.437,508	428,839	317°39'25"
5+900	8.880.894,021	591.450,979	428,962	317°39'25"
5+920	8.880.879,239	591.464,450	429,085	317°39'25"
5+940	8.880.864,456	591.477,922	429,208	317°39'25"
5+960	8.880.849,674	591.491,393	429,331	317°39'25"
5+980	8.880.834,891	591.504,864	429,453	317°39'25"
6+000	8.880.820,109	591.518,336	429,576	317°39'25"
6+020	8.880.805,326	591.531,807	429,699	317°39'25"
6+040	8.880.790,544	591.545,279	429,822	317°39'25"
6+060	8.880.775,762	591.558,750	429,945	317°39'25"
6+080	8.880.760,979	591.572,221	430,067	317°39'25"
6+100	8.880.746,197	591.585,693	430,190	317°39'25"
6+120	8.880.731,414	591.599,164	430,313	317°39'25"
6+140	8.880.716,632	591.612,636	430,436	317°39'25"
6+160	8.880.701,849	591.626,107	430,559	317°39'25"
6+180	8.880.687,067	591.639,578	430,681	317°39'25"
6+200	8.880.672,284	591.653,050	430,804	317°39'25"
6+220	8.880.657,502	591.666,521	430,927	317°39'25"
6+240	8.880.642,719	591.679,993	431,050	317°39'25"
6+260	8.880.627,937	591.693,464	431,173	317°39'25"
6+280	8.880.613,154	591.706,935	431,295	317°39'25"
6+300	8.880.598,372	591.720,407	431,418	317°39'25"
6+320	8.880.583,589	591.733,878	431,541	317°39'25"
6+340	8.880.568,807	591.747,350	431,664	317°39'25"
6+360	8.880.554,024	591.760,821	431,787	317°39'25"
6+380	8.880.539,242	591.774,292	431,909	317°39'25"
6+400	8.880.524,459	591.787,764	432,032	317°39'25"
6+420	8.880.509,677	591.801,235	432,155	317°39'25"
6+440	8.880.494,895	591.814,707	432,278	317°39'25"
6+460	8.880.480,112	591.828,178	432,401	317°39'25"
6+480	8.880.465,330	591.841,649	432,523	317°39'25"
6+500	8.880.450,547	591.855,121	432,646	317°39'25"
6+520	8.880.435,765	591.868,592	432,769	317°39'25"
6+540	8.880.420,982	591.882,064	432,892	317°39'25"
6+560	8.880.406,200	591.895,535	433,015	317°39'25"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
6+580	8.880.391,417	591.909,006	433,137	317°39'25"
6+600	8.880.376,635	591.922,478	433,260	317°39'25"
6+620	8.880.361,852	591.935,949	433,383	317°39'25"
6+640	8.880.347,070	591.949,421	433,506	317°39'25"
6+660	8.880.332,287	591.962,892	433,629	317°39'25"
6+680	8.880.317,505	591.976,363	433,751	317°39'25"
6+700	8.880.302,722	591.989,835	433,874	317°39'25"
6+720	8.880.287,940	592.003,306	433,997	317°39'25"
6+740	8.880.273,157	592.016,777	434,120	317°39'25"
6+760	8.880.258,375	592.030,249	434,243	317°39'25"
6+780	8.880.243,592	592.043,720	434,365	317°39'25"
6+800	8.880.228,810	592.057,192	434,488	317°39'25"
6+820	8.880.214,027	592.070,663	434,611	317°39'25"
6+840	8.880.199,245	592.084,134	434,734	317°39'25"
6+860	8.880.184,463	592.097,606	434,857	317°39'25"
6+880	8.880.169,680	592.111,077	434,979	317°39'25"
6+900	8.880.154,898	592.124,549	435,102	317°39'25"
6+920	8.880.140,115	592.138,020	435,225	317°39'25"
6+940	8.880.125,333	592.151,491	435,348	317°39'25"
6+960	8.880.110,550	592.164,963	435,471	317°39'25"
6+980	8.880.095,768	592.178,434	435,593	317°39'25"
7+000	8.880.080,985	592.191,906	435,716	317°39'25"
7+020	8.880.066,203	592.205,377	435,839	317°39'25"
7+040	8.880.051,420	592.218,848	435,962	317°39'25"
7+060	8.880.036,638	592.232,320	436,085	317°39'25"
7+080	8.880.021,855	592.245,791	436,208	317°39'25"
7+100	8.880.007,763	592.259,781	436,333	296°09'15"
7+120	8.879.998,947	592.277,733	436,480	296°09'15"
7+140	8.879.990,132	592.295,685	436,627	296°09'15"
7+160	8.879.981,316	592.313,638	436,773	296°09'15"
7+180	8.879.972,500	592.331,590	436,920	296°09'15"
7+200	8.879.963,684	592.349,542	437,067	296°09'15"
7+220	8.879.954,869	592.367,494	437,214	296°09'15"
7+240	8.879.946,053	592.385,447	437,361	296°09'15"
7+260	8.879.937,237	592.403,399	437,508	296°09'15"
7+280	8.879.928,421	592.421,351	437,654	296°09'15"
7+300	8.879.919,605	592.439,303	437,801	296°09'15"
7+320	8.879.910,790	592.457,255	437,948	296°09'15"
7+340	8.879.901,974	592.475,208	438,095	296°09'15"
7+360	8.879.893,158	592.493,160	438,242	296°09'15"
7+380	8.879.884,342	592.511,112	438,376	296°09'15"
7+400	8.879.875,883	592.529,161	438,404	274°07'44"
7+420	8.879.874,443	592.549,109	438,421	274°07'44"
7+440	8.879.873,003	592.569,057	438,318	274°07'44"
7+460	8.879.871,563	592.589,005	438,216	274°07'44"
7+480	8.879.870,123	592.608,953	438,113	274°07'44"
7+500	8.879.868,683	592.628,901	438,011	274°07'44"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
7+520	8.879.867,243	592.648,849	437,908	274°07'44"
7+540	8.879.865,803	592.668,797	437,806	274°07'44"
7+560	8.879.864,363	592.688,745	437,703	274°07'44"
7+580	8.879.862,923	592.708,693	437,601	274°07'44"
7+600	8.879.861,483	592.728,642	437,498	274°07'44"
7+620	8.879.860,043	592.748,590	437,396	274°07'44"
7+640	8.879.858,603	592.768,538	437,293	274°07'44"
7+660	8.879.857,163	592.788,486	437,191	274°07'44"
7+680	8.879.855,723	592.808,434	437,088	274°07'44"
7+700	8.879.854,283	592.828,382	436,986	274°07'44"
7+720	8.879.852,843	592.848,330	436,883	274°07'44"
7+740	8.879.851,403	592.868,278	436,781	274°07'44"
7+760	8.879.849,963	592.888,226	436,678	274°07'44"
7+780	8.879.848,523	592.908,174	436,576	274°07'44"
7+800	8.879.847,083	592.928,122	436,473	274°07'44"
7+820	8.879.845,643	592.948,071	436,371	274°07'44"
7+840	8.879.844,203	592.968,019	436,268	274°07'44"
7+860	8.879.842,763	592.987,967	436,166	274°07'44"
7+880	8.879.841,323	593.007,915	436,063	274°07'44"
7+900	8.879.839,883	593.027,863	435,961	274°07'44"
7+920	8.879.838,443	593.047,811	435,858	274°07'44"
7+940	8.879.837,003	593.067,759	435,756	274°07'44"
7+960	8.879.835,563	593.087,707	435,653	274°07'44"
7+980	8.879.834,123	593.107,655	435,551	274°07'44"
8+000	8.879.832,683	593.127,603	435,448	274°07'44"
8+020	8.879.831,243	593.147,552	435,346	274°07'44"
8+040	8.879.829,803	593.167,500	435,243	274°07'44"
8+060	8.879.828,363	593.187,448	435,141	274°07'44"
8+080	8.879.826,923	593.207,396	435,038	274°07'44"
8+100	8.879.825,483	593.227,344	434,936	274°07'44"
8+120	8.879.824,043	593.247,292	434,833	274°07'44"
8+140	8.879.822,603	593.267,240	434,731	274°07'44"
8+160	8.879.821,163	593.287,188	434,628	274°07'44"
8+180	8.879.819,723	593.307,136	434,526	274°07'44"
8+200	8.879.818,283	593.327,084	434,423	274°07'44"
8+220	8.879.816,843	593.347,032	434,321	274°07'44"
8+240	8.879.815,403	593.366,981	434,218	274°07'44"
8+260	8.879.813,963	593.386,929	434,116	274°07'44"
8+280	8.879.812,524	593.406,877	434,013	274°07'44"
8+300	8.879.811,084	593.426,825	433,911	274°07'44"
8+320	8.879.809,644	593.446,773	433,808	274°07'44"
8+340	8.879.808,204	593.466,721	433,706	274°07'44"
8+360	8.879.806,764	593.486,669	433,603	274°07'44"
8+380	8.879.805,324	593.506,617	433,505	274°07'44"
8+400	8.879.803,884	593.526,565	433,444	274°07'44"
8+420	8.879.802,093	593.546,483	433,377	275°04'33"
8+440	8.879.800,075	593.566,381	433,407	275°04'33"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
8+460	8.879.798,056	593.586,279	433,438	275°47'33"
8+480	8.879.796,038	593.606,177	433,469	275°47'33"
8+500	8.879.794,019	593.626,075	433,499	275°47'33"
8+520	8.879.792,001	593.645,972	433,530	275°47'33"
8+540	8.879.789,982	593.665,870	433,561	275°47'33"
8+560	8.879.787,964	593.685,768	433,591	275°47'33"
8+580	8.879.785,945	593.705,666	433,622	275°47'33"
8+600	8.879.783,927	593.725,564	433,653	275°47'33"
8+620	8.879.781,908	593.745,462	433,683	275°47'33"
8+640	8.879.779,890	593.765,360	433,714	275°47'33"
8+660	8.879.777,871	593.785,258	433,748	275°47'33"
8+680	8.879.775,853	593.805,155	433,807	275°47'33"
8+700	8.879.769,493	593.823,829	433,872	295°43'4"
8+720	8.879.760,814	593.841,847	434,005	295°43'4"
8+740	8.879.752,136	593.859,866	434,137	295°43'4"
8+760	8.879.743,457	593.877,885	434,270	295°43'4"
8+780	8.879.734,778	593.895,904	434,394	295°43'4"
8+800	8.879.724,631	593.912,941	434,445	311°50'16"
8+820	8.879.711,290	593.927,841	434,491	311°50'16"
8+840	8.879.697,950	593.942,742	434,489	311°50'16"
8+860	8.879.684,609	593.957,643	434,488	311°50'16"
8+880	8.879.671,269	593.972,543	434,486	311°50'16"
8+900	8.879.657,929	593.987,444	434,484	311°50'16"
8+920	8.879.644,588	594.002,345	434,483	311°50'16"
8+940	8.879.631,248	594.017,246	434,481	311°50'16"
8+960	8.879.617,907	594.032,146	434,480	311°50'16"
8+980	8.879.604,567	594.047,047	434,478	311°50'16"
9+000	8.879.591,226	594.061,948	434,476	311°50'16"
9+020	8.879.577,886	594.076,849	434,475	311°50'16"
9+040	8.879.564,545	594.091,749	434,473	311°50'16"
9+060	8.879.551,205	594.106,650	434,471	311°50'16"
9+080	8.879.537,864	594.121,551	434,470	311°50'16"
9+100	8.879.524,524	594.136,451	434,468	311°50'16"
9+120	8.879.511,183	594.151,352	434,467	311°50'16"
9+140	8.879.497,843	594.166,253	434,465	311°50'16"
9+160	8.879.484,502	594.181,154	434,463	311°50'16"
9+180	8.879.471,162	594.196,054	434,462	311°50'16"
9+200	8.879.457,821	594.210,955	434,460	311°50'16"
9+220	8.879.444,481	594.225,856	434,459	311°50'16"
9+240	8.879.431,140	594.240,756	434,457	311°50'16"
9+260	8.879.417,800	594.255,657	434,455	311°50'16"
9+280	8.879.404,459	594.270,558	434,454	311°50'16"
9+300	8.879.391,119	594.285,459	434,447	311°50'16"
9+320	8.879.383,955	594.304,103	434,396	290°36'32"
9+340	8.879.376,915	594.322,824	434,344	290°36'32"
9+360	8.879.369,875	594.341,544	434,289	290°36'32"
9+380	8.879.362,836	594.360,264	434,235	290°36'32"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
9+400	8.879.355,796	594.378,984	434,180	290°36'32"
9+420	8.879.348,756	594.397,704	434,125	290°36'32"
9+440	8.879.341,716	594.416,424	434,071	290°36'32"
9+460	8.879.334,676	594.435,144	434,016	290°36'32"
9+480	8.879.327,637	594.453,864	433,961	290°36'32"
9+500	8.879.320,597	594.472,584	433,907	290°36'32"
9+520	8.879.313,557	594.491,304	433,852	290°36'32"
9+540	8.879.306,517	594.510,024	433,797	290°36'32"
9+560	8.879.299,478	594.528,744	433,743	290°36'32"
9+580	8.879.292,438	594.547,465	433,678	290°36'32"
9+600	8.879.285,398	594.566,185	433,522	290°36'32"
9+620	8.879.284,356	594.586,051	433,349	271°01'40"
9+640	8.879.283,997	594.606,048	433,038	271°01'40"
9+660	8.879.283,639	594.626,044	432,727	271°01'40"
9+680	8.879.283,280	594.646,041	432,416	271°01'40"
9+700	8.879.282,921	594.666,038	432,106	271°01'40"
9+720	8.879.282,562	594.686,035	431,795	271°01'40"
9+740	8.879.282,204	594.706,032	431,484	271°01'40"
9+760	8.879.281,845	594.726,028	431,173	271°01'40"
9+780	8.879.281,486	594.746,025	430,862	271°01'40"
9+800	8.879.281,128	594.766,022	430,552	271°01'40"
9+820	8.879.280,769	594.786,019	430,241	271°01'40"
9+840	8.879.280,410	594.806,015	429,930	271°01'40"
9+860	8.879.280,052	594.826,012	429,619	271°01'40"
9+880	8.879.279,693	594.846,009	429,308	271°01'40"
9+900	8.879.279,334	594.866,006	428,998	271°01'40"
9+920	8.879.278,975	594.886,003	428,687	271°01'40"
9+940	8.879.278,617	594.905,999	428,376	271°01'40"
9+960	8.879.278,258	594.925,996	428,065	271°01'40"
9+980	8.879.277,899	594.945,993	427,754	271°01'40"
10+000	8.879.277,541	594.965,990	427,444	271°01'40"
10+020	8.879.277,182	594.985,986	427,133	271°01'40"
10+040	8.879.276,823	595.005,983	426,822	271°01'40"
10+060	8.879.276,464	595.025,980	426,511	271°01'40"
10+080	8.879.276,106	595.045,977	426,200	271°01'40"
10+100	8.879.275,747	595.065,974	425,890	271°01'40"
10+120	8.879.275,388	595.085,970	425,579	271°01'40"
10+140	8.879.275,030	595.105,967	425,268	271°01'40"
10+160	8.879.274,671	595.125,964	424,957	271°01'40"
10+180	8.879.274,312	595.145,961	424,646	271°01'40"
10+200	8.879.273,954	595.165,958	424,336	271°01'40"
10+220	8.879.273,595	595.185,954	424,025	271°01'40"
10+240	8.879.273,236	595.205,951	423,714	271°01'40"
10+260	8.879.272,877	595.225,948	423,396	271°01'40"
10+280	8.879.272,519	595.245,945	423,010	271°01'40"
10+300	8.879.276,544	595.265,502	422,801	257°31'19"
10+320	8.879.280,865	595.285,029	422,512	257°31'19"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
10+340	8.879.285,187	595.304,557	422,222	257°31'19"
10+360	8.879.289,508	595.324,085	421,932	257°31'19"
10+380	8.879.293,829	595.343,612	421,642	257°31'19"
10+400	8.879.298,150	595.363,140	421,352	257°31'19"
10+420	8.879.302,472	595.382,667	421,063	257°31'19"
10+440	8.879.306,793	595.402,195	420,773	257°31'19"
10+460	8.879.311,114	595.421,723	420,483	257°31'19"
10+480	8.879.315,436	595.441,250	420,193	257°31'19"
10+500	8.879.319,757	595.460,778	419,903	257°31'19"
10+520	8.879.324,078	595.480,305	419,614	257°31'19"
10+540	8.879.328,399	595.499,833	419,324	257°31'19"
10+560	8.879.332,721	595.519,360	419,034	257°31'19"
10+580	8.879.337,042	595.538,888	418,744	257°31'19"
10+600	8.879.341,363	595.558,416	418,455	257°31'19"
10+620	8.879.345,685	595.577,943	418,165	257°31'19"
10+640	8.879.350,006	595.597,471	417,875	257°31'19"
10+660	8.879.354,327	595.616,998	417,654	257°31'19"
10+680	8.879.361,203	595.635,664	418,065	245°09'56"
10+700	8.879.369,603	595.653,814	418,504	245°09'56"
10+720	8.879.378,003	595.671,965	419,135	245°09'56"
10+740	8.879.386,403	595.690,115	419,767	245°09'56"
10+760	8.879.394,803	595.708,266	420,398	245°09'56"
10+780	8.879.403,202	595.726,416	421,029	245°09'56"
10+800	8.879.411,602	595.744,567	421,661	245°09'56"
10+820	8.879.420,002	595.762,717	422,292	245°09'56"
10+840	8.879.428,402	595.780,868	422,923	245°09'56"
10+860	8.879.436,802	595.799,018	423,525	245°09'56"
10+880	8.879.446,069	595.816,728	423,900	241°00'16"
10+900	8.879.455,764	595.834,222	424,288	241°00'16"
10+920	8.879.465,459	595.851,715	424,589	241°00'16"
10+940	8.879.475,154	595.869,208	424,864	241°00'16"
10+960	8.879.484,232	595.887,024	424,974	243°38'21"
10+980	8.879.493,113	595.904,945	425,105	243°38'21"
11+000	8.879.501,993	595.922,865	425,222	243°38'21"
11+020	8.879.510,874	595.940,785	425,339	243°38'21"
11+040	8.879.519,754	595.958,706	425,456	243°38'21"
11+060	8.879.528,635	595.976,626	425,573	243°38'21"
11+080	8.879.537,515	595.994,546	425,690	243°38'21"
11+100	8.879.546,396	596.012,466	425,807	243°38'21"
11+120	8.879.555,276	596.030,387	425,924	243°38'21"
11+140	8.879.564,157	596.048,307	426,041	243°38'21"
11+160	8.879.573,037	596.066,227	426,158	243°38'21"
11+180	8.879.581,918	596.084,148	426,275	243°38'21"
11+200	8.879.590,798	596.102,068	426,392	243°38'21"
11+220	8.879.599,678	596.119,988	426,509	243°38'21"
11+240	8.879.608,559	596.137,909	426,626	243°38'21"
11+260	8.879.617,439	596.155,829	426,744	243°38'21"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
11+280	8.879.626,320	596.173,749	426,861	243°38'21"
11+300	8.879.635,200	596.191,669	426,978	243°38'21"
11+320	8.879.644,081	596.209,590	427,095	243°38'21"
11+340	8.879.652,961	596.227,510	427,137	243°38'21"
11+360	8.879.661,733	596.245,483	426,509	244°13'53"
11+380	8.879.670,428	596.263,495	425,884	244°13'53"
11+400	8.879.679,123	596.281,506	425,248	244°13'53"
11+420	8.879.687,818	596.299,517	424,612	244°13'53"
11+440	8.879.696,512	596.317,528	423,976	244°13'53"
11+460	8.879.705,207	596.335,539	423,340	244°13'53"
11+480	8.879.713,902	596.353,550	422,705	244°13'53"
11+500	8.879.722,597	596.371,561	422,069	244°13'53"
11+520	8.879.731,291	596.389,573	421,433	244°13'53"
11+540	8.879.739,986	596.407,584	420,797	244°13'53"
11+560	8.879.748,681	596.425,595	420,161	244°13'53"
11+580	8.879.757,375	596.443,606	419,525	244°13'53"
11+600	8.879.766,070	596.461,617	418,889	244°13'53"
11+620	8.879.774,765	596.479,628	418,253	244°13'53"
11+640	8.879.783,460	596.497,640	417,617	244°13'53"
11+660	8.879.792,154	596.515,651	416,981	244°13'53"
11+680	8.879.800,849	596.533,662	416,345	244°13'53"
11+700	8.879.809,544	596.551,673	415,709	244°13'53"
11+720	8.879.818,239	596.569,684	415,074	244°13'53"
11+740	8.879.826,933	596.587,695	414,438	244°13'53"
11+760	8.879.835,628	596.605,706	413,802	244°13'53"
11+780	8.879.844,323	596.623,718	413,166	244°13'53"
11+800	8.879.853,018	596.641,729	412,530	244°13'53"
11+820	8.879.861,712	596.659,740	411,894	244°13'53"
11+840	8.879.870,407	596.677,751	411,258	244°13'53"
11+860	8.879.879,102	596.695,762	410,675	244°13'53"
11+880	8.879.887,796	596.713,773	410,568	244°13'53"
11+900	8.879.896,528	596.731,766	410,524	243°58'35"
11+920	8.879.905,303	596.749,739	411,119	243°58'35"
11+940	8.879.914,078	596.767,711	411,714	243°58'35"
11+960	8.879.922,853	596.785,683	412,308	243°58'35"
11+980	8.879.931,628	596.803,656	412,903	243°58'35"
12+000	8.879.940,402	596.821,628	413,498	243°58'35"
12+020	8.879.949,177	596.839,600	414,092	243°58'35"
12+040	8.879.957,952	596.857,572	414,687	243°58'35"
12+060	8.879.966,727	596.875,545	415,282	243°58'35"
12+080	8.879.975,502	596.893,517	415,876	243°58'35"
12+100	8.879.984,277	596.911,489	416,480	243°58'35"
12+120	8.879.992,817	596.929,552	417,168	253°55'7"
12+140	8.879.998,357	596.948,769	417,858	253°55'7"
12+160	8.880.003,897	596.967,986	418,580	253°55'7"
12+180	8.880.009,437	596.987,204	419,301	253°55'7"
12+200	8.880.014,977	597.006,421	420,022	253°55'7"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
12+220	8.880.020,517	597.025,639	420,732	253°55'7"
12+240	8.880.026,057	597.044,856	421,342	253°55'7"
12+260	8.880.030,277	597.064,310	421,925	265°43'59"
12+280	8.880.031,765	597.084,255	422,326	265°43'59"
12+300	8.880.033,253	597.104,199	422,728	265°43'59"
12+320	8.880.034,741	597.124,144	423,129	265°43'59"
12+340	8.880.036,229	597.144,089	423,531	265°43'59"
12+360	8.880.037,717	597.164,033	423,932	265°43'59"
12+380	8.880.039,205	597.183,978	424,334	265°43'59"
12+400	8.880.040,693	597.203,922	424,735	265°43'59"
12+420	8.880.042,181	597.223,867	425,137	265°43'59"
12+440	8.880.043,669	597.243,811	425,538	265°43'59"
12+460	8.880.045,157	597.263,756	425,940	265°43'59"
12+480	8.880.046,645	597.283,701	426,341	265°43'59"
12+500	8.880.048,133	597.303,645	426,743	265°43'59"
12+520	8.880.049,621	597.323,590	427,144	265°43'59"
12+540	8.880.051,109	597.343,534	427,545	265°43'59"
12+560	8.880.052,598	597.363,479	427,947	265°43'59"
12+580	8.880.054,086	597.383,423	428,348	265°43'59"
12+600	8.880.055,574	597.403,368	428,750	265°43'59"
12+620	8.880.057,062	597.423,313	429,151	265°43'59"
12+640	8.880.058,550	597.443,257	429,553	265°43'59"
12+660	8.880.060,038	597.463,202	429,954	265°43'59"
12+680	8.880.061,526	597.483,146	430,356	265°43'59"
12+700	8.880.063,014	597.503,091	430,757	265°43'59"
12+720	8.880.064,502	597.523,035	431,159	265°43'59"
12+740	8.880.065,990	597.542,980	431,560	265°43'59"
12+760	8.880.067,478	597.562,924	431,962	265°43'59"
12+780	8.880.068,966	597.582,869	432,363	265°43'59"
12+800	8.880.070,454	597.602,814	432,765	265°43'59"
12+820	8.880.071,942	597.622,758	433,166	265°43'59"
12+840	8.880.073,430	597.642,703	433,568	265°43'59"
12+860	8.880.074,918	597.662,647	433,969	265°43'59"
12+880	8.880.076,406	597.682,592	434,370	265°43'59"
12+900	8.880.077,894	597.702,536	434,772	265°43'59"
12+920	8.880.079,382	597.722,481	435,173	265°43'59"
12+940	8.880.080,870	597.742,426	435,575	265°43'59"
12+960	8.880.082,358	597.762,370	435,976	265°43'59"
12+980	8.880.083,846	597.782,315	436,378	265°43'59"
13+000	8.880.085,334	597.802,259	436,779	265°43'59"
13+020	8.880.086,822	597.822,204	437,181	265°43'59"
13+040	8.880.088,310	597.842,148	437,582	265°43'59"
13+060	8.880.089,798	597.862,093	437,970	265°43'59"
13+080	8.880.091,286	597.882,038	438,231	265°43'59"
13+100	8.880.093,031	597.901,961	438,480	264°49'16"
13+120	8.880.094,836	597.921,879	438,645	264°49'16"
13+140	8.880.096,642	597.941,798	438,810	264°49'16"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
13+160	8.880.098,447	597.961,716	438,975	264°49'16"
13+180	8.880.100,252	597.981,634	439,141	264°49'16"
13+200	8.880.102,058	598.001,553	439,306	264°49'16"
13+220	8.880.103,863	598.021,471	439,471	264°49'16"
13+240	8.880.105,668	598.041,389	439,636	264°49'16"
13+260	8.880.107,473	598.061,308	439,801	264°49'16"
13+280	8.880.109,279	598.081,226	439,967	264°49'16"
13+300	8.880.111,084	598.101,144	440,132	264°49'16"
13+320	8.880.112,889	598.121,063	440,297	264°49'16"
13+340	8.880.114,695	598.140,981	440,462	264°49'16"
13+360	8.880.116,500	598.160,900	440,628	264°49'16"
13+380	8.880.118,305	598.180,818	440,793	264°49'16"
13+400	8.880.120,111	598.200,736	440,958	264°49'16"
13+420	8.880.121,916	598.220,655	441,123	264°49'16"
13+440	8.880.123,721	598.240,573	441,288	264°49'16"
13+460	8.880.125,526	598.260,491	441,454	264°49'16"
13+480	8.880.127,332	598.280,410	441,619	264°49'16"
13+500	8.880.129,137	598.300,328	441,784	264°49'16"
13+520	8.880.130,942	598.320,246	441,949	264°49'16"
13+540	8.880.132,748	598.340,165	442,114	264°49'16"
13+560	8.880.134,553	598.360,083	442,280	264°49'16"
13+580	8.880.136,358	598.380,001	442,445	264°49'16"
13+600	8.880.138,164	598.399,920	442,610	264°49'16"
13+620	8.880.139,969	598.419,838	442,776	264°49'16"
13+640	8.880.141,774	598.439,757	442,946	264°49'16"
13+660	8.880.143,579	598.459,675	443,119	264°49'16"
13+680	8.880.145,021	598.479,616	443,315	266°07'33"
13+700	8.880.146,372	598.499,570	443,509	266°07'33"
13+720	8.880.147,723	598.519,525	443,705	266°07'33"
13+740	8.880.149,074	598.539,479	443,900	266°07'33"
13+760	8.880.150,426	598.559,433	444,096	266°07'33"
13+780	8.880.151,777	598.579,388	444,292	266°07'33"
13+800	8.880.153,128	598.599,342	444,487	266°07'33"
13+820	8.880.154,479	598.619,296	444,683	266°07'33"
13+840	8.880.155,831	598.639,250	444,879	266°07'33"
13+860	8.880.157,182	598.659,205	445,074	266°07'33"
13+880	8.880.158,533	598.679,159	445,270	266°07'33"
13+900	8.880.159,884	598.699,113	445,465	266°07'33"
13+920	8.880.161,236	598.719,068	445,661	266°07'33"
13+940	8.880.162,587	598.739,022	445,857	266°07'33"
13+960	8.880.163,938	598.758,976	446,052	266°07'33"
13+980	8.880.165,290	598.778,931	446,248	266°07'33"
14+000	8.880.166,641	598.798,885	446,443	266°07'33"
14+020	8.880.167,992	598.818,839	446,639	266°07'33"
14+040	8.880.169,343	598.838,793	446,835	266°07'33"
14+060	8.880.170,695	598.858,748	447,030	266°07'33"
14+080	8.880.172,046	598.878,702	447,226	266°07'33"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
14+100	8.880.173,397	598.898,656	447,421	266°07'33"
14+120	8.880.174,748	598.918,611	447,617	266°07'33"
14+140	8.880.176,100	598.938,565	447,813	266°07'33"
14+160	8.880.177,451	598.958,519	448,008	266°07'33"
14+180	8.880.178,802	598.978,474	448,204	266°07'33"
14+200	8.880.180,153	598.998,428	448,399	266°07'33"
14+220	8.880.181,505	599.018,382	448,595	266°07'33"
14+240	8.880.182,856	599.038,336	448,791	266°07'33"
14+260	8.880.184,207	599.058,291	448,986	266°07'33"
14+280	8.880.185,559	599.078,245	449,182	266°07'33"
14+300	8.880.186,910	599.098,199	449,378	266°07'33"
14+320	8.880.188,261	599.118,154	449,573	266°07'33"
14+340	8.880.189,612	599.138,108	449,769	266°07'33"
14+360	8.880.190,964	599.158,062	449,964	266°07'33"
14+380	8.880.192,315	599.178,017	450,160	266°07'33"
14+400	8.880.193,666	599.197,971	450,356	266°07'33"
14+420	8.880.195,017	599.217,925	450,551	266°07'33"
14+440	8.880.196,369	599.237,879	450,747	266°07'33"
14+460	8.880.197,720	599.257,834	450,942	266°07'33"
14+480	8.880.199,071	599.277,788	451,138	266°07'33"
14+500	8.880.200,423	599.297,742	451,334	266°07'33"
14+520	8.880.201,774	599.317,697	451,529	266°07'33"
14+540	8.880.203,125	599.337,651	451,725	266°07'33"
14+560	8.880.204,476	599.357,605	451,920	266°07'33"
14+580	8.880.205,828	599.377,560	452,099	266°07'33"
14+600	8.880.207,041	599.397,522	452,127	267°01'29"
14+620	8.880.207,974	599.417,500	452,161	267°01'29"
14+640	8.880.208,908	599.437,478	452,168	267°01'29"
14+660	8.880.209,841	599.457,456	452,175	267°01'29"
14+680	8.880.210,775	599.477,435	452,182	267°01'29"
14+700	8.880.211,708	599.497,413	452,189	267°01'29"
14+720	8.880.212,642	599.517,391	452,195	267°01'29"
14+740	8.880.213,575	599.537,369	452,202	267°01'29"
14+760	8.880.214,509	599.557,347	452,209	267°01'29"
14+780	8.880.215,442	599.577,326	452,216	267°01'29"
14+800	8.880.216,376	599.597,304	452,222	267°01'29"
14+820	8.880.217,309	599.617,282	452,229	267°01'29"
14+840	8.880.218,243	599.637,260	452,236	267°01'29"
14+860	8.880.219,176	599.657,238	452,243	267°01'29"
14+880	8.880.220,110	599.677,217	452,250	267°01'29"
14+900	8.880.221,043	599.697,195	452,256	267°01'29"
14+920	8.880.221,977	599.717,173	452,263	267°01'29"
14+940	8.880.222,910	599.737,151	452,270	267°01'29"
14+960	8.880.223,844	599.757,129	452,277	267°01'29"
14+980	8.880.224,777	599.777,108	452,283	267°01'29"
15+000	8.880.225,711	599.797,086	452,290	267°01'29"
15+020	8.880.226,644	599.817,064	452,297	267°01'29"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
15+040	8.880.227,578	599.837,042	452,304	267°19'29"
15+060	8.880.228,512	599.857,020	452,311	267°19'29"
15+080	8.880.229,445	599.876,999	452,317	267°19'29"
15+100	8.880.230,379	599.896,977	452,324	267°19'29"
15+120	8.880.231,312	599.916,955	452,331	267°19'29"
15+140	8.880.232,246	599.936,933	452,338	267°19'29"
15+160	8.880.233,179	599.956,911	452,344	267°19'29"
15+180	8.880.234,113	599.976,890	452,351	267°19'29"
15+200	8.880.235,046	599.996,868	452,358	267°19'29"
15+220	8.880.235,980	600.016,846	452,365	267°19'29"
15+240	8.880.236,913	600.036,824	452,372	267°19'29"
15+260	8.880.237,847	600.056,802	452,378	267°19'29"
15+280	8.880.238,780	600.076,781	452,385	267°19'29"
15+300	8.880.239,714	600.096,759	452,392	267°19'29"
15+320	8.880.240,647	600.116,737	452,399	267°19'29"
15+340	8.880.241,581	600.136,715	452,406	267°19'29"
15+360	8.880.242,514	600.156,693	452,412	267°19'29"
15+380	8.880.243,448	600.176,672	452,419	267°19'29"
15+400	8.880.244,381	600.196,650	452,426	267°19'29"
15+420	8.880.245,315	600.216,628	452,433	267°19'29"
15+440	8.880.246,248	600.236,606	452,439	267°19'29"
15+460	8.880.247,182	600.256,584	452,446	267°19'29"
15+480	8.880.248,115	600.276,563	452,453	267°19'29"
15+500	8.880.249,049	600.296,541	452,460	267°19'29"
15+520	8.880.249,982	600.316,519	452,467	267°19'29"
15+540	8.880.250,916	600.336,497	452,460	267°19'29"
15+560	8.880.251,849	600.356,475	452,336	267°19'29"
15+580	8.880.252,784	600.376,454	452,169	267°16'53"
15+600	8.880.253,733	600.396,431	451,624	267°16'53"
15+620	8.880.254,681	600.416,409	451,078	267°16'53"
15+640	8.880.255,630	600.436,386	450,533	267°16'53"
15+660	8.880.256,578	600.456,364	449,987	267°16'53"
15+680	8.880.257,527	600.476,341	449,441	267°16'53"
15+700	8.880.258,476	600.496,319	448,896	267°16'53"
15+720	8.880.259,424	600.516,296	448,350	267°16'53"
15+740	8.880.260,373	600.536,274	447,804	267°16'53"
15+760	8.880.261,321	600.556,251	447,259	267°16'53"
15+780	8.880.262,270	600.576,228	446,713	267°16'53"
15+800	8.880.263,218	600.596,206	446,167	267°16'53"
15+820	8.880.264,167	600.616,183	445,622	267°16'53"
15+840	8.880.265,116	600.636,161	445,076	267°16'53"
15+860	8.880.266,064	600.656,138	444,530	267°16'53"
15+880	8.880.267,013	600.676,116	443,985	267°16'53"
15+900	8.880.267,961	600.696,093	443,439	267°16'53"
15+920	8.880.268,910	600.716,071	442,893	267°16'53"
15+940	8.880.269,859	600.736,048	442,348	267°16'53"
15+960	8.880.270,807	600.756,026	441,802	267°16'53"

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Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
15+980	8.880.271,756	600.776,003	441,257	267°16'53"
16+000	8.880.272,704	600.795,981	440,711	267°16'53"
16+020	8.880.273,653	600.815,958	440,165	267°16'53"
16+040	8.880.274,602	600.835,936	439,620	267°16'53"
16+060	8.880.275,550	600.855,913	439,074	267°16'53"
16+080	8.880.276,499	600.875,891	438,528	267°16'53"
16+100	8.880.277,447	600.895,868	438,062	267°16'53"
16+120	8.880.278,396	600.915,846	438,312	267°16'53"
16+140	8.880.279,458	600.935,818	438,547	266°50'13"
16+160	8.880.280,561	600.955,787	439,346	266°50'13"
16+180	8.880.281,665	600.975,757	440,145	266°50'13"
16+200	8.880.282,768	600.995,726	440,944	266°50'13"
16+220	8.880.283,872	601.015,696	441,743	266°50'13"
16+240	8.880.284,975	601.035,665	442,542	266°50'13"
16+260	8.880.286,079	601.055,635	443,312	266°50'13"
16+280	8.880.287,183	601.075,604	443,815	266°50'13"
16+300	8.880.288,268	601.095,575	444,256	267°05'22"
16+320	8.880.289,284	601.115,549	444,083	267°05'22"
16+340	8.880.290,299	601.135,523	443,910	267°05'22"
16+360	8.880.291,315	601.155,497	443,737	267°05'22"
16+380	8.880.292,330	601.175,472	443,564	267°05'22"
16+400	8.880.293,346	601.195,446	443,390	267°05'22"
16+420	8.880.294,361	601.215,420	443,217	267°05'22"
16+440	8.880.295,377	601.235,394	443,044	267°05'22"
16+460	8.880.296,393	601.255,368	442,871	267°05'22"
16+480	8.880.297,408	601.275,343	442,698	267°05'22"
16+500	8.880.298,424	601.295,317	442,524	267°05'22"
16+520	8.880.299,439	601.315,291	442,351	267°05'22"
16+540	8.880.300,455	601.335,265	442,174	267°05'22"
16+560	8.880.301,470	601.355,239	441,962	267°05'22"
16+580	8.880.302,486	601.375,214	441,701	267°05'22"
16+600	8.880.303,426	601.395,191	440,984	267°22'46"
16+620	8.880.304,341	601.415,170	440,261	267°22'46"
16+640	8.880.305,255	601.435,150	439,542	267°22'46"
16+660	8.880.306,169	601.455,129	438,823	267°22'46"
16+680	8.880.307,084	601.475,108	438,104	267°22'46"
16+700	8.880.307,998	601.495,087	437,385	267°22'46"
16+720	8.880.308,913	601.515,066	436,666	267°22'46"
16+740	8.880.309,827	601.535,045	435,991	267°22'46"
16+760	8.880.310,741	601.555,024	435,711	267°22'46"
16+780	8.880.311,729	601.574,999	435,536	265°56'59"
16+800	8.880.313,142	601.594,949	436,400	265°56'59"
16+820	8.880.314,555	601.614,899	437,263	265°56'59"
16+840	8.880.315,967	601.634,849	438,127	265°56'59"
16+860	8.880.317,380	601.654,799	438,981	265°56'59"
16+880	8.880.318,793	601.674,749	439,754	265°56'59"
16+900	8.880.320,205	601.694,699	440,420	265°56'59"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
16+920	8.880.319,678	601.714,662	440,130	273°18'19"
16+940	8.880.318,525	601.734,629	439,839	273°18'19"
16+960	8.880.317,372	601.754,595	439,549	273°18'19"
16+980	8.880.316,219	601.774,562	439,286	273°18'19"
17+000	8.880.315,066	601.794,529	439,019	273°18'19"
17+020	8.880.313,913	601.814,495	438,739	273°18'19"
17+040	8.880.312,760	601.834,462	438,713	273°18'19"
17+060	8.880.311,406	601.854,407	438,755	278°59'13"
17+080	8.880.308,282	601.874,162	439,039	278°59'13"
17+100	8.880.305,158	601.893,916	439,323	278°59'13"
17+120	8.880.302,033	601.913,671	439,606	278°59'13"
17+140	8.880.298,909	601.933,425	439,890	278°59'13"
17+160	8.880.295,785	601.953,180	440,174	278°59'13"
17+180	8.880.292,661	601.972,934	440,458	278°59'13"
17+200	8.880.289,537	601.992,689	440,742	278°59'13"
17+220	8.880.286,412	602.012,443	441,026	278°59'13"
17+240	8.880.283,288	602.032,198	441,310	278°59'13"
17+260	8.880.280,164	602.051,952	441,593	278°59'13"
17+280	8.880.277,040	602.071,707	441,877	278°59'13"
17+300	8.880.273,915	602.091,461	442,161	278°59'13"
17+320	8.880.270,791	602.111,215	442,445	278°59'13"
17+340	8.880.267,667	602.130,970	442,729	278°59'13"
17+360	8.880.264,543	602.150,724	443,013	278°59'13"
17+380	8.880.261,418	602.170,479	443,296	278°59'13"
17+400	8.880.258,294	602.190,233	443,580	278°59'13"
17+420	8.880.255,170	602.209,988	443,864	278°59'13"
17+440	8.880.252,046	602.229,742	444,148	278°59'13"
17+460	8.880.248,921	602.249,497	444,421	278°59'13"
17+480	8.880.245,797	602.269,251	444,698	278°59'13"
17+500	8.880.242,673	602.289,006	444,984	278°59'13"
17+520	8.880.239,549	602.308,760	445,270	278°59'13"
17+540	8.880.236,425	602.328,515	445,555	278°59'13"
17+560	8.880.233,300	602.348,269	445,841	278°59'13"
17+580	8.880.230,176	602.368,024	446,127	278°59'13"
17+600	8.880.227,052	602.387,778	446,413	278°59'13"
17+620	8.880.223,928	602.407,533	446,698	278°59'13"
17+640	8.880.220,803	602.427,287	446,970	278°59'13"
17+660	8.880.217,679	602.447,041	447,232	278°59'13"
17+680	8.880.214,422	602.466,775	447,422	279°24'50"
17+700	8.880.211,151	602.486,505	447,612	279°24'50"
17+720	8.880.207,880	602.506,236	447,801	279°24'50"
17+740	8.880.204,609	602.525,966	447,991	279°24'50"
17+760	8.880.201,337	602.545,697	448,181	279°24'50"
17+780	8.880.198,066	602.565,428	448,371	279°24'50"
17+800	8.880.194,795	602.585,158	448,560	279°24'50"
17+820	8.880.191,524	602.604,889	448,750	279°24'50"
17+840	8.880.188,252	602.624,620	448,940	279°24'50"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
17+860	8.880.184,981	602.644,350	449,166	279°24'50"
17+880	8.880.181,710	602.664,081	449,667	279°24'50"
17+900	8.880.182,865	602.683,951	450,198	264°12'12"
17+920	8.880.184,885	602.703,849	450,903	264°12'12"
17+940	8.880.186,905	602.723,747	451,608	264°12'12"
17+960	8.880.188,925	602.743,645	452,313	264°12'12"
17+980	8.880.190,945	602.763,542	453,018	264°12'12"
18+000	8.880.192,965	602.783,440	453,723	264°12'12"
18+020	8.880.194,985	602.803,338	454,428	264°12'12"
18+040	8.880.197,005	602.823,236	455,133	264°12'12"
18+060	8.880.199,025	602.843,133	455,838	264°12'12"
18+080	8.880.201,045	602.863,031	456,543	264°12'12"
18+100	8.880.203,065	602.882,929	457,248	264°12'12"
18+120	8.880.205,085	602.902,826	457,953	264°12'12"
18+140	8.880.207,105	602.922,724	458,658	264°12'12"
18+160	8.880.209,125	602.942,622	459,363	264°12'12"
18+180	8.880.211,145	602.962,520	460,068	264°12'12"
18+200	8.880.213,165	602.982,417	460,773	264°12'12"
18+220	8.880.215,185	603.002,315	461,442	264°12'12"
18+240	8.880.218,187	603.021,950	461,853	245°47'2"
18+260	8.880.226,391	603.040,190	462,273	245°47'2"
18+280	8.880.234,594	603.058,430	462,607	245°47'2"
18+300	8.880.242,798	603.076,670	462,942	245°47'2"
18+320	8.880.251,001	603.094,910	463,277	245°47'2"
18+340	8.880.259,205	603.113,150	463,611	245°47'2"
18+360	8.880.267,409	603.131,390	463,946	245°47'2"
18+380	8.880.275,612	603.149,630	464,281	245°47'2"
18+400	8.880.283,816	603.167,870	464,616	245°47'2"
18+420	8.880.292,019	603.186,111	464,950	245°47'2"
18+440	8.880.300,223	603.204,351	465,285	245°47'2"
18+460	8.880.308,426	603.222,591	465,620	245°47'2"
18+480	8.880.316,630	603.240,831	465,954	245°47'2"
18+500	8.880.324,833	603.259,071	466,289	245°47'2"
18+520	8.880.333,037	603.277,311	466,624	245°47'2"
18+540	8.880.341,240	603.295,551	466,958	245°47'2"
18+560	8.880.349,444	603.313,791	467,293	245°47'2"
18+580	8.880.357,648	603.332,031	467,628	245°47'2"
18+600	8.880.365,851	603.350,272	467,962	245°47'2"
18+620	8.880.374,055	603.368,512	468,297	245°47'2"
18+640	8.880.382,258	603.386,752	468,632	245°47'2"
18+660	8.880.390,462	603.404,992	468,966	245°47'2"
18+680	8.880.398,665	603.423,232	469,301	245°47'2"
18+700	8.880.406,869	603.441,472	469,636	245°47'2"
18+720	8.880.415,072	603.459,712	469,971	245°47'2"
18+740	8.880.423,276	603.477,952	470,305	245°47'2"
18+760	8.880.431,480	603.496,193	470,640	245°47'2"
18+780	8.880.439,683	603.514,433	470,975	245°47'2"

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Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
18+800	8.880.447,887	603.532,673	471,309	245°47'2"
18+820	8.880.456,090	603.550,913	471,644	245°47'2"
18+840	8.880.464,294	603.569,153	471,979	245°47'2"
18+860	8.880.472,497	603.587,393	472,313	245°47'2"
18+880	8.880.480,701	603.605,633	472,648	245°47'2"
18+900	8.880.488,904	603.623,873	472,983	245°47'2"
18+920	8.880.497,108	603.642,113	473,317	245°47'2"
18+940	8.880.505,311	603.660,354	473,652	245°47'2"
18+960	8.880.513,515	603.678,594	473,987	245°47'2"
18+980	8.880.521,719	603.696,834	474,321	245°47'2"
19+000	8.880.529,922	603.715,074	474,656	245°47'2"
19+020	8.880.538,126	603.733,314	474,939	245°47'2"
19+040	8.880.546,145	603.751,635	474,833	246°52'46"
19+060	8.880.553,999	603.770,028	474,725	246°52'46"
19+080	8.880.561,852	603.788,422	474,598	246°52'46"
19+100	8.880.569,705	603.806,816	474,471	246°52'46"
19+120	8.880.577,559	603.825,209	474,344	246°52'46"
19+140	8.880.585,412	603.843,603	474,217	246°52'46"
19+160	8.880.593,265	603.861,996	474,090	246°52'46"
19+180	8.880.601,119	603.880,390	473,963	246°52'46"
19+200	8.880.608,972	603.898,784	473,836	246°52'46"
19+220	8.880.616,825	603.917,177	473,709	246°52'46"
19+240	8.880.624,679	603.935,571	473,582	246°52'46"
19+260	8.880.632,532	603.953,964	473,455	246°52'46"
19+280	8.880.640,385	603.972,358	473,328	246°52'46"
19+300	8.880.648,239	603.990,752	473,201	246°52'46"
19+320	8.880.656,092	604.009,145	473,074	246°52'46"
19+340	8.880.663,945	604.027,539	472,947	246°52'46"
19+360	8.880.671,799	604.045,933	472,820	246°52'46"
19+380	8.880.679,652	604.064,326	472,693	246°52'46"
19+400	8.880.687,505	604.082,720	472,566	246°52'46"
19+420	8.880.695,359	604.101,113	472,439	246°52'46"
19+440	8.880.703,212	604.119,507	472,311	246°52'46"
19+460	8.880.711,065	604.137,901	472,184	246°52'46"
19+480	8.880.718,919	604.156,294	472,057	246°52'46"
19+500	8.880.726,772	604.174,688	471,930	246°52'46"
19+520	8.880.734,625	604.193,082	471,803	246°52'46"
19+540	8.880.742,479	604.211,475	471,640	246°52'46"
19+560	8.880.750,325	604.229,872	471,201	247°12'22"
19+580	8.880.758,074	604.248,310	470,750	247°12'22"
19+600	8.880.765,822	604.266,748	470,193	247°12'22"
19+620	8.880.773,570	604.285,186	469,635	247°12'22"
19+640	8.880.781,319	604.303,624	469,078	247°12'22"
19+660	8.880.789,067	604.322,062	468,521	247°12'22"
19+680	8.880.796,815	604.340,500	467,963	247°12'22"
19+700	8.880.804,564	604.358,938	467,406	247°12'22"
19+720	8.880.812,312	604.377,376	466,849	247°12'22"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
19+740	8.880.820,060	604.395,814	466,291	247°12'22"
19+760	8.880.827,809	604.414,253	465,734	247°12'22"
19+780	8.880.835,557	604.432,691	465,177	247°12'22"
19+800	8.880.843,305	604.451,129	464,620	247°12'22"
19+820	8.880.851,054	604.469,567	464,062	247°12'22"
19+840	8.880.858,802	604.488,005	463,505	247°12'22"
19+860	8.880.866,550	604.506,443	462,948	247°12'22"
19+880	8.880.874,299	604.524,881	462,391	247°12'22"
19+900	8.880.882,047	604.543,319	461,833	247°12'22"
19+920	8.880.889,795	604.561,757	461,276	247°12'22"
19+940	8.880.897,544	604.580,195	460,735	247°12'22"
19+960	8.880.905,292	604.598,633	460,319	247°12'22"
19+980	8.880.913,040	604.617,072	459,954	247°13'22"
20+000	8.880.920,783	604.635,512	459,974	247°13'22"
20+020	8.880.928,526	604.653,953	459,993	247°13'22"
20+040	8.880.936,269	604.672,393	460,013	247°13'22"
20+060	8.880.944,012	604.690,833	460,032	247°13'22"
20+080	8.880.951,755	604.709,274	460,052	247°13'22"
20+100	8.880.959,498	604.727,714	460,072	247°13'22"
20+120	8.880.967,241	604.746,154	460,091	247°13'22"
20+140	8.880.974,984	604.764,595	460,111	247°13'22"
20+160	8.880.982,727	604.783,035	460,131	247°13'22"
20+180	8.880.990,470	604.801,475	460,150	247°13'22"
20+200	8.880.998,213	604.819,916	460,170	247°13'22"
20+220	8.881.005,956	604.838,356	460,190	247°13'22"
20+240	8.881.013,699	604.856,796	460,209	247°13'22"
20+260	8.881.021,442	604.875,237	460,229	247°13'22"
20+280	8.881.029,185	604.893,677	460,248	247°13'22"
20+300	8.881.036,928	604.912,117	460,268	247°13'22"
20+320	8.881.044,671	604.930,558	460,288	247°13'22"
20+340	8.881.052,414	604.948,998	460,292	247°13'22"
20+360	8.881.060,157	604.967,438	460,183	247°13'22"
20+380	8.881.067,531	604.986,028	460,084	248°29'1"
20+400	8.881.074,867	605.004,635	459,916	248°29'1"
20+420	8.881.082,202	605.023,241	459,749	248°29'1"
20+440	8.881.089,538	605.041,847	459,581	248°29'1"
20+460	8.881.096,873	605.060,453	459,413	248°29'1"
20+480	8.881.104,208	605.079,060	459,246	248°29'1"
20+500	8.881.111,544	605.097,666	459,078	248°29'1"
20+520	8.881.118,879	605.116,272	458,911	248°29'1"
20+540	8.881.126,214	605.134,878	458,743	248°29'1"
20+560	8.881.133,550	605.153,485	458,576	248°29'1"
20+580	8.881.140,885	605.172,091	458,408	248°29'1"
20+600	8.881.148,220	605.190,697	458,240	248°29'1"
20+620	8.881.155,556	605.209,303	458,073	248°29'1"
20+640	8.881.162,891	605.227,910	457,905	248°29'1"
20+660	8.881.170,227	605.246,516	457,738	248°29'1"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
20+680	8.881.177,562	605.265,122	457,570	248°29'1"
20+700	8.881.184,897	605.283,728	457,334	248°29'1"
20+720	8.881.192,226	605.302,337	456,585	248°50'48"
20+740	8.881.199,444	605.320,989	455,814	248°50'48"
20+760	8.881.206,661	605.339,642	454,841	248°50'48"
20+780	8.881.213,878	605.358,294	453,868	248°50'48"
20+800	8.881.221,096	605.376,946	452,895	248°50'48"
20+820	8.881.228,313	605.395,599	451,922	248°50'48"
20+840	8.881.235,530	605.414,251	450,948	248°50'48"
20+860	8.881.242,748	605.432,904	449,975	248°50'48"
20+880	8.881.249,965	605.451,556	449,002	248°50'48"
20+900	8.881.257,182	605.470,208	448,029	248°50'48"
20+920	8.881.264,400	605.488,861	447,056	248°50'48"
20+940	8.881.271,617	605.507,513	446,083	248°50'48"
20+960	8.881.278,834	605.526,165	445,109	248°50'48"
20+980	8.881.286,052	605.544,818	444,136	248°50'48"
21+000	8.881.293,269	605.563,470	443,163	248°50'48"
21+020	8.881.300,486	605.582,122	442,190	248°50'48"
21+040	8.881.307,704	605.600,775	441,217	248°50'48"
21+060	8.881.314,921	605.619,427	440,243	248°50'48"
21+080	8.881.322,138	605.638,079	439,270	248°50'48"
21+100	8.881.329,356	605.656,732	438,297	248°50'48"
21+120	8.881.336,573	605.675,384	437,324	248°50'48"
21+140	8.881.343,790	605.694,036	436,468	248°50'48"
21+160	8.881.351,008	605.712,689	436,488	248°50'48"
21+180	8.881.358,198	605.731,352	436,620	248°59'1"
21+200	8.881.365,371	605.750,021	437,645	248°59'1"
21+220	8.881.372,543	605.768,691	438,671	248°59'1"
21+240	8.881.379,716	605.787,360	439,697	248°59'1"
21+260	8.881.386,889	605.806,030	440,722	248°59'1"
21+280	8.881.394,061	605.824,699	441,748	248°59'1"
21+300	8.881.401,234	605.843,369	442,774	248°59'1"
21+320	8.881.408,407	605.862,038	443,799	248°59'1"
21+340	8.881.415,580	605.880,708	444,825	248°59'1"
21+360	8.881.422,752	605.899,378	445,850	248°59'1"
21+380	8.881.429,925	605.918,047	446,876	248°59'1"
21+400	8.881.437,098	605.936,717	447,902	248°59'1"
21+420	8.881.444,270	605.955,386	448,927	248°59'1"
21+440	8.881.451,443	605.974,056	449,953	248°59'1"
21+460	8.881.458,616	605.992,725	450,979	248°59'1"
21+480	8.881.465,788	606.011,395	452,004	248°59'1"
21+500	8.881.472,961	606.030,064	452,990	248°59'1"
21+520	8.881.480,134	606.048,734	453,677	248°59'1"
21+540	8.881.487,004	606.067,515	454,369	250°31'53"
21+560	8.881.493,670	606.086,372	454,747	250°31'53"
21+580	8.881.500,336	606.105,228	455,125	250°31'53"
21+600	8.881.507,002	606.124,084	455,502	250°31'53"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
21+620	8.881.513,668	606.142,941	455,880	250°31'53"
21+640	8.881.520,333	606.161,797	456,257	250°31'53"
21+660	8.881.526,999	606.180,654	456,635	250°31'53"
21+680	8.881.533,665	606.199,510	457,012	250°31'53"
21+700	8.881.540,331	606.218,367	457,390	250°31'53"
21+720	8.881.546,997	606.237,223	457,767	250°31'53"
21+740	8.881.553,663	606.256,080	458,140	250°31'53"
21+760	8.881.560,328	606.274,936	458,474	250°31'53"
21+780	8.881.562,351	606.294,458	458,793	273°10'5"
21+800	8.881.561,245	606.314,427	459,073	273°10'5"
21+820	8.881.560,140	606.334,397	459,353	273°10'5"
21+840	8.881.559,035	606.354,366	459,633	273°10'5"
21+860	8.881.557,930	606.374,336	459,913	273°10'5"
21+880	8.881.556,824	606.394,305	460,193	273°10'5"
21+900	8.881.555,719	606.414,274	460,474	273°10'5"
21+920	8.881.554,614	606.434,244	460,762	273°10'5"
21+940	8.881.552,613	606.454,086	461,051	283°2'1"
21+960	8.881.548,103	606.473,571	461,355	283°2'1"
21+980	8.881.543,593	606.493,055	461,658	283°2'1"
22+000	8.881.539,082	606.512,540	461,962	283°2'1"
22+020	8.881.534,572	606.532,025	462,266	283°2'1"
22+040	8.881.530,061	606.551,510	462,570	283°2'1"
22+060	8.881.525,551	606.570,994	462,873	283°2'1"
22+080	8.881.521,041	606.590,479	463,177	283°2'1"
22+100	8.881.516,530	606.609,964	463,481	283°2'1"
22+120	8.881.512,020	606.629,449	463,784	283°2'1"
22+140	8.881.507,509	606.648,934	464,088	283°2'1"
22+160	8.881.502,999	606.668,418	464,392	283°2'1"
22+180	8.881.498,488	606.687,903	464,695	283°2'1"
22+200	8.881.493,978	606.707,388	464,999	283°2'1"
22+220	8.881.489,468	606.726,873	465,303	283°2'1"
22+240	8.881.484,957	606.746,357	465,607	283°2'1"
22+260	8.881.480,447	606.765,842	465,910	283°2'1"
22+280	8.881.475,936	606.785,327	466,214	283°2'1"
22+300	8.881.471,426	606.804,812	466,518	283°2'1"
22+320	8.881.466,916	606.824,296	466,821	283°2'1"
22+340	8.881.462,405	606.843,781	467,125	283°2'1"
22+360	8.881.457,895	606.863,266	467,429	283°2'1"
22+380	8.881.453,384	606.882,751	467,732	283°2'1"
22+400	8.881.448,874	606.902,236	468,036	283°2'1"
22+420	8.881.444,363	606.921,720	468,340	283°2'1"
22+440	8.881.439,853	606.941,205	468,643	283°2'1"
22+460	8.881.435,343	606.960,690	468,947	283°2'1"
22+480	8.881.430,832	606.980,175	469,251	283°2'1"
22+500	8.881.426,322	606.999,659	469,555	283°2'1"
22+520	8.881.421,811	607.019,144	469,858	283°2'1"
22+540	8.881.417,301	607.038,629	470,162	283°2'1"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
22+560	8.881.412,791	607.058,114	470,466	283°2'1"
22+580	8.881.408,280	607.077,598	470,769	283°2'1"
22+600	8.881.403,770	607.097,083	471,073	283°2'1"
22+620	8.881.399,259	607.116,568	471,377	283°2'1"
22+640	8.881.394,749	607.136,053	471,680	283°2'1"
22+660	8.881.390,238	607.155,538	471,984	283°2'1"
22+680	8.881.385,728	607.175,022	472,288	283°2'1"
22+700	8.881.381,218	607.194,507	472,591	283°2'1"
22+720	8.881.376,707	607.213,992	472,895	283°2'1"
22+740	8.881.372,197	607.233,477	473,199	283°2'1"
22+760	8.881.367,686	607.252,961	473,503	283°2'1"
22+780	8.881.363,176	607.272,446	473,806	283°2'1"
22+800	8.881.358,666	607.291,931	474,110	283°2'1"
22+820	8.881.354,155	607.311,416	474,414	283°2'1"
22+840	8.881.349,645	607.330,900	474,717	283°2'1"
22+860	8.881.345,134	607.350,385	475,021	283°2'1"
22+880	8.881.340,624	607.369,870	475,325	283°2'1"
22+900	8.881.336,114	607.389,355	475,628	283°2'1"
22+920	8.881.331,603	607.408,839	475,932	283°2'1"
22+940	8.881.327,093	607.428,324	476,236	283°2'1"
22+960	8.881.322,582	607.447,809	476,540	283°2'1"
22+980	8.881.318,072	607.467,294	476,843	283°2'1"
23+000	8.881.313,561	607.486,779	477,147	283°2'1"
23+020	8.881.309,051	607.506,263	477,451	283°2'1"
23+040	8.881.304,541	607.525,748	477,754	283°2'1"
23+060	8.881.300,030	607.545,233	478,058	283°2'1"
23+080	8.881.295,520	607.564,718	478,362	283°2'1"
23+100	8.881.291,009	607.584,202	478,665	283°2'1"
23+120	8.881.286,499	607.603,687	478,969	283°2'1"
23+140	8.881.281,989	607.623,172	479,222	283°2'1"
23+160	8.881.277,484	607.642,658	479,093	282°56'27"
23+180	8.881.273,005	607.662,150	478,951	282°56'27"
23+200	8.881.268,527	607.681,642	478,707	282°56'27"
23+220	8.881.264,048	607.701,134	478,463	282°56'27"
23+240	8.881.259,569	607.720,626	478,218	282°56'27"
23+260	8.881.255,090	607.740,118	477,974	282°56'27"
23+280	8.881.250,611	607.759,610	477,730	282°56'27"
23+300	8.881.246,132	607.779,102	477,486	282°56'27"
23+320	8.881.241,653	607.798,594	477,242	282°56'27"
23+340	8.881.237,175	607.818,087	476,998	282°56'27"
23+360	8.881.232,696	607.837,579	476,754	282°56'27"
23+380	8.881.228,217	607.857,071	476,510	282°56'27"
23+400	8.881.223,738	607.876,563	476,265	282°56'27"
23+420	8.881.219,259	607.896,055	476,021	282°56'27"
23+440	8.881.214,780	607.915,547	475,777	282°56'27"
23+460	8.881.210,301	607.935,039	475,533	282°56'27"
23+480	8.881.205,822	607.954,531	475,289	282°56'27"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
23+500	8.881.201,344	607.974,023	475,045	282°56'27"
23+520	8.881.196,865	607.993,515	474,801	282°56'27"
23+540	8.881.192,386	608.013,007	474,556	282°56'27"
23+560	8.881.187,907	608.032,499	474,312	282°56'27"
23+580	8.881.183,428	608.051,991	474,068	282°56'27"
23+600	8.881.178,949	608.071,483	473,824	282°56'27"
23+620	8.881.174,470	608.090,975	473,580	282°56'27"
23+640	8.881.169,992	608.110,467	473,336	282°56'27"
23+660	8.881.165,513	608.129,959	473,092	282°56'27"
23+680	8.881.161,034	608.149,451	472,848	282°56'27"
23+700	8.881.156,555	608.168,943	472,603	282°56'27"
23+720	8.881.152,076	608.188,435	472,359	282°56'27"
23+740	8.881.147,597	608.207,927	472,115	282°56'27"
23+760	8.881.143,118	608.227,419	471,871	282°56'27"
23+780	8.881.138,640	608.246,911	471,627	282°56'27"
23+800	8.881.134,161	608.266,404	471,383	282°56'27"
23+820	8.881.129,682	608.285,896	471,139	282°56'27"
23+840	8.881.125,203	608.305,388	470,894	282°56'27"
23+860	8.881.120,724	608.324,880	470,650	282°56'27"
23+880	8.881.116,245	608.344,372	470,406	282°56'27"
23+900	8.881.111,766	608.363,864	470,162	282°56'27"
23+920	8.881.107,288	608.383,356	469,918	282°56'27"
23+940	8.881.102,809	608.402,848	469,674	282°56'27"
23+960	8.881.098,330	608.422,340	469,430	282°56'27"
23+980	8.881.093,851	608.441,832	469,186	282°56'27"
24+000	8.881.089,372	608.461,324	468,941	282°56'27"
24+020	8.881.084,893	608.480,816	468,697	282°56'27"
24+040	8.881.080,414	608.500,308	468,453	282°56'27"
24+060	8.881.075,935	608.519,800	468,209	282°56'27"
24+080	8.881.071,457	608.539,292	467,965	282°56'27"
24+100	8.881.066,978	608.558,784	467,721	282°56'27"
24+120	8.881.062,499	608.578,276	467,477	282°56'27"
24+140	8.881.058,020	608.597,768	467,233	282°56'27"
24+160	8.881.053,541	608.617,260	466,988	282°56'27"
24+180	8.881.049,062	608.636,752	466,744	282°56'27"
24+200	8.881.044,583	608.656,244	466,500	282°56'27"
24+220	8.881.040,105	608.675,736	466,256	282°56'27"
24+240	8.881.035,626	608.695,229	466,012	282°56'27"
24+260	8.881.031,147	608.714,721	465,768	282°56'27"
24+280	8.881.026,668	608.734,213	465,524	282°56'27"
24+300	8.881.022,189	608.753,705	465,279	282°56'27"
24+320	8.881.017,710	608.773,197	465,035	282°56'27"
24+340	8.881.013,245	608.792,692	464,757	282°52'18"
24+360	8.881.008,790	608.812,189	464,342	282°52'18"
24+380	8.881.004,335	608.831,687	463,927	282°52'18"
24+400	8.880.999,879	608.851,184	463,113	282°52'18"
24+420	8.880.995,424	608.870,682	462,310	282°52'18"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
24+440	8.880.990,968	608.890,179	461,578	282°52'18"
24+460	8.880.986,513	608.909,676	460,846	282°52'18"
24+480	8.880.982,058	608.929,174	460,114	282°52'18"
24+500	8.880.977,602	608.948,671	459,382	282°52'18"
24+520	8.880.973,147	608.968,169	458,650	282°52'18"
24+540	8.880.968,691	608.987,666	457,918	282°52'18"
24+560	8.880.964,236	609.007,164	457,187	282°52'18"
24+580	8.880.959,781	609.026,661	456,455	282°52'18"
24+600	8.880.955,325	609.046,158	455,723	282°52'18"
24+620	8.880.950,870	609.065,656	454,991	282°52'18"
24+640	8.880.946,415	609.085,153	454,259	282°52'18"
24+660	8.880.941,959	609.104,651	453,527	282°52'18"
24+680	8.880.937,504	609.124,148	452,795	282°52'18"
24+700	8.880.933,048	609.143,646	452,076	282°52'18"
24+720	8.880.928,593	609.163,143	451,590	282°52'18"
24+740	8.880.924,138	609.182,640	451,558	282°52'18"
24+760	8.880.919,682	609.202,138	451,473	282°52'18"
24+780	8.880.915,227	609.221,635	451,384	282°52'18"
24+800	8.880.910,771	609.241,133	451,295	282°52'18"
24+820	8.880.906,316	609.260,630	451,205	282°52'18"
24+840	8.880.901,861	609.280,128	451,116	282°52'18"
24+860	8.880.897,405	609.299,625	451,027	282°52'18"
24+880	8.880.892,950	609.319,122	450,938	282°52'18"
24+900	8.880.888,495	609.338,620	450,849	282°52'18"
24+920	8.880.884,039	609.358,117	450,760	282°52'18"
24+940	8.880.879,584	609.377,615	450,670	282°52'18"
24+960	8.880.875,128	609.397,112	450,532	282°52'18"
24+980	8.880.870,673	609.416,610	450,453	282°52'18"
25+000	8.880.866,218	609.436,107	450,373	282°52'18"
25+020	8.880.861,762	609.455,604	450,294	282°52'18"
25+040	8.880.857,307	609.475,102	450,214	282°52'18"
25+060	8.880.852,852	609.494,599	450,087	282°52'18"
25+080	8.880.848,396	609.514,097	449,767	282°52'18"
25+100	8.880.843,941	609.533,594	449,448	282°52'18"
25+120	8.880.839,485	609.553,091	449,128	282°52'18"
25+140	8.880.835,030	609.572,589	448,808	282°52'18"
25+160	8.880.830,575	609.592,086	448,488	282°52'18"
25+180	8.880.826,119	609.611,584	448,169	282°52'18"
25+200	8.880.821,664	609.631,081	447,849	282°52'18"
25+220	8.880.817,208	609.650,579	447,529	282°52'18"
25+240	8.880.812,753	609.670,076	447,210	282°52'18"
25+260	8.880.808,298	609.689,573	446,890	282°52'18"
25+280	8.880.803,842	609.709,071	446,570	282°52'18"
25+300	8.880.799,387	609.728,568	446,250	282°52'18"
25+320	8.880.794,932	609.748,066	445,931	282°52'18"
25+340	8.880.790,476	609.767,563	445,611	282°52'18"
25+360	8.880.786,021	609.787,061	445,291	282°52'18"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
25+380	8.880.781,565	609.806,558	444,971	282°52'18"
25+400	8.880.777,110	609.826,055	444,652	282°52'18"
25+420	8.880.772,655	609.845,553	444,332	282°52'18"
25+440	8.880.768,199	609.865,050	444,012	282°52'18"
25+460	8.880.763,744	609.884,548	443,692	282°52'18"
25+480	8.880.759,288	609.904,045	443,373	282°52'18"
25+500	8.880.754,833	609.923,543	443,053	282°52'18"
25+520	8.880.750,378	609.943,040	442,733	282°52'18"
25+540	8.880.745,922	609.962,537	442,414	282°52'18"
25+560	8.880.741,467	609.982,035	442,094	282°52'18"
25+580	8.880.737,012	610.001,532	441,774	282°52'18"
25+600	8.880.732,556	610.021,030	441,454	282°52'18"
25+620	8.880.728,101	610.040,527	441,135	282°52'18"
25+640	8.880.723,645	610.060,025	440,815	282°52'18"
25+660	8.880.719,190	610.079,522	440,450	282°52'18"
25+680	8.880.714,705	610.099,013	439,762	283°03'30"
25+700	8.880.710,174	610.118,493	439,043	283°07'27"
25+720	8.880.705,633	610.137,970	438,235	283°07'27"
25+740	8.880.701,092	610.157,448	437,428	283°07'27"
25+760	8.880.696,550	610.176,925	436,620	283°07'27"
25+780	8.880.692,009	610.196,403	435,813	283°07'27"
25+800	8.880.687,468	610.215,881	435,005	283°07'27"
25+820	8.880.682,927	610.235,358	434,198	283°07'27"
25+840	8.880.678,385	610.254,836	433,391	283°07'27"
25+860	8.880.673,844	610.274,313	432,605	283°07'27"
25+880	8.880.669,303	610.293,791	431,978	283°07'27"
25+900	8.880.664,762	610.313,269	431,492	283°07'27"
25+920	8.880.660,335	610.332,773	432,032	282°44'37"
25+940	8.880.655,923	610.352,280	432,572	282°44'37"
25+960	8.880.651,512	610.371,787	433,113	282°44'37"
25+980	8.880.647,100	610.391,295	433,653	282°44'37"
26+000	8.880.642,688	610.410,802	434,193	282°44'37"
26+020	8.880.638,276	610.430,309	434,733	282°44'37"
26+040	8.880.633,865	610.449,817	435,274	282°44'37"
26+060	8.880.629,453	610.469,324	435,814	282°44'37"
26+080	8.880.625,041	610.488,831	436,354	282°44'37"
26+100	8.880.620,629	610.508,339	436,894	282°44'37"
26+120	8.880.616,218	610.527,846	437,434	282°44'37"
26+140	8.880.611,806	610.547,353	437,975	282°44'37"
26+160	8.880.607,394	610.566,861	438,515	282°44'37"
26+180	8.880.602,982	610.586,368	439,055	282°44'37"
26+200	8.880.598,570	610.605,875	439,595	282°44'37"
26+220	8.880.594,159	610.625,383	440,098	282°44'37"
26+240	8.880.589,847	610.644,912	440,327	281°52'45"
26+260	8.880.585,730	610.664,484	440,551	281°52'45"
26+280	8.880.581,613	610.684,055	440,730	281°52'45"
26+300	8.880.577,496	610.703,627	440,908	281°52'45"

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SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
26+320	8.880.573,379	610.723,199	441,087	281°52'45"
26+340	8.880.569,262	610.742,770	441,266	281°52'45"
26+360	8.880.565,145	610.762,342	441,445	281°52'45"
26+380	8.880.561,028	610.781,914	441,624	281°52'45"
26+400	8.880.556,911	610.801,485	441,803	281°52'45"
26+420	8.880.552,794	610.821,057	441,982	281°52'45"
26+440	8.880.548,677	610.840,629	442,161	281°52'45"
26+460	8.880.544,560	610.860,200	442,340	281°52'45"
26+480	8.880.540,443	610.879,772	442,519	281°52'45"
26+500	8.880.536,326	610.899,344	442,698	281°52'45"
26+520	8.880.532,209	610.918,915	442,877	281°52'45"
26+540	8.880.528,092	610.938,487	443,056	281°52'45"
26+560	8.880.523,975	610.958,059	443,235	281°52'45"
26+580	8.880.519,858	610.977,630	443,401	281°52'45"
26+600	8.880.515,741	610.997,202	443,478	281°52'45"
26+620	8.880.511,195	611.016,677	443,564	283°31'36"
26+640	8.880.506,517	611.036,122	443,579	283°31'36"
26+660	8.880.501,839	611.055,567	443,594	283°31'36"
26+680	8.880.497,161	611.075,013	443,609	283°31'36"
26+700	8.880.492,483	611.094,458	443,624	283°31'36"
26+720	8.880.487,805	611.113,903	443,639	283°31'36"
26+740	8.880.483,127	611.133,348	443,654	283°31'36"
26+760	8.880.478,449	611.152,793	443,669	283°31'36"
26+780	8.880.473,771	611.172,239	443,684	283°31'36"
26+800	8.880.469,093	611.191,684	443,699	283°31'36"
26+820	8.880.464,415	611.211,129	443,714	283°31'36"
26+840	8.880.459,737	611.230,574	443,729	283°31'36"
26+860	8.880.455,059	611.250,019	443,744	283°31'36"
26+880	8.880.450,381	611.269,465	443,759	283°31'36"
26+900	8.880.445,703	611.288,910	443,774	283°31'36"
26+920	8.880.441,025	611.308,355	443,789	283°31'36"
26+940	8.880.436,347	611.327,800	443,804	283°31'36"
26+960	8.880.431,669	611.347,246	443,819	283°31'36"
26+980	8.880.426,991	611.366,691	443,834	283°31'36"
27+000	8.880.422,313	611.386,136	443,849	283°31'36"
27+020	8.880.417,635	611.405,581	443,870	283°31'36"
27+040	8.880.412,993	611.425,035	443,932	282°56'28"
27+060	8.880.408,514	611.444,527	444,008	282°56'28"
27+080	8.880.404,035	611.464,019	444,090	282°56'28"
27+100	8.880.399,556	611.483,511	444,172	282°56'28"
27+120	8.880.395,077	611.503,003	444,255	282°56'28"
27+140	8.880.390,598	611.522,495	444,337	282°56'28"
27+160	8.880.386,119	611.541,987	444,420	282°56'28"
27+180	8.880.381,640	611.561,479	444,502	282°56'28"
27+200	8.880.377,161	611.580,971	444,584	282°56'28"
27+220	8.880.372,682	611.600,463	444,667	282°56'28"
27+240	8.880.368,204	611.619,955	444,749	282°56'28"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
27+260	8.880.363,725	611.639,447	444,832	282°56'28"
27+280	8.880.359,246	611.658,939	444,914	282°56'28"
27+300	8.880.354,767	611.678,431	444,996	282°56'28"
27+320	8.880.350,288	611.697,923	445,079	282°56'28"
27+340	8.880.345,809	611.717,415	445,161	282°56'28"
27+360	8.880.341,330	611.736,907	445,244	282°56'28"
27+380	8.880.336,851	611.756,399	445,326	282°56'28"
27+400	8.880.332,372	611.775,891	445,408	282°56'28"
27+420	8.880.327,893	611.795,383	445,483	282°56'28"
27+440	8.880.323,414	611.814,875	445,500	282°56'28"
27+460	8.880.318,938	611.834,368	445,491	282°50'21"
27+480	8.880.314,493	611.853,868	445,289	282°50'21"
27+500	8.880.310,049	611.873,368	445,086	282°50'21"
27+520	8.880.305,605	611.892,868	444,884	282°50'21"
27+540	8.880.301,160	611.912,368	444,682	282°50'21"
27+560	8.880.296,716	611.931,868	444,479	282°50'21"
27+580	8.880.292,272	611.951,368	444,277	282°50'21"
27+600	8.880.287,827	611.970,868	444,075	282°50'21"
27+620	8.880.283,383	611.990,368	443,872	282°50'21"
27+640	8.880.278,939	612.009,867	443,670	282°50'21"
27+660	8.880.274,494	612.029,367	443,468	282°50'21"
27+680	8.880.270,050	612.048,867	443,265	282°50'21"
27+700	8.880.265,606	612.068,367	443,063	282°50'21"
27+720	8.880.261,161	612.087,867	442,861	282°50'21"
27+740	8.880.256,717	612.107,367	442,658	282°50'21"
27+760	8.880.252,273	612.126,867	442,456	282°50'21"
27+780	8.880.247,828	612.146,367	442,254	282°50'21"
27+800	8.880.243,384	612.165,867	442,051	282°50'21"
27+820	8.880.238,940	612.185,367	441,849	282°50'21"
27+840	8.880.234,496	612.204,867	441,647	282°50'21"
27+860	8.880.230,051	612.224,367	441,444	282°50'21"
27+880	8.880.225,607	612.243,867	441,242	282°50'21"
27+900	8.880.221,163	612.263,367	441,040	282°50'21"
27+920	8.880.216,718	612.282,867	440,837	282°50'21"
27+940	8.880.212,274	612.302,367	440,635	282°50'21"
27+960	8.880.207,830	612.321,867	440,432	282°50'21"
27+980	8.880.203,385	612.341,367	440,230	282°50'21"
28+000	8.880.198,941	612.360,867	440,028	282°50'21"
28+020	8.880.194,497	612.380,367	439,729	282°50'21"
28+040	8.880.190,057	612.399,867	438,731	282°49'7"
28+060	8.880.185,619	612.419,369	437,731	282°49'7"
28+080	8.880.181,182	612.438,871	436,723	282°49'7"
28+100	8.880.176,745	612.458,372	435,714	282°49'7"
28+120	8.880.172,307	612.477,874	434,706	282°49'7"
28+140	8.880.167,870	612.497,375	433,698	282°49'7"
28+160	8.880.163,433	612.516,877	432,689	282°49'7"
28+180	8.880.158,996	612.536,378	431,681	282°49'7"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
28+200	8.880.154,558	612.555,880	430,673	282°49'7"
28+220	8.880.150,121	612.575,381	429,664	282°49'7"
28+240	8.880.145,684	612.594,883	428,656	282°49'7"
28+260	8.880.141,246	612.614,384	427,661	282°49'7"
28+280	8.880.136,809	612.633,886	426,761	282°49'7"
28+300	8.880.132,372	612.653,388	426,088	282°49'7"
28+320	8.880.127,028	612.672,652	427,085	286°30'29"
28+340	8.880.121,344	612.691,827	428,091	286°30'29"
28+360	8.880.115,661	612.711,003	429,091	286°30'29"
28+380	8.880.109,978	612.730,179	430,087	286°30'29"
28+400	8.880.104,295	612.749,354	431,056	286°30'29"
28+420	8.880.094,362	612.766,546	432,081	303°32'3"
28+440	8.880.083,313	612.783,217	433,074	303°32'3"
28+460	8.880.072,265	612.799,888	434,066	303°32'3"
28+480	8.880.061,216	612.816,559	435,058	303°32'3"
28+500	8.880.050,167	612.833,230	436,051	303°32'3"
28+520	8.880.039,119	612.849,902	437,043	303°32'3"
28+540	8.880.028,070	612.866,573	438,036	303°32'3"
28+560	8.880.017,021	612.883,244	439,028	303°32'3"
28+580	8.880.005,973	612.899,915	439,918	303°32'3"
28+600	8.879.997,428	612.917,609	440,059	280°54'30"
28+620	8.879.993,643	612.937,248	440,185	280°54'30"
28+640	8.879.989,858	612.956,886	440,191	280°54'30"
28+660	8.879.986,073	612.976,525	440,196	280°54'30"
28+680	8.879.982,289	612.996,163	440,202	280°54'30"
28+700	8.879.978,504	613.015,802	440,208	280°54'30"
28+720	8.879.974,719	613.035,441	440,214	280°54'30"
28+740	8.879.970,934	613.055,079	440,220	280°54'30"
28+760	8.879.967,149	613.074,718	440,225	280°54'30"
28+780	8.879.963,365	613.094,356	440,231	280°54'30"
28+800	8.879.959,580	613.113,995	440,237	280°54'30"
28+820	8.879.955,795	613.133,634	440,243	280°54'30"
28+840	8.879.952,010	613.153,272	440,249	280°54'30"
28+860	8.879.948,226	613.172,911	440,254	280°54'30"
28+880	8.879.944,441	613.192,550	440,260	280°54'30"
28+900	8.879.940,656	613.212,188	440,266	280°54'30"
28+920	8.879.936,871	613.231,827	440,272	280°54'30"
28+940	8.879.933,087	613.251,465	440,278	280°54'30"
28+960	8.879.929,302	613.271,104	440,283	280°54'30"
28+980	8.879.925,517	613.290,743	440,289	280°54'30"
29+000	8.879.921,732	613.310,381	440,295	280°54'30"
29+020	8.879.917,948	613.330,020	440,301	280°54'30"
29+040	8.879.914,163	613.349,659	440,307	280°54'30"
29+060	8.879.910,378	613.369,297	440,313	280°54'30"
29+080	8.879.906,593	613.388,936	440,318	280°54'30"
29+100	8.879.902,808	613.408,574	440,324	280°54'30"
29+120	8.879.899,024	613.428,213	440,330	280°54'30"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
29+140	8.879.895,239	613.447,852	440,336	280°54'30"
29+160	8.879.891,454	613.467,490	440,342	280°54'30"
29+180	8.879.887,669	613.487,129	440,347	280°54'30"
29+200	8.879.883,885	613.506,768	440,353	280°54'30"
29+220	8.879.880,100	613.526,406	440,359	280°54'30"
29+240	8.879.876,315	613.546,045	440,365	280°54'30"
29+260	8.879.872,530	613.565,683	440,371	280°54'30"
29+280	8.879.868,746	613.585,322	440,376	280°54'30"
29+300	8.879.864,961	613.604,961	440,382	280°54'30"
29+320	8.879.861,176	613.624,599	440,388	280°54'30"
29+340	8.879.857,391	613.644,238	440,394	280°54'30"
29+360	8.879.853,607	613.663,877	440,400	280°54'30"
29+380	8.879.849,822	613.683,515	440,405	280°54'30"
29+400	8.879.846,037	613.703,154	440,411	280°54'30"
29+420	8.879.842,252	613.722,792	440,417	280°54'30"
29+440	8.879.838,468	613.742,431	440,423	280°54'30"
29+460	8.879.834,683	613.762,070	440,429	280°54'30"
29+480	8.879.830,898	613.781,708	440,434	280°54'30"
29+500	8.879.827,113	613.801,347	440,440	280°54'30"
29+520	8.879.823,328	613.820,986	440,446	280°54'30"
29+540	8.879.819,544	613.840,624	440,452	280°54'30"
29+560	8.879.815,759	613.860,263	440,458	280°54'30"
29+580	8.879.811,974	613.879,901	440,464	280°54'30"
29+600	8.879.808,189	613.899,540	440,469	280°54'30"
29+620	8.879.804,405	613.919,179	440,475	280°54'30"
29+640	8.879.800,620	613.938,817	440,481	280°54'30"
29+660	8.879.796,835	613.958,456	440,236	280°54'30"
29+680	8.879.792,604	613.978,000	438,158	283°01'15"
29+700	8.879.788,098	613.997,486	436,073	283°01'15"
29+720	8.879.783,592	614.016,972	433,991	283°01'15"
29+740	8.879.779,086	614.036,457	431,908	283°01'15"
29+760	8.879.774,580	614.055,943	429,826	283°01'15"
29+780	8.879.770,073	614.075,429	427,744	283°01'15"
29+800	8.879.765,567	614.094,915	425,662	283°01'15"
29+820	8.879.761,061	614.114,400	423,580	283°01'15"
29+840	8.879.756,555	614.133,886	421,498	283°01'15"
29+860	8.879.752,049	614.153,372	419,415	283°01'15"
29+880	8.879.747,543	614.172,858	417,333	283°01'15"
29+900	8.879.743,037	614.192,343	415,403	283°01'15"
29+920	8.879.738,530	614.211,829	414,579	283°01'15"
29+940	8.879.731,957	614.230,526	413,984	298°44'42"
29+960	8.879.722,338	614.248,061	415,101	298°44'42"
29+980	8.879.712,720	614.265,597	416,218	298°44'42"
30+000	8.879.703,102	614.283,132	417,335	298°44'42"
30+020	8.879.693,484	614.300,667	418,452	298°44'42"
30+040	8.879.683,865	614.318,203	419,569	298°44'42"
30+060	8.879.674,247	614.335,738	420,686	298°44'42"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
30+080	8.879.664,629	614.353,274	421,804	298°44'42"
30+100	8.879.655,011	614.370,809	422,921	298°44'42"
30+120	8.879.645,392	614.388,344	424,038	298°44'42"
30+140	8.879.635,774	614.405,880	425,155	298°44'42"
30+160	8.879.626,156	614.423,415	426,272	298°44'42"
30+180	8.879.616,538	614.440,951	427,389	298°44'42"
30+200	8.879.606,919	614.458,486	428,506	298°44'42"
30+220	8.879.597,301	614.476,021	429,624	298°44'42"
30+240	8.879.587,683	614.493,557	430,741	298°44'42"
30+260	8.879.578,065	614.511,092	431,858	298°44'42"
30+280	8.879.568,447	614.528,627	432,975	298°44'42"
30+300	8.879.558,828	614.546,163	434,092	298°44'42"
30+320	8.879.549,210	614.563,698	435,209	298°44'42"
30+340	8.879.539,592	614.581,234	436,326	298°44'42"
30+360	8.879.529,974	614.598,769	437,444	298°44'42"
30+380	8.879.520,355	614.616,304	438,578	298°44'42"
30+400	8.879.510,801	614.633,875	439,838	298°14'45"
30+420	8.879.501,336	614.651,493	441,053	298°14'45"
30+440	8.879.491,871	614.669,112	441,921	298°14'45"
30+460	8.879.479,231	614.683,040	442,419	340°19'14"
30+480	8.879.460,399	614.689,776	442,295	340°19'14"
30+500	8.879.441,567	614.696,511	442,868	340°19'14"
30+520	8.879.422,735	614.703,246	443,441	340°19'14"
30+540	8.879.406,177	614.713,947	443,853	320°1'56"
30+560	8.879.390,849	614.726,794	444,172	320°1'56"
30+580	8.879.375,521	614.739,641	444,444	320°1'56"
30+600	8.879.360,192	614.752,489	444,716	320°1'56"
30+620	8.879.344,864	614.765,336	444,987	320°1'56"
30+640	8.879.329,536	614.778,183	445,259	320°1'56"
30+660	8.879.314,208	614.791,030	445,531	320°1'56"
30+680	8.879.298,880	614.803,877	445,803	320°1'56"
30+700	8.879.283,552	614.816,724	446,074	320°1'56"
30+720	8.879.268,224	614.829,571	446,344	320°1'56"
30+740	8.879.252,895	614.842,418	446,599	320°1'56"
30+760	8.879.237,567	614.855,265	446,856	320°1'56"
30+780	8.879.222,239	614.868,112	447,127	320°1'56"
30+800	8.879.206,911	614.880,960	447,399	320°1'56"
30+820	8.879.191,583	614.893,807	447,671	320°1'56"
30+840	8.879.176,255	614.906,654	447,943	320°1'56"
30+860	8.879.160,927	614.919,501	448,214	320°1'56"
30+880	8.879.145,598	614.932,348	448,486	320°1'56"
30+900	8.879.130,270	614.945,195	448,758	320°1'56"
30+920	8.879.114,942	614.958,042	449,030	320°1'56"
30+940	8.879.099,614	614.970,889	449,301	320°1'56"
30+960	8.879.084,286	614.983,736	449,573	320°1'56"
30+980	8.879.068,958	614.996,583	449,845	320°1'56"
31+000	8.879.053,630	615.009,431	450,117	320°1'56"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 4 : ALTO ALEGRE-AVELINO LOPES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
31+020	8.879.038,301	615.022,278	450,388	320°1'56"
31+040	8.879.022,973	615.035,125	450,660	320°1'56"
31+060	8.879.007,645	615.047,972	450,932	320°1'56"
31+080	8.878.992,317	615.060,819	451,204	320°1'56"
31+100	8.878.976,989	615.073,666	451,476	320°1'56"
31+118,872	8.878.978,458	615.087,038	452,004	228°56'11"



2.2.5 TRECHO 5: ETA – Júlio Borges

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
0+000	8.872.579,468	584.950,711	419,236	89°13'31"
0+020	8.872.577,127	584.931,137	418,570	67°38'7"
0+040	8.872.569,517	584.912,641	415,919	67°38'7"
0+060	8.872.561,907	584.894,146	413,962	67°38'7"
0+080	8.872.553,636	584.875,970	413,248	60°45'22"
0+100	8.872.543,866	584.858,519	412,955	60°45'22"
0+120	8.872.534,095	584.841,068	413,048	60°45'22"
0+140	8.872.524,324	584.823,617	413,141	60°45'22"
0+160	8.872.514,554	584.806,166	413,234	60°45'22"
0+180	8.872.504,783	584.788,715	413,327	60°45'22"
0+200	8.872.495,013	584.771,264	413,420	60°45'22"
0+220	8.872.485,242	584.753,813	413,513	60°45'22"
0+240	8.872.475,472	584.736,362	413,606	60°45'22"
0+260	8.872.465,701	584.718,911	413,699	60°45'22"
0+280	8.872.455,930	584.701,460	413,793	60°45'22"
0+300	8.872.446,160	584.684,009	413,886	60°45'22"
0+320	8.872.436,389	584.666,558	413,979	60°45'22"
0+340	8.872.426,619	584.649,107	414,072	60°45'22"
0+360	8.872.416,848	584.631,656	414,165	60°45'22"
0+380	8.872.407,077	584.614,206	414,258	60°45'22"
0+400	8.872.397,307	584.596,755	414,351	60°45'22"
0+420	8.872.387,536	584.579,304	414,444	60°45'22"
0+440	8.872.377,766	584.561,853	414,537	60°45'22"
0+460	8.872.367,995	584.544,402	414,630	60°45'22"
0+480	8.872.358,225	584.526,951	414,724	60°45'22"
0+500	8.872.348,454	584.509,500	414,817	60°45'22"
0+520	8.872.338,683	584.492,049	414,910	60°45'22"
0+540	8.872.328,913	584.474,598	415,003	60°45'22"
0+560	8.872.319,142	584.457,147	415,096	60°45'22"
0+580	8.872.309,372	584.439,696	415,189	60°45'22"
0+600	8.872.299,601	584.422,245	415,282	60°45'22"
0+620	8.872.289,830	584.404,794	415,375	60°45'22"
0+640	8.872.280,060	584.387,343	415,468	60°45'22"
0+660	8.872.270,289	584.369,892	415,595	60°45'22"
0+680	8.872.260,477	584.352,465	415,780	60°7'50"
0+700	8.872.250,517	584.335,122	416,017	60°7'50"
0+720	8.872.240,556	584.317,778	416,331	60°7'50"
0+740	8.872.230,595	584.300,435	416,646	60°7'50"
0+760	8.872.220,635	584.283,092	416,961	60°7'50"
0+780	8.872.210,674	584.265,749	417,276	60°7'50"
0+800	8.872.200,714	584.248,405	417,591	60°7'50"
0+820	8.872.190,753	584.231,062	417,906	60°7'50"
0+840	8.872.180,793	584.213,719	418,220	60°7'50"
0+860	8.872.170,832	584.196,376	418,535	60°7'50"
0+880	8.872.160,872	584.179,033	418,850	60°7'50"
0+900	8.872.150,911	584.161,689	419,165	60°7'50"
0+920	8.872.140,951	584.144,346	419,480	60°7'50"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
0+940	8.872.130,990	584.127,003	419,795	60°7'50"
0+960	8.872.121,030	584.109,660	420,109	60°7'50"
0+980	8.872.111,069	584.092,316	420,424	60°7'50"
1+000	8.872.101,108	584.074,973	420,739	60°7'50"
1+020	8.872.091,148	584.057,630	421,054	60°7'50"
1+040	8.872.081,187	584.040,287	421,369	60°7'50"
1+060	8.872.071,227	584.022,943	421,683	60°7'50"
1+080	8.872.061,266	584.005,600	421,998	60°7'50"
1+100	8.872.051,306	583.988,257	422,313	60°7'50"
1+120	8.872.041,345	583.970,914	422,628	60°7'50"
1+140	8.872.031,385	583.953,571	422,942	60°7'50"
1+160	8.872.021,424	583.936,227	423,257	60°7'50"
1+180	8.872.011,464	583.918,884	423,572	60°7'50"
1+200	8.872.001,503	583.901,541	423,887	60°7'50"
1+220	8.871.991,543	583.884,198	424,202	60°7'50"
1+240	8.871.981,582	583.866,854	424,517	60°7'50"
1+260	8.871.971,621	583.849,511	424,831	60°7'50"
1+280	8.871.961,661	583.832,168	425,146	60°7'50"
1+300	8.871.951,700	583.814,825	425,461	60°7'50"
1+320	8.871.941,740	583.797,481	425,776	60°7'50"
1+340	8.871.931,779	583.780,138	426,091	60°7'50"
1+360	8.871.921,819	583.762,795	426,406	60°7'50"
1+380	8.871.911,858	583.745,452	426,720	60°7'50"
1+400	8.871.901,898	583.728,109	427,035	60°7'50"
1+420	8.871.891,937	583.710,765	427,350	60°7'50"
1+440	8.871.881,977	583.693,422	427,665	60°7'50"
1+460	8.871.872,016	583.676,079	427,980	60°7'50"
1+480	8.871.862,056	583.658,736	428,295	60°7'50"
1+500	8.871.852,095	583.641,392	428,596	60°7'50"
1+520	8.871.842,134	583.624,049	428,874	60°7'50"
1+540	8.871.831,183	583.607,338	429,175	54°49'19"
1+560	8.871.819,661	583.590,990	429,386	54°49'19"
1+580	8.871.808,138	583.574,643	429,597	54°49'19"
1+600	8.871.796,616	583.558,296	429,809	54°49'19"
1+620	8.871.785,094	583.541,948	430,020	54°49'19"
1+640	8.871.773,571	583.525,601	430,231	54°49'19"
1+660	8.871.762,049	583.509,254	430,442	54°49'19"
1+680	8.871.750,527	583.492,906	430,653	54°49'19"
1+700	8.871.739,004	583.476,559	430,865	54°49'19"
1+720	8.871.727,482	583.460,212	431,076	54°49'19"
1+740	8.871.715,959	583.443,865	431,287	54°49'19"
1+760	8.871.704,437	583.427,517	431,498	54°49'19"
1+780	8.871.692,915	583.411,170	431,710	54°49'19"
1+800	8.871.681,392	583.394,823	431,921	54°49'19"
1+820	8.871.669,870	583.378,475	432,132	54°49'19"
1+840	8.871.658,347	583.362,128	432,343	54°49'19"
1+860	8.871.646,825	583.345,781	432,555	54°49'19"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
1+880	8.871.635,303	583.329,433	432,766	54°49'19"
1+900	8.871.623,780	583.313,086	432,977	54°49'19"
1+920	8.871.612,258	583.296,739	433,188	54°49'19"
1+940	8.871.600,735	583.280,391	433,399	54°49'19"
1+960	8.871.589,213	583.264,044	433,611	54°49'19"
1+980	8.871.577,691	583.247,697	433,822	54°49'19"
2+000	8.871.566,168	583.231,350	434,033	54°49'19"
2+020	8.871.554,646	583.215,002	434,244	54°49'19"
2+040	8.871.543,123	583.198,655	434,456	54°49'19"
2+060	8.871.531,601	583.182,308	434,667	54°49'19"
2+080	8.871.520,079	583.165,960	434,878	54°49'19"
2+100	8.871.508,556	583.149,613	435,089	54°49'19"
2+120	8.871.497,034	583.133,266	435,301	54°49'19"
2+140	8.871.485,206	583.117,145	435,236	51°54'31"
2+160	8.871.472,868	583.101,405	434,702	51°54'31"
2+180	8.871.460,530	583.085,664	434,167	51°54'31"
2+200	8.871.448,191	583.069,923	433,632	51°54'31"
2+220	8.871.435,853	583.054,183	433,097	51°54'31"
2+240	8.871.423,515	583.038,442	432,562	51°54'31"
2+260	8.871.411,176	583.022,702	432,027	51°54'31"
2+280	8.871.398,838	583.006,961	431,492	51°54'31"
2+300	8.871.386,500	582.991,221	430,957	51°54'31"
2+320	8.871.374,161	582.975,480	430,423	51°54'31"
2+340	8.871.361,823	582.959,739	429,888	51°54'31"
2+360	8.871.349,485	582.943,999	429,353	51°54'31"
2+380	8.871.337,146	582.928,258	428,818	51°54'31"
2+400	8.871.324,808	582.912,518	428,283	51°54'31"
2+420	8.871.312,470	582.896,777	427,748	51°54'31"
2+440	8.871.296,318	582.887,382	427,363	10°5'46"
2+460	8.871.276,628	582.883,876	427,279	10°5'46"
2+480	8.871.256,938	582.880,370	427,157	10°5'46"
2+500	8.871.237,247	582.876,864	427,025	10°5'46"
2+520	8.871.217,557	582.873,358	426,893	10°5'46"
2+540	8.871.197,867	582.869,852	426,761	10°5'46"
2+560	8.871.178,177	582.866,346	426,628	10°5'46"
2+580	8.871.158,486	582.862,840	426,496	10°5'46"
2+600	8.871.138,796	582.859,334	426,364	10°5'46"
2+620	8.871.119,106	582.855,828	426,232	10°5'46"
2+640	8.871.099,415	582.852,322	426,099	10°5'46"
2+660	8.871.079,725	582.848,816	425,967	10°5'46"
2+680	8.871.061,123	582.849,957	426,018	323°32'44"
2+700	8.871.045,036	582.861,840	426,156	323°32'44"
2+720	8.871.028,950	582.873,724	426,344	323°32'44"
2+740	8.871.012,863	582.885,608	426,547	323°32'44"
2+760	8.870.996,777	582.897,491	426,751	323°32'44"
2+780	8.870.980,690	582.909,375	426,954	323°32'44"
2+800	8.870.964,603	582.921,259	427,158	323°32'44"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
2+820	8.870.948,517	582.933,142	427,362	323°32'44"
2+840	8.870.932,430	582.945,026	427,565	323°32'44"
2+860	8.870.916,344	582.956,910	427,769	323°32'44"
2+880	8.870.900,257	582.968,794	427,974	323°32'44"
2+900	8.870.884,076	582.980,544	428,176	325°50'22"
2+920	8.870.867,527	582.991,775	428,369	325°50'22"
2+940	8.870.850,978	583.003,005	428,563	325°50'22"
2+960	8.870.834,428	583.014,235	428,757	325°50'22"
2+980	8.870.817,879	583.025,465	428,952	325°50'22"
3+000	8.870.801,330	583.036,696	429,146	325°50'22"
3+020	8.870.784,780	583.047,926	429,341	325°50'22"
3+040	8.870.768,231	583.059,156	429,535	325°50'22"
3+060	8.870.751,682	583.070,387	429,730	325°50'22"
3+080	8.870.735,132	583.081,617	429,924	325°50'22"
3+100	8.870.718,583	583.092,847	430,118	325°50'22"
3+120	8.870.702,034	583.104,077	430,313	325°50'22"
3+140	8.870.685,484	583.115,308	430,507	325°50'22"
3+160	8.870.668,935	583.126,538	430,702	325°50'22"
3+180	8.870.652,386	583.137,768	430,896	325°50'22"
3+200	8.870.635,836	583.148,999	431,090	325°50'22"
3+220	8.870.619,287	583.160,229	431,285	325°50'22"
3+240	8.870.602,738	583.171,459	431,479	325°50'22"
3+260	8.870.586,188	583.182,689	431,674	325°50'22"
3+280	8.870.569,639	583.193,920	431,868	325°50'22"
3+300	8.870.553,090	583.205,150	432,063	325°50'22"
3+320	8.870.535,151	583.212,872	432,002	350°58'2"
3+340	8.870.515,399	583.216,012	431,902	350°58'2"
3+360	8.870.495,647	583.219,152	431,749	350°58'2"
3+380	8.870.475,895	583.222,292	431,575	350°58'2"
3+400	8.870.456,143	583.225,432	431,454	350°58'2"
3+420	8.870.437,506	583.219,083	431,129	22°26'5"
3+440	8.870.419,020	583.211,451	430,806	22°26'5"
3+460	8.870.400,534	583.203,818	430,497	22°26'5"
3+480	8.870.382,047	583.196,185	430,189	22°26'5"
3+500	8.870.363,561	583.188,553	429,881	22°26'5"
3+520	8.870.345,075	583.180,920	429,573	22°26'5"
3+540	8.870.326,589	583.173,287	429,264	22°26'5"
3+560	8.870.308,102	583.165,655	428,956	22°26'5"
3+580	8.870.289,616	583.158,022	428,648	22°26'5"
3+600	8.870.271,130	583.150,390	428,317	22°26'5"
3+620	8.870.252,567	583.147,810	428,111	339°17'49"
3+640	8.870.233,858	583.154,880	428,111	339°17'49"
3+660	8.870.215,150	583.161,950	428,092	339°17'49"
3+680	8.870.196,441	583.169,021	428,072	339°17'49"
3+700	8.870.177,733	583.176,091	428,053	339°17'49"
3+720	8.870.159,024	583.183,162	428,034	339°17'49"
3+740	8.870.140,316	583.190,232	428,014	339°17'49"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
3+760	8.870.121,607	583.197,303	427,995	339º17'49"
3+780	8.870.102,899	583.204,373	427,975	339º17'49"
3+800	8.870.084,190	583.211,444	427,956	339º17'49"
3+820	8.870.065,482	583.218,514	427,937	339º17'49"
3+840	8.870.046,773	583.225,585	427,917	339º17'49"
3+860	8.870.028,065	583.232,655	427,898	339º17'49"
3+880	8.870.009,356	583.239,725	427,879	339º17'49"
3+900	8.869.990,648	583.246,796	427,859	339º17'49"
3+920	8.869.971,939	583.253,866	427,840	339º17'49"
3+940	8.869.953,231	583.260,937	427,820	339º17'49"
3+960	8.869.934,522	583.268,007	427,801	339º17'49"
3+980	8.869.915,814	583.275,078	427,782	339º17'49"
4+000	8.869.897,105	583.282,148	427,762	339º17'49"
4+020	8.869.878,397	583.289,219	427,743	339º17'49"
4+040	8.869.859,688	583.296,289	427,724	339º17'49"
4+060	8.869.840,980	583.303,360	427,704	339º17'49"
4+080	8.869.822,271	583.310,430	427,685	339º17'49"
4+100	8.869.803,563	583.317,500	427,665	339º17'49"
4+120	8.869.784,854	583.324,571	427,646	339º17'49"
4+140	8.869.766,146	583.331,641	427,627	339º17'49"
4+160	8.869.747,437	583.338,712	427,607	339º17'49"
4+180	8.869.728,728	583.345,782	427,588	339º17'49"
4+200	8.869.709,828	583.352,255	427,880	345º9'11"
4+220	8.869.690,496	583.357,380	428,285	345º9'11"
4+240	8.869.671,164	583.362,505	428,775	345º9'11"
4+260	8.869.651,832	583.367,629	429,297	345º9'11"
4+280	8.869.632,499	583.372,754	429,819	345º9'11"
4+300	8.869.613,167	583.377,879	430,340	345º9'11"
4+320	8.869.593,835	583.383,004	430,862	345º9'11"
4+340	8.869.574,502	583.388,128	431,383	345º9'11"
4+360	8.869.555,170	583.393,253	431,905	345º9'11"
4+380	8.869.535,838	583.398,378	432,427	345º9'11"
4+400	8.869.516,506	583.403,503	432,948	345º9'11"
4+420	8.869.497,173	583.408,627	433,470	345º9'11"
4+440	8.869.477,841	583.413,752	433,992	345º9'11"
4+460	8.869.458,509	583.418,877	434,513	345º9'11"
4+480	8.869.439,495	583.417,024	434,683	20º4'20"
4+500	8.869.420,710	583.410,160	434,645	20º4'20"
4+520	8.869.401,924	583.403,296	434,596	20º4'20"
4+540	8.869.383,139	583.396,432	434,542	20º4'20"
4+560	8.869.364,354	583.389,568	434,489	20º4'20"
4+580	8.869.345,569	583.382,704	434,435	20º4'20"
4+600	8.869.326,784	583.375,840	434,382	20º4'20"
4+620	8.869.307,998	583.368,976	434,329	20º4'20"
4+640	8.869.289,213	583.362,111	434,275	20º4'20"
4+660	8.869.270,428	583.355,247	434,222	20º4'20"
4+680	8.869.251,643	583.348,383	434,168	20º4'20"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
4+700	8.869.232,857	583.341,519	434,115	20°4'20"
4+720	8.869.214,072	583.334,655	434,185	20°4'20"
4+740	8.869.194,239	583.334,873	434,288	356°46'8"
4+760	8.869.174,270	583.336,000	434,485	356°46'8"
4+780	8.869.154,302	583.337,128	434,713	356°46'8"
4+800	8.869.134,334	583.338,255	434,940	356°46'8"
4+820	8.869.114,366	583.339,382	435,168	356°46'8"
4+840	8.869.094,398	583.340,509	435,396	356°46'8"
4+860	8.869.074,429	583.341,637	435,623	356°46'8"
4+880	8.869.054,461	583.342,764	435,851	356°46'8"
4+900	8.869.034,493	583.343,891	436,079	356°46'8"
4+920	8.869.014,525	583.345,018	436,307	356°46'8"
4+940	8.868.994,557	583.346,146	436,534	356°46'8"
4+960	8.868.974,588	583.347,273	436,762	356°46'8"
4+980	8.868.954,620	583.348,400	436,990	356°46'8"
5+000	8.868.934,652	583.349,527	437,217	356°46'8"
5+020	8.868.914,684	583.350,655	437,445	356°46'8"
5+040	8.868.894,715	583.351,782	437,673	356°46'8"
5+060	8.868.874,747	583.352,909	437,900	356°46'8"
5+080	8.868.854,779	583.354,036	438,128	356°46'8"
5+100	8.868.834,811	583.355,164	438,356	356°46'8"
5+120	8.868.814,843	583.356,291	438,584	356°46'8"
5+140	8.868.794,874	583.357,418	438,811	356°46'8"
5+160	8.868.774,906	583.358,546	439,039	356°46'8"
5+180	8.868.754,938	583.359,673	439,267	356°46'8"
5+200	8.868.734,970	583.360,800	439,494	356°46'8"
5+220	8.868.715,002	583.361,927	439,722	356°46'8"
5+240	8.868.695,023	583.362,516	439,744	0°59'22"
5+260	8.868.675,026	583.362,171	439,721	0°59'22"
5+280	8.868.655,029	583.361,825	439,648	0°59'22"
5+300	8.868.635,032	583.361,480	439,558	0°59'22"
5+320	8.868.615,035	583.361,135	439,469	0°59'22"
5+340	8.868.595,038	583.360,789	439,379	0°59'22"
5+360	8.868.575,041	583.360,444	439,289	0°59'22"
5+380	8.868.555,044	583.360,098	439,199	0°59'22"
5+400	8.868.535,047	583.359,753	439,109	0°59'22"
5+420	8.868.515,050	583.359,408	439,019	0°59'22"
5+440	8.868.495,053	583.359,062	438,994	0°59'22"
5+460	8.868.478,428	583.348,196	438,894	34°33'9"
5+480	8.868.461,956	583.336,853	438,824	34°33'9"
5+500	8.868.445,484	583.325,509	438,770	34°33'9"
5+520	8.868.429,011	583.314,166	438,716	34°33'9"
5+540	8.868.412,539	583.302,823	438,663	34°33'9"
5+560	8.868.396,067	583.291,480	438,609	34°33'9"
5+580	8.868.379,595	583.280,136	438,555	34°33'9"
5+600	8.868.363,123	583.268,793	438,501	34°33'9"
5+620	8.868.346,651	583.257,450	438,447	34°33'9"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
5+640	8.868.330,179	583.246,107	438,393	34°33'9"
5+660	8.868.313,707	583.234,763	438,340	34°33'9"
5+680	8.868.297,234	583.223,420	438,302	34°33'9"
5+700	8.868.283,616	583.208,954	438,262	50°16'56"
5+720	8.868.270,836	583.193,570	438,235	50°16'56"
5+740	8.868.258,055	583.178,186	438,213	50°16'56"
5+760	8.868.245,275	583.162,802	438,192	50°16'56"
5+780	8.868.232,495	583.147,418	438,170	50°16'56"
5+800	8.868.219,715	583.132,034	438,149	50°16'56"
5+820	8.868.206,935	583.116,650	438,127	50°16'56"
5+840	8.868.194,155	583.101,266	438,106	50°16'56"
5+860	8.868.181,375	583.085,882	438,084	50°16'56"
5+880	8.868.168,594	583.070,498	438,063	50°16'56"
5+900	8.868.155,814	583.055,114	438,041	50°16'56"
5+920	8.868.143,034	583.039,730	438,020	50°16'56"
5+940	8.868.130,254	583.024,346	437,998	50°16'56"
5+960	8.868.117,474	583.008,962	437,977	50°16'56"
5+980	8.868.104,694	582.993,578	437,955	50°16'56"
6+000	8.868.091,914	582.978,194	437,934	50°16'56"
6+020	8.868.079,133	582.962,810	437,912	50°16'56"
6+040	8.868.066,353	582.947,426	437,891	50°16'56"
6+060	8.868.053,573	582.932,042	437,869	50°16'56"
6+080	8.868.043,766	582.915,221	437,974	78°8'38"
6+100	8.868.039,657	582.895,648	438,196	78°8'38"
6+120	8.868.035,548	582.876,074	438,439	78°8'38"
6+140	8.868.031,439	582.856,501	438,688	78°8'38"
6+160	8.868.027,330	582.836,928	438,937	78°8'38"
6+180	8.868.023,221	582.817,354	439,186	78°8'38"
6+200	8.868.019,112	582.797,781	439,436	78°8'38"
6+220	8.868.015,003	582.778,208	439,685	78°8'38"
6+240	8.868.010,894	582.758,634	439,934	78°8'38"
6+260	8.868.006,785	582.739,061	440,184	78°8'38"
6+280	8.868.002,676	582.719,488	440,432	78°8'38"
6+300	8.867.998,567	582.699,914	440,682	78°8'38"
6+320	8.867.994,457	582.680,341	440,931	78°8'38"
6+340	8.867.990,348	582.660,768	441,180	78°8'38"
6+360	8.867.986,239	582.641,194	441,429	78°8'38"
6+380	8.867.982,130	582.621,621	441,679	78°8'38"
6+400	8.867.978,021	582.602,048	441,928	78°8'38"
6+420	8.867.973,912	582.582,474	442,177	78°8'38"
6+440	8.867.969,803	582.562,901	442,426	78°8'38"
6+460	8.867.965,694	582.543,328	442,676	78°8'38"
6+480	8.867.961,585	582.523,754	442,925	78°8'38"
6+500	8.867.957,476	582.504,181	443,174	78°8'38"
6+520	8.867.951,393	582.485,217	443,338	67°33'46"
6+540	8.867.943,760	582.466,731	443,471	67°33'46"
6+560	8.867.936,126	582.448,245	443,591	67°33'46"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
6+580	8.867.928,493	582.429,759	443,705	67°33'46"
6+600	8.867.914,998	582.415,345	443,727	42°51'17"
6+620	8.867.900,336	582.401,743	443,713	42°51'17"
6+640	8.867.885,674	582.388,140	443,699	42°51'17"
6+660	8.867.871,013	582.374,537	443,686	42°51'17"
6+680	8.867.856,351	582.360,934	443,672	42°51'17"
6+700	8.867.841,689	582.347,331	443,658	42°51'17"
6+720	8.867.827,028	582.333,729	443,644	42°51'17"
6+740	8.867.812,366	582.320,126	443,630	42°51'17"
6+760	8.867.797,704	582.306,523	443,616	42°51'17"
6+780	8.867.783,043	582.292,920	443,603	42°51'17"
6+800	8.867.768,381	582.279,317	443,589	42°51'17"
6+820	8.867.753,720	582.265,714	443,575	42°51'17"
6+840	8.867.739,058	582.252,112	443,561	42°51'17"
6+860	8.867.724,396	582.238,509	443,547	42°51'17"
6+880	8.867.709,735	582.224,906	443,533	42°51'17"
6+900	8.867.695,073	582.211,303	443,520	42°51'17"
6+920	8.867.680,411	582.197,700	443,506	42°51'17"
6+940	8.867.665,750	582.184,098	443,492	42°51'17"
6+960	8.867.651,088	582.170,495	443,478	42°51'17"
6+980	8.867.636,427	582.156,892	443,464	42°51'17"
7+000	8.867.621,765	582.143,289	443,450	42°51'17"
7+020	8.867.607,103	582.129,686	443,437	42°51'17"
7+040	8.867.592,442	582.116,084	443,423	42°51'17"
7+060	8.867.577,780	582.102,481	443,409	42°51'17"
7+080	8.867.563,118	582.088,878	443,424	42°51'17"
7+100	8.867.548,457	582.075,275	443,449	42°51'17"
7+120	8.867.533,773	582.061,696	443,727	42°45'15"
7+140	8.867.519,087	582.048,119	444,098	42°45'15"
7+160	8.867.504,402	582.034,542	444,469	42°45'15"
7+180	8.867.489,716	582.020,965	444,840	42°45'15"
7+200	8.867.475,031	582.007,388	445,210	42°45'15"
7+220	8.867.460,346	581.993,811	445,581	42°45'15"
7+240	8.867.445,660	581.980,234	445,952	42°45'15"
7+260	8.867.430,975	581.966,657	446,323	42°45'15"
7+280	8.867.416,289	581.953,080	446,693	42°45'15"
7+300	8.867.401,604	581.939,502	447,064	42°45'15"
7+320	8.867.386,918	581.925,925	447,435	42°45'15"
7+340	8.867.372,233	581.912,348	447,806	42°45'15"
7+360	8.867.357,547	581.898,771	448,176	42°45'15"
7+380	8.867.342,862	581.885,194	448,547	42°45'15"
7+400	8.867.328,177	581.871,617	448,918	42°45'15"
7+420	8.867.313,491	581.858,040	449,288	42°45'15"
7+440	8.867.298,828	581.844,439	449,635	43°03'11"
7+460	8.867.284,213	581.830,786	449,972	43°03'11"
7+480	8.867.269,599	581.817,132	450,302	43°03'11"
7+500	8.867.254,984	581.803,479	450,630	43°03'11"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
7+520	8.867.240,370	581.789,825	450,958	43°3'11"
7+540	8.867.225,755	581.776,172	451,286	43°3'11"
7+560	8.867.211,141	581.762,518	451,614	43°3'11"
7+580	8.867.196,526	581.748,865	451,942	43°3'11"
7+600	8.867.181,912	581.735,211	452,270	43°3'11"
7+620	8.867.167,298	581.721,558	452,598	43°3'11"
7+640	8.867.152,683	581.707,904	452,925	43°3'11"
7+660	8.867.138,069	581.694,251	453,253	43°3'11"
7+680	8.867.123,454	581.680,597	453,581	43°3'11"
7+700	8.867.108,840	581.666,944	453,909	43°3'11"
7+720	8.867.094,225	581.653,290	454,237	43°3'11"
7+740	8.867.079,611	581.639,637	454,565	43°3'11"
7+760	8.867.064,997	581.625,983	454,893	43°3'11"
7+780	8.867.050,382	581.612,330	455,221	43°3'11"
7+800	8.867.035,768	581.598,676	455,549	43°3'11"
7+820	8.867.021,153	581.585,023	455,877	43°3'11"
7+840	8.867.006,539	581.571,369	456,205	43°3'11"
7+860	8.866.991,924	581.557,716	456,533	43°3'11"
7+880	8.866.977,310	581.544,062	456,859	43°3'11"
7+900	8.866.962,695	581.530,409	457,187	43°3'11"
7+920	8.866.948,081	581.516,755	457,515	43°3'11"
7+940	8.866.933,467	581.503,102	457,843	43°3'11"
7+960	8.866.918,852	581.489,448	458,171	43°3'11"
7+980	8.866.904,238	581.475,795	458,499	43°3'11"
8+000	8.866.889,623	581.462,141	458,827	43°3'11"
8+020	8.866.875,009	581.448,488	459,155	43°3'11"
8+040	8.866.860,394	581.434,834	459,483	43°3'11"
8+060	8.866.845,780	581.421,181	459,811	43°3'11"
8+080	8.866.831,166	581.407,527	460,139	43°3'11"
8+100	8.866.816,551	581.393,874	460,467	43°3'11"
8+120	8.866.801,937	581.380,220	460,795	43°3'11"
8+140	8.866.787,322	581.366,567	461,123	43°3'11"
8+160	8.866.772,708	581.352,913	461,451	43°3'11"
8+180	8.866.758,093	581.339,260	461,778	43°3'11"
8+200	8.866.743,479	581.325,606	462,106	43°3'11"
8+220	8.866.728,864	581.311,953	462,434	43°3'11"
8+240	8.866.714,250	581.298,299	462,762	43°3'11"
8+260	8.866.699,636	581.284,646	463,090	43°3'11"
8+280	8.866.685,021	581.270,992	463,418	43°3'11"
8+300	8.866.670,407	581.257,339	463,746	43°3'11"
8+320	8.866.655,792	581.243,685	464,074	43°3'11"
8+340	8.866.641,178	581.230,031	464,402	43°3'11"
8+360	8.866.626,563	581.216,378	464,737	43°3'11"
8+380	8.866.611,972	581.202,700	465,075	43°9'4"
8+400	8.866.597,381	581.189,021	465,417	43°9'4"
8+420	8.866.582,790	581.175,343	465,761	43°9'4"
8+440	8.866.568,199	581.161,664	466,104	43°9'4"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
8+460	8.866.553,608	581.147,986	466,448	43°9'4"
8+480	8.866.539,017	581.134,307	466,791	43°9'4"
8+500	8.866.524,426	581.120,629	467,135	43°9'4"
8+520	8.866.509,835	581.106,950	467,479	43°9'4"
8+540	8.866.495,244	581.093,272	467,822	43°9'4"
8+560	8.866.480,653	581.079,593	468,166	43°9'4"
8+580	8.866.466,062	581.065,915	468,509	43°9'4"
8+600	8.866.451,471	581.052,236	468,853	43°9'4"
8+620	8.866.436,880	581.038,558	469,197	43°9'4"
8+640	8.866.422,289	581.024,879	469,540	43°9'4"
8+660	8.866.407,697	581.011,201	469,884	43°9'4"
8+680	8.866.393,106	580.997,522	470,227	43°9'4"
8+700	8.866.378,515	580.983,844	470,571	43°9'4"
8+720	8.866.363,924	580.970,165	470,914	43°9'4"
8+740	8.866.349,333	580.956,487	471,258	43°9'4"
8+760	8.866.334,742	580.942,808	471,602	43°9'4"
8+780	8.866.320,151	580.929,130	471,945	43°9'4"
8+800	8.866.305,560	580.915,451	472,289	43°9'4"
8+820	8.866.290,969	580.901,773	472,632	43°9'4"
8+840	8.866.276,378	580.888,094	472,976	43°9'4"
8+860	8.866.261,787	580.874,416	473,320	43°9'4"
8+880	8.866.247,196	580.860,737	473,663	43°9'4"
8+900	8.866.232,605	580.847,059	474,007	43°9'4"
8+920	8.866.218,014	580.833,380	474,351	43°9'4"
8+940	8.866.203,423	580.819,702	474,694	43°9'4"
8+960	8.866.188,832	580.806,023	474,989	43°9'4"
8+980	8.866.174,431	580.792,161	475,271	48°39'2"
9+000	8.866.161,218	580.777,147	475,387	48°39'2"
9+020	8.866.148,004	580.762,133	475,431	48°39'2"
9+040	8.866.134,791	580.747,119	475,475	48°39'2"
9+060	8.866.121,578	580.732,105	475,518	48°39'2"
9+080	8.866.108,365	580.717,091	475,562	48°39'2"
9+100	8.866.095,152	580.702,078	475,606	48°39'2"
9+120	8.866.081,939	580.687,064	475,650	48°39'2"
9+140	8.866.068,726	580.672,050	475,694	48°39'2"
9+160	8.866.055,513	580.657,036	475,737	48°39'2"
9+180	8.866.042,300	580.642,022	475,781	48°39'2"
9+200	8.866.029,087	580.627,008	475,825	48°39'2"
9+220	8.866.015,874	580.611,994	475,869	48°39'2"
9+240	8.866.002,661	580.596,981	475,913	48°39'2"
9+260	8.865.989,448	580.581,967	475,956	48°39'2"
9+280	8.865.976,235	580.566,953	476,000	48°39'2"
9+300	8.865.963,022	580.551,939	476,044	48°39'2"
9+320	8.865.949,809	580.536,925	476,088	48°39'2"
9+340	8.865.936,596	580.521,911	476,132	48°39'2"
9+360	8.865.923,383	580.506,897	476,176	48°39'2"
9+380	8.865.910,170	580.491,884	476,219	48°39'2"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
9+400	8.865.896,957	580.476,870	476,262	48°39'2"
9+420	8.865.883,744	580.461,856	476,303	48°39'2"
9+440	8.865.873,788	580.444,598	476,238	62°12'52"
9+460	8.865.864,465	580.426,904	476,146	62°12'52"
9+480	8.865.855,141	580.409,210	476,055	62°12'52"
9+500	8.865.845,818	580.391,516	475,963	62°12'52"
9+520	8.865.836,495	580.373,822	475,871	62°12'52"
9+540	8.865.827,172	580.356,128	475,780	62°12'52"
9+560	8.865.817,848	580.338,434	475,688	62°12'52"
9+580	8.865.808,525	580.320,740	475,596	62°12'52"
9+600	8.865.799,202	580.303,046	475,505	62°12'52"
9+620	8.865.789,879	580.285,352	475,413	62°12'52"
9+640	8.865.780,555	580.267,658	475,322	62°12'52"
9+660	8.865.771,232	580.249,964	475,230	62°12'52"
9+680	8.865.761,909	580.232,270	475,138	62°12'52"
9+700	8.865.752,585	580.214,576	475,047	62°12'52"
9+720	8.865.743,262	580.196,882	474,955	62°12'52"
9+740	8.865.733,939	580.179,188	474,863	62°12'52"
9+760	8.865.724,616	580.161,494	474,772	62°12'52"
9+780	8.865.715,292	580.143,800	474,680	62°12'52"
9+800	8.865.705,969	580.126,106	474,589	62°12'52"
9+820	8.865.696,646	580.108,412	474,497	62°12'52"
9+840	8.865.687,323	580.090,718	474,405	62°12'52"
9+860	8.865.677,999	580.073,024	474,314	62°12'52"
9+880	8.865.668,676	580.055,330	474,222	62°12'52"
9+900	8.865.659,353	580.037,636	474,131	62°12'52"
9+920	8.865.650,030	580.019,943	474,039	62°12'52"
9+940	8.865.640,706	580.002,249	473,947	62°12'52"
9+960	8.865.628,530	579.988,703	474,124	6°48'45"
9+980	8.865.608,672	579.986,331	474,320	6°48'45"
10+000	8.865.588,813	579.983,958	474,610	6°48'45"
10+020	8.865.568,954	579.981,586	474,931	6°48'45"
10+040	8.865.549,095	579.979,214	475,252	6°48'45"
10+060	8.865.529,236	579.976,841	475,573	6°48'45"
10+080	8.865.509,378	579.974,469	475,894	6°48'45"
10+100	8.865.489,519	579.972,096	476,216	6°48'45"
10+120	8.865.469,660	579.969,724	476,537	6°48'45"
10+140	8.865.449,801	579.967,352	476,858	6°48'45"
10+160	8.865.429,942	579.964,979	477,179	6°48'45"
10+180	8.865.410,084	579.962,607	477,500	6°48'45"
10+200	8.865.390,225	579.960,235	477,822	6°48'45"
10+220	8.865.370,366	579.957,862	478,143	6°48'45"
10+240	8.865.350,507	579.955,490	478,464	6°48'45"
10+260	8.865.330,648	579.953,117	478,785	6°48'45"
10+280	8.865.310,790	579.950,745	479,106	6°48'45"
10+300	8.865.290,931	579.948,373	479,428	6°48'45"
10+320	8.865.271,072	579.946,000	479,749	6°48'45"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
10+340	8.865.251,213	579.943,628	480,070	6°48'45"
10+360	8.865.231,354	579.941,256	480,391	6°48'45"
10+380	8.865.211,496	579.938,883	480,712	6°48'45"
10+400	8.865.191,637	579.936,511	481,034	6°48'45"
10+420	8.865.171,778	579.934,139	481,355	6°48'45"
10+440	8.865.151,919	579.931,766	481,676	6°48'45"
10+460	8.865.132,060	579.929,394	481,997	6°48'45"
10+480	8.865.112,202	579.927,021	482,318	6°48'45"
10+500	8.865.092,343	579.924,649	482,640	6°48'45"
10+520	8.865.072,484	579.922,277	482,961	6°48'45"
10+540	8.865.052,625	579.919,904	483,282	6°48'45"
10+560	8.865.032,766	579.917,532	483,603	6°48'45"
10+580	8.865.012,908	579.915,160	483,924	6°48'45"
10+600	8.864.993,049	579.912,787	484,246	6°48'45"
10+620	8.864.973,190	579.910,415	484,567	6°48'45"
10+640	8.864.953,331	579.908,042	484,888	6°48'45"
10+660	8.864.933,472	579.905,670	485,209	6°48'45"
10+680	8.864.913,614	579.903,298	485,531	6°48'45"
10+700	8.864.893,755	579.900,925	485,852	6°48'45"
10+720	8.864.873,896	579.898,553	486,173	6°48'45"
10+740	8.864.854,037	579.896,181	486,494	6°48'45"
10+760	8.864.834,178	579.893,808	486,815	6°48'45"
10+780	8.864.814,320	579.891,436	487,137	6°48'45"
10+800	8.864.794,461	579.889,064	487,458	6°48'45"
10+820	8.864.774,602	579.886,691	487,779	6°48'45"
10+840	8.864.754,743	579.884,319	488,059	6°48'45"
10+860	8.864.734,884	579.881,953	488,325	6°46'31"
10+880	8.864.715,023	579.879,593	488,522	6°46'31"
10+900	8.864.695,163	579.877,234	488,696	6°46'31"
10+920	8.864.675,303	579.874,874	488,870	6°46'31"
10+940	8.864.655,442	579.872,515	489,044	6°46'31"
10+960	8.864.635,582	579.870,155	489,218	6°46'31"
10+980	8.864.615,722	579.867,796	489,392	6°46'31"
11+000	8.864.595,861	579.865,436	489,565	6°46'31"
11+020	8.864.576,001	579.863,076	489,739	6°46'31"
11+040	8.864.556,141	579.860,717	489,913	6°46'31"
11+060	8.864.536,280	579.858,357	490,087	6°46'31"
11+080	8.864.516,420	579.855,998	490,261	6°46'31"
11+100	8.864.496,560	579.853,638	490,434	6°46'31"
11+120	8.864.476,699	579.851,279	490,608	6°46'31"
11+140	8.864.456,839	579.848,919	490,782	6°46'31"
11+160	8.864.436,979	579.846,560	490,956	6°46'31"
11+180	8.864.417,118	579.844,200	491,130	6°46'31"
11+200	8.864.397,258	579.841,841	491,304	6°46'31"
11+220	8.864.377,398	579.839,481	491,477	6°46'31"
11+240	8.864.357,538	579.837,122	491,651	6°46'31"
11+260	8.864.337,677	579.834,762	491,825	6°46'31"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
11+280	8.864.317,817	579.832,403	491,999	6°46'31"
11+300	8.864.297,957	579.830,043	492,173	6°46'31"
11+320	8.864.278,096	579.827,684	492,347	6°46'31"
11+340	8.864.258,236	579.825,324	492,520	6°46'31"
11+360	8.864.238,376	579.822,965	492,694	6°46'31"
11+380	8.864.218,515	579.820,605	492,868	6°46'31"
11+400	8.864.198,655	579.818,245	493,042	6°46'31"
11+420	8.864.178,795	579.815,886	493,216	6°46'31"
11+440	8.864.158,934	579.813,526	493,389	6°46'31"
11+460	8.864.139,074	579.811,167	493,563	6°46'31"
11+480	8.864.119,214	579.808,807	493,737	6°46'31"
11+500	8.864.099,353	579.806,448	493,911	6°46'31"
11+520	8.864.079,493	579.804,088	494,085	6°46'31"
11+540	8.864.059,633	579.801,729	494,258	6°46'31"
11+560	8.864.039,772	579.799,369	494,432	6°46'31"
11+580	8.864.019,912	579.797,010	494,606	6°46'31"
11+600	8.864.000,052	579.794,650	494,787	6°47'10"
11+620	8.863.980,192	579.792,287	494,970	6°47'10"
11+640	8.863.960,332	579.789,923	495,157	6°47'10"
11+660	8.863.940,472	579.787,560	495,344	6°47'10"
11+680	8.863.920,612	579.785,197	495,532	6°47'10"
11+700	8.863.900,752	579.782,833	495,719	6°47'10"
11+720	8.863.880,892	579.780,470	495,907	6°47'10"
11+740	8.863.861,032	579.778,107	496,095	6°47'10"
11+760	8.863.841,173	579.775,744	496,282	6°47'10"
11+780	8.863.821,313	579.773,380	496,470	6°47'10"
11+800	8.863.801,453	579.771,017	496,657	6°47'10"
11+820	8.863.781,593	579.768,654	496,845	6°47'10"
11+840	8.863.761,733	579.766,291	497,032	6°47'10"
11+860	8.863.741,873	579.763,927	497,220	6°47'10"
11+880	8.863.722,013	579.761,564	497,408	6°47'10"
11+900	8.863.702,153	579.759,201	497,595	6°47'10"
11+920	8.863.682,294	579.756,838	497,783	6°47'10"
11+940	8.863.662,434	579.754,474	497,970	6°47'10"
11+960	8.863.642,574	579.752,111	498,156	6°47'10"
11+980	8.863.622,714	579.749,748	498,343	6°47'10"
12+000	8.863.602,854	579.747,385	498,531	6°47'10"
12+020	8.863.582,994	579.745,021	498,718	6°47'10"
12+040	8.863.563,134	579.742,658	498,906	6°47'10"
12+060	8.863.543,274	579.740,295	499,093	6°47'10"
12+080	8.863.523,414	579.737,932	499,281	6°47'10"
12+100	8.863.503,555	579.735,568	499,469	6°47'10"
12+120	8.863.483,695	579.733,205	499,656	6°47'10"
12+140	8.863.463,835	579.730,842	499,844	6°47'10"
12+160	8.863.443,975	579.728,479	500,031	6°47'10"
12+180	8.863.424,115	579.726,115	500,219	6°47'10"
12+200	8.863.404,255	579.723,752	500,317	6°47'10"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
12+220	8.863.384,396	579.721,381	500,380	6°48'48"
12+240	8.863.364,537	579.719,008	500,374	6°48'48"
12+260	8.863.344,679	579.716,635	500,341	6°48'48"
12+280	8.863.324,820	579.714,263	500,309	6°48'48"
12+300	8.863.304,961	579.711,890	500,277	6°48'48"
12+320	8.863.285,102	579.709,517	500,244	6°48'48"
12+340	8.863.265,244	579.707,145	500,212	6°48'48"
12+360	8.863.245,385	579.704,772	500,180	6°48'48"
12+380	8.863.225,526	579.702,399	500,147	6°48'48"
12+400	8.863.205,667	579.700,027	500,115	6°48'48"
12+420	8.863.185,809	579.697,654	500,083	6°48'48"
12+440	8.863.165,950	579.695,281	500,050	6°48'48"
12+460	8.863.146,091	579.692,909	500,018	6°48'48"
12+480	8.863.126,232	579.690,536	499,986	6°48'48"
12+500	8.863.106,374	579.688,163	499,953	6°48'48"
12+520	8.863.086,515	579.685,791	499,929	6°48'48"
12+540	8.863.066,656	579.683,418	499,897	6°48'48"
12+560	8.863.046,797	579.681,045	499,865	6°48'48"
12+580	8.863.026,938	579.678,673	499,832	6°48'48"
12+600	8.863.007,080	579.676,300	499,800	6°48'48"
12+620	8.862.987,221	579.673,927	499,768	6°48'48"
12+640	8.862.967,362	579.671,555	499,735	6°48'48"
12+660	8.862.947,503	579.669,182	499,703	6°48'48"
12+680	8.862.927,645	579.666,809	499,670	6°48'48"
12+700	8.862.907,786	579.664,437	499,638	6°48'48"
12+720	8.862.887,927	579.662,064	499,605	6°48'48"
12+740	8.862.868,068	579.659,691	499,573	6°48'48"
12+760	8.862.848,210	579.657,319	499,541	6°48'48"
12+780	8.862.828,351	579.654,946	499,508	6°48'48"
12+800	8.862.808,492	579.652,573	499,476	6°48'48"
12+820	8.862.788,633	579.650,201	499,443	6°48'48"
12+840	8.862.768,775	579.647,828	499,411	6°48'48"
12+860	8.862.748,916	579.645,455	499,379	6°48'48"
12+880	8.862.729,046	579.643,183	499,068	6°14'47"
12+900	8.862.709,164	579.641,007	498,652	6°14'47"
12+920	8.862.689,283	579.638,831	498,199	6°14'47"
12+940	8.862.669,402	579.636,655	497,731	6°14'47"
12+960	8.862.649,520	579.634,479	497,184	6°14'47"
12+980	8.862.629,639	579.632,303	496,605	6°14'47"
13+000	8.862.609,756	579.630,149	495,009	6°10'20"
13+020	8.862.589,871	579.627,999	492,986	6°10'20"
13+040	8.862.569,987	579.625,848	490,966	6°10'20"
13+060	8.862.550,103	579.623,698	488,943	6°10'20"
13+080	8.862.530,241	579.621,379	488,699	8°33'37"
13+100	8.862.510,464	579.618,402	489,198	8°33'37"
13+120	8.862.490,687	579.615,425	490,337	8°33'37"
13+140	8.862.470,909	579.612,448	491,744	8°33'37"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
13+160	8.862.451,132	579.609,471	493,032	8°33'37"
13+180	8.862.431,346	579.606,562	494,245	6°5'43"
13+200	8.862.411,459	579.604,438	494,776	6°5'43"
13+220	8.862.391,572	579.602,315	495,063	6°5'43"
13+240	8.862.371,686	579.600,191	495,345	6°5'43"
13+260	8.862.351,799	579.598,067	495,632	6°5'43"
13+280	8.862.331,912	579.595,944	495,918	6°5'43"
13+300	8.862.312,025	579.593,820	496,205	6°5'43"
13+320	8.862.292,138	579.591,696	496,491	6°5'43"
13+340	8.862.272,251	579.589,573	496,778	6°5'43"
13+360	8.862.252,364	579.587,449	496,929	6°5'43"
13+380	8.862.232,630	579.587,262	497,016	344°53'54"
13+400	8.862.213,320	579.592,472	496,688	344°53'54"
13+420	8.862.194,011	579.597,683	496,223	344°53'54"
13+440	8.862.174,702	579.602,894	495,758	344°53'54"
13+460	8.862.155,392	579.608,104	495,293	344°53'54"
13+480	8.862.136,083	579.613,315	494,828	344°53'54"
13+500	8.862.116,774	579.618,526	494,363	344°53'54"
13+520	8.862.097,464	579.623,736	493,898	344°53'54"
13+540	8.862.078,155	579.628,947	493,433	344°53'54"
13+560	8.862.058,882	579.634,282	494,082	342°14'9"
13+580	8.862.039,836	579.640,384	495,135	342°14'9"
13+600	8.862.020,790	579.646,486	496,669	342°14'9"
13+620	8.862.001,743	579.652,588	498,349	342°14'9"
13+640	8.861.982,697	579.658,690	500,023	342°14'9"
13+660	8.861.963,650	579.664,792	501,703	342°14'9"
13+680	8.861.944,600	579.670,881	502,863	342°23'17"
13+700	8.861.925,537	579.676,932	503,855	342°23'17"
13+720	8.861.906,475	579.682,983	504,684	342°23'17"
13+740	8.861.887,412	579.689,035	505,461	342°23'17"
13+760	8.861.868,350	579.695,086	506,241	342°23'17"
13+780	8.861.849,287	579.701,138	507,018	342°23'17"
13+800	8.861.830,225	579.707,189	507,798	342°23'17"
13+820	8.861.811,162	579.713,240	508,575	342°23'17"
13+840	8.861.792,099	579.719,292	509,352	342°23'17"
13+860	8.861.773,037	579.725,343	510,129	342°23'17"
13+880	8.861.753,974	579.731,394	510,906	342°23'17"
13+900	8.861.734,912	579.737,446	511,683	342°23'17"
13+920	8.861.715,849	579.743,497	512,460	342°23'17"
13+940	8.861.696,787	579.749,548	513,237	342°23'17"
13+960	8.861.677,724	579.755,600	514,014	342°23'17"
13+980	8.861.658,662	579.761,651	514,791	342°23'17"
14+000	8.861.639,599	579.767,702	515,568	342°23'17"
14+020	8.861.620,536	579.773,754	516,345	342°23'17"
14+040	8.861.601,474	579.779,805	517,121	342°23'17"
14+060	8.861.582,411	579.785,856	517,898	342°23'17"
14+080	8.861.563,349	579.791,908	518,675	342°23'17"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
14+100	8.861.544,286	579.797,959	519,452	342°23'17"
14+120	8.861.525,224	579.804,010	520,229	342°23'17"
14+140	8.861.506,161	579.810,062	521,006	342°23'17"
14+160	8.861.487,098	579.816,113	521,783	342°23'17"
14+180	8.861.468,036	579.822,164	522,560	342°23'17"
14+200	8.861.448,973	579.828,216	523,337	342°23'17"
14+220	8.861.429,911	579.834,267	524,114	342°23'17"
14+240	8.861.410,848	579.840,319	524,890	342°23'17"
14+260	8.861.391,786	579.846,370	525,667	342°23'17"
14+280	8.861.372,723	579.852,421	525,985	342°23'17"
14+300	8.861.352,903	579.854,124	527,082	357°51'3"
14+320	8.861.332,917	579.854,874	528,044	357°51'3"
14+340	8.861.312,931	579.855,624	528,853	357°51'3"
14+360	8.861.292,945	579.856,374	529,662	357°51'3"
14+380	8.861.272,959	579.857,124	530,470	357°51'3"
14+400	8.861.252,973	579.857,874	531,279	357°51'3"
14+420	8.861.232,988	579.858,624	532,088	357°51'3"
14+440	8.861.213,002	579.859,374	532,897	357°51'3"
14+460	8.861.193,016	579.860,124	533,705	357°51'3"
14+480	8.861.173,030	579.860,874	534,514	357°51'3"
14+500	8.861.153,044	579.861,624	535,323	357°51'3"
14+520	8.861.133,058	579.862,374	536,132	357°51'3"
14+540	8.861.113,072	579.863,124	536,940	357°51'3"
14+560	8.861.093,086	579.863,874	537,749	357°51'3"
14+580	8.861.073,100	579.864,624	538,558	357°51'3"
14+600	8.861.053,114	579.865,374	539,367	357°51'3"
14+620	8.861.033,128	579.866,124	540,175	357°51'3"
14+640	8.861.013,142	579.866,874	540,834	357°51'3"
14+660	8.860.994,504	579.872,317	541,759	330°6'28"
14+680	8.860.977,165	579.882,284	542,748	330°6'28"
14+700	8.860.959,825	579.892,251	543,654	330°6'28"
14+720	8.860.942,486	579.902,219	544,559	330°6'28"
14+740	8.860.925,147	579.912,186	545,465	330°6'28"
14+760	8.860.907,807	579.922,154	546,371	330°6'28"
14+780	8.860.890,468	579.932,121	547,277	330°6'28"
14+800	8.860.873,129	579.942,088	546,887	330°6'28"
14+820	8.860.853,233	579.941,623	547,315	2°21'21"
14+840	8.860.834,049	579.937,686	547,237	26°24'54"
14+860	8.860.816,137	579.928,789	547,491	26°24'54"
14+880	8.860.798,225	579.919,892	547,706	26°24'54"
14+900	8.860.780,313	579.910,994	547,905	26°24'54"
14+920	8.860.762,401	579.902,097	548,104	26°24'54"
14+940	8.860.744,489	579.893,200	548,303	26°24'54"
14+960	8.860.726,577	579.884,302	548,501	26°24'54"
14+980	8.860.708,665	579.875,405	548,700	26°24'54"
15+000	8.860.690,753	579.866,507	548,857	26°24'54"
15+020	8.860.672,841	579.857,610	549,056	26°24'54"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
15+040	8.860.654,773	579.849,275	542,940	4°41'3"
15+060	8.860.634,840	579.847,641	542,201	4°41'3"
15+080	8.860.614,907	579.846,008	537,903	4°41'3"
15+100	8.860.594,974	579.844,375	532,381	4°41'3"
15+120	8.860.575,421	579.847,223	529,468	345°36'44"
15+140	8.860.556,048	579.852,193	527,637	345°36'44"
15+160	8.860.536,675	579.857,162	525,975	345°36'44"
15+180	8.860.517,546	579.862,959	524,447	341°37'16"
15+200	8.860.498,566	579.869,265	523,140	341°37'16"
15+220	8.860.479,586	579.875,571	521,914	341°37'16"
15+240	8.860.460,606	579.881,877	520,733	341°37'16"
15+260	8.860.443,181	579.890,136	519,572	301°21'35"
15+280	8.860.432,772	579.907,214	518,580	301°21'35"
15+300	8.860.422,364	579.924,293	517,646	301°21'35"
15+320	8.860.411,956	579.941,371	516,712	301°21'35"
15+340	8.860.401,548	579.958,449	515,778	301°21'35"
15+360	8.860.391,140	579.975,528	514,848	301°21'35"
15+380	8.860.380,732	579.992,606	513,914	301°21'35"
15+400	8.860.370,323	580.009,685	512,978	301°21'35"
15+420	8.860.359,915	580.026,763	512,044	301°21'35"
15+440	8.860.346,449	580.040,800	510,274	328°19'46"
15+460	8.860.329,428	580.051,300	506,935	328°19'46"
15+480	8.860.312,406	580.061,801	503,695	328°19'46"
15+500	8.860.295,384	580.072,302	500,496	328°19'46"
15+520	8.860.279,131	580.083,542	499,722	299°28'25"
15+540	8.860.269,290	580.100,953	498,073	299°28'25"
15+560	8.860.259,450	580.118,365	497,800	299°28'25"
15+580	8.860.249,609	580.135,777	497,926	299°28'25"
15+600	8.860.239,769	580.153,188	498,419	299°28'25"
15+620	8.860.225,905	580.166,566	498,185	330°40'54"
15+640	8.860.208,467	580.176,359	497,717	330°40'54"
15+660	8.860.191,029	580.186,152	497,475	330°40'54"
15+680	8.860.173,590	580.195,945	497,233	330°40'54"
15+700	8.860.156,152	580.205,738	496,992	330°40'54"
15+720	8.860.138,714	580.215,532	496,750	330°40'54"
15+740	8.860.121,275	580.225,325	496,509	330°40'54"
15+760	8.860.103,837	580.235,118	496,267	330°40'54"
15+780	8.860.086,399	580.244,911	496,025	330°40'54"
15+800	8.860.071,014	580.256,951	495,774	304°28'21"
15+820	8.860.059,693	580.273,439	495,518	304°28'21"
15+840	8.860.048,373	580.289,927	495,259	304°28'21"
15+860	8.860.037,053	580.306,415	494,999	304°28'21"
15+880	8.860.025,733	580.322,903	494,740	304°28'21"
15+900	8.860.014,412	580.339,391	494,480	304°28'21"
15+920	8.860.003,092	580.355,879	494,220	304°28'21"
15+940	8.859.991,772	580.372,367	493,961	304°28'21"
15+960	8.859.980,452	580.388,855	493,701	304°28'21"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
15+980	8.859.969,131	580.405,342	493,441	304°28'21"
16+000	8.859.957,811	580.421,830	493,167	304°28'21"
16+020	8.859.946,491	580.438,318	492,907	304°28'21"
16+040	8.859.935,171	580.454,806	492,543	304°28'21"
16+060	8.859.924,549	580.471,690	492,168	294°32'21"
16+080	8.859.916,243	580.489,883	491,558	294°32'21"
16+100	8.859.907,937	580.508,077	490,824	294°32'21"
16+120	8.859.899,630	580.526,270	490,089	294°32'21"
16+140	8.859.891,324	580.544,464	489,355	294°32'21"
16+160	8.859.883,018	580.562,657	488,628	294°32'21"
16+180	8.859.874,711	580.580,851	487,893	294°32'21"
16+200	8.859.866,405	580.599,044	487,159	294°32'21"
16+220	8.859.858,099	580.617,238	486,424	294°32'21"
16+240	8.859.848,471	580.633,991	486,070	340°23'56"
16+260	8.859.829,630	580.640,700	483,888	340°23'56"
16+280	8.859.810,789	580.647,409	481,880	340°23'56"
16+300	8.859.791,948	580.654,119	480,085	340°23'56"
16+320	8.859.777,193	580.667,002	478,940	312°36'15"
16+340	8.859.763,654	580.681,723	478,000	312°36'15"
16+360	8.859.750,115	580.696,444	477,060	312°36'15"
16+380	8.859.736,577	580.711,165	476,120	312°36'15"
16+400	8.859.723,038	580.725,886	475,620	312°36'15"
16+420	8.859.705,631	580.734,775	474,956	340°16'14"
16+440	8.859.686,805	580.741,527	474,584	340°16'14"
16+460	8.859.667,979	580.748,278	474,368	340°16'14"
16+480	8.859.649,153	580.755,030	474,155	340°16'14"
16+500	8.859.630,327	580.761,781	473,940	340°16'14"
16+520	8.859.611,501	580.768,533	473,724	340°16'14"
16+540	8.859.592,675	580.775,284	473,509	340°16'14"
16+560	8.859.573,849	580.782,036	473,293	340°16'14"
16+580	8.859.555,023	580.788,788	473,077	340°16'14"
16+600	8.859.536,417	580.795,968	473,183	325°29'4"
16+620	8.859.519,937	580.807,300	472,868	325°29'4"
16+640	8.859.503,458	580.818,633	472,756	325°29'4"
16+660	8.859.486,978	580.829,965	472,691	325°29'4"
16+680	8.859.470,499	580.841,298	472,627	325°29'4"
16+700	8.859.454,019	580.852,630	472,563	325°29'4"
16+720	8.859.437,540	580.863,963	472,498	325°29'4"
16+740	8.859.421,060	580.875,296	472,434	325°29'4"
16+760	8.859.404,581	580.886,628	472,366	325°29'4"
16+780	8.859.388,101	580.897,961	472,301	325°29'4"
16+800	8.859.371,622	580.909,293	472,237	325°29'4"
16+820	8.859.355,142	580.920,626	472,173	325°29'4"
16+840	8.859.338,663	580.931,958	472,108	325°29'4"
16+860	8.859.322,184	580.943,291	472,043	325°29'4"
16+880	8.859.305,704	580.954,624	471,979	325°29'4"
16+900	8.859.289,225	580.965,956	471,914	325°29'4"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
16+920	8.859.272,745	580.977,289	471,848	325°29'4"
16+940	8.859.256,266	580.988,621	471,783	325°29'4"
16+960	8.859.239,786	580.999,954	471,719	325°29'4"
16+980	8.859.223,307	581.011,286	471,655	325°29'4"
17+000	8.859.209,171	581.025,058	471,447	306°48'8"
17+020	8.859.197,190	581.041,073	471,180	306°48'8"
17+040	8.859.185,209	581.057,087	470,898	306°48'8"
17+060	8.859.173,228	581.073,101	470,614	306°48'8"
17+080	8.859.161,247	581.089,115	470,340	306°48'8"
17+100	8.859.149,266	581.105,129	470,057	306°48'8"
17+120	8.859.137,285	581.121,143	469,773	306°48'8"
17+140	8.859.125,303	581.137,157	469,490	306°48'8"
17+160	8.859.116,125	581.154,748	469,381	291°53'59"
17+180	8.859.108,665	581.173,304	469,395	291°53'59"
17+200	8.859.101,206	581.191,861	469,397	291°53'59"
17+220	8.859.093,746	581.210,418	469,397	291°53'59"
17+240	8.859.086,286	581.228,975	469,394	291°53'59"
17+260	8.859.078,827	581.247,532	469,394	291°53'59"
17+280	8.859.071,367	581.266,088	469,394	291°53'59"
17+300	8.859.063,907	581.284,645	469,394	291°53'59"
17+320	8.859.056,448	581.303,202	469,390	291°53'59"
17+340	8.859.048,988	581.321,759	469,390	291°53'59"
17+360	8.859.041,528	581.340,315	469,390	291°53'59"
17+380	8.859.034,069	581.358,872	469,390	291°53'59"
17+400	8.859.026,609	581.377,429	469,337	291°53'59"
17+420	8.859.019,593	581.396,101	469,283	277°9'41"
17+440	8.859.017,100	581.415,945	469,241	277°9'41"
17+460	8.859.014,607	581.435,789	469,111	277°9'41"
17+480	8.859.012,114	581.455,633	468,981	277°9'41"
17+500	8.859.009,620	581.475,477	468,851	277°9'41"
17+520	8.859.007,127	581.495,321	468,722	277°9'41"
17+540	8.859.004,634	581.515,165	468,592	277°9'41"
17+560	8.859.002,141	581.535,009	468,464	277°9'41"
17+580	8.858.999,647	581.554,853	468,334	277°9'41"
17+600	8.858.997,154	581.574,697	468,204	277°9'41"
17+620	8.858.994,661	581.594,541	468,074	277°9'41"
17+640	8.858.992,168	581.614,385	467,944	277°9'41"
17+660	8.858.989,674	581.634,229	467,814	277°9'41"
17+680	8.858.987,181	581.654,073	467,685	277°9'41"
17+700	8.858.984,688	581.673,916	467,555	277°9'41"
17+720	8.858.982,195	581.693,760	467,425	277°9'41"
17+740	8.858.979,701	581.713,604	467,295	277°9'41"
17+760	8.858.977,208	581.733,448	467,165	277°9'41"
17+780	8.858.974,715	581.753,292	467,035	277°9'41"
17+800	8.858.972,222	581.773,136	466,905	277°9'41"
17+820	8.858.969,728	581.792,980	466,776	277°9'41"
17+840	8.858.967,235	581.812,824	466,646	277°9'41"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
17+860	8.858.964,742	581.832,668	466,516	277°9'41"
17+880	8.858.962,249	581.852,512	466,386	277°9'41"
17+900	8.858.959,755	581.872,356	466,256	277°9'41"
17+920	8.858.957,262	581.892,200	466,126	277°9'41"
17+940	8.858.954,769	581.912,044	465,996	277°9'41"
17+960	8.858.952,276	581.931,888	465,867	277°9'41"
17+980	8.858.949,782	581.951,732	465,737	277°9'41"
18+000	8.858.947,289	581.971,576	465,607	277°9'41"
18+020	8.858.944,796	581.991,420	465,477	277°9'41"
18+040	8.858.942,303	582.011,264	465,347	277°9'41"
18+060	8.858.939,809	582.031,108	465,217	277°9'41"
18+080	8.858.933,156	582.049,539	464,978	300°21'14"
18+100	8.858.923,050	582.066,798	464,711	300°21'14"
18+120	8.858.912,943	582.084,056	464,434	300°21'14"
18+140	8.858.902,836	582.101,315	464,153	300°21'14"
18+160	8.858.892,729	582.118,573	463,872	300°21'14"
18+180	8.858.882,622	582.135,831	463,592	300°21'14"
18+200	8.858.872,515	582.153,090	463,311	300°21'14"
18+220	8.858.862,409	582.170,348	463,030	300°21'14"
18+240	8.858.852,302	582.187,607	462,749	300°21'14"
18+260	8.858.842,195	582.204,865	462,468	300°21'14"
18+280	8.858.832,088	582.222,123	462,188	300°21'14"
18+300	8.858.821,981	582.239,382	461,907	300°21'14"
18+320	8.858.811,874	582.256,640	461,626	300°21'14"
18+340	8.858.801,768	582.273,899	461,345	300°21'14"
18+360	8.858.791,661	582.291,157	461,065	300°21'14"
18+380	8.858.781,554	582.308,415	460,784	300°21'14"
18+400	8.858.771,447	582.325,674	460,503	300°21'14"
18+420	8.858.761,340	582.342,932	460,222	300°21'14"
18+440	8.858.751,234	582.360,191	459,942	300°21'14"
18+460	8.858.741,127	582.377,449	459,661	300°21'14"
18+480	8.858.731,020	582.394,707	459,380	300°21'14"
18+500	8.858.720,913	582.411,966	459,099	300°21'14"
18+520	8.858.710,806	582.429,224	458,818	300°21'14"
18+540	8.858.700,699	582.446,483	458,538	300°21'14"
18+560	8.858.689,687	582.463,159	457,970	305°7'14"
18+580	8.858.678,181	582.479,517	457,306	305°7'14"
18+600	8.858.666,675	582.495,876	456,637	305°7'14"
18+620	8.858.655,169	582.512,235	455,965	305°7'14"
18+640	8.858.643,663	582.528,594	455,297	305°7'14"
18+660	8.858.632,157	582.544,953	454,631	305°7'14"
18+680	8.858.620,684	582.561,335	454,017	304°58'57"
18+700	8.858.609,217	582.577,721	453,420	304°58'57"
18+720	8.858.597,751	582.594,108	452,824	304°58'57"
18+740	8.858.586,284	582.610,494	452,228	304°58'57"
18+760	8.858.574,818	582.626,881	451,632	304°58'57"
18+780	8.858.563,351	582.643,267	451,035	304°58'57"

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MEMÓRIA DE CÁLCULO - LEVANTAMENTO TOPOGRÁFICO
SISTEMA ADUTOR ALGODÕES II
Trecho 5: ETA-JULIO BORGES

ESTACAS (Km)	COORDENADAS		ALTITUDE (m)	AZIMUTE
	NORTE	ESTE		
18+800	8.858.551,884	582.659,654	450,439	304°58'57"
18+820	8.858.540,418	582.676,041	449,843	304°58'57"
18+840	8.858.528,951	582.692,427	449,246	304°58'57"
18+860	8.858.517,485	582.708,814	448,650	304°58'57"
18+880	8.858.506,018	582.725,200	448,054	304°58'57"
18+900	8.858.494,552	582.741,587	447,457	304°58'57"
18+920	8.858.482,887	582.757,829	446,166	307°11'59"
18+940	8.858.470,795	582.773,759	444,654	307°11'59"
18+960	8.858.458,703	582.789,690	442,984	307°11'59"
18+980	8.858.446,611	582.805,621	441,260	307°11'59"
19+000	8.858.434,519	582.821,551	439,535	307°11'59"
19+020	8.858.422,427	582.837,482	437,810	307°11'59"
19+040	8.858.410,336	582.853,413	436,086	307°11'59"
19+060	8.858.392,706	582.847,493	436,179	24°21'21"
19+080	8.858.374,107	582.841,218	436,345	357°22'43"
19+100	8.858.354,128	582.842,133	436,509	357°22'43"
19+120	8.858.334,149	582.843,047	436,673	357°22'43"
19+140	8.858.314,170	582.843,962	436,743	357°22'43"
19+160	8.858.294,191	582.844,877	436,779	357°22'43"
19+180	8.858.274,212	582.845,791	436,763	357°22'43"
19+200	8.858.254,233	582.846,706	436,727	357°22'43"
19+220	8.858.234,253	582.847,621	436,781	357°22'43"
19+240	8.858.214,274	582.848,535	436,869	357°22'43"
19+260	8.858.207,324	582.835,395	437,092	88°16'48"
19+280	8.858.206,724	582.815,404	437,382	88°16'48"
19+300	8.858.206,123	582.795,413	437,671	88°16'48"
19+320	8.858.205,523	582.775,422	437,960	88°16'48"
19+340	8.858.204,922	582.755,431	438,249	88°16'48"
19+360	8.858.204,322	582.735,440	438,539	88°16'48"
19+380	8.858.203,722	582.715,449	438,828	88°16'48"
19+400	8.858.203,121	582.695,458	439,117	88°16'48"
19+420	8.858.202,521	582.675,467	439,406	88°16'48"
19+440	8.858.201,921	582.655,476	439,695	88°16'48"
19+460	8.858.201,320	582.635,485	439,990	88°16'48"
19+480	8.858.200,720	582.615,494	440,288	88°16'48"
19+500	8.858.200,120	582.595,503	440,572	88°16'48"
19+520	8.858.198,005	582.577,106	440,852	358°46'8"
19+540	8.858.178,010	582.577,536	441,141	358°46'8"
19+560	8.858.161,180	582.574,606	441,429	87°48'44"
19+570.103	8.858.160,794	582.564,510	441,575	87°48'44"



3 SERVIÇOS GEOTÉCNICOS



3.1 SONDAGEM A TRADO - BOLETIM DE CAMPO



3.1.1 TRECHO 1: Barragem Algodões II - Espinhos

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
01	O furo nº 01 ficou localizado na O.E da barragem algodões II, como mostra o croqui no verso					
		000/020		Alteração de rocha	2ª	O.E
02		000/000		Cascalho com blocos de rocha	1ª	E
03		000/030		Silte arenoso com pedregulhos. Cor cinza	1ª	E
		030		Alteração de rocha	2ª	
04		010/040		Silte arenoso com pedregulhos. Cor cinza	1ª	
		040		Alteração de rocha	2ª	
05		010/050		Seixo silte arenoso. Cor cinza	1ª	E
		050		Alteração de rocha	2ª	
06		010/110		Silte areno argiloso. Cor amarelada	1ª	E
		110		N.A.		
07		010/030		Silte arenoso. Cor cinza	1ª	E
		030/110		Silte areno argiloso. Cor amarelada	1ª	
		110		N.A.		
08		010/080		Seixo silte areno argiloso. Cor cinza	1ª	E
		080		N.A.		
09		010/080		Seixo silte areno argiloso. Cor cinza	1ª	
		080		N.A.		
10		010/100		Silte arenoso. Cor cinza	1ª	E
		100/150		Silte areno argiloso. Cor amarelada	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 01 - Barragem Algodões II à Espinhos				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 01/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
11		010/060		Cascalho silte arenoso. Cor cinza	1ª	E
		060		Alteração de rocha	1ª	
12		010/150		Silte areno argiloso. Cor amarelada	1ª	E
13		010/035		Silte arenoso. Cor cinza	1ª	E
		035/150		Silte areno argiloso. Cor amarelada	1ª	
14		010/030		Silte areno argiloso. Cor amarelada	1ª	
		030/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
15		010/030		Silte areno argiloso. Cor amarelada	1ª	E
		030/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
16		010/030		Silte arenoso. Cor cinza	1ª	E
		030/150		Silte areno argiloso. Cor amarelada	1ª	
17		010/050		Silte arenoso. Cor cinza	1ª	E
		050/150		Silte areno argiloso. Cor amarelada	1ª	
18		010/030		Silte arenoso. Cor cinza	1ª	E
		030/150		Silte areno argiloso. Cor amarelada	1ª	
19		010/030		Silte arenoso. Cor cinza	1ª	
		030/150		Silte areno argiloso. Cor amarelada	1ª	
20		010/150		Silte areno argiloso. Cor amarelada	1ª	E
21		010/150		Silte areno argiloso. Cor amarelada	1ª	E
22		010/020		Silte arenoso. Cor cinza	1ª	E
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 01 - Barragem Algodões II à Espinhos				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 02/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		020/040		Cascalho silte arenoso. Cor cinza	1ª	
		040/150		Cascalho silte areno argiloso. Cor variegada	1ª	
23		010/040		Silte arenoso com pedregulhos. Cor amarelada	1ª	
		040/150		Silte areno argiloso. Cor amarelada	1ª	
24		010/040		Silte arenoso com pedregulhos. Cor amarelada	1ª	E
		040/150		Silte areno argiloso. Cor amarelada	1ª	
25		010/060		Silte areno argiloso com pedregulhos. Cor avermelhada	1ª	E
		060/100		Argila siltosa. Cor cinza (Massapê)	a	
		100		Alteração de rocha	2ª	
26		010/050		Cascalho silte arenoso. Cor cinza	1ª	E
		050/100		Silte argiloso. Cor amarelada	1ª	
		100		Alteração de rocha	2ª	
27		010/100		Silte argiloso com pedregulhos. Cor cinza escuro. (Massapê)	1ª	E
		100		Impenetrável		
28		010/040		Silte argiloso. Cor cinza	1ª	
		040/150		Argila siltosa. Cor roxa (Massapê)	1ª	
29		010/040		Silte argiloso. Cor cinza	1ª	E
		040/150		Argila siltosa. Cor roxa (Massapê)	1ª	
30		010/100		Argila siltosa. Cor roxa (Massapê)	1ª	E
		100		N.A.		
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 01 - Barragem Algodões II à Espinhos				CONSÓRCIO: ENGESOFTE/SISINFO		DATA: MAR/2005
						FOLHA: 03/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
31		010/020		Cascalho silte arenoso. Cor cinza	1	E
		020/080		Cascalho silte areno argiloso. Cor amarelada	1ª	
		080		Alteração de rocha	2ª	
32		010/080		Cascalho silte arenoso. Cor cinza	1ª	E
		080/100		Cascalho silte areno argiloso. Cor amarelada	1ª	
		100		Alteração de rocha	2ª	
33		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	E
34		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
35		000/000		N.A.		E
36		000/020		Cascalho silte areno argiloso. Cor amarelada	1ª	E
		020		Impenetrável	3ª	
37		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	E
38		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
39		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	E
40		010/150		Silte areno argiloso. Cor cinza (Massapê)	1ª	E
41		010/150		Silte argiloso. Cor roxa (Massapê)	1ª	E
42		010/150		Silte areno argiloso. Cor cinza	1ª	E
43		010/030		Silte argiloso. Cor cinza	1ª	E
		030/150		Argila siltosa. Cor roxa (Massapê)	1ª	
44		010/030		Silte argiloso. Cor cinza	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 01 - Barragem Algodões II à Espinhos				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 04/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		030/150		Argila siltosa. Cor roxa (Massapê)	1ª	
45		010/030		Silte arenoso. Cor cinza	1ª	E
		030/150		Argila siltosa. Cor roxa (Massapê)	1ª	
46		010/030		Silte areno argiloso. Cor cinza	1ª	E
		030/150		Argila siltosa. Cor cinza escuro (Massapê)	1ª	
47		000/000		N.A. (Massapê)		E
48		010/050		Silte argiloso. Cor cinza	1ª	
		050/150		Argila siltosa. Cor roxa (Massapê)	1ª	
49		010/050		Silte argiloso. Cor cinza	1ª	E
		050/150		Argila siltosa. Cor roxa (Massapê)	1ª	
50		010/030		Silte areno argiloso. Cor cinza	1ª	E
		030/150		Silte argiloso. Cor cinza escuro (Massapê)	1ª	
51		010/040		Silte areno argiloso. Cor cinza	1ª	E
		040/150		Silte areno argiloso. Cor cinza	1ª	
52		010/030		Silte argiloso. Cor cinza (Massapê)	1ª	E
		030/150		Argila siltosa. Cor roxa (Massapê)	1ª	
53		010/040		Argila siltosa. Cor cinza (Massapê)	1ª	
		040/150		Argila siltosa. Cor roxa (Massapê)	1ª	
54		010/040		Argila siltosa. Cor cinza (Massapê)	1ª	E
		040/150		Argila siltosa. Cor roxa (Massapê)	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 01 - Barragem Algodões II à Espinhos				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005 FOLHA: 05/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
55		010/150		Argila siltosa. Cor roxa (Massapê)	1ª	E
56		010/030		Silte argiloso. Cor cinza	1ª	E
		030/150		Argila siltosa. Cor roxa (Massapê)	1ª	
57		010/030		Silte argiloso. Cor cinza	1ª	E
		030/150		Argila siltosa. Cor roxa (Massapê)	1ª	
58		010/050		Silte argiloso. Cor cinza	1ª	
		050/150		Argila siltosa. Cor roxa (Massapê)	1ª	
59		010/050		Silte argiloso. Cor cinza	1ª	E
		050/150		Argila siltosa. Cor roxa (Massapê)	1ª	
60		010/110		Silte arenoso. Cor cinza	1ª	E
		110/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
61		010/150		Silte areno argiloso. Cor avermelhada	1ª	E
62		010/040		Areia fina. Cor cinza	1ª	E
		040/070		Silte arenoso. Cor cinza	1ª	
		070/150		Silte areno argiloso. Cor amarelada	1ª	
63		010/030		Silte arenoso. Cor cinza	1ª	E
		030/150		Silte areno argiloso. Cor amarelada	1ª	
64		010/030		Silte arenoso. Cor cinza	1ª	
		030/150		Silte areno argiloso. Cor amarelada	1ª	
65		010/115		Silte areno argiloso. Cor amarelada	1ª	E
		115/150		Silte areno argiloso. Cor variegada	1ª	
Final do trecho no entrocamento de Curimatá/Avelino Lopes						
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 01 - Barragem Algodões II à Espinhos				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005 FOLHA: 06/06



3.1.2 TRECHO 2: Espinhos - Curimatá

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
01	O furo nº 01 é igual ao furo 52 do trecho 01 (Algodões II à Espinho)					
		000/115		Silte areno argiloso. Cor amarelada	1ª	
		115/150		Silte areno argiloso. Cor variegada	1ª	
02		010/150		Silte areno argiloso. Cor avermelhada	1ª	E
03		010/030		Cascalho silte arenoso. Cor amarelada	1ª	
		030/150		Silte arenoso. Cor amarelada	1ª	
04		010/030		Cascalho silte arenoso. Cor amarelada	1ª	E
		030/150		Silte arenoso. Cor amarelada	1ª	
05		010/150		Silte areno argiloso. Cor amarelada	1ª	E
06		010/070		Cascalho silte areno argiloso. Cor amarelada	1ª	E
		070/100		Silte argiloso com pedregulhos. Cor variegada	1ª	
07		010/070		Silte areno argiloso. Cor amarelada	1ª	E
		070		Alteração de rocha	2ª	
08		010/150		Silte areno argiloso. Cor amarelada	1ª	E
09		010/150		Silte areno argiloso. Cor amarelada	1ª	
10		010/150		Silte areno argiloso. Cor amarelada	1ª	E
11		010/030		Silte arenoso. Cor cinza	1ª	E
		030/150		Silte areno argiloso. Cor amarelada	1ª	
12		010/050		Silte arenoso. Cor cinza	1ª	E
		050/150		Silte areno argiloso. Cor amarelada	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 02 - Do entrocamento Espinhos à cidade de Curimatá				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005 FOLHA: 01/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
13		010/060		Cascalho silte areno argiloso. Cor amarelada	1ª	E
		060		Alteração de rocha	2ª	
14		010/060		Cascalho silte areno argiloso. Cor amarelada	1ª	
		060		Alteração de rocha	2ª	
15		010/150		Silte areno argiloso. Cor amarelada	1ª	E
16		010/150		Silte areno argiloso. Cor amarelada	1ª	E
17		010/150		Silte areno argiloso. Cor avermelhada	1ª	E
18		010/150		Silte areno argiloso. Cor amarelada	1ª	
		150		N.A.		
19		010/150		Silte areno argiloso. Cor amarelada	1ª	E
		150		N.A.		
20		010/100		Silte areno argiloso. Cor amarelada	1ª	E
		100		N.A.		
21		010/150		Silte arenoso. Cor cinza	1ª	E
22		010/030		Silte areno argiloso. Cor cinza	1ª	E
		030/150		Argila siltosa. Cor cinza escuro (Massapê)	1ª	
23		010/150		Silte areno argiloso. Cor cinza	1ª	E
24		010/150		Silte areno argiloso. Cor cinza	1ª	
25		000/000		N.A. (Lagoa)		E
26		010/060		Silte areno argiloso. Cor cinza	1ª	E
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 02 - Do entrocamento Espinhos à cidade de Curimatá				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005 FOLHA: 02/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		060		N.A. (Lagoa)		
27		000/000		N.A. (Lagoa)		E
28		010/060		Silte arenoso. Cor cinza	1ª	
		060/150		Silte areno argiloso. Cor amarelada	1ª	
29		010/060		Silte arenoso. Cor cinza	1ª	E
		060/150		Silte areno argiloso. Cor amarelada	1ª	
30		010/100		Silte areno argiloso. Cor amarelada	1ª	E
		100/150		Silte argiloso com pedregulhos. Cor cinza (Massapê)	1ª	
31		010/020		Silte arenoso. Cor amarelada	1ª	E
		020/150		Silte areno argiloso. Cor cinza escuro (Massapê)	1ª	
32		010/020		Silte arenoso. Cor amarelada	1ª	E
		020/150		Argila siltosa. Cor roxa (Massapê)	1ª	
33		010/020		Silte arenoso. Cor amarelada	1ª	
		020/150		Argila siltosa. Cor roxa (Massapê)	1ª	
34		010/025		Silte arenoso. Cor cinza	1ª	E
		025/080		Silte argiloso. Cor roxa (Massapê)	1ª	
		080		N.A. (Lagoa)		
35		010/040		Silte arenoso. Cor cinza	1ª	E
		040/150		Silte areno argiloso. Cor amarelada	1ª	
36		010/070		Silte arenoso. Cor cinza	1ª	E
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 02 - Do entrocamento Espinhos à cidade de Curimatá				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 03/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		070/110		Areia siltosa com pedregulhos. Cor cinza	1ª	
		110/150		Silte argiloso. Cor variegada (Massapê)	1ª	
37		010/040		Silte arenoso. Cor cinza	1ª	E
		040/150		Silte areno argiloso. Cor avermelhada	1ª	
38		010/040		Silte arenoso. Cor cinza	1ª	E
		040/150		Silte areno argiloso. Cor amarelada	1ª	
39		010/040		Silte arenoso. Cor cinza	1ª	
		040/150		Silte areno argiloso. Cor amarelada	1ª	
40		010/090		Silte arenoso. Cor cinza	1ª	E
		090/150		Silte areno argiloso. Cor amarelada	1ª	
41		010/150		Silte arenoso. Cor cinza	1ª	E
42		010/150		Areia siltosa. Cor cinza	1ª	E
43		010/060		Silte arenoso. Cor cinza	1ª	
		060/150		Silte areno argiloso. Cor amarelada	1ª	
44		010/060		Silte arenoso. Cor cinza	1ª	E
		060/150		Silte areno argiloso. Cor amarelada	1ª	
45		010/030		Silte arenoso. Cor cinza	1ª	E
		030/150		Silte areno argiloso. Cor amarelada	1ª	
46		010/080		Silte areno argiloso. Cor amarelada	1ª	E
		080		Impenetrável	3ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 02 - Do entrocamento Espinhos à cidade de Curimatá				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 04/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
47		010/150		Silte arenoso. Cor cinza	1ª	E
48		010/150		Silte arenoso. Cor cinza	1ª	E
49		010/150		Silte arenoso. Cor cinza	1ª	
50		010/150		Silte arenoso. Cor cinza	1ª	E
51		010/030		Silte arenoso. Cor amarelada	1ª	E
		030/150		Silte areno argiloso. Cor amarelada	1ª	
52		010/070		Silte arenoso. Cor cinza	1ª	E
		070		Impenetrável	3ª	
53		010/090		Silte arenoso. Cor cinza	1ª	
		090		Impenetrável	3ª	
54		010/090		Silte arenoso. Cor cinza	1ª	E
		090		Impenetrável	3ª	
55		010/030		Silte arenoso. Cor cinza	1ª	E
		030/100		Silte areno argiloso. Cor amarelada	1ª	
		100		Impenetrável	3ª	
56		010/080		Silte arenoso. Cor cinza	1ª	E
		080/150		Silte arenoso. Cor variegada	1ª	
57		010/030		Silte arenoso. Cor cinza	1ª	E
		030/150		Silte areno argiloso. Cor amarelada	1ª	
58		010/050		Silte arenoso. Cor cinza	1ª	E
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 02 - Do entrocamento Espinhos à cidade de Curimatá				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005 FOLHA: 05/06

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		050/150		Silte areno argiloso. Cor amarelada	1ª	
59		010/050		Silte arenoso. Cor cinza	1ª	
		050/150		Silte areno argiloso. Cor amarelada	1ª	
60		010/030		Silte arenoso. Cor cinza	1ª	E
		030/150		Silte areno argiloso. Cor amarelada	1ª	
61		010/150		Areia siltosa. Cor cinza	1ª	E
62		010/150		Silte arenoso. Cor cinza	1ª	E
63		010/060		Silte arenoso. Cor cinza	1ª	E
		060/150		Silte areno argiloso. Cor amarelada	1ª	
64		010/060		Silte arenoso. Cor cinza	1ª	
		060/150		Silte areno argiloso. Cor amarelada	1ª	
65		010/150		Silte arenoso. Cor amarelada	1ª	E
66		010/150		Silte areno argiloso. Cor amarelada	1ª	E
Final do trecho 02						
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 02 - Do entrocamento Espinhos à cidade de Curimatá				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 06/06



3.1.3 TRECHO 3: Espinhos - Avelino Lopes

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
01	O furo nº 01 é igual ao furo 52 do trecho 01 (Algodões II à Espinho)					
		000/115		Silte areno argiloso. Cor amarelada	1ª	
		115/150		Silte areno argiloso. Cor variegada	1ª	
02		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	D Corte
03		010/150		Silte areno argiloso. Cor amarelada	1ª	
04		010/150		Silte areno argiloso. Cor amarelada	1ª	D
05		010/150		Silte areno argiloso. Cor amarelada	1ª	D
06		010/060		Silte areno argiloso. Cor amarelada	1ª	D
		060/150		Cascalho silte areno argiloso. Cor variegada	1ª	
07		010/060		Silte areno argiloso. Cor amarelada	1ª	D
		060/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
08		010/080		Silte areno argiloso. Cor amarelada	1ª	
		080/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
09		010/080		Silte areno argiloso. Cor amarelada	1ª	D
		080/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
10		010/100		Cascalho silte areno argiloso. Cor amarelada	1ª	D
		100/150		Cascalho silte areno argiloso. Cor variegada	1ª	
11		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	D
12		010/150		Silte areno argiloso. Cor amarelada	1ª	D
13		010/150		Silte areno argiloso. Cor amarelada	1ª	D
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 01/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
14		010/150		Silte areno argiloso. Cor amarelada	1ª	
15		010/100		Cascalho silte areno argiloso. Cor cinza	1ª	D
		100		Alteração de rocha	2ª	
16		010/150		Silte areno argiloso. Cor amarelada	1ª	D
17		000/010		Cascalho silte areno argiloso. Cor amarelada	1ª	D
		010		Alteração de rocha	2ª	
18		010/150		Silte areno argiloso. Cor amarelada	1ª	
19		010/150		Silte areno argiloso. Cor amarelada	1ª	
20		010/100		Cascalho silte areno argiloso. Cor amarelada	1ª	
		100/150		Silte areno argiloso. Cor amarelada	1ª	
21		010/150		Silte areno argiloso. Cor amarelada	1ª	
22		010/030		Cascalho silte areno argiloso. Cor cinza	1ª	
		030		Alteração de rocha	2ª	
23		010/150		Silte areno argiloso. Cor amarelada	1ª	
24		010/150		Silte areno argiloso. Cor amarelada	1ª	
25		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	D Aterro
26		010/100		Cascalho silte areno argiloso. Cor amarelada	1ª	D Aterro (Bueiro)
		100		Alteração de rocha	2ª	
27		010/080		Cascalho silte areno argiloso. Cor amarelada	1ª	D
		080		Alteração de rocha	2ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005 FOLHA: 02/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
28		010/080		Silte arenoso. Cor cinza	1ª	D
		080/090		Cascalho silte areno argiloso. Cor cinza	1ª	
		090		Alteração de rocha	2ª	
29		010/080		Silte arenoso. Cor cinza	1ª	
		080		Alteração de rocha	2ª	
30		010/060		Silte arenoso. Cor cinza	1ª	D
		060		Alteração de rocha	2ª	
31		010/150		Silte areno argiloso. Cor amarelada	1ª	D
32		010/150		Silte areno argiloso. Cor amarelada	1ª	D
33		010/150		Silte areno argiloso. Cor amarelada	1ª	
34		010/150		Silte areno argiloso. Cor amarelada	1ª	D
35		010/150		Silte areno argiloso. Cor amarelada	1ª	D
36		010/150		Silte areno argiloso. Cor amarelada	1ª	D
37		010/150		Silte areno argiloso. Cor amarelada	1ª	D
38		010/150		Silte areno argiloso. Cor amarelada	1ª	
39		010/150		Silte areno argiloso. Cor amarelada	1ª	D
40		010/150		Silte areno argiloso. Cor amarelada	1ª	D
41		010/150		Silte areno argiloso. Cor amarelada	1ª	D
42		010/150		Silte areno argiloso. Cor amarelada	1ª	D
43		010/150		Silte areno argiloso. Cor amarelada	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005 FOLHA: 03/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
44		010/150		Silte areno argiloso. Cor amarelada	1ª	D
45		010/150		Silte areno argiloso. Cor amarelada	1ª	D
46		010/150		Silte areno argiloso. Cor amarelada	1ª	D
47		010/150		Silte areno argiloso. Cor amarelada	1ª	D
48		010/150		Silte areno argiloso. Cor amarelada	1ª	
49		010/150		Silte areno argiloso. Cor amarelada	1ª	D
50		010/150		Silte areno argiloso. Cor amarelada	1ª	D
51		010/150		Silte areno argiloso. Cor amarelada	1ª	D
52		010/060		Cascalho silte areno argiloso. Cor amarelada	1ª	D
		060		Impenetrável	3ª	
53		010/150		Silte areno argiloso. Cor amarelada	1ª	
54		010/150		Silte areno argiloso. Cor amarelada	1ª	D
55		010/100		Cascalho silte arenoso. Cor cinza	1ª	D
		100		Alteração de rocha	2ª	
56		010/020		Cascalho silte areno argiloso. Cor amarelada	1ª	D
		020		Alteração de rocha	2ª	
57		010/020		Silte arenoso. Cor cinza	1ª	D
		020/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
58		010/150		Silte areno argiloso. Cor amarelada	1ª	D
59		010/150		Silte areno argiloso. Cor amarelada	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 04/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
60		010/020		Silte arenoso. Cor cinza	1ª	D
		020/150		Silte areno argiloso. Cor amarelada	1ª	
61		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	D
62		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	D Aterro (N.A.)
63		010/110		Cascalho silte areno argiloso. Cor cinza	1ª	D
		110		Alteração de rocha	2ª	
64		010/110		Cascalho silte areno argiloso. Cor cinza	1ª	
		110		Alteração de rocha	2ª	
65		010/150		Silte areno argiloso. Cor amarelada	1ª	D
66		010/150		Silte areno argiloso. Cor amarelada	1ª	D
67		010/150		Silte areno argiloso. Cor amarelada	1ª	D
68		010/150		Silte areno argiloso. Cor amarelada	1ª	D
69		010/150		Silte areno argiloso. Cor amarelada	1ª	
70		010/150		Silte areno argiloso. Cor amarelada	1ª	D
71		010/150		Silte areno argiloso. Cor amarelada	1ª	D
72		010/150		Silte areno argiloso. Cor amarelada	1ª	D
73		010/150		Silte areno argiloso. Cor amarelada	1ª	
74		010/150		Silte areno argiloso. Cor amarelada	1ª	D
75		010/150		Silte areno argiloso. Cor amarelada	1ª	D
76		010/150		Silte areno argiloso. Cor amarelada	1ª	D
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005 FOLHA: 05/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
77		010/150		Silte areno argiloso. Cor amarelada	1ª	D
78		010/070		Silte areno argiloso. Cor amarelada	1ª	
		070		Impenetrável	3ª	
79		010/070		Silte areno argiloso. Cor amarelada	1ª	D
		070		Impenetrável	3ª	
80		010/150		Silte areno argiloso. Cor amarelada	1ª	D
81		010/150		Silte areno argiloso. Cor amarelada	1ª	D
82		010/070		Silte areno argiloso. Cor amarelada	1ª	D
		070/080		Cascalho silte areno argiloso. Cor amarelada	1ª	
		080		Alteração de rocha	2ª	
83		010/090		Silte areno argiloso com pedregulhos. Cor amarelada	1ª	D
		090		Alteração de rocha	2ª	
84		010/090		Silte areno argiloso com pedregulhos. Cor amarelada	1ª	
		090		Alteração de rocha	2ª	
85		010/150		Silte areno argiloso. Cor amarelada	1ª	D
86		010/150		Silte areno argiloso. Cor amarelada	1ª	D
87		010/020		Alteração de rocha	2ª	D
88		000/000		N.A. Aterro da barragem		D
89		010/150		Silte areno argiloso. Cor amarelada	1ª	
90		010/150		Silte areno argiloso. Cor amarelada	1ª	D
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 06/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
91		010/100		Cascalho silte areno argiloso. Cor amarelada	1ª	D
		100		Alteração de rocha	2ª	
92		010/110		Cascalho silte areno argiloso. Cor cinza	1ª	D
		110		Alteração de rocha	2ª	
93		010/150		Silte areno argiloso. Cor amarelada	1ª	D
94		010/150		Silte areno argiloso. Cor amarelada	1ª	
95		010/150		Silte areno argiloso. Cor amarelada	1ª	D
96		010/150		Silte areno argiloso. Cor amarelada	1ª	D
97		010/150		Silte areno argiloso. Cor amarelada	1ª	D
98		010/150		Silte areno argiloso. Cor amarelada	1ª	D
99		010/150		Silte areno argiloso. Cor amarelada	1ª	
100		010/150		Silte areno argiloso. Cor amarelada	1ª	D
101		010/150		Silte areno argiloso. Cor amarelada	1ª	D
102		010/040		Silte areno argiloso. Cor cinza	1ª	D
		040/150		Silte areno argiloso. Cor amarelada	1ª	
103		010/150		Silte areno argiloso. Cor amarelada	1ª	D
104		010/150		Silte areno argiloso. Cor amarelada	1ª	
105		010/150		Silte areno argiloso. Cor amarelada	1ª	D
106		010/050		Silte areno argiloso. Cor amarelada	1ª	D
		050/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005 FOLHA: 07/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
107		010/070		Cascalho silte areno argiloso. Cor cinza	1ª	D Corte
		070		Alteração de rocha	2ª	
108		010/100		Silte areno argiloso. Cor avermelhada	1ª	D Aterro
		100		N.A.		
109		010/100		Silte areno argiloso. Cor avermelhada	1ª	
		100		N.A.		
110		010/030		Cascalho silte areno argiloso. Cor amarelada	1ª	D Corte
		030		Alteração de rocha	2ª	
111		010/030		Cascalho silte areno argiloso. Cor amarelada	1ª	D
		030		Alteração de rocha	2ª	
112		010/150		Silte areno argiloso. Cor amarelada	1ª	D
113		010/150		Silte areno argiloso. Cor amarelada	1ª	D
114		010/150		Silte areno argiloso. Cor amarelada	1ª	
115		010/150		Silte areno argiloso. Cor amarelada	1ª	D
116		010/150		Silte areno argiloso. Cor amarelada	1ª	D
117		010/050		Silte areno argiloso. Cor amarelada	1ª	D
		050/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
118		010/100		Silte areno argiloso. Cor amarelada	1ª	D
		100/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
119		010/100		Silte areno argiloso. Cor amarelada	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 08/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		100/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
120		010/150		Silte areno argiloso. Cor amarelada	1ª	D
121		010/150		Silte areno argiloso. Cor amarelada	1ª	D
122		010/150		Silte areno argiloso. Cor amarelada	1ª	D
123		010/150		Silte areno argiloso. Cor amarelada	1ª	D
124		010/150		Silte areno argiloso. Cor amarelada	1ª	
125		010/040		Silte areno argiloso. Cor amarelada	1ª	D
		040/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
126		010/060		Silte arenoso. Cor cinza	1ª	D
		060/090		Cascalho silte areno argiloso. Cor amarelada	1ª	
		090		Alteração de rocha	2ª	
127		010/050		Silte areno argiloso. Cor amarelada	1ª	D
		050/110		Cascalho silte areno argiloso. Cor amarelada	1ª	
		110		Alteração de rocha	2ª	
128		010/150		Silte areno argiloso. Cor amarelada	1ª	D
129		010/150		Silte areno argiloso. Cor amarelada	1ª	
130		010/150		Silte areno argiloso. Cor amarelada	1ª	D
131		010/100		Silte arenoso. Cor amarelada	1ª	D
		100/150		Silte areno argiloso. Cor amarelada	1ª	
132		010/020		Cascalho silte areno argiloso. Cor amarelada	1ª	D
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 09/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		020		Alteração de rocha	2ª	
133		010/150		Silte areno argiloso. Cor amarelada	1ª	D
134		010/150		Silte areno argiloso. Cor amarelada	1ª	
135		010/050		Silte areno argiloso. Cor amarelada	1ª	D
		050/110		Cascalho silte areno argiloso. Cor amarelada	1ª	
		110		Alteração de rocha	2ª	
136		010/100		Silte areno argiloso. Cor amarelada	1ª	D
		100		Impenetrável	3ª	
137		010/080		Silte areno argiloso. Cor amarelada	1ª	D
		080/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
138		010/100		Silte areno argiloso. Cor amarelada	1ª	D
		100		Impenetrável	3ª	
139		010/100		Silte areno argiloso. Cor amarelada	1ª	
		100		Impenetrável	3ª	
140		010/150		Silte areno argiloso. Cor amarelada	1ª	D
141		010/110		Cascalho silte areno argiloso. Cor amarelada	1ª	D
		110		Impenetrável	3ª	
142		010/060		Cascalho silte arenoso. Cor cinza	1ª	D
		060		Alteração de rocha	2ª	
143		010/020		Cascalho silte areno argiloso. Cor amarelada	1ª	D Corte
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 10/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		020		Alteração de rocha	2ª	
144		010/020		Cascalho silte areno argiloso. Cor amarelada	1ª	
		020		Alteração de rocha	2ª	
145		010/025		Silte areno argiloso. Cor amarelada	1ª	D
		025/090		Cascalho silte areno argiloso. Cor amarelada	1ª	
		090		Alteração de rocha	2ª	
146		010/040		Cascalho silte areno argiloso. Cor amarelada	1ª	D
		040		Impenetrável	3ª	
147		010/015		Cascalho silte areno argiloso. Cor amarelada	1ª	D Corte
		015		Alteração de rocha	2ª	
148		000/000		N.A.		D Aterro Barragem
149		000/000		N.A.		
150		000/000		N.A. Rio		D Ponte
151		000/000		N.A.		D Aterro Barragem
152		010/030		Silte arenoso. Cor cinza	1ª	D
		030/150		Silte areno argiloso. Cor amarelada	1ª	
153		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	D Zona Urbana
154		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
155	Av. Sergio Gama N.º 102					
		000/150		Silte areno argiloso. Cor amarelada	1ª	D
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 11/12

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
156	Av. Sergio Gama N.º 250					
		000/150		Silte areno argiloso. Cor amarelada	1ª	D
157	Av. Sergio Gama com Rua 15 de Novembro					
		000/150		Silte areno argiloso. Cor amarelada	1ª	D
Final do trecho 3 Avelino Lopes - PI						
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 03 - Do entrocamento de Espinhos à Avelino Lopes				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 12/12



3.1.4 TRECHOS 4: Barragem Algodões II - Júlio Borges

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
01	O furo nº 01 ficou localizado na 0.E da barragem Algodões II.					
		000/020		Alteração de rocha	2ª	
02		000/030		Cascalho silte areno argiloso. Cor amarelada	1ª	
		030		Alteração de rocha	2ª	
03		000/020		Silte areno argiloso com pedregulhos. Cor amarelada	1ª	
		020		Alteração de rocha	2ª	
04		000/020		Silte areno argiloso com pedregulhos. Cor amarelada	1ª	
		020		Alteração de rocha	2ª	
05		000/040		Silte areno argiloso. Cor amarelada	1ª	
		040		Alteração de rocha	2ª	
06		010/150		Silte areno argiloso. Cor amarelada	1ª	
07		010/030		Silte areno argiloso. Cor amarelada	1ª	
		130/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
08		010/150		Silte areno argiloso. Cor avermelhada	1ª	
09		010/150		Silte areno argiloso. Cor avermelhada	1ª	
10		010/150		Silte areno argiloso. Cor avermelhada	1ª	
11		010/090		Cascalho silte areno argiloso. Cor avermelhada	1ª	
		090		Alteração de rocha	2ª	
12		010/150		Silte areno argiloso. Cor amarelada	1ª	
13		010/150		Silte areno argiloso. Cor avermelhada	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 04 - Barragem Algodões II à Júlio Borges				CONSÓRCIO: ENGESOF/SISINFO		DATA: MAR/2005
						FOLHA: 01/08

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
14		010/150		Silte areno argiloso. Cor avermelhada	1ª	
15		010/150		Silte areno argiloso. Cor avermelhada	1ª	
16		010/150		Silte areno argiloso. Cor avermelhada	1ª	
17		010/150		Cascalho silte areno argiloso. Cor avermelhada	1ª	Aterro
18		010/100		Silte arenoso. Cor cinza	1ª	
		100/150		Silte argiloso. Cor cinza	1ª	
19		010/100		Silte arenoso. Cor cinza	1ª	
		100/150		Silte argiloso. Cor cinza	1ª	
20		010/150		Silte areno argiloso. Cor cinza	1ª	
21		010/075		Silte areno argiloso. Cor cinza	1ª	
		075/100		Cascalho silte areno argiloso. Cor avermelhada	1ª	
		100		Alteração de rocha	2ª	
22		010/150		Silte areno argiloso. Cor amarelada	1ª	
23		010/100		Cascalho silte arenoso. Cor cinza	1ª	
		100		Alteração de rocha	2ª	
24		010/100		Cascalho silte arenoso. Cor cinza	1ª	
		100		Alteração de rocha	2ª	
25		010/150		Silte areno argiloso. Cor avermelhada	1ª	
26		000/060		Cascalho silte areno argiloso. Cor amarelada	1ª	
		060		Alteração de rocha	2ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 04 - Barragem Algodões II à Júlio Borges				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 02/08

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
27		000/070		Cascalho silte areno argiloso. Cor amarelada	1ª	
		070		Alteração de rocha	2ª	
28		000/020		Silte arenoso. Cor cinza	1ª	
		020		Rocha	3ª	
29		000/020		Silte arenoso. Cor cinza	1ª	
		020		Rocha	3ª	
30		010/150		Silte areno argiloso. Cor amarelada	1ª	
31		000/050		Cascalho silte areno argiloso. Cor amarelada	1ª	
		050		Rocha	3ª	
32		000/120		Cascalho silte areno argiloso. Cor amarelada	1ª	
		120		Alteração de rocha	2ª	
33		010/100		Cascalho silte arenoso. Cor cinza	1ª	
		100		Alteração de rocha	2ª	
34		010/100		Cascalho silte arenoso. Cor cinza	1ª	
		100		Alteração de rocha	2ª	
35		000/030		Cascalho silte areno argiloso. Cor cinza	1ª	
		030		Alteração de rocha	2ª	
36		000/060		Cascalho silte areno argiloso. Cor cinza	1ª	
		060		Alteração de rocha	2ª	
37		000/040		Silte areno argiloso. Cor cinza	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 04 - Barragem Algodões II à Júlio Borges				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 03/08

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		040/060		Cascalho silte areno argiloso	1ª	
		060		Rocha	3ª	
38		000/030		Silte arenoso. Cor cinza	1ª	
		030/100		Silte areno argiloso. Cor cinza	1ª	
		100/150		Cascalho silte areno argiloso. Cor variegada	1ª	
39		000/030		Silte arenoso. Cor cinza	1ª	
		030/100		Silte areno argiloso. Cor cinza	1ª	
		100/150		Cascalho silte areno argiloso. Cor variegada	1ª	
40		000/020		Silte arenoso com pedregulhos. Cor cinza	1ª	
		020		Rocha	3ª	
41		000/050		Cascalho silte areno argiloso. Cor amarelada	1ª	
		050		Alteração de rocha	2ª	
42		000/150		Silte areno argiloso. Cor amarelada	1ª	
43		000/150		Silte areno argiloso. Cor amarelada	1ª	
44		000/150		Silte areno argiloso. Cor amarelada	1ª	
45		000/150		Silte areno argiloso. Cor amarelada	1ª	
46		000/150		Silte areno argiloso. Cor amarelada	1ª	
47		000/040		Cascalho silte areno argiloso. Cor amarelada	1ª	
		040		Alteração de rocha	2ª	
48		000/150		Silte areno argiloso. Cor amarelada	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 04 - Barragem Algodões II à Júlio Borges				CONSÓRCIO: ENGESoft/SISINFO		DATA: MAR/2005
						FOLHA: 04/08

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
49		000/150		Silte areno argiloso. Cor amarelada	1ª	
50		000/060		Silte areno argiloso. Cor amarelada	1ª	
		060		Alteração de rocha	2ª	
51		000/030		Cascalho silte areno argiloso. Cor amarelada	1ª	
		030		Alteração de rocha	2ª	
52		000/150		Silte areno argiloso. Cor amarelada	1ª	
53		000/150		Silte areno argiloso. Cor amarelada	1ª	
54		000/150		Silte areno argiloso. Cor amarelada	1ª	
55		000/150		Silte areno argiloso. Cor amarelada	1ª	
56		000/080		Silte areno argiloso. Cor amarelada	1ª	
		080		Alteração de rocha	2ª	
57		000/150		Silte areno argiloso. Cor amarelada	1ª	
58		000/150		Silte areno argiloso. Cor amarelada	1ª	
59		000/150		Silte areno argiloso. Cor amarelada	1ª	
60		000/150		Silte areno argiloso. Cor amarelada	1ª	
61		000/150		Silte areno argiloso. Cor amarelada	1ª	
62		000/060		Silte areno argiloso. Cor amarelada	1ª	
		060		Rocha	3ª	
63		000/150		Silte areno argiloso. Cor avermelhada	1ª	
64		000/150		Silte areno argiloso. Cor avermelhada	1ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 04 - Barragem Algodões II à Júlio Borges				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 05/08

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
65		000/150		Cascalho silte areno argiloso. Cor cinza	1ª	Aterro
66		000/080		Cascalho silte areno argiloso. Cor amarelada	1ª	
		080		Alteração de rocha	2ª	
67		000/000		Rocha	3ª	
68		000/030		Cascalho silte areno argiloso. Cor amarelada	1ª	
		030		Rocha	3ª	
69		000/030		Cascalho silte areno argiloso. Cor amarelada	1ª	
		030		Rocha	3ª	
70		000/150		Silte areno argiloso. Cor amarelada	1ª	
71		000/150		Silte areno argiloso. Cor amarelada	1ª	
72		000/150		Silte areno argiloso. Cor amarelada	1ª	Entrada de Parnaguá
73		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	Corte Descida da Serra
74		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
75		010/150		Cascalho silte areno argiloso. Cor amarelada	1ª	Corte Serra
76		000/000		Rocha	3ª	Corte Serra
77		000/000		Rocha	3ª	Corte
78		010/100		Silte areno argiloso. Cor amarelada	1ª	
		100		Alteração de rocha	2ª	
79		010/100		Silte areno argiloso. Cor amarelada	1ª	
		100		Alteração de rocha	2ª	
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 04 - Barragem Algodões II à Júlio Borges				CONSÓRCIO: ENGESoft/SISINFO		DATA: MAR/2005
						FOLHA: 06/08

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
80		010/150		Silte areno argiloso. Cor amarelada	1ª	
81		010/150		Silte areno argiloso. Cor amarelada	1ª	
82		010/150		Silte areno argiloso. Cor amarelada	1ª	Final da Serra
83		010/150		Silte areno argiloso. Cor amarelada	1ª	
84		010/150		Silte areno argiloso. Cor amarelada	1ª	
85		010/150		Silte areno argiloso. Cor amarelada	1ª	
86		010/150		Silte areno argiloso. Cor amarelada	1ª	
87		010/150		Silte areno argiloso. Cor amarelada	1ª	
88		010/150		Silte areno argiloso. Cor amarelada	1ª	
89		010/150		Silte areno argiloso. Cor amarelada	1ª	
90		010/150		Silte areno argiloso. Cor amarelada	1ª	
91		010/050		Silte areno argiloso. Cor amarelada	1ª	
		050/150		Cascalho silte areno argiloso. Cor amarelada	1ª	
92		000/020		Cascalho silte areno argiloso. Cor amarelada	1ª	
		020		Alteração de rocha	2ª	
93		000/030		Cascalho silte areno argiloso. Cor amarelada	1ª	
		030		Alteração de rocha	2ª	
94		000/030		Cascalho silte areno argiloso. Cor amarelada	1ª	
		030		Alteração de rocha	2ª	
95	Aterro - Zona Urbana. Rua Boa Vista. O ponto mais alto da cidade					
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 04 - Barragem Algodões II à Júlio Borges				CONSÓRCIO: ENGESoft/SISINFO		DATA: MAR/2005
						FOLHA: 07/08

FURO	ESTACA (Km)	PROF. (cm)	COORDENADAS	CLASSIFICAÇÃO EXPEDITA	CATEGORIA	OBSERVAÇÕES
		010/050		Cascalho silte arenoso. Cor cinza	1ª	
		050		Rocha	3ª	
96		010/050		Silte arenoso. Cor cinza	1ª	
		050/150		Silte areno argiloso. Cor amarelada	1ª	
97	Av. Boa Vista N.º 28					
		000/012		Calçamento e areia		
		012/040		Silte arenoso. Cor cinza	1ª	
		040/150		Silte areno argiloso. Cor amarelada	1ª	
98		010/030		Silte arenoso. Cor cinza	1ª	
		030/150		Silte areno argiloso. Cor amarelada	1ª	
99	Av. Antonio Ribeiro					
		010/030		Silte arenoso. Cor cinza	1ª	
		030/150		Silte areno argiloso. Cor amarelada	1ª	
Final do trecho - Obs.: Não há reservatório na cidade, só a 6,0 km destino à Pipiri						
PROJETO: Sistema Adutor Algodões II				BOLETIM DE CAMPO		
TRECHO: Trecho 04 - Barragem Algodões II à Júlio Borges				CONSÓRCIO: ENGESOFT/SISINFO		DATA: MAR/2005
						FOLHA: 08/08

Consórcio



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