

APRESENTAÇÃO

A **GANEM Engenharia Ltda EPP** apresenta a seguir o relatório do levantamento planialtimétrico e cadastral que visa dar suporte ao projeto do Booster Alto Lage, e das suas linhas de alimentação e recalque, localizado no município de Cariacica. O trabalho foi realizado conforme contrato N°284/2012, com a **CESAN – Companhia Espírito Santense de Saneamento**.

O trabalho será apresentado em volume único.

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RELATÓRIO

1 DESCRIÇÃO DA ÁREA

O presente levantamento topográfico ocorreu em um trecho, descrito abaixo, em Cariacica Sede, em frente a sede da prefeitura municipal. Para o cálculo da poligonal fechada levou-se em consideração dois marcos, sendo o marco LGO1055 (7 751 275.965 / 356 309.034) como ponto de partida fazendo “RÉ” no marco LGO1054 (7 751 168.565 / 356 460.233). O total do caminhamento da poligonal foi de 1 179.509 m, destes sendo 156.63 m levantados no Caminhamento 01 e 606.66 m no Caminhamento 02, ambos aproximadamente. A Figura 1 apresenta as localizações dos trechos levantados.



Figura 1 – Localização do Booster Alto Lage, da linhas de alimentação e de recalque.

O presente levantamento topográfico foi realizado para dar suporte ao projeto do Booster Alto Lage, e das suas linhas de alimentação e recalque.

2 LEVANTAMENTO TOPOGRÁFICO

2.1 Considerações Gerais

O levantamento topográfico foi executado utilizando uma Estação Total da marca LEICA-TS02, adotando-se o método do caminhamento com pontos irradiados intra e extra-poligonal, sendo os pontos lidos e gravados pelo próprio aparelho.

Os dados colhidos no campo pela Estação Total foram processados eletronicamente e trabalhados utilizando o *software* POSIÇÃO para a elaboração dos desenhos, os cálculos de área, os relatórios das planilhas dos dados coletados e os memoriais descritivos.

As precisões das poligonais estão apresentadas nas planilhas do Anexo 04.

A equipe técnica que realizou os trabalhos de campo era composta por um agrimensor, um topógrafo e dois auxiliares de topografia. Os trabalhos de escritório e os desenhos foram executados por um agrimensor e desenhista (cadista).

ANEXOS

ANEXO 1 CADERNETA DE CAMPO

Segue o resultado da caderneta de campo do levantamento topográfico.

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: LGO1055			H.I.: 1.487							
LGO1054	R		0°00'01"	96°48'30"	*****	*****	1.500	186.779	185.462	-22.155
O2	V	ESTACAO	88°47'03"	90°32'32"	*****	*****	1.500	117.066	117.061	-1.121
ESTAÇÃO: LGO1055			H.I.: 1.487							
LGO1054	R		0°00'00"	96°48'41"	*****	*****	1.500	186.780	185.462	-22.165
2	V	ESTACAO	88°47'00"	90°32'32"	*****	*****	1.500	117.065	117.060	-1.121
ESTAÇÃO: LGO1055			H.I.: 1.487							
LGO1054	R		359°59'59"	96°48'25"	*****	*****	1.500	186.780	185.463	-22.151
O2	V	ESTACAO	88°47'00"	90°32'26"	*****	*****	1.500	117.065	117.060	-1.117
ESTAÇÃO: LGO1055			H.I.: 1.487							
LGO1054	R		359°59'59"	96°48'20"	*****	*****	1.500	186.778	185.462	-22.146
2	V	ESTACAO	88°46'59"	90°32'19"	*****	*****	1.500	117.066	117.061	-1.113
ESTAÇÃO: O2			H.I.: 1.689							
LGO1055	R		0°00'01"	89°32'54"	*****	*****	1.500	117.070	117.066	1.112
O3	V	ESTACAO	108°27'25"	92°04'37"	*****	*****	1.500	90.744	90.684	-3.100
ESTAÇÃO: O2			H.I.: 1.689							
LGO1055	R		0°00'01"	89°33'02"	*****	*****	1.500	117.069	117.065	1.107
O3	V	ESTACAO	108°27'23"	92°04'44"	*****	*****	1.500	90.745	90.685	-3.103
ESTAÇÃO: O2			H.I.: 1.689							
LGO1055	R		0°00'01"	89°33'08"	*****	*****	1.500	117.070	117.066	1.104
O3	V	ESTACAO	108°27'27"	92°04'45"	*****	*****	1.500	90.744	90.684	-3.103
ESTAÇÃO: O2			H.I.: 1.689							
LGO1055	R		359°59'59"	89°32'52"	*****	*****	1.500	117.075	117.071	1.113
O3	V	ESTACAO	108°27'24"	92°04'24"	*****	*****	1.500	90.745	90.686	-3.094
ESTAÇÃO: O3			H.I.: 1.526							
O2	R		0°00'00"	88°03'59"	*****	*****	1.500	90.742	90.690	3.088
O4	V	ESTACAO	175°53'41"	96°24'59"	*****	*****	1.500	103.504	102.856	-11.541
ESTAÇÃO: O3			H.I.: 1.526							
O2	R		0°00'00"	88°04'00"	*****	*****	1.500	90.742	90.690	3.087
O4	V	ESTACAO	175°53'42"	96°24'54"	*****	*****	1.500	103.503	102.855	-11.538
ESTAÇÃO: O3			H.I.: 1.526							
2	R		0°00'00"	88°04'01"	*****	*****	1.500	90.741	90.689	3.087
O4	V	ESTACAO	175°53'41"	96°24'54"	*****	*****	1.500	103.503	102.855	-11.538
ESTAÇÃO: O3			H.I.: 1.526							
O2	R		0°00'01"	88°03'45"	*****	*****	1.500	90.742	90.690	3.094
O4	V	ESTACAO	175°53'43"	96°24'48"	*****	*****	1.500	103.504	102.856	-11.535
ESTAÇÃO: O4			H.I.: 1.636							
O3	R		0°00'00"	83°41'00"	*****	*****	1.500	103.488	102.860	11.522
O5	V	ESTACAO	244°08'13"	91°24'30"	*****	*****	1.500	42.738	42.725	-0.914
ESTAÇÃO: O4			H.I.: 1.636							
O3	R		359°59'59"	83°41'00"	*****	*****	1.500	103.488	102.860	11.522
O5	V	ESTACAO	244°08'18"	91°24'27"	*****	*****	1.500	42.739	42.726	-0.914
ESTAÇÃO: O4			H.I.: 1.636							
O3	R		0°00'00"	83°41'06"	*****	*****	1.500	103.488	102.860	11.519
5	V	ESTACAO	244°07'31"	91°24'25"	*****	*****	1.500	42.739	42.726	-0.913

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O4			H.I.: 1.636							
O3	R		0°00'00"	83°41'06"	*****	*****	1.500	103.488	102.860	11.519
ESTAÇÃO: O5			H.I.: 1.575							
O4	R		0°00'03"	88°53'16"	*****	*****	1.500	42.737	42.729	0.905
O5A	V	ESTACAO	212°19'20"	86°30'39"	*****	*****	1.500	126.309	126.075	7.762
ESTAÇÃO: O5			H.I.: 1.575							
O4	R		0°00'01"	88°53'14"	*****	*****	1.500	42.737	42.729	0.905
O5A	V	ESTACAO	212°19'23"	86°30'41"	*****	*****	1.500	126.306	126.072	7.761
ESTAÇÃO: O5A			H.I.: 1.731							
O5	R		0°00'00"	93°37'51"	*****	*****	1.500	126.333	126.079	-7.769
A1	V	ESTACAO	144°32'25"	91°36'35"	*****	*****	1.500	19.199	19.191	-0.308
ESTAÇÃO: O5A			H.I.: 1.731							
O5	R		0°00'00"	93°37'57"	*****	*****	1.500	126.332	126.078	-7.773
A1	V	ESTACAO	144°32'42"	91°36'34"	*****	*****	1.500	19.199	19.191	-0.308
ESTAÇÃO: O5A			H.I.: 1.731							
O5	R		359°59'59"	93°37'55"	*****	*****	1.500	126.331	126.077	-7.772
A1	V	ESTACAO	144°32'37"	91°36'54"	*****	*****	1.500	19.199	19.191	-0.310
ESTAÇÃO: O5A			H.I.: 1.731							
O5	R		0°00'02"	93°37'58"	*****	*****	1.500	126.334	126.080	-7.774
A1	V	ESTACAO	144°32'36"	91°36'27"	*****	*****	1.500	19.200	19.192	-0.308
ESTAÇÃO: A1			H.I.: 1.741							
O5A	R		0°00'00"	89°49'31"	*****	*****	1.500	19.199	19.199	0.300
O6	V	ESTACAO	125°26'25"	92°10'19"	*****	*****	1.500	69.162	69.112	-2.380
ESTAÇÃO: A1			H.I.: 1.741							
O5A	R		359°59'58"	89°49'42"	*****	*****	1.500	19.201	19.201	0.299
O6	V	ESTACAO	125°26'23"	92°10'20"	*****	*****	1.500	69.161	69.111	-2.380
ESTAÇÃO: O6			H.I.: 1.710							
A1	R		0°00'00"	88°12'41"	*****	*****	1.500	69.151	69.117	2.368
O7	V	ESTACAO	118°44'38"	90°13'40"	*****	*****	1.500	102.956	102.955	-0.199
ESTAÇÃO: O6			H.I.: 1.710							
A1	R		359°59'58"	88°12'38"	*****	*****	1.500	69.152	69.118	2.369
A7	V	ESTACAO	118°44'40"	90°13'35"	*****	*****	1.500	102.955	102.954	-0.197
ESTAÇÃO: O6			H.I.: 1.710							
A1	R		0°00'01"	88°12'40"	*****	*****	1.500	69.151	69.117	2.369
A7	V	ESTACAO	118°44'33"	90°13'39"	*****	*****	1.500	102.954	102.953	-0.199
ESTAÇÃO: O7			H.I.: 1.581							
O6	R		359°59'59"	89°56'29"	*****	*****	1.500	102.957	102.957	0.186
LGO1054	V	ESTACAO	110°13'54"	91°51'30"	*****	*****	1.500	323.539	323.369	-10.411
ESTAÇÃO: O7			H.I.: 1.581							
O6	R		0°00'00"	89°56'32"	*****	*****	1.500	102.957	102.957	0.185
LGO1054	V	ESTACAO	110°13'19"	91°51'43"	*****	*****	1.500	323.537	323.366	-10.431
ESTAÇÃO: O7			H.I.: 1.581							
O6	R		359°59'59"	89°56'29"	*****	*****	1.500	102.957	102.957	0.186
LGO1054	V	ESTACAO	110°13'52"	91°51'26"	*****	*****	1.500	323.536	323.366	-10.404

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: LGO1054			H.I.: 1.555							
O7	R		0°00'01"	88°10'38"	*****	*****	1.500	323.539	323.375	10.346
LGO1055	V	ESTACAO	111°26'37"	83°12'40"	*****	*****	1.500	186.770	185.460	22.133
ESTAÇÃO: LGO1054			H.I.: 1.555							
O7	R		0°00'00"	88°10'13"	*****	*****	1.500	323.536	323.371	10.385
LGO1055	V	ESTACAO	111°26'15"	83°12'34"	*****	*****	1.500	186.769	185.459	22.139
ESTAÇÃO: LGO1055			H.I.: 1.554							
LGO1054	R		0°00'02"	96°49'44"	*****	*****	1.500	186.787	185.462	-22.156
O1	A	AUXILIAR	266°35'19"	87°01'13"	*****	*****	1.500	129.700	129.525	6.796
N1	I	BE	87°13'02"	90°26'41"	*****	*****	1.500	95.775	95.772	-0.689
N2	I	BE	89°31'25"	90°23'59"	*****	*****	1.500	95.596	95.594	-0.613
N3	I	EXT	88°16'14"	90°25'26"	*****	*****	1.500	95.342	95.339	-0.651
N4	I	EXT	88°37'31"	90°20'19"	*****	*****	1.500	83.794	83.793	-0.441
N5	I	BE	90°02'50"	90°19'49"	*****	*****	1.500	83.666	83.665	-0.428
N6	I	BE	87°14'24"	90°23'00"	*****	*****	1.500	83.089	83.087	-0.502
N7	I	BE	87°16'05"	90°22'35"	*****	*****	1.500	69.613	69.612	-0.403
N8	I	BE	90°37'56"	90°26'07"	*****	*****	1.500	69.951	69.949	-0.477
N9	I	EXT	88°52'30"	90°23'35"	*****	*****	1.500	69.752	69.750	-0.425
N10	I	PTC	86°46'48"	90°23'38"	*****	*****	1.500	67.822	67.820	-0.412
N11	I	EXT	89°28'37"	90°11'12"	*****	*****	1.500	55.540	55.540	-0.127
N12	I	BE	91°59'55"	90°17'02"	*****	*****	1.500	55.708	55.707	-0.222
N13	I	BE	87°14'23"	90°10'38"	*****	*****	1.500	55.402	55.402	-0.117
N14	I	BE	87°26'09"	89°41'35"	*****	*****	1.500	38.943	38.942	0.263
N15	I	BE	94°15'37"	89°37'41"	*****	*****	1.500	39.230	39.229	0.309
N16	I	EXT	90°38'35"	89°36'18"	*****	*****	1.500	38.697	38.696	0.321
N17	I	EXT	93°35'23"	89°38'36"	*****	*****	1.500	26.947	26.946	0.222
N18	I	BE	88°21'53"	89°49'32"	*****	*****	1.500	26.691	26.691	0.135
N19	I	BE	100°01'06"	89°36'21"	*****	*****	1.500	27.476	27.475	0.243
N20	I	BE	112°21'25"	89°44'29"	*****	*****	1.500	16.327	16.327	0.128
N21	I	BE	89°53'49"	90°50'00"	*****	*****	1.500	14.558	14.556	-0.158
N22	I	EXT	102°57'39"	89°55'12"	*****	*****	1.500	15.328	15.328	0.075
N23	I	EXT	114°10'51"	90°14'15"	*****	*****	1.500	9.879	9.879	0.013
N24	I	EXA	115°07'16"	90°22'55"	*****	*****	1.500	9.418	9.418	-0.009
N25	I	MF	148°15'54"	88°59'14"	*****	*****	1.500	10.373	10.371	0.237
N26	I	MF	86°25'28"	93°06'48"	*****	*****	1.500	9.136	9.123	-0.442
N27	I	BE	94°28'05"	91°57'50"	*****	*****	1.500	9.132	9.127	-0.259
N28	I	BE	94°53'56"	91°22'35"	*****	*****	1.500	10.419	10.416	-0.196
N29	I	MF	50°09'45"	96°14'23"	*****	*****	1.500	11.722	11.653	-1.220
N30	I	MF	27°14'32"	97°05'46"	*****	*****	1.500	19.695	19.544	-2.379
N31	I	MF	18°50'46"	96°57'58"	*****	*****	1.500	27.618	27.414	-3.296
N32	I	MF	13°59'09"	96°47'42"	*****	*****	1.500	36.458	36.202	-4.260
N33	I	MF	2°55'33"	97°04'08"	*****	*****	1.500	35.456	35.187	-4.309
N34	I	EXA	8°37'24"	96°55'02"	*****	*****	1.500	35.644	35.385	-4.239
N35	I	EXA	12°29'07"	97°06'34"	*****	*****	1.500	27.386	27.175	-3.335
N36	I	MF	4°08'11"	97°15'13"	*****	*****	1.500	26.675	26.462	-3.314
N37	I	MF	6°40'35"	97°53'46"	*****	*****	1.500	16.875	16.715	-2.264
N38	I	EXA	17°32'29"	97°27'34"	*****	*****	1.500	18.368	18.213	-2.331
N39	I	MF	38°28'05"	98°07'12"	*****	*****	1.500	8.482	8.397	-1.144
N40	I	MF	51°34'54"	102°30'20"	*****	*****	1.500	2.758	2.693	-0.543
N41	I	MF	81°35'16"	101°07'56"	*****	*****	1.500	2.132	2.092	-0.358
N42	I	MF	169°31'07"	94°04'19"	*****	*****	1.500	1.316	1.313	-0.039
N43	I	MF	216°09'05"	89°40'29"	*****	*****	1.500	2.456	2.456	0.068
N44	I	MF	258°13'24"	88°09'10"	*****	*****	1.500	12.854	12.847	0.468
N45	I	MF	262°08'15"	87°48'20"	*****	*****	1.500	23.800	23.783	0.965
N46	I	MF	263°35'43"	87°43'58"	*****	*****	1.500	35.274	35.246	1.449
N47	I	MF	252°30'34"	87°47'38"	*****	*****	1.500	36.554	36.527	1.461
N48	I	EXA	257°46'29"	87°43'20"	*****	*****	1.500	36.086	36.057	1.488

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: LGO1055			H.I.: 1.554							
LGO1054	R		0°00'02"	96°49'44"	*****	*****	1.500	186.787	185.462	-22.156
N49	I EXA		253°52'24"	87°51'50"	*****	*****	1.500	24.368	24.351	0.962
N50	I MF		246°01'34"	87°59'00"	*****	*****	1.500	25.421	25.405	0.949
N51	I MF		230°19'18"	87°57'26"	*****	*****	1.500	15.257	15.247	0.598
N52	I EXA		242°30'55"	87°56'34"	*****	*****	1.500	13.245	13.236	0.529
N53	I EXA		193°57'33"	87°27'30"	*****	*****	1.500	5.697	5.691	0.307
N54	I MF		185°07'58"	88°08'27"	*****	*****	1.500	9.102	9.097	0.349
N55	I EXA		139°30'56"	89°11'13"	*****	*****	1.500	6.363	6.362	0.144
N56	I PTC		160°17'35"	87°30'50"	*****	*****	1.500	9.901	9.892	0.483
N57	I MF		255°55'32"	87°43'02"	*****	*****	1.500	48.127	48.089	1.971
N58	I MF		264°17'27"	87°40'07"	*****	*****	1.500	47.409	47.370	1.983
N59	I EXA		260°13'16"	87°37'49"	*****	*****	1.500	47.658	47.617	2.025
N60	I EXA		262°12'25"	87°29'36"	*****	*****	1.500	65.917	65.854	2.937
N61	I MF		258°58'57"	87°30'36"	*****	*****	1.500	66.259	66.196	2.933
N62	I MF		265°01'00"	87°36'52"	*****	*****	1.500	65.665	65.608	2.787
N63	I MF		265°22'12"	87°23'10"	*****	*****	1.500	81.888	81.803	3.789
N64	I MF		260°31'48"	87°24'23"	*****	*****	1.500	82.332	82.248	3.780
N65	I EXA		262°53'11"	87°20'48"	*****	*****	1.500	82.266	82.178	3.862
N66	I EXA		263°43'51"	87°11'42"	*****	*****	1.500	95.208	95.094	4.713
N67	I MF		265°33'07"	87°12'59"	*****	*****	1.500	95.126	95.014	4.674
N68	I MF		265°41'09"	87°06'24"	*****	*****	1.500	104.517	104.384	5.330
N69	I MF		261°52'53"	87°06'50"	*****	*****	1.500	105.074	104.941	5.345
N70	I MF		261°29'52"	87°13'01"	*****	*****	1.500	97.923	97.808	4.809
N71	I BE		260°41'11"	87°07'24"	*****	*****	1.500	97.336	97.213	4.939
N72	I BE		259°41'24"	87°07'41"	*****	*****	1.500	97.057	96.935	4.917
N73	I MF		261°06'39"	87°17'53"	*****	*****	1.500	91.588	91.486	4.371
N74	I BE		260°38'24"	87°16'10"	*****	*****	1.500	93.751	93.645	4.520
N75	I BE		259°42'09"	87°16'15"	*****	*****	1.500	94.216	94.109	4.540
N76	I BE		256°54'48"	86°21'12"	*****	*****	2.600	93.913	93.723	4.927
N77	I BE		257°01'32"	86°21'53"	*****	*****	2.600	96.426	96.232	5.068
N78	I EXT		256°54'34"	86°26'17"	*****	*****	2.600	95.099	94.915	4.862
N79	I EXT		252°03'45"	86°13'40"	*****	*****	2.600	95.293	95.087	5.223
N80	I BE		252°02'29"	86°09'15"	*****	*****	2.600	93.806	93.595	5.246
N81	I BE		252°13'48"	86°10'08"	*****	*****	2.600	96.651	96.435	5.412
N82	I BE		247°02'17"	86°21'58"	*****	*****	2.600	98.397	98.199	5.190
N83	I BE		246°46'05"	86°17'15"	*****	*****	2.600	94.664	94.465	5.083
N84	I EXT		246°44'41"	86°24'02"	*****	*****	2.600	96.335	96.145	5.002
N85	I PTC		260°48'10"	86°49'05"	*****	*****	1.500	105.470	105.307	5.908
N86	I PTC		259°03'07"	87°20'54"	*****	*****	1.500	71.490	71.413	3.361
N87	I CX		265°23'17"	87°27'07"	*****	*****	1.500	57.379	57.322	2.605
N88	I PTC		251°47'18"	87°34'56"	*****	*****	1.500	36.835	36.802	1.608
N89	I ARV		237°23'49"	87°31'44"	*****	*****	1.500	19.773	19.755	0.907
N90	I ARV		228°26'59"	87°26'37"	*****	*****	1.500	15.735	15.719	0.756
N91	I ARV		213°52'42"	87°00'55"	*****	*****	1.500	12.346	12.329	0.697
N92	I ARV		190°46'40"	86°44'36"	*****	*****	1.500	10.083	10.067	0.627
N93	I ARV		112°01'04"	89°10'03"	*****	*****	1.500	22.459	22.457	0.380
N94	I ARV		108°12'34"	86°56'23"	*****	*****	2.600	26.923	26.885	0.391
N95	I PTC		104°21'12"	87°16'28"	*****	*****	2.600	35.753	35.713	0.654
N96	I ARV		101°56'52"	89°18'44"	*****	*****	1.500	36.662	36.659	0.494
N97	I ARV		100°16'28"	89°07'30"	*****	*****	1.500	41.336	41.331	0.685
N98	I MF		265°50'36"	86°57'13"	*****	*****	1.500	119.569	119.400	6.408
N99	I MF		266°05'58"	86°57'54"	*****	*****	1.500	122.843	122.671	6.558
N100	I BE		266°42'17"	86°59'05"	*****	*****	1.500	125.693	125.519	6.666
N101	I MF		261°31'13"	86°57'44"	*****	*****	1.500	119.732	119.564	6.399
N102	I MF		262°04'00"	86°58'03"	*****	*****	1.500	118.003	117.838	6.297
N103	I MF		262°20'09"	86°59'42"	*****	*****	1.500	115.741	115.582	6.122
N104	I EXA		264°03'52"	86°57'23"	*****	*****	1.500	115.579	115.416	6.191

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: LGO1055			H.I.: 1.554							
LGO1054	R		0°00'02"	96°49'44"	*****	*****	1.500	186.787	185.462	-22.156
N105	I	EXA	263°49'41"	86°54'38"	*****	*****	1.500	121.622	121.445	6.609
N106	I	EXA	263°30'19"	86°54'13"	*****	*****	1.500	128.268	128.081	6.983
N107	I	EXA	265°25'48"	86°58'34"	*****	*****	1.500	128.541	128.362	6.835
N108	I	EXA	261°29'17"	86°52'58"	*****	*****	1.500	128.729	128.539	7.054
N109	I	MUR	267°13'38"	86°54'35"	*****	*****	1.500	120.875	120.699	6.570
N110	I	CA	261°27'42"	86°38'01"	*****	*****	1.500	116.147	115.947	6.874
N111	I	CA	261°14'49"	86°36'35"	*****	*****	1.500	113.102	112.904	6.743
N112	I	MUR	260°36'47"	86°46'26"	*****	*****	1.500	105.261	105.094	5.978
N113	I	CX	261°57'58"	86°52'37"	*****	*****	1.500	110.573	110.409	6.078
N114	I	CX	261°45'06"	86°51'45"	*****	*****	1.500	110.589	110.423	6.107
N115	I	CX	261°45'55"	86°51'46"	*****	*****	1.500	110.964	110.798	6.127
N116	I	CAL	261°47'25"	86°55'41"	*****	*****	1.500	105.032	104.881	5.683
N117	I	PVA	263°47'59"	87°07'22"	*****	*****	1.500	101.741	101.613	5.161
N118	I	CX	263°29'06"	87°07'29"	*****	*****	1.500	102.429	102.300	5.192
N119	I	CX	264°21'00"	87°07'28"	*****	*****	1.500	102.394	102.265	5.191
N120	I	CX	264°19'00"	87°07'26"	*****	*****	1.500	100.641	100.514	5.104
N121	I	MUR	267°26'10"	87°13'27"	*****	*****	1.500	94.213	94.102	4.617
N122	I	MUR	259°41'03"	87°13'33"	*****	*****	1.500	93.296	93.187	4.569
N123	I	MUR	267°21'51"	87°05'44"	*****	*****	1.500	104.173	104.039	5.332
N124	I	MUR	267°39'22"	87°31'57"	*****	*****	1.500	65.601	65.540	2.878
N125	I	MUR	256°44'20"	87°16'45"	*****	*****	1.500	65.770	65.696	3.176
N126	I	CAL	265°02'19"	87°35'11"	*****	*****	1.500	62.480	62.425	2.685
N127	I	CAL	267°40'20"	87°27'53"	*****	*****	1.500	62.513	62.452	2.819
N128	I	HIDRANTE	265°45'12"	87°25'02"	*****	*****	1.500	57.377	57.319	2.640
N129	I	REG	265°13'32"	87°43'34"	*****	*****	1.500	57.318	57.273	2.328
N130	I	COTA	265°08'48"	87°59'50"	*****	*****	1.500	57.295	57.260	2.056
N131	I	DIV	267°45'58"	87°19'28"	*****	*****	1.500	55.916	55.855	2.664
N132	I	MUR	267°44'52"	87°08'06"	*****	*****	1.500	34.874	34.830	1.797
N133	I	MUR	248°01'51"	87°27'51"	*****	*****	1.500	35.946	35.911	1.644
N134	I	POR	245°38'07"	87°51'47"	*****	*****	1.500	32.081	32.059	1.250
N135	I	POR	244°14'48"	87°44'33"	*****	*****	1.500	30.241	30.218	1.245
N136	I	SOL	244°57'41"	87°47'31"	*****	*****	1.500	31.152	31.129	1.254
N137	I	CA	268°35'36"	87°00'39"	*****	*****	1.500	18.966	18.940	1.043
N138	I	CA	270°26'56"	86°13'26"	*****	*****	1.500	9.451	9.430	0.676
N139	I	MUR	276°23'52"	84°23'49"	*****	*****	1.500	3.572	3.555	0.403
N140	I	MUR	352°21'36"	102°04'53"	*****	*****	1.500	2.507	2.451	-0.471
N141	I	MUR	355°44'10"	103°38'54"	*****	*****	1.500	13.343	12.966	-3.094
N142	I	MUR	355°50'58"	96°37'50"	*****	*****	1.500	20.431	20.294	-2.305
N143	I	MUR	355°58'32"	96°51'10"	*****	*****	1.500	21.154	21.003	-2.470
N144	I	MUR	357°58'56"	96°48'01"	*****	*****	1.500	35.285	35.037	-4.124
N145	I	MUR	17°30'23"	96°20'23"	*****	*****	1.500	37.195	36.968	-4.053
N146	I	PVA	15°43'40"	96°29'37"	*****	*****	1.500	36.123	35.891	-4.031
N147	I	PVA	16°27'11"	96°30'25"	*****	*****	1.500	34.393	34.171	-3.843
N148	I	CX	17°45'43"	96°25'52"	*****	*****	1.500	33.905	33.692	-3.744
N149	I	CX	15°37'11"	96°32'38"	*****	*****	1.500	33.565	33.346	-3.771
N150	I	CX	17°16'04"	96°33'11"	*****	*****	1.500	35.007	34.778	-3.941
N151	I	CX	17°07'30"	96°28'59"	*****	*****	1.500	35.439	35.212	-3.947
N152	I	CX	14°50'37"	96°34'44"	*****	*****	1.500	35.032	34.801	-3.960
N153	I	CX	14°11'33"	96°35'22"	*****	*****	1.500	36.430	36.189	-4.126
N154	I	MUR	27°53'59"	96°38'33"	*****	*****	1.500	24.089	23.927	-2.732
N155	I	PTC	5°53'01"	97°31'19"	*****	*****	1.500	15.555	15.421	-1.982
N156	I	ARV	59°29'27"	94°22'45"	*****	*****	1.500	11.959	11.924	-0.859
N157	I	MUR	71°51'30"	93°28'00"	*****	*****	1.500	11.876	11.854	-0.664
N158	I	MUR	84°26'05"	82°24'49"	*****	*****	1.500	14.528	14.401	1.972
N159	I	MUR	219°56'53"	87°21'57"	*****	*****	1.500	15.783	15.766	0.779
N160	I	CXA	238°11'15"	87°49'24"	*****	*****	1.500	13.394	13.384	0.563

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: LGO1055			H.I.: 1.554							
LGO1054	R		0°00'02"	96°49'44"	*****	*****	1.500	186.787	185.462	-22.156
N161	I	PVE	82°15'32"	94°38'08"	*****	*****	1.500	6.069	6.049	-0.436
N162	I	CX	78°47'43"	94°38'05"	*****	*****	1.500	6.487	6.466	-0.470
N163	I	CX	78°21'37"	95°11'00"	*****	*****	1.500	5.519	5.496	-0.445
N164	I	CX	88°00'45"	93°49'01"	*****	*****	1.500	5.510	5.498	-0.313
N165	I	CX	87°50'44"	92°01'42"	*****	*****	1.500	10.042	10.036	-0.301
N166	I	CX	87°17'47"	92°45'35"	*****	*****	1.500	9.325	9.314	-0.395
N167	I	CX	93°50'03"	92°17'09"	*****	*****	1.500	9.280	9.273	-0.316
N168	I	CONTA	91°33'17"	97°49'42"	*****	*****	1.500	9.644	9.554	-1.260
N169	I	POR	141°38'08"	88°01'42"	*****	*****	1.500	14.252	14.244	0.544
N170	I	POR	150°21'14"	87°45'25"	*****	*****	1.500	12.999	12.989	0.563
N171	I	SOL	146°04'11"	87°52'03"	*****	*****	1.500	13.609	13.600	0.560
N172	I	MUR	109°32'47"	88°19'58"	*****	*****	1.800	29.990	29.977	0.627
N173	I	MUR	99°53'04"	89°01'47"	*****	*****	1.500	50.844	50.837	0.915
N174	I	MUR	95°51'14"	88°46'59"	*****	*****	1.500	74.010	73.993	1.626
N175	I	MUR	93°56'25"	88°21'56"	*****	*****	1.850	94.030	93.992	2.386
ESTAÇÃO: LGO1055			H.I.: 1.589							
LGO1054	R		0°00'00"	96°50'22"	*****	*****	1.500	186.792	185.463	-22.156
N176	I	MUR	85°50'27"	90°00'47"	*****	*****	1.500	27.150	27.150	0.083
ESTAÇÃO: LGO1055			H.I.: 1.589							
LGO1054	R		0°00'00"	96°50'22"	*****	*****	1.500	186.792	185.463	-22.156
N177	I	MUR	86°19'10"	89°42'33"	*****	*****	1.500	41.432	41.431	0.299
N178	I	MUR	86°30'17"	90°25'20"	*****	*****	1.500	61.947	61.945	-0.367
N179	I	PE	89°46'39"	90°25'20"	*****	*****	1.500	96.355	96.352	-0.621
N180	I	PE	90°17'32"	88°53'33"	*****	*****	3.600	82.244	82.229	-0.421
N181	I	PE	91°21'05"	90°21'49"	*****	*****	1.500	67.707	67.706	-0.341
N182	I	CRI	92°47'38"	89°11'25"	*****	*****	1.500	67.973	67.966	1.050
N183	I	CRI	91°58'19"	88°57'25"	*****	*****	1.500	82.427	82.413	1.589
N184	I	CRI	90°57'57"	88°33'40"	*****	*****	2.600	95.834	95.804	1.395
N185	I	CRI	94°36'02"	89°10'55"	*****	*****	1.500	48.979	48.974	0.788
N186	I	PE	93°10'56"	90°05'15"	*****	*****	1.500	48.994	48.994	0.014
N187	I	CRP	95°16'43"	89°38'34"	*****	*****	1.500	41.023	41.022	0.345
N188	I	MUR	250°30'42"	86°38'19"	*****	*****	1.850	93.349	93.188	5.212
N189	I	CER	250°38'43"	86°04'05"	*****	*****	2.600	98.778	98.546	5.762
N190	I	CER	254°02'16"	86°07'16"	*****	*****	2.600	98.503	98.277	5.652
N191	I	MUR	255°24'01"	85°35'12"	*****	*****	2.600	107.098	106.780	7.230
N192	I	COTA	16°22'08"	95°54'55"	*****	*****	2.600	34.350	34.167	-4.551
N193	I	REG	16°26'31"	95°30'46"	*****	*****	2.600	34.294	34.135	-4.306
N194	I	COTA	15°48'26"	97°10'54"	*****	*****	2.600	36.097	35.814	-5.524
N195	I	TUBO	15°26'45"	96°42'57"	*****	*****	2.600	35.870	35.624	-5.206
N196	I	TUBO	16°13'34"	96°26'45"	*****	*****	2.600	36.027	35.799	-5.056
N197	I	TUBO	16°40'05"	96°31'15"	*****	*****	2.530	36.185	35.951	-5.050
N198	I	TUBO	15°52'47"	96°32'47"	*****	*****	2.610	36.657	36.418	-5.200
N199	I	REG	15°05'12"	96°37'01"	*****	*****	2.250	35.910	35.671	-4.799
N200	I	ADT	14°02'52"	96°39'20"	*****	*****	2.600	36.390	36.145	-5.229
N201	I	ADT	14°33'03"	96°42'25"	*****	*****	2.670	35.023	34.783	-5.171
N202	I	COTA	82°31'33"	98°30'55"	*****	*****	2.600	6.103	6.036	-1.915
ESTAÇÃO: O1			H.I.: 1.672							
LGO1055	R		0°00'02"	93°04'51"	*****	*****	1.500	129.723	129.536	-6.800
N203	I	MF	4°06'13"	93°47'43"	*****	*****	1.500	5.000	4.989	-0.159
N204	I	BE	269°34'35"	97°21'39"	*****	*****	1.500	2.228	2.210	-0.113
N205	I	BE	221°59'18"	90°03'01"	*****	*****	1.500	11.904	11.904	0.162
N206	I	MF	196°33'30"	91°08'35"	*****	*****	1.500	11.670	11.668	-0.061
N207	I	MF	196°32'39"	91°32'36"	*****	*****	1.500	18.089	18.082	-0.315
N208	I	EXA	207°52'07"	91°05'54"	*****	*****	1.500	7.110	7.109	0.036

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O1			H.I.: 1.672							
LGO1055	R		0°00'02"	93°04'51"	*****	*****	1.500	129.723	129.536	-6.800
N209	I EXA		187°22'45"	91°35'09"	*****	*****	1.500	18.239	18.232	-0.333
N210	I MF		177°49'03"	91°41'25"	*****	*****	1.500	18.864	18.856	-0.384
N211	I EXA		191°32'18"	92°10'05"	*****	*****	1.500	31.677	31.654	-1.026
N212	I MF		196°59'16"	92°18'16"	*****	*****	1.500	31.255	31.230	-1.085
N213	I MF		184°53'03"	92°14'00"	*****	*****	1.500	31.680	31.656	-1.063
N214	I TMF		184°58'59"	91°54'27"	*****	*****	1.500	31.695	31.677	-0.883
N215	I TMF		197°02'58"	91°57'25"	*****	*****	1.500	31.248	31.230	-0.895
N216	I MF		174°29'49"	91°10'38"	*****	*****	1.500	15.842	15.839	-0.153
N217	I MF		168°31'58"	90°39'34"	*****	*****	1.500	13.011	13.010	0.022
N218	I PTC		163°04'48"	89°55'43"	*****	*****	1.500	12.068	12.068	0.187
N219	I MF		152°35'02"	89°57'12"	*****	*****	1.500	9.794	9.794	0.180
N220	I MF		142°14'13"	89°40'57"	*****	*****	1.500	9.228	9.228	0.223
N221	I MF		137°14'26"	89°28'01"	*****	*****	1.500	9.346	9.346	0.259
N222	I BE		119°45'04"	89°27'33"	*****	*****	1.500	11.621	11.620	0.282
N223	I MF		31°41'29"	92°52'17"	*****	*****	1.500	16.405	16.384	-0.650
N224	I MF		35°08'26"	92°39'13"	*****	*****	1.500	15.604	15.587	-0.550
N225	I MF		42°52'18"	92°15'13"	*****	*****	1.500	14.926	14.914	-0.415
N226	I MF		51°45'10"	91°53'15"	*****	*****	1.500	14.958	14.950	-0.321
N227	I MF		67°16'31"	90°51'28"	*****	*****	1.500	16.685	16.683	-0.078
N228	I BE		76°46'57"	90°05'52"	*****	*****	1.500	19.735	19.735	0.138
N229	I BE		107°03'26"	89°30'07"	*****	*****	1.500	18.170	18.169	0.330
N230	I EXA		91°10'16"	89°27'29"	*****	*****	1.500	18.396	18.395	0.346
N231	I EXA		93°38'53"	89°56'44"	*****	*****	1.500	30.059	30.059	0.201
N232	I BE		83°49'14"	90°08'00"	*****	*****	1.500	25.784	25.784	0.112
N233	I BE		101°02'18"	89°58'23"	*****	*****	1.500	30.204	30.204	0.186
N234	I BE		85°38'41"	90°19'10"	*****	*****	1.500	30.561	30.561	0.002
N235	I BE		87°14'29"	90°38'31"	*****	*****	1.500	36.704	36.702	-0.239
N236	I BE		98°49'22"	90°19'17"	*****	*****	1.500	36.706	36.705	-0.034
N237	I EXA		92°27'05"	90°22'57"	*****	*****	1.500	36.620	36.619	-0.072
N238	I EXA		179°58'21"	90°38'27"	*****	*****	1.500	10.877	10.876	0.050
N239	I MUR		309°06'28"	92°33'49"	*****	*****	1.500	3.969	3.965	-0.006
N240	I DIV		223°17'33"	88°39'50"	*****	*****	1.500	17.955	17.950	0.591
N241	I POR		218°30'27"	88°47'09"	*****	*****	1.500	17.680	17.676	0.547
N242	I POR		204°54'57"	89°00'06"	*****	*****	1.500	17.707	17.704	0.481
N243	I SOL		211°56'43"	88°34'05"	*****	*****	1.500	17.622	17.617	0.612
N244	I MUR		199°39'16"	90°29'40"	*****	*****	1.500	17.939	17.938	0.017
N245	I CER		182°27'38"	90°51'39"	*****	*****	1.500	31.623	31.619	-0.303
N246	I PVA		175°03'52"	90°59'21"	*****	*****	1.500	14.818	14.816	-0.084
N247	I CER		166°03'21"	89°08'46"	*****	*****	1.500	15.194	15.192	0.398
N248	I CER		151°33'54"	86°55'09"	*****	*****	1.500	11.315	11.299	0.780
N249	I CER		137°49'04"	88°29'58"	*****	*****	1.500	11.306	11.302	0.468
N250	I CER		110°37'11"	89°11'47"	*****	*****	1.500	18.467	18.465	0.431
N251	I CER		104°25'55"	89°17'35"	*****	*****	1.500	26.435	26.433	0.498
N252	I CER		100°53'54"	90°06'43"	*****	*****	1.500	36.178	36.178	0.101
N253	I CER		82°52'55"	88°52'25"	*****	*****	1.500	36.846	36.839	0.896
N254	I MUR		76°04'26"	89°14'08"	*****	*****	1.500	23.327	23.325	0.483
N255	I POR		75°44'47"	89°24'28"	*****	*****	1.500	23.148	23.147	0.411
N256	I POR		68°32'03"	88°59'18"	*****	*****	1.500	19.920	19.917	0.524
N257	I SOL		71°40'01"	88°52'15"	*****	*****	1.500	21.230	21.226	0.590
N258	I CA		61°35'15"	89°37'32"	*****	*****	1.500	17.866	17.866	0.289
N259	I CXE		63°22'42"	89°24'49"	*****	*****	1.500	17.963	17.962	0.356
N260	I CAL		67°06'42"	89°52'46"	*****	*****	1.500	16.643	16.643	0.207
N261	I CA		57°56'45"	90°10'46"	*****	*****	1.500	16.694	16.694	0.120
N262	I CA		54°00'37"	89°55'30"	*****	*****	1.500	17.840	17.840	0.195
N263	I CA		48°10'13"	90°44'04"	*****	*****	1.500	16.097	16.096	-0.034
N264	I CA		41°28'57"	89°04'27"	*****	*****	1.500	18.475	18.473	0.471

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O1			H.I.: 1.672							
LGO1055	R		0°00'02"	93°04'51"	*****	*****	1.500	129.723	129.536	-6.800
N265	I	CAL	35°08'52"	91°32'49"	*****	*****	1.500	15.579	15.573	-0.249
N266	I	CAL	30°43'43"	89°46'23"	*****	*****	1.500	16.989	16.989	0.239
N267	I	CX	49°42'14"	90°49'42"	*****	*****	1.500	15.545	15.543	-0.053
N268	I	CX	51°01'59"	90°50'55"	*****	*****	1.500	15.287	15.285	-0.054
N269	I	CX	51°53'38"	90°45'41"	*****	*****	1.500	15.616	15.615	-0.036
N270	I	PVA	95°33'42"	89°21'45"	*****	*****	1.500	5.940	5.940	0.238
N271	I	PVA	20°59'48"	96°22'45"	*****	*****	1.500	1.909	1.897	-0.040
N272	I	CX	334°27'41"	99°38'15"	*****	*****	1.500	1.635	1.612	-0.102
N273	I	CX	61°25'30"	93°25'22"	*****	*****	1.500	1.995	1.991	0.053
N274	I	CX	30°21'21"	92°41'24"	*****	*****	1.500	5.118	5.112	-0.068
N275	I	ADT	18°39'45"	103°48'50"	*****	*****	2.600	1.517	1.473	-1.290
N276	I	ADT	16°42'43"	94°14'37"	*****	*****	2.750	3.480	3.470	-1.335
N277	I	ADT	34°24'38"	92°55'45"	*****	*****	2.750	3.759	3.754	-1.270
N278	I	ADT	16°07'58"	93°25'32"	*****	*****	2.750	4.735	4.727	-1.361
N279	I	COTA	28°03'18"	129°20'27"	*****	*****	2.600	2.578	1.994	-2.562
N280	I	CXA	24°31'58"	109°05'01"	*****	*****	1.500	0.626	0.592	-0.033
N281	I	REG	33°34'09"	94°05'43"	*****	*****	2.610	2.671	2.664	-1.129
N282	I	REG	94°58'18"	95°51'34"	*****	*****	1.500	5.966	5.935	-0.437
N283	I	COTA	96°18'06"	97°14'09"	*****	*****	1.500	5.989	5.941	-0.582
N284	I	COTA	174°31'07"	91°10'26"	*****	*****	2.600	14.764	14.761	-1.230
N285	I	GS	175°03'19"	93°01'23"	*****	*****	1.500	15.023	15.002	-0.620
N286	I	REG	9°57'29"	93°42'43"	*****	*****	2.600	28.654	28.594	-2.783
N287	I	ADT	9°44'39"	93°37'42"	*****	*****	2.700	29.509	29.450	-2.895
N288	I	ADT	10°13'29"	93°36'25"	*****	*****	2.750	27.864	27.809	-2.831
N289	I	COTA	9°28'45"	94°57'33"	*****	*****	2.600	28.646	28.539	-3.404
N290	I	CXA	10°25'51"	93°34'45"	*****	*****	1.500	26.274	26.223	-1.468
ESTAÇÃO: O2			H.I.: 1.704							
LGO1055	R		0°00'00"	89°33'34"	*****	*****	1.500	117.072	117.069	1.104
N291	I	BE	356°16'13"	89°13'04"	*****	*****	1.500	21.019	21.017	0.491
N292	I	BE	353°47'34"	90°03'40"	*****	*****	1.500	14.140	14.140	0.189
N293	I	BE	347°08'15"	90°07'45"	*****	*****	1.500	9.769	9.769	0.182
N294	I	BE	332°04'21"	88°51'40"	*****	*****	1.500	9.307	9.305	0.389
N295	I	BE	312°22'46"	86°31'04"	*****	*****	1.500	16.812	16.781	1.225
N296	I	BE	300°17'24"	86°20'52"	*****	*****	1.500	34.061	33.992	2.374
N297	I	BE	289°45'10"	86°09'47"	*****	*****	1.500	33.341	33.266	2.435
N298	I	EXA	295°39'23"	86°13'21"	*****	*****	1.500	33.542	33.469	2.414
N299	I	EXA	296°43'42"	85°39'26"	*****	*****	1.500	24.020	23.951	2.023
N300	I	BE	289°45'51"	85°49'09"	*****	*****	1.500	23.487	23.425	1.916
N301	I	BE	303°47'04"	85°52'30"	*****	*****	1.500	24.182	24.119	1.943
N302	I	BE	288°48'14"	86°06'30"	*****	*****	1.500	16.434	16.396	1.319
N303	I	EXA	301°25'07"	85°59'12"	*****	*****	1.500	16.181	16.141	1.336
N304	I	EXA	309°34'27"	87°14'31"	*****	*****	1.500	7.405	7.396	0.560
N305	I	EXA	19°49'51"	92°22'48"	*****	*****	1.500	3.521	3.518	0.058
N306	I	BE	287°06'03"	87°53'40"	*****	*****	1.500	6.363	6.359	0.438
N307	I	BE	130°09'18"	104°45'38"	*****	*****	1.500	1.243	1.202	-0.113
N308	I	BE	165°24'25"	100°03'10"	*****	*****	1.500	3.123	3.075	-0.341
N309	I	BE	214°23'44"	98°06'13"	*****	*****	1.500	7.726	7.649	-0.885
N310	I	BE	226°57'52"	97°56'51"	*****	*****	1.500	15.763	15.612	-1.976
N311	I	MF	136°07'12"	94°55'18"	*****	*****	1.500	10.149	10.112	-0.667
N312	I	MF	112°38'29"	93°43'13"	*****	*****	1.500	13.785	13.756	-0.690
N313	I	MF	110°11'16"	93°09'24"	*****	*****	1.500	22.106	22.072	-1.013
N314	I	MF	92°15'52"	93°02'22"	*****	*****	1.500	23.545	23.512	-1.044
N315	I	PTC	90°44'49"	92°57'39"	*****	*****	1.500	23.664	23.632	-1.018
N316	I	EXA	100°56'47"	92°58'58"	*****	*****	1.500	22.793	22.762	-0.982
N317	I	EXA	99°15'24"	93°38'03"	*****	*****	1.500	13.869	13.841	-0.675
N318	I	MF	111°03'35"	93°34'23"	*****	*****	1.500	16.102	16.071	-0.800

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O2			H.I.: 1.704							
LGO1055	R		0°00'00"	89°33'34"	*****	*****	1.500	117.072	117.069	1.104
N319	I EXA		144°21'14"	96°45'06"	*****	*****	1.500	5.501	5.463	-0.443
N320	I EXA		189°18'39"	97°03'33"	*****	*****	1.500	9.841	9.766	-1.005
N321	I MF		177°15'26"	95°45'15"	*****	*****	1.500	12.230	12.168	-1.022
N322	I MF		197°19'59"	88°46'07"	*****	*****	4.600	17.689	17.685	-2.516
N323	I EXA		208°14'42"	98°03'40"	*****	*****	1.500	16.235	16.075	-2.073
N324	I EXA		79°28'42"	93°48'05"	*****	*****	1.500	7.339	7.323	-0.283
N325	I MF		58°29'14"	92°56'07"	*****	*****	1.500	8.670	8.659	-0.240
N326	I BE		58°25'33"	92°56'06"	*****	*****	1.500	8.706	8.695	-0.242
N327	I BE		36°10'56"	92°19'09"	*****	*****	1.500	8.608	8.601	-0.144
N328	I BE		11°08'57"	90°38'04"	*****	*****	1.500	14.016	14.015	0.049
N329	I EXT		359°59'01"	90°11'28"	*****	*****	1.500	13.839	13.839	0.158
N330	I PTC		14°09'27"	90°21'56"	*****	*****	1.500	14.483	14.483	0.112
N331	I PTC		313°40'02"	87°09'58"	*****	*****	1.500	16.942	16.921	1.042
N332	I MF		109°05'25"	92°14'13"	*****	*****	1.500	37.370	37.342	-1.255
N333	I EXA		104°01'07"	92°19'06"	*****	*****	1.500	37.212	37.182	-1.301
N334	I BE		98°24'09"	92°28'20"	*****	*****	1.500	37.258	37.223	-1.403
N335	I BE		95°06'31"	92°52'41"	*****	*****	1.500	28.270	28.234	-1.215
N336	I MF		95°05'18"	92°52'42"	*****	*****	1.500	28.268	28.232	-1.215
N337	I MF		108°36'03"	91°40'26"	*****	*****	1.500	57.680	57.655	-1.481
N338	I EXA		105°48'17"	91°42'40"	*****	*****	1.500	57.504	57.478	-1.513
N339	I BE		102°10'55"	91°48'18"	*****	*****	1.500	57.302	57.274	-1.601
N340	I PTC		100°55'21"	91°48'20"	*****	*****	1.500	57.301	57.273	-1.601
N341	I MF		103°19'15"	91°34'17"	*****	*****	1.500	70.979	70.952	-1.742
N342	I BE		103°19'17"	91°34'17"	*****	*****	1.500	70.964	70.937	-1.742
N343	I MF		108°17'49"	91°35'05"	*****	*****	1.500	70.621	70.594	-1.749
N344	I EXA		106°05'37"	91°34'23"	*****	*****	1.500	70.876	70.849	-1.742
N345	I EXA		106°07'46"	91°41'57"	*****	*****	1.500	82.297	82.261	-2.236
N346	I MF		108°18'13"	91°44'06"	*****	*****	1.500	82.523	82.485	-2.295
N347	I MF		104°02'12"	91°41'50"	*****	*****	1.500	83.004	82.968	-2.254
N348	I TMF		104°01'35"	91°36'41"	*****	*****	1.500	83.001	82.968	-2.130
N349	I TMF		108°21'50"	91°38'51"	*****	*****	1.500	82.715	82.681	-2.174
N350	I MF		108°21'17"	92°10'45"	*****	*****	1.500	90.668	90.602	-3.244
N351	I MF		104°21'32"	92°01'53"	*****	*****	1.500	91.014	90.957	-3.022
N352	I EXA		106°08'48"	92°04'34"	*****	*****	1.500	90.663	90.603	-3.080
N353	I CA		104°06'01"	91°40'41"	*****	*****	1.500	85.889	85.852	-2.311
N354	I CA		103°45'14"	91°29'20"	*****	*****	1.500	79.338	79.311	-1.857
N355	I CA		100°13'15"	91°08'37"	*****	*****	2.000	79.646	79.630	-1.886
N356	I MUR		100°04'58"	91°06'52"	*****	*****	2.000	79.562	79.547	-1.843
N357	I ARV		99°06'34"	91°12'06"	*****	*****	2.000	66.810	66.795	-1.697
N358	I MUR		97°57'21"	91°18'54"	*****	*****	2.000	60.340	60.324	-1.681
N359	I DIV		96°16'46"	91°29'16"	*****	*****	2.000	50.532	50.515	-1.608
N360	I MUR		91°44'45"	91°48'26"	*****	*****	2.000	35.426	35.408	-1.413
N361	I MUR		84°30'41"	91°41'43"	*****	*****	2.000	24.289	24.278	-1.015
N362	I MUR		52°11'10"	90°12'34"	*****	*****	2.000	11.224	11.224	-0.337
N363	I MUR		40°16'28"	89°34'14"	*****	*****	2.000	10.589	10.589	-0.217
N364	I MUR		28°51'08"	91°18'20"	*****	*****	1.500	11.285	11.282	-0.053
N365	I MUR		16°17'16"	90°56'31"	*****	*****	1.500	13.963	13.961	-0.026
N366	I MUR		5°15'53"	87°22'58"	*****	*****	2.600	34.999	34.962	0.702
N367	I PE		336°09'21"	88°41'20"	*****	*****	1.500	21.672	21.666	0.700
N368	I CRI		336°52'41"	85°23'24"	*****	*****	0.100	22.004	21.933	3.373
N369	I CRI		321°40'32"	84°08'10"	*****	*****	1.500	27.849	27.703	3.049
N370	I PE		320°30'51"	86°38'45"	*****	*****	1.500	27.251	27.204	1.798
N371	I CRP		310°21'48"	85°46'25"	*****	*****	1.500	31.655	31.569	2.537
N372	I TUBO		317°48'00"	85°18'20"	*****	*****	1.500	29.043	28.946	2.581
N373	I TUBO		321°44'26"	84°46'21"	*****	*****	1.500	27.532	27.417	2.712
N374	I ARV		307°58'04"	85°55'57"	*****	*****	1.500	35.259	35.170	2.705

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O2			H.I.: 1.704							
LGO1055	R		0°00'00"	89°33'34"	*****	*****	1.500	117.072	117.069	1.104
N375	I MUR		308°55'30"	85°58'42"	*****	*****	1.500	37.009	36.918	2.800
N376	I CER		284°46'48"	85°18'59"	*****	*****	1.500	30.848	30.745	2.723
N377	I CER		282°18'49"	83°38'11"	*****	*****	2.600	20.497	20.371	1.376
N378	I CER		275°32'04"	81°47'22"	*****	*****	2.600	9.989	9.887	0.531
N379	I MUR		255°46'06"	89°49'13"	*****	*****	2.100	41.310	41.310	-0.266
N380	I CA		239°59'30"	93°45'15"	*****	*****	1.500	29.352	29.289	-1.718
N381	I CA		186°46'20"	96°43'06"	*****	*****	2.600	21.703	21.554	-3.435
N382	I CA		140°31'42"	92°31'54"	*****	*****	3.600	38.022	37.985	-3.576
N383	I COTA		112°09'32"	89°42'26"	*****	*****	3.600	57.365	57.364	-1.603
N384	I COTA		122°31'31"	91°53'22"	*****	*****	1.500	60.599	60.566	-1.794
N385	I COTA		125°07'18"	91°36'33"	*****	*****	3.600	61.093	61.069	-3.612
N386	I COTA		111°26'51"	89°06'42"	*****	*****	3.600	36.366	36.362	-1.332
N387	I COTA		122°31'25"	92°30'56"	*****	*****	1.500	37.733	37.697	-1.452
N388	I COTA		131°06'50"	92°33'38"	*****	*****	1.500	40.315	40.275	-1.597
N389	I COTA		134°53'02"	92°15'32"	*****	*****	3.600	41.168	41.136	-3.519
N390	I COTA		165°16'43"	93°37'02"	*****	*****	3.600	23.306	23.260	-3.366
N391	I COTA		159°33'41"	93°20'38"	*****	*****	1.500	20.315	20.280	-0.981
N392	I COTA		142°33'51"	93°46'12"	*****	*****	1.500	15.407	15.374	-0.809
N393	I COTA		115°19'01"	93°29'37"	*****	*****	1.500	14.530	14.503	-0.681
N394	I POR		200°26'38"	90°22'46"	*****	*****	4.600	21.176	21.176	-3.036
N395	I POR		210°55'15"	92°59'55"	*****	*****	3.600	21.834	21.804	-3.038
N396	I SOL		207°16'16"	98°31'16"	*****	*****	1.500	22.051	21.808	-3.063
N397	I EXA		207°37'51"	98°45'02"	*****	*****	1.500	20.707	20.466	-2.946
N398	I MF		199°43'23"	101°43'44"	*****	*****	0.500	21.053	20.613	-3.076
N399	I BE		229°29'41"	97°46'45"	*****	*****	1.500	23.519	23.303	-2.979
ESTAÇÃO: O3			H.I.: 1.575							
O2	R		0°00'00"	88°05'42"	*****	*****	1.500	90.740	90.690	3.091
O3A	A AUXILIAR		148°05'54"	91°48'26"	*****	*****	1.500	22.701	22.690	-0.641
N400	I PTC		102°12'14"	84°22'00"	*****	*****	1.500	8.138	8.099	0.874
N401	I MUR		104°02'21"	90°24'57"	*****	*****	1.500	6.907	6.907	0.025
N402	I MUR		91°34'55"	88°50'43"	*****	*****	1.500	6.699	6.698	0.210
N403	I MUR		91°33'11"	84°25'44"	*****	*****	1.500	11.989	11.932	1.239
N404	I MUR		83°34'06"	84°24'54"	*****	*****	1.500	12.020	11.963	1.245
N405	I MUR		77°34'53"	87°24'56"	*****	*****	1.500	6.804	6.797	0.382
N406	I MUR		66°06'18"	86°24'47"	*****	*****	1.500	7.296	7.282	0.531
N407	I TOPO		66°35'10"	81°10'36"	*****	*****	1.500	7.294	7.208	1.194
N408	I TOPO		103°48'16"	80°33'26"	*****	*****	1.500	7.036	6.941	1.229
N409	I TOPO		83°38'48"	84°11'33"	*****	*****	1.500	11.977	11.916	1.287
N410	I TOPO		91°28'50"	84°16'38"	*****	*****	1.500	11.962	11.902	1.268
N411	I MUR		108°31'52"	89°38'12"	*****	*****	1.500	12.690	12.690	0.155
ESTAÇÃO: O3A			H.I.: 1.661							
O3	R		359°59'57"	88°48'59"	*****	*****	1.500	22.694	22.689	0.630
N412	I MF		7°31'24"	91°05'11"	*****	*****	1.500	12.704	12.702	-0.080
N413	I EXA		356°52'54"	90°38'20"	*****	*****	1.500	16.569	16.568	-0.024
N414	I MF		359°45'39"	89°17'58"	*****	*****	1.500	22.309	22.307	0.434
N415	I MF		350°28'00"	90°17'46"	*****	*****	1.500	20.772	20.772	0.054
N416	I MF		349°01'53"	90°27'39"	*****	*****	1.500	20.899	20.898	-0.007
N417	I MF		348°40'43"	90°27'43"	*****	*****	1.500	21.284	21.283	-0.011
N418	I MF		348°28'28"	90°01'41"	*****	*****	1.500	26.903	26.903	0.148
N419	I MF		347°15'17"	89°58'18"	*****	*****	1.500	30.481	30.481	0.176
N420	I MF		344°04'40"	89°41'19"	*****	*****	1.500	34.510	34.509	0.349
N421	I MF		339°34'13"	89°26'29"	*****	*****	1.500	38.701	38.699	0.538
N422	I EXP		336°45'25"	89°43'11"	*****	*****	1.500	37.060	37.060	0.342
N423	I MF		332°47'55"	90°00'36"	*****	*****	1.500	35.259	35.259	0.155
N424	I MF		334°56'35"	90°09'35"	*****	*****	1.500	31.728	31.728	0.073

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O3A			H.I.: 1.661							
O3	R		359°59'57"	88°48'59"	*****	*****	1.500	22.694	22.689	0.630
N425	I MF		335°57'59"	90°27'05"	*****	*****	1.500	28.114	28.113	-0.060
N426	I MF		333°15'37"	91°49'36"	*****	*****	1.500	23.122	23.110	-0.576
N427	I EXP		340°47'36"	91°14'33"	*****	*****	1.500	21.471	21.466	-0.305
N428	I EXP		342°03'40"	90°04'11"	*****	*****	1.500	27.507	27.507	0.128
N429	I EXP		339°36'54"	89°47'38"	*****	*****	1.500	33.106	33.106	0.280
N430	I EXP		336°50'35"	89°42'31"	*****	*****	1.500	37.027	37.027	0.349
N431	I MF		325°36'34"	92°17'36"	*****	*****	1.500	26.790	26.769	-0.911
N432	I ARV		146°51'28"	91°24'17"	*****	*****	1.500	3.153	3.152	0.084
N433	I ARV		138°11'54"	90°05'05"	*****	*****	1.500	6.116	6.116	0.152
N434	I ARV		130°40'27"	89°39'23"	*****	*****	1.500	9.279	9.279	0.217
N435	I ARV		128°35'21"	89°35'47"	*****	*****	1.500	12.031	12.031	0.246
N436	I ARV		127°39'14"	89°29'37"	*****	*****	1.500	15.571	15.570	0.299
N437	I ARV		126°29'38"	89°26'10"	*****	*****	1.500	18.620	18.619	0.344
N438	I ARV		126°28'52"	89°26'09"	*****	*****	1.500	21.939	21.938	0.377
N439	I ARV		24°06'39"	89°00'32"	*****	*****	1.500	9.952	9.951	0.333
N440	I ARV		50°55'34"	89°55'27"	*****	*****	1.500	10.066	10.066	0.174
N441	I ARV		74°45'05"	89°52'34"	*****	*****	1.500	12.361	12.361	0.188
N442	I ARV		89°28'22"	89°40'01"	*****	*****	1.500	15.958	15.958	0.254
N443	I ARV		99°29'06"	89°33'30"	*****	*****	1.500	21.677	21.676	0.328
N444	I MF		121°13'32"	89°48'34"	*****	*****	1.500	21.906	21.906	0.234
N445	I MF		103°51'39"	89°46'33"	*****	*****	1.500	23.586	23.586	0.253
N446	I EXA		112°16'21"	89°38'57"	*****	*****	1.500	22.537	22.537	0.299
N447	I EXA		97°32'26"	90°16'25"	*****	*****	1.500	11.313	11.313	0.107
N448	I MF		119°00'56"	90°12'51"	*****	*****	1.500	13.742	13.742	0.110
N449	I MF		90°38'58"	90°20'11"	*****	*****	1.500	15.477	15.477	0.070
N450	I MF		115°45'44"	90°50'36"	*****	*****	1.500	9.545	9.544	0.021
N451	I MF		81°52'33"	90°39'48"	*****	*****	1.500	12.742	12.741	0.013
N452	I MF		113°48'16"	91°27'11"	*****	*****	1.500	6.659	6.657	-0.008
N453	I MF		113°18'13"	91°49'21"	*****	*****	1.500	5.365	5.362	-0.010
N454	I MF		152°04'57"	103°36'24"	*****	*****	1.500	0.999	0.971	-0.074
N455	I MF		21°24'37"	91°42'18"	*****	*****	1.500	9.168	9.164	-0.112
N456	I MF		299°59'24"	98°14'11"	*****	*****	1.500	3.985	3.944	-0.410
N457	I MF		295°53'10"	98°15'37"	*****	*****	1.500	4.374	4.329	-0.467
N458	I MF		268°29'02"	99°26'29"	*****	*****	1.500	6.075	5.993	-0.836
N459	I MF		235°59'01"	99°38'15"	*****	*****	1.500	12.334	12.160	-1.904
N460	I MF		232°03'12"	99°30'12"	*****	*****	1.500	15.260	15.051	-2.359
N461	I MF		10°38'10"	91°50'29"	*****	*****	1.500	10.343	10.338	-0.171
N462	I MF		7°18'01"	91°04'13"	*****	*****	1.500	12.782	12.780	-0.078
N463	I MF		223°13'03"	98°59'49"	*****	*****	1.500	27.346	27.010	-4.115
N464	I EXA		359°31'27"	92°55'28"	*****	*****	1.500	5.015	5.008	-0.095
N465	I MF		236°15'05"	98°28'01"	*****	*****	1.500	29.129	28.812	-4.128
N466	I MF		237°05'14"	98°21'38"	*****	*****	1.500	28.860	28.553	-4.035
N467	I MF		236°43'48"	98°28'14"	*****	*****	1.500	28.547	28.236	-4.044
N468	I MF		237°38'32"	98°23'01"	*****	*****	1.500	28.287	27.985	-3.963
N469	I MF		237°39'48"	98°21'59"	*****	*****	1.500	28.259	27.958	-3.951
N470	I MF		246°14'55"	98°13'28"	*****	*****	1.500	21.004	20.788	-2.844
N471	I MF		252°30'52"	97°43'19"	*****	*****	1.500	20.000	19.819	-2.526
N472	I MF		259°21'19"	97°13'37"	*****	*****	1.500	20.038	19.879	-2.360
N473	I MF		266°08'04"	96°37'26"	*****	*****	1.500	20.716	20.578	-2.229
N474	I MF		284°11'50"	94°43'14"	*****	*****	1.500	25.677	25.590	-1.952
N475	I MF		300°50'15"	93°01'49"	*****	*****	1.500	37.035	36.983	-1.797
N476	I PTC		300°28'05"	92°52'59"	*****	*****	1.500	37.235	37.188	-1.712
N477	I PTC		325°11'52"	92°02'34"	*****	*****	1.500	28.896	28.878	-0.869
N478	I MF		324°12'00"	92°22'16"	*****	*****	1.500	28.783	28.758	-1.030
N479	I MF		305°40'30"	91°21'50"	*****	*****	2.450	43.312	43.300	-1.820
N480	I MF		320°03'22"	92°25'27"	*****	*****	1.500	36.772	36.739	-1.394

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O3A			H.I.: 1.661							
O3	R		359°59'57"	88°48'59"	*****	*****	1.500	22.694	22.689	0.630
N481	I MF		318°27'10"	92°24'42"	*****	*****	1.500	42.145	42.108	-1.612
N482	I PTC		319°47'25"	92°06'24"	*****	*****	1.500	41.276	41.248	-1.356
N483	I ARV		321°36'11"	92°01'53"	*****	*****	1.500	36.995	36.972	-1.150
N484	I ARV		326°18'32"	91°54'08"	*****	*****	1.500	27.648	27.633	-0.757
N485	I CX		325°39'39"	92°00'45"	*****	*****	1.500	29.327	29.309	-0.869
N486	I CX		324°34'46"	92°00'46"	*****	*****	1.500	29.169	29.151	-0.863
N487	I CX		323°57'47"	92°00'47"	*****	*****	1.500	30.177	30.158	-0.899
N488	I EXA		312°00'46"	92°23'10"	*****	*****	1.500	42.468	42.431	-1.607
N489	I EXA		309°31'30"	92°41'33"	*****	*****	1.500	32.137	32.102	-1.349
N490	I EXA		317°44'52"	92°24'20"	*****	*****	1.500	27.026	27.002	-0.973
N491	I EXA		309°11'37"	92°39'05"	*****	*****	1.500	27.108	27.079	-1.093
N492	I EXA		300°41'26"	93°27'06"	*****	*****	1.500	30.258	30.203	-1.661
N493	I EXA		329°54'43"	92°03'20"	*****	*****	1.500	20.505	20.492	-0.574
N494	I EXA		290°26'51"	94°34'10"	*****	*****	1.500	23.942	23.866	-1.746
N495	I EXA		343°10'13"	91°57'09"	*****	*****	1.500	11.149	11.143	-0.219
N496	I EXA		273°29'29"	96°22'14"	*****	*****	1.500	18.738	18.622	-1.918
N497	I EXA		291°00'09"	95°49'58"	*****	*****	1.500	8.082	8.040	-0.660
N498	I EXA		258°45'13"	98°18'14"	*****	*****	1.500	11.514	11.393	-1.502
N499	I EXA		4°59'10"	92°42'31"	*****	*****	1.500	5.466	5.460	-0.097
N500	I EXA		237°15'55"	98°52'51"	*****	*****	1.500	19.883	19.645	-2.909
N501	I EXA		331°08'37"	92°21'50"	*****	*****	1.500	8.343	8.336	-0.183
N502	I EXA		229°17'25"	98°51'08"	*****	*****	1.500	28.491	28.152	-4.223
N503	I EXA		223°43'18"	98°33'30"	*****	*****	1.500	43.178	42.697	-6.265
N504	I MF		218°54'11"	98°37'57"	*****	*****	1.500	43.374	42.883	-6.349
N505	I MF		227°43'46"	98°28'00"	*****	*****	1.500	44.848	44.359	-6.442
N506	I CANT		295°06'47"	94°28'15"	*****	*****	1.500	11.329	11.295	-0.722
N507	I CANT		287°54'09"	95°26'16"	*****	*****	1.500	12.908	12.850	-1.062
N508	I CANT		304°56'52"	93°30'46"	*****	*****	1.500	10.754	10.734	-0.498
N509	I CANT		284°58'14"	95°41'17"	*****	*****	1.500	15.732	15.655	-1.398
N510	I CANT		316°22'34"	92°26'22"	*****	*****	1.500	11.499	11.489	-0.328
N511	I CANT		287°57'48"	95°25'20"	*****	*****	1.500	18.665	18.581	-1.603
N512	I CANT		324°03'54"	92°10'01"	*****	*****	1.500	13.664	13.654	-0.356
N513	I CANT		293°40'18"	94°48'46"	*****	*****	1.500	20.780	20.707	-1.582
N514	I CANT		324°23'10"	92°03'48"	*****	*****	1.500	17.101	17.090	-0.455
N515	I CANT		299°51'28"	94°09'04"	*****	*****	1.500	21.871	21.814	-1.422
N516	I CANT		319°50'35"	92°10'36"	*****	*****	1.500	19.740	19.726	-0.589
N517	I CANT		306°54'55"	93°14'49"	*****	*****	1.500	22.147	22.111	-1.093
N518	I CANT		313°59'38"	92°26'03"	*****	*****	1.500	21.310	21.291	-0.744
N519	I DEF		303°55'14"	93°14'22"	*****	*****	1.500	21.713	21.678	-1.066
N520	I DEF		321°59'35"	91°47'16"	*****	*****	1.500	18.224	18.215	-0.408
N521	I DEF		314°06'54"	91°54'04"	*****	*****	1.500	11.463	11.457	-0.219
N522	I DEF		288°30'26"	94°54'33"	*****	*****	1.500	18.491	18.423	-1.421
N523	I DEF		286°36'11"	95°15'59"	*****	*****	1.500	14.736	14.674	-1.192
N524	I TORRE		318°59'21"	91°30'45"	*****	*****	1.500	13.107	13.102	-0.185
N525	I TORRE		314°29'16"	91°59'23"	*****	*****	1.500	17.078	17.068	-0.432
N526	I TORRE		300°25'40"	93°25'41"	*****	*****	1.500	16.502	16.472	-0.826
N527	I TORRE		300°41'04"	93°11'21"	*****	*****	1.500	12.306	12.287	-0.524
N528	I PTC		218°21'47"	96°34'43"	*****	*****	1.500	32.563	32.349	-3.570
N529	I PE		212°43'54"	97°28'02"	*****	*****	2.600	33.531	33.247	-5.297
N530	I CRI		212°38'16"	94°56'10"	*****	*****	2.600	33.246	33.123	-3.800
N531	I CRI		218°44'09"	94°41'09"	*****	*****	2.600	33.048	32.938	-3.639
N532	I PE		219°48'53"	96°53'14"	*****	*****	2.600	33.767	33.523	-4.988
N533	I PE		222°17'46"	96°21'18"	*****	*****	2.600	25.684	25.526	-3.782
N534	I CRI		221°16'21"	94°54'48"	*****	*****	2.600	25.459	25.365	-3.119
N535	I CRP		225°39'31"	95°24'09"	*****	*****	2.600	17.636	17.558	-2.599
N536	I MUR		210°29'30"	93°38'48"	*****	*****	2.600	31.775	31.711	-2.960

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O3A			H.I.: 1.661							
O3	R		359°59'57"	88°48'59"	*****	*****	1.500	22.694	22.689	0.630
N537	I MUR		209°20'14"	91°15'05"	*****	*****	2.600	16.767	16.763	-1.305
N538	I MUR		197°04'28"	92°04'14"	*****	*****	1.500	2.648	2.646	0.065
N539	I MUR		128°51'54"	89°24'01"	*****	*****	1.500	22.036	22.035	0.392
N540	I MUR		97°47'03"	89°07'05"	*****	*****	1.500	24.070	24.067	0.531
N541	I MUR		48°15'16"	89°31'49"	*****	*****	1.500	11.562	11.562	0.256
N542	I MUR		41°40'06"	89°05'28"	*****	*****	1.500	11.672	11.671	0.346
N543	I MUR		36°27'15"	87°42'41"	*****	*****	1.500	12.358	12.348	0.654
N544	I CA		31°52'31"	89°19'19"	*****	*****	1.500	10.811	10.810	0.289
N545	I TP		37°11'55"	87°48'31"	*****	*****	2.000	10.090	10.083	0.047
N546	I CA		10°45'09"	89°29'49"	*****	*****	1.500	11.426	11.426	0.261
N547	I CA		30°33'55"	83°50'22"	*****	*****	2.600	15.232	15.144	0.696
N548	I COTA		349°43'30"	89°30'33"	*****	*****	1.500	25.438	25.437	0.379
N549	I COTA		355°35'38"	85°44'45"	*****	*****	1.500	26.812	26.738	2.150
N550	I COTA		351°56'29"	86°43'13"	*****	*****	1.500	32.244	32.191	2.006
N551	I COTA		347°27'38"	87°11'16"	*****	*****	1.500	36.991	36.946	1.976
N552	I COTA		4°59'36"	87°39'45"	*****	*****	1.500	42.599	42.564	1.898
N553	I COTA		355°28'02"	86°34'00"	*****	*****	2.200	44.505	44.425	2.126
N554	I COTA		347°43'12"	88°15'46"	*****	*****	2.200	30.812	30.798	0.395
N555	I COTA		342°33'30"	88°19'13"	*****	*****	2.200	36.436	36.420	0.529
N556	I COTA		342°02'53"	89°30'03"	*****	*****	2.200	38.349	38.348	-0.205
N557	I CA		340°59'19"	89°14'26"	*****	*****	2.200	38.945	38.942	-0.023
N558	I CXE		341°21'43"	88°21'37"	*****	*****	2.200	38.439	38.423	0.561
N559	I CXE		340°37'02"	88°19'00"	*****	*****	2.200	38.115	38.099	0.581
N560	I CXE		340°08'30"	88°19'50"	*****	*****	2.200	38.545	38.529	0.584
N561	I COTA		340°43'55"	89°21'05"	*****	*****	2.200	38.523	38.521	-0.103
N562	I COTA		333°16'44"	89°54'57"	*****	*****	2.200	35.313	35.313	-0.487
N563	I GS		332°57'01"	90°26'24"	*****	*****	1.500	35.424	35.423	-0.111
N564	I GS		333°31'34"	90°20'42"	*****	*****	1.500	35.278	35.277	-0.051
N565	I GS		340°19'26"	89°49'36"	*****	*****	1.500	38.372	38.372	0.277
N566	I CX		332°47'31"	89°59'58"	*****	*****	1.500	35.441	35.441	0.161
N567	I CX		333°39'56"	90°01'14"	*****	*****	1.500	35.666	35.666	0.148
N568	I CX		334°02'11"	90°01'15"	*****	*****	1.500	35.210	35.210	0.148
N569	I MUR		333°01'38"	89°59'10"	*****	*****	1.500	35.175	35.175	0.170
N570	I MUR		324°48'53"	91°54'50"	*****	*****	1.500	32.470	32.452	-0.923
N571	I MUR		319°50'44"	92°04'26"	*****	*****	1.500	43.990	43.961	-1.431
N572	I MUR		303°37'24"	92°19'25"	*****	*****	1.500	44.816	44.779	-1.656
N573	I MUR		289°54'14"	93°35'46"	*****	*****	1.500	31.375	31.313	-1.807
N574	I MUR		260°15'12"	95°39'21"	*****	*****	1.500	21.864	21.758	-1.994
N575	I LUM		256°23'19"	94°56'46"	*****	*****	1.500	23.971	23.882	-1.906
N576	I MUR		249°38'39"	94°06'55"	*****	*****	1.500	31.363	31.282	-2.090
N577	I CX		247°28'46"	93°25'02"	*****	*****	1.500	37.064	36.998	-2.048
N578	I CX		246°25'17"	93°27'19"	*****	*****	1.500	36.444	36.378	-2.035
N579	I CX		245°26'07"	93°26'25"	*****	*****	1.500	37.038	36.971	-2.062
N580	I MUR		247°19'20"	93°10'48"	*****	*****	1.500	43.653	43.586	-2.261
N581	I MUR		244°28'53"	91°40'38"	*****	*****	2.600	45.553	45.533	-2.272
N582	I MUR		238°40'58"	91°19'32"	*****	*****	2.600	60.299	60.283	-2.334
N583	I MUR		234°59'44"	90°57'40"	*****	*****	2.600	76.660	76.649	-2.225
N584	I LUM		236°19'41"	91°52'04"	*****	*****	1.500	69.067	69.030	-2.090
N585	I LUM		240°06'38"	92°21'40"	*****	*****	1.500	55.294	55.247	-2.117
N586	I PTC		276°42'38"	97°21'41"	*****	*****	1.500	4.284	4.249	-0.388
N587	I LUM		248°07'06"	93°19'04"	*****	*****	1.500	36.603	36.542	-1.957
N588	I PTC		13°16'02"	90°43'31"	*****	*****	1.500	10.169	10.168	0.032
N589	I CX		14°16'47"	91°58'48"	*****	*****	1.500	7.255	7.251	-0.090
N590	I CX		24°11'56"	91°56'21"	*****	*****	1.500	6.817	6.813	-0.070
N591	I CX		20°34'22"	92°28'10"	*****	*****	1.500	5.560	5.555	-0.079
N592	I BL		27°10'08"	92°14'53"	*****	*****	1.500	8.772	8.765	-0.183

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O3A			H.I.: 1.661							
O3	R		359°59'57"	88°48'59"	*****	*****	1.500	22.694	22.689	0.630
N593	I	COTA	27°35'11"	98°00'56"	*****	*****	1.500	8.793	8.707	-1.065
N594	I	EXA	349°34'54"	91°49'03"	*****	*****	1.500	13.282	13.275	-0.260
N595	I	GS	240°51'30"	98°00'49"	*****	*****	1.500	27.231	26.965	-3.635
N596	I	COTA	240°57'08"	98°35'53"	*****	*****	1.500	27.297	26.990	-3.920
ESTAÇÃO: O5			H.I.: 1.531							
O4	R		0°00'00"	88°49'07"	*****	*****	1.500	42.738	42.729	0.912
N597	I	MF	7°39'04"	89°28'47"	*****	*****	1.500	41.605	41.603	0.409
N598	I	MF	335°02'51"	85°33'41"	*****	*****	2.450	51.102	50.949	3.036
N599	I	MF	340°56'38"	86°40'26"	*****	*****	1.500	55.307	55.214	3.240
N600	I	MF	349°19'36"	87°33'35"	*****	*****	1.500	47.714	47.671	2.063
N601	I	MF	354°01'57"	88°06'44"	*****	*****	1.500	44.836	44.812	1.508
N602	I	MF	356°15'20"	88°24'04"	*****	*****	1.500	43.979	43.962	1.258
N603	I	MF	359°07'49"	88°45'17"	*****	*****	1.500	43.811	43.801	0.983
N604	I	MF	6°51'52"	89°22'04"	*****	*****	1.500	38.210	38.208	0.453
N605	I	MF	6°45'40"	89°21'58"	*****	*****	1.500	36.952	36.950	0.440
N606	I	PTC	347°16'40"	86°28'11"	*****	*****	1.500	52.116	52.017	3.240
N607	I	MF	5°24'05"	89°24'59"	*****	*****	1.500	29.477	29.475	0.331
N608	I	MF	337°43'55"	87°02'56"	*****	*****	1.500	47.482	47.419	2.476
N609	I	MF	340°44'54"	87°30'44"	*****	*****	1.500	43.251	43.210	1.908
N610	I	MF	343°05'54"	88°04'31"	*****	*****	1.500	38.260	38.238	1.316
N611	I	MF	345°52'26"	88°46'29"	*****	*****	1.500	32.929	32.921	0.735
N612	I	MF	347°04'19"	89°11'14"	*****	*****	1.500	29.256	29.253	0.446
N613	I	MF	346°14'58"	89°31'41"	*****	*****	1.500	24.696	24.695	0.234
N614	I	MF	4°31'52"	89°37'41"	*****	*****	1.500	17.697	17.697	0.146
N615	I	MF	343°25'16"	89°40'58"	*****	*****	1.500	19.885	19.885	0.141
N616	I	MF	315°16'38"	89°31'03"	*****	*****	1.500	8.851	8.851	0.106
N617	I	MF	1°16'26"	89°41'14"	*****	*****	1.500	5.213	5.213	0.059
N618	I	MF	224°26'59"	88°13'28"	*****	*****	1.500	10.376	10.371	0.352
N619	I	MF	188°03'47"	90°38'13"	*****	*****	1.500	7.484	7.484	-0.052
N620	I	MF	204°57'37"	89°22'11"	*****	*****	1.500	19.132	19.131	0.241
N621	I	MF	183°09'39"	91°29'14"	*****	*****	1.500	10.453	10.449	-0.240
N622	I	MF	202°16'03"	89°42'32"	*****	*****	1.500	23.040	23.040	0.148
N623	I	MF	170°45'39"	93°56'56"	*****	*****	1.500	12.886	12.855	-0.856
N624	I	MF	202°08'49"	89°48'26"	*****	*****	1.500	27.188	27.188	0.122
N625	I	MF	161°07'16"	95°03'54"	*****	*****	1.500	13.446	13.394	-1.156
N626	I	MF	204°31'03"	89°31'21"	*****	*****	1.500	35.110	35.109	0.324
N627	I	MF	153°01'40"	96°04'26"	*****	*****	1.500	13.209	13.135	-1.367
N628	I	MF	207°57'19"	88°51'13"	*****	*****	1.500	47.397	47.388	0.979
N629	I	MF	118°22'49"	94°30'40"	*****	*****	2.500	13.166	13.125	-2.005
N630	I	MF	114°01'08"	94°45'17"	*****	*****	2.500	13.141	13.096	-2.058
N631	I	MF	99°47'07"	99°42'39"	*****	*****	1.500	12.247	12.072	-2.035
N632	I	PTC	99°08'37"	99°00'45"	*****	*****	1.500	13.302	13.138	-2.053
N633	I	MF	200°55'00"	89°00'00"	*****	*****	1.500	49.197	49.190	0.890
N634	I	MF	203°22'23"	88°31'12"	*****	*****	1.500	56.019	56.000	1.478
N635	I	MF	209°27'29"	88°20'25"	*****	*****	1.500	55.252	55.229	1.631
N636	I	MF	210°25'23"	87°46'32"	*****	*****	1.500	62.599	62.552	2.461
N637	I	MF	204°52'59"	87°55'00"	*****	*****	1.500	63.148	63.106	2.327
N638	I	MF	206°04'08"	87°22'57"	*****	*****	1.500	72.689	72.613	3.351
N639	I	MF	211°13'35"	87°17'53"	*****	*****	1.500	72.194	72.114	3.434
N640	I	MF	148°05'32"	94°15'41"	*****	*****	1.500	23.117	23.053	-1.687
N641	I	MF	211°57'57"	86°58'22"	*****	*****	1.500	84.567	84.449	4.497
N642	I	MF	153°41'46"	93°32'45"	*****	*****	1.500	21.377	21.336	-1.291
N643	I	MF	207°13'15"	87°04'45"	*****	*****	1.500	85.305	85.194	4.378
N644	I	MF	164°25'02"	91°55'25"	*****	*****	1.500	21.990	21.978	-0.707
N645	I	MF	208°05'36"	86°53'17"	*****	*****	1.500	97.294	97.151	5.313
N646	I	MF	176°57'33"	90°36'33"	*****	*****	1.500	24.838	24.837	-0.233

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 05			H.I.: 1.531							
O4	R		0°00'00"	88°49'07"	*****	*****	1.500	42.738	42.729	0.912
N647	I MF		212°26'40"	86°46'25"	*****	*****	1.500	95.853	95.701	5.426
N648	I MF		187°45'17"	89°54'45"	*****	*****	1.500	30.774	30.774	0.078
N649	I MF		193°03'28"	89°34'41"	*****	*****	1.500	35.904	35.903	0.295
N650	I EXB		210°21'19"	86°48'16"	*****	*****	1.500	96.458	96.308	5.408
N651	I EXB		209°47'16"	86°56'17"	*****	*****	1.500	84.715	84.594	4.556
N652	I EXB		208°42'46"	87°19'03"	*****	*****	1.500	72.008	71.929	3.401
N653	I EXB		207°35'28"	87°51'20"	*****	*****	1.500	62.026	61.983	2.352
N654	I EXB		206°09'03"	88°19'14"	*****	*****	1.500	54.892	54.868	1.640
N655	I EXB		204°06'15"	88°48'43"	*****	*****	1.500	47.900	47.890	1.024
N656	I EXB		199°32'35"	89°19'07"	*****	*****	1.500	36.826	36.823	0.469
N657	I EXB		194°51'49"	89°39'34"	*****	*****	1.500	29.725	29.724	0.208
N658	I EXB		189°24'57"	89°59'57"	*****	*****	1.500	24.396	24.396	0.031
N659	I EXB		192°18'25"	89°57'39"	*****	*****	1.500	20.841	20.841	0.045
N660	I EXA		193°03'14"	89°57'44"	*****	*****	1.500	20.341	20.341	0.044
N661	I EXB		174°26'00"	91°30'25"	*****	*****	1.500	19.342	19.335	-0.478
N662	I EXA		205°27'33"	88°59'38"	*****	*****	1.500	10.966	10.964	0.224
N663	I EXB		149°07'42"	94°47'19"	*****	*****	1.500	17.472	17.411	-1.428
N664	I EXB		134°09'54"	96°24'04"	*****	*****	1.500	17.743	17.632	-1.947
N665	I EXA		131°00'20"	96°30'18"	*****	*****	1.500	18.313	18.195	-2.044
N666	I EXA		331°42'46"	89°54'54"	*****	*****	1.500	6.800	6.800	0.041
N667	I EXA		353°29'03"	89°41'19"	*****	*****	1.500	17.620	17.620	0.127
N668	I EXA		354°21'52"	89°06'17"	*****	*****	1.500	28.870	28.866	0.482
N669	I EXA		359°14'42"	88°48'13"	*****	*****	1.500	36.706	36.698	0.797
N670	I EXA		347°05'30"	87°53'51"	*****	*****	1.500	41.290	41.262	1.546
N671	I EXA		342°13'04"	87°05'09"	*****	*****	1.500	48.788	48.725	2.511
N672	I EXA		3°26'06"	89°19'24"	*****	*****	1.500	45.882	45.879	0.573
N673	I EXA		338°00'22"	86°37'44"	*****	*****	1.500	53.822	53.729	3.196
N674	I CXT		345°58'24"	85°58'47"	*****	*****	1.500	52.949	52.819	3.743
N675	I CXT		346°44'45"	85°56'01"	*****	*****	1.500	52.060	51.929	3.723
N676	I CXT		346°25'43"	86°00'51"	*****	*****	1.500	53.262	53.133	3.733
N677	I COTA		8°41'39"	90°19'37"	*****	*****	1.500	31.769	31.768	-0.150
N678	I COTA		18°17'57"	92°25'17"	*****	*****	1.500	30.528	30.501	-1.259
N679	I COTA		27°10'47"	94°07'24"	*****	*****	1.500	30.629	30.550	-2.171
N680	I COTA		11°17'26"	91°23'01"	*****	*****	1.500	17.275	17.270	-0.386
N681	I COTA		39°24'49"	96°09'12"	*****	*****	1.500	19.272	19.161	-2.035
N682	I COTA		25°33'54"	93°57'32"	*****	*****	1.500	17.656	17.614	-1.188
N683	I COTA		65°59'48"	99°44'49"	*****	*****	1.500	11.026	10.867	-1.836
N684	I COTA		35°32'16"	96°04'55"	*****	*****	1.500	6.002	5.968	-0.605
N685	I COTA		106°34'57"	99°11'06"	*****	*****	1.500	9.925	9.798	-1.553
N686	I COTA		139°37'26"	96°09'43"	*****	*****	1.500	4.246	4.221	-0.425
N687	I COTA		133°56'10"	97°06'04"	*****	*****	1.500	11.533	11.445	-1.395
N688	I COTA		139°51'02"	94°21'06"	*****	*****	1.500	10.627	10.596	-0.775
N689	I COTA		166°01'00"	93°14'48"	*****	*****	1.500	11.262	11.244	-0.607
N690	I ARV		156°14'48"	93°33'16"	*****	*****	1.500	10.547	10.527	-0.623
N691	I ARV		168°31'47"	93°09'35"	*****	*****	1.500	7.990	7.978	-0.409
N692	I ARV		113°50'46"	97°01'23"	*****	*****	1.500	8.127	8.066	-0.963
N693	I ARV		52°52'54"	96°55'05"	*****	*****	1.500	6.924	6.874	-0.803
N694	I ARV		35°41'29"	95°46'59"	*****	*****	1.500	10.110	10.059	-0.988
N695	I ARV		20°20'23"	93°51'26"	*****	*****	1.500	9.406	9.385	-0.602
N696	I ARV		31°35'00"	95°27'45"	*****	*****	1.500	18.376	18.293	-1.718
N697	I ARV		13°02'21"	91°46'47"	*****	*****	1.500	24.053	24.041	-0.716
N698	I ARV		24°02'36"	93°26'10"	*****	*****	1.500	37.798	37.730	-2.234
N699	I ARV		20°07'42"	92°24'44"	*****	*****	1.500	42.275	42.238	-1.748
N700	I ARV		11°41'56"	90°17'16"	*****	*****	1.500	39.960	39.960	-0.170
N701	I ARV		17°46'23"	91°58'23"	*****	*****	1.500	46.336	46.309	-1.564
N702	I COTA		49°07'59"	94°25'57"	*****	*****	1.500	34.730	34.626	-2.653

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O5			H.I.: 1.531							
O4	R		0°00'00"	88°49'07"	*****	*****	1.500	42.738	42.729	0.912
N703	I	COTA	59°47'14"	95°22'57"	*****	*****	1.500	27.278	27.158	-2.528
N704	I	COTA	43°58'27"	93°32'29"	*****	*****	1.500	45.231	45.145	-2.763
N705	I	COTA	63°48'55"	94°21'40"	*****	*****	1.500	32.075	31.982	-2.408
N706	I	COTA	46°32'50"	92°44'17"	*****	*****	1.500	59.333	59.265	-2.803
N707	I	COTA	57°56'22"	93°37'43"	*****	*****	1.500	38.823	38.745	-2.426
N708	I	COTA	45°27'42"	92°28'59"	*****	*****	1.500	69.017	68.952	-2.959
N709	I	COTA	55°09'42"	93°05'30"	*****	*****	1.500	46.353	46.286	-2.469
N710	I	COTA	54°24'01"	92°25'18"	*****	*****	1.500	64.730	64.672	-2.704
N711	I	COTA	54°58'13"	92°39'58"	*****	*****	1.500	55.521	55.461	-2.552
N712	I	COTA	63°48'36"	92°17'42"	*****	*****	1.500	60.385	60.337	-2.387
N713	I	COTA	73°35'37"	91°53'43"	*****	*****	1.500	60.028	59.995	-1.954
N714	I	COTA	64°48'02"	92°30'53"	*****	*****	1.500	54.016	53.964	-2.339
N715	I	COTA	83°06'16"	91°18'30"	*****	*****	1.500	62.150	62.134	-1.388
N716	I	COTA	70°38'05"	92°21'06"	*****	*****	1.500	51.190	51.147	-2.069
N717	I	ARV	69°50'27"	93°36'01"	*****	*****	0.100	55.750	55.640	-2.070
N718	I	COTA	66°51'14"	92°56'08"	*****	*****	1.500	44.449	44.391	-2.245
N719	I	ARV	51°59'04"	93°51'54"	*****	*****	0.100	58.817	58.683	-2.534
N720	I	COTA	55°38'29"	93°10'30"	*****	*****	1.500	42.460	42.395	-2.321
N721	I	ARV	57°06'04"	92°50'51"	*****	*****	1.500	50.279	50.217	-2.467
N722	I	PTC	58°47'38"	92°39'07"	*****	*****	1.500	52.847	52.790	-2.414
N723	I	LUM	63°21'37"	92°45'59"	*****	*****	1.500	49.787	49.729	-2.372
N724	I	CANT	64°12'39"	92°42'25"	*****	*****	1.500	49.874	49.818	-2.324
N725	I	CANT	62°28'22"	92°47'19"	*****	*****	1.500	49.779	49.720	-2.391
ESTAÇÃO: O4			H.I.: 1.690							
O3	R		0°00'00"	83°42'31"	*****	*****	1.500	103.478	102.855	11.530
N726	I	COTA	354°06'32"	82°30'17"	*****	*****	1.500	62.832	62.295	8.386
N727	I	COTA	351°17'34"	81°54'02"	*****	*****	1.500	59.984	59.386	8.641
N728	I	COTA	353°08'48"	82°29'14"	*****	*****	1.500	58.022	57.524	7.776
N729	I	COTA	354°18'52"	83°14'16"	*****	*****	1.500	57.507	57.107	6.961
N730	I	COTA	352°36'41"	84°00'08"	*****	*****	1.500	49.182	48.913	5.329
N731	I	COTA	348°25'50"	82°29'48"	*****	*****	1.500	50.246	49.816	6.751
N732	I	COTA	344°42'35"	80°44'13"	*****	*****	1.500	51.810	51.134	8.530
N733	I	COTA	336°46'30"	79°23'54"	*****	*****	1.500	45.823	45.041	8.621
N734	I	COTA	338°08'33"	79°23'44"	*****	*****	1.500	44.346	43.589	8.351
N735	I	COTA	341°45'23"	81°29'21"	*****	*****	1.500	41.999	41.537	6.406
N736	I	COTA	346°19'44"	83°09'16"	*****	*****	1.500	40.527	40.238	5.021
N737	I	COTA	349°24'11"	84°06'10"	*****	*****	1.500	39.535	39.326	4.252
N738	I	COTA	345°38'14"	84°35'17"	*****	*****	1.500	31.673	31.532	3.177
N739	I	COTA	339°05'23"	81°19'55"	*****	*****	1.500	33.006	32.629	5.164
N740	I	COTA	332°38'07"	79°01'07"	*****	*****	1.500	35.787	35.132	7.007
N741	I	COTA	328°00'12"	77°19'53"	*****	*****	1.500	38.298	37.366	8.589
N742	I	COTA	319°01'27"	75°49'28"	*****	*****	1.500	34.280	33.236	8.585
N743	I	COTA	322°30'47"	76°59'59"	*****	*****	1.500	30.100	29.329	6.961
N744	I	COTA	328°02'51"	77°28'13"	*****	*****	1.500	26.652	26.017	5.972
N745	I	COTA	334°04'44"	81°34'15"	*****	*****	1.500	23.716	23.460	3.666
N746	I	COTA	337°55'24"	84°49'12"	*****	*****	1.500	22.806	22.713	2.249
N747	I	COTA	327°40'38"	85°46'37"	*****	*****	1.500	17.994	17.945	1.515
N748	I	COTA	320°58'21"	79°25'24"	*****	*****	1.500	20.452	20.105	3.944
N749	I	COTA	314°29'58"	76°48'41"	*****	*****	1.500	24.127	23.491	5.695
N750	I	COTA	310°26'30"	75°56'25"	*****	*****	1.500	27.448	26.626	6.858
N751	I	COTA	307°49'29"	74°22'57"	*****	*****	1.500	30.878	29.738	8.503
N752	I	COTA	302°03'17"	75°02'24"	*****	*****	1.500	27.277	26.352	7.231
N753	I	COTA	304°08'04"	77°17'09"	*****	*****	1.500	24.002	23.413	5.472
N754	I	COTA	304°14'46"	77°48'16"	*****	*****	1.500	21.471	20.986	4.726
N755	I	COTA	308°20'34"	79°37'06"	*****	*****	1.500	20.488	20.153	3.882
N756	I	COTA	303°01'45"	82°09'51"	*****	*****	1.500	18.166	17.996	2.667

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O4			H.I.: 1.690							
O3	R		0°00'00"	83°42'31"	*****	*****	1.500	103.478	102.855	11.530
N757	I	COTA	311°18'33"	83°56'27"	*****	*****	1.500	17.075	16.980	1.992
N758	I	COTA	302°21'46"	88°34'03"	*****	*****	1.500	14.998	14.993	0.565
N759	I	COTA	283°08'04"	90°30'44"	*****	*****	1.500	15.958	15.957	0.047
N760	I	COTA	288°17'50"	84°28'23"	*****	*****	1.500	21.091	20.993	2.221
N761	I	COTA	291°52'22"	79°05'53"	*****	*****	1.500	24.728	24.282	4.867
N762	I	COTA	294°06'38"	74°39'23"	*****	*****	1.500	27.666	26.680	7.511
N763	I	COTA	294°19'37"	73°46'53"	*****	*****	1.500	29.927	28.736	8.549
N764	I	COTA	296°18'40"	75°18'12"	*****	*****	1.500	33.416	32.323	8.668
N765	I	COTA	290°56'35"	76°40'29"	*****	*****	1.500	36.824	35.833	8.677
N766	I	COTA	288°26'17"	75°08'35"	*****	*****	1.500	32.466	31.381	8.515
N767	I	COTA	287°18'11"	75°02'57"	*****	*****	1.500	30.800	29.757	8.136
N768	I	COTA	284°18'58"	78°39'50"	*****	*****	1.500	27.999	27.453	5.694
N769	I	COTA	281°49'27"	82°15'46"	*****	*****	1.500	25.107	24.878	3.570
N770	I	COTA	277°30'29"	87°01'05"	*****	*****	1.500	21.850	21.820	1.327
N771	I	COTA	271°05'52"	91°26'03"	*****	*****	1.500	18.647	18.641	-0.277
N772	I	COTA	279°30'10"	90°55'08"	*****	*****	1.500	16.233	16.231	-0.070
N773	I	COTA	263°31'41"	91°16'37"	*****	*****	1.500	23.795	23.789	-0.340
N774	I	COTA	259°49'49"	91°18'27"	*****	*****	1.500	29.873	29.865	-0.492
N775	I	COTA	264°54'12"	86°44'18"	*****	*****	1.500	31.341	31.290	1.973
N776	I	COTA	268°53'13"	85°15'46"	*****	*****	1.500	28.521	28.424	2.545
N777	I	COTA	275°00'01"	80°32'59"	*****	*****	1.500	30.493	30.079	5.197
N778	I	COTA	272°21'08"	80°58'00"	*****	*****	1.500	33.879	33.459	5.509
N779	I	COTA	279°01'13"	77°46'59"	*****	*****	1.500	37.255	36.411	8.074
N780	I	COTA	285°21'48"	77°54'06"	*****	*****	1.500	40.108	39.217	8.596
N781	I	COTA	283°44'59"	78°32'29"	*****	*****	2.600	49.163	48.183	8.857
N782	I	COTA	276°41'46"	79°13'22"	*****	*****	1.500	44.391	43.608	8.491
N783	I	COTA	273°54'33"	79°21'27"	*****	*****	1.500	42.649	41.915	8.066
N784	I	COTA	269°53'49"	81°33'33"	*****	*****	1.500	41.282	40.835	6.250
N785	I	COTA	266°15'37"	83°49'54"	*****	*****	1.500	39.740	39.510	4.460
N786	I	COTA	262°33'59"	86°26'14"	*****	*****	1.500	38.976	38.901	2.612
N787	I	COTA	258°29'09"	89°11'02"	*****	*****	1.500	38.064	38.060	0.732
N788	I	COTA	260°44'00"	88°17'15"	*****	*****	1.500	36.088	36.072	1.268
N789	I	COTA	258°14'34"	91°15'19"	*****	*****	1.500	34.504	34.496	-0.566
N790	I	COTA	256°40'38"	90°45'36"	*****	*****	1.500	39.550	39.547	-0.335
N791	I	COTA	255°22'05"	90°31'12"	*****	*****	1.500	47.450	47.448	-0.241
N792	I	COTA	259°40'01"	87°24'46"	*****	*****	1.500	48.808	48.758	2.393
N793	I	COTA	262°47'34"	84°50'24"	*****	*****	1.500	50.110	49.907	4.697
N794	I	COTA	265°36'11"	82°38'37"	*****	*****	1.500	51.938	51.510	6.840
N795	I	COTA	269°00'03"	81°14'37"	*****	*****	1.500	52.921	52.304	8.246
N796	I	COTA	272°26'32"	81°00'31"	*****	*****	1.500	54.277	53.610	8.673
N797	I	COTA	278°36'17"	79°50'20"	*****	*****	3.600	60.671	59.719	8.793
N798	I	COTA	273°36'10"	79°40'54"	*****	*****	3.600	59.908	58.939	8.821
N799	I	COTA	272°41'48"	80°31'57"	*****	*****	3.600	65.942	65.044	8.937
N800	I	COTA	268°53'38"	80°32'10"	*****	*****	3.600	65.047	64.162	8.785
N801	I	COTA	268°47'58"	81°21'42"	*****	*****	3.600	72.130	71.312	8.924
N802	I	COTA	271°54'01"	81°19'03"	*****	*****	3.600	72.295	71.467	9.004
N803	I	COTA	267°32'07"	81°41'23"	*****	*****	1.500	59.378	58.755	8.772
N804	I	COTA	264°40'35"	82°59'46"	*****	*****	1.500	58.073	57.640	7.271
N805	I	COTA	262°25'44"	85°01'32"	*****	*****	1.500	58.461	58.241	5.259
N806	I	COTA	261°33'02"	85°13'51"	*****	*****	1.500	60.591	60.381	5.228
N807	I	COTA	262°05'32"	84°40'37"	*****	*****	1.500	55.566	55.326	5.345
N808	I	COTA	258°36'17"	87°29'47"	*****	*****	1.500	56.939	56.885	2.677
N809	I	COTA	254°49'58"	90°04'55"	*****	*****	1.500	56.929	56.929	0.109
N810	I	COTA	252°35'00"	90°38'58"	*****	*****	1.500	57.019	57.015	-0.456
N811	I	COTA	254°01'04"	90°41'25"	*****	*****	1.500	65.112	65.107	-0.594
N812	I	BE	79°28'19"	97°16'48"	*****	*****	1.500	2.171	2.154	-0.085

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O4			H.I.: 1.690							
O3	R		0°00'00"	83°42'31"	*****	*****	1.500	103.478	102.855	11.530
N813	I BE		86°09'50"	95°07'15"	*****	*****	1.500	5.854	5.831	-0.333
N814	I BE		80°06'40"	92°27'06"	*****	*****	1.500	14.541	14.528	-0.432
N815	I BE		115°24'48"	95°56'04"	*****	*****	1.500	18.273	18.175	-1.699
N816	I EXC		97°54'02"	93°52'31"	*****	*****	1.500	15.443	15.408	-0.854
N817	I BE		138°29'53"	97°25'06"	*****	*****	1.500	13.246	13.135	-1.520
N818	I EXC		122°56'24"	95°59'18"	*****	*****	1.500	8.098	8.054	-0.655
N819	I EXA		124°12'37"	96°07'56"	*****	*****	1.500	7.549	7.506	-0.616
N820	I EXC		86°08'48"	92°35'48"	*****	*****	1.500	31.021	30.989	-1.215
N821	I BE		77°07'16"	91°47'13"	*****	*****	1.500	29.257	29.243	-0.722
N822	I BE		96°44'16"	92°31'35"	*****	*****	2.600	31.409	31.378	-2.294
N823	I BE		76°37'38"	90°59'51"	*****	*****	1.500	42.928	42.921	-0.557
N824	I BE		93°08'32"	92°27'58"	*****	*****	2.600	38.035	38.000	-2.547
N825	I EXC		83°49'15"	92°12'42"	*****	*****	1.500	41.555	41.524	-1.414
N826	I BE		91°55'58"	92°17'00"	*****	*****	2.600	41.098	41.065	-2.547
N827	I EXC		87°16'42"	92°57'00"	*****	*****	1.500	46.871	46.809	-2.222
N828	I BE		93°40'48"	92°47'43"	*****	*****	2.600	46.169	46.114	-3.162
N829	I BE		97°15'43"	93°42'50"	*****	*****	2.600	57.638	57.517	-4.643
N830	I BE		75°52'25"	90°36'18"	*****	*****	1.500	52.385	52.382	-0.363
N831	I BE		87°11'48"	92°09'59"	*****	*****	2.600	55.359	55.319	-3.003
N832	I BE		84°00'46"	92°23'41"	*****	*****	1.500	54.045	53.998	-2.068
N833	I EXC		91°43'01"	92°31'49"	*****	*****	3.000	53.231	53.179	-3.660
N834	I DIV		75°06'01"	90°26'47"	*****	*****	1.500	52.529	52.527	-0.219
N835	I CXT		80°42'08"	94°26'17"	*****	*****	1.500	6.486	6.467	-0.312
N836	I CXT		80°04'05"	94°02'26"	*****	*****	1.500	7.559	7.540	-0.343
N837	I CXT		76°17'57"	94°02'33"	*****	*****	1.500	7.566	7.547	-0.343
N838	I CX		78°46'30"	92°29'17"	*****	*****	1.500	12.820	12.808	-0.367
N839	I CX		75°41'19"	92°28'06"	*****	*****	1.500	12.798	12.786	-0.361
N840	I CX		78°29'32"	92°09'03"	*****	*****	1.500	14.489	14.479	-0.354
N841	I CA		75°13'46"	90°49'26"	*****	*****	1.500	31.668	31.665	-0.265
N842	I CA		74°59'49"	94°13'24"	*****	*****	1.500	6.674	6.656	-0.302
N843	I CA		19°38'48"	82°11'56"	*****	*****	1.500	22.752	22.541	3.278
N844	I MUR		13°32'07"	79°51'53"	*****	*****	3.600	36.467	35.898	4.507
N845	I DIV		10°39'41"	81°08'29"	*****	*****	3.600	52.187	51.564	6.127
N846	I LUM		286°13'30"	75°29'53"	*****	*****	1.500	33.377	32.314	8.548
N847	I LUM		274°19'16"	79°36'58"	*****	*****	1.500	46.745	45.979	8.615
N848	I LUM		268°50'43"	81°48'54"	*****	*****	1.500	61.571	60.944	8.956
N849	I PASS		201°58'22"	94°55'43"	*****	*****	1.500	6.912	6.886	-0.404
N850	I PASS		207°41'13"	94°54'21"	*****	*****	1.500	7.468	7.441	-0.449
N851	I PASS		198°30'19"	90°29'42"	*****	*****	3.600	13.582	13.581	-2.027
N852	I PASS		195°03'34"	90°43'43"	*****	*****	3.600	13.437	13.436	-2.081
N853	I PASS		194°39'53"	93°50'14"	*****	*****	3.600	20.856	20.809	-3.306
N854	I PASS		192°20'03"	93°59'06"	*****	*****	3.600	20.523	20.473	-3.336
N855	I PASS		115°53'53"	90°10'09"	*****	*****	3.600	18.529	18.529	-1.965
N856	I PASS		117°38'23"	90°09'13"	*****	*****	3.600	17.714	17.714	-1.957
N857	I CA		295°00'18"	75°40'29"	*****	*****	1.500	35.027	33.938	8.857
N858	I CA		284°59'32"	76°52'42"	*****	*****	4.600	52.210	50.847	8.943
N859	I MUR		282°44'23"	76°39'30"	*****	*****	4.600	51.605	50.212	8.998
ESTAÇÃO: O5			H.I.: 1.610							
O4	R		359°59'59"	88°55'13"	*****	*****	1.500	42.735	42.727	0.915
O5A1	A AUXILIAR		45°56'46"	92°33'57"	*****	*****	1.500	67.307	67.240	-2.903
N860	I COTA		206°58'01"	89°39'32"	*****	*****	1.500	26.438	26.438	0.267
N861	I COTA		211°50'11"	89°17'31"	*****	*****	1.500	26.573	26.571	0.438
N862	I COTA		217°11'40"	85°18'00"	*****	*****	1.500	27.437	27.345	2.358
N863	I COTA		220°25'03"	81°42'54"	*****	*****	1.500	28.031	27.738	4.149
N864	I COTA		217°47'25"	82°17'04"	*****	*****	1.500	34.431	34.119	4.733
N865	I COTA		213°10'48"	86°02'53"	*****	*****	1.500	34.096	34.015	2.460

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 05			H.I.: 1.610							
O4	R		359°59'59"	88°55'13"	*****	*****	1.500	42.735	42.727	0.915
N866	I	COTA	209°56'15"	88°05'09"	*****	*****	1.500	34.400	34.381	1.259
N867	I	COTA	208°03'18"	89°07'30"	*****	*****	1.500	34.556	34.552	0.638
N868	I	COTA	209°59'20"	88°39'19"	*****	*****	1.500	43.365	43.353	1.128
N869	I	COTA	211°18'34"	88°07'44"	*****	*****	1.500	43.449	43.426	1.529
N870	I	COTA	216°12'18"	84°51'09"	*****	*****	1.500	43.998	43.821	4.058
N871	I	COTA	217°44'02"	83°48'10"	*****	*****	1.500	50.019	49.727	5.510
N872	I	COTA	213°52'57"	86°45'32"	*****	*****	1.500	50.133	50.053	2.944
N873	I	COTA	211°05'27"	88°17'13"	*****	*****	1.500	50.712	50.689	1.626
N874	I	COTA	212°06'07"	87°48'41"	*****	*****	1.500	58.783	58.740	2.355
N875	I	COTA	214°14'11"	86°31'35"	*****	*****	1.500	58.942	58.834	3.681
N876	I	COTA	217°26'20"	84°18'42"	*****	*****	1.500	58.989	58.699	5.957
N877	I	COTA	217°03'57"	84°57'58"	*****	*****	1.500	65.161	64.910	5.828
N878	I	COTA	214°31'36"	86°23'50"	*****	*****	1.500	65.375	65.246	4.218
N879	I	COTA	212°20'20"	87°25'46"	*****	*****	1.500	66.130	66.063	3.076
N880	I	COTA	213°03'29"	87°02'34"	*****	*****	1.500	76.116	76.015	4.037
N881	I	COTA	214°24'14"	86°28'44"	*****	*****	1.500	76.108	75.964	4.784
N882	I	COTA	216°27'43"	85°02'32"	*****	*****	1.500	76.367	76.081	6.710
N883	I	COTA	216°57'08"	84°34'39"	*****	*****	1.500	83.609	83.235	8.011
N884	I	COTA	215°17'36"	85°55'28"	*****	*****	1.500	83.009	82.799	6.010
N885	I	COTA	213°22'22"	86°54'28"	*****	*****	1.500	83.559	83.437	4.617
N886	I	COTA	213°30'48"	86°52'02"	*****	*****	1.500	89.389	89.255	4.995
N887	I	COTA	215°34'22"	85°47'35"	*****	*****	1.500	89.714	89.472	6.691
N888	I	COTA	217°05'23"	84°42'03"	*****	*****	1.500	91.145	90.755	8.528
N889	I	COTA	216°52'54"	84°52'05"	*****	*****	1.500	93.793	93.417	8.500
N890	I	COTA	215°32'58"	85°25'53"	*****	*****	1.500	93.915	93.617	7.591
N891	I	COTA	214°18'35"	86°16'53"	*****	*****	1.500	93.260	93.064	6.159
N892	I	COTA	213°26'42"	86°40'59"	*****	*****	1.500	92.782	92.627	5.478
N893	I	COTA	212°51'43"	86°44'51"	*****	*****	1.500	95.499	95.345	5.528
N894	I	COTA	214°34'32"	86°20'06"	*****	*****	1.500	98.506	98.305	6.407
N895	I	COTA	216°44'49"	85°05'17"	*****	*****	2.600	97.556	97.198	7.363
N896	I	GS	215°49'46"	85°12'28"	*****	*****	2.600	94.849	94.517	6.934
N897	I	COTA	215°49'35"	85°34'59"	*****	*****	2.600	94.727	94.446	6.305
N898	I	MUR	215°53'05"	85°12'36"	*****	*****	1.500	95.162	94.830	8.056
N899	I	MUR	215°59'22"	85°10'17"	*****	*****	1.500	94.249	93.915	8.043
N900	I	MUR	214°09'39"	86°03'01"	*****	*****	1.500	93.228	93.007	6.532
N901	I	MUR	213°59'57"	86°05'33"	*****	*****	1.500	94.155	93.936	6.526
N902	I	MUR	212°20'27"	86°49'52"	*****	*****	1.500	93.355	93.212	5.271
N903	I	MUR	212°17'43"	86°51'53"	*****	*****	1.500	91.770	91.633	5.129
N904	I	MUR	213°06'32"	86°49'52"	*****	*****	1.500	92.472	92.331	5.222
N905	I	ESC	212°22'05"	86°49'49"	*****	*****	1.500	93.239	93.096	5.266
N906	I	ESC	212°20'05"	86°51'09"	*****	*****	1.500	91.935	91.796	5.158
N907	I	ESC	212°56'54"	86°48'48"	*****	*****	1.500	92.601	92.458	5.258
N908	I	ESC	212°47'31"	86°47'31"	*****	*****	1.500	93.702	93.555	5.354
N909	I	ESC	215°18'29"	85°45'24"	*****	*****	2.500	94.067	93.809	6.070
N910	I	ESC	215°12'01"	85°46'17"	*****	*****	2.500	94.691	94.433	6.092
N911	I	ESC	215°45'32"	85°38'56"	*****	*****	2.500	94.982	94.708	6.316
N912	I	ESC	215°47'02"	85°37'05"	*****	*****	2.500	94.308	94.032	6.316
N913	I	CX	205°25'13"	87°08'48"	*****	*****	1.500	81.036	80.936	4.144
N914	I	CX	205°10'05"	87°11'57"	*****	*****	1.500	78.010	77.917	3.922
N915	I	CX	204°50'28"	87°17'28"	*****	*****	1.500	75.108	75.024	3.660
N916	I	CX	204°30'00"	87°23'37"	*****	*****	1.500	71.997	71.923	3.384
N917	I	CA	205°46'44"	87°00'11"	*****	*****	1.500	95.581	95.450	5.107
N918	I	CA	204°09'16"	87°16'31"	*****	*****	1.500	77.739	77.651	3.806
N919	I	CA	200°56'25"	88°35'02"	*****	*****	1.500	56.852	56.835	1.515
N920	I	CA	199°48'14"	88°52'28"	*****	*****	1.500	51.940	51.930	1.130
N921	I	CA	190°55'45"	89°24'40"	*****	*****	1.500	36.682	36.680	0.487

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 05			H.I.: 1.610							
O4	R		359°59'59"	88°55'13"	*****	*****	1.500	42.735	42.727	0.915
N922	I CA		181°42'25"	90°03'53"	*****	*****	1.500	35.856	35.856	0.070
N923	I CA		172°59'18"	90°40'16"	*****	*****	1.500	38.140	38.137	-0.337
N924	I MUR		162°00'49"	90°10'20"	*****	*****	2.600	42.990	42.990	-1.119
N925	I HIDRANTE		155°41'19"	93°16'46"	*****	*****	1.000	33.837	33.782	-1.326
N926	I CX		155°36'04"	93°26'10"	*****	*****	1.000	33.452	33.392	-1.395
N927	I REG		155°37'46"	93°27'46"	*****	*****	1.500	33.480	33.419	-1.912
N928	I COTA		155°38'47"	93°43'27"	*****	*****	1.500	33.476	33.405	-2.064
N929	I BL		151°12'51"	93°27'19"	*****	*****	1.500	32.654	32.595	-1.858
N930	I BL		150°36'00"	93°30'31"	*****	*****	1.500	31.928	31.868	-1.844
N931	I BL		150°37'14"	93°16'27"	*****	*****	1.500	31.930	31.878	-1.714
N932	I COTA		154°18'42"	93°05'28"	*****	*****	1.500	26.812	26.773	-1.336
N933	I COTA		166°27'05"	91°30'34"	*****	*****	1.500	24.945	24.936	-0.547
N934	I COTA		179°36'06"	90°13'11"	*****	*****	1.500	27.975	27.975	0.003
N935	I COTA		171°28'46"	90°46'27"	*****	*****	1.500	28.958	28.955	-0.281
N936	I COTA		174°41'39"	90°42'09"	*****	*****	1.500	32.724	32.722	-0.291
N937	I COTA		180°13'58"	90°10'58"	*****	*****	1.500	31.384	31.384	0.010
N938	I COTA		190°25'36"	89°52'04"	*****	*****	1.500	33.844	33.844	0.188
N939	I COTA		180°24'48"	90°23'22"	*****	*****	1.500	34.517	34.516	-0.125
N940	I COTA		171°25'10"	91°00'00"	*****	*****	1.500	35.924	35.919	-0.517
N941	I COTA		161°20'37"	91°49'12"	*****	*****	1.500	40.486	40.466	-1.176
N942	I COTA		161°28'32"	91°52'22"	*****	*****	1.500	34.948	34.929	-1.032
N943	I COTA		156°49'22"	92°55'38"	*****	*****	1.500	30.469	30.429	-1.446
N944	I ARV		167°37'23"	90°57'03"	*****	*****	1.500	29.121	29.117	-0.373
N945	I PTC		160°37'50"	91°35'31"	*****	*****	1.500	44.342	44.325	-1.122
N946	I LUM		135°25'03"	92°34'01"	*****	*****	1.500	36.830	36.793	-1.539
N947	I COTA		141°56'13"	91°56'42"	*****	*****	1.500	40.761	40.738	-1.273
N948	I COTA		137°03'51"	91°35'02"	*****	*****	1.500	46.435	46.417	-1.173
N949	I COTA		121°02'54"	92°28'41"	*****	*****	1.500	39.448	39.411	-1.596
N950	I COTA		125°53'48"	93°39'33"	*****	*****	1.500	30.252	30.190	-1.821
N951	I COTA		107°21'05"	95°07'44"	*****	*****	1.500	25.663	25.560	-2.184
N952	I COTA		106°21'19"	93°23'45"	*****	*****	1.500	34.804	34.743	-1.952
N953	I COTA		91°02'43"	93°36'29"	*****	*****	1.500	36.266	36.194	-2.172
N954	I COTA		87°47'40"	95°02'20"	*****	*****	1.500	27.880	27.772	-2.339
N955	I COTA		79°04'33"	93°31'38"	*****	*****	1.500	40.045	39.969	-2.354
N956	I COTA		81°06'34"	92°42'36"	*****	*****	1.500	47.378	47.325	-2.130
N957	I COTA		93°46'11"	92°19'14"	*****	*****	1.500	44.791	44.754	-1.704
N958	I COTA		106°10'08"	92°04'23"	*****	*****	1.500	43.980	43.951	-1.481
N959	I COTA		122°58'43"	91°50'29"	*****	*****	1.500	46.812	46.788	-1.394
N960	I COTA		133°35'48"	91°10'34"	*****	*****	1.500	55.279	55.267	-1.025
N961	I COTA		127°46'32"	90°27'42"	*****	*****	1.500	61.951	61.949	-0.389
N962	I COTA		118°41'07"	90°23'37"	*****	*****	1.900	57.714	57.713	-0.686
N963	I COTA		104°34'49"	91°18'57"	*****	*****	1.500	53.831	53.817	-1.126
N964	I COTA		94°48'36"	91°27'52"	*****	*****	1.500	54.129	54.111	-1.273
N965	I COTA		87°58'48"	91°35'44"	*****	*****	1.500	55.374	55.353	-1.432
N966	I COTA		102°11'58"	90°28'09"	*****	*****	1.500	60.915	60.913	-0.389
N967	I COTA		116°55'09"	89°54'46"	*****	*****	1.500	63.994	63.994	0.207
N968	I COTA		125°12'20"	89°31'07"	*****	*****	1.500	69.097	69.095	0.691
N969	I ARV		127°45'51"	89°34'00"	*****	*****	1.500	69.491	69.489	0.636
N970	I ARV		126°42'14"	90°45'29"	*****	*****	1.500	59.040	59.035	-0.671
N971	I ARV		134°51'43"	91°28'23"	*****	*****	1.500	50.239	50.222	-1.181
N972	I ARV		130°06'45"	91°53'50"	*****	*****	1.500	43.838	43.814	-1.341
N973	I ARV		123°46'06"	92°34'14"	*****	*****	1.500	37.605	37.567	-1.577
N974	I ARV		109°27'54"	91°45'32"	*****	*****	1.500	47.850	47.827	-1.359
N975	I ARV		97°14'28"	91°59'26"	*****	*****	1.500	48.156	48.127	-1.563
N976	I ARV		99°01'11"	93°35'54"	*****	*****	1.500	34.670	34.602	-2.066
N977	I ARV		56°10'36"	93°12'29"	*****	*****	1.500	42.483	42.416	-2.267

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 05			H.I.: 1.610							
O4	R		359°59'59"	88°55'13"	*****	*****	1.500	42.735	42.727	0.915
N978	I	COTA	146°31'11"	91°20'15"	*****	*****	1.500	48.927	48.914	-1.032
N979	I	COTA	138°47'53"	91°12'14"	*****	*****	1.500	55.279	55.267	-1.051
N980	I	COTA	151°46'17"	90°41'07"	*****	*****	1.500	61.162	61.158	-0.622
N981	I	COTA	144°52'24"	90°33'35"	*****	*****	1.500	64.886	64.883	-0.524
N982	I	COTA	150°38'39"	90°17'11"	*****	*****	1.500	69.694	69.693	-0.238
N983	I	COTA	146°15'02"	89°46'43"	*****	*****	1.500	77.905	77.904	0.411
N984	I	COTA	140°19'02"	90°03'39"	*****	*****	1.500	72.257	72.257	0.033
N985	I	COTA	139°09'59"	89°18'02"	*****	*****	1.500	79.125	79.119	1.076
N986	I	COTA	132°56'29"	89°51'36"	*****	*****	1.500	69.214	69.214	0.279
N987	I	COTA	134°47'09"	89°02'39"	*****	*****	1.500	77.629	77.618	1.405
N988	I	COTA	131°30'32"	88°59'52"	*****	*****	1.500	75.825	75.813	1.436
N989	I	ARV	137°41'30"	89°41'51"	*****	*****	1.500	74.408	74.407	0.503
N990	I	ARV	134°27'07"	90°20'16"	*****	*****	1.500	66.704	66.703	-0.283
N991	I	ARV	136°00'52"	90°11'37"	*****	*****	1.500	68.930	68.930	-0.123
N992	I	ARV	147°36'48"	89°43'01"	*****	*****	1.500	77.655	77.654	0.494
N993	I	ARV	144°50'25"	90°24'18"	*****	*****	1.500	67.961	67.959	-0.370
N994	I	ARV	148°49'57"	89°54'04"	*****	*****	1.500	74.136	74.136	0.238
N995	I	ARV	148°03'34"	90°32'31"	*****	*****	1.500	62.414	62.411	-0.480
N996	I	ARV	141°35'23"	90°52'27"	*****	*****	1.500	59.434	59.427	-0.797
N997	I	MF	151°04'04"	91°24'43"	*****	*****	1.500	49.781	49.766	-1.117
N998	I	TMF	151°01'49"	91°16'49"	*****	*****	1.500	49.841	49.829	-1.004
N999	I	MF	154°28'14"	90°58'23"	*****	*****	1.500	56.857	56.849	-0.856
N1000	I	MF	137°34'14"	93°00'21"	*****	*****	1.500	34.621	34.573	-1.705
N1001	I	MF	155°25'30"	90°13'45"	*****	*****	2.000	61.140	61.140	-0.635
N1002	I	MF	110°14'28"	95°50'25"	*****	*****	1.500	24.269	24.143	-2.360
N1003	I	MF	155°37'04"	90°05'13"	*****	*****	2.000	64.355	64.355	-0.488
N1004	I	MF	154°43'35"	89°51'32"	*****	*****	2.000	69.258	69.258	-0.219
N1005	I	MF	153°09'44"	90°01'01"	*****	*****	1.500	73.070	73.070	0.088
N1006	I	MF	88°31'50"	96°07'03"	*****	*****	1.500	25.667	25.521	-2.625
N1007	I	MF	78°09'16"	95°15'33"	*****	*****	1.500	32.036	31.901	-2.826
N1008	I	MF	76°38'17"	93°41'43"	*****	*****	1.500	42.043	41.956	-2.600
N1009	I	MF	82°01'10"	92°22'45"	*****	*****	1.500	52.017	51.972	-2.049
N1010	I	TMF	82°10'14"	92°09'18"	*****	*****	1.500	51.929	51.892	-1.843
N1011	I	MF	151°10'19"	89°44'06"	*****	*****	1.500	76.236	76.235	0.463
N1012	I	MF	90°14'34"	91°21'32"	*****	*****	1.500	58.706	58.689	-1.282
N1013	I	MF	149°01'12"	89°28'22"	*****	*****	1.500	78.484	78.481	0.832
N1014	I	MF	101°56'30"	90°25'40"	*****	*****	1.500	62.685	62.683	-0.358
N1015	I	TMF	101°59'19"	90°17'07"	*****	*****	1.500	62.571	62.570	-0.202
N1016	I	MF	146°38'14"	89°14'08"	*****	*****	1.500	80.243	80.236	1.181
N1017	I	MF	142°02'34"	89°34'30"	*****	*****	0.500	81.879	81.877	1.717
N1018	I	MF	116°49'56"	89°31'58"	*****	*****	1.500	67.884	67.882	0.664
N1019	I	MF	126°34'41"	89°03'07"	*****	*****	1.500	74.534	74.524	1.343
N1020	I	MF	138°10'25"	88°42'08"	*****	*****	1.500	81.874	81.853	1.964
N1021	I	MF	131°38'10"	88°45'26"	*****	*****	1.500	79.338	79.319	1.831
N1022	I	MF	136°17'59"	88°39'44"	*****	*****	1.500	81.473	81.451	2.012
N1023	I	MF	134°41'14"	88°38'57"	*****	*****	1.500	80.935	80.913	2.018
N1024	I	TMF	134°42'32"	88°33'10"	*****	*****	1.500	80.905	80.879	2.153
N1025	I	BL	131°41'47"	88°46'22"	*****	*****	1.500	98.838	98.815	2.227
N1026	I	BL	131°56'46"	88°45'28"	*****	*****	1.500	99.370	99.347	2.264
N1027	I	BL	131°56'00"	88°39'00"	*****	*****	1.500	99.340	99.312	2.450
N1028	I	MF	131°45'25"	88°46'04"	*****	*****	1.500	98.707	98.684	2.233
N1029	I	MF	128°29'01"	88°57'29"	*****	*****	1.500	92.450	92.435	1.791
N1030	I	TMF	128°27'02"	88°48'09"	*****	*****	1.500	92.542	92.522	2.044
N1031	I	MF	124°39'14"	89°09'04"	*****	*****	1.500	86.961	86.951	1.398
N1032	I	MF	117°55'35"	89°09'13"	*****	*****	2.000	80.093	80.084	0.793
N1033	I	PV	117°07'53"	89°24'13"	*****	*****	1.500	80.970	80.966	0.953

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 05			H.I.: 1.610							
O4	R		359°59'59"	88°55'13"	*****	*****	1.500	42.735	42.727	0.915
N1034	I MF		110°33'21"	89°14'46"	*****	*****	2.300	74.863	74.857	0.295
N1035	I PTC		110°05'09"	89°09'32"	*****	*****	2.300	76.483	76.475	0.433
N1036	I MF		102°17'31"	90°22'59"	*****	*****	1.500	71.066	71.064	-0.365
N1037	I MF		93°21'19"	90°51'54"	*****	*****	1.500	68.956	68.948	-0.931
N1038	I MF		86°26'15"	91°09'03"	*****	*****	1.500	68.126	68.112	-1.258
N1039	I PTC		84°49'39"	90°59'53"	*****	*****	1.500	69.688	69.677	-1.104
N1040	I MF		81°29'53"	91°26'34"	*****	*****	1.500	67.945	67.923	-1.601
N1041	I MF		76°29'36"	91°40'22"	*****	*****	1.500	68.000	67.971	-1.875
N1042	I TMF		76°31'36"	91°29'45"	*****	*****	1.500	68.050	68.027	-1.666
N1043	I MF		71°49'13"	91°54'57"	*****	*****	1.500	68.310	68.272	-2.174
N1044	I MF		66°41'00"	92°04'56"	*****	*****	1.500	68.965	68.919	-2.396
N1045	I MF		59°51'41"	92°19'11"	*****	*****	1.500	70.341	70.283	-2.737
N1046	I MF		55°08'41"	92°25'01"	*****	*****	1.500	71.896	71.832	-2.922
N1047	I TMF		55°19'45"	93°22'32"	*****	*****	0.100	71.857	71.732	-2.721
N1048	I PTC		56°39'49"	92°09'07"	*****	*****	1.500	72.017	71.966	-2.594
N1049	I MF		44°42'22"	92°36'07"	*****	*****	1.500	70.311	70.239	-3.082
N1050	I TMF		44°43'05"	92°30'00"	*****	*****	1.500	70.115	70.048	-2.948
N1051	I MF		48°08'44"	92°40'33"	*****	*****	1.500	68.675	68.600	-3.096
N1052	I MF		42°58'16"	93°04'20"	*****	*****	1.500	58.706	58.622	-3.036
N1053	I MF		54°25'17"	92°35'58"	*****	*****	1.500	66.296	66.228	-2.897
N1054	I TMF		54°25'06"	92°26'12"	*****	*****	1.500	66.194	66.134	-2.704
N1055	I MF		40°59'16"	93°33'13"	*****	*****	1.500	49.505	49.410	-2.958
N1056	I MF		60°52'30"	92°28'08"	*****	*****	1.500	64.542	64.482	-2.670
N1057	I MF		39°59'28"	93°54'42"	*****	*****	1.500	45.044	44.939	-2.963
N1058	I MF		68°03'04"	92°16'02"	*****	*****	1.500	63.228	63.179	-2.391
N1059	I MF		76°03'00"	91°54'56"	*****	*****	1.500	62.561	62.526	-1.981
N1060	I MF		83°18'14"	91°25'29"	*****	*****	1.500	62.366	62.347	-1.441
N1061	I MF		82°18'51"	91°28'58"	*****	*****	1.500	61.221	61.201	-1.474
N1062	I MF		82°18'49"	91°34'52"	*****	*****	1.500	62.447	62.423	-1.613
N1063	I TMF		82°15'13"	91°23'18"	*****	*****	1.500	62.335	62.317	-1.400
N1064	I MF		40°00'31"	94°11'30"	*****	*****	1.500	42.249	42.136	-2.978
N1065	I MF		41°18'18"	94°40'20"	*****	*****	1.500	36.927	36.804	-2.898
N1066	I MF		43°37'42"	95°09'36"	*****	*****	1.500	33.303	33.168	-2.885
N1067	I MF		75°03'16"	92°10'06"	*****	*****	1.500	54.257	54.218	-1.943
N1068	I MF		54°33'09"	96°10'42"	*****	*****	1.500	26.376	26.223	-2.729
N1069	I MF		71°41'56"	92°34'05"	*****	*****	1.500	49.750	49.700	-2.119
N1070	I MF		63°58'32"	96°42'40"	*****	*****	1.500	23.494	23.333	-2.636
N1071	I MF		69°34'20"	96°53'36"	*****	*****	1.500	22.452	22.290	-2.585
N1072	I MF		71°23'44"	96°46'27"	*****	*****	1.500	22.653	22.495	-2.562
N1073	I MF		71°43'26"	96°35'04"	*****	*****	1.500	23.346	23.192	-2.567
N1074	I MF		69°55'23"	95°59'43"	*****	*****	1.500	25.318	25.180	-2.534
N1075	I MF		69°01'45"	93°01'20"	*****	*****	1.500	45.436	45.373	-2.286
N1076	I TMF		68°57'00"	92°50'11"	*****	*****	1.500	45.470	45.414	-2.140
N1077	I MF		66°55'03"	93°31'47"	*****	*****	1.500	0.000	0.000	0.110
N1078	I MF		66°09'06"	94°01'24"	*****	*****	1.500	36.751	36.660	-2.469
N1079	I MF		67°23'53"	95°17'33"	*****	*****	1.500	28.585	28.463	-2.527
N1080	I MF		66°04'58"	94°39'01"	*****	*****	1.500	32.604	32.497	-2.533
N1081	I MF		66°30'34"	94°58'29"	*****	*****	1.500	30.551	30.436	-2.539
N1082	I CANL		78°04'40"	95°08'22"	*****	*****	1.500	32.727	32.595	-2.822
N1083	I CANL		78°04'37"	94°49'20"	*****	*****	1.500	32.764	32.648	-2.644
N1084	I CANL		78°24'37"	95°15'02"	*****	*****	1.500	32.155	32.020	-2.833
N1085	I CANL		78°32'32"	94°57'56"	*****	*****	1.500	32.144	32.023	-2.672
N1086	I CANL		79°56'07"	94°58'38"	*****	*****	1.500	32.114	31.993	-2.676
N1087	I CANL		78°42'56"	95°10'33"	*****	*****	1.500	32.677	32.544	-2.838
N1088	I CANL		78°42'42"	94°52'44"	*****	*****	1.500	32.702	32.584	-2.671
N1089	I CX		83°34'38"	92°27'18"	*****	*****	1.500	47.138	47.095	-1.909

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 05			H.I.: 1.610							
O4	R		359°59'59"	88°55'13"	*****	*****	1.500	42.735	42.727	0.915
N1090	I CX		85°10'20"	92°26'24"	*****	*****	1.500	46.850	46.808	-1.885
N1091	I CX		85°30'47"	92°18'29"	*****	*****	1.500	47.958	47.919	-1.821
N1092	I PV		84°35'02"	92°21'21"	*****	*****	1.500	47.591	47.551	-1.846
N1093	I PLACA		128°22'53"	92°26'26"	*****	*****	1.500	38.587	38.552	-1.533
N1094	I PLACA		130°38'47"	92°25'29"	*****	*****	1.500	38.103	38.069	-1.502
N1095	I CANT		117°04'51"	89°44'38"	*****	*****	1.500	65.346	65.345	0.402
N1096	I CANT		118°17'28"	89°44'39"	*****	*****	1.500	65.733	65.732	0.404
N1097	I LUM		117°39'21"	89°49'32"	*****	*****	1.500	65.647	65.647	0.310
N1098	I PLACA		122°14'04"	88°20'27"	*****	*****	2.600	70.583	70.553	1.054
N1099	I CANT		136°17'41"	92°32'10"	*****	*****	1.500	37.173	37.137	-1.535
N1100	I CANT		134°17'46"	92°37'16"	*****	*****	1.500	36.437	36.399	-1.556
N1101	I PASS		143°08'47"	92°14'24"	*****	*****	1.500	39.526	39.496	-1.435
N1102	I PASS		144°25'04"	92°08'02"	*****	*****	1.500	40.849	40.821	-1.411
N1103	I PASS		133°59'28"	91°02'10"	*****	*****	1.500	57.163	57.154	-0.924
N1104	I PASS		132°43'02"	90°02'08"	*****	*****	2.600	56.152	56.152	-1.025
N1105	I PASS		126°51'03"	88°08'12"	*****	*****	2.600	74.571	74.532	1.435
N1106	I PASS		127°52'04"	88°06'30"	*****	*****	2.600	75.508	75.467	1.503
N1107	I MF		158°40'49"	93°05'50"	*****	*****	0.500	44.891	44.825	-1.315
N1108	I MF		150°31'24"	93°28'41"	*****	*****	1.500	31.852	31.793	-1.822
N1109	I MF		144°45'34"	94°16'20"	*****	*****	1.500	26.530	26.456	-1.866
N1110	I MF		144°36'49"	94°20'04"	*****	*****	1.500	25.716	25.642	-1.834
N1111	I MF		105°01'00"	99°00'55"	*****	*****	1.500	14.554	14.374	-2.171
N1112	I MF		101°44'03"	98°57'17"	*****	*****	1.500	14.967	14.785	-2.220
N1113	I MF		81°32'48"	99°33'29"	*****	*****	1.500	14.958	14.750	-2.374
N1114	I MF		57°42'16"	98°42'18"	*****	*****	1.500	17.807	17.602	-2.585
N1115	I CX		51°48'36"	97°20'53"	*****	*****	1.500	18.543	18.391	-2.262
N1116	I CX		55°48'53"	98°04'17"	*****	*****	1.500	17.270	17.099	-2.315
N1117	I CX		51°40'18"	98°22'56"	*****	*****	1.500	15.948	15.778	-2.215
N1118	I MF		52°19'52"	97°59'04"	*****	*****	1.500	19.370	19.182	-2.581
N1119	I MF		42°21'58"	96°29'05"	*****	*****	1.500	23.992	23.839	-2.600
N1120	I MF		33°56'03"	94°55'35"	*****	*****	1.500	32.232	32.113	-2.658
N1121	I PTC		31°18'06"	96°42'10"	*****	*****	0.100	34.186	33.952	-2.480
N1122	I MF		32°37'16"	96°24'55"	*****	*****	0.500	34.503	34.287	-2.745
N1123	I MF		29°55'16"	95°28'19"	*****	*****	0.500	41.223	41.035	-2.821
N1124	I MF		28°24'30"	93°38'06"	*****	*****	1.500	48.441	48.344	-2.961
N1125	I MF		27°46'14"	94°29'24"	*****	*****	0.500	54.346	54.179	-3.144
N1126	I PASS		24°56'00"	93°03'50"	*****	*****	1.500	56.405	56.324	-2.905
N1127	I PASS		24°54'53"	93°04'21"	*****	*****	1.500	55.397	55.317	-2.859
N1128	I MF		27°18'39"	93°13'30"	*****	*****	1.500	61.357	61.260	-3.342
N1129	I MF		26°39'48"	92°58'59"	*****	*****	1.500	67.530	67.438	-3.404
N1130	I MF		25°08'33"	92°47'11"	*****	*****	1.500	70.710	70.626	-3.327
N1131	I MF		26°15'54"	92°52'36"	*****	*****	1.500	70.658	70.569	-3.436
N1132	I MF		25°20'22"	92°48'13"	*****	*****	1.500	74.776	74.687	-3.548
N1133	I PTC		26°01'56"	92°51'12"	*****	*****	1.500	66.847	66.764	-3.218
N1134	I PTC		20°49'40"	92°40'16"	*****	*****	1.500	65.468	65.397	-2.941
N1135	I CA		58°26'31"	92°48'56"	*****	*****	0.500	73.602	73.513	-2.505
N1136	I CA		67°43'59"	91°41'22"	*****	*****	1.500	71.586	71.555	-2.001
N1137	I CA		75°39'33"	91°23'01"	*****	*****	1.500	70.764	70.743	-1.599
N1138	I CA		83°04'34"	91°04'57"	*****	*****	1.500	70.806	70.793	-1.228
N1139	I CA		92°35'16"	90°34'18"	*****	*****	1.500	71.562	71.558	-0.604
N1140	I MUR		93°01'20"	90°35'17"	*****	*****	1.500	71.647	71.643	-0.625
N1141	I MUR		94°05'58"	90°31'13"	*****	*****	1.500	71.834	71.831	-0.542
N1142	I MUR		105°24'20"	89°55'25"	*****	*****	1.500	75.201	75.201	0.210
N1143	I MUR		117°14'38"	89°18'45"	*****	*****	1.500	82.889	82.883	1.105
N1144	I MUR		123°44'04"	88°57'24"	*****	*****	1.500	89.715	89.700	1.744
N1145	I MUR		128°07'36"	88°44'30"	*****	*****	1.500	96.134	96.111	2.221

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O5			H.I.: 1.610							
O4	R		359°59'59"	88°55'13"	*****	*****	1.500	42.735	42.727	0.915
N1146	I	MUR	131°51'51"	88°30'36"	*****	*****	1.500	104.111	104.076	2.817
N1147	I	EXA	133°58'31"	88°36'15"	*****	*****	1.500	97.726	97.697	2.491
N1148	I	EXA	131°07'18"	88°45'01"	*****	*****	1.500	90.926	90.904	2.093
N1149	I	EXA	136°31'14"	88°28'47"	*****	*****	1.500	89.801	89.769	2.492
N1150	I	EXA	136°46'22"	88°28'31"	*****	*****	1.500	86.450	86.419	2.410
N1151	I	EXA	140°53'29"	88°37'32"	*****	*****	1.500	85.925	85.900	2.171
N1152	I	EXA	146°45'14"	89°03'26"	*****	*****	1.500	84.014	84.003	1.492
N1153	I	EXA	152°20'40"	89°35'32"	*****	*****	1.500	79.402	79.400	0.675
N1154	I	EXA	157°18'53"	90°07'08"	*****	*****	1.500	72.641	72.641	-0.041
N1155	I	EXA	160°56'33"	90°29'22"	*****	*****	1.500	66.558	66.556	-0.459
N1156	I	EXA	155°02'35"	91°29'50"	*****	*****	1.500	49.014	48.997	-1.171
N1157	I	EXA	148°14'37"	92°36'16"	*****	*****	1.500	37.388	37.349	-1.589
N1158	I	EXA	139°07'03"	93°57'04"	*****	*****	1.500	28.799	28.731	-1.874
N1159	I	EXA	121°44'15"	96°07'48"	*****	*****	1.500	21.227	21.106	-2.157
N1160	I	EXA	91°34'14"	97°35'00"	*****	*****	1.500	19.015	18.849	-2.399
N1161	I	EXA	76°15'01"	95°54'33"	*****	*****	1.500	26.396	26.256	-2.608
N1162	I	EXA	72°04'10"	94°16'18"	*****	*****	1.500	35.820	35.721	-2.558
N1163	I	EXA	73°15'02"	93°14'00"	*****	*****	1.500	43.907	43.837	-2.366
N1164	I	EXA	80°52'39"	91°52'52"	*****	*****	1.500	55.765	55.735	-1.721
N1165	I	EXA	88°16'54"	91°12'54"	*****	*****	1.500	61.278	61.264	-1.189
N1166	I	EXA	94°45'32"	90°45'33"	*****	*****	1.500	65.320	65.314	-0.755
N1167	I	EXA	103°45'24"	90°14'30"	*****	*****	1.500	67.853	67.852	-0.176
N1168	I	EXA	118°55'44"	89°23'45"	*****	*****	1.500	75.104	75.100	0.902
N1169	I	EXA	125°39'00"	89°02'49"	*****	*****	1.500	83.207	83.195	1.494
N1170	I	EXA	126°01'05"	89°03'20"	*****	*****	1.500	77.316	77.306	1.384
N1171	I	EXA	80°50'24"	91°29'14"	*****	*****	1.500	65.264	65.242	-1.584
N1172	I	PLACA	80°07'40"	91°32'30"	*****	*****	1.500	61.095	61.073	-1.534
N1173	I	EXA	71°53'16"	91°54'51"	*****	*****	1.500	65.913	65.876	-2.092
N1174	I	EXA	59°51'49"	92°19'21"	*****	*****	1.500	67.693	67.637	-2.633
N1175	I	EXA	42°19'19"	92°35'08"	*****	*****	1.500	72.331	72.257	-3.153
N1176	I	EXA	40°12'44"	94°11'47"	*****	*****	0.100	62.078	61.912	-3.033
N1177	I	EXA	37°04'58"	94°55'31"	*****	*****	0.500	48.947	48.766	-3.092
N1178	I	EXA	37°50'23"	97°16'36"	*****	*****	0.100	33.608	33.337	-2.747
N1179	I	EXA	54°35'11"	96°55'46"	*****	*****	1.500	22.564	22.399	-2.612
ESTAÇÃO: O5A1			H.I.: 1.654							
O5	R		0°00'00"	87°39'18"	*****	*****	1.500	67.294	67.238	2.907
N1180	I	COTA	71°39'50"	90°31'16"	*****	*****	1.500	25.970	25.969	-0.082
N1181	I	COTA	83°08'16"	90°54'45"	*****	*****	1.500	28.076	28.072	-0.293
N1182	I	COTA	70°41'38"	88°11'10"	*****	*****	1.500	34.072	34.055	1.232
N1183	I	COTA	80°32'23"	88°43'39"	*****	*****	1.500	36.477	36.468	0.964
N1184	I	COTA	89°23'33"	89°11'24"	*****	*****	1.500	39.716	39.712	0.715
N1185	I	COTA	98°47'36"	89°45'50"	*****	*****	1.500	42.936	42.936	0.331
N1186	I	COTA	105°57'08"	90°33'51"	*****	*****	1.500	44.229	44.227	-0.282
N1187	I	COTA	111°07'00"	91°12'36"	*****	*****	1.500	45.276	45.266	-0.802
N1188	I	COTA	106°55'47"	91°18'15"	*****	*****	1.500	39.571	39.561	-0.747
N1189	I	COTA	102°25'10"	91°14'48"	*****	*****	1.500	33.956	33.948	-0.585
N1190	I	COTA	95°40'12"	91°00'37"	*****	*****	1.500	32.417	32.412	-0.418
N1191	I	ARV	100°01'58"	90°16'15"	*****	*****	1.500	41.452	41.452	-0.042
N1192	I	ARV	94°52'56"	90°30'20"	*****	*****	1.500	36.673	36.672	-0.170
N1193	I	ARV	87°55'23"	90°34'27"	*****	*****	1.500	32.192	32.190	-0.169
N1194	I	ARV	76°29'46"	89°16'23"	*****	*****	1.500	32.529	32.526	0.567
N1195	I	COTA	122°10'47"	91°48'45"	*****	*****	1.500	10.008	10.003	-0.163
N1196	I	COTA	121°31'29"	91°23'18"	*****	*****	1.500	16.405	16.400	-0.243
N1197	I	COTA	103°31'26"	91°18'05"	*****	*****	1.500	15.591	15.587	-0.200
N1198	I	COTA	95°20'04"	90°55'56"	*****	*****	1.500	17.463	17.461	-0.130
N1199	I	COTA	117°37'19"	91°06'08"	*****	*****	1.500	20.943	20.939	-0.249

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O5A1			H.I.: 1.654							
O5	R		0°00'00"	87°39'18"	*****	*****	1.500	67.294	67.238	2.907
N1200	I	COTA	122°18'13"	91°07'26"	*****	*****	1.500	35.526	35.519	-0.543
N1201	I	ARV	120°49'16"	91°17'04"	*****	*****	1.500	30.335	30.327	-0.526
N1202	I	ARV	117°45'18"	91°04'40"	*****	*****	1.500	26.601	26.596	-0.346
N1203	I	ARV	106°31'50"	91°02'51"	*****	*****	1.500	19.576	19.573	-0.204
N1204	I	ARV	86°10'46"	91°05'10"	*****	*****	1.500	12.825	12.823	-0.089
N1205	I	ARV	63°50'20"	90°59'50"	*****	*****	1.500	13.731	13.729	-0.085
N1206	I	MF	36°21'30"	91°04'38"	*****	*****	1.500	18.368	18.365	-0.191
N1207	I	TMF	36°21'32"	90°32'18"	*****	*****	1.500	18.337	18.336	-0.018
N1208	I	MF	47°09'17"	91°26'45"	*****	*****	1.500	13.533	13.529	-0.187
N1209	I	MF	71°45'20"	92°11'12"	*****	*****	1.500	9.407	9.400	-0.205
N1210	I	MF	111°54'22"	92°31'38"	*****	*****	1.500	8.610	8.602	-0.226
N1211	I	MF	128°48'04"	92°31'08"	*****	*****	1.500	9.740	9.731	-0.274
N1212	I	TMF	128°24'54"	91°41'18"	*****	*****	1.500	9.895	9.891	-0.138
N1213	I	MF	125°20'17"	91°59'03"	*****	*****	1.500	15.177	15.168	-0.371
N1214	I	MF	123°41'07"	91°36'50"	*****	*****	1.500	22.076	22.067	-0.468
N1215	I	MF	123°08'07"	91°23'00"	*****	*****	1.500	32.439	32.430	-0.629
N1216	I	MF	122°56'00"	91°16'53"	*****	*****	1.500	37.742	37.733	-0.690
N1217	I	MF	122°55'04"	91°18'14"	*****	*****	1.500	41.022	41.011	-0.779
N1218	I	TMF	122°50'25"	91°08'00"	*****	*****	1.500	40.930	40.922	-0.656
N1219	I	MF	122°28'23"	91°13'48"	*****	*****	1.500	40.986	40.977	-0.726
N1220	I	MF	119°48'20"	91°31'35"	*****	*****	1.500	35.323	35.310	-0.787
N1221	I	MF	116°58'00"	91°16'43"	*****	*****	1.500	29.313	29.306	-0.500
N1222	I	MF	112°13'55"	91°17'17"	*****	*****	1.500	24.697	24.691	-0.401
N1223	I	TMF	112°16'20"	90°54'32"	*****	*****	1.500	24.602	24.599	-0.236
N1224	I	MF	102°50'47"	91°22'15"	*****	*****	1.500	20.203	20.197	-0.329
N1225	I	MF	87°46'37"	91°19'54"	*****	*****	1.500	16.859	16.854	-0.238
N1226	I	MF	60°51'42"	91°46'58"	*****	*****	1.500	16.239	16.231	-0.351
N1227	I	MF	40°53'28"	91°22'48"	*****	*****	1.500	18.126	18.121	-0.283
N1228	I	PTC	91°10'11"	90°59'57"	*****	*****	1.500	10.608	10.606	-0.031
N1229	I	PTC	112°55'12"	91°13'53"	*****	*****	1.500	17.082	17.078	-0.213
N1230	I	CANT	110°34'14"	91°13'49"	*****	*****	1.500	17.328	17.324	-0.218
N1231	I	CANT	115°21'39"	91°16'40"	*****	*****	1.500	17.027	17.023	-0.226
N1232	I	BE	225°00'16"	90°43'16"	*****	*****	1.500	13.062	13.061	-0.010
N1233	I	BE	210°46'26"	90°32'29"	*****	*****	1.500	15.132	15.131	0.011
N1234	I	BE	192°45'24"	89°58'05"	*****	*****	1.500	20.065	20.065	0.165
N1235	I	BE	179°07'51"	89°31'55"	*****	*****	1.500	28.942	28.941	0.390
N1236	I	BE	172°30'02"	88°56'08"	*****	*****	1.500	37.799	37.792	0.856
N1237	I	MF	164°48'21"	88°45'31"	*****	*****	1.500	36.256	36.247	0.939
N1238	I	MF	166°24'55"	89°14'46"	*****	*****	1.500	29.656	29.653	0.544
N1239	I	BE	165°55'58"	89°51'02"	*****	*****	1.500	25.023	25.023	0.219
N1240	I	BE	164°55'37"	90°03'50"	*****	*****	1.500	22.669	22.669	0.129
N1241	I	BE	161°03'39"	90°52'07"	*****	*****	1.500	17.883	17.881	-0.117
N1242	I	BE	155°16'58"	91°43'25"	*****	*****	1.500	15.733	15.726	-0.319
N1243	I	BE	149°10'16"	92°07'28"	*****	*****	1.500	15.177	15.167	-0.409
N1244	I	BE	144°27'13"	92°20'29"	*****	*****	1.500	15.617	15.604	-0.484
N1245	I	PTC	149°28'57"	91°54'22"	*****	*****	1.500	17.335	17.325	-0.423
N1246	I	BE	133°02'10"	91°41'13"	*****	*****	1.500	29.097	29.084	-0.703
N1247	I	BE	131°00'54"	91°26'49"	*****	*****	1.500	40.120	40.107	-0.859
N1248	I	BE	131°01'43"	91°22'21"	*****	*****	1.500	52.178	52.163	-1.096
N1249	I	BE	131°15'56"	91°24'44"	*****	*****	1.500	65.230	65.210	-1.454
N1250	I	BE	124°54'00"	91°14'39"	*****	*****	1.500	67.155	67.139	-1.304
N1251	I	BE	122°40'46"	91°18'48"	*****	*****	1.500	58.386	58.371	-1.184
N1252	I	BE	118°11'55"	91°16'12"	*****	*****	1.500	55.054	55.040	-1.066
N1253	I	BE	110°56'37"	90°34'23"	*****	*****	1.500	53.391	53.388	-0.380
N1254	I	PV	112°42'55"	90°39'34"	*****	*****	1.500	55.278	55.274	-0.482
N1255	I	BE	113°44'50"	91°15'58"	*****	*****	1.500	47.501	47.489	-0.896

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O5A1			H.I.: 1.654							
O5	R		0°00'00"	87°39'18"	*****	*****	1.500	67.294	67.238	2.907
N1256	I	BE	114°16'22"	91°17'48"	*****	*****	1.500	46.924	46.912	-0.908
N1257	I	MF	114°15'31"	91°17'56"	*****	*****	1.500	46.518	46.506	-0.900
N1258	I	MF	108°13'22"	91°27'56"	*****	*****	1.500	35.493	35.481	-0.754
N1259	I	MF	106°20'44"	91°20'11"	*****	*****	1.500	36.405	36.395	-0.695
N1260	I	MF	105°53'01"	91°20'11"	*****	*****	1.500	35.560	35.550	-0.675
N1261	I	MF	106°28'49"	91°30'32"	*****	*****	1.500	33.649	33.637	-0.732
N1262	I	MF	100°49'40"	91°35'11"	*****	*****	1.500	29.027	29.016	-0.650
N1263	I	EXA	17°53'27"	90°19'39"	*****	*****	1.500	27.815	27.815	-0.005
N1264	I	EXA	54°03'39"	91°14'00"	*****	*****	1.500	19.504	19.499	-0.266
N1265	I	EXA	81°37'03"	91°39'43"	*****	*****	1.500	19.769	19.761	-0.419
N1266	I	EXA	105°03'19"	91°33'46"	*****	*****	1.500	27.400	27.390	-0.593
N1267	I	EXA	116°46'31"	91°27'53"	*****	*****	1.500	41.025	41.012	-0.895
N1268	I	EXA	121°53'42"	91°19'14"	*****	*****	1.500	49.214	49.201	-0.980
N1269	I	EXC	115°52'57"	91°14'45"	*****	*****	1.500	51.341	51.329	-0.962
N1270	I	EXA	116°48'57"	91°17'04"	*****	*****	1.500	51.710	51.697	-1.005
N1271	I	EXA	125°23'22"	91°17'19"	*****	*****	1.500	51.280	51.267	-0.999
N1272	I	EXA	127°27'33"	91°17'19"	*****	*****	1.500	66.242	66.225	-1.336
N1273	I	PVA	134°14'54"	90°57'22"	*****	*****	1.500	59.721	59.713	-0.843
N1274	I	CX	132°48'10"	91°18'21"	*****	*****	1.500	64.225	64.208	-1.310
N1275	I	CX	131°57'39"	91°19'16"	*****	*****	1.500	64.213	64.196	-1.326
N1276	I	CX	131°55'32"	91°19'14"	*****	*****	1.500	65.122	65.105	-1.347
N1277	I	CX	135°35'46"	90°42'00"	*****	*****	1.500	55.467	55.463	-0.524
N1278	I	CX	135°36'24"	90°43'08"	*****	*****	1.500	54.814	54.810	-0.534
N1279	I	CX	136°25'36"	90°38'22"	*****	*****	1.500	54.788	54.785	-0.457
N1280	I	CX	138°26'30"	90°20'14"	*****	*****	1.500	55.025	55.024	-0.170
N1281	I	CX	138°24'58"	90°24'02"	*****	*****	1.500	54.297	54.296	-0.226
N1282	I	CX	139°12'55"	90°16'05"	*****	*****	1.500	55.041	55.040	-0.104
N1283	I	CX	139°10'12"	90°08'27"	*****	*****	1.500	56.554	56.554	0.015
N1284	I	CX	139°14'33"	90°06'51"	*****	*****	1.500	56.023	56.023	0.042
N1285	I	CX	139°49'23"	90°06'50"	*****	*****	1.500	56.067	56.067	0.043
N1286	I	CX	140°40'36"	90°02'23"	*****	*****	1.500	55.546	55.546	0.115
N1287	I	CX	139°44'54"	90°10'06"	*****	*****	1.500	0.000	0.000	0.154
N1288	I	CX	139°52'29"	90°10'01"	*****	*****	1.500	55.428	55.428	-0.008
N1289	I	CX	139°44'58"	90°07'17"	*****	*****	1.500	0.000	0.000	0.154
N1290	I	CX	139°52'44"	90°07'18"	*****	*****	1.500	56.523	56.523	0.034
N1291	I	CX	141°04'55"	90°08'54"	*****	*****	1.500	51.407	51.407	0.021
N1292	I	CX	141°47'15"	90°04'18"	*****	*****	1.500	51.498	51.498	0.090
N1293	I	CX	141°54'53"	90°05'40"	*****	*****	1.500	50.808	50.808	0.070
N1294	I	CX	141°49'12"	90°05'45"	*****	*****	1.500	50.676	50.676	0.069
N1295	I	CX	141°01'45"	90°06'02"	*****	*****	1.500	50.501	50.501	0.065
N1296	I	CX	141°12'10"	90°07'22"	*****	*****	1.500	49.710	49.710	0.047
N1297	I	CX	141°38'02"	90°05'16"	*****	*****	1.500	49.706	49.706	0.078
N1298	I	CX	142°11'51"	90°02'43"	*****	*****	1.500	49.835	49.835	0.115
N1299	I	CX	142°22'50"	90°00'50"	*****	*****	1.500	49.275	49.275	0.142
N1300	I	COTA	141°34'03"	89°46'55"	*****	*****	2.600	50.046	50.046	-0.756
N1301	I	CX	143°24'45"	90°04'14"	*****	*****	1.500	45.556	45.556	0.098
N1302	I	CX	142°34'32"	90°09'14"	*****	*****	1.500	45.389	45.389	0.032
N1303	I	CX	143°45'24"	90°03'10"	*****	*****	1.500	44.703	44.703	0.113
N1304	I	CX	143°58'22"	90°03'12"	*****	*****	1.500	44.367	44.367	0.113
N1305	I	CX	143°18'16"	90°08'06"	*****	*****	1.500	44.185	44.185	0.050
N1306	I	CX	143°34'26"	90°10'13"	*****	*****	1.500	43.514	43.514	0.025
N1307	I	PTC	139°56'28"	90°27'08"	*****	*****	1.600	43.849	43.848	-0.292
N1308	I	SOL	145°31'48"	89°52'01"	*****	*****	1.500	41.741	41.741	0.251
N1309	I	CX	146°08'21"	90°10'04"	*****	*****	1.500	38.604	38.604	0.041
N1310	I	CX	145°09'43"	90°09'41"	*****	*****	1.500	38.358	38.358	0.046
N1311	I	CX	145°35'16"	90°08'11"	*****	*****	1.500	37.503	37.503	0.065

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O5A1			H.I.: 1.654							
O5	R		0°00'00"	87°39'18"	*****	*****	1.500	67.294	67.238	2.907
N1312	I CX		147°11'30"	90°05'43"	*****	*****	1.500	37.460	37.460	0.092
N1313	I CX		146°19'44"	90°05'46"	*****	*****	1.500	37.216	37.216	0.092
N1314	I CX		146°40'35"	90°05'48"	*****	*****	1.500	36.557	36.557	0.092
N1315	I PTC		180°35'42"	89°21'59"	*****	*****	1.500	28.615	28.613	0.470
N1316	I CX		237°21'36"	89°09'14"	*****	*****	1.500	15.457	15.455	0.382
N1317	I CX		236°46'27"	89°57'13"	*****	*****	1.500	13.291	13.291	0.165
N1318	I CX		253°30'05"	89°28'22"	*****	*****	1.500	13.073	13.072	0.274
N1319	I CX		248°11'50"	89°07'11"	*****	*****	1.500	15.292	15.290	0.389
N1320	I COTA		243°22'21"	93°04'31"	*****	*****	2.600	14.132	14.112	-1.704
N1321	I CA		213°31'43"	89°37'13"	*****	*****	1.500	16.574	16.574	0.264
N1322	I CA		197°34'51"	89°56'12"	*****	*****	1.500	19.784	19.784	0.176
N1323	I POR		197°34'38"	89°28'24"	*****	*****	1.500	19.997	19.996	0.338
N1324	I POR		186°41'32"	89°33'40"	*****	*****	1.500	24.892	24.891	0.345
N1325	I SOL		191°44'04"	89°34'15"	*****	*****	1.500	22.524	22.523	0.323
N1326	I MUR		173°53'55"	88°52'48"	*****	*****	1.500	37.844	37.837	0.894
N1327	I CA		162°46'06"	88°25'51"	*****	*****	1.500	36.194	36.180	1.145
N1328	I CA		163°12'44"	88°50'12"	*****	*****	1.500	31.178	31.172	0.787
N1329	I CA		163°12'28"	89°40'49"	*****	*****	1.500	27.911	27.911	0.310
N1330	I CA		156°37'13"	90°10'14"	*****	*****	1.500	26.481	26.481	0.075
N1331	I CA		146°25'11"	90°05'34"	*****	*****	1.500	38.888	38.888	0.091
N1332	I CA		140°32'34"	89°05'51"	*****	*****	2.400	56.530	56.523	0.144
N1333	I MUR		135°11'22"	90°50'34"	*****	*****	1.500	57.048	57.042	-0.685
N1334	I POR		135°11'44"	90°53'20"	*****	*****	1.500	57.733	57.726	-0.742
N1335	I POR		135°13'32"	90°48'01"	*****	*****	1.500	65.130	65.124	-0.756
N1336	I SOL		135°13'28"	90°46'27"	*****	*****	1.500	62.293	62.287	-0.688
N1337	I MUR		135°13'33"	90°49'18"	*****	*****	1.500	65.200	65.193	-0.781
N1338	I COTA		119°07'19"	92°15'03"	*****	*****	0.100	69.130	69.077	-1.161
N1339	I PTC		110°26'44"	89°57'17"	*****	*****	2.500	65.529	65.529	-0.794
N1340	I COTA		111°25'48"	90°43'01"	*****	*****	1.500	73.479	73.473	-0.765
N1341	I COTA		107°52'51"	89°39'09"	*****	*****	1.500	63.249	63.248	0.538
N1342	I COTA		106°57'32"	88°43'09"	*****	*****	3.600	67.278	67.261	-0.442
N1343	I COTA		103°41'26"	88°24'00"	*****	*****	1.500	65.491	65.465	1.983
N1344	I COTA		102°38'18"	88°28'43"	*****	*****	1.500	69.709	69.684	2.005
N1345	I COTA		102°47'41"	88°36'56"	*****	*****	2.450	70.088	70.068	0.897
N1346	I DIV		102°46'53"	88°43'58"	*****	*****	3.500	71.366	71.349	-0.268
N1347	I DIV		99°17'34"	88°00'29"	*****	*****	3.500	64.068	64.029	0.381
N1348	I COTA		105°53'28"	89°21'26"	*****	*****	1.500	58.437	58.433	0.810
N1349	I COTA		99°01'45"	87°58'44"	*****	*****	1.500	63.647	63.607	2.399
N1350	I EXA		127°33'52"	91°24'15"	*****	*****	1.500	40.509	40.497	-0.839
N1351	I EXA		127°35'32"	91°30'32"	*****	*****	1.500	29.504	29.494	-0.623
N1352	I EXA		133°58'04"	92°06'09"	*****	*****	1.500	16.095	16.084	-0.436
N1353	I EXA		154°11'20"	92°54'00"	*****	*****	1.500	9.323	9.311	-0.318
N1354	I EXA		183°30'20"	90°46'21"	*****	*****	1.500	14.766	14.765	-0.045
N1355	I EXA		172°52'40"	89°25'49"	*****	*****	1.500	27.474	27.473	0.427
N1356	I EXA		168°44'57"	88°45'37"	*****	*****	1.500	36.461	36.452	0.943
N1357	I EXA		237°19'10"	91°18'16"	*****	*****	1.500	8.795	8.793	-0.046
N1358	I COTA		315°27'21"	89°47'58"	*****	*****	3.600	42.283	42.283	-1.798
N1359	I COTA		112°27'35"	90°55'47"	*****	*****	3.600	55.462	55.455	-2.846
N1360	I COTA		134°20'02"	91°35'22"	*****	*****	1.500	59.686	59.663	-1.502
N1361	I TUBO		134°07'50"	91°32'08"	*****	*****	1.500	59.854	59.833	-1.450
N1362	I TUBO		134°08'02"	91°31'30"	*****	*****	1.500	59.502	59.481	-1.430
N1363	I REG		134°04'01"	91°27'54"	*****	*****	1.500	59.694	59.674	-1.372
N1364	I TUBO		134°14'58"	91°21'20"	*****	*****	1.500	59.960	59.943	-1.264
N1365	I TUBO		134°14'20"	91°19'50"	*****	*****	1.500	59.490	59.474	-1.227
N1366	I COTA		359°23'28"	83°47'28"	*****	*****	3.600	94.273	93.720	8.250
N1367	I COTA		359°01'24"	83°22'33"	*****	*****	3.600	103.292	102.602	9.969

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O5A1			H.I.: 1.654							
O5	R		0°00'00"	87°39'18"	*****	*****	1.500	67.294	67.238	2.907
N1368	I	COTA	358°13'27"	83°56'40"	*****	*****	3.600	112.421	111.794	9.914
N1369	I	COTA	357°47'31"	83°54'42"	*****	*****	3.600	120.215	119.537	10.804
N1370	I	COTA	357°07'53"	83°59'40"	*****	*****	3.600	130.957	130.238	11.755
N1371	I	COTA	356°26'44"	85°18'52"	*****	*****	1.500	142.570	142.094	11.800
N1372	I	COTA	358°09'39"	84°34'22"	*****	*****	1.500	130.604	130.019	12.507
N1373	I	COTA	359°02'04"	84°12'13"	*****	*****	1.500	122.940	122.311	12.570
N1374	I	COTA	0°46'42"	83°38'50"	*****	*****	1.500	113.255	112.560	12.686
N1375	I	COTA	359°40'26"	83°57'10"	*****	*****	1.500	111.960	111.337	11.949
N1376	I	COTA	0°29'36"	83°33'08"	*****	*****	1.500	105.097	104.432	11.956
N1377	I	COTA	2°10'46"	83°08'49"	*****	*****	1.500	105.895	105.138	12.790
N1378	I	COTA	3°30'14"	82°44'38"	*****	*****	1.500	99.663	98.865	12.742
N1379	I	COTA	2°17'09"	82°48'45"	*****	*****	1.500	97.566	96.799	12.361
N1380	I	LUM	1°42'04"	83°14'23"	*****	*****	1.500	107.839	107.089	12.848
N1381	I	LUM	358°58'17"	84°12'58"	*****	*****	1.500	124.687	124.052	12.720
N1382	I	LUM	357°17'49"	84°36'12"	*****	*****	2.300	137.735	137.124	12.308
N1383	I	LUM	355°48'36"	85°11'24"	*****	*****	2.300	149.882	149.354	11.922
ESTAÇÃO: O7			H.I.: 1.620							
O6	R		0°00'01"	89°57'42"	*****	*****	1.500	102.954	102.954	0.189
O7A	A	AUXILIAR	11°23'45"	91°32'25"	*****	*****	1.500	79.857	79.828	-2.027
N1383	I	LUM	343°54'44"	90°51'21"	*****	*****	1.500	66.702	66.695	-0.876
N1384	I	CANT	344°32'28"	90°48'50"	*****	*****	1.500	66.969	66.962	-0.831
N1385	I	CANT	343°16'35"	90°44'13"	*****	*****	1.500	66.760	66.754	-0.739
N1386	I	COTA	342°39'42"	90°52'33"	*****	*****	1.500	60.213	60.206	-0.800
N1387	I	COTA	336°08'13"	90°34'23"	*****	*****	1.500	52.512	52.509	-0.405
N1388	I	ARV	340°36'14"	90°57'01"	*****	*****	1.500	53.822	53.815	-0.773
N1389	I	ARV	354°44'18"	91°32'40"	*****	*****	1.500	56.767	56.746	-1.410
N1390	I	COTA	350°33'25"	91°20'07"	*****	*****	1.500	59.472	59.456	-1.266
N1391	I	COTA	347°33'08"	91°31'51"	*****	*****	1.500	50.696	50.678	-1.234
N1392	I	COTA	343°27'14"	91°31'24"	*****	*****	1.500	42.970	42.955	-1.022
N1393	I	COTA	339°07'47"	91°54'15"	*****	*****	1.500	34.725	34.706	-1.034
N1394	I	COTA	324°32'24"	90°39'20"	*****	*****	1.500	38.724	38.721	-0.323
N1395	I	COTA	305°57'35"	90°04'26"	*****	*****	1.500	33.411	33.411	0.077
N1396	I	COTA	291°24'32"	89°23'18"	*****	*****	1.500	32.820	32.818	0.470
N1397	I	COTA	276°57'34"	88°33'34"	*****	*****	1.500	34.789	34.778	0.995
N1398	I	COTA	266°27'20"	88°17'27"	*****	*****	1.500	39.571	39.553	1.300
N1399	I	COTA	284°07'00"	88°16'05"	*****	*****	1.500	24.781	24.770	0.869
N1400	I	COTA	297°03'00"	88°41'39"	*****	*****	1.500	20.929	20.924	0.597
N1401	I	COTA	320°27'26"	89°29'04"	*****	*****	1.500	15.573	15.572	0.260
N1402	I	COTA	327°18'40"	91°45'01"	*****	*****	1.500	23.681	23.670	-0.603
N1403	I	ARV	308°24'44"	90°51'34"	*****	*****	1.500	27.106	27.103	-0.287
N1404	I	ARV	316°58'22"	90°13'19"	*****	*****	1.500	35.486	35.486	-0.017
N1405	I	ARV	333°23'31"	91°10'13"	*****	*****	1.500	41.827	41.818	-0.734
N1406	I	ARV	345°09'59"	92°06'08"	*****	*****	1.500	37.407	37.382	-1.252
N1407	I	ARV	350°56'51"	91°55'29"	*****	*****	1.500	42.808	42.784	-1.318
N1408	I	ARV	357°41'32"	92°36'02"	*****	*****	1.500	32.974	32.940	-1.376
N1409	I	ARV	356°33'11"	92°36'07"	*****	*****	1.500	32.986	32.952	-1.377
N1410	I	ARV	355°27'54"	92°36'10"	*****	*****	1.500	33.033	32.999	-1.380
N1411	I	ARV	346°27'04"	92°30'03"	*****	*****	1.500	27.652	27.626	-1.087
N1412	I	ARV	336°42'10"	92°05'09"	*****	*****	1.500	19.189	19.176	-0.578
N1413	I	ARV	2°19'10"	93°35'55"	*****	*****	1.500	22.302	22.258	-1.280
N1414	I	ARV	21°16'32"	91°36'56"	*****	*****	1.500	15.387	15.381	-0.314
N1415	I	ARV	33°09'55"	94°26'55"	*****	*****	1.500	28.049	27.965	-2.056
N1416	I	ARV	35°43'47"	94°33'20"	*****	*****	1.500	33.482	33.376	-2.539
N1417	I	ARV	19°29'48"	93°52'52"	*****	*****	1.500	32.615	32.540	-2.088
N1418	I	ARV	12°51'18"	93°00'54"	*****	*****	1.500	42.852	42.793	-2.134
N1419	I	ARV	3°29'20"	92°14'05"	*****	*****	1.500	49.074	49.037	-1.794

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 07			H.I.: 1.620							
O6	R		0°00'01"	89°57'42"	*****	*****	1.500	102.954	102.954	0.189
N1420	I	COTA	3°08'25"	92°28'53"	*****	*****	1.500	43.889	43.848	-1.780
N1421	I	COTA	20°19'33"	93°05'13"	*****	*****	1.500	48.470	48.400	-2.490
N1422	I	COTA	22°27'31"	93°41'51"	*****	*****	1.500	41.100	41.014	-2.530
N1423	I	COTA	27°35'29"	94°04'57"	*****	*****	1.500	33.957	33.871	-2.298
N1424	I	COTA	32°37'38"	94°01'45"	*****	*****	1.500	42.521	42.416	-2.868
N1425	I	COTA	33°50'51"	93°39'01"	*****	*****	1.500	50.209	50.107	-3.077
N1426	I	ARV	36°59'49"	94°11'11"	*****	*****	1.500	43.385	43.269	-3.047
N1427	I	ARV	41°41'14"	94°16'38"	*****	*****	1.500	43.814	43.692	-3.148
N1428	I	ARV	47°44'18"	94°36'30"	*****	*****	1.500	39.534	39.406	-3.056
N1429	I	ARV	58°30'53"	94°14'37"	*****	*****	1.900	39.789	39.680	-3.224
N1430	I	ARV	60°55'20"	93°30'09"	*****	*****	3.000	46.736	46.649	-4.235
N1431	I	COTA	47°58'11"	93°19'57"	*****	*****	3.000	43.111	43.038	-3.886
N1432	I	COTA	52°01'31"	93°12'58"	*****	*****	3.000	34.885	34.830	-3.337
N1433	I	COTA	53°35'48"	91°45'22"	*****	*****	3.000	27.218	27.205	-2.214
N1434	I	COTA	70°32'03"	91°58'55"	*****	*****	2.300	35.862	35.841	-1.920
N1435	I	COTA	79°33'06"	92°12'23"	*****	*****	2.300	43.873	43.840	-2.369
N1436	I	LUM	84°50'11"	92°05'53"	*****	*****	2.300	46.494	46.463	-2.382
N1437	I	CANT	83°53'32"	92°05'00"	*****	*****	2.300	46.488	46.457	-2.370
N1438	I	CANT	85°38'57"	91°46'14"	*****	*****	2.300	46.227	46.205	-2.108
N1439	I	CANT	63°20'28"	93°53'43"	*****	*****	1.900	64.667	64.518	-4.673
N1440	I	CANT	63°20'30"	93°53'47"	*****	*****	1.900	0.000	0.000	-0.280
N1441	I	CANT	62°33'11"	93°46'18"	*****	*****	1.900	65.864	65.721	-4.613
N1442	I	LUM	62°57'31"	93°53'42"	*****	*****	1.900	65.143	64.993	-4.705
N1443	I	COTA	64°21'13"	93°57'45"	*****	*****	1.800	60.779	60.634	-4.380
N1444	I	COTA	64°20'20"	93°58'51"	*****	*****	1.800	53.421	53.292	-3.889
N1445	I	COTA	56°23'51"	93°40'54"	*****	*****	1.800	56.457	56.340	-3.805
N1446	I	COTA	47°51'19"	93°46'29"	*****	*****	1.800	51.468	51.356	-3.568
N1447	I	CX	47°44'33"	93°35'49"	*****	*****	1.800	55.027	54.919	-3.632
N1448	I	CX	49°16'32"	93°41'02"	*****	*****	1.800	55.586	55.471	-3.751
N1449	I	CX	49°13'14"	93°34'58"	*****	*****	1.800	56.090	55.980	-3.685
N1450	I	CX	49°07'35"	93°34'54"	*****	*****	1.800	53.942	53.837	-3.550
N1451	I	CX	49°21'27"	93°38'00"	*****	*****	1.800	53.206	53.099	-3.552
N1452	I	CX	48°42'58"	93°38'03"	*****	*****	1.800	53.034	52.927	-3.542
N1453	I	CX	50°42'06"	93°37'23"	*****	*****	1.800	56.419	56.306	-3.745
N1454	I	CX	51°25'28"	93°31'52"	*****	*****	1.800	56.745	56.637	-3.675
N1455	I	CX	51°09'59"	93°29'20"	*****	*****	1.800	57.361	57.255	-3.671
N1456	I	CX	51°24'40"	93°32'35"	*****	*****	1.800	57.473	57.363	-3.732
N1457	I	CX	51°45'45"	93°31'54"	*****	*****	1.800	57.052	56.944	-3.694
N1458	I	CX	52°20'45"	93°34'46"	*****	*****	1.800	57.299	57.187	-3.757
N1459	I	CANT	249°17'38"	89°50'13"	*****	*****	1.500	8.503	8.503	0.144
N1460	I	CANT	239°54'38"	89°54'00"	*****	*****	1.500	8.870	8.870	0.135
N1461	I	LUM	243°33'13"	89°54'01"	*****	*****	1.500	8.864	8.864	0.135
N1462	I	ARV	247°59'16"	91°48'47"	*****	*****	1.500	2.794	2.793	0.032
N1463	I	ARV	86°56'47"	93°30'02"	*****	*****	1.500	8.962	8.945	-0.427
N1464	I	ARV	88°44'49"	92°54'57"	*****	*****	1.500	18.231	18.207	-0.807
N1465	I	ARV	91°27'53"	92°49'20"	*****	*****	1.500	28.945	28.910	-1.305
N1466	I	COTA	98°32'06"	92°47'59"	*****	*****	1.500	49.600	49.541	-2.303
N1467	I	COTA	94°30'16"	92°49'20"	*****	*****	1.500	39.394	39.346	-1.820
N1468	I	COTA	94°29'39"	92°49'24"	*****	*****	1.500	39.415	39.367	-1.821
N1469	I	COTA	90°06'26"	92°53'10"	*****	*****	1.500	23.983	23.953	-1.088
N1470	I	ARV	251°34'56"	88°36'28"	*****	*****	1.500	14.711	14.707	0.477
N1471	I	ARV	250°45'59"	88°30'40"	*****	*****	1.500	22.395	22.387	0.702
N1472	I	ARV	245°35'04"	88°32'01"	*****	*****	1.500	32.173	32.162	0.943
N1473	I	ARV	244°05'01"	88°35'14"	*****	*****	1.500	43.325	43.312	1.188
N1474	I	ARV	237°57'27"	88°56'08"	*****	*****	1.500	63.427	63.416	1.298
N1475	I	COTA	241°32'40"	88°46'02"	*****	*****	1.500	54.486	54.473	1.292

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

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Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 07			H.I.: 1.620							
O6	R		0°00'01"	89°57'42"	*****	*****	1.500	102.954	102.954	0.189
N1476	I	CANT	234°58'56"	89°03'16"	*****	*****	1.500	72.819	72.809	1.322
N1477	I	CANT	233°49'11"	89°03'11"	*****	*****	1.500	72.212	72.202	1.313
N1478	I	PTC	234°26'04"	89°03'05"	*****	*****	1.500	72.211	72.201	1.316
N1479	I	COTA	230°27'48"	89°16'44"	*****	*****	1.500	81.483	81.477	1.146
N1480	I	MF	228°06'30"	89°29'22"	*****	*****	1.500	88.509	88.505	0.909
N1481	I	MF	227°57'58"	89°28'27"	*****	*****	1.500	88.484	88.480	0.932
N1482	I	MF	227°51'29"	89°28'25"	*****	*****	1.500	88.324	88.320	0.931
N1483	I	TMF	228°04'29"	89°24'35"	*****	*****	1.500	88.432	88.427	1.031
N1484	I	MF	230°19'47"	89°24'52"	*****	*****	1.500	84.206	84.202	0.981
N1485	I	MF	229°02'48"	89°23'22"	*****	*****	1.500	82.586	82.581	1.000
N1486	I	MF	233°56'56"	89°13'15"	*****	*****	1.500	77.094	77.087	1.168
N1487	I	MF	231°02'49"	89°18'24"	*****	*****	1.500	75.312	75.306	1.031
N1488	I	MF	240°29'26"	88°59'03"	*****	*****	1.500	65.852	65.842	1.287
N1489	I	MF	233°50'50"	89°09'00"	*****	*****	1.500	64.675	64.668	1.079
N1490	I	MF	236°10'53"	89°03'48"	*****	*****	1.500	54.855	54.848	1.017
N1491	I	MF	245°38'21"	88°42'49"	*****	*****	1.500	57.327	57.313	1.407
N1492	I	MF	250°42'54"	88°29'14"	*****	*****	1.500	41.184	41.170	1.207
N1493	I	MF	237°57'31"	88°57'19"	*****	*****	1.500	45.323	45.315	0.946
N1494	I	TMF	238°06'30"	88°45'17"	*****	*****	1.500	45.312	45.301	1.105
N1495	I	MF	255°49'53"	88°23'24"	*****	*****	1.500	30.525	30.513	0.978
N1496	I	TMF	255°35'42"	88°00'01"	*****	*****	1.500	30.516	30.497	1.185
N1497	I	MF	239°28'38"	88°56'44"	*****	*****	1.500	30.846	30.841	0.688
N1498	I	MF	266°28'33"	88°19'44"	*****	*****	1.500	17.847	17.839	0.640
N1499	I	MF	235°56'02"	89°19'40"	*****	*****	1.500	17.083	17.082	0.320
N1500	I	MF	300°34'51"	89°47'09"	*****	*****	1.500	6.009	6.009	0.142
N1501	I	MF	198°13'35"	93°24'44"	*****	*****	1.500	6.090	6.079	-0.242
N1502	I	MF	27°31'02"	92°56'53"	*****	*****	1.500	4.810	4.804	-0.127
N1503	I	MF	108°44'15"	94°25'22"	*****	*****	1.500	11.438	11.404	-0.762
N1504	I	MF	99°15'35"	93°32'55"	*****	*****	1.500	21.181	21.140	-1.191
N1505	I	MF	65°30'37"	92°50'08"	*****	*****	1.500	11.720	11.706	-0.460
N1506	I	MF	81°04'24"	92°46'15"	*****	*****	1.500	24.024	23.996	-1.041
N1507	I	MF	97°43'35"	93°07'56"	*****	*****	1.500	30.559	30.513	-1.550
N1508	I	MF	87°52'09"	92°48'00"	*****	*****	1.500	33.677	33.637	-1.525
N1509	I	MF	98°24'44"	92°59'34"	*****	*****	1.500	40.510	40.455	-1.995
N1510	I	MF	93°50'29"	92°54'37"	*****	*****	1.500	43.488	43.432	-2.088
N1511	I	MF	100°01'09"	92°57'31"	*****	*****	1.500	49.805	49.739	-2.451
N1512	I	MF	97°30'19"	92°49'11"	*****	*****	1.500	50.389	50.328	-2.359
N1513	I	MF	101°06'10"	92°56'05"	*****	*****	1.500	56.247	56.173	-2.760
N1514	I	MF	100°47'32"	92°55'10"	*****	*****	1.500	56.739	56.665	-2.770
N1515	I	MF	100°25'55"	92°55'10"	*****	*****	1.500	56.590	56.517	-2.762
N1516	I	TMF	100°29'14"	92°46'04"	*****	*****	1.500	56.488	56.422	-2.608
N1517	I	MF	90°41'35"	92°40'55"	*****	*****	1.500	50.528	50.473	-2.244
N1518	I	MF	90°53'26"	92°41'12"	*****	*****	1.500	50.304	50.249	-2.238
N1519	I	TMF	90°49'08"	92°30'14"	*****	*****	1.500	50.309	50.261	-2.078
N1520	I	MF	83°07'58"	93°17'51"	*****	*****	1.500	50.554	50.470	-2.788
N1521	I	MF	87°44'42"	92°31'46"	*****	*****	1.500	45.598	45.554	-1.892
N1522	I	MF	75°17'41"	93°46'08"	*****	*****	1.500	53.624	53.508	-3.405
N1523	I	MF	81°44'29"	92°19'03"	*****	*****	1.500	37.746	37.715	-1.406
N1524	I	MF	76°22'12"	92°06'37"	*****	*****	1.500	31.910	31.888	-1.055
N1525	I	MF	69°38'46"	91°54'30"	*****	*****	1.500	26.251	26.236	-0.754
N1526	I	MF	68°58'08"	93°10'24"	*****	*****	2.500	60.287	60.195	-4.217
N1527	I	MF	60°14'28"	91°38'27"	*****	*****	1.500	20.419	20.411	-0.465
N1528	I	MF	48°49'29"	91°15'02"	*****	*****	1.500	15.978	15.974	-0.229
N1529	I	MF	66°40'42"	93°13'38"	*****	*****	2.500	66.048	65.943	-4.598
N1530	I	MF	23°42'45"	90°08'39"	*****	*****	1.500	11.381	11.381	0.091
N1531	I	MF	332°34'37"	88°28'16"	*****	*****	1.500	10.438	10.434	0.398

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 07			H.I.: 1.620							
O6	R		0°00'01"	89°57'42"	*****	*****	1.500	102.954	102.954	0.189
N1532	I MF		65°53'25"	93°17'13"	*****	*****	2.500	69.722	69.607	-4.878
N1533	I MF		65°28'37"	93°17'14"	*****	*****	2.500	70.349	70.233	-4.914
N1534	I MF		294°50'00"	87°54'54"	*****	*****	1.500	16.117	16.106	0.706
N1535	I MF		65°00'53"	93°17'18"	*****	*****	2.500	70.231	70.115	-4.908
N1536	I TMF		65°00'02"	93°06'50"	*****	*****	2.500	70.149	70.045	-4.691
N1537	I MF		279°35'00"	87°52'53"	*****	*****	1.500	22.588	22.573	0.955
N1538	I TMF		279°44'00"	87°29'58"	*****	*****	1.500	22.669	22.647	1.109
N1539	I MF		271°17'30"	87°52'59"	*****	*****	1.500	28.566	28.547	1.175
N1540	I MF		55°50'52"	94°04'04"	*****	*****	1.500	62.923	62.764	-4.344
N1541	I MF		266°07'13"	87°59'06"	*****	*****	1.500	33.502	33.481	1.298
N1542	I MF		44°24'08"	93°48'51"	*****	*****	1.500	57.430	57.303	-3.700
N1543	I MF		257°23'37"	88°28'15"	*****	*****	1.500	47.473	47.456	1.387
N1544	I MF		257°43'43"	88°29'31"	*****	*****	1.500	47.666	47.649	1.374
N1545	I MF		34°10'07"	93°26'39"	*****	*****	1.500	55.044	54.945	-3.187
N1546	I MF		23°09'10"	92°53'24"	*****	*****	1.500	54.532	54.463	-2.629
N1547	I MF		265°21'24"	88°25'31"	*****	*****	1.500	43.622	43.606	1.319
N1548	I MF		11°35'43"	92°12'03"	*****	*****	1.500	56.160	56.119	-2.037
N1549	I MF		277°22'23"	88°29'16"	*****	*****	1.500	39.723	39.709	1.168
N1550	I MF		0°15'24"	91°31'35"	*****	*****	1.500	60.385	60.364	-1.489
N1551	I MF		291°50'31"	88°44'21"	*****	*****	1.500	38.110	38.101	0.959
N1552	I MF		351°06'21"	91°05'35"	*****	*****	1.500	66.180	66.168	-1.142
N1553	I TMF		350°56'57"	90°57'26"	*****	*****	1.500	66.155	66.146	-0.985
N1554	I MF		302°57'48"	89°03'10"	*****	*****	1.500	38.960	38.955	0.764
N1555	I MF		343°45'40"	90°45'39"	*****	*****	1.500	73.248	73.242	-0.853
N1556	I MF		315°37'53"	89°25'39"	*****	*****	1.500	42.420	42.418	0.544
N1557	I MF		342°12'29"	90°42'27"	*****	*****	1.500	75.168	75.162	-0.808
N1558	I MF		324°16'03"	89°49'36"	*****	*****	1.500	47.204	47.204	0.263
N1559	I MF		341°47'41"	90°40'05"	*****	*****	1.500	75.087	75.082	-0.755
N1560	I MF		330°28'17"	90°04'33"	*****	*****	1.500	52.705	52.705	0.050
N1561	I MF		338°38'16"	90°27'28"	*****	*****	1.500	66.106	66.104	-0.408
N1562	I MF		335°30'53"	90°17'42"	*****	*****	1.500	59.642	59.641	-0.187
N1563	I MF		343°34'40"	90°42'48"	*****	*****	1.500	84.232	84.225	-0.929
N1564	I MF		343°40'22"	90°42'30"	*****	*****	1.500	83.634	83.628	-0.914
N1565	I MF		344°47'18"	90°45'34"	*****	*****	1.500	94.206	94.198	-1.129
N1566	I MF		345°27'31"	90°47'41"	*****	*****	1.500	105.426	105.416	-1.342
N1567	I MF		351°37'28"	90°57'59"	*****	*****	1.500	74.899	74.888	-1.143
N1568	I MF		345°33'17"	90°48'50"	*****	*****	1.500	114.954	114.942	-1.513
N1569	I MF		345°21'49"	90°47'05"	*****	*****	1.500	126.619	126.607	-1.614
N1570	I MF		11°50'56"	92°04'13"	*****	*****	1.500	63.860	63.818	-2.187
N1571	I MF		345°23'08"	90°48'52"	*****	*****	1.500	127.805	127.792	-1.697
N1572	I TMF		345°24'55"	90°45'33"	*****	*****	1.500	127.546	127.535	-1.570
N1573	I MF		345°33'40"	90°48'57"	*****	*****	1.500	127.168	127.155	-1.691
N1574	I MF		0°09'00"	91°19'32"	*****	*****	1.500	68.786	68.768	-1.471
N1575	I MF		347°17'05"	90°45'47"	*****	*****	1.500	117.055	117.045	-1.439
N1576	I MF		15°10'57"	92°16'03"	*****	*****	1.500	63.061	63.012	-2.375
N1577	I TMF		15°08'59"	92°04'48"	*****	*****	1.500	63.170	63.128	-2.173
N1578	I MF		351°20'05"	90°53'36"	*****	*****	1.500	101.563	101.551	-1.463
N1579	I MF		26°27'51"	92°50'49"	*****	*****	1.500	62.010	61.933	-2.960
N1580	I MF		26°27'39"	92°49'04"	*****	*****	1.500	62.248	62.173	-2.940
N1581	I MF		17°03'53"	92°12'27"	*****	*****	1.500	66.208	66.159	-2.430
N1582	I MF		353°47'50"	90°57'49"	*****	*****	1.500	94.756	94.743	-1.474
N1583	I MF		11°11'54"	91°52'30"	*****	*****	1.500	70.001	69.964	-2.170
N1584	I MF		4°31'09"	91°49'50"	*****	*****	1.000	76.460	76.421	-1.822
N1585	I MF		359°08'19"	91°10'50"	*****	*****	1.500	83.957	83.939	-1.610
N1586	I CX		21°38'14"	92°19'39"	*****	*****	1.500	63.379	63.327	-2.454
N1587	I CX		22°07'09"	92°20'09"	*****	*****	1.500	63.296	63.243	-2.460

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 07			H.I.: 1.620							
O6	R		0°00'01"	89°57'42"	*****	*****	1.500	102.954	102.954	0.189
N1588	I CX		22°05'34"	92°22'21"	*****	*****	1.500	62.738	62.684	-2.477
N1589	I BE		26°42'45"	92°36'43"	*****	*****	1.500	69.725	69.653	-3.057
N1590	I BE		24°56'02"	92°29'06"	*****	*****	1.500	70.805	70.738	-2.950
N1591	I BE		24°26'37"	92°27'01"	*****	*****	1.500	70.933	70.868	-2.913
N1592	I BE		25°28'00"	92°29'25"	*****	*****	1.500	71.215	71.148	-2.974
N1593	I BE		25°13'39"	92°29'52"	*****	*****	1.500	70.905	70.838	-2.970
N1594	I BE		24°09'52"	92°23'14"	*****	*****	1.500	71.532	71.470	-2.860
N1595	I MF		25°38'47"	92°16'54"	*****	*****	1.500	74.705	74.646	-2.854
N1596	I MF		28°15'24"	92°35'32"	*****	*****	1.500	74.871	74.794	-3.266
N1597	I MF		29°22'08"	92°35'50"	*****	*****	1.500	77.566	77.486	-3.395
N1598	I CX		29°00'58"	92°32'37"	*****	*****	1.500	78.445	78.368	-3.361
N1599	I CXT		27°48'07"	92°27'00"	*****	*****	1.500	77.576	77.505	-3.196
N1600	I CXT		26°12'19"	92°28'34"	*****	*****	1.500	73.841	73.772	-3.070
N1601	I CXT		28°14'24"	92°25'40"	*****	*****	1.500	78.416	78.346	-3.202
N1602	I CXT		27°27'17"	92°26'40"	*****	*****	1.500	77.845	77.774	-3.200
N1603	I CXT		26°05'42"	92°28'15"	*****	*****	1.500	73.268	73.200	-3.039
N1604	I CXT		26°54'00"	92°32'51"	*****	*****	1.500	72.941	72.869	-3.122
N1605	I CXT		25°30'25"	92°18'55"	*****	*****	1.500	73.188	73.128	-2.837
N1606	I CXT		25°26'43"	92°19'45"	*****	*****	1.500	72.271	72.211	-2.817
N1607	I CXT		24°44'40"	92°14'08"	*****	*****	1.500	73.292	73.236	-2.739
N1608	I CX		29°48'04"	92°29'47"	*****	*****	1.500	80.550	80.474	-3.388
N1609	I CX		30°19'13"	92°25'33"	*****	*****	1.500	81.664	81.591	-3.337
N1610	I CX		30°43'38"	92°30'19"	*****	*****	1.500	80.616	80.539	-3.404
N1611	I CX		30°29'21"	92°31'16"	*****	*****	1.500	80.015	79.938	-3.400
N1612	I BE		44°10'04"	93°31'13"	*****	*****	1.500	68.999	68.869	-4.117
N1613	I MF		54°19'58"	93°47'00"	*****	*****	1.500	73.154	72.995	-4.707
N1614	I MF		64°44'06"	93°57'11"	*****	*****	1.500	80.505	80.313	-5.430
N1615	I BE		71°55'14"	93°16'31"	*****	*****	2.450	89.923	89.776	-5.968
N1616	I CX		71°24'02"	93°16'34"	*****	*****	2.450	89.268	89.122	-5.931
N1617	I CX		71°10'43"	93°15'44"	*****	*****	2.450	89.595	89.450	-5.928
N1618	I CX		70°35'58"	93°15'43"	*****	*****	2.450	88.908	88.764	-5.889
N1619	I PTC		75°24'30"	93°35'02"	*****	*****	1.500	98.236	98.044	-6.021
N1620	I MUR		66°32'51"	93°44'19"	*****	*****	1.500	86.401	86.217	-5.514
N1621	I CA		60°04'24"	92°29'14"	*****	*****	3.150	79.518	79.443	-4.981
N1622	I CA		53°04'36"	93°22'39"	*****	*****	1.500	75.389	75.258	-4.321
N1623	I PTC		53°50'11"	93°27'23"	*****	*****	1.500	74.955	74.819	-4.399
N1624	I CA		51°41'05"	93°13'16"	*****	*****	1.500	77.928	77.805	-4.259
N1625	I POR		51°19'22"	93°13'19"	*****	*****	1.500	77.956	77.833	-4.261
N1626	I POR		46°53'05"	93°18'31"	*****	*****	1.500	76.515	76.387	-4.296
N1627	I SOL		49°18'06"	93°13'49"	*****	*****	1.500	77.262	77.139	-4.234
N1628	I CA		44°43'45"	93°13'14"	*****	*****	1.500	77.034	76.912	-4.208
N1629	I CX		44°41'50"	93°15'24"	*****	*****	1.500	75.867	75.744	-4.190
N1630	I CX		44°35'21"	93°16'48"	*****	*****	1.500	75.241	75.118	-4.185
N1631	I CA		43°53'18"	93°16'48"	*****	*****	1.500	72.779	72.660	-4.044
N1632	I CA		40°47'58"	92°26'57"	*****	*****	2.200	73.785	73.718	-3.733
N1633	I CA		40°56'41"	92°32'21"	*****	*****	1.500	78.581	78.504	-3.361
N1634	I CA		30°39'59"	92°18'51"	*****	*****	1.500	84.442	84.373	-3.290
N1635	I CA		28°25'21"	92°31'51"	*****	*****	1.500	78.329	78.253	-3.339
N1636	I CA		25°29'12"	91°37'39"	*****	*****	1.500	80.999	80.966	-2.180
N1637	I CER		44°22'23"	94°17'29"	*****	*****	1.500	45.106	44.980	-3.255
N1638	I CER		43°36'32"	94°19'03"	*****	*****	1.500	42.021	41.902	-3.044
N1639	I CER		61°31'12"	94°07'49"	*****	*****	1.650	55.375	55.231	-4.018
N1640	I CER		59°53'22"	93°10'25"	*****	*****	2.600	56.989	56.902	-4.135
N1641	I MF		109°10'20"	93°24'23"	*****	*****	1.500	39.454	39.384	-2.224
N1642	I MF		111°37'20"	93°38'40"	*****	*****	1.500	30.868	30.806	-1.842
N1643	I TMF		111°51'22"	93°08'41"	*****	*****	1.500	30.885	30.838	-1.574

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 07			H.I.: 1.620							
O6	R		0°00'01"	89°57'42"	*****	*****	1.500	102.954	102.954	0.189
N1644	I MF		120°54'17"	93°59'59"	*****	*****	1.500	20.961	20.910	-1.342
N1645	I PTC		125°43'52"	93°02'10"	*****	*****	1.500	22.066	22.035	-1.049
N1646	I BL		127°39'25"	94°10'11"	*****	*****	1.500	18.094	18.046	-1.196
N1647	I BL		129°06'16"	94°09'50"	*****	*****	1.500	17.585	17.539	-1.157
N1648	I BL		129°02'42"	93°41'09"	*****	*****	1.500	17.596	17.560	-1.011
N1649	I MF		127°09'28"	94°05'45"	*****	*****	1.500	17.981	17.935	-1.164
N1650	I MF		128°42'38"	94°05'56"	*****	*****	1.500	17.433	17.388	-1.126
N1651	I MF		149°52'22"	93°57'12"	*****	*****	1.500	13.456	13.424	-0.808
N1652	I MF		182°51'51"	92°49'05"	*****	*****	1.500	13.090	13.074	-0.524
N1653	I MF		210°28'26"	90°29'27"	*****	*****	1.500	18.268	18.267	-0.036
N1654	I MF		212°08'25"	90°29'13"	*****	*****	1.500	19.003	19.002	-0.042
N1655	I BL		211°35'07"	90°53'13"	*****	*****	1.500	19.011	19.009	-0.174
N1656	I BL		210°35'47"	90°52'38"	*****	*****	1.500	18.501	18.499	-0.163
N1657	I BL		210°25'02"	90°19'16"	*****	*****	1.500	18.457	18.457	0.017
N1658	I PV		209°01'39"	89°50'10"	*****	*****	1.500	19.396	19.396	0.175
N1659	I PTC		212°54'54"	89°49'00"	*****	*****	1.500	21.418	21.418	0.189
N1660	I MF		215°23'05"	89°56'19"	*****	*****	1.500	22.690	22.690	0.144
N1661	I MF		217°07'47"	89°40'39"	*****	*****	1.500	28.712	28.712	0.282
N1662	I MF		216°03'18"	89°35'46"	*****	*****	1.500	34.559	34.558	0.364
N1663	I MF		213°28'33"	89°27'14"	*****	*****	1.500	39.710	39.708	0.498
N1664	I PTC		211°27'43"	89°10'11"	*****	*****	1.500	41.225	41.221	0.717
N1665	I MF		208°38'28"	89°23'23"	*****	*****	1.500	46.579	46.576	0.616
N1666	I TMF		208°32'27"	89°08'07"	*****	*****	1.500	46.520	46.515	0.822
N1667	I PTC		208°32'34"	89°08'00"	*****	*****	1.500	0.000	0.000	0.120
N1668	I PTC		202°08'23"	88°05'39"	*****	*****	2.450	56.427	56.396	1.047
N1669	I MF		201°37'32"	88°19'05"	*****	*****	2.450	59.038	59.013	0.903
N1670	I MF		209°59'37"	89°22'32"	*****	*****	1.500	64.723	64.719	0.825
N1671	I MF		212°01'30"	89°14'35"	*****	*****	1.500	53.966	53.961	0.833
N1672	I MF		214°28'18"	89°32'23"	*****	*****	1.500	63.253	63.251	0.628
N1673	I MF		212°11'00"	89°14'47"	*****	*****	1.500	54.805	54.800	0.841
N1674	I MF		214°27'27"	89°32'27"	*****	*****	1.500	63.244	63.242	0.627
N1675	I MF		213°18'13"	89°18'37"	*****	*****	1.500	56.416	56.412	0.799
N1676	I MF		216°42'20"	89°34'42"	*****	*****	1.500	63.539	63.537	0.588
N1677	I MF		214°16'50"	89°18'34"	*****	*****	1.500	56.817	56.813	0.805
N1678	I MF		217°38'49"	89°21'32"	*****	*****	1.500	57.196	57.192	0.760
N1679	I MF		217°36'07"	89°36'54"	*****	*****	1.500	63.730	63.729	0.548
N1680	I TMF		217°38'01"	89°10'51"	*****	*****	1.500	57.092	57.086	0.936
N1681	I MF		221°24'52"	89°31'34"	*****	*****	1.500	66.147	66.145	0.667
N1682	I MF		222°18'05"	89°19'19"	*****	*****	1.500	59.097	59.093	0.819
N1683	I MF		224°12'36"	89°27'06"	*****	*****	1.500	70.877	70.874	0.798
N1684	I MF		226°36'56"	89°16'29"	*****	*****	1.500	62.849	62.844	0.916
N1685	I MF		224°54'31"	89°29'04"	*****	*****	1.500	75.013	75.010	0.795
N1686	I MF		227°10'54"	89°22'34"	*****	*****	1.500	62.978	62.974	0.806
N1687	I MF		224°12'17"	89°33'07"	*****	*****	1.500	79.269	79.267	0.740
N1688	I MF		227°25'53"	89°19'23"	*****	*****	1.500	62.438	62.434	0.858
N1689	I MF		223°24'40"	89°36'27"	*****	*****	1.500	82.453	82.451	0.685
N1690	I MF		222°03'35"	89°38'07"	*****	*****	1.500	87.593	87.591	0.678
N1691	I MF		228°02'14"	89°20'35"	*****	*****	1.500	57.292	57.288	0.777
N1692	I MF		228°28'54"	89°22'01"	*****	*****	1.500	51.825	51.822	0.693
N1693	I TMF		221°57'53"	89°29'59"	*****	*****	1.500	87.617	87.614	0.885
N1694	I MF		228°40'59"	89°20'52"	*****	*****	1.500	46.260	46.257	0.647
N1695	I PTC		222°30'58"	89°15'01"	*****	*****	1.500	76.142	76.135	1.116
N1696	I MF		228°38'54"	89°21'19"	*****	*****	1.500	43.295	43.292	0.607
N1697	I ARV		217°59'38"	89°13'28"	*****	*****	1.500	68.101	68.095	1.042
N1698	I ARV		214°43'58"	89°13'22"	*****	*****	1.500	67.012	67.006	1.029
N1699	I CX		216°53'05"	89°14'56"	*****	*****	1.500	65.813	65.807	0.983

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 07			H.I.: 1.620							
O6	R		0°00'01"	89°57'42"	*****	*****	1.500	102.954	102.954	0.189
N1700	I CX		215°57'00"	89°15'06"	*****	*****	1.500	65.238	65.232	0.972
N1701	I CX		216°35'12"	89°26'32"	*****	*****	1.500	63.752	63.749	0.741
N1702	I MF		228°16'27"	89°22'55"	*****	*****	1.500	41.798	41.796	0.571
N1703	I BL		216°48'59"	89°43'55"	*****	*****	1.500	63.752	63.751	0.418
N1704	I BL		217°23'25"	89°41'18"	*****	*****	1.500	63.922	63.921	0.468
N1705	I BL		217°25'22"	89°28'40"	*****	*****	1.500	63.923	63.920	0.703
N1706	I PLACA		226°09'27"	89°08'57"	*****	*****	1.500	60.224	60.217	1.014
N1707	I ARV		226°40'39"	89°16'39"	*****	*****	1.500	52.689	52.685	0.784
N1708	I ARV		222°03'15"	89°09'53"	*****	*****	1.500	52.487	52.481	0.885
N1709	I COTA		214°25'16"	89°06'52"	*****	*****	1.500	54.502	54.495	0.962
N1710	I CX		225°36'23"	89°12'58"	*****	*****	1.500	52.829	52.824	0.843
N1711	I CX		225°59'52"	89°12'54"	*****	*****	1.500	51.796	51.791	0.830
N1712	I CX		224°58'58"	89°15'48"	*****	*****	1.500	51.466	51.462	0.782
N1713	I CANL		225°13'56"	89°24'05"	*****	*****	1.500	51.525	51.522	0.658
N1714	I CANL		225°40'11"	89°23'36"	*****	*****	1.500	51.620	51.617	0.667
N1715	I CANL		225°27'43"	89°36'49"	*****	*****	1.500	51.565	51.564	0.468
N1716	I CANL		226°21'01"	89°29'31"	*****	*****	1.500	46.511	46.509	0.532
N1717	I CANL		226°31'28"	89°11'32"	*****	*****	1.500	46.566	46.561	0.776
N1718	I CANL		226°04'11"	89°18'42"	*****	*****	1.500	46.519	46.516	0.679
N1719	I CANL		227°47'58"	89°06'40"	*****	*****	1.500	41.778	41.773	0.768
N1720	I CANL		227°25'55"	89°08'12"	*****	*****	1.500	41.162	41.157	0.740
N1721	I CANL		227°33'19"	89°23'53"	*****	*****	1.500	41.574	41.572	0.557
N1722	I MF		227°30'07"	89°18'58"	*****	*****	1.500	40.925	40.922	0.608
N1723	I MF		225°49'28"	89°17'58"	*****	*****	1.500	40.190	40.187	0.611
N1724	I MF		223°36'54"	89°18'21"	*****	*****	1.500	39.938	39.935	0.604
N1725	I MF		221°55'26"	89°15'06"	*****	*****	1.500	42.084	42.080	0.670
N1726	I MF		218°35'34"	89°15'58"	*****	*****	1.500	46.013	46.009	0.709
N1727	I MF		219°58'08"	89°15'58"	*****	*****	1.500	44.538	44.534	0.690
N1728	I MF		215°49'44"	89°14'38"	*****	*****	1.500	49.373	49.369	0.772
N1729	I CX		207°37'26"	89°12'11"	*****	*****	1.500	59.890	59.884	0.953
N1730	I CX		206°44'24"	89°13'12"	*****	*****	1.500	59.256	59.251	0.927
N1731	I CX		207°05'12"	89°13'36"	*****	*****	1.500	60.764	60.758	0.940
N1732	I PVE		206°57'39"	89°14'01"	*****	*****	1.500	60.022	60.017	0.923
N1733	I PVT		213°28'04"	89°09'59"	*****	*****	1.500	66.269	66.262	1.084
N1734	I PVT		214°24'23"	89°11'40"	*****	*****	1.500	65.546	65.540	1.042
N1735	I PVT		224°21'25"	89°14'48"	*****	*****	1.500	75.201	75.195	1.109
N1736	I PVE		231°40'34"	89°14'38"	*****	*****	1.500	67.054	67.048	1.005
N1737	I CX		232°02'15"	89°12'32"	*****	*****	1.500	68.130	68.124	1.061
N1738	I CX		232°37'01"	89°12'30"	*****	*****	1.500	66.795	66.789	1.043
N1739	I CX		231°31'16"	89°14'19"	*****	*****	1.500	65.980	65.974	0.997
N1740	I MUR		212°14'51"	88°59'13"	*****	*****	1.500	68.666	68.655	1.334
N1741	I MUR		215°25'00"	89°10'32"	*****	*****	1.500	68.122	68.115	1.100
N1742	I MUR		219°45'41"	89°12'30"	*****	*****	1.500	70.835	70.828	1.099
N1743	I MUR		221°11'27"	89°16'58"	*****	*****	1.500	75.763	75.757	1.068
N1744	I MUR		199°04'25"	87°59'29"	*****	*****	2.450	58.198	58.162	1.210
N1745	I CX		201°25'08"	88°02'28"	*****	*****	2.450	56.405	56.372	1.098
N1746	I CX		200°36'54"	88°00'34"	*****	*****	2.450	56.087	56.053	1.118
N1747	I CX		200°53'39"	88°00'34"	*****	*****	2.450	55.267	55.234	1.090
N1748	I MUR		204°50'48"	89°00'36"	*****	*****	1.500	46.168	46.161	0.918
N1749	I MUR		207°52'25"	89°02'24"	*****	*****	1.500	41.664	41.658	0.818
N1750	I MUR		208°22'29"	89°03'24"	*****	*****	1.500	40.828	40.822	0.792
N1751	I MUR		208°30'00"	89°00'41"	*****	*****	1.500	38.340	38.334	0.782
N1752	I MUR		208°10'08"	88°59'21"	*****	*****	1.500	35.785	35.779	0.751
N1753	I MUR		207°25'05"	89°03'43"	*****	*****	1.500	33.316	33.312	0.665
N1754	I MUR		205°37'18"	89°12'56"	*****	*****	1.500	30.985	30.982	0.544
N1755	I MUR		203°11'34"	89°25'18"	*****	*****	1.500	28.783	28.782	0.411

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 07			H.I.: 1.620							
O6	R		0°00'01"	89°57'42"	*****	*****	1.500	102.954	102.954	0.189
N1756	I	MUR	167°27'10"	91°09'04"	*****	*****	1.500	20.396	20.392	-0.290
N1757	I	MUR	134°39'45"	92°41'51"	*****	*****	1.500	21.814	21.790	-0.907
N1758	I	MUR	130°07'33"	92°47'13"	*****	*****	1.500	23.507	23.479	-1.023
N1759	I	MUR	127°47'14"	92°48'45"	*****	*****	1.500	25.858	25.827	-1.149
N1760	I	MUR	127°26'04"	92°48'47"	*****	*****	1.500	28.423	28.389	-1.275
N1761	I	MUR	125°31'09"	92°48'43"	*****	*****	1.500	30.124	30.088	-1.358
N1762	I	MUR	121°14'45"	93°04'37"	*****	*****	1.500	31.339	31.294	-1.562
N1763	I	MUR	118°14'44"	93°04'33"	*****	*****	1.500	33.198	33.150	-1.661
N1764	I	MUR	116°00'43"	93°00'06"	*****	*****	1.500	35.332	35.284	-1.730
N1765	I	MUR	114°18'22"	92°51'54"	*****	*****	1.500	37.626	37.579	-1.761
N1766	I	CXT	139°08'52"	92°30'14"	*****	*****	1.500	20.171	20.152	-0.761
N1767	I	CXT	149°52'20"	92°10'45"	*****	*****	1.500	18.726	18.712	-0.592
N1768	I	PASS	90°20'30"	92°36'20"	*****	*****	1.500	49.724	49.673	-2.140
N1769	I	PASS	89°42'25"	92°35'55"	*****	*****	1.500	50.146	50.094	-2.154
N1770	I	PASS	80°56'28"	92°19'21"	*****	*****	1.500	38.789	38.757	-1.452
N1771	I	PASS	81°52'51"	92°19'21"	*****	*****	1.500	38.500	38.468	-1.440
N1772	I	PASS	68°38'17"	91°44'49"	*****	*****	1.500	25.916	25.904	-0.670
N1773	I	PASS	67°15'44"	91°55'09"	*****	*****	1.500	26.431	26.416	-0.765
N1774	I	PASS	51°13'22"	91°28'45"	*****	*****	1.500	18.412	18.406	-0.355
N1775	I	PASS	47°34'56"	91°26'45"	*****	*****	1.500	17.257	17.252	-0.315
N1776	I	PASS	50°40'05"	91°09'50"	*****	*****	1.500	16.893	16.890	-0.223
N1777	I	PASS	323°40'23"	88°27'30"	*****	*****	1.500	12.278	12.274	0.450
N1778	I	PASS	322°29'48"	87°57'25"	*****	*****	1.500	11.360	11.353	0.525
N1779	I	PASS	284°04'29"	87°50'13"	*****	*****	1.500	22.185	22.169	0.957
N1780	I	PASS	282°24'11"	87°39'08"	*****	*****	1.500	21.498	21.480	1.001
N1781	I	PASS	269°40'00"	87°50'11"	*****	*****	1.500	30.310	30.288	1.264
N1782	I	PASS	271°20'57"	87°56'16"	*****	*****	1.500	30.758	30.738	1.227
N1783	I	PASS	272°04'32"	87°53'33"	*****	*****	1.500	29.914	29.894	1.220
N1784	I	PASS	260°03'54"	88°19'21"	*****	*****	1.500	44.846	44.827	1.433
N1785	I	PASS	258°26'01"	88°19'20"	*****	*****	1.500	45.640	45.620	1.456
N1786	I	PASS	259°37'27"	88°21'02"	*****	*****	1.500	46.205	46.186	1.450
N1787	I	PASS	287°16'32"	88°44'10"	*****	*****	1.500	37.273	37.264	0.942
N1788	I	PASS	287°51'44"	88°40'43"	*****	*****	1.500	38.032	38.022	0.997
N1789	I	PASS	288°17'18"	88°44'31"	*****	*****	1.500	37.111	37.102	0.935
N1790	I	PASS	321°45'14"	89°45'00"	*****	*****	1.500	44.032	44.032	0.312
N1791	I	PASS	322°53'32"	89°50'32"	*****	*****	1.500	44.738	44.738	0.243
N1792	I	PASS	322°00'11"	89°44'54"	*****	*****	1.500	45.335	45.335	0.319
N1793	I	PASS	337°15'45"	90°21'43"	*****	*****	1.500	60.415	60.414	-0.262
N1794	I	PASS	336°28'34"	90°18'54"	*****	*****	1.500	60.916	60.915	-0.215
N1795	I	PASS	342°04'22"	90°34'02"	*****	*****	1.500	73.906	73.902	-0.612
N1796	I	PASS	341°59'32"	90°36'18"	*****	*****	1.500	74.811	74.807	-0.670
N1797	I	RADAR	342°09'12"	90°33'49"	*****	*****	1.500	73.690	73.686	-0.605
N1798	I	PASS	1°25'35"	91°36'01"	*****	*****	1.500	58.461	58.438	-1.513
N1799	I	PASS	2°11'28"	91°37'26"	*****	*****	1.500	58.065	58.042	-1.525
N1800	I	PASS	2°39'08"	91°37'20"	*****	*****	1.500	58.936	58.912	-1.548
N1801	I	PASS	349°06'12"	91°37'14"	*****	*****	1.500	50.291	50.271	-1.302
N1802	I	PASS	349°19'53"	91°40'15"	*****	*****	1.500	49.661	49.640	-1.328
N1803	I	PASS	38°49'28"	93°36'36"	*****	*****	1.500	54.707	54.598	-3.325
N1804	I	PASS	38°38'54"	93°33'32"	*****	*****	1.500	55.672	55.565	-3.336
N1805	I	PASS	37°20'54"	93°35'19"	*****	*****	1.500	54.572	54.465	-3.296
N1806	I	PASS	55°22'20"	93°58'11"	*****	*****	1.500	61.214	61.067	-4.118
N1807	I	PASS	54°59'48"	94°01'15"	*****	*****	1.500	62.171	62.018	-4.239
N1808	I	PASS	65°15'48"	93°03'05"	*****	*****	2.600	70.035	69.936	-4.708
N1809	I	PASS	65°21'13"	93°02'29"	*****	*****	2.600	68.935	68.838	-4.638
N1810	I	EXA	87°57'11"	92°34'45"	*****	*****	1.500	41.032	40.990	-1.726
N1811	I	EXA	79°53'24"	92°20'40"	*****	*****	1.500	30.337	30.312	-1.121

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: O7			H.I.: 1.620							
O6	R		0°00'01"	89°57'42"	*****	*****	1.500	102.954	102.954	0.189
N1812	I EXA		68°50'13"	92°04'03"	*****	*****	1.500	20.429	20.416	-0.617
N1813	I EXA		48°59'27"	91°31'34"	*****	*****	1.500	12.143	12.139	-0.203
N1814	I EXA		331°55'15"	88°51'08"	*****	*****	1.500	7.705	7.703	0.274
N1815	I EXA		284°41'43"	87°57'19"	*****	*****	1.500	14.836	14.827	0.649
N1816	I EXA		266°16'04"	87°53'01"	*****	*****	1.500	26.638	26.620	1.104
N1817	I EXA		256°57'04"	88°16'25"	*****	*****	1.500	39.511	39.493	1.310
N1818	I EXA		252°14'31"	88°32'42"	*****	*****	1.500	52.444	52.427	1.452
N1819	I EXA		224°52'45"	89°32'54"	*****	*****	1.500	88.838	88.835	0.820
N1820	I EXA		228°00'54"	89°22'44"	*****	*****	1.500	75.178	75.174	0.935
N1821	I EXA		225°31'30"	89°23'10"	*****	*****	1.500	67.713	67.709	0.845
N1822	I EXA		218°50'27"	89°28'31"	*****	*****	1.500	61.374	61.371	0.682
N1823	I EXA		211°59'14"	89°23'27"	*****	*****	1.500	61.005	61.002	0.769
N1824	I EXA		207°34'52"	89°17'13"	*****	*****	1.500	63.033	63.028	0.904
N1825	I EXA		203°58'02"	89°11'37"	*****	*****	1.500	60.228	60.222	0.968
N1826	I EXA		209°38'51"	89°15'26"	*****	*****	1.500	51.521	51.517	0.788
N1827	I EXA		216°52'07"	89°20'50"	*****	*****	1.500	41.935	41.932	0.598
N1828	I EXA		224°07'58"	89°32'13"	*****	*****	1.500	30.084	30.083	0.363
N1829	I EXA		229°47'20"	89°18'24"	*****	*****	1.500	24.862	24.860	0.421
N1830	I EXA		233°26'11"	89°08'04"	*****	*****	1.500	40.013	40.008	0.724
N1831	I EXA		232°08'55"	89°11'04"	*****	*****	1.500	55.249	55.243	0.906
N1832	I EXA		213°40'08"	90°45'05"	*****	*****	1.500	12.776	12.775	-0.048
N1833	I EXA		152°24'14"	94°02'07"	*****	*****	1.500	9.274	9.251	-0.533
N1834	I EXA		110°18'16"	93°41'32"	*****	*****	1.500	19.596	19.555	-1.142
N1835	I EXA		103°08'32"	93°13'37"	*****	*****	1.500	36.655	36.597	-1.943
N1836	I PASS		41°55'17"	94°31'40"	*****	*****	1.500	36.083	35.970	-2.728
N1837	I PASS		39°53'03"	92°48'55"	*****	*****	2.600	35.867	35.824	-2.742
ESTAÇÃO: O7A			H.I.: 1.693							
O7	R		0°00'02"	88°41'16"	*****	*****	1.500	79.844	79.823	2.021
N1838	I MF		228°43'25"	85°12'40"	*****	*****	3.600	30.724	30.617	0.658
N1839	I MF		225°41'31"	90°05'23"	*****	*****	1.500	16.835	16.835	0.167
N1840	I MF		239°25'43"	91°09'06"	*****	*****	1.500	12.663	12.660	-0.062
N1841	I MF		291°26'33"	96°17'33"	*****	*****	1.500	4.252	4.226	-0.273
N1842	I MF		315°00'26"	98°16'45"	*****	*****	1.500	3.548	3.511	-0.318
N1843	I MF		326°32'57"	99°20'56"	*****	*****	1.500	2.969	2.930	-0.289
N1844	I MF		348°37'18"	102°05'58"	*****	*****	1.500	1.992	1.948	-0.225
N1845	I TMF		348°25'44"	98°19'40"	*****	*****	1.500	1.947	1.926	-0.089
N1846	I MF		114°17'16"	90°49'52"	*****	*****	1.500	10.429	10.428	0.042
N1847	I MF		118°13'45"	90°00'58"	*****	*****	1.500	17.617	17.617	0.188
N1848	I PTC		121°35'30"	89°11'06"	*****	*****	1.500	16.507	16.505	0.428
N1849	I MF		121°27'55"	89°43'21"	*****	*****	1.500	29.990	29.990	0.338
N1850	I MF		123°34'05"	89°42'50"	*****	*****	1.500	43.370	43.369	0.410
N1851	I MF		124°39'27"	89°47'10"	*****	*****	1.500	52.106	52.106	0.388
N1852	I TMF		124°47'27"	89°35'45"	*****	*****	1.500	52.066	52.065	0.560
N1853	I PTC		125°49'56"	89°39'34"	*****	*****	1.500	51.492	51.491	0.499
N1854	I MF		126°12'58"	90°01'20"	*****	*****	1.500	64.952	64.952	0.168
N1855	I PE		130°06'02"	89°37'07"	*****	*****	1.500	64.696	64.695	0.624
N1856	I CRI		131°30'34"	88°44'40"	*****	*****	1.200	64.262	64.247	1.901
N1857	I CRI		131°51'10"	87°49'49"	*****	*****	1.500	46.844	46.810	1.966
N1858	I PE		128°42'45"	89°22'49"	*****	*****	1.500	46.853	46.850	0.700
N1859	I PE		130°19'52"	89°04'18"	*****	*****	1.500	23.291	23.288	0.570
N1860	I CRI		137°34'03"	85°22'22"	*****	*****	1.500	23.773	23.696	2.111
N1861	I CRI		175°22'07"	77°05'57"	*****	*****	1.500	6.678	6.509	1.684
N1862	I PE		170°25'02"	91°37'00"	*****	*****	1.500	3.544	3.543	0.093
N1863	I PE		203°26'16"	90°38'25"	*****	*****	1.500	4.909	4.909	0.138
N1864	I CRI		193°20'58"	79°08'00"	*****	*****	1.500	8.121	7.975	1.724
N1865	I CRI		203°57'32"	84°24'47"	*****	*****	1.500	17.859	17.774	1.932

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 07A			H.I.: 1.693							
O7	R		0°00'02"	88°41'16"	*****	*****	1.500	79.844	79.823	2.021
N1866	I	PE	212°04'59"	87°54'46"	*****	*****	1.500	17.113	17.102	0.816
N1867	I	COTA	192°26'52"	84°23'52"	*****	*****	1.500	20.105	20.009	2.156
N1868	I	COTA	165°36'27"	86°12'28"	*****	*****	1.500	29.819	29.754	2.165
N1869	I	COTA	155°03'49"	87°17'58"	*****	*****	1.500	41.814	41.768	2.163
N1870	I	COTA	148°22'10"	87°32'26"	*****	*****	2.000	56.243	56.191	2.107
N1871	I	COTA	144°26'32"	87°31'05"	*****	*****	2.500	65.766	65.704	2.041
N1872	I	CX	261°32'38"	89°49'58"	*****	*****	1.500	26.584	26.584	0.271
N1873	I	CX	260°25'45"	89°49'39"	*****	*****	1.500	26.367	26.367	0.272
N1874	I	CX	261°59'52"	89°56'25"	*****	*****	1.500	25.107	25.107	0.219
N1875	I	COTA	261°27'00"	89°47'53"	*****	*****	2.800	25.973	25.973	-1.015
N1876	I	COTA	200°22'01"	86°50'51"	*****	*****	1.500	33.824	33.773	2.053
N1877	I	CX	268°15'01"	90°21'30"	*****	*****	1.500	21.682	21.682	0.057
N1878	I	CX	267°02'48"	90°25'27"	*****	*****	1.500	21.379	21.378	0.035
N1879	I	CX	268°47'32"	90°34'42"	*****	*****	1.500	20.599	20.598	-0.015
N1880	I	CXEL	268°30'14"	90°21'17"	*****	*****	1.500	21.640	21.640	0.059
N1881	I	CXEL	269°54'16"	90°29'04"	*****	*****	1.500	20.952	20.951	0.016
N1882	I	CXEL	270°21'31"	90°27'25"	*****	*****	1.500	21.092	21.091	0.025
N1883	I	CX	281°47'48"	91°48'58"	*****	*****	1.500	16.536	16.528	-0.331
N1884	I	CX	283°35'56"	91°57'10"	*****	*****	1.500	16.259	16.250	-0.361
N1885	I	CX	282°34'54"	91°59'14"	*****	*****	1.500	15.748	15.739	-0.353
N1886	I	CX	290°09'18"	92°23'42"	*****	*****	1.500	17.908	17.892	-0.555
N1887	I	CX	288°34'45"	92°17'50"	*****	*****	1.500	17.807	17.793	-0.521
N1888	I	CX	289°09'06"	92°17'46"	*****	*****	1.500	17.154	17.140	-0.494
N1889	I	PVT	293°25'17"	92°43'28"	*****	*****	1.500	16.481	16.462	-0.590
N1890	I	MF	290°46'14"	92°37'31"	*****	*****	1.500	18.092	18.073	-0.636
N1891	I	MF	291°36'27"	92°45'30"	*****	*****	1.500	15.814	15.796	-0.568
N1892	I	MF	286°53'24"	92°55'04"	*****	*****	1.500	13.465	13.448	-0.492
N1893	I	MF	286°45'43"	92°41'31"	*****	*****	1.500	15.714	15.697	-0.545
N1894	I	MF	303°35'57"	93°09'35"	*****	*****	1.500	14.091	14.070	-0.584
N1895	I	MF	301°02'09"	93°16'50"	*****	*****	1.500	12.531	12.510	-0.524
N1896	I	PTC	301°21'11"	92°43'02"	*****	*****	1.500	19.283	19.261	-0.721
N1897	I	MF	290°39'47"	93°14'26"	*****	*****	1.500	11.064	11.046	-0.432
N1898	I	MF	277°24'53"	92°43'25"	*****	*****	1.500	11.502	11.489	-0.354
N1899	I	MF	275°16'39"	92°33'22"	*****	*****	1.500	12.147	12.135	-0.349
N1900	I	MF	275°39'54"	91°50'27"	*****	*****	1.500	16.376	16.368	-0.333
N1901	I	MF	267°53'16"	91°32'09"	*****	*****	1.500	16.564	16.558	-0.251
N1902	I	MF	266°54'32"	91°40'31"	*****	*****	1.500	15.709	15.702	-0.266
N1903	I	MF	263°51'39"	90°28'41"	*****	*****	1.500	21.254	21.253	0.016
N1904	I	MF	263°30'49"	91°33'40"	*****	*****	1.500	15.798	15.792	-0.237
N1905	I	MF	261°06'28"	91°08'58"	*****	*****	1.500	17.139	17.136	-0.151
N1906	I	MF	261°21'31"	90°54'56"	*****	*****	1.500	18.342	18.340	-0.100
N1907	I	MF	258°15'45"	90°24'44"	*****	*****	1.500	22.035	22.034	0.034
N1908	I	MF	259°51'42"	90°10'13"	*****	*****	1.500	24.032	24.032	0.122
N1909	I	MF	254°40'56"	90°05'11"	*****	*****	1.500	24.781	24.781	0.156
N1910	I	MF	252°36'12"	89°46'52"	*****	*****	1.500	27.819	27.819	0.299
N1911	I	MF	256°50'54"	89°50'30"	*****	*****	1.500	26.788	26.788	0.267
N1912	I	MF	254°13'23"	89°38'18"	*****	*****	1.500	29.778	29.777	0.381
N1913	I	MF	250°23'46"	89°36'07"	*****	*****	1.500	30.608	30.607	0.406
N1914	I	MF	249°16'31"	89°14'22"	*****	*****	1.600	33.697	33.694	0.540
N1915	I	MF	252°14'54"	89°30'47"	*****	*****	1.600	32.422	32.421	0.369
N1916	I	MF	245°06'27"	89°21'15"	*****	*****	1.600	34.429	34.427	0.481
N1917	I	MF	249°09'01"	89°09'48"	*****	*****	1.600	38.132	38.128	0.650
N1918	I	MF	245°38'44"	88°38'25"	*****	*****	1.500	55.429	55.413	1.508
N1919	I	CA	245°44'57"	88°37'00"	*****	*****	1.500	55.425	55.409	1.531
N1920	I	CA	243°17'35"	88°19'43"	*****	*****	1.500	67.465	67.436	2.161
N1921	I	EXB	240°14'00"	89°16'30"	*****	*****	1.500	31.390	31.387	0.590

LISTAGEM DA CADERNETA

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

PT VISADO	TIPO	DESCRIÇÃO	ÂNG.HZ.D	ÂNG.VT.D	ANG.HZ.I	ANG.VT.I	H.P.	DT.INC	DT.RED	DESNIV
ESTAÇÃO: 07A			H.I.: 1.693							
O7	R		0°00'02"	88°41'16"	*****	*****	1.500	79.844	79.823	2.021
N1922	I EXB		252°55'07"	91°10'27"	*****	*****	1.500	13.938	13.935	-0.093
N1923	I EXB		315°02'29"	94°34'07"	*****	*****	1.500	7.489	7.465	-0.404
N1924	I EXA		316°07'22"	94°25'17"	*****	*****	1.500	7.538	7.516	-0.388
N1925	I EXA		336°30'22"	93°13'18"	*****	*****	1.500	8.826	8.812	-0.303
N1926	I EXA		314°08'39"	92°47'44"	*****	*****	1.500	19.912	19.888	-0.778
N1927	I EXA		306°53'00"	92°47'18"	*****	*****	1.500	36.352	36.309	-1.575
N1928	I EXA		302°11'45"	92°44'26"	*****	*****	1.500	59.884	59.816	-2.670
N1929	I EXA		309°44'36"	92°36'51"	*****	*****	1.500	46.082	46.034	-1.909
N1930	I EXA		321°21'00"	92°18'19"	*****	*****	1.500	32.477	32.451	-1.113
N1931	I EXA		342°58'29"	91°28'38"	*****	*****	1.500	22.637	22.629	-0.391
N1932	I EXA		14°08'33"	90°00'46"	*****	*****	1.500	19.132	19.132	0.189
N1933	I PTC		357°30'54"	90°55'15"	*****	*****	1.500	14.187	14.185	-0.035
N1934	I CANT		354°39'58"	91°15'14"	*****	*****	1.500	13.128	13.125	-0.094
N1935	I CANT		0°05'57"	91°26'27"	*****	*****	1.500	13.440	13.436	-0.145
N1936	I ARV		52°21'46"	89°48'58"	*****	*****	1.500	12.964	12.964	0.235
N1937	I COTA		68°36'02"	89°16'55"	*****	*****	1.500	17.519	17.518	0.413
N1938	I ARV		84°40'48"	88°45'30"	*****	*****	1.500	22.032	22.027	0.670
N1939	I COTA		82°09'57"	88°49'50"	*****	*****	1.500	31.927	31.920	0.845
N1940	I COTA		94°48'06"	88°49'38"	*****	*****	1.500	28.240	28.234	0.771
N1941	I COTA		90°28'45"	88°47'59"	*****	*****	1.500	37.843	37.835	0.986
N1942	I COTA		106°32'20"	89°16'45"	*****	*****	1.500	42.829	42.826	0.732
N1943	I ARV		101°34'40"	89°04'49"	*****	*****	1.500	36.152	36.147	0.773
N1944	I COTA		117°20'40"	89°27'09"	*****	*****	1.500	54.498	54.496	0.714
N1945	I CANT		115°23'12"	89°23'48"	*****	*****	1.500	48.879	48.876	0.708
N1946	I CANT		113°42'00"	89°22'17"	*****	*****	1.500	49.307	49.304	0.734
N1947	I PTC		114°32'41"	89°28'27"	*****	*****	1.500	49.170	49.168	0.644
N1948	I RADAR		82°18'23"	88°29'14"	*****	*****	1.500	38.726	38.713	1.215
N1949	I EXA		66°43'02"	88°30'48"	*****	*****	1.500	30.760	30.750	0.991
N1950	I EXA		75°38'32"	88°32'23"	*****	*****	1.500	39.848	39.835	1.208
N1951	I EXA		74°09'32"	91°03'33"	*****	*****	1.500	6.983	6.982	0.064
N1952	I EXA		106°00'32"	89°29'14"	*****	*****	1.500	17.563	17.562	0.350
N1953	I EXA		115°05'48"	89°24'38"	*****	*****	1.500	29.238	29.236	0.494
N1954	I EXA		25°20'12"	89°31'51"	*****	*****	1.500	19.222	19.221	0.350
N1955	I EXA		120°50'31"	89°36'46"	*****	*****	1.500	49.877	49.876	0.530
N1956	I EXA		124°03'08"	89°28'12"	*****	*****	2.000	65.345	65.342	0.297
N1957	I EXA		117°52'52"	88°38'16"	*****	*****	2.000	35.056	35.046	0.526
N1958	I ARV		238°16'38"	92°02'37"	*****	*****	1.500	5.045	5.042	0.013
N1959	I ARV		217°40'36"	89°43'29"	*****	*****	1.500	9.795	9.795	0.240
N1960	I ARV		223°36'22"	89°15'28"	*****	*****	1.500	14.689	14.688	0.383
N1961	I ARV		283°33'20"	92°23'38"	*****	*****	1.500	18.225	18.209	-0.568
N1962	I LUM		266°38'28"	91°17'51"	*****	*****	1.500	16.561	16.557	-0.182
N1963	I LUM		247°43'17"	89°14'24"	*****	*****	1.500	34.513	34.510	0.651

ANEXO 2 IRRADIAÇÕES

Seguem as informações referentes às irradiações.

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
LGO1055	O1	AUXILIAR	266°35'17"	31°58'30"	129.525	7751385.838	356377.624	55.725
LGO1055	N1	BE	87°13'00"	212°36'13"	95.772	7751195.285	356257.430	48.240
LGO1055	N2	BE	89°31'23"	214°54'36"	95.594	7751197.573	356254.327	48.316
LGO1055	N3	EXT	88°16'12"	213°39'25"	95.339	7751196.607	356256.195	48.278
LGO1055	N4	EXT	88°37'29"	214°00'42"	83.793	7751206.507	356262.164	48.488
LGO1055	N5	BE	90°02'48"	215°26'01"	83.665	7751207.796	356260.529	48.501
LGO1055	N6	BE	87°14'22"	212°37'35"	83.087	7751205.989	356264.237	48.427
LGO1055	N7	BE	87°16'03"	212°39'16"	69.612	7751217.356	356271.474	48.526
LGO1055	N8	BE	90°37'54"	216°01'07"	69.949	7751219.388	356267.901	48.452
LGO1055	N9	EXT	88°52'28"	214°15'41"	69.750	7751218.318	356269.767	48.505
LGO1055	N10	PTC	86°46'46"	212°09'59"	67.820	7751218.555	356272.928	48.517
LGO1055	N11	EXT	89°28'35"	214°51'48"	55.540	7751230.394	356277.286	48.802
LGO1055	N12	BE	91°59'53"	217°23'06"	55.707	7751231.701	356275.210	48.707
LGO1055	N13	BE	87°14'21"	212°37'34"	55.402	7751229.305	356279.164	48.812
LGO1055	N14	BE	87°26'07"	212°49'20"	38.942	7751243.240	356287.926	49.192
LGO1055	N15	BE	94°15'35"	219°38'48"	39.229	7751245.759	356284.004	49.238
LGO1055	N16	EXT	90°38'33"	216°01'46"	38.696	7751244.671	356286.273	49.250
LGO1055	N17	EXT	93°35'21"	218°58'34"	26.947	7751255.017	356292.085	49.151
LGO1055	N18	BE	88°21'51"	213°45'04"	26.691	7751253.773	356294.205	49.064
LGO1055	N19	BE	100°01'04"	225°24'17"	27.475	7751256.675	356289.469	49.172
LGO1055	N20	BE	112°21'23"	237°44'36"	16.327	7751267.251	356295.227	49.057
LGO1055	N21	BE	89°53'47"	215°17'00"	14.556	7751264.082	356300.626	48.771
LGO1055	N22	EXT	102°57'37"	228°20'50"	15.328	7751265.778	356297.581	49.004
LGO1055	N23	EXT	114°10'49"	239°34'02"	9.879	7751270.961	356300.516	48.942
LGO1055	N24	EXA	115°07'14"	240°30'27"	9.418	7751271.328	356300.837	48.920
LGO1055	N25	MF	148°15'52"	273°39'05"	10.371	7751276.626	356298.684	49.166
LGO1055	N26	MF	86°25'26"	211°48'39"	9.123	7751268.213	356304.225	48.487
LGO1055	N27	BE	94°28'03"	219°51'16"	9.127	7751268.959	356303.185	48.670
LGO1055	N28	BE	94°53'54"	220°17'07"	10.416	7751268.019	356302.299	48.733
LGO1055	N29	MF	50°09'43"	175°32'56"	11.653	7751264.348	356309.938	47.709
LGO1055	N30	MF	27°14'30"	152°37'43"	19.544	7751258.609	356318.019	46.550
LGO1055	N31	MF	18°50'44"	144°13'57"	27.414	7751253.721	356325.057	45.633
LGO1055	N32	MF	13°59'07"	139°22'20"	36.202	7751248.489	356332.607	44.669
LGO1055	N33	MF	2°55'31"	128°18'44"	35.187	7751254.151	356336.643	44.620
LGO1055	N34	EXA	8°37'22"	134°00'35"	35.385	7751251.380	356334.483	44.690
LGO1055	N35	EXA	12°29'05"	137°52'18"	27.175	7751255.810	356327.263	45.594
LGO1055	N36	MF	4°08'09"	129°31'22"	26.462	7751259.125	356329.446	45.615
LGO1055	N37	MF	6°40'33"	132°03'46"	16.715	7751264.767	356321.443	46.665
LGO1055	N38	EXA	17°32'27"	142°55'40"	18.213	7751261.434	356320.013	46.598
LGO1055	N39	MF	38°28'03"	163°51'16"	8.397	7751267.899	356311.369	47.785
LGO1055	N40	MF	51°34'52"	176°58'05"	2.693	7751273.276	356309.176	48.386
LGO1055	N41	MF	81°35'14"	206°58'27"	2.092	7751274.101	356308.085	48.571
LGO1055	N42	MF	169°31'05"	294°54'18"	1.313	7751276.518	356307.843	48.890
LGO1055	N43	MF	216°09'03"	341°32'16"	2.456	7751278.295	356308.256	48.997
LGO1055	N44	MF	258°13'22"	23°36'35"	12.847	7751287.737	356314.179	49.397
LGO1055	N45	MF	262°08'13"	27°31'26"	23.783	7751297.056	356320.024	49.894
LGO1055	N46	MF	263°35'41"	28°58'54"	35.246	7751306.798	356326.112	50.379
LGO1055	N47	MF	252°30'32"	17°53'45"	36.527	7751310.725	356320.258	50.390
LGO1055	N48	EXA	257°46'27"	23°09'40"	36.057	7751309.116	356323.216	50.417
LGO1055	N49	EXA	253°52'22"	19°15'35"	24.351	7751298.953	356317.066	49.891
LGO1055	N50	MF	246°01'32"	11°24'45"	25.405	7751300.868	356314.061	49.878
LGO1055	N51	MF	230°19'16"	355°42'29"	15.247	7751291.169	356307.893	49.527
LGO1055	N52	EXA	242°30'53"	7°54'06"	13.236	7751289.076	356310.854	49.459
LGO1055	N53	EXA	193°57'31"	319°20'44"	5.691	7751280.283	356305.326	49.236
LGO1055	N54	MF	185°07'56"	310°31'09"	9.097	7751281.876	356302.118	49.278
LGO1055	N55	EXA	139°30'54"	264°54'07"	6.362	7751275.400	356302.697	49.073
LGO1055	N56	PTC	160°17'33"	285°40'46"	9.892	7751278.638	356299.510	49.413

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
LGO1055	N57	MF	255°55'30"	21°18'43"	48.089	7751320.765	356326.512	50.900
LGO1055	N58	MF	264°17'25"	29°40'38"	47.370	7751317.121	356332.487	50.912
LGO1055	N59	EXA	260°13'14"	25°36'27"	47.617	7751318.905	356329.614	50.954
LGO1055	N60	EXA	262°12'23"	27°35'36"	65.854	7751334.328	356339.537	51.866
LGO1055	N61	MF	258°58'55"	24°22'08"	66.196	7751336.264	356336.347	51.862
LGO1055	N62	MF	265°00'58"	30°24'11"	65.608	7751332.551	356342.237	51.716
LGO1055	N63	MF	265°22'10"	30°45'23"	81.803	7751346.262	356350.867	52.718
LGO1055	N64	MF	260°31'46"	25°54'59"	82.248	7751349.941	356344.981	52.709
LGO1055	N65	EXA	262°53'09"	28°16'22"	82.178	7751348.339	356347.959	52.791
LGO1055	N66	EXA	263°43'49"	29°07'02"	95.094	7751359.042	356355.307	53.642
LGO1055	N67	MF	265°33'05"	30°56'18"	95.014	7751357.460	356357.882	53.603
LGO1055	N68	MF	265°41'07"	31°04'20"	104.384	7751365.372	356362.908	54.259
LGO1055	N69	MF	261°52'51"	27°16'04"	104.941	7751369.244	356357.113	54.274
LGO1055	N70	MF	261°29'50"	26°53'03"	97.808	7751363.202	356353.261	53.738
LGO1055	N71	BE	260°41'09"	26°04'22"	97.213	7751363.286	356351.760	53.868
LGO1055	N72	BE	259°41'22"	25°04'35"	96.935	7751363.763	356350.118	53.846
LGO1055	N73	MF	261°06'37"	26°29'50"	91.486	7751357.841	356349.851	53.300
LGO1055	N74	BE	260°38'22"	26°01'35"	93.645	7751360.113	356350.124	53.449
LGO1055	N75	BE	259°42'07"	25°05'20"	94.109	7751361.195	356348.938	53.469
LGO1055	N76	BE	256°54'46"	22°17'59"	93.723	7751362.679	356344.597	53.856
LGO1055	N77	BE	257°01'30"	22°24'43"	96.232	7751364.928	356345.724	53.997
LGO1055	N78	EXT	256°54'32"	22°17'45"	94.915	7751363.784	356345.044	53.791
LGO1055	N79	EXT	252°03'43"	17°26'56"	95.087	7751366.676	356337.546	54.152
LGO1055	N80	BE	252°02'27"	17°25'40"	93.595	7751365.263	356337.066	54.175
LGO1055	N81	BE	252°13'46"	17°36'59"	96.435	7751367.878	356338.219	54.341
LGO1055	N82	BE	247°02'15"	12°25'28"	98.199	7751371.864	356330.162	54.120
LGO1055	N83	BE	246°46'03"	12°09'16"	94.465	7751368.313	356328.923	54.013
LGO1055	N84	EXT	246°44'39"	12°07'52"	96.145	7751369.963	356329.239	53.931
LGO1055	N85	PTC	260°48'08"	26°11'21"	105.307	7751370.462	356355.510	54.837
LGO1055	N86	PTC	259°03'05"	24°26'18"	71.413	7751340.980	356338.579	52.290
LGO1055	N87	CX	265°23'15"	30°46'28"	57.322	7751325.216	356338.363	51.534
LGO1055	N88	PTC	251°47'16"	17°10'29"	36.802	7751311.126	356319.901	50.537
LGO1055	N89	ARV	237°23'47"	2°47'00"	19.755	7751295.696	356309.993	49.836
LGO1055	N90	ARV	228°26'57"	353°50'10"	15.719	7751291.594	356307.346	49.685
LGO1055	N91	ARV	213°52'40"	339°15'53"	12.329	7751287.496	356304.669	49.626
LGO1055	N92	ARV	190°46'38"	316°09'51"	10.067	7751283.226	356302.062	49.556
LGO1055	N93	ARV	112°01'02"	237°24'15"	22.457	7751263.867	356290.115	49.309
LGO1055	N94	ARV	108°12'32"	233°35'45"	26.885	7751260.010	356287.396	49.320
LGO1055	N95	PTC	104°21'10"	229°44'23"	35.713	7751252.885	356281.781	49.583
LGO1055	N96	ARV	101°56'50"	227°20'03"	36.659	7751251.120	356282.078	49.423
LGO1055	N97	ARV	100°16'26"	225°39'39"	41.331	7751247.078	356279.473	49.614
LGO1055	N98	MF	265°50'34"	31°13'47"	119.400	7751378.063	356370.939	55.337
LGO1055	N99	MF	266°05'56"	31°29'09"	122.671	7751380.575	356373.103	55.487
LGO1055	N100	BE	266°42'15"	32°05'28"	125.519	7751382.305	356375.718	55.595
LGO1055	N101	MF	261°31'11"	26°54'24"	119.564	7751382.585	356363.141	55.328
LGO1055	N102	MF	262°03'58"	27°27'11"	117.838	7751380.533	356363.360	55.226
LGO1055	N103	MF	262°20'07"	27°43'20"	115.582	7751378.280	356362.801	55.050
LGO1055	N104	EXA	264°03'50"	29°27'03"	115.416	7751376.467	356365.781	55.120
LGO1055	N105	EXA	263°49'39"	29°12'52"	121.445	7751381.962	356368.309	55.538
LGO1055	N106	EXA	263°30'17"	28°53'30"	128.081	7751388.104	356370.917	55.911
LGO1055	N107	EXA	265°25'46"	30°48'59"	128.362	7751386.204	356374.792	55.764
LGO1055	N108	EXA	261°29'15"	26°52'28"	128.538	7751390.621	356367.138	55.983
LGO1055	N109	MUR	267°13'36"	32°36'49"	120.699	7751377.633	356374.087	55.499
LGO1055	N110	CA	261°27'40"	26°50'53"	115.947	7751379.413	356361.399	55.803
LGO1055	N111	CA	261°14'47"	26°38'00"	112.904	7751376.889	356359.647	55.672
LGO1055	N112	MUR	260°36'45"	25°59'58"	105.094	7751370.423	356355.103	54.907
LGO1055	N113	CX	261°57'56"	27°21'09"	110.409	7751374.030	356359.763	55.007

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
LGO1055	N114	CX	261°45'04"	27°08'17"	110.423	7751374.232	356359.402	55.036
LGO1055	N115	CX	261°45'53"	27°09'06"	110.798	7751374.553	356359.596	55.056
LGO1055	N116	CAL	261°47'23"	27°10'36"	104.881	7751369.268	356356.937	54.612
LGO1055	N117	PVA	263°47'57"	29°11'10"	101.613	7751364.677	356358.585	54.090
LGO1055	N118	CX	263°29'04"	28°52'17"	102.300	7751365.550	356358.429	54.121
LGO1055	N119	CX	264°20'58"	29°44'11"	102.265	7751364.764	356359.758	54.120
LGO1055	N120	CX	264°18'58"	29°42'11"	100.514	7751363.272	356358.839	54.033
LGO1055	N121	MUR	267°26'08"	32°49'21"	94.103	7751355.044	356360.041	53.546
LGO1055	N122	MUR	259°41'01"	25°04'14"	93.187	7751360.372	356348.520	53.498
LGO1055	N123	MUR	267°21'49"	32°45'02"	104.039	7751363.465	356365.317	54.261
LGO1055	N124	MUR	267°39'20"	33°02'33"	65.540	7751330.905	356344.770	51.807
LGO1055	N125	MUR	256°44'18"	22°07'31"	65.696	7751336.823	356333.777	52.105
LGO1055	N126	CAL	265°02'17"	30°25'30"	62.425	7751329.793	356340.646	51.614
LGO1055	N127	CAL	267°40'18"	33°03'31"	62.452	7751328.307	356343.101	51.748
LGO1055	N128	HIDRANTE	265°45'10"	31°08'23"	57.319	7751325.025	356338.675	51.569
LGO1055	N129	REG	265°13'30"	30°36'43"	57.273	7751325.256	356338.198	51.257
LGO1055	N130	COTA	265°08'46"	30°31'59"	57.260	7751325.285	356338.124	50.985
LGO1055	N131	DIV	267°45'56"	33°09'09"	55.855	7751322.728	356339.579	51.593
LGO1055	N132	MUR	267°44'50"	33°08'03"	34.830	7751305.132	356328.072	50.726
LGO1055	N133	MUR	248°01'49"	13°25'02"	35.911	7751310.896	356317.367	50.573
LGO1055	N134	POR	245°38'05"	11°01'18"	32.059	7751307.432	356315.163	50.179
LGO1055	N135	POR	244°14'46"	9°37'59"	30.218	7751305.757	356314.090	50.174
LGO1055	N136	SOL	244°57'39"	10°20'52"	31.129	7751306.588	356314.626	50.183
LGO1055	N137	CA	268°35'34"	33°58'47"	18.940	7751291.671	356319.620	49.972
LGO1055	N138	CA	270°26'54"	35°50'07"	9.431	7751283.610	356314.555	49.605
LGO1055	N139	MUR	276°23'50"	41°47'03"	3.555	7751278.616	356311.403	49.332
LGO1055	N140	MUR	352°21'34"	117°44'47"	2.451	7751274.824	356311.204	48.458
LGO1055	N141	MUR	355°44'08"	121°07'21"	12.966	7751269.263	356320.134	45.835
LGO1055	N142	MUR	355°50'56"	121°14'09"	20.294	7751265.441	356326.387	46.624
LGO1055	N143	MUR	355°58'30"	121°21'43"	21.003	7751265.034	356326.968	46.459
LGO1055	N144	MUR	357°58'54"	123°22'07"	35.037	7751256.694	356338.295	44.805
LGO1055	N145	MUR	17°30'21"	142°53'34"	36.968	7751246.483	356331.337	44.876
LGO1055	N146	PVA	15°43'38"	141°06'51"	35.891	7751248.027	356331.566	44.898
LGO1055	N147	PVA	16°27'09"	141°50'22"	34.171	7751249.097	356330.147	45.086
LGO1055	N148	CX	17°45'41"	143°08'54"	33.692	7751249.005	356329.240	45.185
LGO1055	N149	CX	15°37'09"	141°00'22"	33.346	7751250.048	356330.017	45.158
LGO1055	N150	CX	17°16'02"	142°39'15"	34.778	7751248.317	356330.131	44.988
LGO1055	N151	CX	17°07'28"	142°30'41"	35.212	7751248.025	356330.464	44.982
LGO1055	N152	CX	14°50'35"	140°13'48"	34.801	7751249.216	356331.297	44.969
LGO1055	N153	CX	14°11'31"	139°34'44"	36.189	7751248.414	356332.499	44.803
LGO1055	N154	MUR	27°53'57"	153°17'10"	23.927	7751254.592	356319.790	46.197
LGO1055	N155	PTC	5°52'59"	131°16'12"	15.421	7751265.793	356320.625	46.947
LGO1055	N156	ARV	59°29'25"	184°52'38"	11.924	7751264.084	356308.020	48.070
LGO1055	N157	MUR	71°51'28"	197°14'41"	11.854	7751264.644	356305.520	48.265
LGO1055	N158	MUR	84°26'03"	209°49'16"	14.401	7751263.471	356301.873	50.901
LGO1055	N159	MUR	219°56'51"	345°20'04"	15.766	7751291.218	356305.042	49.708
LGO1055	N160	CXA	238°11'13"	3°34'26"	13.384	7751289.323	356309.868	49.492
LGO1055	N161	PVE	82°15'30"	207°38'43"	6.049	7751270.606	356306.227	48.492
LGO1055	N162	CX	78°47'41"	204°10'54"	6.466	7751270.067	356306.385	48.459
LGO1055	N163	CX	78°21'35"	203°44'48"	5.496	7751270.934	356306.821	48.484
LGO1055	N164	CX	88°00'43"	213°23'56"	5.498	7751271.375	356306.008	48.616
LGO1055	N165	CX	87°50'42"	213°13'55"	10.036	7751267.571	356303.534	48.628
LGO1055	N166	CX	87°17'45"	212°40'58"	9.314	7751268.126	356304.004	48.534
LGO1055	N167	CX	93°50'01"	219°13'14"	9.273	7751268.781	356303.171	48.613
LGO1055	N168	CONTA	91°33'15"	216°56'28"	9.554	7751268.329	356303.292	47.669
LGO1055	N169	POR	141°38'06"	267°01'19"	14.244	7751275.225	356294.810	49.473
LGO1055	N170	POR	150°21'12"	275°44'25"	12.989	7751277.264	356296.110	49.492

RELATÓRIO DE IRRADIAÇÕES

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Estado: ES

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Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
LGO1055	N171	SOL	146°04'09"	271°27'22"	13.600	7751276.311	356295.439	49.489
LGO1055	N172	MUR	109°32'45"	234°55'58"	29.977	7751258.742	356284.498	49.556
LGO1055	N173	MUR	99°53'02"	225°16'15"	50.837	7751240.188	356272.917	49.844
LGO1055	N174	MUR	95°51'12"	221°14'25"	73.993	7751220.326	356260.256	50.555
LGO1055	N175	MUR	93°56'23"	219°19'36"	93.992	7751203.258	356249.468	51.315
LGO1055	N176	MUR	85°50'27"	211°13'40"	27.150	7751252.749	356294.958	49.012
LGO1055	N177	MUR	86°19'10"	211°42'23"	41.431	7751240.717	356287.259	49.228
LGO1055	N178	MUR	86°30'17"	211°53'30"	61.945	7751223.370	356276.307	48.562
LGO1055	N179	PE	89°46'39"	215°09'52"	96.352	7751197.197	356253.542	48.308
LGO1055	N180	PE	90°17'32"	215°40'45"	82.229	7751209.171	356261.074	48.508
LGO1055	N181	PE	91°21'05"	216°44'18"	67.706	7751221.707	356268.535	48.588
LGO1055	N182	CRI	92°47'38"	218°10'51"	67.966	7751222.539	356267.021	49.979
LGO1055	N183	CRI	91°58'19"	217°21'32"	82.413	7751210.459	356259.025	50.519
LGO1055	N184	CRI	90°57'57"	216°21'10"	95.804	7751198.806	356252.246	50.325
LGO1055	N185	CRI	94°36'02"	219°59'15"	48.974	7751238.442	356277.562	49.717
LGO1055	N186	PE	93°10'56"	218°34'09"	48.994	7751237.659	356278.488	48.943
LGO1055	N187	CRP	95°16'43"	220°39'56"	41.022	7751244.849	356282.302	49.274
LGO1055	N188	MUR	250°30'42"	15°53'55"	93.188	7751365.589	356334.562	54.141
LGO1055	N189	CER	250°38'43"	16°01'56"	98.546	7751370.678	356336.250	54.691
LGO1055	N190	CER	254°02'16"	19°25'29"	98.277	7751368.648	356341.718	54.581
LGO1055	N191	MUR	255°24'01"	20°47'14"	106.780	7751375.794	356346.930	56.159
LGO1055	N192	COTA	16°22'08"	141°45'21"	34.167	7751249.131	356330.184	44.378
LGO1055	N193	REG	16°26'31"	141°49'44"	34.135	7751249.129	356330.130	44.623
LGO1055	N194	COTA	15°48'26"	141°11'39"	35.814	7751248.056	356331.478	43.405
LGO1055	N195	TUBO	15°26'45"	140°49'58"	35.624	7751248.346	356331.534	43.723
LGO1055	N196	TUBO	16°13'34"	141°36'47"	35.799	7751247.904	356331.264	43.873
LGO1055	N197	TUBO	16°40'05"	142°03'18"	35.951	7751247.614	356331.140	43.879
LGO1055	N198	TUBO	15°52'47"	141°16'00"	36.418	7751247.556	356331.821	43.729
LGO1055	N199	REG	15°05'12"	140°28'25"	35.671	7751248.451	356331.736	44.130
LGO1055	N200	ADT	14°02'52"	139°26'05"	36.145	7751248.507	356332.539	43.700
LGO1055	N201	ADT	14°33'03"	139°56'16"	34.783	7751249.344	356331.421	43.758
LGO1055	N202	COTA	82°31'33"	207°54'46"	6.036	7751270.632	356306.209	47.014
O1	N203	MF	4°06'11"	216°04'41"	4.989	7751381.806	356374.686	55.566
O1	N204	BE	269°34'33"	121°33'03"	2.210	7751384.682	356379.507	55.612
O1	N205	BE	221°59'16"	73°57'46"	11.904	7751389.127	356389.064	55.887
O1	N206	MF	196°33'28"	48°31'58"	11.668	7751393.564	356386.367	55.664
O1	N207	MF	196°32'37"	48°31'07"	18.082	7751397.815	356391.171	55.410
O1	N208	EXA	207°52'05"	59°50'35"	7.109	7751389.409	356383.770	55.761
O1	N209	EXA	187°22'43"	39°21'13"	18.232	7751399.936	356389.185	55.392
O1	N210	MF	177°49'01"	29°47'31"	18.856	7751402.202	356386.992	55.341
O1	N211	EXA	191°32'16"	43°30'46"	31.654	7751408.794	356399.418	54.699
O1	N212	MF	196°59'14"	48°57'44"	31.230	7751406.342	356401.180	54.640
O1	N213	MF	184°53'01"	36°51'31"	31.656	7751411.167	356396.612	54.663
O1	N214	TMF	184°58'57"	36°57'27"	31.677	7751411.151	356396.669	54.842
O1	N215	TMF	197°02'56"	49°01'26"	31.230	7751406.317	356401.202	54.830
O1	N216	MF	174°29'47"	26°28'17"	15.839	7751400.016	356384.684	55.572
O1	N217	MF	168°31'56"	20°30'26"	13.010	7751398.024	356382.182	55.747
O1	N218	PTC	163°04'46"	15°03'16"	12.068	7751397.492	356380.758	55.912
O1	N219	MF	152°35'00"	4°33'30"	9.794	7751395.601	356378.402	55.905
O1	N220	MF	142°14'11"	354°12'41"	9.228	7751395.019	356376.693	55.948
O1	N221	MF	137°14'24"	349°12'54"	9.346	7751395.019	356375.875	55.984
O1	N222	BE	119°45'02"	331°43'32"	11.620	7751396.072	356372.119	56.007
O1	N223	MF	31°41'27"	243°39'57"	16.384	7751378.570	356362.940	55.075
O1	N224	MF	35°08'24"	247°06'54"	15.587	7751379.776	356363.263	55.175
O1	N225	MF	42°52'16"	254°50'46"	14.915	7751381.939	356363.228	55.310
O1	N226	MF	51°45'08"	263°43'38"	14.950	7751384.205	356362.763	55.404
O1	N227	MF	67°16'29"	279°14'59"	16.683	7751388.520	356361.157	55.647

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CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O1	N228	BE	76°46'55"	288°45'25"	19.735	7751392.184	356358.937	55.863
O1	N229	BE	107°03'24"	319°01'54"	18.169	7751399.557	356365.711	56.055
O1	N230	EXA	91°10'14"	303°08'44"	18.395	7751395.896	356362.222	56.071
O1	N231	EXA	93°38'51"	305°37'21"	30.059	7751403.346	356353.190	55.926
O1	N232	BE	83°49'12"	295°47'42"	25.784	7751397.058	356354.409	55.837
O1	N233	BE	101°02'16"	313°00'46"	30.204	7751406.442	356355.539	55.911
O1	N234	BE	85°38'39"	297°37'09"	30.561	7751400.006	356350.546	55.727
O1	N235	BE	87°14'27"	299°12'57"	36.702	7751403.752	356345.591	55.486
O1	N236	BE	98°49'20"	310°47'50"	36.705	7751409.821	356349.837	55.691
O1	N237	EXA	92°27'03"	304°25'33"	36.619	7751406.540	356347.418	55.653
O1	N238	EXA	179°58'19"	31°56'49"	10.876	7751395.067	356383.379	55.776
O1	N239	MUR	309°06'26"	161°04'56"	3.965	7751382.087	356378.909	55.720
O1	N240	DIV	223°17'31"	75°16'01"	17.950	7751390.403	356394.984	56.316
O1	N241	POR	218°30'25"	70°28'55"	17.676	7751391.744	356394.284	56.272
O1	N242	POR	204°54'55"	56°53'25"	17.704	7751395.509	356392.453	56.206
O1	N243	SOL	211°56'41"	63°55'11"	17.616	7751393.583	356393.447	56.337
O1	N244	MUR	199°39'14"	51°37'44"	17.938	7751396.973	356391.688	55.742
O1	N245	CER	182°27'36"	34°26'06"	31.619	7751411.917	356395.504	55.422
O1	N246	PVA	175°03'50"	27°02'20"	14.816	7751399.035	356384.359	55.641
O1	N247	CER	166°03'19"	18°01'49"	15.192	7751400.284	356382.326	56.123
O1	N248	CER	151°33'52"	3°32'22"	11.299	7751397.115	356378.321	56.505
O1	N249	CER	137°49'02"	349°47'32"	11.302	7751396.961	356375.621	56.193
O1	N250	CER	110°37'09"	322°35'39"	18.465	7751400.506	356366.407	56.156
O1	N251	CER	104°25'53"	316°24'23"	26.433	7751404.982	356359.397	56.223
O1	N252	CER	100°53'52"	312°52'22"	36.178	7751410.453	356351.110	55.826
O1	N253	CER	82°52'53"	294°51'23"	36.839	7751401.323	356344.197	56.621
O1	N254	MUR	76°04'24"	288°02'54"	23.325	7751393.065	356355.447	56.208
O1	N255	POR	75°44'45"	287°43'15"	23.147	7751392.884	356355.575	56.136
O1	N256	POR	68°32'01"	280°30'31"	19.917	7751389.471	356358.041	56.249
O1	N257	SOL	71°39'59"	283°38'29"	21.226	7751390.844	356356.997	56.316
O1	N258	CA	61°35'13"	273°33'43"	17.866	7751386.948	356359.793	56.014
O1	N259	CXE	63°22'40"	275°21'10"	17.962	7751387.514	356359.740	56.081
O1	N260	CAL	67°06'40"	279°05'10"	16.643	7751388.466	356361.190	55.932
O1	N261	CA	57°56'43"	269°55'13"	16.694	7751385.815	356360.930	55.845
O1	N262	CA	54°00'35"	265°59'05"	17.840	7751384.589	356359.828	55.920
O1	N263	CA	48°10'11"	260°08'41"	16.096	7751383.083	356361.765	55.691
O1	N264	CA	41°28'55"	253°27'25"	18.473	7751380.578	356359.916	56.196
O1	N265	CAL	35°08'50"	247°07'20"	15.573	7751379.784	356363.275	55.477
O1	N266	CAL	30°43'41"	242°42'11"	16.989	7751378.047	356362.527	55.964
O1	N267	CX	49°42'12"	261°40'42"	15.543	7751383.588	356362.244	55.672
O1	N268	CX	51°01'57"	263°00'27"	15.285	7751383.977	356362.452	55.671
O1	N269	CX	51°53'36"	263°52'06"	15.615	7751384.170	356362.098	55.690
O1	N270	PVA	95°33'40"	307°32'10"	5.940	7751389.457	356372.914	55.963
O1	N271	PVA	20°59'46"	232°58'16"	1.897	7751384.696	356376.109	55.685
O1	N272	CX	334°27'39"	186°26'09"	1.612	7751384.236	356377.443	55.623
O1	N273	CX	61°25'28"	273°23'58"	1.991	7751385.956	356375.636	55.778
O1	N274	CX	30°21'19"	242°19'49"	5.112	7751383.464	356373.096	55.657
O1	N275	ADT	18°39'43"	230°38'13"	1.473	7751384.904	356376.485	54.435
O1	N276	ADT	16°42'41"	228°41'11"	3.470	7751383.547	356375.017	54.390
O1	N277	ADT	34°24'36"	246°23'06"	3.754	7751384.334	356374.184	54.455
O1	N278	ADT	16°07'56"	228°06'26"	4.726	7751382.682	356374.105	54.364
O1	N279	COTA	28°03'16"	240°01'46"	1.994	7751384.842	356375.896	53.163
O1	N280	CXA	24°31'56"	236°30'26"	0.592	7751385.512	356377.130	55.692
O1	N281	REG	33°34'07"	245°32'37"	2.664	7751384.735	356375.199	54.596
O1	N282	REG	94°58'16"	306°56'46"	5.935	7751389.405	356372.881	55.288
O1	N283	COTA	96°18'04"	308°16'34"	5.941	7751389.518	356372.960	55.143
O1	N284	COTA	174°31'05"	26°29'35"	14.761	7751399.049	356384.208	54.495

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O1	N285	GS	175°03'17"	27°01'47"	15.002	7751399.202	356384.441	55.105
O1	N286	REG	9°57'27"	221°55'57"	28.594	7751364.566	356358.516	52.942
O1	N287	ADT	9°44'37"	221°43'07"	29.450	7751363.856	356358.026	52.830
O1	N288	ADT	10°13'27"	222°11'57"	27.809	7751365.237	356358.944	52.894
O1	N289	COTA	9°28'43"	221°27'13"	28.539	7751364.448	356358.731	52.321
O1	N290	CXA	10°25'49"	222°24'19"	26.223	7751366.475	356359.940	54.257
O2	N291	BE	356°16'13"	30°26'36"	21.017	7751197.227	356253.925	48.306
O2	N292	BE	353°47'34"	27°57'57"	14.140	7751191.596	356249.907	48.004
O2	N293	BE	347°08'15"	21°18'38"	9.769	7751188.208	356246.827	47.997
O2	N294	BE	332°04'21"	6°14'44"	9.305	7751188.357	356244.289	48.204
O2	N295	BE	312°22'46"	346°33'09"	16.781	7751195.428	356239.374	49.040
O2	N296	BE	300°17'24"	334°27'47"	33.992	7751209.778	356228.623	50.188
O2	N297	BE	289°45'10"	323°55'33"	33.266	7751205.995	356223.688	50.250
O2	N298	EXA	295°39'23"	329°49'46"	33.469	7751208.042	356226.455	50.229
O2	N299	EXA	296°43'42"	330°54'05"	23.951	7751200.035	356231.628	49.838
O2	N300	BE	289°45'51"	323°56'14"	23.424	7751198.043	356229.487	49.731
O2	N301	BE	303°47'04"	337°57'27"	24.119	7751201.464	356234.224	49.758
O2	N302	BE	288°48'14"	322°58'37"	16.396	7751192.198	356233.404	49.134
O2	N303	EXA	301°25'07"	335°35'30"	16.141	7751193.806	356236.606	49.151
O2	N304	EXA	309°34'27"	343°44'50"	7.396	7751186.208	356241.206	48.375
O2	N305	EXA	19°49'51"	54°00'14"	3.518	7751181.175	356246.122	47.873
O2	N306	BE	287°06'03"	321°16'26"	6.359	7751184.068	356239.298	48.253
O2	N307	BE	130°09'18"	164°19'41"	1.202	7751177.950	356243.601	47.702
O2	N308	BE	165°24'25"	199°34'48"	3.075	7751176.210	356242.246	47.474
O2	N309	BE	214°23'44"	248°34'07"	7.649	7751176.312	356236.156	46.930
O2	N310	BE	226°57'52"	261°08'15"	15.612	7751176.702	356227.851	45.839
O2	N311	MF	136°07'12"	170°17'35"	10.112	7751169.140	356244.981	47.148
O2	N312	MF	112°38'29"	146°48'52"	13.756	7751167.595	356250.806	47.124
O2	N313	MF	110°11'16"	144°21'39"	22.073	7751161.169	356256.138	46.801
O2	N314	MF	92°15'52"	126°26'15"	23.512	7751165.143	356262.192	46.770
O2	N315	PTC	90°44'49"	124°55'12"	23.632	7751165.579	356262.654	46.797
O2	N316	EXA	100°56'47"	135°07'10"	22.762	7751162.979	356259.338	46.833
O2	N317	EXA	99°15'24"	133°25'47"	13.841	7751169.592	356253.328	47.140
O2	N318	MF	111°03'35"	145°13'58"	16.071	7751165.906	356252.441	47.015
O2	N319	EXA	144°21'14"	178°31'37"	5.463	7751173.646	356243.417	47.372
O2	N320	EXA	189°18'39"	223°29'02"	9.766	7751172.021	356236.556	46.809
O2	N321	MF	177°15'26"	211°25'49"	12.168	7751168.724	356236.931	46.793
O2	N322	MF	197°19'59"	231°30'22"	17.685	7751168.099	356229.435	45.299
O2	N323	EXA	208°14'42"	242°25'05"	16.075	7751171.664	356229.029	45.742
O2	N324	EXA	79°28'42"	113°39'05"	7.323	7751176.169	356249.984	47.532
O2	N325	MF	58°29'14"	92°39'37"	8.659	7751178.705	356251.926	47.575
O2	N326	BE	58°25'33"	92°35'56"	8.695	7751178.713	356251.962	47.573
O2	N327	BE	36°10'56"	70°21'19"	8.601	7751181.999	356251.377	47.670
O2	N328	BE	11°08'57"	45°19'20"	14.015	7751188.962	356253.242	47.864
O2	N329	EXT	359°59'01"	34°09'24"	13.839	7751190.559	356251.046	47.973
O2	N330	PTC	14°09'27"	48°19'50"	14.483	7751188.736	356254.095	47.926
O2	N331	PTC	313°40'02"	347°50'25"	16.921	7751195.649	356239.712	48.856
O2	N332	MF	109°05'25"	143°15'48"	37.342	7751149.182	356265.612	46.560
O2	N333	EXA	104°01'07"	138°11'30"	37.181	7751151.393	356268.063	46.514
O2	N334	BE	98°24'09"	132°34'32"	37.223	7751153.923	356270.687	46.412
O2	N335	BE	95°06'31"	129°16'54"	28.234	7751161.231	356265.131	46.599
O2	N336	MF	95°05'18"	129°15'41"	28.232	7751161.240	356265.136	46.599
O2	N337	MF	108°36'03"	142°46'26"	57.655	7751133.199	356278.156	46.334
O2	N338	EXA	105°48'17"	139°58'40"	57.478	7751135.091	356280.240	46.302
O2	N339	BE	102°10'55"	136°21'18"	57.274	7751137.662	356282.806	46.214
O2	N340	PTC	100°55'21"	135°05'44"	57.273	7751138.542	356283.707	46.213
O2	N341	MF	103°19'15"	137°29'38"	70.952	7751126.801	356291.217	46.072

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O2	N342	BE	103°19'17"	137°29'40"	70.937	7751126.811	356291.206	46.073
O2	N343	MF	108°17'49"	142°28'12"	70.594	7751123.124	356286.281	46.066
O2	N344	EXA	106°05'37"	140°16'00"	70.849	7751124.622	356288.564	46.073
O2	N345	EXA	106°07'46"	140°18'09"	82.261	7751115.814	356295.819	45.579
O2	N346	MF	108°18'13"	142°28'36"	82.485	7751113.688	356293.517	45.520
O2	N347	MF	104°02'12"	138°12'35"	82.968	7751117.248	356298.567	45.560
O2	N348	TMF	104°01'35"	138°11'58"	82.968	7751117.257	356298.578	45.685
O2	N349	TMF	108°21'50"	142°32'13"	82.681	7751113.480	356293.567	45.641
O2	N350	MF	108°21'17"	142°31'40"	90.602	7751107.201	356298.397	44.571
O2	N351	MF	104°21'32"	138°31'55"	90.957	7751110.951	356303.508	44.793
O2	N352	EXA	106°08'48"	140°19'11"	90.603	7751109.377	356301.127	44.734
O2	N353	CA	104°06'01"	138°16'24"	85.852	7751115.033	356300.418	45.504
O2	N354	CA	103°45'14"	137°55'37"	79.311	7751120.235	356296.421	45.957
O2	N355	CA	100°13'15"	134°23'38"	79.630	7751123.399	356300.176	45.929
O2	N356	MUR	100°04'58"	134°15'21"	79.547	7751123.594	356300.250	45.971
O2	N357	ARV	99°06'34"	133°16'57"	66.795	7751133.313	356291.902	46.118
O2	N358	MUR	97°57'21"	132°07'44"	60.324	7751138.642	356288.015	46.134
O2	N359	DIV	96°16'46"	130°27'09"	50.515	7751146.332	356281.715	46.207
O2	N360	MUR	91°44'45"	125°55'08"	35.408	7751158.335	356271.952	46.402
O2	N361	MUR	84°30'41"	118°41'04"	24.278	7751167.454	356264.575	46.800
O2	N362	MUR	52°11'10"	86°21'33"	11.224	7751179.820	356254.478	47.478
O2	N363	MUR	40°16'28"	74°26'51"	10.589	7751181.946	356253.477	47.598
O2	N364	MUR	28°51'08"	63°01'31"	11.282	7751184.225	356253.331	47.762
O2	N365	MUR	16°17'16"	50°27'39"	13.961	7751187.995	356254.043	47.789
O2	N366	MUR	5°15'53"	39°26'16"	34.962	7751206.109	356265.486	48.517
O2	N367	PE	336°09'21"	10°19'44"	21.666	7751200.422	356247.161	48.515
O2	N368	CRI	336°52'41"	11°03'04"	21.933	7751200.633	356247.480	51.187
O2	N369	CRI	321°40'32"	355°50'55"	27.703	7751206.738	356241.271	50.864
O2	N370	PE	320°30'51"	354°41'14"	27.204	7751206.195	356240.757	49.613
O2	N371	CRP	310°21'48"	344°32'11"	31.569	7751209.533	356234.859	50.352
O2	N372	TUBO	317°48'00"	351°58'23"	28.946	7751207.769	356239.234	50.396
O2	N373	TUBO	321°44'26"	355°54'49"	27.418	7751206.455	356241.323	50.527
O2	N374	ARV	307°58'04"	342°08'27"	35.170	7751212.583	356232.490	50.520
O2	N375	MUR	308°55'30"	343°05'53"	36.918	7751214.430	356232.543	50.614
O2	N376	CER	284°46'48"	318°57'11"	30.745	7751202.294	356223.087	50.538
O2	N377	CER	282°18'49"	316°29'12"	20.371	7751193.880	356229.251	49.191
O2	N378	CER	275°32'04"	309°42'27"	9.887	7751185.423	356235.670	48.345
O2	N379	MUR	255°46'06"	289°56'29"	41.310	7751193.196	356204.443	47.548
O2	N380	CA	239°59'30"	274°09'53"	29.289	7751181.234	356214.065	46.097
O2	N381	CA	186°46'20"	220°56'43"	21.554	7751162.827	356229.151	44.380
O2	N382	CA	140°31'42"	174°42'05"	37.985	7751141.285	356246.784	44.239
O2	N383	COTA	112°09'32"	146°19'55"	57.364	7751131.365	356275.078	46.212
O2	N384	COTA	122°31'31"	156°41'54"	60.566	7751123.481	356267.235	46.021
O2	N385	COTA	125°07'18"	159°17'41"	61.069	7751121.983	356264.868	44.203
O2	N386	COTA	111°26'51"	145°37'14"	36.362	7751149.097	356263.809	46.483
O2	N387	COTA	122°31'25"	156°41'48"	37.697	7751144.486	356258.189	46.363
O2	N388	COTA	131°06'50"	165°17'13"	40.275	7751140.153	356253.505	46.218
O2	N389	COTA	134°53'02"	169°03'25"	41.136	7751138.719	356251.085	44.296
O2	N390	COTA	165°16'43"	199°27'06"	23.260	7751157.175	356235.531	44.448
O2	N391	COTA	159°33'41"	193°44'04"	20.280	7751159.407	356238.461	46.834
O2	N392	COTA	142°33'51"	176°44'14"	15.374	7751163.759	356244.151	47.006
O2	N393	COTA	115°19'01"	149°29'24"	14.503	7751166.612	356250.639	47.133
O2	N394	POR	200°26'38"	234°37'01"	21.175	7751166.846	356226.012	44.779
O2	N395	POR	210°55'15"	245°05'38"	21.804	7751169.925	356223.500	44.777
O2	N396	SOL	207°16'16"	241°26'39"	21.808	7751168.683	356224.122	44.751
O2	N397	EXA	207°37'51"	241°48'14"	20.466	7751169.437	356225.239	44.869
O2	N398	MF	199°43'23"	233°53'46"	20.613	7751166.961	356226.622	44.739

RELATÓRIO DE IRRADIAÇÕES

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CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O2	N399	BE	229°29'41"	263°40'04"	23.303	7751176.537	356220.116	44.835
O3	O3A	AUXILIAR	148°05'54"	110°43'57"	22.690	7751098.996	356319.537	44.079
O3	N400	PTC	102°12'14"	64°50'17"	8.099	7751110.472	356305.647	45.594
O3	N401	MUR	104°02'21"	66°40'24"	6.907	7751109.763	356304.659	44.745
O3	N402	MUR	91°34'55"	54°12'58"	6.698	7751110.945	356303.750	44.930
O3	N403	MUR	91°33'11"	54°11'14"	11.932	7751114.010	356307.993	45.959
O3	N404	MUR	83°34'06"	46°12'09"	11.963	7751115.308	356306.951	45.965
O3	N405	MUR	77°34'53"	40°12'56"	6.797	7751112.219	356302.705	45.102
O3	N406	MUR	66°06'18"	28°44'21"	7.282	7751113.413	356301.818	45.251
O3	N407	TOPO	66°35'10"	29°13'13"	7.208	7751113.319	356301.835	45.914
O3	N408	TOPO	103°48'16"	66°26'19"	6.941	7751109.803	356304.678	45.949
O3	N409	TOPO	83°38'48"	46°16'51"	11.915	7751115.264	356306.928	46.007
O3	N410	TOPO	91°28'50"	54°06'53"	11.902	7751114.005	356307.960	45.988
O3	N411	MUR	108°31'52"	71°09'55"	12.690	7751111.125	356310.327	44.875
O3A	N412	MF	7°31'27"	298°15'24"	12.702	7751105.009	356308.349	43.999
O3A	N413	EXA	356°52'57"	287°36'54"	16.568	7751104.010	356303.746	44.055
O3A	N414	MF	359°45'42"	290°29'39"	22.307	7751106.806	356298.642	44.513
O3A	N415	MF	350°28'03"	281°12'00"	20.772	7751103.031	356299.161	44.133
O3A	N416	MF	349°01'56"	279°45'53"	20.898	7751102.541	356298.941	44.072
O3A	N417	MF	348°40'46"	279°24'43"	21.283	7751102.477	356298.540	44.068
O3A	N418	MF	348°28'31"	279°12'28"	26.903	7751103.301	356292.981	44.227
O3A	N419	MF	347°15'20"	277°59'17"	30.481	7751103.232	356289.352	44.255
O3A	N420	MF	344°04'43"	274°48'40"	34.510	7751101.890	356285.149	44.428
O3A	N421	MF	339°34'16"	270°18'13"	38.699	7751099.201	356280.838	44.617
O3A	N422	EXP	336°45'28"	267°29'25"	37.060	7751097.373	356282.513	44.421
O3A	N423	MF	332°47'58"	263°31'55"	35.259	7751095.024	356284.502	44.234
O3A	N424	MF	334°56'38"	265°40'35"	31.728	7751096.604	356287.899	44.151
O3A	N425	MF	335°58'02"	266°41'59"	28.113	7751097.378	356291.470	44.018
O3A	N426	MF	333°15'40"	263°59'37"	23.110	7751096.578	356296.553	43.503
O3A	N427	EXP	340°47'39"	271°31'36"	21.466	7751099.568	356298.079	43.774
O3A	N428	EXP	342°03'43"	272°47'40"	27.507	7751100.337	356292.063	44.206
O3A	N429	EXP	339°36'57"	270°20'54"	33.106	7751099.197	356286.432	44.359
O3A	N430	EXP	336°50'38"	267°34'35"	37.026	7751097.430	356282.544	44.428
O3A	N431	MF	325°36'37"	256°20'34"	26.768	7751092.676	356293.525	43.168
O3A	N432	ARV	146°51'31"	77°35'28"	3.152	7751099.673	356322.615	44.163
O3A	N433	ARV	138°11'57"	68°55'54"	6.116	7751101.195	356325.244	44.231
O3A	N434	ARV	130°40'30"	61°24'27"	9.279	7751103.437	356327.684	44.296
O3A	N435	ARV	128°35'24"	59°19'21"	12.031	7751105.134	356329.884	44.325
O3A	N436	ARV	127°39'17"	58°23'14"	15.570	7751107.158	356332.797	44.377
O3A	N437	ARV	126°29'41"	57°13'38"	18.619	7751109.075	356335.192	44.423
O3A	N438	ARV	126°28'55"	57°12'52"	21.938	7751110.875	356337.980	44.456
O3A	N439	ARV	24°06'42"	314°50'39"	9.950	7751106.013	356312.482	44.412
O3A	N440	ARV	50°55'37"	341°39'34"	10.066	7751108.551	356316.369	44.253
O3A	N441	ARV	74°45'08"	5°29'05"	12.361	7751111.300	356320.718	44.267
O3A	N442	ARV	89°28'25"	20°12'22"	15.958	7751113.972	356325.049	44.333
O3A	N443	ARV	99°29'09"	30°13'06"	21.676	7751117.727	356330.447	44.407
O3A	N444	MF	121°13'35"	51°57'32"	21.906	7751112.495	356336.789	44.313
O3A	N445	MF	103°51'42"	34°35'39"	23.586	7751118.412	356332.928	44.332
O3A	N446	EXA	112°16'24"	43°00'21"	22.537	7751115.477	356334.909	44.378
O3A	N447	EXA	97°32'29"	28°16'26"	11.313	7751108.959	356324.896	44.186
O3A	N448	MF	119°00'59"	49°44'56"	13.742	7751107.875	356330.025	44.188
O3A	N449	MF	90°39'01"	21°22'58"	15.477	7751113.407	356325.180	44.149
O3A	N450	MF	115°45'47"	46°29'44"	9.544	7751105.566	356326.459	44.099
O3A	N451	MF	81°52'36"	12°36'33"	12.741	7751111.430	356322.318	44.092
O3A	N452	MF	113°48'19"	44°32'16"	6.657	7751103.741	356324.206	44.071
O3A	N453	MF	113°18'16"	44°02'13"	5.362	7751102.851	356323.264	44.069
O3A	N454	MF	152°05'00"	82°48'57"	0.971	7751099.117	356320.500	44.005

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O3A	N455	MF	21°24'40"	312°08'37"	9.164	7751105.145	356312.742	43.967
O3A	N456	MF	299°59'27"	230°43'24"	3.944	7751096.499	356316.484	43.669
O3A	N457	MF	295°53'13"	226°37'10"	4.329	7751096.023	356316.391	43.611
O3A	N458	MF	268°29'05"	199°13'02"	5.993	7751093.337	356317.564	43.243
O3A	N459	MF	235°59'04"	166°43'01"	12.160	7751087.162	356322.331	42.175
O3A	N460	MF	232°03'15"	162°47'12"	15.051	7751084.620	356323.991	41.720
O3A	N461	MF	10°38'13"	301°22'10"	10.338	7751104.377	356310.710	43.908
O3A	N462	MF	7°18'04"	298°02'01"	12.780	7751105.003	356308.257	44.001
O3A	N463	MF	223°13'06"	153°57'03"	27.010	7751074.730	356331.398	39.964
O3A	N464	EXA	359°31'30"	290°15'27"	5.008	7751100.730	356314.838	43.984
O3A	N465	MF	236°15'08"	166°59'05"	28.811	7751070.925	356326.025	39.951
O3A	N466	MF	237°05'17"	167°49'14"	28.553	7751071.086	356325.561	40.044
O3A	N467	MF	236°43'51"	167°27'48"	28.236	7751071.434	356325.666	40.035
O3A	N468	MF	237°38'35"	168°22'32"	27.985	7751071.585	356325.176	40.116
O3A	N469	MF	237°39'51"	168°23'48"	27.958	7751071.609	356325.160	40.128
O3A	N470	MF	246°14'58"	176°58'55"	20.788	7751078.237	356320.631	41.235
O3A	N471	MF	252°30'55"	183°14'52"	19.819	7751079.209	356318.414	41.553
O3A	N472	MF	259°21'22"	190°05'19"	19.879	7751079.425	356316.055	41.719
O3A	N473	MF	266°08'07"	196°52'04"	20.578	7751079.304	356313.566	41.850
O3A	N474	MF	284°11'53"	214°55'50"	25.590	7751078.016	356304.884	42.127
O3A	N475	MF	300°50'18"	231°34'15"	36.983	7751076.009	356290.565	42.282
O3A	N476	PTC	300°28'08"	231°12'05"	37.188	7751075.695	356290.554	42.367
O3A	N477	PTC	325°11'55"	255°55'52"	28.878	7751091.976	356291.525	43.210
O3A	N478	MF	324°12'03"	254°56'00"	28.758	7751091.521	356291.767	43.049
O3A	N479	MF	305°40'33"	236°24'30"	43.300	7751075.040	356283.468	42.259
O3A	N480	MF	320°03'25"	250°47'22"	36.739	7751086.907	356284.844	42.685
O3A	N481	MF	318°27'13"	249°11'10"	42.108	7751084.034	356280.177	42.467
O3A	N482	PTC	319°47'28"	250°31'25"	41.248	7751085.243	356280.649	42.723
O3A	N483	ARV	321°36'14"	252°20'11"	36.972	7751087.778	356284.308	42.928
O3A	N484	ARV	326°18'35"	257°02'32"	27.633	7751092.800	356292.608	43.322
O3A	N485	CX	325°39'42"	256°23'39"	29.309	7751092.101	356291.051	43.210
O3A	N486	CX	324°34'49"	255°18'46"	29.151	7751091.605	356291.338	43.215
O3A	N487	CX	323°57'50"	254°41'47"	30.158	7751091.036	356290.448	43.180
O3A	N488	EXA	312°00'49"	242°44'46"	42.431	7751079.565	356281.816	42.472
O3A	N489	EXA	309°31'33"	240°15'30"	32.102	7751083.071	356291.664	42.730
O3A	N490	EXA	317°44'55"	248°28'52"	27.002	7751089.092	356294.417	43.106
O3A	N491	EXA	309°11'40"	239°55'37"	27.079	7751085.427	356296.103	42.986
O3A	N492	EXA	300°41'29"	231°25'26"	30.203	7751080.163	356295.925	42.418
O3A	N493	EXA	329°54'46"	260°38'43"	20.492	7751095.665	356299.318	43.504
O3A	N494	EXA	290°26'54"	221°10'51"	23.866	7751081.034	356303.823	42.333
O3A	N495	EXA	343°10'16"	273°54'13"	11.143	7751099.755	356308.420	43.860
O3A	N496	EXA	273°29'32"	204°13'29"	18.622	7751082.014	356311.896	42.161
O3A	N497	EXA	291°00'12"	221°44'09"	8.040	7751092.996	356314.185	43.419
O3A	N498	EXA	258°45'16"	189°29'13"	11.393	7751087.759	356317.659	42.577
O3A	N499	EXA	4°59'13"	295°43'10"	5.460	7751101.366	356314.618	43.982
O3A	N500	EXA	237°15'58"	167°59'55"	19.645	7751079.781	356323.622	41.170
O3A	N501	EXA	331°08'40"	261°52'37"	8.336	7751097.818	356311.285	43.896
O3A	N502	EXA	229°17'28"	160°01'25"	28.152	7751072.538	356329.154	39.855
O3A	N503	EXA	223°43'21"	154°27'18"	42.697	7751060.473	356337.949	37.814
O3A	N504	MF	218°54'14"	149°38'11"	42.883	7751061.996	356341.213	37.730
O3A	N505	MF	227°43'49"	158°27'46"	44.359	7751057.734	356335.821	37.637
O3A	N506	CANT	295°06'50"	225°50'47"	11.294	7751091.128	356311.433	43.357
O3A	N507	CANT	287°54'12"	218°38'09"	12.850	7751088.959	356311.514	43.017
O3A	N508	CANT	304°56'55"	235°40'52"	10.734	7751092.944	356310.672	43.581
O3A	N509	CANT	284°58'17"	215°42'14"	15.655	7751086.284	356310.401	42.681
O3A	N510	CANT	316°22'37"	247°06'34"	11.489	7751094.527	356308.953	43.751
O3A	N511	CANT	287°57'51"	218°41'48"	18.581	7751084.494	356307.920	42.476

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O3A	N512	CANT	324°03'57"	254°47'54"	13.654	7751095.416	356306.360	43.723
O3A	N513	CANT	293°40'21"	224°24'18"	20.707	7751084.203	356305.048	42.496
O3A	N514	CANT	324°23'13"	255°07'10"	17.090	7751094.607	356303.020	43.624
O3A	N515	CANT	299°51'31"	230°35'28"	21.814	7751085.148	356302.683	42.657
O3A	N516	CANT	319°50'38"	250°34'35"	19.726	7751092.436	356300.934	43.490
O3A	N517	CANT	306°54'58"	237°38'55"	22.111	7751087.164	356300.857	42.986
O3A	N518	CANT	313°59'41"	244°43'38"	21.291	7751089.906	356300.284	43.335
O3A	N519	DEF	303°55'17"	234°39'14"	21.678	7751086.455	356301.855	43.013
O3A	N520	DEF	321°59'38"	252°43'35"	18.215	7751093.587	356302.143	43.671
O3A	N521	DEF	314°06'57"	244°50'54"	11.457	7751094.127	356309.166	43.860
O3A	N522	DEF	288°30'29"	219°14'26"	18.423	7751084.727	356307.883	42.657
O3A	N523	DEF	286°36'14"	217°20'11"	14.674	7751087.329	356310.637	42.887
O3A	N524	TORRE	318°59'24"	249°43'21"	13.102	7751094.455	356307.247	43.894
O3A	N525	TORRE	314°29'19"	245°13'16"	17.068	7751091.843	356304.041	43.647
O3A	N526	TORRE	300°25'43"	231°09'40"	16.473	7751088.666	356306.706	43.253
O3A	N527	TORRE	300°41'07"	231°25'04"	12.287	7751091.333	356309.932	43.555
O3A	N528	PTC	218°21'50"	149°05'47"	32.349	7751071.240	356336.151	40.509
O3A	N529	PE	212°43'57"	143°27'54"	33.247	7751072.283	356339.329	38.782
O3A	N530	CRI	212°38'19"	143°22'16"	33.123	7751072.415	356339.299	40.279
O3A	N531	CRI	218°44'12"	149°28'09"	32.938	7751070.625	356336.269	40.440
O3A	N532	PE	219°48'56"	150°32'53"	33.523	7751069.805	356336.020	39.091
O3A	N533	PE	222°17'49"	153°01'46"	25.526	7751076.246	356331.114	40.297
O3A	N534	CRI	221°16'24"	152°00'21"	25.366	7751076.599	356331.443	40.959
O3A	N535	CRP	225°39'34"	156°23'31"	17.558	7751082.908	356326.568	41.479
O3A	N536	MUR	210°29'33"	141°13'30"	31.711	7751074.274	356339.396	41.119
O3A	N537	MUR	209°20'17"	140°04'14"	16.763	7751086.142	356330.296	42.774
O3A	N538	MUR	197°04'31"	127°48'28"	2.646	7751097.374	356321.628	44.144
O3A	N539	MUR	128°51'57"	59°35'54"	22.035	7751110.147	356338.542	44.471
O3A	N540	MUR	97°47'06"	28°31'03"	24.067	7751120.143	356331.027	44.610
O3A	N541	MUR	48°15'19"	338°59'16"	11.562	7751109.789	356315.391	44.335
O3A	N542	MUR	41°40'09"	332°24'06"	11.671	7751109.339	356314.130	44.425
O3A	N543	MUR	36°27'18"	327°11'15"	12.348	7751109.374	356312.846	44.733
O3A	N544	CA	31°52'34"	322°36'31"	10.810	7751107.585	356312.972	44.368
O3A	N545	TP	37°11'58"	327°55'55"	10.083	7751107.540	356314.184	44.126
O3A	N546	CA	10°45'12"	301°29'09"	11.426	7751104.963	356309.794	44.340
O3A	N547	CA	30°33'58"	321°17'55"	15.144	7751110.815	356310.068	44.775
O3A	N548	COTA	349°43'33"	280°27'30"	25.437	7751103.613	356294.522	44.458
O3A	N549	COTA	355°35'41"	286°19'38"	26.738	7751106.513	356293.877	46.229
O3A	N550	COTA	351°56'32"	282°40'29"	32.191	7751106.059	356288.130	46.085
O3A	N551	COTA	347°27'41"	278°11'38"	36.947	7751104.262	356282.968	46.055
O3A	N552	COTA	4°59'39"	295°43'36"	42.564	7751117.472	356281.193	45.977
O3A	N553	COTA	355°28'05"	286°12'02"	44.425	7751111.391	356276.876	46.205
O3A	N554	COTA	347°43'15"	278°27'12"	30.798	7751103.524	356289.074	44.474
O3A	N555	COTA	342°33'33"	273°17'30"	36.420	7751101.087	356283.177	44.608
O3A	N556	COTA	342°02'56"	272°46'53"	38.347	7751100.857	356281.235	43.874
O3A	N557	CA	340°59'22"	271°43'19"	38.942	7751100.166	356280.613	44.056
O3A	N558	CXE	341°21'46"	272°05'43"	38.423	7751100.401	356281.139	44.640
O3A	N559	CXE	340°37'05"	271°21'02"	38.099	7751099.894	356281.449	44.660
O3A	N560	CXE	340°08'33"	270°52'30"	38.529	7751099.584	356281.013	44.663
O3A	N561	COTA	340°43'58"	271°27'55"	38.520	7751099.981	356281.029	43.976
O3A	N562	COTA	333°16'47"	264°00'44"	35.313	7751095.312	356284.417	43.592
O3A	N563	GS	332°57'04"	263°41'01"	35.423	7751095.099	356284.329	43.968
O3A	N564	GS	333°31'37"	264°15'34"	35.277	7751095.468	356284.437	44.028
O3A	N565	GS	340°19'29"	271°03'26"	38.372	7751099.704	356281.172	44.356
O3A	N566	CX	332°47'34"	263°31'31"	35.441	7751095.000	356284.322	44.240
O3A	N567	CX	333°39'59"	264°23'56"	35.666	7751095.515	356284.041	44.227
O3A	N568	CX	334°02'14"	264°46'11"	35.210	7751095.786	356284.474	44.227

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O3A	N569	MUR	333°01'41"	263°45'38"	35.175	7751095.173	356284.570	44.248
O3A	N570	MUR	324°48'56"	255°32'53"	32.452	7751090.897	356288.112	43.156
O3A	N571	MUR	319°50'47"	250°34'44"	43.961	7751084.379	356278.077	42.648
O3A	N572	MUR	303°37'27"	234°21'24"	44.779	7751072.902	356283.147	42.423
O3A	N573	MUR	289°54'17"	220°38'14"	31.313	7751075.234	356299.144	42.272
O3A	N574	MUR	260°15'15"	190°59'12"	21.758	7751077.637	356315.390	42.085
O3A	N575	LUM	256°23'22"	187°07'19"	23.882	7751075.299	356316.576	42.173
O3A	N576	MUR	249°38'42"	180°22'39"	31.282	7751067.715	356319.331	41.989
O3A	N577	CX	247°28'49"	178°12'46"	36.998	7751062.016	356320.691	42.031
O3A	N578	CX	246°25'20"	177°09'17"	36.378	7751062.663	356321.343	42.043
O3A	N579	CX	245°26'10"	176°10'07"	36.971	7751062.107	356322.007	42.017
O3A	N580	MUR	247°19'23"	178°03'20"	43.586	7751055.435	356321.016	41.818
O3A	N581	MUR	244°28'56"	175°12'53"	45.533	7751053.621	356323.335	41.807
O3A	N582	MUR	238°41'01"	169°24'58"	60.283	7751039.739	356330.609	41.745
O3A	N583	MUR	234°59'47"	165°43'44"	76.649	7751024.712	356338.432	41.854
O3A	N584	LUM	236°19'44"	167°03'41"	69.030	7751031.718	356334.993	41.989
O3A	N585	LUM	240°06'41"	170°50'38"	55.247	7751044.453	356328.328	41.962
O3A	N586	PTC	276°42'41"	207°26'38"	4.249	7751095.225	356317.579	43.691
O3A	N587	LUM	248°07'09"	178°51'06"	36.542	7751062.462	356320.269	42.122
O3A	N588	PTC	13°16'05"	304°00'02"	10.168	7751104.682	356311.107	44.111
O3A	N589	CX	14°16'50"	305°00'47"	7.251	7751103.156	356313.599	43.989
O3A	N590	CX	24°11'59"	314°55'56"	6.813	7751103.808	356314.714	44.009
O3A	N591	CX	20°34'25"	311°18'22"	5.555	7751102.663	356315.364	44.000
O3A	N592	BL	27°10'11"	317°54'08"	8.765	7751105.500	356313.661	43.896
O3A	N593	COTA	27°35'14"	318°19'11"	8.707	7751105.499	356313.747	43.014
O3A	N594	EXA	349°34'57"	280°18'54"	13.275	7751101.373	356306.476	43.819
O3A	N595	GS	240°51'33"	171°35'30"	26.965	7751072.321	356323.480	40.444
O3A	N596	COTA	240°57'11"	171°41'08"	26.990	7751072.290	356323.440	40.159
O5	N597	MF	7°39'04"	30°18'59"	41.603	7751026.439	356370.968	32.689
O5	N598	MF	335°02'51"	357°42'46"	50.949	7751041.433	356347.934	35.316
O5	N599	MF	340°56'38"	3°36'33"	55.214	7751045.629	356353.443	35.520
O5	N600	MF	349°19'36"	11°59'31"	47.671	7751037.155	356359.872	34.343
O5	N601	MF	354°01'57"	16°41'52"	44.812	7751033.447	356362.843	33.788
O5	N602	MF	356°15'20"	18°55'15"	43.962	7751032.111	356364.223	33.538
O5	N603	MF	359°07'49"	21°47'44"	43.801	7751031.195	356366.230	33.263
O5	N604	MF	6°51'52"	29°31'47"	38.208	7751023.770	356368.799	32.733
O5	N605	MF	6°45'40"	29°25'35"	36.950	7751022.708	356368.121	32.720
O5	N606	PTC	347°16'40"	9°56'35"	52.017	7751041.761	356358.949	35.520
O5	N607	MF	5°24'05"	28°04'00"	29.476	7751016.534	356363.836	32.611
O5	N608	MF	337°43'55"	0°23'50"	47.419	7751037.943	356350.296	34.756
O5	N609	MF	340°44'54"	3°24'49"	43.210	7751033.659	356352.540	34.188
O5	N610	MF	343°05'54"	5°45'49"	38.238	7751028.570	356353.807	33.596
O5	N611	MF	345°52'26"	8°32'21"	32.922	7751023.082	356354.856	33.015
O5	N612	MF	347°04'19"	9°44'14"	29.253	7751019.357	356354.915	32.726
O5	N613	MF	346°14'58"	8°54'53"	24.695	7751014.922	356353.794	32.514
O5	N614	MF	4°31'52"	27°11'47"	17.697	7751006.265	356358.056	32.426
O5	N615	MF	343°25'16"	6°05'11"	19.885	7751010.298	356352.076	32.421
O5	N616	MF	315°16'38"	337°56'33"	8.851	7750998.728	356346.644	32.386
O5	N617	MF	1°16'26"	23°56'21"	5.213	7750995.289	356352.083	32.340
O5	N618	MF	224°26'59"	247°06'54"	10.371	7750986.492	356340.413	32.633
O5	N619	MF	188°03'47"	210°43'42"	7.484	7750984.092	356346.144	32.228
O5	N620	MF	204°57'37"	227°37'32"	19.131	7750977.631	356335.834	32.522
O5	N621	MF	183°09'39"	205°49'34"	10.450	7750981.119	356345.415	32.040
O5	N622	MF	202°16'03"	224°55'58"	23.040	7750974.214	356333.695	32.428
O5	N623	MF	170°45'39"	193°25'34"	12.855	7750978.021	356346.982	31.424
O5	N624	MF	202°08'49"	224°48'44"	27.188	7750971.237	356330.806	32.403
O5	N625	MF	161°07'16"	183°47'11"	13.393	7750977.161	356349.083	31.124

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5	N626	MF	204°31'03"	227°10'58"	35.109	7750966.663	356324.214	32.604
O5	N627	MF	153°01'40"	175°41'35"	13.135	7750977.427	356350.954	30.913
O5	N628	MF	207°57'19"	230°37'14"	47.388	7750960.460	356313.339	33.259
O5	N629	MF	118°22'49"	141°02'44"	13.125	7750980.318	356358.219	30.276
O5	N630	MF	114°01'08"	136°41'03"	13.096	7750980.997	356358.951	30.222
O5	N631	MF	99°47'07"	122°27'02"	12.072	7750984.048	356360.154	30.245
O5	N632	PTC	99°08'37"	121°48'32"	13.138	7750983.600	356361.132	30.227
O5	N633	MF	200°55'00"	223°34'55"	49.190	7750954.893	356316.057	33.170
O5	N634	MF	203°22'23"	226°02'18"	56.000	7750951.651	356309.658	33.758
O5	N635	MF	209°27'29"	232°07'24"	55.229	7750956.616	356306.373	33.911
O5	N636	MF	210°25'23"	233°05'18"	62.552	7750952.957	356299.953	34.741
O5	N637	MF	204°52'59"	227°32'54"	63.106	7750947.930	356303.405	34.607
O5	N638	MF	206°04'08"	228°44'03"	72.613	7750942.633	356295.387	35.631
O5	N639	MF	211°13'35"	233°53'30"	72.114	7750948.027	356291.706	35.714
O5	N640	MF	148°05'32"	170°45'27"	23.053	7750967.771	356353.670	30.593
O5	N641	MF	211°57'57"	234°37'52"	84.449	7750941.643	356281.104	36.777
O5	N642	MF	153°41'46"	176°21'41"	21.336	7750969.232	356351.321	30.989
O5	N643	MF	207°13'15"	229°53'10"	85.194	7750935.634	356284.814	36.658
O5	N644	MF	164°25'02"	187°04'57"	21.978	7750968.715	356347.258	31.573
O5	N645	MF	208°05'36"	230°45'31"	97.150	7750929.069	356274.725	37.593
O5	N646	MF	176°57'33"	199°37'28"	24.837	7750967.131	356341.626	32.047
O5	N647	MF	212°26'40"	235°06'35"	95.701	7750935.783	356271.469	37.706
O5	N648	MF	187°45'17"	210°25'12"	30.774	7750963.987	356334.385	32.358
O5	N649	MF	193°03'28"	215°43'23"	35.903	7750961.377	356329.005	32.575
O5	N650	EXB	210°21'19"	233°01'14"	96.308	7750932.593	356273.032	37.688
O5	N651	EXB	209°47'16"	232°27'11"	84.594	7750938.973	356282.897	36.836
O5	N652	EXB	208°42'46"	231°22'41"	71.929	7750945.628	356293.770	35.681
O5	N653	EXB	207°35'28"	230°15'23"	61.983	7750950.896	356302.308	34.632
O5	N654	EXB	206°09'03"	228°48'58"	54.868	7750954.395	356308.673	33.920
O5	N655	EXB	204°06'15"	226°46'10"	47.890	7750957.724	356315.075	33.304
O5	N656	EXB	199°32'35"	222°12'30"	36.823	7750963.250	356325.228	32.749
O5	N657	EXB	194°51'49"	217°31'44"	29.724	7750966.952	356331.860	32.488
O5	N658	EXB	189°24'57"	212°04'52"	24.396	7750969.854	356337.010	32.312
O5	N659	EXB	192°18'25"	214°58'20"	20.841	7750973.447	356338.022	32.325
O5	N660	EXA	193°03'14"	215°43'09"	20.341	7750974.010	356338.092	32.325
O5	N661	EXB	174°26'00"	197°05'55"	19.335	7750972.044	356344.282	31.802
O5	N662	EXA	205°27'33"	228°07'28"	10.964	7750983.206	356341.803	32.504
O5	N663	EXB	149°07'42"	171°47'37"	17.411	7750973.292	356352.453	30.852
O5	N664	EXB	134°09'54"	156°49'49"	17.632	7750974.315	356356.905	30.333
O5	N665	EXA	131°00'20"	153°40'15"	18.195	7750974.217	356358.037	30.236
O5	N666	EXA	331°42'46"	354°22'41"	6.800	7750997.292	356349.301	32.321
O5	N667	EXA	353°29'03"	16°08'58"	17.620	7751007.450	356354.868	32.407
O5	N668	EXA	354°21'52"	17°01'47"	28.866	7751018.126	356358.421	32.762
O5	N669	EXA	359°14'42"	21°54'37"	36.698	7751024.572	356363.661	33.078
O5	N670	EXA	347°05'30"	9°45'25"	41.262	7751031.190	356356.960	33.826
O5	N671	EXA	342°13'04"	4°52'59"	48.725	7751039.073	356354.115	34.791
O5	N672	EXA	3°26'06"	26°06'01"	45.879	7751031.725	356370.151	32.853
O5	N673	EXA	338°00'22"	0°40'17"	53.729	7751044.250	356350.597	35.476
O5	N674	CXT	345°58'24"	8°38'19"	52.819	7751042.745	356357.901	36.023
O5	N675	CXT	346°44'45"	9°24'40"	51.929	7751041.755	356358.459	36.003
O5	N676	CXT	346°25'43"	9°05'38"	53.133	7751042.990	356358.365	36.013
O5	N677	COTA	8°41'39"	31°21'34"	31.768	7751017.653	356366.500	32.130
O5	N678	COTA	18°17'57"	40°57'52"	30.501	7751013.557	356369.963	31.021
O5	N679	COTA	27°10'47"	49°50'42"	30.550	7751010.225	356373.317	30.109
O5	N680	COTA	11°17'26"	33°57'21"	17.270	7751004.850	356359.614	31.894
O5	N681	COTA	39°24'49"	62°04'44"	19.161	7750999.497	356366.898	30.245
O5	N682	COTA	25°33'54"	48°13'49"	17.614	7751002.258	356363.104	31.092

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5	N683	COTA	65°59'48"	88°39'43"	10.867	7750990.779	356360.831	30.444
O5	N684	COTA	35°32'16"	58°12'11"	5.968	7750993.670	356355.040	31.675
O5	N685	COTA	106°34'57"	129°14'52"	9.798	7750984.326	356357.555	30.727
O5	N686	COTA	139°37'26"	162°17'21"	4.221	7750986.504	356351.252	31.855
O5	N687	COTA	133°56'10"	156°36'05"	11.444	7750980.022	356354.512	30.885
O5	N688	COTA	139°51'02"	162°30'57"	10.596	7750980.418	356353.151	31.505
O5	N689	COTA	166°01'00"	188°40'55"	11.244	7750979.410	356348.270	31.673
O5	N690	ARV	156°14'48"	178°54'43"	10.527	7750980.000	356350.167	31.657
O5	N691	ARV	168°31'47"	191°11'42"	7.978	7750982.699	356348.419	31.871
O5	N692	ARV	113°50'46"	136°30'41"	8.066	7750984.673	356355.519	31.317
O5	N693	ARV	52°52'54"	75°32'49"	6.874	7750992.241	356356.623	31.477
O5	N694	ARV	35°41'29"	58°21'24"	10.059	7750995.802	356358.531	31.292
O5	N695	ARV	20°20'23"	43°00'18"	9.385	7750997.388	356356.368	31.678
O5	N696	ARV	31°35'00"	54°14'55"	18.293	7751001.213	356364.813	30.562
O5	N697	ARV	13°02'21"	35°42'16"	24.041	7751010.048	356363.998	31.564
O5	N698	ARV	24°02'36"	46°42'31"	37.730	7751016.397	356377.430	30.046
O5	N699	ARV	20°07'42"	42°47'37"	42.237	7751021.519	356378.662	30.532
O5	N700	ARV	11°41'56"	34°21'51"	39.959	7751023.510	356372.523	32.110
O5	N701	ARV	17°46'23"	40°26'18"	46.309	7751025.771	356380.004	30.716
O5	N702	COTA	49°07'59"	71°47'54"	34.626	7751001.341	356382.861	29.627
O5	N703	COTA	59°47'14"	82°27'09"	27.158	7750994.092	356376.890	29.752
O5	N704	COTA	43°58'27"	66°38'22"	45.145	7751008.425	356391.411	29.517
O5	N705	COTA	63°48'55"	86°28'50"	31.982	7750992.488	356381.889	29.872
O5	N706	COTA	46°32'50"	69°12'45"	59.265	7751011.558	356405.375	29.477
O5	N707	COTA	57°56'22"	80°36'17"	38.745	7750996.850	356388.193	29.854
O5	N708	COTA	45°27'42"	68°07'37"	68.952	7751016.213	356413.956	29.321
O5	N709	COTA	55°09'42"	77°49'37"	46.285	7751000.285	356395.212	29.811
O5	N710	COTA	54°24'01"	77°03'56"	64.672	7751005.001	356412.999	29.576
O5	N711	COTA	54°58'13"	77°38'08"	55.461	7751002.401	356404.142	29.729
O5	N712	COTA	63°48'36"	86°28'31"	60.337	7750994.234	356410.190	29.893
O5	N713	COTA	73°35'37"	96°15'32"	59.995	7750983.984	356409.605	30.326
O5	N714	COTA	64°48'02"	87°27'57"	53.964	7750992.911	356403.879	29.941
O5	N715	COTA	83°06'16"	105°46'11"	62.134	7750973.639	356409.763	30.892
O5	N716	COTA	70°38'05"	93°18'00"	51.147	7750987.581	356401.030	30.211
O5	N717	ARV	69°50'27"	92°30'22"	55.640	7750988.092	356405.554	30.210
O5	N718	COTA	66°51'14"	89°31'09"	44.391	7750990.897	356394.356	30.035
O5	N719	ARV	51°59'04"	74°38'59"	58.683	7751006.060	356406.557	29.747
O5	N720	COTA	55°38'29"	78°18'24"	42.395	7750999.117	356391.482	29.959
O5	N721	ARV	57°06'04"	79°45'59"	50.217	7750999.447	356399.385	29.813
O5	N722	PTC	58°47'38"	81°27'33"	52.790	7750998.365	356402.172	29.866
O5	N723	LUM	63°21'37"	86°01'32"	49.729	7750993.972	356399.577	29.908
O5	N724	CANT	64°12'39"	86°52'34"	49.818	7750993.240	356399.712	29.956
O5	N725	CANT	62°28'22"	85°08'17"	49.720	7750994.739	356399.509	29.889
O4	N726	COTA	354°06'32"	312°38'20"	62.295	7751072.152	356320.607	41.576
O4	N727	COTA	351°17'34"	309°49'22"	59.386	7751067.986	356320.823	41.831
O4	N728	COTA	353°08'48"	311°40'36"	57.524	7751068.204	356323.468	40.966
O4	N729	COTA	354°18'52"	312°50'40"	57.107	7751068.788	356324.562	40.151
O4	N730	COTA	352°36'41"	311°08'29"	48.913	7751062.136	356329.598	38.519
O4	N731	COTA	348°25'50"	306°57'38"	49.816	7751059.907	356326.628	39.941
O4	N732	COTA	344°42'35"	303°14'23"	51.134	7751057.984	356323.665	41.719
O4	N733	COTA	336°46'30"	295°18'18"	45.041	7751049.207	356325.714	41.810
O4	N734	COTA	338°08'33"	296°40'21"	43.589	7751049.521	356327.483	41.541
O4	N735	COTA	341°45'23"	300°17'11"	41.536	7751050.903	356330.566	39.595
O4	N736	COTA	346°19'44"	304°51'32"	40.238	7751052.953	356333.416	38.210
O4	N737	COTA	349°24'11"	307°55'59"	39.326	7751054.130	356335.416	37.442
O4	N738	COTA	345°38'14"	304°10'02"	31.532	7751047.664	356340.344	36.367
O4	N739	COTA	339°05'23"	297°37'11"	32.629	7751045.082	356337.523	38.354

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O4	N740	COTA	332°38'07"	291°09'55"	35.132	7751042.640	356333.671	40.197
O4	N741	COTA	328°00'12"	286°32'00"	37.366	7751040.588	356330.613	41.779
O4	N742	COTA	319°01'27"	277°33'15"	33.236	7751034.324	356333.486	41.775
O4	N743	COTA	322°30'47"	281°02'35"	29.328	7751035.573	356337.648	40.151
O4	N744	COTA	328°02'51"	286°34'39"	26.017	7751037.378	356341.497	39.162
O4	N745	COTA	334°04'44"	292°36'32"	23.460	7751038.974	356344.776	36.856
O4	N746	COTA	337°55'24"	296°27'12"	22.713	7751040.073	356346.099	35.439
O4	N747	COTA	327°40'38"	286°12'26"	17.945	7751034.964	356349.201	34.705
O4	N748	COTA	320°58'21"	279°30'09"	20.105	7751033.274	356346.605	37.134
O4	N749	COTA	314°29'58"	273°01'46"	23.491	7751031.196	356342.976	38.884
O4	N750	COTA	310°26'30"	268°58'18"	26.626	7751029.477	356339.812	40.048
O4	N751	COTA	307°49'29"	266°21'17"	29.738	7751028.064	356336.756	41.692
O4	N752	COTA	302°03'17"	260°35'05"	26.352	7751025.644	356340.436	40.421
O4	N753	COTA	304°08'04"	262°39'52"	23.413	7751026.966	356343.211	38.662
O4	N754	COTA	304°14'46"	262°46'34"	20.986	7751027.316	356345.613	37.915
O4	N755	COTA	308°20'34"	266°52'22"	20.153	7751028.856	356346.311	37.072
O4	N756	COTA	303°01'45"	261°33'33"	17.996	7751027.313	356348.632	35.856
O4	N757	COTA	311°18'33"	269°50'21"	16.980	7751029.907	356349.454	35.182
O4	N758	COTA	302°21'46"	260°53'34"	14.993	7751027.582	356351.629	33.755
O4	N759	COTA	283°08'04"	241°39'52"	15.957	7751022.381	356352.388	33.237
O4	N760	COTA	288°17'50"	246°49'38"	20.993	7751021.694	356347.134	35.411
O4	N761	COTA	291°52'22"	250°24'10"	24.282	7751021.811	356343.558	38.056
O4	N762	COTA	294°06'38"	252°38'26"	26.680	7751021.995	356340.969	40.700
O4	N763	COTA	294°19'37"	252°51'25"	28.736	7751021.485	356338.974	41.738
O4	N764	COTA	296°18'40"	254°50'28"	32.323	7751021.503	356335.235	41.857
O4	N765	COTA	290°56'35"	249°28'23"	35.833	7751017.390	356332.876	41.867
O4	N766	COTA	288°26'17"	246°58'05"	31.381	7751017.678	356337.554	41.704
O4	N767	COTA	287°18'11"	245°49'59"	29.757	7751017.772	356339.284	41.326
O4	N768	COTA	284°18'58"	242°50'46"	27.453	7751017.426	356342.006	38.883
O4	N769	COTA	281°49'27"	240°21'15"	24.878	7751017.649	356344.812	36.760
O4	N770	COTA	277°30'29"	236°02'17"	21.820	7751017.765	356348.335	34.516
O4	N771	COTA	271°05'52"	229°37'40"	18.641	7751017.880	356352.231	32.913
O4	N772	COTA	279°30'10"	238°01'58"	16.231	7751021.362	356352.664	33.119
O4	N773	COTA	263°31'41"	222°03'29"	23.789	7751012.292	356350.497	32.849
O4	N774	COTA	259°49'49"	218°21'37"	29.865	7751006.537	356347.899	32.698
O4	N775	COTA	264°54'12"	223°26'00"	31.290	7751007.233	356344.921	35.163
O4	N776	COTA	268°53'13"	227°25'01"	28.424	7751010.722	356345.505	35.735
O4	N777	COTA	275°00'01"	233°31'49"	30.079	7751012.076	356342.244	38.386
O4	N778	COTA	272°21'08"	230°52'56"	33.459	7751008.845	356340.474	38.699
O4	N779	COTA	279°01'13"	237°33'01"	36.411	7751010.418	356335.707	41.263
O4	N780	COTA	285°21'48"	243°53'36"	39.217	7751012.698	356331.217	41.786
O4	N781	COTA	283°44'59"	242°16'47"	48.183	7751007.542	356323.780	42.046
O4	N782	COTA	276°41'46"	235°13'34"	43.608	7751005.084	356330.613	41.680
O4	N783	COTA	273°54'33"	232°26'21"	41.915	7751004.403	356333.207	41.256
O4	N784	COTA	269°53'49"	228°25'37"	40.835	7751002.858	356335.884	39.439
O4	N785	COTA	266°15'37"	224°47'25"	39.510	7751001.915	356338.598	37.650
O4	N786	COTA	262°33'59"	221°05'47"	38.901	7751000.639	356340.863	35.802
O4	N787	COTA	258°29'09"	217°00'57"	38.060	7750999.565	356343.520	33.922
O4	N788	COTA	260°44'00"	219°15'48"	36.072	7751002.026	356343.604	34.458
O4	N789	COTA	258°14'34"	216°46'22"	34.496	7751002.323	356345.783	32.624
O4	N790	COTA	256°40'38"	215°12'26"	39.547	7750997.643	356343.633	32.855
O4	N791	COTA	255°22'05"	213°53'53"	47.448	7750990.572	356339.971	32.949
O4	N792	COTA	259°40'01"	218°11'49"	48.758	7750991.636	356336.283	35.583
O4	N793	COTA	262°47'34"	221°19'22"	49.907	7750992.475	356333.480	37.886
O4	N794	COTA	265°36'11"	224°07'59"	51.511	7750992.985	356330.565	40.030
O4	N795	COTA	269°00'03"	227°31'51"	52.304	7750994.640	356327.852	41.436
O4	N796	COTA	272°26'32"	230°58'20"	53.610	7750996.197	356324.787	41.862

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O4	N797	COTA	278°36'17"	237°08'05"	59.719	7750997.547	356316.272	41.983
O4	N798	COTA	273°36'10"	232°07'58"	58.939	7750993.776	356319.905	42.010
O4	N799	COTA	272°41'48"	231°13'36"	65.044	7750989.222	356315.723	42.126
O4	N800	COTA	268°53'38"	227°25'26"	64.162	7750986.545	356319.186	41.975
O4	N801	COTA	268°47'58"	227°19'46"	71.312	7750981.621	356314.000	42.113
O4	N802	COTA	271°54'01"	230°25'49"	71.466	7750984.430	356311.343	42.193
O4	N803	COTA	267°32'07"	226°03'55"	58.755	7750989.189	356324.122	41.962
O4	N804	COTA	264°40'35"	223°12'23"	57.640	7750987.942	356326.971	40.461
O4	N805	COTA	262°25'44"	220°57'32"	58.241	7750985.973	356328.255	38.449
O4	N806	COTA	261°33'02"	220°04'50"	60.381	7750983.755	356327.556	38.417
O4	N807	COTA	262°05'32"	220°37'20"	55.326	7750987.961	356330.412	38.535
O4	N808	COTA	258°36'17"	217°08'05"	56.885	7750984.605	356332.093	35.867
O4	N809	COTA	254°49'58"	213°21'46"	56.929	7750982.408	356335.126	33.298
O4	N810	COTA	252°35'00"	211°06'48"	57.015	7750981.141	356336.972	32.733
O4	N811	COTA	254°01'04"	212°32'52"	65.107	7750975.073	356331.405	32.595
O4	N812	BE	79°28'19"	38°00'07"	2.154	7751031.652	356367.759	33.105
O4	N813	BE	86°09'50"	44°41'38"	5.831	7751034.100	356370.534	32.857
O4	N814	BE	80°06'40"	38°38'28"	14.528	7751041.302	356375.505	32.758
O4	N815	BE	115°24'48"	73°56'36"	18.175	7751034.982	356383.899	31.490
O4	N816	EXC	97°54'02"	56°25'50"	15.408	7751038.475	356379.271	32.336
O4	N817	BE	138°29'53"	97°01'41"	13.135	7751028.348	356379.470	31.669
O4	N818	EXC	122°56'24"	81°28'12"	8.054	7751031.150	356374.398	32.535
O4	N819	EXA	124°12'37"	82°44'25"	7.506	7751030.904	356373.879	32.573
O4	N820	EXC	86°08'48"	44°40'36"	30.989	7751051.991	356388.222	31.974
O4	N821	BE	77°07'16"	35°39'04"	29.243	7751053.717	356383.477	32.467
O4	N822	BE	96°44'16"	55°16'04"	31.378	7751047.833	356392.221	30.895
O4	N823	BE	76°37'38"	35°09'26"	42.922	7751065.047	356391.149	32.632
O4	N824	BE	93°08'32"	51°40'20"	38.000	7751053.521	356396.243	30.643
O4	N825	EXC	83°49'15"	42°21'03"	41.524	7751060.643	356394.407	31.776
O4	N826	BE	91°55'58"	50°27'46"	41.065	7751056.096	356398.103	30.642
O4	N827	EXC	87°16'42"	45°48'30"	46.809	7751062.584	356399.996	30.967
O4	N828	BE	93°40'48"	52°12'36"	46.114	7751058.212	356402.876	30.028
O4	N829	BE	97°15'43"	55°47'31"	57.517	7751062.291	356414.000	28.546
O4	N830	BE	75°52'25"	34°24'13"	52.382	7751073.174	356396.030	32.827
O4	N831	BE	87°11'48"	45°43'36"	55.319	7751068.572	356406.043	30.187
O4	N832	BE	84°00'46"	42°32'34"	53.998	7751069.739	356402.943	31.121
O4	N833	EXC	91°43'01"	50°14'49"	53.179	7751063.962	356407.318	29.530
O4	N834	DIV	75°06'01"	33°37'49"	52.527	7751073.691	356395.525	32.970
O4	N835	CXT	80°42'08"	39°13'56"	6.467	7751034.964	356370.523	32.878
O4	N836	CXT	80°04'05"	38°35'53"	7.540	7751035.848	356371.137	32.847
O4	N837	CXT	76°17'57"	34°49'45"	7.547	7751036.150	356370.744	32.846
O4	N838	CX	78°46'30"	37°18'18"	12.808	7751040.143	356374.196	32.823
O4	N839	CX	75°41'19"	34°13'07"	12.786	7751040.528	356373.624	32.828
O4	N840	CX	78°29'32"	37°01'20"	14.479	7751041.515	356375.151	32.836
O4	N841	CA	75°13'46"	33°45'34"	31.665	7751056.280	356384.030	32.924
O4	N842	CA	74°59'49"	33°31'37"	6.656	7751035.503	356370.110	32.888
O4	N843	CA	19°38'48"	338°10'36"	22.541	7751050.881	356358.054	36.468
O4	N844	MUR	13°32'07"	332°03'55"	35.898	7751061.670	356349.616	37.697
O4	N845	DIV	10°39'41"	329°11'29"	51.565	7751074.243	356340.023	39.316
O4	N846	LUM	286°13'30"	244°45'18"	32.314	7751016.174	356337.206	41.738
O4	N847	LUM	274°19'16"	232°51'04"	45.979	7751002.189	356329.785	41.805
O4	N848	LUM	268°50'43"	227°22'31"	60.944	7750988.684	356321.590	42.145
O4	N849	PASS	201°58'22"	160°30'10"	6.886	7751023.463	356368.732	32.786
O4	N850	PASS	207°41'13"	166°13'01"	7.441	7751022.729	356368.206	32.741
O4	N851	PASS	198°30'19"	157°02'07"	13.582	7751017.450	356371.732	31.162
O4	N852	PASS	195°03'34"	153°35'22"	13.436	7751017.921	356372.410	31.109
O4	N853	PASS	194°39'53"	153°11'41"	20.809	7751011.382	356375.817	29.884

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O4	N854	PASS	192°20'03"	150°51'51"	20.473	7751012.072	356376.401	29.853
O4	N855	PASS	115°53'53"	74°25'41"	18.529	7751034.929	356384.282	31.225
O4	N856	PASS	117°38'23"	76°10'11"	17.714	7751034.189	356383.634	31.232
O4	N857	CA	295°00'18"	253°32'06"	33.938	7751020.336	356333.887	42.046
O4	N858	CA	284°59'32"	243°31'20"	50.847	7751007.285	356320.920	42.132
O4	N859	MUR	282°44'23"	241°16'11"	50.212	7751005.819	356322.403	42.188
O5	O5A1	AUXILIAR	45°56'47"	68°36'42"	67.240	7751015.046	356412.576	29.377
O5	N860	COTA	206°58'02"	229°37'57"	26.438	7750973.402	356329.824	32.547
O5	N861	COTA	211°50'12"	234°30'07"	26.571	7750975.096	356328.335	32.718
O5	N862	COTA	217°11'41"	239°51'36"	27.345	7750976.795	356326.320	34.638
O5	N863	COTA	220°25'04"	243°04'59"	27.738	7750977.968	356325.234	36.429
O5	N864	COTA	217°47'26"	240°27'21"	34.119	7750973.701	356320.284	37.013
O5	N865	COTA	213°10'49"	235°50'44"	34.015	7750971.428	356321.819	34.740
O5	N866	COTA	209°56'16"	232°36'11"	34.381	7750969.644	356322.654	33.539
O5	N867	COTA	208°03'19"	230°43'14"	34.552	7750968.650	356323.222	32.918
O5	N868	COTA	209°59'21"	232°39'16"	43.353	7750964.226	356315.502	33.408
O5	N869	COTA	211°18'35"	233°58'30"	43.426	7750964.985	356314.846	33.809
O5	N870	COTA	216°12'19"	238°52'14"	43.821	7750967.871	356312.457	36.338
O5	N871	COTA	217°44'03"	240°23'58"	49.727	7750965.963	356306.731	37.790
O5	N872	COTA	213°52'58"	236°32'53"	50.053	7750962.934	356308.206	35.224
O5	N873	COTA	211°05'28"	233°45'23"	50.689	7750960.556	356309.086	33.906
O5	N874	COTA	212°06'08"	234°46'03"	58.740	7750956.638	356301.987	34.635
O5	N875	COTA	214°14'12"	236°54'07"	58.834	7750958.397	356300.680	35.961
O5	N876	COTA	217°26'21"	240°06'16"	58.699	7750961.269	356299.079	38.237
O5	N877	COTA	217°03'58"	239°43'53"	64.910	7750957.807	356293.907	38.108
O5	N878	COTA	214°31'37"	237°11'32"	65.246	7750955.173	356295.129	36.498
O5	N879	COTA	212°20'21"	235°00'16"	66.064	7750952.637	356295.848	35.356
O5	N880	COTA	213°03'30"	235°43'25"	76.015	7750947.715	356287.154	36.317
O5	N881	COTA	214°24'15"	237°04'10"	75.964	7750949.229	356286.208	37.064
O5	N882	COTA	216°27'44"	239°07'39"	76.081	7750951.486	356284.666	38.990
O5	N883	COTA	216°57'09"	239°37'04"	83.235	7750948.428	356278.163	40.291
O5	N884	COTA	215°17'37"	237°57'32"	82.799	7750946.598	356279.781	38.290
O5	N885	COTA	213°22'23"	236°02'18"	83.437	7750943.914	356280.764	36.898
O5	N886	COTA	213°30'49"	236°10'44"	89.255	7750940.845	356275.816	37.275
O5	N887	COTA	215°34'23"	238°14'18"	89.472	7750943.428	356273.894	38.971
O5	N888	COTA	217°05'24"	239°45'19"	90.755	7750944.812	356271.565	40.808
O5	N889	COTA	216°52'55"	239°32'50"	93.417	7750943.179	356269.438	40.780
O5	N890	COTA	215°32'59"	238°12'54"	93.617	7750941.214	356270.390	39.871
O5	N891	COTA	214°18'36"	236°58'31"	93.064	7750939.805	356271.939	38.439
O5	N892	COTA	213°26'43"	236°06'38"	92.627	7750938.877	356273.077	37.758
O5	N893	COTA	212°51'44"	235°31'39"	95.345	7750936.559	356271.365	37.808
O5	N894	COTA	214°34'33"	237°14'28"	98.305	7750937.332	356267.298	38.687
O5	N895	COTA	216°44'50"	239°24'45"	97.198	7750941.066	356266.294	39.643
O5	N896	GS	215°49'47"	238°29'42"	94.517	7750941.133	356269.382	39.214
O5	N897	COTA	215°49'36"	238°29'31"	94.446	7750941.166	356269.446	38.585
O5	N898	MUR	215°53'06"	238°33'01"	94.830	7750941.048	356269.068	40.337
O5	N899	MUR	215°59'23"	238°39'18"	93.915	7750941.672	356269.760	40.324
O5	N900	MUR	214°09'40"	236°49'35"	93.007	7750939.634	356272.119	38.812
O5	N901	MUR	213°59'58"	236°39'53"	93.936	7750938.904	356271.487	38.806
O5	N902	MUR	212°20'28"	235°00'23"	93.212	7750937.069	356273.606	37.551
O5	N903	MUR	212°17'44"	234°57'39"	91.633	7750937.915	356274.942	37.409
O5	N904	MUR	213°06'33"	235°46'28"	92.331	7750938.594	356273.626	37.502
O5	N905	ESC	212°22'06"	235°02'01"	93.096	7750937.172	356273.676	37.546
O5	N906	ESC	212°20'06"	235°00'01"	91.796	7750937.873	356274.772	37.438
O5	N907	ESC	212°56'55"	235°36'50"	92.458	7750938.308	356273.666	37.538
O5	N908	ESC	212°47'32"	235°27'27"	93.555	7750937.478	356272.905	37.634
O5	N909	ESC	215°18'30"	237°58'25"	93.809	7750940.777	356270.436	38.350

RELATÓRIO DE IRRADIAÇÕES

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Estado: ES

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Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5	N910	ESC	215°12'02"	237°51'57"	94.433	7750940.296	356270.001	38.372
O5	N911	ESC	215°45'33"	238°25'28"	94.708	7750940.934	356269.281	38.596
O5	N912	ESC	215°47'03"	238°26'58"	94.032	7750941.323	356269.835	38.596
O5	N913	CX	205°25'14"	228°05'09"	80.936	7750936.459	356289.740	36.424
O5	N914	CX	205°10'06"	227°50'01"	77.917	7750938.221	356292.215	36.202
O5	N915	CX	204°50'29"	227°30'24"	75.024	7750939.846	356294.648	35.940
O5	N916	CX	204°30'01"	227°09'56"	71.922	7750941.626	356297.225	35.664
O5	N917	CA	205°46'45"	228°26'40"	95.450	7750927.208	356278.541	37.387
O5	N918	CA	204°09'17"	226°49'12"	77.651	7750937.389	356293.344	36.086
O5	N919	CA	200°56'26"	223°36'21"	56.835	7750949.371	356310.769	33.795
O5	N920	CA	199°48'15"	222°28'10"	51.930	7750952.219	356314.904	33.410
O5	N921	CA	190°55'46"	213°35'41"	36.680	7750959.971	356329.672	32.767
O5	N922	CA	181°42'26"	204°22'21"	35.856	7750957.865	356335.171	32.350
O5	N923	CA	172°59'19"	195°39'14"	38.137	7750953.802	356339.677	31.943
O5	N924	MUR	162°00'50"	184°40'45"	42.990	7750947.679	356346.460	31.161
O5	N925	HIDRANTE	155°41'20"	178°21'15"	33.782	7750956.757	356350.938	30.954
O5	N926	CX	155°36'05"	178°16'00"	33.392	7750957.148	356350.977	30.885
O5	N927	REG	155°37'47"	178°17'42"	33.419	7750957.121	356350.962	30.368
O5	N928	COTA	155°38'48"	178°18'43"	33.405	7750957.134	356350.951	30.216
O5	N929	BL	151°12'52"	173°52'47"	32.595	7750958.116	356353.443	30.422
O5	N930	BL	150°36'01"	173°15'56"	31.868	7750958.877	356353.704	30.436
O5	N931	BL	150°37'15"	173°17'10"	31.878	7750958.866	356353.694	30.567
O5	N932	COTA	154°18'43"	176°58'38"	26.773	7750963.789	356351.379	30.944
O5	N933	COTA	166°27'06"	189°07'01"	24.936	7750965.904	356346.016	31.733
O5	N934	COTA	179°36'07"	202°16'02"	27.975	7750964.636	356339.367	32.283
O5	N935	COTA	171°28'47"	194°08'42"	28.955	7750962.448	356342.891	31.999
O5	N936	COTA	174°41'40"	197°21'35"	32.721	7750959.294	356340.204	31.989
O5	N937	COTA	180°13'59"	202°53'54"	31.384	7750961.614	356337.756	32.290
O5	N938	COTA	190°25'37"	213°05'32"	33.844	7750962.171	356331.489	32.468
O5	N939	COTA	180°24'49"	203°04'44"	34.516	7750958.771	356336.437	32.156
O5	N940	COTA	171°25'11"	194°05'06"	35.919	7750955.686	356341.226	31.763
O5	N941	COTA	161°20'38"	184°00'33"	40.466	7750950.158	356347.138	31.104
O5	N942	COTA	161°28'33"	184°08'28"	34.929	7750955.687	356347.445	31.248
O5	N943	COTA	156°49'23"	179°29'18"	30.429	7750960.097	356350.239	30.834
O5	N944	ARV	167°37'24"	190°17'19"	29.117	7750961.876	356344.767	31.907
O5	N945	PTC	160°37'51"	183°17'46"	44.325	7750946.273	356347.419	31.158
O5	N946	LUM	135°25'04"	158°04'59"	36.793	7750956.391	356363.701	30.741
O5	N947	COTA	141°56'14"	164°36'09"	40.737	7750951.250	356360.784	31.007
O5	N948	COTA	137°03'52"	159°43'47"	46.417	7750946.982	356366.049	31.107
O5	N949	COTA	121°02'55"	143°42'50"	39.411	7750958.757	356373.292	30.684
O5	N950	COTA	125°53'49"	148°33'44"	30.190	7750964.766	356365.714	30.459
O5	N951	COTA	107°21'06"	130°01'01"	25.560	7750974.089	356369.543	30.096
O5	N952	COTA	106°21'20"	129°01'15"	34.743	7750968.651	356376.960	30.328
O5	N953	COTA	91°02'44"	113°42'39"	36.194	7750975.971	356383.106	30.108
O5	N954	COTA	87°47'41"	110°27'36"	27.772	7750980.817	356375.988	29.941
O5	N955	COTA	79°04'34"	101°44'29"	39.969	7750982.391	356389.100	29.926
O5	N956	COTA	81°06'35"	103°46'30"	47.325	7750979.256	356395.931	30.150
O5	N957	COTA	93°46'12"	116°26'07"	44.754	7750970.601	356390.042	30.576
O5	N958	COTA	106°10'09"	128°50'04"	43.951	7750962.964	356384.204	30.799
O5	N959	COTA	122°58'44"	145°38'39"	46.788	7750951.899	356376.371	30.886
O5	N960	COTA	133°35'49"	156°15'44"	55.267	7750939.933	356372.215	31.256
O5	N961	COTA	127°46'33"	150°26'28"	61.949	7750936.639	356380.528	31.891
O5	N962	COTA	118°41'08"	141°21'03"	57.713	7750945.452	356386.012	31.594
O5	N963	COTA	104°34'50"	127°14'45"	53.817	7750957.953	356392.808	31.154
O5	N964	COTA	94°48'37"	117°28'32"	54.111	7750965.560	356397.975	31.007
O5	N965	COTA	87°58'49"	110°38'44"	55.352	7750971.008	356401.765	30.848
O5	N966	COTA	102°11'59"	124°51'54"	60.913	7750955.704	356399.947	31.891

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5	N967	COTA	116°55'10"	139°35'05"	63.994	7750941.802	356391.456	32.487
O5	N968	COTA	125°12'21"	147°52'16"	69.095	7750932.012	356386.714	32.971
O5	N969	ARV	127°45'52"	150°25'47"	69.489	7750930.087	356384.259	32.916
O5	N970	ARV	126°42'15"	149°22'10"	59.035	7750939.727	356380.046	31.609
O5	N971	ARV	134°51'44"	157°31'39"	50.222	7750944.116	356369.164	31.099
O5	N972	ARV	130°06'46"	152°46'41"	43.814	7750951.564	356370.010	30.939
O5	N973	ARV	123°46'07"	146°26'02"	37.567	7750959.222	356370.738	30.703
O5	N974	ARV	109°27'55"	132°07'50"	47.828	7750958.441	356385.437	30.921
O5	N975	ARV	97°14'29"	119°54'24"	48.127	7750966.529	356391.686	30.717
O5	N976	ARV	99°01'12"	121°41'07"	34.602	7750972.350	356379.411	30.214
O5	N977	ARV	56°10'37"	78°50'32"	42.416	7750998.733	356391.582	30.013
O5	N978	COTA	146°31'12"	169°11'07"	48.914	7750942.480	356359.145	31.248
O5	N979	COTA	138°47'54"	161°27'49"	55.267	7750938.125	356367.537	31.229
O5	N980	COTA	151°46'18"	174°26'13"	61.158	7750929.655	356355.896	31.659
O5	N981	COTA	144°52'25"	167°32'20"	64.883	7750927.171	356363.968	31.756
O5	N982	COTA	150°38'40"	173°18'35"	69.693	7750921.306	356358.087	32.042
O5	N983	COTA	146°15'03"	168°54'58"	77.904	7750914.074	356364.944	32.691
O5	N984	COTA	140°19'03"	162°58'58"	72.257	7750921.432	356371.114	32.313
O5	N985	COTA	139°10'00"	161°49'55"	79.119	7750915.350	356374.637	33.356
O5	N986	COTA	132°56'30"	155°36'25"	69.214	7750927.490	356378.552	32.559
O5	N987	COTA	134°47'10"	157°27'05"	77.618	7750918.840	356379.731	33.685
O5	N988	COTA	131°30'33"	154°10'28"	75.813	7750922.283	356382.994	33.716
O5	N989	ARV	137°41'31"	160°21'26"	74.407	7750920.448	356374.980	32.783
O5	N990	ARV	134°27'08"	157°07'03"	66.703	7750929.071	356375.904	31.997
O5	N991	ARV	136°00'53"	158°40'48"	68.930	7750926.313	356375.029	32.157
O5	N992	ARV	147°36'49"	170°16'44"	77.654	7750913.986	356363.079	32.774
O5	N993	ARV	144°50'26"	167°30'21"	67.959	7750924.175	356364.670	31.910
O5	N994	ARV	148°49'58"	171°29'53"	74.136	7750917.204	356360.928	32.518
O5	N995	ARV	148°03'35"	170°43'30"	62.411	7750928.930	356360.026	31.800
O5	N996	ARV	141°35'24"	164°15'19"	59.427	7750933.328	356366.093	31.483
O5	N997	MF	151°04'05"	173°44'00"	49.766	7750941.056	356355.400	31.163
O5	N998	TMF	151°01'50"	173°41'45"	49.829	7750940.998	356355.439	31.276
O5	N999	MF	154°28'15"	177°08'10"	56.849	7750933.747	356352.808	31.424
O5	N1000	MF	137°34'15"	160°14'10"	34.573	7750957.988	356361.658	30.575
O5	N1001	MF	155°25'31"	178°05'26"	61.139	7750929.419	356352.004	31.646
O5	N1002	MF	110°14'29"	132°54'24"	24.143	7750974.088	356367.651	29.921
O5	N1003	MF	155°37'05"	178°17'00"	64.355	7750926.199	356351.895	31.792
O5	N1004	MF	154°43'36"	177°23'31"	69.258	7750921.339	356353.119	32.061
O5	N1005	MF	153°09'45"	175°49'40"	73.070	7750917.649	356355.284	32.368
O5	N1006	MF	88°31'51"	111°11'46"	25.521	7750981.298	356373.762	29.655
O5	N1007	MF	78°09'17"	100°49'12"	31.901	7750984.536	356381.301	29.454
O5	N1008	MF	76°38'18"	99°18'13"	41.956	7750983.742	356391.371	29.680
O5	N1009	MF	82°01'11"	104°41'06"	51.972	7750977.350	356400.242	30.231
O5	N1010	TMF	82°10'15"	104°50'10"	51.892	7750977.238	356400.130	30.437
O5	N1011	MF	151°10'20"	173°50'15"	76.235	7750914.730	356358.151	32.743
O5	N1012	MF	90°14'35"	112°54'30"	58.690	7750967.680	356404.028	30.998
O5	N1013	MF	149°01'13"	171°41'08"	78.481	7750912.869	356361.316	33.112
O5	N1014	MF	101°56'31"	124°36'26"	62.683	7750954.924	356401.560	31.922
O5	N1015	TMF	101°59'20"	124°39'15"	62.570	7750954.946	356401.438	32.079
O5	N1016	MF	146°38'15"	169°18'10"	80.236	7750911.684	356364.861	33.461
O5	N1017	MF	142°02'35"	164°42'30"	81.877	7750911.547	356371.561	33.997
O5	N1018	MF	116°49'57"	139°29'52"	67.882	7750938.909	356394.055	32.944
O5	N1019	MF	126°34'42"	149°14'37"	74.524	7750926.483	356388.078	33.623
O5	N1020	MF	138°10'26"	160°50'21"	81.853	7750913.207	356376.833	34.244
O5	N1021	MF	131°38'11"	154°18'06"	79.319	7750919.051	356384.363	34.111
O5	N1022	MF	136°18'00"	158°57'55"	81.451	7750914.502	356379.203	34.292
O5	N1023	MF	134°41'15"	157°21'10"	80.912	7750915.851	356381.123	34.298

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5	N1024	TMF	134°42'33"	157°22'28"	80.879	7750915.870	356381.082	34.434
O5	N1025	BL	131°41'48"	154°21'43"	98.815	7750901.439	356392.723	34.507
O5	N1026	BL	131°56'47"	154°36'42"	99.347	7750900.773	356392.562	34.544
O5	N1027	BL	131°56'01"	154°35'56"	99.312	7750900.813	356392.568	34.730
O5	N1028	MF	131°45'26"	154°25'21"	98.684	7750901.512	356392.572	34.513
O5	N1029	MF	128°29'02"	151°08'57"	92.435	7750909.563	356394.570	34.071
O5	N1030	TMF	128°27'03"	151°06'58"	92.522	7750909.513	356394.659	34.324
O5	N1031	MF	124°39'15"	147°19'10"	86.951	7750917.338	356396.917	33.678
O5	N1032	MF	117°55'36"	140°35'31"	80.084	7750928.648	356400.808	33.073
O5	N1033	PV	117°07'54"	139°47'49"	80.966	7750928.686	356402.231	33.233
O5	N1034	MF	110°33'22"	133°13'17"	74.856	7750939.262	356404.516	32.575
O5	N1035	PTC	110°05'10"	132°45'05"	76.475	7750938.612	356406.123	32.713
O5	N1036	MF	102°17'32"	124°57'27"	71.064	7750949.807	356408.210	31.915
O5	N1037	MF	93°21'20"	116°01'15"	68.948	7750960.277	356411.927	31.349
O5	N1038	MF	86°26'16"	109°06'11"	68.112	7750968.234	356414.329	31.022
O5	N1039	PTC	84°49'40"	107°29'35"	69.677	7750969.581	356416.422	31.176
O5	N1040	MF	81°29'54"	104°09'49"	67.924	7750973.905	356415.826	30.679
O5	N1041	MF	76°29'37"	99°09'32"	67.971	7750979.706	356417.072	30.405
O5	N1042	TMF	76°31'37"	99°11'32"	68.027	7750979.658	356417.121	30.614
O5	N1043	MF	71°49'14"	94°29'09"	68.272	7750985.185	356418.030	30.106
O5	N1044	MF	66°41'01"	89°20'56"	68.919	7750991.308	356418.882	29.884
O5	N1045	MF	59°51'42"	82°31'37"	70.283	7750999.666	356419.654	29.543
O5	N1046	MF	55°08'42"	77°48'37"	71.832	7751005.692	356420.180	29.358
O5	N1047	TMF	55°19'46"	77°59'41"	71.732	7751005.445	356420.131	29.559
O5	N1048	PTC	56°39'50"	79°19'45"	71.966	7751003.851	356420.689	29.686
O5	N1049	MF	44°42'23"	67°22'18"	70.239	7751017.549	356414.799	29.198
O5	N1050	TMF	44°43'06"	67°23'01"	70.048	7751017.463	356414.629	29.332
O5	N1051	MF	48°08'45"	70°48'40"	68.600	7751013.073	356414.756	29.184
O5	N1052	MF	42°58'17"	65°38'12"	58.622	7751014.708	356403.369	29.244
O5	N1053	MF	54°25'18"	77°05'13"	66.228	7751005.325	356414.520	29.383
O5	N1054	TMF	54°25'07"	77°05'02"	66.134	7751005.308	356414.428	29.576
O5	N1055	MF	40°59'17"	63°39'12"	49.410	7751012.453	356394.245	29.322
O5	N1056	MF	60°52'31"	83°32'26"	64.482	7750997.779	356414.040	29.610
O5	N1057	MF	39°59'29"	62°39'24"	44.939	7751011.166	356389.885	29.317
O5	N1058	MF	68°03'05"	90°43'00"	63.178	7750989.735	356413.141	29.889
O5	N1059	MF	76°03'01"	98°42'56"	62.526	7750981.050	356411.771	30.299
O5	N1060	MF	83°18'15"	105°58'10"	62.347	7750973.372	356409.908	30.840
O5	N1061	MF	82°18'52"	104°58'47"	61.200	7750974.706	356409.088	30.806
O5	N1062	MF	82°18'50"	104°58'45"	62.423	7750974.391	356410.269	30.667
O5	N1063	TMF	82°15'14"	104°55'09"	62.317	7750974.481	356410.183	30.880
O5	N1064	MF	40°00'32"	62°40'27"	42.136	7751009.867	356387.401	29.302
O5	N1065	MF	41°18'19"	63°58'14"	36.804	7751006.676	356383.039	29.382
O5	N1066	MF	43°37'43"	66°17'38"	33.168	7751003.860	356380.337	29.395
O5	N1067	MF	75°03'17"	97°43'12"	54.218	7750983.242	356403.694	30.337
O5	N1068	MF	54°33'10"	77°13'05"	26.223	7750996.327	356375.540	29.551
O5	N1069	MF	71°41'57"	94°21'52"	49.700	7750986.743	356399.523	30.161
O5	N1070	MF	63°58'33"	86°38'28"	23.333	7750991.892	356373.260	29.645
O5	N1071	MF	69°34'21"	92°14'16"	22.290	7750989.655	356372.240	29.695
O5	N1072	MF	71°23'45"	94°03'40"	22.495	7750988.932	356372.406	29.718
O5	N1073	MF	71°43'27"	94°23'22"	23.192	7750988.750	356373.091	29.713
O5	N1074	MF	69°55'24"	92°35'19"	25.180	7750989.388	356375.121	29.746
O5	N1075	MF	69°01'46"	91°41'41"	45.373	7750989.183	356395.320	29.995
O5	N1076	TMF	68°57'01"	91°36'56"	45.414	7750989.245	356395.364	30.140
O5	N1078	MF	66°09'07"	88°49'02"	36.660	7750991.282	356386.620	29.812
O5	N1079	MF	67°23'54"	90°03'49"	28.463	7750990.493	356378.431	29.753
O5	N1080	MF	66°04'59"	88°44'54"	32.497	7750991.235	356382.456	29.747
O5	N1081	MF	66°30'35"	89°10'30"	30.436	7750990.963	356380.400	29.741

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5	N1082	CANL	78°04'41"	100°44'36"	32.595	7750984.449	356381.992	29.458
O5	N1083	CANL	78°04'38"	100°44'33"	32.648	7750984.440	356382.043	29.636
O5	N1084	CANL	78°24'38"	101°04'33"	32.020	7750984.374	356381.391	29.448
O5	N1085	CANL	78°32'33"	101°12'28"	32.023	7750984.301	356381.380	29.608
O5	N1086	CANL	79°56'08"	102°36'03"	31.993	7750983.546	356381.190	29.604
O5	N1087	CANL	78°42'57"	101°22'52"	32.544	7750984.103	356381.871	29.442
O5	N1088	CANL	78°42'43"	101°22'38"	32.584	7750984.097	356381.911	29.609
O5	N1089	CX	83°34'39"	106°14'34"	47.095	7750977.352	356395.182	30.371
O5	N1090	CX	85°10'21"	107°50'16"	46.807	7750976.187	356394.525	30.396
O5	N1091	CX	85°30'48"	108°10'43"	47.919	7750975.575	356395.495	30.459
O5	N1092	PV	84°35'03"	107°14'58"	47.551	7750976.425	356395.379	30.434
O5	N1093	PLACA	128°22'54"	151°02'49"	38.552	7750956.791	356368.630	30.747
O5	N1094	PLACA	130°38'48"	153°18'43"	38.069	7750956.512	356367.065	30.778
O5	N1095	CANT	117°04'52"	139°44'47"	65.345	7750940.654	356392.192	32.682
O5	N1096	CANT	118°17'29"	140°57'24"	65.732	7750939.473	356391.373	32.684
O5	N1097	LUM	117°39'22"	140°19'17"	65.647	7750940.001	356391.882	32.590
O5	N1098	PLACA	122°14'05"	144°54'00"	70.553	7750932.802	356390.536	33.334
O5	N1099	CANT	136°17'42"	158°57'37"	37.137	7750955.864	356363.300	30.745
O5	N1100	CANT	134°17'47"	156°57'42"	36.399	7750957.029	356364.212	30.724
O5	N1101	PASS	143°08'48"	165°48'43"	39.496	7750952.234	356359.648	30.845
O5	N1102	PASS	144°25'05"	167°05'00"	40.821	7750950.737	356359.092	30.869
O5	N1103	PASS	133°59'29"	156°39'24"	57.154	7750938.049	356372.614	31.357
O5	N1104	PASS	132°43'03"	155°22'58"	56.152	7750939.477	356373.358	31.255
O5	N1105	PASS	126°51'04"	149°30'59"	74.532	7750926.296	356387.777	33.715
O5	N1106	PASS	127°52'05"	150°32'00"	75.467	7750924.820	356387.091	33.783
O5	N1107	MF	158°40'50"	181°20'45"	44.825	7750945.712	356348.915	30.965
O5	N1108	MF	150°31'25"	173°11'20"	31.793	7750958.956	356353.738	30.458
O5	N1109	MF	144°45'35"	167°25'30"	26.456	7750964.703	356355.727	30.414
O5	N1110	MF	144°36'50"	167°16'45"	25.642	7750965.512	356355.614	30.447
O5	N1111	MF	105°01'01"	127°40'56"	14.374	7750981.738	356361.343	30.110
O5	N1112	MF	101°44'04"	124°23'59"	14.785	7750982.172	356362.166	30.060
O5	N1113	MF	81°32'49"	104°12'44"	14.750	7750986.904	356364.266	29.906
O5	N1114	MF	57°42'17"	80°22'12"	17.602	7750993.469	356367.321	29.695
O5	N1115	CX	51°48'37"	74°28'32"	18.391	7750995.447	356367.687	30.018
O5	N1116	CX	55°48'54"	78°28'49"	17.099	7750993.940	356366.722	29.965
O5	N1117	CX	51°40'19"	74°20'14"	15.778	7750994.785	356365.159	30.065
O5	N1118	MF	52°19'53"	74°59'48"	19.182	7750995.491	356368.496	29.700
O5	N1119	MF	42°21'59"	65°01'54"	23.838	7751000.588	356371.578	29.680
O5	N1120	MF	33°56'04"	56°35'59"	32.113	7751008.203	356376.777	29.622
O5	N1121	PTC	31°18'07"	53°58'02"	33.952	7751010.497	356377.424	29.800
O5	N1122	MF	32°37'17"	55°17'12"	34.287	7751010.050	356378.152	29.535
O5	N1123	MF	29°55'17"	52°35'12"	41.035	7751015.456	356382.561	29.459
O5	N1124	MF	28°24'31"	51°04'26"	48.344	7751020.900	356387.577	29.319
O5	N1125	MF	27°46'15"	50°26'10"	54.179	7751025.034	356391.735	29.136
O5	N1126	PASS	24°56'01"	47°35'56"	56.324	7751028.505	356391.560	29.375
O5	N1127	PASS	24°54'54"	47°34'49"	55.317	7751027.840	356390.804	29.421
O5	N1128	MF	27°18'40"	49°58'35"	61.260	7751029.921	356396.879	28.938
O5	N1129	MF	26°39'49"	49°19'44"	67.439	7751034.476	356401.117	28.876
O5	N1130	MF	25°08'34"	47°48'29"	70.626	7751037.959	356402.295	28.953
O5	N1131	MF	26°15'55"	48°55'50"	70.569	7751036.887	356403.170	28.844
O5	N1132	MF	25°20'23"	48°00'18"	74.686	7751040.495	356405.475	28.733
O5	N1133	PTC	26°01'57"	48°41'52"	66.764	7751034.591	356400.123	29.063
O5	N1134	PTC	20°49'41"	43°29'36"	65.397	7751037.967	356394.978	29.339
O5	N1135	CA	58°26'32"	81°06'27"	73.513	7751001.889	356422.597	29.775
O5	N1136	CA	67°44'00"	90°23'55"	71.555	7750990.027	356421.520	30.280
O5	N1137	CA	75°39'34"	98°19'29"	70.743	7750980.282	356419.965	30.681
O5	N1138	CA	83°04'35"	105°44'30"	70.793	7750971.319	356418.106	31.052

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5	N1139	CA	92°35'17"	115°15'12"	71.558	7750959.997	356414.687	31.676
O5	N1140	MUR	93°01'21"	115°41'16"	71.643	7750959.470	356414.530	31.655
O5	N1141	MUR	94°05'59"	116°45'54"	71.831	7750958.177	356414.102	31.738
O5	N1142	MUR	105°24'21"	128°04'16"	75.201	7750944.153	356409.169	32.490
O5	N1143	MUR	117°14'39"	139°54'34"	82.883	7750927.117	356403.344	33.385
O5	N1144	MUR	123°44'05"	146°24'00"	89.700	7750915.812	356399.607	34.024
O5	N1145	MUR	128°07'37"	150°47'32"	96.111	7750906.634	356396.867	34.501
O5	N1146	MUR	131°51'52"	154°31'47"	104.076	7750896.564	356394.724	35.097
O5	N1147	EXA	133°58'32"	156°38'27"	97.697	7750900.836	356388.704	34.771
O5	N1148	EXA	131°07'19"	153°47'14"	90.904	7750908.969	356390.120	34.373
O5	N1149	EXA	136°31'15"	159°11'10"	89.769	7750906.614	356381.865	34.773
O5	N1150	EXA	136°46'23"	159°26'18"	86.419	7750909.611	356380.319	34.690
O5	N1151	EXA	140°53'30"	163°33'25"	85.900	7750908.138	356374.282	34.451
O5	N1152	EXA	146°45'15"	169°25'10"	84.003	7750907.951	356365.392	33.773
O5	N1153	EXA	152°20'41"	175°00'36"	79.400	7750911.426	356356.874	32.955
O5	N1154	EXA	157°18'54"	179°58'49"	72.641	7750917.884	356349.992	32.239
O5	N1155	EXA	160°56'34"	183°36'29"	66.556	7750924.101	356345.779	31.822
O5	N1156	EXA	155°02'36"	177°42'31"	48.997	7750941.567	356351.926	31.109
O5	N1157	EXA	148°14'38"	170°54'33"	37.349	7750953.645	356355.869	30.691
O5	N1158	EXA	139°07'04"	161°46'59"	28.731	7750963.234	356358.949	30.406
O5	N1159	EXA	121°44'16"	144°24'11"	21.106	7750973.363	356362.253	30.123
O5	N1160	EXA	91°34'15"	114°14'10"	18.849	7750982.788	356367.155	29.881
O5	N1161	EXA	76°15'02"	98°54'57"	26.256	7750986.456	356375.906	29.673
O5	N1162	EXA	72°04'11"	94°44'06"	35.721	7750987.576	356385.566	29.722
O5	N1163	EXA	73°15'03"	95°54'58"	43.837	7750986.007	356393.571	29.914
O5	N1164	EXA	80°52'40"	103°32'35"	55.735	7750977.473	356404.153	30.560
O5	N1165	EXA	88°16'55"	110°56'50"	61.264	7750968.622	356407.183	31.091
O5	N1166	EXA	94°45'33"	117°25'28"	65.314	7750960.443	356407.942	31.525
O5	N1167	EXA	103°45'25"	126°25'20"	67.852	7750950.239	356404.566	32.104
O5	N1168	EXA	118°55'45"	141°35'40"	75.100	7750931.674	356396.621	33.182
O5	N1169	EXA	125°39'01"	148°18'56"	83.195	7750919.729	356393.665	33.774
O5	N1170	EXA	126°01'06"	148°41'01"	77.305	7750924.482	356390.148	33.664
O5	N1171	EXA	80°50'25"	103°30'20"	65.242	7750975.288	356413.405	30.696
O5	N1172	PLACA	80°07'41"	102°47'36"	61.073	7750977.001	356409.524	30.746
O5	N1173	EXA	71°53'17"	94°33'12"	65.876	7750985.295	356415.636	30.189
O5	N1174	EXA	59°51'50"	82°31'45"	67.637	7750999.319	356417.031	29.647
O5	N1175	EXA	42°19'20"	64°59'15"	72.257	7751021.077	356415.448	29.127
O5	N1176	EXA	40°12'45"	62°52'40"	61.912	7751018.750	356405.071	29.247
O5	N1177	EXA	37°04'59"	59°44'54"	48.766	7751015.093	356392.093	29.188
O5	N1178	EXA	37°50'24"	60°30'19"	33.337	7751006.938	356378.984	29.533
O5	N1179	EXA	54°35'12"	77°15'07"	22.399	7750995.468	356371.814	29.668
O5A1	N1180	COTA	71°39'50"	320°16'32"	25.969	7751035.020	356395.980	29.295
O5A1	N1181	COTA	83°08'16"	331°44'58"	28.072	7751039.775	356399.289	29.084
O5A1	N1182	COTA	70°41'38"	319°18'20"	34.055	7751040.867	356390.372	30.610
O5A1	N1183	COTA	80°32'23"	329°09'05"	36.468	7751046.355	356393.877	30.341
O5A1	N1184	COTA	89°23'33"	338°00'15"	39.712	7751051.868	356397.703	30.093
O5A1	N1185	COTA	98°47'36"	347°24'18"	42.936	7751056.949	356403.214	29.708
O5A1	N1186	COTA	105°57'08"	354°33'50"	44.227	7751059.074	356408.386	29.096
O5A1	N1187	COTA	111°07'00"	359°43'42"	45.266	7751060.312	356412.362	28.575
O5A1	N1188	COTA	106°55'47"	355°32'29"	39.561	7751054.487	356409.501	28.630
O5A1	N1189	COTA	102°25'10"	351°01'52"	33.948	7751048.579	356407.284	28.792
O5A1	N1190	COTA	95°40'12"	344°16'54"	32.412	7751046.246	356403.796	28.959
O5A1	N1191	ARV	100°01'58"	348°38'40"	41.452	7751055.686	356404.415	29.335
O5A1	N1192	ARV	94°52'56"	343°29'38"	36.672	7751050.207	356402.157	29.207
O5A1	N1193	ARV	87°55'23"	336°32'05"	32.190	7751044.575	356399.758	29.208
O5A1	N1194	ARV	76°29'46"	325°06'28"	32.526	7751041.725	356393.970	29.944
O5A1	N1195	COTA	122°10'47"	10°47'29"	10.003	7751024.872	356414.449	29.215

RELATÓRIO DE IRRADIAÇÕES

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5A1	N1196	COTA	121°31'29"	10°08'11"	16.400	7751031.190	356415.463	29.134
O5A1	N1197	COTA	103°31'26"	352°08'08"	15.587	7751030.487	356410.443	29.177
O5A1	N1198	COTA	95°20'04"	343°56'46"	17.461	7751031.826	356407.748	29.247
O5A1	N1199	COTA	117°37'19"	6°14'01"	20.939	7751035.862	356414.850	29.128
O5A1	N1200	COTA	122°18'13"	10°54'55"	35.519	7751049.923	356419.302	28.834
O5A1	N1201	ARV	120°49'16"	9°25'58"	30.327	7751044.964	356417.547	28.851
O5A1	N1202	ARV	117°45'18"	6°22'00"	26.596	7751041.479	356415.525	29.031
O5A1	N1203	ARV	106°31'50"	355°08'32"	19.573	7751034.549	356410.919	29.173
O5A1	N1204	ARV	86°10'46"	334°47'28"	12.823	7751026.648	356407.115	29.288
O5A1	N1205	ARV	63°50'20"	312°27'02"	13.729	7751024.313	356402.446	29.292
O5A1	N1206	MF	36°21'30"	284°58'12"	18.365	7751019.790	356394.835	29.186
O5A1	N1207	TMF	36°21'32"	284°58'14"	18.336	7751019.783	356394.862	29.359
O5A1	N1208	MF	47°09'17"	295°45'59"	13.529	7751020.927	356400.393	29.189
O5A1	N1209	MF	71°45'20"	320°22'02"	9.400	7751022.286	356406.580	29.172
O5A1	N1210	MF	111°54'22"	0°31'04"	8.602	7751023.648	356412.654	29.151
O5A1	N1211	MF	128°48'04"	17°24'46"	9.731	7751024.331	356415.488	29.103
O5A1	N1212	TMF	128°24'54"	17°01'36"	9.891	7751024.503	356415.472	29.239
O5A1	N1213	MF	125°20'17"	13°56'59"	15.168	7751029.767	356416.233	29.006
O5A1	N1214	MF	123°41'07"	12°17'49"	22.067	7751036.607	356417.276	28.909
O5A1	N1215	MF	123°08'07"	11°44'49"	32.430	7751046.797	356419.179	28.748
O5A1	N1216	MF	122°56'00"	11°32'42"	37.733	7751052.015	356420.128	28.687
O5A1	N1217	MF	122°55'04"	11°31'46"	41.011	7751055.230	356420.773	28.598
O5A1	N1218	TMF	122°50'25"	11°27'07"	40.922	7751055.154	356420.701	28.721
O5A1	N1219	MF	122°28'23"	11°05'05"	40.977	7751055.258	356420.454	28.651
O5A1	N1220	MF	119°48'20"	8°25'02"	35.310	7751049.976	356417.745	28.590
O5A1	N1221	MF	116°58'00"	5°34'42"	29.306	7751044.213	356415.425	28.877
O5A1	N1222	MF	112°13'55"	0°50'37"	24.691	7751039.734	356412.940	28.976
O5A1	N1223	TMF	112°16'20"	0°53'02"	24.599	7751039.642	356412.956	29.141
O5A1	N1224	MF	102°50'47"	351°27'29"	20.197	7751035.020	356409.576	29.048
O5A1	N1225	MF	87°46'37"	336°23'19"	16.855	7751030.490	356405.825	29.139
O5A1	N1226	MF	60°51'42"	309°28'24"	16.231	7751025.365	356400.847	29.026
O5A1	N1227	MF	40°53'28"	289°30'10"	18.121	7751021.096	356395.495	29.095
O5A1	N1228	PTC	91°10'11"	339°46'53"	10.606	7751024.999	356408.911	29.346
O5A1	N1229	PTC	112°55'12"	1°31'54"	17.078	7751032.118	356413.033	29.164
O5A1	N1230	CANT	110°34'14"	359°10'56"	17.324	7751032.368	356412.329	29.159
O5A1	N1231	CANT	115°21'39"	3°58'21"	17.023	7751032.028	356413.756	29.151
O5A1	N1232	BE	225°00'16"	113°36'58"	13.061	7751009.814	356424.543	29.367
O5A1	N1233	BE	210°46'26"	99°23'08"	15.131	7751012.579	356427.505	29.388
O5A1	N1234	BE	192°45'24"	81°22'06"	20.065	7751018.058	356432.414	29.542
O5A1	N1235	BE	179°07'51"	67°44'33"	28.941	7751026.008	356439.361	29.767
O5A1	N1236	BE	172°30'02"	61°06'44"	37.792	7751033.304	356445.666	30.233
O5A1	N1237	MF	164°48'21"	53°25'03"	36.248	7751036.649	356441.683	30.317
O5A1	N1238	MF	166°24'55"	55°01'37"	29.653	7751032.043	356436.875	29.921
O5A1	N1239	BE	165°55'58"	54°32'40"	25.023	7751029.561	356432.959	29.596
O5A1	N1240	BE	164°55'37"	53°32'19"	22.669	7751028.518	356430.808	29.506
O5A1	N1241	BE	161°03'39"	49°40'21"	17.881	7751026.618	356426.208	29.260
O5A1	N1242	BE	155°16'58"	43°53'40"	15.726	7751026.379	356423.480	29.058
O5A1	N1243	BE	149°10'16"	37°46'58"	15.167	7751027.033	356421.868	28.968
O5A1	N1244	BE	144°27'13"	33°03'55"	15.604	7751028.123	356421.090	28.893
O5A1	N1245	PTC	149°28'57"	38°05'39"	17.325	7751028.681	356423.265	28.954
O5A1	N1246	BE	133°02'10"	21°38'52"	29.084	7751042.079	356423.306	28.674
O5A1	N1247	BE	131°00'54"	19°37'36"	40.107	7751052.823	356426.048	28.518
O5A1	N1248	BE	131°01'43"	19°38'25"	52.163	7751064.174	356430.109	28.281
O5A1	N1249	BE	131°15'56"	19°52'38"	65.210	7751076.372	356434.748	27.923
O5A1	N1250	BE	124°54'00"	13°30'42"	67.139	7751080.327	356428.263	28.073
O5A1	N1251	BE	122°40'46"	11°17'28"	58.371	7751072.287	356424.005	28.193
O5A1	N1252	BE	118°11'55"	6°48'37"	55.041	7751069.698	356419.103	28.311

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5A1	N1253	BE	110°56'37"	359°33'19"	53.388	7751068.433	356412.162	28.997
O5A1	N1254	PV	112°42'55"	1°19'37"	55.274	7751070.306	356413.856	28.895
O5A1	N1255	BE	113°44'50"	2°21'32"	47.489	7751062.496	356414.531	28.481
O5A1	N1256	BE	114°16'22"	2°53'04"	46.912	7751061.899	356414.937	28.469
O5A1	N1257	MF	114°15'31"	2°52'13"	46.506	7751061.494	356414.905	28.477
O5A1	N1258	MF	108°13'22"	356°50'04"	35.481	7751050.474	356410.617	28.623
O5A1	N1259	MF	106°20'44"	354°57'26"	36.395	7751051.300	356409.377	28.682
O5A1	N1260	MF	105°53'01"	354°29'43"	35.550	7751050.433	356409.166	28.702
O5A1	N1261	MF	106°28'49"	355°05'31"	33.637	7751048.560	356409.698	28.645
O5A1	N1262	MF	100°49'40"	349°26'22"	29.016	7751043.571	356407.258	28.727
O5A1	N1263	EXA	17°53'27"	266°30'09"	27.815	7751013.349	356384.813	29.372
O5A1	N1264	EXA	54°03'39"	302°40'21"	19.500	7751025.573	356396.162	29.111
O5A1	N1265	EXA	81°37'03"	330°13'45"	19.761	7751032.199	356402.764	28.958
O5A1	N1266	EXA	105°03'19"	353°40'01"	27.390	7751042.269	356409.555	28.784
O5A1	N1267	EXA	116°46'31"	5°23'13"	41.012	7751055.877	356416.427	28.482
O5A1	N1268	EXA	121°53'42"	10°30'24"	49.201	7751063.422	356421.548	28.397
O5A1	N1269	EXC	115°52'57"	4°29'39"	51.329	7751066.217	356416.598	28.415
O5A1	N1270	EXA	116°48'57"	5°25'39"	51.697	7751066.512	356417.466	28.372
O5A1	N1271	EXA	125°23'22"	14°00'04"	51.267	7751064.790	356424.980	28.378
O5A1	N1272	EXA	127°27'33"	16°04'15"	66.225	7751078.684	356430.909	28.041
O5A1	N1273	PVA	134°14'54"	22°51'36"	59.713	7751070.069	356435.774	28.535
O5A1	N1274	CX	132°48'10"	21°24'52"	64.208	7751074.822	356436.019	28.067
O5A1	N1275	CX	131°57'39"	20°34'21"	64.196	7751075.148	356435.134	28.050
O5A1	N1276	CX	131°55'32"	20°32'14"	65.105	7751076.013	356435.416	28.030
O5A1	N1277	CX	135°35'46"	24°12'28"	55.463	7751065.632	356435.319	28.853
O5A1	N1278	CX	135°36'24"	24°13'06"	54.810	7751065.032	356435.060	28.843
O5A1	N1279	CX	136°25'36"	25°02'18"	54.785	7751064.683	356435.763	28.920
O5A1	N1280	CX	138°26'30"	27°03'12"	55.024	7751064.050	356437.602	29.207
O5A1	N1281	CX	138°24'58"	27°01'40"	54.296	7751063.412	356437.249	29.151
O5A1	N1282	CX	139°12'55"	27°49'37"	55.040	7751063.722	356438.269	29.273
O5A1	N1283	CX	139°10'12"	27°46'54"	56.554	7751065.081	356438.936	29.392
O5A1	N1284	CX	139°14'33"	27°51'15"	56.023	7751064.578	356438.751	29.419
O5A1	N1285	CX	139°49'23"	28°26'05"	56.067	7751064.349	356439.273	29.420
O5A1	N1286	CX	140°40'36"	29°17'18"	55.546	7751063.492	356439.750	29.492
O5A1	N1288	CX	139°52'29"	28°29'11"	55.428	7751063.763	356439.013	29.369
O5A1	N1290	CX	139°52'44"	28°29'26"	56.523	7751064.724	356439.539	29.411
O5A1	N1291	CX	141°04'55"	29°41'37"	51.407	7751059.703	356438.041	29.398
O5A1	N1292	CX	141°47'15"	30°23'57"	51.498	7751059.464	356438.635	29.467
O5A1	N1293	CX	141°54'53"	30°31'35"	50.808	7751058.812	356438.383	29.447
O5A1	N1294	CX	141°49'12"	30°25'54"	50.676	7751058.741	356438.244	29.446
O5A1	N1295	CX	141°01'45"	29°38'27"	50.501	7751058.939	356437.552	29.442
O5A1	N1296	CX	141°12'10"	29°48'52"	49.710	7751058.177	356437.292	29.424
O5A1	N1297	CX	141°38'02"	30°14'44"	49.706	7751057.986	356437.613	29.455
O5A1	N1298	CX	142°11'51"	30°48'33"	49.835	7751057.848	356438.101	29.492
O5A1	N1299	CX	142°22'50"	30°59'32"	49.275	7751057.287	356437.949	29.519
O5A1	N1300	COTA	141°34'03"	30°10'45"	50.046	7751058.309	356437.735	28.622
O5A1	N1301	CX	143°24'45"	32°01'27"	45.556	7751053.670	356436.733	29.475
O5A1	N1302	CX	142°34'32"	31°11'14"	45.389	7751053.876	356436.080	29.409
O5A1	N1303	CX	143°45'24"	32°22'06"	44.703	7751052.804	356436.508	29.490
O5A1	N1304	CX	143°58'22"	32°35'04"	44.367	7751052.430	356436.470	29.490
O5A1	N1305	CX	143°18'16"	31°54'58"	44.185	7751052.551	356435.936	29.427
O5A1	N1306	CX	143°34'26"	32°11'08"	43.514	7751051.873	356435.754	29.402
O5A1	N1307	PTC	139°56'28"	28°33'10"	43.848	7751053.561	356433.534	29.085
O5A1	N1308	SOL	145°31'48"	34°08'30"	41.741	7751049.593	356436.003	29.628
O5A1	N1309	CX	146°08'21"	34°45'03"	38.604	7751046.765	356434.581	29.418
O5A1	N1310	CX	145°09'43"	33°46'25"	38.358	7751046.931	356433.900	29.423
O5A1	N1311	CX	145°35'16"	34°11'58"	37.503	7751046.064	356433.656	29.442

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5A1	N1312	CX	147°11'30"	35°48'12"	37.460	7751045.427	356434.491	29.469
O5A1	N1313	CX	146°19'44"	34°56'26"	37.216	7751045.554	356433.891	29.469
O5A1	N1314	CX	146°40'35"	35°17'17"	36.557	7751044.886	356433.695	29.469
O5A1	N1315	PTC	180°35'42"	69°12'24"	28.613	7751025.204	356439.326	29.847
O5A1	N1316	CX	237°21'36"	125°58'18"	15.455	7751005.968	356425.084	29.759
O5A1	N1317	CX	236°46'27"	125°23'09"	13.291	7751007.350	356423.412	29.542
O5A1	N1318	CX	253°30'05"	142°06'47"	13.072	7751004.729	356420.604	29.651
O5A1	N1319	CX	248°11'50"	136°48'32"	15.290	7751003.899	356423.041	29.766
O5A1	N1320	COTA	243°22'21"	131°59'03"	14.112	7751005.607	356423.066	27.673
O5A1	N1321	CA	213°31'43"	102°08'25"	16.574	7751011.561	356428.779	29.641
O5A1	N1322	CA	197°34'51"	86°11'33"	19.784	7751016.360	356432.317	29.553
O5A1	N1323	POR	197°34'38"	86°11'20"	19.996	7751016.375	356432.528	29.715
O5A1	N1324	POR	186°41'32"	75°18'14"	24.891	7751021.361	356436.653	29.722
O5A1	N1325	SOL	191°44'04"	80°20'46"	22.523	7751018.823	356434.781	29.700
O5A1	N1326	MUR	173°53'55"	62°30'37"	37.837	7751032.511	356446.141	30.271
O5A1	N1327	CA	162°46'06"	51°22'48"	36.180	7751037.628	356440.844	30.522
O5A1	N1328	CA	163°12'44"	51°49'26"	31.172	7751034.313	356437.081	30.164
O5A1	N1329	CA	163°12'28"	51°49'10"	27.911	7751032.299	356434.516	29.687
O5A1	N1330	CA	156°37'13"	45°13'55"	26.481	7751033.695	356431.377	29.452
O5A1	N1331	CA	146°25'11"	35°01'53"	38.888	7751046.889	356434.899	29.468
O5A1	N1332	CA	140°32'34"	29°09'16"	56.523	7751064.408	356440.112	29.521
O5A1	N1333	MUR	135°11'22"	23°48'04"	57.042	7751067.237	356435.596	28.692
O5A1	N1334	POR	135°11'44"	23°48'26"	57.726	7751067.860	356435.878	28.635
O5A1	N1335	POR	135°13'32"	23°50'14"	65.124	7751074.615	356438.895	28.621
O5A1	N1336	SOL	135°13'28"	23°50'10"	62.287	7751072.021	356437.748	28.689
O5A1	N1337	MUR	135°13'33"	23°50'15"	65.193	7751074.678	356438.924	28.596
O5A1	N1338	COTA	119°07'19"	7°44'01"	69.077	7751083.495	356421.872	28.216
O5A1	N1339	PTC	110°26'44"	359°03'26"	65.529	7751080.566	356411.498	28.583
O5A1	N1340	COTA	111°25'48"	0°02'30"	73.473	7751088.520	356412.630	28.612
O5A1	N1341	COTA	107°52'51"	356°29'33"	63.248	7751078.176	356408.707	29.915
O5A1	N1342	COTA	106°57'32"	355°34'14"	67.261	7751082.107	356407.382	28.935
O5A1	N1343	COTA	103°41'26"	352°18'08"	65.466	7751079.922	356403.807	31.360
O5A1	N1344	COTA	102°38'18"	351°15'00"	69.684	7751083.920	356401.976	31.382
O5A1	N1345	COTA	102°47'41"	351°24'23"	70.067	7751084.327	356402.106	30.274
O5A1	N1346	DIV	102°46'53"	351°23'35"	71.349	7751085.591	356401.899	29.109
O5A1	N1347	DIV	99°17'34"	347°54'16"	64.029	7751077.654	356399.159	29.758
O5A1	N1348	COTA	105°53'28"	354°30'10"	58.433	7751073.211	356406.979	30.187
O5A1	N1349	COTA	99°01'45"	347°38'27"	63.607	7751077.180	356398.962	31.776
O5A1	N1350	EXA	127°33'52"	16°10'34"	40.497	7751053.940	356423.858	28.538
O5A1	N1351	EXA	127°35'32"	16°12'14"	29.494	7751043.368	356420.807	28.754
O5A1	N1352	EXA	133°58'04"	22°34'46"	16.084	7751029.898	356418.752	28.941
O5A1	N1353	EXA	154°11'20"	42°48'02"	9.311	7751021.878	356418.903	29.059
O5A1	N1354	EXA	183°30'20"	72°07'02"	14.765	7751019.580	356426.628	29.332
O5A1	N1355	EXA	172°52'40"	61°29'22"	27.473	7751028.160	356436.717	29.804
O5A1	N1356	EXA	168°44'57"	57°21'39"	36.453	7751034.707	356443.272	30.320
O5A1	N1357	EXA	237°19'10"	125°55'52"	8.793	7751009.887	356419.696	29.331
O5A1	N1358	COTA	315°27'21"	204°04'03"	42.283	7750976.439	356395.333	27.579
O5A1	N1359	COTA	112°27'35"	1°04'17"	55.455	7751070.491	356413.613	26.531
O5A1	N1360	COTA	134°20'02"	22°56'44"	59.663	7751069.988	356435.836	27.875
O5A1	N1361	TUBO	134°07'50"	22°44'32"	59.833	7751070.227	356435.707	27.927
O5A1	N1362	TUBO	134°08'02"	22°44'44"	59.481	7751069.901	356435.574	27.948
O5A1	N1363	REG	134°04'01"	22°40'43"	59.675	7751070.107	356435.584	28.005
O5A1	N1364	TUBO	134°14'58"	22°51'40"	59.943	7751070.281	356435.864	28.113
O5A1	N1365	TUBO	134°14'20"	22°51'02"	59.474	7751069.853	356435.672	28.150
O5A1	N1366	COTA	359°23'28"	248°00'10"	93.720	7750979.942	356325.679	37.627
O5A1	N1367	COTA	359°01'24"	247°38'06"	102.602	7750976.006	356317.692	39.346
O5A1	N1368	COTA	358°13'27"	246°50'09"	111.794	7750971.071	356309.795	39.291

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O5A1	N1369	COTA	357°47'31"	246°24'13"	119.537	7750967.197	356303.034	40.181
O5A1	N1370	COTA	357°07'53"	245°44'35"	130.238	7750961.541	356293.836	41.132
O5A1	N1371	COTA	356°26'44"	245°03'26"	142.094	7750955.124	356283.736	41.177
O5A1	N1372	COTA	358°09'39"	246°46'21"	130.018	7750963.769	356293.096	41.884
O5A1	N1373	COTA	359°02'04"	247°38'46"	122.311	7750968.528	356299.456	41.947
O5A1	N1374	COTA	0°46'42"	249°23'24"	112.560	7750975.425	356307.221	42.063
O5A1	N1375	COTA	359°40'26"	248°17'08"	111.337	7750973.854	356309.140	41.326
O5A1	N1376	COTA	0°29'36"	249°06'18"	104.432	7750977.800	356315.012	41.333
O5A1	N1377	COTA	2°10'46"	250°47'28"	105.138	7750980.454	356313.291	42.167
O5A1	N1378	COTA	3°30'14"	252°06'56"	98.865	7750984.685	356318.489	42.119
O5A1	N1379	COTA	2°17'09"	250°53'51"	96.799	7750983.368	356321.107	41.738
O5A1	N1380	LUM	1°42'04"	250°18'46"	107.089	7750978.970	356311.747	42.225
O5A1	N1381	LUM	358°58'17"	247°34'59"	124.052	7750967.740	356297.898	42.096
O5A1	N1382	LUM	357°17'49"	245°54'31"	137.125	7750959.073	356287.396	41.685
O5A1	N1383	LUM	355°48'36"	244°25'18"	149.354	7750950.564	356277.859	41.299
O7	O7A	AUXILIAR	11°23'44"	275°06'57"	79.828	7750861.871	356302.775	35.149
O7	N1383	LUM	343°54'43"	247°37'56"	66.695	7750829.372	356320.608	36.299
O7	N1384	CANT	344°32'27"	248°15'40"	66.962	7750829.952	356320.085	36.344
O7	N1385	CANT	343°16'34"	246°59'47"	66.754	7750828.666	356320.838	36.437
O7	N1386	COTA	342°39'41"	246°22'54"	60.206	7750830.632	356327.122	36.375
O7	N1387	COTA	336°08'12"	239°51'25"	52.509	7750828.385	356336.876	36.770
O7	N1388	ARV	340°36'13"	244°19'26"	53.815	7750831.436	356333.784	36.403
O7	N1389	ARV	354°44'17"	258°27'30"	56.746	7750843.399	356326.686	35.766
O7	N1390	COTA	350°33'24"	254°16'37"	59.456	7750838.641	356325.053	35.910
O7	N1391	COTA	347°33'07"	251°16'20"	50.678	7750838.482	356334.290	35.941
O7	N1392	COTA	343°27'13"	247°10'26"	42.955	7750838.089	356342.694	36.153
O7	N1393	COTA	339°07'46"	242°50'59"	34.706	7750838.916	356351.403	36.142
O7	N1394	COTA	324°32'23"	228°15'36"	38.721	7750828.974	356353.392	36.853
O7	N1395	COTA	305°57'34"	209°40'47"	33.411	7750825.725	356365.741	37.253
O7	N1396	COTA	291°24'31"	195°07'44"	32.818	7750823.072	356373.719	37.646
O7	N1397	COTA	276°57'33"	180°40'46"	34.778	7750819.977	356381.872	38.170
O7	N1398	COTA	266°27'19"	170°10'32"	39.553	7750815.779	356389.034	38.476
O7	N1399	COTA	284°06'59"	187°50'12"	24.770	7750830.214	356378.907	38.045
O7	N1400	COTA	297°02'59"	200°46'12"	20.924	7750835.189	356374.865	37.773
O7	N1401	COTA	320°27'25"	224°10'38"	15.572	7750843.584	356371.432	37.436
O7	N1402	COTA	327°18'39"	231°01'52"	23.670	7750839.867	356363.882	36.572
O7	N1403	ARV	308°24'43"	212°07'56"	27.103	7750831.801	356367.869	36.889
O7	N1404	ARV	316°58'21"	220°41'34"	35.486	7750827.847	356359.148	37.158
O7	N1405	ARV	333°23'30"	237°06'43"	41.818	7750832.046	356347.168	36.441
O7	N1406	ARV	345°09'58"	248°53'11"	37.382	7750841.287	356347.412	35.923
O7	N1407	ARV	350°56'50"	254°40'03"	42.784	7750843.440	356341.024	35.858
O7	N1408	ARV	357°41'31"	261°24'44"	32.940	7750849.834	356349.714	35.800
O7	N1409	ARV	356°33'10"	260°16'23"	32.952	7750849.185	356349.806	35.798
O7	N1410	ARV	355°27'53"	259°11'06"	32.999	7750848.561	356349.872	35.796
O7	N1411	ARV	346°27'03"	250°10'16"	27.626	7750845.382	356356.297	36.089
O7	N1412	ARV	336°42'09"	240°25'22"	19.176	7750845.287	356365.607	36.597
O7	N1413	ARV	2°19'09"	266°02'22"	22.258	7750853.215	356360.080	35.896
O7	N1414	ARV	21°16'31"	284°59'44"	15.381	7750858.732	356367.427	36.862
O7	N1415	ARV	33°09'54"	296°53'07"	27.965	7750867.399	356357.343	35.120
O7	N1416	ARV	35°43'46"	299°26'59"	33.376	7750871.163	356353.221	34.636
O7	N1417	ARV	19°29'47"	283°13'00"	32.540	7750862.193	356350.606	35.088
O7	N1418	ARV	12°51'17"	276°34'30"	42.793	7750859.653	356339.773	35.042
O7	N1419	ARV	3°29'19"	267°12'32"	49.037	7750852.365	356333.306	35.382
O7	N1420	COTA	3°08'24"	266°51'37"	43.848	7750852.351	356338.503	35.395
O7	N1421	COTA	20°19'32"	284°02'45"	48.400	7750866.499	356335.332	34.685
O7	N1422	COTA	22°27'30"	286°10'43"	41.014	7750866.181	356342.894	34.645
O7	N1423	COTA	27°35'28"	291°18'41"	33.871	7750867.063	356350.730	34.878

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
07	N1424	COTA	32°37'37"	296°20'50"	42.416	7750873.577	356344.275	34.308
07	N1425	COTA	33°50'50"	297°34'03"	50.107	7750877.942	356337.866	34.099
07	N1426	ARV	36°59'48"	300°43'01"	43.269	7750876.855	356345.086	34.129
07	N1427	ARV	41°41'13"	305°24'26"	43.692	7750880.067	356346.673	34.028
07	N1428	ARV	47°44'17"	311°27'30"	39.406	7750880.843	356352.752	34.119
07	N1429	ARV	58°30'52"	322°14'05"	39.680	7750886.121	356357.983	33.951
07	N1430	ARV	60°55'19"	324°38'32"	46.649	7750892.797	356355.290	32.941
07	N1431	COTA	47°58'10"	311°41'23"	43.038	7750883.377	356350.146	33.290
07	N1432	COTA	52°01'30"	315°44'43"	34.830	7750879.700	356357.979	33.839
07	N1433	COTA	53°35'47"	317°19'00"	27.205	7750874.752	356363.841	34.962
07	N1434	COTA	70°32'02"	334°15'15"	35.841	7750887.036	356366.716	35.255
07	N1435	COTA	79°33'05"	343°16'18"	43.840	7750896.738	356369.666	34.807
07	N1436	LUM	84°50'10"	348°33'23"	46.463	7750900.292	356373.066	34.794
07	N1437	CANT	83°53'31"	347°36'44"	46.457	7750900.128	356372.318	34.806
07	N1438	CANT	85°38'56"	349°22'09"	46.205	7750900.165	356373.761	35.067
07	N1439	CANT	63°20'27"	327°03'40"	64.518	7750908.899	356347.204	32.503
07	N1441	CANT	62°33'10"	326°16'23"	65.721	7750909.413	356345.794	32.563
07	N1442	LUM	62°57'30"	326°40'43"	64.993	7750909.061	356346.582	32.471
07	N1443	COTA	64°21'12"	328°04'25"	60.634	7750906.214	356350.220	32.796
07	N1444	COTA	64°20'19"	328°03'32"	53.292	7750899.976	356354.091	33.287
07	N1445	COTA	56°23'50"	320°07'03"	56.340	7750897.986	356346.158	33.370
07	N1446	COTA	47°51'18"	311°34'31"	51.356	7750888.833	356343.866	33.607
07	N1447	CX	47°44'32"	311°27'45"	54.919	7750891.116	356341.129	33.544
07	N1448	CX	49°16'31"	312°59'44"	55.471	7750892.581	356341.713	33.424
07	N1449	CX	49°13'13"	312°56'26"	55.980	7750892.889	356341.304	33.491
07	N1450	CX	49°07'34"	312°50'47"	53.837	7750891.364	356342.813	33.626
07	N1451	CX	49°21'26"	313°04'39"	53.099	7750891.019	356343.499	33.624
07	N1452	CX	48°42'57"	312°26'10"	52.927	7750890.467	356343.223	33.634
07	N1453	CX	50°42'05"	314°25'18"	56.306	7750894.163	356342.070	33.431
07	N1454	CX	51°25'27"	315°08'40"	56.637	7750894.902	356342.337	33.501
07	N1455	CX	51°09'58"	314°53'11"	57.255	7750895.158	356341.719	33.505
07	N1456	CX	51°24'39"	315°07'52"	57.363	7750895.407	356341.816	33.444
07	N1457	CX	51°45'44"	315°28'57"	56.944	7750895.356	356342.360	33.481
07	N1458	CX	52°20'44"	316°03'57"	57.187	7750895.935	356342.606	33.418
07	N1459	CANT	249°17'37"	153°00'50"	8.503	7750847.176	356386.143	37.320
07	N1460	CANT	239°54'37"	143°37'50"	8.870	7750847.611	356387.544	37.311
07	N1461	LUM	243°33'12"	147°16'25"	8.864	7750847.296	356387.077	37.311
07	N1462	ARV	247°59'15"	151°42'28"	2.793	7750852.294	356383.608	37.207
07	N1463	ARV	86°56'46"	350°39'59"	8.945	7750863.580	356380.834	36.748
07	N1464	ARV	88°44'48"	352°28'01"	18.207	7750872.803	356379.898	36.368
07	N1465	ARV	91°27'52"	355°11'05"	28.910	7750883.561	356379.858	35.870
07	N1466	COTA	98°32'05"	2°15'18"	49.541	7750904.255	356384.234	34.873
07	N1467	COTA	94°30'15"	358°13'28"	39.346	7750894.080	356381.066	35.356
07	N1468	COTA	94°29'38"	358°12'51"	39.367	7750894.101	356381.058	35.354
07	N1469	COTA	90°06'25"	353°49'38"	23.953	7750878.566	356379.709	36.088
07	N1470	ARV	251°34'55"	155°18'08"	14.707	7750841.391	356388.430	37.653
07	N1471	ARV	250°45'58"	154°29'11"	22.387	7750834.548	356391.927	37.878
07	N1472	ARV	245°35'03"	149°18'16"	32.163	7750827.096	356398.703	38.119
07	N1473	ARV	244°05'00"	147°48'13"	43.312	7750818.101	356405.362	38.364
07	N1474	ARV	237°57'26"	141°40'39"	63.416	7750805.001	356421.608	38.474
07	N1475	COTA	241°32'39"	145°15'52"	54.473	7750809.987	356413.323	38.468
07	N1476	CANT	234°58'55"	138°42'08"	72.809	7750800.052	356430.336	38.497
07	N1477	CANT	233°49'10"	137°32'23"	72.202	7750801.486	356431.027	38.489
07	N1478	PTC	234°26'03"	138°09'16"	72.201	7750800.967	356430.452	38.491
07	N1479	COTA	230°27'47"	134°11'00"	81.477	7750797.967	356440.713	38.321
07	N1480	MF	228°06'29"	131°49'42"	88.505	7750795.728	356448.234	38.084
07	N1481	MF	227°57'57"	131°41'10"	88.480	7750795.909	356448.361	38.108

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
07	N1482	MF	227°51'28"	131°34'41"	88.320	7750796.140	356448.353	38.107
07	N1483	TMF	228°04'28"	131°47'41"	88.427	7750795.819	356448.210	38.207
07	N1484	MF	230°19'46"	134°02'59"	84.202	7750796.209	356442.803	38.156
07	N1485	MF	229°02'47"	132°46'00"	82.581	7750798.679	356442.910	38.176
07	N1486	MF	233°56'55"	137°40'08"	77.087	7750797.765	356434.196	38.344
07	N1487	MF	231°02'48"	134°46'01"	75.306	7750801.720	356435.750	38.207
07	N1488	MF	240°29'25"	144°12'38"	65.842	7750801.344	356420.789	38.463
07	N1489	MF	233°50'49"	137°34'02"	64.668	7750807.023	356425.918	38.255
07	N1490	MF	236°10'52"	139°54'05"	54.848	7750812.798	356417.612	38.192
07	N1491	MF	245°38'20"	149°21'33"	57.313	7750805.442	356411.494	38.583
07	N1492	MF	250°42'53"	154°26'06"	41.170	7750817.614	356400.051	38.383
07	N1493	MF	237°57'30"	141°40'43"	45.316	7750819.201	356410.383	38.122
07	N1494	TMF	238°06'29"	141°49'42"	45.301	7750819.139	356410.282	38.280
07	N1495	MF	255°49'52"	159°33'05"	30.513	7750826.163	356392.945	38.153
07	N1496	TMF	255°35'41"	159°18'54"	30.497	7750826.221	356393.057	38.361
07	N1497	MF	239°28'37"	143°11'50"	30.841	7750830.059	356400.760	37.863
07	N1498	MF	266°28'32"	170°11'45"	17.839	7750837.174	356385.322	37.816
07	N1499	MF	235°56'01"	139°39'14"	17.082	7750841.734	356393.343	37.496
07	N1500	MF	300°34'50"	204°18'03"	6.009	7750849.276	356379.812	37.318
07	N1501	MF	198°13'34"	101°56'47"	6.079	7750853.494	356388.232	36.933
07	N1502	MF	27°31'01"	291°14'14"	4.804	7750856.493	356377.807	37.048
07	N1503	MF	108°44'14"	12°27'27"	11.404	7750865.888	356384.745	36.414
07	N1504	MF	99°15'34"	2°58'47"	21.140	7750875.865	356383.384	35.985
07	N1505	MF	65°30'36"	329°13'49"	11.706	7750864.811	356376.296	36.716
07	N1506	MF	81°04'23"	344°47'36"	23.996	7750877.908	356375.991	36.134
07	N1507	MF	97°43'34"	1°26'47"	30.513	7750885.256	356383.055	35.626
07	N1508	MF	87°52'08"	351°35'21"	33.637	7750888.028	356377.365	35.651
07	N1509	MF	98°24'43"	2°07'56"	40.455	7750895.179	356383.790	35.181
07	N1510	MF	93°50'28"	357°33'41"	43.432	7750898.145	356380.437	35.088
07	N1511	MF	100°01'08"	3°44'21"	49.739	7750904.385	356385.528	34.725
07	N1512	MF	97°30'18"	1°13'31"	50.328	7750905.069	356383.361	34.817
07	N1513	MF	101°06'09"	4°49'22"	56.173	7750910.727	356387.007	34.416
07	N1514	MF	100°47'31"	4°30'44"	56.665	7750911.242	356386.743	34.406
07	N1515	MF	100°25'54"	4°09'07"	56.517	7750911.121	356386.377	34.413
07	N1516	TMF	100°29'13"	4°12'26"	56.422	7750911.023	356386.424	34.568
07	N1517	MF	90°41'34"	354°24'47"	50.473	7750904.986	356377.371	34.931
07	N1518	MF	90°53'25"	354°36'38"	50.249	7750904.779	356377.565	34.938
07	N1519	TMF	90°49'07"	354°32'20"	50.261	7750904.786	356377.501	35.098
07	N1520	MF	83°07'57"	346°51'10"	50.470	7750903.900	356370.805	34.388
07	N1521	MF	87°44'41"	351°27'54"	45.554	7750899.802	356375.524	35.283
07	N1522	MF	75°17'40"	339°00'53"	53.508	7750904.712	356363.122	33.771
07	N1523	MF	81°44'28"	345°27'41"	37.715	7750891.260	356372.817	35.769
07	N1524	MF	76°22'11"	340°05'24"	31.888	7750884.735	356371.425	36.121
07	N1525	MF	69°38'45"	333°21'58"	26.236	7750878.205	356370.523	36.422
07	N1526	MF	68°58'07"	332°41'20"	60.195	7750908.237	356354.666	32.958
07	N1527	MF	60°14'27"	323°57'40"	20.411	7750871.257	356370.276	36.711
07	N1528	MF	48°49'28"	312°32'41"	15.974	7750865.554	356370.516	36.947
07	N1529	MF	66°40'41"	330°23'54"	65.943	7750912.089	356349.711	32.578
07	N1530	MF	23°42'44"	287°25'57"	11.381	7750858.162	356371.426	37.267
07	N1531	MF	332°34'36"	236°17'49"	10.434	7750848.963	356373.604	37.574
07	N1532	MF	65°53'24"	329°36'37"	69.607	7750914.796	356347.072	32.298
07	N1533	MF	65°28'36"	329°11'49"	70.233	7750915.078	356346.319	32.262
07	N1534	MF	294°49'59"	198°33'12"	16.106	7750839.484	356377.160	37.882
07	N1535	MF	65°00'52"	328°44'05"	70.115	7750914.686	356345.895	32.267
07	N1536	TMF	65°00'01"	328°43'14"	70.045	7750914.617	356345.916	32.485
07	N1537	MF	279°34'59"	183°18'12"	22.573	7750832.218	356380.984	38.131
07	N1538	TMF	279°43'59"	183°27'12"	22.647	7750832.146	356380.920	38.285

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
07	N1539	MF	271°17'29"	175°00'42"	28.547	7750826.314	356384.767	38.351
07	N1540	MF	55°50'51"	319°34'04"	62.764	7750902.527	356341.579	32.832
07	N1541	MF	266°07'12"	169°50'25"	33.481	7750821.797	356388.190	38.474
07	N1542	MF	44°24'07"	308°07'20"	57.303	7750890.128	356337.205	33.475
07	N1543	MF	257°23'36"	161°06'49"	47.456	7750809.852	356397.646	38.563
07	N1544	MF	257°43'42"	161°26'55"	47.650	7750809.579	356397.444	38.550
07	N1545	MF	34°10'06"	297°53'19"	54.945	7750880.453	356333.721	33.989
07	N1546	MF	23°09'09"	286°52'22"	54.463	7750870.560	356330.166	34.546
07	N1547	MF	265°21'23"	169°04'36"	43.605	7750811.937	356390.548	38.495
07	N1548	MF	11°35'42"	275°18'55"	56.119	7750859.952	356326.407	35.139
07	N1549	MF	277°22'22"	181°05'35"	39.709	7750815.051	356381.527	38.344
07	N1550	MF	0°15'23"	263°58'36"	60.364	7750848.419	356322.254	35.687
07	N1551	MF	291°50'30"	195°33'43"	38.101	7750818.049	356372.063	38.134
07	N1552	MF	351°06'20"	254°49'33"	66.168	7750837.433	356318.424	36.033
07	N1553	TMF	350°56'56"	254°40'09"	66.146	7750837.264	356318.493	36.191
07	N1554	MF	302°57'47"	206°41'00"	38.955	7750819.947	356364.792	37.940
07	N1555	MF	343°45'39"	247°28'52"	73.242	7750826.702	356314.627	36.323
07	N1556	MF	315°37'52"	219°21'05"	42.418	7750821.952	356355.389	37.720
07	N1557	MF	342°12'28"	245°55'41"	75.162	7750824.095	356313.659	36.367
07	N1558	MF	324°16'02"	227°59'15"	47.204	7750823.160	356347.212	37.438
07	N1559	MF	341°47'40"	245°30'53"	75.082	7750823.634	356313.955	36.420
07	N1560	MF	330°28'16"	234°11'29"	52.705	7750823.916	356339.542	37.226
07	N1561	MF	338°38'15"	242°21'28"	66.104	7750824.084	356323.726	36.767
07	N1562	MF	335°30'52"	239°14'05"	59.641	7750824.245	356331.037	36.989
07	N1563	MF	343°34'39"	247°17'52"	84.225	7750822.247	356304.585	36.247
07	N1564	MF	343°40'21"	247°23'34"	83.628	7750822.605	356305.083	36.262
07	N1565	MF	344°47'17"	248°30'30"	94.198	7750820.242	356294.636	36.047
07	N1566	MF	345°27'30"	249°10'43"	105.416	7750817.282	356283.753	35.833
07	N1567	MF	351°37'27"	255°20'40"	74.888	7750835.806	356309.833	36.032
07	N1568	MF	345°33'16"	249°16'29"	114.942	7750814.076	356274.780	35.663
07	N1569	MF	345°21'48"	249°05'01"	126.607	7750809.554	356264.020	35.562
07	N1570	MF	11°50'55"	275°34'08"	63.818	7750860.946	356318.768	34.989
07	N1571	MF	345°23'07"	249°06'20"	127.792	7750809.176	356262.896	35.479
07	N1572	TMF	345°24'54"	249°08'07"	127.535	7750809.330	356263.113	35.606
07	N1573	MF	345°33'39"	249°16'52"	127.155	7750809.768	356263.353	35.485
07	N1574	MF	0°08'59"	263°52'12"	68.768	7750847.410	356313.910	35.705
07	N1575	MF	347°17'04"	251°00'17"	117.045	7750816.656	356271.613	35.737
07	N1576	MF	15°10'56"	278°54'09"	63.012	7750864.504	356320.032	34.801
07	N1577	TMF	15°08'58"	278°52'11"	63.128	7750864.486	356319.911	35.003
07	N1578	MF	351°20'04"	255°03'17"	101.551	7750828.563	356284.169	35.712
07	N1579	MF	26°27'50"	290°11'03"	61.934	7750876.122	356324.155	34.216
07	N1580	MF	26°27'38"	290°10'51"	62.173	7750876.202	356323.929	34.236
07	N1581	MF	17°03'52"	280°47'05"	66.159	7750867.133	356317.294	34.745
07	N1582	MF	353°47'49"	257°31'02"	94.743	7750834.275	356289.782	35.702
07	N1583	MF	11°11'53"	274°55'06"	69.963	7750860.751	356312.579	35.005
07	N1584	MF	4°31'08"	268°14'21"	76.421	7750852.405	356305.900	35.353
07	N1585	MF	359°08'18"	262°51'31"	83.939	7750844.318	356298.997	35.566
07	N1586	CX	21°38'13"	285°21'26"	63.327	7750871.524	356321.219	34.722
07	N1587	CX	22°07'08"	285°50'21"	63.243	7750872.014	356321.443	34.716
07	N1588	CX	22°05'33"	285°48'46"	62.684	7750871.834	356321.972	34.699
07	N1589	BE	26°42'44"	290°25'57"	69.653	7750879.069	356317.014	34.118
07	N1590	BE	24°56'01"	288°39'14"	70.738	7750877.379	356315.262	34.226
07	N1591	BE	24°26'36"	288°09'49"	70.868	7750876.845	356314.948	34.263
07	N1592	BE	25°27'59"	289°11'12"	71.148	7750878.135	356315.089	34.201
07	N1593	BE	25°13'38"	288°56'51"	70.838	7750877.754	356315.285	34.206
07	N1594	BE	24°09'51"	287°53'04"	71.470	7750876.701	356314.268	34.316
07	N1595	MF	25°38'46"	289°21'59"	74.646	7750879.506	356311.862	34.322

RELATÓRIO DE IRRADIAÇÕES

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CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
07	N1596	MF	28°15'23"	291°58'36"	74.794	7750882.743	356312.925	33.910
07	N1597	MF	29°22'07"	293°05'20"	77.486	7750885.140	356311.005	33.781
07	N1598	CX	29°00'57"	292°44'10"	78.368	7750885.041	356310.007	33.814
07	N1599	CXT	27°48'06"	291°31'19"	77.505	7750883.186	356310.183	33.980
07	N1600	CXT	26°12'18"	289°55'31"	73.772	7750879.894	356312.929	34.106
07	N1601	CXT	28°14'23"	291°57'36"	78.346	7750884.051	356309.623	33.974
07	N1602	CXT	27°27'16"	291°10'29"	77.774	7750882.846	356309.762	33.976
07	N1603	CXT	26°05'41"	289°48'54"	73.200	7750879.566	356313.419	34.137
07	N1604	CXT	26°53'59"	290°37'12"	72.869	7750880.415	356314.084	34.054
07	N1605	CXT	25°30'24"	289°13'37"	73.128	7750878.835	356313.235	34.339
07	N1606	CXT	25°26'42"	289°09'55"	72.211	7750878.459	356314.076	34.359
07	N1607	CXT	24°44'39"	288°27'52"	73.236	7750877.948	356312.819	34.437
07	N1608	CX	29°48'03"	293°31'16"	80.474	7750886.869	356308.497	33.787
07	N1609	CX	30°19'12"	294°02'25"	81.591	7750887.991	356307.771	33.839
07	N1610	CX	30°43'37"	294°26'50"	80.539	7750888.084	356308.967	33.772
07	N1611	CX	30°29'20"	294°12'33"	79.938	7750887.533	356309.377	33.776
07	N1612	BE	44°10'03"	307°53'16"	68.869	7750897.046	356327.932	33.059
07	N1613	MF	54°19'57"	318°03'10"	72.995	7750909.043	356333.492	32.469
07	N1614	MF	64°44'05"	328°27'18"	80.314	7750923.198	356340.267	31.746
07	N1615	BE	71°55'13"	335°38'26"	89.776	7750936.537	356345.256	31.208
07	N1616	CX	71°24'01"	335°07'14"	89.122	7750935.604	356344.790	31.244
07	N1617	CX	71°10'42"	334°53'55"	89.450	7750935.755	356344.338	31.247
07	N1618	CX	70°35'57"	334°19'10"	88.764	7750934.749	356343.819	31.287
07	N1619	PTC	75°24'29"	339°07'42"	98.044	7750946.363	356347.354	31.155
07	N1620	MUR	66°32'50"	330°16'03"	86.217	7750929.620	356339.525	31.662
07	N1621	CA	60°04'23"	323°47'36"	79.443	7750918.855	356335.358	32.195
07	N1622	CA	53°04'35"	316°47'48"	75.258	7750909.611	356330.764	32.854
07	N1623	PTC	53°50'10"	317°33'23"	74.819	7750909.965	356331.792	32.777
07	N1624	CA	51°41'04"	315°24'17"	77.805	7750910.156	356327.658	32.917
07	N1625	POR	51°19'21"	315°02'34"	77.833	7750909.830	356327.290	32.914
07	N1626	POR	46°53'04"	310°36'17"	76.388	7750904.469	356324.290	32.880
07	N1627	SOL	49°18'05"	313°01'18"	77.139	7750907.383	356325.889	32.942
07	N1628	CA	44°43'44"	308°26'57"	76.912	7750902.578	356322.050	32.968
07	N1629	CX	44°41'49"	308°25'02"	75.745	7750901.819	356322.938	32.986
07	N1630	CX	44°35'20"	308°18'33"	75.118	7750901.319	356323.341	32.991
07	N1631	CA	43°53'17"	307°36'30"	72.660	7750899.094	356324.724	33.132
07	N1632	CA	40°47'57"	304°31'10"	73.718	7750896.528	356321.546	33.443
07	N1633	CA	40°56'40"	304°39'53"	78.504	7750899.404	356317.716	33.814
07	N1634	CA	30°39'58"	294°23'11"	84.373	7750889.590	356305.439	33.886
07	N1635	CA	28°25'20"	292°08'33"	78.253	7750884.247	356309.803	33.837
07	N1636	CA	25°29'11"	289°12'24"	80.966	7750881.389	356305.825	34.995
07	N1637	CER	44°22'22"	308°05'35"	44.980	7750882.503	356346.885	33.920
07	N1638	CER	43°36'31"	307°19'44"	41.902	7750880.162	356348.966	34.132
07	N1639	CER	61°31'11"	325°14'24"	55.231	7750900.128	356350.795	33.157
07	N1640	CER	59°53'21"	323°36'34"	56.902	7750900.558	356348.526	33.041
07	N1641	MF	109°10'19"	12°53'32"	39.384	7750893.144	356391.072	34.951
07	N1642	MF	111°37'19"	15°20'32"	30.806	7750884.461	356390.435	35.334
07	N1643	TMF	111°51'21"	15°34'34"	30.838	7750884.459	356390.565	35.601
07	N1644	MF	120°54'16"	24°37'29"	20.910	7750873.761	356390.997	35.834
07	N1645	PTC	125°43'51"	29°27'04"	22.035	7750873.940	356393.119	36.127
07	N1646	BL	127°39'24"	31°22'37"	18.046	7750870.160	356391.681	35.980
07	N1647	BL	129°06'15"	32°49'28"	17.539	7750869.491	356391.792	36.019
07	N1648	BL	129°02'41"	32°45'54"	17.560	7750869.519	356391.788	36.164
07	N1649	MF	127°09'27"	30°52'40"	17.935	7750870.146	356391.489	36.011
07	N1650	MF	128°42'37"	32°25'50"	17.388	7750869.429	356391.610	36.050
07	N1651	MF	149°52'21"	53°35'34"	13.424	7750862.720	356393.089	36.368
07	N1652	MF	182°51'50"	86°35'03"	13.074	7750855.532	356395.335	36.652

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
07	N1653	MF	210°28'25"	114°11'38"	18.267	7750847.266	356398.947	37.139
07	N1654	MF	212°08'24"	115°51'37"	19.002	7750846.464	356399.384	37.134
07	N1655	BL	211°35'06"	115°18'19"	19.009	7750846.628	356399.469	37.001
07	N1656	BL	210°35'46"	114°18'59"	18.499	7750847.135	356399.142	37.013
07	N1657	BL	210°25'01"	114°08'14"	18.457	7750847.205	356399.128	37.192
07	N1658	PV	209°01'38"	112°44'51"	19.396	7750847.253	356400.172	37.351
07	N1659	PTC	212°54'53"	116°38'06"	21.418	7750845.151	356401.430	37.364
07	N1660	MF	215°23'04"	119°06'17"	22.690	7750843.716	356402.110	37.320
07	N1661	MF	217°07'46"	120°50'59"	28.712	7750840.030	356406.934	37.457
07	N1662	MF	216°03'17"	119°46'30"	34.558	7750837.591	356412.280	37.539
07	N1663	MF	213°28'32"	117°11'45"	39.708	7750836.605	356417.603	37.674
07	N1664	PTC	211°27'42"	115°10'55"	41.221	7750837.214	356419.588	37.893
07	N1665	MF	208°38'27"	112°21'40"	46.576	7750837.033	356425.359	37.792
07	N1666	TMF	208°32'26"	112°15'39"	46.515	7750837.132	356425.333	37.998
07	N1668	PTC	202°08'22"	105°51'35"	56.396	7750839.341	356436.534	38.222
07	N1669	MF	201°37'31"	105°20'44"	59.013	7750839.136	356439.193	38.078
07	N1670	MF	209°59'36"	113°42'49"	64.719	7750828.725	356441.539	38.001
07	N1671	MF	212°01'29"	115°44'42"	53.961	7750831.314	356430.889	38.009
07	N1672	MF	214°28'17"	118°11'30"	63.251	7750824.872	356438.032	37.804
07	N1673	MF	212°10'59"	115°54'12"	54.800	7750830.813	356431.579	38.017
07	N1674	MF	214°27'26"	118°10'39"	63.242	7750824.890	356438.032	37.803
07	N1675	MF	213°18'12"	117°01'25"	56.412	7750829.122	356432.537	37.975
07	N1676	MF	216°42'19"	120°25'32"	63.537	7750822.576	356437.072	37.763
07	N1677	MF	214°16'49"	118°00'02"	56.813	7750828.080	356432.447	37.980
07	N1678	MF	217°38'48"	121°22'01"	57.192	7750824.983	356431.118	37.936
07	N1679	MF	217°36'06"	121°19'19"	63.729	7750821.624	356436.725	37.724
07	N1680	TMF	217°38'00"	121°21'13"	57.086	7750825.050	356431.035	38.112
07	N1681	MF	221°24'51"	125°08'04"	66.145	7750816.687	356436.378	37.843
07	N1682	MF	222°18'04"	126°01'17"	59.093	7750820.001	356430.079	37.995
07	N1683	MF	224°12'35"	127°55'48"	70.874	7750811.187	356438.187	37.974
07	N1684	MF	226°36'55"	130°20'08"	62.844	7750814.076	356430.188	38.091
07	N1685	MF	224°54'30"	128°37'43"	75.010	7750807.926	356440.883	37.971
07	N1686	MF	227°10'53"	130°54'06"	62.974	7750813.520	356429.883	37.981
07	N1687	MF	224°12'16"	127°55'29"	79.267	7750806.033	356444.812	37.916
07	N1688	MF	227°25'52"	131°09'05"	62.434	7750813.668	356429.295	38.033
07	N1689	MF	223°24'39"	127°07'52"	82.451	7750804.982	356448.019	37.861
07	N1690	MF	222°03'34"	125°46'47"	87.591	7750803.541	356453.345	37.853
07	N1691	MF	228°02'13"	131°45'26"	57.288	7750816.600	356425.020	37.953
07	N1692	MF	228°28'53"	132°12'06"	51.822	7750819.942	356420.673	37.868
07	N1693	TMF	221°57'52"	125°41'05"	87.614	7750803.645	356453.448	38.061
07	N1694	MF	228°40'58"	132°24'11"	46.257	7750823.560	356416.442	37.822
07	N1695	PTC	222°30'57"	126°14'10"	76.135	7750809.748	356443.694	38.292
07	N1696	MF	228°38'53"	132°22'06"	43.292	7750825.578	356414.270	37.783
07	N1697	ARV	217°59'37"	121°42'50"	68.095	7750818.957	356440.212	38.218
07	N1698	ARV	214°43'57"	118°27'10"	67.006	7750822.829	356441.197	38.205
07	N1699	CX	216°53'04"	120°36'17"	65.807	7750821.249	356438.925	38.158
07	N1700	CX	215°56'59"	119°40'12"	65.232	7750822.462	356438.964	38.148
07	N1701	CX	216°35'11"	120°18'24"	63.749	7750822.583	356437.321	37.916
07	N1702	MF	228°16'26"	131°59'39"	41.796	7750826.789	356413.348	37.747
07	N1703	BL	216°48'58"	120°32'11"	63.751	7750822.362	356437.194	37.594
07	N1704	BL	217°23'24"	121°06'37"	63.921	7750821.726	356437.012	37.643
07	N1705	BL	217°25'21"	121°08'34"	63.920	7750821.695	356436.993	37.878
07	N1706	PLACA	226°09'26"	129°52'39"	60.217	7750816.145	356428.496	38.190
07	N1707	ARV	226°40'38"	130°23'51"	52.685	7750820.608	356422.407	37.960
07	N1708	ARV	222°03'14"	125°46'27"	52.481	7750824.072	356424.864	38.061
07	N1709	COTA	214°25'15"	118°08'28"	54.495	7750829.050	356430.338	38.138
07	N1710	CX	225°36'22"	129°19'35"	52.824	7750821.276	356423.146	38.019

RELATÓRIO DE IRRADIAÇÕES

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
07	N1711	CX	225°59'51"	129°43'04"	51.791	7750821.658	356422.122	38.005
07	N1712	CX	224°58'57"	128°42'10"	51.462	7750822.575	356422.445	37.957
07	N1713	CANL	225°13'55"	128°57'08"	51.522	7750822.362	356422.352	37.834
07	N1714	CANL	225°40'10"	129°23'23"	51.617	7750821.997	356422.177	37.842
07	N1715	CANL	225°27'42"	129°10'55"	51.564	7750822.175	356422.254	37.643
07	N1716	CANL	226°21'00"	130°04'13"	46.509	7750824.814	356417.876	37.708
07	N1717	CANL	226°31'27"	130°14'40"	46.561	7750824.672	356417.825	37.952
07	N1718	CANL	226°04'10"	129°47'23"	46.516	7750824.984	356418.027	37.855
07	N1719	CANL	227°47'57"	131°31'10"	41.773	7750827.063	356413.561	37.944
07	N1720	CANL	227°25'54"	131°09'07"	41.157	7750827.669	356413.275	37.916
07	N1721	CANL	227°33'18"	131°16'31"	41.572	7750827.329	356413.528	37.733
07	N1722	MF	227°30'06"	131°13'19"	40.922	7750827.786	356413.065	37.784
07	N1723	MF	225°49'27"	129°32'40"	40.187	7750829.167	356413.274	37.787
07	N1724	MF	223°36'53"	127°20'06"	39.935	7750830.533	356414.037	37.780
07	N1725	MF	221°55'25"	125°38'38"	42.080	7750830.231	356416.481	37.845
07	N1726	MF	218°35'33"	122°18'46"	46.009	7750830.159	356421.169	37.885
07	N1727	MF	219°58'07"	123°41'20"	44.534	7750830.050	356419.340	37.866
07	N1728	MF	215°49'43"	119°32'56"	49.369	7750830.406	356425.232	37.947
07	N1729	CX	207°37'25"	111°20'38"	59.884	7750832.957	356438.062	38.129
07	N1730	CX	206°44'23"	110°27'36"	59.251	7750834.042	356437.797	38.102
07	N1731	CX	207°05'11"	110°48'24"	60.758	7750833.170	356439.081	38.116
07	N1732	PVE	206°57'38"	110°40'51"	60.017	7750833.557	356438.434	38.099
07	N1733	PVT	213°28'03"	117°11'16"	66.262	7750824.477	356441.226	38.260
07	N1734	PVT	214°24'22"	118°07'35"	65.540	7750823.856	356440.084	38.217
07	N1735	PVT	224°21'24"	128°04'37"	75.195	7750808.379	356441.476	38.284
07	N1736	PVE	231°40'33"	135°23'46"	67.048	7750807.016	356429.366	38.181
07	N1737	CX	232°02'14"	135°45'27"	68.124	7750805.950	356429.814	38.236
07	N1738	CX	232°37'00"	136°20'13"	66.789	7750806.437	356428.396	38.219
07	N1739	CX	231°31'15"	135°14'28"	65.974	7750807.906	356428.739	38.172
07	N1740	MUR	212°14'50"	115°58'03"	68.655	7750824.691	356444.009	38.510
07	N1741	MUR	215°24'59"	119°08'12"	68.115	7750821.588	356441.780	38.276
07	N1742	MUR	219°45'40"	123°28'53"	70.828	7750815.679	356441.360	38.274
07	N1743	MUR	221°11'26"	124°54'39"	75.757	7750811.397	356444.409	38.244
07	N1744	MUR	199°04'24"	102°47'37"	58.162	7750841.873	356439.003	38.386
07	N1745	CX	201°25'07"	105°08'20"	56.372	7750840.031	356436.700	38.274
07	N1746	CX	200°36'53"	104°20'06"	56.053	7750840.874	356436.593	38.294
07	N1747	CX	200°53'38"	104°36'51"	55.234	7750840.817	356435.731	38.265
07	N1748	MUR	204°50'47"	108°34'00"	46.161	7750840.055	356426.043	38.093
07	N1749	MUR	207°52'24"	111°35'37"	41.658	7750839.422	356421.019	37.994
07	N1750	MUR	208°22'28"	112°05'41"	40.822	7750839.398	356420.109	37.968
07	N1751	MUR	208°29'59"	112°13'12"	38.334	7750840.256	356417.772	37.957
07	N1752	MUR	208°10'07"	111°53'20"	35.779	7750841.414	356415.485	37.927
07	N1753	MUR	207°25'04"	111°08'17"	33.312	7750842.740	356413.355	37.841
07	N1754	MUR	205°37'17"	109°20'30"	30.982	7750844.491	356411.518	37.720
07	N1755	MUR	203°11'33"	106°54'46"	28.782	7750846.380	356409.821	37.586
07	N1756	MUR	167°27'09"	71°10'22"	20.392	7750861.333	356401.585	36.886
07	N1757	MUR	134°39'44"	38°22'57"	21.790	7750871.833	356395.814	36.269
07	N1758	MUR	130°07'32"	33°50'45"	23.479	7750874.253	356395.362	36.153
07	N1759	MUR	127°47'13"	31°30'26"	25.827	7750876.772	356395.782	36.027
07	N1760	MUR	127°26'03"	31°09'16"	28.389	7750879.047	356396.971	35.901
07	N1761	MUR	125°31'08"	29°14'21"	30.088	7750881.007	356396.981	35.818
07	N1762	MUR	121°14'44"	24°57'57"	31.294	7750883.122	356395.493	35.614
07	N1763	MUR	118°14'43"	21°57'56"	33.150	7750885.497	356394.684	35.514
07	N1764	MUR	116°00'42"	19°43'55"	35.283	7750887.964	356394.197	35.446
07	N1765	MUR	114°18'21"	18°01'34"	37.579	7750890.487	356393.914	35.415
07	N1766	CXT	139°08'51"	42°52'04"	20.152	7750869.522	356395.994	36.414
07	N1767	CXT	149°52'19"	53°35'32"	18.712	7750865.859	356397.345	36.584

RELATÓRIO DE IRRADIAÇÕES

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Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
07	N1768	PASS	90°20'29"	354°03'42"	49.673	7750904.159	356377.146	35.035
07	N1769	PASS	89°42'24"	353°25'37"	50.094	7750904.518	356376.550	35.022
07	N1770	PASS	80°56'27"	344°39'40"	38.757	7750892.129	356372.032	35.724
07	N1771	PASS	81°52'50"	345°36'03"	38.468	7750892.013	356372.719	35.736
07	N1772	PASS	68°38'16"	332°21'29"	25.904	7750877.700	356370.267	36.506
07	N1773	PASS	67°15'43"	330°58'56"	26.416	7750877.853	356369.471	36.410
07	N1774	PASS	51°13'21"	314°56'34"	18.406	7750867.755	356369.257	36.820
07	N1775	PASS	47°34'55"	311°18'08"	17.252	7750866.139	356369.325	36.860
07	N1776	PASS	50°40'04"	314°23'17"	16.890	7750866.567	356370.215	36.953
07	N1777	PASS	323°40'22"	227°23'35"	12.274	7750846.444	356373.251	37.626
07	N1778	PASS	322°29'47"	226°13'00"	11.353	7750846.897	356374.088	37.701
07	N1779	PASS	284°04'28"	187°47'41"	22.169	7750832.788	356379.278	38.133
07	N1780	PASS	282°24'10"	186°07'23"	21.480	7750833.395	356379.993	38.176
07	N1781	PASS	269°39'59"	173°23'12"	30.288	7750824.666	356385.773	38.440
07	N1782	PASS	271°20'56"	175°04'09"	30.738	7750824.128	356384.927	38.403
07	N1783	PASS	272°04'31"	175°47'44"	29.894	7750824.940	356384.476	38.396
07	N1784	PASS	260°03'53"	163°47'06"	44.827	7750811.709	356394.802	38.608
07	N1785	PASS	258°26'00"	162°09'13"	45.620	7750811.327	356396.266	38.632
07	N1786	PASS	259°37'26"	163°20'39"	46.186	7750810.505	356395.522	38.626
07	N1787	PASS	287°16'31"	190°59'44"	37.264	7750818.173	356375.177	38.118
07	N1788	PASS	287°51'43"	191°34'56"	38.022	7750817.505	356374.651	38.173
07	N1789	PASS	288°17'17"	192°00'30"	37.102	7750818.463	356374.565	38.111
07	N1790	PASS	321°45'13"	225°28'26"	44.032	7750823.876	356350.893	37.488
07	N1791	PASS	322°53'31"	226°36'44"	44.738	7750824.021	356349.773	37.419
07	N1792	PASS	322°00'10"	225°43'23"	45.335	7750823.104	356349.826	37.495
07	N1793	PASS	337°15'44"	240°58'57"	60.414	7750825.447	356329.454	36.914
07	N1794	PASS	336°28'33"	240°11'46"	60.915	7750824.476	356329.427	36.961
07	N1795	PASS	342°04'21"	245°47'34"	73.902	7750824.450	356314.881	36.564
07	N1796	PASS	341°59'31"	245°42'44"	74.807	7750823.983	356314.099	36.506
07	N1797	RADAR	342°09'11"	245°52'24"	73.686	7750824.633	356315.035	36.571
07	N1798	PASS	1°25'34"	265°08'47"	58.438	7750849.808	356324.056	35.663
07	N1799	PASS	2°11'27"	265°54'40"	58.042	7750850.614	356324.391	35.650
07	N1800	PASS	2°39'07"	266°22'20"	58.912	7750851.025	356323.490	35.627
07	N1801	PASS	349°06'11"	252°49'24"	50.271	7750839.907	356334.256	35.873
07	N1802	PASS	349°19'52"	253°03'05"	49.640	7750840.282	356334.801	35.848
07	N1803	PASS	38°49'27"	302°32'40"	54.599	7750884.124	356336.259	33.851
07	N1804	PASS	38°38'53"	302°22'06"	55.565	7750884.500	356335.353	33.840
07	N1805	PASS	37°20'53"	301°04'06"	54.465	7750882.860	356335.633	33.880
07	N1806	PASS	55°22'19"	319°05'32"	61.067	7750900.905	356342.295	33.058
07	N1807	PASS	54°59'47"	318°43'00"	62.018	7750901.357	356341.366	32.936
07	N1808	PASS	65°15'47"	328°59'00"	69.936	7750914.689	356346.248	32.468
07	N1809	PASS	65°21'12"	329°04'25"	68.838	7750913.804	356346.906	32.538
07	N1810	EXA	87°57'10"	351°40'23"	40.990	7750895.311	356376.348	35.449
07	N1811	EXA	79°53'23"	343°36'36"	30.312	7750883.833	356373.731	36.055
07	N1812	EXA	68°50'12"	332°33'25"	20.416	7750872.871	356372.876	36.559
07	N1813	EXA	48°59'26"	312°42'39"	12.139	7750862.986	356373.365	36.972
07	N1814	EXA	331°55'14"	235°38'27"	7.704	7750850.405	356375.925	37.450
07	N1815	EXA	284°41'42"	188°24'55"	14.827	7750840.086	356380.115	37.825
07	N1816	EXA	266°16'03"	169°59'16"	26.620	7750828.538	356386.913	38.279
07	N1817	EXA	256°57'03"	160°40'16"	39.493	7750817.486	356395.356	38.486
07	N1818	EXA	252°14'30"	155°57'43"	52.427	7750806.872	356403.640	38.627
07	N1819	EXA	224°52'44"	128°35'57"	88.835	7750799.331	356451.712	37.996
07	N1820	EXA	228°00'53"	131°44'06"	75.174	7750804.711	356438.381	38.111
07	N1821	EXA	225°31'29"	129°14'42"	67.709	7750811.917	356434.722	38.021
07	N1822	EXA	218°50'26"	122°33'39"	61.371	7750821.723	356434.010	37.858
07	N1823	EXA	211°59'13"	115°42'26"	61.002	7750828.292	356437.248	37.944
07	N1824	EXA	207°34'51"	111°18'04"	63.028	7750831.856	356441.007	38.080

RELATÓRIO DE IRRADIAÇÕES

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO LAGE

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O7	N1825	EXA	203°58'01"	107°41'14"	60.222	7750836.456	356439.660	38.143
O7	N1826	EXA	209°38'50"	113°22'03"	51.517	7750834.320	356429.576	37.964
O7	N1827	EXA	216°52'06"	120°35'19"	41.932	7750833.415	356418.382	37.773
O7	N1828	EXA	224°07'57"	127°51'10"	30.083	7750836.293	356406.038	37.539
O7	N1829	EXA	229°47'19"	133°30'32"	24.860	7750837.637	356400.315	37.597
O7	N1830	EXA	233°26'10"	137°09'23"	40.008	7750825.418	356409.490	37.900
O7	N1831	EXA	232°08'54"	135°52'07"	55.243	7750815.102	356420.751	38.082
O7	N1832	EXA	213°40'07"	117°23'20"	12.775	7750848.876	356393.628	37.128
O7	N1833	EXA	152°24'13"	56°07'26"	9.251	7750859.909	356389.965	36.643
O7	N1834	EXA	110°18'15"	14°01'28"	19.555	7750873.725	356387.024	36.034
O7	N1835	EXA	103°08'31"	6°51'44"	36.597	7750891.088	356386.657	35.232
O7	N1836	PASS	41°55'16"	305°38'29"	35.970	7750875.713	356353.052	34.447
O7	N1837	PASS	39°53'02"	303°36'15"	35.824	7750874.579	356352.448	34.434
O7A	N1838	MF	228°43'23"	323°50'20"	30.617	7750886.590	356284.709	35.807
O7A	N1839	MF	225°41'29"	320°48'26"	16.835	7750874.919	356292.136	35.316
O7A	N1840	MF	239°25'41"	334°32'38"	12.660	7750873.302	356297.333	35.088
O7A	N1841	MF	291°26'31"	26°33'28"	4.226	7750865.651	356304.664	34.876
O7A	N1842	MF	315°00'24"	50°07'21"	3.511	7750864.122	356305.469	34.831
O7A	N1843	MF	326°32'55"	61°39'52"	2.930	7750863.262	356305.353	34.860
O7A	N1844	MF	348°37'16"	83°44'13"	1.948	7750862.084	356304.711	34.925
O7A	N1845	TMF	348°25'42"	83°32'39"	1.927	7750862.088	356304.689	35.060
O7A	N1846	MF	114°17'14"	209°24'11"	10.428	7750852.786	356297.655	35.191
O7A	N1847	MF	118°13'43"	213°20'40"	17.617	7750847.154	356293.091	35.337
O7A	N1848	PTC	121°35'28"	216°42'25"	16.505	7750848.639	356292.909	35.577
O7A	N1849	MF	121°27'53"	216°34'50"	29.990	7750837.789	356284.902	35.487
O7A	N1850	MF	123°34'03"	218°41'00"	43.370	7750828.016	356275.668	35.559
O7A	N1851	MF	124°39'25"	219°46'22"	52.106	7750821.823	356269.440	35.537
O7A	N1852	TMF	124°47'25"	219°54'22"	52.065	7750821.933	356269.373	35.709
O7A	N1853	PTC	125°49'54"	220°56'51"	51.491	7750822.979	356269.029	35.648
O7A	N1854	MF	126°12'56"	221°19'53"	64.952	7750813.099	356259.879	35.317
O7A	N1855	PE	130°06'00"	225°12'57"	64.695	7750816.298	356256.856	35.773
O7A	N1856	CRI	131°30'32"	226°37'29"	64.247	7750817.748	356256.075	37.050
O7A	N1857	CRI	131°51'08"	226°58'05"	46.810	7750829.927	356268.557	37.116
O7A	N1858	PE	128°42'43"	223°49'40"	46.850	7750828.072	356270.331	35.849
O7A	N1859	PE	130°19'50"	225°26'47"	23.288	7750845.533	356286.180	35.720
O7A	N1860	CRI	137°34'01"	232°40'58"	23.695	7750847.506	356283.930	37.260
O7A	N1861	CRI	175°22'05"	270°29'02"	6.509	7750861.926	356296.265	36.833
O7A	N1862	PE	170°25'00"	265°31'57"	3.543	7750861.595	356299.243	35.242
O7A	N1863	PE	203°26'14"	298°33'11"	4.909	7750864.217	356298.463	35.287
O7A	N1864	CRI	193°20'56"	288°27'53"	7.975	7750864.397	356295.210	36.873
O7A	N1865	CRI	203°57'30"	299°04'27"	17.774	7750870.508	356287.240	37.081
O7A	N1866	PE	212°04'57"	307°11'54"	17.102	7750872.210	356289.152	35.965
O7A	N1867	COTA	192°26'50"	287°33'47"	20.009	7750867.909	356283.698	37.305
O7A	N1868	COTA	165°36'25"	260°43'22"	29.754	7750857.075	356273.410	37.314
O7A	N1869	COTA	155°03'47"	250°10'44"	41.768	7750847.708	356263.481	37.312
O7A	N1870	COTA	148°22'08"	243°29'05"	56.191	7750836.785	356252.494	37.256
O7A	N1871	COTA	144°26'30"	239°33'27"	65.704	7750828.581	356246.128	37.190
O7A	N1872	CX	261°32'36"	356°39'33"	26.584	7750888.410	356301.225	35.420
O7A	N1873	CX	260°25'43"	355°32'40"	26.367	7750888.158	356300.726	35.422
O7A	N1874	CX	261°59'50"	357°06'47"	25.107	7750886.946	356301.510	35.368
O7A	N1875	COTA	261°26'58"	356°33'55"	25.973	7750887.797	356301.219	34.134
O7A	N1876	COTA	200°21'59"	295°28'56"	33.773	7750876.401	356272.287	37.202
O7A	N1877	CX	268°14'59"	3°21'56"	21.682	7750883.515	356304.047	35.207
O7A	N1878	CX	267°02'46"	2°09'43"	21.378	7750883.234	356303.581	35.184
O7A	N1879	CX	268°47'30"	3°54'27"	20.598	7750882.421	356304.178	35.134
O7A	N1880	CXEL	268°30'12"	3°37'09"	21.640	7750883.468	356304.140	35.208
O7A	N1881	CXEL	269°54'14"	5°01'11"	20.951	7750882.742	356304.608	35.165

RELATÓRIO DE IRRADIAÇÕES

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Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
07A	N1882	CXEL	270°21'29"	5°28'26"	21.091	7750882.866	356304.786	35.174
07A	N1883	CX	281°47'46"	16°54'43"	16.528	7750877.684	356307.582	34.818
07A	N1884	CX	283°35'54"	18°42'51"	16.250	7750877.262	356307.988	34.788
07A	N1885	CX	282°34'52"	17°41'49"	15.739	7750876.865	356307.559	34.796
07A	N1886	CX	290°09'16"	25°16'13"	17.892	7750878.051	356310.413	34.594
07A	N1887	CX	288°34'43"	23°41'40"	17.793	7750878.164	356309.925	34.628
07A	N1888	CX	289°09'04"	24°16'01"	17.140	7750877.497	356309.819	34.655
07A	N1889	PVT	293°25'15"	28°32'12"	16.462	7750876.333	356310.639	34.559
07A	N1890	MF	290°46'12"	25°53'09"	18.073	7750878.131	356310.665	34.514
07A	N1891	MF	291°36'25"	26°43'22"	15.796	7750875.980	356309.877	34.581
07A	N1892	MF	286°53'22"	22°00'19"	13.447	7750874.339	356307.813	34.657
07A	N1893	MF	286°45'41"	21°52'38"	15.697	7750876.437	356308.623	34.604
07A	N1894	MF	303°35'55"	38°42'52"	14.070	7750872.849	356311.574	34.566
07A	N1895	MF	301°02'07"	36°09'04"	12.511	7750871.973	356310.155	34.625
07A	N1896	PTC	301°21'09"	36°28'06"	19.261	7750877.361	356314.223	34.428
07A	N1897	MF	290°39'45"	25°46'42"	11.046	7750871.818	356307.578	34.717
07A	N1898	MF	277°24'51"	12°31'48"	11.489	7750873.087	356305.267	34.796
07A	N1899	MF	275°16'37"	10°23'34"	12.135	7750873.807	356304.964	34.800
07A	N1900	MF	275°39'52"	10°46'49"	16.368	7750877.950	356305.836	34.816
07A	N1901	MF	267°53'14"	3°00'11"	16.558	7750878.406	356303.642	34.898
07A	N1902	MF	266°54'30"	2°01'27"	15.702	7750877.564	356303.329	34.883
07A	N1903	MF	263°51'37"	358°58'34"	21.253	7750883.121	356302.395	35.165
07A	N1904	MF	263°30'47"	358°37'44"	15.792	7750877.659	356302.397	34.912
07A	N1905	MF	261°06'26"	356°13'23"	17.136	7750878.969	356301.646	34.998
07A	N1906	MF	261°21'29"	356°28'26"	18.340	7750880.176	356301.647	35.049
07A	N1907	MF	258°15'43"	353°22'40"	22.034	7750883.759	356300.233	35.184
07A	N1908	MF	259°51'40"	354°58'37"	24.032	7750885.811	356300.670	35.271
07A	N1909	MF	254°40'54"	349°47'51"	24.781	7750886.260	356298.385	35.305
07A	N1910	MF	252°36'10"	347°43'07"	27.819	7750889.053	356296.857	35.449
07A	N1911	MF	256°50'52"	351°57'49"	26.788	7750888.396	356299.030	35.416
07A	N1912	MF	254°13'21"	349°20'18"	29.777	7750891.134	356297.265	35.530
07A	N1913	MF	250°23'44"	345°30'41"	30.607	7750891.505	356295.117	35.555
07A	N1914	MF	249°16'29"	344°23'26"	33.694	7750894.322	356293.708	35.690
07A	N1915	MF	252°14'52"	347°21'49"	32.421	7750893.507	356295.682	35.518
07A	N1916	MF	245°06'25"	340°13'22"	34.427	7750894.267	356291.126	35.630
07A	N1917	MF	249°08'59"	344°15'56"	38.128	7750898.570	356292.435	35.799
07A	N1918	MF	245°38'42"	340°45'39"	55.413	7750914.190	356284.515	36.657
07A	N1919	CA	245°44'55"	340°51'52"	55.409	7750914.218	356284.611	36.680
07A	N1920	CA	243°17'33"	338°24'30"	67.436	7750924.575	356277.959	37.310
07A	N1921	EXB	240°13'58"	335°20'55"	31.387	7750890.398	356289.683	35.739
07A	N1922	EXB	252°55'05"	348°02'02"	13.935	7750875.503	356299.885	35.057
07A	N1923	EXB	315°02'27"	50°09'24"	7.465	7750866.654	356308.506	34.746
07A	N1924	EXA	316°07'20"	51°14'17"	7.516	7750866.577	356308.635	34.761
07A	N1925	EXA	336°30'20"	71°37'17"	8.812	7750864.650	356311.137	34.846
07A	N1926	EXA	314°08'37"	49°15'34"	19.888	7750874.851	356317.843	34.371
07A	N1927	EXA	306°52'58"	41°59'55"	36.309	7750888.855	356327.069	33.574
07A	N1928	EXA	302°11'43"	37°18'40"	59.816	7750909.446	356339.031	32.479
07A	N1929	EXA	309°44'34"	44°51'31"	46.034	7750894.502	356335.245	33.240
07A	N1930	EXA	321°20'58"	56°27'55"	32.451	7750879.798	356329.824	34.036
07A	N1931	EXA	342°58'27"	78°05'24"	22.630	7750866.541	356324.917	34.759
07A	N1932	EXA	14°08'31"	109°15'28"	19.132	7750855.561	356320.836	35.338
07A	N1933	PTC	357°30'52"	92°37'49"	14.185	7750861.220	356316.945	35.114
07A	N1934	CANT	354°39'56"	89°46'53"	13.125	7750861.921	356315.899	35.055
07A	N1935	CANT	0°05'55"	95°12'52"	13.436	7750860.650	356316.155	35.004
07A	N1936	ARV	52°21'44"	147°28'41"	12.964	7750850.940	356309.744	35.384
07A	N1937	COTA	68°36'00"	163°42'57"	17.518	7750845.056	356307.687	35.562
07A	N1938	ARV	84°40'46"	179°47'43"	22.027	7750839.844	356302.853	35.820

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CÁLCULO: Topográfico

ESTAÇÃO	PONTO VISADO	DESCRIÇÃO	ÂNGULO.HZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA
O7A	N1939	COTA	82°09'55"	177°16'52"	31.920	7750829.987	356304.289	35.994
O7A	N1940	COTA	94°48'04"	189°55'01"	28.234	7750834.059	356297.912	35.920
O7A	N1941	COTA	90°28'43"	185°35'40"	37.835	7750824.217	356299.086	36.135
O7A	N1942	COTA	106°32'18"	201°39'15"	42.826	7750822.068	356286.972	35.881
O7A	N1943	ARV	101°34'38"	196°41'35"	36.147	7750827.247	356292.391	35.922
O7A	N1944	COTA	117°20'38"	212°27'35"	54.495	7750815.889	356273.526	35.863
O7A	N1945	CANT	115°23'10"	210°30'07"	48.876	7750819.759	356277.966	35.857
O7A	N1946	CANT	113°41'58"	208°48'55"	49.304	7750818.672	356279.010	35.883
O7A	N1947	PTC	114°32'39"	209°39'36"	49.168	7750819.145	356278.444	35.794
O7A	N1948	RADAR	82°18'21"	177°25'18"	38.712	7750823.198	356304.516	36.365
O7A	N1949	EXA	66°43'00"	161°49'57"	30.750	7750832.654	356312.362	36.140
O7A	N1950	EXA	75°38'30"	170°45'27"	39.835	7750822.553	356309.172	36.358
O7A	N1951	EXA	74°09'30"	169°16'27"	6.982	7750855.011	356304.074	35.213
O7A	N1952	EXA	106°00'30"	201°07'27"	17.562	7750845.489	356296.445	35.499
O7A	N1953	EXA	115°05'46"	210°12'43"	29.236	7750836.606	356288.063	35.643
O7A	N1954	EXA	25°20'10"	120°27'07"	19.221	7750852.129	356319.344	35.500
O7A	N1955	EXA	120°50'29"	215°57'26"	49.876	7750821.499	356273.488	35.679
O7A	N1956	EXA	124°03'06"	219°10'03"	65.342	7750811.211	356261.505	35.447
O7A	N1957	EXA	117°52'50"	212°59'47"	35.046	7750832.478	356283.689	35.676
O7A	N1958	ARV	238°16'36"	333°23'33"	5.042	7750866.379	356300.516	35.162
O7A	N1959	ARV	217°40'34"	312°47'31"	9.795	7750868.525	356295.587	35.389
O7A	N1960	ARV	223°36'20"	318°43'17"	14.688	7750872.909	356293.085	35.532
O7A	N1961	ARV	283°33'18"	18°40'15"	18.209	7750879.122	356308.604	34.581
O7A	N1962	LUM	266°38'26"	1°45'23"	16.557	7750878.420	356303.282	34.967
O7A	N1963	LUM	247°43'15"	342°50'12"	34.510	7750894.844	356292.591	35.800

ANEXO 3 POLIGONAL PRINCIPAL

Seguem as informações da poligonal principal.

RELATÓRIO DE POLIGONAL

Cliente: COMPANHIA ESPÍRITO SANTENSE DE ABASTECIMENTO

Obra: BOOSTER ALTO LAGE

Município: CARIACICA

Estado: ES

Local:

Arquivo: \\Servidor\oriental\PROJETOS\TOPOGRAFIA\GANEM\CARIACICA\BOOSTER ALTO LAGE\CALCULO\GANEM_POL 2 BOOSTER ALTO L

POLIGONAL: Fechada CÁLCULO: Topográfico

Método de Ajustamento: Projeções das Abcissas

Método de Distribuição do erro Angular: Inv. proporcional às distâncias

ESTAÇÃO	ÂNGULO HORIZ	AZIMUTE	DISTÂNCIA	COORD.NORTE	COORD.ESTE	COTA	DESCRIÇÃO
LGO1054		305°23'13.0"					
LGO1055	88°47'01.5"	214°10'22.6"	117.064	7751275.965	356309.034	48.929	ESTACAO
O2	108°27'24.3"	142°38'03.3"	90.688	7751179.107	356243.276	47.815	ESTACAO
O3	175°53'41.7"	138°31'48.2"	102.858	7751107.028	356298.317	44.720	ESTACAO
O4	244°08'16.0"	202°39'55.1"	42.727	7751029.955	356366.433	33.190	ESTACAO
O5	212°19'19.5"	234°59'17.2"	126.076	7750990.525	356349.967	32.280	ESTACAO
O5A	144°32'34.8"	199°31'57.2"	19.196	7750918.186	356246.702	40.047	ESTACAO
A1	125°26'25.0"	144°58'40.9"	69.115	7750900.094	356240.284	39.743	ESTACAO
O6	118°44'38.0"	83°43'13.3"	102.956	7750843.492	356279.950	37.368	ESTACAO
O7	110°13'42.3"	13°56'57.9"	323.370	7750854.753	356382.285	37.176	ESTACAO
LGO1054	111°26'25.5"	305°23'13.0"	185.461	7751168.565	356460.233	26.785	ESTACAO
LGO1055				7751275.965	356309.034	48.929	ESTACAO

DADOS DO FECHAMENTO

Perímetro:..... 1179.509

ERROS

TOLERÂNCIAS

Angular:..... 0°00'31"

0°01'35"

Erro Distribuído

Relativo:..... 1:18646

1:10000

Erro Distribuído

Linear:..... 0.0633

Eixo Norte:..... 0.0594

Eixo Este:..... 0.0218

Azimute:..... 20°07'48"

Altimétrico:.... -0.0016

0.0543

Erro Distribuído

ANEXO 4 DESENHO

A Tabela A1.1 apresenta a lista dos desenhos gerados neste estudo.

Tabela A1.1 – Lista de desenhos.

Número da CESAN	Referência do desenho	Emissão
1	SISTEMA VALE ESPERANÇA (SETORES ALTO LAGE E VALVERDE) - BOOSTER ALTO LAGE, LINHAS DE ALIMENTAÇÃO E RECALQUE - LEVANTAMENTO PLANIALTIMÉTRICO E CADASTRAL- PLANTA E PERFIL 01/01	R 00

Segue o desenho listado.