



**CONTRATO Nº 07/SRH-CE/2021:**

***ESTUDOS BÁSICOS E CONCEPÇÃO DO PROJETO, ESTUDOS  
ARQUEOLÓGICOS E DETALHAMENTO DO PROJETO EXECUTIVO DA  
BARRAGEM BERÉ, NO MUNICÍPIO DE JARDIM, ESTADO DO CEARÁ.***

**FASE A - ESTUDOS BÁSICOS E CONCEPÇÃO DA BARRAGEM**

**Volume 2 - Estudos Topograficos - ANEXOS**



## ANEXOS

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## **ANEXO 1 – Levantamento RTK**

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Barragem Beré - Serviços Cartográficos - Apoio de Campo					Pontos Levantamento Topográfico RTK				
ID	Coordenadas		Cota	Descrição	ID	Coordenadas		Cota	Descrição
	X	Y				X	Y		
1	480.706,179	9.153.261,780	496,750	M1	63	480.434,373	9.153.911,045	499,192	TN EX2
2	480.827,313	9.153.065,949	499,010	B01	64	480.614,363	9.153.924,628	497,026	TN EX2A
3	480.654,322	9.153.463,244	511,481	M2	65	480.620,179	9.153.929,701	503,999	TN EX2A
4	480.412,715	9.154.072,043	539,670	B02	66	480.620,183	9.153.929,708	503,986	TN EX2A
5	480.643,578	9.153.643,111	497,674	M3 AP	67	480.614,331	9.153.924,630	497,008	TN EX2A
6	480.638,635	9.153.678,835	493,254	EX RIO	68	480.596,241	9.153.906,618	496,239	TN EX2A
7	480.624,808	9.153.714,420	493,521	EX RIO	69	480.584,548	9.153.896,270	499,085	TN EX2A
8	480.619,000	9.153.742,451	494,914	EX E3	70	480.565,837	9.153.877,107	499,357	TN EX2A
9	480.641,671	9.153.747,710	493,714	EX E3RIO	71	480.555,614	9.153.866,227	504,716	TN EX2A
10	480.630,141	9.153.776,490	493,414	EX RIO	72	480.543,343	9.153.852,083	512,441	TN EX2A
11	480.633,402	9.153.811,393	495,099	MARCO	73	480.528,108	9.153.836,117	519,921	TN EX2A
12	480.626,288	9.153.836,768	493,762	EX RIO	74	480.516,815	9.153.820,925	527,307	TN EX2A
13	480.612,841	9.153.885,935	494,332	EX RIO	75	480.503,691	9.153.806,083	535,528	TN EX2A
14	480.606,520	9.153.921,276	494,304	EX 2A	76	480.495,855	9.153.798,864	540,027	TN EX2A
15	480.581,158	9.153.956,790	494,357	EXRIO	77	480.495,837	9.153.798,882	539,996	TN EX2A
16	480.540,581	9.153.967,012	494,562	EXRIO	78	480.503,676	9.153.806,086	535,516	TN EX2A
17	480.518,585	9.153.965,295	494,790	EXRIO	79	480.516,796	9.153.820,957	527,294	TN EX2A
18	480.488,750	9.153.936,927	494,829	EXRIO	80	480.528,132	9.153.836,112	519,896	TN EX2A
19	480.454,113	9.153.920,301	495,402	EXRIO CE	81	480.543,391	9.153.852,081	512,447	TN EX2A
20	480.433,871	9.153.918,627	495,377	EXRIO EX2	82	480.633,382	9.153.811,401	495,215	AP06
21	480.410,540	9.153.922,951	495,480	EX	83	480.633,388	9.153.811,390	495,218	AP06
22	480.389,171	9.153.942,173	495,952	EXRIO	84	480.626,254	9.153.836,828	493,789	AP07
23	480.377,524	9.153.968,970	496,571	EXRIO	85	480.596,231	9.153.906,644	496,266	TNEX2A
24	480.341,291	9.154.027,509	495,681	EXRIO EX1	86	480.659,431	9.153.751,093	497,572	TNEX3
25	480.279,012	9.154.107,622	499,160	EX M1	87	480.677,426	9.153.760,880	498,042	TNEX3
26	480.286,200	9.154.114,118	500,747	TN M1	88	480.695,208	9.153.770,874	502,835	TNEX3
27	480.290,561	9.154.120,072	504,891	TN	89	480.712,221	9.153.779,730	509,384	TNEX3
28	480.269,632	9.154.095,387	503,831	TN	90	480.730,007	9.153.788,183	515,590	TNEX3
29	480.342,748	9.154.046,062	500,079	PAREDE	91	480.740,770	9.153.793,506	519,451	TNEX3 MARCO
30	480.341,430	9.154.045,400	500,243	PAREDE	92	480.748,729	9.153.794,718	521,955	TNEX3
31	480.341,832	9.154.044,461	500,294	PAREDE	93	480.766,386	9.153.803,759	527,613	TNEX3
32	480.341,332	9.154.045,438	499,955	SANGRADOR	94	480.785,656	9.153.810,946	533,984	TNEX3
33	480.341,717	9.154.044,531	499,952	SANGRADOR	95	480.804,157	9.153.818,297	539,129	TNEX3
34	480.330,864	9.154.040,102	499,925	SANGRADOR	96	480.804,158	9.153.818,297	539,114	TNEX3
35	480.331,175	9.154.039,369	499,852	SANGRADOR	97	480.785,653	9.153.810,971	533,965	TNEX3
36	480.330,633	9.154.040,131	500,187	PAREDE	98	480.766,403	9.153.803,745	527,609	TNEX3
37	480.408,449	9.154.069,744	538,611	TN	99	480.748,721	9.153.794,721	522,001	TNEX3
38	480.395,939	9.154.060,765	531,468	TN EX1	100	480.740,772	9.153.793,547	519,462	TNEX3
39	480.380,255	9.154.050,803	524,330	TN EX1	101	480.730,014	9.153.788,204	515,598	TNEX3
40	480.362,321	9.154.047,263	512,341	TN EX1	102	480.712,200	9.153.779,758	509,390	TNEX3
41	480.350,006	9.154.035,567	501,991	TN EX1	103	480.695,217	9.153.770,879	502,844	TNEX3
42	480.350,009	9.154.035,562	501,981	TN EX1	104	480.677,426	9.153.760,878	498,045	TNEX3
43	480.362,319	9.154.047,250	512,356	TN EX1	105	480.659,419	9.153.751,084	497,595	TNEX3
44	480.380,467	9.154.050,686	524,357	TN EX1	106	480.647,104	9.153.745,256	497,697	TNEX3
45	480.395,977	9.154.060,721	531,452	TN EX1	107	480.638,573	9.153.678,872	493,314	EX RIO
46	480.409,066	9.154.069,911	538,721	TN EX1	108	480.010,803	9.153.609,459	569,882	TN
47	480.434,256	9.153.911,062	499,219	TN EX2	109	480.827,313	9.153.065,949	499,010	B01
48	480.434,274	9.153.911,058	499,212	TN EX2	110	480.751,176	9.153.533,363	496,876	TN
49	480.435,043	9.153.926,085	495,889	TN EX2	111	480.164,688	9.153.703,393	587,384	B03
50	480.432,680	9.153.946,967	499,769	TN EX2	112	480.164,697	9.153.703,417	587,383	B03
51	480.435,933	9.153.969,281	504,804	TN EX2	113	480.754,291	9.153.547,551	492,771	EXRIO
52	480.436,689	9.153.982,815	512,617	TN EX2	114	480.761,094	9.153.562,427	496,546	TN
53	480.437,933	9.153.999,500	525,236	TN EX2	115	480.757,517	9.153.656,333	497,743	TN
54	480.438,423	9.154.018,899	536,883	TN EX2	116	480.751,983	9.153.704,863	505,805	TN
55	480.439,148	9.154.037,942	545,195	TN EX2	117	480.744,539	9.153.736,257	501,714	TN
56	480.439,130	9.154.037,924	545,230	TN EX2	118	480.740,817	9.153.793,557	519,499	AP01
57	480.438,451	9.154.018,877	536,847	TN EX2	119	480.767,200	9.153.847,633	530,467	TN

Barragem Beré - Serviços Cartográficos - Apoio de Campo					Pontos Levantamento Topográfico RTK				
ID	Coordenadas		Cota	Descrição	ID	Coordenadas		Cota	Descrição
	X	Y				X	Y		
58	480.437,973	9.153.999,539	525,193	TN EX2	120	480.790,673	9.153.860,033	534,331	TN
59	480.436,635	9.153.982,805	512,651	TN EX2	121	480.790,698	9.153.860,032	534,340	TN
60	480.435,910	9.153.969,364	504,863	TN EX2	122	480.767,209	9.153.847,663	530,444	TN
61	480.194,049	9.154.418,645	571,126	TN	123	480.740,814	9.153.793,535	519,510	AP01
62	480.435,077	9.153.926,124	495,809	TN EX2	124	480.744,582	9.153.736,247	501,701	TN
125	480.647,106	9.153.745,276	497,697	TNEX3	187	479.899,543	9.153.955,016	503,927	TN
126	480.624,796	9.153.714,412	493,488	EX RIO	188	479.898,043	9.153.959,248	502,642	EXRIO
127	480.641,667	9.153.747,734	493,745	EX E3RIO	189	479.897,405	9.153.963,328	503,856	TN
128	480.630,128	9.153.776,476	493,489	EX RIO	190	479.890,674	9.153.982,995	510,416	TN
129	480.626,273	9.153.836,779	493,811	EX RIO	191	479.890,757	9.153.982,977	510,344	TN
130	480.612,843	9.153.885,983	494,350	EX RIO	192	479.864,599	9.153.941,196	503,402	EXRIO
131	480.606,598	9.153.921,213	494,523	EX 2ARIO	193	479.822,657	9.153.925,384	504,336	EXRIO
132	480.272,818	9.154.099,393	501,239	TN	194	479.825,851	9.153.916,589	505,524	TN
133	480.269,355	9.154.095,659	503,701	TN	195	479.835,546	9.153.903,412	508,329	TN
134	480.242,329	9.154.127,199	499,485	EXRIO	196	479.835,535	9.153.903,395	508,337	TN
135	480.240,595	9.154.115,804	501,727	TN	197	479.825,867	9.153.916,644	505,422	TN
136	480.237,423	9.154.098,687	511,010	TN	198	479.822,660	9.153.925,448	504,319	EXRIO
137	480.237,411	9.154.098,687	510,985	TN	199	479.820,989	9.153.934,847	507,512	TN
138	480.238,422	9.154.105,980	507,331	TN	200	479.820,683	9.153.935,118	507,312	TN
139	480.238,430	9.154.105,989	507,326	TN	201	479.789,534	9.153.882,420	505,098	EXRIO AP
140	480.240,438	9.154.115,725	501,746	TN	202	479.781,232	9.153.890,875	506,239	TN
141	480.237,857	9.154.138,326	502,212	TN	203	479.775,205	9.153.898,115	508,990	TN
142	480.235,164	9.154.146,360	506,450	TN	204	479.775,193	9.153.898,094	508,999	TN
143	480.235,178	9.154.146,345	506,460	TN	205	479.781,240	9.153.890,892	506,229	TN
144	480.237,996	9.154.138,374	502,203	TN	206	479.789,496	9.153.882,397	505,072	EXRIO AP
145	480.160,504	9.154.102,088	500,140	EX RIO	207	479.799,462	9.153.876,162	505,966	TN
146	480.157,346	9.154.107,828	500,835	TN	208	479.805,221	9.153.872,652	508,014	TN
147	480.153,438	9.154.119,757	505,672	TN	209	479.805,215	9.153.872,682	508,025	TN
148	480.153,439	9.154.119,727	505,719	TN	210	479.765,293	9.153.839,298	504,934	EXRIO
149	480.157,359	9.154.107,820	500,887	TN	211	479.756,421	9.153.842,215	505,795	TN
150	480.163,215	9.154.094,470	501,456	TN	212	479.744,104	9.153.847,612	508,203	TN
151	480.163,731	9.154.084,406	505,776	TN	213	479.736,708	9.153.851,215	509,134	TN
152	480.163,750	9.154.084,397	505,767	TN	214	479.736,711	9.153.851,224	509,120	TN
153	480.163,469	9.154.094,547	501,448	TN	215	479.743,975	9.153.847,579	508,181	TN
154	480.751,971	9.153.704,835	505,790	TN	216	479.756,433	9.153.842,223	505,766	TN
155	480.117,638	9.154.086,177	501,023	EXRIO	217	479.765,234	9.153.839,329	504,885	EXRIO
156	480.065,641	9.154.062,843	501,878	EXRIO	218	479.770,734	9.153.836,272	506,702	TN
157	480.063,267	9.154.067,927	502,461	TN	219	479.782,679	9.153.829,138	510,230	TN
158	480.058,879	9.154.077,441	507,063	TN	220	479.782,741	9.153.829,074	510,241	TN
159	480.058,881	9.154.077,453	507,042	TN	221	479.770,759	9.153.836,271	506,695	TN
160	480.063,213	9.154.067,931	502,456	TN	222	479.712,484	9.153.803,861	506,311	EXRIO AP
161	480.072,109	9.154.047,768	505,612	TN	223	479.711,882	9.153.789,202	509,439	TN
162	480.072,117	9.154.047,773	505,629	TN	224	479.711,880	9.153.789,176	509,455	TN
163	480.065,609	9.154.062,827	501,852	EXRIO	225	479.712,509	9.153.794,389	508,152	TN
164	479.992,640	9.154.044,520	502,133	EXRIO	226	479.712,548	9.153.794,368	508,158	TN
165	479.991,931	9.154.050,970	506,226	TN	227	479.712,601	9.153.803,881	506,383	EXRIO AP
166	479.992,021	9.154.050,980	503,759	TN	228	479.715,029	9.153.810,651	506,318	TN
167	479.992,134	9.154.056,528	507,199	TN	229	479.714,966	9.153.810,689	506,366	TN
168	479.992,159	9.154.056,561	507,209	TN	230	479.686,544	9.153.825,676	506,559	EXRIO
169	479.992,623	9.154.044,517	502,101	EXRIO	231	479.684,149	9.153.835,572	507,286	TN
170	480.002,519	9.154.031,418	507,425	TN	232	479.687,668	9.153.845,953	509,648	TN
171	480.007,200	9.154.027,228	510,307	TN	233	479.692,723	9.153.861,691	513,910	TN
172	480.007,211	9.154.027,237	510,298	TN	234	479.692,716	9.153.861,698	513,908	TN
173	480.002,501	9.154.031,428	507,452	TN	235	479.687,649	9.153.845,973	509,644	TN
174	479.952,272	9.154.006,442	503,011	EXRIO	236	479.684,138	9.153.835,605	507,290	TN
175	479.952,272	9.154.006,441	503,007	EXRIO	237	479.686,604	9.153.825,882	506,512	EXRIO
176	479.906,635	9.153.962,858	502,711	EXRIO AP	238	479.679,218	9.153.819,577	506,875	TN
177	479.897,993	9.153.959,437	502,781	EXRIO AP	239	479.679,286	9.153.819,554	506,958	TN
178	479.899,783	9.153.955,044	503,943	TN	240	479.675,212	9.153.804,848	509,353	TN
179	479.901,216	9.153.949,633	504,665	TN	241	479.671,472	9.153.792,057	512,601	TN
180	479.901,210	9.153.949,626	504,649	TN	242	479.671,447	9.153.792,031	512,620	TN
181	479.904,912	9.153.944,567	507,370	TN	243	479.675,179	9.153.804,823	509,398	TN
182	479.907,486	9.153.940,052	510,084	TN	244	479.643,803	9.153.838,906	507,472	TN

Barragem Beré - Serviços Cartográficos - Apoio de Campo					Pontos Levantamento Topográfico RTK				
ID	Coordenadas		Cota	Descrição	ID	Coordenadas		Cota	Descrição
	X	Y				X	Y		
183	479.910,506	9.153.934,509	512,246	TN	245	479.643,844	9.153.838,861	507,507	TN
184	479.910,518	9.153.934,519	512,240	TN	246	479.647,097	9.153.848,716	506,960	EXRIO
185	479.907,754	9.153.939,713	510,063	TN	247	479.647,040	9.153.848,760	506,973	EXRIO
186	479.904,906	9.153.944,535	507,355	TN	248	479.655,271	9.153.856,121	507,494	TN
249	479.655,269	9.153.856,137	507,542	TN	311	480.378,278	9.153.742,329	562,683	TNEX3
250	479.588,413	9.153.882,840	506,655	TN	312	480.357,616	9.153.744,066	563,687	TNEX3
251	479.588,425	9.153.882,821	506,662	TN	313	480.336,895	9.153.749,628	565,546	TNEX3
252	479.590,032	9.153.889,264	507,280	TN	314	480.316,958	9.153.753,714	567,789	MARCO AP
253	479.590,127	9.153.889,328	507,311	TN	315	480.164,695	9.153.703,387	587,387	MARCO AP
254	479.587,584	9.153.876,946	507,659	TN	316	480.334,166	9.153.765,117	565,453	TNEX2
255	479.587,607	9.153.876,941	507,663	TN	317	480.352,418	9.153.775,884	562,093	TNEX2
256	479.864,560	9.153.941,202	503,453	EXRIO	318	480.369,336	9.153.786,727	557,592	TNEX2
257	479.951,995	9.154.007,126	502,914	EXRIO	319	480.387,024	9.153.796,922	554,289	TNEX2
258	480.160,485	9.154.102,094	500,213	EXRIO	320	480.390,385	9.153.816,880	550,177	TNEX2
259	480.242,330	9.154.127,188	499,545	EXRIO	321	480.395,015	9.153.836,858	542,844	TNEX2
260	480.336,484	9.154.026,006	498,146	TNEX1	322	480.400,291	9.153.855,542	535,918	TNEX2
261	480.336,464	9.154.025,939	498,080	TNEX1	323	480.408,959	9.153.875,142	526,931	TNEX2
262	480.321,624	9.154.015,639	508,000	TNEX1	324	480.417,756	9.153.892,716	518,238	TNEX2
263	480.321,631	9.154.015,612	507,974	TNEX1	325	480.417,742	9.153.892,720	518,257	TNEX2
264	480.308,221	9.154.006,659	520,155	TNEX1	326	480.408,993	9.153.875,157	526,972	TNEX2
265	480.308,195	9.154.006,614	520,175	TNEX1	327	480.400,291	9.153.855,549	535,916	TNEX2
266	480.296,976	9.153.995,778	532,724	TNEX1	328	480.395,023	9.153.836,840	542,830	TNEX2
267	480.296,972	9.153.995,785	532,724	TNEX1	329	480.390,380	9.153.816,875	550,192	TNEX2
268	480.290,349	9.153.989,360	538,812	TNEX1	330	480.387,041	9.153.796,916	554,267	TNEX2
269	480.290,334	9.153.989,349	538,805	TNEX1	331	480.369,341	9.153.786,738	557,549	TNEX2
270	480.277,507	9.153.975,658	549,953	TNEX1	332	480.352,441	9.153.775,893	562,060	TNEX2
271	480.277,507	9.153.975,634	549,957	TNEX1	333	480.334,171	9.153.765,118	565,450	TNEX2
272	480.263,463	9.153.963,592	559,094	TNEX1	334	480.316,906	9.153.753,738	567,774	MARCO AP
273	480.263,476	9.153.963,601	559,118	TNEX1	335	480.336,849	9.153.749,635	565,557	TNEX3
274	480.251,681	9.153.948,618	568,085	TNEX1	336	480.357,600	9.153.744,089	563,694	TNEX3
275	480.251,685	9.153.948,613	568,080	TNEX1	337	480.378,272	9.153.742,357	562,686	TNEX3
276	480.249,936	9.153.941,032	570,144	TNEX1	338	480.399,630	9.153.741,355	560,912	TNEX3
277	480.249,961	9.153.941,034	570,137	TNEX1	339	480.420,110	9.153.739,499	559,073	TNEX3
278	480.240,449	9.153.931,578	573,714	TNEX1	340	480.441,305	9.153.738,218	556,148	TNEX3
279	480.240,455	9.153.931,575	573,713	TNEX1	341	480.461,568	9.153.735,542	552,055	TNEX3
280	480.225,280	9.153.917,715	576,549	EX1 MARCO AP	342	480.482,567	9.153.732,657	548,242	TNEX3
281	480.225,295	9.153.917,722	576,546	EX1	343	480.502,743	9.153.731,819	543,728	TNEX3
282	480.278,990	9.154.107,518	499,199	EXRIO	344	480.523,125	9.153.733,109	536,271	TNEX3
283	480.272,719	9.154.099,441	501,353	TN	345	480.541,460	9.153.737,019	527,050	TNEX3
284	480.341,272	9.154.027,540	495,708	EXRIO EX1	346	480.562,780	9.153.741,959	518,326	TNEX3
285	480.377,558	9.153.968,972	496,619	EXRIO	347	480.573,985	9.153.739,834	511,564	TNEX3
286	480.389,192	9.153.942,197	496,099	EXRIO	348	480.596,221	9.153.742,504	499,224	TNEX3
287	480.529,774	9.153.347,545	509,519	MARCO AP	349	480.619,024	9.153.742,505	494,934	TNEX3
288	480.532,918	9.153.411,094	515,732	MARCO AP	350	480.488,773	9.153.936,969	494,921	EXRIO
289	480.624,234	9.153.627,973	498,492	EX SANGR	351	480.454,098	9.153.920,328	495,474	EXRIO CE
290	480.624,253	9.153.627,989	498,482	EX	352	480.433,852	9.153.918,585	495,469	EXRIO EX2
291	480.631,772	9.153.642,549	497,908	EX SANGR	353	480.410,605	9.153.922,946	495,523	EXRIO
292	480.631,764	9.153.642,532	497,921	EX	354	480.518,645	9.153.965,410	494,681	EXRIO
293	480.636,918	9.153.662,687	497,228	EX SANGR	355	480.540,608	9.153.967,047	494,646	EXRIO
294	480.636,953	9.153.662,650	497,220	EX	356	480.581,156	9.153.956,802	494,349	EXRIO
295	480.608,210	9.153.613,788	499,153	EX SANGR	357	480.577,546	9.153.591,606	500,551	EX SANGR
296	480.608,218	9.153.613,784	499,171	EX	358	480.562,993	9.153.585,124	501,366	EX SANGR
297	480.593,591	9.153.605,438	499,835	EX SANGR	359	480.541,766	9.153.584,450	502,401	EX SANGR
298	480.593,605	9.153.605,438	499,847	EX SANGR	360	480.528,348	9.153.592,894	502,962	EX SANGR
299	480.923,718	9.153.600,374	509,911	MARCO AP	361	480.509,796	9.153.602,703	504,070	EX SANGR
300	480.596,259	9.153.742,459	499,215	TNEX3	362	480.495,866	9.153.608,167	504,449	EX SANGR
301	480.573,998	9.153.739,814	511,486	TNEX3	363	480.509,755	9.153.602,730	504,051	EX SANGR
302	480.562,808	9.153.741,942	518,353	TNEX3	364	480.528,382	9.153.592,901	502,957	EX SANGR
303	480.541,475	9.153.737,011	527,021	TNEX3	365	480.541,828	9.153.584,432	502,401	EX SANGR
304	480.523,110	9.153.733,091	536,258	TNEX3	366	480.563,004	9.153.585,182	501,370	EX SANGR
305	480.502,750	9.153.731,836	543,665	TNEX3	367	480.577,535	9.153.591,621	500,557	EX SANGR
306	480.482,585	9.153.732,652	548,193	TNEX3	368	480.495,853	9.153.608,045	504,656	EX SANGR
307	480.461,555	9.153.735,505	552,015	TNEX3	369	480.472,990	9.153.622,543	505,261	EX SANGR

Barragem Beré - Serviços Cartográficos - Apoio de Campo					Pontos Levantamento Topográfico RTK				
ID	Coordenadas		Cota	Descrição	ID	Coordenadas		Cota	Descrição
	X	Y				X	Y		
308	480.441,318	9.153.738,176	556,154	TNEX3	370	480.449,148	9.153.629,626	507,741	EX SANGR
309	480.420,113	9.153.739,499	559,106	TNEX3	371	480.441,910	9.153.628,339	508,643	EX SANGR
310	480.399,634	9.153.741,338	560,932	TNEX3	372	480.473,006	9.153.622,601	505,287	EX SANGR
373	480.449,094	9.153.629,528	507,716	EX SANGR	435	480.633,506	9.154.037,589	550,238	TN
374	480.441,912	9.153.628,422	508,656	EX SANGR	436	480.672,919	9.154.030,184	547,676	TN
375	480.441,910	9.153.628,339	508,643	EX SANGR	437	480.645,978	9.153.960,272	535,119	EX2A TN
376	480.312,896	9.153.507,069	541,781	MARCO AP	438	480.672,036	9.153.924,541	525,869	TN
377	480.757,518	9.153.656,327	497,723	TN	439	480.715,624	9.153.897,262	512,898	TN
378	480.761,066	9.153.562,402	496,559	TN	440	480.691,155	9.153.869,540	503,373	TN
379	480.754,273	9.153.547,531	492,764	EXRIO	441	480.674,886	9.153.840,758	498,618	TN
380	480.751,186	9.153.533,365	496,859	TN	442	480.626,267	9.153.836,814	493,809	AP07
381	480.674,904	9.153.840,753	498,619	TNS2	443	480.606,505	9.153.921,293	494,370	AP08
382	480.691,171	9.153.869,550	503,350	TN	444	480.606,470	9.153.921,290	494,389	AP08
383	480.715,603	9.153.897,203	512,904	TN	445	480.537,058	9.153.951,300	496,237	TN
384	480.752,809	9.153.906,447	512,250	TN	446	480.537,044	9.153.951,317	496,238	TN
385	480.752,811	9.153.906,444	512,208	TN	447	480.510,355	9.153.922,473	501,492	TN
386	480.740,489	9.153.891,306	509,263	TN	448	480.490,494	9.153.909,991	506,082	TN
387	480.740,497	9.153.891,306	509,256	TN	449	480.458,585	9.153.883,467	516,486	TN
388	480.672,064	9.153.924,543	525,902	TN	450	480.448,372	9.153.869,691	520,907	TN
389	480.645,967	9.153.960,279	535,114	EX2A TN	451	480.452,567	9.153.835,059	532,337	TN
390	480.705,731	9.154.008,278	556,891	TN	452	480.452,568	9.153.835,054	532,343	TN
391	480.705,732	9.154.008,283	556,874	TN	453	480.448,364	9.153.869,715	520,902	TN
392	480.690,000	9.154.000,488	553,369	AP02	454	480.458,620	9.153.883,468	516,504	TN
393	480.690,001	9.154.000,491	553,359	AP02	455	480.490,487	9.153.909,994	506,079	TN
394	480.672,930	9.154.030,160	547,718	TN	456	480.510,398	9.153.922,487	501,480	TN
395	480.720,327	9.154.053,418	555,944	TN	457	480.643,579	9.153.643,142	497,723	AP09
396	480.720,274	9.154.053,384	555,969	TN	458	480.643,570	9.153.643,143	497,725	AP09
397	480.633,496	9.154.037,581	550,268	TN	459	480.654,311	9.153.463,259	511,532	AP10
398	480.603,555	9.154.068,071	548,294	TN	460	480.532,879	9.153.411,093	515,760	AP11
399	480.632,583	9.154.114,380	554,963	TN	461	480.532,872	9.153.411,096	515,753	AP11
400	480.632,592	9.154.114,364	554,960	TN	462	480.529,781	9.153.347,555	509,541	AP12
401	480.560,332	9.154.067,229	555,837	TN	463	480.069,768	9.153.523,345	555,045	AP13
402	480.506,509	9.154.065,997	560,240	TN	464	480.069,770	9.153.523,338	555,048	AP13
403	480.484,825	9.154.080,690	563,069	TN	465	479.964,785	9.153.658,627	578,182	AP14
404	480.535,836	9.154.113,270	572,260	TN	466	480.234,029	9.153.715,667	577,668	TN
405	480.535,847	9.154.113,263	572,286	TN	467	480.316,936	9.153.753,733	567,772	AP15
406	480.484,812	9.154.080,699	563,084	TN	468	480.316,945	9.153.753,730	567,783	AP15
407	480.458,668	9.154.062,539	555,335	TN	469	480.234,024	9.153.715,683	577,680	TN
408	480.412,690	9.154.072,056	539,712	AP03 B02	470	480.152,440	9.153.802,416	582,640	TN
409	480.422,026	9.154.102,384	534,920	TN	471	480.124,743	9.153.862,915	588,566	TN
410	480.419,509	9.154.127,330	537,751	TN	472	480.225,263	9.153.917,757	576,584	AP16
411	480.397,013	9.154.194,378	524,573	TN	473	480.240,427	9.153.931,595	573,736	TN
412	480.410,828	9.154.151,543	521,542	TN	474	480.124,732	9.153.862,913	588,553	TN
413	480.410,802	9.154.151,553	521,551	TN	475	480.152,423	9.153.802,398	582,652	TN
414	480.414,182	9.154.241,914	534,418	TN	476	480.096,665	9.153.673,437	587,386	TN
415	480.414,211	9.154.241,895	534,419	TN	477	480.096,673	9.153.673,449	587,372	TN
416	480.392,319	9.154.289,782	541,350	AP04	478	479.964,790	9.153.658,627	578,173	AP14
417	480.322,528	9.154.330,440	561,280	TN	479	480.010,805	9.153.609,439	569,868	TN
418	480.284,452	9.154.371,840	567,178	TN	480	480.069,763	9.153.523,323	555,053	AP13
419	480.194,048	9.154.418,640	571,143	TN	481	480.096,542	9.153.408,278	536,645	AP17
420	480.104,655	9.154.439,045	580,804	AP05	482	479.643,790	9.153.543,390	552,472	TN
421	480.104,649	9.154.439,045	580,822	AP05	483	479.494,412	9.153.512,479	563,094	AP18
422	480.284,436	9.154.371,824	567,176	TN	484	479.551,046	9.153.569,005	559,773	TN
423	480.322,510	9.154.330,441	561,260	TN	485	479.572,045	9.153.542,458	553,122	TN
424	480.392,323	9.154.289,794	543,916	AP04	486	479.660,541	9.153.597,587	532,129	TN
425	480.431,160	9.154.201,818	524,877	TN	487	479.649,362	9.153.680,751	523,290	TN
426	480.431,141	9.154.201,810	524,898	TN	488	479.551,050	9.153.569,001	559,771	TN
427	480.397,047	9.154.194,366	524,530	TN	489	479.572,050	9.153.542,466	553,145	TN
428	480.419,502	9.154.127,312	537,740	TN	490	479.494,407	9.153.512,482	563,110	AP18
429	480.421,990	9.154.102,378	534,916	TN	491	479.454,047	9.153.509,438	564,862	TN
430	480.412,696	9.154.072,076	539,701	AP03 B02	492	479.430,664	9.153.509,859	559,644	TN
431	480.458,715	9.154.062,534	555,346	TN	493	479.397,962	9.153.513,536	567,577	TN
432	480.506,510	9.154.065,993	560,247	TN	494	479.344,528	9.153.534,565	577,361	TN

<b>Barragem Beré - Serviços Cartográficos - Apoio de Campo</b>					<b>Pontos Levantamento Topográfico RTK</b>				
ID	Coordenadas		Cota	Descrição	ID	Coordenadas		Cota	Descrição
	X	Y				X	Y		
433	480.560,362	9.154.067,232	555,879	TN	495	479.357,036	9.153.599,552	571,932	TN
434	480.603,572	9.154.068,050	548,283	TN	496	479.374,119	9.153.667,660	581,484	AP20
497	479.508,056	9.153.785,252	579,462	AP21	559	479.499,686	9.154.533,561	593,778	TN
498	479.508,045	9.153.785,250	579,464	AP21	560	479.607,591	9.154.616,333	595,583	AP30
499	479.374,108	9.153.667,670	581,445	AP20	561	479.555,084	9.154.625,489	599,925	AP29
500	479.357,021	9.153.599,537	571,930	TN	562	479.417,885	9.154.637,983	583,388	AP28
501	479.344,523	9.153.534,563	577,352	TN	563	479.359,029	9.154.644,579	574,175	TN
502	479.397,981	9.153.513,539	567,576	TN	564	479.283,110	9.154.609,946	564,719	TN
503	479.430,645	9.153.509,852	559,648	TN	565	479.224,518	9.154.560,164	558,025	AP27
504	479.454,038	9.153.509,415	564,873	TN	566	479.143,789	9.154.568,899	542,528	TN
505	479.643,787	9.153.543,411	552,474	TN	567	479.100,726	9.154.517,063	531,621	AP26 EXRIO
506	479.660,534	9.153.597,582	532,108	TN	568	479.059,225	9.154.502,227	531,647	EXRIO
507	479.616,620	9.153.673,807	528,269	TN	569	479.157,250	9.154.514,105	530,965	EXRIO
508	479.616,643	9.153.673,853	528,253	TN	570	479.326,496	9.154.441,636	528,772	AP32 EXRIO
509	479.682,484	9.153.763,094	513,021	TN	571	479.248,081	9.153.630,051	566,589	TN
510	479.685,496	9.153.873,294	517,436	TN	572	480.073,476	9.153.725,741	582,654	TN
511	479.672,188	9.153.937,194	543,876	AP19	573	479.955,659	9.153.809,193	555,786	AP33
512	479.672,175	9.153.937,182	543,865	AP19	574	479.922,774	9.153.870,151	530,785	TN
513	479.685,432	9.153.873,262	517,479	TN	575	479.907,543	9.153.920,382	513,533	CE TN
514	479.649,380	9.153.680,748	523,275	TN	576	479.906,675	9.153.962,715	503,037	AP34
515	479.239,619	9.153.539,677	575,536	AP22	577	479.973,355	9.154.088,619	535,732	TN
516	479.271,193	9.153.625,430	569,840	TN	578	479.972,862	9.154.141,281	562,862	TN
517	479.270,518	9.153.619,359	568,498	TN	579	479.978,715	9.154.182,561	576,029	AP35
518	479.273,225	9.153.633,543	567,812	TN	580	480.005,212	9.154.225,796	577,469	TN
519	479.253,807	9.153.645,104	564,418	TN	581	480.086,361	9.154.215,324	561,904	TN
520	479.250,514	9.153.635,789	569,595	EX AÇUDE	582	480.106,730	9.154.217,707	556,364	TN
521	479.248,089	9.153.630,052	566,595	TN	583	480.143,086	9.154.198,115	545,691	TN
522	479.226,306	9.153.642,719	568,744	TN	584	479.059,212	9.154.502,225	531,643	EXRIO
523	479.229,709	9.153.648,644	569,915	TN	585	480.155,280	9.154.207,621	540,420	TN
524	479.238,799	9.153.665,199	565,112	TN	586	480.155,153	9.154.207,553	540,484	TN
525	479.184,196	9.153.780,594	588,094	TN	587	480.171,156	9.154.218,633	530,553	TN
526	479.042,954	9.153.807,730	602,043	AP23	588	480.175,119	9.154.256,236	529,960	TN
527	479.049,029	9.153.872,943	596,626	TN	589	480.174,386	9.154.231,092	527,783	TN
528	479.053,368	9.153.911,879	602,082	TN	590	480.204,400	9.154.188,647	509,481	TN
529	479.073,655	9.154.149,973	589,435	AP24	591	480.219,576	9.154.167,091	505,443	TN
530	479.076,763	9.154.192,411	582,521	TN	592	480.220,198	9.154.139,774	501,079	TN
531	479.082,477	9.154.259,932	592,330	AP25	593	480.242,334	9.154.127,256	499,552	AP36
532	479.169,394	9.154.314,856	580,293	TN	594	480.334,401	9.154.081,653	500,859	TN
533	479.095,574	9.154.420,766	563,590	TN	595	480.377,545	9.153.969,002	496,642	AP37
534	479.100,734	9.154.517,066	531,620	AP26 EXRIO	596	480.363,433	9.154.092,758	506,146	TN
535	479.143,760	9.154.568,885	542,554	TN	597	480.312,913	9.153.507,074	541,808	AP38
536	479.224,509	9.154.560,142	558,043	AP27	598	480.351,116	9.154.086,416	502,587	TN
537	479.283,092	9.154.609,953	564,738	TN	599	480.363,433	9.154.092,758	506,146	TN
538	479.359,011	9.154.644,603	574,174	TN	600	478.165,167	9.154.206,976	563,795	ASF
539	479.417,880	9.154.637,982	583,401	AP28	601	478.214,828	9.154.185,368	555,625	TN
540	479.555,074	9.154.625,474	599,950	AP29	602	478.214,834	9.154.185,408	555,590	TN
541	479.607,603	9.154.616,331	595,577	AP30	603	479.250,492	9.153.635,789	569,597	EX PAR AÇUDE
542	479.499,665	9.154.533,543	593,781	TN	604	479.253,813	9.153.645,069	564,414	TN
543	479.508,712	9.154.472,765	594,406	TN	605	479.326,488	9.154.441,649	528,775	AP32 EXRIO
544	479.562,191	9.154.378,313	584,400	TN	606	479.157,254	9.154.514,110	530,960	EXRIO
545	479.597,432	9.154.338,188	581,993	AP31	607	479.095,582	9.154.420,766	563,587	TN
546	479.672,302	9.154.223,341	564,482	TN	608	479.169,379	9.154.314,840	580,287	TN
547	479.658,110	9.154.226,777	568,135	TN	609	479.082,478	9.154.259,925	592,343	AP25
548	479.638,045	9.154.227,947	562,862	TN	610	479.076,751	9.154.192,383	582,499	AP25
549	479.629,356	9.154.159,499	573,022	TN	611	479.073,667	9.154.149,951	589,430	AP24
550	479.599,955	9.154.061,444	585,607	TN	612	479.053,348	9.153.911,895	602,069	TN
551	479.599,957	9.154.061,439	585,603	TN	613	479.049,018	9.153.872,932	596,616	TN
552	479.629,372	9.154.159,526	573,021	TN	614	479.042,964	9.153.807,708	602,034	AP23
553	479.672,294	9.154.223,309	564,486	TN	615	479.184,194	9.153.780,622	588,087	TN
554	479.658,076	9.154.226,793	568,128	TN	616	479.238,770	9.153.665,176	565,114	TN
555	479.638,066	9.154.227,941	562,847	TN	617	479.229,708	9.153.648,622	569,909	TN
556	479.597,424	9.154.338,198	581,980	AP31	618	479.226,294	9.153.642,699	568,724	TN
557	479.562,203	9.154.378,282	584,400	TN	619	479.955,654	9.153.809,185	555,788	AP33



Barragem Beré - Serviços Cartográficos - Apoio de Campo				
ID	Coordenadas		Cota	Descrição
	X	Y		
558	479.508,716	9.154.472,776	594,399	TN
621	479.922,765	9.153.870,165	530,805	TN
622	479.907,538	9.153.920,383	513,544	CE TN
623	479.906,650	9.153.962,711	503,024	AP34
624	479.973,375	9.154.088,624	535,737	TN
625	479.972,871	9.154.141,264	562,861	TN
626	479.978,700	9.154.182,567	576,040	AP35
627	480.005,210	9.154.225,794	577,469	TN
628	480.086,336	9.154.215,312	561,895	TN
629	480.106,745	9.154.217,708	556,360	TN
630	480.143,087	9.154.198,118	545,687	TN
631	480.155,162	9.154.207,558	540,474	TN
632	480.175,126	9.154.256,234	529,957	TN
633	480.174,345	9.154.231,064	527,769	TN
634	480.171,164	9.154.218,621	530,543	TN
635	480.204,381	9.154.188,656	509,475	TN
636	480.219,572	9.154.167,075	505,463	TN
637	480.220,191	9.154.139,784	501,101	TN
638	480.242,331	9.154.127,247	499,545	AP36
639	480.351,116	9.154.086,425	502,574	TN
640	480.363,420	9.154.092,755	506,155	TN
641	480.334,399	9.154.081,650	500,860	TN
642	480.377,547	9.153.969,001	496,656	AP37
643	480.312,875	9.153.507,094	541,806	AP38
644	478.227,261	9.154.148,141	551,113	TN
645	478.227,247	9.154.148,155	551,101	TN
646	478.165,168	9.154.206,968	563,793	TN
647	479.273,214	9.153.633,540	567,825	TN
648	479.271,164	9.153.625,441	569,832	TN
649	479.270,501	9.153.619,311	568,497	TN
650	479.239,625	9.153.539,650	575,542	AP22
651	480.096,572	9.153.408,262	536,660	AP17
652	480.529,775	9.153.347,556	509,553	AP12
653	480.654,329	9.153.463,214	511,550	AP10
654	480.923,715	9.153.600,363	509,932	AP39
655	480.923,725	9.153.600,363	509,924	AP39

Pontos Levantamento Topográfico RTK				
ID	Coordenadas		Cota	Descrição
	X	Y		
620	480.073,474	9.153.725,741	582,668	TN
<b>Resumo dos Serviços do Aerolevamento e do Levantamento Topográfico com RTK</b>				
ID	Descrição			Total
01	Área do Voo (ha)			308,70
02	Total do Levantamento RTK (km)			21,255

## **ANEXOS 2 – Levantamento Estação Total**

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### Levantamento Estação Total - Barragem Beré

Pontos	Coordenadas		Cota	Descrição
	X	Y		
E-0	480455,765	9154040,323	550,111	EIXO
E-0+10	480453,282	9154030,641	545,527	EIXO
E-1	480450,781	9154020,960	539,725	EIXO
E1+10	480448,276	9154011,241	533,198	EIXO
E2	480445,771	9154001,581	526,570	EIXO
E2+10	480443,307	9153991,912	519,421	EIXO
E3	480440,784	9153982,240	512,015	EIXO
E3+10	480438,306	9153972,514	506,798	EIXO
E-4	480435,818	9153962,815	501,903	EIXO
E-4+10	480433,304	9153953,176	499,957	EIXO
E-5	480430,854	9153943,413	499,791	EIXO
E-5+10	480428,304	9153933,804	498,491	EIXO
E-6	480425,807	9153924,117	495,609	EIXO
E6+10	480423,351	9153914,645	497,541	EIXO
E7	480420,467	9153904,581	507,087	EIXO
E7+10	480418,288	9153895,113	516,278	EIXO
E8	480415,743	9153885,068	522,534	EIXO
E8+10	480413,308	9153875,674	526,127	EIXO
E9	480410,796	9153865,932	530,006	EIXO
E9+10	480408,311	9153856,270	534,666	EIXO
E10	480405,798	9153846,556	539,411	EIXO
E10+10	480403,241	9153836,657	542,815	EIXO
E11	480400,833	9153827,304	545,773	EIXO
E11+10	480398,249	9153817,327	549,241	EIXO
E12	480395,815	9153807,828	552,126	EIXO
1	480402,068	9153806,088	551,797	TN
2	480410,503	9153804,334	550,157	TN
3	480414,482	9153803,083	548,725	TN
4	480419,966	9153800,220	549,456	TN
5	480429,895	9153798,219	549,381	TN
6	480439,770	9153796,595	549,251	TN
7	480444,447	9153795,356	549,785	TN
8	480390,903	9153809,575	551,885	TN
9	480384,100	9153811,458	551,127	TN
10	480378,970	9153813,892	549,576	TN
11	480375,472	9153814,414	550,112	TN
12	480367,717	9153817,446	549,763	TN
13	480363,992	9153818,516	549,271	TN
14	480358,899	9153819,601	548,479	TN
15	480353,749	9153820,982	547,631	TN
16	480407,713	9153826,551	545,322	TN
17	480412,963	9153825,577	544,610	TN
18	480416,976	9153824,967	543,662	TN
19	480421,884	9153824,336	541,855	TN
20	480425,729	9153823,666	540,510	TN



### Levantamento Estação Total - Barragem Beré

Pontos	Coordenadas		Cota	Descrição
	X	Y		
21	480401,415	9153828,081	545,423	TN
22	480392,670	9153829,258	545,189	TN
23	480386,814	9153829,505	545,792	TN
24	480381,304	9153830,282	544,182	TN
25	480377,466	9153830,378	545,043	TN
26	480373,250	9153830,709	545,473	TN
27	480368,956	9153831,140	545,453	TN
28	480364,760	9153831,414	545,124	TN
29	480360,635	9153832,295	544,597	TN
30	480402,206	9153847,224	539,154	TN
31	480395,079	9153848,605	538,587	TN
32	480390,134	9153849,759	538,383	TN
33	480386,254	9153850,538	537,474	TN
34	480383,737	9153850,969	537,931	TN
35	480378,777	9153851,289	537,986	TN
36	480373,012	9153852,220	537,884	TN
37	480365,170	9153851,909	537,862	TN
38	480408,801	9153845,293	539,299	TN
39	480414,927	9153843,344	538,438	TN
40	480421,068	9153840,817	537,402	TN
41	480425,221	9153839,484	536,652	TN
42	480428,506	9153838,035	536,121	TN
43	480435,621	9153838,161	532,681	TN
44	480437,964	9153834,319	531,882	TN
45	480447,729	9153855,063	524,324	TN
46	480441,619	9153856,330	526,030	TN
47	480434,536	9153856,710	527,842	TN
48	480429,103	9153858,493	528,757	TN
49	480424,604	9153859,527	529,675	TN
50	480415,413	9153862,838	530,516	TN
51	480410,319	9153863,933	530,949	TN
52	480405,185	9153865,101	531,106	TN
53	480401,280	9153865,706	531,486	TN
54	480394,669	9153867,297	532,206	TN
55	480390,303	9153868,474	531,936	TN
56	480385,642	9153869,057	531,545	TN
57	480380,790	9153870,207	530,750	TN
58	480375,936	9153871,479	529,103	TN
59	480385,433	9153889,445	518,740	TN
60	480389,287	9153887,741	521,506	TN
61	480394,281	9153886,143	523,829	TN
62	480399,543	9153884,703	524,942	TN
63	480404,189	9153884,142	524,907	TN
64	480410,304	9153881,551	525,505	TN
65	480414,871	9153880,737	524,522	TN



### Levantamento Estação Total - Barragem Beré

Pontos	Coordenadas		Cota	Descrição
	X	Y		
66	480419,786	9153879,637	523,769	TN
67	480425,485	9153878,601	522,894	TN
68	480429,968	9153876,126	523,023	TN
69	480434,542	9153874,587	522,627	TN
70	480438,895	9153874,317	521,821	TN
71	480443,996	9153875,773	520,386	TN
72	480448,849	9153872,358	520,250	TN
73	480453,878	9153870,366	519,463	TN
74	480458,229	9153869,718	518,527	TN
75	480494,025	9154028,495	540,345	TN
76	480489,709	9154031,112	542,444	TN
77	480484,978	9154032,336	543,785	TN
78	480479,468	9154034,150	545,538	TN
79	480475,445	9154035,407	546,941	TN
80	480469,944	9154036,847	548,301	TN
81	480465,865	9154037,685	549,411	TN
82	480460,491	9154039,185	550,296	TN
83	480453,456	9154041,453	550,168	TN
84	480449,273	9154042,116	549,443	TN
85	480430,656	9154046,877	545,261	TN
86	480421,810	9154049,706	543,788	TN
87	480411,744	9154051,615	540,648	TN
88	480448,424	9154021,669	539,993	TN
89	480444,178	9154022,694	540,282	TN
90	480439,637	9154024,102	539,788	TN
91	480436,233	9154024,678	538,989	TN
92	480430,908	9154026,295	537,253	TN
93	480425,456	9154027,696	536,885	TN
94	480415,714	9154030,090	537,422	TN
95	480410,293	9154031,526	537,137	TN
96	480408,572	9154032,274	536,889	TN
97	480481,207	9154014,834	532,665	TN
98	480476,758	9154016,252	534,046	TN
99	480471,714	9154016,811	534,910	TN
100	480466,134	9154018,508	536,512	TN
101	480460,987	9154019,014	537,690	TN
102	480456,044	9154020,488	539,049	TN
S1	480450,637	9154012,812	533,810	SONDAGEM
103	480448,730	9154000,863	526,191	TN
104	480452,402	9154000,778	525,743	TN
105	480456,856	9153999,735	524,662	TN
106	480461,917	9153998,880	524,059	TN
107	480466,485	9153998,001	523,060	TN
108	480471,461	9153998,323	522,258	TN
109	480478,269	9153998,092	521,810	TN



### Levantamento Estação Total - Barragem Beré

Pontos	Coordenadas		Cota	Descrição
	X	Y		
110	480489,512	9153996,488	519,619	TN
111	480440,169	9154001,618	526,772	TN
112	480434,289	9154002,810	527,013	TN
113	480430,362	9154005,304	528,180	TN
114	480425,732	9154006,836	528,198	TN
115	480421,967	9154007,534	527,370	TN
116	480416,432	9154008,360	526,586	TN
117	480411,001	9154008,937	525,771	TN
118	480402,993	9154010,985	524,528	TN
119	480401,870	9153994,277	518,365	TN
120	480407,491	9153992,781	519,050	TN
121	480411,632	9153991,454	518,233	TN
122	480417,206	9153989,954	517,589	TN
123	480421,351	9153988,733	516,626	TN
124	480426,405	9153986,710	515,552	TN
125	480430,251	9153984,732	514,247	TN
126	480435,345	9153983,563	513,054	TN
127	480442,682	9153981,597	511,818	TN
128	480448,716	9153979,911	511,349	TN
129	480454,237	9153978,191	510,917	TN
130	480459,109	9153976,632	509,972	TN
131	480462,505	9153975,309	509,677	TN
132	480465,631	9153974,064	508,769	TN
133	480469,319	9153973,208	507,275	TN
134	480470,611	9153972,957	506,771	TN
135	480472,867	9153972,768	505,315	TN
136	480476,064	9153971,395	503,370	TN
137	480479,884	9153970,813	501,876	TN
138	480484,698	9153969,534	500,293	TN
139	480471,752	9153890,893	512,852	TN
140	480463,671	9153893,433	512,652	TN
141	480458,506	9153893,895	512,933	TN
142	480449,676	9153895,943	513,409	TN
143	480442,098	9153895,155	514,069	TN
S4	480414,313	9153889,272	520,408	SONDAGEM
S5	480411,274	9153870,584	527,275	SONDAGEM
S6	480410,452	9153857,133	533,350	SONDAGEM
144	480436,236	9153965,560	502,321	TN
145	480432,281	9153963,514	502,050	TN
146	480427,184	9153965,105	502,481	TN
147	480421,927	9153967,076	503,751	TN
148	480416,977	9153969,005	504,346	TN
149	480413,277	9153970,367	504,671	TN
150	480409,542	9153971,483	504,939	TN
151	480406,091	9153972,630	504,001	TN



### Levantamento Estação Total - Barragem Beré

Pontos	Coordenadas		Cota	Descrição
	X	Y		
152	480400,769	9153974,538	503,771	TN
153	480395,981	9153975,854	502,626	TN
154	480440,511	9153961,822	501,604	TN
155	480446,932	9153960,359	501,729	TN
156	480450,060	9153959,866	501,267	TN
157	480455,395	9153958,372	500,367	TN
158	480461,256	9153956,273	499,461	TN
159	480467,518	9153955,231	499,308	TN
160	480476,940	9153953,126	498,678	TN
161	480427,690	9153945,838	499,875	TN
162	480423,274	9153947,834	499,573	TN
163	480418,739	9153950,131	499,818	TN
164	480413,988	9153952,767	499,666	TN
165	480409,717	9153955,328	499,633	TN
166	480404,769	9153957,604	499,402	TN
167	480399,992	9153959,914	498,886	TN
168	480396,000	9153962,142	498,387	TN
169	480392,348	9153964,595	498,054	TN
170	480436,212	9153943,023	499,745	TN
171	480442,000	9153940,784	499,631	TN
172	480462,395	9153922,825	494,881	TN
173	480458,446	9153921,789	495,381	TN
174	480454,760	9153920,807	495,434	TN
175	480448,912	9153920,970	495,714	TN
176	480442,304	9153921,403	495,850	TN
177	480435,863	9153921,908	496,028	TN
178	480430,132	9153923,162	495,870	TN
SR1	480425,706	9153920,681	494,955	SONDAGEM
179	480420,802	9153924,390	496,200	TN
180	480415,761	9153925,349	496,115	TN
181	480409,879	9153926,435	495,998	TN
182	480405,068	9153930,482	495,953	TN
183	480400,303	9153933,967	495,908	TN
184	480396,321	9153937,602	496,378	TN
185	480392,253	9153940,360	495,942	TN
186	480390,595	9153938,582	496,047	TN
187	480396,367	9153935,250	495,836	TN
188	480398,841	9153930,142	495,940	TN
189	480403,371	9153927,094	495,649	TN
190	480409,438	9153922,672	495,464	TN
191	480409,433	9153922,768	495,419	TN
192	480417,815	9153919,602	495,026	TN
193	480422,459	9153919,979	495,356	TN
194	480429,081	9153917,014	495,246	TN
195	480431,031	9153916,028	496,005	TN



### Levantamento Estação Total - Barragem Beré

Pontos	Coordenadas		Cota	Descrição
	X	Y		
196	480437,509	9153915,389	496,057	TN
SR3	480440,394	9153981,051	511,502	SONDAGEM
SR2	480434,402	9153958,542	500,774	SONDAGEM
197	480446,948	9153937,708	499,356	TN
198	480451,247	9153934,844	498,772	TN
199	480456,334	9153931,515	497,829	TN
200	480458,326	9153928,414	495,773	TN
SR6	480409,263	9153962,590	499,946	SONDAGEM
SR4	480463,202	9153955,606	499,340	SONDAGEM
201	480476,833	9153964,638	499,588	TN
202	480480,907	9153965,237	499,608	TN
203	480486,300	9153967,983	499,652	TN
204	480491,274	9153967,690	499,097	TN
SR7	480489,828	9153966,995	499,170	SONDAGEM
SR8	480495,988	9153960,122	498,811	SONDAGEM
SR5	480464,130	9153931,440	495,564	SONDAGEM