



**GOVERNO DO
ESTADO DO CEARÁ**



GOVERNO DO ESTADO DO CEARÁ

PREFEITURA MUNICIPAL DE MIRAÍMA

Projeto Básico de Engenharia

VOLUME 2A - NOTAS DE SERVIÇO E VOLUMES

RODOVIA: VICINAL

TRECHO 1 (10,6KM): ENTR. CE-176 (JUREMAL) - SUINASA - CIGANO;

TRECHO 2 (5,5KM): ENTR. CE-176 (BARRA DO GARROTE) - ENTR.
CE-240 (GARROTE)

Maio de 2018



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1 – APRESENTAÇÃO





1 - APRESENTAÇÃO

A Prefeitura Municipal de Miraíma, situada a Av. Mestre Francisco Marques, nº 22 - Estação - Fone (088) 3630 1167 elaborou o **VOLUME 2A – NOTAS DE SERVIÇOS E CÁLCULO DE VOLUMES** para o Piçarramento e implantação de dispositivos de drenagem da Rodovia Vicinal, Trecho 1 (10,6km): Entr. CE-176 (Juremal) - Suinasa - Cigano; Trecho 2 (5,5km): Entr. CE-176 (Barra Do Garrote) - Entr. Ce-240 (Garrote), totalizando uma extensão de 16,10Km.

O Projeto Básico é composto e apresentado em 03(Vias) vias e consta dos seguintes volumes:

- Volume 1– Relatório de Projeto(tamanho A-4);
- Volume 2– Projeto de Execução(tamanho A-3);
- Volume 2A – Notas de Serviço e Pontos de Coordenadas(Formato A-4);
- Volume 4 – Orçamento(Formato A-4);



GOVERNO MUNICIPAL

MIRAIMA



2 – NOTAS DE SERVIÇOS

Estaca	Lado Esquerdo						Eixo						Lado Direito								
	Offset			Bordo			Cota			Cota Vermelha			Bordo			Lateral			Offset		
	Distância	Altura	Lateral	Distância	Cota	%	Terreno	Projeto	Cota	Vermelha	Distância	Cota	%	Distância	Cota	Distância	Cota	Distância	Cota	Altura	
0	3,596	52,224	0,144	3,500	52,080	-3,00	52,185	52,185	0,000	3,500	52,080	-3,00	3,500	52,080	3,545	52,147	0,067				
0+5,000	3,708	52,215	0,312	3,500	51,903	-3,00	52,153	52,008	0,145	3,500	51,903	-3,00	3,500	51,903	3,597	52,049	0,146				
1	3,535	51,489	0,052	3,500	51,437	-3,00	51,420	51,542	-0,122	3,500	51,437	-3,00	3,500	51,437	3,909	51,164	-0,273				
1+14,781	3,594	51,246	0,140	3,500	51,106	-3,00	51,131	51,211	-0,080	3,500	51,106	-3,00	3,500	51,106	3,717	50,961	-0,145				
2	3,617	51,195	0,175	3,500	51,020	-3,00	51,082	51,125	-0,043	3,500	51,020	-3,00	3,500	51,020	3,608	50,948	-0,072				
2+18,514	3,635	51,044	0,202	3,500	50,842	-3,00	50,964	50,947	0,017	3,500	50,842	-3,00	3,500	50,842	3,573	50,951	0,109				
3	3,651	51,062	0,226	3,500	50,836	-3,00	50,984	50,941	0,043	3,500	50,836	-3,00	3,500	50,836	3,587	50,966	0,130				
4	3,761	51,278	0,392	3,500	50,886	-3,00	51,202	50,991	0,211	3,500	50,886	-3,00	3,500	50,886	3,688	51,167	0,281				
4+12,622	3,816	51,511	0,473	3,500	51,038	-3,00	51,262	51,143	0,119	3,500	51,038	-3,00	3,500	51,038	3,662	51,281	0,243				
5	3,830	51,664	0,495	3,500	51,169	-3,00	51,319	51,274	0,045	3,500	51,169	-3,00	3,500	51,169	3,635	51,371	0,202				
5+5,000	3,823	51,762	0,485	3,500	51,277	-3,00	51,381	51,382	-0,001	3,500	51,277	-3,00	3,500	51,277	3,633	51,476	0,199				
6	3,663	51,864	0,244	3,500	51,620	-3,00	51,679	51,725	-0,046	3,500	51,620	-3,00	3,500	51,620	3,663	51,864	0,244				
6+18,333	3,584	52,166	0,126	3,500	52,040	-3,00	52,080	52,145	-0,065	3,500	52,040	-3,00	3,500	52,040	3,540	52,100	0,060				
7	3,591	52,215	0,137	3,500	52,078	-3,00	52,118	52,183	-0,065	3,500	52,078	-3,00	3,500	52,078	3,543	52,142	0,064				
8	3,600	52,687	0,150	3,500	52,537	-3,00	52,554	52,642	-0,088	3,500	52,537	-3,00	3,500	52,537	3,524	52,573	0,036				
8+18,292	3,520	52,985	0,029	3,500	52,956	-3,00	52,951	53,061	-0,110	3,500	52,956	-3,00	3,500	52,956	3,537	52,931	-0,025				
9	3,519	53,024	0,029	3,500	52,995	-3,00	52,989	53,100	-0,111	3,500	52,995	-3,00	3,500	52,995	3,510	52,988	-0,007				
10	3,543	53,425	-0,028	3,500	53,453	-3,00	53,426	53,558	-0,132	3,500	53,453	-3,00	3,500	53,453	3,514	53,444	-0,009				
11	3,644	54,127	0,216	3,500	53,911	-3,00	53,823	54,016	-0,193	3,500	53,911	-3,00	3,500	53,911	3,585	53,854	-0,057				
12	3,732	54,719	0,349	3,500	54,370	-3,00	54,236	54,475	-0,239	3,500	54,370	-3,00	3,500	54,370	3,534	54,420	0,050				
13	3,680	55,098	0,270	3,500	54,828	-3,00	54,888	54,933	-0,045	3,500	54,828	-3,00	3,500	54,828	3,532	54,876	0,048				
14	3,723	55,620	0,334	3,500	55,286	-3,00	55,390	55,391	-0,001	3,500	55,286	-3,00	3,500	55,286	3,551	55,363	0,077				
14+13,00	3,617	55,759	0,175	3,500	55,584	-3,00	55,572	55,689	-0,117	3,500	55,584	-3,00	3,500	55,584	3,559	55,544	-0,040				
15	3,569	55,828	0,104	3,500	55,724	-3,00	55,675	55,829	-0,154	3,500	55,724	-3,00	3,500	55,724	3,624	55,641	-0,083				
15+13,00	3,552	55,952	0,078	3,500	55,874	-3,00	55,894	55,979	-0,085	3,500	55,874	-3,00	3,500	55,874	3,577	55,822	-0,052				
16	3,567	56,018	0,101	3,500	55,917	-3,00	55,932	56,022	-0,090	3,500	55,917	-3,00	3,500	55,917	3,517	55,906	-0,011				
16+14,28	3,595	56,147	0,142	3,500	56,005	-3,00	56,068	56,110	-0,042	3,500	56,005	-3,00	3,500	56,005	3,514	56,026	0,021				
17	3,600	56,191	0,151	3,500	56,040	-3,00	56,124	56,145	-0,021	3,500	56,040	-3,00	3,500	56,040	3,524	56,075	0,035				
17+13,00	3,540	56,180	0,060	3,500	56,120	-3,00	56,096	56,225	-0,129	3,500	56,120	-3,00	3,500	56,120	3,648	56,021	-0,099				



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Estaca	Lado Esquerdo						Eixo						Lado Direito												
	Offset			Lateral			Bordo			Cota			Vermelha			Cota			Lateral			Offset			
	Distância	Altura	Cota	Distância	Cota	Distância	%	Cota	Terreno	Projeto	Distância	%	Cota	Distância	Cota	Distância	%	Cota	Distância	Cota	Distância	Cota	Distância	Cota	Altura
18	3,512	-0,008	56,133	3,500	56,141	3,500	-3,00	56,067	56,246	3,500	-3,00	56,141	3,500	-0,179	56,246	3,500	-3,00	56,141	3,500	56,141	3,703	56,006	3,703	56,006	-0,135
18+13,00	3,633	-0,089	55,978	3,500	56,067	3,500	-3,00	56,086	56,172	3,500	-3,00	56,067	3,500	-0,086	56,172	3,500	-3,00	56,067	3,500	56,067	3,597	56,002	3,597	56,002	-0,065
18+14,26	3,627	-0,085	55,967	3,500	56,052	3,500	-3,00	56,074	56,157	3,500	-3,00	56,052	3,500	-0,083	56,157	3,500	-3,00	56,052	3,500	56,052	3,547	56,021	3,547	56,021	-0,031
19	3,531	0,047	56,034	3,500	55,987	3,500	-3,00	55,991	56,092	3,500	-3,00	55,987	3,500	-0,101	56,092	3,500	-3,00	55,987	3,500	55,987	3,574	55,937	3,574	55,937	-0,050
20	3,558	0,087	55,846	3,500	55,759	3,500	-3,00	55,839	55,864	3,500	-3,00	55,759	3,500	-0,025	55,864	3,500	-3,00	55,759	3,500	55,759	3,531	55,738	3,531	55,738	-0,021
21	3,636	0,204	55,734	3,500	55,530	3,500	-3,00	55,647	55,635	3,500	-3,00	55,530	3,500	0,012	55,635	3,500	-3,00	55,530	3,500	55,530	3,524	55,514	3,524	55,514	-0,016
22	3,565	0,097	55,399	3,500	55,302	3,500	-3,00	55,221	55,407	3,500	-3,00	55,302	3,500	-0,186	55,407	3,500	-3,00	55,302	3,500	55,302	3,617	55,478	3,617	55,478	0,176
22+14,00	3,694	0,290	55,432	3,500	55,142	3,500	-3,00	54,884	55,247	3,500	-3,00	55,142	3,500	-0,363	55,247	3,500	-3,00	55,142	3,500	55,142	3,777	55,557	3,777	55,557	0,415
23	3,815	0,473	55,585	3,500	55,112	3,500	-3,00	55,163	55,217	3,500	-3,00	55,112	3,500	-0,054	55,217	3,500	-3,00	55,112	3,500	55,112	3,813	55,581	3,813	55,581	0,469
23+14,00	3,774	0,411	55,755	3,500	55,344	3,500	-3,00	55,765	55,449	3,500	-3,00	55,344	3,500	0,316	55,449	3,500	-3,00	55,344	3,500	55,344	3,649	55,568	3,649	55,568	0,224
24	3,706	0,309	55,843	3,500	55,534	3,500	-3,00	55,700	55,639	3,500	-3,00	55,534	3,500	0,061	55,639	3,500	-3,00	55,534	3,500	55,534	3,577	55,650	3,577	55,650	0,116
25	3,571	0,107	56,274	3,500	56,167	3,500	-3,00	56,216	56,272	3,500	-3,00	56,167	3,500	-0,056	56,272	3,500	-3,00	56,167	3,500	56,167	3,538	56,224	3,538	56,224	0,057
25+19,02	3,684	-0,123	56,645	3,500	56,768	3,500	-3,00	56,776	56,873	3,500	-3,00	56,768	3,500	-0,097	56,873	3,500	-3,00	56,768	3,500	56,768	3,577	56,884	3,577	56,884	0,116
26	3,689	-0,126	56,673	3,500	56,799	3,500	-3,00	56,814	56,904	3,500	-3,00	56,799	3,500	-0,090	56,904	3,500	-3,00	56,799	3,500	56,799	3,581	56,920	3,581	56,920	0,121
27	3,541	-0,027	57,405	3,500	57,432	3,500	-3,00	57,478	57,537	3,500	-3,00	57,432	3,500	-0,059	57,537	3,500	-3,00	57,432	3,500	57,432	3,659	57,671	3,659	57,671	0,239
27+18,99	3,776	0,414	58,447	3,500	58,033	3,500	-3,00	58,032	58,138	3,500	-3,00	58,033	3,500	-0,106	58,138	3,500	-3,00	58,033	3,500	58,033	3,598	58,180	3,598	58,180	0,147
28	3,771	0,407	58,471	3,500	58,064	3,500	-3,00	58,065	58,169	3,500	-3,00	58,064	3,500	-0,104	58,169	3,500	-3,00	58,064	3,500	58,064	3,594	58,206	3,594	58,206	0,142
28+10,00	3,667	0,250	58,631	3,500	58,381	3,500	-3,00	58,390	58,486	3,500	-3,00	58,381	3,500	-0,096	58,486	3,500	-3,00	58,381	3,500	58,381	3,561	58,472	3,561	58,472	0,091
29	3,530	0,046	58,618	3,500	58,572	3,500	-3,00	58,750	58,677	3,500	-3,00	58,572	3,500	0,073	58,677	3,500	-3,00	58,572	3,500	58,572	3,611	58,738	3,611	58,738	0,166
29+10,00	3,513	0,019	58,531	3,500	58,512	3,500	-3,00	58,596	58,617	3,500	-3,00	58,512	3,500	-0,021	58,617	3,500	-3,00	58,512	3,500	58,512	3,533	58,562	3,533	58,562	0,050
30	3,609	0,163	58,490	3,500	58,327	3,500	-3,00	58,433	58,432	3,500	-3,00	58,327	3,500	0,001	58,432	3,500	-3,00	58,327	3,500	58,327	3,534	58,377	3,534	58,377	0,050
30+2,366	3,675	0,262	58,546	3,500	58,284	3,500	-3,00	58,396	58,389	3,500	-3,00	58,284	3,500	0,007	58,389	3,500	-3,00	58,284	3,500	58,284	3,531	58,331	3,531	58,331	0,047
31	3,652	0,228	58,186	3,500	57,958	3,500	-3,00	57,978	58,063	3,500	-3,00	57,958	3,500	-0,085	58,063	3,500	-3,00	57,958	3,500	57,958	3,517	57,947	3,517	57,947	-0,011
32	3,600	0,150	57,738	3,500	57,588	3,500	-3,00	57,447	57,693	3,500	-3,00	57,588	3,500	-0,246	57,693	3,500	-3,00	57,588	3,500	57,588	3,587	57,530	3,587	57,530	-0,058
32+2,331	3,575	0,112	57,657	3,500	57,545	3,500	-3,00	57,404	57,650	3,500	-3,00	57,545	3,500	-0,246	57,650	3,500	-3,00	57,545	3,500	57,545	3,587	57,487	3,587	57,487	-0,058
33	3,632	-0,088	57,130	3,500	57,218	3,500	-3,00	57,048	57,323	3,500	-3,00	57,218	3,500	-0,275	57,323	3,500	-3,00	57,218	3,500	57,218	3,583	57,163	3,583	57,163	-0,055
34	3,592	0,138	56,986	3,500	56,848	3,500	-3,00	56,793	56,953	3,500	-3,00	56,848	3,500	-0,160	56,953	3,500	-3,00	56,848	3,500	56,848	3,590	56,788	3,590	56,788	-0,060
35	3,601	0,152	56,631	3,500	56,479	3,500	-3,00	56,624	56,594	3,500	-3,00	56,479	3,500	0,040	56,594	3,500	-3,00	56,479	3,500	56,479	3,597	56,624	3,597	56,624	0,145
35+10,00	3,593	0,139	56,433	3,500	56,294	3,500	-3,00	56,550	56,399	3,500	-3,00	56,294	3,500	0,151	56,399	3,500	-3,00	56,294	3,500	56,294	3,521	56,325	3,521	56,325	0,031



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	Offset			Lateral			Bordo			Cota			Vermelha			Cota			Bordo			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	Distância	%	Distância	Cota	Terreno	Projeto	Cota	Distância	%	Distância	Cota	Distância	%	Distância	Cota	Distância	Cota	Distância	%	Distância	Cota	Distância
36	3,591	56,327	0,136	3,500	56,191	3,500	-3,00	3,500	56,214	56,296	-0,082	3,500	56,191	-3,00	3,500	56,191	3,500	-3,00	3,500	56,191	3,500	56,191	-3,00	3,500	56,166	56,166	-0,025
36+10,00	3,586	56,382	0,129	3,500	56,253	3,500	-3,00	3,500	56,564	56,358	0,206	3,500	56,253	-3,00	3,500	56,253	3,500	-3,00	3,500	56,253	3,500	56,253	-3,00	3,500	56,573	56,573	0,320
37	3,638	56,604	0,207	3,500	56,397	3,500	-3,00	3,500	56,720	56,502	0,218	3,500	56,397	-3,00	3,500	56,397	3,500	-3,00	3,500	56,397	3,500	56,397	-3,00	3,500	56,598	56,598	0,201
37+10,98	3,639	56,764	0,209	3,500	56,555	3,500	-3,00	3,500	56,681	56,660	0,021	3,500	56,555	-3,00	3,500	56,555	3,500	-3,00	3,500	56,555	3,500	56,555	-3,00	3,500	56,617	56,617	0,062
38	3,531	56,732	0,047	3,500	56,685	3,500	-3,00	3,500	56,662	56,790	-0,128	3,500	56,685	-3,00	3,500	56,685	3,500	-3,00	3,500	56,685	3,500	56,685	-3,00	3,500	56,625	56,625	-0,060
39	3,509	56,986	0,013	3,500	56,973	3,500	-3,00	3,500	56,962	57,078	-0,116	3,500	56,973	-3,00	3,500	56,973	3,500	-3,00	3,500	56,973	3,500	56,973	-3,00	3,500	56,755	56,755	-0,218
39+10,00	3,546	57,186	0,069	3,500	57,117	3,500	-3,00	3,500	57,093	57,222	-0,129	3,500	57,117	-3,00	3,500	57,117	3,500	-3,00	3,500	57,117	3,500	57,117	-3,00	3,500	56,759	56,759	-0,358
40	3,569	57,288	0,103	3,500	57,185	3,500	-3,00	3,500	57,225	57,290	-0,065	3,500	57,185	-3,00	3,500	57,185	3,500	-3,00	3,500	57,185	3,500	57,185	-3,00	3,500	56,724	56,724	-0,461
40+10,00	4,094	56,705	-0,396	3,500	57,101	3,500	-3,00	3,500	57,152	57,206	-0,054	3,500	57,101	-3,00	3,500	57,101	3,500	-3,00	3,500	57,101	3,500	57,101	-3,00	3,500	56,662	56,662	-0,439
41	3,742	56,780	-0,161	3,500	56,941	3,500	-3,00	3,500	57,127	57,046	0,081	3,500	56,941	-3,00	3,500	56,941	3,500	-3,00	3,500	56,941	3,500	56,941	-3,00	3,500	56,993	56,993	0,052
41+12,98	3,527	56,773	0,040	3,500	56,733	3,500	-3,00	3,500	56,827	56,838	-0,011	3,500	56,733	-3,00	3,500	56,733	3,500	-3,00	3,500	56,733	3,500	56,733	-3,00	3,500	56,882	56,882	0,149
41+18,50	3,597	56,790	0,145	3,500	56,645	3,500	-3,00	3,500	56,720	56,750	-0,030	3,500	56,645	-3,00	3,500	56,645	3,500	-3,00	3,500	56,645	3,500	56,645	-3,00	3,500	56,847	56,847	0,202
42	3,623	56,806	0,184	3,500	56,622	3,500	-3,00	3,500	56,691	56,727	-0,036	3,500	56,622	-3,00	3,500	56,622	3,500	-3,00	3,500	56,622	3,500	56,622	-3,00	3,500	56,872	56,872	0,250
42+18,50	3,699	56,871	0,298	3,500	56,573	3,500	-3,00	3,500	56,682	56,678	0,004	3,500	56,573	-3,00	3,500	56,573	3,500	-3,00	3,500	56,573	3,500	56,573	-3,00	3,500	56,783	56,783	0,210
43	3,685	56,865	0,278	3,500	56,587	3,500	-3,00	3,500	56,691	56,692	-0,001	3,500	56,587	-3,00	3,500	56,587	3,500	-3,00	3,500	56,587	3,500	56,587	-3,00	3,500	56,794	56,794	0,207
44	3,565	56,861	0,098	3,500	56,763	3,500	-3,00	3,500	56,815	56,868	-0,053	3,500	56,763	-3,00	3,500	56,763	3,500	-3,00	3,500	56,763	3,500	56,763	-3,00	3,500	57,065	57,065	0,302
44+2,347	3,556	56,868	0,084	3,500	56,784	3,500	-3,00	3,500	56,831	56,889	-0,058	3,500	56,784	-3,00	3,500	56,784	3,500	-3,00	3,500	56,784	3,500	56,784	-3,00	3,500	57,111	57,111	0,327
45	3,505	56,937	-0,003	3,500	56,940	3,500	-3,00	3,500	57,018	57,045	-0,027	3,500	56,940	-3,00	3,500	56,940	3,500	-3,00	3,500	56,940	3,500	56,940	-3,00	3,500	57,280	57,280	0,340
46	3,673	57,002	-0,115	3,500	57,117	3,500	-3,00	3,500	57,073	57,222	-0,149	3,500	57,117	-3,00	3,500	57,117	3,500	-3,00	3,500	57,117	3,500	57,117	-3,00	3,500	57,368	57,368	0,251
46+16,30	3,798	57,062	-0,199	3,500	57,261	3,500	-3,00	3,500	57,161	57,366	-0,205	3,500	57,261	-3,00	3,500	57,261	3,500	-3,00	3,500	57,261	3,500	57,261	-3,00	3,500	57,104	57,104	-0,157
47	3,806	57,090	-0,204	3,500	57,294	3,500	-3,00	3,500	57,182	57,399	-0,217	3,500	57,294	-3,00	3,500	57,294	3,500	-3,00	3,500	57,294	3,500	57,294	-3,00	3,500	57,128	57,128	-0,166
47+0,918	3,806	57,098	-0,204	3,500	57,302	3,500	-3,00	3,500	57,187	57,407	-0,220	3,500	57,302	-3,00	3,500	57,302	3,500	-3,00	3,500	57,302	3,500	57,302	-3,00	3,500	57,135	57,135	-0,167
48	3,689	57,344	-0,126	3,500	57,470	3,500	-3,00	3,500	57,399	57,575	-0,176	3,500	57,470	-3,00	3,500	57,470	3,500	-3,00	3,500	57,470	3,500	57,470	-3,00	3,500	57,320	57,320	-0,150
49	3,509	57,661	0,014	3,500	57,647	3,500	-3,00	3,500	57,617	57,752	-0,135	3,500	57,647	-3,00	3,500	57,647	3,500	-3,00	3,500	57,647	3,500	57,647	-3,00	3,500	57,515	57,515	-0,132
50	3,553	57,903	0,079	3,500	57,824	3,500	-3,00	3,500	57,808	57,929	-0,121	3,500	57,824	-3,00	3,500	57,824	3,500	-3,00	3,500	57,824	3,500	57,824	-3,00	3,500	57,769	57,769	-0,055
50+10,64	3,569	58,021	0,103	3,500	57,918	3,500	-3,00	3,500	57,914	58,023	-0,109	3,500	57,918	-3,00	3,500	57,918	3,500	-3,00	3,500	57,918	3,500	57,918	-3,00	3,500	57,895	57,895	-0,023
51	3,572	58,109	0,108	3,500	58,001	3,500	-3,00	3,500	58,017	58,106	-0,089	3,500	58,001	-3,00	3,500	58,001	3,500	-3,00	3,500	58,001	3,500	58,001	-3,00	3,500	58,002	58,002	0,001
52	3,580	58,296	0,119	3,500	58,177	3,500	-3,00	3,500	58,237	58,282	-0,045	3,500	58,177	-3,00	3,500	58,177	3,500	-3,00	3,500	58,177	3,500	58,177	-3,00	3,500	58,227	58,227	0,050
52+10,00	3,567	58,367	0,101	3,500	58,266	3,500	-3,00	3,500	58,347	58,371	-0,024	3,500	58,266	-3,00	3,500	58,266	3,500	-3,00	3,500	58,266	3,500	58,266	-3,00	3,500	58,340	58,340	0,074



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Estaca	Lado Esquerdo						Eixo						Lado Direito							
	Offset			Lateral			Terreno	Cota	Projeto	Vermelha	Cota	Bordo		Distância	Cota	%	Lateral		Offset	
	Distância	Altura	0,056	Distância	Cota	Distância						Cota	Distância				Cota	Distância	Cota	Distância
53	3,537	58,423	0,056	3,500	58,367	-3,00	58,459	58,472	-0,013	3,500	58,367	-3,00	58,367	58,367	-3,00	58,367	58,367	3,516	58,391	0,024
53+10,00	3,600	58,645	0,150	3,500	58,495	-3,00	58,634	58,600	0,034	3,500	58,495	-3,00	58,495	58,495	-3,00	58,495	58,495	3,505	58,502	0,007
54	3,583	58,762	0,125	3,500	58,637	-3,00	58,776	58,742	0,034	3,500	58,637	-3,00	58,637	58,637	-3,00	58,637	58,637	3,505	58,644	0,007
55	3,525	58,957	0,037	3,500	58,920	-3,00	58,747	59,025	-0,278	3,500	58,920	-3,00	58,920	58,920	-3,00	58,920	58,920	4,068	58,541	-0,379
55+0,696	3,509	58,924	-0,006	3,500	58,930	-3,00	58,747	59,035	-0,288	3,500	58,930	-3,00	58,930	58,930	-3,00	58,930	58,930	4,083	58,541	-0,389
56	3,550	59,170	-0,033	3,500	59,203	-3,00	59,292	59,308	-0,016	3,500	59,203	-3,00	59,203	59,203	-3,00	59,203	59,203	4,441	58,576	-0,627
57	3,576	59,435	-0,051	3,500	59,486	-3,00	59,519	59,591	-0,072	3,500	59,486	-3,00	59,486	59,486	-3,00	59,486	59,486	4,258	58,981	-0,505
58	3,807	59,563	-0,205	3,500	59,768	-3,00	59,715	59,873	-0,158	3,500	59,768	-3,00	59,768	59,768	-3,00	59,768	59,768	3,873	59,519	-0,249
59	3,782	59,863	-0,188	3,500	60,051	-3,00	59,904	60,156	-0,252	3,500	60,051	-3,00	60,051	60,051	-3,00	60,051	60,051	3,632	59,963	-0,088
59+4,198	3,753	59,942	-0,169	3,500	60,111	-3,00	59,934	60,216	-0,282	3,500	60,111	-3,00	60,111	60,111	-3,00	60,111	60,111	3,621	60,030	-0,081
60	3,795	60,137	-0,197	3,500	60,334	-3,00	60,200	60,439	-0,239	3,500	60,334	-3,00	60,334	60,334	-3,00	60,334	60,334	3,553	60,298	-0,036
60+7,238	3,832	60,216	-0,221	3,500	60,437	-3,00	60,340	60,542	-0,202	3,500	60,437	-3,00	60,437	60,437	-3,00	60,437	60,437	3,574	60,388	-0,049
61	3,798	60,418	-0,199	3,500	60,617	-3,00	60,606	60,722	-0,116	3,500	60,617	-3,00	60,617	60,617	-3,00	60,617	60,617	3,540	60,677	0,060
62	3,596	61,044	0,144	3,500	60,900	-3,00	60,955	61,005	-0,050	3,500	60,900	-3,00	60,900	60,900	-3,00	60,900	60,900	3,559	60,860	-0,040
63	3,685	61,460	0,277	3,500	61,183	-3,00	61,184	61,288	-0,104	3,500	61,183	-3,00	61,183	61,183	-3,00	61,183	61,183	3,767	61,005	-0,178
64	3,580	61,586	0,120	3,500	61,466	-3,00	61,407	61,571	-0,164	3,500	61,466	-3,00	61,466	61,466	-3,00	61,466	61,466	3,798	61,268	-0,198
64+1,758	3,574	61,602	0,111	3,500	61,491	-3,00	61,430	61,596	-0,166	3,500	61,491	-3,00	61,491	61,491	-3,00	61,491	61,491	3,785	61,301	-0,190
65	3,532	61,728	-0,021	3,500	61,749	-3,00	61,775	61,854	-0,079	3,500	61,749	-3,00	61,749	61,749	-3,00	61,749	61,749	3,640	61,656	-0,093
66	3,537	62,088	0,056	3,500	62,032	-3,00	62,012	62,137	-0,125	3,500	62,032	-3,00	62,032	62,032	-3,00	62,032	62,032	3,676	61,914	-0,118
67	3,608	62,242	-0,072	3,500	62,314	-3,00	62,186	62,419	-0,233	3,500	62,314	-3,00	62,314	62,314	-3,00	62,314	62,314	3,693	62,185	-0,129
68	3,627	62,513	-0,084	3,500	62,597	-3,00	62,439	62,702	-0,263	3,500	62,597	-3,00	62,597	62,597	-3,00	62,597	62,597	3,578	62,545	-0,052
69	3,504	62,887	0,007	3,500	62,880	-3,00	62,870	62,985	-0,115	3,500	62,880	-3,00	62,880	62,880	-3,00	62,880	62,880	3,531	62,927	0,047
70	3,526	63,145	-0,018	3,500	63,163	-3,00	63,464	63,268	0,196	3,500	63,163	-3,00	63,163	63,163	-3,00	63,163	63,163	3,757	63,548	0,385
70+1,950	3,531	63,171	-0,020	3,500	63,191	-3,00	63,493	63,296	0,197	3,500	63,191	-3,00	63,191	63,191	-3,00	63,191	63,191	3,768	63,593	0,402
70+10,00	3,562	63,263	-0,042	3,500	63,305	-3,00	63,508	63,410	0,098	3,500	63,305	-3,00	63,305	63,305	-3,00	63,305	63,305	3,803	63,759	0,454
71	3,517	63,373	0,026	3,500	63,347	-3,00	63,513	63,452	0,061	3,500	63,347	-3,00	63,347	63,347	-3,00	63,347	63,347	3,616	63,522	0,175
71+10,00	3,659	63,429	0,239	3,500	63,190	-3,00	63,367	63,295	0,072	3,500	63,190	-3,00	63,190	63,190	-3,00	63,190	63,190	3,694	63,060	-0,130
72	3,631	63,129	0,196	3,500	62,933	-3,00	62,976	63,038	-0,062	3,500	62,933	-3,00	62,933	62,933	-3,00	62,933	62,933	4,186	62,476	-0,457
72+1,925	3,623	63,068	0,184	3,500	62,884	-3,00	62,915	62,989	-0,074	3,500	62,884	-3,00	62,884	62,884	-3,00	62,884	62,884	4,199	62,418	-0,466

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 Governo do Estado do Ceará

Estaca	Lado Esquerdo						Eixo						Lado Direito								
	Offset			Lateral			Cota Terreno	Cota Projeto	Vermelho	Bordo			Cota	%	Bordo			Lateral			Offset
	Distância	Altura		Distância	Cota					Distância	Cota				Distância	Cota		Distância	Cota		
73	3,501	62,420	0,000	3,500	62,420	-3,00	62,455	-0,070	3,500	62,420	-3,00	62,420	-3,00	3,500	62,420	-3,00	3,500	62,420	4,134	61,997	-0,423
73+14,00	3,514	62,083	0,022	3,500	62,061	-3,00	62,069	-0,097	3,500	62,061	-3,00	62,061	-3,00	3,500	62,061	-3,00	3,500	62,061	4,085	61,671	-0,390
74	3,505	61,901	0,007	3,500	61,894	-3,00	61,918	-0,081	3,500	61,894	-3,00	61,894	-3,00	3,500	61,894	-3,00	3,500	61,894	3,975	61,577	-0,317
74+14,00	3,787	61,201	-0,192	3,500	61,393	-3,00	61,358	-0,140	3,500	61,393	-3,00	61,393	-3,00	3,500	61,393	-3,00	3,500	61,393	3,762	61,218	-0,175
75	3,732	60,991	-0,155	3,500	61,146	-3,00	61,146	-0,105	3,500	61,146	-3,00	61,146	-3,00	3,500	61,146	-3,00	3,500	61,146	3,680	61,026	-0,120
76	3,545	60,291	-0,030	3,500	60,321	-3,00	60,120	-0,306	3,500	60,321	-3,00	60,321	-3,00	3,500	60,321	-3,00	3,500	60,321	3,729	60,168	-0,153
77	3,938	59,205	-0,292	3,500	59,497	-3,00	59,261	-0,341	3,500	59,497	-3,00	59,497	-3,00	3,500	59,497	-3,00	3,500	59,497	3,730	59,344	-0,153
78	3,714	58,529	-0,143	3,500	58,672	-3,00	58,572	-0,205	3,500	58,672	-3,00	58,672	-3,00	3,500	58,672	-3,00	3,500	58,672	3,610	58,599	-0,073
78+15,00	3,574	58,005	-0,049	3,500	58,054	-3,00	58,049	-0,110	3,500	58,054	-3,00	58,054	-3,00	3,500	58,054	-3,00	3,500	58,054	3,517	58,079	0,025
79	3,538	57,832	-0,025	3,500	57,857	-3,00	57,875	-0,087	3,500	57,857	-3,00	57,857	-3,00	3,500	57,857	-3,00	3,500	57,857	3,535	57,909	0,052
79+15,00	3,631	57,574	0,196	3,500	57,378	-3,00	57,400	-0,083	3,500	57,378	-3,00	57,378	-3,00	3,500	57,378	-3,00	3,500	57,378	3,645	57,281	-0,097
80	3,639	57,455	0,209	3,500	57,246	-3,00	57,235	-0,116	3,500	57,246	-3,00	57,246	-3,00	3,500	57,246	-3,00	3,500	57,246	3,611	57,172	-0,074
81	3,598	56,865	0,147	3,500	56,718	-3,00	56,829	0,006	3,500	56,718	-3,00	56,718	-3,00	3,500	56,718	-3,00	3,500	56,718	3,524	56,754	0,036
82	3,626	56,378	0,189	3,500	56,189	-3,00	56,106	-0,188	3,500	56,189	-3,00	56,189	-3,00	3,500	56,189	-3,00	3,500	56,189	3,544	56,255	0,066
82+17,00	3,533	55,716	-0,022	3,500	55,738	-3,00	55,651	-0,192	3,500	55,738	-3,00	55,738	-3,00	3,500	55,738	-3,00	3,500	55,738	3,538	55,795	0,057
83	3,611	55,587	-0,074	3,500	55,661	-3,00	55,574	-0,192	3,500	55,661	-3,00	55,661	-3,00	3,500	55,661	-3,00	3,500	55,661	3,530	55,706	0,045
84	3,902	54,865	-0,268	3,500	55,133	-3,00	55,034	-0,204	3,500	55,133	-3,00	55,133	-3,00	3,500	55,133	-3,00	3,500	55,133	3,533	55,111	-0,022
84+17,00	3,561	54,643	-0,041	3,500	54,684	-3,00	54,613	-0,176	3,500	54,684	-3,00	54,684	-3,00	3,500	54,684	-3,00	3,500	54,684	3,539	54,742	0,058
85	3,510	54,618	0,014	3,500	54,604	-3,00	54,535	-0,174	3,500	54,604	-3,00	54,604	-3,00	3,500	54,604	-3,00	3,500	54,604	3,547	54,675	0,071
86	3,634	54,276	0,200	3,500	54,076	-3,00	54,192	0,011	3,500	54,076	-3,00	54,076	-3,00	3,500	54,076	-3,00	3,500	54,076	3,642	54,289	0,213
86+5,000	3,665	54,191	0,247	3,500	53,944	-3,00	54,109	0,060	3,500	53,944	-3,00	53,944	-3,00	3,500	53,944	-3,00	3,500	53,944	3,671	54,200	0,256
87	3,589	53,871	0,133	3,500	53,738	-3,00	53,747	-0,096	3,500	53,738	-3,00	53,738	-3,00	3,500	53,738	-3,00	3,500	53,738	4,135	53,315	-0,423
87+5,000	3,548	53,826	0,072	3,500	53,754	-3,00	53,758	-0,101	3,500	53,754	-3,00	53,754	-3,00	3,500	53,754	-3,00	3,500	53,754	3,540	53,813	0,059
88	3,524	53,899	0,035	3,500	53,864	-3,00	53,983	0,014	3,500	53,864	-3,00	53,864	-3,00	3,500	53,864	-3,00	3,500	53,864	3,553	53,944	0,080
89	3,542	54,074	0,063	3,500	54,011	-3,00	54,093	-0,023	3,500	54,011	-3,00	54,011	-3,00	3,500	54,011	-3,00	3,500	54,011	3,516	54,001	-0,010
89+9,228	3,542	54,142	0,063	3,500	54,079	-3,00	54,144	-0,040	3,500	54,079	-3,00	54,079	-3,00	3,500	54,079	-3,00	3,500	54,079	3,586	54,021	-0,058
90	3,533	54,208	0,049	3,500	54,159	-3,00	54,232	-0,032	3,500	54,159	-3,00	54,159	-3,00	3,500	54,159	-3,00	3,500	54,159	3,580	54,105	-0,054
91	3,523	54,291	-0,015	3,500	54,306	-3,00	54,363	-0,048	3,500	54,306	-3,00	54,306	-3,00	3,500	54,306	-3,00	3,500	54,306	3,552	54,271	-0,035
92	3,620	54,373	-0,080	3,500	54,453	-3,00	54,429	-0,129	3,500	54,453	-3,00	54,453	-3,00	3,500	54,453	-3,00	3,500	54,453	3,505	54,461	0,008



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(Handwritten mark)

Estaca	Lado Esquerdo						Eixo						Lado Direito													
	Offset			Lateral			Bordo			Cota			Vermelha			Cota			Lateral			Offset				
	Distância	Altura	Cota	Distância	Cota	Distância	%	Cota	Terreno	Projeto	Distância	%	Cota	Distância	Cota	Distância	%	Cota	Distância	Cota	Distância	Cota	Distância	Cota	Altura	
93	3,656	-0,104	54,380	3,500	54,484	3,500	-3,00	54,394	54,589	-0,195	3,500	-3,00	54,484	-0,195	54,589	3,500	-3,00	54,484	3,500	54,484	3,500	-3,00	54,484	3,500	54,491	0,007
93+9,072	3,583	-0,055	54,390	3,500	54,445	3,500	-3,00	54,320	54,550	-0,230	3,500	-3,00	54,445	-0,230	54,550	3,500	-3,00	54,445	3,500	54,445	3,500	-3,00	54,445	3,500	54,434	-0,011
94	3,517	-0,011	54,386	3,500	54,397	3,500	-3,00	54,302	54,502	-0,200	3,500	-3,00	54,397	-0,200	54,502	3,500	-3,00	54,397	3,500	54,397	3,500	-3,00	54,397	3,500	54,419	0,022
95	3,532	0,048	54,359	3,500	54,311	3,500	-3,00	54,277	54,416	-0,139	3,500	-3,00	54,311	-0,139	54,416	3,500	-3,00	54,311	3,500	54,311	3,500	-3,00	54,311	3,500	54,366	0,055
96	3,551	0,077	54,302	3,500	54,225	3,500	-3,00	54,257	54,330	-0,073	3,500	-3,00	54,225	-0,073	54,330	3,500	-3,00	54,225	3,500	54,225	3,500	-3,00	54,225	3,500	54,336	0,111
97	3,530	0,045	54,183	3,500	54,138	3,500	-3,00	54,207	54,243	-0,036	3,500	-3,00	54,138	-0,036	54,243	3,500	-3,00	54,138	3,500	54,138	3,500	-3,00	54,138	3,500	54,289	0,151
97+10,00	3,538	0,057	54,152	3,500	54,095	3,500	-3,00	54,173	54,200	-0,027	3,500	-3,00	54,095	-0,027	54,200	3,500	-3,00	54,095	3,500	54,095	3,500	-3,00	54,095	3,500	54,250	0,155
98	3,525	0,037	54,070	3,500	54,033	3,500	-3,00	54,096	54,138	-0,042	3,500	-3,00	54,033	-0,042	54,138	3,500	-3,00	54,033	3,500	54,033	3,500	-3,00	54,033	3,500	54,134	0,101
98+10,00	3,533	0,049	53,983	3,500	53,934	3,500	-3,00	54,019	54,039	-0,020	3,500	-3,00	53,934	-0,020	54,039	3,500	-3,00	53,934	3,500	53,934	3,500	-3,00	53,934	3,500	53,953	0,019
99	3,523	0,035	53,852	3,500	53,817	3,500	-3,00	53,849	53,922	-0,073	3,500	-3,00	53,817	-0,073	53,922	3,500	-3,00	53,817	3,500	53,817	3,500	-3,00	53,817	3,500	53,759	-0,058
100	3,548	0,072	53,653	3,500	53,581	3,500	-3,00	53,616	53,686	-0,070	3,500	-3,00	53,581	-0,070	53,686	3,500	-3,00	53,581	3,500	53,581	3,500	-3,00	53,581	3,500	53,617	0,036
100+16,4	3,553	0,079	53,466	3,500	53,387	3,500	-3,00	53,387	53,492	-0,105	3,500	-3,00	53,346	-0,105	53,492	3,500	-3,00	53,346	3,500	53,387	3,500	-3,00	53,387	3,500	53,391	0,004
101	3,548	0,072	53,418	3,500	53,346	3,500	-3,00	53,339	53,451	-0,112	3,500	-3,00	53,346	-0,112	53,451	3,500	-3,00	53,346	3,500	53,346	3,500	-3,00	53,346	3,500	53,343	-0,003
102	3,588	0,132	53,242	3,500	53,110	3,500	-3,00	53,132	53,215	-0,083	3,500	-3,00	53,110	-0,083	53,215	3,500	-3,00	53,110	3,500	53,110	3,500	-3,00	53,110	3,500	53,106	-0,004
102+16,4	3,543	0,064	52,980	3,500	52,916	3,500	-3,00	53,033	53,021	0,012	3,500	-3,00	52,916	0,012	53,021	3,500	-3,00	52,916	3,500	52,916	3,500	-3,00	52,916	3,500	52,967	0,051
103	3,512	-0,008	52,867	3,500	52,875	3,500	-3,00	53,028	52,980	0,048	3,500	-3,00	52,875	0,048	52,980	3,500	-3,00	52,875	3,500	52,875	3,500	-3,00	52,875	3,500	52,957	0,082
104	3,755	-0,170	52,469	3,500	52,639	3,500	-3,00	52,857	52,744	0,113	3,500	-3,00	52,639	0,113	52,744	3,500	-3,00	52,639	3,500	52,639	3,500	-3,00	52,639	3,500	52,493	-0,146
104+2,00	3,670	-0,113	52,503	3,500	52,616	3,500	-3,00	52,882	52,721	0,161	3,500	-3,00	52,616	0,161	52,721	3,500	-3,00	52,616	3,500	52,616	3,500	-3,00	52,616	3,500	52,580	-0,036
105	3,623	0,184	52,770	3,500	52,586	3,500	-3,00	52,871	52,691	0,180	3,500	-3,00	52,586	0,180	52,691	3,500	-3,00	52,586	3,500	52,586	3,500	-3,00	52,586	3,500	52,874	0,288
105+2,00	3,621	0,182	52,787	3,500	52,605	3,500	-3,00	52,862	52,710	0,152	3,500	-3,00	52,605	0,152	52,710	3,500	-3,00	52,605	3,500	52,605	3,500	-3,00	52,605	3,500	52,864	0,259
105+3,30	3,607	0,160	52,779	3,500	52,619	3,500	-3,00	52,856	52,724	0,132	3,500	-3,00	52,619	0,132	52,724	3,500	-3,00	52,619	3,500	52,619	3,500	-3,00	52,619	3,500	52,858	0,239
106	3,676	-0,117	52,680	3,500	52,797	3,500	-3,00	52,768	52,902	-0,134	3,500	-3,00	52,797	-0,134	52,902	3,500	-3,00	52,797	3,500	52,797	3,500	-3,00	52,797	3,500	52,793	-0,004
107	3,643	-0,095	52,916	3,500	53,011	3,500	-3,00	53,021	53,116	-0,095	3,500	-3,00	53,011	-0,095	53,116	3,500	-3,00	53,011	3,500	53,011	3,500	-3,00	53,011	3,500	53,009	-0,002
107+10,0	3,574	-0,050	53,068	3,500	53,118	3,500	-3,00	53,181	53,223	-0,042	3,500	-3,00	53,118	-0,042	53,223	3,500	-3,00	53,118	3,500	53,118	3,500	-3,00	53,118	3,500	53,188	0,070
108	3,578	-0,052	53,158	3,500	53,210	3,500	-3,00	53,281	53,315	-0,034	3,500	-3,00	53,210	-0,034	53,315	3,500	-3,00	53,210	3,500	53,210	3,500	-3,00	53,210	3,500	53,272	0,062
108+10,0	3,514	0,020	53,292	3,500	53,272	3,500	-3,00	53,372	53,377	-0,005	3,500	-3,00	53,272	-0,005	53,377	3,500	-3,00	53,272	3,500	53,272	3,500	-3,00	53,272	3,500	53,252	-0,020
109	3,558	0,086	53,404	3,500	53,318	3,500	-3,00	53,392	53,423	-0,031	3,500	-3,00	53,318	-0,031	53,423	3,500	-3,00	53,318	3,500	53,318	3,500	-3,00	53,318	3,500	53,257	-0,061
110	3,547	0,070	53,482	3,500	53,412	3,500	-3,00	53,485	53,517	-0,032	3,500	-3,00	53,412	-0,032	53,517	3,500	-3,00	53,412	3,500	53,412	3,500	-3,00	53,412	3,500	53,317	-0,095
110+10,0	3,530	0,044	53,502	3,500	53,458	3,500	-3,00	53,518	53,563	-0,045	3,500	-3,00	53,458	-0,045	53,563	3,500	-3,00	53,458	3,500	53,458	3,500	-3,00	53,458	3,500	53,301	-0,157

PREFEITURA MUNICIPAL DE MIRAIMA
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Governador do Ceará



Estaca	Lado Esquerdo						Eixo						Lado Direito							
	Offset			Lateral			Terreno	Cota	Projeto	Vermelha	Cota	Bordo			Lateral			Offset		
	Distância	Altura	Cota	Distância	Cota	Distância						Cota	%	Distância	Cota	%	Distância	Cota	Distância	Cota
111	3,547	53,566	0,071	3,500	53,495	-3,00	53,542	53,600	-0,058	3,500	53,495	-3,00	53,495	3,874	53,246	-0,249				
111+3,0	3,563	53,596	0,094	3,500	53,502	-3,00	53,559	53,607	-0,048	3,500	53,502	-3,00	53,502	3,907	53,230	-0,272				
111+10,0	3,626	53,701	0,190	3,500	53,511	-3,00	53,614	53,616	-0,002	3,500	53,511	-3,00	53,511	3,982	53,190	-0,321				
112	3,598	53,664	0,147	3,500	53,517	-3,00	53,431	53,622	-0,191	3,500	53,517	-3,00	53,517	4,089	53,124	-0,393				
113	3,504	53,527	-0,003	3,500	53,530	-3,00	53,517	53,635	-0,118	3,500	53,530	-3,00	53,530	4,322	52,982	-0,548				
114	4,147	53,111	-0,431	3,500	53,542	-3,00	53,452	53,647	-0,195	3,500	53,542	-3,00	53,542	4,510	52,869	-0,673				
115	4,089	53,162	-0,393	3,500	53,555	-3,00	53,369	53,660	-0,291	3,500	53,555	-3,00	53,555	4,154	53,119	-0,436				
115+10,0	3,745	53,398	-0,163	3,500	53,561	-3,00	53,383	53,666	-0,283	3,500	53,561	-3,00	53,561	3,974	53,245	-0,316				
116	3,514	53,582	0,021	3,500	53,561	-3,00	53,658	53,666	-0,008	3,500	53,561	-3,00	53,561	3,807	53,356	-0,205				
116+10,0	3,542	53,522	-0,028	3,500	53,550	-3,00	53,641	53,655	-0,014	3,500	53,550	-3,00	53,550	3,620	53,470	-0,080				
117	3,596	53,468	-0,064	3,500	53,532	-3,00	53,610	53,637	-0,027	3,500	53,532	-3,00	53,532	3,533	53,582	0,050				
117+8,10	3,561	53,478	-0,040	3,500	53,518	-3,00	53,593	53,623	-0,030	3,500	53,518	-3,00	53,518	3,570	53,624	0,106				
118	3,517	53,485	-0,012	3,500	53,497	-3,00	53,571	53,602	-0,031	3,500	53,497	-3,00	53,497	3,529	53,541	0,044				
119	3,511	53,479	0,016	3,500	53,463	-3,00	53,617	53,568	0,049	3,500	53,463	-3,00	53,463	3,563	53,558	0,095				
120	3,533	53,406	-0,022	3,500	53,428	-3,00	53,540	53,533	0,007	3,500	53,428	-3,00	53,428	3,575	53,540	0,112				
121	3,616	53,316	-0,077	3,500	53,393	-3,00	53,446	53,498	-0,052	3,500	53,393	-3,00	53,393	3,514	53,413	0,020				
121+7,97	3,637	53,288	-0,091	3,500	53,379	-3,00	53,420	53,484	-0,064	3,500	53,379	-3,00	53,379	3,552	53,344	-0,035				
121+10,0	3,641	53,281	-0,094	3,500	53,375	-3,00	53,414	53,480	-0,066	3,500	53,375	-3,00	53,375	3,575	53,325	-0,050				
122	3,642	53,256	-0,095	3,500	53,351	-3,00	53,391	53,456	-0,065	3,500	53,351	-3,00	53,351	3,675	53,234	-0,117				
122+10,0	3,572	53,267	-0,048	3,500	53,315	-3,00	53,285	53,420	-0,135	3,500	53,315	-3,00	53,315	3,668	53,203	-0,112				
123	3,616	53,194	-0,077	3,500	53,271	-3,00	53,114	53,376	-0,262	3,500	53,271	-3,00	53,271	3,746	53,107	-0,164				
124	3,713	53,042	-0,142	3,500	53,184	-3,00	53,181	53,289	-0,108	3,500	53,184	-3,00	53,184	3,525	53,221	0,037				
125	3,564	53,055	-0,042	3,500	53,097	-3,00	53,087	53,202	-0,115	3,500	53,097	-3,00	53,097	3,742	52,936	-0,161				
125+10,0	3,514	53,044	-0,010	3,500	53,054	-3,00	53,147	53,159	-0,012	3,500	53,054	-3,00	53,054	3,726	52,904	-0,150				
126	3,575	53,049	0,112	3,500	52,937	-3,00	53,117	53,042	0,075	3,500	52,937	-3,00	52,937	3,571	53,043	0,106				
126+7,89	3,616	52,914	0,174	3,500	52,740	-3,00	52,940	52,845	0,095	3,500	52,740	-3,00	52,740	3,580	52,860	0,120				
126+10,0	3,618	52,850	0,177	3,500	52,673	-3,00	52,846	52,778	0,068	3,500	52,673	-3,00	52,673	3,523	52,707	0,034				
127	3,597	52,481	0,146	3,500	52,335	-3,00	52,341	52,440	-0,099	3,500	52,335	-3,00	52,335	3,936	52,045	-0,290				
128	3,607	51,821	0,160	3,500	51,661	-3,00	51,875	51,766	0,109	3,500	51,661	-3,00	51,661	3,877	51,410	-0,251				



PREFEITURA MUNICIPAL DE MIRAIMA
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 Governo do Estado do Ceará

Estaca	Lado Esquerdo						Eixo						Lado Direito											
	Offset			Lateral			Bordo			Cota			Vermelha			Cota			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	Distância	%	Cota	Terreno	Projeto	Distância	Cota	%	Distância	Cota	Distância	%	Distância	Cota	Distância	Cota	Distância	Cota	Altura
128+10,0	3,579	51,441	0,118	3,500	51,323	3,500	-3,00	51,678	51,428	0,250	3,500	51,323	-3,00	3,500	51,323	3,500	-3,00	3,500	51,323	3,500	51,323	3,843	51,095	-0,228
129	4,021	50,735	-0,347	3,500	51,082	3,500	-3,00	51,078	51,187	-0,109	3,500	51,082	-3,00	3,500	51,082	3,500	-3,00	3,500	51,082	3,500	51,082	4,263	50,574	-0,508
129+10,0	5,325	49,815	-1,217	3,500	51,032	3,500	-3,00	50,337	51,137	-0,800	3,500	51,032	-3,00	3,500	51,032	3,500	-3,00	3,500	51,032	3,500	51,032	5,251	49,865	-1,167
130	4,579	50,358	-0,719	3,500	51,077	3,500	-3,00	51,228	51,182	0,046	3,500	51,077	-3,00	3,500	51,077	3,500	-3,00	3,500	51,077	3,500	51,077	3,507	51,087	0,010
131	3,527	51,209	0,041	3,500	51,168	3,500	-3,00	51,321	51,273	0,048	3,500	51,168	-3,00	3,500	51,168	3,500	-3,00	3,500	51,168	3,500	51,168	3,505	51,176	0,008
131+10,0	3,808	51,676	0,462	3,500	51,214	3,500	-3,00	51,264	51,319	-0,055	3,500	51,214	-3,00	3,500	51,214	3,500	-3,00	3,500	51,214	3,500	51,214	3,561	51,305	0,091
132	3,796	51,737	0,444	3,500	51,293	3,500	-3,00	51,340	51,398	-0,058	3,500	51,293	-3,00	3,500	51,293	3,500	-3,00	3,500	51,293	3,500	51,293	3,540	51,353	0,060
132+2,38	3,804	51,777	0,456	3,500	51,321	3,500	-3,00	51,358	51,426	-0,068	3,500	51,321	-3,00	3,500	51,321	3,500	-3,00	3,500	51,321	3,500	51,321	3,528	51,363	0,042
132+10,0	3,726	51,778	0,339	3,500	51,439	3,500	-3,00	51,416	51,544	-0,128	3,500	51,439	-3,00	3,500	51,439	3,500	-3,00	3,500	51,439	3,500	51,439	3,503	51,437	-0,002
133	3,734	51,968	0,350	3,500	51,618	3,500	-3,00	51,600	51,723	-0,123	3,500	51,618	-3,00	3,500	51,618	3,500	-3,00	3,500	51,618	3,500	51,618	3,617	51,540	-0,078
133+10,0	3,743	52,162	0,364	3,500	51,798	3,500	-3,00	51,775	51,903	-0,128	3,500	51,798	-3,00	3,500	51,798	3,500	-3,00	3,500	51,798	3,500	51,798	3,732	51,643	-0,155
134	3,738	52,286	0,358	3,500	51,928	3,500	-3,00	52,027	52,033	-0,006	3,500	51,928	-3,00	3,500	51,928	3,500	-3,00	3,500	51,928	3,500	51,928	3,766	51,751	-0,177
134+10,0	3,642	52,174	0,214	3,500	51,960	3,500	-3,00	52,102	52,065	0,037	3,500	51,960	-3,00	3,500	51,960	3,500	-3,00	3,500	51,960	3,500	51,960	3,994	51,631	-0,329
135	3,651	52,168	0,226	3,500	51,942	3,500	-3,00	51,977	52,047	-0,070	3,500	51,942	-3,00	3,500	51,942	3,500	-3,00	3,500	51,942	3,500	51,942	4,145	51,512	-0,430
136	3,757	52,292	0,385	3,500	51,907	3,500	-3,00	51,960	52,012	-0,052	3,500	51,907	-3,00	3,500	51,907	3,500	-3,00	3,500	51,907	3,500	51,907	4,159	51,468	-0,439
136+10,0	3,924	52,526	0,636	3,500	51,890	3,500	-3,00	51,827	51,995	-0,168	3,500	51,890	-3,00	3,500	51,890	3,500	-3,00	3,500	51,890	3,500	51,890	4,142	51,462	-0,428
137	4,005	52,662	0,757	3,500	51,905	3,500	-3,00	51,783	52,010	-0,227	3,500	51,905	-3,00	3,500	51,905	3,500	-3,00	3,500	51,905	3,500	51,905	4,167	51,460	-0,445
137+10,0	4,042	52,799	0,812	3,500	51,987	3,500	-3,00	51,892	52,092	-0,200	3,500	51,987	-3,00	3,500	51,987	3,500	-3,00	3,500	51,987	3,500	51,987	4,283	51,465	-0,522
138	3,965	52,800	0,697	3,500	52,103	3,500	-3,00	52,321	52,208	0,113	3,500	52,103	-3,00	3,500	52,103	3,500	-3,00	3,500	52,103	3,500	52,103	4,414	51,494	-0,609
138+14,0	3,819	52,743	0,478	3,500	52,265	3,500	-3,00	52,220	52,370	-0,150	3,500	52,265	-3,00	3,500	52,265	3,500	-3,00	3,500	52,265	3,500	52,265	3,548	52,233	-0,032
139	3,651	52,560	0,227	3,500	52,333	3,500	-3,00	52,281	52,438	-0,157	3,500	52,333	-3,00	3,500	52,333	3,500	-3,00	3,500	52,333	3,500	52,333	3,582	52,456	0,123
140	3,794	52,368	-0,196	3,500	52,564	3,500	-3,00	52,239	52,669	-0,430	3,500	52,564	-3,00	3,500	52,564	3,500	-3,00	3,500	52,564	3,500	52,564	4,221	52,083	-0,481
141	3,502	52,793	-0,001	3,500	52,794	3,500	-3,00	52,526	52,899	-0,373	3,500	52,794	-3,00	3,500	52,794	3,500	-3,00	3,500	52,794	3,500	52,794	4,039	52,435	-0,359
142	3,850	53,550	0,525	3,500	53,025	3,500	-3,00	53,342	53,130	0,212	3,500	53,025	-3,00	3,500	53,025	3,500	-3,00	3,500	53,025	3,500	53,025	3,617	52,947	-0,078
143	3,757	53,640	0,385	3,500	53,255	3,500	-3,00	53,427	53,360	0,067	3,500	53,255	-3,00	3,500	53,255	3,500	-3,00	3,500	53,255	3,500	53,255	3,530	53,301	0,046
143+3,16	3,778	53,709	0,417	3,500	53,292	3,500	-3,00	53,488	53,397	0,091	3,500	53,292	-3,00	3,500	53,292	3,500	-3,00	3,500	53,292	3,500	53,292	3,541	53,353	0,061
143+10,0	3,828	53,863	0,492	3,500	53,371	3,500	-3,00	53,504	53,476	0,028	3,500	53,371	-3,00	3,500	53,371	3,500	-3,00	3,500	53,371	3,500	53,371	3,577	53,487	0,116
144	3,870	54,086	0,555	3,500	53,531	3,500	-3,00	53,506	53,636	-0,130	3,500	53,531	-3,00	3,500	53,531	3,500	-3,00	3,500	53,531	3,500	53,531	3,605	53,688	0,157
144+10,0	3,847	54,302	0,521	3,500	53,781	3,500	-3,00	54,088	53,886	0,202	3,500	53,781	-3,00	3,500	53,781	3,500	-3,00	3,500	53,781	3,500	53,781	3,588	53,912	0,131

PREFEITURA MUNICIPAL DE MIRAIMA

Avenida Mestre Francisco Marques, nº 22 Estação

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Governo do Estado do Ceará



(Handwritten mark)

Estaca	Lado Esquerdo						Eixo						Lado Direito												
	Offset			Lateral			Terreno	Cota	Projeto	Vermelha	Cota	Bordo			%	Bordo			Distância	Cota	Distância	Cota	Distância	Cota	Offset
	Distância	Altura	Cota	Distância	Cota	Distância						Cota	Distância	Cota		Distância	Cota	Distância							
145	3,797	54,520	0,445	3,500	54,075	-3,00	54,121	54,180	-0,059	54,075	-3,00	54,075	54,075	-3,00	54,075	54,075	-3,00	54,075	54,075	3,522	54,108	0,033			
146	3,755	55,046	0,382	3,500	54,664	-3,00	54,608	54,769	-0,161	54,664	-3,00	54,664	54,664	-3,00	54,664	54,664	-3,00	54,664	54,664	3,569	54,618	-0,046			
147	3,737	55,609	0,355	3,500	55,254	-3,00	55,092	55,359	-0,267	55,254	-3,00	55,254	55,254	-3,00	55,254	55,254	-3,00	55,254	55,254	3,563	55,212	-0,042			
148	3,666	56,092	0,249	3,500	55,843	-3,00	55,877	55,948	-0,071	55,843	-3,00	55,843	55,843	-3,00	55,843	55,843	-3,00	55,843	55,843	3,512	55,861	0,018			
149	3,563	56,526	0,094	3,500	56,432	-3,00	56,393	56,537	-0,144	56,432	-3,00	56,432	56,432	-3,00	56,432	56,432	-3,00	56,432	56,432	3,576	56,546	0,114			
150	3,509	57,034	0,013	3,500	57,021	-3,00	57,101	57,126	-0,025	57,021	-3,00	57,021	57,021	-3,00	57,021	57,021	-3,00	57,021	57,021	3,649	57,245	0,224			
151	3,677	57,492	-0,118	3,500	57,610	-3,00	57,571	57,715	-0,144	57,610	-3,00	57,610	57,610	-3,00	57,610	57,610	-3,00	57,610	57,610	3,644	57,826	0,216			
151+3,11	3,718	57,557	-0,145	3,500	57,702	-3,00	57,631	57,807	-0,176	57,702	-3,00	57,702	57,702	-3,00	57,702	57,702	-3,00	57,702	57,702	3,607	57,862	0,160			
152	3,702	58,065	-0,135	3,500	58,200	-3,00	58,184	58,305	-0,121	58,200	-3,00	58,200	58,200	-3,00	58,200	58,200	-3,00	58,200	58,200	3,662	58,442	0,242			
153	3,710	58,649	-0,140	3,500	58,789	-3,00	58,762	58,894	-0,132	58,789	-3,00	58,789	58,789	-3,00	58,789	58,789	-3,00	58,789	58,789	3,509	58,803	0,014			
153+10,0	3,658	59,320	0,237	3,500	59,083	-3,00	59,236	59,188	0,048	59,083	-3,00	59,083	59,083	-3,00	59,083	59,083	-3,00	59,083	59,083	3,548	59,156	0,073			
154	3,624	59,522	0,186	3,500	59,336	-3,00	59,452	59,441	0,011	59,336	-3,00	59,336	59,336	-3,00	59,336	59,336	-3,00	59,336	59,336	3,519	59,364	0,028			
154+10,0	3,613	59,672	0,169	3,500	59,503	-3,00	59,465	59,608	-0,143	59,503	-3,00	59,503	59,503	-3,00	59,503	59,503	-3,00	59,503	59,503	3,520	59,534	0,031			
154+19,3	3,546	59,688	0,068	3,500	59,620	-3,00	59,565	59,725	-0,160	59,620	-3,00	59,620	59,620	-3,00	59,620	59,620	-3,00	59,620	59,620	3,506	59,628	0,008			
155	3,541	59,689	0,061	3,500	59,628	-3,00	59,577	59,733	-0,156	59,628	-3,00	59,628	59,628	-3,00	59,628	59,628	-3,00	59,628	59,628	3,504	59,634	0,006			
156	3,596	59,813	-0,064	3,500	59,877	-3,00	59,873	59,982	-0,109	59,877	-3,00	59,877	59,877	-3,00	59,877	59,877	-3,00	59,877	59,877	3,550	59,952	0,075			
156+10,0	3,528	59,984	-0,018	3,500	60,002	-3,00	60,038	60,107	-0,069	60,002	-3,00	60,002	60,002	-3,00	60,002	60,002	-3,00	60,002	60,002	3,561	60,093	0,091			
157	3,512	60,153	-0,008	3,500	60,161	-3,00	60,202	60,266	-0,064	60,161	-3,00	60,161	60,161	-3,00	60,161	60,161	-3,00	60,161	60,161	3,560	60,251	0,090			
157+10,0	3,550	60,353	-0,033	3,500	60,386	-3,00	60,360	60,491	-0,131	60,386	-3,00	60,386	60,386	-3,00	60,386	60,386	-3,00	60,386	60,386	3,515	60,409	0,023			
158	3,538	60,621	-0,025	3,500	60,646	-3,00	60,616	60,751	-0,135	60,646	-3,00	60,646	60,646	-3,00	60,646	60,646	-3,00	60,646	60,646	3,564	60,603	-0,043			
159	3,709	61,025	-0,139	3,500	61,164	-3,00	61,098	61,269	-0,171	61,164	-3,00	61,164	61,164	-3,00	61,164	61,164	-3,00	61,164	61,164	3,651	61,064	-0,100			
159+10,0	3,807	61,219	-0,205	3,500	61,424	-3,00	61,401	61,529	-0,128	61,424	-3,00	61,424	61,424	-3,00	61,424	61,424	-3,00	61,424	61,424	3,571	61,530	0,106			
160	3,660	61,556	-0,106	3,500	61,662	-3,00	61,707	61,767	-0,060	61,662	-3,00	61,662	61,662	-3,00	61,662	61,662	-3,00	61,662	61,662	3,630	61,857	0,195			
160+10,0	3,564	61,815	-0,042	3,500	61,857	-3,00	61,929	61,962	-0,033	61,857	-3,00	61,857	61,857	-3,00	61,857	61,857	-3,00	61,857	61,857	3,647	62,078	0,221			
161	3,513	62,051	0,020	3,500	62,031	-3,00	62,149	62,136	0,013	62,031	-3,00	62,031	62,031	-3,00	62,031	62,031	-3,00	62,031	62,031	3,693	62,321	0,290			
162	3,540	62,440	0,061	3,500	62,379	-3,00	62,463	62,484	-0,021	62,379	-3,00	62,379	62,379	-3,00	62,379	62,379	-3,00	62,379	62,379	3,779	62,798	0,419			
163	3,630	62,920	0,194	3,500	62,726	-3,00	62,795	62,831	-0,036	62,726	-3,00	62,726	62,726	-3,00	62,726	62,726	-3,00	62,726	62,726	3,678	62,992	0,266			
163+10,0	3,635	63,103	0,203	3,500	62,900	-3,00	63,137	63,005	0,132	62,900	-3,00	62,900	62,900	-3,00	62,900	62,900	-3,00	62,900	62,900	3,650	63,125	0,225			
164	3,625	63,251	0,188	3,500	63,063	-3,00	63,125	63,168	-0,043	63,063	-3,00	63,063	63,063	-3,00	63,063	63,063	-3,00	63,063	63,063	3,646	63,282	0,219			

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Governador do Ceará



Estaca	Lado Esquerdo						Eixo						Lado Direito														
	Offset			Lateral			Bordo			Terreno			Cota			Vermelha			Bordo			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	Altura	Distância	Cota	%	Distância	Cota	%	Distância	Cota	%	Distância	Cota	%	Distância	Cota	%	Distância	Cota	Altura	Distância	Cota	Altura
164+10,0	3,629	63,398	0,193	3,500	63,205	-0,083	3,500	63,205	-3,00	63,227	63,310	-0,083	3,500	63,205	-3,00	63,205	63,205	-3,00	3,500	63,205	-3,00	3,500	63,205	3,656	63,440	0,235	
165	3,583	63,461	0,124	3,500	63,337	-0,050	3,500	63,337	-3,00	63,392	63,442	-0,050	3,500	63,337	-3,00	63,337	63,337	-3,00	3,500	63,337	-3,00	3,500	63,337	3,614	63,507	0,170	
165+15,6	3,500	63,542	0,000	3,500	63,542	-0,021	3,500	63,542	-3,00	63,626	63,647	-0,021	3,500	63,542	-3,00	63,542	63,542	-3,00	3,500	63,542	-3,00	3,500	63,542	3,557	63,628	0,086	
166	3,502	63,602	0,003	3,500	63,599	-0,145	3,500	63,599	-3,00	63,603	63,704	-0,101	3,500	63,599	-3,00	63,599	63,599	-3,00	3,500	63,599	-3,00	3,500	63,599	3,536	63,653	0,054	
167	3,596	63,798	-0,064	3,500	63,862	-0,019	3,500	63,862	-3,00	63,822	63,967	-0,145	3,500	63,862	-3,00	63,862	63,862	-3,00	3,500	63,862	-3,00	3,500	63,862	3,558	63,948	0,086	
168	3,558	64,086	-0,038	3,500	64,124	-0,023	3,500	64,124	-3,00	64,210	64,229	-0,019	3,500	64,124	-3,00	64,124	64,124	-3,00	3,500	64,124	-3,00	3,500	64,124	3,626	64,313	0,189	
168+14,5	3,599	64,249	-0,066	3,500	64,315	-0,075	3,500	64,315	-3,00	64,397	64,420	-0,023	3,500	64,315	-3,00	64,315	64,315	-3,00	3,500	64,315	-3,00	3,500	64,315	3,634	64,516	0,201	
169	3,592	64,318	-0,061	3,500	64,379	-0,088	3,500	64,379	-3,00	64,409	64,484	-0,075	3,500	64,379	-3,00	64,379	64,379	-3,00	3,500	64,379	-3,00	3,500	64,379	3,630	64,574	0,195	
169+14,5	3,551	64,553	0,077	3,500	64,476	-0,029	3,500	64,476	-3,00	64,493	64,581	-0,088	3,500	64,476	-3,00	64,476	64,476	-3,00	3,500	64,476	-3,00	3,500	64,476	3,574	64,587	0,111	
170	3,539	64,550	0,058	3,500	64,492	-0,069	3,500	64,492	-3,00	64,568	64,597	-0,029	3,500	64,492	-3,00	64,492	64,492	-3,00	3,500	64,492	-3,00	3,500	64,492	3,562	64,584	0,092	
171	3,568	64,652	0,101	3,500	64,551	-0,108	3,500	64,551	-3,00	64,587	64,656	-0,069	3,500	64,551	-3,00	64,551	64,551	-3,00	3,500	64,551	-3,00	3,500	64,551	3,526	64,589	0,038	
171+11,0	3,582	64,529	-0,054	3,500	64,583	-0,116	3,500	64,583	-3,00	64,580	64,688	-0,108	3,500	64,583	-3,00	64,583	64,583	-3,00	3,500	64,583	-3,00	3,500	64,583	3,532	64,631	0,048	
172	3,600	64,507	-0,067	3,500	64,574	-0,080	3,500	64,574	-3,00	64,563	64,679	-0,116	3,500	64,574	-3,00	64,574	64,574	-3,00	3,500	64,574	-3,00	3,500	64,574	3,526	64,613	0,039	
172+11,0	3,638	64,375	-0,092	3,500	64,467	-0,036	3,500	64,467	-3,00	64,492	64,572	-0,080	3,500	64,467	-3,00	64,467	64,467	-3,00	3,500	64,467	-3,00	3,500	64,467	3,565	64,565	0,098	
173	3,537	64,391	0,055	3,500	64,336	-0,038	3,500	64,336	-3,00	64,477	64,441	0,036	3,500	64,336	-3,00	64,336	64,336	-3,00	3,500	64,336	-3,00	3,500	64,336	3,667	64,587	0,251	
174	3,506	64,053	0,009	3,500	64,044	-0,042	3,500	64,044	-3,00	64,111	64,149	-0,038	3,500	64,044	-3,00	64,044	64,044	-3,00	3,500	64,044	-3,00	3,500	64,044	3,574	64,154	0,110	
174+12,5	3,522	63,893	0,032	3,500	63,861	-0,065	3,500	63,861	-3,00	63,924	63,966	-0,042	3,500	63,861	-3,00	63,861	63,861	-3,00	3,500	63,861	-3,00	3,500	63,861	3,613	64,031	0,170	
175	3,509	63,802	0,013	3,500	63,789	-0,036	3,500	63,789	-3,00	63,829	63,894	-0,065	3,500	63,789	-3,00	63,789	63,789	-3,00	3,500	63,789	-3,00	3,500	63,789	3,608	63,950	0,161	
175+12,5	3,503	63,833	-0,002	3,500	63,835	-0,075	3,500	63,835	-3,00	63,904	63,940	-0,036	3,500	63,835	-3,00	63,835	63,835	-3,00	3,500	63,835	-3,00	3,500	63,835	3,626	64,024	0,189	
176	3,601	63,856	-0,068	3,500	63,924	-0,082	3,500	63,924	-3,00	63,954	64,029	-0,075	3,500	63,924	-3,00	63,924	63,924	-3,00	3,500	63,924	-3,00	3,500	63,924	3,612	64,092	0,168	
177	3,577	64,279	0,116	3,500	64,163	-0,082	3,500	64,163	-3,00	64,186	64,268	-0,082	3,500	64,163	-3,00	64,163	64,163	-3,00	3,500	64,163	-3,00	3,500	64,163	3,563	64,257	0,094	
177+16,5	3,778	64,777	0,417	3,500	64,360	-0,125	3,500	64,360	-3,00	64,590	64,465	0,125	3,500	64,360	-3,00	64,360	64,360	-3,00	3,500	64,360	-3,00	3,500	64,360	3,609	64,524	0,164	
178	3,806	64,875	0,459	3,500	64,416	-0,082	3,500	64,416	-3,00	64,675	64,521	0,154	3,500	64,416	-3,00	64,416	64,416	-3,00	3,500	64,416	-3,00	3,500	64,416	3,630	64,610	0,194	
178+16,5	3,693	65,344	0,289	3,500	65,055	-0,056	3,500	65,055	-3,00	65,078	65,160	-0,082	3,500	65,055	-3,00	65,055	65,055	-3,00	3,500	65,055	-3,00	3,500	65,055	3,577	65,004	-0,051	
179	3,629	65,449	0,193	3,500	65,256	-0,056	3,500	65,256	-3,00	65,311	65,361	-0,050	3,500	65,256	-3,00	65,256	65,256	-3,00	3,500	65,256	-3,00	3,500	65,256	3,531	65,236	-0,020	
180	3,586	66,534	0,129	3,500	66,405	-0,062	3,500	66,405	-3,00	66,454	66,510	-0,056	3,500	66,405	-3,00	66,405	66,405	-3,00	3,500	66,405	-3,00	3,500	66,405	3,597	66,551	0,146	
180+5,42	3,537	66,772	0,055	3,500	66,717	-0,062	3,500	66,717	-3,00	66,760	66,822	-0,062	3,500	66,717	-3,00	66,717	66,717	-3,00	3,500	66,717	-3,00	3,500	66,717	3,577	66,833	0,116	
181	3,551	67,520	-0,034	3,500	67,554	-0,195	3,500	67,554	-3,00	67,464	67,659	-0,195	3,500	67,554	-3,00	67,554	67,554	-3,00	3,500	67,554	-3,00	3,500	67,554	3,513	67,573	0,019	
181+13,0	3,894	68,039	-0,262	3,500	68,301	-0,206	3,500	68,301	-3,00	68,200	68,406	-0,206	3,500	68,301	-3,00	68,301	68,301	-3,00	3,500	68,301	-3,00	3,500	68,301	3,541	68,362	0,061	



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Governador do Estado do Ceará

(Handwritten mark)

Estaca	Lado Esquerdo						Eixo						Lado Direito											
	Offset			Lateral			Bordo			Cota			Vermelha			Bordo			Lateral			Offset		
	Distância	Altura	Cota	Distância	Cota	Altura	Distância	Cota	%	Terreno	Projeto	Cota	Distância	Cota	%	Distância	Cota	Altura	Distância	Cota	Altura	Distância	Cota	Altura
181+17,5	3,790	-0,193	68,350	3,500	68,543	-0,124	3,500	68,543	-3,00	68,524	68,648	-0,124	3,500	68,543	-3,00	3,500	68,543	3,598	68,689	0,146				
182	3,688	-0,125	68,496	3,500	68,621	-0,063	3,500	68,621	-3,00	68,663	68,726	-0,063	3,500	68,621	-3,00	3,500	68,621	3,638	68,828	0,207				
183	3,589	-0,059	68,572	3,500	68,631	-0,017	3,500	68,631	-3,00	68,719	68,736	-0,017	3,500	68,631	-3,00	3,500	68,631	3,729	68,975	0,344				
183+3,00	3,606	-0,071	68,446	3,500	68,517	-0,084	3,500	68,517	-3,00	68,538	68,622	-0,084	3,500	68,517	-3,00	3,500	68,517	3,685	68,795	0,278				
183+10,0	3,709	-0,139	68,076	3,500	68,215	-0,178	3,500	68,215	-3,00	68,142	68,320	-0,178	3,500	68,215	-3,00	3,500	68,215	3,914	68,836	0,621				
184	3,666	-0,111	67,746	3,500	67,857	-0,175	3,500	67,857	-3,00	67,787	67,962	-0,175	3,500	67,857	-3,00	3,500	67,857	3,838	68,364	0,507				
185	3,530	-0,020	67,549	3,500	67,569	-0,100	3,500	67,569	-3,00	67,574	67,674	-0,100	3,500	67,569	-3,00	3,500	67,569	3,524	67,605	0,036				
186	3,744	0,366	68,222	3,500	67,856	0,073	3,500	67,856	-3,00	68,034	67,961	0,073	3,500	67,856	-3,00	3,500	67,856	3,641	68,068	0,212				
187	3,721	0,332	69,048	3,500	68,716	-0,140	3,500	68,716	-3,00	68,681	68,821	-0,140	3,500	68,716	-3,00	3,500	68,716	3,523	68,750	0,034				
187+4,00	3,729	0,343	69,289	3,500	68,946	-0,124	3,500	68,946	-3,00	68,927	69,051	-0,124	3,500	68,946	-3,00	3,500	68,946	3,525	68,983	0,037				
188	3,657	0,236	69,950	3,500	69,714	-0,048	3,500	69,714	-3,00	69,771	69,819	-0,048	3,500	69,714	-3,00	3,500	69,714	3,514	69,735	0,021				
188+12,8	3,576	-0,051	70,064	3,500	70,115	-0,103	3,500	70,115	-3,00	70,117	70,220	-0,103	3,500	70,115	-3,00	3,500	70,115	3,511	70,131	0,016				
189	3,702	-0,135	70,118	3,500	70,253	-0,170	3,500	70,253	-3,00	70,188	70,358	-0,170	3,500	70,253	-3,00	3,500	70,253	3,537	70,229	-0,024				
190	3,675	-0,117	70,206	3,500	70,323	-0,114	3,500	70,323	-3,00	70,314	70,428	-0,114	3,500	70,323	-3,00	3,500	70,323	3,526	70,362	0,039				
190+4,00	3,745	-0,163	70,118	3,500	70,281	-0,140	3,500	70,281	-3,00	70,246	70,386	-0,140	3,500	70,281	-3,00	3,500	70,281	3,507	70,276	-0,005				
191	4,024	-0,350	69,725	3,500	70,075	-0,192	3,500	70,075	-3,00	69,988	70,180	-0,192	3,500	70,075	-3,00	3,500	70,075	3,723	69,926	-0,149				
192	3,770	-0,180	69,638	3,500	69,818	-0,303	3,500	69,818	-3,00	69,620	69,923	-0,303	3,500	69,818	-3,00	3,500	69,818	3,515	69,840	0,022				
193	3,668	-0,112	69,449	3,500	69,561	-0,231	3,500	69,561	-3,00	69,435	69,666	-0,231	3,500	69,561	-3,00	3,500	69,561	3,738	69,403	-0,158				
194	3,513	0,020	69,324	3,500	69,304	-0,095	3,500	69,304	-3,00	69,314	69,409	-0,095	3,500	69,304	-3,00	3,500	69,304	3,562	69,262	-0,042				
195	3,645	-0,097	68,949	3,500	69,046	-0,124	3,500	69,046	-3,00	69,027	69,151	-0,124	3,500	69,046	-3,00	3,500	69,046	3,606	68,975	-0,071				
196	3,741	-0,161	68,628	3,500	68,789	-0,103	3,500	68,789	-3,00	68,791	68,894	-0,103	3,500	68,789	-3,00	3,500	68,789	3,504	68,795	0,006				
196+10,0	3,738	-0,159	68,502	3,500	68,661	-0,085	3,500	68,661	-3,00	68,681	68,766	-0,085	3,500	68,661	-3,00	3,500	68,661	3,542	68,724	0,063				
197	3,676	-0,117	68,443	3,500	68,560	-0,041	3,500	68,560	-3,00	68,624	68,665	-0,041	3,500	68,560	-3,00	3,500	68,560	3,562	68,653	0,093				
197+10,0	3,654	-0,102	68,414	3,500	68,516	-0,012	3,500	68,516	-3,00	68,609	68,621	-0,012	3,500	68,516	-3,00	3,500	68,516	3,545	68,584	0,068				
198	3,631	-0,087	68,413	3,500	68,500	-0,039	3,500	68,500	-3,00	68,566	68,605	-0,039	3,500	68,500	-3,00	3,500	68,500	3,510	68,514	0,014				
199	3,510	-0,007	68,461	3,500	68,468	-0,024	3,500	68,468	-3,00	68,549	68,573	-0,024	3,500	68,468	-3,00	3,500	68,468	3,515	68,490	0,022				
200	3,549	-0,033	68,403	3,500	68,436	-0,001	3,500	68,436	-3,00	68,540	68,541	-0,001	3,500	68,436	-3,00	3,500	68,436	3,542	68,499	0,063				
200+8,50	3,612	-0,074	68,349	3,500	68,423	0,011	3,500	68,423	-3,00	68,539	68,528	0,011	3,500	68,423	-3,00	3,500	68,423	3,559	68,512	0,089				
201	3,667	-0,112	68,263	3,500	68,375	0,002	3,500	68,375	-3,00	68,482	68,480	0,002	3,500	68,375	-3,00	3,500	68,375	3,573	68,485	0,110				



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Governador do Estado do Ceará

Estaca	Lado Esquerdo						Eixo						Lado Direito								
	Offset			Lateral			Bordo	Cota	Terreno	Projeto	Vermelha	Cota	Bordo	%	Distância	Cota	Distância	Cota	Distância	Cota	Offset
	Distância	Altura	Cota	Distância	Cota	Distância															
201+8,50	3,694	68,171	-0,129	3,500	68,300	3,500	68,300	-3,00	68,365	68,405	-0,040	68,300	68,300	-3,00	3,544	68,366	0,066				
202	3,698	68,046	-0,132	3,500	68,178	3,500	68,178	-3,00	68,196	68,283	-0,087	68,178	68,178	-3,00	3,531	68,225	0,047				
203	3,624	67,881	-0,083	3,500	67,964	3,500	67,964	-3,00	67,975	68,069	-0,094	67,964	67,964	-3,00	3,528	67,946	-0,018				
204	3,508	67,763	0,012	3,500	67,751	3,500	67,751	-3,00	67,761	67,856	-0,095	67,751	67,751	-3,00	3,885	67,494	-0,257				
204+9,89	3,537	67,700	0,055	3,500	67,645	3,500	67,645	-3,00	67,699	67,750	-0,051	67,645	67,645	-3,00	3,517	67,670	0,025				
205	3,565	67,636	0,098	3,500	67,538	3,500	67,538	-3,00	67,647	67,643	0,004	67,538	67,538	-3,00	3,622	67,721	0,183				
206	3,517	67,349	0,025	3,500	67,324	3,500	67,324	-3,00	67,380	67,429	-0,049	67,324	67,324	-3,00	3,600	67,475	0,151				
207	3,553	67,190	0,079	3,500	67,111	3,500	67,111	-3,00	67,184	67,216	-0,032	67,111	67,111	-3,00	3,508	67,122	0,011				
207+6,50	3,531	67,022	-0,020	3,500	67,042	3,500	67,042	-3,00	66,971	67,147	-0,176	67,042	67,042	-3,00	3,604	66,973	-0,069				
208	3,529	66,946	0,043	3,500	66,803	3,500	66,803	-3,00	66,790	66,908	-0,118	66,803	66,803	-3,00	3,622	66,722	-0,081				
208+6,50	3,596	66,765	0,144	3,500	66,621	3,500	66,621	-3,00	66,706	66,726	-0,020	66,621	66,621	-3,00	3,512	66,638	0,017				
208+19,0	3,646	66,446	0,219	3,500	66,227	3,500	66,227	-3,00	66,262	66,332	-0,070	66,227	66,227	-3,00	3,532	66,205	-0,022				
209	3,620	66,377	0,180	3,500	66,197	3,500	66,197	-3,00	66,185	66,302	-0,117	66,197	66,197	-3,00	3,586	66,140	-0,057				
209+1,98	3,565	66,232	0,097	3,500	66,135	3,500	66,135	-3,00	66,026	66,240	-0,214	66,135	66,135	-3,00	3,697	66,004	-0,131				
210	3,841	65,342	-0,227	3,500	65,569	3,500	65,569	-3,00	65,340	65,674	-0,334	65,569	65,569	-3,00	3,662	65,461	-0,108				
210+10,0	3,581	65,201	-0,054	3,500	65,255	3,500	65,255	-3,00	65,221	65,360	-0,139	65,255	65,255	-3,00	3,523	65,240	-0,015				
211	3,531	64,955	0,047	3,500	64,908	3,500	64,908	-3,00	64,985	65,013	-0,028	64,908	64,908	-3,00	3,598	65,055	0,147				
211+5,76	4,015	64,335	-0,343	3,500	64,678	3,500	64,678	-3,00	64,481	64,783	-0,302	64,678	64,678	-3,00	3,597	64,613	-0,065				
211+10,0	4,365	63,919	-0,577	3,500	64,496	3,500	64,496	-3,00	64,067	64,601	-0,534	64,496	64,496	-3,00	3,829	64,277	-0,219				
212	5,105	62,981	-1,070	3,500	64,051	3,500	64,051	-3,00	63,087	64,156	-1,069	64,051	64,051	-3,00	4,371	63,470	-0,581				
212+12,6	4,712	62,678	-0,808	3,500	63,486	3,500	63,486	-3,00	62,694	63,591	-0,897	63,486	63,486	-3,00	4,382	62,898	-0,588				
213	4,493	62,498	-0,662	3,500	63,160	3,500	63,160	-3,00	62,494	63,265	-0,771	63,160	63,160	-3,00	4,184	62,704	-0,456				
213+10,0	3,991	62,387	-0,328	3,500	62,715	3,500	62,715	-3,00	62,328	62,820	-0,492	62,715	62,715	-3,00	3,753	62,546	-0,169				
214	3,517	62,336	-0,012	3,500	62,348	3,500	62,348	-3,00	62,276	62,453	-0,177	62,348	62,348	-3,00	3,534	62,400	0,052				
214+10,0	3,597	62,282	0,145	3,500	62,137	3,500	62,137	-3,00	62,344	62,242	0,102	62,137	62,137	-3,00	3,680	62,407	0,270				
214+11,4	3,632	62,316	0,198	3,500	62,118	3,500	62,118	-3,00	62,376	62,223	0,153	62,118	62,118	-3,00	3,713	62,437	0,319				
215	3,654	62,236	0,231	3,500	62,005	3,500	62,005	-3,00	62,232	62,110	0,122	62,005	62,005	-3,00	3,649	62,229	0,224				
216	4,156	61,303	-0,437	3,500	61,740	3,500	61,740	-3,00	61,530	61,845	-0,315	61,740	61,740	-3,00	3,537	61,715	-0,025				
216+2,71	4,181	61,250	-0,454	3,500	61,704	3,500	61,704	-3,00	61,518	61,809	-0,291	61,704	61,704	-3,00	3,524	61,740	0,036				

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Estaca	Lado Esquerdo						Eixo						Lado Direito											
	Offset			Lateral			Bordo			Cota			Vermelha			Cota			Lateral			Offset		
	Distância	Altura	Cota	Distância	Cota	Distância	%	Cota	Terreno	Projeto	Distância	Cota	%	Distância	Cota	Distância	%	Distância	Cota	Distância	Cota	Distância	Cota	Distância
217	4,113	61,066	-0,409	3,500	61,475	3,500	-3,00	61,437	61,580	-0,143	3,500	61,475	-3,00	3,500	61,475	-3,00	-3,00	3,500	61,475	3,500	61,475	3,735	61,828	0,353
218	3,603	61,141	-0,069	3,500	61,210	3,500	-3,00	61,341	61,315	0,026	3,500	61,210	-3,00	3,500	61,210	-3,00	-3,00	3,500	61,210	3,500	61,210	3,791	61,647	0,437
218+13,7	3,514	61,018	-0,009	3,500	61,027	3,500	-3,00	61,153	61,132	0,021	3,500	61,027	-3,00	3,500	61,027	-3,00	-3,00	3,500	61,027	3,500	61,027	3,760	61,417	0,390
219	3,525	60,928	-0,017	3,500	60,945	3,500	-3,00	61,047	61,050	-0,003	3,500	60,945	-3,00	3,500	60,945	-3,00	-3,00	3,500	60,945	3,500	60,945	3,730	61,289	0,344
219+18,5	3,554	60,664	-0,036	3,500	60,700	3,500	-3,00	60,829	60,805	0,024	3,500	60,700	-3,00	3,500	60,700	-3,00	-3,00	3,500	60,700	3,500	60,700	3,634	60,901	0,201
220	3,569	60,632	-0,046	3,500	60,678	3,500	-3,00	60,786	60,783	0,003	3,500	60,678	-3,00	3,500	60,678	-3,00	-3,00	3,500	60,678	3,500	60,678	3,617	60,853	0,175
220+18,5	3,518	60,254	0,027	3,500	60,227	3,500	-3,00	60,307	60,332	-0,025	3,500	60,227	-3,00	3,500	60,227	-3,00	-3,00	3,500	60,227	3,500	60,227	3,561	60,318	0,091
221	3,531	60,222	0,046	3,500	60,176	3,500	-3,00	60,274	60,281	-0,007	3,500	60,176	-3,00	3,500	60,176	-3,00	-3,00	3,500	60,176	3,500	60,176	3,566	60,275	0,099
222	3,519	59,483	-0,013	3,500	59,496	3,500	-3,00	59,604	59,601	0,003	3,500	59,496	-3,00	3,500	59,496	-3,00	-3,00	3,500	59,496	3,500	59,496	3,544	59,562	0,066
223	4,049	58,450	-0,366	3,500	58,816	3,500	-3,00	58,720	58,921	-0,201	3,500	58,816	-3,00	3,500	58,816	-3,00	-3,00	3,500	58,816	3,500	58,816	3,623	58,734	-0,082
223+0,50	4,060	58,426	-0,373	3,500	58,799	3,500	-3,00	58,714	58,904	-0,190	3,500	58,799	-3,00	3,500	58,799	-3,00	-3,00	3,500	58,799	3,500	58,799	3,606	58,728	-0,071
224	4,938	57,434	-0,959	3,500	58,393	3,500	-3,00	58,446	58,498	-0,052	3,500	58,393	-3,00	3,500	58,393	-3,00	-3,00	3,500	58,393	3,500	58,393	3,531	58,440	0,047
224+0,50	4,972	57,408	-0,982	3,500	58,390	3,500	-3,00	58,439	58,495	-0,056	3,500	58,390	-3,00	3,500	58,390	-3,00	-3,00	3,500	58,390	3,500	58,390	3,528	58,432	0,042
225	5,100	57,187	-1,067	3,500	58,254	3,500	-3,00	58,226	58,359	-0,133	3,500	58,254	-3,00	3,500	58,254	-3,00	-3,00	3,500	58,254	3,500	58,254	3,576	58,203	-0,051
226	4,826	57,231	-0,884	3,500	58,115	3,500	-3,00	58,123	58,220	-0,097	3,500	58,115	-3,00	3,500	58,115	-3,00	-3,00	3,500	58,115	3,500	58,115	4,123	57,700	-0,415
226+5,00	4,778	57,228	-0,852	3,500	58,080	3,500	-3,00	58,136	58,185	-0,049	3,500	58,080	-3,00	3,500	58,080	-3,00	-3,00	3,500	58,080	3,500	58,080	4,049	57,714	-0,366
227	4,718	57,221	-0,812	3,500	58,033	3,500	-3,00	58,150	58,138	0,012	3,500	58,033	-3,00	3,500	58,033	-3,00	-3,00	3,500	58,033	3,500	58,033	3,808	57,828	-0,205
227+5,00	4,733	57,220	-0,822	3,500	58,042	3,500	-3,00	58,150	58,147	0,003	3,500	58,042	-3,00	3,500	58,042	-3,00	-3,00	3,500	58,042	3,500	58,042	3,781	57,854	-0,188
228	4,795	57,226	-0,863	3,500	58,089	3,500	-3,00	58,189	58,194	-0,005	3,500	58,089	-3,00	3,500	58,089	-3,00	-3,00	3,500	58,089	3,500	58,089	3,645	57,993	-0,096
229	4,680	57,365	-0,786	3,500	58,151	3,500	-3,00	58,225	58,256	-0,031	3,500	58,151	-3,00	3,500	58,151	-3,00	-3,00	3,500	58,151	3,500	58,151	3,522	58,184	0,033
230	4,189	57,753	-0,460	3,500	58,213	3,500	-3,00	58,300	58,318	-0,018	3,500	58,213	-3,00	3,500	58,213	-3,00	-3,00	3,500	58,213	3,500	58,213	3,542	58,276	0,063
231	3,510	58,290	0,015	3,500	58,275	3,500	-3,00	58,179	58,380	-0,201	3,500	58,275	-3,00	3,500	58,275	-3,00	-3,00	3,500	58,275	3,500	58,275	3,656	58,171	-0,104
231+1,70	3,757	58,109	-0,171	3,500	58,280	3,500	-3,00	57,965	58,385	-0,420	3,500	58,280	-3,00	3,500	58,280	-3,00	-3,00	3,500	58,280	3,500	58,280	3,995	57,950	-0,330
232	5,151	57,330	-1,101	3,500	58,431	3,500	-3,00	57,166	58,536	-1,370	3,500	58,431	-3,00	3,500	58,431	-3,00	-3,00	3,500	58,431	3,500	58,431	5,222	57,283	-1,148
232+1,70	5,139	57,362	-1,092	3,500	58,454	3,500	-3,00	57,184	58,559	-1,375	3,500	58,454	-3,00	3,500	58,454	-3,00	-3,00	3,500	58,454	3,500	58,454	5,254	57,285	-1,169
232+4,93	5,118	57,421	-1,079	3,500	58,500	3,500	-3,00	57,245	58,605	-1,360	3,500	58,500	-3,00	3,500	58,500	-3,00	-3,00	3,500	58,500	3,500	58,500	5,317	57,289	-1,211
233	4,069	58,337	-0,379	3,500	58,716	3,500	-3,00	58,489	58,821	-0,332	3,500	58,716	-3,00	3,500	58,716	-3,00	-3,00	3,500	58,716	3,500	58,716	3,757	58,545	-0,171
233+7,22	3,790	58,626	-0,193	3,500	58,819	3,500	-3,00	58,750	58,924	-0,174	3,500	58,819	-3,00	3,500	58,819	-3,00	-3,00	3,500	58,819	3,500	58,819	3,543	58,884	0,065
234	3,510	59,017	0,015	3,500	59,002	3,500	-3,00	59,053	59,107	-0,054	3,500	59,002	-3,00	3,500	59,002	-3,00	-3,00	3,500	59,002	3,500	59,002	3,656	59,237	0,235



PREFEITURA MUNICIPAL DE MIRAIMA
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Governador do Ceará

	Lado Esquerdo						Eixo						Lado Direito							
	Offset			Bordo			Cota	Terreno	Projeto	Vermelha	Cota	Bordo			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	%						Distância	Cota	Distância	Cota	%	Distância	Cota	Distância	Cota
234+10,0	3,593	59,285	0,140	3,500	59,145	-3,00	59,343	59,250	0,093	3,500	59,145	-3,00	3,500	59,145	3,697	59,440	0,295			
235	3,509	59,266	0,013	3,500	59,253	-3,00	59,332	59,358	-0,026	3,500	59,253	-3,00	3,500	59,253	3,618	59,430	0,177			
235+3,84	3,527	59,258	-0,018	3,500	59,276	-3,00	59,328	59,381	-0,053	3,500	59,276	-3,00	3,500	59,276	3,599	59,425	0,149			
235+10,0	3,570	59,246	-0,046	3,500	59,292	-3,00	59,326	59,397	-0,071	3,500	59,292	-3,00	3,500	59,292	3,559	59,381	0,089			
236	3,600	59,228	-0,067	3,500	59,295	-3,00	59,198	59,400	-0,202	3,500	59,295	-3,00	3,500	59,295	3,505	59,302	0,007			
237	5,687	57,844	-1,458	3,500	59,302	-3,00	58,024	59,407	-1,383	3,500	59,302	-3,00	3,500	59,302	4,893	58,373	-0,929			
237+11,6	6,083	57,584	-1,722	3,500	59,306	-3,00	57,570	59,411	-1,841	3,500	59,306	-3,00	3,500	59,306	5,999	57,640	-1,666			
238	6,160	57,535	-1,774	3,500	59,309	-3,00	57,633	59,414	-1,781	3,500	59,309	-3,00	3,500	59,309	5,858	57,737	-1,572			
239	5,063	58,274	-1,042	3,500	59,316	-3,00	58,237	59,421	-1,184	3,500	59,316	-3,00	3,500	59,316	5,027	58,298	-1,018			
240	4,067	58,945	-0,378	3,500	59,323	-3,00	58,931	59,428	-0,497	3,500	59,323	-3,00	3,500	59,323	3,922	59,042	-0,281			
240+16,3	3,704	59,193	-0,136	3,500	59,329	-3,00	59,329	59,434	-0,105	3,500	59,329	-3,00	3,500	59,329	3,593	59,468	0,139			
241	3,636	59,240	-0,090	3,500	59,330	-3,00	59,370	59,435	-0,065	3,500	59,330	-3,00	3,500	59,330	3,570	59,435	0,105			
242	4,584	58,615	-0,722	3,500	59,337	-3,00	58,861	59,442	-0,581	3,500	59,337	-3,00	3,500	59,337	3,965	59,027	-0,310			
243	4,451	58,710	-0,634	3,500	59,344	-3,00	58,776	59,449	-0,673	3,500	59,344	-3,00	3,500	59,344	4,448	58,712	-0,632			
243+4,00	4,098	58,946	-0,399	3,500	59,345	-3,00	58,833	59,450	-0,617	3,500	59,345	-3,00	3,500	59,345	4,290	58,818	-0,527			
244	3,773	59,436	-0,182	3,500	59,618	-3,00	59,518	59,723	-0,205	3,500	59,618	-3,00	3,500	59,618	3,527	59,600	-0,018			
244+4,00	3,732	59,614	-0,155	3,500	59,769	-3,00	59,636	59,874	-0,238	3,500	59,769	-3,00	3,500	59,769	3,575	59,719	-0,050			
245	3,774	60,259	-0,183	3,500	60,442	-3,00	60,190	60,547	-0,357	3,500	60,442	-3,00	3,500	60,442	3,829	60,223	-0,219			
245+6,15	3,661	60,593	-0,107	3,500	60,700	-3,00	60,511	60,805	-0,294	3,500	60,700	-3,00	3,500	60,700	3,865	60,457	-0,243			
245+15,8	3,668	60,997	-0,112	3,500	61,109	-3,00	60,901	61,214	-0,313	3,500	61,109	-3,00	3,500	61,109	3,980	60,789	-0,320			
246	3,731	61,128	-0,154	3,500	61,282	-3,00	61,037	61,387	-0,350	3,500	61,282	-3,00	3,500	61,282	4,042	60,921	-0,361			
247	3,749	61,957	-0,166	3,500	62,123	-3,00	61,880	62,228	-0,348	3,500	62,123	-3,00	3,500	62,123	3,943	61,828	-0,295			
247+15,1	3,809	62,552	-0,206	3,500	62,758	-3,00	62,560	62,863	-0,303	3,500	62,758	-3,00	3,500	62,758	3,791	62,564	-0,194			
248	3,821	62,749	-0,214	3,500	62,963	-3,00	62,779	63,068	-0,289	3,500	62,963	-3,00	3,500	62,963	3,769	62,784	-0,179			
249	3,592	63,741	-0,062	3,500	63,803	-3,00	63,760	63,908	-0,148	3,500	63,803	-3,00	3,500	63,803	3,590	63,743	-0,060			
249+13,0	3,629	64,544	0,194	3,500	64,350	-3,00	64,449	64,455	-0,006	3,500	64,350	-3,00	3,500	64,350	3,555	64,432	0,082			
250	3,740	64,995	0,360	3,500	64,635	-3,00	64,946	64,740	0,206	3,500	64,635	-3,00	3,500	64,635	3,615	64,808	0,173			
250+13,0	3,629	65,313	0,194	3,500	65,119	-3,00	65,375	65,224	0,151	3,500	65,119	-3,00	3,500	65,119	3,669	65,372	0,253			
251	3,542	65,427	0,063	3,500	65,364	-3,00	65,464	65,469	-0,005	3,500	65,364	-3,00	3,500	65,364	3,573	65,474	0,110			



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 Governo do Estado do Ceará

Estaca	Lado Esquerdo						Eixo						Lado Direito													
	Offset			Lateral			Bordo			Cota			Cota			Bordo			Lateral			Offset				
	Distância	Cota	Altura	Distância	Cota	Distância	%	Cota	Terreno	Projeto	Vermelha	Cota	Distância	Cota	Distância	%	Cota	Distância	Cota	Distância	%	Cota	Distância	Cota	Distância	Cota
252	3,792	65,868	-0,194	3,500	66,062	3,500	-3,00	65,905	66,167	-0,262	3,500	66,062	-3,00	66,062	-3,00	66,062	3,500	3,500	66,062	3,689	65,936	-0,126				
253	3,907	66,490	-0,271	3,500	66,761	3,500	-3,00	66,454	66,866	-0,412	3,500	66,761	-3,00	66,761	-3,00	66,761	3,500	3,500	66,761	3,934	66,471	-0,290				
254	3,928	67,174	-0,285	3,500	67,459	3,500	-3,00	67,118	67,564	-0,446	3,500	67,459	-3,00	67,459	-3,00	67,459	3,500	3,500	67,459	4,060	67,086	-0,373				
255	3,884	67,902	-0,256	3,500	68,158	3,500	-3,00	67,852	68,263	-0,411	3,500	68,158	-3,00	68,158	-3,00	68,158	3,500	3,500	68,158	4,060	67,785	-0,373				
256	3,785	68,686	-0,190	3,500	68,856	3,500	-3,00	68,604	68,961	-0,357	3,500	68,856	-3,00	68,856	-3,00	68,856	3,500	3,500	68,856	3,910	68,582	-0,274				
257	3,620	69,475	-0,080	3,500	69,555	3,500	-3,00	69,480	69,660	-0,180	3,500	69,555	-3,00	69,555	-3,00	69,555	3,500	3,500	69,555	3,712	69,413	-0,142				
257+10,0	3,548	69,872	-0,032	3,500	69,904	3,500	-3,00	69,877	70,009	-0,132	3,500	69,904	-3,00	69,904	-3,00	69,904	3,500	3,500	69,904	3,650	69,804	-0,100				
258	3,551	70,193	-0,034	3,500	70,227	3,500	-3,00	70,195	70,332	-0,137	3,500	70,227	-3,00	70,227	-3,00	70,227	3,500	3,500	70,227	3,693	70,098	-0,129				
258+10,0	3,599	70,432	-0,066	3,500	70,498	3,500	-3,00	70,512	70,603	-0,091	3,500	70,498	-3,00	70,498	-3,00	70,498	3,500	3,500	70,498	3,647	70,400	-0,098				
259	3,743	70,580	-0,162	3,500	70,742	3,500	-3,00	70,781	70,847	-0,066	3,500	70,742	-3,00	70,742	-3,00	70,742	3,500	3,500	70,742	3,561	70,701	-0,041				
260	3,930	70,946	-0,286	3,500	71,232	3,500	-3,00	71,287	71,337	-0,050	3,500	71,232	-3,00	71,232	-3,00	71,232	3,500	3,500	71,232	3,550	71,307	0,075				
261	3,906	71,450	-0,271	3,500	71,721	3,500	-3,00	71,751	71,826	-0,075	3,500	71,721	-3,00	71,721	-3,00	71,721	3,500	3,500	71,721	3,630	71,915	0,194				
262	3,727	72,060	-0,151	3,500	72,211	3,500	-3,00	72,240	72,316	-0,076	3,500	72,211	-3,00	72,211	-3,00	72,211	3,500	3,500	72,211	3,671	72,467	0,256				
263	3,715	72,557	-0,143	3,500	72,700	3,500	-3,00	72,762	72,805	-0,043	3,500	72,700	-3,00	72,700	-3,00	72,700	3,500	3,500	72,700	3,664	72,946	0,246				
263+2,00	3,719	72,603	-0,146	3,500	72,749	3,500	-3,00	72,810	72,854	-0,044	3,500	72,749	-3,00	72,749	-3,00	72,749	3,500	3,500	72,749	3,653	72,978	0,229				
264	3,719	72,808	-0,146	3,500	72,954	3,500	-3,00	73,016	73,059	-0,043	3,500	72,954	-3,00	72,954	-3,00	72,954	3,500	3,500	72,954	3,636	73,158	0,204				
264+2,00	3,743	72,786	-0,162	3,500	72,948	3,500	-3,00	72,995	73,053	-0,058	3,500	72,948	-3,00	72,948	-3,00	72,948	3,500	3,500	72,948	3,645	73,165	0,217				
264+9,57	3,817	72,702	-0,211	3,500	72,913	3,500	-3,00	72,915	73,018	-0,103	3,500	72,913	-3,00	72,913	-3,00	72,913	3,500	3,500	72,913	3,687	73,193	0,280				
265	3,880	72,612	-0,253	3,500	72,865	3,500	-3,00	72,928	72,970	-0,042	3,500	72,865	-3,00	72,865	-3,00	72,865	3,500	3,500	72,865	3,730	73,210	0,345				
265+14,0	3,837	72,576	-0,224	3,500	72,800	3,500	-3,00	72,811	72,905	-0,094	3,500	72,800	-3,00	72,800	-3,00	72,800	3,500	3,500	72,800	3,672	73,059	0,259				
266	3,812	72,583	-0,208	3,500	72,791	3,500	-3,00	72,798	72,896	-0,098	3,500	72,791	-3,00	72,791	-3,00	72,791	3,500	3,500	72,791	3,671	73,048	0,257				
266+9,55	3,825	72,636	-0,217	3,500	72,853	3,500	-3,00	72,875	72,958	-0,083	3,500	72,853	-3,00	72,853	-3,00	72,853	3,500	3,500	72,853	3,719	73,182	0,329				
266+14,0	3,857	72,676	-0,238	3,500	72,914	3,500	-3,00	72,887	73,019	-0,132	3,500	72,914	-3,00	72,914	-3,00	72,914	3,500	3,500	72,914	3,786	73,342	0,428				
267	3,916	72,734	-0,277	3,500	73,011	3,500	-3,00	73,013	73,116	-0,103	3,500	73,011	-3,00	73,011	-3,00	73,011	3,500	3,500	73,011	3,858	73,548	0,537				
267+17,0	3,792	73,089	-0,195	3,500	73,284	3,500	-3,00	73,297	73,389	-0,092	3,500	73,284	-3,00	73,284	-3,00	73,284	3,500	3,500	73,284	4,044	74,100	0,816				
268	3,754	73,170	-0,169	3,500	73,339	3,500	-3,00	73,356	73,444	-0,088	3,500	73,339	-3,00	73,339	-3,00	73,339	3,500	3,500	73,339	4,049	74,163	0,824				
268+7,03	3,767	73,351	-0,178	3,500	73,529	3,500	-3,00	73,543	73,634	-0,091	3,500	73,529	-3,00	73,529	-3,00	73,529	3,500	3,500	73,529	4,024	74,315	0,786				
268+17,0	3,781	73,752	-0,187	3,500	73,939	3,500	-3,00	74,008	74,044	-0,036	3,500	73,939	-3,00	73,939	-3,00	73,939	3,500	3,500	73,939	3,894	74,529	0,590				
269	3,809	73,881	-0,206	3,500	74,087	3,500	-3,00	74,143	74,192	-0,049	3,500	74,087	-3,00	74,087	-3,00	74,087	3,500	3,500	74,087	3,838	74,594	0,507				

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 Governo do Estado do Ceará



(Handwritten mark)

Estaca	Lado Esquerdo										Eixo										Lado Direito									
	Offset			Lateral			Bordo				Cota Terreno	Cota Projeto	Cota Vermelha	Bordo			Lateral			Offset										
	Distância	Altura	Distância	Distância	Cota	%	Distância	Cota	Distância	Distância				Cota	%	Distância	Cota	Distância	Distância	Cota	Distância	Cota	Distância							
269+16,0	4,025	74,529	-0,350	3,500	74,879	3,500	74,879	-3,00	74,837	74,984	-0,147	3,500	74,879	-3,00	3,500	74,879	-3,00	3,500	74,879	3,524	74,914	0,035								
270	4,292	74,528	-0,528	3,500	75,056	3,500	75,056	-3,00	74,994	75,161	-0,167	3,500	75,056	-3,00	3,500	75,056	-3,00	3,500	75,056	3,611	74,982	-0,074								
270+7,03	4,802	74,396	-0,868	3,500	75,264	3,500	75,264	-3,00	75,177	75,369	-0,192	3,500	75,264	-3,00	3,500	75,264	-3,00	3,500	75,264	3,748	75,099	-0,165								
270+16,0	4,753	74,503	-0,835	3,500	75,338	3,500	75,338	-3,00	75,309	75,443	-0,134	3,500	75,338	-3,00	3,500	75,338	-3,00	3,500	75,338	3,625	75,254	-0,084								
271	4,536	74,633	-0,691	3,500	75,324	3,500	75,324	-3,00	75,334	75,429	-0,095	3,500	75,324	-3,00	3,500	75,324	-3,00	3,500	75,324	3,501	75,326	0,002								
272	3,778	75,067	-0,186	3,500	75,253	3,500	75,253	-3,00	75,295	75,358	-0,063	3,500	75,253	-3,00	3,500	75,253	-3,00	3,500	75,253	3,613	75,422	0,169								
273	3,841	74,954	-0,228	3,500	75,182	3,500	75,182	-3,00	75,146	75,287	-0,141	3,500	75,182	-3,00	3,500	75,182	-3,00	3,500	75,182	3,580	75,302	0,120								
273+13,0	3,744	74,974	-0,162	3,500	75,136	3,500	75,136	-3,00	75,135	75,241	-0,106	3,500	75,136	-3,00	3,500	75,136	-3,00	3,500	75,136	3,559	75,225	0,089								
274	3,751	74,981	-0,167	3,500	75,148	3,500	75,148	-3,00	75,145	75,253	-0,108	3,500	75,148	-3,00	3,500	75,148	-3,00	3,500	75,148	3,526	75,187	0,039								
274+13,0	3,692	75,240	-0,128	3,500	75,368	3,500	75,368	-3,00	75,378	75,473	-0,095	3,500	75,368	-3,00	3,500	75,368	-3,00	3,500	75,368	3,504	75,374	0,006								
275	3,759	75,382	-0,173	3,500	75,555	3,500	75,555	-3,00	75,556	75,660	-0,104	3,500	75,555	-3,00	3,500	75,555	-3,00	3,500	75,555	3,505	75,551	-0,004								
275+13,7	4,132	75,503	-0,421	3,500	75,924	3,500	75,924	-3,00	75,937	76,029	-0,092	3,500	75,924	-3,00	3,500	75,924	-3,00	3,500	75,924	3,575	75,874	-0,050								
276	4,445	75,460	-0,630	3,500	76,090	3,500	76,090	-3,00	76,164	76,195	-0,031	3,500	76,090	-3,00	3,500	76,090	-3,00	3,500	76,090	3,527	76,131	0,041								
276+17,0	6,063	74,836	-1,709	3,500	76,545	3,500	76,545	-3,00	76,629	76,650	-0,021	3,500	76,545	-3,00	3,500	76,545	-3,00	3,500	76,545	3,602	76,699	0,154								
277	6,376	74,693	-1,917	3,500	76,610	3,500	76,610	-3,00	76,614	76,715	-0,101	3,500	76,610	-3,00	3,500	76,610	-3,00	3,500	76,610	3,553	76,689	0,079								
277+13,7	5,930	74,871	-1,620	3,500	76,491	3,500	76,491	-3,00	76,666	76,596	0,070	3,500	76,491	-3,00	3,500	76,491	-3,00	3,500	76,491	3,568	76,593	0,102								
278	4,649	75,448	-0,766	3,500	76,214	3,500	76,214	-3,00	76,291	76,319	-0,028	3,500	76,214	-3,00	3,500	76,214	-3,00	3,500	76,214	3,527	76,254	0,040								
278+6,33	3,894	75,528	-0,263	3,500	75,791	3,500	75,791	-3,00	75,646	75,896	-0,250	3,500	75,791	-3,00	3,500	75,791	-3,00	3,500	75,791	3,578	75,907	0,116								
278+7,00	3,901	75,471	-0,267	3,500	75,738	3,500	75,738	-3,00	75,578	75,843	-0,265	3,500	75,738	-3,00	3,500	75,738	-3,00	3,500	75,738	3,589	75,871	0,133								
279	4,097	74,292	-0,398	3,500	74,690	3,500	74,690	-3,00	74,295	74,795	-0,500	3,500	74,690	-3,00	3,500	74,690	-3,00	3,500	74,690	3,704	74,995	0,305								
280	4,415	72,467	-0,610	3,500	73,077	3,500	73,077	-3,00	72,452	73,182	-0,730	3,500	73,077	-3,00	3,500	73,077	-3,00	3,500	73,077	3,816	72,867	-0,210								
280+2,00	4,464	72,274	-0,642	3,500	72,916	3,500	72,916	-3,00	72,273	73,021	-0,748	3,500	72,916	-3,00	3,500	72,916	-3,00	3,500	72,916	3,868	72,671	-0,245								
280+6,24	4,600	71,860	-0,734	3,500	72,594	3,500	72,594	-3,00	71,898	72,699	-0,801	3,500	72,594	-3,00	3,500	72,594	-3,00	3,500	72,594	3,996	72,264	-0,330								
281	3,520	71,869	0,030	3,500	71,839	3,500	71,839	-3,00	72,058	71,944	0,114	3,500	71,839	-3,00	3,500	71,839	-3,00	3,500	71,839	3,746	72,207	0,368								
281+2,00	3,601	71,916	0,151	3,500	71,765	3,500	71,765	-3,00	72,108	71,870	0,238	3,500	71,765	-3,00	3,500	71,765	-3,00	3,500	71,765	3,819	72,243	0,478								
281+14,7	3,748	71,161	-0,165	3,500	71,326	3,500	71,326	-3,00	71,345	71,431	-0,086	3,500	71,326	-3,00	3,500	71,326	-3,00	3,500	71,326	3,722	71,659	0,333								
282	4,012	70,804	-0,341	3,500	71,145	3,500	71,145	-3,00	70,995	71,250	-0,255	3,500	71,145	-3,00	3,500	71,145	-3,00	3,500	71,145	3,634	71,347	0,202								
282+8,00	4,404	70,268	-0,602	3,500	70,870	3,500	70,870	-3,00	70,581	70,975	-0,394	3,500	70,870	-3,00	3,500	70,870	-3,00	3,500	70,870	3,502	70,872	0,002								
283	4,353	70,288	-0,569	3,500	70,857	3,500	70,857	-3,00	70,396	70,962	-0,566	3,500	70,857	-3,00	3,500	70,857	-3,00	3,500	70,857	4,172	70,409	-0,448								



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Handwritten mark resembling a stylized 'Y' or signature.

Estaca	Lado Esquerdo						Eixo						Lado Direito											
	Offset			Lateral			Bordo			Cota			Vermelha			Bordo			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	Altura	Distância	Cota	%	Terreno	Projeto	Distância	Cota	%	Distância	Cota	%	Distância	Cota	Distância	Cota	Altura	Distância	Cota
283+8,00	3,846	71,063	-0,230	3,500	71,293	-0,260	71,138	71,398	-3,00	71,293	3,500	71,293	-3,00	3,500	71,293	-3,00	3,500	71,293	3,957	70,988	-0,305			
283+14,6	3,639	71,714	-0,093	3,500	71,807	-0,258	71,654	71,912	-3,00	71,807	3,500	71,807	-3,00	3,500	71,807	-3,00	3,500	71,807	4,003	71,472	-0,335			
284	3,705	72,077	-0,137	3,500	72,214	-0,293	72,026	72,319	-3,00	72,214	3,500	72,214	-3,00	3,500	72,214	-3,00	3,500	72,214	4,045	71,851	-0,363			
285	3,995	73,420	-0,330	3,500	73,750	-0,453	73,402	73,855	-3,00	73,750	3,500	73,750	-3,00	3,500	73,750	-3,00	3,500	73,750	4,199	73,284	-0,466			
286	3,580	75,406	0,120	3,500	75,286	-0,131	75,260	75,391	-3,00	75,286	3,500	75,286	-3,00	3,500	75,286	-3,00	3,500	75,286	3,873	75,038	-0,248			
286+18,5	3,504	76,713	0,007	3,500	76,706	-0,028	76,783	76,811	-3,00	76,706	3,500	76,706	-3,00	3,500	76,706	-3,00	3,500	76,706	3,560	76,795	0,089			
287	3,559	76,780	-0,039	3,500	76,819	-0,053	76,871	76,924	-3,00	76,819	3,500	76,819	-3,00	3,500	76,819	-3,00	3,500	76,819	3,558	76,906	0,087			
288	4,238	77,399	-0,492	3,500	77,891	0,047	78,043	77,996	-3,00	77,891	3,500	77,891	-3,00	3,500	77,891	-3,00	3,500	77,891	3,702	78,194	0,303			
289	4,719	77,343	-0,813	3,500	78,156	-0,063	78,198	78,261	-3,00	78,156	3,500	78,156	-3,00	3,500	78,156	-3,00	3,500	78,156	3,704	78,462	0,306			
289+8,50	4,894	77,095	-0,929	3,500	78,024	0,006	78,135	78,129	-3,00	78,024	3,500	78,024	-3,00	3,500	78,024	-3,00	3,500	78,024	3,827	78,515	0,491			
290	5,037	76,722	-1,025	3,500	77,747	0,016	77,868	77,852	-3,00	77,747	3,500	77,747	-3,00	3,500	77,747	-3,00	3,500	77,747	3,767	78,147	0,400			
290+11,0	10,813	72,608	-4,875	3,500	77,483	-0,024	77,564	77,588	-3,00	77,483	3,500	77,483	-3,00	3,500	77,483	-3,00	3,500	77,483	3,674	77,744	0,261			
291	10,232	72,685	-4,488	3,500	77,173	-0,034	77,244	77,278	-3,00	77,173	3,500	77,173	-3,00	3,500	77,173	-3,00	3,500	77,173	3,664	77,419	0,246			
291+11,0	8,838	72,980	-3,559	3,500	76,539	-0,048	76,596	76,644	-3,00	76,539	3,500	76,539	-3,00	3,500	76,539	-3,00	3,500	76,539	3,676	76,803	0,264			
292	7,441	73,280	-2,627	3,500	75,907	-0,085	75,927	76,012	-3,00	75,907	3,500	75,907	-3,00	3,500	75,907	-3,00	3,500	75,907	3,670	76,162	0,255			
292+4,25	6,826	73,391	-2,217	3,500	75,608	-0,102	75,611	75,713	-3,00	75,608	3,500	75,608	-3,00	3,500	75,608	-3,00	3,500	75,608	3,668	75,860	0,252			
292+11,0	5,845	73,571	-1,563	3,500	75,134	-0,129	75,110	75,239	-3,00	75,134	3,500	75,134	-3,00	3,500	75,134	-3,00	3,500	75,134	3,666	75,383	0,249			
293	4,752	73,783	-0,835	3,500	74,618	-0,278	74,445	74,723	-3,00	74,618	3,500	74,618	-3,00	3,500	74,618	-3,00	3,500	74,618	3,584	74,743	0,125			
293+11,0	4,035	73,949	-0,357	3,500	74,306	-0,164	74,247	74,411	-3,00	74,306	3,500	74,306	-3,00	3,500	74,306	-3,00	3,500	74,306	3,635	74,508	0,202			
294	3,714	74,052	-0,142	3,500	74,194	0,109	74,408	74,299	-3,00	74,194	3,500	74,194	-3,00	3,500	74,194	-3,00	3,500	74,194	3,755	74,576	0,382			
294+4,24	3,559	74,102	-0,039	3,500	74,141	0,239	74,485	74,246	-3,00	74,141	3,500	74,141	-3,00	3,500	74,141	-3,00	3,500	74,141	3,811	74,608	0,467			
295	3,606	74,104	0,159	3,500	73,945	0,282	74,332	74,050	-3,00	73,945	3,500	73,945	-3,00	3,500	73,945	-3,00	3,500	73,945	3,856	74,480	0,535			
296	3,724	74,033	0,337	3,500	73,696	0,172	73,973	73,801	-3,00	73,696	3,500	73,696	-3,00	3,500	73,696	-3,00	3,500	73,696	3,770	74,101	0,405			
297	3,844	73,962	0,516	3,500	73,446	-0,063	73,488	73,551	-3,00	73,446	3,500	73,446	-3,00	3,500	73,446	-3,00	3,500	73,446	3,636	73,650	0,204			
297+12,5	3,918	73,918	0,627	3,500	73,291	-0,192	73,204	73,396	-3,00	73,291	3,500	73,291	-3,00	3,500	73,291	-3,00	3,500	73,291	3,553	73,371	0,080			
298	3,923	73,904	0,635	3,500	73,269	-0,149	73,225	73,374	-3,00	73,269	3,500	73,269	-3,00	3,500	73,269	-3,00	3,500	73,269	3,579	73,388	0,119			
298+12,5	3,752	73,931	0,378	3,500	73,553	-0,052	73,606	73,658	-3,00	73,553	3,500	73,553	-3,00	3,500	73,553	-3,00	3,500	73,553	3,659	73,791	0,238			
299	3,617	74,020	0,176	3,500	73,844	-0,103	73,846	73,949	-3,00	73,844	3,500	73,844	-3,00	3,500	73,844	-3,00	3,500	73,844	3,639	74,053	0,209			
300	3,533	74,669	0,050	3,500	74,619	-0,207	74,517	74,724	-3,00	74,619	3,500	74,619	-3,00	3,500	74,619	-3,00	3,500	74,619	3,627	74,809	0,190			



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(Handwritten mark)

Estaca	Lado Esquerdo						Eixo						Lado Direito											
	Offset			Lateral			Bordo			Cota			Vermelha			Bordo			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	Altura	Distância	Cota	%	Terreno	Projeto	Distância	Cota	%	Distância	Cota	%	Distância	Cota	Distância	Cota	Altura		
301	3,764	75,217	-0,176	3,500	75,393	-3,00	3,500	75,393	-3,00	75,415	75,498	-0,083	3,500	75,393	-3,00	3,500	75,393	-3,00	3,500	75,393	3,567	75,494	0,101	
302	5,225	75,018	-1,150	3,500	76,168	-3,00	3,500	76,168	-3,00	76,119	76,273	-0,154	3,500	76,168	-3,00	3,500	76,168	-3,00	3,500	76,168	3,608	76,096	-0,072	
302+10,0	5,955	74,920	-1,636	3,500	76,556	-3,00	3,500	76,556	-3,00	76,436	76,661	-0,225	3,500	76,556	-3,00	3,500	76,556	-3,00	3,500	76,556	3,774	76,374	-0,182	
303	6,849	74,785	-2,233	3,500	77,018	-3,00	3,500	77,018	-3,00	77,028	77,123	-0,095	3,500	77,018	-3,00	3,500	77,018	-3,00	3,500	77,018	3,692	76,890	-0,128	
303+10,0	8,074	74,582	-3,049	3,500	77,631	-3,00	3,500	77,631	-3,00	77,950	77,736	0,214	3,500	77,631	-3,00	3,500	77,631	-3,00	3,500	77,631	3,619	77,809	0,178	
303+15,0	3,539	77,950	-0,026	3,500	77,976	-3,00	3,500	77,976	-3,00	78,411	78,081	0,330	3,500	77,976	-3,00	3,500	77,976	-3,00	3,500	77,976	3,684	78,252	0,276	
304	3,521	78,336	0,032	3,500	78,304	-3,00	3,500	78,304	-3,00	78,858	78,409	0,449	3,500	78,304	-3,00	3,500	78,304	-3,00	3,500	78,304	3,760	78,693	0,389	
304+19,3	11,350	74,053	-5,233	3,500	79,286	-3,00	3,500	79,286	-3,00	79,153	79,391	-0,238	3,500	79,286	-3,00	3,500	79,286	-3,00	3,500	79,286	3,903	79,017	-0,269	
305	11,403	74,045	-5,268	3,500	79,313	-3,00	3,500	79,313	-3,00	79,159	79,418	-0,259	3,500	79,313	-3,00	3,500	79,313	-3,00	3,500	79,313	3,936	79,022	-0,291	
306	12,371	73,917	-5,914	3,500	79,831	-3,00	3,500	79,831	-3,00	79,813	79,971	-0,158	3,500	79,831	-3,00	3,500	79,831	-3,00	3,500	79,831	4,410	79,224	-0,607	
306+19,3	3,783	79,677	-0,189	3,500	79,866	-3,00	3,500	79,866	-3,00	79,824	79,963	-0,139	3,500	79,866	-3,00	3,500	79,866	-3,00	3,500	79,866	3,973	79,551	-0,315	
307	3,745	79,695	-0,163	3,500	79,858	-3,00	3,500	79,858	-3,00	79,824	79,963	-0,139	3,500	79,858	-3,00	3,500	79,858	-3,00	3,500	79,858	3,940	79,564	-0,294	
308	3,578	79,512	0,117	3,500	79,395	-3,00	3,500	79,395	-3,00	79,529	79,500	0,029	3,500	79,395	-3,00	3,500	79,395	-3,00	3,500	79,395	3,540	79,455	0,060	
308+5,00	3,636	79,407	0,204	3,500	79,203	-3,00	3,500	79,203	-3,00	79,425	79,308	0,117	3,500	79,203	-3,00	3,500	79,203	-3,00	3,500	79,203	3,604	79,359	0,156	
309	3,869	79,133	0,554	3,500	78,579	-3,00	3,500	78,579	-3,00	79,204	78,684	0,520	3,500	78,579	-3,00	3,500	78,579	-3,00	3,500	78,579	3,827	79,070	0,491	
310	3,767	78,148	0,400	3,500	77,748	-3,00	3,500	77,748	-3,00	78,024	77,853	0,171	3,500	77,748	-3,00	3,500	77,748	-3,00	3,500	77,748	3,588	77,880	0,132	
310+10,0	3,681	77,605	0,272	3,500	77,333	-3,00	3,500	77,333	-3,00	77,486	77,438	0,048	3,500	77,333	-3,00	3,500	77,333	-3,00	3,500	77,333	3,517	77,359	0,026	
311	3,606	77,076	0,159	3,500	76,917	-3,00	3,500	76,917	-3,00	76,976	77,022	-0,046	3,500	76,917	-3,00	3,500	76,917	-3,00	3,500	76,917	3,559	76,878	-0,039	
311+10,0	3,547	76,570	0,070	3,500	76,500	-3,00	3,500	76,500	-3,00	76,492	76,605	-0,113	3,500	76,500	-3,00	3,500	76,500	-3,00	3,500	76,500	3,645	76,403	-0,097	
312	3,549	76,157	0,073	3,500	76,084	-3,00	3,500	76,084	-3,00	76,089	76,189	-0,100	3,500	76,084	-3,00	3,500	76,084	-3,00	3,500	76,084	3,644	75,988	-0,096	
313	3,538	75,307	0,057	3,500	75,250	-3,00	3,500	75,250	-3,00	75,270	75,355	-0,085	3,500	75,250	-3,00	3,500	75,250	-3,00	3,500	75,250	3,641	75,156	-0,094	
314	3,619	74,595	0,178	3,500	74,417	-3,00	3,500	74,417	-3,00	74,501	74,522	-0,021	3,500	74,417	-3,00	3,500	74,417	-3,00	3,500	74,417	3,587	74,359	-0,058	
315	3,641	73,795	0,211	3,500	73,584	-3,00	3,500	73,584	-3,00	73,623	73,689	-0,066	3,500	73,584	-3,00	3,500	73,584	-3,00	3,500	73,584	3,711	73,443	-0,141	
316	3,646	72,969	0,219	3,500	72,750	-3,00	3,500	72,750	-3,00	72,750	72,855	-0,105	3,500	72,750	-3,00	3,500	72,750	-3,00	3,500	72,750	3,742	72,589	-0,161	
316+10,0	3,649	72,558	0,224	3,500	72,334	-3,00	3,500	72,334	-3,00	72,374	72,439	-0,065	3,500	72,334	-3,00	3,500	72,334	-3,00	3,500	72,334	3,566	72,290	-0,044	
316+17,0	3,625	72,261	0,188	3,500	72,073	-3,00	3,500	72,073	-3,00	72,108	72,178	-0,070	3,500	72,073	-3,00	3,500	72,073	-3,00	3,500	72,073	3,503	72,077	0,004	
317	3,574	72,097	0,111	3,500	71,986	-3,00	3,500	71,986	-3,00	72,004	72,091	-0,087	3,500	71,986	-3,00	3,500	71,986	-3,00	3,500	71,986	3,507	71,997	0,011	
317+10,0	3,566	71,876	0,100	3,500	71,776	-3,00	3,500	71,776	-3,00	71,762	71,881	-0,119	3,500	71,776	-3,00	3,500	71,776	-3,00	3,500	71,776	3,520	71,762	-0,014	
318	3,644	71,539	-0,096	3,500	71,635	-3,00	3,500	71,635	-3,00	71,510	71,740	-0,230	3,500	71,635	-3,00	3,500	71,635	-3,00	3,500	71,635	3,544	71,606	-0,029	



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2

Estaca	Lado Esquerdo						Eixo						Lado Direito							
	Offset			Bordo			Cota	Terreno	Projeto	Vermelha	Cota	Bordo			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	%						Distância	Cota	%	Distância	Cota	%	Distância	Cota	Distância
318+16,8	3,806	71,192	-0,204	3,500	71,396	-3,00	71,275	71,501	-0,226	3,500	71,396	-3,00	3,500	71,396	3,654	71,627	0,231			
319	3,794	71,156	-0,196	3,500	71,352	-3,00	71,267	71,457	-0,190	3,500	71,352	-3,00	3,500	71,352	3,685	71,630	0,278			
319+13,9	3,672	71,040	-0,114	3,500	71,154	-3,00	71,330	71,259	0,071	3,500	71,154	-3,00	3,500	71,154	3,822	71,637	0,483			
320	3,652	71,298	0,228	3,500	71,070	-3,00	71,624	71,175	0,449	3,500	71,070	-3,00	3,500	71,070	3,876	71,633	0,563			
320+2,00	3,735	71,394	0,353	3,500	71,041	-3,00	71,627	71,146	0,481	3,500	71,041	-3,00	3,500	71,041	3,894	71,632	0,591			
321	3,633	70,518	0,199	3,500	70,319	-3,00	70,984	70,424	0,560	3,500	70,319	-3,00	3,500	70,319	3,838	70,826	0,507			
321+2,00	3,665	70,428	0,247	3,500	70,181	-3,00	70,769	70,286	0,483	3,500	70,181	-3,00	3,500	70,181	3,793	70,620	0,439			
322	4,041	68,527	-0,361	3,500	68,888	-3,00	68,755	68,993	-0,238	3,500	68,888	-3,00	3,500	68,888	3,791	68,694	-0,194			
322+10,0	4,207	67,697	-0,472	3,500	68,169	-3,00	67,943	68,274	-0,331	3,500	68,169	-3,00	3,500	68,169	4,410	67,562	-0,607			
323	4,397	66,903	-0,598	3,500	67,501	-3,00	66,991	67,606	-0,615	3,500	67,501	-3,00	3,500	67,501	3,920	67,221	-0,280			
323+10,0	4,221	66,453	-0,481	3,500	66,934	-3,00	66,677	67,039	-0,362	3,500	66,934	-3,00	3,500	66,934	3,567	66,889	-0,045			
324	4,013	66,075	-0,342	3,500	66,417	-3,00	66,301	66,522	-0,221	3,500	66,417	-3,00	3,500	66,417	3,609	66,580	0,163			
325	3,834	65,163	-0,222	3,500	65,385	-3,00	65,389	65,490	-0,101	3,500	65,385	-3,00	3,500	65,385	3,656	65,619	0,234			
326	3,957	64,047	-0,305	3,500	64,352	-3,00	64,363	64,457	-0,094	3,500	64,352	-3,00	3,500	64,352	3,614	64,522	0,170			
327	4,324	62,770	-0,549	3,500	63,319	-3,00	63,092	63,424	-0,332	3,500	63,319	-3,00	3,500	63,319	3,559	63,407	0,088			
327+16,0	4,278	61,974	-0,519	3,500	62,493	-3,00	61,933	62,598	-0,665	3,500	62,493	-3,00	3,500	62,493	3,762	62,318	-0,175			
328	3,695	62,184	-0,130	3,500	62,314	-3,00	62,093	62,419	-0,326	3,500	62,314	-3,00	3,500	62,314	3,901	62,046	-0,268			
328+10,5	3,901	62,708	0,602	3,500	62,106	-3,00	62,631	62,211	0,420	3,500	62,106	-3,00	3,500	62,106	3,582	62,230	0,124			
328+16,0	4,033	62,948	0,800	3,500	62,148	-3,00	62,929	62,253	0,676	3,500	62,148	-3,00	3,500	62,148	3,560	62,238	0,090			
329	3,802	62,670	0,453	3,500	62,217	-3,00	62,513	62,322	0,191	3,500	62,217	-3,00	3,500	62,217	3,679	62,485	0,268			
330	5,298	61,360	-1,199	3,500	62,559	-3,00	61,493	62,664	-1,171	3,500	62,559	-3,00	3,500	62,559	4,820	61,679	-0,880			
331	3,981	62,580	-0,321	3,500	62,901	-3,00	62,858	63,006	-0,148	3,500	62,901	-3,00	3,500	62,901	3,689	63,185	0,284			
331+13,1	3,792	62,932	-0,194	3,500	63,126	-3,00	63,168	63,231	-0,063	3,500	63,126	-3,00	3,500	63,126	3,575	63,239	0,113			
332	3,743	63,082	-0,162	3,500	63,244	-3,00	63,247	63,349	-0,102	3,500	63,244	-3,00	3,500	63,244	3,542	63,307	0,063			
332+9,92	3,753	63,245	-0,169	3,500	63,414	-3,00	63,398	63,519	-0,121	3,500	63,414	-3,00	3,500	63,414	3,560	63,504	0,090			
333	3,829	63,367	-0,219	3,500	63,586	-3,00	63,556	63,691	-0,135	3,500	63,586	-3,00	3,500	63,586	3,626	63,775	0,189			
334	3,898	63,663	-0,265	3,500	63,928	-3,00	63,933	64,033	-0,100	3,500	63,928	-3,00	3,500	63,928	3,575	63,878	-0,050			
335	4,603	63,536	-0,735	3,500	64,271	-3,00	63,547	64,376	-0,829	3,500	64,271	-3,00	3,500	64,271	4,471	63,624	-0,647			
335+10,0	3,804	64,240	-0,202	3,500	64,442	-3,00	64,216	64,547	-0,331	3,500	64,442	-3,00	3,500	64,442	3,870	64,195	-0,247			



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Estaca	Lado Esquerdo						Eixo						Lado Direito											
	Offset			Lateral			Bordo			Cota			Vermelha			Bordo			Lateral			Offset		
	Distância	Altura	Cota	Distância	Cota	Altura	Distância	Cota	%	Terreno	Projeto	Cota	Distância	Cota	%	Distância	Cota	%	Distância	Cota	Altura	Distância	Cota	Altura
336	3,657	-0,105	64,596	3,500	64,701	-0,105	3,500	64,701	-3,00	64,492	64,806	-0,314	3,500	64,701	-3,00	3,500	64,701	-3,00	3,500	64,701	3,540	64,674	-0,027	
336+10,0	3,620	-0,080	65,057	3,500	65,137	-0,080	3,500	65,137	-3,00	64,965	65,242	-0,277	3,500	65,137	-3,00	3,500	65,137	-3,00	3,500	65,137	3,642	65,043	-0,094	
337	3,729	-0,152	65,509	3,500	65,661	-0,152	3,500	65,661	-3,00	65,432	65,766	-0,334	3,500	65,661	-3,00	3,500	65,661	-3,00	3,500	65,661	3,820	65,447	-0,214	
338	3,742	-0,162	66,548	3,500	66,710	-0,162	3,500	66,710	-3,00	66,473	66,815	-0,342	3,500	66,710	-3,00	3,500	66,710	-3,00	3,500	66,710	3,918	66,431	-0,279	
339	3,782	-0,188	67,570	3,500	67,758	-0,188	3,500	67,758	-3,00	67,494	67,863	-0,369	3,500	67,758	-3,00	3,500	67,758	-3,00	3,500	67,758	3,997	67,427	-0,331	
340	3,774	-0,183	68,623	3,500	68,806	-0,183	3,500	68,806	-3,00	68,517	68,911	-0,394	3,500	68,806	-3,00	3,500	68,806	-3,00	3,500	68,806	3,993	68,478	-0,328	
340+1,45	3,753	-0,168	68,714	3,500	68,882	-0,168	3,500	68,882	-3,00	68,603	68,987	-0,384	3,500	68,882	-3,00	3,500	68,882	-3,00	3,500	68,882	3,983	68,560	-0,322	
341	3,540	-0,027	69,827	3,500	69,854	-0,027	3,500	69,854	-3,00	69,724	69,959	-0,235	3,500	69,854	-3,00	3,500	69,854	-3,00	3,500	69,854	3,826	69,636	-0,218	
341+3,80	3,501	0,001	70,055	3,500	70,054	0,001	3,500	70,054	-3,00	69,956	70,159	-0,203	3,500	70,054	-3,00	3,500	70,054	-3,00	3,500	70,054	3,796	69,857	-0,197	
342	3,566	0,099	71,002	3,500	70,903	0,099	3,500	70,903	-3,00	70,981	71,008	-0,027	3,500	70,903	-3,00	3,500	70,903	-3,00	3,500	70,903	3,820	70,690	-0,213	
343	3,507	-0,004	71,947	3,500	71,951	-0,004	3,500	71,951	-3,00	71,800	72,056	-0,256	3,500	71,951	-3,00	3,500	71,951	-3,00	3,500	71,951	4,005	71,614	-0,337	
343+13,4	4,242	-0,495	72,091	3,500	72,586	-0,495	3,500	72,586	-3,00	72,000	72,691	-0,691	3,500	72,586	-3,00	3,500	72,586	-3,00	3,500	72,586	4,465	71,943	-0,643	
344	4,116	-0,410	72,431	3,500	72,841	-0,410	3,500	72,841	-3,00	72,353	72,946	-0,593	3,500	72,841	-3,00	3,500	72,841	-3,00	3,500	72,841	4,305	72,305	-0,536	
345	3,750	0,374	73,948	3,500	73,574	0,374	3,500	73,574	-3,00	73,983	73,679	0,304	3,500	73,574	-3,00	3,500	73,574	-3,00	3,500	73,574	3,738	73,931	0,357	
346	3,535	0,053	74,360	3,500	74,307	0,053	3,500	74,307	-3,00	74,265	74,412	-0,147	3,500	74,307	-3,00	3,500	74,307	-3,00	3,500	74,307	3,706	74,170	-0,137	
347	3,538	-0,025	75,015	3,500	75,040	-0,025	3,500	75,040	-3,00	75,125	75,145	-0,020	3,500	75,040	-3,00	3,500	75,040	-3,00	3,500	75,040	3,525	75,078	0,038	
348	3,560	-0,040	75,732	3,500	75,772	-0,040	3,500	75,772	-3,00	75,853	75,877	-0,024	3,500	75,772	-3,00	3,500	75,772	-3,00	3,500	75,772	3,574	75,884	0,112	
348+15,3	3,564	-0,042	76,294	3,500	76,336	-0,042	3,500	76,336	-3,00	76,235	76,441	-0,206	3,500	76,336	-3,00	3,500	76,336	-3,00	3,500	76,336	3,578	76,284	-0,052	
349	3,551	-0,034	76,471	3,500	76,505	-0,034	3,500	76,505	-3,00	76,411	76,610	-0,199	3,500	76,505	-3,00	3,500	76,505	-3,00	3,500	76,505	3,648	76,407	-0,098	
350	3,574	0,110	77,348	3,500	77,238	0,110	3,500	77,238	-3,00	77,228	77,343	-0,115	3,500	77,238	-3,00	3,500	77,238	-3,00	3,500	77,238	3,711	77,097	-0,141	
350+4,69	3,585	0,127	77,537	3,500	77,410	0,127	3,500	77,410	-3,00	77,385	77,515	-0,130	3,500	77,410	-3,00	3,500	77,410	-3,00	3,500	77,410	3,737	77,252	-0,158	
351	3,598	0,146	78,117	3,500	77,971	0,146	3,500	77,971	-3,00	77,947	78,076	-0,129	3,500	77,971	-3,00	3,500	77,971	-3,00	3,500	77,971	3,661	77,864	-0,107	
352	3,573	0,110	78,813	3,500	78,703	0,110	3,500	78,703	-3,00	78,794	78,808	-0,014	3,500	78,703	-3,00	3,500	78,703	-3,00	3,500	78,703	3,529	78,683	-0,020	
352+7,27	3,541	0,061	79,031	3,500	78,970	0,061	3,500	78,970	-3,00	79,052	79,075	-0,023	3,500	78,970	-3,00	3,500	78,970	-3,00	3,500	78,970	3,518	78,958	-0,012	
352+16,0	3,542	-0,028	79,262	3,500	79,290	-0,028	3,500	79,290	-3,00	79,332	79,395	-0,063	3,500	79,290	-3,00	3,500	79,290	-3,00	3,500	79,290	3,502	79,289	-0,001	
353	3,593	-0,062	79,359	3,500	79,421	-0,062	3,500	79,421	-3,00	79,454	79,526	-0,072	3,500	79,421	-3,00	3,500	79,421	-3,00	3,500	79,421	3,516	79,445	0,024	
353+16,0	3,519	0,028	79,671	3,500	79,643	0,028	3,500	79,643	-3,00	79,776	79,748	0,028	3,500	79,643	-3,00	3,500	79,643	-3,00	3,500	79,643	3,681	79,914	0,271	
354	3,524	0,035	79,672	3,500	79,637	0,035	3,500	79,637	-3,00	79,743	79,742	0,001	3,500	79,637	-3,00	3,500	79,637	-3,00	3,500	79,637	3,665	79,884	0,247	
355	3,548	0,072	79,683	3,500	79,611	0,072	3,500	79,611	-3,00	79,656	79,716	-0,060	3,500	79,611	-3,00	3,500	79,611	-3,00	3,500	79,611	3,520	79,641	0,030	

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Estaca	Lado Esquerdo						Eixo						Lado Direito								
	Offset			Bordo			Cota		Projeto		Cota		Bordo			Lateral			Offset		
	Distância	Altura	Distância	Distância	Cota	%	Terreno	Projeto	Vermelha	Cota	Distância	Distância	Cota	%	Distância	Distância	Cota	Distância	Distância	Cota	Altura
356	3,584	79,528	-0,056	3,500	79,584	-3,00	79,470	79,669	-0,219	3,500	79,584	-3,00	79,470	79,669	-0,219	3,500	79,584	3,720	79,438	-0,146	
356+10,0	3,551	79,537	-0,034	3,500	79,571	-3,00	79,482	79,676	-0,194	3,500	79,571	-3,00	79,482	79,676	-0,194	3,500	79,571	3,651	79,471	-0,100	
357	3,563	79,706	0,094	3,500	79,612	-3,00	79,663	79,717	-0,054	3,500	79,612	-3,00	79,663	79,717	-0,054	3,500	79,612	3,540	79,671	0,059	
357+0,91	3,565	79,718	0,097	3,500	79,621	-3,00	79,680	79,726	-0,046	3,500	79,621	-3,00	79,680	79,726	-0,046	3,500	79,621	3,546	79,690	0,069	
357+10,0	3,550	79,836	0,074	3,500	79,762	-3,00	79,842	79,867	-0,025	3,500	79,762	-3,00	79,842	79,867	-0,025	3,500	79,762	3,568	79,864	0,102	
358	3,504	79,970	0,005	3,500	79,965	-3,00	79,997	80,070	-0,073	3,500	79,965	-3,00	79,997	80,070	-0,073	3,500	79,965	3,545	80,032	0,067	
358+17,0	3,686	80,188	-0,124	3,500	80,312	-3,00	80,220	80,417	-0,197	3,500	80,312	-3,00	80,220	80,417	-0,197	3,500	80,312	3,559	80,273	-0,039	
359	3,714	80,229	-0,143	3,500	80,372	-3,00	80,260	80,477	-0,217	3,500	80,372	-3,00	80,260	80,477	-0,217	3,500	80,372	3,586	80,315	-0,057	
359+16,8	3,553	80,678	-0,036	3,500	80,714	-3,00	80,653	80,819	-0,166	3,500	80,714	-3,00	80,653	80,819	-0,166	3,500	80,714	3,644	80,618	-0,096	
360	3,583	80,724	-0,055	3,500	80,779	-3,00	80,715	80,884	-0,169	3,500	80,779	-3,00	80,715	80,884	-0,169	3,500	80,779	3,635	80,689	-0,090	
361	3,710	81,046	-0,140	3,500	81,186	-3,00	81,093	81,291	-0,198	3,500	81,186	-3,00	81,093	81,291	-0,198	3,500	81,186	3,592	81,125	-0,061	
362	3,612	81,519	-0,074	3,500	81,593	-3,00	81,589	81,698	-0,109	3,500	81,593	-3,00	81,589	81,698	-0,109	3,500	81,593	3,533	81,642	0,049	
363	3,589	81,941	-0,059	3,500	82,000	-3,00	81,995	82,105	-0,110	3,500	82,000	-3,00	81,995	82,105	-0,110	3,500	82,000	3,514	82,020	0,020	
364	3,607	82,336	-0,071	3,500	82,407	-3,00	82,318	82,512	-0,194	3,500	82,407	-3,00	82,318	82,512	-0,194	3,500	82,407	3,573	82,359	-0,048	
364+10,0	3,664	82,502	-0,109	3,500	82,611	-3,00	82,482	82,716	-0,234	3,500	82,611	-3,00	82,482	82,716	-0,234	3,500	82,611	3,653	82,509	-0,102	
365	3,665	82,655	-0,110	3,500	82,765	-3,00	82,657	82,870	-0,213	3,500	82,765	-3,00	82,657	82,870	-0,213	3,500	82,765	3,670	82,652	-0,113	
365+8,38	3,554	82,784	-0,036	3,500	82,820	-3,00	82,774	82,925	-0,151	3,500	82,820	-3,00	82,774	82,925	-0,151	3,500	82,820	3,570	82,774	-0,046	
365+10,0	3,527	82,805	-0,018	3,500	82,823	-3,00	82,787	82,928	-0,141	3,500	82,823	-3,00	82,787	82,928	-0,141	3,500	82,823	3,560	82,783	-0,040	
366	3,525	82,869	0,037	3,500	82,832	-3,00	82,835	82,937	-0,102	3,500	82,832	-3,00	82,835	82,937	-0,102	3,500	82,832	3,537	82,807	-0,025	
366+19,0	3,586	82,980	0,130	3,500	82,850	-3,00	82,875	82,955	-0,080	3,500	82,850	-3,00	82,875	82,955	-0,080	3,500	82,850	3,519	82,879	0,029	
367	3,590	82,986	0,135	3,500	82,851	-3,00	82,884	82,956	-0,072	3,500	82,851	-3,00	82,884	82,956	-0,072	3,500	82,851	3,523	82,885	0,034	
367+1,99	3,596	83,001	0,145	3,500	82,856	-3,00	82,899	82,961	-0,062	3,500	82,856	-3,00	82,899	82,961	-0,062	3,500	82,856	3,527	82,896	0,040	
367+19,0	3,560	83,122	0,090	3,500	83,032	-3,00	83,025	83,137	-0,112	3,500	83,032	-3,00	83,025	83,137	-0,112	3,500	83,032	3,578	82,980	-0,052	
368	3,553	83,128	0,079	3,500	83,049	-3,00	83,033	83,154	-0,121	3,500	83,049	-3,00	83,033	83,154	-0,121	3,500	83,049	3,596	82,985	-0,064	
369	3,506	83,404	0,009	3,500	83,395	-3,00	83,295	83,500	-0,205	3,500	83,395	-3,00	83,295	83,500	-0,205	3,500	83,395	3,631	83,308	-0,087	
370	3,507	83,751	0,011	3,500	83,740	-3,00	83,598	83,845	-0,247	3,500	83,740	-3,00	83,598	83,845	-0,247	3,500	83,740	3,650	83,640	-0,100	
371	3,537	84,142	0,056	3,500	84,086	-3,00	83,952	84,191	-0,239	3,500	84,086	-3,00	83,952	84,191	-0,239	3,500	84,086	3,675	83,969	-0,117	
371+11,7	3,565	84,385	0,097	3,500	84,288	-3,00	84,261	84,393	-0,132	3,500	84,288	-3,00	84,261	84,393	-0,132	3,500	84,288	3,653	84,186	-0,102	
372	3,585	84,559	0,127	3,500	84,432	-3,00	84,450	84,537	-0,087	3,500	84,432	-3,00	84,450	84,537	-0,087	3,500	84,432	3,608	84,360	-0,072	



PREFEITURA MUNICIPAL DE MIRAIMA
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Governo do Estado do Ceará

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Estaca	Lado Esquerdo						Eixo						Lado Direito														
	Offset			Lateral			Bordo			Terreno			Cota			Vermelha			Bordo			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	%	Distância	Cota	%	Cota	Projeto	Cota	Distância	Cota	%	Distância	Cota	Distância	Cota	%	Distância	Cota	Distância	Cota	Altura		
373	3,544	84,843	0,066	3,500	84,777	-3,00	3,500	84,777	-3,00	84,809	84,882	-0,073	3,500	84,777	-3,00	3,500	84,777	3,610	84,777	-3,00	3,500	84,777	3,610	84,704	-0,073		
374	3,527	85,105	-0,018	3,500	85,123	-3,00	3,500	85,123	-3,00	85,123	85,228	-0,105	3,500	85,123	-3,00	3,500	85,123	3,686	85,123	-3,00	3,500	85,123	3,686	84,999	-0,124		
375	3,549	85,436	-0,032	3,500	85,468	-3,00	3,500	85,468	-3,00	85,419	85,573	-0,154	3,500	85,468	-3,00	3,500	85,468	3,652	85,468	-3,00	3,500	85,468	3,652	85,367	-0,101		
375+11,1	3,507	85,671	0,010	3,500	85,661	-3,00	3,500	85,661	-3,00	85,602	85,766	-0,164	3,500	85,661	-3,00	3,500	85,661	3,774	85,661	-3,00	3,500	85,661	3,774	85,478	-0,183		
375+18,3	3,507	85,795	0,010	3,500	85,785	-3,00	3,500	85,785	-3,00	85,733	85,890	-0,157	3,500	85,785	-3,00	3,500	85,785	3,941	85,785	-3,00	3,500	85,785	3,941	85,491	-0,294		
376	3,504	85,820	0,006	3,500	85,814	-3,00	3,500	85,814	-3,00	85,761	85,919	-0,158	3,500	85,814	-3,00	3,500	85,814	3,983	85,814	-3,00	3,500	85,814	3,983	85,492	-0,322		
376+1,00	3,503	85,835	0,004	3,500	85,831	-3,00	3,500	85,831	-3,00	85,777	85,936	-0,159	3,500	85,831	-3,00	3,500	85,831	4,006	85,831	-3,00	3,500	85,831	4,006	85,493	-0,338		
377	3,566	85,795	-0,044	3,500	85,839	-3,00	3,500	85,839	-3,00	85,816	85,944	-0,128	3,500	85,839	-3,00	3,500	85,839	4,028	85,839	-3,00	3,500	85,839	4,028	85,487	-0,352		
377+1,00	3,532	85,801	-0,021	3,500	85,822	-3,00	3,500	85,822	-3,00	85,799	85,927	-0,128	3,500	85,822	-3,00	3,500	85,822	4,005	85,822	-3,00	3,500	85,822	4,005	85,485	-0,337		
377+18,2	3,533	85,557	0,049	3,500	85,508	-3,00	3,500	85,508	-3,00	85,500	85,613	-0,113	3,500	85,508	-3,00	3,500	85,508	3,679	85,508	-3,00	3,500	85,508	3,679	85,388	-0,120		
378	3,529	85,520	0,043	3,500	85,477	-3,00	3,500	85,477	-3,00	85,472	85,582	-0,110	3,500	85,477	-3,00	3,500	85,477	3,661	85,477	-3,00	3,500	85,477	3,661	85,370	-0,107		
379	3,543	85,085	-0,028	3,500	85,113	-3,00	3,500	85,113	-3,00	85,144	85,218	-0,074	3,500	85,113	-3,00	3,500	85,113	3,549	85,113	-3,00	3,500	85,113	3,549	85,080	-0,033		
380	3,656	84,646	-0,104	3,500	84,750	-3,00	3,500	84,750	-3,00	84,649	84,855	-0,206	3,500	84,750	-3,00	3,500	84,750	3,671	84,750	-3,00	3,500	84,750	3,671	84,636	-0,114		
380+10,0	3,709	84,429	-0,139	3,500	84,568	-3,00	3,500	84,568	-3,00	84,308	84,673	-0,365	3,500	84,568	-3,00	3,500	84,568	3,676	84,568	-3,00	3,500	84,568	3,676	84,451	-0,117		
381	3,637	84,340	-0,091	3,500	84,431	-3,00	3,500	84,431	-3,00	84,194	84,536	-0,342	3,500	84,431	-3,00	3,500	84,431	3,734	84,431	-3,00	3,500	84,431	3,734	84,275	-0,156		
381+10,0	3,537	84,361	-0,025	3,500	84,386	-3,00	3,500	84,386	-3,00	84,220	84,491	-0,271	3,500	84,386	-3,00	3,500	84,386	3,899	84,386	-3,00	3,500	84,386	3,899	84,120	-0,266		
381+14,1	3,521	84,372	-0,014	3,500	84,386	-3,00	3,500	84,386	-3,00	84,230	84,491	-0,261	3,500	84,386	-3,00	3,500	84,386	3,923	84,386	-3,00	3,500	84,386	3,923	84,104	-0,282		
382	3,503	84,384	-0,002	3,500	84,386	-3,00	3,500	84,386	-3,00	84,244	84,491	-0,247	3,500	84,386	-3,00	3,500	84,386	3,955	84,386	-3,00	3,500	84,386	3,955	84,083	-0,303		
383	3,541	84,448	0,062	3,500	84,386	-3,00	3,500	84,386	-3,00	84,176	84,491	-0,315	3,500	84,386	-3,00	3,500	84,386	3,960	84,386	-3,00	3,500	84,386	3,960	84,080	-0,306		
383+14,0	3,552	84,463	0,077	3,500	84,386	-3,00	3,500	84,386	-3,00	84,237	84,491	-0,254	3,500	84,386	-3,00	3,500	84,386	3,706	84,386	-3,00	3,500	84,386	3,706	84,249	-0,137		
384	3,555	84,468	0,082	3,500	84,386	-3,00	3,500	84,386	-3,00	84,305	84,491	-0,186	3,500	84,386	-3,00	3,500	84,386	3,725	84,386	-3,00	3,500	84,386	3,725	84,236	-0,150		
384+3,91	3,558	84,472	0,086	3,500	84,386	-3,00	3,500	84,386	-3,00	84,309	84,491	-0,182	3,500	84,386	-3,00	3,500	84,386	3,749	84,386	-3,00	3,500	84,386	3,749	84,220	-0,166		
385	3,541	84,448	0,062	3,500	84,386	-3,00	3,500	84,386	-3,00	84,236	84,491	-0,255	3,500	84,386	-3,00	3,500	84,386	3,890	84,386	-3,00	3,500	84,386	3,890	84,126	-0,260		
386	3,541	84,448	0,062	3,500	84,386	-3,00	3,500	84,386	-3,00	84,250	84,491	-0,241	3,500	84,386	-3,00	3,500	84,386	3,872	84,386	-3,00	3,500	84,386	3,872	84,138	-0,248		
386+3,76	3,550	84,460	0,074	3,500	84,386	-3,00	3,500	84,386	-3,00	84,277	84,491	-0,214	3,500	84,386	-3,00	3,500	84,386	3,861	84,386	-3,00	3,500	84,386	3,861	84,146	-0,240		
387	3,591	84,522	0,136	3,500	84,386	-3,00	3,500	84,386	-3,00	84,325	84,491	-0,166	3,500	84,386	-3,00	3,500	84,386	3,764	84,386	-3,00	3,500	84,386	3,764	84,210	-0,176		
388	3,641	84,598	0,212	3,500	84,386	-3,00	3,500	84,386	-3,00	84,383	84,491	-0,108	3,500	84,386	-3,00	3,500	84,386	3,565	84,386	-3,00	3,500	84,386	3,565	84,343	-0,043		
389	3,549	84,460	0,074	3,500	84,386	-3,00	3,500	84,386	-3,00	84,264	84,491	-0,227	3,500	84,386	-3,00	3,500	84,386	3,779	84,386	-3,00	3,500	84,386	3,779	84,200	-0,186		
390	3,610	84,313	-0,073	3,500	84,386	-3,00	3,500	84,386	-3,00	84,102	84,491	-0,389	3,500	84,386	-3,00	3,500	84,386	3,947	84,386	-3,00	3,500	84,386	3,947	84,088	-0,298		



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Estaca	Lado Esquerdo						Eixo						Lado Direito											
	Offset			Lateral			Bordo			Cota			Vermelha			Cota			Lateral			Offset		
	Distância	Altura	Cota	Distância	Cota	%	Distância	Cota	%	Terreno	Projeto	Cota	Distância	Cota	%	Distância	Cota	%	Distância	Cota	Distância	Cota	Distância	Cota
391	3,637	-0,091	84,295	3,500	84,386	-3,00	3,500	84,386	-3,00	84,140	84,491	-0,351	3,500	84,386	-3,00	3,500	84,386	-3,00	3,500	84,386	3,803	84,184	-0,202	
391+10,0	3,607	-0,072	84,314	3,500	84,386	-3,00	3,500	84,386	-3,00	84,215	84,491	-0,276	3,500	84,386	-3,00	3,500	84,386	-3,00	3,500	84,386	3,698	84,254	-0,132	
392	3,604	-0,070	84,416	3,500	84,486	-3,00	3,500	84,486	-3,00	84,398	84,591	-0,193	3,500	84,486	-3,00	3,500	84,486	-3,00	3,500	84,486	3,502	84,484	-0,002	
392+4,83	3,639	-0,093	84,514	3,500	84,607	-3,00	3,500	84,607	-3,00	84,449	84,712	-0,263	3,500	84,607	-3,00	3,500	84,607	-3,00	3,500	84,607	3,554	84,571	-0,036	
392+10,0	3,719	-0,146	84,642	3,500	84,788	-3,00	3,500	84,788	-3,00	84,534	84,893	-0,359	3,500	84,788	-3,00	3,500	84,788	-3,00	3,500	84,788	3,685	84,665	-0,123	
393	4,091	-0,394	84,795	3,500	85,189	-3,00	3,500	85,189	-3,00	84,684	85,294	-0,610	3,500	85,189	-3,00	3,500	85,189	-3,00	3,500	85,189	4,052	84,821	-0,368	
394	3,505	0,008	86,001	3,500	85,993	-3,00	3,500	85,993	-3,00	85,882	86,098	-0,216	3,500	85,993	-3,00	3,500	85,993	-3,00	3,500	85,993	3,683	85,871	-0,122	
394+13,8	3,541	0,062	86,611	3,500	86,549	-3,00	3,500	86,549	-3,00	86,533	86,654	-0,121	3,500	86,549	-3,00	3,500	86,549	-3,00	3,500	86,549	3,541	86,611	0,062	
395	3,589	0,134	86,930	3,500	86,796	-3,00	3,500	86,796	-3,00	86,846	86,901	-0,055	3,500	86,796	-3,00	3,500	86,796	-3,00	3,500	86,796	3,586	86,924	0,128	
396	3,529	-0,019	87,581	3,500	87,600	-3,00	3,500	87,600	-3,00	87,454	87,705	-0,251	3,500	87,600	-3,00	3,500	87,600	-3,00	3,500	87,600	3,663	87,491	-0,109	
396+10,0	3,797	-0,198	87,803	3,500	88,001	-3,00	3,500	88,001	-3,00	87,698	88,106	-0,408	3,500	88,001	-3,00	3,500	88,001	-3,00	3,500	88,001	3,971	87,687	-0,314	
396+19,4	3,926	-0,284	88,015	3,500	88,299	-3,00	3,500	88,299	-3,00	87,941	88,404	-0,463	3,500	88,299	-3,00	3,500	88,299	-3,00	3,500	88,299	4,137	87,875	-0,424	
397	3,925	-0,283	88,030	3,500	88,313	-3,00	3,500	88,313	-3,00	87,956	88,418	-0,462	3,500	88,313	-3,00	3,500	88,313	-3,00	3,500	88,313	4,141	87,886	-0,427	
397+10,0	3,781	-0,187	88,257	3,500	88,444	-3,00	3,500	88,444	-3,00	88,180	88,549	-0,369	3,500	88,444	-3,00	3,500	88,444	-3,00	3,500	88,444	4,048	88,079	-0,365	
398	3,554	-0,036	88,448	3,500	88,484	-3,00	3,500	88,484	-3,00	88,356	88,589	-0,233	3,500	88,484	-3,00	3,500	88,484	-3,00	3,500	88,484	3,809	88,278	-0,206	
399	3,620	0,180	88,745	3,500	88,565	-3,00	3,500	88,565	-3,00	88,632	88,670	-0,038	3,500	88,565	-3,00	3,500	88,565	-3,00	3,500	88,565	3,534	88,615	0,050	
399+10,0	3,632	0,198	88,804	3,500	88,606	-3,00	3,500	88,606	-3,00	88,700	88,711	-0,011	3,500	88,606	-3,00	3,500	88,606	-3,00	3,500	88,606	3,529	88,649	0,043	
400	3,624	0,187	88,771	3,500	88,584	-3,00	3,500	88,584	-3,00	88,668	88,689	-0,021	3,500	88,584	-3,00	3,500	88,584	-3,00	3,500	88,584	3,560	88,544	-0,040	
400+0,71	3,623	0,184	88,762	3,500	88,578	-3,00	3,500	88,578	-3,00	88,657	88,683	-0,026	3,500	88,578	-3,00	3,500	88,578	-3,00	3,500	88,578	3,573	88,530	-0,048	
400+10,0	3,656	0,234	88,674	3,500	88,440	-3,00	3,500	88,440	-3,00	88,503	88,545	-0,042	3,500	88,440	-3,00	3,500	88,440	-3,00	3,500	88,440	3,664	88,330	-0,110	
401	3,731	0,346	88,579	3,500	88,233	-3,00	3,500	88,233	-3,00	88,337	88,338	-0,001	3,500	88,233	-3,00	3,500	88,233	-3,00	3,500	88,233	3,675	88,116	-0,117	
401+17,0	3,686	0,280	88,162	3,500	87,882	-3,00	3,500	87,882	-3,00	87,869	87,987	-0,118	3,500	87,882	-3,00	3,500	87,882	-3,00	3,500	87,882	3,580	87,828	-0,054	
402	3,666	0,249	88,074	3,500	87,825	-3,00	3,500	87,825	-3,00	87,798	87,930	-0,132	3,500	87,825	-3,00	3,500	87,825	-3,00	3,500	87,825	3,571	87,778	-0,047	
402+17,0	3,718	0,327	87,980	3,500	87,653	-3,00	3,500	87,653	-3,00	87,725	87,758	-0,033	3,500	87,653	-3,00	3,500	87,653	-3,00	3,500	87,653	3,502	87,652	-0,001	
403	3,739	0,358	88,004	3,500	87,646	-3,00	3,500	87,646	-3,00	87,739	87,751	-0,012	3,500	87,646	-3,00	3,500	87,646	-3,00	3,500	87,646	3,503	87,644	-0,002	
403+4,50	3,770	0,404	88,039	3,500	87,635	-3,00	3,500	87,635	-3,00	87,761	87,740	0,021	3,500	87,635	-3,00	3,500	87,635	-3,00	3,500	87,635	3,505	87,632	-0,003	
404	3,677	0,265	87,864	3,500	87,599	-3,00	3,500	87,599	-3,00	87,729	87,704	0,025	3,500	87,599	-3,00	3,500	87,599	-3,00	3,500	87,599	3,530	87,643	0,044	
404+13,1	3,677	0,265	87,833	3,500	87,568	-3,00	3,500	87,568	-3,00	87,665	87,673	-0,008	3,500	87,568	-3,00	3,500	87,568	-3,00	3,500	87,568	3,524	87,603	0,035	
405	3,657	0,236	87,788	3,500	87,552	-3,00	3,500	87,552	-3,00	87,627	87,657	-0,030	3,500	87,552	-3,00	3,500	87,552	-3,00	3,500	87,552	3,517	87,578	0,026	



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 Governo do Estado do Ceará

Handwritten mark resembling a stylized 'X' or signature.



Estaca	Lado Esquerdo						Eixo						Lado Direito										
	Offset			Lateral			Cota	Terreno	Projeto	Vermelha	Cota	Bordo			%			Lateral			Offset		
	Distância	Altura	Cota	Distância	Cota	Distância						Cota	Distância	Cota	Distância	Cota	Distância	Cota	Distância	Cota	Distância	Cota	Distância
406	3,591	87,642	0,136	3,500	87,506	-3,00	87,536	87,611	-0,075	3,500	87,506	-3,00	87,506	87,506	-3,00	3,500	87,506	-3,00	3,500	87,506	3,518	87,534	0,028
406+6,50	3,526	87,529	0,039	3,500	87,490	-3,00	87,495	87,595	-0,100	3,500	87,490	-3,00	87,490	87,490	-3,00	3,500	87,490	-3,00	3,500	87,490	3,535	87,467	-0,023
407	3,514	87,432	0,020	3,500	87,412	-3,00	87,360	87,517	-0,157	3,500	87,412	-3,00	87,412	87,412	-3,00	3,500	87,412	-3,00	3,500	87,412	3,626	87,328	-0,084
407+6,50	3,620	87,521	0,180	3,500	87,341	-3,00	87,332	87,446	-0,114	3,500	87,341	-3,00	87,341	87,341	-3,00	3,500	87,341	-3,00	3,500	87,341	3,643	87,245	-0,096
407+10,6	3,601	87,440	0,151	3,500	87,289	-3,00	87,287	87,394	-0,107	3,500	87,289	-3,00	87,289	87,289	-3,00	3,500	87,289	-3,00	3,500	87,289	3,651	87,189	-0,100
408	3,558	87,257	0,087	3,500	87,170	-3,00	87,179	87,275	-0,096	3,500	87,170	-3,00	87,170	87,170	-3,00	3,500	87,170	-3,00	3,500	87,170	3,663	87,061	-0,109
409	3,555	86,999	0,082	3,500	86,917	-3,00	86,876	87,022	-0,146	3,500	86,917	-3,00	86,917	86,917	-3,00	3,500	86,917	-3,00	3,500	86,917	3,633	86,828	-0,089
410	3,551	86,741	0,076	3,500	86,665	-3,00	86,630	86,770	-0,140	3,500	86,665	-3,00	86,665	86,665	-3,00	3,500	86,665	-3,00	3,500	86,665	3,688	86,540	-0,125
411	3,574	86,523	0,111	3,500	86,412	-3,00	86,418	86,517	-0,099	3,500	86,412	-3,00	86,412	86,412	-3,00	3,500	86,412	-3,00	3,500	86,412	3,614	86,336	-0,076
412	3,580	86,280	0,120	3,500	86,160	-3,00	86,182	86,265	-0,083	3,500	86,160	-3,00	86,160	86,160	-3,00	3,500	86,160	-3,00	3,500	86,160	3,630	86,073	-0,087
412+3,50	3,570	86,219	0,104	3,500	86,115	-3,00	86,123	86,220	-0,097	3,500	86,115	-3,00	86,115	86,115	-3,00	3,500	86,115	-3,00	3,500	86,115	3,648	86,016	-0,099
412+10,1	3,578	86,139	0,116	3,500	86,023	-3,00	85,971	86,128	-0,157	3,500	86,023	-3,00	86,023	86,023	-3,00	3,500	86,023	-3,00	3,500	86,023	3,665	85,913	-0,110
413	3,627	86,039	0,191	3,500	85,848	-3,00	85,720	85,953	-0,233	3,500	85,848	-3,00	85,848	85,848	-3,00	3,500	85,848	-3,00	3,500	85,848	3,625	85,765	-0,083
413+3,50	3,574	85,888	0,112	3,500	85,776	-3,00	85,631	85,881	-0,250	3,500	85,776	-3,00	85,776	85,776	-3,00	3,500	85,776	-3,00	3,500	85,776	3,588	85,717	-0,059
414	3,655	85,322	-0,103	3,500	85,425	-3,00	85,222	85,530	-0,308	3,500	85,425	-3,00	85,425	85,425	-3,00	3,500	85,425	-3,00	3,500	85,425	3,698	85,293	-0,132
414+15,1	3,548	85,070	-0,032	3,500	85,102	-3,00	84,903	85,207	-0,304	3,500	85,102	-3,00	85,102	85,102	-3,00	3,500	85,102	-3,00	3,500	85,102	3,735	84,945	-0,157
415	3,502	84,998	-0,001	3,500	84,999	-3,00	84,811	85,104	-0,293	3,500	84,999	-3,00	84,999	84,999	-3,00	3,500	84,999	-3,00	3,500	84,999	3,750	84,833	-0,166
416	3,600	84,723	0,150	3,500	84,573	-3,00	84,603	84,678	-0,075	3,500	84,573	-3,00	84,573	84,573	-3,00	3,500	84,573	-3,00	3,500	84,573	3,605	84,503	-0,070
417	3,718	84,474	0,327	3,500	84,147	-3,00	84,309	84,252	0,057	3,500	84,147	-3,00	84,147	84,147	-3,00	3,500	84,147	-3,00	3,500	84,147	3,591	84,283	0,136
417+13,9	3,866	84,399	0,548	3,500	83,851	-3,00	84,174	83,956	0,218	3,500	83,851	-3,00	83,851	83,851	-3,00	3,500	83,851	-3,00	3,500	83,851	3,673	84,110	0,259
418	3,868	84,275	0,553	3,500	83,722	-3,00	84,150	83,827	0,323	3,500	83,722	-3,00	83,722	83,722	-3,00	3,500	83,722	-3,00	3,500	83,722	3,707	84,032	0,310
418+17,6	3,787	83,780	0,431	3,500	83,349	-3,00	83,674	83,454	0,220	3,500	83,349	-3,00	83,349	83,349	-3,00	3,500	83,349	-3,00	3,500	83,349	3,637	83,554	0,205
419	3,782	83,712	0,423	3,500	83,289	-3,00	83,607	83,394	0,213	3,500	83,289	-3,00	83,289	83,289	-3,00	3,500	83,289	-3,00	3,500	83,289	3,631	83,485	0,196
419+17,5	3,711	82,821	0,317	3,500	82,504	-3,00	82,700	82,609	0,091	3,500	82,504	-3,00	82,504	82,504	-3,00	3,500	82,504	-3,00	3,500	82,504	3,554	82,585	0,081
420	3,707	82,657	0,311	3,500	82,346	-3,00	82,556	82,451	0,105	3,500	82,346	-3,00	82,346	82,346	-3,00	3,500	82,346	-3,00	3,500	82,346	3,563	82,440	0,094
421	3,576	81,032	-0,051	3,500	81,083	-3,00	81,040	81,188	-0,148	3,500	81,083	-3,00	81,083	81,083	-3,00	3,500	81,083	-3,00	3,500	81,083	3,538	81,058	-0,025
422	3,753	79,651	-0,168	3,500	79,819	-3,00	79,691	79,924	-0,233	3,500	79,819	-3,00	79,819	79,819	-3,00	3,500	79,819	-3,00	3,500	79,819	3,667	79,708	-0,111
423	3,746	78,391	-0,164	3,500	78,555	-3,00	78,382	78,660	-0,278	3,500	78,555	-3,00	78,555	78,555	-3,00	3,500	78,555	-3,00	3,500	78,555	3,577	78,504	-0,051
423+3,22	3,724	78,202	-0,149	3,500	78,351	-3,00	78,179	78,456	-0,277	3,500	78,351	-3,00	78,351	78,351	-3,00	3,500	78,351	-3,00	3,500	78,351	3,653	78,249	-0,102

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Estaca	Lado Esquerdo						Eixo						Lado Direito							
	Offset			Bordo			Cota	Terreno	Projeto	Vermelha	Cota	Bordo			Lateral			Offset		
	Distância	Altura	Lateral	Distância	Cota	%						Distância	Cota	%	Distância	Cota	%	Distância	Cota	%
424	3,643	77,197	-0,095	3,500	77,292	-3,00	77,160	77,397	-0,237	77,292	-3,00	77,292	3,500	77,292	-3,00	3,500	77,292	3,720	77,145	-0,147
425	3,578	75,976	-0,052	3,500	76,028	-3,00	75,892	76,133	-0,241	76,028	-3,00	76,028	3,500	76,028	-3,00	3,500	76,028	3,598	75,962	-0,066
425+0,88	3,574	75,922	-0,050	3,500	75,972	-3,00	75,849	76,077	-0,228	75,972	-3,00	75,972	3,500	75,972	-3,00	3,500	75,972	3,576	75,921	-0,051
425+12,5	3,566	75,337	0,099	3,500	75,238	-3,00	75,318	75,343	-0,025	75,238	-3,00	75,238	3,500	75,238	-3,00	3,500	75,238	3,602	75,391	0,153
425+12,9	3,569	75,314	0,104	3,500	75,210	-3,00	75,297	75,315	-0,018	75,210	-3,00	75,210	3,500	75,210	-3,00	3,500	75,210	3,607	75,371	0,161
426	3,614	74,967	0,172	3,500	74,795	-3,00	74,986	74,900	0,086	74,795	-3,00	74,795	3,500	74,795	-3,00	3,500	74,795	3,664	75,041	0,246
427	3,793	74,357	0,439	3,500	73,918	-3,00	74,212	74,023	0,189	73,918	-3,00	73,918	3,500	73,918	-3,00	3,500	73,918	3,648	74,140	0,222
427+1,53	3,792	74,306	0,437	3,500	73,869	-3,00	74,155	73,974	0,181	73,869	-3,00	73,869	3,500	73,869	-3,00	3,500	73,869	3,634	74,070	0,201
428	3,581	73,603	0,121	3,500	73,482	-3,00	73,496	73,587	-0,091	73,482	-3,00	73,482	3,500	73,482	-3,00	3,500	73,482	3,568	73,584	0,102
429	3,861	73,246	-0,241	3,500	73,487	-3,00	73,271	73,592	-0,321	73,487	-3,00	73,487	3,500	73,487	-3,00	3,500	73,487	3,671	73,373	-0,114
430	4,222	73,453	-0,481	3,500	73,934	-3,00	73,194	74,039	-0,845	73,934	-3,00	73,934	3,500	73,934	-3,00	3,500	73,934	4,554	73,231	-0,703
430+1,38	4,210	73,508	-0,473	3,500	73,981	-3,00	73,237	74,086	-0,849	73,981	-3,00	73,981	3,500	73,981	-3,00	3,500	73,981	4,509	73,308	-0,673
430+12,5	3,923	75,071	0,634	3,500	74,437	-3,00	74,295	74,542	-0,247	74,437	-3,00	74,437	3,500	74,437	-3,00	3,500	74,437	3,943	74,141	-0,296
431	4,052	75,618	0,828	3,500	74,790	-3,00	74,894	74,895	-0,001	74,790	-3,00	74,790	3,500	74,790	-3,00	3,500	74,790	3,629	74,704	-0,086
431+0,20	4,048	75,622	0,822	3,500	74,800	-3,00	74,912	74,905	0,007	74,800	-3,00	74,800	3,500	74,800	-3,00	3,500	74,800	3,623	74,718	-0,082
432	3,772	76,142	0,408	3,500	75,734	-3,00	75,656	75,839	-0,183	75,734	-3,00	75,734	3,500	75,734	-3,00	3,500	75,734	3,783	75,545	-0,189
432+4,50	3,728	76,288	0,342	3,500	75,946	-3,00	75,957	76,051	-0,094	75,946	-3,00	75,946	3,500	75,946	-3,00	3,500	75,946	3,901	75,678	-0,268
433	3,656	76,910	0,233	3,500	76,677	-3,00	76,441	76,782	-0,341	76,677	-3,00	76,677	3,500	76,677	-3,00	3,500	76,677	4,074	76,294	-0,383
433+13,5	3,734	77,666	0,351	3,500	77,315	-3,00	77,128	77,420	-0,292	77,315	-3,00	77,315	3,500	77,315	-3,00	3,500	77,315	4,035	76,958	-0,357
433+19,2	3,820	78,063	0,480	3,500	77,583	-3,00	77,698	77,688	0,010	77,583	-3,00	77,583	3,500	77,583	-3,00	3,500	77,583	3,947	77,285	-0,298
434	3,828	78,112	0,492	3,500	77,620	-3,00	77,744	77,725	0,019	77,620	-3,00	77,620	3,500	77,620	-3,00	3,500	77,620	3,927	77,335	-0,285
434+10,0	3,866	78,640	0,549	3,500	78,091	-3,00	78,300	78,196	0,104	78,091	-3,00	78,091	3,500	78,091	-3,00	3,500	78,091	3,620	78,011	-0,080
435	3,748	78,876	0,372	3,500	78,504	-3,00	78,668	78,609	0,059	78,504	-3,00	78,504	3,500	78,504	-3,00	3,500	78,504	3,682	78,383	-0,121
435+10,0	3,621	78,978	0,181	3,500	78,797	-3,00	78,700	78,902	-0,202	78,797	-3,00	78,797	3,500	78,797	-3,00	3,500	78,797	4,157	78,359	-0,438
436	4,184	78,575	-0,456	3,500	79,031	-3,00	78,440	79,136	-0,696	79,031	-3,00	79,031	3,500	79,031	-3,00	3,500	79,031	4,859	78,125	-0,906
437	4,428	78,880	-0,619	3,500	79,499	-3,00	78,661	79,604	-0,943	79,499	-3,00	79,499	3,500	79,499	-3,00	3,500	79,499	5,123	78,417	-1,082
438	3,566	80,065	0,098	3,500	79,967	-3,00	79,913	80,072	-0,159	79,967	-3,00	79,967	3,500	79,967	-3,00	3,500	79,967	4,323	79,418	-0,549
439	3,699	80,734	0,299	3,500	80,435	-3,00	80,617	80,540	0,077	80,435	-3,00	80,435	3,500	80,435	-3,00	3,500	80,435	3,517	80,424	-0,011
439+7,81	3,636	80,822	0,204	3,500	80,618	-3,00	80,614	80,723	-0,109	80,618	-3,00	80,618	3,500	80,618	-3,00	3,500	80,618	3,661	80,511	-0,107

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 Governo do Estado do Ceará



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Estaca	Lado Esquerdo						Eixo						Lado Direito								
	Offset			Bordo			Cota		Cota		Cota		Bordo			Lateral			Offset		
	Distância	Altura	Distância	Distância	Cota	%	Terreno	Projeto	Vermelha	Distância	Cota	%	Distância	Cota	%	Distância	Cota	Distância	Cota	Altura	
440	3,631	81,100	0,197	3,500	80,903	-3,00	80,968	81,008	-0,040	3,500	80,903	-3,00	3,500	80,903	-3,00	3,500	80,903	3,514	80,924	0,021	
441	3,857	81,133	-0,238	3,500	81,371	-3,00	81,083	81,476	-0,393	3,500	81,371	-3,00	3,500	81,371	-3,00	3,500	81,371	4,009	81,032	-0,339	
441+9,04	3,759	81,286	-0,173	3,500	81,459	-3,00	81,292	81,564	-0,272	3,500	81,459	-3,00	3,500	81,459	-3,00	3,500	81,459	3,800	81,259	-0,200	
442	3,501	81,234	0,001	3,500	81,233	-3,00	81,156	81,338	-0,182	3,500	81,233	-3,00	3,500	81,233	-3,00	3,500	81,233	3,663	81,125	-0,108	
443	3,664	80,735	0,246	3,500	80,489	-3,00	80,465	80,594	-0,129	3,500	80,489	-3,00	3,500	80,489	-3,00	3,500	80,489	3,651	80,388	-0,101	
443+8,83	3,642	80,373	0,213	3,500	80,160	-3,00	80,274	80,265	0,009	3,500	80,160	-3,00	3,500	80,160	-3,00	3,500	80,160	3,501	80,161	0,001	
444	3,592	79,882	0,137	3,500	79,745	-3,00	79,816	79,850	-0,034	3,500	79,745	-3,00	3,500	79,745	-3,00	3,500	79,745	3,504	79,750	0,005	
445	3,580	78,948	-0,053	3,500	79,001	-3,00	78,987	79,106	-0,119	3,500	79,001	-3,00	3,500	79,001	-3,00	3,500	79,001	3,525	79,039	0,038	
445+16,6	3,502	78,384	0,003	3,500	78,381	-3,00	78,455	78,486	-0,031	3,500	78,381	-3,00	3,500	78,381	-3,00	3,500	78,381	3,598	78,528	0,147	
446	3,513	78,277	0,020	3,500	78,257	-3,00	78,328	78,362	-0,034	3,500	78,257	-3,00	3,500	78,257	-3,00	3,500	78,257	3,561	78,348	0,091	
447	3,678	77,393	-0,119	3,500	77,512	-3,00	77,423	77,617	-0,194	3,500	77,512	-3,00	3,500	77,512	-3,00	3,500	77,512	3,556	77,475	-0,037	
447+17,3	3,748	77,238	0,372	3,500	76,866	-3,00	76,835	76,971	-0,136	3,500	76,866	-3,00	3,500	76,866	-3,00	3,500	76,866	3,575	76,816	-0,050	
448	3,732	77,116	0,348	3,500	76,768	-3,00	76,723	76,873	-0,150	3,500	76,768	-3,00	3,500	76,768	-3,00	3,500	76,768	3,580	76,715	-0,053	
449	3,610	76,189	0,165	3,500	76,024	-3,00	75,875	76,129	-0,254	3,500	76,024	-3,00	3,500	76,024	-3,00	3,500	76,024	3,627	75,940	-0,084	
450	3,945	74,983	-0,297	3,500	75,280	-3,00	75,062	75,385	-0,323	3,500	75,280	-3,00	3,500	75,280	-3,00	3,500	75,280	3,515	75,270	-0,010	
450+5,00	4,142	74,666	-0,428	3,500	75,094	-3,00	74,855	75,199	-0,344	3,500	75,094	-3,00	3,500	75,094	-3,00	3,500	75,094	3,524	75,078	-0,016	
451	4,995	73,929	-0,996	3,500	74,925	-3,00	73,721	75,030	-1,309	3,500	74,925	-3,00	3,500	74,925	-3,00	3,500	74,925	4,792	74,064	-0,861	
451+15,0	4,208	75,061	-0,472	3,500	75,533	-3,00	75,268	75,638	-0,370	3,500	75,533	-3,00	3,500	75,533	-3,00	3,500	75,533	4,473	74,885	-0,648	
451+19,8	4,000	75,526	-0,333	3,500	75,859	-3,00	75,607	75,964	-0,357	3,500	75,859	-3,00	3,500	75,859	-3,00	3,500	75,859	4,166	75,415	-0,444	
452	3,996	75,536	-0,330	3,500	75,866	-3,00	75,614	75,971	-0,357	3,500	75,866	-3,00	3,500	75,866	-3,00	3,500	75,866	4,159	75,426	-0,440	
452+10,0	3,561	76,621	0,091	3,500	76,530	-3,00	76,395	76,635	-0,240	3,500	76,530	-3,00	3,500	76,530	-3,00	3,500	76,530	3,527	76,570	0,040	
453	3,669	77,324	0,253	3,500	77,071	-3,00	77,121	77,176	-0,055	3,500	77,071	-3,00	3,500	77,071	-3,00	3,500	77,071	3,566	77,027	-0,044	
453+10,0	3,560	77,453	0,090	3,500	77,363	-3,00	77,272	77,468	-0,196	3,500	77,363	-3,00	3,500	77,363	-3,00	3,500	77,363	3,896	77,099	-0,264	
453+19,8	3,527	77,510	-0,018	3,500	77,528	-3,00	77,419	77,633	-0,214	3,500	77,528	-3,00	3,500	77,528	-3,00	3,500	77,528	4,033	77,172	-0,356	
454	3,531	77,511	-0,021	3,500	77,532	-3,00	77,422	77,637	-0,215	3,500	77,532	-3,00	3,500	77,532	-3,00	3,500	77,532	4,038	77,173	-0,359	
455	3,549	77,835	-0,033	3,500	77,868	-3,00	77,494	77,973	-0,479	3,500	77,868	-3,00	3,500	77,868	-3,00	3,500	77,868	4,263	77,359	-0,509	
456	3,708	78,066	-0,139	3,500	78,205	-3,00	77,596	78,310	-0,714	3,500	78,205	-3,00	3,500	78,205	-3,00	3,500	78,205	4,344	77,642	-0,563	
457	3,612	78,467	-0,074	3,500	78,541	-3,00	78,256	78,646	-0,390	3,500	78,541	-3,00	3,500	78,541	-3,00	3,500	78,541	3,956	78,237	-0,304	
458	3,510	78,893	0,015	3,500	78,878	-3,00	78,761	78,983	-0,222	3,500	78,878	-3,00	3,500	78,878	-3,00	3,500	78,878	3,631	78,791	-0,087	

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 Governo do Estado do Ceará



Estaca	Lado Esquerdo						Eixo						Lado Direito								
	Offset			Bordo			Cota	Terreno	Projeto	Vermelha	Bordo			Cota	Distância	Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	%					Distância	Cota	%			Distância	Cota	%	Distância	Cota	Distância
458+10,0	3,573	79,155	0,109	3,500	79,046	-3,00	79,042	79,151	-0,109	3,500	79,046	-3,00	79,046	3,504	79,046	3,504	79,052	0,006			
459	3,622	79,333	0,182	3,500	79,151	-3,00	79,222	79,256	-0,034	3,500	79,151	-3,00	79,151	3,576	79,151	3,576	79,255	0,114			
459+8,12	3,632	79,343	0,198	3,500	79,145	-3,00	79,276	79,250	0,026	3,500	79,145	-3,00	79,145	3,573	79,145	3,573	79,255	0,110			
459+10,0	3,639	79,341	0,209	3,500	79,132	-3,00	79,276	79,237	0,039	3,500	79,132	-3,00	79,132	3,587	79,132	3,587	79,263	0,131			
460	3,694	79,339	0,290	3,500	79,049	-3,00	79,189	79,154	0,035	3,500	79,049	-3,00	79,049	3,665	79,049	3,665	79,297	0,248			
461	3,684	79,160	0,276	3,500	78,884	-3,00	78,969	78,989	-0,020	3,500	78,884	-3,00	78,884	3,679	78,884	3,679	79,152	0,268			
461+8,06	3,599	78,965	0,148	3,500	78,817	-3,00	78,835	78,922	-0,087	3,500	78,817	-3,00	78,817	3,565	78,817	3,565	78,915	0,098			
461+10,0	3,578	78,918	0,116	3,500	78,802	-3,00	78,802	78,907	-0,105	3,500	78,802	-3,00	78,802	3,539	78,802	3,539	78,861	0,059			
462	3,505	78,695	0,007	3,500	78,688	-3,00	78,628	78,793	-0,165	3,500	78,688	-3,00	78,688	3,703	78,688	3,703	78,552	-0,136			
462+10,0	3,518	78,499	-0,012	3,500	78,511	-3,00	78,416	78,616	-0,200	3,500	78,511	-3,00	78,511	3,868	78,511	3,868	78,266	-0,245			
463	3,505	78,309	0,007	3,500	78,302	-3,00	78,203	78,407	-0,204	3,500	78,302	-3,00	78,302	3,652	78,302	3,652	78,201	-0,101			
464	3,582	78,009	0,123	3,500	77,886	-3,00	77,865	77,991	-0,126	3,500	77,886	-3,00	77,886	3,569	77,886	3,569	77,989	0,103			
464+10,0	3,594	77,818	0,141	3,500	77,677	-3,00	77,749	77,782	-0,033	3,500	77,677	-3,00	77,677	3,608	77,677	3,608	77,839	0,162			
465	3,501	77,491	0,001	3,500	77,490	-3,00	77,499	77,595	-0,096	3,500	77,490	-3,00	77,490	3,520	77,490	3,520	77,520	0,030			
465+0,99	3,530	77,454	-0,020	3,500	77,474	-3,00	77,472	77,579	-0,107	3,500	77,474	-3,00	77,474	3,556	77,474	3,556	77,437	-0,037			
465+10,0	3,797	77,148	-0,198	3,500	77,346	-3,00	77,200	77,451	-0,251	3,500	77,346	-3,00	77,346	4,104	77,346	4,104	76,943	-0,403			
466	4,078	76,836	-0,386	3,500	77,222	-3,00	76,783	77,327	-0,544	3,500	77,222	-3,00	77,222	4,273	77,222	4,273	76,707	-0,515			
467	3,803	77,430	0,454	3,500	76,976	-3,00	77,267	77,081	0,186	3,500	76,976	-3,00	76,976	3,636	76,976	3,636	77,180	0,204			
467+0,66	3,822	77,450	0,483	3,500	76,967	-3,00	77,277	77,072	0,205	3,500	76,967	-3,00	76,967	3,657	76,967	3,657	77,202	0,235			
467+18,6	4,328	77,988	1,242	3,500	76,746	-3,00	77,888	76,851	1,037	3,500	76,746	-3,00	76,746	4,324	76,746	4,324	77,982	1,236			
468	4,284	77,905	1,176	3,500	76,729	-3,00	77,780	76,834	0,946	3,500	76,729	-3,00	76,729	4,281	76,729	4,281	77,900	1,171			
469	3,590	76,617	0,135	3,500	76,482	-3,00	76,370	76,587	-0,217	3,500	76,482	-3,00	76,482	3,916	76,482	3,916	76,205	-0,277			
469+15,6	3,670	76,176	-0,113	3,500	76,289	-3,00	75,907	76,394	-0,487	3,500	76,289	-3,00	76,289	4,092	76,289	4,092	75,894	-0,395			
470	3,503	76,241	0,005	3,500	76,236	-3,00	75,950	76,341	-0,391	3,500	76,236	-3,00	76,236	4,019	76,236	4,019	75,890	-0,346			
470+10,0	3,757	76,498	0,386	3,500	76,112	-3,00	76,131	76,217	-0,086	3,500	76,112	-3,00	76,112	3,860	76,112	3,860	75,872	-0,240			
471	3,837	76,407	0,505	3,500	75,902	-3,00	76,054	76,007	0,047	3,500	75,902	-3,00	75,902	3,769	75,902	3,769	75,723	-0,179			
471+9,98	3,863	76,062	0,544	3,500	75,518	-3,00	75,717	75,623	0,094	3,500	75,518	-3,00	75,518	3,518	75,518	3,518	75,506	-0,012			
471+10,0	3,863	76,062	0,544	3,500	75,518	-3,00	75,717	75,623	0,094	3,500	75,518	-3,00	75,518	3,518	75,518	3,518	75,506	-0,012			
471+17,0	4,093	76,077	0,889	3,500	75,188	-3,00	75,633	75,293	0,340	3,500	75,188	-3,00	75,188	3,655	75,188	3,655	75,420	0,232			

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 Governo do Estado do Ceará



Estaca	Lado Esquerdo						Eixo						Lado Direito														
	Offset			Lateral			Bordo			Cota			Vermelha			Cota			Lateral			Offset					
	Distância	Altura	Cota	Distância	Cota	Terreno	Distância	Cota	%	Distância	Cota	Projeto	Distância	Cota	%	Distância	Cota	Terreno	Distância	Cota	Projeto	Distância	Cota	Terreno	Distância	Cota	Altura
472	4,133	76,000	0,950	3,500	75,050	-3,00	3,500	75,050	-3,00	0,408	75,155	0,408	3,500	75,050	-3,00	3,500	75,050	-3,00	3,500	75,050	75,155	0,408	3,500	75,050	3,696	75,345	0,295
472+16,8	3,819	74,882	0,479	3,500	74,403	-3,00	3,500	74,403	-3,00	74,388	74,508	-0,120	3,500	74,403	-3,00	3,500	74,403	-3,00	3,500	74,403	74,508	-0,120	3,500	74,403	3,587	74,345	-0,058
473	3,725	74,642	0,337	3,500	74,305	-3,00	3,500	74,305	-3,00	74,140	74,410	-0,270	3,500	74,305	-3,00	3,500	74,305	-3,00	3,500	74,305	74,410	-0,270	3,500	74,305	3,763	74,130	-0,175
474	4,349	73,300	-0,566	3,500	73,866	-3,00	3,500	73,866	-3,00	72,807	73,971	-1,164	3,500	73,866	-3,00	3,500	73,866	-3,00	3,500	73,866	73,971	-1,164	3,500	73,866	5,143	72,770	-1,096
475	4,760	72,892	-0,840	3,500	73,732	-3,00	3,500	73,732	-3,00	72,540	73,837	-1,297	3,500	73,732	-3,00	3,500	73,732	-3,00	3,500	73,732	73,837	-1,297	3,500	73,732	5,082	72,677	-1,055
476	4,239	73,409	-0,493	3,500	73,902	-3,00	3,500	73,902	-3,00	73,144	74,007	-0,863	3,500	73,902	-3,00	3,500	73,902	-3,00	3,500	73,902	74,007	-0,863	3,500	73,902	3,961	73,595	-0,307
477	3,755	74,759	0,382	3,500	74,377	-3,00	3,500	74,377	-3,00	74,701	74,482	0,219	3,500	74,377	-3,00	3,500	74,377	-3,00	3,500	74,377	74,482	0,219	3,500	74,377	3,680	74,646	0,269
477+17,0	3,724	75,357	0,336	3,500	75,021	-3,00	3,500	75,021	-3,00	75,156	75,126	0,030	3,500	75,021	-3,00	3,500	75,021	-3,00	3,500	75,021	75,126	0,030	3,500	75,021	3,760	75,412	0,391
478	3,702	75,458	0,304	3,500	75,154	-3,00	3,500	75,154	-3,00	75,214	75,259	-0,045	3,500	75,154	-3,00	3,500	75,154	-3,00	3,500	75,154	75,259	-0,045	3,500	75,154	3,754	75,535	0,381
478+17,0	3,606	76,066	0,158	3,500	75,908	-3,00	3,500	75,908	-3,00	76,048	76,013	0,035	3,500	75,908	-3,00	3,500	75,908	-3,00	3,500	75,908	76,013	0,035	3,500	75,908	3,517	75,934	0,026
479	3,584	76,155	0,126	3,500	76,029	-3,00	3,500	76,029	-3,00	76,135	76,134	0,001	3,500	76,029	-3,00	3,500	76,029	-3,00	3,500	76,029	76,134	0,001	3,500	76,029	3,560	75,989	-0,040
479+15,9	3,649	76,477	0,224	3,500	76,253	-3,00	3,500	76,253	-3,00	76,286	76,358	-0,072	3,500	76,253	-3,00	3,500	76,253	-3,00	3,500	76,253	76,358	-0,072	3,500	76,253	3,788	76,051	-0,192
479+17,0	3,638	76,449	0,206	3,500	76,243	-3,00	3,500	76,243	-3,00	76,281	76,348	-0,067	3,500	76,243	-3,00	3,500	76,243	-3,00	3,500	76,243	76,348	-0,067	3,500	76,243	3,819	76,031	-0,212
480	3,608	76,373	0,162	3,500	76,211	-3,00	3,500	76,211	-3,00	76,220	76,316	-0,096	3,500	76,211	-3,00	3,500	76,211	-3,00	3,500	76,211	76,316	-0,096	3,500	76,211	3,817	76,000	-0,211
481	3,500	75,995	0,001	3,500	75,994	-3,00	3,500	75,994	-3,00	75,618	76,099	-0,481	3,500	75,994	-3,00	3,500	75,994	-3,00	3,500	75,994	76,099	-0,481	3,500	75,994	3,995	75,664	-0,330
481+15,9	3,568	75,776	-0,045	3,500	75,821	-3,00	3,500	75,821	-3,00	75,216	75,926	-0,710	3,500	75,821	-3,00	3,500	75,821	-3,00	3,500	75,821	75,926	-0,710	3,500	75,821	4,591	75,094	-0,727
482	3,573	75,727	-0,049	3,500	75,776	-3,00	3,500	75,776	-3,00	75,090	75,881	-0,791	3,500	75,776	-3,00	3,500	75,776	-3,00	3,500	75,776	75,881	-0,791	3,500	75,776	4,720	74,963	-0,813
483	6,284	73,703	-1,856	3,500	75,559	-3,00	3,500	75,559	-3,00	73,690	75,664	-1,974	3,500	75,559	-3,00	3,500	75,559	-3,00	3,500	75,559	75,664	-1,974	3,500	75,559	6,128	73,807	-1,752
483+17,2	5,888	73,780	-1,592	3,500	75,372	-3,00	3,500	75,372	-3,00	73,499	75,477	-1,978	3,500	75,372	-3,00	3,500	75,372	-3,00	3,500	75,372	75,477	-1,978	3,500	75,372	6,031	73,685	-1,687
484	5,536	73,985	-1,357	3,500	75,342	-3,00	3,500	75,342	-3,00	73,639	75,447	-1,808	3,500	75,342	-3,00	3,500	75,342	-3,00	3,500	75,342	75,447	-1,808	3,500	75,342	5,714	73,866	-1,476
485	3,527	75,107	-0,018	3,500	75,125	-3,00	3,500	75,125	-3,00	75,123	75,230	-0,107	3,500	75,125	-3,00	3,500	75,125	-3,00	3,500	75,125	75,230	-0,107	3,500	75,125	3,805	74,922	-0,203
485+12,0	3,569	75,098	0,103	3,500	74,995	-3,00	3,500	74,995	-3,00	75,072	75,100	-0,028	3,500	74,995	-3,00	3,500	74,995	-3,00	3,500	74,995	75,100	-0,028	3,500	74,995	3,531	75,041	0,046
485+15,9	3,544	75,012	0,066	3,500	74,946	-3,00	3,500	74,946	-3,00	74,995	75,051	-0,056	3,500	74,946	-3,00	3,500	74,946	-3,00	3,500	74,946	75,051	-0,056	3,500	74,946	3,515	74,968	0,022
486	3,531	74,928	0,046	3,500	74,882	-3,00	3,500	74,882	-3,00	74,914	74,987	-0,073	3,500	74,882	-3,00	3,500	74,882	-3,00	3,500	74,882	74,987	-0,073	3,500	74,882	3,505	74,878	-0,004
486+12,0	3,553	74,695	0,079	3,500	74,616	-3,00	3,500	74,616	-3,00	74,632	74,721	-0,089	3,500	74,616	-3,00	3,500	74,616	-3,00	3,500	74,616	74,721	-0,089	3,500	74,616	3,624	74,533	-0,083
487	3,531	74,447	0,047	3,500	74,400	-3,00	3,500	74,400	-3,00	74,446	74,505	-0,059	3,500	74,400	-3,00	3,500	74,400	-3,00	3,500	74,400	74,505	-0,059	3,500	74,400	3,545	74,370	-0,030
487+16,6	3,528	73,932	-0,019	3,500	73,951	-3,00	3,500	73,951	-3,00	73,991	74,056	-0,065	3,500	73,951	-3,00	3,500	73,951	-3,00	3,500	73,951	74,056	-0,065	3,500	73,951	3,538	74,008	0,057
488	3,534	73,838	-0,022	3,500	73,860	-3,00	3,500	73,860	-3,00	73,884	73,965	-0,081	3,500	73,860	-3,00	3,500	73,860	-3,00	3,500	73,860	73,965	-0,081	3,500	73,860	3,515	73,882	0,022
489	3,589	73,261	-0,059	3,500	73,320	-3,00	3,500	73,320	-3,00	73,211	73,425	-0,214	3,500	73,320	-3,00	3,500	73,320	-3,00	3,500	73,320	73,425	-0,214	3,500	73,320	3,712	73,179	-0,141

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Estaca	Lado Esquerdo						Eixo						Lado Direito							
	Offset			Bordo			Cota	Terreno	Projeto	Vermelha	Cota	Bordo			Lateral			Offset		
	Distância	Altura	Distância	Distância	Cota	%						Distância	Cota	Distância	Cota	%	Distância	Cota	Distância	Cota
489+14,3	3,590	73,068	0,135	3,500	72,933	-3,00	72,868	73,038	-0,170	3,500	72,933	-3,00	3,500	72,933	-3,00	3,500	72,933	3,800	72,733	-0,200
490	3,638	72,987	0,207	3,500	72,780	-3,00	72,738	72,885	-0,147	3,500	72,780	-3,00	3,500	72,780	-3,00	3,500	72,780	3,754	72,610	-0,170
491	3,538	72,298	0,057	3,500	72,241	-3,00	72,211	72,346	-0,135	3,500	72,241	-3,00	3,500	72,241	-3,00	3,500	72,241	3,626	72,157	-0,084
492	3,984	71,378	-0,323	3,500	71,701	-3,00	71,365	71,806	-0,441	3,500	71,701	-3,00	3,500	71,701	-3,00	3,500	71,701	3,974	71,385	-0,316
493	3,892	70,900	-0,261	3,500	71,161	-3,00	70,771	71,266	-0,495	3,500	71,161	-3,00	3,500	71,161	-3,00	3,500	71,161	3,921	70,880	-0,281
494	3,540	70,681	0,060	3,500	70,621	-3,00	70,558	70,726	-0,168	3,500	70,621	-3,00	3,500	70,621	-3,00	3,500	70,621	3,595	70,763	0,142
494+10,0	3,654	70,582	0,231	3,500	70,351	-3,00	70,318	70,456	-0,138	3,500	70,351	-3,00	3,500	70,351	-3,00	3,500	70,351	3,742	70,190	-0,161
495	3,785	70,677	0,428	3,500	70,249	-3,00	70,098	70,354	-0,256	3,500	70,249	-3,00	3,500	70,249	-3,00	3,500	70,249	3,789	70,056	-0,193
495+10,0	3,617	70,657	0,175	3,500	70,482	-3,00	70,321	70,587	-0,266	3,500	70,482	-3,00	3,500	70,482	-3,00	3,500	70,482	3,678	70,363	-0,119
496	3,538	70,857	-0,025	3,500	70,882	-3,00	70,625	70,987	-0,362	3,500	70,882	-3,00	3,500	70,882	-3,00	3,500	70,882	3,813	70,673	-0,209
497	3,611	71,851	0,167	3,500	71,684	-3,00	71,653	71,789	-0,136	3,500	71,684	-3,00	3,500	71,684	-3,00	3,500	71,684	3,531	71,664	-0,020
497+19,8	3,584	72,606	0,126	3,500	72,480	-3,00	72,500	72,585	-0,085	3,500	72,480	-3,00	3,500	72,480	-3,00	3,500	72,480	3,553	72,559	0,079
498	3,585	72,612	0,127	3,500	72,485	-3,00	72,504	72,590	-0,086	3,500	72,485	-3,00	3,500	72,485	-3,00	3,500	72,485	3,553	72,564	0,079
499	3,526	73,270	-0,017	3,500	73,287	-3,00	73,312	73,392	-0,080	3,500	73,287	-3,00	3,500	73,287	-3,00	3,500	73,287	3,570	73,392	0,105
499+19,5	3,561	74,159	0,091	3,500	74,068	-3,00	74,176	74,173	0,003	3,500	74,068	-3,00	3,500	74,068	-3,00	3,500	74,068	3,550	74,144	0,076
500	3,563	74,182	0,094	3,500	74,088	-3,00	74,199	74,193	0,006	3,500	74,088	-3,00	3,500	74,088	-3,00	3,500	74,088	3,550	74,163	0,075
500+6,00	3,539	74,386	0,058	3,500	74,328	-3,00	74,371	74,433	-0,062	3,500	74,328	-3,00	3,500	74,328	-3,00	3,500	74,328	3,520	74,314	-0,014
501	3,622	74,643	-0,081	3,500	74,724	-3,00	74,661	74,829	-0,168	3,500	74,724	-3,00	3,500	74,724	-3,00	3,500	74,724	3,682	74,602	-0,122
501+6,00	3,559	74,754	-0,039	3,500	74,793	-3,00	74,770	74,898	-0,128	3,500	74,793	-3,00	3,500	74,793	-3,00	3,500	74,793	3,606	74,722	-0,071
502	3,551	74,958	0,076	3,500	74,882	-3,00	74,973	74,987	-0,014	3,500	74,882	-3,00	3,500	74,882	-3,00	3,500	74,882	3,531	74,928	0,046
502+15,3	3,609	75,142	0,163	3,500	74,979	-3,00	75,175	75,084	0,091	3,500	74,979	-3,00	3,500	74,979	-3,00	3,500	74,979	3,680	75,250	0,271
503	3,628	75,201	0,192	3,500	75,009	-3,00	75,235	75,114	0,121	3,500	75,009	-3,00	3,500	75,009	-3,00	3,500	75,009	3,757	75,395	0,386
504	3,664	75,382	0,246	3,500	75,136	-3,00	75,471	75,241	0,230	3,500	75,136	-3,00	3,500	75,136	-3,00	3,500	75,136	3,783	75,560	0,424
505	3,747	75,098	-0,165	3,500	75,263	-3,00	75,265	75,368	-0,103	3,500	75,263	-3,00	3,500	75,263	-3,00	3,500	75,263	3,549	75,337	0,074
505+18,0	4,895	74,447	-0,930	3,500	75,377	-3,00	74,661	75,482	-0,821	3,500	75,377	-3,00	3,500	75,377	-3,00	3,500	75,377	4,515	74,701	-0,676
506	4,743	74,588	-0,828	3,500	75,396	-3,00	74,776	75,501	-0,725	3,500	75,396	-3,00	3,500	75,396	-3,00	3,500	75,396	4,370	74,816	-0,580
506+18,0	3,871	75,811	-0,247	3,500	76,058	-3,00	75,785	76,163	-0,378	3,500	76,058	-3,00	3,500	76,058	-3,00	3,500	76,058	3,808	75,852	-0,206
507	3,818	75,970	-0,212	3,500	76,182	-3,00	75,895	76,287	-0,392	3,500	76,182	-3,00	3,500	76,182	-3,00	3,500	76,182	3,821	75,968	-0,214
508	3,696	77,285	-0,131	3,500	77,416	-3,00	77,188	77,521	-0,333	3,500	77,416	-3,00	3,500	77,416	-3,00	3,500	77,416	3,580	77,363	-0,053

PREFEITURA MUNICIPAL DE MIRAIMA
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 Governo do Estado do Ceará

Handwritten mark resembling a stylized 'D' or 'S'.

Estaca	Lado Esquerdo						Eixo						Lado Direito											
	Offset			Lateral			Bordo			Cota			Vermelha			Bordo			Lateral			Offset		
	Distância	Cota	Altura	Distância	Cota	Altura	Distância	Cota	%	Terreno	Projeto	Cota	Distância	Cota	%	Distância	Cota	Altura	Distância	Cota	Altura	Distância	Cota	Altura
509	3,579	78,597	-0,053	3,500	78,650	-0,070	3,500	78,650	-3,00	78,685	78,755	-0,070	3,500	78,650	-3,00	3,500	78,650	0,033	3,500	78,650	3,522	78,683	0,033	
510	3,508	79,896	0,012	3,500	79,884	-0,012	3,500	79,884	-3,00	79,759	79,989	-0,230	3,500	79,884	-3,00	3,500	79,884	-0,016	3,500	79,884	3,524	79,868	-0,016	
511	3,524	81,154	0,035	3,500	81,119	-0,035	3,500	81,119	-3,00	80,886	81,224	-0,338	3,500	81,119	-3,00	3,500	81,119	-0,091	3,500	81,119	3,636	81,028	-0,091	
511+13,0	3,535	81,974	0,053	3,500	81,921	-0,053	3,500	81,921	-3,00	81,750	82,026	-0,276	3,500	81,921	-3,00	3,500	81,921	0,125	3,500	81,921	3,583	82,046	0,125	
512	3,590	82,461	0,135	3,500	82,326	-0,135	3,500	82,326	-3,00	82,316	82,431	-0,115	3,500	82,326	-3,00	3,500	82,326	0,190	3,500	82,326	3,627	82,516	0,190	
513	3,994	82,852	-0,329	3,500	83,181	-0,329	3,500	83,181	-3,00	82,816	83,286	-0,470	3,500	83,181	-3,00	3,500	83,181	-0,159	3,500	83,181	3,738	83,022	-0,159	
514	3,979	83,271	-0,320	3,500	83,591	-0,320	3,500	83,591	-3,00	83,217	83,696	-0,479	3,500	83,591	-3,00	3,500	83,591	-0,297	3,500	83,591	3,946	83,294	-0,297	
514+0,12	3,979	83,272	-0,320	3,500	83,592	-0,320	3,500	83,592	-3,00	83,218	83,697	-0,479	3,500	83,592	-3,00	3,500	83,592	-0,298	3,500	83,592	3,946	83,294	-0,298	
515	3,753	83,386	-0,168	3,500	83,554	-0,168	3,500	83,554	-3,00	83,328	83,659	-0,331	3,500	83,554	-3,00	3,500	83,554	-0,225	3,500	83,554	3,837	83,329	-0,225	
515+1,14	3,776	83,355	-0,184	3,500	83,539	-0,184	3,500	83,539	-3,00	83,306	83,644	-0,338	3,500	83,539	-3,00	3,500	83,539	-0,232	3,500	83,539	3,848	83,307	-0,232	
515+3,00	3,807	83,305	-0,205	3,500	83,510	-0,205	3,500	83,510	-3,00	83,270	83,615	-0,345	3,500	83,510	-3,00	3,500	83,510	-0,238	3,500	83,510	3,857	83,272	-0,238	
516	4,006	82,896	-0,337	3,500	83,233	-0,337	3,500	83,233	-3,00	82,944	83,338	-0,394	3,500	83,233	-3,00	3,500	83,233	-0,272	3,500	83,233	3,909	82,961	-0,272	
517	3,881	82,653	-0,254	3,500	82,907	-0,254	3,500	82,907	-3,00	82,554	83,012	-0,458	3,500	82,907	-3,00	3,500	82,907	-0,224	3,500	82,907	3,837	82,663	-0,224	
517+0,61	3,868	82,652	-0,245	3,500	82,897	-0,245	3,500	82,897	-3,00	82,553	83,002	-0,449	3,500	82,897	-3,00	3,500	82,897	-0,211	3,500	82,897	3,817	82,686	-0,211	
518	3,552	82,546	-0,035	3,500	82,581	-0,035	3,500	82,581	-3,00	82,518	82,686	-0,168	3,500	82,581	-3,00	3,500	82,581	-0,092	3,500	82,581	3,639	82,489	-0,092	
519	3,745	82,092	-0,163	3,500	82,255	-0,163	3,500	82,255	-3,00	82,001	82,360	-0,359	3,500	82,255	-3,00	3,500	82,255	-0,191	3,500	82,255	3,787	82,064	-0,191	
520	3,768	81,750	-0,179	3,500	81,929	-0,179	3,500	81,929	-3,00	81,813	82,034	-0,221	3,500	81,929	-3,00	3,500	81,929	-0,052	3,500	81,929	3,577	81,877	-0,052	
521	3,779	81,417	-0,186	3,500	81,603	-0,186	3,500	81,603	-3,00	81,425	81,708	-0,283	3,500	81,603	-3,00	3,500	81,603	-0,069	3,500	81,603	3,603	81,534	-0,069	
522	3,807	81,072	-0,205	3,500	81,277	-0,205	3,500	81,277	-3,00	81,086	81,382	-0,296	3,500	81,277	-3,00	3,500	81,277	-0,104	3,500	81,277	3,656	81,173	-0,104	
522+7,00	3,743	81,001	-0,162	3,500	81,163	-0,162	3,500	81,163	-3,00	81,087	81,268	-0,181	3,500	81,163	-3,00	3,500	81,163	-0,059	3,500	81,163	3,588	81,104	-0,059	
523	3,729	80,836	-0,152	3,500	80,988	-0,152	3,500	80,988	-3,00	80,996	81,093	-0,097	3,500	80,988	-3,00	3,500	80,988	0,033	3,500	80,988	3,522	81,021	0,033	
523+7,00	3,711	80,782	-0,141	3,500	80,923	-0,141	3,500	80,923	-3,00	80,802	81,028	-0,226	3,500	80,923	-3,00	3,500	80,923	0,044	3,500	80,923	3,530	80,967	0,044	
524	3,621	80,742	-0,081	3,500	80,823	-0,081	3,500	80,823	-3,00	80,753	80,928	-0,175	3,500	80,823	-3,00	3,500	80,823	-0,107	3,500	80,823	3,660	80,716	-0,107	
525	3,671	80,556	-0,114	3,500	80,670	-0,114	3,500	80,670	-3,00	80,567	80,775	-0,208	3,500	80,670	-3,00	3,500	80,670	-0,131	3,500	80,670	3,696	80,539	-0,131	
526	3,742	80,355	-0,161	3,500	80,516	-0,161	3,500	80,516	-3,00	80,336	80,621	-0,285	3,500	80,516	-3,00	3,500	80,516	-0,086	3,500	80,516	3,630	80,430	-0,086	
527	3,675	80,245	-0,117	3,500	80,362	-0,117	3,500	80,362	-3,00	80,194	80,467	-0,273	3,500	80,362	-3,00	3,500	80,362	-0,086	3,500	80,362	3,629	80,276	-0,086	
528	3,657	80,104	-0,105	3,500	80,209	-0,105	3,500	80,209	-3,00	80,126	80,314	-0,188	3,500	80,209	-3,00	3,500	80,209	-0,063	3,500	80,209	3,595	80,146	-0,063	
528+18,5	3,681	79,945	-0,121	3,500	80,066	-0,121	3,500	80,066	-3,00	79,974	80,171	-0,197	3,500	80,066	-3,00	3,500	80,066	-0,081	3,500	80,066	3,621	79,985	-0,081	



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Governador do Estado do Ceará

Lucídio Carneiro
Engº Civil - CREA 100-0
01/11/2014

3 - CÁLCULO DOS VOLUMES

VOLUME DE PROJETO



RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
0	0,378	0,378	0,000	0,000					
0+5,000	1,391	1,769	0,000	0,000	2,500	4,423	4,423	0,000	0,000
1	0,040	1,809	0,869	0,869	7,500	10,733	15,156	6,518	6,518
1+14,781	0,214	2,023	0,569	1,438	7,391	1,877	17,033	10,628	17,146
2	0,291	2,314	0,341	1,779	2,610	1,318	18,351	2,375	19,521
2+18,514	0,596	2,910	0,000	1,779	9,257	8,211	26,562	3,157	22,678
3	0,762	3,672	0,000	1,779	0,743	1,009	27,571	0,000	22,678
4	1,997	5,669	0,000	1,779	10,000	27,590	55,161	0,000	22,678
4+12,622	1,633	7,302	0,000	1,779	6,311	22,909	78,070	0,000	22,678
5	1,160	8,462	0,000	1,779	3,689	10,303	88,373	0,000	22,678
5+5,000	0,900	9,362	0,000	1,779	2,500	5,150	93,523	0,000	22,678
	0,521	9,883	0,149	1,928	7,500	10,658	104,181	1,117	23,795
6+18,333	0,142	10,025	0,211	2,139	9,167	6,077	110,258	3,300	27,095
7	0,156	10,181	0,187	2,326	0,834	0,248	110,506	0,332	27,427
8	0,094	10,275	0,219	2,545	10,000	2,500	113,006	4,060	31,487
8+18,292	0,011	10,286	0,395	2,940	9,146	0,960	113,966	5,616	37,103
9	0,010	10,296	0,364	3,304	0,854	0,018	113,984	0,648	37,751
10	0,000	10,296	0,590	3,894	10,000	0,100	114,084	9,540	47,291
11	0,163	10,459	0,640	4,534	10,000	1,630	115,714	12,300	59,591
12	0,274	10,733	0,782	5,316	10,000	4,370	120,084	14,220	73,811
13	0,260	10,993	0,106	5,422	10,000	5,340	125,424	8,880	82,691
14	0,610	11,603	0,000	5,422	10,000	8,700	134,124	1,060	83,751
14+13,000	0,199	11,802	0,403	5,825	6,500	5,258	139,382	2,620	86,371
15	0,120	11,922	0,607	6,432	3,500	1,117	140,499	3,535	89,906
13,000	0,139	12,061	0,338	6,770	6,500	1,684	142,183	6,143	96,049
16	0,171	12,232	0,265	7,035	3,500	1,085	143,268	2,111	98,160
16+14,289	0,188	12,420	0,076	7,111	7,145	2,565	145,833	2,436	100,596
17	0,254	12,674	0,019	7,130	2,856	1,262	147,095	0,271	100,867
17+13,000	0,039	12,713	0,541	7,671	6,500	1,904	148,999	3,640	104,507
18	0,000	12,713	0,897	8,568	3,500	0,137	149,136	5,033	109,540
18+13,000	0,000	12,713	0,522	9,090	6,500	0,000	149,136	9,223	118,763
18+14,260	0,000	12,713	0,437	9,527	0,630	0,000	149,136	0,604	119,367
19	0,039	12,752	0,377	9,904	2,870	0,112	149,248	2,336	121,703
20	0,185	12,937	0,117	10,021	10,000	2,240	151,488	4,940	126,643
21	0,461	13,398	0,015	10,036	10,000	6,460	157,948	1,320	127,963
22	0,238	13,636	0,735	10,771	10,000	6,990	164,938	7,500	135,463
22+14,000	0,406	14,042	1,048	11,819	7,000	4,508	169,446	12,481	147,944
23	1,084	15,126	0,218	12,037	3,000	4,470	173,916	3,798	151,742
					7,000	22,456	196,372	1,526	153,268

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
23+14,000	2,124	17,250	0,000	12,037					
24	1,023	18,273	0,000	12,037	3,000	9,441	205,813	0,000	153,268
25	0,145	18,418	0,161	12,198	10,000	11,680	217,493	1,610	154,878
25+19,022	0,135	18,553	0,416	12,614	9,511	2,663	220,156	5,488	160,366
26	0,146	18,699	0,399	13,013	0,489	0,137	220,293	0,399	160,765
27	0,402	19,101	0,422	13,435	10,000	5,480	225,773	8,210	168,975
27+18,999	0,404	19,505	0,464	13,899	9,500	7,657	233,430	8,417	177,392
28	0,404	19,909	0,448	14,347	0,501	0,404	233,834	0,456	177,848
28+10,000	0,375	20,284	0,278	14,625	5,000	3,895	237,729	3,630	181,478
29	1,177	21,461	0,000	14,625	5,000	7,760	245,489	1,390	182,868
29+10,000	0,546	22,007	0,017	14,642	5,000	8,615	254,104	0,085	182,953
	0,662	22,669	0,000	14,642	5,000	6,040	260,144	0,085	183,038
30+2,368	0,691	23,360	0,000	14,642	1,184	1,602	261,746	0,000	183,038
31	0,415	23,775	0,168	14,810	8,816	9,750	271,496	1,481	184,519
32	0,029	23,804	1,209	16,019	10,000	4,440	275,936	13,770	198,289
32+2,331	0,049	23,853	1,177	17,196	1,166	0,091	276,027	2,781	201,070
33	0	23,853	1,29	18,486	8,835	0,433	276,460	21,795	222,865
34	0,108	23,961	0,516	19,002	10,000	1,080	277,540	18,060	240,925
35	0,691	24,65	0	19,002	10,000	7,990	285,530	5,160	246,085
35+10,000	0,954	25,606	0,000	19,002	5,000	8,225	293,755	0,000	246,085
36	0,128	25,73	0,26	19,262	5,000	5,410	299,165	1,300	247,385
36+10,000	1,693	27,427	0,000	19,262	5,000	9,105	308,270	1,300	248,685
37	1,669	29,10	0	19,262	5,000	16,810	325,080	0,000	248,685
37+10,982	0,535	29,631	0,000	19,262	5,491	12,102	337,182	0,000	248,685
	0,035	29,67	0,474	19,736	4,509	2,570	339,752	2,137	250,822
39	0,007	29,673	0,659	20,395	10,000	0,420	340,172	11,330	262,152
39+10,000	0,066	29,74	0,848	21,243	5,000	0,365	340,537	7,535	269,687
40	0,204	29,943	0,767	22,010	5,000	1,350	341,887	8,075	277,762
40+10,000	0	29,94	1,122	23,132	5,000	1,020	342,907	9,445	287,207
41	0,554	30,497	0,038	23,170	5,000	2,770	345,677	5,800	293,007
41+12,991	0,784	31,28	0,002	23,172	6,496	8,691	354,368	0,260	293,267
41+18,500	0,788	32,069	0,019	23,191	2,755	4,330	358,698	0,058	293,325
42	0,756	32,83	0,028	23,219	0,750	1,158	359,856	0,035	293,360
42+18,500	0,910	33,735	0,000	23,219	9,250	15,410	375,266	0,259	293,619
43	0,846	34,58	0	23,219	0,750	1,317	376,583	0,000	293,619
44	0,328	34,909	0,087	23,306	10,000	11,740	388,323	0,870	294,489
44+2,347	0,305	35,21	0,111	23,417	1,174	0,743	389,066	0,232	294,721
45	0,575	35,789	0,215	23,632	8,827	7,767	396,833	2,877	297,598
					10,000	6,820	403,653	8,750	306,348

8

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
72	0,572	46,17	0,194	48,675					
					0,963	0,924	511,649	0,458	644,709
72+1,925	0,388	46,557	0,282	48,957					
					9,038	5,567	517,216	6,453	651,162
73	0,228	46,79	0,432	49,389					
					7,000	1,827	519,043	4,956	656,118
73+14,000	0,033	46,818	0,276	49,665					
					3,000	0,102	519,145	1,983	658,101
74	0,001	46,82	0,385	50,05					
					7,000	0,007	519,152	9,226	667,327
74+14,000	0,000	46,819	0,933	50,983					
					3,000	0,000	519,152	5,259	672,586
75	0	46,82	0,82	51,803					
					10,000	0,000	519,152	21,350	693,936
76	0,000	46,819	1,315	53,118					
					10,000	0,000	519,152	35,540	729,476
77	0	46,82	2,239	55,357					
					10,000	0,000	519,152	33,620	763,096
78	0,000	46,819	1,123	56,480					
					7,500	0,075	519,227	12,015	775,111
78+15,000	0,01	46,83	0,479	56,959					
					2,500	0,130	519,357	2,072	777,183
	0,042	46,871	0,350	57,309					
					7,500	2,100	521,457	3,825	781,008
79+15,000	0,238	47,11	0,16	57,469					
					2,500	0,870	522,327	1,258	782,266
80	0,110	47,219	0,343	57,812					
					10,000	3,970	526,297	4,460	786,726
81	0,287	47,51	0,103	57,915					
					10,000	6,430	532,727	5,890	792,616
82	0,356	47,862	0,486	58,401					
					8,539	3,296	536,023	10,725	803,341
82+17,078	0,03	47,89	0,77	59,171					
					1,461	0,073	536,096	2,416	805,757
83	0,020	47,912	0,884	60,055					
					10,000	0,200	536,296	21,210	826,967
84	0	47,91	1,237	61,292					
					8,504	0,187	536,483	17,305	844,272
84+17,007	0,022	47,934	0,798	62,090					
					1,497	0,084	536,567	2,195	846,467
85	0,034	47,97	0,669	62,759					
					10,000	6,790	543,357	6,690	853,157
86	0,645	48,613	0,000	62,759					
					2,500	4,165	547,522	0,000	853,157
86+5,000	1,021	49,63	0	62,759					
					7,500	8,745	556,267	8,572	861,729
87	0,145	49,779	1,143	63,902					
					2,500	0,600	556,867	3,460	865,189
	5,000	49,87	0,241	64,143					
					7,500	3,990	560,857	1,807	866,996
88	0,437	50,311	0,000	64,143					
					10,000	6,580	567,437	0,900	867,896
89	0,221	50,53	0,09	64,233					
					4,614	1,938	569,375	1,301	869,197
89+9,228	0,199	50,731	0,192	64,425					
					5,386	1,993	571,368	1,907	871,104
90	0,171	50,90	0,162	64,587					
					10,000	2,030	573,398	2,650	873,754
91	0,032	50,934	0,103	64,690					
					10,000	0,330	573,728	6,640	880,394
92	0,001	50,94	0,561	65,251					
					10,000	0,020	573,748	14,490	894,884
93	0,001	50,936	0,888	66,139					
					4,536	0,005	573,753	8,655	903,539
93+9,072	0	50,94	1,02	67,159					
					5,464	0,016	573,769	9,447	912,986
94	0,003	50,939	0,709	67,868					
					10,000	0,550	574,319	11,480	924,466
95	0,052	50,99	0,439	68,307					
					10,000	2,130	576,449	6,420	930,886
96	0,161	51,152	0,203	68,510					
					10,000	4,190	580,639	2,480	933,366
97	0,258	51,41	0,045	68,56					
					5,000	2,740	583,379	0,350	933,716
97+10,000	0,290	51,700	0,025	68,580					
					5,000	2,305	585,684	0,435	934,151

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VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
98	0,171	51,87	0,062	68,64					
98+10,000	0,207	52,078	0,014	68,656	5,000	1,890	587,574	0,380	934,531
99	0,033	52,11	0,404	69,06	5,000	1,200	588,774	2,090	936,621
100	0,075	52,186	0,161	69,221	10,000	1,080	589,854	5,650	942,271
100+16,494	0,05	52,24	0,311	69,53	8,247	1,031	590,885	3,893	946,164
101	0,045	52,281	0,345	69,877	1,753	0,167	591,052	1,150	947,314
102	0,136	52,42	0,184	70,06	10,000	1,810	592,862	5,290	952,604
102+16,475	0,267	52,684	0,016	70,077	8,238	3,320	596,182	1,647	954,251
103	0,401	53,09	0,099	70,18	1,763	1,177	597,359	0,203	954,454
104	0,657	53,742	0,190	70,366	10,000	10,580	607,939	2,890	957,344
104+2,000	0,914	54,66	0,072	70,44	1,000	1,571	609,510	0,262	957,606
	1,535	56,191	0,000	70,438	9,000	22,041	631,551	0,648	958,254
105+2,000	1,337	57,53	0	70,44	1,000	2,872	634,423	0,000	958,254
105+3,304	1,192	58,720	0,000	70,438	0,652	1,649	636,072	0,000	958,254
106	0	58,72	0,649	71,09	8,348	9,951	646,023	5,418	963,672
107	0,000	58,720	0,466	71,553	10,000	0,000	646,023	11,150	974,822
107+10,000	0,117	58,84	0,174	71,73	5,000	0,585	646,608	3,200	978,022
108	0,193	59,030	0,173	71,900	5,000	1,550	648,158	1,735	979,757
108+10,000	0,248	59,278	0,009	71,909	5,000	2,205	650,363	0,910	980,667
109	0,150	59,428	0,188	72,097	5,000	1,990	652,353	0,985	981,652
110	0,118	59,546	0,250	72,347	10,000	2,680	655,033	4,380	986,032
110+10,000	0,092	59,638	0,308	72,655	5,000	1,050	656,083	2,790	988,822
111	0,164	59,802	0,512	73,167	5,000	1,280	657,363	4,100	992,922
111+3,090	0,205	60,007	0,552	73,719	1,545	0,570	657,933	1,644	994,566
+10,000	0,393	60,400	0,624	74,343	3,455	2,066	659,999	4,063	998,629
112	0,217	60,617	1,386	75,729	5,000	3,050	663,049	10,050	1.008,679
113	0,000	60,617	1,512	77,241	10,000	2,170	665,219	28,980	1.037,659
114	0,000	60,617	2,511	79,752	10,000	0,000	665,219	40,230	1.077,889
115	0,000	60,617	2,706	82,458	10,000	0,000	665,219	52,170	1.130,059
115+10,000	0,000	60,617	1,668	84,126	5,000	0,000	665,219	21,870	1.151,929
116	0,082	60,699	0,085	84,211	5,000	0,410	665,629	8,765	1.160,694
116+10,000	0,111	60,810	0,025	84,236	5,000	0,965	666,594	0,550	1.161,244
117	0,168	60,978	0,079	84,315	5,000	1,395	667,989	0,520	1.161,764
117+8,101	0,132	61,110	0,124	84,439	4,051	1,215	669,204	0,822	1.162,586
118	0,134	61,244	0,083	84,522	5,950	1,583	670,787	1,232	1.163,818
119	0,396	61,640	0,000	84,522	10,000	5,300	676,087	0,830	1.164,648
120	0,382	62,022	0,004	84,526	10,000	7,780	683,867	0,040	1.164,688
121	0,108	62,130	0,224	84,750	10,000	4,900	688,767	2,280	1.166,968
					3,987	0,766	689,533	2,041	1.169,009

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
121+7,974	0,084	62,214	0,288	85,038					
121+10,000	0,084	62,298	0,301	85,339	1,013	0,170	689,703	0,597	1.169,606
122	0,101	62,399	0,309	85,648	5,000	0,925	690,628	3,050	1.172,656
122+10,000	0,021	62,420	0,506	86,154	5,000	0,610	691,238	4,075	1.176,731
123	0,000	62,420	1,383	87,537	5,000	0,105	691,343	9,445	1.186,176
124	0,028	62,448	0,461	87,998	10,000	0,280	691,623	18,440	1.204,616
125	0,004	62,452	0,603	88,601	10,000	0,320	691,943	10,640	1.215,256
125+10,000	0,078	62,530	0,326	88,927	5,000	0,410	692,353	4,645	1.219,901
126	0,963	63,493	0,000	88,927	5,000	5,205	697,558	1,630	1.221,531
126+7,894	0,926	64,419	0,000	88,927	3,947	7,456	705,014	0,000	1.221,531
126+10,000	0,649	65,068	0,006	88,933	1,053	1,658	706,672	0,006	1.221,537
	0,258	65,326	0,888	89,821	5,000	4,535	711,207	4,470	1.226,007
128	0,778	66,104	0,592	90,413	10,000	10,360	721,567	14,800	1.240,807
128+10,000	1,550	67,654	0,367	90,780	5,000	11,640	733,207	4,795	1.245,602
129	0,071	67,725	1,601	92,381	5,000	8,105	741,312	9,840	1.255,442
129+10,000	0,000	67,725	8,263	100,644	5,000	0,355	741,667	49,320	1.304,762
130	0,110	67,835	1,482	102,126	5,000	0,550	742,217	48,725	1.353,487
131	0,445	68,280	0,139	102,265	10,000	5,550	747,767	16,210	1.369,697
131+10,000	0,460	68,740	0,098	102,363	5,000	4,525	752,292	1,185	1.370,882
132	0,380	69,120	0,104	102,467	5,000	4,200	756,492	1,010	1.371,892
132+2,381	0,386	69,506	0,142	102,609	1,191	0,912	757,404	0,293	1.372,185
132+10,000	0,353	69,859	0,409	103,018	3,810	2,815	760,219	2,099	1.374,284
133	0,407	70,266	0,580	103,598	5,000	3,800	764,019	4,945	1.379,229
133+10,000	0,422	70,688	0,719	104,317	5,000	4,145	768,164	6,495	1.385,724
	0,375	71,063	0,280	104,597	5,000	3,985	772,149	4,995	1.390,719
134+10,000	0,381	71,444	0,753	105,350	5,000	3,780	775,929	5,165	1.395,884
135	0,439	71,883	1,338	106,688	5,000	4,100	780,029	10,455	1.406,339
136	0,313	72,196	0,927	107,615	10,000	7,520	787,549	22,650	1.428,989
136+10,000	0,665	72,861	1,228	108,843	5,000	4,890	792,439	10,775	1.439,764
137	0,669	73,530	1,581	110,424	5,000	6,670	799,109	14,045	1.453,809
137+10,000	0,486	74,016	1,457	111,881	5,000	5,775	804,884	15,190	1.468,999
138	1,751	75,767	1,035	112,916	5,000	11,185	816,069	12,460	1.481,459
138+14,078	0,921	76,688	0,282	113,198	7,039	18,808	834,877	9,270	1.490,729
139	0,307	76,995	0,418	113,616	2,961	3,636	838,513	2,073	1.492,802
140	0,000	76,995	2,672	116,288	10,000	3,070	841,583	30,900	1.523,702
141	0	77,00	2,013	118,301	10,000	0,000	841,583	46,850	1.570,552
142	1,844	78,839	0,083	118,384	10,000	18,440	860,023	20,960	1.591,512
143	0,82	79,66	0	118,384	10,000	26,640	886,663	0,830	1.592,342
					1,582	2,781	889,444	0,000	1.592,342

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VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
143+3,164	0,938	80,597	0,000	118,384					
					3,418	7,328	896,772	0,014	1.592,356
143+10,000	1,206	81,80	0,004	118,388					
					5,000	13,495	910,267	0,630	1.592,986
144	1,493	83,296	0,122	118,510					
					5,000	15,485	925,752	0,740	1.593,726
144+10,000	1,604	84,90	0,026	118,536					
					5,000	12,675	938,427	0,740	1.594,466
145	0,931	85,831	0,122	118,658					
					10,000	16,860	955,287	5,990	1.600,456
146	0,755	86,59	0,477	119,135					
					10,000	13,970	969,257	12,960	1.613,416
147	0,642	87,228	0,819	119,954					
					10,000	11,470	980,727	11,270	1.624,686
148	0,505	87,73	0,308	120,262					
					10,000	6,690	987,417	6,810	1.631,496
149	0,164	87,897	0,373	120,635					
					10,000	5,240	992,657	4,790	1.636,286
150	0,36	88,26	0,106	120,741					
					10,000	6,140	998,797	8,350	1.644,636
151	0,254	88,511	0,729	121,470					
					1,555	0,709	999,506	2,510	1.647,146
+3,110	0,202	88,71	0,885	122,355					
					8,445	3,623	1.003,129	12,887	1.660,033
152	0,227	88,940	0,641	122,996					
					10,000	2,290	1.005,419	13,010	1.673,043
153	0,002	88,94	0,66	123,656					
					5,000	3,640	1.009,059	3,300	1.676,343
153+10,000	0,726	89,668	0,000	123,656					
					5,000	5,835	1.014,894	0,000	1.676,343
154	0,441	90,11	0	123,656					
					5,000	3,355	1.018,249	2,150	1.678,493
154+10,000	0,230	90,339	0,430	124,086					
					4,675	1,454	1.019,703	4,142	1.682,635
154+19,349	0,081	90,42	0,456	124,542					
					0,326	0,049	1.019,752	0,294	1.682,929
155	0,070	90,490	0,448	124,990					
					10,000	1,520	1.021,272	8,530	1.691,459
156	0,082	90,57	0,405	125,395					
					5,000	0,875	1.022,147	3,045	1.694,504
156+10,000	0,093	90,665	0,204	125,599					
					5,000	0,930	1.023,077	1,885	1.696,389
157	0,093	90,76	0,173	125,772					
					5,000	0,495	1.023,572	3,525	1.699,914
157+10,000	0,006	90,764	0,532	126,304					
					5,000	0,030	1.023,602	5,640	1.705,554
158	0	90,76	0,596	126,9					
					10,000	0,000	1.023,602	17,130	1.722,684
159	0,000	90,764	1,117	128,017					
					5,000	0,480	1.024,082	9,385	1.732,069
159+10,000	0,096	90,86	0,76	128,777					
					5,000	1,800	1.025,882	5,365	1.737,434
160	0,264	91,124	0,313	129,090					
					5,000	2,975	1.028,857	2,335	1.739,769
160+10,000	0,331	91,46	0,154	129,244					
					5,000	4,550	1.033,407	0,770	1.740,539
161	0,579	92,034	0,000	129,244					
					10,000	12,600	1.046,007	0,510	1.741,049
162	0,681	92,72	0,051	129,295					
					10,000	15,550	1.061,557	1,690	1.742,739
163	0,874	93,589	0,118	129,413					
					5,000	9,490	1.071,047	0,590	1.743,329
163+10,000	1,024	94,61	0	129,413					
					5,000	8,540	1.079,587	0,240	1.743,569
164	0,684	95,297	0,048	129,461					
					5,000	6,510	1.086,097	0,915	1.744,484
164+10,000	0,618	95,92	0,135	129,596					
					5,000	5,385	1.091,482	0,880	1.745,364
165	0,459	96,374	0,041	129,637					
					7,838	4,036	1.095,518	1,473	1.746,837
165+15,675	0,056	96,43	0,147	129,784					
					2,163	0,186	1.095,704	0,941	1.747,778
166	0,030	96,460	0,288	130,072					
					10,000	1,640	1.097,344	7,140	1.754,918
167	0,134	96,59	0,426	130,498					
					10,000	4,820	1.102,164	6,760	1.761,678



VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
168	0,348	96,942	0,250	130,748					
					7,250	5,126	1.107,290	3,857	1.765,535
168+14,500	0,359	97,30	0,282	131,03					
					2,750	1,675	1.108,965	1,840	1.767,375
169	0,250	97,551	0,387	131,417					
					7,250	2,740	1.111,705	4,444	1.771,819
169+14,500	0,128	97,68	0,226	131,643					
					2,750	0,817	1.112,522	0,701	1.772,520
170	0,169	97,848	0,029	131,672					
					10,000	3,280	1.115,802	1,630	1.774,150
171	0,159	98,01	0,134	131,806					
					5,500	1,023	1.116,825	3,019	1.777,169
171+11,000	0,027	98,034	0,415	132,221					
					4,500	0,202	1.117,027	3,965	1.781,134
172	0,018	98,05	0,466	132,687					
					5,500	0,600	1.117,627	4,433	1.785,567
172+11,000	0,091	98,143	0,340	133,027					
					4,500	3,353	1.120,980	1,530	1.787,097
173	0,654	98,80	0	133,027					
					10,000	8,010	1.128,990	0,780	1.787,877
174	0,147	98,944	0,078	133,105					
					6,250	2,431	1.131,421	0,963	1.788,840
174+12,500	0,242	99,19	0,076	133,181					
					3,750	1,680	1.133,101	0,960	1.789,800
175	0,206	99,392	0,180	133,361					
					6,250	3,131	1.136,232	2,131	1.791,931
175+12,500	0,295	99,69	0,161	133,522					
					3,750	1,958	1.138,190	1,969	1.793,900
176	0,227	99,914	0,364	133,886					
					10,000	4,200	1.142,390	5,430	1.799,330
177	0,193	100,11	0,179	134,065					
					8,250	12,779	1.155,169	1,477	1.800,807
177+16,500	1,356	101,463	0,000	134,065					
					1,750	5,143	1.160,312	0,000	1.800,807
178	1,583	103,05	0	134,065					
					8,250	15,881	1.176,193	2,723	1.803,530
178+16,500	0,342	103,388	0,330	134,395					
					1,750	1,059	1.177,252	1,075	1.804,605
179	0,263	103,65	0,284	134,679					
					10,000	5,910	1.183,162	4,040	1.808,645
180	0,328	103,979	0,120	134,799					
					2,712	1,331	1.184,493	0,713	1.809,358
180+5,423	0,163	104,14	0,143	134,942					
					7,289	1,210	1.185,703	6,873	1.816,231
181	0,003	104,145	0,800	135,742					
					6,500	0,182	1.185,885	12,682	1.828,913
181+13,000	0,025	104,17	1,151	136,893					
					2,451	0,402	1.186,287	4,436	1.833,349
181+17,902	0,139	104,309	0,659	137,552					
					1,049	0,441	1.186,728	1,061	1.834,410
182	0,281	104,59	0,352	137,904					
					10,000	8,650	1.195,378	4,220	1.838,630
183	0,584	105,174	0,070	137,974					
					1,500	1,440	1.196,818	0,489	1.839,119
183+3,000	0,376	105,55	0,256	138,23					
					3,500	5,033	1.201,851	3,147	1.842,266
183+10,000	1,062	106,612	0,643	138,873					
					5,000	7,940	1.209,791	7,175	1.849,441
184	0,526	107,14	0,792	139,665					
					10,000	5,430	1.215,221	11,290	1.860,731
185	0,017	107,155	0,337	140,002					
					10,000	11,660	1.226,881	3,370	1.864,101
186	1,149	108,30	0	140,002					
					10,000	14,130	1.241,011	5,050	1.869,151
187	0,264	108,568	0,505	140,507					
					2,000	0,998	1.242,009	1,870	1.871,021
187+4,000	0,235	108,80	0,43	140,937					
					8,000	3,568	1.245,577	4,216	1.875,237
188	0,211	109,014	0,097	141,034					
					6,440	1,397	1.246,974	3,052	1.878,289
188+12,879	0,006	109,02	0,377	141,411					
					3,561	0,021	1.246,995	4,298	1.882,587
189	0,000	109,020	0,830	142,241					
					10,000	0,670	1.247,665	13,400	1.895,987
190	0,067	109,09	0,51	142,751					
					2,000	0,146	1.247,811	2,308	1.898,295

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
190+4,000	0,006	109,093	0,644	143,395					
191	0	109,09	1,288	144,683	8,000	0,048	1.247,859	15,456	1.913,751
192	0,020	109,113	1,444	146,127	10,000	0,200	1.248,059	27,320	1.941,071
193	0	109,11	1,667	147,794	10,000	0,200	1.248,259	31,110	1.972,181
194	0,006	109,119	0,292	148,086	10,000	0,060	1.248,319	19,590	1.991,771
195	0	109,12	0,701	148,787	10,000	0,060	1.248,379	9,930	2.001,701
196	0,001	109,120	0,604	149,391	10,000	0,010	1.248,389	13,050	2.014,751
196+10,000	0,05	109,17	0,481	149,872	5,000	0,255	1.248,644	5,425	2.020,176
197	0,135	109,305	0,265	150,137	5,000	0,925	1.249,569	3,730	2.023,906
197+10,000	0,136	109,44	0,134	150,271	5,000	1,355	1.250,924	1,995	2.025,901
198	0,008	109,449	0,159	150,430	5,000	0,720	1.251,644	1,465	2.027,366
199	0,02	109,47	0,056	150,486	10,000	0,280	1.251,924	2,150	2.029,516
200	0,136	109,605	0,016	150,502	10,000	1,560	1.253,484	0,720	2.030,236
200+8,500	0,221	109,83	0,081	150,583	4,250	1,517	1.255,001	0,412	2.030,648
201	0,265	110,091	0,183	150,766	5,750	2,794	1.257,795	1,518	2.032,166
201+8,500	0,074	110,17	0,27	151,04	4,250	1,441	1.259,236	1,925	2.034,091
202	0,027	110,192	0,473	151,509	5,750	0,581	1.259,817	4,272	2.038,363
203	0	110,19	0,468	151,98	10,000	0,270	1.260,087	9,410	2.047,773
204	0,003	110,195	0,428	152,405	10,000	0,030	1.260,117	8,960	2.056,733
204+9,895	0,15	110,35	0,094	152,50	4,948	0,757	1.260,874	2,583	2.059,316
205	0,628	110,973	0,000	152,499	5,053	3,931	1.264,805	0,475	2.059,791
206	0,249	111,22	0,079	152,58	10,000	8,770	1.273,575	0,790	2.060,581
207	0,136	111,358	0,052	152,630	10,000	3,850	1.277,425	1,310	2.061,891
207+6,500	0	111,36	0,842	153,47	3,250	0,442	1.277,867	2,906	2.064,797
208	0,021	111,379	0,494	153,966	6,750	0,142	1.278,009	9,018	2.073,815
208+6,500	0,244	111,62	0,02	153,99	3,250	0,861	1.278,870	1,671	2.075,486
208+19,042	0,227	111,850	0,235	154,221	6,271	2,954	1.281,824	1,599	2.077,085
209	0,132	111,98	0,442	154,66	0,479	0,172	1.281,996	0,324	2.077,409
209+1,986	0,036	112,018	0,953	155,616	0,993	0,167	1.282,163	1,385	2.078,794
210	0	112,02	1,892	157,51	9,007	0,324	1.282,487	25,625	2.104,419
210+10,000	0,000	112,018	0,608	158,116	5,000	0,000	1.282,487	12,500	2.116,919
211	0,242	112,26	0,027	158,14	5,000	1,210	1.283,697	3,175	2.120,094
211+5,767	0,000	112,260	1,736	159,879	2,884	0,698	1.284,395	5,084	2.125,178
211+10,000	0	112,26	3,445	163,32	2,117	0,000	1.284,395	10,966	2.136,144
212	0,000	112,260	7,849	171,173	5,000	0,000	1.284,395	56,470	2.192,614
212+12,686	0,000	112,260	6,502	177,675	6,343	0,000	1.284,395	91,028	2.283,642
213	0,000	112,260	5,264	182,939	3,657	0,000	1.284,395	43,028	2.326,670
213+10,000	0,000	112,260	2,676	185,615	5,000	0,000	1.284,395	39,700	2.366,370
					5,000	0,060	1.284,455	17,015	2.383,385

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
214	0,012	112,272	0,727	186,342					
					5,000	5,620	1.290,075	3,635	2.387,020
214+10,000	1,112	113,384	0,000	186,342					
					0,722	1,874	1.291,949	0,000	2.387,020
214+11,444	1,483	114,867	0,000	186,342					
					4,278	11,717	1.303,666	0,000	2.387,020
215	1,256	116,123	0,000	186,342					
					10,000	12,560	1.316,226	19,570	2.406,590
216	0,000	116,123	1,957	188,299					
					1,358	0,005	1.316,231	5,082	2.411,672
216+2,716	0,004	116,127	1,785	190,084					
					8,642	3,794	1.320,025	24,103	2.435,775
217	0,435	116,562	1,004	191,088					
					10,000	12,670	1.332,695	10,650	2.446,425
218	0,832	117,394	0,061	191,149					
					6,879	10,546	1.343,241	0,502	2.446,927
218+13,758	0,701	118,095	0,012	191,161					
					3,121	3,989	1.347,230	0,072	2.446,999
219	0,577	118,672	0,011	191,172					
					9,250	9,629	1.356,859	0,231	2.447,230
219+18,500	0,464	119,136	0,014	191,186					
					0,750	0,608	1.357,467	0,028	2.447,258
)	0,347	119,483	0,023	191,209					
					9,250	5,680	1.363,147	0,629	2.447,887
220+18,500	0,267	119,750	0,045	191,254					
					0,750	0,461	1.363,608	0,047	2.447,934
221	0,347	120,097	0,018	191,272					
					10,000	5,700	1.369,308	0,190	2.448,124
222	0,223	120,320	0,001	191,273					
					10,000	2,230	1.371,538	14,150	2.462,274
223	0,000	120,320	1,414	192,687					
					0,250	0,000	1.371,538	0,697	2.462,971
223+0,500	0,000	120,320	1,375	194,062					
					9,750	1,287	1.372,825	26,364	2.489,335
224	0,132	120,452	1,329	195,391					
					0,250	0,064	1.372,889	0,671	2.490,006
224+0,500	0,123	120,575	1,356	196,747					
					9,750	1,228	1.374,117	30,605	2.520,611
225	0,003	120,578	1,783	198,530					
					10,000	0,030	1.374,147	35,880	2.556,491
226	0,000	120,578	1,805	200,335					
					2,500	0,070	1.374,217	7,980	2.564,471
226+5,000	0,028	120,606	1,387	201,722					
					7,500	1,777	1.375,994	16,260	2.580,731
227	0,209	120,815	0,781	202,503					
					2,500	0,955	1.376,949	3,708	2.584,439
227+5,000	0,173	120,988	0,702	203,205					
					7,500	2,467	1.379,416	9,412	2.593,851
3	0,156	121,144	0,553	203,758					
					10,000	2,460	1.381,876	11,540	2.605,391
229	0,090	121,234	0,601	204,359					
					10,000	2,430	1.384,306	8,200	2.613,591
230	0,153	121,387	0,219	204,578					
					10,000	1,530	1.385,836	12,010	2.625,601
231	0,000	121,387	0,982	205,560					
					0,850	0,000	1.385,836	3,075	2.628,676
231+1,700	0,000	121,387	2,636	208,196					
					9,150	0,000	1.385,836	126,261	2.754,937
232	0,000	121,387	11,163	219,359					
					0,850	0,000	1.385,836	19,043	2.773,980
232+1,700	0,000	121,387	11,241	230,600					
					1,617	0,000	1.385,836	36,392	2.810,372
232+4,933	0,000	121,387	11,272	241,872					
					7,534	0,000	1.385,836	100,926	2.911,298
233	0,000	121,387	2,125	243,997					
					3,613	0,083	1.385,919	10,978	2.922,276
233+7,225	0,023	121,410	0,914	244,911					
					6,388	2,734	1.388,653	6,196	2.928,472
234	0,405	121,815	0,056	244,967					
					5,000	7,375	1.396,028	0,280	2.928,752
234+10,000	1,070	122,885	0,000	244,967					
					5,000	6,730	1.402,758	0,295	2.929,047
235	0,276	123,161	0,059	245,026					
					1,924	0,908	1.403,666	0,435	2.929,482
235+3,847	0,196	123,357	0,167	245,193					
					3,077	0,883	1.404,549	1,308	2.930,790

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Rubrica

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
235+10,000	0,091	123,448	0,258	245,451					
					5,000	0,455	1.405,004	6,135	2.936,925
236	0,000	123,448	0,969	246,420	10,000	0,000	1.405,004	121,710	3.058,635
237	0,000	123,448	11,202	257,622	5,818	0,000	1.405,004	163,414	3.222,049
237+11,635	0,000	123,448	16,888	274,510	4,183	0,000	1.405,004	138,211	3.360,260
238	0,000	123,448	16,157	290,667	10,000	0,000	1.405,004	255,570	3.615,830
239	0,000	123,448	9,400	300,067	10,000	0,000	1.405,004	125,590	3.741,420
240	0,000	123,448	3,159	303,226	8,159	1,207	1.406,211	30,170	3.771,590
240+16,317	0,148	123,596	0,539	303,765	1,842	0,486	1.406,697	1,584	3.773,174
241	0,116	123,712	0,321	304,086	10,000	1,160	1.407,857	42,720	3.815,894
242	0,000	123,712	3,951	308,037	10,000	0,000	1.407,857	91,740	3.907,634
243	0	123,712	5,223	313,26	2,000	0,000	1.407,857	18,572	3.926,206
+4,000	0,000	123,712	4,063	317,323	8,000	0,000	1.407,857	41,512	3.967,718
244	0	123,712	1,126	318,449	2,000	0,000	1.407,857	4,810	3.972,528
244+4,000	0,000	123,712	1,279	319,728	8,000	0,000	1.407,857	26,664	3.999,192
245	0	123,71	2,054	321,782	3,079	0,000	1.407,857	11,704	4.010,896
245+6,157	0,000	123,712	1,748	323,530	4,860	0,000	1.407,857	17,822	4.028,718
245+15,877	0	123,71	1,919	325,449	2,062	0,000	1.407,857	8,561	4.037,279
246	0,000	123,712	2,234	327,683	10,000	0,000	1.407,857	44,200	4.081,479
247	0	123,71	2,186	329,869	7,559	0,000	1.407,857	30,153	4.111,632
247+15,118	0,000	123,712	1,803	331,672	2,441	0,000	1.407,857	8,644	4.120,276
248	0	123,71	1,738	333,41	10,000	0,000	1.407,857	24,360	4.144,636
249	0,000	123,712	0,698	334,108	6,500	2,756	1.410,613	4,543	4.149,179
249+13,000	0,424	124,14	0,001	334,109	3,500	7,686	1.418,299	0,004	4.149,183
250	1,772	125,908	0,000	334,109	6,500	20,618	1.438,917	0,000	4.149,183
+13,000	1,4	127,31	0	334,109	3,500	5,953	1.444,870	0,004	4.149,187
251	0,301	127,609	0,001	334,110	10,000	3,010	1.447,880	15,190	4.164,377
252	0	127,61	1,518	335,628	10,000	0,000	1.447,880	41,030	4.205,407
253	0,000	127,609	2,585	338,213	10,000	0,000	1.447,880	54,950	4.260,357
254	0	127,61	2,91	341,123	10,000	0,000	1.447,880	55,710	4.316,067
255	0,000	127,609	2,661	343,784	10,000	0,000	1.447,880	49,190	4.365,257
256	0	127,61	2,258	346,042	10,000	0,000	1.447,880	32,540	4.397,797
257	0,000	127,609	0,996	347,038	5,000	0,000	1.447,880	8,315	4.406,112
257+10,000	0	127,61	0,667	347,705	5,000	0,000	1.447,880	7,105	4.413,217
258	0,000	127,609	0,754	348,459	5,000	0,000	1.447,880	6,680	4.419,897
258+10,000	0	127,61	0,582	349,041	5,000	0,000	1.447,880	5,990	4.425,887
259	0,000	127,609	0,616	349,657	10,000	0,510	1.448,390	13,760	4.439,647
260	0,051	127,66	0,76	350,417	10,000	3,530	1.451,920	14,840	4.454,487
261	0,302	127,962	0,724	351,141	10,000	6,520	1.458,440	11,790	4.466,277

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VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
262	0,35	128,31	0,455	351,596					
263	0,391	128,703	0,330	351,926	10,000	7,410	1.465,850	7,850	4.474,127
263+2,000	0,364	129,07	0,337	352,263	1,000	0,755	1.466,605	0,667	4.474,794
264	0,346	129,413	0,335	352,598	9,000	6,390	1.472,995	6,048	4.480,842
264+2,000	0,346	129,76	0,4	352,998	1,000	0,692	1.473,687	0,735	4.481,577
264+9,570	0,425	130,184	0,597	353,595	3,785	2,918	1.476,605	3,774	4.485,351
265	0,578	130,76	0,61	354,205	5,215	5,231	1.481,836	6,295	4.491,646
265+14,000	0,334	131,096	0,646	354,851	7,000	6,384	1.488,220	8,792	4.500,438
266	0,382	131,48	0,662	355,513	3,000	2,148	1.490,368	3,924	4.504,362
266+9,552	0,164	131,642	0,878	356,391	4,776	2,608	1.492,976	7,355	4.511,717
266+14,000	0,08	131,72	1,111	357,502	2,224	0,543	1.493,519	4,424	4.516,141
7	0,145	131,867	1,025	358,527	3,000	0,675	1.494,194	6,408	4.522,549
267+17,000	0,596	132,46	0,52	359,047	8,500	6,298	1.500,492	13,133	4.535,682
268	0,682	133,145	0,437	359,484	1,500	1,917	1.502,409	1,436	4.537,118
268+7,039	0,713	133,86	0,481	359,965	3,520	4,910	1.507,319	3,231	4.540,349
268+17,000	0,551	134,409	0,374	360,339	4,981	6,295	1.513,614	4,258	4.544,607
269	0,48	134,89	0,434	360,773	1,500	1,547	1.515,161	1,212	4.545,819
269+16,000	0,048	134,937	0,937	361,710	8,000	4,224	1.519,385	10,968	4.556,787
270	0	134,94	1,295	363,005	2,000	0,096	1.519,481	4,464	4.561,251
270+7,031	0,000	134,937	1,677	364,682	3,516	0,000	1.519,481	10,448	4.571,699
270+16,000	0	134,94	1,193	365,875	4,485	0,000	1.519,481	12,871	4.584,570
271	0,000	134,937	0,726	366,601	2,000	0,000	1.519,481	3,838	4.588,408
272	0,276	135,21	0,467	367,068	10,000	2,760	1.522,241	11,930	4.600,338
273	0,183	135,396	0,756	367,824	10,000	4,590	1.526,831	12,230	4.612,568
3+13,000	0,134	135,53	0,536	368,36	6,500	2,061	1.528,892	8,398	4.620,966
274	0,062	135,592	0,565	368,925	3,500	0,686	1.529,578	3,853	4.624,819
274+13,000	0,023	135,62	0,54	369,465	6,500	0,552	1.530,130	7,183	4.632,002
275	0,000	135,615	0,706	370,171	3,500	0,081	1.530,211	4,361	4.636,363
275+13,794	0	135,62	0,764	370,935	6,897	0,000	1.530,211	10,139	4.646,502
276	0,023	135,638	0,473	371,408	3,103	0,071	1.530,282	3,838	4.650,340
276+17,000	0,214	135,85	1,121	372,529	8,500	2,015	1.532,297	13,549	4.663,889
277	0,071	135,923	1,532	374,061	1,500	0,427	1.532,724	3,979	4.667,868
277+13,783	0,453	136,38	0,829	374,89	6,892	3,611	1.536,335	16,271	4.684,139
278	0,112	136,488	0,854	375,744	3,109	1,756	1.538,091	5,232	4.689,371
278+6,331	0,251	136,74	1,41	377,154	3,166	1,149	1.539,240	7,167	4.696,538
278+7,000	0,276	137,015	1,454	378,608	0,335	0,176	1.539,416	0,958	4.697,496
279	0,181	137,20	2,592	381,2	6,500	2,970	1.542,386	26,299	4.723,795
280	0,000	137,196	5,018	386,218	10,000	1,810	1.544,196	76,100	4.799,895
					1,000	0,000	1.544,196	10,242	4.810,137

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VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
280+2,000	0	137,20	5,224	391,442					
					2,125	0,000	1.544,196	23,429	4.833,566
280+6,249	0,000	137,196	5,804	397,246					
					6,876	8,044	1.552,240	39,905	4.873,471
281	1,17	138,37	0	397,246					
					1,000	3,192	1.555,432	0,000	4.873,471
281+2,000	2,022	140,388	0,000	397,246					
					6,375	15,670	1.571,102	3,092	4.876,563
281+14,750	0,436	140,82	0,485	397,731					
					2,625	1,769	1.572,871	4,762	4.881,325
282	0,238	141,062	1,329	399,060					
					4,000	0,952	1.573,823	15,856	4.897,181
282+8,000	0	141,06	2,635	401,695					
					6,000	0,000	1.573,823	40,362	4.937,543
283	0,000	141,062	4,092	405,787					
					4,000	0,000	1.573,823	24,272	4.961,815
283+8,000	0	141,06	1,976	407,763					
					3,348	0,000	1.573,823	12,218	4.974,033
283+14,695	0,000	141,062	1,674	409,437					
					2,653	0,000	1.573,823	9,496	4.983,529
284	0	141,06	1,906	411,343					
					10,000	0,000	1.573,823	49,010	5.032,539
285	0,000	141,062	2,995	414,338					
					10,000	0,920	1.574,743	37,900	5.070,439
286	0,092	141,15	0,795	415,133					
					9,250	2,220	1.576,963	7,752	5.078,191
286+18,500	0,148	141,302	0,043	415,176					
					0,750	0,175	1.577,138	0,197	5.078,388
287	0,085	141,39	0,219	415,395					
					10,000	7,250	1.584,388	7,210	5.085,598
288	0,640	142,027	0,502	415,897					
					10,000	11,790	1.596,178	14,550	5.100,148
289	0,539	142,57	0,953	416,85					
					4,250	6,103	1.602,281	6,367	5.106,515
289+8,500	0,897	143,463	0,545	417,395					
					5,750	9,988	1.612,269	6,308	5.112,823
290	0,84	144,30	0,552	417,947					
					5,500	7,040	1.619,309	17,644	5.130,467
290+11,000	0,440	144,743	2,656	420,603					
					4,500	3,776	1.623,085	26,325	5.156,792
291	0,399	145,14	3,194	423,797					
					5,500	4,505	1.627,590	31,839	5.188,631
291+11,000	0,420	145,562	2,595	426,392					
					4,500	3,532	1.631,122	19,638	5.208,269
292	0,365	145,93	1,769	428,161					
					2,126	1,507	1.632,629	6,884	5.215,153
292+4,251	0,344	146,271	1,470	429,631					
					3,375	2,217	1.634,846	8,672	5.223,825
293	0,313	146,58	1,1	430,731					
					4,500	1,755	1.636,601	12,060	5.235,885
293	0,077	146,661	1,580	432,311					
					5,500	1,903	1.638,504	13,645	5.249,530
293+11,000	0,269	146,93	0,901	433,212					
					4,500	6,332	1.644,836	4,482	5.254,012
294	1,138	148,068	0,095	433,307					
					2,125	6,155	1.650,991	0,219	5.254,231
294+4,249	1,759	149,83	0,008	433,315					
					7,876	30,313	1.681,304	0,063	5.254,294
295	2,090	151,917	0,000	433,315					
					10,000	37,430	1.718,734	0,000	5.254,294
296	1,653	153,57	0	433,315					
					10,000	25,510	1.744,244	2,400	5.256,694
297	0,898	154,468	0,240	433,555					
					6,250	11,319	1.755,563	6,106	5.262,800
297+12,500	0,913	155,38	0,737	434,29					
					3,750	7,223	1.762,786	4,770	5.267,570
298	1,013	156,394	0,535	434,827					
					6,250	12,031	1.774,817	4,681	5.272,251
298+12,500	0,912	157,31	0,214	435,04					
					3,750	5,104	1.779,921	2,400	5.274,651
299	0,449	157,755	0,426	435,467					
					10,000	6,110	1.786,031	14,520	5.289,171
300	0,162	157,92	1,026	436,49					
					10,000	3,300	1.789,331	17,100	5.306,271
301	0,168	158,085	0,684	437,177					
					10,000	1,680	1.791,011	22,240	5.328,511

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VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
302	0	158,09	1,54	438,72	5,000	0,000	1.791,011	19,040	5.347,551
302+10,000	0,000	158,085	2,268	440,985	5,000	0,000	1.791,011	20,440	5.367,991
303	0	158,09	1,82	442,81	5,000	6,545	1.797,556	20,420	5.388,411
303+10,000	1,309	159,394	2,264	445,069	2,500	7,938	1.805,494	5,665	5.394,076
303+15,000	1,866	161,26	0,002	445,07	2,500	10,880	1.816,374	0,005	5.394,081
304	2,486	163,746	0,000	445,071	9,653	23,997	1.840,371	77,002	5.471,083
304+19,306	0	163,75	7,977	453,05	0,347	0,000	1.840,371	5,592	5.476,675
305	0,000	163,746	8,138	461,186	10,000	0,000	1.840,371	169,660	5.646,335
306	0	163,75	8,828	470,01	9,652	0,000	1.840,371	98,532	5.744,867
306+19,303	0,000	163,746	1,381	471,395	0,349	0,000	1.840,371	0,905	5.745,772
307	0	163,75	1,216	472,61	10,000	4,940	1.845,311	12,160	5.757,932
307+5,000	0,494	164,240	0,000	472,611	2,500	4,128	1.849,439	0,000	5.757,932
308+5,000	1,157	165,40	0	472,61	7,500	38,858	1.888,297	0,000	5.757,932
309	4,024	169,421	0,000	472,611	10,000	55,820	1.944,117	0,000	5.757,932
310	1,558	170,979	0,000	472,611	5,000	11,260	1.955,377	0,000	5.757,932
310+10,000	0,694	171,673	0,000	472,611	5,000	4,630	1.960,007	0,830	5.758,762
311	0,232	171,905	0,166	472,777	5,000	1,395	1.961,402	3,270	5.762,032
311+10,000	0,047	171,952	0,488	473,265	5,000	0,560	1.961,962	4,595	5.766,627
312	0,065	172,017	0,431	473,696	10,000	1,210	1.963,172	8,230	5.774,857
313	0,056	172,073	0,392	474,088	10,000	3,500	1.966,672	5,530	5.780,387
314	0,294	172,367	0,161	474,249	10,000	6,220	1.972,892	5,720	5.786,107
315	0,328	172,695	0,411	474,660	10,000	6,080	1.978,972	10,180	5.796,287
316	0,280	172,975	0,607	475,267	5,000	2,975	1.981,947	4,415	5.800,702
316+10,000	0,315	173,290	0,276	475,543	3,544	1,867	1.983,814	1,517	5.802,219
316+17,087	0,212	173,502	0,152	475,695	1,457	0,428	1.984,242	0,492	5.802,711
317	0,082	173,584	0,186	475,881	5,000	0,810	1.985,052	3,010	5.805,721
317+10,000	0,080	173,664	0,416	476,297	5,000	0,400	1.985,452	8,520	5.814,241
318	0,000	173,664	1,288	477,585	8,441	2,321	1.987,773	20,654	5.834,895
318+16,881	0,275	173,939	1,159	478,744	1,560	1,045	1.988,818	3,389	5.838,284
319	0,395	174,334	1,014	479,758	6,992	12,214	2.001,032	8,474	5.846,758
319+13,983	1,352	175,686	0,198	479,956	3,009	12,600	2.013,632	0,596	5.847,354
320	2,836	178,522	0,000	479,956	1,000	6,168	2.019,800	0,000	5.847,354
320+2,000	3,332	181,854	0,000	479,956	9,000	66,807	2.086,607	0,000	5.847,354
321	4,091	185,945	0,000	479,956	1,000	7,597	2.094,204	0,000	5.847,354
321+2,000	3,506	189,451	0,000	479,956	9,000	31,554	2.125,758	14,490	5.861,844
322	0,000	189,451	1,610	481,566	5,000	0,000	2.125,758	24,725	5.886,569
322+10,000	0,000	189,451	3,335	484,901	5,000	0,000	2.125,758	36,975	5.923,544
323	0,000	189,451	4,060	488,961	5,000	0,000	2.125,758	32,425	5.955,969

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
323+10,000	0,000	189,451	2,425	491,386					
					5,000	0,730	2.126,488	18,735	5.974,704
324	0,146	189,597	1,322	492,708					
					10,000	5,060	2.131,548	20,090	5.994,794
325	0,360	189,957	0,687	493,395					
					10,000	5,660	2.137,208	14,090	6.008,884
326	0,206	190,163	0,722	494,117					
					10,000	2,470	2.139,678	29,170	6.038,054
327	0,041	190,204	2,195	496,312					
					8,000	0,328	2.140,006	46,944	6.084,998
327+16,000	0,000	190,204	3,673	499,985					
					2,000	0,000	2.140,006	11,568	6.096,566
328	0,000	190,204	2,111	502,096					
					5,297	16,281	2.156,287	11,181	6.107,747
328+10,593	3,074	193,278	0,000	502,096					
					2,704	20,049	2.176,336	0,000	6.107,747
328+16,000	4,342	197,620	0,000	502,096					
					2,000	12,916	2.189,252	0,000	6.107,747
329	2,116	199,736	0,000	502,096					
					10,000	21,160	2.210,412	95,070	6.202,817
330	0,000	199,736	9,507	511,603					
					10,000	5,060	2.215,472	104,810	6.307,627
					6,560	4,749	2.220,221	9,911	6.317,538
331+13,119	0,218	200,460	0,537	513,114					
					3,441	0,981	2.221,202	3,754	6.321,292
332	0,067	200,527	0,554	513,668					
					4,963	0,675	2.221,877	5,970	6.327,262
332+9,926	0,069	200,596	0,649	514,317					
					5,037	1,738	2.223,615	7,006	6.334,268
333	0,276	200,872	0,742	515,059					
					10,000	2,760	2.226,375	15,880	6.350,148
334	0,000	200,872	0,846	515,905					
					10,000	0,000	2.226,375	70,370	6.420,518
335	0,000	200,872	6,191	522,096					
					5,000	0,000	2.226,375	41,090	6.461,608
335+10,000	0,000	200,872	2,027	524,123					
					5,000	0,000	2.226,375	16,910	6.478,518
336	0,000	200,872	1,355	525,478					
					5,000	0,000	2.226,375	13,535	6.492,053
336+10,000	0,000	200,872	1,352	526,830					
					5,000	0,000	2.226,375	16,165	6.508,218
337	0,000	200,872	1,881	528,711					
					10,000	0,000	2.226,375	39,510	6.547,728
338	0,000	200,872	2,070	530,781					
					10,000	0,000	2.226,375	43,670	6.591,398
339	0,000	200,872	2,297	533,078					
					10,000	0,000	2.226,375	46,880	6.638,278
					0,727	0,000	2.226,375	3,415	6.641,693
340+1,454	0,000	200,872	2,306	537,775					
					9,273	0,000	2.226,375	33,216	6.674,909
341	0,000	200,872	1,276	539,051					
					1,903	0,000	2.226,375	4,464	6.679,373
341+3,806	0	200,872	1,07	540,121					
					8,097	1,741	2.228,116	11,384	6.690,757
342	0,215	201,087	0,336	540,457					
					10,000	2,150	2.230,266	18,420	6.709,177
343	0	201,087	1,506	541,963					
					6,743	0,000	2.230,266	43,034	6.752,211
343+13,486	0,000	201,087	4,876	546,839					
					3,257	0,000	2.230,266	29,111	6.781,322
344	0	201,09	4,062	550,901					
					10,000	23,130	2.253,396	40,620	6.821,942
345	2,313	203,400	0,000	550,901					
					10,000	23,400	2.276,796	7,330	6.829,272
346	0,027	203,43	0,733	551,634					
					10,000	0,890	2.277,686	7,640	6.836,912
347	0,062	203,489	0,031	551,665					
					10,000	1,660	2.279,346	2,290	6.839,202
348	0,104	203,59	0,198	551,863					
					7,685	0,799	2.280,145	8,661	6.847,863
348+15,370	0,000	203,593	0,929	552,792					
					2,315	0,000	2.280,145	4,493	6.852,356
349	0	203,59	1,012	553,804					
					10,000	0,870	2.281,015	15,400	6.867,756



VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
350	0,087	203,680	0,528	554,332					
					2,345	0,448	2.281,463	2,683	6.870,439
350+4,690	0,104	203,78	0,616	554,948					
					7,655	1,891	2.283,354	9,048	6.879,487
351	0,143	203,927	0,566	555,514					
					10,000	3,370	2.286,724	6,250	6.885,737
352	0,194	204,12	0,059	555,573					
					3,639	0,961	2.287,685	0,448	6.886,185
352+7,277	0,070	204,191	0,064	555,637					
					4,362	0,305	2.287,990	1,230	6.887,415
352+16,000	0	204,19	0,218	555,855					
					2,000	0,098	2.288,088	0,988	6.888,403
353	0,049	204,240	0,276	556,131					
					8,000	5,344	2.293,432	2,208	6.890,611
353+16,000	0,619	204,86	0	556,131					
					2,000	2,266	2.295,698	0,000	6.890,611
354	0,514	205,373	0,000	556,131					
					10,000	6,070	2.301,768	1,270	6.891,881
355	0,093	205,47	0,127	556,258					
					10,000	0,930	2.302,698	12,840	6.904,721
356	0,000	205,466	1,157	557,415					
					5,000	0,000	2.302,698	10,460	6.915,181
+10,000	0	205,47	0,935	558,35					
					5,000	0,775	2.303,473	5,095	6.920,276
357	0,155	205,621	0,084	558,434					
					0,457	0,158	2.303,631	0,067	6.920,343
357+0,914	0,191	205,81	0,063	558,497					
					4,543	2,117	2.305,748	0,377	6.920,720
357+10,000	0,275	206,087	0,020	558,517					
					5,000	1,640	2.307,388	1,055	6.921,775
358	0,053	206,14	0,191	558,708					
					8,529	0,452	2.307,840	10,243	6.932,018
358+17,057	0,000	206,140	1,010	559,718					
					1,472	0,000	2.307,840	3,184	6.935,202
359	0	206,14	1,154	560,872					
					8,415	0,000	2.307,840	16,670	6.951,872
359+16,830	0,000	206,140	0,827	561,699					
					1,585	0,000	2.307,840	2,685	6.954,557
360	0	206,14	0,867	562,566					
					10,000	0,000	2.307,840	19,260	6.973,817
361	0,000	206,140	1,059	563,625					
					10,000	0,270	2.308,110	14,690	6.988,507
362	0,027	206,17	0,41	564,035					
					10,000	0,390	2.308,500	8,710	6.997,217
363	0,012	206,179	0,461	564,496					
					10,000	0,120	2.308,620	13,700	7.010,917
364	0	206,18	0,909	565,405					
					5,000	0,000	2.308,620	10,440	7.021,357
+10,000	0,000	206,179	1,179	566,584					
					5,000	0,000	2.308,620	11,745	7.033,102
365	0	206,18	1,17	567,754					
					4,194	0,000	2.308,620	7,675	7.040,777
365+8,388	0,000	206,179	0,660	568,414					
					0,806	0,000	2.308,620	1,003	7.041,780
365+10,000	0	206,18	0,584	568,998					
					5,000	0,085	2.308,705	4,740	7.046,520
366	0,017	206,196	0,364	569,362					
					9,500	1,586	2.310,291	4,902	7.051,422
366+19,000	0,15	206,35	0,152	569,514					
					0,500	0,158	2.310,449	0,140	7.051,562
367	0,166	206,512	0,127	569,641					
					0,999	0,361	2.310,810	0,224	7.051,786
367+1,997	0,196	206,71	0,097	569,738					
					8,502	2,593	2.313,403	4,370	7.056,156
367+19,000	0,109	206,817	0,417	570,155					
					0,500	0,100	2.313,503	0,445	7.056,601
368	0,091	206,91	0,473	570,628					
					10,000	0,920	2.314,423	14,480	7.071,081
369	0,001	206,909	0,975	571,603					
					10,000	0,020	2.314,443	20,610	7.091,691
370	0,001	206,91	1,086	572,689					
					10,000	0,340	2.314,783	20,770	7.112,461
371	0,033	206,943	0,991	573,680					
					5,860	0,791	2.315,574	9,258	7.121,719
371+11,719	0,102	207,05	0,589	574,269					
					4,141	1,089	2.316,663	4,066	7.125,785

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VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
372	0,161	207,206	0,393	574,662	10,000	2,810	2.319,473	7,090	7.132,875
373	0,12	207,33	0,316	574,978	10,000	1,200	2.320,673	8,610	7.141,485
374	0,000	207,326	0,545	575,523	10,000	0,000	2.320,673	13,040	7.154,525
375	0	207,33	0,759	576,282	5,572	0,006	2.320,679	8,397	7.162,922
375+11,144	0,001	207,327	0,748	577,030	3,600	0,007	2.320,686	5,688	7.168,610
375+18,344	0,001	207,33	0,832	577,862	0,828	0,001	2.320,687	1,429	7.170,039
376	0,000	207,328	0,894	578,756	0,500	0,000	2.320,687	0,914	7.170,953
376+1,000	0	207,33	0,934	579,69	9,500	0,000	2.320,687	16,929	7.187,882
377	0,000	207,328	0,848	580,538	0,500	0,000	2.320,687	0,807	7.188,689
377+1,000	0	207,33	0,766	581,304	8,648	0,553	2.321,240	10,551	7.199,240
377+18,296	0,064	207,392	0,454	581,758	0,852	0,110	2.321,350	0,753	7.199,993
	0,065	207,46	0,43	582,188	10,000	0,650	2.322,000	7,040	7.207,033
379	0,000	207,457	0,274	582,462	10,000	0,000	2.322,000	14,170	7.221,203
380	0	207,46	1,143	583,605	5,000	0,000	2.322,000	16,300	7.237,503
380+10,000	0,000	207,457	2,117	585,722	5,000	0,000	2.322,000	20,690	7.258,193
381	0	207,46	2,021	587,743	5,000	0,000	2.322,000	18,475	7.276,668
381+10,000	0,000	207,457	1,674	589,417	2,052	0,000	2.322,000	6,782	7.283,450
381+14,103	0	207,46	1,632	591,049	2,949	0,000	2.322,000	9,482	7.292,932
382	0,000	207,457	1,584	592,633	10,000	0,080	2.322,080	34,130	7.327,062
383	0,008	207,47	1,829	594,462	7,031	0,534	2.322,614	20,213	7.347,275
383+14,061	0,068	207,533	1,046	595,508	2,970	0,454	2.323,068	5,755	7.353,030
384	0,085	207,62	0,892	596,4	1,958	0,343	2.323,411	3,542	7.356,572
384+3,916	0,090	207,708	0,917	597,317	8,042	0,917	2.324,328	18,424	7.374,996
385	0,024	207,73	1,374	598,691	10,000	0,480	2.324,808	26,470	7.401,466
	0,024	207,756	1,273	599,964	1,882	0,109	2.324,917	4,563	7.406,029
386+3,763	0,034	207,79	1,152	601,116	8,119	1,202	2.326,119	16,383	7.422,412
387	0,114	207,904	0,866	601,982	10,000	3,500	2.329,619	12,270	7.434,682
388	0,236	208,14	0,361	602,343	10,000	2,650	2.332,269	15,220	7.449,902
389	0,029	208,169	1,161	603,504	10,000	0,290	2.332,559	33,010	7.482,912
390	0	208,17	2,14	605,644	10,000	0,000	2.332,559	39,890	7.522,802
391	0,000	208,169	1,849	607,493	5,000	0,000	2.332,559	16,475	7.539,277
391+10,000	0	208,17	1,446	608,939	5,000	0,000	2.332,559	11,435	7.550,712
392	0,000	208,169	0,841	609,780	2,415	0,000	2.332,559	4,683	7.555,395
392+4,830	0	208,17	1,098	610,878	2,585	0,000	2.332,559	7,683	7.563,078
392+10,000	0,000	208,169	1,874	612,752	5,000	0,000	2.332,559	28,945	7.592,023
393	0	208,17	3,915	616,667	10,000	0,010	2.332,569	49,150	7.641,173
394	0,001	208,170	1,000	617,667	6,929	0,471	2.333,040	9,209	7.650,382
394+13,858	0,067	208,24	0,329	617,996	3,071	1,102	2.334,142	1,284	7.651,666

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VOLUME DE PROJETO



RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km

Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum.
395	0,292	208,529	0,089	618,085					
					10,000	2,920	2.337,062	12,210	7.663,876
396	0	208,53	1,132	619,217	5,000	0,000	2.337,062	18,140	7.682,016
396+10,000	0,000	208,529	2,496	621,713	4,700	0,000	2.337,062	26,259	7.708,275
396+19,400	0	208,53	3,091	624,804	0,300	0,000	2.337,062	1,853	7.710,128
397	0,000	208,529	3,087	627,891	5,000	0,000	2.337,062	27,290	7.737,418
397+10,000	0	208,53	2,371	630,262	5,000	0,000	2.337,062	18,295	7.755,713
398	0,000	208,529	1,288	631,550	10,000	2,960	2.340,022	13,360	7.769,073
399	0,296	208,83	0,048	631,598	5,000	3,550	2.343,572	0,255	7.769,328
399+10,000	0,414	209,239	0,003	631,601	5,000	3,635	2.347,207	0,875	7.770,203
400	0,313	209,55	0,172	631,773	0,359	0,224	2.347,431	0,134	7.770,337
400+0,718	0,310	209,862	0,200	631,973	4,641	3,411	2.350,842	2,641	7.772,978
400+10,000	0,425	210,29	0,369	632,34	5,000	5,600	2.356,442	3,315	7.776,293
401	0,695	210,982	0,294	632,636	8,500	8,925	2.365,367	5,738	7.782,031
401+17,000	0,355	211,34	0,381	633,02	1,500	0,956	2.366,323	1,175	7.783,206
402	0,282	211,619	0,402	633,419	8,500	6,502	2.372,825	4,446	7.787,652
402+17,000	0,483	212,10	0,121	633,54	1,500	1,576	2.374,401	0,294	7.787,946
403	0,568	212,670	0,075	633,615	2,254	2,939	2.377,340	0,187	7.788,133
403+4,508	0,736	213,41	0,008	633,62	7,746	10,511	2.387,851	0,062	7.788,195
404	0,621	214,027	0,000	633,623	6,560	7,164	2.395,015	0,020	7.788,215
404+13,120	0,471	214,50	0,003	633,63	3,440	2,797	2.397,812	0,169	7.788,384
405	0,342	214,840	0,046	633,672	10,000	4,660	2.402,472	2,330	7.790,714
406	0,124	214,96	0,187	633,86	3,250	0,478	2.402,950	1,768	7.792,482
406+6,500	0,023	214,987	0,357	634,216	6,750	0,182	2.403,132	7,175	7.799,657
407	0,004	214,99	0,706	634,92	3,250	0,634	2.403,766	3,890	7.803,547
407+6,500	0,191	215,182	0,491	635,413	2,055	0,791	2.404,557	2,008	7.805,555
407+10,610	0,194	215,38	0,486	635,90	4,695	1,498	2.406,055	4,474	7.810,029
408	0,125	215,501	0,467	636,366	10,000	1,770	2.407,825	10,180	7.820,209
409	0,052	215,55	0,551	636,92	10,000	0,990	2.408,815	12,150	7.832,359
410	0,047	215,600	0,664	637,581	10,000	1,440	2.410,255	10,540	7.842,899
411	0,097	215,70	0,39	637,97	10,000	2,230	2.412,485	7,400	7.850,299
412	0,126	215,823	0,350	638,321	1,750	0,389	2.412,874	1,355	7.851,654
412+3,500	0,096	215,919	0,424	638,745	3,300	0,713	2.413,587	3,138	7.854,792
412+10,100	0,120	216,039	0,527	639,272	4,950	1,044	2.414,631	6,653	7.861,445
413	0,091	216,130	0,817	640,089	1,750	0,214	2.414,845	3,010	7.864,455
413+3,500	0,031	216,161	0,903	640,992	8,250	0,256	2.415,101	20,567	7.885,022
414	0,000	216,161	1,590	642,582	7,573	0,000	2.415,101	22,969	7.907,991
414+15,146	0,000	216,161	1,443	644,025	2,427	0,000	2.415,101	6,788	7.914,779
415	0,000	216,161	1,354	645,379	10,000	1,710	2.416,811	16,600	7.931,379

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
416	0,171	216,332	0,306	645,685					
					10,000	11,840	2.428,651	3,060	7.934,439
417	1,013	217,345	0,000	645,685		6,967	2.450,966	0,000	7.934,439
417+13,934	2,190	219,535	0,000	645,685		3,033	2.465,991	0,000	7.934,439
418	2,764	222,299	0,000	645,685		8,750	2.507,335	0,000	7.934,439
418+17,500	1,961	224,260	0,000	645,685		1,250	2.512,171	0,000	7.934,439
419	1,908	226,168	0,000	645,685		8,750	2.537,975	0,000	7.934,439
419+17,500	1,041	227,209	0,000	645,685		1,250	2.540,695	0,000	7.934,439
420	1,135	228,344	0,000	645,685		10,000	2.552,045	6,660	7.941,099
421	0,000	228,344	0,666	646,351		10,000	2.552,045	20,070	7.961,169
422	0,000	228,344	1,341	647,692		10,000	2.552,045	27,350	7.988,519
423	0,000	228,344	1,394	649,086		1,613	2.552,045	4,660	7.993,179
+3,225	0,000	228,344	1,496	650,582		8,388	2.552,045	23,896	8.017,075
424	0,000	228,344	1,353	651,935		10,000	2.552,045	24,690	8.041,765
425	0,000	228,344	1,116	653,051		0,444	2.552,045	0,956	8.042,721
425+0,887	0,000	228,344	1,039	654,090		5,807	2.553,752	6,161	8.048,882
425+12,500	0,294	228,638	0,022	654,112		0,226	2.553,893	0,007	8.048,889
425+12,951	0,333	228,971	0,011	654,123		3,525	2.558,552	0,039	8.048,928
426	0,989	229,960	0,000	654,123		10,000	2.586,992	0,000	8.048,928
427	1,855	231,815	0,000	654,123		0,768	2.589,781	0,000	8.048,928
427+1,535	1,779	233,594	0,000	654,123		9,233	2.607,794	2,068	8.050,996
428	0,172	233,766	0,224	654,347		10,000	2.609,514	20,160	8.071,156
429	0,000	233,766	1,792	656,139		10,000	2.609,514	76,900	8.148,056
430	0,000	233,766	5,898	662,037		0,692	2.609,514	8,091	8.156,147
430+1,384	0,000	233,766	5,794	667,831		5,558	2.613,255	38,828	8.194,975
+12,500	0,673	234,439	1,192	669,023		3,750	2.620,365	4,976	8.199,951
431	1,223	235,662	0,135	669,158		0,104	2.620,617	0,026	8.199,977
431+0,207	1,207	236,869	0,118	669,276		9,897	2.639,589	7,967	8.207,944
432	0,710	237,579	0,687	669,963		2,251	2.642,376	3,408	8.211,352
432+4,502	0,528	238,107	0,827	670,790		7,749	2.647,762	18,884	8.230,236
433	0,167	238,274	1,610	672,400		6,765	2.651,543	21,518	8.251,754
433+13,529	0,392	238,666	1,571	673,971		2,848	2.655,159	6,714	8.258,468
433+19,224	0,878	239,544	0,787	674,758		0,388	2.655,855	0,540	8.259,008
434	0,917	240,461	0,604	675,362		5,000	2.666,605	3,620	8.262,628
434+10,000	1,233	241,694	0,120	675,482		5,000	2.676,725	1,140	8.263,768
435	0,791	242,485	0,108	675,590		5,000	2.681,265	7,215	8.270,983
435+10,000	0,117	242,602	1,335	676,925		5,000	2.681,850	33,255	8.304,238
436	0,000	242,602	5,316	682,241		10,000	2.681,850	126,810	8.431,048
437	0,000	242,602	7,365	689,606		10,000	2.682,510	88,290	8.519,338

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
438	0,066	242,668	1,464	691,070					
					10,000	8,680	2.691,190	14,660	8.533,998
439	0,802	243,470	0,002	691,072					
					3,908	4,045	2.695,235	2,020	8.536,018
439+7,816	0,233	243,703	0,515	691,587					
					6,092	3,673	2.698,908	3,576	8.539,594
440	0,370	244,073	0,072	691,659					
					10,000	3,700	2.702,608	25,810	8.565,404
441	0,000	244,073	2,509	694,168					
					4,523	0,000	2.702,608	18,689	8.584,093
441+9,046	0,000	244,073	1,623	695,791					
					5,477	0,000	2.702,608	13,577	8.597,670
442	0,000	244,073	0,856	696,647					
					10,000	3,690	2.706,298	15,820	8.613,490
443	0,369	244,442	0,726	697,373					
					4,417	3,546	2.709,844	3,206	8.616,696
443+8,833	0,434	244,876	0,000	697,373					
					5,584	3,518	2.713,362	0,352	8.617,048
444	0,196	245,072	0,063	697,436					
					10,000	2,120	2.715,482	5,380	8.622,428
445	0,016	245,088	0,475	697,911					
					8,331	1,941	2.717,423	4,448	8.626,876
445+16,661	0,217	245,305	0,059	697,970					
					1,670	0,531	2.717,954	0,194	8.627,070
446	0,101	245,406	0,057	698,027					
					10,000	1,010	2.718,964	11,310	8.638,380
447	0,000	245,406	1,074	699,101					
					8,685	3,743	2.722,707	14,513	8.652,893
447+17,370	0,431	245,837	0,597	699,698					
					1,315	1,023	2.723,730	1,662	8.654,555
448	0,347	246,184	0,667	700,365					
					10,000	4,020	2.727,750	19,110	8.673,665
449	0,055	246,239	1,244	701,609					
					10,000	0,550	2.728,300	30,650	8.704,315
450	0,000	246,239	1,821	703,430					
					2,500	0,000	2.728,300	10,255	8.714,570
450+5,000	0,000	246,239	2,281	705,711					
					7,500	0,000	2.728,300	92,633	8.807,203
451	0,000	246,239	10,070	715,781					
					7,500	0,000	2.728,300	104,257	8.911,460
451+15,000	0,000	246,239	3,831	719,612					
					2,449	0,000	2.728,300	16,021	8.927,481
451+19,897	0,000	246,239	2,712	722,324					
					0,052	0,000	2.728,300	0,278	8.927,759
452	0,000	246,239	2,690	725,014					
					5,000	0,105	2.728,405	18,515	8.946,274
452+10,000	0,021	246,260	1,013	726,027					
					5,000	1,945	2.730,350	6,660	8.952,934
	0,368	246,628	0,319	726,346					
					5,000	2,160	2.732,510	6,870	8.959,804
453+10,000	0,064	246,692	1,055	727,401					
					4,906	0,314	2.732,824	10,871	8.970,675
453+19,811	0,000	246,692	1,161	728,562					
					0,095	0,000	2.732,824	0,221	8.970,896
454	0,000	246,692	1,174	729,736					
					10,000	0,000	2.732,824	41,090	9.011,986
455	0,000	246,692	2,935	732,671					
					10,000	0,000	2.732,824	70,120	9.082,106
456	0,000	246,692	4,077	736,748					
					10,000	0,000	2.732,824	63,560	9.145,666
457	0,000	246,692	2,279	739,027					
					10,000	0,020	2.732,844	32,050	9.177,716
458	0,002	246,694	0,926	739,953					
					5,000	0,565	2.733,409	6,465	9.184,181
458+10,000	0,111	246,805	0,367	740,320					
					5,000	2,735	2.736,144	2,065	9.186,246
459	0,436	247,241	0,046	740,366					
					4,060	3,950	2.740,094	0,187	9.186,433
459+8,120	0,537	247,778	0,000	740,366					
					0,940	1,086	2.741,180	0,000	9.186,433
459+10,000	0,618	248,396	0,000	740,366					
					5,000	8,470	2.749,650	0,000	9.186,433
460	1,076	249,472	0,000	740,366					
					10,000	17,920	2.767,570	0,540	9.186,973
461	0,716	250,188	0,054	740,420					
					4,033	4,234	2.771,804	1,363	9.188,336

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
461+8,065	0,334	250,522	0,284	740,704					
					0,968	0,552	2.772,356	0,612	9.188,948
461+10,000	0,237	250,759	0,349	741,053	5,000	1,185	2.773,541	5,625	9.194,573
462	0,000	250,759	0,776	741,829	5,000	0,000	2.773,541	9,495	9.204,068
462+10,000	0,000	250,759	1,123	742,952	5,000	0,000	2.773,541	10,260	9.214,328
463	0,000	250,759	0,929	743,881	10,000	1,430	2.774,971	12,960	9.227,288
464	0,143	250,902	0,367	744,248	5,000	2,970	2.777,941	2,310	9.229,598
464+10,000	0,451	251,353	0,095	744,343	5,000	2,750	2.780,691	3,515	9.233,113
465	0,099	251,452	0,608	744,951	0,498	0,087	2.780,778	0,649	9.233,762
465+0,996	0,075	251,527	0,696	745,647	4,502	0,338	2.781,116	11,183	9.244,945
465+10,000	0,000	251,527	1,788	747,435	5,000	0,000	2.781,116	27,950	9.272,895
466	0,000	251,527	3,802	751,237	10,000	17,670	2.798,786	38,020	9.310,915
	1,767	253,294	0,000	751,237	0,333	1,233	2.800,019	0,000	9.310,915
467+0,666	1,935	255,229	0,000	751,237	8,968	96,553	2.896,572	0,000	9.310,915
467+18,601	8,832	264,061	0,000	751,237	0,700	11,815	2.908,387	0,000	9.310,915
468	8,059	272,120	0,000	751,237	10,000	81,480	2.989,867	11,160	9.322,075
469	0,089	272,209	1,116	752,353	7,824	0,696	2.990,563	30,952	9.353,027
469+15,648	0,000	272,209	2,840	755,193	2,176	0,000	2.990,563	10,841	9.363,868
470	0,000	272,209	2,142	757,335	5,000	2,675	2.993,238	14,440	9.378,308
470+10,000	0,535	272,744	0,746	758,081	5,000	7,325	3.000,563	4,990	9.383,298
471	0,930	273,674	0,252	758,333	4,993	10,729	3.011,292	1,268	9.384,566
471+9,985	1,219	274,893	0,002	758,335	0,008	0,018	3.011,310	0,000	9.384,566
471+10,000	1,219	276,112	0,002	758,337	3,500	15,463	3.026,773	0,007	9.384,573
471+17,000	3,199	279,311	0,000	758,337	1,500	10,337	3.037,110	0,000	9.384,573
472	3,692	283,003	0,000	758,337	8,413	36,468	3.073,578	3,668	9.388,241
472+16,825	0,643	283,646	0,436	758,773	1,588	1,527	3.075,105	2,273	9.390,514
473	0,319	283,965	0,996	759,769	10,000	3,190	3.078,295	91,640	9.482,154
474	0,000	283,965	8,168	767,937	10,000	0,000	3.078,295	186,530	9.668,684
475	0,000	283,965	10,485	778,422	10,000	0,000	3.078,295	151,050	9.819,734
476	0,000	283,965	4,620	783,042	10,000	19,700	3.097,995	46,200	9.865,934
477	1,970	285,935	0,000	783,042	8,500	27,982	3.125,977	0,000	9.865,934
477+17,000	1,322	287,257	0,000	783,042	1,500	3,188	3.129,165	0,069	9.866,003
478	0,803	288,060	0,046	783,088	8,500	9,180	3.138,345	1,029	9.867,032
478+17,000	0,277	288,337	0,075	783,163	1,500	0,593	3.138,938	0,262	9.867,294
479	0,118	288,455	0,100	783,263	7,962	3,694	3.142,632	5,128	9.872,422
479+15,924	0,346	288,801	0,544	783,807	0,538	0,351	3.142,983	0,582	9.873,004
479+17,000	0,306	289,107	0,537	784,344	1,500	0,771	3.143,754	1,650	9.874,654
480	0,208	289,315	0,563	784,907	10,000	2,080	3.145,834	29,560	9.904,214
481	0,000	289,315	2,393	787,300	7,958	0,000	3.145,834	54,504	9.958,718

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
481+15,916	0,000	289,315	4,456	791,756					
					2,042	0,000	3.145,834	19,211	9.977,929
482	0,000	289,315	4,952	796,708	10,000	0,000	3.145,834	232,190	10.210,119
483	0,000	289,315	18,267	814,975	8,616	0,000	3.145,834	302,464	10.512,583
483+17,231	0,000	289,315	16,840	831,815	1,385	0,000	3.145,834	43,713	10.556,296
484	0,000	289,315	14,733	846,548	10,000	0,000	3.145,834	154,560	10.710,856
485	0,000	289,315	0,723	847,271	6,000	1,230	3.147,064	4,506	10.715,362
485+12,000	0,205	289,520	0,028	847,299	1,963	0,571	3.147,635	0,275	10.715,637
485+15,925	0,086	289,606	0,112	847,411	2,038	0,259	3.147,894	0,617	10.716,254
486	0,041	289,647	0,191	847,602	6,000	0,840	3.148,734	3,534	10.719,788
486+12,000	0,099	289,746	0,398	848,000	4,000	0,580	3.149,314	2,524	10.722,312
487	0,046	289,792	0,233	848,233	8,324	0,816	3.150,130	3,571	10.725,883
7+16,647	0,052	289,844	0,196	848,429	1,677	0,101	3.150,231	0,811	10.726,694
488	0,008	289,852	0,288	848,717	10,000	0,080	3.150,311	14,200	10.740,894
489	0,000	289,852	1,132	849,849	7,172	0,904	3.151,215	14,529	10.755,423
489+14,343	0,126	289,978	0,894	850,743	2,829	1,001	3.152,216	4,715	10.760,138
490	0,228	290,206	0,773	851,516	10,000	2,630	3.154,846	13,880	10.774,018
491	0,035	290,241	0,615	852,131	10,000	0,350	3.155,196	35,110	10.809,128
492	0,000	290,241	2,896	855,027	10,000	0,000	3.155,196	59,530	10.868,658
493	0,000	290,241	3,057	858,084	10,000	1,980	3.157,176	35,210	10.903,868
494	0,198	290,439	0,464	858,548	5,000	1,430	3.158,606	5,690	10.909,558
494+10,000	0,088	290,527	0,674	859,222	5,000	1,280	3.159,886	9,990	10.919,548
495	0,168	290,695	1,324	860,546	5,000	1,040	3.160,926	12,485	10.932,033
495+10,000	0,040	290,735	1,173	861,719	5,000	0,200	3.161,126	16,050	10.948,083
496	0,000	290,735	2,037	863,756	10,000	1,130	3.162,256	25,080	10.973,163
7	0,113	290,848	0,471	864,227	9,939	2,365	3.164,621	6,749	10.979,912
497+19,878	0,125	290,973	0,208	864,435	0,061	0,015	3.164,636	0,025	10.979,937
498	0,127	291,100	0,208	864,643	10,000	2,320	3.166,956	4,570	10.984,507
499	0,105	291,205	0,249	864,892	9,752	4,769	3.171,725	2,428	10.986,935
499+19,504	0,384	291,589	0,000	864,892	0,248	0,194	3.171,919	0,000	10.986,935
500	0,399	291,988	0,000	864,892	3,000	1,419	3.173,338	0,507	10.987,442
500+6,000	0,074	292,062	0,169	865,061	7,000	0,518	3.173,856	7,735	10.995,177
501	0,000	292,062	0,936	865,997	3,000	0,000	3.173,856	4,605	10.999,782
501+6,000	0,000	292,062	0,599	866,596	7,000	1,547	3.175,403	4,242	11.004,024
502	0,221	292,283	0,007	866,603	7,677	9,466	3.184,869	0,054	11.004,078
502+15,354	1,012	293,295	0,000	866,603	2,323	5,775	3.190,644	0,000	11.004,078
503	1,474	294,769	0,000	866,603	10,000	35,560	3.226,204	0,000	11.004,078
504	2,082	296,851	0,000	866,603	10,000	21,600	3.247,804	5,310	11.009,388
505	0,078	296,929	0,531	867,134	9,000	0,702	3.248,506	63,405	11.072,793

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VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176(MIRAIMA) - DISTRITO DE JUREMAL
 EXTENSÃO: 10,58 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
505+18,000	0,000	296,929	6,514	873,648					
					1,000	0,000	3.248,506	12,140	11.084,933
506	0,000	296,929	5,626	879,274					
					9,000	0,000	3.248,506	71,811	11.156,744
506+18,000	0,000	296,929	2,353	881,627					
					1,000	0,000	3.248,506	4,691	11.161,435
507	0,000	296,929	2,338	883,965					
					10,000	0,000	3.248,506	38,860	11.200,295
508	0,000	296,929	1,548	885,513					
					10,000	0,060	3.248,566	19,360	11.219,655
509	0,006	296,935	0,388	885,901					
					10,000	0,070	3.248,636	12,360	11.232,015
510	0,001	296,936	0,848	886,749					
					10,000	0,360	3.248,996	22,880	11.254,895
511	0,035	296,971	1,440	888,189					
					6,500	1,632	3.250,628	13,390	11.268,285
511+13,000	0,216	297,187	0,620	888,809					
					3,500	2,523	3.253,151	3,038	11.271,323
512	0,505	297,692	0,248	889,057					
					10,000	5,050	3.258,201	30,670	11.301,993
513	0,000	297,692	2,819	891,876					
					10,000	0,000	3.258,201	57,920	11.359,913
	0,000	297,692	2,973	894,849					
					0,064	0,000	3.258,201	0,381	11.360,294
514+0,128	0,000	297,692	2,975	897,824					
					9,936	0,000	3.258,201	48,468	11.408,762
515	0,000	297,692	1,903	899,727					
					0,572	0,000	3.258,201	2,209	11.410,971
515+1,144	0,000	297,692	1,959	901,686					
					0,928	0,000	3.258,201	3,699	11.414,670
515+3,000	0,000	297,692	2,027	903,713					
					8,500	0,000	3.258,201	38,956	11.453,626
516	0,000	297,692	2,556	906,269					
					10,000	0,000	3.258,201	51,600	11.505,226
517	0,000	297,692	2,604	908,873					
					0,307	0,000	3.258,201	1,569	11.506,795
517+0,613	0,000	297,692	2,515	911,388					
					9,694	0,000	3.258,201	32,997	11.539,792
518	0,000	297,692	0,889	912,277					
					10,000	0,000	3.258,201	29,520	11.569,312
519	0,000	297,692	2,063	914,340					
					10,000	0,000	3.258,201	33,360	11.602,672
520	0,000	297,692	1,273	915,613					
					10,000	0,000	3.258,201	28,410	11.631,082
521	0,000	297,692	1,568	917,181					
					10,000	0,000	3.258,201	33,150	11.664,232
522	0,000	297,692	1,747	918,928					
					3,500	0,000	3.258,201	9,471	11.673,703
522+7,000	0,000	297,692	0,959	919,887					
					6,500	0,124	3.258,325	9,782	11.683,485
523	0,019	297,711	0,546	920,433					
					3,500	0,116	3.258,441	5,891	11.689,376
523+7,000	0,014	297,725	1,137	921,570					
					6,500	0,091	3.258,532	13,631	11.703,007
524	0,000	297,725	0,960	922,530					
					10,000	0,000	3.258,532	21,190	11.724,197
525	0,000	297,725	1,159	923,689					
					10,000	0,000	3.258,532	26,730	11.750,927
526	0,000	297,725	1,514	925,203					
					10,000	0,000	3.258,532	28,780	11.779,707
527	0,000	297,725	1,364	926,567					
					10,000	0,000	3.258,532	23,260	11.802,967
528	0,000	297,725	0,962	927,529					
					9,293	0,000	3.258,532	18,577	11.821,544
528+18,586	0,000	297,725	1,037	928,566					

DESCRIÇÃO	Corte	Aterro
Áreas	297,725 m2	928,566 m2
Volumes	3.258,532 m3	11.821,544 m3

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176 (BARRA DO GARROTE) - GARROTE
 EXTENSÃO: 5,50 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
0	0,330	0,330	0,000	0,000					
					10,000	7,250	7,250	2,670	2,670
1	0,400	0,730	0,270	0,270					
					10,000	6,900	14,150	3,330	6,000
2	0,290	1,020	0,070	0,340					
					10,000	6,580	20,720	5,190	11,190
3	0,370	1,390	0,450	0,790					
					10,000	12,190	32,920	4,670	15,860
4	0,850	2,240	0,020	0,810					
					10,000	21,610	54,520	1,760	17,620
5	1,310	3,550	0,160	0,970					
					10,000	16,420	70,950	4,050	21,660
6	0,340	3,890	0,240	1,210					
					10,000	9,000	79,940	3,440	25,100
7	0,560	4,450	0,100	1,310					
					10,000	12,570	92,510	8,880	33,980
8	0,690	5,140	0,790	2,100					
					10,000	26,920	119,430	7,880	41,860
9	2,000	7,140	0,000	2,100					
					10,000	23,780	143,210	4,580	46,440
10	0,380	7,520	0,460	2,560					
					10,000	7,020	150,220	10,240	56,680
	0,320	7,840	0,570	3,130					
					10,000	7,630	157,860	8,590	65,270
12	0,440	8,280	0,290	3,420					
					10,000	9,870	167,730	4,920	70,190
13	0,550	8,830	0,200	3,620					
					10,000	7,780	175,510	10,250	80,440
14	0,230	9,060	0,830	4,450					
					10,000	15,540	191,050	28,360	108,800
15	1,320	10,380	2,010	6,460					
					10,000	23,780	214,830	26,650	135,450
16	1,050	11,430	0,660	7,120					
					10,000	25,970	240,790	6,550	142,010
17	1,540	12,970	0,000	7,120					
					10,000	28,730	269,520	0,000	142,010
18	1,330	14,300	0,000	7,120					
					10,000	29,850	299,370	0,000	142,010
19	1,650	15,950	0,000	7,120					
					10,000	29,310	328,680	0,000	142,010
20	1,280	17,230	0,000	7,120					
					10,000	17,020	345,710	0,540	142,540
21	0,430	17,660	0,050	7,170					
					10,000	5,880	351,590	7,950	150,490
22	0,160	17,820	0,740	7,910					
					10,000	3,950	355,530	12,920	163,410
23	0,230	18,050	0,550	8,460					
					10,000	6,670	362,200	18,550	181,970
	0,430	18,480	1,300	9,760					
					10,000	8,360	370,560	20,210	202,180
25	0,400	18,880	0,720	10,480					
					10,000	6,550	377,110	14,150	216,330
26	0,250	19,130	0,700	11,180					
					10,000	3,760	380,870	15,220	231,550
27	0,120	19,250	0,820	12,000					
					10,000	7,020	387,890	13,920	245,470
28	0,580	19,830	0,570	12,570					
					10,000	10,030	397,920	12,900	258,370
29	0,420	20,250	0,720	13,290					
					10,000	5,300	403,220	13,780	272,150
30	0,110	20,360	0,660	13,950					
					10,000	2,420	405,640	12,390	284,540
31	0,140	20,500	0,580	14,530					
					10,000	3,810	409,450	15,940	300,480
32	0,240	20,740	1,010	15,540					
					10,000	7,780	417,230	16,120	316,610
33	0,530	21,270	0,600	16,140					
					10,000	6,790	424,020	14,590	331,200
34	0,150	21,420	0,860	17,000					
					10,000	5,070	429,090	13,780	344,980
35	0,360	21,780	0,520	17,520					
					10,000	10,890	439,980	12,720	357,700
36	0,730	22,510	0,750	18,270					
					10,000	16,590	456,570	10,940	368,630
37	0,930	23,440	0,340	18,610					
					10,000	18,690	475,260	4,090	372,720

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176 (BARRA DO GARROTE) - GARROTE
 EXTENSÃO: 5,50 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
38	0,940	24,380	0,070	18,680					
					10,000	14,070	489,320	3,250	375,970
39	0,470	24,850	0,260	18,940					
					10,000	12,630	501,950	3,840	379,810
40	0,790	25,640	0,130	19,070					
					10,000	15,930	517,890	1,430	381,240
41	0,800	26,440	0,020	19,090					
					10,000	14,420	532,310	1,980	383,210
42	0,640	27,080	0,180	19,270					
					10,000	14,350	546,660	2,140	385,360
43	0,790	27,870	0,030	19,300					
					10,000	20,300	566,970	0,320	385,680
44	1,240	29,110	0,000	19,300					
					10,000	14,710	581,680	1,130	386,810
45	0,230	29,340	0,110	19,410					
					10,000	2,390	584,060	7,260	394,070
46	0,000	29,340	0,610	20,020					
					10,000	3,680	587,740	11,770	405,840
47	0,360	29,700	0,560	20,580					
					10,000	11,650	599,400	6,740	412,570
48	0,800	30,500	0,110	20,690					
					10,000	12,600	611,990	2,200	414,770
	0,460	30,960	0,110	20,800					
					10,000	13,840	625,830	1,420	416,190
50	0,930	31,890	0,030	20,830					
					10,000	12,690	638,520	0,810	417,010
51	0,340	32,230	0,050	20,880					
					10,000	6,520	645,040	0,500	417,500
52	0,310	32,540	0,000	20,880					
					10,000	3,120	648,160	7,000	424,510
53	0,000	32,540	0,700	21,580					
					10,000	4,170	652,330	15,820	440,330
54	0,420	32,960	0,880	22,460					
					10,000	19,280	671,610	26,050	466,380
55	1,510	34,470	1,720	24,180					
					10,000	17,740	689,350	22,810	489,190
56	0,260	34,730	0,560	24,740					
					10,000	7,260	696,610	5,580	494,780
57	0,460	35,190	0,000	24,740					
					10,000	10,400	707,010	0,000	494,780
58	0,580	35,770	0,000	24,740					
					10,000	5,820	712,830	3,640	498,420
59	0,000	35,770	0,360	25,100					
					10,000	3,070	715,900	4,570	502,990
60	0,300	36,070	0,090	25,190					
					10,000	6,720	722,630	1,090	504,070
61	0,370	36,440	0,020	25,210					
					10,000	5,660	728,290	0,410	504,480
	0,190	36,630	0,030	25,240					
					10,000	6,900	735,180	1,000	505,480
63	0,490	37,120	0,070	25,310					
					10,000	14,340	749,530	3,400	508,880
64	0,940	38,060	0,260	25,570					
					10,000	20,180	769,700	3,470	512,340
65	1,080	39,140	0,080	25,650					
					10,000	16,540	786,240	2,150	514,490
66	0,580	39,720	0,130	25,780					
					10,000	11,850	798,090	1,680	516,170
67	0,610	40,330	0,040	25,820					
					10,000	7,010	805,100	12,040	528,210
68	0,090	40,420	1,170	26,990					
					10,000	1,010	806,110	16,960	545,160
69	0,000	40,420	0,530	27,520					
					10,000	5,350	811,460	11,020	556,180
70	0,530	40,950	0,570	28,090					
					10,000	10,760	822,220	6,270	562,450
71	0,550	41,500	0,050	28,140					
					10,000	10,460	832,680	0,790	563,240
72	0,500	42,000	0,030	28,170					
					10,000	5,570	838,250	1,470	564,710
73	0,060	42,060	0,120	28,290					
					10,000	7,410	845,660	1,210	565,920
74	0,680	42,740	0,000	28,290					
					10,000	9,800	855,460	1,230	567,150
75	0,300	43,040	0,120	28,410					
					10,000	4,500	859,950	2,930	570,080

8

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176 (BARRA DO GARROTE) - GARROTE
 EXTENSÃO: 5,50 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto									
Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
76	0,150	43,190	0,170	28,580					
					10,000	1,540	861,500	6,750	576,830
77	0,000	43,190	0,510	29,090					
					10,000	0,050	861,550	16,760	593,590
78	0,000	43,190	1,170	30,260					
					10,000	0,060	861,610	13,360	606,950
79	0,000	43,190	0,160	30,420					
					10,000	0,590	862,200	9,030	615,970
80	0,050	43,240	0,740	31,160					
					10,000	8,560	870,770	7,810	623,790
81	0,800	44,040	0,040	31,200					
					10,000	10,550	881,320	4,600	628,380
82	0,250	44,290	0,420	31,620					
					10,000	2,550	883,870	14,910	643,290
83	0,000	44,290	1,070	32,690					
					10,000	3,920	887,790	12,560	655,850
84	0,390	44,680	0,180	32,870					
					10,000	21,650	909,440	1,820	657,670
85	1,780	46,460	0,000	32,870					
					10,000	38,950	948,400	0,000	657,670
86	2,120	48,580	0,000	32,870					
					10,000	22,860	971,260	0,510	658,180
	0,170	48,750	0,050	32,920					
					10,000	1,680	972,930	11,790	669,970
88	0,000	48,750	1,130	34,050					
					10,000	1,560	974,490	11,930	681,900
89	0,150	48,900	0,070	34,120					
					10,000	2,050	976,540	13,170	695,070
90	0,050	48,950	1,250	35,370					
					10,000	1,560	978,110	20,780	715,850
91	0,110	49,060	0,830	36,200					
					10,000	1,050	979,160	17,240	733,090
92	0,000	49,060	0,900	37,100					
					10,000	0,000	979,160	24,650	757,740
93	0,000	49,060	1,570	38,670					
					10,000	0,670	979,830	17,270	775,010
94	0,070	49,130	0,160	38,830					
					10,000	0,740	980,580	6,380	781,390
95	0,000	49,130	0,480	39,310					
					10,000	2,710	983,280	6,950	788,340
96	0,260	49,390	0,220	39,530					
					10,000	2,670	985,960	9,410	797,750
97	0,000	49,390	0,730	40,260					
					10,000	0,630	986,590	19,790	817,540
98	0,060	49,450	1,250	41,510					
					10,000	4,480	991,060	19,180	836,720
99	0,390	49,840	0,660	42,170					
					10,000	5,410	996,470	14,530	851,250
	0,150	49,990	0,790	42,960					
					10,000	2,920	999,390	17,660	868,910
101	0,140	50,130	0,980	43,940					
					10,000	5,850	1005,240	12,440	881,340
102	0,440	50,570	0,270	44,210					
					10,000	5,090	1010,330	10,710	892,050
103	0,060	50,630	0,800	45,010					
					10,000	0,640	1010,970	13,120	905,170
104	0,000	50,630	0,510	45,520					
					10,000	3,460	1014,430	6,190	911,360
105	0,350	50,980	0,110	45,630					
					10,000	8,310	1022,740	2,350	913,710
106	0,480	51,460	0,120	45,750					
					10,000	9,470	1032,210	5,710	919,420
107	0,460	51,920	0,450	46,200					
					10,000	7,620	1039,840	8,430	927,850
108	0,300	52,220	0,400	46,600					
					10,000	8,840	1048,680	10,290	938,140
109	0,580	52,800	0,630	47,230					
					10,000	16,940	1065,620	12,000	950,140
110	1,110	53,910	0,570	47,800					
					10,000	18,840	1084,460	13,220	963,370
111	0,770	54,680	0,760	48,560					
					10,000	30,790	1115,250	7,560	970,930
112	2,310	56,990	0,000	48,560					
					10,000	31,930	1147,190	1,800	972,730
113	0,890	57,880	0,180	48,740					
					10,000	9,330	1156,520	3,800	976,530

8

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176 (BARRA DO GARROTE) - GARROTE
 EXTENSÃO: 5,50 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto									
Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
114	0,050	57,930	0,200	48,940	10,000	0,450	1156,970	11,600	988,130
115	0,000	57,930	0,960	49,900	10,000	0,010	1156,980	19,650	1007,780
116	0,000	57,930	1,010	50,910	10,000	4,130	1161,110	11,220	1018,990
117	0,410	58,340	0,120	51,030	10,000	13,850	1174,960	1,160	1020,150
118	0,970	59,310	0,000	51,030	10,000	24,270	1199,230	0,000	1020,150
119	1,450	60,760	0,000	51,030	10,000	22,070	1221,300	0,000	1020,150
120	0,750	61,510	0,000	51,030	10,000	10,630	1231,930	0,170	1020,320
121	0,310	61,820	0,020	51,050	10,000	6,250	1238,180	0,470	1020,800
122	0,310	62,130	0,030	51,080	10,000	5,950	1244,130	0,660	1021,450
123	0,280	62,410	0,040	51,120	10,000	2,810	1246,930	3,620	1025,070
124	0,000	62,410	0,330	51,450	10,000	0,000	1246,930	10,810	1035,880
	0,000	62,410	0,750	52,200	10,000	0,110	1247,040	9,830	1045,710
126	0,010	62,420	0,230	52,430	10,000	0,160	1247,210	9,610	1055,320
127	0,000	62,420	0,730	53,160	10,000	0,050	1247,260	15,570	1070,890
128	0,000	62,420	0,830	53,990	10,000	0,190	1247,450	18,810	1089,710
129	0,020	62,440	1,060	55,050	10,000	4,350	1251,810	16,290	1106,000
130	0,420	62,860	0,570	55,620	10,000	9,490	1261,290	12,410	1118,410
131	0,530	63,390	0,670	56,290	10,000	7,030	1268,320	13,490	1131,900
132	0,170	63,560	0,680	56,970	10,000	10,940	1279,260	6,970	1138,870
133	0,920	64,480	0,020	56,990	10,000	9,240	1288,500	20,390	1159,260
134	0,000	64,480	2,020	59,010	10,000	0,000	1288,500	47,870	1207,130
135	0,000	64,480	2,760	61,770	10,000	0,000	1288,500	57,330	1264,460
136	0,000	64,480	2,970	64,740	10,000	1,660	1290,160	53,370	1317,830
137	0,170	64,650	2,370	67,110	10,000	5,140	1295,300	27,770	1345,600
	0,350	65,000	0,410	67,520	10,000	8,030	1303,330	12,860	1358,460
139	0,450	65,450	0,880	68,400	10,000	8,110	1311,450	23,370	1381,830
140	0,360	65,810	1,460	69,860	10,000	4,320	1315,760	36,320	1418,160
141	0,070	65,880	2,170	72,030	10,000	5,360	1321,120	31,560	1449,720
142	0,460	66,340	0,980	73,010	10,000	45,280	1366,400	10,260	1459,980
143	4,070	70,410	0,040	73,050	10,000	52,750	1419,140	22,160	1482,140
144	1,210	71,620	2,170	75,220	10,000	12,090	1431,230	46,090	1528,230
145	0,000	71,620	2,430	77,650	10,000	5,000	1436,230	29,100	1557,320
146	0,500	72,120	0,470	78,120	10,000	6,880	1443,100	6,760	1564,080
147	0,190	72,310	0,200	78,320	10,000	2,010	1445,120	12,310	1576,390
148	0,010	72,320	1,030	79,350	10,000	8,640	1453,760	10,300	1586,680
149	0,850	73,170	0,000	79,350	10,000	17,070	1470,820	0,000	1586,680
150	0,860	74,030	0,000	79,350	10,000	12,670	1483,500	4,240	1590,930
151	0,410	74,440	0,420	79,770	10,000	4,120	1487,620	35,990	1626,920

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176 (BARRA DO GARROTE) - GARROTE
 EXTENSÃO: 5,50 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
152	0,000	74,440	3,180	82,950					
153	0,710	75,150	0,480	83,430	10,000	7,120	1494,740	36,540	1663,460
154	1,930	77,080	0,260	83,690	10,000	26,460	1521,200	7,420	1670,880
155	0,470	77,550	0,660	84,350	10,000	24,070	1545,270	9,210	1680,100
156	1,260	78,810	0,780	85,130	10,000	17,360	1562,630	14,350	1694,440
157	4,820	83,630	0,000	85,130	10,000	60,830	1623,460	7,760	1702,200
158	2,980	86,610	0,000	85,130	10,000	78,040	1701,500	0,000	1702,200
159	0,320	86,930	0,230	85,360	10,000	33,040	1734,540	2,340	1704,540
160	1,100	88,030	0,000	85,360	10,000	14,170	1748,700	2,340	1706,870
161	0,600	88,630	0,000	85,360	10,000	16,930	1765,630	0,000	1706,870
162	0,040	88,670	0,510	85,870	10,000	6,340	1771,960	5,100	1711,980
	0,180	88,850	0,090	85,960	10,000	2,230	1774,190	6,030	1718,010
164	0,330	89,180	0,110	86,070	10,000	5,190	1779,380	2,080	1720,090
165	0,370	89,550	0,300	86,370	10,000	7,060	1786,440	4,170	1724,260
166	0,610	90,160	0,980	87,350	10,000	9,860	1796,300	12,860	1737,120
167	0,500	90,660	0,870	88,220	10,000	11,170	1807,480	18,490	1755,610
168	0,410	91,070	0,100	88,320	10,000	9,110	1816,590	9,700	1765,310
169	0,670	91,740	0,390	88,710	10,000	10,770	1827,360	4,940	1770,250
170	0,100	91,840	0,330	89,040	10,000	7,660	1835,020	7,160	1777,410
171	0,130	91,970	0,550	89,590	10,000	2,320	1837,340	8,720	1786,130
172	0,810	92,780	0,000	89,590	10,000	9,430	1846,770	5,450	1791,580
173	0,990	93,770	0,000	89,590	10,000	17,960	1864,730	0,000	1791,580
174	1,010	94,780	0,000	89,590	10,000	19,930	1884,650	0,000	1791,580
175	0,030	94,810	1,020	90,610	10,000	10,370	1895,020	10,160	1801,740
	0,660	95,470	0,000	90,610	10,000	6,870	1901,890	10,160	1811,900
177	0,150	95,620	0,150	90,760	10,000	8,080	1909,970	1,470	1813,370
178	0,600	96,220	0,180	90,940	10,000	7,570	1917,540	3,240	1816,610
179	0,740	96,960	0,020	90,960	10,000	13,470	1931,010	1,920	1818,530
180	0,700	97,660	0,000	90,960	10,000	14,400	1945,420	0,150	1818,690
181	0,510	98,170	0,000	90,960	10,000	12,050	1957,460	0,060	1818,750
182	0,710	98,880	0,030	90,990	10,000	12,150	1969,620	0,390	1819,140
183	0,220	99,100	0,040	91,030	10,000	9,290	1978,900	0,720	1819,870
184	2,520	101,620	0,000	91,030	10,000	27,410	2006,310	0,390	1820,260
185	0,830	102,450	0,190	91,220	10,000	33,520	2039,830	1,900	1822,160
186	0,010	102,460	1,190	92,410	10,000	8,450	2048,280	13,850	1836,000
187	0,000	102,460	1,740	94,150	10,000	0,130	2048,410	29,370	1865,380
188	0,000	102,460	2,300	96,450	10,000	0,000	2048,410	40,400	1905,780
189	0,000	102,460	1,060	97,510	10,000	0,000	2048,410	33,610	1939,390
					10,000	1,320	2049,730	12,340	1951,730

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VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176 (BARRA DO GARROTE) - GARROTE
 EXTENSÃO: 5,50 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
190	0,130	102,590	0,170	97,680	10,000	5,810	2055,540	3,380	1955,110
191	0,450	103,040	0,170	97,850	10,000	26,760	2082,310	1,670	1956,780
192	2,230	105,270	0,000	97,850	10,000	34,250	2116,560	0,060	1956,840
193	1,200	106,470	0,000	97,850	10,000	21,140	2137,700	0,830	1957,670
194	0,920	107,390	0,080	97,930	10,000	13,600	2151,300	0,830	1958,500
195	0,440	107,830	0,000	97,930	10,000	5,310	2156,610	0,250	1958,750
196	0,090	107,920	0,020	97,950	10,000	0,870	2157,480	38,080	1996,830
197	0,000	107,920	3,790	101,740	10,000	0,000	2157,480	62,010	2058,840
198	0,000	107,920	2,410	104,150	10,000	0,000	2157,480	47,340	2106,180
199	0,000	107,920	2,320	106,470	10,000	0,000	2157,480	33,350	2139,530
200	0,000	107,920	1,010	107,480	10,000	3,470	2160,950	15,930	2155,460
	0,350	108,270	0,580	108,060	10,000	12,440	2173,390	6,790	2162,250
202	0,900	109,170	0,100	108,160	10,000	16,940	2190,320	2,830	2165,080
203	0,800	109,970	0,180	108,340	10,000	9,030	2199,350	7,300	2172,380
204	0,110	110,080	0,550	108,890	10,000	4,110	2203,460	8,880	2181,260
205	0,300	110,380	0,340	109,230	10,000	8,130	2211,600	3,460	2184,730
206	0,510	110,890	0,000	109,230	10,000	10,640	2222,240	0,510	2185,240
207	0,550	111,440	0,050	109,280	10,000	14,860	2237,090	0,500	2185,740
208	0,930	112,370	0,000	109,280	10,000	21,340	2258,430	0,060	2185,800
209	1,200	113,570	0,000	109,280	10,000	26,790	2285,230	0,030	2185,830
210	1,480	115,050	0,000	109,280	10,000	24,350	2309,580	0,000	2185,830
211	0,960	116,010	0,000	109,280	10,000	18,780	2328,360	6,810	2192,640
212	0,920	116,930	0,680	109,960	10,000	10,980	2339,340	10,450	2203,080
213	0,180	117,110	0,360	110,320	10,000	2,460	2341,800	4,450	2207,530
	0,070	117,180	0,080	110,400	10,000	1,960	2343,750	1,020	2208,550
215	0,130	117,310	0,020	110,420	10,000	1,840	2345,590	3,630	2212,180
216	0,050	117,360	0,340	110,760	10,000	16,020	2361,610	3,410	2215,590
217	1,550	118,910	0,000	110,760	10,000	25,580	2387,180	0,000	2215,590
218	1,010	119,920	0,000	110,760	10,000	27,970	2415,150	0,000	2215,590
219	1,790	121,710	0,000	110,760	10,000	44,060	2459,210	0,000	2215,590
220	2,620	124,330	0,000	110,760	10,000	26,280	2485,490	23,350	2238,940
221	0,010	124,340	2,330	113,090	10,000	21,540	2507,040	23,350	2262,290
222	2,140	126,480	0,000	113,090	10,000	21,460	2528,490	8,240	2270,530
223	0,000	126,480	0,820	113,910	10,000	1,540	2530,030	19,740	2290,270
224	0,150	126,630	1,150	115,060	10,000	6,070	2536,100	13,250	2303,520
225	0,450	127,080	0,180	115,240	10,000	4,550	2540,650	13,400	2316,920
226	0,000	127,080	1,160	116,400	10,000	0,110	2540,760	18,000	2334,930
227	0,010	127,090	0,640	117,040	10,000	7,750	2548,520	9,510	2344,440



VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176 (BARRA DO GARROTE) - GARROTE
 EXTENSÃO: 5,50 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
228	0,760	127,850	0,320	117,360					
					10,000	12,000	2560,520	7,150	2351,590
229	0,440	128,290	0,400	117,760					
					10,000	6,370	2566,890	5,270	2356,860
230	0,200	128,490	0,130	117,890					
					10,000	2,020	2568,910	8,240	2365,110
231	0,000	128,490	0,700	118,590					
					10,000	2,180	2571,080	7,690	2372,790
232	0,220	128,710	0,070	118,660					
					10,000	4,060	2575,140	8,150	2380,940
233	0,190	128,900	0,740	119,400					
					10,000	2,840	2577,980	16,640	2397,580
234	0,100	129,000	0,920	120,320					
					10,000	1,470	2579,450	18,600	2416,190
235	0,050	129,050	0,940	121,260					
					10,000	1,060	2580,510	17,270	2433,460
236	0,050	129,100	0,790	122,050					
					10,000	4,140	2584,650	9,420	2442,870
237	0,360	129,460	0,150	122,200					
					10,000	10,210	2594,870	1,530	2444,410
238	0,660	130,120	0,000	122,200					
					10,000	6,620	2601,480	16,400	2460,810
	0,000	130,120	1,640	123,840					
					10,000	0,000	2601,480	43,030	2503,830
240	0,000	130,120	2,660	126,500					
					10,000	0,000	2601,480	49,100	2552,930
241	0,000	130,120	2,250	128,750					
					10,000	0,000	2601,480	47,330	2600,270
242	0,000	130,120	2,490	131,240					
					10,000	0,950	2602,440	25,950	2626,220
243	0,100	130,220	0,110	131,350					
					10,000	5,400	2607,830	1,140	2627,360
244	0,440	130,660	0,000	131,350					
					10,000	6,130	2613,970	0,370	2627,730
245	0,170	130,830	0,030	131,380					
					10,000	5,690	2619,660	0,320	2628,050
246	0,400	131,230	0,000	131,380					
					10,000	4,000	2623,660	14,670	2642,720
247	0,000	131,230	1,470	132,850					
					10,000	0,000	2623,660	24,010	2666,730
248	0,000	131,230	0,930	133,780					
					10,000	8,330	2631,990	9,330	2676,060
249	0,830	132,060	0,000	133,780					
					10,000	8,390	2640,380	10,960	2687,020
250	0,000	132,060	1,100	134,880					
					10,000	8,000	2648,380	11,060	2698,080
251	0,790	132,850	0,010	134,890					
					10,000	11,440	2659,820	5,670	2703,750
	0,350	133,200	0,560	135,450					
					10,000	3,500	2663,320	29,900	2733,650
253	0,000	133,200	2,430	137,880					
					10,000	0,000	2663,320	106,790	2840,440
254	0,000	133,200	8,250	146,130					
					10,000	0,000	2663,320	128,040	2968,480
255	0,000	133,200	4,560	150,690					
					10,000	16,620	2679,940	52,620	3021,100
256	1,660	134,860	0,700	151,390					
					10,000	28,570	2708,510	10,320	3031,420
257	1,190	136,050	0,330	151,720					
					10,000	51,630	2760,140	3,280	3034,700
258	3,970	140,020	0,000	151,720					
					10,000	48,350	2808,490	1,240	3035,950
259	0,870	140,890	0,120	151,840					
					10,000	15,540	2824,030	1,360	3037,300
260	0,690	141,580	0,010	151,850					
					10,000	7,620	2831,650	6,740	3044,040
261	0,070	141,650	0,660	152,510					
					10,000	2,630	2834,280	11,980	3056,020
262	0,190	141,840	0,540	153,050					
					10,000	4,730	2839,010	12,620	3068,640
263	0,280	142,120	0,730	153,780					
					10,000	5,530	2844,540	16,710	3085,350
264	0,270	142,390	0,940	154,720					
					10,000	4,390	2848,930	17,420	3102,770
265	0,170	142,560	0,800	155,520					
					10,000	2,240	2851,170	20,740	3123,510

VOLUME DE PROJETO

RODOVIA: Vicinal
 TRECHO: ENTR CE 176 (BARRA DO GARROTE) - GARROTE
 EXTENSÃO: 5,50 km



Cálculo de Volume por Comparação de Perfis: Terreno x Projeto

Estaca	Área	Corte	Área	Aterro	Semi-Dis.	Vol.Corte	V.C.Acum.	Vol.Aterro	V.A.Acum
266	0,050	142,610	1,280	156,800					
					10,000	1,000	2852,170	16,530	3140,050
267	0,050	142,660	0,380	157,180					
					10,000	7,150	2859,320	4,300	3144,350
268	0,670	143,330	0,050	157,230					
					10,000	12,850	2872,170	1,130	3145,480
269	0,620	143,950	0,060	157,290					
					10,000	9,280	2881,450	2,920	3148,400
270	0,310	144,260	0,230	157,520					
					10,000	7,810	2889,260	2,320	3150,720
271	0,470	144,730	0,000	157,520					
					10,000	6,760	2896,020	2,780	3153,500
272	0,210	144,940	0,280	157,800					
					10,000	12,730	2908,750	2,920	3156,420
273	1,070	146,010	0,010	157,810					
					10,000	19,150	2927,900	2,150	3158,580
274	0,850	146,860	0,200	158,010					
					5,760	9,110	2937,020	1,160	3159,730
274+11,52	0,730	147,590	-	158,010					

ESCRICÃO	Corte	Aterro
Areas	147,590 m2	158,010 m2
Volumes	2.937,020 m3	3.159,730 m3

Lucidio Carneiro
 Engº Civil - CRE 130-D
 C.F. 0007804194



4 - COORDENADAS DO TRAÇADO HORIZONTAL



Nome	Estaca	Norte	Este	Linha	Raio	Parâmetro	AC/AZ	Extensão
PI-0	0	9.616.592,0414	400.701,7680					
				TANG	-	-	286°11'41,74"	58,514
PC1	2+18,514	9.616.608,3613	400.645,5759					
				CIRC	50,000	-	39°05'06,54"	34,108
PT1	4+12,622	9.616.606,4079	400.612,1823					
				TANG	-	-	247°06'35,20"	45,711
PC2	6+18,333	9.616.588,6280	400.570,0712					
				CIRC	359,323	-	6°22'17,82"	39,959
PT2	8+18,292	9.616.575,1621	400.532,4716					
				TANG	-	-	253°28'53,02"	155,998
PC3	16+14,289	9.616.530,8079	400.382,9125					
				CIRC	425,850	-	5°22'40,17"	39,971
PT3	18+14,260	9.616.517,6627	400.345,1807					
				TANG	-	-	248°06'12,85"	144,762
PC4	25+19,022	9.616.463,6767	400.210,8622					
				CIRC	482,661	-	4°44'44,20"	39,977
	27+18,999	9.616.447,2498	400.174,4285					
				TANG	-	-	243°21'28,65"	43,369
PC5	30+2,368	9.616.427,8023	400.135,6638					
				CIRC	378,012	-	6°03'25,96"	39,963
PT5	32+2,331	9.616.411,8022	400.099,0642					
				TANG	-	-	249°24'54,61"	108,651
PC6	37+10,982	9.616.373,6010	399.997,3499					
				CIRC	150,000	-	31°19'30,17"	82,009
PT6	41+12,991	9.616.366,6516	399.916,6574					
				TANG	-	-	280°44'24,78"	49,356
PC7	44+2,347	9.616.375,8493	399.868,1662					
				CIRC	573,870	-	5°23'14,79"	53,960
PT7	46+16,307	9.616.383,3997	399.814,7569					
				TANG	-	-	275°21'09,99"	4,612
PC8	47+0,919	9.616.383,8299	399.810,1654					
				CIRC	320,519	-	12°27'49,61"	69,724
PT8	50+10,643	9.616.397,8040	399.741,9966					
				TANG	-	-	287°48'59,60"	90,054
PC9	55+0,696	9.616.425,3577	399.656,2618					
				CIRC	220,000	-	21°44'48,45"	83,502
PT9	59+4,198	9.616.435,3913	399.573,8692					
				TANG	-	-	266°04'11,15"	23,040
PC10	60+7,238	9.616.433,8121	399.550,8830					
				CIRC	150,000	-	28°27'52,98"	74,520
PT10	64+1,759	9.616.447,0026	399.478,3156					
				TANG	-	-	294°32'04,12"	120,192
PC11	70+1,950	9.616.496,9110	399.368,9760					
				CIRC	456,871	-	5°00'47,40"	39,974
PT11	72+1,925	9.616.511,8990	399.331,9314					
				TANG	-	-	289°31'16,73"	215,154
PC12	82+17,078	9.616.583,7942	399.129,1452					
				CIRC	272,094	-	8°24'28,14"	39,928

Nome	Estaca	Norte	Este	Linha	Raio	Parâmetro	AC/AZ	Extensão
PT12	84+17,007	9.616.594,3325	399.090,6699					
				TANG	-	-	281°06'48,59"	92,222
PC13	89+9,228	9.616.612,1084	399.000,1778					
				CIRC	521,392	-	8°46'26,43"	79,844
PT13	93+9,072	9.616.621,4514	398.920,9612					
				TANG	-	-	272°20'22,16"	147,422
PC14	100+16,494	9.616.627,4692	398.773,6622					
				CIRC	532,297	-	4°18'12,68"	39,981
PT14	102+16,475	9.616.630,5993	398.733,8132					
				TANG	-	-	276°38'34,84"	46,829
PC15	105+3,304	9.616.636,0166	398.687,2987					
				CIRC	819,329	-	8°22'35,98"	119,786
PT15	111+3,090	9.616.641,1423	398.567,7290					
				TANG	-	-	268°15'58,86"	125,011
PC16	117+8,101	9.616.637,3603	398.442,7749					
				CIRC	578,693	-	7°54'29,29"	79,873
	121+7,974	9.616.640,4525	398.363,0253					
				TANG	-	-	276°10'28,15"	99,920
PC17	126+7,894	9.616.651,1996	398.263,6847					
				CIRC	150,000	-	43°43'50,95"	114,487
PT17	132+2,381	9.616.620,9829	398.156,1201					
				TANG	-	-	232°26'37,20"	131,697
PC18	138+14,078	9.616.540,7081	398.051,7167					
				CIRC	90,000	-	56°42'49,89"	89,086
PT18	143+3,164	9.616.462,6589	398.016,8252					
				TANG	-	-	175°43'47,32"	159,946
PC19	151+3,110	9.616.303,1570	398.028,7348					
				CIRC	101,981	-	42°49'59,15"	76,239
PT19	154+19,349	9.616.231,9911	398.006,7782					
				TANG	-	-	218°33'46,47"	216,326
PC20	165+15,675	9.616.062,8409	397.871,9266					
				CIRC	454,022	-	36°33'54,29"	289,748
PT20	180+5,423	9.615.795,6434	397.773,1914					
				TANG	-	-	181°59'52,18"	32,479
PC21	181+17,902	9.615.763,1843	397.772,0591					
				CIRC	230,000	-	33°37'28,02"	134,977
PT21	188+12,879	9.615.637,2414	397.729,1600					
				TANG	-	-	215°37'20,20"	317,016
PC22	204+9,895	9.615.379,5475	397.544,5177					
				CIRC	264,635	-	19°18'04,06"	89,147
PT22	208+19,042	9.615.299,7816	397.505,6620					
				TANG	-	-	196°19'16,14"	2,944
PC23	209+1,986	9.615.296,9560	397.504,8346					
				CIRC	36,281	-	69°08'18,06"	43,780
PT23	211+5,767	9.615.270,9844	397.472,8875					
				TANG	-	-	265°27'34,20"	26,920
PC24	212+12,686	9.615.268,8533	397.446,0525					
				CIRC	63,695	-	34°51'50,79"	38,758



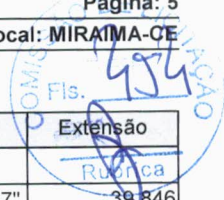
Nome	Estaca	Norte	Este	Linha	Raio	Parâmetro	AC/AZ	Extensão
PT24	214+11,444	9.615.277,3677	397.408,8515					
				TANG	-	-	300°19'24,99"	31,272
PC25	216+2,716	9.615.293,1562	397.381,8582					
				CIRC	108,755	-	26°53'26,62"	51,042
PT25	218+13,758	9.615.307,8401	397.333,4620					
				TANG	-	-	273°25'58,36"	271,176
PC26	232+4,933	9.615.324,0778	397.062,7730					
				CIRC	14,544	-	87°48'55,45"	22,291
PT26	233+7,225	9.615.310,9834	397.047,4277					
				TANG	-	-	185°37'02,91"	36,622
PC27	235+3,847	9.615.274,5374	397.043,8430					
				CIRC	207,882	-	13°10'16,76"	47,788
PT27	237+11,635	9.615.227,9315	397.033,7638					
				TANG	-	-	198°47'19,67"	64,682
PC28	240+16,317	9.615.166,6963	397.012,9309					
				CIRC	50,000	-	102°56'55,58"	89,840
PT28	245+6,157	9.615.140,2770	396.939,2938					
				TANG	-	-	301°44'15,25"	9,720
PC29	245+15,877	9.615.145,3898	396.931,0275					
				CIRC	82,422	-	27°16'43,84"	39,242
PT29	247+15,118	9.615.157,4652	396.894,0787					
				TANG	-	-	274°27'31,40"	334,452
PC30	264+9,570	9.615.183,4658	396.560,6394					
				CIRC	546,826	-	4°11'21,42"	39,982
PT30	266+9,552	9.615.185,1147	396.520,7001					
				TANG	-	-	270°16'09,98"	37,487
PC31	268+7,039	9.615.185,2909	396.483,2131					
				CIRC	775,067	-	2°57'22,65"	39,991
PT31	270+7,031	9.615.186,5104	396.443,2450					
				TANG	-	-	273°13'32,62"	106,763
PC32	275+13,794	9.615.192,5179	396.336,6512					
				CIRC	710,876	-	3°13'23,16"	39,989
PT32	277+13,783	9.615.193,6442	396.296,6829					
				TANG	-	-	270°00'09,46"	12,548
PC33	278+6,331	9.615.193,6448	396.284,1347					
				CIRC	253,719	-	9°00'51,55"	39,917
PT33	280+6,249	9.615.196,7803	396.244,3819					
				TANG	-	-	279°01'01,01"	28,501
PC34	281+14,750	9.615.201,2471	396.216,2330					
				CIRC	313,038	-	7°18'40,70"	39,946
PT34	283+14,695	9.615.204,9770	396.176,4890					
				TANG	-	-	271°42'20,30"	169,556
PC35	292+4,251	9.615.210,0237	396.007,0081					
				CIRC	1.393,675	-	1°38'39,62"	39,997
PT35	294+4,249	9.615.211,7877	395.967,0511					
				TANG	-	-	273°20'59,92"	215,057
PC36	304+19,306	9.615.224,3546	395.752,3616					
				CIRC	1.391,523	-	1°38'48,77"	39,997

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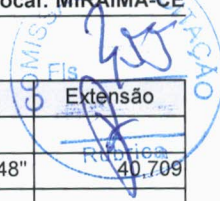
Nome	Estaca	Norte	Este	Linha	Raio	Parâmetro	AC/AZ	Extensão
PT36	306+19,303	9.615.226,1177	395.712,4046					
				TANG	-	-	271°42'11,15"	197,783
PC37	316+17,087	9.615.231,9958	395.514,7085					
				CIRC	27,000	-	84°26'46,33"	39,794
PT37	318+16,881	9.615.257,1707	395.488,5719					
				TANG	-	-	356°08'57,48"	17,102
PI38	319+13,983	9.615.274,2345	395.487,4233					
				TANG	-	-	352°36'18,97"	176,610
PC39	328+10,593	9.615.449,3755	395.464,6929					
				CIRC	50,000	-	71°38'57,11"	62,526
PT39	331+13,119	9.615.492,0290	395.424,6115					
				TANG	-	-	280°57'21,86"	16,807
PC40	332+9,926	9.615.495,2233	395.408,1108					
				CIRC	175,000	-	49°36'39,06"	151,528
PT40	340+1,454	9.615.581,0374	395.288,9579					
				TANG	-	-	330°34'00,92"	22,352
	341+3,806	9.615.600,5044	395.277,9740					
				CIRC	179,350	-	15°52'15,25"	49,680
PT41	343+13,486	9.615.639,8613	395.247,9176					
				TANG	-	-	314°41'45,67"	101,884
PC42	348+15,370	9.615.711,5211	395.175,4934					
				CIRC	56,342	-	29°48'58,19"	29,320
PT42	350+4,690	9.615.736,5265	395.160,8252					
				TANG	-	-	344°30'43,86"	42,587
PC43	352+7,277	9.615.777,5670	395.149,4530					
				CIRC	160,000	-	33°31'53,14"	93,637
PT43	357+0,914	9.615.855,6305	395.100,1920					
				TANG	-	-	310°58'50,73"	36,143
PC44	358+17,057	9.615.879,3333	395.072,9064					
				CIRC	53,583	-	21°08'33,51"	19,773
PT44	359+16,830	9.615.894,7310	395.060,6814					
				TANG	-	-	332°07'24,24"	111,559
PC45	365+8,388	9.615.993,3439	395.008,5201					
				CIRC	30,000	-	64°11'14,33"	33,608
PT45	367+1,997	9.616.009,2974	394.980,9210					
				TANG	-	-	267°56'09,91"	89,722
PC46	371+11,719	9.616.006,0661	394.891,2573					
				CIRC	270,730	-	16°48'32,95"	79,425
PT46	375+11,144	9.616.014,8064	394.812,6005					
				TANG	-	-	284°44'42,86"	7,200
PC47	375+18,344	9.616.016,6389	394.805,6378					
				CIRC	333,755	-	6°51'30,96"	39,952
PT47	377+18,296	9.616.029,0931	394.767,7014					
				TANG	-	-	291°36'13,82"	75,807
PC48	381+14,103	9.616.057,0043	394.697,2196					
				CIRC	353,593	-	6°28'28,75"	39,957
PT48	383+14,061	9.616.073,7816	394.660,9785					
				TANG	-	-	298°04'42,57"	9,856

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Nome	Estaca	Norte	Este	Linha	Raio	Parâmetro	AC/AZ	Extensão
PC49	384+3,916	9.616.078,4205	394.652,2827					
				CIRC	185,708	-	12°17'37,27"	39,846
PT49	386+3,763	9.616.093,2747	394.615,3909					
				TANG	-	-	285°47'05,30"	121,067
PC50	392+4,830	9.616.126,2079	394.498,8893					
				CIRC	101,729	-	27°36'49,47"	49,028
PT50	394+13,858	9.616.127,8838	394.450,3630					
				TANG	-	-	258°10'15,82"	45,541
PC51	396+19,400	9.616.118,5482	394.405,7886					
				CIRC	50,891	-	69°02'10,58"	61,319
PT51	400+0,718	9.616.140,7958	394.352,5759					
				TANG	-	-	327°12'26,40"	63,790
PC52	403+4,508	9.616.194,4197	394.318,0273					
				CIRC	38,569	-	42°30'12,70"	28,611
PT52	404+13,120	9.616.221,8143	394.312,4335					
				TANG	-	-	9°42'39,10"	57,490
	407+10,610	9.616.278,4808	394.322,1307					
				CIRC	402,661	-	14°09'24,60"	99,491
PT53	412+10,100	9.616.373,4885	394.350,7958					
				TANG	-	-	23°52'03,70"	45,045
PC54	414+15,146	9.616.414,6814	394.369,0222					
				CIRC	119,649	-	28°09'05,27"	58,788
PT54	417+13,934	9.616.472,0320	394.378,9201					
				TANG	-	-	355°42'58,42"	109,292
PC55	423+3,225	9.616.581,0183	394.370,7564					
				CIRC	45,235	-	47°42'13,75"	37,662
PT55	425+0,887	9.616.615,4891	394.383,0094					
				TANG	-	-	43°25'12,17"	12,064
PC56	425+12,951	9.616.624,2513	394.391,3012					
				CIRC	38,161	-	42°55'00,57"	28,584
PT56	427+1,535	9.616.650,1458	394.401,7430					
				TANG	-	-	0°30'11,60"	59,849
PC57	430+1,384	9.616.709,9927	394.402,2687					
				CIRC	22,530	-	47°52'05,75"	18,823
PT57	431+0,207	9.616.726,6353	394.409,8312					
				TANG	-	-	48°22'17,35"	24,295
PC58	432+4,502	9.616.742,7745	394.427,9910					
				CIRC	46,672	-	35°38'00,99"	29,027
PT58	433+13,529	9.616.767,3698	394.442,5104					
				TANG	-	-	12°44'16,36"	5,695
PC59	433+19,224	9.616.772,9247	394.443,7661					
				CIRC	65,000	-	95°43'14,35"	108,592
PT59	439+7,816	9.616.820,2487	394.527,7465					
				TANG	-	-	108°27'30,70"	41,230
PC60	441+9,046	9.616.807,1945	394.566,8556					
				CIRC	157,635	-	14°27'41,85"	39,787
PT60	443+8,833	9.616.799,4680	394.605,7781					
				TANG	-	-	93°59'48,86"	47,828

Nome	Estaca	Norte	Este	Linha	Raio	Parâmetro	AC/AZ	Extensão
PC61	445+16,661	9.616.796,1343	394.653,4898					
				CIRC	22,000	-	106°01'12,48"	40,709
PT61	447+17,370	9.616.822,6636	394.676,5406					
				TANG	-	-	347°58'36,38"	82,527
PC62	451+19,897	9.616.903,3802	394.659,3496					
				CIRC	248,681	-	9°11'46,21"	39,914
PT62	453+19,811	9.616.942,9172	394.654,1970					
				TANG	-	-	357°10'22,59"	108,309
PC63	459+8,120	9.617.051,0942	394.648,8550					
				CIRC	309,738	-	7°23'20,43"	39,945
PT63	461+8,065	9.617.090,7528	394.644,3214					
				TANG	-	-	349°47'02,16"	72,931
PC64	465+0,996	9.617.162,5276	394.631,3863					
				CIRC	126,154	-	18°01'01,09"	39,670
PT64	467+0,666	9.617.202,0254	394.630,5537					
				TANG	-	-	7°48'03,24"	17,936
	467+18,601	9.617.219,7951	394.632,9881					
				CIRC	39,647	-	53°32'13,45"	37,046
PT65	469+15,648	9.617.253,5693	394.621,3801					
				TANG	-	-	314°15'49,80"	34,337
PC66	471+9,985	9.617.277,5353	394.596,7902					
				CIRC	24,127	-	63°44'22,71"	26,840
PT66	472+16,825	9.617.302,2703	394.590,6843					
				TANG	-	-	18°00'12,50"	139,098
PC67	479+15,924	9.617.434,5582	394.633,6761					
				CIRC	814,039	-	2°48'53,34"	39,992
PT67	481+15,916	9.617.472,2732	394.646,9657					
				TANG	-	-	20°49'05,84"	41,315
PC68	483+17,231	9.617.510,8911	394.661,6494					
				CIRC	62,028	-	35°44'32,90"	38,694
PT68	485+15,925	9.617.540,6064	394.685,4469					
				TANG	-	-	56°33'38,74"	40,722
PC69	487+16,647	9.617.563,0462	394.719,4279					
				CIRC	45,608	-	47°21'24,59"	37,696
PT69	489+14,343	9.617.593,8097	394.739,3163					
				TANG	-	-	9°12'14,15"	165,535
PC70	497+19,878	9.617.757,2137	394.765,7935					
				CIRC	118,273	-	19°11'44,86"	39,625
PT70	499+19,504	9.617.794,5493	394.778,5048					
				TANG	-	-	28°23'59,01"	55,851
PC71	502+15,354	9.617.843,6785	394.805,0686					
				CIRC	390,000	-	33°01'19,13"	224,773
PT71	514+0,128	9.618.060,5988	394.850,7363					
				TANG	-	-	355°22'39,89"	21,016
PC72	515+1,144	9.618.081,5463	394.849,0428					
				CIRC	99,073	-	22°49'33,68"	39,470
PT72	517+0,613	9.618.120,4803	394.853,6790					
				TANG	-	-	18°12'13,56"	237,973



Handwritten signature or mark.

Nome	Estaca	Norte	Este	Linha	Raio	Parâmetro	AC/AZ	Extensão
PI-73	528+18,586	9.618.346,5430	394.928,0211					



Lucidio Carneiro
 Engº Civil - CREA 160-D
 CREA 087.788.701-4