

**Estado do Ceará
Prefeitura Municipal de
São Gonçalo do Amarante**



Projeto Básico de Engenharia

**Estrada de Ligação do Siupé a Tabuba no Município de
São Gonçalo do Amarante/CE**

Volume 3C – Notas de Serviço e Cálculos de Volume

Agosto / 2017

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APRESENTAÇÃO

APRESENTAÇÃO

A empresa **TECHPROJ Consultoria e Projetos** apresenta o **Volume 3C – Notas de Serviço e Cálculos de Volume**, referente ao Projeto Básico de Engenharia para a Pavimentação da Estrada que liga o Siupé a Tabuba localizado no município de São Gonçalo do Amarante.

O trecho de pavimentação em CBUQ apresentado foi desenvolvido com velocidade diretriz de 60km/h, com uma pista de 6m de largura.

O Projeto Final, em sua forma de apresentação consta de 05 (cinco) volumes, assim identificados:

VOLUME 1 – RELATÓRIO DO PROJETO

Objetivo

Apresentar em formato A4 todas as informações necessárias à licitação da obra, em conformidade com as Instruções Provisórias para Apresentação de Relatórios e Projetos Básicos de Engenharia para Restauração de Rodovias.

VOLUME 2 – PROJETO DE EXECUÇÃO

Objetivo

Apresentar as plantas, perfis, seções transversais tipo, desenhos, tabelas e demais elementos gráficos necessários à execução dos projetos. É apresentado em formato A3.

VOLUME 3A – ESTUDOS GEOTÉCNICOS.

Objetivo

Apresentar os elementos obtidos nos estudos geotécnicos, tais como boletins de sondagens e os resultados dos ensaios efetuados para as camadas do pavimento existente, subleito da duplicação e terceira faixa, ocorrências de solo, areais, pedreiras e empréstimos para terraplenagem. É apresentado em formato A4.

VOLUME 3C – NOTAS DE SERVIÇO E CÁLCULO DE VOLUMES

Objetivo

Apresentar todos os estudos e projetos desenvolvidos, as metodologias adotadas, os resultados obtidos e a conclusão a respeito dos trabalhos. É apresentado em formato A4.

VOLUME 4 – ORÇAMENTO

Objetivo

Apresentar o custo de todas as obras necessárias à execução do Projeto e como deverá ser executado o mesmo, indicando e justificando os métodos adotados na sua obtenção. É apresentado em formato A4.

O presente volume corresponde ao **VOLUME 3C – NOTAS DE SERVIÇO E CÁLCULO DE VOLUMES**.

1. MAPA DE SITUAÇÃO

MAPA DE SITUAÇÃO



2. QUADRO DE COORDENADAS

QUADRO DE COORDENADAS			
Alinhamento: Rua Messias Rocha			
Estaca	Norte	Leste	Rumo
0+0.00	9,609,191.6681m	506,199.7228m	S70° 46' 51"E
1+0.00	9,609,189.6537m	506,217.8779m	N43° 03' 42"E
2+0.00	9,609,204.2661m	506,231.5336m	N43° 03' 42"E
3+0.00	9,609,218.5450m	506,245.5365m	N44° 37' 16"E
4+0.00	9,609,232.7804m	506,259.5848m	N44° 37' 16"E
5+0.00	9,609,247.0016m	506,273.6474m	N44° 51' 00"E
6+0.00	9,609,261.1807m	506,287.7524m	N44° 51' 00"E
7+0.00	9,609,275.3598m	506,301.8575m	N44° 51' 00"E
8+0.00	9,609,290.0143m	506,315.4665m	N42° 42' 45"E
9+0.00	9,609,304.7096m	506,329.0329m	N42° 42' 45"E
10+0.00	9,609,319.0543m	506,342.9624m	N45° 18' 34"E
11+0.00	9,609,333.1198m	506,357.1807m	N45° 18' 34"E
12+0.00	9,609,347.1853m	506,371.3990m	N45° 18' 34"E
13+0.00	9,609,360.9708m	506,385.8890m	N46° 26' 05"E
14+0.00	9,609,374.7544m	506,400.3808m	N46° 26' 05"E
15+0.00	9,609,388.5439m	506,414.8669m	N45° 36' 36"E
16+0.00	9,609,402.5347m	506,429.1588m	N45° 36' 36"E
17+0.00	9,609,416.5255m	506,443.4507m	N45° 36' 36"E
18+0.00	9,609,430.3602m	506,457.8922m	N46° 47' 30"E
19+0.00	9,609,444.0533m	506,472.4696m	N46° 47' 30"E
20+0.00	9,609,459.3325m	506,485.3176m	N38° 15' 43"E
21+0.00	9,609,472.9482m	506,499.8940m	N48° 58' 37"E
22+0.00	9,609,484.6790m	506,515.9530m	N61° 26' 43"E
23+0.00	9,609,494.2389m	506,533.5203m	N61° 26' 43"E
24+0.00	9,609,503.7988m	506,551.0875m	N61° 26' 43"E
25+0.00	9,609,513.2130m	506,568.7319m	N62° 45' 29"E
26+0.00	9,609,522.3680m	506,586.5136m	N62° 45' 29"E
27+0.00	9,609,532.4673m	506,603.7762m	N59° 39' 29"E

QUADRO DE COORDENADAS			
Alinhamento: Rua Messias Rocha			
Estaca	Norte	Leste	Rumo
28+0.00	9,609,542.7440m	506,620.9315m	N57° 53' 02"E
29+0.00	9,609,553.3767m	506,637.8710m	N57° 53' 02"E
30+0.00	9,609,565.3523m	506,653.8792m	N52° 38' 14"E
31+0.00	9,609,577.4895m	506,669.7754m	N52° 38' 14"E
32+0.00	9,609,589.6267m	506,685.6716m	N52° 38' 14"E
33+0.00	9,609,601.7639m	506,701.5678m	N52° 38' 14"E
34+0.00	9,609,614.0406m	506,717.3557m	N51° 46' 54"E
35+0.00	9,609,626.4138m	506,733.0689m	N51° 46' 54"E
36+0.00	9,609,638.9178m	506,748.6744m	N49° 18' 42"E
37+0.00	9,609,651.9567m	506,763.8398m	N49° 18' 42"E
38+0.00	9,609,664.9956m	506,779.0052m	N49° 18' 42"E
39+0.00	9,609,678.0344m	506,794.1705m	N49° 18' 42"E
40+0.00	9,609,690.8017m	506,809.5589m	N51° 54' 03"E
41+0.00	9,609,703.1422m	506,825.2978m	N51° 54' 03"E
42+0.00	9,609,716.3582m	506,840.2534m	N44° 27' 50"E
43+0.00	9,609,730.6321m	506,854.2625m	N44° 27' 50"E
44+0.00	9,609,745.5036m	506,867.6300m	N41° 27' 47"E
45+0.00	9,609,760.4912m	506,880.8727m	N41° 27' 47"E
46+0.00	9,609,775.4789m	506,894.1155m	N41° 27' 47"E
47+0.00	9,609,793.1603m	506,903.1346m	N23° 35' 39"E
48+0.00	9,609,811.4883m	506,911.1397m	N23° 35' 39"E
49+0.00	9,609,829.8164m	506,919.1448m	N23° 35' 39"E
50+0.00	9,609,836.4536m	506,935.3097m	N86° 34' 43"E
51+0.00	9,609,837.6472m	506,955.2740m	N86° 34' 43"E
52+0.00	9,609,838.8408m	506,975.2384m	N86° 34' 43"E
53+0.00	9,609,840.0344m	506,995.2027m	N86° 34' 43"E
54+0.00	9,609,841.0389m	507,015.1749m	N88° 40' 33"E
55+0.00	9,609,841.5011m	507,035.1696m	N88° 40' 33"E

QUADRO DE COORDENADAS			
Alinhamento: Rua Messias Rocha			
Estaca	Norte	Leste	Rumo
56+0.00	9,609,841.9633m	507,055.1643m	N88° 40' 33"E
57+0.00	9,609,842.4255m	507,075.1589m	N88° 40' 33"E
58+0.00	9,609,842.8877m	507,095.1536m	N88° 40' 33"E
59+0.00	9,609,843.3795m	507,115.1472m	N87° 16' 00"E
60+0.00	9,609,844.3332m	507,135.1244m	N87° 16' 00"E
61+0.00	9,609,845.2870m	507,155.1017m	N87° 16' 00"E
62+0.00	9,609,846.2407m	507,175.0789m	N87° 16' 00"E
63+0.00	9,609,847.1944m	507,195.0562m	N87° 16' 00"E
64+0.00	9,609,848.1351m	507,215.0340m	N87° 49' 52"E
65+0.00	9,609,848.8920m	507,235.0196m	N87° 49' 52"E
66+0.00	9,609,849.5697m	507,255.0075m	N88° 56' 26"E
67+0.00	9,609,849.9395m	507,275.0041m	N88° 56' 26"E
68+0.00	9,609,849.8900m	507,294.9992m	S88° 31' 03"E
69+0.00	9,609,847.9489m	507,314.8765m	S77° 27' 13"E
70+0.00	9,609,842.7785m	507,334.1760m	S72° 20' 15"E
71+0.00	9,609,836.9148m	507,353.2962m	S73° 26' 29"E
72+0.00	9,609,831.2149m	507,372.4668m	S73° 26' 29"E
73+0.00	9,609,825.8477m	507,391.7245m	S77° 12' 57"E
74+0.00	9,609,821.4221m	507,411.2287m	S77° 12' 57"E
75+0.00	9,609,816.9966m	507,430.7329m	S77° 12' 57"E
76+0.00	9,609,812.5710m	507,450.2371m	S77° 12' 58"E
77+0.00	9,609,808.1455m	507,469.7413m	S77° 12' 58"E
78+0.00	9,609,803.7200m	507,489.2456m	S77° 12' 58"E
79+0.00	9,609,799.2944m	507,508.7498m	S77° 12' 58"E
80+0.00	9,609,794.8689m	507,528.2540m	S77° 12' 58"E
81+0.00	9,609,790.4434m	507,547.7582m	S77° 12' 58"E
82+0.00	9,609,786.0179m	507,567.2624m	S77° 12' 58"E
83+0.00	9,609,781.5923m	507,586.7667m	S77° 12' 58"E

QUADRO DE COORDENADAS			
Alinhamento: Rua Messias Rocha			
Estaca	Norte	Leste	Rumo
84+0.00	9,609,777.1668m	507,606.2709m	S77° 12' 58"E
85+0.00	9,609,772.4507m	507,625.7068m	S76° 20' 29"E
86+0.00	9,609,767.7279m	507,645.1412m	S76° 20' 29"E
87+0.00	9,609,763.0052m	507,664.5756m	S76° 20' 29"E
88+0.00	9,609,758.2825m	507,684.0100m	S76° 20' 29"E
89+0.00	9,609,753.5597m	507,703.4444m	S76° 20' 29"E
90+0.00	9,609,748.8370m	507,722.8788m	S76° 20' 29"E
91+0.00	9,609,743.9501m	507,742.2718m	S75° 19' 14"E
92+0.00	9,609,738.8819m	507,761.6189m	S75° 19' 14"E
93+0.00	9,609,733.8137m	507,780.9661m	S75° 19' 14"E
94+0.00	9,609,728.7455m	507,800.3133m	S75° 19' 14"E
95+0.00	9,609,723.6773m	507,819.6605m	S75° 19' 14"E
96+0.00	9,609,718.6091m	507,839.0077m	S75° 19' 14"E
97+0.00	9,609,713.5316m	507,858.3524m	S75° 15' 07"E
98+0.00	9,609,708.4403m	507,877.6935m	S75° 15' 07"E
99+0.00	9,609,703.3489m	507,897.0346m	S75° 15' 07"E
100+0.00	9,609,698.2576m	507,916.3757m	S75° 15' 07"E
101+0.00	9,609,693.1662m	507,935.7168m	S75° 15' 07"E
102+0.00	9,609,688.1039m	507,955.0654m	S75° 42' 51"E
103+0.00	9,609,683.1687m	507,974.4470m	S75° 42' 51"E
104+0.00	9,609,678.2335m	507,993.8285m	S75° 42' 51"E
105+0.00	9,609,673.2983m	508,013.2100m	S75° 42' 51"E
106+0.00	9,609,668.1838m	508,032.5412m	S72° 53' 29"E
107+0.00	9,609,662.3000m	508,051.6561m	S72° 53' 29"E
108+0.00	9,609,656.4163m	508,070.7711m	S72° 53' 29"E
109+0.00	9,609,650.5326m	508,089.8860m	S72° 53' 29"E
110+0.00	9,609,644.5178m	508,108.9591m	S71° 40' 20"E
111+0.00	9,609,638.2287m	508,127.9446m	S71° 40' 20"E

QUADRO DE COORDENADAS			
Alinhamento: Rua Messias Rocha			
Estaca	Norte	Leste	Rumo
112+0.00	9,609,631.9397m	508,146.9301m	S71° 40' 20"E
113+0.00	9,609,625.3096m	508,165.7939m	S69° 04' 28"E
114+0.00	9,609,618.1665m	508,184.4748m	S69° 04' 28"E
115+0.00	9,609,611.0234m	508,203.1557m	S69° 04' 28"E
116+0.00	9,609,603.8803m	508,221.8366m	S69° 04' 28"E
117+0.00	9,609,596.7372m	508,240.5175m	S69° 04' 28"E
118+0.00	9,609,593.6656m	508,260.0847m	S86° 21' 52"E
119+0.00	9,609,592.7164m	508,280.0554m	S89° 43' 02"E
120+0.00	9,609,592.6177m	508,300.0551m	S89° 43' 02"E
121+0.00	9,609,592.6548m	508,320.0536m	N88° 39' 03"E
122+0.00	9,609,593.1257m	508,340.0481m	N88° 39' 03"E
123+0.00	9,609,594.0150m	508,360.0227m	N85° 55' 20"E
124+0.00	9,609,595.4371m	508,379.9721m	N85° 55' 20"E
125+0.00	9,609,596.8593m	508,399.9214m	N85° 55' 20"E
126+0.00	9,609,598.2815m	508,419.8708m	N85° 55' 20"E
127+0.00	9,609,599.7036m	508,439.8202m	N85° 55' 20"E
128+0.00	9,609,600.9238m	508,459.7828m	N86° 34' 24"E
129+0.00	9,609,602.1192m	508,479.7471m	N86° 34' 24"E
130+0.00	9,609,603.3145m	508,499.7113m	N86° 34' 24"E
131+0.00	9,609,604.5099m	508,519.6755m	N86° 34' 24"E
132+0.00	9,609,605.9540m	508,539.6225m	N85° 29' 23"E
133+0.00	9,609,607.5268m	508,559.5606m	N85° 29' 23"E
134+0.00	9,609,609.0996m	508,579.4987m	N85° 29' 23"E
135+0.00	9,609,610.6724m	508,599.4367m	N85° 29' 23"E
136+0.00	9,609,612.2452m	508,619.3748m	N85° 29' 23"E
137+0.00	9,609,613.1170m	508,639.3450m	N89° 15' 08"E
138+0.00	9,609,613.3780m	508,659.3433m	N89° 15' 08"E
139+0.00	9,609,612.9084m	508,679.3171m	S85° 24' 44"E

QUADRO DE COORDENADAS			
Alinhamento: Rua Messias Rocha			
Estaca	Norte	Leste	Rumo
140+0.00	9,609,611.3086m	508,699.2531m	S85° 24' 44"E
141+0.00	9,609,609.7089m	508,719.1890m	S85° 24' 44"E
142+0.00	9,609,608.1091m	508,739.1249m	S85° 24' 44"E
143+0.00	9,609,606.5094m	508,759.0608m	S85° 24' 44"E
144+0.00	9,609,604.9096m	508,778.9967m	S85° 24' 44"E
145+0.00	9,609,603.3099m	508,798.9326m	S85° 24' 44"E
146+0.00	9,609,601.5819m	508,818.8577m	S84° 55' 30"E
147+0.00	9,609,599.8127m	508,838.7793m	S84° 55' 30"E
148+0.00	9,609,598.0437m	508,858.7009m	S84° 57' 04"E
149+0.00	9,609,596.2836m	508,878.6233m	S84° 57' 04"E
150+0.00	9,609,594.5235m	508,898.5457m	S84° 57' 04"E
151+0.00	9,609,592.7634m	508,918.4681m	S84° 57' 04"E
152+0.00	9,609,591.0033m	508,938.3905m	S84° 57' 04"E
153+0.00	9,609,589.2432m	508,958.3129m	S84° 57' 04"E
154+0.00	9,609,587.5151m	508,978.2374m	S87° 43' 39"E
155+0.00	9,609,586.7221m	508,998.2216m	S87° 43' 39"E
156+0.00	9,609,586.4333m	509,018.2103m	N88° 43' 44"E
157+0.00	9,609,587.7176m	509,038.1412m	N82° 32' 35"E
158+0.00	9,609,590.3133m	509,057.9721m	N82° 32' 35"E
159+0.00	9,609,593.0674m	509,077.7815m	N82° 04' 38"E
160+0.00	9,609,595.8242m	509,097.5906m	N82° 04' 38"E
161+0.00	9,609,597.6211m	509,117.4970m	N86° 21' 04"E
162+0.00	9,609,598.8939m	509,137.4565m	N86° 21' 04"E
163+0.00	9,609,600.1681m	509,157.4158m	N86° 20' 37"E
164+0.00	9,609,601.4436m	509,177.3751m	N86° 20' 37"E
165+0.00	9,609,602.7190m	509,197.3344m	N86° 20' 37"E
166+0.00	9,609,603.9945m	509,217.2937m	N86° 20' 37"E
167+0.00	9,609,604.9340m	509,237.2692m	N88° 06' 50"E

QUADRO DE COORDENADAS			
Alinhamento: Rua Messias Rocha			
Estaca	Norte	Leste	Rumo
168+0.00	9,609,605.5923m	509,257.2584m	N88° 06' 50"E
169+0.00	9,609,606.2506m	509,277.2476m	N88° 06' 50"E

QUADRO DE COORDENADAS			
Alinhamento: Rua SDO 01			
Estaca	Norte	Leste	Rumo
0+0.00	9,609,700.0138m	506,821.3078m	S71° 47' 43"E
1+0.00	9,609,693.8880m	506,840.3380m	S79° 33' 09"E
2+0.00	9,609,690.2613m	506,860.0064m	S79° 33' 09"E
3+0.00	9,609,686.6346m	506,879.6749m	S79° 33' 09"E
4+0.00	9,609,683.0079m	506,899.3433m	S79° 33' 09"E
5+0.00	9,609,679.3812m	506,919.0117m	S79° 33' 09"E
6+0.00	9,609,675.7545m	506,938.6802m	S79° 33' 09"E
7+0.00	9,609,672.1278m	506,958.3486m	S79° 33' 09"E
8+0.00	9,609,668.5011m	506,978.0170m	S79° 33' 09"E
9+0.00	9,609,664.8744m	506,997.6854m	S79° 33' 09"E
10+0.00	9,609,661.2477m	507,017.3539m	S79° 33' 09"E
11+0.00	9,609,657.6210m	507,037.0223m	S79° 33' 09"E
12+0.00	9,609,653.9943m	507,056.6907m	S79° 33' 09"E
13+0.00	9,609,650.3615m	507,076.3580m	S79° 02' 58"E
14+0.00	9,609,646.5623m	507,095.9938m	S79° 02' 58"E
15+0.00	9,609,642.7630m	507,115.6297m	S79° 02' 58"E
16+0.00	9,609,638.9638m	507,135.2655m	S79° 02' 58"E
17+0.00	9,609,635.1645m	507,154.9013m	S79° 02' 58"E
18+0.00	9,609,631.3653m	507,174.5371m	S79° 02' 58"E
19+0.00	9,609,627.5660m	507,194.1730m	S79° 02' 58"E
20+0.00	9,609,623.7668m	507,213.8088m	S79° 02' 58"E
21+0.00	9,609,619.9675m	507,233.4446m	S79° 02' 58"E
22+0.00	9,609,616.1683m	507,253.0804m	S79° 02' 58"E
23+0.00	9,609,612.7369m	507,272.7838m	S80° 08' 59"E
24+0.00	9,609,609.3154m	507,292.4890m	S80° 08' 59"E

3. NOTAS DE SERVIÇO

NOTA DE SERVIÇO											
Alinhamento: Rua Messias Rocha											
Lado Esquerdo				Eixo				Lado Direito			
OFFSET		BORDO		Estaca	Cota Projeto	Cota Terreno	Cota Vermelha	BORDO		OFFSET	
Afast. (m)	Cota (m)	Afast. (m)	Cota (m)					Afast. (m)	Cota (m)	Afast. (m)	Cota (m)
		-3.000	8.135	41+0.000	8.425	8.323	0.102	3.000	8.135		
		-3.000	7.493	42+0.000	7.783	7.738	0.045	3.000	7.493		
		-3.000	6.601	43+0.000	6.891	6.631	0.260	3.000	6.601		
		-3.000	4.573	44+0.000	4.863	4.726	0.137	3.000	4.573		
		-3.000	2.602	45+0.000	2.892	2.649	0.243	3.000	2.602		
		-3.000	2.133	46+0.000	2.423	2.279	0.144	3.000	2.133		
		-3.000	1.811	47+0.000	2.101	1.864	0.237	3.000	1.811		
		-3.000	2.595	48+0.000	2.885	2.654	0.231	3.000	2.595		
		-3.000	4.399	49+0.000	4.689	4.463	0.226	3.000	4.399		
		-3.000	5.430	50+0.000	5.720	5.412	0.308	3.000	5.430		
		-3.000	5.915	51+0.000	6.205	6.101	0.104	3.000	5.915		
		-3.000	5.724	52+0.000	6.014	5.901	0.113	3.000	5.724		
		-3.000	5.361	53+0.000	5.651	5.485	0.167	3.000	5.361		
		-3.000	5.187	54+0.000	5.477	5.284	0.192	3.000	5.187		
		-3.000	5.090	55+0.000	5.380	5.282	0.097	3.000	5.090		
		-3.000	5.117	56+0.000	5.407	5.253	0.154	3.000	5.117		
		-3.000	5.331	57+0.000	5.621	5.385	0.236	3.000	5.331		
		-3.000	5.609	58+0.000	5.899	5.615	0.284	3.000	5.609		
		-3.000	5.887	59+0.000	6.177	6.240	-0.063	3.000	5.887		
		-3.000	6.166	60+0.000	6.456	6.423	0.033	3.000	6.166		
		-3.000	6.444	61+0.000	6.734	6.854	-0.120	3.000	6.444		
		-3.000	6.722	62+0.000	7.012	6.852	0.161	3.000	6.722		
		-3.000	7.001	63+0.000	7.291	7.036	0.254	3.000	7.001		
		-3.000	7.279	64+0.000	7.569	7.488	0.081	3.000	7.279		
		-3.000	7.557	65+0.000	7.847	7.538	0.310	3.000	7.557		
		-3.000	7.836	66+0.000	8.126	7.873	0.253	3.000	7.836		
		-3.000	8.114	67+0.000	8.404	8.224	0.180	3.000	8.114		
		-3.000	8.349	68+0.000	8.639	8.423	0.216	3.000	8.349		
		-3.000	8.505	69+0.000	8.795	8.562	0.232	3.000	8.505		
		-3.000	8.623	70+0.000	8.913	8.757	0.156	3.000	8.623		
		-3.000	8.742	71+0.000	9.032	8.999	0.033	3.000	8.742		
		-3.000	8.860	72+0.000	9.150	8.889	0.261	3.000	8.860		
		-3.000	8.979	73+0.000	9.269	9.088	0.181	3.000	8.979		
		-3.000	9.097	74+0.000	9.387	9.212	0.175	3.000	9.097		
		-3.000	9.215	75+0.000	9.505	9.394	0.112	3.000	9.215		
		-3.000	9.334	76+0.000	9.624	9.577	0.047	3.000	9.334		

NOTA DE SERVIÇO											
Alinhamento: Rua Messias Rocha											
Lado Esquerdo				Eixo				Lado Direito			
OFFSET		BORDO		Estaca	Cota Projeto	Cota Terreno	Cota Vermelha	BORDO		OFFSET	
Afast. (m)	Cota (m)	Afast. (m)	Cota (m)					Afast. (m)	Cota (m)	Afast. (m)	Cota (m)
		-3.000	9.452	77+0.000	9.742	9.725	0.018	3.000	9.452		
		-3.000	9.571	78+0.000	9.861	9.875	-0.015	3.000	9.571		
		-3.000	9.689	79+0.000	9.979	9.467	0.512	3.000	9.689		
		-3.000	9.808	80+0.000	10.098	9.901	0.197	3.000	9.808		
		-3.000	9.926	81+0.000	10.216	10.037	0.179	3.000	9.926		
		-3.000	10.045	82+0.000	10.335	10.144	0.191	3.000	10.045		
		-3.000	10.163	83+0.000	10.453	10.370	0.083	3.000	10.163		
		-3.000	10.281	84+0.000	10.571	10.524	0.048	3.000	10.281		
		-3.000	10.400	85+0.000	10.690	10.503	0.187	3.000	10.400		
		-3.000	10.518	86+0.000	10.808	10.601	0.208	3.000	10.518		
		-3.000	10.637	87+0.000	10.927	10.546	0.381	3.000	10.637		
		-3.000	10.739	88+0.000	11.029	10.680	0.350	3.000	10.739		
		-3.000	10.745	89+0.000	11.035	10.578	0.456	3.000	10.745		
		-3.000	10.656	90+0.000	10.946	10.494	0.452	3.000	10.656		
		-3.000	10.556	91+0.000	10.846	10.433	0.414	3.000	10.556		
		-3.000	10.456	92+0.000	10.746	10.430	0.316	3.000	10.456		
		-3.000	10.356	93+0.000	10.646	10.401	0.245	3.000	10.356		
		-3.000	10.256	94+0.000	10.546	10.417	0.130	3.000	10.256		
		-3.000	10.171	95+0.000	10.461	10.355	0.106	3.000	10.171		
		-3.000	10.180	96+0.000	10.470	10.334	0.136	3.000	10.180		
		-3.000	10.279	97+0.000	10.569	10.605	-0.036	3.000	10.279		
		-3.000	10.389	98+0.000	10.679	10.606	0.073	3.000	10.389		
		-3.000	10.499	99+0.000	10.789	10.590	0.199	3.000	10.499		
		-3.000	10.609	100+0.000	10.899	10.740	0.159	3.000	10.609		
		-3.000	10.719	101+0.000	11.009	10.826	0.183	3.000	10.719		
		-3.000	10.829	102+0.000	11.119	10.908	0.211	3.000	10.829		
		-3.000	10.939	103+0.000	11.229	10.948	0.281	3.000	10.939		
		-3.000	11.049	104+0.000	11.339	11.084	0.255	3.000	11.049		
		-3.000	11.166	105+0.000	11.456	11.100	0.356	3.000	11.166		
		-3.000	11.325	106+0.000	11.615	11.345	0.270	3.000	11.325		
		-3.000	11.524	107+0.000	11.814	11.544	0.271	3.000	11.524		
		-3.000	11.729	108+0.000	12.019	11.927	0.092	3.000	11.729		
		-3.000	11.933	109+0.000	12.223	12.339	-0.116	3.000	11.933		
		-3.000	12.138	110+0.000	12.428	12.769	-0.342	3.000	12.138		
		-3.000	12.342	111+0.000	12.632	12.837	-0.205	3.000	12.342		
		-3.000	12.547	112+0.000	12.837	12.669	0.168	3.000	12.547		

NOTA DE SERVIÇO											
Alinhamento: Rua Messias Rocha											
Lado Esquerdo				Eixo				Lado Direito			
OFFSET		BORDO		Estaca	Cota Projeto	Cota Terreno	Cota Vermelha	BORDO		OFFSET	
Afast. (m)	Cota (m)	Afast. (m)	Cota (m)					Afast. (m)	Cota (m)	Afast. (m)	Cota (m)
		-3.000	12.751	113+0.000	13.041	12.513	0.528	3.000	12.751		
		-3.000	12.958	114+0.000	13.248	12.751	0.497	3.000	12.958		
		-3.000	13.571	115+0.000	13.861	13.537	0.324	3.000	13.571		
		-3.000	14.881	116+0.000	15.171	15.056	0.116	3.000	14.881		
		-3.000	16.101	117+0.000	16.391	16.311	0.080	3.000	16.101		
		-3.000	16.221	118+0.000	16.511	16.294	0.217	3.000	16.221		
		-3.000	15.612	119+0.000	15.902	15.343	0.559	3.000	15.612		
		-3.000	14.986	120+0.000	15.276	14.862	0.414	3.000	14.986		
		-3.000	14.361	121+0.000	14.651	14.126	0.525	3.000	14.361		
		-3.000	13.736	122+0.000	14.026	13.506	0.520	3.000	13.736		
		-3.000	13.111	123+0.000	13.401	13.182	0.219	3.000	13.111		
		-3.000	12.555	124+0.000	12.845	12.595	0.250	3.000	12.555		
		-3.000	12.219	125+0.000	12.509	12.157	0.353	3.000	12.219		
		-3.000	12.099	126+0.000	12.389	11.776	0.613	3.000	12.099		
		-3.000	12.036	127+0.000	12.326	11.639	0.687	3.000	12.036		
		-3.000	11.973	128+0.000	12.263	11.710	0.552	3.000	11.973		
		-3.000	11.910	129+0.000	12.200	11.638	0.562	3.000	11.910		
		-3.000	11.846	130+0.000	12.136	11.693	0.443	3.000	11.846		
		-3.000	11.783	131+0.000	12.073	11.585	0.488	3.000	11.783		
		-3.000	11.720	132+0.000	12.010	11.592	0.419	3.000	11.720		
		-3.000	11.657	133+0.000	11.947	11.633	0.314	3.000	11.657		
		-3.000	11.594	134+0.000	11.884	11.606	0.278	3.000	11.594		
		-3.000	11.531	135+0.000	11.821	11.560	0.261	3.000	11.531		
		-3.000	11.468	136+0.000	11.758	11.586	0.172	3.000	11.468		
		-3.000	11.404	137+0.000	11.694	11.612	0.083	3.000	11.404		
		-3.000	11.346	138+0.000	11.636	11.502	0.134	3.000	11.346		
		-3.000	11.319	139+0.000	11.609	11.575	0.034	3.000	11.319		
		-3.000	11.327	140+0.000	11.617	11.543	0.074	3.000	11.327		
		-3.000	11.368	141+0.000	11.658	11.648	0.010	3.000	11.368		
		-3.000	11.440	142+0.000	11.730	11.579	0.151	3.000	11.440		
		-3.000	11.515	143+0.000	11.805	11.602	0.204	3.000	11.515		
		-3.000	11.591	144+0.000	11.881	11.821	0.059	3.000	11.591		
		-3.000	11.666	145+0.000	11.956	11.840	0.116	3.000	11.666		
		-3.000	11.741	146+0.000	12.031	11.839	0.192	3.000	11.741		
		-3.000	11.817	147+0.000	12.107	11.788	0.318	3.000	11.817		
		-3.000	11.892	148+0.000	12.182	11.913	0.269	3.000	11.892		

4. QUADRO DE CUBAÇÃO

QUADRO DE CUBAÇÃO DE TERRAPLENAGEM – Rua Messias Rocha							
Estaca 0+00.000 a Estaca 169+8.04							
Estaca	Área (m²)		Volume (m³)		Volume Acumul. (m³)		Ordenada de Massa
	Corte	Aterro	Corte	Aterro	Corte	Aterro	
1+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
29+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
32+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
33+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

QUADRO DE CUBAÇÃO DE TERRAPLENAGEM – Rua Messias Rocha							
Estaca 0+00.000 a Estaca 169+8.04							
Estaca	Área (m²)		Volume (m³)		Volume Acumul. (m³)		Ordenada de Massa
	Corte	Aterro	Corte	Aterro	Corte	Aterro	
34+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
36+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
37+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
38+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40+0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
41+0.00	1.58	0.13	15.78	1.34	15.78	1.34	14.44
42+0.00	2.70	0.00	42.83	1.32	58.61	2.66	55.95
43+0.00	0.84	0.08	35.45	0.85	94.06	3.51	90.55
44+0.00	3.97	0.00	48.02	0.86	142.08	4.37	137.70
45+0.00	2.44	0.01	64.13	0.11	206.20	4.48	201.72
46+0.00	1.37	0.09	38.11	0.95	244.32	5.43	238.88
47+0.00	0.28	1.70	16.49	17.80	260.81	23.23	237.57
48+0.00	1.08	0.25	13.60	19.59	274.41	42.83	231.58
49+0.00	1.49	0.13	25.72	3.81	300.13	46.63	253.49
50+0.00	0.95	0.21	25.96	2.75	326.08	49.38	276.70
51+0.00	1.71	0.07	26.61	2.77	352.70	52.15	300.55
52+0.00	1.94	0.02	36.49	0.90	389.19	53.04	336.15
53+0.00	1.26	0.12	32.01	1.36	421.19	54.40	366.79
54+0.00	1.27	0.14	25.26	2.58	446.46	56.98	389.47
55+0.00	1.84	0.10	31.07	2.42	477.53	59.40	418.12
56+0.00	1.60	0.09	34.39	1.91	511.92	61.31	450.61
57+0.00	1.06	0.20	26.58	2.88	538.49	64.19	474.30
58+0.00	0.85	0.13	19.03	3.28	557.53	67.48	490.05
59+0.00	2.36	0.03	32.08	1.60	589.61	69.07	520.54
60+0.00	1.84	0.14	42.04	1.73	631.65	70.80	560.85
61+0.00	2.79	0.00	46.32	1.43	677.97	72.22	605.75
62+0.00	1.46	0.09	42.50	0.87	720.47	73.09	647.38
63+0.00	0.84	0.22	23.03	3.07	743.50	76.16	667.34
64+0.00	1.98	0.27	28.24	4.92	771.74	81.08	690.65
65+0.00	0.50	0.33	24.79	6.01	796.53	87.09	709.44
66+0.00	0.86	0.27	13.61	6.00	810.14	93.09	717.05

QUADRO DE CUBAÇÃO DE TERRAPLENAGEM – Rua Messias Rocha							
Estaca 0+00.000 a Estaca 169+8.04							
Estaca	Área (m²)		Volume (m³)		Volume Acumul. (m³)		Ordenada de Massa
	Corte	Aterro	Corte	Aterro	Corte	Aterro	
67+0.00	1.64	0.10	25.07	3.72	835.21	96.81	738.40
68+0.00	1.38	0.01	30.24	1.09	865.46	97.90	767.55
69+0.00	1.01	0.20	23.98	2.10	889.44	100.00	789.43
70+0.00	2.05	0.05	30.71	2.55	920.14	102.55	817.59
71+0.00	2.17	0.07	42.22	1.27	962.36	103.82	858.55
72+0.00	0.87	0.16	30.41	2.36	992.77	106.18	886.59
73+0.00	1.03	0.13	18.97	2.97	1,011.74	109.15	902.59
74+0.00	1.72	0.00	27.51	1.34	1,039.25	110.49	928.76
75+0.00	2.41	0.00	41.33	0.00	1,080.59	110.49	970.10
76+0.00	2.14	0.00	45.52	0.00	1,126.11	110.49	1,015.61
77+0.00	2.08	0.00	42.19	0.01	1,168.29	110.50	1,057.79
78+0.00	2.31	0.02	43.88	0.16	1,212.17	110.66	1,101.51
79+0.00	0.09	1.13	23.97	11.42	1,236.14	122.09	1,114.05
80+0.00	1.22	0.11	13.05	12.34	1,249.19	134.42	1,114.76
81+0.00	1.36	0.08	25.71	1.90	1,274.90	136.32	1,138.57
82+0.00	1.14	0.13	24.97	2.12	1,299.86	138.44	1,161.42
83+0.00	1.88	0.01	30.20	1.36	1,330.06	139.80	1,190.26
84+0.00	2.23	0.00	41.05	0.07	1,371.11	139.87	1,231.24
85+0.00	1.33	0.09	35.55	0.90	1,406.66	140.77	1,265.89
86+0.00	1.04	0.23	23.66	3.23	1,430.32	144.00	1,286.32
87+0.00	0.23	0.47	12.66	6.99	1,442.98	150.99	1,291.99
88+0.00	0.31	0.38	5.34	8.43	1,448.32	159.42	1,288.90
89+0.00	0.02	0.88	3.22	12.61	1,451.54	172.03	1,279.51
90+0.00	0.02	0.79	0.40	16.73	1,451.94	188.76	1,263.18
91+0.00	0.00	0.87	0.24	16.59	1,452.17	205.34	1,246.83
92+0.00	0.36	0.35	3.61	12.20	1,455.79	217.55	1,238.24
93+0.00	0.73	0.24	10.87	5.91	1,466.65	223.46	1,243.20
94+0.00	1.59	0.04	23.17	2.77	1,489.82	226.23	1,263.59
95+0.00	1.92	0.01	35.09	0.44	1,524.92	226.66	1,298.25
96+0.00	1.73	0.00	36.45	0.10	1,561.37	226.76	1,334.61
97+0.00	2.67	0.00	43.93	0.04	1,605.30	226.80	1,378.51
98+0.00	2.09	0.00	47.60	0.00	1,652.90	226.80	1,426.10
99+0.00	1.10	0.13	31.91	1.31	1,684.81	228.11	1,456.70

QUADRO DE CUBAÇÃO DE TERRAPLENAGEM – Rua Messias Rocha							
Estaca 0+00.000 a Estaca 169+8.04							
Estaca	Área (m²)		Volume (m³)		Volume Acumul. (m³)		Ordenada de Massa
	Corte	Aterro	Corte	Aterro	Corte	Aterro	
100+0.00	1.48	0.06	25.76	1.89	1,710.57	230.00	1,480.57
101+0.00	1.16	0.13	26.36	1.92	1,736.93	231.91	1,505.02
102+0.00	1.09	0.16	22.50	2.95	1,759.43	234.86	1,524.57
103+0.00	0.59	0.30	16.77	4.59	1,776.20	239.44	1,536.75
104+0.00	0.71	0.24	12.93	5.35	1,789.12	244.79	1,544.33
105+0.00	0.14	0.44	8.48	6.75	1,797.61	251.54	1,546.06
106+0.00	0.49	0.29	6.31	7.29	1,803.92	258.83	1,545.09
107+0.00	0.71	0.23	11.98	5.21	1,815.90	264.04	1,551.86
108+0.00	1.91	0.00	26.21	2.28	1,842.11	266.32	1,575.79
109+0.00	3.34	0.00	52.51	0.00	1,894.62	266.32	1,628.30
110+0.00	4.99	0.00	83.26	0.00	1,977.88	266.32	1,711.56
111+0.00	3.95	0.00	89.42	0.00	2,067.30	266.32	1,800.98
112+0.00	1.49	0.06	54.39	0.55	2,121.69	266.87	1,854.82
113+0.00	0.00	1.65	14.87	16.98	2,136.56	283.85	1,852.71
114+0.00	0.00	1.14	0.05	27.82	2,136.61	311.67	1,824.94
115+0.00	0.56	0.32	5.64	14.52	2,142.25	326.19	1,816.06
116+0.00	2.32	0.22	28.78	5.38	2,171.03	331.56	1,839.46
117+0.00	1.88	0.25	42.01	4.68	2,213.04	336.25	1,876.79
118+0.00	1.16	1.24	29.94	15.72	2,242.98	351.97	1,891.01
119+0.00	0.01	1.80	11.62	30.66	2,254.60	382.63	1,871.97
120+0.00	0.27	0.30	2.77	21.04	2,257.38	403.67	1,853.71
121+0.00	0.00	1.53	2.74	18.30	2,260.12	421.97	1,838.14
122+0.00	0.03	1.17	0.34	27.01	2,260.45	448.99	1,811.46
123+0.00	0.96	0.16	9.88	13.32	2,270.33	462.31	1,808.02
124+0.00	1.07	0.16	20.31	3.21	2,290.64	465.52	1,825.12
125+0.00	0.38	0.72	14.56	8.84	2,305.21	474.36	1,830.85
126+0.00	1.69	1.08	20.79	17.99	2,326.00	492.35	1,833.65
127+0.00	0.00	2.89	16.95	39.66	2,342.95	532.02	1,810.93
128+0.00	0.00	2.20	0.00	50.89	2,342.95	582.90	1,760.04
129+0.00	0.00	1.90	0.00	41.00	2,342.95	623.90	1,719.05
130+0.00	0.01	1.08	0.08	29.80	2,343.03	653.70	1,689.32
131+0.00	0.00	1.28	0.10	23.58	2,343.12	677.28	1,665.84
132+0.00	0.06	0.72	0.66	20.00	2,343.79	697.28	1,646.51

QUADRO DE CUBAÇÃO DE TERRAPLENAGEM – Rua Messias Rocha							
Estaca 0+00.000 a Estaca 169+8.04							
Estaca	Área (m²)		Volume (m³)		Volume Acumul. (m³)		Ordenada de Massa
	Corte	Aterro	Corte	Aterro	Corte	Aterro	
133+0.00	0.53	0.30	5.99	10.27	2,349.78	707.54	1,642.24
134+0.00	0.70	0.25	12.37	5.55	2,362.15	713.09	1,649.06
135+0.00	0.62	0.33	13.27	5.85	2,375.41	718.94	1,656.47
136+0.00	1.31	0.08	19.33	4.12	2,394.74	723.06	1,671.68
137+0.00	1.89	0.03	32.05	1.09	2,426.79	724.15	1,702.65
138+0.00	1.61	0.04	35.07	0.77	2,461.87	724.92	1,736.94
139+0.00	2.25	0.01	38.69	0.57	2,500.55	725.49	1,775.06
140+0.00	1.94	0.10	41.91	1.17	2,542.46	726.66	1,815.80
141+0.00	2.31	0.00	42.52	1.04	2,584.98	727.69	1,857.29
142+0.00	1.26	0.26	35.67	2.63	2,620.65	730.33	1,890.33
143+0.00	1.05	0.14	23.02	4.00	2,643.67	734.33	1,909.34
144+0.00	1.85	0.04	28.92	1.80	2,672.60	736.13	1,936.47
145+0.00	1.68	0.04	35.31	0.81	2,707.91	736.95	1,970.96
146+0.00	1.42	0.05	31.04	0.92	2,738.95	737.87	2,001.08
147+0.00	0.53	0.26	19.54	3.15	2,758.49	741.02	2,017.47
148+0.00	0.47	0.43	10.01	6.85	2,768.50	747.87	2,020.63
149+0.00	0.77	0.39	12.37	8.15	2,780.87	756.02	2,024.85
150+0.00	0.31	0.52	10.77	9.15	2,791.65	765.17	2,026.48
151+0.00	0.00	1.46	3.07	19.83	2,794.72	785.00	2,009.71
152+0.00	0.24	0.46	2.42	19.16	2,797.13	804.16	1,992.97
153+0.00	1.26	0.13	15.07	5.85	2,812.20	810.01	2,002.19
154+0.00	1.81	0.10	30.78	2.26	2,842.98	812.27	2,030.71
155+0.00	1.38	0.07	31.94	1.65	2,874.92	813.91	2,061.00
156+0.00	0.95	0.26	23.29	3.32	2,898.21	817.23	2,080.98
157+0.00	1.24	0.11	21.84	3.77	2,920.05	821.00	2,099.05
158+0.00	2.16	0.02	34.00	1.34	2,954.06	822.34	2,131.72
159+0.00	2.82	0.00	49.88	0.23	3,003.94	822.57	2,181.37
160+0.00	1.74	0.04	45.67	0.39	3,049.61	822.96	2,226.65
161+0.00	2.01	0.07	37.47	1.10	3,087.08	824.06	2,263.03
162+0.00	0.79	0.27	28.01	3.41	3,115.10	827.46	2,287.63
163+0.00	0.97	0.30	17.56	5.76	3,132.65	833.22	2,299.43
164+0.00	0.28	0.39	12.51	6.95	3,145.16	840.17	2,304.99
165+0.00	0.62	0.28	9.00	6.74	3,154.16	846.91	2,307.25

QUADRO DE CUBAÇÃO DE TERRAPLENAGEM – Rua SDO 01							
Estaca 0+00.000 a Estaca 24+18.50							
Estaca	Área (m²)		Volume (m³)		Volume Acumul. (m³)		Ordenada de Massa
	Corte	Aterro	Corte	Aterro	Corte	Aterro	
1+0.00	2.39	0.00	0.00	0.00	0.00	0.00	0.00
2+0.00	2.63	0.00	50.15	0.00	50.15	0.00	50.15
3+0.00	1.89	0.05	45.14	0.52	95.29	0.52	94.76
4+0.00	2.32	0.10	42.10	1.56	137.39	2.08	135.31
5+0.00	2.06	0.13	43.88	2.37	181.27	4.45	176.82
6+0.00	1.90	0.13	39.62	2.65	220.89	7.09	213.80
7+0.00	2.61	0.17	45.10	2.99	265.99	10.08	255.91
8+0.00	2.41	0.07	50.23	2.35	316.22	12.43	303.78
9+0.00	3.17	0.00	55.80	0.68	372.01	13.11	358.90
10+0.00	4.03	0.00	71.97	0.00	443.98	13.11	430.87
11+0.00	2.27	0.04	63.00	0.39	506.98	13.50	493.48
12+0.00	1.59	0.13	38.57	1.72	545.55	15.22	530.33
13+0.00	2.30	0.01	38.84	1.39	584.40	16.61	567.79
14+0.00	1.92	0.04	42.17	0.46	626.57	17.07	609.50
15+0.00	2.56	0.07	44.80	1.08	671.37	18.15	653.22
16+0.00	2.88	0.00	54.44	0.67	725.81	18.82	706.99
17+0.00	1.97	0.02	48.49	0.21	774.30	19.03	755.27
18+0.00	2.25	0.00	42.17	0.21	816.47	19.24	797.23
19+0.00	1.46	0.07	37.11	0.67	853.58	19.91	833.67
20+0.00	1.75	0.16	32.14	2.31	885.72	22.22	863.50
21+0.00	1.97	0.04	37.27	2.06	922.99	24.28	898.71
22+0.00	2.55	0.00	45.26	0.42	968.25	24.70	943.55
23+0.00	2.85	0.00	54.06	0.00	1,022.31	24.70	997.61
24+0.00	2.49	0.02	53.41	0.16	1,075.72	24.85	1,050.86