

Road No.4
Mt. Gay Springs Road

TABLE OF COORDINATES AND CURVE ELEMENTS

R-4(Mt. Gay/Springs)

ES:Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
BOP	1,332,820.43	427,906.65	0 + 0												
1	1,332,788.45	428,002.46	0 + 101.007	288 27 30	101.006	42 17 25 R	60	23.2064	44.2863	4.331	EX	-	-	0 + 77.80	0 + 122.09
2	1,332,733.03	428,033.50	0 + 162.406	330 44 51	63.521	36 53 45 L	90	30.0226	57.9558	4.875	EX	-	-	0 + 132.38	0 + 190.34
3	1,332,701.43	428,104.98	0 + 238.467	293 50 58	78.153	44 13 27 L	62	25.1908	47.8552	4.922	EX	-	-	0 + 213.28	0 + 261.13
4	1,332,640.80	428,129.39	0 + 301.296	338 4 12	65.359	15 27 56 L	50	6.78939	13.4962	0.459	EX	-	-	0 + 294.51	0 + 308.00
5	1,332,598.40	428,161.80	0 + 354.588	322 36 22	53.368						EX	-	-	0 + 354.59	0 + 354.59
6	1,332,513.51	428,166.75	0 + 439.615	356 39 46	85.034	36 10 5 L	45	14.6944	28.4063	2.338	EX	-	-	0 + 424.92	0 + 453.33
7	1,332,471.33	428,201.53	0 + 493.303	320 29 32	54.67	24 40 12 L	75	16.4006	32.293	1.772	EX	-	-	0 + 476.90	0 + 509.20
8	1,332,450.20	428,249.39	0 + 544.984	293 49 17	52.317	22 27 45 R	75	14.8929	29.4033	1.464	EX	-	-	0 + 530.09	0 + 559.49
9	1,332,390.31	428,306.65	0 + 627.459	316 17 10	82.858	123 54 46 R	13	24.4046	28.1149	14.651	EX	-	-	0 + 603.05	0 + 631.17
10	1,332,374.99	428,217.98	0 + 696.749	80 11 51	89.984	37 0 11 L	35	11.7119	22.6039	1.908	EX	-	-	0 + 685.04	0 + 707.64
11	1,332,328.35	428,174.19	0 + 759.901	43 11 41	63.975	58 6 19 R	40	22.220	40.5651	5.757	EX	-	-	0 + 737.68	0 + 778.25
12	1,332,339.69	428,117.50	0 + 813.838	101 18 43	57.813	108 1 46 L	24	33.051	45.2513	16.846	EX	-	-	0 + 780.79	0 + 826.04
13	1,332,216.01	428,132.08	0 + 917.517	353 16 36	124.536	61 4 6 R	60	35.3909	63.9506	9.660	EX	-	-	0 + 882.13	0 + 946.08
14	1,332,161.63	428,056.28	1 + 3.979	54 20 38	93.289	56 20 30 R	60	32.1324	59.0009	8.082	EX	-	-	0 + 971.85	1 + 30.85
15	1,332,190.37	427,880.13	1 + 80.109	110 40 38	81.393	42 7 41 L	55	21.1831	40.440	3.938	EX	-	-	1 + 58.93	1 + 99.37
16	1,332,170.83	427,930.38	1 + 131.640	68 33 25	53.45	19 16 9 L	55	9.337	18.4971	0.787	EX	-	-	1 + 122.30	1 + 140.80
17	1,332,126.21	427,878.53	1 + 199.868	49 17 10	68.406						EX	-	-	1 + 199.87	1 + 199.87
18	1,332,078.84	427,919.30	1 + 262.364	319 16 57	62.499	11 32 27 L	200	20.2109	40.2851	1.019	EX	-	-	1 + 242.15	1 + 282.44
19	1,332,008.50	428,010.15	1 + 377.129	307 44 55	114.898	69 51 30 P	35	24.4428	42.674	7.690	EX	-	-	1 + 352.69	1 + 395.36
20	1,331,952.74	427,992.46	1 + 429.421	17 36 6	58.499	17 50 52 R	125	19.6279	38.9378	1.532	EX	-	-	1 + 409.79	1 + 448.73
21	1,331,909.19	427,961.46	1 + 482.559	35 26 39	53.457	30 41 4 L	45	12.3463	24.100	1.663	EX	9.0	30	1 + 470.21	1 + 494.31
22	1,331,877.61	427,958.82	1 + 513.656	4 46 43	31.69	39 55 7 L	20	7.263	13.9342	1.278	EX	9.0	30	1 + 506.39	1 + 520.33
23	1,331,854.03	427,975.43	1 + 541.905	324 50 19	28.843	67 18 9 R	20	13.3138	23.493	4.026	EX	-	-	1 + 528.59	1 + 552.08
24	1,331,781.02	427,929.54	1 + 625.011	32 9 4	86.234	75 2 15 R	28	21.500	36.670	7.302	EX	-	-	1 + 603.51	1 + 640.18

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-4(Mt. Gay/Springs)

ES: Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
25	1,331,793.56	427,888.96	1 + 661.128	107 10 48	42.454	50 40 54 L	28	13.260	24.7677	2.981	EX	9.0	30	1 + 647.87	1 + 672.64
26	1,331,772.33	427,856.90	1 + 697.844	56 30 15	38.469	36 11 33 R	30	9.80334	18.9503	1.561	EX	-	-	1 + 688.04	1 + 706.99
27	1,331,775.64	427,786.78	1 + 767.391	92 42 9	70.198	35 56 34 R	50	16.2184	31.366	2.565	EX	-	-	1 + 751.17	1 + 782.54
28	1,331,792.83	427,765.28	1 + 793.850	128 38 37	27.527	38 1 41 L	20	6.89203	13.2743	1.154	EX	9.0	30	1 + 786.96	1 + 800.23
29	1,331,793.63	427,690.06	1 + 868.558	90 36 34	75.224	16 23 27 L	200	28.8041	57.2148	2.064	EX	-	-	1 + 839.75	1 + 896.97
30	1,331,768.96	427,602.72	1 + 958.924	74 13 38	90.757	68 51 5 L	30	20.5612	36.0505	6.370	EX	9.0	30	1 + 938.36	1 + 974.41
31	1,331,703.43	427,596.56	2 + 19.667	5 22 13	65.819	31 1 54 R	25	6.941	13.540	0.946	EX	-	-	2 + 12.73	2 + 26.27
32	1,331,669.87	427,571.82	2 + 61.016	36 23 50	41.693	32 8 41 L	45	12.9651	25.2464	1.030	EX	-	-	2 + 48.05	2 + 73.30
33	1,331,541.59	427,562.27	2 + 188.968	4 15 27	128.635						EX	-	-	2 + 188.97	2 + 188.97
34	1,331,431.55	427,573.90	2 + 299.624	353 58 1	110.653	11 19 23 L	500	49.5676	98.8123	2.451	EX	-	-	2 + 250.06	2 + 348.87
35	1,331,307.00	427,612.83	2 + 429.796	342 38 33	130.492	87 28 8 L	62	59.320	94.650	23.807	EX	-	-	2 + 370.48	2 + 465.13
36	1,331,373.16	427,862.77	2 + 664.348	255 10 25	258.548	144 2 28 R	47	144.828	118.158	105.263	EX	-	-	2 + 519.52	2 + 637.68
37	1,331,210.48	427,730.02	2 + 702.822	39 12 54	209.970	70 52 33 L	45	32.0247	55.6657	10.232	EX	-	-	2 + 670.80	2 + 726.46
38	1,331,116.70	427,787.85	2 + 804.611	328 20 23	110.177	31 39 53 R	90	25.5223	49.7388	3.549	EX	-	-	2 + 779.09	2 + 828.83
39	1,331,037.32	427,787.84	2 + 882.689	0 0 26	79.38	3 57 8 L	100	3.450	6.898	0.060	EX	-	-	2 + 879.24	2 + 886.14
40	1,330,994.14	427,790.82	2 + 925.962	356 3 7	43.283	23 55 7 R	60	12.7089	25.0475	1.331	EX	-	-	2 + 913.25	2 + 938.30
41	1,330,935.22	427,769.41	2 + 988.287	19 58 11	62.689	5 44 3 L	60	3.005	6.005	0.075	EX	-	-	2 + 985.28	2 + 991.29
42	1,330,904.20	427,761.54	3 + 20.288	14 14 10	32.003	57 18 28 R	40	21.8575	40.0084	5.582	EX	-	-	2 + 998.43	3 + 38.44
43	1,330,873.78	427,670.42	3 + 112.649	71 32 19	96.064	101 32 54 L	18	22.050	31.9023	10.464	EX	9.0	30	3 + 90.60	3 + 122.50
44	1,330,810.78	427,706.80	3 + 173.207	329 59 43	72.750						EX	-	-	3 + 173.21	3 + 173.21
45	1,330,773.70	427,726.28	3 + 215.090	332 17 5	41.886						EX	-	-	3 + 215.09	3 + 215.09
46	1,330,722.78	427,756.15	3 + 274.127	329 36 14	59.034	9 9 55 L	200	16.0306	31.9929	0.641	EX	-	-	3 + 258.10	3 + 290.09
47	1,330,695.16	427,778.96	3 + 309.879	320 26 54	35.821	8 17 52 L	200	14.5077	28.9647	0.525	EX	-	-	3 + 295.37	3 + 324.34
48	1,330,623.39	427,858.27	3 + 416.793	312 8 34	106.963	20 26 35 R	50	9.016	17.840	0.806	EX	-	-	3 + 407.78	3 + 425.62
49	1,330,549.04	427,896.83	3 + 500.350	332 35 15	83.754	3 24 24 L	100	2.974	5.946	0.044	EX	-	-	3 + 497.38	3 + 503.32

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-4(Mt.Gay/Springs)

ES:Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
50	1,330,518.41	427,915.11	3 + 536.026	329 10 16	35.670	7 36 22 R	100	6.647	13.2752	0.221	EX	-	-	3 + 529.38	3 + 542.65
51	1,330,479.93	427,931.62	3 + 577.876	336 46 41	41.872	6 35 9 R	100	5.754	11.4944	0.165	EX	-	-	3 + 572.12	3 + 583.62
52	1,330,387.14	427,959.33	3 + 674.704	343 22 22	96.839	18 25 48 L	175	28.3908	56.2912	2.288	EX	-	-	3 + 646.31	3 + 702.60
53	1,330,347.45	427,987.18	3 + 722.602	324 56 35	48.486	13 5 46 L	50	5.73927	11.4285	0.328	EX	-	-	3 + 716.95	3 + 728.38
54	1,330,289.59	428,051.79	3 + 809.378	311 50 43	86.731	3 34 34 L	200	6.24352	12.483	0.097	EX	-	-	3 + 803.13	3 + 815.62
55	1,330,237.55	428,117.76	3 + 893.402	308 16 4	84.025	2 4 34 R	200	3.62389	7.24699	0.033	EX	-	-	3 + 889.78	3 + 897.03
56	1,330,175.34	428,191.00	3 + 989.491	310 20 40	96.095	27 50 60 L	130	32.232	63.190	3.936	EX	-	-	3 + 957.26	4 + 20.45
57	1,330,152.79	428,292.78	4 + 92.470	282 29 33	104.248	27 40 35 R	50	12.3165	24.1522	1.495	EX	-	-	4 + 80.15	4 + 104.31
58	1,330,116.34	428,335.96	4 + 148.493	310 10 9	56.508	5 8 44 L	200	8.987	17.9614	0.202	EX	-	-	4 + 139.51	4 + 157.47
59	1,330,075.47	428,394.27	4 + 219.683	305 1 37	71.207	41 48 32 R	33	12.6044	24.080	2.325	EX	-	-	4 + 207.08	4 + 231.16
60	1,330,040.39	428,402.47	4 + 254.581	346 50 36	38.026	6 8 13 L	375	20.1023	40.1662	0.538	EX	-	-	4 + 234.48	4 + 274.64
61	1,329,943.20	428,436.51	4 + 357.523	340 41 51	102.979	2 54 38 L	200	5.08097	10.1598	0.065	EX	-	-	4 + 352.44	4 + 362.60
62	1,329,881.66	428,461.64	4 + 423.995	337 47 14	66.473	44 42 29 R	40	16.4493	31.2121	3.250	EX	-	-	4 + 407.55	4 + 438.76
63	1,329,819.10	428,435.57	4 + 490.084	22 37 21	67.775	28 6 39 L	205	51.3268	100.586	6.327	EX	-	-	4 + 438.76	4 + 539.34
64	1,329,743.09	428,442.81	4 + 564.369	354 33 32	76.354	5 26 38 R	200	9.509	19.0028	0.226	EX	-	-	4 + 554.86	4 + 573.86
65	1,329,695.82	428,442.81	4 + 611.623	0 0 0	47.27	36 39 57 L	48	15.9051	30.7171	2.567	EX	-	-	4 + 595.72	4 + 626.44
66	1,329,633.16	428,489.46	4 + 688.647	323 19 57	78.118	56 2 30 R	45	23.9479	44.015	5.976	EX	-	-	4 + 664.70	4 + 708.71
67	1,329,578.62	428,470.28	4 + 742.583	19 22 31	57.814	63 4 55 L	22	13.5033	24.2217	3.814	EX	-	-	4 + 729.08	4 + 753.30
68	1,329,523.45	428,523.01	4 + 816.114	316 17 44	76.316	55 37 26 L	20	10.5501	19.4164	2.612	EX	-	-	4 + 805.56	4 + 824.98
69	1,329,531.37	428,571.23	4 + 863.297	260 40 21	48.866	102 29 40 R	13	16.1961	23.2553	7.788	EX	9.0	30	4 + 847.10	4 + 870.36
70	1,329,470.80	428,567.88	4 + 914.834	3 9 56	60.663	34 6 33 L	70	21.4741	41.6722	3.220	EX	-	-	4 + 893.36	4 + 935.03
71	1,329,436.37	428,588.52	4 + 953.693	329 3 30	40.143	52 17 50 R	24	11.7827	21.9062	2.736	EX	9.0	30	4 + 941.91	4 + 963.82
72	1,329,421.26	428,582.61	4 + 963.970	21 21 43	16.225	-	-	-	-	-	EX	9.0	30	4 + 963.97	4 + 963.97
73	1,329,423.03	428,549.35	5 + 1.563	93 2 46	33.307	9 47 20 R	30	2.56898	5.12545	0.110	EX	9.0	30	4 + 998.99	5 + 4.12
74	1,329,433.51	428,503.30	5 + 48.782	102 49 15	47.227	9 21 7 L	30	2.454	4.897	0.100	EX	-	-	5 + 46.33	5 + 51.22

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-4(Mt.Gay/Springs)

ES:Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
				93 28 49	45.794										
75	1,329,436.29	428,457.59	5 + 94.565			6 54 0 L	50	3.014	6.021	0.091	EX	-	-	5 + 91.55	5 + 97.57
				86 34 34	41.694										
76	1,329,433.80	428,415.97	5 + 136.251			0 58 5 R	250	2.11202	4.224	0.009	EX	-	-	5 + 134.14	5 + 138.36
				87 32 29	54.78										
77	1,329,431.45	428,361.24	5 + 191.029			46 3 21 L	30	12.7515	24.1148	2.598	EX	-	-	5 + 178.28	5 + 202.39
				41 29 17	29.088										
78	1,329,409.66	428,341.97	5 + 236.456			26 31 23 L	50	11.7841	23.1457	1.370	EX	-	-	5 + 224.67	5 + 247.82
				14 58 42	18.147										
79	1,329,392.13	428,337.28	5 + 218.733			23 56 30 R	30	6.361	12.5358	0.667	EX	-	-	5 + 212.37	5 + 224.91
				38 54 15	40.285										
80	1,329,360.78	428,311.98	5 + 276.557			17 46 47 R	160	25.0263	49.650	1.945	EX	-	-	5 + 251.53	5 + 301.18
				56 41 15	29.042										
81	1,329,344.83	428,287.71	5 + 305.196			9 10 58 L	50	4.015	8.013	0.161	EX	-	-	5 + 301.18	5 + 309.19
				47 29 55	54.173										
82	1,329,308.23	428,247.77	5 + 359.358			9 52 60 R	30	2.594	5.175	0.112	EX	-	-	5 + 356.76	5 + 361.93
				57 23 25	50.157										
83	1,329,281.20	428,205.52	5 + 409.497			24 39 28 L	100	21.8563	43.0359	2.361	EX	-	-	5 + 387.64	5 + 430.68
				32 43 12	42.921										
84	1,329,245.09	428,182.32	5 + 451.735			62 4 8 L	35	21.0588	37.9157	5.847	EX	-	-	5 + 430.68	5 + 468.59
				330 39 19	88.805										
85	1,329,167.68	428,225.84	5 + 536.431			51 28 19 R	90	43.3837	80.8519	9.911	EX	-	-	5 + 493.05	5 + 573.90
				22 7 60	89.765										
86	1,329,084.53	428,192.02	5 + 620.184			2 58 23 R	100	2.59506	5.18396	0.034	EX	-	-	5 + 617.59	5 + 622.78
				25 6 23	72.732										
87	1,329,018.67	428,161.16	5 + 692.915			13 3 41 L	200	22.8957	45.5928	1.306	EX	-	-	5 + 670.02	5 + 715.61
				12 2 20	55.807										
88	1,328,964.09	428,149.52	5 + 748.531			15 55 58 R	100	13.9943	27.8079	0.974	EX	-	-	5 + 734.54	5 + 767.34
				27 58 33	73.929										
89	1,328,898.80	428,114.84	5 + 822.275			76 14 29 L	40	31.3873	53.2265	10.845	EX	-	-	5 + 790.89	5 + 844.11
				311 44 16	89.842										
90	1,328,838.99	428,181.88	5 + 902.569			101 31 39 L	33	40.410	58.4756	19.172	EX	9.0	30	5 + 862.16	5 + 920.63
				53 15 48	98.004										
91	1,328,780.37	428,103.34	5 + 978.229			40 3 18 L	100	36.4514	69.9092	6.436	EX	-	-	5 + 941.78	6 + 11.69
				13 12 18	63.519										
EOP	1,328,718.53	428,088.83	6 + 38.760												

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Table Location of Temporary Bench Mark (Road No. 4 Mt. Gay to Springs Road - 1)

No.	Elevation	Coordination		Remarks
		North	East	
1	14.07	1,332,747.93	428,022.00	
2	17.25	1,332,695.88	428,098.81	
3	19.20	1,332,601.42	428,155.72	
4	16.17	1,332,555.37	428,160.08	
5	20.79	1,332,488.44	428,182.92	
6	24.58	1,332,463.13	428,229.06	
7	31.16	1,332,401.70	428,297.50	
8	40.12	1,332,383.33	428,239.21	
9	46.65	1,332,341.55	428,192.56	
10	55.90	1,332,329.15	428,121.75	
11	68.02	1,332,224.22	428,128.95	
12	78.17	1,332,162.97	428,061.23	
13	84.87	1,332,186.39	427,999.47	
14	93.09	1,332,177.78	427,936.02	
15	92.68	1,332,114.45	427,887.39	
16	67.90	1,331,891.81	427,952.77	
17	66.20	1,331,849.00	427,975.10	
18	62.39	1,331,814.22	427,944.78	
19	54.13	1,331,790.65	427,879.03	
20	46.96	1,331,777.97	427,804.81	
21	38.81	1,331,799.52	427,746.76	
22	22.28	1,331,770.70	427,608.08	
23	15.72	1,331,705.52	427,600.20	
24	12.69	1,331,686.70	427,578.41	
25	2.62	1,331,575.35	427,561.80	
26	3.68	1,331,474.25	427,564.66	
27	4.75	1,331,355.40	427,593.97	
28	8.21	1,331,317.74	427,642.14	
29	14.80	1,331,340.73	427,749.25	
30	18.59	1,331,284.38	427,785.52	
31	21.76	1,331,221.39	427,730.94	
32	29.44	1,331,112.83	427,788.98	
33	45.15	1,330,904.39	427,759.40	
34	45.85	1,330,872.64	427,677.52	
35	50.06	1,330,800.04	427,709.97	
36	55.58	1,330,685.33	427,781.85	
37	47.80	1,330,627.56	427,857.32	
38	41.38	1,330,560.23	427,894.50	
39	39.99	1,330,515.18	427,920.63	
40	38.57	1,330,435.01	427,942.37	
41	33.02	1,330,341.19	427,988.39	
42	31.00	1,330,260.72	428,093.40	
43	29.53	1,330,176.89	428,189.59	
44	26.69	1,330,158.54	428,291.79	
45	24.68	1,330,137.23	428,311.15	
46	22.66	1,330,115.91	428,330.50	
47	21.79	1,330,087.26	428,386.76	
48	19.00	1,329,972.38	428,422.74	
49	19.74	1,329,897.47	428,459.95	
50	22.24	1,329,834.07	428,442.76	

Table Location of Temporary Bench Mark (Road No. 4 Mt. Gay to Springs Road - 1)

No.	Elevation	Coordination		Remarks
		North	East	
51	28.07	1,329,706.22	428,440.79	
52	28.07	1,329,659.97	428,466.32	
53	33.02	1,329,687.79	428,467.81	
54	34.46	1,329,525.00	428,517.85	
55	35.17	1,329,524.15	428,559.40	
56	39.17	1,329,420.04	428,585.56	
57	33.06	1,329,440.46	428,483.64	
58	26.64	1,329,431.49	428,359.59	
59	23.29	1,329,380.45	428,332.03	
60	23.41	1,329,359.74	428,315.46	
61	17.63	1,329,319.67	428,256.03	
62	13.68	1,329,259.83	428,185.62	
63	11.21	1,329,156.48	428,222.90	
64	10.65	1,329,030.54	428,164.17	
65	10.31	1,328,961.55	428,142.91	
66	10.33	1,328,898.06	428,118.99	
67	7.65	1,328,815.90	428,156.52	
68	6.62	1,328,774.77	428,102.23	
69	5.14	1,328,710.57	428,089.48	EOP 6+038.76

Road No.5
Eastern Main Road
(Grenvill / Sauteurs)

TABLE OF COORDINATES AND CURVE ELEMENTS

R-5(Eastern Main Road)

ES:Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
BOP	1,340,030.957	440,943.956	0 + 0								ES	-	-		
1	1,340,048.102	440,947.254	0 + 17.459	190 53 18	17.459	18 50 31 R	75	12.444	24.664	1.025	ES	-	-	0 + 5.01	0 + 29.68
2	1,340,097.422	440,975.392	0 + 74.017	209 42 20	56.782	4 21 47 L	100	3.809	7.615	0.073	ES	-	-	0 + 70.21	0 + 77.82
3	1,340,148.903	440,999.774	0 + 130.976	205 20 34	58.963	33 11 34 L	50	14.902	28.966	2.174	ES	-	-	0 + 116.07	0 + 145.04
4	1,340,214.014	440,990.797	0 + 195.865	172 8 60	65.727	13 47 39 L	250	30.240	60.188	1.822	ES	-	-	0 + 165.62	0 + 225.81
5	1,340,310.467	440,952.522	0 + 299.342	158 21 20	103.77	19 58 0 R	100	17.603	34.848	1.537	ES	-	-	0 + 281.74	0 + 316.59
6	1,340,383.976	440,950.370	0 + 372.525	178 19 23	73.54	17 39 29 L	100	15.533	30.819	1.199	ES	-	-	0 + 356.99	0 + 387.81
7	1,340,464.089	440,922.258	0 + 457.181	160 39 50	84.902	12 31 29 L	100	10.974	21.860	0.600	ES	-	-	0 + 446.21	0 + 468.07
8	1,340,531.237	440,880.527	0 + 536.152	148 8 24	79.059	58 30 33 R	25	14.003	25.529	3.655	ES	-	-	0 + 522.15	0 + 547.68
9	1,340,603.015	440,916.547	0 + 613.984	206 38 55	80.309	44 9 22 L	65	26.365	50.094	5.143	ES	-	-	0 + 587.62	0 + 637.71
10	1,340,677.770	440,892.867	0 + 689.734	192 29 35	78.386	29 39 58 R	100	26.483	51.777	3.447	ES	-	-	0 + 663.25	0 + 715.03
11	1,340,753.722	440,909.331	0 + 766.241	192 9 31	77.695	7 2 44 L	100	6.156	12.297	0.189	ES	-	-	0 + 760.08	0 + 772.38
12	1,340,829.841	440,916.143	0 + 842.648	185 6 50	76.423	4 37 14 R	100	4.034	8.064	0.081	ES	-	-	0 + 838.61	0 + 846.68
13	1,340,947.504	440,936.327	0 + 962.026	189 44 2	119.382	26 36 42 R	125	29.562	58.058	3.448	ES	-	-	0 + 932.46	0 + 990.52
14	1,341,031.796	440,998.350	1 + 65.611	216 20 46	104.652	21 45 18 R	75	14.412	28.477	1.372	ES	-	-	1 + 51.20	1 + 79.68
15	1,341,176.493	441,230.822	1 + 339.090	238 6 3	273.826	56 2 54 L	60	31.935	58.694	7.969	ES	-	-	1 + 307.15	1 + 365.85
16	1,341,289.964	441,234.889	1 + 447.478	182 3 8	113.564	64 29 12 L	40	25.232	45.020	7.290	ES	-	-	1 + 422.25	1 + 467.27
17	1,341,310.562	441,195.471	1 + 486.501	117 33 60	44.466	19 40 31 L	25	4.335	8.585	0.373	ES	-	-	1 + 482.17	1 + 490.75
18	1,341,317.452	441,145.755	1 + 536.606	97 53 25	50.191	36 5 47 R	65	21.180	40.950	3.364	ES	-	-	1 + 515.43	1 + 556.38
19	1,341,409.332	441,050.567	1 + 667.494	133 59 13	132.298	35 46 3 L	50	16.134	31.213	2.539	ES	-	-	1 + 651.36	1 + 682.57
20	1,341,427.755	440,923.018	1 + 795.312	98 13 8	128.873	40 15 53 R	90	32.993	63.248	5.857	ES	-	-	1 + 762.32	1 + 825.57

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-5(Eastern Main Road)

ES: Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
21	1,341,499.203	440,859.770	1 + 887.995	138 29 1	95.421	9 59 39 R	100	8.744	17.443	0.382	ES	-	-	1 + 879.25	1 + 896.69
22	1,341,589.564	440,804.350	1 + 993.952	148 28 43	106.002	0 54 10 R	100	0.788	1.576	0.003	ES	-	-	1 + 993.16	1 + 994.74
23	1,341,873.237	440,636.458	2 + 323.585	149 22 51	329.633	60 29 33 L	45	26.239	47.511	7.091	ES	-	-	2 + 297.35	2 + 344.86
24	1,341,872.179	440,581.921	2 + 373.164	88 53 19	54.547	33 57 44 R	50	15.269	29.638	2.279	ES	-	-	2 + 357.90	2 + 387.53
25	1,341,889.656	440,539.368	2 + 422.918	122 51 3	50.653	10 0 31 R	85	7.443	14.848	0.325	ES	-	-	2 + 415.48	2 + 430.32
26	1,341,923.348	440,513.836	2 + 457.711	132 51 33	34.831	29 24 29 R	50	13.121	25.663	1.693	ES	-	-	2 + 444.59	2 + 470.25
27	1,342,185.326	440,430.063	2 + 732.179	162 16 2	275.046	42 47 57 R	35	13.716	26.145	2.592	ES	-	-	2 + 718.46	2 + 744.61
28	1,342,211.295	440,442.209	2 + 759.560	205 3 58	28.669	51 56 52 R	15	7.308	13.600	1.685	ES	-	-	2 + 752.25	2 + 765.85
29	1,342,217.194	440,467.792	2 + 784.799	257 0 56	26.254	39 32 7 R	35	12.578	24.151	2.192	ES	-	-	2 + 772.22	2 + 796.37
30	1,342,171.299	440,559.847	2 + 886.475	296 32 56	102.682	33 46 7 L	100	30.352	58.937	4.505	ES	-	-	2 + 856.12	2 + 915.06
31	1,342,178.430	440,615.943	2 + 941.453	262 46 51	56.748	12 48 18 L	100	11.221	22.349	0.628	ES	-	-	2 + 930.23	2 + 962.58
32	1,342,209.898	440,702.286	3 + 33.259	249 58 32	91.899	45 48 55 L	50	21.129	39.981	4.281	ES	-	-	3 + 12.13	3 + 52.11
33	1,342,360.109	440,769.669	3 + 195.615	204 9 38	164.632	78 30 27 L	47	38.406	64.400	13.896	ES	-	-	3 + 157.21	3 + 221.61
34	1,342,425.159	440,678.985	3 + 294.805	125 39 10	111.602	100 11 50 R	25	29.898	43.719	13.973	ES	-	-	3 + 264.91	3 + 308.63
35	1,342,482.422	440,737.973	3 + 360.939	225 51 0	82.211	32 36 56 L	90	26.331	51.232	3.773	ES	-	-	3 + 334.61	3 + 348.87
36	1,342,572.587	440,759.178	3 + 452.134	193 14 4	92.625	43 6 22 L	60	23.699	45.141	4.511	ES	-	-	3 + 428.44	3 + 473.58
37	1,342,644.025	440,718.147	3 + 532.260	150 7 43	82.383	71 54 40 R	35	25.388	43.928	8.238	ES	-	-	3 + 506.87	3 + 550.80
38	1,342,712.524	440,779.910	3 + 617.645	222 2 23	92.232	42 24 6 L	60	23.273	44.403	4.356	ES	-	-	3 + 594.37	3 + 638.77
39	1,342,796.964	440,779.377	3 + 699.943	179 38 18	84.442	13 54 44 L	50	6.100	12.141	0.371	ES	-	-	3 + 693.84	3 + 705.98
40	1,342,846.574	440,766.756	3 + 751.073	165 43 35	51.19	50 13 34 R	40	18.748	35.064	4.176	ES	-	-	3 + 732.32	3 + 767.39

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-5(Eastern Main Road)				ES:Existing Superelevation											
PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
41	1,342,897.978	440,804.037	3 + 812.141	215 57 6	63.5	23 34 45 L	100	20.872	41.153	2.155	ES	-	-	3 + 791.27	3 + 832.42
42	1,343,003.073	440,827.092	3 + 919.144	192 22 23	107.594	42 40 50 R	60	23.442	44.695	4.417	ES	-	-	3 + 895.70	3 + 940.40
43	1,343,055.807	440,902.553	4 + 9.017	235 3 12	92.061	51 12 56 L	60	28.757	53.633	6.536	ES	-	-	3 + 980.26	4 + 33.89
44	1,343,124.217	440,907.143	4 + 73.699	183 50 19	68.564	8 4 34 R	100	7.059	14.095	0.249	ES	-	-	4 + 66.64	4 + 80.74
45	1,343,180.209	440,918.956	4 + 130.901	191 54 48	57.225	89 16 49 L	20	19.750	31.165	8.108	ES	-	-	4 + 111.15	4 + 142.31
46	1,343,195.434	440,851.032	4 + 192.174	102 38 2	69.609	94 18 17 R	25	26.953	41.148	11.762	ES	-	-	4 + 165.22	4 + 206.37
47	1,343,246.016	440,866.437	4 + 232.293	196 56 18	52.876	46 5 34 L	25	10.636	20.112	2.168	ES	-	-	4 + 221.66	4 + 241.77
48	1,343,349.351	440,808.794	4 + 349.458	150 50 46	118.325	42 3 41 R	35	13.457	25.694	2.498	ES	-	-	4 + 336.00	4 + 361.70
49	1,343,371.594	440,813.891	4 + 371.058	192 54 24	22.82	92 5 38 R		0.000	0.000	0.000	ES	-	-	4 + 371.06	4 + 371.06
50	1,343,363.707	440,843.324	4 + 401.529	285 0 3	30.471	7 11 28 L	100	6.284	12.551	0.197	ES	-	-	4 + 395.25	4 + 407.80
51	1,343,358.367	440,882.256	4 + 440.810	277 48 36	39.297	6 20 32 L	100	5.540	11.089	0.153	ES	-	-	4 + 435.27	4 + 446.34
52	1,343,357.121	440,930.857	4 + 489.415	271 28 7	48.617	95 8 31 L	24	26.257	39.853	11.573	ES	-	-	4 + 463.16	4 + 503.01
53	1,343,447.717	440,925.039	4 + 567.538	176 19 32	90.783	43 1 14 R	65	25.618	48.805	4.866	ES	-	-	4 + 541.92	4 + 590.73
54	1,343,498.016	440,966.276	4 + 630.150	219 20 46	65.042	14 5 6 R	75	9.265	18.437	0.570	ES	-	-	4 + 620.88	4 + 639.32
55	1,343,524.837	441,002.433	4 + 675.076	233 25 56	45.019	47 1 57 L	40	17.406	32.835	3.623	ES	-	-	4 + 657.67	4 + 690.50
56	1,343,579.679	441,008.583	4 + 728.285	186 23 54	55.186	5 1 29 R	75	3.291	6.577	0.072	ES	-	-	4 + 724.99	4 + 731.57
57	1,343,633.089	441,019.376	4 + 782.770	191 25 28	54.49	12 54 22 L	50	5.655	11.263	0.319	ES	-	-	4 + 777.12	4 + 788.38
58	1,343,707.401	441,017.452	4 + 857.060	178 31 1	74.337	73 59 53 R	52	39.183	67.159	13.110	ES	-	-	4 + 817.88	4 + 885.03
59	1,343,734.178	441,102.459	4 + 934.976	252 30 57	89.125	8 35 20 L	200	15.019	29.981	0.563	ES	-	-	4 + 919.96	4 + 949.94
60	1,343,765.148	441,165.751	5 + 5.383	243 55 36	70.463	66 34 16 L	55	36.108	63.904	10.794	ES	-	-	4 + 969.27	5 + 33.18

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TABLE OF COORDINATES AND CURVE ELEMENTS

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	ES: Existing Superelevation								PC	PT
	NORTHING	EASTING				I	R	T	Lc	E	e(%)	W(m)	V(kph)		
61	1,343,852.424	441,161.721	5 + 84.439	177 21 22	87.369	43 44 45 R	40	16.058	30.540	3.103	ES	-	-	5 + 68.38	5 + 98.92
62	1,343,908.264	441,210.435	5 + 156.965	221 6 3	74.102	13 50 37 R	100	12.140	24.162	0.734	ES	-	-	5 + 144.83	5 + 168.99
63	1,343,939.462	441,254.899	5 + 211.164	234 56 41	54.317	32 34 45 L	110	32.145	62.548	4.600	ES	-	-	5 + 179.02	5 + 241.57
64	1,344,069.891	441,308.567	5 + 350.461	202 21 57	141.039	88 41 24 R	35	34.209	54.178	13.941	ES	-	-	5 + 316.25	5 + 370.43
65	1,344,032.210	441,406.444	5 + 441.102	291 3 21	104.88	104 6 36 L	24	30.779	43.609	15.030	ES	-	-	5 + 410.32	5 + 452.93
66	1,344,104.514	441,415.252	5 + 495.991	186 56 44	72.839	32 14 19 L	52	15.028	29.259	2.128	ES	-	-	5 + 480.96	5 + 510.22
67	1,344,232.893	441,354.587	5 + 637.185	154 42 26	141.991	49 33 59 R	50	23.085	43.255	5.072	ES	-	-	5 + 614.10	5 + 657.35
68	1,344,383.910	441,422.689	5 + 799.931	204 16 24	165.662	39 29 37 L	85	30.513	58.590	5.311	ES	-	-	5 + 769.42	5 + 828.01
69	1,344,446.831	441,405.570	5 + 862.703	164 46 48	65.208	28 19 50 L	50	12.620	24.723	1.568	ES	-	-	5 + 850.08	5 + 874.81
70	1,344,479.715	441,374.308	5 + 907.560	136 26 55	45.373	52 48 43 L	50	24.827	46.087	5.824	ES	-	-	5 + 882.73	5 + 928.82
71	1,344,470.766	441,294.057	5 + 984.742	83 38 14	80.748	48 44 23 R	85	38.504	72.307	8.314	ES	-	-	5 + 946.24	6 + 18.54
72	1,344,597.448	441,155.209	6 + 167.996	132 22 36	187.955	26 12 50 R	175	40.746	80.066	4.681	ES	-	-	6 + 127.25	6 + 207.32
73	1,344,663.270	441,129.401	6 + 237.270	158 35 26	70.701	8 52 20 R	100	7.758	15.485	0.300	ES	-	-	6 + 229.51	6 + 245.00
74	1,344,708.840	441,119.267	6 + 283.922	167 27 45	46.683			0.000	0.000	0.000	ES	-	-	6 + 283.92	6 + 283.92
75	1,344,762.809	441,146.732	6 + 344.478	206 58 18	60.556	46 25 7 R	47	20.153	38.077	4.139	ES	-	-	6 + 324.33	6 + 362.40
76	1,344,784.945	441,220.939	6 + 419.687	253 23 24	77.438	99 32 44 L	65	23.367	44.863	4.072	ES	-	-	6 + 396.32	6 + 441.18
77	1,344,820.977	441,245.101	6 + 461.200	213 50 41	43.383	53 53 40 L	30	15.251	28.219	3.654	ES	-	-	6 + 445.95	6 + 474.17
78	1,344,862.945	441,229.784	6 + 503.593	159 56 58	44.676	42 58 29 R	50	19.683	37.503	3.735	ES	-	-	6 + 483.91	6 + 521.41
79	1,344,968.230	441,282.770	6 + 637.759	202 55 29	136.029	38 42 23 R	85	29.855	57.422	5.091	ES	-	-	6 + 607.90	6 + 665.33
80	1,345,025.626	441,352.021	6 + 714.174	241 37 50	78.703	32 36 14 L	65	19.010	36.988	2.723	ES	-	-	6 + 695.16	6 + 732.15

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-5(Eastern Main Road)

ES:Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
81	1,345,063.723	441,373.102	6 + 756.712	209 1 37	43.57	47 28 26 L	35	15.391	29.000	3.235	ES	-	-	6 + 741.32	6 + 770.32
				161 33 10	69.355										
82	1,345,129.514	441,351.216	6 + 824.286	219 56 5	124.957	58 22 53 R	50	27.933	50.947	7.274	ES	-	-	6 + 796.35	6 + 847.30
				106 29 0	159.902										
83	1,345,225.328	441,431.428	6 + 944.323	106 29 0	159.902	29 48 53 R	100	26.622	52.037	3.483	ES	-	-	7 + 50.91	7 + 102.95
				136 17 53	211.529										
84	1,345,270.698	441,278.098	7 + 77.536	61 6 51	80.834	10 21 21 R	100	9.062	18.074	0.410	ES	-	-	7 + 351.44	7 + 369.51
				71 28 14	34.667										
85	1,345,423.622	441,131.951	7 + 287.858	89 10 58	35.271	17 42 43 R	50	7.790	15.457	0.603	ES	-	-	7 + 387.33	7 + 402.78
				11 27 44 R	100										
86	1,345,384.574	441,061.174	7 + 380.500	100 38 38	106.385	124 23 2 R	28	53.089	60.785	32.020	ES	-	-	7 + 483.47	7 + 544.26
				225 1 40	109.652										
87	1,345,373.557	441,028.304	7 + 395.118	87 36 52 L	109.652	87 36 52 L	33	31.654	50.462	12.727	ES	-	-	7 + 569.17	7 + 619.63
				137 24 48	210.124										
88	1,345,373.054	440,993.037	7 + 430.265	11 52 54 L	103.89	11 52 54 L	100	10.406	20.737	0.540	ES	-	-	7 + 787.70	7 + 808.43
				125 31 54	103.89										
89	1,345,392.700	440,888.502	7 + 536.563	4 28 23 R	73.976	4 28 23 R	100	3.905	7.807	0.076	ES	-	-	7 + 898.01	7 + 905.82
				130 0 16	73.976										
90	1,345,470.198	440,966.075	7 + 600.823	33 43 26 R	91.833	33 43 26 R	100	30.310	58.859	4.493	ES	-	-	7 + 945.58	8 + 4.44
				163 43 44	91.833										
91	1,345,624.903	440,823.883	7 + 798.101	3 44 25 R	107.645	3 44 25 R	100	3.265	6.528	0.053	ES	-	-	8 + 62.70	8 + 69.22
				167 28 8	107.645										
92	1,345,685.279	440,739.338	7 + 901.917	1 27 24 R	96.007	1 27 24 R	100	1.271	2.542	0.008	ES	-	-	8 + 172.33	8 + 174.88
				168 55 33	96.007										
93	1,345,732.834	440,682.673	7 + 975.889	51 58 43 L	88.375	51 58 43 L	50	24.375	45.360	5.625	ES	-	-	8 + 245.24	8 + 290.60
				116 56 50	88.375										
94	1,345,820.989	440,656.943	8 + 65.961	52 39 47 R	105.986	52 39 47 R	80	39.593	73.531	9.262	ES	-	-	8 + 315.00	8 + 328.53
				169 36 37	105.986										
95	1,345,926.070	440,633.587	8 + 173.604	32 33 12 R	155.974	32 33 12 R	150	43.797	85.224	6.263	ES	-	-	8 + 411.13	8 + 496.35
				202 9 50	155.974										
96	1,346,020.289	440,615.146	8 + 269.611	70 51 38 L	155.974	70 51 38 L	25	17.786	30.919	5.682	ES	-	-	8 + 590.75	8 + 621.66
				202 9 50	155.974										
97	1,346,060.338	440,536.366	8 + 354.596												
98	1,346,164.586	440,517.252	8 + 454.927												
99	1,346,309.035	440,576.094	8 + 608.532												

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-5(Eastern Main Road)

ES: Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
100	1,346,339.424	440,541.507	8 + 649.918	131 18 12	46.041	76 19 13 L	35	27.503	46.621	9.513	ES	-	-	8 + 622.42	8 + 669.04
101	1,346,305.596	440,493.226	8 + 700.486	54 58 59	58.952	33 48 46 L	100	30.395	59.014	4.517	ES	-	-	8 + 670.09	8 + 729.11
102	1,346,152.125	440,433.790	8 + 863.289	21 10 13	164.578	8 56 36 R	150	11.731	23.414	0.458	ES	-	-	8 + 851.56	8 + 874.97
103	1,346,094.312	440,400.259	8 + 930.075	30 6 48	66.833	20 38 24 R	50	9.105	18.012	0.822	ES	-	-	8 + 920.97	8 + 938.98
104	1,346,078.462	440,380.858	8 + 954.930	50 45 8	25.052	59 20 0 R	20	11.392	20.711	3.017	ES	-	-	8 + 943.54	8 + 964.25
105	1,346,094.203	440,337.815	8 + 998.667	110 5 16	45.831	68 19 29 R	35	33.991	53.955	13.789	ES	-	-	8 + 964.70	9 + 18.65
106	1,346,159.393	440,359.515	9 + 53.366	198 24 40	68.707	25 56 37 L	100	23.035	45.280	2.619	ES	-	-	9 + 30.33	9 + 75.61
107	1,346,221.660	440,351.283	9 + 115.385	172 28 8	62.809	2 10 35 R	250	4.749	9.496	0.045	ES	-	-	9 + 110.64	9 + 120.13
108	1,346,377.877	440,336.638	9 + 272.286	174 38 39	156.902	108 13 33 L	32	44.227	60.445	22.590	ES	-	-	9 + 228.06	9 + 288.50
109	1,346,348.187	440,268.619	9 + 318.492	66 25 8	74.216	19 18 15 L	80	13.606	26.954	1.149	ES	-	-	9 + 304.89	9 + 331.84
110	1,346,274.541	440,189.326	9 + 426.452	47 6 53	108.218	33 52 18 R	55	16.748	32.514	2.493	ES	-	-	9 + 409.70	9 + 442.22
111	1,346,264.715	440,127.383	9 + 488.189	80 59 11	62.718	58 55 15 R	25	14.122	25.709	3.713	ES	-	-	9 + 474.07	9 + 499.78
112	1,346,291.921	440,104.479	9 + 521.218	139 54 25	35.563	16 41 26 R	100	14.689	29.131	1.070	ES	-	-	9 + 506.55	9 + 535.68
113	1,346,372.400	440,069.649	9 + 608.703	156 35 52	87.893	19 33 27 L	200	34.470	68.269	2.949	ES	-	-	9 + 574.23	9 + 642.50
114	1,346,429.898	440,016.106	9 + 686.901	137 2 24	78.568	16 3 57 R	50	7.056	14.020	0.495	ES	-	-	9 + 679.54	9 + 693.56
115	1,346,488.580	439,986.343	9 + 752.306	153 6 23	65.798	80 5 8 L	28	23.530	39.137	8.574	ES	-	-	9 + 728.78	9 + 767.91
116	1,346,472.064	439,932.252	9 + 800.938	73 1 14	56.556	18 58 45 R	50	8.358	16.562	0.694	ES	-	-	9 + 792.58	9 + 809.14
117	1,346,474.515	439,862.023	9 + 871.057	91 59 56	70.272	111 34 24 R	17	25.002	33.104	13.234	ES	-	-	9 + 846.05	9 + 879.16
118	1,346,535.247	439,888.522	9 + 920.418	203 34 23	86.261	16 44 46 R	50	7.359	14.614	0.539	ES	-	-	9 + 913.06	9 + 927.67
119	1,346,592.443	439,937.060	9 + 995.328	220 19 8	75.015	96 11 29 L	27	30.087	45.329	13.426	ES	-	-	9 + 965.24	10 + 10.57

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-5(Eastern Main Road)			ES: Existing Superelevation												
PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
120	1,346,630.717	439,880.588	10 + 48.702	124 7 39	68.22										
						11 29 58 R	100	10.069	20.070	0.506	ES	-	-	10 + 38.63	10 + 58.70
121	1,346,688.078	439,824.469	10 + 128.882	135 37 37	80.247										
						90 59 3 R	20	20.347	31.759	8.530	ES	-	-	10 + 108.54	10 + 140.29
122	1,346,729.376	439,868.157	10 + 180.066	226 36 39	60.118										
						75 8 35 L	37	28.465	48.525	9.682	ES	-	-	10 + 151.60	10 + 200.13
123	1,346,787.491	439,836.561	10 + 237.811	151 28 5	66.149										
						72 50 22 L	35	25.823	44.495	8.495	ES	-	-	10 + 211.99	10 + 256.48
124	1,346,776.614	439,782.480	10 + 285.825	78 37 41	55.164										
						20 36 58 L	100	18.188	35.982	1.640	ES	-	-	10 + 267.64	10 + 303.92
125	1,346,760.206	439,756.209	10 + 316.405	58 0 45	30.974										
						13 43 26 L	35	4.212	8.383	0.253	ES	-	-	10 + 312.19	10 + 320.58
126	1,346,704.750	439,702.113	10 + 393.836	44 17 20	77.471										
						76 41 1 R	30	23.728	40.151	8.250	ES	-	-	10 + 370.11	10 + 410.26
127	1,346,754.854	439,618.633	10 + 483.893	120 58 19	97.362										
						54 34 31 R	50	25.793	47.626	6.261	ES	-	-	10 + 458.10	10 + 505.73
128	1,346,979.952	439,601.104	10 + 705.712	175 32 50	225.779										
						106 0 6 L	29	38.485	53.652	19.188	ES	-	-	10 + 667.23	10 + 770.88
129	1,346,943.748	439,504.031	10 + 785.998	69 32 44	103.605										
						65 26 5 R	29	18.630	33.119	5.469	ES	-	-	10 + 767.37	10 + 800.49
130	1,346,996.054	439,451.686	10 + 855.858	134 58 47	74.001										
						75 40 55 R	22	17.090	29.060	5.858	ES	-	-	10 + 838.77	10 + 867.83
131	1,347,059.635	439,489.381	10 + 924.653	210 39 44	73.915										
						25 59 5 L	50	11.536	22.676	1.314	ES	-	-	10 + 913.12	10 + 935.79
132	1,347,109.757	439,493.482	10 + 974.545	184 40 39	50.289										
						56 39 39 L	33	17.791	32.634	4.490	ES	-	-	10 + 956.75	10 + 989.39
133	1,347,184.727	439,397.582	11 + 93.323	128 0 60	121.726										
						150 48 40 R	15.5	59.529	40.798	46.014	ES	-	-	11 + 33.79	11 + 74.59
134	1,347,170.566	439,488.767	11 + 107.341	278 49 39	92.278										
						13 45 29 L	150	18.096	36.019	1.088	ES	-	-	11 + 89.24	11 + 125.26
135	1,347,173.721	439,525.338	11 + 143.874	265 4 9	36.707										
						15 9 29 L	75	9.979	19.842	0.661	ES	-	-	11 + 133.89	11 + 153.74
136	1,347,205.932	439,613.413	11 + 237.537	249 54 41	93.78										
						4 54 29 R	75	3.214	6.425	0.069	ES	-	-	11 + 234.32	11 + 240.75
137	1,347,221.709	439,671.558	11 + 297.780	254 49 8	60.247										
						37 57 18 L	60	20.633	39.746	3.449	ES	-	-	11 + 277.15	11 + 316.89
138	1,347,308.735	439,736.814	11 + 405.034	216 51 51	108.774										
						50 17 22 L	19	8.918	16.677	1.989	ES	-	-	11 + 396.12	11 + 412.79
139	1,347,351.055	439,726.713	11 + 447.383	166 34 33	43.509										
						98 8 28 L	23	28.524	39.396	12.108	ES	-	-	11 + 420.86	11 + 460.76

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-5(Eastern Main Road)

ES:Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
140	1,347,334.468	439,684.747	11 + 478.856	66 26 1	45.125	14 2 0 L	75	9.231	18.370	0.566	ES	-	-	11 + 469.62	11 + 487.99
141	1,347,319.421	439,663.729	11 + 504.612	54 24 3	25.849	37 33 3 R	35	11.898	22.938	1.967	ES	-	-	11 + 492.71	11 + 515.65
142	1,347,321.873	439,591.744	11 + 575.781	91 57 3	72.027	16 39 53 R	125	18.308	36.357	1.334	ES	-	-	11 + 557.47	11 + 593.83
143	1,347,357.304	439,486.560	11 + 686.514	108 36 58	110.991	62 37 55 R	60	36.503	65.568	10.232	ES	-	-	11 + 650.01	11 + 715.60
144	1,347,427.159	439,475.806	11 + 749.773	171 14 53	70.678	6 46 37 R	60	3.553	7.097	0.105	ES	-	-	11 + 746.22	11 + 753.32
145	1,347,514.287	439,472.801	11 + 836.945	178 1 29	87.18	18 2 39 L	200	31.756	62.986	2.505	ES	-	-	11 + 805.19	11 + 868.17
146	1,347,591.423	439,444.696	11 + 918.516	159 58 50	82.097	51 55 4 R	66	32.132	59.805	7.406	ES	-	-	11 + 886.38	11 + 946.19
147	1,347,986.682	439,690.708	12 + 379.623	211 53 54	465.566	88 1 20 L		0.000	0.000	0.000	ES	-	-	12 + 379.62	12 + 379.62
148	1,348,072.866	439,562.337	12 + 534.241	123 52 34	154.618	6 13 46 L	200	10.883	21.745	0.286	ES	-	-	12 + 523.36	12 + 545.10
149	1,348,090.891	439,527.925	12 + 573.067	117 38 44	38.847	2 0 3 L	200	3.492	6.984	0.030	ES	-	-	12 + 569.57	12 + 576.56
150	1,348,188.799	439,323.993	12 + 799.283	115 38 45	226.217	1 53 16 L	200	3.295	6.590	0.027	ES	-	-	12 + 795.99	12 + 802.58
151	1,348,210.116	439,275.565	12 + 852.195	113 45 29	52.912	5 57 13 L	400	20.801	41.564	0.540	ES	-	-	12 + 831.39	12 + 872.96
152	1,348,248.667	439,154.898	12 + 978.894	107 48 14	126.737	32 57 21 L	50	14.790	28.759	2.141	ES	-	-	12 + 964.10	12 + 992.86
153	1,348,211.534	439,017.033	13 + 120.904	74 50 53	142.83	38 5 11 R	85	29.340	56.502	4.821	ES	-	-	13 + 91.56	13 + 148.07
154	1,348,238.829	438,952.474	13 + 188.819	112 55 6	70.092	16 3 13 R	100	14.102	28.019	0.989	ES	-	-	13 + 174.72	13 + 202.74
155	1,348,271.768	438,911.757	13 + 241.007	128 58 19	52.372	36 0 30 R	90	29.250	56.562	4.634	ES	-	-	13 + 211.76	13 + 268.32
156	1,348,374.530	438,864.183	13 + 345.465	164 58 47	106.397	28 11 41 R	75	18.835	36.907	2.329	ES	-	-	13 + 326.63	13 + 363.54
157	1,348,426.583	438,896.368	13 + 398.162	193 10 30	53.46	20 23 38 L	65	11.692	23.136	1.043	ES	-	-	13 + 386.47	13 + 409.61
158	1,348,473.646	438,890.406	13 + 445.354	172 46 49	47.439	7 40 54 R	75	5.035	10.055	0.169	ES	-	-	13 + 440.32	13 + 450.37
159	1,348,496.763	438,890.593	13 + 468.457	180 27 48	23.118	15 20 18 R	75	10.099	20.078	0.677	ES	-	-	13 + 458.36	13 + 478.44

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-5(Eastern Main Road)

ES:Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
160	1,348,534.809	438,901.359	13 + 507.876	195 48 0	39.54	12 56 21 R	75	8.505	16.937	0.481	ES	-	-	13 + 499.37	13 + 516.31
161	1,348,608.093	438,941.547	13 + 591.383	208 44 23	83.58	13 10 41 L	175	20.214	40.250	1.164	ES	-	-	13 + 571.17	13 + 611.42
162	1,348,706.999	438,969.091	13 + 693.875	195 33 43	102.67	57 5 53 L	25	13.602	24.914	3.461	ES	-	-	13 + 680.27	13 + 705.19
163	1,348,733.102	438,945.968	13 + 726.458	138 27 51	34.872	12 34 22 L	75	8.262	16.458	0.454	ES	-	-	13 + 718.20	13 + 734.65
164	1,348,759.163	438,909.953	13 + 770.846	125 53 24	44.455	52 48 4 R	37	18.367	34.037	4.308	ES	-	-	13 + 752.48	13 + 786.58
165	1,348,842.406	438,908.053	13 + 851.474	178 41 33	83.265	56 10 15 L	37	19.744	36.274	4.938	ES	-	-	13 + 831.73	13 + 868.00
166	1,348,910.057	438,801.947	13 + 974.097	122 31 15	125.838	16 24 52 R	240	34.615	68.757	2.483	ES	-	-	13 + 939.48	14 + 8.24
167	1,349,001.760	438,722.049	14 + 95.250	138 56 7	121.627	6 3 44 L	50	2.648	5.290	0.070	ES	-	-	14 + 92.60	14 + 97.89
168	1,349,052.682	438,667.200	14 + 170.088	132 52 25	74.843	43 25 22 L	85	33.845	64.419	6.490	ES	-	-	14 + 136.24	14 + 200.66
169	1,349,051.749	438,569.985	14 + 264.036	89 27 0	97.219	16 0 49 L	85	11.956	23.757	0.837	ES	-	-	14 + 252.08	14 + 275.84
170	1,349,037.038	438,520.520	14 + 315.486	73 26 15	51.606	58 54 17 L	37	20.893	38.039	5.491	ES	-	-	14 + 294.59	14 + 332.63
171	1,349,001.921	438,511.417	14 + 348.017	14 31 56	36.278	24 42 20 L	37	8.103	15.954	0.877	ES	-	-	14 + 339.91	14 + 355.87
172	1,348,940.629	438,522.416	14 + 410.036	349 49 35	62.271	15 34 36 L	125	17.097	33.983	1.164	ES	-	-	14 + 392.94	14 + 426.92
173	1,348,883.778	438,549.838	14 + 472.944	334 14 59	63.119	23 35 52 R	50	10.445	20.593	1.079	ES	-	-	14 + 462.50	14 + 483.09
174	1,348,842.782	438,551.379	14 + 513.673	357 50 50	41.025	43 21 0 R	40	15.898	30.264	3.043	ES	-	-	14 + 497.78	14 + 528.04
175	1,348,799.371	438,513.379	14 + 569.835	41 11 51	57.693	84 35 59 R	23	20.928	33.961	8.097	ES	-	-	14 + 548.91	14 + 582.87
176	1,348,864.674	438,422.825	14 + 673.584	125 47 50	111.645	30 12 6 L	25	6.746	13.178	0.894	ES	-	-	14 + 666.84	14 + 680.02
177	1,348,867.321	438,395.805	14 + 700.419	95 35 42	27.149	L		0.000	0.000	0.000	ES	-	-	14 + 700.42	14 + 700.42
178	1,348,999.023	438,350.929	14 + 839.557	161 11 2	139.138	14 53 42 R	150	19.608	38.995	1.276	ES	-	-	14 + 819.95	14 + 858.94
179	1,349,092.717	438,344.507	14 + 933.250	176 4 44	93.914	37 2 7 L	92	30.814	59.468	5.023	ES	-	-	14 + 902.44	14 + 961.90

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TABLE OF COORDINATES AND CURVE ELEMENTS

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	ES: Existing Superelevation			PC	PT
	NORTHING	EASTING									e(%)	W(m)	V(kph)		
180	1,349,147.774	438,296.721	15 + 3.992	139 2 39	72.903										
						21 7 23 L	150	27.968	55.300	2.585	ES	-	-	14 + 976.02	15 + 31.32
181	1,349,172.187	438,250.652	15 + 55.495	117 55 12	52.138										
						10 58 39 R	75	7.207	14.370	0.345	ES	-	-	15 + 48.29	15 + 62.66
182	1,349,199.437	438,216.879	15 + 98.847	128 53 55	43.396										
						32 1 54 R	50	14.352	27.953	2.019	ES	-	-	15 + 84.49	15 + 112.45
183	1,349,250.227	438,199.321	15 + 151.834	160 55 47	53.739										
						46 20 0 R	55	23.535	44.477	4.824	ES	-	-	15 + 128.30	15 + 172.78
184	1,349,305.415	438,227.761	15 + 211.326	207 15 48	62.085										
						53 14 49 L	45	22.557	41.820	5.397	ES	-	-	15 + 188.77	15 + 230.59
185	1,349,365.656	438,198.401	15 + 275.046	154 0 59	67.015										
						1 45 5 L	500	7.642	15.284	0.058	ES	-	-	15 + 267.40	15 + 282.69
186	1,349,422.400	438,168.566	15 + 339.154	152 15 55	64.109										
						1 50 21 R	500	8.026	16.050	0.064	ES	-	-	15 + 331.13	15 + 347.18
187	1,349,470.861	438,145.038	15 + 393.023	154 6 12	53.871										
						8 55 41 L	300	23.421	46.747	0.913	ES	-	-	15 + 369.60	15 + 416.35
188	1,349,653.289	438,018.135	15 + 615.155	145 10 34	222.226										
						3 25 38 R	500	14.959	29.908	0.224	ES	-	-	15 + 600.20	15 + 630.10
189	1,349,699.236	437,990.093	15 + 668.974	148 36 14	53.828										
						2 55 51 R	200	5.116	10.231	0.065	ES	-	-	15 + 663.86	15 + 674.09
190	1,349,779.653	437,946.492	15 + 760.447	151 32 3	91.476										
						0 47 21 R	500	3.443	6.887	0.012	ES	-	-	15 + 757.00	15 + 763.89
191	1,349,831.613	437,919.715	15 + 818.901	152 44 10	58.454										
						0 46 55 L	500	3.412	6.824	0.012	ES	-	-	15 + 815.49	15 + 822.31
192	1,349,905.854	437,880.208	15 + 902.999	151 58 50	84.098										
						50 57 30 L	20	9.531	17.788	2.155	ES	-	-	15 + 893.47	15 + 911.26
193	1,349,910.528	437,856.212	15 + 926.173	101 1 20	24.447										
						32 43 54 L	40	11.747	22.851	1.689	ES	-	-	15 + 914.43	15 + 937.28
194	1,349,881.465	437,783.215	16 + 4.100	68 17 26	78.57										
						30 37 39 R	70	19.168	37.419	2.577	ES	-	-	15 + 984.93	16 + 22.35
195	1,349,888.383	437,739.129	16 + 47.808	98 55 5	44.625										
						47 8 57 R	39	17.018	32.093	3.551	ES	-	-	16 + 30.79	16 + 62.88
196	1,349,939.504	437,704.735	16 + 107.479	146 4 3	61.614										
						7 33 19 R	200	13.208	26.373	0.435	ES	-	-	16 + 94.27	16 + 120.65
197	1,349,988.129	437,680.621	16 + 161.717	153 37 21	54.276										
						14 26 31 L	200	25.340	50.412	1.599	ES	-	-	16 + 136.38	16 + 186.79
198	1,350,045.236	437,631.293	16 + 236.911	139 10 48	75.462										
						3 40 24 R	100	3.207	6.411	0.051	ES	-	-	16 + 233.70	16 + 240.12
199	1,350,104.246	437,586.590	16 + 310.939	142 51 15	74.031										
						19 23 25 R	75	12.813	25.382	1.087	ES	-	-	16 + 298.13	16 + 323.51

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TABLE OF COORDINATES AND CURVE ELEMENTS

R-5(Eastern Main Road)

ES: Existing Superelevation

PI NO.	COORDINATES		PI STATION	AZIMUTH	DIST.	I	R	T	Lc	E	e(%)	W(m)	V(kph)	PC	PT
	NORTHING	EASTING													
200	1,350,137.122	437,576.062	16 + 345.215	162 14 35	34.521										
						19 35 7 R	75	12.945	25.637	1.109	ES	-	-	16 + 332.27	16 + 357.91
201	1,350,199.983	437,578.069	16 + 407.856	181 49 43	62.893										
						93 14 44 L	27	28.574	43.941	12.313	ES	-	-	16 + 379.28	16 + 423.22
202	1,350,197.548	437,479.591	16 + 493.156	88 35 1	98.508										
						26 10 27 L	75	17.435	34.262	2.000	ES	-	-	16 + 475.72	16 + 509.98
203	1,350,181.544	437,448.966	16 + 527.102	62 24 34	34.555										
						22 18 24 L	50	9.858	19.466	0.963	ES	-	-	16 + 702.00	16 + 721.47
EOP	1,350,166.900	437,436.630	16 + 546.000	40 6 38	19.147										
								0.000	0.000	0.000	ES	-	-	16 + 546.00	16 + 546.00

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Table Location of Temporary Bench Mark (Road No. 5 Eastern Main Road - I)

No.	Elevation	Coordination		Remarks
		North	East	
1	3.33	1,340,047.331	440,946.109	
2	5.72	1,340,146.665	441,000.326	
3	5.48	1,340,234.765	440,985.103	
4	6.08	1,340,311.082	440,950.835	
5	10.03	1,340,406.579	440,946.004	
6	16.87	1,340,486.840	440,905.191	
7	15.74	1,340,536.732	440,880.367	
8	12.48	1,340,602.344	440,914.951	
9	11.64	1,340,673.722	440,892.617	
10	13.04	1,340,825.948	440,919.129	
11	10.48	1,340,952.627	440,938.842	
12	8.96	1,341,029.184	440,993.184	
13	7.29	1,341,102.863	441,119.326	
14	8.42	1,341,181.380	441,229.494	
15	10.26	1,341,241.150	441,235.361	
16	9.63	1,341,306.246	441,210.648	
17	13.07	1,341,324.389	441,136.401	
18	20.55	1,341,405.309	441,058.162	
19	30.43	1,341,430.388	440,924.790	
20	34.61	1,341,508.483	440,850.560	
21	34.87	1,341,639.884	440,777.408	
22	36.71	1,341,743.076	440,710.076	
23	36.20	1,341,866.271	440,639.078	
24	32.01	1,341,877.586	440,570.114	
25	28.57	1,341,927.949	440,511.503	
26	25.69	1,342,023.906	440,479.870	
27	27.90	1,342,193.144	440,430.990	
28	27.25	1,342,215.819	440,474.290	
29	30.42	1,342,272.868	440,562.788	
30	33.07	1,342,183.935	440,641.201	
31	35.31	1,342,217.675	440,707.577	
32	38.47	1,342,303.841	440,747.362	
33	39.62	1,342,360.902	440,757.909	
34	39.03	1,342,425.832	440,689.047	
35	38.61	1,342,498.574	440,743.437	
36	38.61	1,342,581.699	440,755.158	
37	37.96	1,342,644.183	440,722.616	
38	38.45	1,342,720.305	440,781.316	
39	37.51	1,342,856.342	440,771.190	
40	37.47	1,342,910.573	440,809.006	
41	36.97	1,342,999.581	440,826.705	
42	36.03	1,343,061.370	440,902.101	
43	31.75	1,343,178.434	440,913.926	
44	29.30	1,343,197.235	440,859.354	
45	26.99	1,343,255.318	440,864.186	
46	24.50	1,343,357.471	440,807.923	
47	25.39	1,343,358.462	440,924.980	
48	22.47	1,343,458.145	440,931.049	
49	21.54	1,343,530.849	441,004.000	
50	30.88	1,343,705.098	441,023.617	

Table Location of Temporary Bench Mark (Road No. 5 Eastern Main Road - 2)

No.	Elevation	Coordination		Remarks
		North	East	
51	39.58	1,343,754.513	441,146.718	
52	42.55	1,343,801.369	441,166.197	
53	44.92	1,343,857.590	441,163.590	
54	50.84	1,343,955.180	441,263.083	
55	52.69	1,344,044.123	441,294.367	
56	50.93	1,344,058.514	441,346.740	
57	48.35	1,344,037.898	441,100.567	
58	46.44	1,344,090.242	441,417.536	
59	42.32	1,344,235.506	441,356.999	
60	38.53	1,344,391.560	441,421.530	
61	38.85	1,344,469.871	441,360.351	
62	40.18	1,344,481.829	441,283.067	
63	43.92	1,344,603.358	441,153.279	
64	43.73	1,344,705.309	441,117.726	
65	43.57	1,344,756.914	441,142.121	
66	47.82	1,344,794.254	441,229.845	
67	49.19	1,344,830.807	441,244.701	
68	50.22	1,344,873.097	441,231.990	
69	51.23	1,344,993.895	441,290.318	
70	51.90	1,345,034.464	441,362.779	
71	52.91	1,345,068.682	441,368.682	
72	53.59	1,345,129.654	441,353.447	
73	54.73	1,345,217.079	441,416.940	
74	54.38	1,345,246.674	441,371.828	
75	53.17	1,345,276.662	441,270.661	
76	52.36	1,345,353.421	441,202.310	
77	50.35	1,345,421.999	441,131.876	
78	49.01	1,345,372.561	441,034.241	
79	47.51	1,345,385.987	440,923.619	
80	45.00	1,345,428.001	440,920.816	
81	42.23	1,345,468.826	440,959.564	
82	37.06	1,345,554.636	440,891.390	
83	41.36	1,345,621.846	440,830.351	
84	107.37	1,346,320.921	440,575.166	
85	105.88	1,346,329.282	440,514.714	
86	100.62	1,346,228.358	440,460.627	
87	99.71	1,346,133.670	440,426.097	
88	98.99	1,346,078.255	440,379.914	
89	98.08	1,346,101.065	440,345.106	
90	101.27	1,346,184.543	440,358.874	
91	102.59	1,346,350.102	440,337.873	
92	104.43	1,346,364.361	440,303.130	
93	107.15	1,345,329.294	440,244.953	
94	111.06	1,346,271.569	440,180.914	
95	112.35	1,346,266.960	440,117.756	
96	116.27	1,346,386.598	440,061.241	
97	112.95	1,346,433.010	440,012.675	
98	107.28	1,346,483.563	439,985.098	
99	102.39	1,346,470.856	439,893.771	
100	104.07	1,346,485.296	439,867.915	

Table Location of Temporary Bench Mark (Road No. 5 Eastern Main Road - 3)

No.	Elevation	Coordination		Remarks
		North	East	
101	109.53	1,346,554.960	439,901.979	
102	113.21	1,346,590.020	439,930.218	
103	124.62	1,346,678.429	439,832.095	
104	127.91	1,346,740.989	439,861.339	
105	129.98	1,346,783.015	439,832.362	
106	133.04	1,346,769.278	439,765.500	
107	134.94	1,346,708.659	439,703.119	
108	133.32	1,346,752.430	439,625.394	
109	130.34	1,346,864.601	439,607.103	
110	128.01	1,346,960.216	439,599.507	
111	124.96	1,346,947.281	439,502.616	
112	121.97	1,347,001.211	439,452.458	
113	115.86	1,347,075.986	439,494.299	
114	112.77	1,347,121.299	439,482.507	
115	107.15	1,347,160.103	439,434.818	
116	104.50	1,347,177.321	439,458.217	
117	101.81	1,347,172.682	439,526.940	
118	97.18	1,347,225.800	439,676.077	
119	95.38	1,347,317.999	439,738.880	
120	93.37	1,347,345.842	439,708.964	
121	86.33	1,347,317.261	439,648.063	
122	76.20	1,347,333.090	439,550.800	
123	70.23	1,347,363.784	439,491.443	
124	62.47	1,347,435.398	439,472.709	
125	53.83	1,347,523.386	439,471.685	
126	48.13	1,347,594.099	439,449.101	
127	42.71	1,347,704.604	439,517.859	
128	38.22	1,347,825.706	439,587.697	
129	33.66	1,347,927.157	439,657.432	
130	33.66	1,347,986.697	439,695.183	
131	32.77	1,348,073.122	439,566.729	
132	35.26	1,348,144.274	439,411.924	
133	33.49	1,348,215.699	439,265.218	
134	35.69	1,348,249.196	439,159.272	
135	43.13	1,348,213.976	439,014.379	
136	54.27	1,348,255.057	438,928.434	
137	59.82	1,348,310.775	438,898.978	
138	64.64	1,348,396.242	438,887.164	
139	68.68	1,348,439.691	438,897.223	
140	73.87	1,348,509.281	438,891.007	
141	85.98	1,348,640.694	438,953.029	
142	90.11	1,348,700.479	438,969.178	
143	84.47	1,348,748.213	438,930.291	
144	81.51	1,348,770.330	438,907.983	
145	77.66	1,348,843.578	438,904.377	
146	71.15	1,348,912.727	438,798.309	
148	64.93	1,349,027.929	438,698.482	
149	62.55	1,349,055.369	438,640.587	
150	58.07	1,349,049.227	438,550.652	

Table Location of Temporary Bench Mark (Road No. 5 Eastern Main Road - 4)

No.	Elevation	Coordination		Remarks
		North	East	
151	55.35	1,349,022.378	438,512.300	
152	49.67	1,348,937.721	438,522.165	
153	44.33	1,348,857.914	438,555.691	
154	40.12	1,348,799.587	438,510.660	
155	34.05	1,348,868.519	438,418.525	
156	33.21	1,348,877.398	438,389.513	
157	32.80	1,349,007.941	438,348.359	
158	29.99	1,349,100.810	438,338.003	
159	28.66	1,349,182.505	438,274.693	
160	28.31	1,349,208.869	438,211.643	
161	27.41	1,349,255.027	438,202.102	
162	24.54	1,349,315.111	438,224.065	
163	23.30	1,349,430.920	438,166.406	
164	24.82	1,349,509.593	438,115.162	
165	23.81	1,349,603.676	438,055.805	
166	20.61	1,349,690.914	437,992.181	
167	19.05	1,349,818.361	437,929.791	
168	13.24	1,349,915.392	437,870.831	
169	12.53	1,349,883.952	437,794.057	
170	8.82	1,349,893.640	437,734.435	
171	4.77	1,350,002.167	437,672.006	
172	5.76	1,350,106.591	437,584.175	
173	13.65	1,350,194.907	437,570.060	
174	23.74	1,350,198.540	437,483.311	
175	26.14	1,350,186.572	437,445.256	
176	27.38	1,350,158.725	437,441.690	

APPENDIX 12

GEOTECHNICAL SURVEY RESULTS

APPENDIX 12

GEOTECHNICAL SURVEY RESULTS

1. Highway Boring Result

Highway boring was done 27 Location, 28 CBR Test and soil classification test for each layer of bore holes. Figure 1 to Figure 3 are presented summarized highway boring result for the project roads. According to CBR Test result are very low percentage and interval of test pits is 2.0km. The test results are difficult to apply for the pavement design. The cause of low CBR value is character of volcanic clay that become drop the bearing capacity by the disturbed sample like as loam in Japan.

2. Core Boring Result

The boring result and required H- pile depth are presented in Table 1. The bridge side has big boulder stratum that is become foundation of bridge substructure. The rapid stream mostly scores the foundation of existing bridges during rain season. So that it better to construct at below of river flow and it need the protection of footing by the H- pile and gabion.

3. Material Sources Survey

Material sources survey was done 5 quarry sites in Grenada Island. The result of physical test is summarized in Table 2 and Figure 4. According to test result, crushed can be used aggregate for the asphalt concrete and cement concrete. Arena sand quarry has problem of grading and will be including salinity. The river gradient in Grenada is very steep and it very difficult to find outs sand quarry for the cement concrete and asphalt concrete.

Figure 1 Highway Boring Result (Grand Etang Road)

A12-2

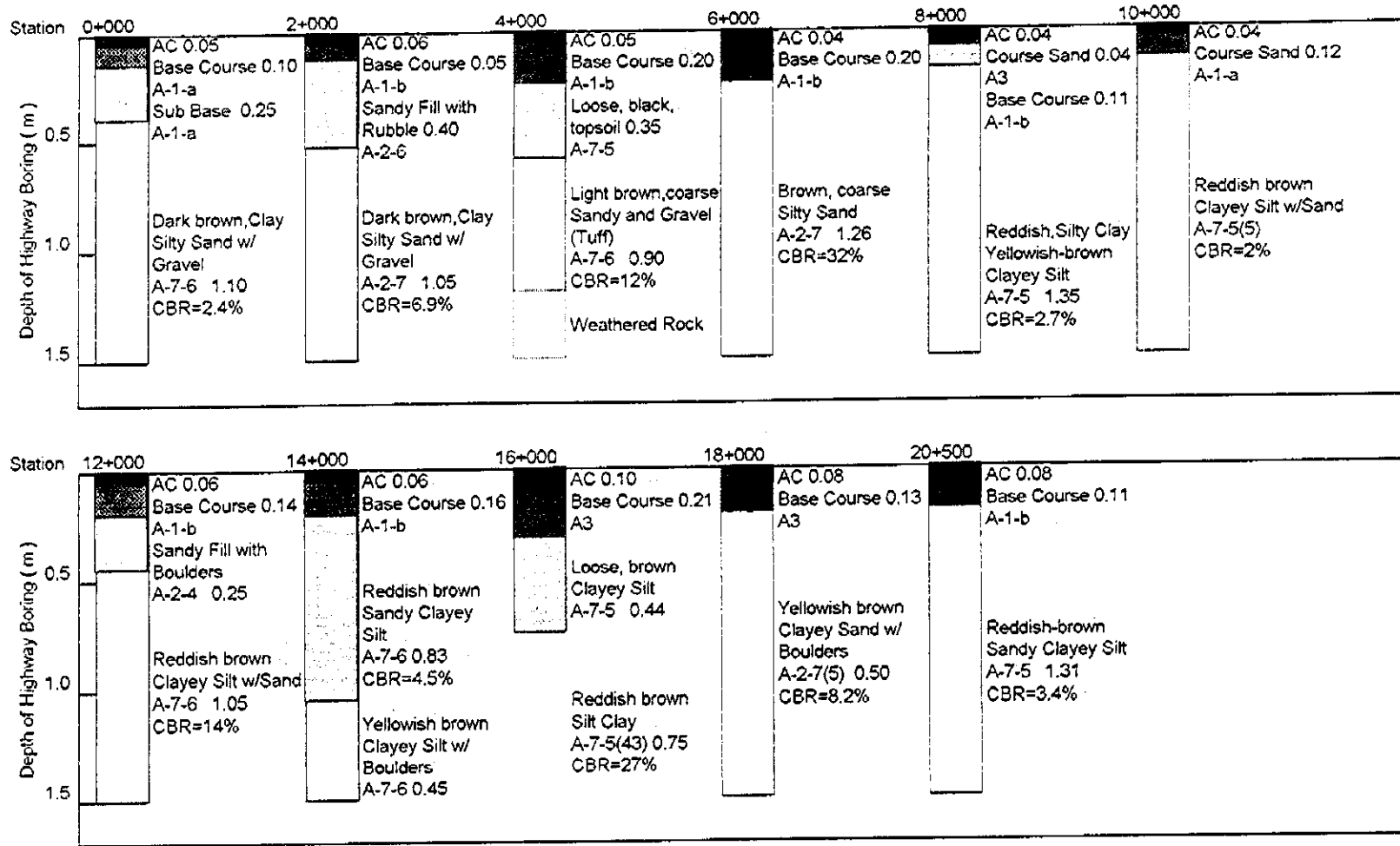


Figure 2 Highway Boring Result (Morne Jaloux and Mt. Gay to Springs Road)

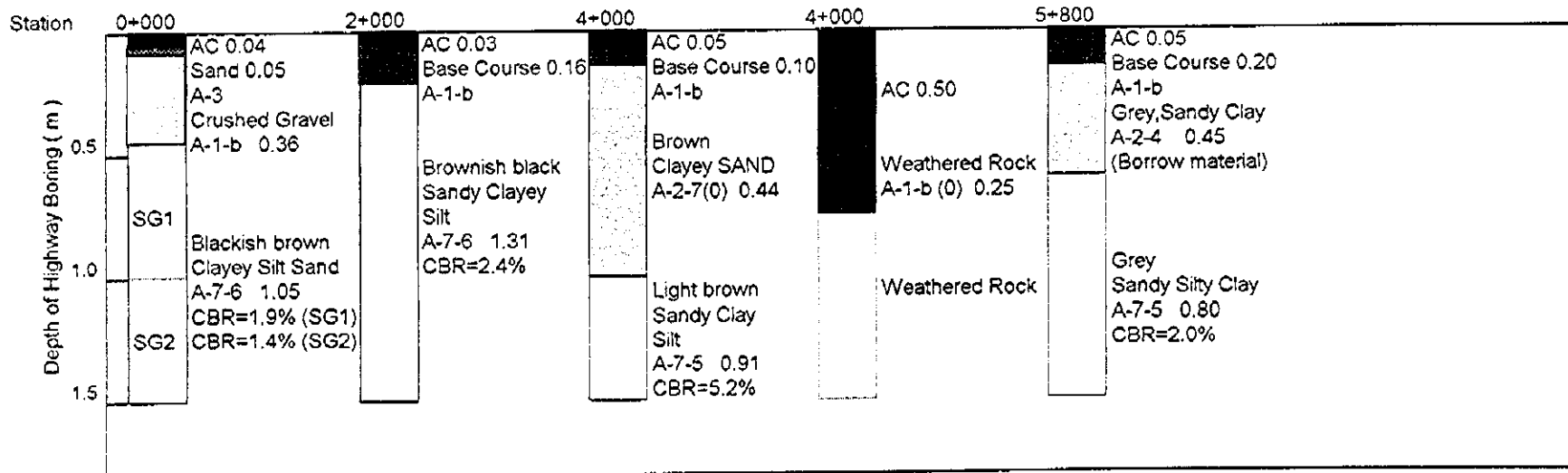
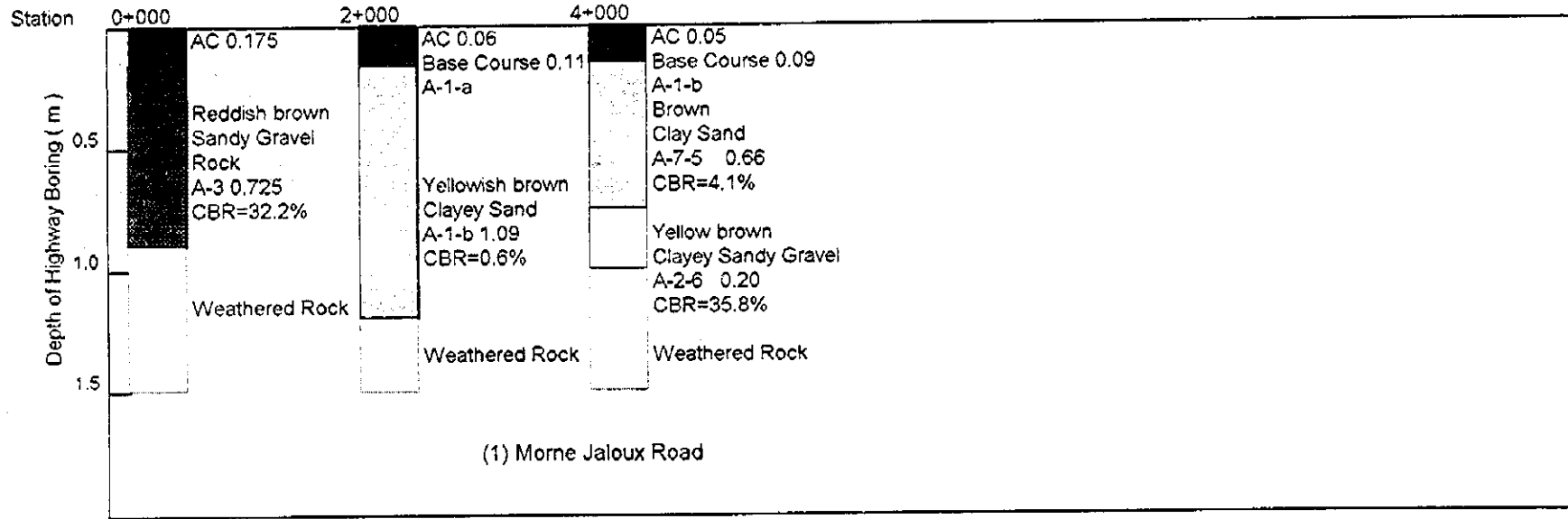


Figure 3 Highway Boring Result (Eastern Main Road)

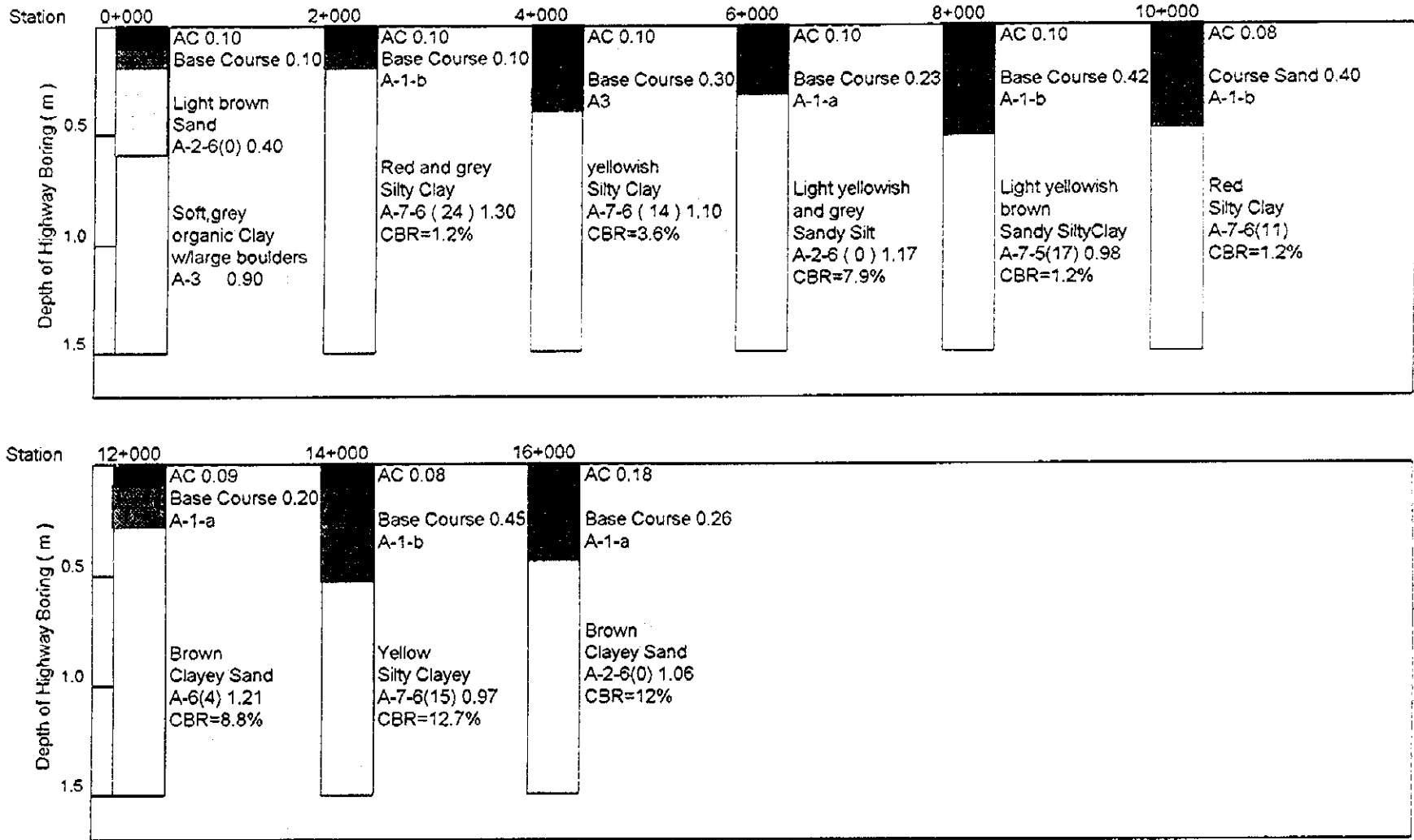


Table 12-1 Machine Boring Results

Road No.	Station	Bridge Name	Depth of Surface (m)	Depth of Boulder (m)	Depth of Hard Starata	H Steel-Pile Length (m)	Remarks
1	11+480	St. Margaret		3.0		5.0	No Boring
	13+460	Birch Grove	1.0	6.0	2.0	9.0	
	16+300	Balthazar	0.7	9.0	2.3	12.0	
	18+250	St. Cyr Great Rive	0.3	14.7	2.0	17.0	
3	6+050	Vineyard		5.0		7.0	No Boring
4	0+450	Tempe		5.0		7.0	No Boring
5	2+280	Dunfermilne		5.0		7.0	No Boring
	7+380	Pointe Field	0.6	9.2	2.2	12.0	
	14+780	Madeys	1.8	3.0	2.2	7.0	

Note: No boring bridge decided foundation depth by the visual inspection at the river.

Table 12-2 Material Sources Test Result

Quarry Name	Location	Company Name	Main Equipment	Production Capacity (tone/day)	Deposit	Test Results	Application	Remarks
Mt. Hartman	Mt. Hartman St. George's	Consolidated Contractors International	Crashing Plant Bulldozer Wheel Loader	400	Unlimited	SG=2 925 Abrasion=14% Soundness=1.45% CBR=68%	AC Aggregate Concrete Aggregate Base Material	
Queen's Park	Queen's Park St. George's				Unlimited		Base Material Concrete Aggregate	
Telescope	Telescope St. Andrew		Crashing Plant Bulldozer Wheel Loader	150	Unlimited	SG=2 905 Abrasion=21% Soundness=1.3% CBR=71%	AC Aggregate Concrete Aggregate Base Material	
Arena	Peals Airport St. Andrew				Unlimited		AC Sand Concrete Sand	
Meribeau	Meribeau Estage St. Andrew				Unlimited	SG=2 205 Abrasion=21% Soundness=12% CBR=26%	Base Material Borrow Material	

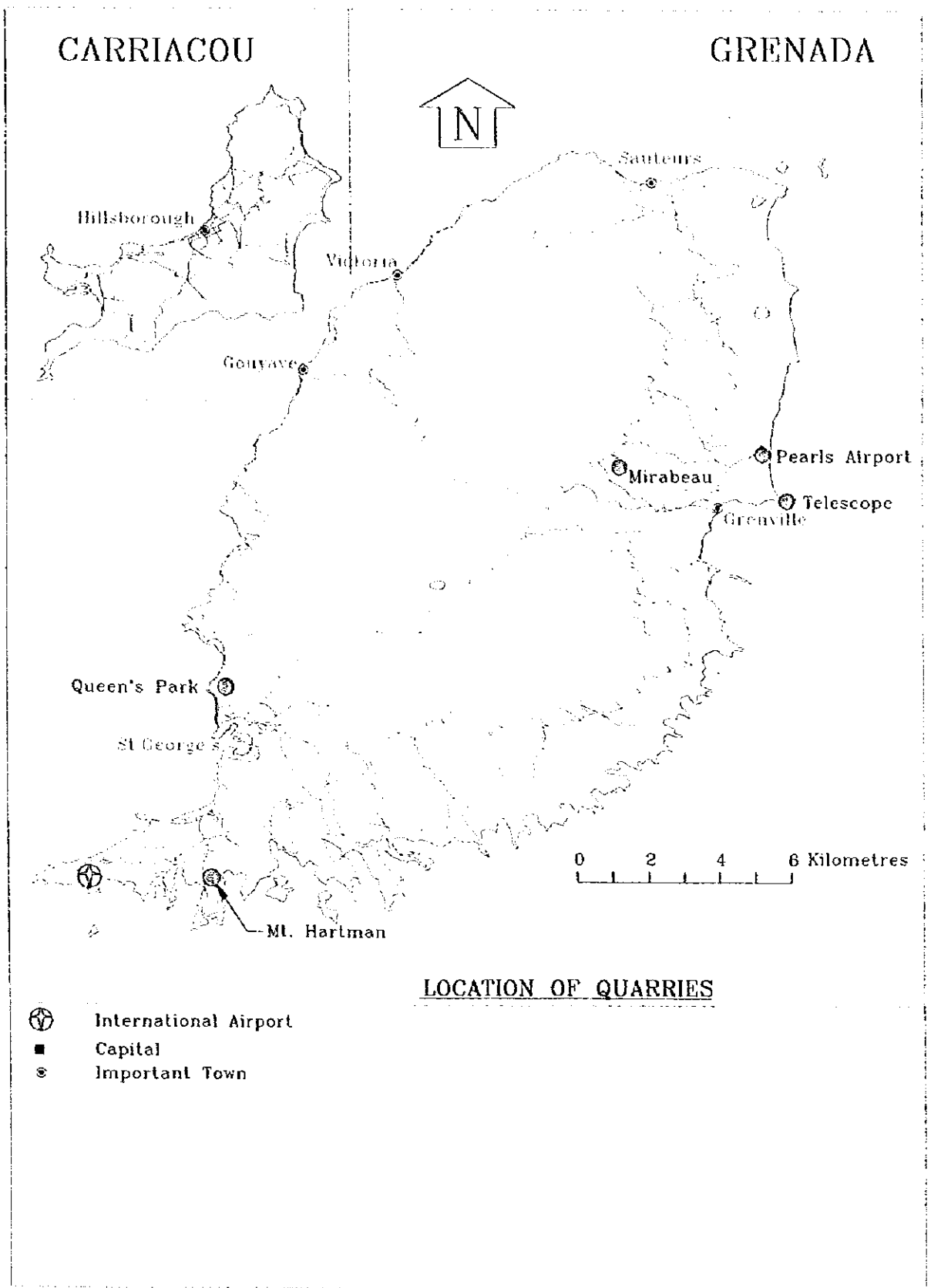


Figure 12-4 Location of Material Sources

APPENDIX 13

HYDROLOGICAL SURVEY RESULTS

100 200 300 400 500

100 200 300 400 500

APPENDIX 13

HYDROLOGICAL SURVEY RESULTS

1. DAILY RAINFALL FREQUENCY

Daily maximum rainfall record and return period of Point Salines International Airport in St. George's Town are shown on Table 1.

Table 1 Daily Maximum Rainfall and Return Period
of Point Salines International Airport in St. George's Town

Year	Daily Maximum	Return Period of Daily Rainfall (mm)		
	(mm)	Number	$1/n+1$	Daily Rainfall
1980	57.0	1	0.056	233.3
1981	60.0	2	0.111	190.3
1982	47.5	3	0.168	186.4
1983	69.2	4	0.222	177.5
1984	50.3	5	0.280	103.5
1985	190.3	6	0.334	93.0
1986	186.4	7	0.389	79.0
1987	233.3	8	0.445	69.2
1988	79.0	9	0.500	63.8
1989	52.9	10	0.556	60.1
1990	177.5	11	0.612	60.0
1991	103.5	12	0.667	57.0
1992	52.9	13	0.723	52.9
1993	63.8	14	0.778	52.9
1994	93.0	15	0.834	50.3
1995	35.6	16	0.890	47.5
1996	60.1	17	0.945	35.6

The daily rainfall frequency of the above table is shown on Figure 1 and Table 2.

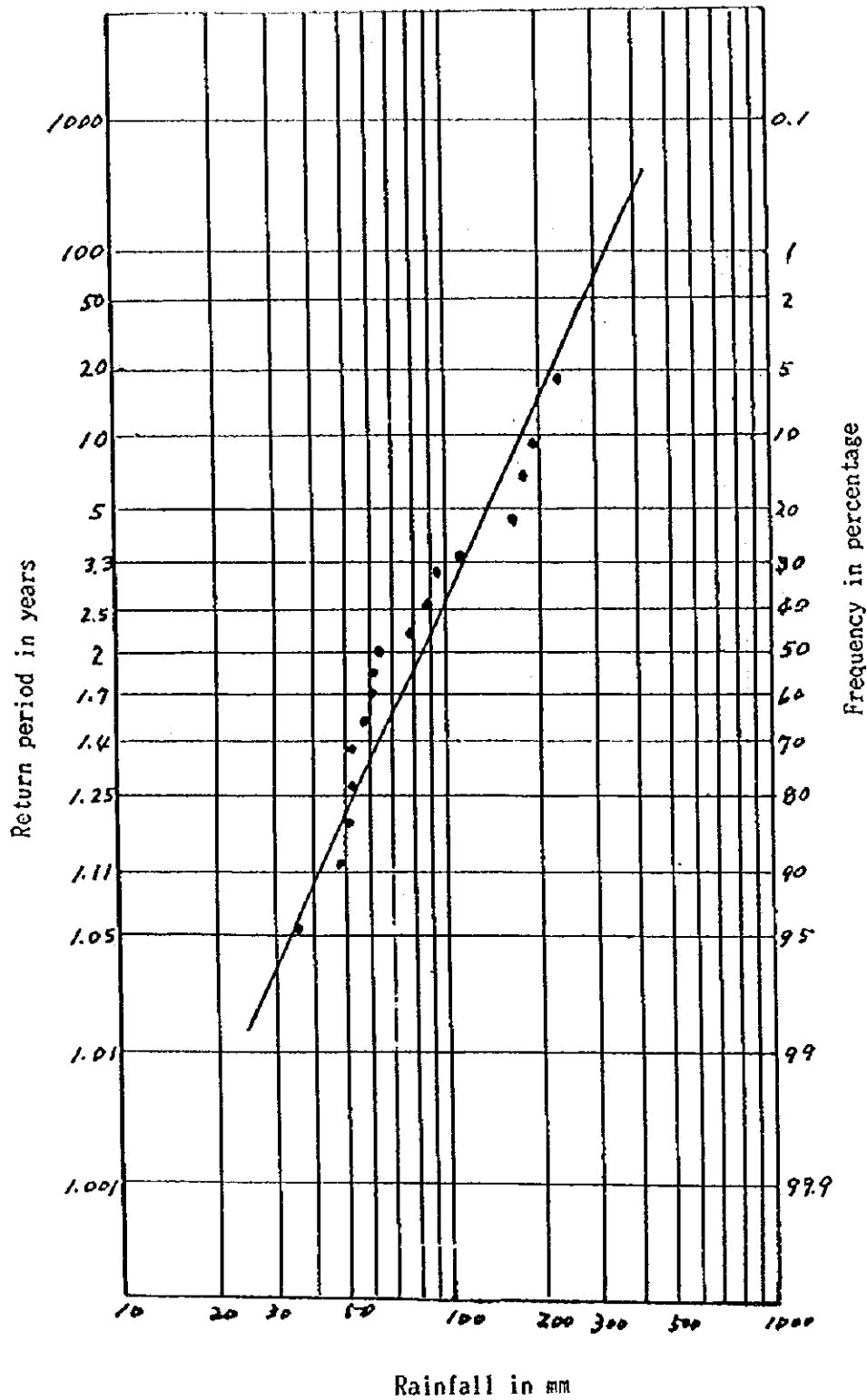


Figure 1 Frequency Curve in Daily Maximum Rainfall at St. George's

Table 2 Daily Rainfall Frequency of Point Salines International Airport in St. George's Town

Frequency Years	Daily Rainfall (mm)	Coefficient "a" for Rainfall Intensity
2	85	36
5	135	58
7	155	68
10	185	80
20	215	94
30	250	108
50	285	124
100	320	138

2. ESTIMATION METHOD OF DAILY RAINFALL FREQUENCY FOR THE STUDY ROADS

The daily rainfall frequency of the study roads should be estimated by the following formula.

$$R_s = R_{p-s} \times \alpha$$

Where:

R_s = Daily Rainfall of the Study Roads

R_{p-s} = Daily Rainfall of the Point Salines International airport in the St. George's Town (Reference Table 2)

α = Mean Annual Rainfall Ratio
(Reference Table 8.1.1 in Progress Report and Isohyetal Map)

Example; At 10.3 km on the Grand Etang Road

Mean annual rainfall = 4,000 mm

Mean annual rainfall of St. George's = 1,500 mm

$R_{S-10.3GE}$ = Daily Rainfall of 50-years at the 10.3 km of the Grand Etang

= 285 mm \times 4,000 mm / 1,500 mm

= 760 mm

3. ESTIMATION OF METHOD OF THE DESIGN MAXIMUM RUNOFF

The design maximum runoff should be estimated by the Rational Formula as follows :

Rational Formula

$$Q = 0.2778 C \cdot R \cdot A$$

Where ;

Q = Design Maximum Runoff (m³/ s)---Maximum ; 20 m³/ s / 1 km²

C = Runoff Coefficient

R = Rainfall Intensity for Duration Equal to the Time of Concentration ;
Tp (mm/hr)

A = Catchment Area (km²)

Here, C, Tp and R should be estimated as follows :

C : Mountainous Area	= 0.9
Rolling Area	= 0.80
Flat Area	= 0.60

$$R = a / (b + TP) n$$

Where:

a = To be obtained from Table 2

b = 0.20

n = 0.73

Tp = Duration (hr), applied Kraven Formula
= Length (m) / velocity + 0.5 hr

Velocity = gradient of slope >0.01	3.5 m/s
gradient of slope 0.01 to 0.02	3.0 m/s
gradient of slope <0.02	2.1 m/s

4. CATCHMENT AREA OF BRIDGES ALONG SELECTED ROADS

Catchment area of bridges are calculated using scale 1 :25,000 map and plani mater.

The result is presented Table 3, and Figure 2.

5. CHECKING OF HIGH WATER LEVEL OF EXISTING BRIDGES

High water level of bridges along selected roads was investigated by the hydrological survey and hydrological analysis of those bridges were applied 50 frequency years. The result is presented Table 4.

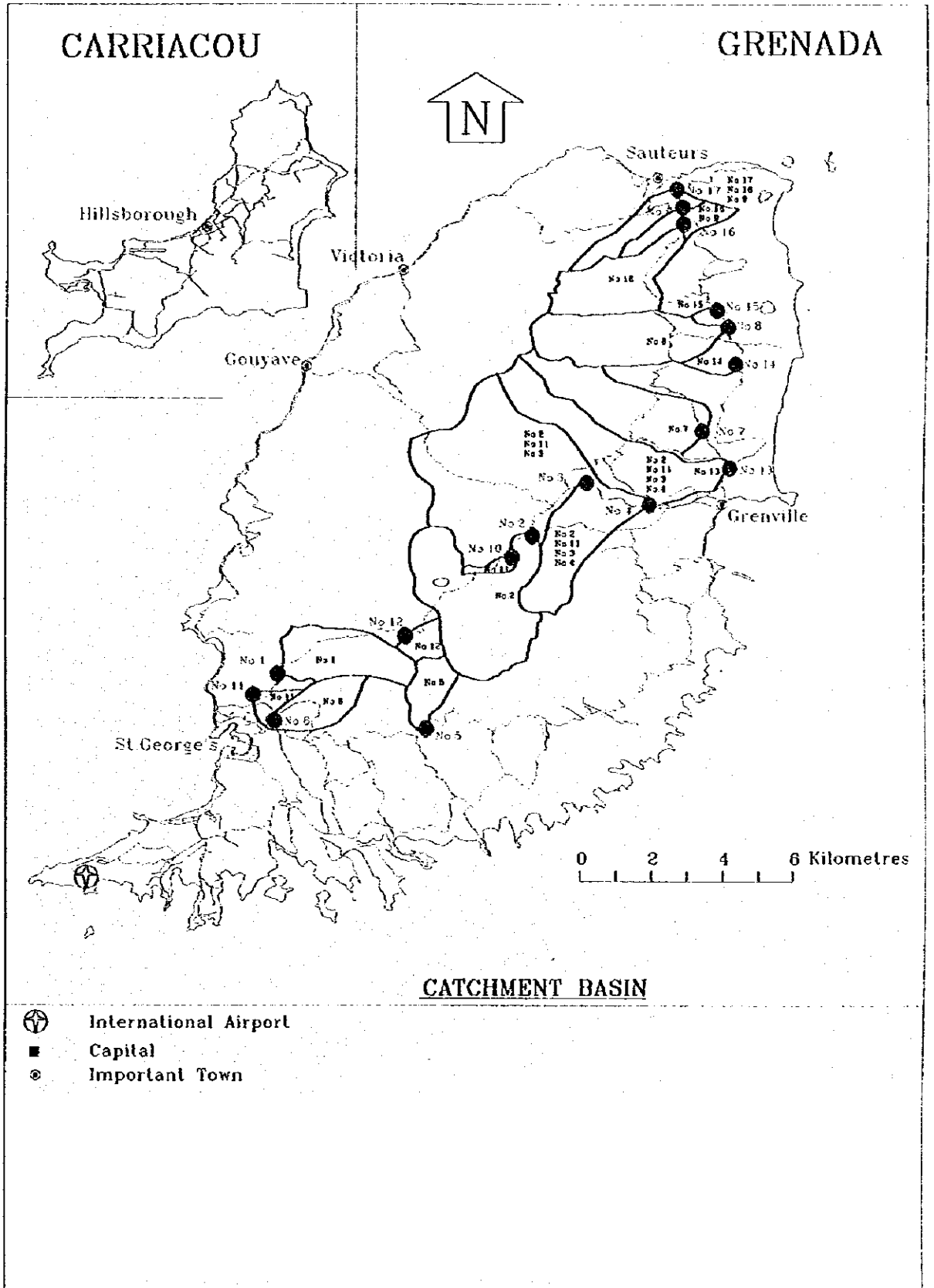


Figure 13-2 Catchment Area

Table 13-3 Catchment Area of Project Bridges

Road No.	Bridge No.	Station	Bridge Name	Readding of Planimeter				Catchment Area (m2)	Remarks	
				1	2	3	Average			
1	11	1+280	Mt. Gay (Tempe Br.)	106	209	314	105 492 597	3,731,250		
	1	2+450	Beaulieu	962	1,918	2,876	959	5,993,750		
	12	7+000	Vendome	157	312	469	156	975,000		
	10	11+480	St. Margaret	49	96	142	47	293,750		
	2	13+460	Birch Grove	1,581	3,153	4,729	1,576	9,850,000		
	3	16+300	Balthazar (St. Margaret Br.) (Birch Grove Br.)	619	1,238	1,858	619 47 1,576	30,393,750		
				2,626	5,245	7,864	2,621 4,863			
		4	18+250	St. Cyr Great River (Balthazan Br.)	476	952	1,427	476 537 4,863 5,876	36,725,000	
	3	5	6+050	Vineyard	372	746	1,120	373	2,331,250	
	4	6	0+450	Tempe	492	984	1,476	492	3,075,000	
5	13	1+280	Paradice (St. Cyr Great River Br.)	1,346	2,692	4,038	1,346 5,876 7,222	45,137,500		
	7	2+280	Dunfermiline	1,193	2,381	3,574	1,191	7,443,750		
	14	6+600	Tivoli	120	239	356	119	743,750		
	8	7+380	Pointe Field	1,324	2,649	3,981	1,327	8,293,750		
	15	9+450	Mt. Rose	32	64	98	33	206,250		
	16	14+506	Morne Fendue	1,248	2,498	3,747	1,249	7,806,250		
	9	14+780	Madeys (Morne Fendue Br.)	256	519	775	258 1,249 1,507	9,418,750		
	17	15+500	La Fortune (Madeys Br.)	401	793	1,192	397 1,507 1,904	11,900,000		

Table 13-4 High Water Level Analysis

Road No.	Bridge No.	Station	Bridge Name	Length (m)	Grade	Design Maximum Discharge Volume										Discharge Capacity at Bridge Site							Capacity	
						Karavan Ratio a (m/s)	Rs	Tp Ua + 0.5	Y=(b+Tp) ⁿ b=0.2,n=0.73	Ri Rs/Y	C	A km ²	Q ₁ (Discharge) (m ³ /s)	n	A : (Cross Area of Bridge site)			R (A/P)	R ^{2/3}	I ^{1/2}	Q ₂ (Capacity) (m ³ /s)	Check Q ₁ / Q ₂		
															Width (m)	Height (m)	m ²							
1	11	1+280	Mt. Gay	3,050	(522-7)/3050=0.17	3.5	207	0.74	0.956	217	0.8	3.71	179	0.02	10.0	2.2	22.0	1.528	1.29	0.14	199	0.90		
	1	2+450	Beaulieu	4,150	(579-38)/4150=0.13	3.5	248	0.83	1.022	243	0.9	5.99	383	0.03	22.0	2.5	55.0	2.037	1.61	0.14	413	0.88		
	12	7+000	Vendome	1,300	(640-350)/1300=0.22	3.5	248	0.60	0.850	292	0.9	0.98	71	0.04	6.7	3.0	20.1	1.583	1.36	0.14	96	0.75		
	10	11+480	St. Margaret	1,450	(679-368)/1450=0.15	3.5	230	0.62	0.888	259	0.9	0.29	19	0.04	4.8	1.5	7.2	0.923	0.95	0.14	74	0.78		
	2	13+460	Birch Grove	6,750	(702-120)/6750=0.09	3.5	230	1.04	1.170	197	0.9	9.85	484	0.03	20.1	3.1	62.3	2.369	1.78	0.14	518	0.94		
	3	16+300	Balthazar	10,400	(702-76)/10400=0.06	3.5	230	1.33	1.384	189	0.9	30.39	1281	0.02	33.1	3.0	99.3	2.540	1.86	0.14	1293	0.99		
	4	18+250	St. Cyr Great River	13,100	(702-38)/13100=0.05	3.5	230	1.54	1.498	154	0.9	36.73	1410	0.03	38.4	3.5	134.4	2.960	2.06	0.14	1292	1.09		
3	5	6+050	Vineyard	2,650	(522-22)/2650=0.19	3.5	248	0.71	0.948	262	0.9	2.33	152	0.03	5.8	3.0	16.8	1.443	1.28	0.22	158	0.97		
4	6	0+450	Tempe	2,750	(702-259)/2750=0.16	3.5	207	0.72	0.941	220	0.9	3.08	169	0.02	6.1	2.7	16.5	1.432	1.27	0.14	146	1.18		
5	13	1+280	Paradise	17,400	(702-4)/17400=0.04	3.5	230	1.88	1.707	135	0.9	45.14	1521	0.02	30.0	4.0	120.0	3.158	2.15	0.14	1806	0.84		
	7	2+280	Dunfermline	6,750	(840-23)/6750=0.12	3.5	207	1.04	1.170	177	0.9	7.44	329	0.03	10.7	3.0	32.1	1.922	1.54	0.22	363	0.91		
	14	6+000	Tivoli	1,500	(228-38)/1500=0.13	3.5	207	0.62	0.870	238	0.9	0.74	44	0.03	6.0	2.0	12.0	1.130	1.00	0.14	56	0.79		
	8	7+380	Pointe Field	6,750	(701-43)/6750=0.10	3.5	207	1.04	1.029	201	0.9	8.29	417	0.04	13.5	3.5	47.3	2.305	1.77	0.20	418	1.00		
	15	9+450	Mt. Rose	700	(182-104)/700=0.11	3.5	207	0.56	0.818	253	0.9	0.21	13	0.03	3.8	1.5	5.7	0.838	0.89	0.22	37	0.36		
	16	14+506	Morne FenDue	5,750	(671-48)/5750=0.11	3.5	207	0.96	1.114	186	0.9	7.81	383	0.02	5.5	4.5	24.8	1.707	1.37	0.22	373	0.97		
	9	14+780	Madeys	6,350	(671-18)/6350=0.10	3.5	207	1.00	1.142	181	0.9	9.42	427	0.03	12.1	3.5	42.4	2.217	1.70	0.20	480	0.89		
	17	15+500	La Fortune	7,450	(671-5)/7450=0.09	3.5	207	1.09	1.085	194	0.9	11.90	578	0.02	15.6	3.2	49.9	2.269	1.73	0.14	605	0.96		

A13-7

Note:

$$Q_1 = 0.2778 \times C \times R \times A$$

Where: Q₁ Design Maximum Discharge Volume (m³)

- C Runoff Coefficient
- R_i Rainfall Intensity (mm / hr)
- A₁ Catchment Area (km²)

$$Q_2 = 1 / n \times A_2 \times R^{2/3} \times I^{1/2}$$

Where: Q₂ Discharge Capacity of Bridge Site

- n Roughness Coefficient
- A₂ Cross Section Area
- R Hydraulic Radius A₂ / P
- I Slope of Bridge Site
- P Wetted Perimeter

$$R_1 = 124 \times 3000 / 1500 = 248 \text{ mm/hr}$$

$$= 124 \times 2500 / 1500 = 207 \text{ mm/hr}$$

$$= 124 \times 2000 / 1500 = 165 \text{ mm/hr}$$

According to Table 4, St. Cyr Great River, Tempe and Point Field bridge are over flow by the 50 frequency years rainfall.

6. REINFORCEMENT CONCRETE BOX CULVERT (R.C.B.C) AT THE BESIDE OF TEMPE BRIDGE

There are flood section by the heavy rainfall at the around Tempe bride. The causes of flooding are flow direction problem, Tempe river have steep gradient, Tempe bridge has lack of discharge capacity. The JICA Study Team was studied expanding of bridge, change the bridge location, change the river flow by bypass channel. The most economical improvement is change the river flow by bypass channel with new construction of R.C.B.C.

In case of RCBC 1.80m x 1.80m, 2 barrel

$$A = 1.80 \times 1.80 = 3.24$$

$$P = 4.68\text{m}$$

$$R = 0.692$$

$$R^{2/3} = 0.782$$

$$I^{1/2} = 0.173$$

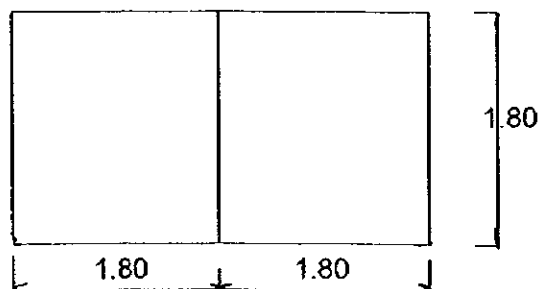
$$V = 1 / 0.013 \times 0.783 \times 0.173 = 10.42 \text{ m / s}$$

$$Q = 3.24 \times 10.42 = 34 \text{ m}^3 / \text{s}$$

$$2Q \times 0.8 = 2 \times 34 \times 0.8 = 54 \text{ m}^3 / \text{s}$$

Over Flow Volume

$$169 \text{ m}^3 - 117\text{m}^3 = 52 \text{ m}^3 < 54 \text{ m}^3 / \text{s}$$



APPENDIX 14

QUANTITY

Road No.1
Grand Etang Road

Bill of Quantities (R-1)

Items	Class	Unit	Quantity	Remarks
1.Earth Work	Excavation/Embankment	Common Soil	m3	565
		Hard Rock	m3	3,268
	Excavation/Waste	Common Soil	m3	2,493
		Hard Rock	m3	24,250
	Borrow Matererials		m3	-
	Structural Excavation	Common Soil	m3	1,690
	Back Fill		m3	647
	Scarification	t=150mm	m2	10,800
2.Side Ditch	Dc(M)-0.5•0.5		m	21,749
			m	
	Dc(C)-A-1.0•0.6		m	474
3.Pavement	Subbase Course	t=230mm	m3	4,537
	Base Course	t=50~150mm	m3	4,349
	Asphalt Concrete Hot Mix	$\gamma=2.4\text{ton/m}^3$	ton	27,335
	Prime Coat		m2	23,200
	Tack Coat		m2	129,835
4.Retaining Wall	Rw-M	h=2m	m	60
	Rw-M	h=3m	m	60
	Rw-M	h=4m	m	253
	Rw-M	h=5m	m	441
	Rw-C	h=2m	m	35
	Rw-C	h=3.5m	m	70
5.Drainage	RCPC	$\Phi 600$	m	18
	RCPC	$\Phi 1000$	m	50
	Under Drain		m	260
6.Incidental Construction	C-Block		m	11,000
	Guard Rail		m	1,635
	Road Signs		point	217
	Lane Marking	W=10cm	m	17,520
	Pedestrian Crossing	W=4.0m	m	30
	Seeding		m2	1,350
7.Bridge Construction	Substruktur		ls	
	Superstructure		m2	

Excavation All 30576
 Soil 0.1 3057.6
 HR 0.9 27518.4
 Embankment 5084.1

Earth Work Quantities Tabke (R-1)

Item	Unit	Excavation/Embankmen		Excavation/Waste		Structual	Back Fill	Seeding
		Soil	Hard Rock	Soil	Hard Rock	Excavation		
		0.9	1.4					
Sideway	m3	565	3,268	2,493	24,250	1,690	647	1350
Total	m3	565	3,268	2,493	24,250	1,690	647	1350

A14-3

Road No. R-1

Quantity

Sheet-No. 1

Road Name GRAND ETANG

Excavation

Excavation

Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
0 + -300.0	50.0	14.0	14.00	700.0	W=2 H=7		0.0		0.00	0.0	
0 + -250.0	50.0	14.0	14.00	700.0			0.0		0.00	0.0	
0 + -200.0	50.0	14.0	14.00	700.0			0.0		0.00	0.0	
0 + -150.0	50.0	14.0	14.00	700.0			0.0		0.00	0.0	
0 + -100.0	5.0	14.0	7.00	35.0			0.0		0.00	0.0	
0 + -95.0		0.0	0.00	0.0			0.0		0.00	0.0	
			0.00	0.0			0.0		0.00	0.0	
			0.00	0.0			0.0		0.00	0.0	
			0.00	0.0						0.0	
			0.00	0.0						0.0	
			0.00	0.0						0.0	
Subtotal				2835.0		Subtotal				0.0	2835.0

A14-4

Road No. R-1

Quantity

Sheet-No. 2

Road Name GRAND ETANG

Excavation						Excavation					
Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
0 + 240.0		0.0				3 + 100.0		12.0			
	10.0		3.00	30.0	W=1.5		50.0		13.00	650.0	
0 + 250.0		6.0			H=4	3 + 150.0		14.0			H=7
	50.0		6.00	300.0			50.0		14.00	700.0	
0 + 300.0		6.0				3 + 200.0		14.0			
	50.0		6.00	300.0			50.0		14.00	700.0	
0 + 350.0		6.0				3 + 250.0		14.0			
	35.0		6.00	210.0			50.0		14.00	700.0	
0 + 385.0		6.0				3 + 300.0		14.0			
	10.0		3.00	30.0			50.0		14.00	700.0	
0 + 395.0		0.0				3 + 350.0		14.0			
			0.00	0.0			50.0		14.00	700.0	
			0.00	0.0		3 + 400.0		14.0			
			0.00	0.0			45.0		14.00	630.0	
2 + 995.0		0.0				3 + 445.0		14.0			
	10.0		5.00	50.0	W=2		10.0		7.00	70.0	
3 - 5.0		10.0			H=5	3 + 455.0		0.0			
	45.0		10.00	450.0						0.0	
3 + 50.0		10.0									
	50.0		11.00	550.0						0.0	
3 + 100.0		12.0			H=6						
Subtotal				1920.0		Subtotal				4850.0	6770.0

A14-5

Road No. R-1

Quantity

Sheet-No. 3

Road Name GRAND ETANG

Excavation						Excavation					
Station	Length	Area	Ave.-Area	Volume	Remaks	Station	Length	Area	Ave.-Area	Volume	Remaks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
3 + 750.0		0.0				4 + 150.0		10.0			
	10.0		5.00	50.0	w=2	4 + 200.0	50.0	10.0	10.00	500.0	
3 + 760.0		10.0			H=5	4 + 250.0	50.0	10.0	10.00	500.0	
	40.0		10.00	400.0		4 + 300.0	50.0	10.0	10.00	500.0	
3 + 800.0		10.0				4 + 350.0	50.0	10.0	10.00	500.0	
	50.0		11.00	550.0	H=6	4 + 400.0	50.0	10.0	10.00	500.0	
3 + 850.0		12.0				4 + 450.0	50.0	10.0	10.00	500.0	
	50.0		12.00	600.0		4 + 490.0	40.0	10.0	10.00	400.0	
3 + 900.0		12.0				4 + 500.0	10.0	0.0	5.00	50.0	
	50.0		12.00	600.0	H=6					0.0	
3 + 950.0		12.0			H=5					0.0	
	50.0		12.00	600.0							
4 + 0.0		12.0									
	50.0		12.00	600.0							
4 + 50.0		12.0			H=6						
	50.0		11.00	550.0							
4 + 100.0		10.0			H=5						
	20.0		5.00	100.0							
4 + 120.0		0.0									
	30.0		5.00	150.0	w=2.5						
4 + 150.0		10.0			H=4						
Subtotal				4200.0		Subtotal				3450.0	7650.0

A14-6

Road No. R-1

Quantity

Sheet-No. 4

Road Name GRAND ETANG

Excavation

Excavation

Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m)	(m ³)			(m)	(m ²)	(m)	(m ³)	
STA.						STA.					
4 + 580.0		0.0				6 + 540.0		0.0			W=1
	5.0		1.50	7.5	W=1	6 + 545.0	5.0	5.0	2.50	12.5	
4 + 585.0		3.0				6 + 580.0	35.0	5.0	5.00	175.0	
	25.0		3.00	75.0		6 + 585.0	5.0	0.0	2.50	12.5	
4 + 610.0		3.0								0.0	
	5.0		1.50	7.5						0.0	
4 + 615.0		0.0								0.0	
				0.0						0.0	
				0.0		6 + 685.0		0.0			
5 + 50.0		0.0				6 + 690.0	5.0	3.0	1.50	7.5	W=1
	5.0		1.50	7.5	W=1	6 + 735.0	45.0	3.0	3.00	135.0	
5 + 55.0		3.0				6 + 740.0	5.0	0.0	1.50	7.5	
	25.0		3.00	75.0						0.0	
5 + 80.0		3.0								0.0	
	5.0		1.50	7.5						0.0	
5 + 85.0		0.0								0.0	
				0.0						0.0	
				0.0						0.0	
Subtotal				180.0		Subtotal				350.0	530.0

A14-7

Road No. R-1

Quantity

Sheet-No. 5

Road Name GRAND ETANG

Excavation

Excavation

Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
6 + 745.0		0.0				7 - 45.0		0.0			
	5.0		1.50	7.5	W=1		5.0		1.50	7.5	W=1
6 + 750.0		3.0				7 + 50.0		3.0			
	35.0		3.00	105.0			30.0		3.00	90.0	
6 + 785.0		3.0				7 + 80.0		3.0			
	5.0		1.50	7.5			5.0		1.50	7.5	
6 + 790.0		0.0				7 + 85.0		0.0			
				0.0						0.0	
				0.0						0.0	
6 + 875.0		0.0				7 + 225.0		0.0			W=1
	5.0		2.50	12.5	W=1		5.0		2.00	10.0	
6 + 880.0		5.0				7 + 230.0		4.0			
	40.0		5.00	200.0			50.0		4.00	200.0	
6 + 920.0		5.0				7 + 280.0		4.0			
	5.0		2.50	12.5			5.0		2.00	10.0	
6 + 925.0		0.0				7 + 285.0		0.0			
				0.0						0.0	
				0.0						0.0	
Subtotal				345.0		Subtotal				325.0	670.0

A14-8

Road No. R-1

Quantity

Sheet-No. 6

Road Name GRAND ETANG

Excavation

Excavation

Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
7 + 345.0		0.0				7 + 915.0		0.0			
	5.0		1.50	7.5	W=1		5.0		2.00	10.0	W=1
7 + 350.0		3.0				7 + 920.0		4.0			
	40.0		3.00	120.0			50.0		4.00	200.0	
7 + 390.0		3.0				7 + 970.0		4.0			
	5.0		1.50	7.5			5.0		2.00	10.0	
7 + 395.0		0.0				7 + 975.0		0.0			
				0.0						0.0	
				0.0						0.0	
7 + 505.0		0.0				8 + 600.0		0.0			
	5.0		2.00	10.0	W=1		5.0		0.50	2.5	
7 + 510.0		4.0				8 + 605.0		1.0			W=1
	30.0		4.00	120.0			25.0		1.00	25.0	
7 + 540.0		4.0				8 + 630.0		1.0			
	5.0		2.00	10.0			5.0		0.50	2.5	
7 + 545.0		0.0				8 + 635.0		0.0			
				0.0						0.0	
				0.0						0.0	
Subtotal				275.0		Subtotal				230.0	525.0

A14-9

Road No. R-1

Quantity

Sheet-No. 7

Road Name GRAND ETANG

Excavation

Excavation

Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
						9 + 610.0		0.0			
	0.0		0.00	0.0	W=1	9 + 615.0	5.0	3.0	1.50	7.5	W=1
	0.0		0.00	0.0		9 + 650.0	35.0	3.0	3.00	105.0	
	0.0		0.00	0.0		9 + 655.0	5.0	0.0	1.50	7.5	
				0.0						0.0	
				0.0						0.0	
9 + 285.0		0.0				9 + 670.0		0.0			
	5.0		1.50	7.5		9 + 675.0	5.0	3.0	1.50	7.5	W=1
9 + 290.0		3.0			W=1	9 + 715.0	40.0	3.0	3.00	120.0	
	30.0		3.00	90.0		9 + 720.0		0.0		0.0	
9 + 320.0		3.0					5.0	3.0	1.50	7.5	
	5.0		1.50	7.5						0.0	
9 + 325.0		0.0								0.0	
				0.0						0.0	
				0.0						0.0	
Subtotal				105.0		Subtotal				255.0	360.0

A14-10

Road No. R-1

Quantity

Sheet-No.

8

Road Name GRAND ETANG

Excavation

Excavation

A14-11

Station	Length	Area	Ave. -Area	Volume	Remaks	Station	Length	Area	Ave. -Area	Volume	Remaks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
9 + 776.0		0.0				10 + 205.0		0.0			
	3.0		1.50	4.5	W=1		5.0		1.50	7.5	W=1
9 + 779.0		3.0				10 + 210.0		3.0			
	26.0		3.00	78.0			35.0		3.00	105.0	
9 + 805.0		3.0				10 + 245.0		3.0			
	3.0		1.50	4.5			5.0		1.50	7.5	
9 + 808.0		0.0				10 + 250.0		0.0			
				0.0						0.0	
				0.0						0.0	
9 + 995.0		0.0				10 + 335.0		0.0			
	5.0		0.75	3.8	W=1		5.0		1.50	7.5	W=1
10 + 0.0		1.5				10 + 340.0		3.0			
	30.0		1.50	45.0			50.0		3.00	150.0	
10 + 30.0		1.5				10 + 390.0		3.0			
	5.0		0.75	3.8			5.0		1.50	7.5	
10 + 35.0		0.0				10 + 395.0		0.0			
				0.0						0.0	
				0.0						0.0	
Subtotal				139.6		Subtotal				285.0	424.6

Road No. R-1

Quantity

Sheet-No. 9

Road Name GRAND ETANG

Excavation						Excavation					
Station	Length	Area	Ave. -Area	Volume	Remaks	Station	Length	Area	Ave. -Area	Volume	Remaks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
10 + 490.0		0.0				10 + 620.0		0.0			
	3.0		1.50	4.5	W=1	10 + 625.0	5.0	3.0	1.50	7.5	W=1
10 + 493.0		3.0				10 + 670.0	45.0	3.0	3.00	135.0	
	14.0		3.00	42.0		10 + 675.0					
10 + 507.0		3.0					5.0	3.0	1.50	7.5	
	3.0		1.50	4.5							
10 + 510.0		0.0						0.0		0.0	
				0.0						0.0	
				0.0		10 + 810.0		0.0			
10 + 555.0		0.0					5.0		7.50	37.5	W=3
	5.0		1.50	7.5	W=1	10 + 815.0		15.0			H=5
10 + 560.0		3.0					35.0		15.00	525.0	
	25.0		3.00	75.0		10 + 850.0		15.0			
10 + 585.0		3.0					50.0		15.00	750.0	
	5.0		1.50	7.5		10 + 900.0		15.0			
10 + 590.0		0.0					50.0		16.50	825.0	W=3
				0.0		10 + 950.0		18.0			H=6
				0.0			50.0		18.00	900.0	
						11 + 0.0		18.0			
Subtotal				141.0		Subtotal				3187.5	3328.5

A14-12

Road No. R-1

Quantity

Sheet-No. 10

Road Name GRAND ETANG

Excavation						Excavation					
Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
11 + 0.0		18.0				11 + 475.0		0.0			
	50.0		18.00	900.0	W=6	11 + 480.0	5.0	1.0	0.50	2.5	
11 + 50.0		18.0			H=5	11 + 480.0			1.00	45.0	
	50.0		18.00	900.0		11 + 525.0	45.0	1.0			
11 + 100.0		18.0				11 + 525.0			1.0	2.5	
	20.0		14.00	280.0	W=2	11 + 530.0	5.0	0.0	0.50		
11 + 120.0		10.0			H=5	11 + 530.0				0.0	
	5.0		5.00	25.0						0.0	
11 + 125.0		0.0								0.0	
				0.0		11 - 735.0		0.0			
				0.0		11 - 735.0	5.0		1.00	5.0	W=1
11 - 335.0		0.0				11 + 740.0		2.0		30.0	H=2
	5.0		1.50	7.5		11 + 740.0	15.0		2.00		
11 + 340.0		3.0				11 + 755.0		2.0		5.0	
	30.0		3.00	90.0		11 + 755.0	5.0		1.00		
11 + 370.0		3.0				11 + 760.0		0.0		0.0	
	5.0		1.50	7.5						0.0	
11 + 375.0		0.0								0.0	
				0.0						0.0	
Subtotal				2210.0		Subtotal				90.0	2300.0

A14-13

Road No. R-1

Quantity

Sheet-No. 11

Road Name GRAND ETANG

Excavation						Excavation					
Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
12 + 215.0		0.0			W=1.5 H=3	12 + 535.0		0.0			
	5.0		2.25	11.3			5.0		2.00	10.0	H=4
12 + 220.0		4.5				12 + 540.0		4.0			W=1
	30.0		4.50	135.0			60.0		4.00	240.0	
12 + 250.0		4.5				12 + 600.0		4.0			
	5.0		2.25	11.3			5.0		2.00	10.0	
12 + 255.0		0.0				12 + 605.0		0.0			
				0.0						0.0	
				0.0						0.0	
12 + 395.0		0.0			W=1.5 H=3	12 + 650.0		0.0			
	5.0		2.25	11.3			5.0		2.25	11.3	H=3
12 + 400.0		4.5				12 + 655.0		4.5			W=1.5
	30.0		4.50	135.0			95.0		4.50	427.5	
12 + 430.0		4.5				12 + 750.0		4.5			
	5.0		2.25	11.3			5.0		2.25	11.3	
12 + 435.0		0.0				12 + 755.0		0.0			
				0.0						0.0	
				0.0						0.0	
Subtotal				315.2		Subtotal				710.1	1025.3

A14-14

Road No. R-1

Quantity

Sheet-No. 12

Road Name GRAND ETANG

Excavation

Excavation

Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
13 + 920.0		0.0				14 + 390.0		0.0			
	5.0		1.50	7.5	H=3		5.0		1.50	7.5	H=3
13 + 925.0		3.0			W=1	14 + 395.0		3.0			W=1
	30.0		3.00	90.0			40.0		3.00	120.0	
13 + 955.0		3.0				14 + 435.0		3.0			
	5.0		1.50	7.5			5.0		1.50	7.5	
13 + 960.0		0.0				14 + 440.0		0.0			
			0.00	0.0					0.00	0.0	
			0.00	0.0					0.00	0.0	
14 + 125.0		0.0				14 + 600.0		0.0			
	5.0		1.50	7.5	H=3		5.0		1.50	7.5	H=3
14 + 130.0		3.0			W=1	14 + 605.0		3.0			W=1
	20.0		3.00	60.0			25.0		3.00	75.0	
14 + 150.0		3.0				14 + 630.0		3.0			
	5.0		1.50	7.5			5.0		1.50	7.5	
14 + 155.0		0.0				14 + 635.0		0.0			
				0.0					0.00	0.0	
				0.0					0.00	0.0	
Subtotal				180.0		Subtotal				225.0	405.0

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Road No. R-1

Quantity

Sheet-No. 13

Road Name GRAND ETANG

Excavation

Excavation

A14-16

Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
15 + 15.0		0.0				17 + 220.0		0.0			
15 + 20.0	5.0		1.50	7.5		17 + 225.0	5.0	17.5	8.75	43.8	H=7 W=2.5
15 + 50.0	30.0	3.0	3.00	90.0		17 + 250.0	25.0	17.5	17.50	437.5	
15 + 55.0	5.0	0.0	1.50	7.5		17 + 300.0	50.0	17.5	17.50	875.0	
				0.0		17 + 350.0	50.0	17.5	17.50	875.0	
				0.0		17 + 400.0	50.0	17.5	17.50	875.0	
				0.0		17 + 425.0	25.0	17.5	17.50	437.5	H=7 W=2.5
18 + 485.0		0.0				17 + 430.0	5.0	0.0	8.75	43.8	
18 + 490.0	5.0	1.5	0.75	3.8	H=1.5 W=1			0.00	0.00	0.0	
18 + 525.0	35.0	1.5	1.50	52.5				0.00	0.00	0.0	
18 + 530.0	5.0	0.0	0.75	3.8				0.00	0.00	0.0	
				0.0				0.00	0.00	0.0	
Subtotal				165.1		Subtotal				3587.6	3752.7
									Total		30576.1

Road No. R-1						Quantity						Sheet-No. 1	
Road Name GRAND ETANG						Embankment						Embankment	
Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks		
	(m)	(m ²)	(m)	(m ³)			(m)	(m ²)	(m)	(m ³)			
STA.				0.0	C5-Emb.	STA.							
11 + 80.0		20.0											
	20.0		25.00	500.0			0.0		0.00	0.0			
11 + 100.0		30.0											
	50.0		30.00	1500.0			0.0		0.00	0.0			
11 + 150.0		30.0											
	50.0		27.50	1375.0			0.0		0.00	0.0			
11 + 200.0		25.0											
				0.0						0.0			
				0.0						0.0			
				0.0	St. Cyr					0.0			
17 + 950.0		0.0			Greatriver								
	89.0		12.85	1143.7			0.0		0.00	0.0			
18 + 39.0		25.7											
			25.70	0.0			0.0		0.00	0.0			
18 + 81.0		25.7											
	44.0		12.85	565.4			0.0		0.00	0.0			
18 + 125.0		0.0											
				0.0						0.0			
Subtotal				5084.1		Subtotal				0.0		5084.1	
										Total		5084.1	

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Road No. R-1

Quantity

Sheet-No. 1

Road Name GRAND ETANG

Structural Excavation

Back Fill

A14-18

Structural Excavation						Back Fill					
Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.					E5	STA.					
0 + 65.0		4.0				0 + 67.0		0.4			
	15.0		4.00	60.0			5.0		0.40	2.0	
0 + 80.0		4.0				0 + 72.0		0.4			
	30.0		4.15	124.5			43.0		0.40	17.2	
0 + 110.0		4.3				0 + 115.0		0.4			
	10.0		4.30	43.0			5.0		0.40	2.0	
0 + 120.0		4.3				0 + 120.0		0.4			
				0.0						0.0	
				0.0						0.0	
				0.0	E6					0.0	
3 + 455.0		0.0				3 + 457.0		0.0			
	5.0		3.85	19.3			5.0		0.20	1.0	
3 + 460.0		7.7				3 + 462.0		0.4			
	30.0		7.70	231.0			25.0		0.40	10.0	
3 + 490.0		7.7				3 + 487.0		0.4			
	5.0		3.85	19.3			5.0		0.20	1.0	
3 + 495.0		0.0				3 + 492.0		0.0			
				0.0						0.0	
Subtotal				497.1		Subtotal				33.2	

Road No. R-1

Quantity

Sheet-No. 2

Road Name GRAND ETANG

Structural Excavation

Back Fill

Station	Length	Area	Ave.-Area	Volume	Remarks	Station	Length	Area	Ave.-Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
3 + 665.0		0.0			E7	3 + 664.0		0.0			
	2.0		0.70	1.4			5.0		10.00	50.0	
3 + 667.0		1.4				3 + 669.0		20.0			
	16.0		1.40	22.4			10.0		20.00	200.0	
3 + 683.0		1.4				3 + 679.0		20.0			
	2.0		0.70	1.4			5.0		10.00	50.0	
3 + 685.0		0.0				3 + 684.0		0.0			
				0.0						0.0	
				0.0						0.0	
				0.0	C5					0.0	
11 + 246.0		0.0				11 + 246.0		0.0			
	24.0		3.75	90.0			24.0		2.10	50.4	
11 + 270.0		7.5				11 + 270.0		4.2			
	25.0		8.15	203.8			25.0		5.60	140.0	
11 + 295.0		8.8				11 + 295.0		7.0			
	21.0		4.40	92.4			21.0		3.50	73.5	
11 + 316.0		0.0				11 + 316.0		0.0			
				0.0						0.0	
Subtotal				411.4		Subtotal				563.9	

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Road No. R-1

Quantity

Sheet-No. 3

Road Name GRAND ETANG

Structural Excavation

Back Fill

Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
13 + 320.0		0.0			C6	13 + 320.0		0.0			
13 + 330.0	10.0		2.25	22.5		13 + 330.0	10.0		0.55	5.5	
13 + 400.0	70.0	4.5	5.15	360.5		13 + 400.0	70.0	1.1	0.60	42.0	
13 + 420.0	20.0	5.8	2.90	58.0		13 + 420.0	20.0	0.1	0.05	1.0	
		0.0		0.0				0.0		0.0	
				0.0						0.0	
14 + 930.0		0.0				14 + 930.0		0.0			
14 + 950.0	20.0		5.25	105.0	C7	14 + 950.0	20.0		0.00	0.0	
14 + 970.0	20.0	10.5	9.60	192.0		14 + 970.0	20.0	0.0	0.05	1.0	
14 + 980.0	10.0	8.7	4.35	43.5		14 + 980.0	10.0	0.1	0.05	0.5	
		0.0		0.0				0.0		0.0	
			0.00	0.0					0.00	0.0	
				0.0						0.0	
Subtotal				781.5		Subtotal				50.0	
				Total	1690.0					Total	647.1

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Road No. R-1

Quantity

Sheet-No. 4

Road Name GRAND ETANG

Structural Excavation

Back Fill

A14-21

Station	Length	Area	Ave. -Area	Volume	Remarks	Station	Length	Area	Ave. -Area	Volume	Remarks
	(m)	(m ²)	(m ²)	(m ³)			(m)	(m ²)	(m ²)	(m ³)	
STA.						STA.					
	0.0		0.00	0.0			0.0		0.00	0.0	
	0.0		0.00	0.0			0.0		0.00	0.0	
	0.0		0.00	0.0			0.0		0.00	0.0	
				0.0						0.0	
				0.0						0.0	
				0.0						0.0	
	0.0		0.00	0.0			0.0		0.00	0.0	
	0.0		0.00	0.0			0.0		0.00	0.0	
	0.0		0.00	0.0			0.0		0.00	0.0	
				0.0						0.0	
Subtotal				0.0		Subtotal				0.0	

Road No. R 1

Quantity

Sheet No. 1

Road Name GRAND ETANG

Seeding

Seeding

Station	Length	Width	Ave. Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
11 + 246.0		0.0				11 + 940.0		0.0			
	4.0		8.50	34.0			10.0		2.25	22.5	
11 + 250.0		17.0				11 + 950.0		4.5			
	15.0		17.00	255.0			20.0		3.75	75.0	
11 + 265.0		17.0				11 + 970.0		3.0			
	30.0		19.00	570.0			10.0		1.50	15.0	
11 + 295.0		21.0				11 + 980.0		0.0			
	15.0		21.00	315.0						0.0	
11 + 310.0		21.0								0.0	
	6.0		10.50	63.0						0.0	
11 + 316.0		0.0								0.0	
			0.00	0.0						0.0	
	0.0		0.00	0.0			0.0		0.00	0.0	
	0.0		0.00	0.0			0.0		0.00	0.0	
	0.0		0.00	0.0			0.0		0.00	0.0	
	0.0		0.00	0.0			0.0		0.00	0.0	
				0.0						0.0	
Subtotal				1237.0		Subtotal				112.5	1349.5
									Total	1349.5	

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Pavement Quantities Table (R-1)

Item		Unit	Roadway	Shoulder	Subtotal	Coefficient	Unit	Subtotal	Total	Remarks
Asphalt Concrete (BOP~0-400)	t=50mm	m2	6,150.0		6,150.0	0.195	ton	1,199.3		
Asphalt Concrete (1+400~EOP)	t=50mm	m2	112,884.5		112,884.5	0.195	ton	22,012.5		
Asphalt Concrete (0-400~1+400)	t=100mm	m2	10,800.0		10,800.0	0.244	ton	2,635.2	27,334.9	
Asphalt Concrete (Binder)	t=50mm	m2	12,399.5		12,399.5	0.120	ton	1,487.9		
Base Course	t=50mm	m2		24,177.5	24,177.5	0.050	m3	1,208.9		
Base Course	t=100mm	m2		1,812.5	1,812.5	0.100	m3	181.3	4,348.9	
Base Course	t=150mm	m2	19,725.0		19,725.0	0.150	m3	2,958.8		
Subbase Course	t=230mm	m2	19,725.0		19,725.0	0.230	m3	4,536.8	4,536.8	
Tack Coat		m2	129,834.5		129,834.5	1.000	m2	129,834.5	129,834.5	
Prime Coat		m2	23,199.5		23,199.5	1.000	m2	23,199.5	23,199.5	
Scarification	t=150mm	m2	10,800.0		10,800.0	0.150	m3	1,620.0	1,620.0	

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Road No. R-1

Quantity

Sheet-No. 1

Road Name GRAND ETANG

Ac (100) Sc (150) Roadway Pavement						Ac (100) Sc (150) Roadway Pavement					
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
0 + -400.0		6.0				0 + 100.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + -350.0		6.0				0 + 150.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + -300.0		6.0				0 + 200.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + -250.0		6.0				0 + 250.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + -200.0		6.0				0 + 300.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + -150.0		6.0				0 + 350.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + -100.0		6.0				0 + 400.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + -50.0		6.0				0 + 450.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + 0.0		6.0				0 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + 50.0		6.0				0 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
0 + 100.0		6.0				0 + 600.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

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Road No. R-1

Quantity

Sheet-No. 2

Road Name GRAND ETANG

Ac (100) Sc (150) Roadway Pavement						Ac (100) Sc (150) Roadway Pavement					
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
0 + 600.0	50.0	6.0	6.00	300.0		1 + 100.0	50.0	6.0	6.00	300.0	
0 + 650.0	50.0	6.0	6.00	300.0		1 + 150.0	50.0	6.0	6.00	300.0	
0 + 700.0	50.0	6.0	6.00	300.0		1 + 200.0	50.0	6.0	6.00	300.0	
0 + 750.0	50.0	6.0	6.00	300.0		1 + 250.0	50.0	6.0	6.00	300.0	
0 + 800.0	50.0	6.0	6.00	300.0		1 + 300.0	50.0	6.0	6.00	300.0	
0 + 850.0	50.0	6.0	6.00	300.0		1 + 350.0	50.0	6.0	6.00	300.0	
0 + 900.0	50.0	6.0	6.00	300.0		1 + 400.0	50.0	6.0	6.00	300.0	
0 + 950.0	50.0	6.0	6.00	300.0		+				0.0	
1 + 0.0	50.0	6.0	6.00	300.0		+				0.0	
1 + 50.0	50.0	6.0	6.00	300.0		+				0.0	
1 + 100.0	50.0	6.0	6.00	300.0		+				0.0	
Subtotal				3000.0		Subtotal				1800.0	4800.0
										Total	10800.0

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Road No. R-1

Quantity

Sheet-No. 3

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
-1 + -400.0	50.0	6.0	6.00	300.0		0 + -900.0	50.0	6.0	6.00	300.0	
-1 + -350.0	50.0	6.0	6.00	300.0		0 + -850.0	50.0	6.0	6.50	325.0	
-1 + -300.0	50.0	6.0	6.00	300.0		0 + -800.0	50.0	7.0	6.50	325.0	
-1 + -250.0	50.0	6.0	6.00	300.0		0 + -750.0	50.0	6.0	6.50	325.0	
-1 + -200.0	50.0	6.0	6.00	300.0		0 + -700.0	50.0	7.0	6.50	325.0	
-1 + -150.0	50.0	6.0	6.00	300.0		0 + -650.0	50.0	6.0	6.50	325.0	
-1 + -100.0	50.0	6.0	6.00	300.0		0 + -600.0	50.0	6.0	6.00	300.0	
-1 + -50.0	50.0	6.0	6.00	300.0		0 + -550.0	50.0	6.0	6.00	300.0	
-1 + 0.0	50.0	6.0	6.00	300.0		0 + -500.0	50.0	6.5	6.25	312.5	
0 + -950.0	50.0	6.0	6.00	300.0		0 + -450.0	50.0	6.0	6.25	312.5	
0 + -900.0	50.0	6.0	6.00	300.0		0 + -400.0	50.0	7.0	6.50	325.0	
Subtotal				3000.0		Subtotal				3150.0	6150.0

A14-26

Road No. R-1

Quantity

Sheet-No. 4

Road Name GRAND ETANG

A14-27

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
				0.0		1 + 500.0	50.0	6.0	6.00	300.0	
				0.0		1 + 550.0	50.0	6.0	6.00	300.0	
				0.0		1 + 600.0	50.0	6.0	6.00	300.0	
				0.0		1 + 650.0	50.0	6.0	6.00	300.0	
				0.0		1 + 700.0	50.0	6.0	6.00	300.0	
				0.0		1 + 750.0	50.0	6.0	6.00	300.0	
				0.0		1 + 800.0	50.0	6.0	6.00	300.0	
				0.0		1 + 850.0	50.0	6.0	6.00	300.0	
1 + 400.0	50.0	6.0	6.00	300.0		1 + 900.0	50.0	6.0	6.00	300.0	
1 - 450.0	50.0	6.0	6.00	300.0		1 + 950.0	50.0	6.0	6.00	300.0	
1 + 500.0		6.0	6.00	300.0		2 + 0.0		6.0			
Subtotal				600.0		Subtotal				3000.0	3600.0

Road No. R-1

Quantity

Sheet-No. 5

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
2 + 0.0		6.0				2 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 50.0		6.0				2 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 100.0		6.0				2 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 150.0		6.0				2 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 200.0		6.0				2 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 250.0		6.0				2 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 300.0		6.0				2 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 350.0		6.0				2 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 400.0		6.0				2 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 450.0		6.0				2 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
2 + 500.0		6.0				3 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

A14-28

Road No. R-1

Quantity

Sheet-No. 6

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
3 + 0.0		6.0				3 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 50.0		6.0				3 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 100.0		6.0				3 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 150.0		6.0				3 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 200.0		6.0				3 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 250.0		6.0				3 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 300.0		6.0				3 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 350.0		6.0				3 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 400.0		6.0				3 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 450.0		6.0				3 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
3 + 500.0		6.0				4 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

A14-29

Road No. R-1						Quantity						Sheet-No. 7	
Road Name GRAND ETANG													
Ac (50)			Roadway Pavement			Ac (50)			Roadway Pavement				
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks		
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)			
STA.						STA.							
4 + 0.0		6.0				4 + 500.0		5.0					
	50.0		6.00	300.0			50.0		5.25	262.5			
4 + 50.0		6.0				4 + 550.0		5.5					
	50.0		6.00	300.0			50.0		5.75	287.5			
4 + 100.0		6.0				4 + 600.0		6.0					
	50.0		6.00	300.0			50.0		6.00	300.0			
4 + 150.0		6.0				4 + 650.0		6.0					
	50.0		6.00	300.0			50.0		6.00	300.0			
4 + 200.0		6.0				4 + 700.0		6.0					
	50.0		6.00	300.0			50.0		6.00	300.0			
4 + 250.0		6.0				4 + 750.0		6.0					
	50.0		6.00	300.0			50.0		6.00	300.0			
4 + 300.0		6.0				4 + 800.0		6.0					
	50.0		6.00	300.0			50.0		6.00	300.0			
4 + 350.0		6.0				4 + 850.0		6.0					
	50.0		6.00	300.0			50.0		6.00	300.0			
4 + 400.0		6.0				4 + 900.0		6.0					
	50.0		6.00	300.0			50.0		6.00	300.0			
4 + 450.0		6.0				4 + 950.0		6.0					
	50.0		5.50	275.0			50.0		5.75	287.5			
4 + 500.0		5.0				5 + 0.0		5.5					
Subtotal				2975.0		Subtotal				2937.5	5912.5		

A14-30

Road No. R-1

Quantity

Sheet-No. 8

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)		STA.	(m)	(m)	(m)	(m ²)	
5 + 0.0		5.5				5 + 500.0		5.5			
	50.0		5.75	287.5			50.0		5.75	287.5	
5 + 50.0		6.0				5 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
5 + 100.0		6.0				5 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
5 + 150.0		6.0				5 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
5 + 200.0		6.0				5 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
5 + 250.0		6.0				5 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
5 + 300.0		6.0				5 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
5 + 350.0		6.0				5 + 850.0		6.0			
	50.0		5.75	287.5			50.0		6.00	300.0	
5 + 400.0		5.5				5 + 900.0		6.0			
	50.0		5.50	275.0			50.0		6.00	300.0	
5 + 450.0		5.5				5 + 950.0		6.0			
	50.0		5.50	275.0			50.0		6.00	300.0	
5 + 500.0		5.5				6 + 0.0		6.0			
Subtotal				2925.0		Subtotal				2987.5	5912.5

A14-31

Road No. R-1

Quantity

Sheet-No. 9

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
6 + 0.0		6.0				6 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
6 + 50.0		6.0				6 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
6 + 100.0		6.0				6 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
6 + 150.0		6.0				6 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
6 + 200.0		6.0				6 + 700.0		6.0			
	50.0		6.00	300.0			50.0		5.75	287.5	
6 + 250.0		6.0				6 + 750.0		5.5			
	50.0		6.00	300.0			50.0		5.25	262.5	
6 + 300.0		6.0				6 + 800.0		5.0			
	50.0		6.00	300.0			50.0		5.50	275.0	
6 + 350.0		6.0				6 + 850.0		6.0			
	50.0		6.25	312.5			50.0		6.00	300.0	
6 + 400.0		6.5				6 + 900.0		6.0			
	50.0		6.25	312.5			50.0		6.00	300.0	
6 + 450.0		6.0				6 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
6 + 500.0		6.0				7 + 0.0		6.0			
Subtotal				3025.0		Subtotal				2925.0	5950.0

A14-32

Road No. R-1

Quantity

Sheet-No. 10

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remaks	Station	Length	Width	Ave.-Width	Area	Remaks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
7 + 0.0		6.0				7 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 50.0		6.0				7 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 100.0		6.0				7 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 150.0		6.0				7 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 200.0		6.0				7 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 250.0		6.0				7 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 300.0		6.0				7 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 350.0		6.0				7 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 400.0		6.0				7 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 450.0		6.0				7 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
7 + 500.0		6.0				8 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

A14-33

Road No. R-1

Quantity

Sheet-No. 11

Road Name GRAND ETANG

A14-34

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
8 + 0.0	50.0	6.0	6.00	300.0		8 + 500.0	50.0	6.0	6.00	300.0	
8 + 50.0	50.0	6.0	6.00	300.0		8 + 550.0	50.0	6.0	6.00	300.0	
8 + 100.0	50.0	6.0	6.00	300.0		8 + 600.0	50.0	6.0	6.00	300.0	
8 + 150.0	50.0	6.0	6.00	300.0		8 + 650.0	50.0	6.0	6.00	300.0	
8 + 200.0	50.0	6.0	6.00	300.0		8 + 700.0	50.0	6.0	6.00	300.0	
8 + 250.0	50.0	6.0	6.00	300.0		8 + 750.0	50.0	6.0	6.00	300.0	
8 + 300.0	50.0	6.0	6.00	300.0		8 + 800.0	50.0	6.0	6.00	300.0	
8 + 350.0	50.0	6.0	6.00	300.0		8 + 850.0	50.0	6.0	6.00	300.0	
8 + 400.0	50.0	6.0	6.00	300.0		8 + 900.0	50.0	6.0	6.00	300.0	
8 + 450.0	50.0	6.0	6.00	300.0		8 + 950.0	50.0	6.0	6.00	300.0	
8 + 500.0		6.0				9 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

Road No. R-1

Quantity

Sheet-No. 12

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
9 + 0.0		6.0				9 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 50.0		6.0				9 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 100.0		6.0				9 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 150.0		6.0				9 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 200.0		6.0				9 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 250.0		6.0				9 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 300.0		6.0				9 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 350.0		6.0				9 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 400.0		6.0				9 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 450.0		6.0				9 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
9 + 500.0		6.0				10 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

A14-35

Road No.		R-1		Quantity				Sheet-No.		13	
Road Name		GRAND ETANG									
Ac (50)		Roadway Pavement				Ac (50)		Roadway Pavement			
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(mf)			(m)	(m)	(m)	(mf)	
STA.						STA.					
10 + 0.0		6.0				10 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 50.0		6.0				10 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 100.0		6.0				10 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 150.0		6.0				10 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 200.0		6.0				10 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 250.0		6.0				10 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 300.0		6.0				10 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 350.0		6.0				10 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 400.0		6.0				10 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 450.0		6.0				10 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
10 + 500.0		6.0				11 + 0.0		5.5			
Subtotal				3000.0		Subtotal				2987.5	5987.5

A14-36

Road No. R-1

Quantity

Sheet-No. 14

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
11 + 0.0		5.5				11 + 500.0		6.0			
	50.0		5.75	287.5			50.0		6.00	300.0	
11 + 50.0		6.0				11 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
11 + 100.0		6.0				11 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
11 + 150.0		6.0				11 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
11 + 200.0		6.0				11 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
11 + 250.0		6.0				11 + 750.0		5.5			
	50.0		6.00	300.0			50.0		5.25	262.5	
11 + 300.0		6.0				11 + 800.0		5.0			
	50.0		6.00	300.0			50.0		5.00	250.0	
11 + 350.0		6.0				11 + 850.0		5.0			
	50.0		5.75	287.5			50.0		5.00	250.0	
11 + 400.0		5.5				11 + 900.0		5.0			
	50.0		5.75	287.5			50.0		5.00	250.0	
11 + 450.0		6.0				11 + 950.0		5.0			
	50.0		6.25	312.5			50.0		5.25	262.5	
11 + 500.0		6.5				12 + 0.0		5.5			
Subtotal				2975.0		Subtotal				2762.5	5737.5

A14-37

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)		STA.	(m)	(m)	(m)	(m ²)	
12 + 0.0	50.0	5.5	5.50	275.0		12 + 500.0	50.0	6.0	6.00	300.0	
12 + 50.0	50.0	5.5	5.50	275.0		12 + 550.0	50.0	6.0	6.00	300.0	
12 + 100.0	50.0	5.5	5.50	275.0		12 + 600.0	50.0	6.0	6.00	300.0	
12 + 150.0	50.0	5.5	5.50	275.0		12 + 650.0	50.0	6.0	6.00	300.0	
12 + 200.0	50.0	6.0	5.75	287.5		12 + 700.0	50.0	6.0	6.00	300.0	
12 + 250.0	50.0	6.0	6.00	300.0		12 + 750.0	50.0	6.0	6.00	300.0	
12 + 300.0	50.0	6.0	6.00	300.0		12 + 800.0	50.0	6.0	6.00	300.0	
12 + 350.0	50.0	6.5	6.25	312.5		12 + 850.0	50.0	6.0	6.00	300.0	
12 + 400.0	50.0	7.0	6.75	337.5		12 + 900.0	50.0	6.0	6.00	300.0	
12 + 450.0	50.0	6.0	6.50	325.0		12 + 950.0	50.0	6.0	6.00	300.0	
12 + 500.0	50.0	6.0	6.00	300.0		13 + 0.0	50.0	6.0	6.00	300.0	
Subtotal				2987.5		Subtotal				3000.0	5987.5

A14-38

Road No. R-1

Quantity

Sheet-No. 16

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
13 + 0.0		6.0				13 - 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 50.0		6.0				13 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 100.0		6.0				13 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 150.0		6.0				13 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 200.0		6.0				13 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 250.0		6.0				13 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 300.0		6.0				13 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 350.0		6.0				13 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 400.0		6.0				13 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 450.0		6.0				13 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
13 + 500.0		6.0				14 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

A14-39

Road No. R-1

Quantity

Sheet-No. 17

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
14 + 0.0		6.0				14 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 50.0		6.0				14 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 100.0		6.0				14 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 150.0		6.0				14 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 200.0		6.0				14 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 250.0		6.0				14 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 300.0		6.0				14 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 350.0		6.0				14 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 400.0		6.0				14 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 450.0		6.0				14 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
14 + 500.0		6.0				15 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

A14-40

Road No. R-1

Quantity

Sheet-No. 18

Road Name GRAND ETANG

A14-41

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
15 + 0.0		6.0				15 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 50.0		6.0				15 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 100.0		6.0				15 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 150.0		6.0				15 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 200.0		6.0				15 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 250.0		6.0				15 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 300.0		6.0				15 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 350.0		6.0				15 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 400.0		6.0				15 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 450.0		6.0				15 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
15 + 500.0		6.0				16 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

Road No. R-1

Quantity

Sheet-No. 19

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
16 + 0.0		6.0				16 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 50.0		6.0				16 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 100.0		6.0				16 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 150.0		6.0				16 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 200.0		6.0				16 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 250.0		6.0				16 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 300.0		6.0				16 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 350.0		6.0				16 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 400.0		6.0				16 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 450.0		6.0				16 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
16 + 500.0		6.0				17 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

A14-42

Road No. R-1

Quantity

Sheet-No. 20

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
17 + 0.0		6.0				17 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 50.0		6.0				17 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 100.0		6.0				17 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 150.0		6.0				17 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 200.0		6.0				17 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 250.0		6.0				17 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 300.0		6.0				17 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 350.0		6.0				17 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 400.0		6.0				17 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 450.0		6.0				17 + 950.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
17 + 500.0		6.0				18 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

A14-43

Road No. R-1

Quantity

Sheet-No. 21

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
18 + 0.0	50.0	6.0	6.00	300.0		18 + 500.0	50.0	6.0	6.00	300.0	
18 + 50.0	50.0	6.0	6.00	300.0		18 + 550.0	50.0	6.0	6.00	300.0	
18 + 100.0	50.0	6.0	6.00	300.0		18 + 600.0	50.0	6.0	6.00	300.0	
18 + 150.0	50.0	6.0	6.00	300.0		18 + 650.0	50.0	6.0	6.00	300.0	
18 + 200.0	50.0	6.0	6.00	300.0		18 + 700.0	50.0	6.0	6.00	300.0	
18 + 250.0	50.0	6.0	6.00	300.0		18 + 750.0	50.0	6.0	6.00	300.0	
18 + 300.0	50.0	6.0	6.00	300.0		18 + 800.0	50.0	6.0	6.00	300.0	
18 + 350.0	50.0	6.0	6.00	300.0		18 + 850.0	50.0	6.0	6.00	300.0	
18 + 400.0	50.0	6.0	6.00	300.0		18 + 900.0	50.0	6.0	6.00	300.0	
18 + 450.0	50.0	6.0	6.00	300.0		18 + 950.0	50.0	6.0	6.00	300.0	
18 + 500.0		6.0				19 + 0.0		6.0			
Subtotal				3000.0		Subtotal				3000.0	6000.0

A14-44

Road No. R-1

Quantity

Sheet-No. 22

Road Name GRAND ETANG

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave. -Width	Area	Remarks	Station	Length	Width	Ave. -Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
19 + 0.0		6.0				19 + 500.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
19 + 50.0		6.0				19 + 550.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
19 + 100.0		6.0				19 + 600.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
19 + 150.0		6.0				19 + 650.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
19 + 200.0		6.0				19 + 700.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
19 + 250.0		6.0				19 + 750.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
19 + 300.0		6.0				19 + 800.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
19 + 350.0		6.0				19 + 850.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
19 + 400.0		6.0				19 + 900.0		6.0			
	50.0		6.00	300.0			50.0		6.00	300.0	
19 + 450.0		6.0				19 + 950.0		6.0			
	50.0		6.00	300.0			50.0		3.00	150.0	
19 + 500.0		6.0				20 + 0.0					
Subtotal				3000.0		Subtotal				2850.0	5850.0

A14-45

Road No. R-1

Quantity

Sheet-No. 25

Road Name GRAND ETANG

A14-46

Ac (50) Roadway Pavement						Ac (50) Roadway Pavement					
Station	Length	Width	Ave.-Width	Area	Remarks	Station	Length	Width	Ave.-Width	Area	Remarks
	(m)	(m)	(m)	(m ²)			(m)	(m)	(m)	(m ²)	
STA.						STA.					
20 + 0.0	50.0	6.0	6.00	300.0						0.0	
20 + 50.0	50.0	6.0	6.00	300.0						0.0	
20 + 100.0	50.0	6.0	6.00	300.0						0.0	
20 + 150.0	50.0	6.0	6.00	300.0						0.0	
20 + 200.0	50.0	6.0	6.00	300.0						0.0	
20 + 250.0	50.0	6.0	6.00	300.0						0.0	
20 + 300.0	49.0	6.0	3.00	147.0						0.0	
20 + 349.0				0.0						0.0	
				0.0						0.0	
				0.0						0.0	
				0.0						0.0	
Subtotal				1947.0		Subtotal				0.0	1947.0
										Total	119034.5