

3.3 Slip Road

SCHEDULE OF QUANTITIES FOR PAVEMENT

SLIP ROAD

ITEMS	UNIT	Slip Road of								TOTAL
		Monbasa Road Junction	Uhuru Monumen Junction	Ngong Road Junction	Dagoretti Forest Junction	Thogoto Junction	Kikuyu Town Junction	Kikuyu Junction		
Asphalt Concrete wearing Course	m3	518.3	168.2	206.2	213.7	202.8	695.7	224.9		2,229.8
Asphalt Concrete Binder Course	m3	1,036.6	252.3	309.3	320.5	304.2	757.5	449.9		3,430.3
Lean Concrete Base	m3	2,961.6	878.6	993.4	1,031.7	984.3	3,037.0	1,264.9		11,151.5
Graded Crushed Stone Base	m3						98.3			98.3
Graded Crushed Stone Subbase	m3	3,528.6	1,279.2	1,156.4	1,202.5	1,083.7	4,288.3	1,484.4		14,023.1
Graded Crushed Stone Shoulder	m3	1,964.9	681.6	439.6	467.4	294.1	1,713.9	804.7		6,366.2
Tack Coat	m2	25,914.6	4,204.4	5,155.8	5,341.8	5,070.2	17,391.5	5,623.2		68,701.5
Prime Coat	m2	12,957.3	4,204.4	5,155.8	5,341.8	5,070.2	17,391.5	5,623.2		55,744.2
Double Surface Dressing	m2	5,612.4	2,248.2	1,495.5	1,604.9	946.7	7,042.6	2,289.0		21,239.3
Single Surface Dressing	m2						277.2			277.2
Gravel Wearing Course	m3									0.0
Filling	m3			473.6	463.9	453.2	339.9	244.8		1,975.4
Grassing	m2			861.0	843.5	824.0	618.0	414.9		3,561.4

SCHEDULE OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION SLIP ROAD

ITEM	UNIT	SLIP ROAD							(A-104) ACCELERATION, DECELERATION LANE							
		A	B	C	D	E	F	G	U-Turn	A	B,D	C	E	F	G	Total
1. ASPHALT CONCRETE WEARING COURSE	m3	61.89	45.03	44.54	43.96	47.29	48.58	36.16	57.37	13.08	27.36	26.39	11.98	27.82	26.85	518.30
2. ASPHALT CONCRETE BINDER COURSE	m3	123.78	90.06	89.07	87.91	94.59	97.16	72.32	114.74	26.16	54.72	52.78	23.96	55.63	53.70	1,036.58
3. LEAN CONCRETE BASE	m3	363.40	261.95	256.85	254.30	272.05	281.56	213.24	318.90	73.30	148.73	146.69	67.25	154.23	148.98	2,961.63
4. GRADED CRUSHED STONE BASE	m3															0.00
5. GRADED CRUSHED STONE SUBBASE	m3	461.55	319.82	309.48	322.31	324.54	343.40	269.28	343.13	85.24	155.97	168.85	78.39	176.15	170.50	3,528.61
6. GRADED CRUSHED STONE SHOULDER	m3	285.66	189.05	177.36	175.58	183.77	201.07	166.85	149.61	46.90	68.62	91.55	43.29	94.13	91.46	1,964.90
7. TACK COAT	m2	3,094.48	2,251.52	2,226.84	2,197.78	2,364.72	2,428.98	1,808.04	2,868.60	654.00	1,368.00	1,319.40	599.00	1,390.80	1,342.40	25,914.56
8. PRIME COAT	m2	1,547.24	1,125.76	1,113.42	1,098.89	1,182.36	1,214.49	904.02	1,434.30	327.00	684.00	659.70	299.50	695.40	671.20	12,957.28
9. FILLING	m3															0.00
10. DOUBLE SURFACE DRESSING	m2	807.91	545.82	505.57	514.04	527.10	574.20	479.17	403.75	135.00	197.51	263.52	124.61	273.95	263.25	5,612.40
11. SINGLE SURFACE DRESSING	m2															0.00
12. GRASSING	m2															0.00

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION A SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,547.24\text{m}^2 \times 0.040 = 61.89\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$1,547.24\text{m}^2 \times 0.080 = 123.78\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,547.24\text{m}^2 \times 0.200 + 312.29\text{m} \times 0.072 + 62.67\text{m} \times 0.072 + 20.00\text{m} \times 0.070 + 303.21\text{m} \times 0.072 + 51.75\text{m} \times 0.072 = 363.40\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,547.24\text{m}^2 \times 0.150 + 312.29\text{m} \times 0.354 + 62.67\text{m} \times 0.320 + 20.00\text{m} \times 0.079 + 303.21\text{m} \times 0.279 + 51.75\text{m} \times 0.245 = 461.545\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$312.29\text{m} \times 0.469 + 62.67\text{m} \times 0.439 + 303.21\text{m} \times 0.319 + 51.75\text{m} \times 0.289 = 285.66\text{m}^3$$

7. TACK COAT

$$1,547.24\text{m}^2$$

8. PRIME COAT

$$1,547.24\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING (Footpath)

$$374.96\text{m} \times 1.350 + 303.21\text{m} \times 0.850 + 51.75\text{m} \times 0.850 = 807.91\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION B SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,125.76\text{m}^2 \times 0.040 = 45.03\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,125.76\text{m}^2 \times 0.080 = 90.06\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,125.76\text{m}^2 \times 0.200 + 148.17\text{m} \times 0.072 + 107.66\text{m} \times 0.072 + 20.00\text{m} \times 0.070 + 138.17\text{m} \times 0.072 + 97.66\text{m} \times 0.072 = 261.95\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,125.76\text{m}^2 \times 0.150 + 148.17\text{m} \times 0.354 + 107.66\text{m} \times 0.320 + 20.00\text{m} \times 0.079 + 138.17\text{m} \times 0.279 + 97.66\text{m} \times 0.245 = 319.82\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$148.17\text{m} \times 0.469 + 107.66\text{m} \times 0.439 + 138.17\text{m} \times 0.319 + 97.66\text{m} \times 0.289 = 189.05\text{m}^3$$

7. TACK COAT

$$1,125.76\text{m}^2$$

8. PRIME COAT

$$1,125.76\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING (Footpath)

$$255.83\text{m} \times 1.350 + 138.17\text{m} \times 0.850 + 97.66\text{m} \times 0.850 = 545.82\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
MOMBASA ROAD JUNCTION B SLIP ROAD

PAVING AREA

STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
0 + 32.343		5.20			
0 + 42.343	10.00	5.42	5.31	53.12	
0 + 42.343		4.42			
0 + 50.625	8.28	4.60	4.51	37.35	
0 + 121.186	70.56	4.60	4.60	324.58	
0 + 150.52	29.33	4.00	4.30	126.14	
0 + 230.69	80.17	4.00	4.00	320.68	
0 + 260.023	29.33	4.60	4.30	126.13	
0 + 275.613	15.59	4.60	4.60	71.71	
0 + 278.168	2.56	4.54	4.57	11.68	
0 + 278.168		5.54			
0 + 288.168	10.00	5.33	5.44	54.36	
TOTAL				1,125.76	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-1 (m)	TYPE-2 (m)	TYPE-3 (m)	TYPE-4 (m)	TYPE-5 (m)
LEFT SIDE					
0 + 32.343 ~ 0 + 140.000		107.66			
0 + 140.000 ~ 0 + 288.168	148.17				
RIGHT SIDE					
0 + 32.343 ~ 0 + 42.343			10.00		
0 + 42.343 ~ 0 + 140.000					97.66
0 + 140.000 ~ 0 + 278.168				138.17	
0 + 278.168 ~ 0 + 288.168			10.00		
TOTAL	148.17	107.66	20.00	138.17	97.66

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION C SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,113.42\text{m}^2 \times 0.040 = 44.54\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,113.42\text{m}^2 \times 0.080 = 89.07\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,113.42\text{m}^2 \times 0.200 + 175.34\text{m} \times 0.072 + 62.19\text{m} \times 0.072 + 20.00\text{m} \times 0.070 + 165.34\text{m} \times 0.072 + 52.19\text{m} \times 0.072 = 256.85\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,113.42\text{m}^2 \times 0.150 + 175.34\text{m} \times 0.354 + 62.19\text{m} \times 0.320 + 20.00\text{m} \times 0.079 + 165.34\text{m} \times 0.279 + 52.19\text{m} \times 0.245 = 309.48\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$175.34\text{m} \times 0.469 + 62.19\text{m} \times 0.439 + 165.34\text{m} \times 0.319 + 52.19\text{m} \times 0.289 = 177.36\text{m}^3$$

7. TACK COAT

$$1,113.42\text{m}^2$$

8. PRIME COAT

$$1,113.42\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING (Footpath)

$$237.53\text{m} \times 1.350 + 165.34\text{m} \times 0.850 + 52.19\text{m} \times 0.850 = 505.57\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
MOMBASA ROAD JUNCTION C SLIP ROAD

PAVING AREA

STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
0 + 19.523		5.50			
0 + 29.523	10.00	5.50	5.50	55.00	
0 + 29.523		4.50			
0 + 189.496	159.97	4.50	4.50	719.88	
0 + 226.502	37.01	5.00	4.75	175.78	
0 + 247.054	20.55	5.00	5.00	102.76	
0 + 247.054		6.00			
0 + 257.054	10.00	6.00	6.00	60.00	
TOTAL				1,113.42	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-1 (m)	TYPE-2 (m)	TYPE-3 (m)	TYPE-4 (m)	TYPE-5 (m)
LEFT SIDE					
0 + 19.523 ~ 0 + 81.715		62.19			
0 + 81.715 ~ 0 + 257.054	175.34				
RIGHT SIDE					
0 + 19.523 ~ 0 + 29.523			10.00		
0 + 29.523 ~ 0 + 81.715					42.19
0 + 81.715 ~ 0 + 247.054				165.34	
0 + 247.054 ~ 0 + 257.054			10.00		
TOTAL	175.34	62.19	20.00	165.34	52.19

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION D SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,098.89\text{m}^2 \times 0.040 = 43.96\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,098.89\text{m}^2 \times 0.080 = 87.91\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,098.89\text{m}^2 \times 0.200 + 108.96\text{m} \times 0.072 + 132.42\text{m} \times 0.072 + 20.00\text{m} \times 0.070 + 78.96\text{m} \times 0.072 + 142.42\text{m} \times 0.072 = 254.50\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,098.89\text{m}^2 \times 0.150 + 108.96\text{m} \times 0.354 + 132.42\text{m} \times 0.320 + 20.00\text{m} \times 0.079 + 78.96\text{m} \times 0.279 + 142.42\text{m} \times 0.245 = 322.31\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$108.96\text{m} \times 0.469 + 132.42\text{m} \times 0.439 + 78.96\text{m} \times 0.319 + 142.42\text{m} \times 0.289 = 175.58\text{m}^3$$

7. TACK COAT

$$1,098.89\text{m}^2$$

8. PRIME COAT

$$1,098.89\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$241.38\text{m} \times 1.350 + 78.96\text{m} \times 0.850 + 142.42\text{m} \times 0.850 = 514.04\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION E SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,182.36\text{m}^2 \times 0.040 = 47.29\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,182.36\text{m}^2 \times 0.080 = 94.59\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,182.36\text{m}^2 \times 0.200 + 163.36\text{m} \times 0.072 + 83.96\text{m} \times 0.072 + 20.00\text{m} \times 0.070 + 153.36 \times 0.072 + 73.96\text{m} \times 0.072 = 272.05\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,182.36\text{m}^2 \times 0.150 + 163.36\text{m} \times 0.354 + 83.96\text{m} \times 0.320 + 20.00\text{m} \times 0.079 + 153.36\text{m} \times 0.279 + 73.96\text{m} \times 0.245 = 324.54\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$163.36\text{m} \times 0.469 + 83.96\text{m} \times 0.439 + 153.36\text{m} \times 0.319 + 73.96\text{m} \times 0.289 = 183.77\text{m}^3$$

7. TACK COAT

$$1,182.36\text{m}^2$$

8. PRIME COAT

$$1,182.36\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$247.32\text{m} \times 1.350 + 153.36\text{m} \times 0.850 + 73.96\text{m} \times 0.850 = 527.10\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION F SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,214.49\text{m}^2 \times 0.040 = 48.58\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,214.49\text{m}^2 \times 0.080 = 97.16\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,214.49\text{m}^2 \times 0.200 + 191.95\text{m} \times 0.072 + 76.77\text{m} \times 0.072 + 20.00\text{m} \times 0.070 + 181.95 \times 0.072 + 66.77\text{m} \times 0.072 = 281.56\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,214.49\text{m}^2 \times 0.150 + 191.95\text{m} \times 0.354 + 76.77\text{m} \times 0.320 + 20.00\text{m} \times 0.079 + 181.95\text{m} \times 0.279 + 66.77\text{m} \times 0.245 = 343.40\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$191.95\text{m} \times 0.469 + 79.77\text{m} \times 0.439 + 181.95\text{m} \times 0.319 + 66.77\text{m} \times 0.289 = 201.07\text{m}^3$$

7. TACK COAT

$$1,214.49\text{m}^2$$

8. PRIME COAT

$$1,214.49\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING (Footpath)

$$268.73\text{m} \times 1.350 + 181.95\text{m} \times 0.850 + 66.77\text{m} \times 0.850 = 574.20\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
MOMBASA ROAD JUNCTION F SLIP ROAD

PAVING AREA

STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
0 + 43.227		5.03			
0 + 53.227	10.00	5.15	5.09	50.91	
0 + 53.227		4.15			
0 + 81.667	28.44	4.50	4.33	123.03	
0 + 281.327	199.66	4.50	4.50	898.47	
0 + 301.954	20.63	4.25	4.37	90.22	
0 + 301.954		5.25			
0 + 311.954	10.00	5.13	5.19	51.86	
TOTAL				1,214.49	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-1 (m)	TYPE-2 (m)	TYPE-3 (m)	TYPE-4 (m)	TYPE-5 (m)
LEFT SIDE					
0 + 43.227 ~ 0 + 120.000		76.77			
0 + 120.000 ~ 0 + 311.954	191.95				
RIGHT SIDE					
0 + 43.227 ~ 0 + 42.343			10.00		
0 + 53.227 ~ 0 + 140.000					66.77
0 + 120.000 ~ 0 + 301.954				181.95	
0 + 301.954 ~ 0 + 311.954			10.00		
TOTAL	191.95	76.77	20.00	181.95	66.77

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION G SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$904.02\text{m}^2 \times 0.040 = 36.16\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$904.02\text{m}^2 \times 0.080 = 72.32\text{m}^3$$

3. LEAN CONCRETE BASE

$$904.02\text{m}^2 \times 0.200 + 145.78\text{m} \times 0.072 + 79.76\text{m} \times 0.072 + 20.00\text{m} \times 0.070 + 135.78 \times 0.072 + 69.76\text{m} \times 0.072 = 213.24\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$904.02\text{m}^2 \times 0.150 + 145.78\text{m} \times 0.354 + 79.76\text{m} \times 0.320 + 20.00\text{m} \times 0.079 + 135.78\text{m} \times 0.279 + 69.76\text{m} \times 0.245 = 269.28\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$145.78\text{m} \times 0.469 + 79.76\text{m} \times 0.439 + 135.78\text{m} \times 0.319 + 69.76\text{m} \times 0.289 = 166.85\text{m}^3$$

7. TACK COAT

$$904.02\text{m}^2$$

8. PRIME COAT

$$904.02\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING (Footpath)

$$225.53\text{m} \times 1.350 + 135.78\text{m} \times 0.850 + 69.76\text{m} \times 0.850 = 479.17\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
MOMBASA ROAD JUNCTION G SLIP ROAD

PAVING AREA

STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
0 + 100.245		4.50			
0 + 110.245	10.00	4.50	4.50	45.00	
0 + 110.245		3.50			
0 + 115.106	4.86	3.50	3.50	17.01	
0 + 157.772	42.67	4.00	3.75	160.00	
0 + 315.775	158.00	4.00	4.00	632.01	
0 + 315.775		5.00			
0 + 325.775	10.00	5.00	5.00	50.00	
TOTAL				904.02	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-1 (m)	TYPE-2 (m)	TYPE-3 (m)	TYPE-4 (m)	TYPE-5 (m)
LEFT SIDE					
0 + 100.245 ~ 0 + 110.245		79.76			
0 + 180.000 ~ 0 + 325.775	145.78				
RIGHT SIDE					
0 + 100.245 ~ 0 + 110.245			10.00		
0 + 110.245 ~ 0 + 180.000					69.76
0 + 180.000 ~ 0 + 315.775				135.78	
0 + 315.775 ~ 0 + 325.775			10.00		
TOTAL	145.78	79.76	20.00	135.78	69.76

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION U TURN ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$(384.3 + 717.5 + 332.5)\text{m}^2 \times 0.040 = 57.37\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$(384.3 + 717.5 + 332.5)\text{m}^2 \times 0.080 = 114.74\text{m}^3$$

3. LEAN CONCRETE BASE

$$(384.3 + 717.5 + 332.5)\text{m}^2 \times 0.200 + (230.0 + 120.0 + 44.0)\text{m} \times 0.072 + 51.0 \times 0.072 = 318.90\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$(384.3 + 717.5 + 332.5)\text{m}^2 \times 0.150 + (230.0 + 120.0 + 44.0)\text{m} \times 0.279 + 51.0 \times 0.354 = 343.13\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$(230.0 + 120.0 + 44.0)\text{m} \times 0.319 + 51.0 \times 0.469 = 149.61\text{m}^3$$

7. TACK COAT

$$384.3 + 717.5 + 332.5 = 1,434.3\text{m}^2$$

8. PRIME COAT

$$1,434.30\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING (Footpath)

$$(230.0 + 120.0 + 44.0)\text{m} \times 0.850 + 51.0 \times 1.350 = 403.75\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION A SLIP ROAD (DECELERATION LANE)

1. ASPHALT CONCRETE WEARING COURSE

$$327.0\text{m}^2 \times 0.040 = 13.08\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$327.0\text{m}^2 \times 0.080 = 26.16\text{m}^3$$

3. LEAN CONCRETE BASE

$$327.0\text{m}^2 \times 0.200 + 100.0\text{m} \times 0.072 + 10.0\text{m} \times 0.070 = 73.30\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$327.0\text{m}^2 \times 0.150 + 100.0\text{m} \times 0.354 + 10.0\text{m} \times 0.079 = 85.24\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$100.0\text{m} \times 0.469 = 46.90\text{m}^3$$

7. TACK COAT

$$327\text{m}^2$$

8. PRIME COAT

$$327\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$100.0\text{m} \times 1.350 = 135.0\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION B & D SLIP ROAD (ACCELERATION, DECELERATION LANE)

1. ASPHALT CONCRETE WEARING COURSE

$$684.0\text{m}^2 \times 0.040 = 27.36\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$684.0\text{m}^2 \times 0.080 = 54.72\text{m}^3$$

3. LEAN CONCRETE BASE

$$684.0\text{m}^2 \times 0.200 + 146.3\text{m} \times 0.072 + 20.0\text{m} \times 0.070 = 148.73\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$684.0\text{m}^2 \times 0.150 + 146.3\text{m} \times 0.354 + 20.0\text{m} \times 0.079 = 155.97\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$146.3\text{m} \times 0.469 = 68.62\text{m}^3$$

7. TACK COAT

$$684.0\text{m}^2$$

8. PRIME COAT

$$684.0\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$146.3\text{m} \times 1.350 = 197.51\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION C SLIP ROAD (ACCELERATION LANE)

1. ASPHALT CONCRETE WEARING COURSE

$$659.7\text{m}^2 \times 0.040 = 26.39\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$659.7\text{m}^2 \times 0.080 = 52.78\text{m}^3$$

3. LEAN CONCRETE BASE

$$659.7\text{m}^2 \times 0.200 + 195.2\text{m} \times 0.072 + 10.0\text{m} \times 0.070 = 146.69\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$659.7\text{m}^2 \times 0.150 + 195.2\text{m} \times 0.354 + 10.0\text{m} \times 0.079 = 168.85\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$195.2\text{m} \times 0.469 = 91.55\text{m}^3$$

7. TACK COAT

$$659.7\text{m}^2$$

8. PRIME COAT

$$659.7\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$195.2\text{m} \times 1.350 = 263.52\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION E SLIP ROAD (DECELERATION LANE)

1. ASPHALT CONCRETE WEARING COURSE

$$299.5\text{m}^2 \times 0.040 = 11.98\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$299.5\text{m}^2 \times 0.080 = 23.96\text{m}^3$$

3. LEAN CONCRETE BASE

$$299.5\text{m}^2 \times 0.200 + 92.3\text{m} \times 0.072 + 10.0\text{m} \times 0.070 = 67.25\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$299.5\text{m}^2 \times 0.150 + 92.3\text{m} \times 0.354 + 10.0\text{m} \times 0.079 = 78.39\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$92.3\text{m} \times 0.469 = 43.29\text{m}^3$$

7. TACK COAT

$$299.5\text{m}^2$$

8. PRIME COAT

$$299.5\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$92.3\text{m} \times 1.350 = 124.61\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION F SLIP ROAD (ACCELERATION LANE)

1. ASPHALT CONCRETE WEARING COURSE

$$695.4\text{m}^2 \times 0.040 = 27.82\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$695.4\text{m}^2 \times 0.080 = 55.63\text{m}^3$$

3. LEAN CONCRETE BASE

$$695.4\text{m}^2 \times 0.200 + 200.7\text{m} \times 0.072 + 10.0\text{m} \times 0.070 = 154.23\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$695.4\text{m}^2 \times 0.150 + 200.7\text{m} \times 0.354 + 10.0\text{m} \times 0.079 = 176.15\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$200.7\text{m} \times 0.469 = 94.13\text{m}^3$$

7. TACK COAT

$$695.4\text{m}^2$$

8. PRIME COAT

$$695.4\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$200.7\text{m} \times 1.350 = 270.95\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION G SLIP ROAD (ACCELERATION LANE)

1. ASPHALT CONCRETE WEARING COURSE

$$671.2\text{m}^2 \times 0.040 = 26.85\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$671.2\text{m}^2 \times 0.080 = 53.70\text{m}^3$$

3. LEAN CONCRETE BASE

$$671.2\text{m}^2 \times 0.200 + 195.0\text{m} \times 0.072 + 10.0\text{m} \times 0.070 = 148.98\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$671.2\text{m}^2 \times 0.150 + 195.0\text{m} \times 0.354 + 10.0\text{m} \times 0.079 = 170.50\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$195.0\text{m} \times 0.469 = 91.46\text{m}^3$$

7. TACK COAT

$$671.2\text{m}^2$$

8. PRIME COAT

$$671.2\text{m}^2$$

9. FILLING

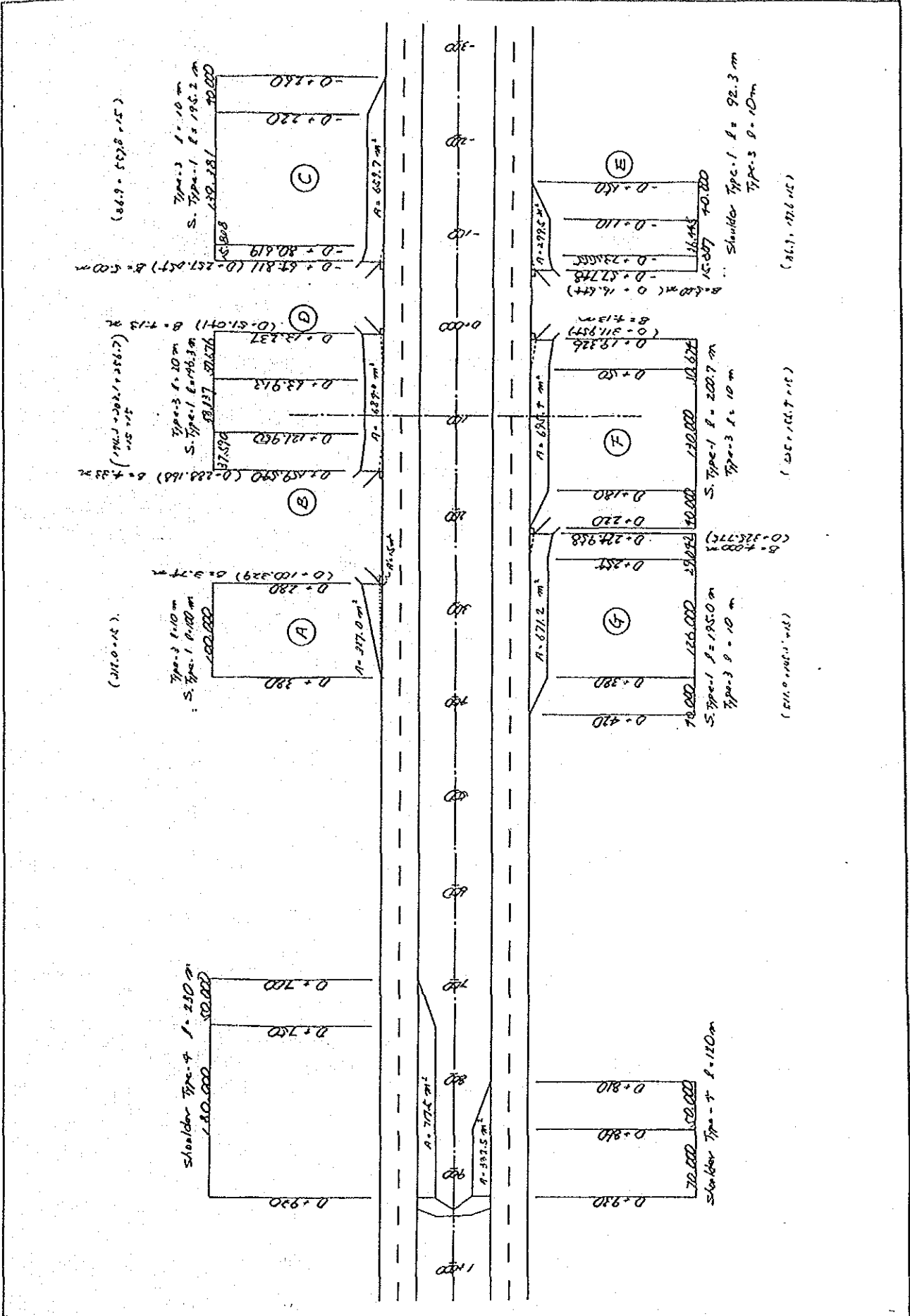
10. DOUBLE SURFACE DRESSING

$$195.0\text{m} \times 1.350 = 263.25\text{m}^2$$

11. SINGLE SURFACE DRESSING

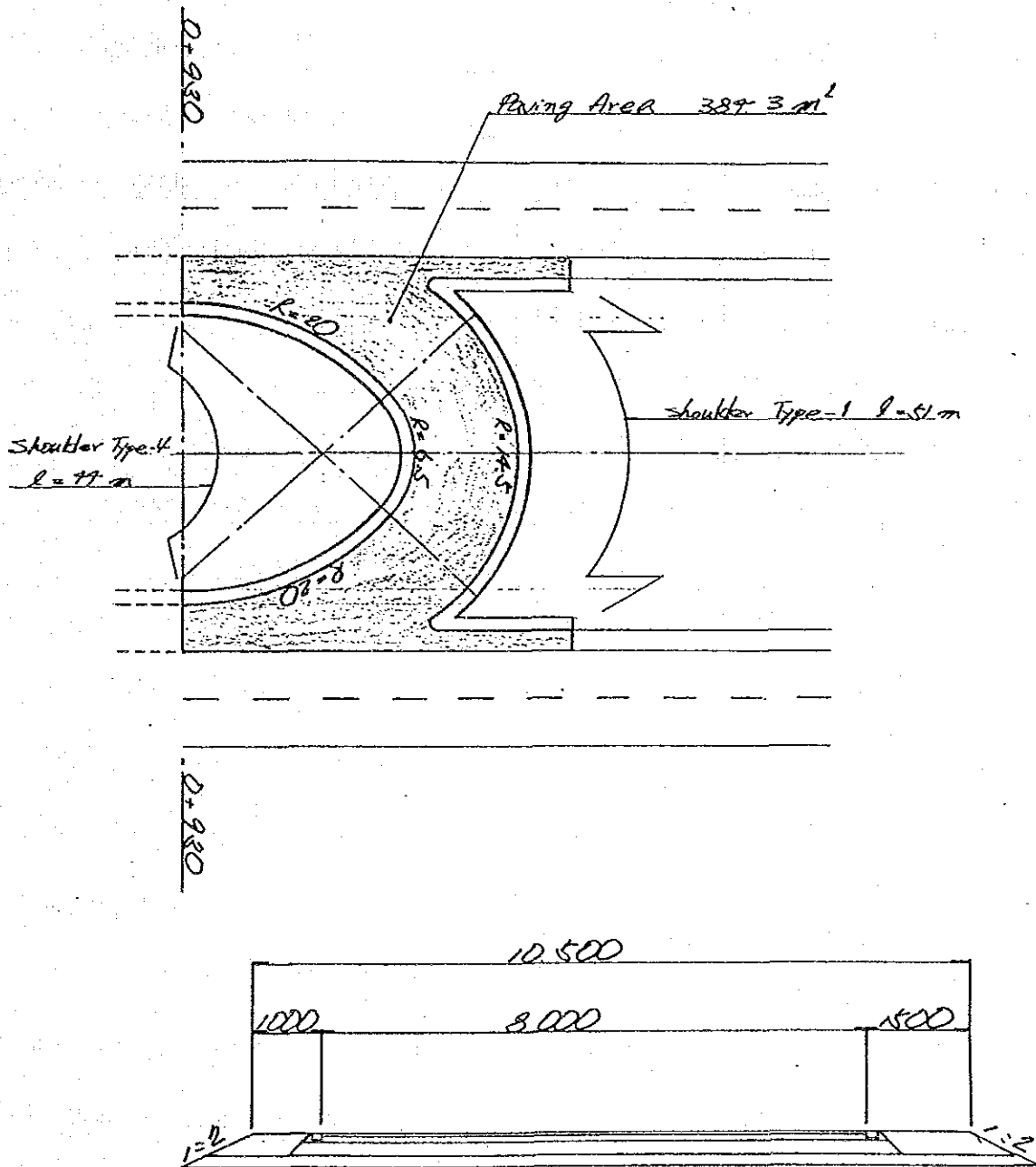
COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION ACCELERATION LANE (A104)



COMPUTATION OF QUANTITIES FOR PAVEMENT

MOMBASA ROAD JUNCTION U-TURN ROAD (A104)



SCHEDULE OF QUANTITIES FOR PAVEMENT

UHURU MONUMENT JUNCTION SLIP ROAD

ITEM	UNIT	SLIP ROAD				Total
		A	B	C	D	
1. ASPHALT CONCRETE WEARING COURSE	m3	44.05	35.79	43.66	44.68	168.18
2. ASPHALT CONCRETE BINDER COURE	m3	66.07	53.69	65.49	67.03	252.28
3. LEAN CONCRETE BASE	m3	230.40	186.82	227.76	233.63	878.61
4. GRADED CRUSHED STONE BASE	m3					0.00
5. GRADED CRUSHED STONE SUBBASE	m3	329.30	263.41	323.26	363.18	1,279.15
6. GRADED CRUSHED STONE SHOULDER	m3	181.37	143.42	176.30	180.49	681.58
7. TACK COAT	m2	1,101.13	894.74	1,091.45	1,117.11	4,204.43
8. PRIME COAT	m2	1,101.13	894.74	1,091.45	1,117.11	4,204.43
9. FILLING	m3					0.00
10. DOUBLE SURFACE DRESSING	m2	594.53	474.93	577.92	600.84	2,248.22
11. SINGLE SURFACE DRESSING	m2					0.00
12. GRASSING	m2					0.00

COMPUTATION OF QUANTITIES FOR PAVEMENT

UHURU MONUMENT JUNCTION A SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,101.13\text{m}^2 \times 0.040 = 44.05\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,101.13\text{m}^2 \times 0.060 = 66.07\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,101.13\text{m}^2 \times 0.180 + 10.0\text{m} \times 0.058 + 278.08\text{m} \times 0.059 + 257.78\text{m} \times 0.059 = 230.40\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,101.13\text{m}^2 \times 0.150 + 10.0\text{m} \times 0.073 + 278.08\text{m} \times 0.341 + 257.78\text{m} \times 0.266 = 329.30\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$278.08\text{m} \times 0.401 + 257.782\text{m} \times 0.271 = 181.37\text{m}^3$$

7. TACK COAT

$$1,101.13\text{m}^2$$

8. PRIME COAT

$$1,101.13\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$278.08\text{m} \times 1.350 + 257.78\text{m} \times 0.850 = 594.53\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

UHURU MONUMENT JUNCTION B SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$894.74\text{m}^2 \times 0.040 = 35.79\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$894.74\text{m}^2 \times 0.060 = 53.69\text{m}^3$$

3. LEAN CONCRETE BASE

$$894.74\text{m}^2 \times 0.180 + 10.0\text{m} \times 0.058 + 163.0\text{m} \times 0.059 + 61.19\text{m} \times 0.059 + 202.69 \times 0.059 = 186.82\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$894.74\text{m}^2 \times 0.150 + 10.0\text{m} \times 0.073 + 163.0\text{m} \times 0.341 + 61.19\text{m} \times 0.310 + 202.69 \times 0.266 = 263.41\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$163.0\text{m} \times 0.401 + 61.19\text{m} \times 0.378 + 202.69\text{m} \times 0.271 = 143.42\text{m}^3$$

7. TACK COAT

$$894.74\text{m}^2$$

8. PRIME COAT

$$894.74\text{m}^2$$

9. FILLING

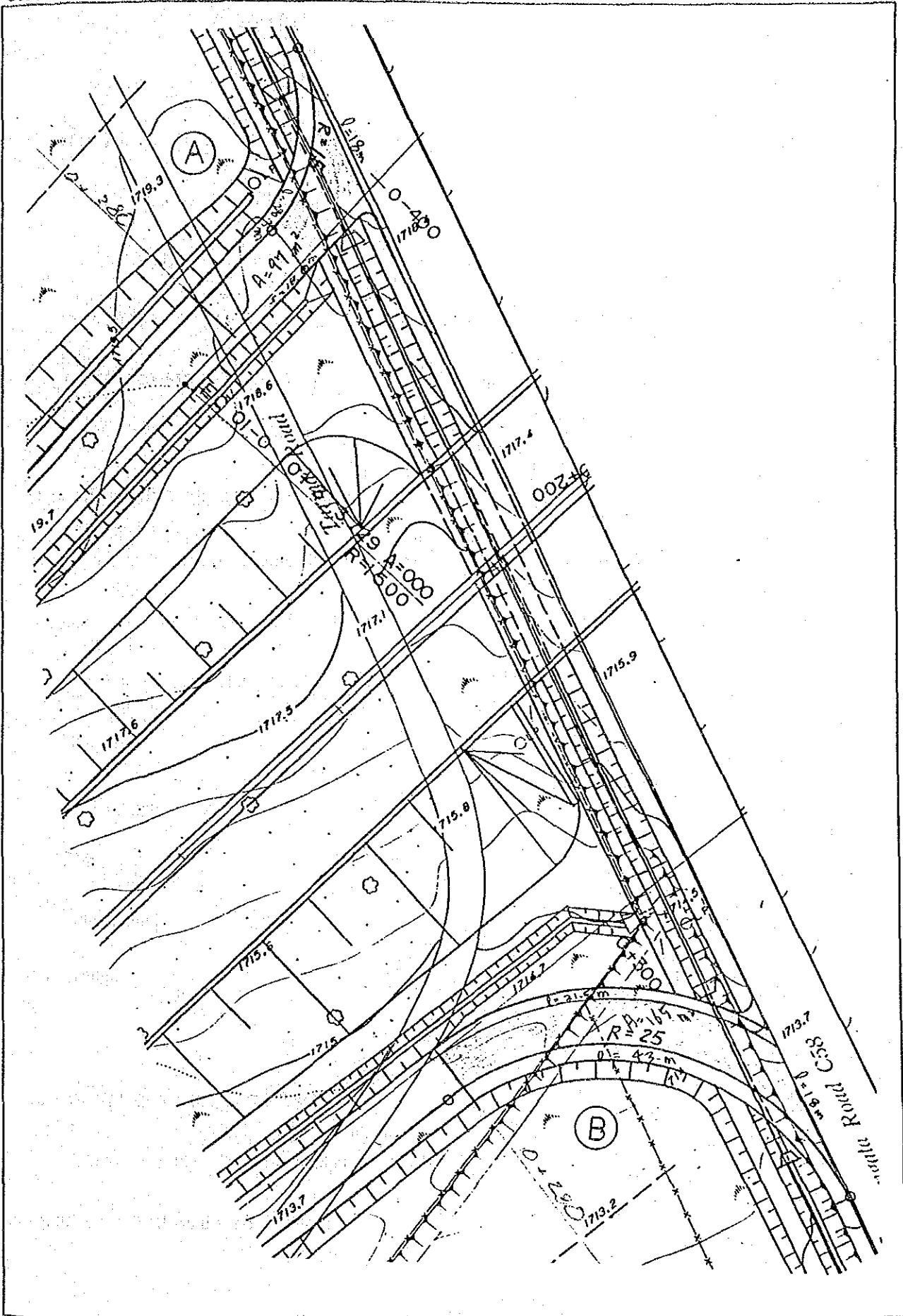
10. DOUBLE SURFACE DRESSING

$$(163.0 + 61.19)\text{m} \times 1.350 + 202.69\text{m} \times 0.850 = 474.93\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

UHURU MONUMENT JUNCTION A,B SLIP ROAD



COMPUTATION OF QUANTITIES FOR PAVEMENT

UHURU MONUMENT JUNCTION C SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,091.45\text{m}^2 \times 0.040 = 43.66\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,091.45\text{m}^2 \times 0.060 = 65.49\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,091.45\text{m}^2 \times 0.180 + 10.0\text{m} \times 0.058 + 270.61\text{m} \times 0.059 + 250.11\text{m} \times 0.059 = 227.76\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,091.45\text{m}^2 \times 0.150 + 10.0\text{m} \times 0.073 + 270.61\text{m} \times 0.341 + 250.11\text{m} \times 0.266 = 323.26\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$270.61\text{m} \times 0.401 + 250.11\text{m} \times 0.271 = 176.30\text{m}^3$$

7. TACK COAT

$$1,091.45\text{m}^2$$

8. PRIME COAT

$$1,091.45\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$270.61\text{m} \times 1.350 + 250.11\text{m} \times 0.850 = 577.92\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
UHURU MONUMENT JUNCTION C SLIP ROAD

PAVING AREA

STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
0 + 40.000		4.00		170.00	
0 + 249.112	209.11	4.00	4.00	836.45	
0 + 259.112	10.00	3.75	3.88	38.75	
0 + 259.112		4.75		0.00	
0 + 269.112	10.00	4.50	4.63	46.25	
TOTAL				1,091.45	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-6 (m)	TYPE-7 (m)	TYPE-8 (m)	TYPE-9 (m)	TYPE-10 (m)
LEFT SIDE		41.5			
0 + 40.000 ~ 0 + 100.000		60.00			
0 + 100.000 ~ 0 + 269.112		169.11			
RIGHT SIDE				31.00	
0 + 40.000 ~ 0 + 259.112				219.11	
0 + 259.112 ~ 0 + 269.112	10.00				
TOTAL	10.00	270.61		250.11	

COMPUTATION OF QUANTITIES FOR PAVEMENT

UHURU MONUMENT JUNCTION D SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,117.11\text{m}^2 \times 0.040 = 44.68\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,117.11\text{m}^2 \times 0.060 = 67.03\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,117.11\text{m}^2 \times 0.180 + 10.0\text{m} \times 0.058 + 158.00\text{m} \times 0.059 + 122.53\text{m} \times 0.059 + 261.33\text{m} \times 0.059 = 233.63\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,117.11\text{m}^2 \times 0.180 + 10.0\text{m} \times 0.073 + 158.00\text{m} \times 0.341 + 122.53\text{m} \times 0.310 + 261.33\text{m} \times 0.266 = 363.18\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$158.00\text{m} \times 0.401 + 122.53\text{m} \times 0.378 + 261.33\text{m} \times 0.271 = 180.49\text{m}^3$$

7. TACK COAT

$$1,117.11\text{m}^2$$

8. PRIME COAT

$$1,117.11\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$(158.00 + 122.53)\text{m} \times 1.350 + 261.33\text{m} \times 0.850 = 600.84\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
UHURU MONUMENT JUNCTION D SLIP ROAD

PAVING AREA

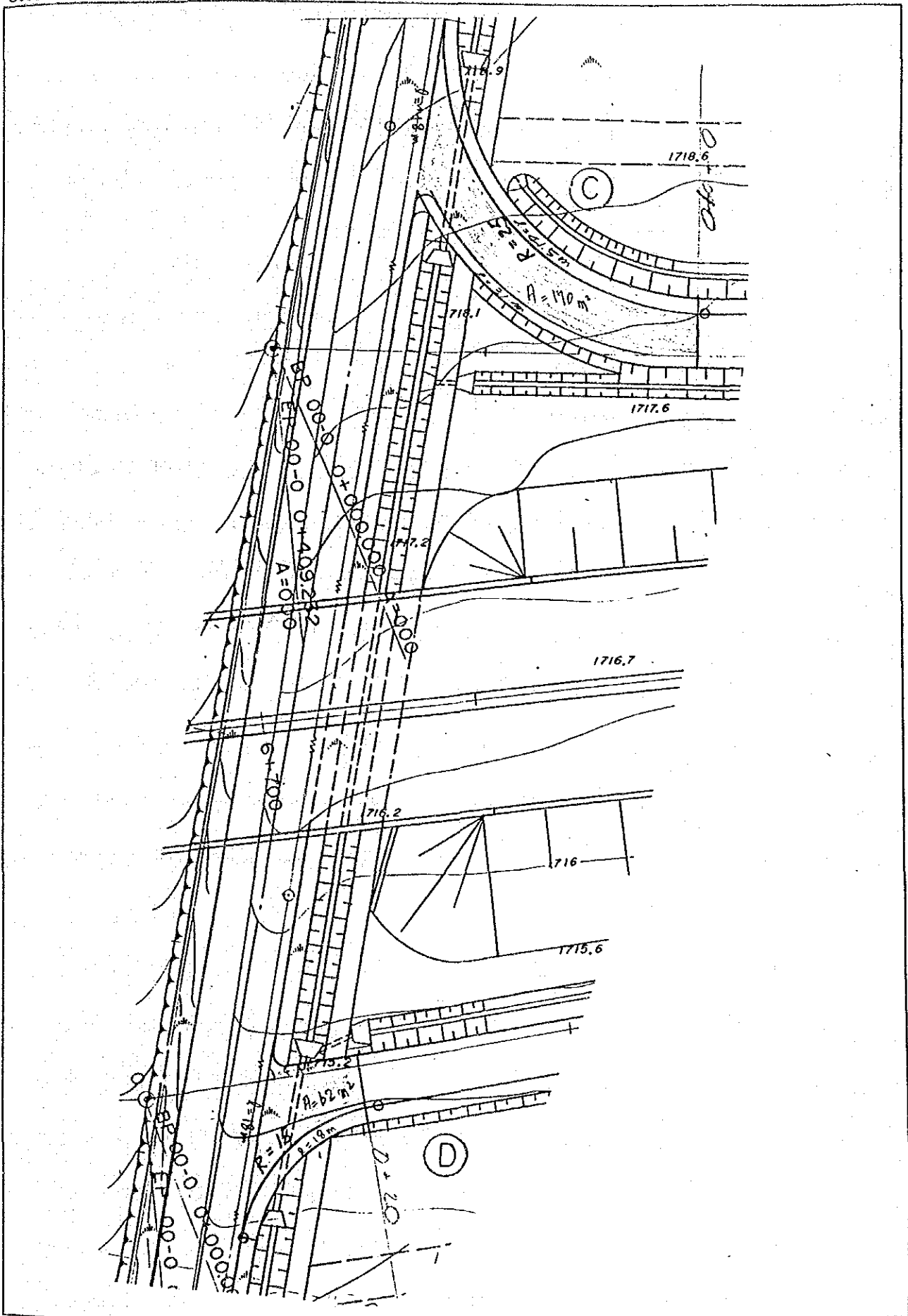
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
				62.00	
0 + 20.000		4.00			
0 + 262.527	242.53	4.00	4.00	970.11	
0 + 272.527	10.00	3.75	3.88	38.75	
0 + 272.527		4.75			
0 + 282.527	10.00	4.50	4.63	46.25	
TOTAL				1,117.11	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-6 (m)	TYPE-7 (m)	TYPE-8 (m)	TYPE-9 (m)	TYPE-10 (m)
LEFT SIDE				8.80	
0 + 20.000 ~ 0 + 272.527				252.53	
0 + 272.527 ~ 0 + 282.527	10.00				
RIGHT SIDE		18.00			
0 + 20.000 ~ 0 + 160.000		140.00			
0 + 160.000 ~ 0 + 282.527			122.53		
TOTAL	10.00	158.00	122.53	261.33	

COMPUTATION OF QUANTITIES FOR PAVEMENT

UHURU MONUMENT JUNCTION C,D SLIP ROAD



SCHEDULE OF QUANTITIES FOR PAVEMENT

NGONG ROAD JUNCTION SLIP ROAD

ITEM	UNIT	SLIP ROAD		Total
		A	B	
1. ASPHALT CONCRETE WEARING COURSE	m3	106.68	99.56	206.24
2. ASPHALT CONCRETE BINDER COURE	m3	160.01	149.33	309.34
3. LEAN CONCRETE BASE	m3	513.69	479.70	993.39
4. GRADED CRUSHED STONE BASE	m3			0.00
5. GRADED CRUSHED STONE SUBBASE	m3	600.52	555.83	1,156.35
6. GRADED CRUSHED STONE SHOULDER	m3	228.73	210.90	439.63
7. TACK COAT	m2	2,666.88	2,488.88	5,155.76
8. PRIME COAT	m2	2,666.88	2,488.88	5,155.76
9. FILLING	m3	243.65	229.90	473.55
10. DOUBLE SURFACE DRESSING	m2	770.04	725.49	1,495.53
11. SINGLE SURFACE DRESSING	m2			0.00
12. GRASSING	m2	443.00	418.00	861.00

COMPUTATION OF QUANTITIES FOR PAVEMENT

NGONG ROAD JUNCTION A SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$2,666.88\text{m}^2 \times 0.040 = 106.68\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$2,666.88\text{m}^2 \times 0.060 = 160.01\text{m}^3$$

3. LEAN CONCRETE BASE

$$2,666.88\text{m}^2 \times 0.180 + 570.40\text{m} \times 0.059 = 513.69\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$2666.88\text{m}^2 \times 0.150 + 133.00\text{m} \times 0.045 + 570.40\text{m} \times 0.341 = 600.52\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$570.4\text{m} \times 0.401 = 228.73\text{m}^3$$

7. TACK COAT

$$2,666.88\text{m}^2$$

8. PRIME COAT

$$2,666.88\text{m}^2$$

9. FILLING

$$(309.0 + 54.0 + 80.0)\text{m}^2 \times 0.550 = 243.65\text{m}^3$$

10. DOUBLE SURFACE DRESSING

$$570.4\text{m}^2 \times 1.350 = 770.04\text{m}^2$$

11. SINGLE SURFACE DRESSING

12. GRASSING

$$309.0 + 54.0 + 80.0 = 443.0\text{m}^2$$

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
 NGONG ROAD JUNCTION A SLIP ROAD

PAVING AREA

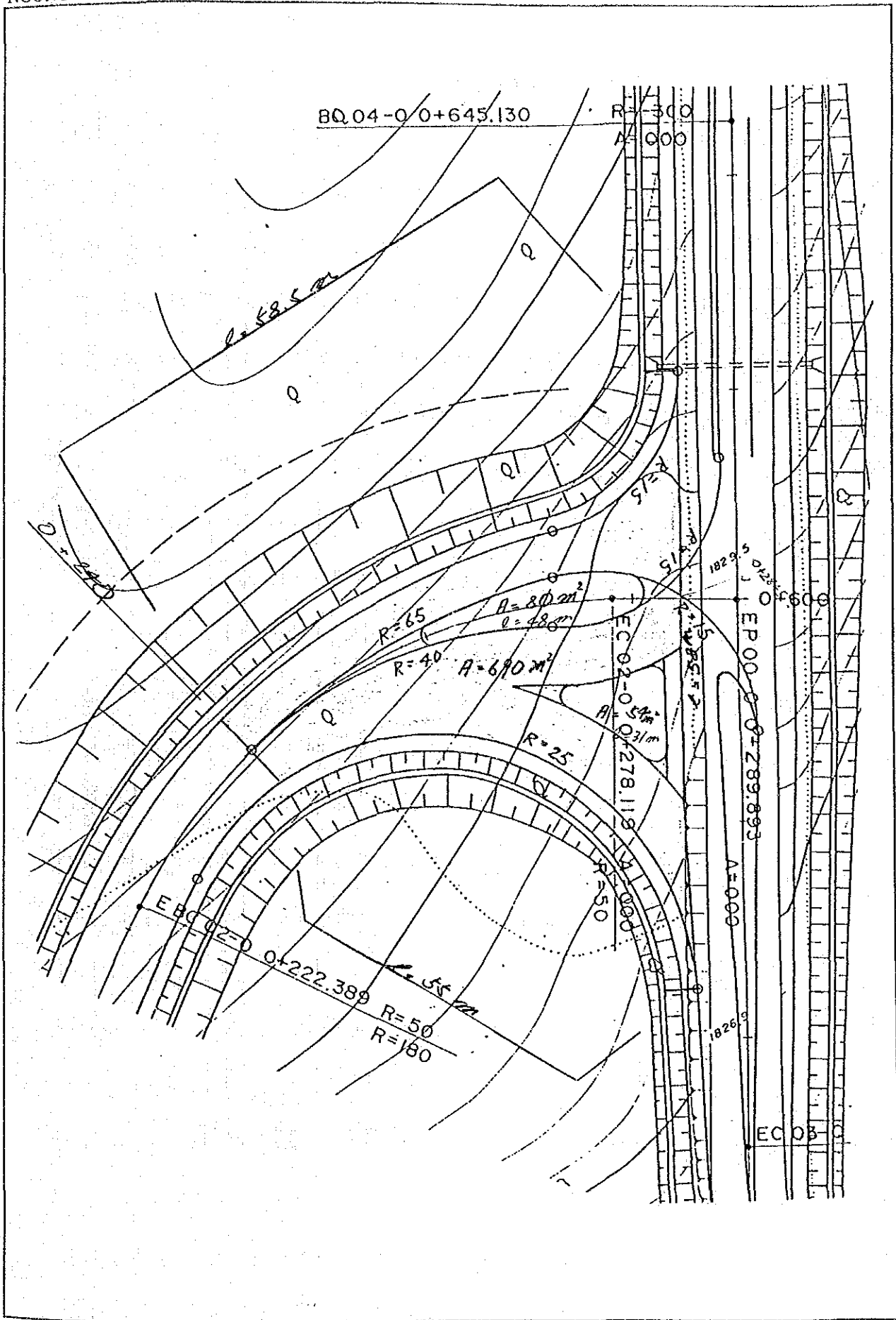
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
				335.00	
0 + 38.750		11.00			
0 + 60.000	21.25	8.00	9.50	201.88	
0 + 240.000	180.00	8.00	8.00	1,440.00	
				690.00	
TOTAL				2,666.88	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-16 (m)	TYPE-7 (m)	TYPE-8 (m)		
	54.00	54.40			
0 + 38.750 ~ 0 + 240.000		402.50			
	79.00	113.50			
TOTAL	133.00	570.40			

COMPUTATION OF QUANTITIES FOR PAVEMENT

NGONG ROAD JUNCTION A SLIP ROAD



88.142 (88.000)

44.071 (44.000)

23.071 (23.000)

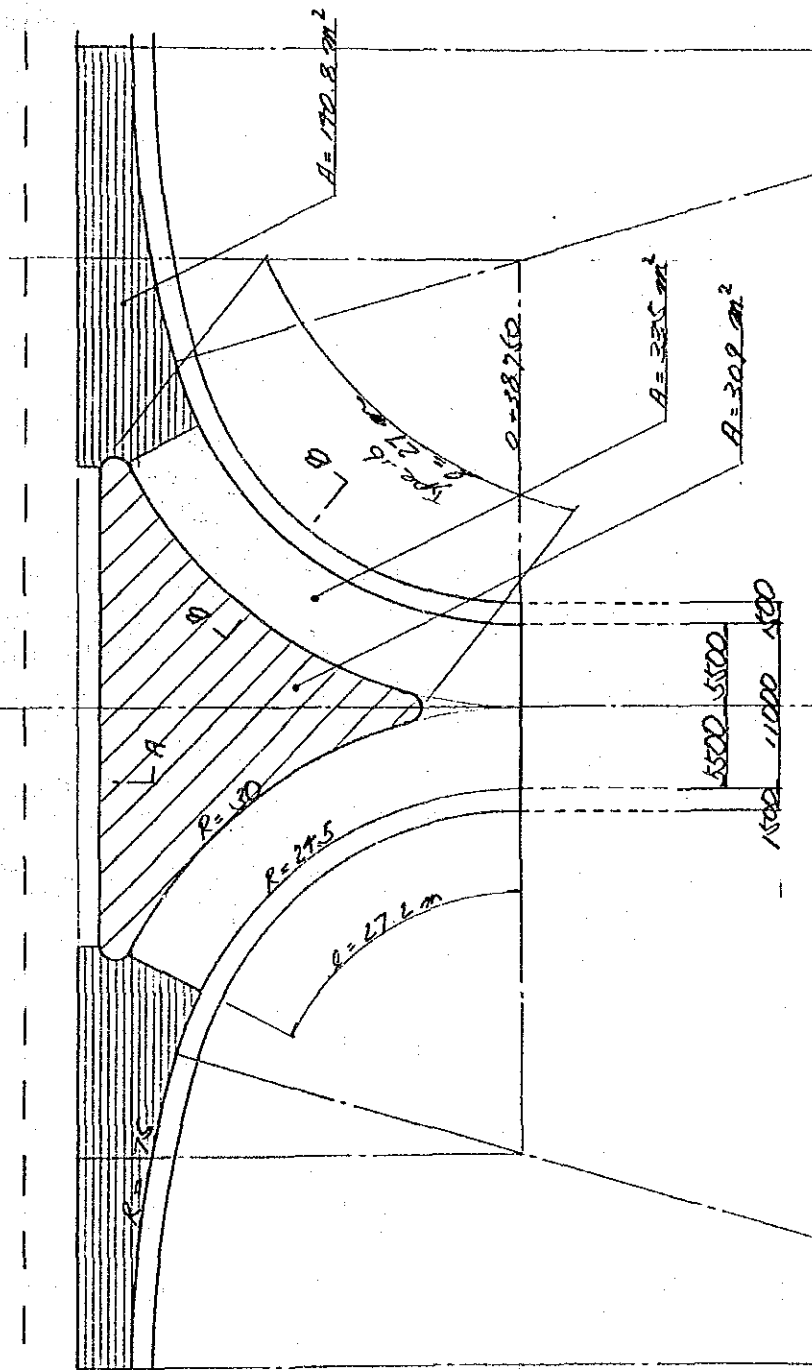
32.000

A

44.071 (44.000)

23.071 (23.000)

1000 10 500 1500
3000 3500 4000



COMPUTATION OF QUANTITIES FOR PAVEMENT

NGONG ROAD JUNCTION B SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$2,488.88\text{m}^2 \times 0.040 = 99.56\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$2,488.88\text{m}^2 \times 0.060 = 149.33\text{m}^3$$

3. LEAN CONCRETE BASE

$$2,488.88\text{m}^2 \times 0.180 + 337.40\text{m} \times 0.059 + 200.00\text{m} \times 0.059 = 479.70\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$2,488.88\text{m}^2 \times 0.150 + 121.00\text{m} \times 0.045 + 337.40\text{m} \times 0.341 + 200.00\text{m} \times 0.310 = 555.83\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$337.40\text{m} \times 0.401 + 200.00\text{m} \times 0.378 = 210.90\text{m}^3$$

7. TACK COAT

$$2,488.88\text{m}^2$$

8. PRIME COAT

$$2,488.88\text{m}^2$$

9. FILLING

$$(309.0 + 24.0 + 85)\text{m}^2 \times 0.550 = 229.90\text{m}^3$$

10. DOUBLE SURFACE DRESSING

$$(337.40 + 200.00)\text{m} \times 1.350 = 725.49\text{m}^2$$

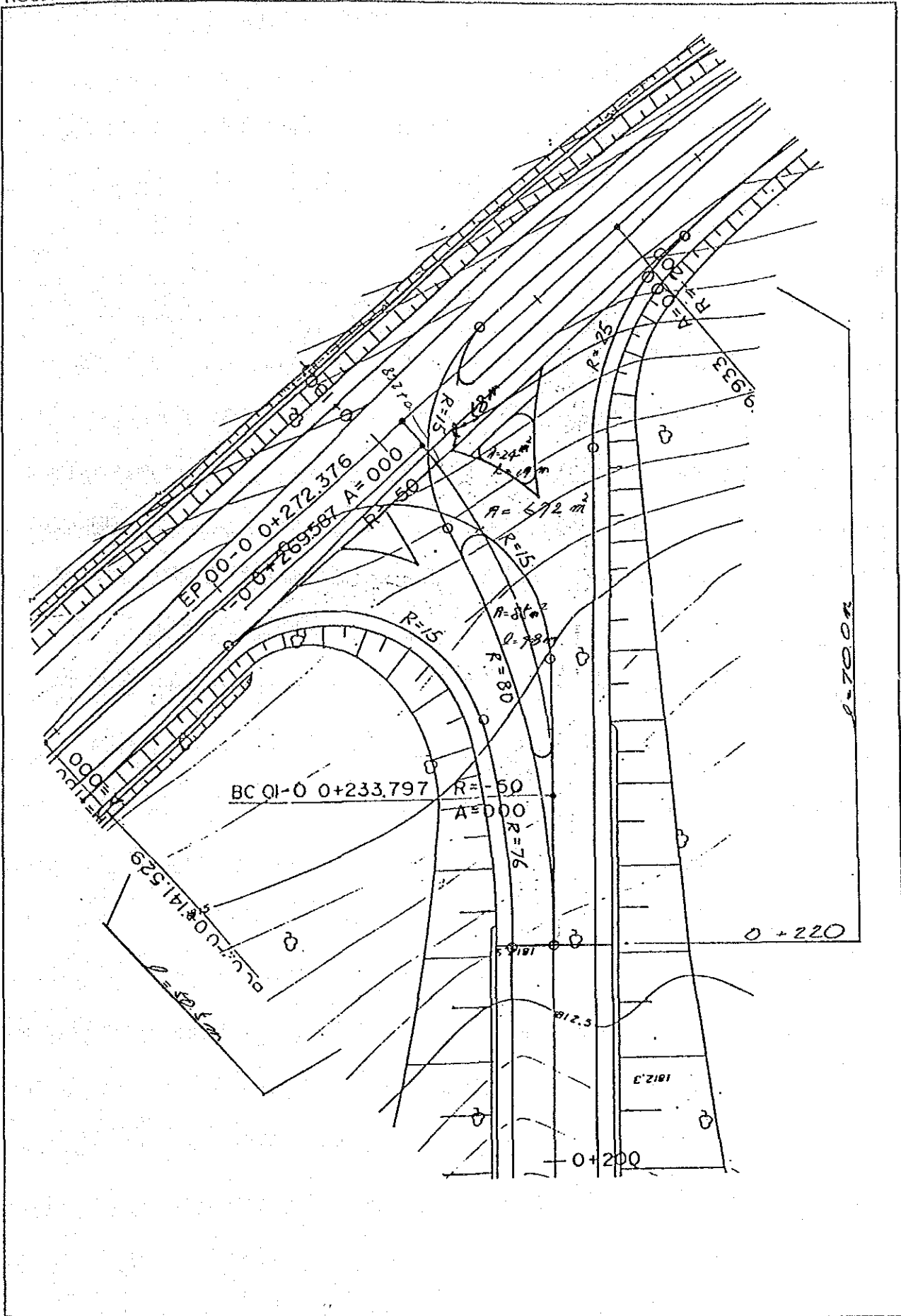
12. GRASSING

$$309.0 + 24.0 + 85.0 = 418.0\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

NGONG ROAD JUNCTION B SLIP ROAD



SCHEDULE OF QUANTITIES FOR PAVEMENT

DAGORETTI FOREST JUNCTION SLIP ROAD

ITEM	UNIT	SLIP ROAD		Total
		A	B	
1. ASPHALT CONCRETE WEARING COURSE	m3	112.00	101.68	213.68
2. ASPHALT CONCRETE BINDER COURE	m3	167.99	152.51	320.50
3. LEAN CONCRETE BASE	m3	541.14	490.51	1,031.65
4. GRADED CRUSHED STONE BASE	m3			0.00
5. GRADED CRUSHED STONE SUBBASE	m3	635.31	567.14	1,202.45
6. GRADED CRUSHED STONE SHOULDER	m3	248.98	218.37	467.35
7. TACK COAT	m2	2,799.88	2,541.88	5,341.76
8. PRIME COAT	m2	2,799.88	2,541.88	5,341.76
9. FILLING	m3	227.98	235.95	463.93
10. DOUBLE SURFACE DRESSING	m2	850.37	754.52	1,604.89
11. SINGLE SURFACE DRESSING	m2			0.00
12. GRASSING	m2	414.50	429.00	843.50

COMPUTATION OF QUANTITIES FOR PAVEMENT

DAGORETTI FOREST JUNCTION A SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$2,799.88\text{m}^2 \times 0.040 = 112.00\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$2,799.88\text{m}^2 \times 0.060 = 167.99\text{m}^3$$

3. LEAN CONCRETE BASE

$$2,799.88\text{m}^2 \times 0.180 + 473.0\text{m} \times 0.059 + 156.9\text{m} \times 0.059 = 541.14\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$2799.88\text{m}^2 \times 0.150 + 120.00\text{m} \times 0.045 + 473.0\text{m} \times 0.341 + 156.90\text{m} \times 0.310 = 635.31\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$473.0\text{m} \times 0.401 + 156.9\text{m} \times 0.378 = 248.98\text{m}^3$$

7. TACK COAT

$$2,799.88\text{m}^2$$

8. PRIME COAT

$$2,799.88\text{m}^2$$

9. FILLING

$$(309.0 + 98.0 + 7.5)\text{m}^2 \times 0.550 = 227.98\text{m}^3$$

10. DOUBLE SURFACE DRESSING

$$(473.0 + 156.9)\text{m}^2 \times 1.350 = 850.37\text{m}^2$$

11. SINGLE SURFACE DRESSING

12. GRASSING

$$309.0 + 98.0 + 7.5 = 414.50\text{m}^2$$

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
DAGORETTI FOREST JUNCTION A SLIP ROAD

PAVING AREA

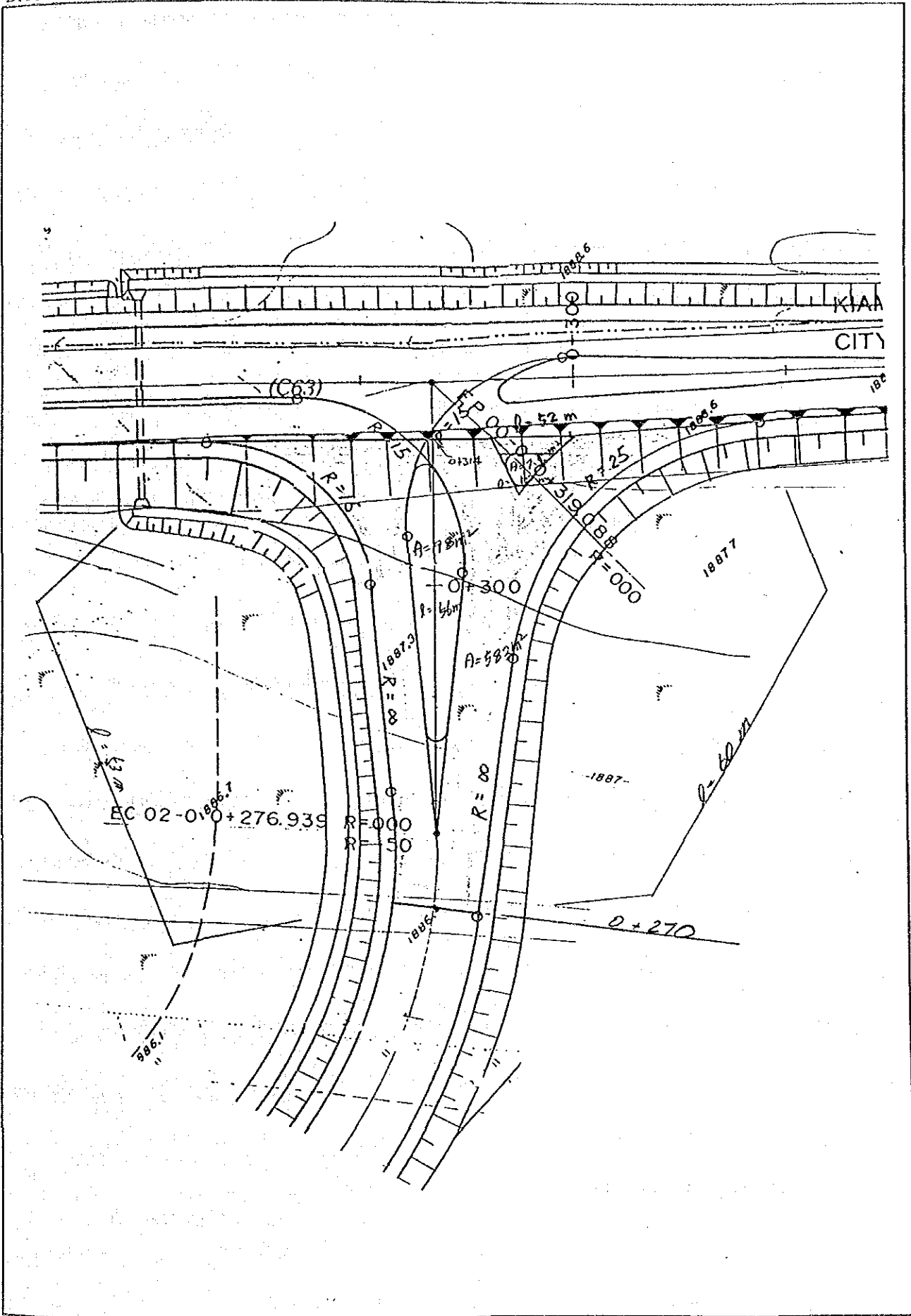
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
				335.00	
0 + 38.750		11.00			
0 + 60.000	21.25	8.00	9.50	201.88	
0 + 270.000	210.00	8.00	8.00	1,680.00	
				583.00	
TOTAL				2,799.88	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-16 (m)	TYPE-7 (m)	TYPE-8 (m)		
LEFT SIDE					
~ 0 + 38.750	27.00		27.20		
0 + 38.750 ~ 0 + 100.000			61.25		
0 + 100.000 ~ 0 + 270.000		170.00			
0 + 270.000 ~	56.00	53.00			
RIGHT SIDE					
~ 0 + 38.750	27.00		27.20		
0 + 38.750 ~ 0 + 80.000			41.25		
0 + 80.000 ~ 0 + 270.000		190.00			
0 + 270.000 ~	10.00	60.00			
TOTAL	120.00	473.00	156.90		

COMPUTATION OF QUANTITIES FOR PAVEMENT

DAGORETTI FOREST JUNCTION A SLIP ROAD



COMPUTATION OF QUANTITIES FOR PAVEMENT

DAGORETTI FOREST JUNCTION B SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$2,541.88\text{m}^2 \times 0.040 = 101.68\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$2,541.88\text{m}^2 \times 0.060 = 152.51\text{m}^3$$

3. LEAN CONCRETE BASE

$$2,541.88\text{m}^2 \times 0.180 + 222.0\text{m} \times 0.059 + 336.9\text{m} \times 0.059 = 490.51\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$2,541.88\text{m}^2 \times 0.150 + 127.00\text{m} \times 0.045 + 222.0\text{m} \times 0.341 + 336.90\text{m} \times 0.310 = 567.14\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$222.0\text{m} \times 0.401 + 336.9\text{m} \times 0.378 = 218.37\text{m}^3$$

7. TACK COAT

$$2,541.88\text{m}^2$$

8. PRIME COAT

$$2,541.88\text{m}^2$$

9. FILLING

$$(309.0 + 112.0 + 8.0)\text{m}^2 \times 0.550 = 235.95\text{m}^3$$

10. DOUBLE SURFACE DRESSING

$$(222.0 + 336.9)\text{m}^2 \times 1.350 = 754.52\text{m}^2$$

12. GRASSING

$$309.0 + 112.0 + 8.0 = 429.00\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
DAGORETTI FOREST JUNCTION B SLIP ROAD

PAVING AREA

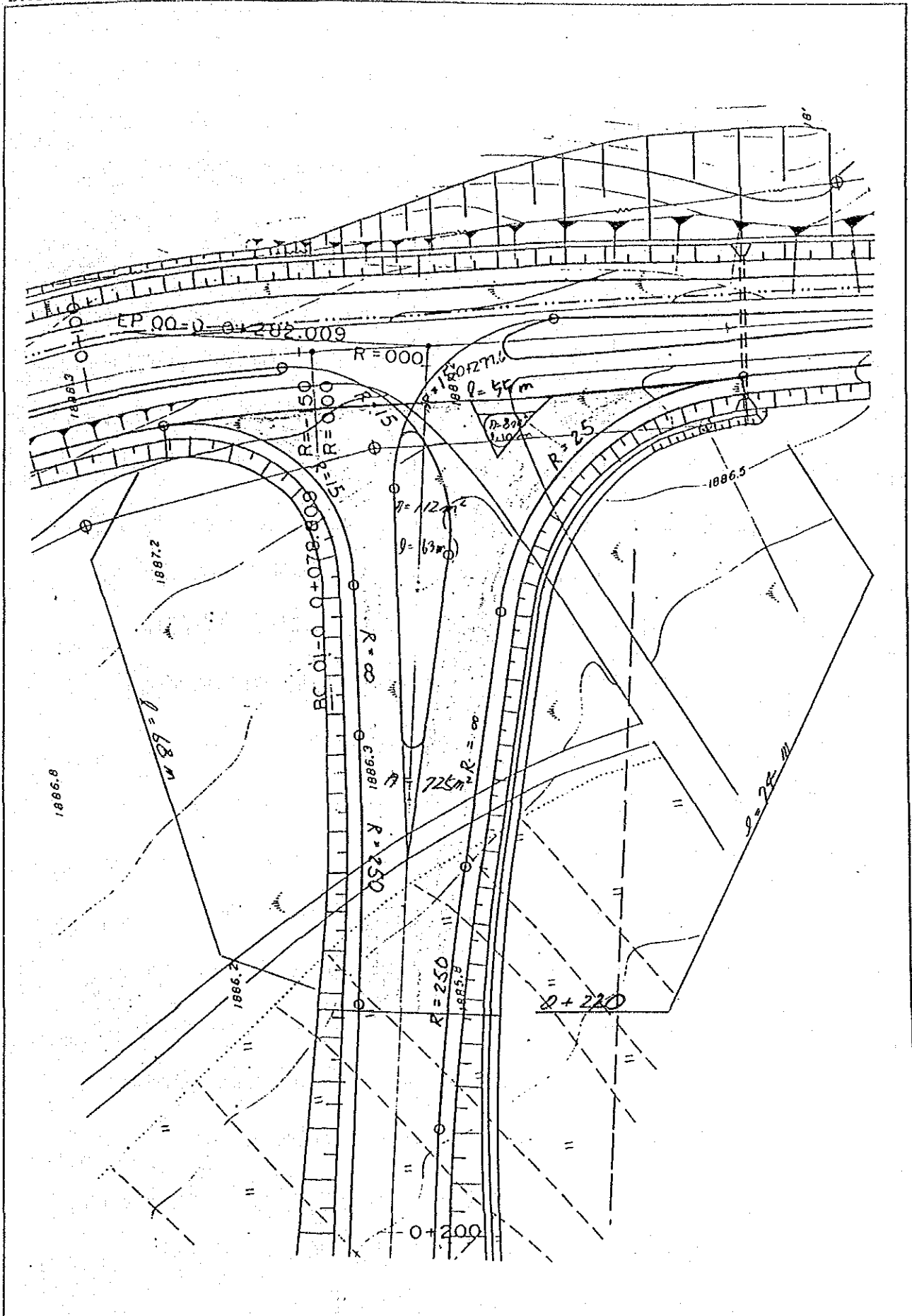
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m2)	REMARKS
				335.00	
0 + 38.750		11.00			
0 + 60.000	21.25	8.00	9.50	201.88	
0 + 220.000	160.00	8.00	8.00	1,280.00	
				725.00	
TOTAL				2,541.88	

SHOULDER LENGTH

SECTION	SHOULDER			
	TYPE-16 (m)	TYPE-7 (m)	TYPE-8 (m)	
LEFT SIDE				
~ 0 + 38.750	27.00		27.20	
0 + 38.750 ~ 0 + 100.000			141.25	
0 + 100.000 ~ 0 + 270.000		40.00		
0 + 270.000 ~	63.00	68.00		
RIGHT SIDE				
~ 0 + 38.750	27.00		27.20	
0 + 38.750 ~ 0 + 80.000			141.25	
0 + 80.000 ~ 0 + 270.000		40.00		
0 + 270.000 ~	10.00	74.00		
TOTAL	127.00	222.00	336.90	

COMPUTATION OF QUANTITIES FOR PAVEMENT

DAGORETTI FOREST JUNCTION B SLIP ROAD



SCHEDULE OF QUANTITIES FOR PAVEMENT

THOGOTO JUNCTION SLIP ROAD

ITEM	UNIT	SLIP ROAD		Total
		A	B	
1. ASPHALT CONCRETE WEARING COURSE	m3	98.45	104.36	202.81
2. ASPHALT CONCRETE BINDER COURE	m3	147.68	156.53	304.21
3. LEAN CONCRETE BASE	m3	475.89	508.36	984.25
4. GRADED CRUSHED STONE BASE	m3			0.00
5. GRADED CRUSHED STONE SUBBASE	m3	522.62	561.11	1,083.73
6. GRADED CRUSHED STONE SHOULDER	m3	150.89	143.19	294.08
7. TACK COAT	m2	2,461.35	2,608.88	5,070.23
8. PRIME COAT	m2	2,461.35	2,608.88	5,070.23
9. FILLING	m3	226.05	227.15	453.20
10. DOUBLE SURFACE DRESSING	m2	473.28	473.45	946.73
11. SINGLE SURFACE DRESSING	m2			0.00
12. GRASSING	m2	411.00	413.00	824.00

COMPUTATION OF QUANTITIES FOR PAVEMENT

THOGOTO JUNCTION A SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$2,461.35\text{m}^2 \times 0.040 = 98.45\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$2,461.35\text{m}^2 \times 0.060 = 147.68\text{m}^3$$

3. LEAN CONCRETE BASE

$$2,461.35\text{m}^2 \times 0.180 + 556.8\text{m} \times 0.059 = 475.89\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$2,461.35\text{m}^2 \times 0.150 + 118.00\text{m} \times 0.045 + 556.8\text{m} \times 0.266 = 522.62\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$556.8\text{m} \times 0.271 = 150.89\text{m}^3$$

7. TACK COAT

$$2,461.35\text{m}^2$$

8. PRIME COAT

$$2,461.35\text{m}^2$$

9. FILLING

$$(309.0 + 90.0 + 12.0)\text{m}^2 \times 0.550 = 226.05\text{m}^3$$

10. DOUBLE SURFACE DRESSING

$$556.8\text{m}^2 \times 0.850 = 473.28\text{m}^2$$

12. GRASSING

$$309.0 + 90.0 + 12.0 = 411.00\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
 THOGOTO JUNCTION A SLIP ROAD

PAVING AREA

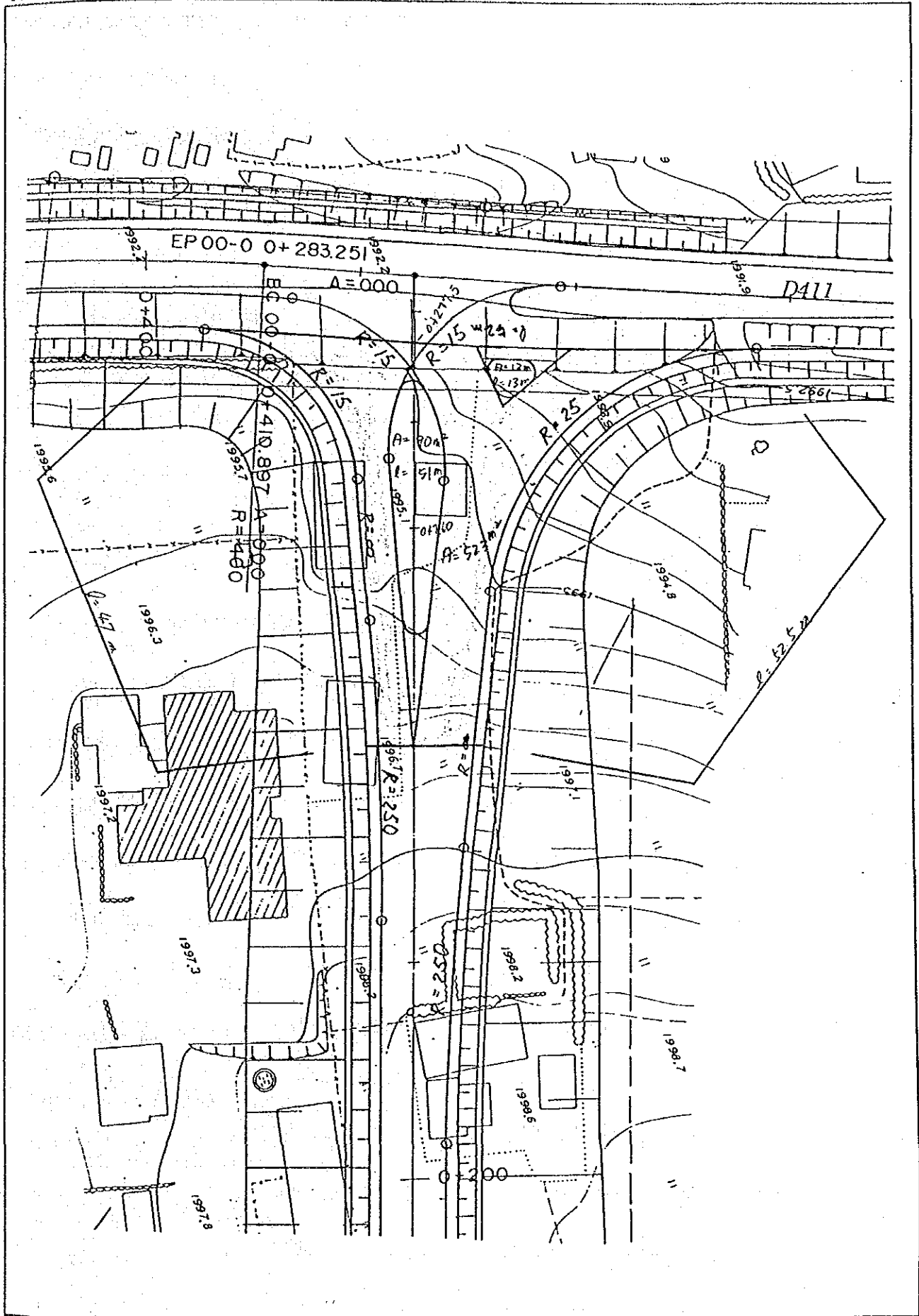
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
				335.00	
0 + 38.750		11.00			
0 + 60.000	21.25	7.75	9.38	199.22	
0 + 95.579	35.58	7.75	7.75	275.74	
0 + 100.000	4.42	6.80	7.27	32.15	
0 + 120.000	20.00	6.46	6.48	129.60	
0 + 140.000	20.00	6.00	6.08	121.64	
0 + 200.000	60.00	6.00	6.00	360.00	
0 + 220.000	20.00	6.00	6.00	360.00	
0 + 240.000	20.00	6.50	6.25	125.00	
				523.00	
TOTAL				2,461.35	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-16 (m)	TYPE-9 (m)	TYPE-10 (m)		
~ 0 + 38.750	54.00	54.80			
0 + 38.750 ~ 0 + 240.000		402.50			
	64.00	99.50			
TOTAL	118.00	556.80			

COMPUTATION OF QUANTITIES FOR PAVEMENT

THOGOTO JUNCTION A SLIP ROAD



COMPUTATION OF QUANTITIES FOR PAVEMENT

THOGOTO JUNCTION B SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$2,608.88\text{m}^2 \times 0.040 = 104.36\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$2,608.88\text{m}^2 \times 0.060 = 156.53\text{m}^3$$

3. LEAN CONCRETE BASE

$$2,608.88\text{m}^2 \times 0.180 + 319.7\text{m} \times 0.059 + 337.3\text{m} \times 0.059 = 508.36\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$2,608.88\text{m}^2 \times 0.150 + 121.5\text{m} \times 0.045 + 319.7\text{m} \times 0.266 + 337.3\text{m} \times 0.235 = 561.11\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$219.7\text{m} \times 0.271 + 337.3\text{m} \times 0.248 = 143.19\text{m}^3$$

7. TACK COAT

$$2,608.88\text{m}^2$$

8. PRIME COAT

$$2,608.88\text{m}^2$$

9. FILLING

$$(309.0 + 87.0 + 17.0)\text{m}^2 \times 0.550 = 227.15\text{m}^3$$

10. DOUBLE SURFACE DRESSING

$$(219.7 + 337.3)\text{m}^2 \times 0.850 = 473.45\text{m}^2$$

12. GRASSING

$$309.0 + 87.0 + 17.0 = 413.00\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
 THOGOTO JUNCTION B SLIP ROAD

PAVING AREA

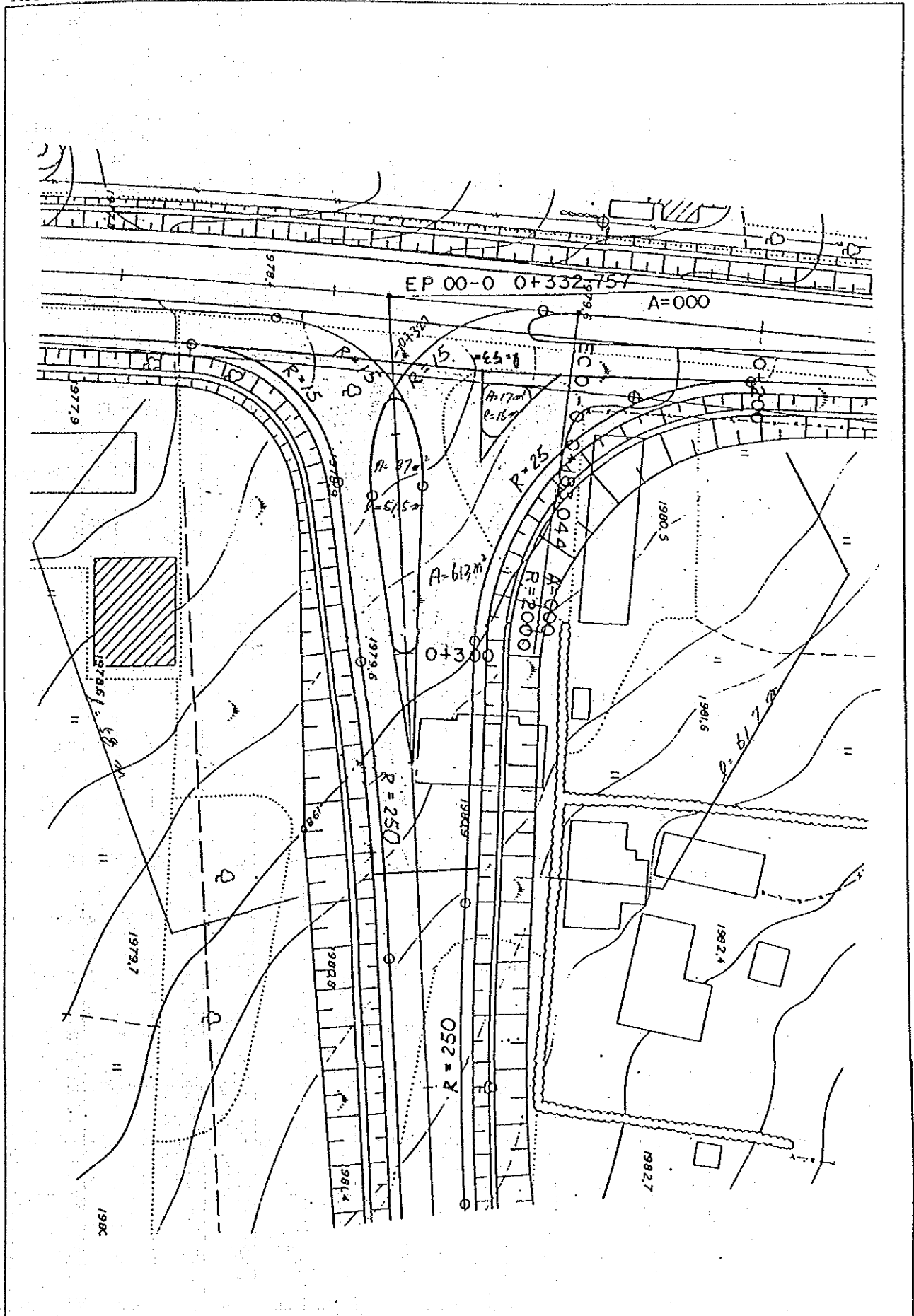
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
				335.00	
0 + 38.750		11.00			
0 + 60.000	21.25	7.75	9.38	199.22	
0 + 117.825	57.83	7.75	7.75	448.14	
0 + 120.000	2.18	6.81	7.28	15.84	
0 + 140.000	20.00	6.23	6.52	130.40	
0 + 160.000	20.00	6.00	6.11	122.28	
0 + 240.000	80.00	6.00	6.00	480.00	
0 + 260.000	20.00	6.30	6.15	123.00	
0 + 280.000	20.00	7.90	7.10	142.00	
				613.00	
TOTAL				2,608.88	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-16 (m)	TYPE-9 (m)	TYPE-10 (m)		
~ 0 + 38.750	54.00		54.80		
0 + 38.750 ~ 0 + 180.000			282.50		
0 + 180.000 ~ 0 + 280.000		200.00			
0 + 280.000	67.50	119.70			
TOTAL	121.50	319.70	337.30		

COMPUTATION OF QUANTITIES FOR PAVEMENT

THOGOTO JUNCTION B SLIP ROAD



SCHEDULE OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION SLIP ROAD

ITEM	UNIT	SLIP ROAD								Total
		A(1/2)	A(2/2)	B	C	D(1/2)	D(2/2)	E		
1. ASPHALT CONCRETE WEARING COURSE	m3	372.12	31.93	29.26	62.39	181.72		18.24		695.66
2. ASPHALT CONCRETE BINDER COURSE	m3	372.12	47.90	43.89	93.58	181.72		18.24		757.45
3. LEAN CONCRETE BASE	m3	1,581.51	166.84	138.34	300.46	772.31		77.52		3,036.98
4. GRADED CRUSHED STONE BASE	m3						98.28			98.28
5. GRADED CRUSHED STONE SUBBASE	m3	2,260.35	233.64	150.69	350.35	1,085.27	118.44	89.58		4,288.32
6. GRADED CRUSHED STONE SHOULDER	m3	914.55	126.52	45.31	134.01	427.00	44.10	22.40		1,713.89
7. TACK COAT	m2	9,303.00	798.25	731.50	1,559.70	4,543.00		456.00		17,391.45
8. PRIME COAT	m2	9,303.00	798.25	731.50	1,559.70	4,543.00		456.00		17,391.45
9. FILLING	m3			169.95	169.95					339.90
10. DOUBLE SURFACE DRESSING	m2	3,527.55	421.89	152.55	451.17	1,647.00	756.00	86.40		7,042.56
11. SINGLE SURFACE DRESSING	m2						277.20			277.20
12. GRASSING	m2			309.00	309.00					618.00

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION A SLIP ROAD(1/2)

1. ASPHALT CONCRETE WEARING COURSE

$$9,303.0\text{m}^2 \times 0.040 = 372.12\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$9,303.0\text{m}^2 \times 0.040 = 372.12\text{m}^3$$

3. LEAN CONCRETE BASE

$$9,303.0\text{m}^2 \times 0.170 = 1,581.51\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$9,303.0\text{m}^2 \times 0.150 + 2,613.0\text{m} \times 0.331 = 2,260.35\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$2,613.0\text{m} \times 0.350 = 914.55\text{m}^3$$

7. TACK COAT

$$9,303.0\text{m}^2$$

8. PRIME COAT

$$9,303.0\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$2,613.0\text{m} \times 1.350 = 3,527.55\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
 KIKUYU TOWN JUNCTION A SLIP ROAD (1/2)

PAVING AREA

STATION			DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
0 +	0.000 ~	1 + 329.000	1,329.00	7.00	7.00	9,303.00	

SHOULDER LENGTH

SECTION	SHOULDER			
	TYPE-23 (m)			
RIGHT SIDE				
0 + 0.000 ~ 1 + 329.000	1329.00			
LEFT SIDE				
0 + 0.000 ~ 1 + 329.000	1284.00			
TOTAL	2613.00			

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION A SLIP ROAD(2/2)

1. ASPHALT CONCRETE WEARING COURSE

$$798.25\text{m}^2 \times 0.040 = 31.93\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$798.25\text{m}^2 \times 0.060 = 47.90\text{m}^3$$

3. LEAN CONCRETE BASE

$$798.25\text{m}^2 \times 0.180 + 10.0\text{m} \times 0.058 + 93.0\text{m} \times 0.059 + 100.3\text{m} \times 0.059 + 189.3\text{m} \times 0.059 = 166.84\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$798.25\text{m}^2 \times 0.150 + 10.0\text{m} \times 0.073 + 93.0\text{m} \times 0.341 + 100.3\text{m} \times 0.310 + 189.3\text{m} \times 0.266 = 233.64\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$93.0\text{m} \times 0.401 + 100.3\text{m} \times 0.378 + 189.3\text{m} \times 0.271 = 126.52\text{m}^3$$

7. TACK COAT

$$798.25\text{m}^2$$

8. PRIME COAT

$$798.25\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$(93.0 + 100.3)\text{m} \times 1.350 + 189.31 \times 0.850 = 421.89\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
KIKUYU TOWN JUNCTION A SLIP ROAD (2/2)

PAVING AREA

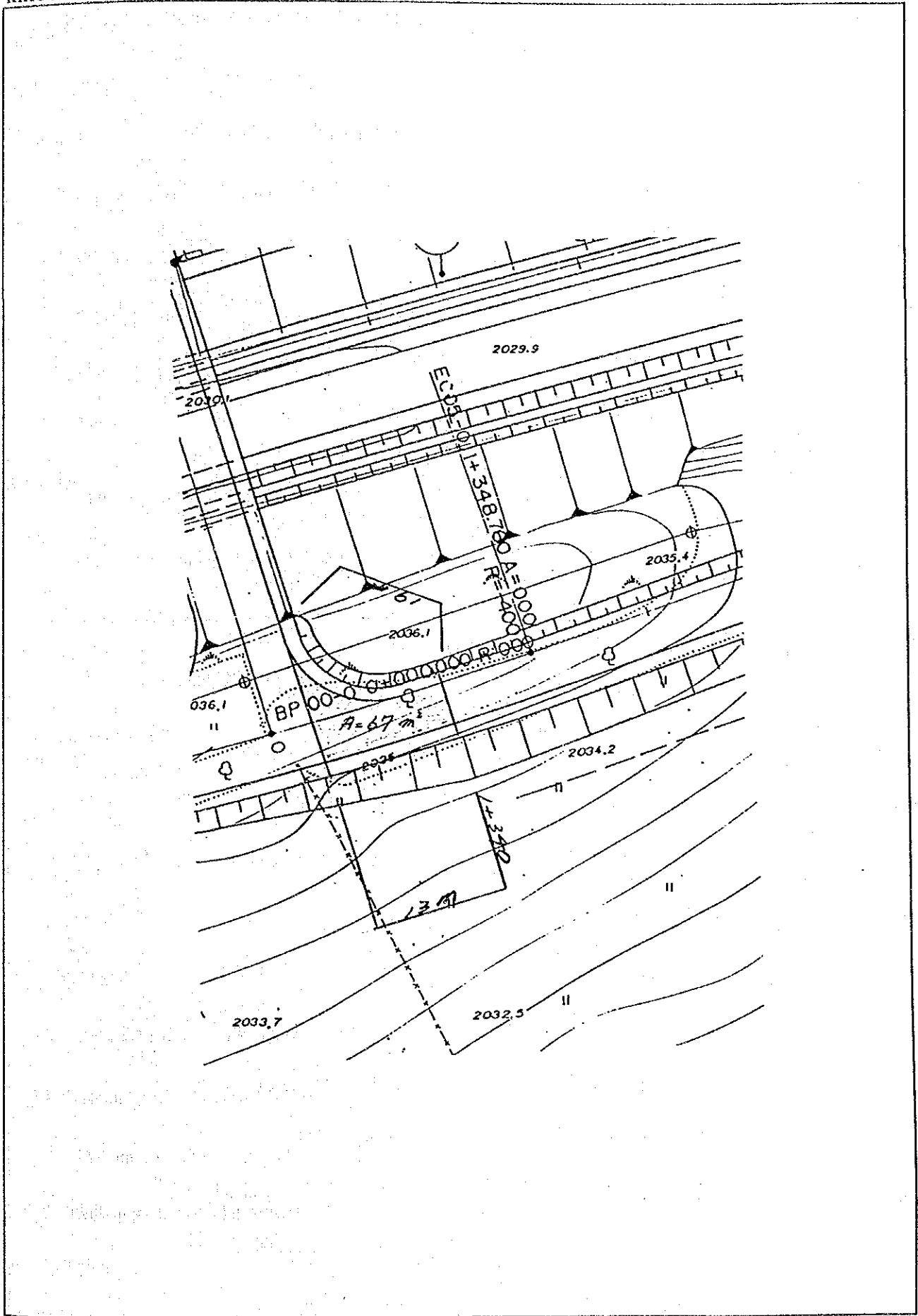
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
				67.00	
1 + 340.000		4.00			
1 + 510.313	170.31	4.00	4.00	681.25	
1 + 510.313		5.00			
1 + 520.313	10.00	5.00	5.00	50.00	
TOTAL				798.25	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-6 (m)	TYPE-7 (m)	TYPE-8 (m)	TYPE-9 (m)	
RIGHT SIDE					
		13.00			
1 + 340.000 ~ 1 + 420.000		80.00			
1 + 420.000 ~ 1 + 520.313			100.31		
LEFT SIDE					
				19.00	
1 + 340.000 ~ 1 + 420.000				170.31	
1 + 420.000 ~ 1 + 520.313	10.00				
TOTAL	10.00	93.00	100.31	189.31	

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION A SLIP ROAD (2/2)



COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION B SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$731.5\text{m}^2 \times 0.040 = 29.26\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$731.5\text{m}^2 \times 0.060 = 43.89\text{m}^3$$

3. LEAN CONCRETE BASE

$$731.5\text{m}^2 \times 0.180 + 113.0\text{m} \times 0.059 = 138.34\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$731.5\text{m}^2 \times 0.150 + 54.0\text{m} \times 0.045 + 113.0\text{m} \times 0.341 = 150.69\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$113.0\text{m} \times 0.401 = 45.31\text{m}^3$$

7. TACK COAT

$$731.5\text{m}^2$$

8. PRIME COAT

$$731.5\text{m}^2$$

9. FILLING

$$309.0\text{m}^2 \times 0.550 = 169.95\text{m}^3$$

10. DOUBLE SURFACE DRESSING

$$113.0\text{m} \times 1.350 = 152.55\text{m}^2$$

11. SINGLE SURFACE DRESSING

12. GRASSING

$$309.0\text{m}^2$$

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
KIKUYU TOWN JUNCTION B SLIP ROAD

PAVING AREA

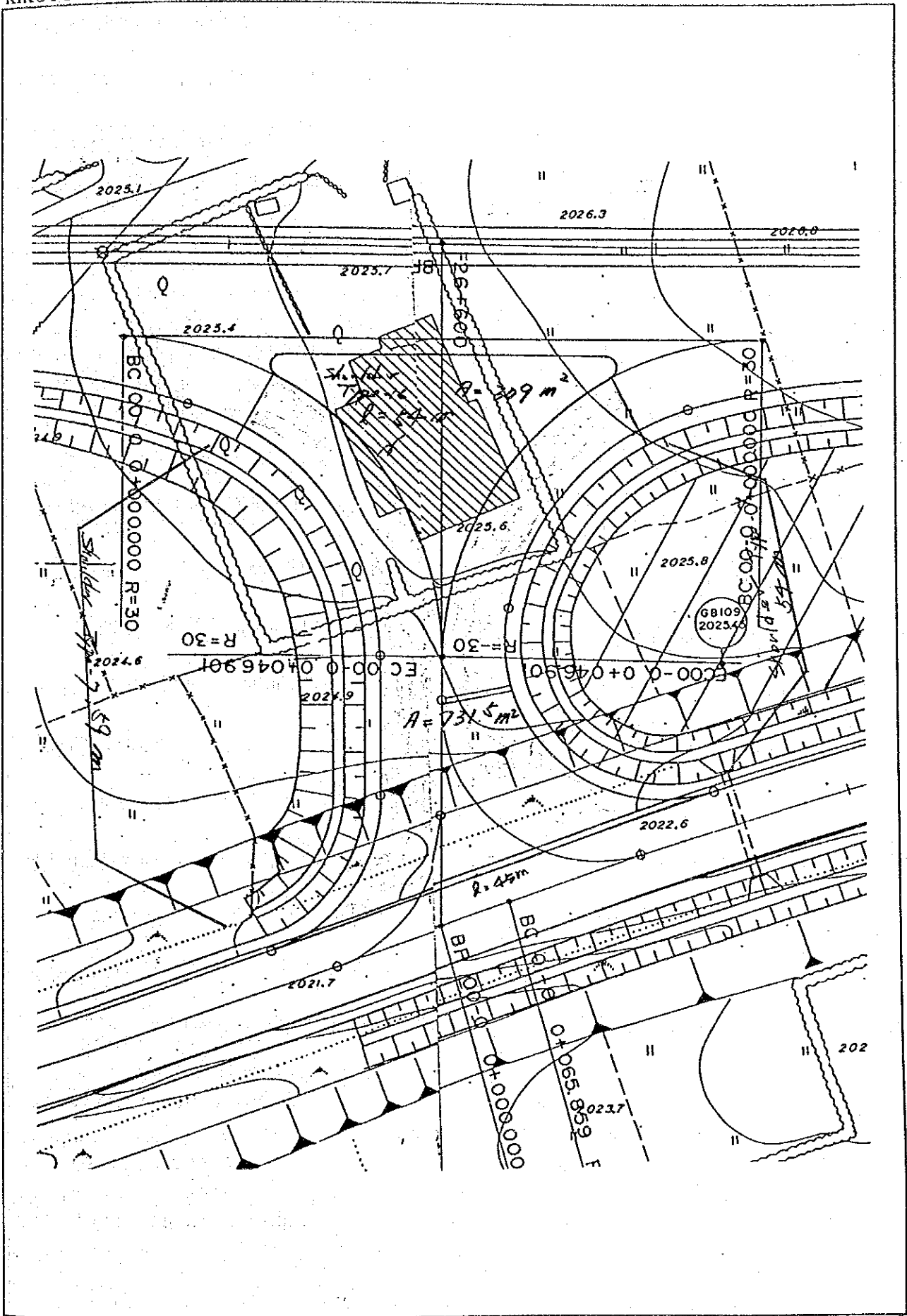
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
TOTAL				731.50	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-16 (m)	TYPE-7 (m)	TYPE-8 (m)	TYPE-9 (m)	
TOTAL	54.00	113.00			

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION B SLIP ROAD



COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION C SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,559.70\text{m}^2 \times 0.040 = 62.39\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,559.70\text{m}^2 \times 0.060 = 93.58\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,559.70\text{m}^2 \times 0.180 + 334.2\text{m} \times 0.059 = 300.46\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,559.70\text{m}^2 \times 0.150 + 54.0\text{m} \times 0.045 + 334.2\text{m} \times 0.341 = 350.35\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$334.2\text{m} \times 0.401 = 134.01\text{m}^3$$

7. TACK COAT

$$1,559.70\text{m}^2$$

8. PRIME COAT

$$1,559.70\text{m}^2$$

9. FILLING

$$309.0\text{m}^2 \times 0.550 = 169.95\text{m}^3$$

10. DOUBLE SURFACE DRESSING

$$334.2\text{m} \times 1.350 = 451.17\text{m}^2$$

12. GRASSING

$$309.0\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
KIKUYU TOWN JUNCTION C SLIP ROAD

PAVING AREA

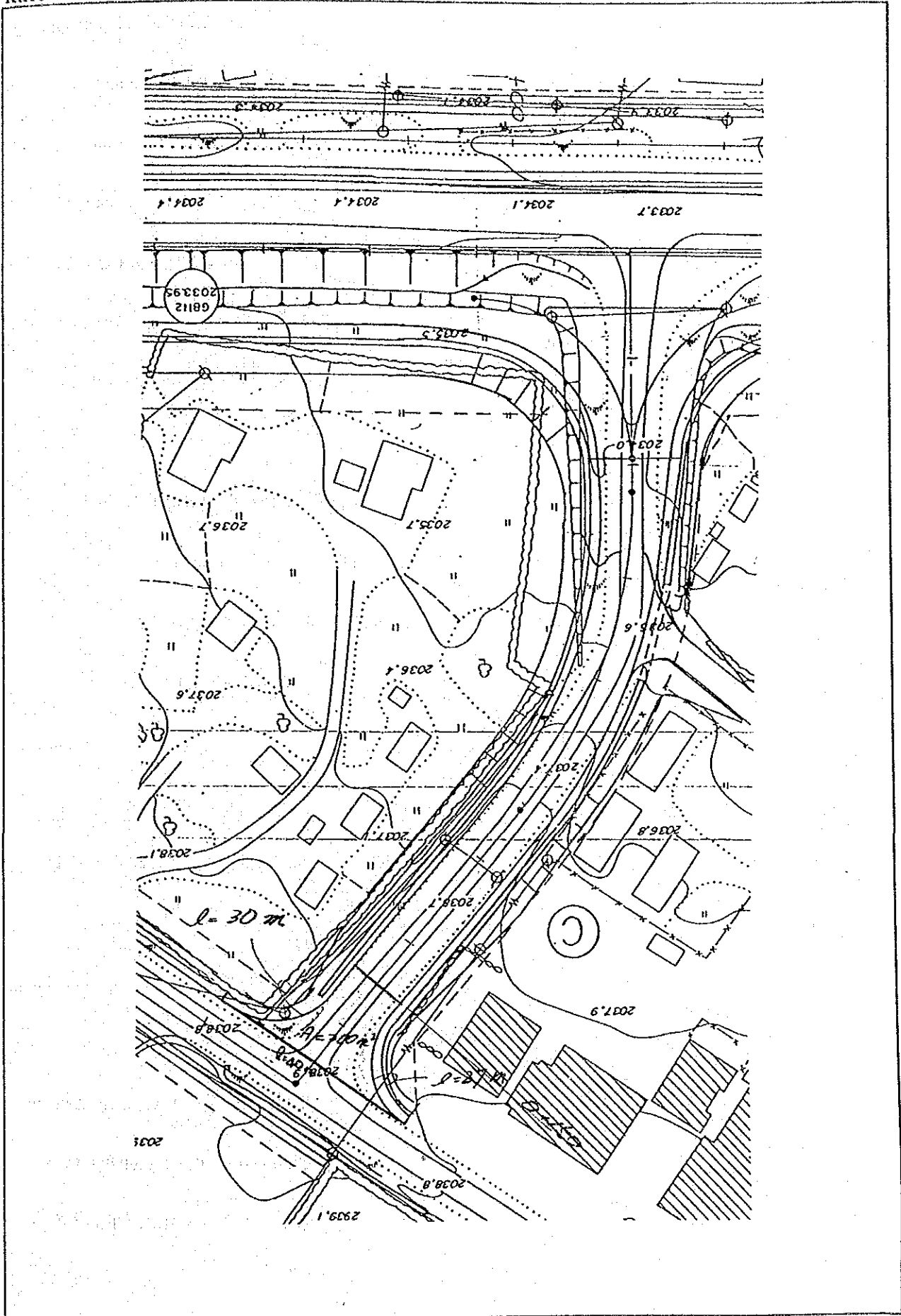
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
				335.00	
0 + 38.750		11.00			
0 + 55.000	16.25	8.64	9.82	159.58	
0 + 71.000	16.00	8.00	8.32	133.12	
0 + 150.000	79.00	8.00	8.00	632.00	
				300.00	
TOTAL				1,559.70	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-16 (m)	TYPE-7 (m)	TYPE-8 (m)	TYPE-9 (m)	
~ 0 + 38.750	54.00	54.70			
0 + 38.750 ~ 0 + 150.000		222.50			
0 + 150.000 ~		57.00			
TOTAL	54.00	334.20			

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION C SLIP ROAD



COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION D SLIP ROAD(1/2)

1. ASPHALT CONCRETE WEARING COURSE

$$4,543.0\text{m}^2 \times 0.040 = 181.72\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$4,543.0\text{m}^2 \times 0.040 = 181.72\text{m}^3$$

3. LEAN CONCRETE BASE

$$4,543.0\text{m}^2 \times 0.170 = 772.31\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$4,543.0\text{m}^2 \times 0.150 + 1,220.0\text{m} \times 0.331 = 1,085.27\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$1,220.0\text{m} \times 0.350 = 427.0\text{m}^3$$

7. TACK COAT

$$4,543.0\text{m}^2$$

8. PRIME COAT

$$4,543.0\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$1,220.0\text{m} \times 1.350 = 1,647.0\text{m}^2$$

11. SINGLE SURFACE DRESSING

12. GRASSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
KIKUYU TOWN JUNCTION D SLIP ROAD (1/2)

PAVING AREA

STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
0 + 0.000 ~ 0 + 649.000	649.00	7.00	7.00	4,543.00	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-23 (m)				
RIGHT SIDE					
0 + 0.000 ~ 0 + 649.000	571.00				
LEFT SIDE					
0 + 0.000 ~ 0 + 649.000	649.00				
TOTAL	1220.00				

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION D SLIP ROAD(2/2)

1. ASPHALT CONCRETE WEARING COURSE

2. ASPHALT CONCRETE BINDER COURE

3. LEAN CONCRETE BASE

4. GRADED CRUSHED STONE BASE

$$756.0\text{m}^2 \times 0.130 = 98.28\text{m}^3$$

5. GRADED CRUSHED STONE SUBBASE

$$756.0\text{m}^2 \times 0.100 + 252.0\text{m} \times 0.170 = 118.44\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$252.0\text{m} \times 0.175 = 44.10\text{m}^3$$

7. TACK COAT

8. PRIME COAT

9. FILLING

10. DOUBLE SURFACE DRESSING

$$756.0\text{m}^2$$

12. GRASSING

11. SINGLE SURFACE DRESSING

$$252.0\text{m} \times 1.100 = 277.2\text{m}^2$$

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
 KIKUYU TOWN JUNCTION D SLIP ROAD (2/2)

PAVING AREA

STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m2)	REMARKS
0 + 649.000 ~ 0 + 775.000	126.00	6.00	6.00	756.00	

SHOULDER LENGTH

SECTION	SHOULDER			
	TYPE-20 (m)			
0 + 649.000 ~ 0 + 775.000	252.00			

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION E SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$456.0\text{m}^2 \times 0.040 = 18.24\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$456.0\text{m}^2 \times 0.040 = 18.24\text{m}^3$$

3. LEAN CONCRETE BASE

$$456.0\text{m}^2 \times 0.170 = 77.52\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$456.0\text{m}^2 \times 0.150 + 64.0\text{m} \times 0.331 = 89.58\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$64.0\text{m} \times 0.350 = 22.40\text{m}^3$$

7. TACK COAT

$$456.0\text{m}^2$$

8. PRIME COAT

$$456.0\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$64.0\text{m} \times 1.350 = 86.40\text{m}^2$$

12. GRASSING

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
 KIKUYU TOWN JUNCTION E SLIP ROAD

PAVING AREA

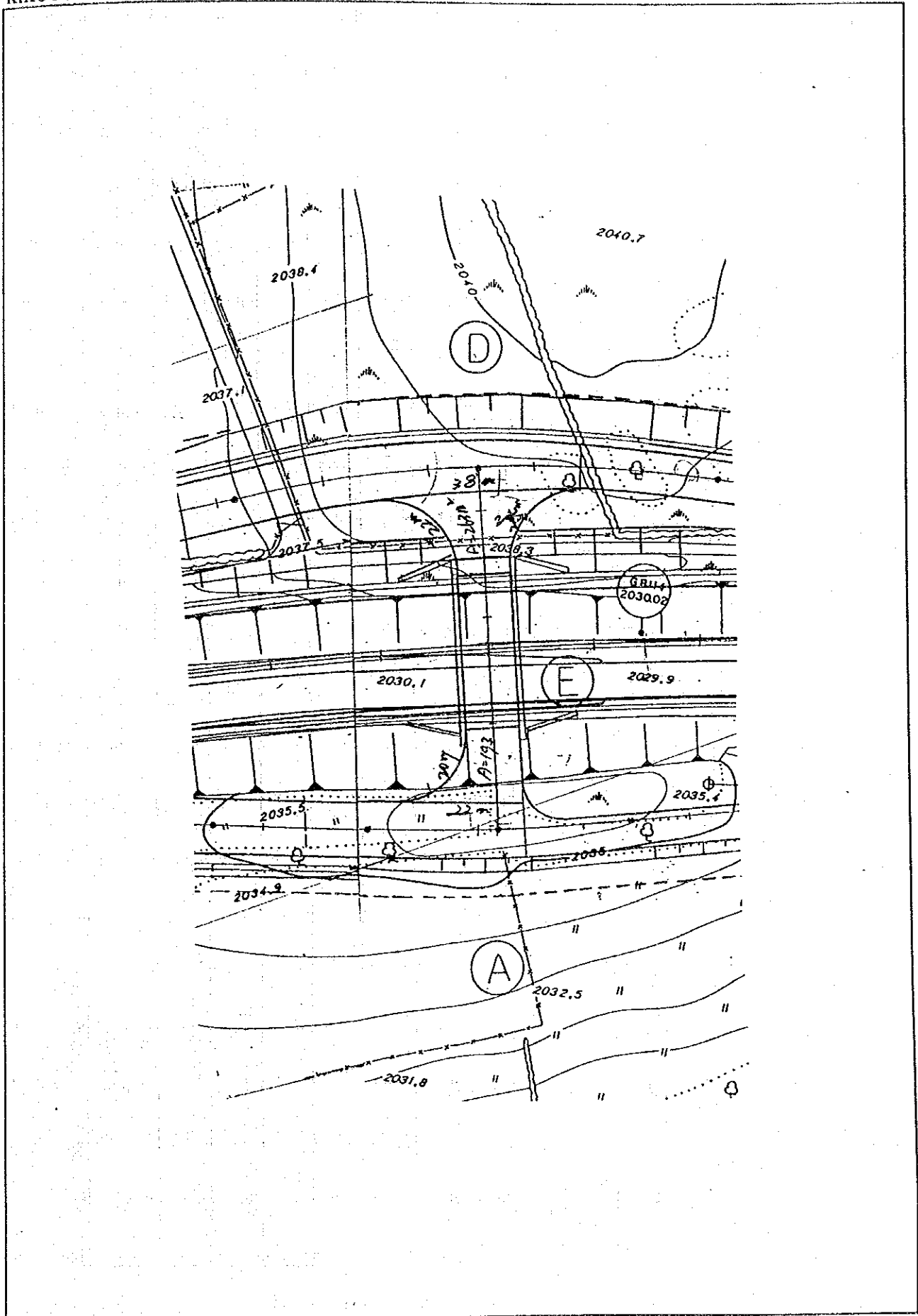
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
				193.00	
				263.00	
TOTAL				456.00	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-23 (m)				
	64.00				

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU TOWN JUNCTION E SLIP ROAD



SCHEDULE OF QUANTITIES FOR PAVEMENT

KIKUYU JUNCTION SLIP ROAD

ITEM	UNIT	SLIP ROAD				Total
		A	B	C	Acce. Deceleration	
1. ASPHALT CONCRETE WEARING COURSE	m3	74.99	17.54	81.35	51.04	224.92
2. ASPHALT CONCRETE BINDER COURSE	m3	149.98	35.08	162.70	102.09	449.85
3. LEAN CONCRETE BASE	m3	442.04	105.19	435.63	282.06	1,264.92
4. GRADED CRUSHED STONE BASE	m3					0.00
5. GRADED CRUSHED STONE SUBBASE	m3	569.05	140.79	452.42	322.15	1,484.41
6. GRADED CRUSHED STONE SHOULDER	m3	358.10	88.32	188.03	170.25	804.70
7. TACK COAT	m2	1,874.76	438.50	2,033.81	1,276.10	5,623.17
8. PRIME COAT	m2	1,874.76	438.50	2,033.81	1,276.10	5,623.17
9. FILLING	m3			244.79		244.79
10. DOUBLE SURFACE DRESSING	m2	1,008.62	249.11	541.23	490.05	2,289.01
11. SINGLE SURFACE DRESSING	m2					0.00
12. GRASSING	m2			414.90		414.90

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU JUNCTION A SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$1,874.76\text{m}^2 \times 0.040 = 74.99\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,874.76\text{m}^2 \times 0.080 = 149.98\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,874.76\text{m}^2 \times 0.200 + 370.15\text{m} \times 0.072 + 96.04\text{m} \times 0.072 + 20.0\text{m} \times 0.070 + 446.19\text{m} \times 0.072 = 442.04\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,874.76\text{m}^2 \times 0.150 + 370.15\text{m} \times 0.354 + 96.04\text{m} \times 0.320 + 20.0\text{m} \times 0.079 + 446.19\text{m} \times 0.279 = 569.05\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$370.15\text{m} \times 0.469 + 96.04\text{m} \times 0.439 + 446.19\text{m} \times 0.319 = 358.10\text{m}^3$$

7. TACK COAT

$$1,874.76\text{m}^2$$

8. PRIME COAT

$$1,874.76\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$(370.15 + 96.04)\text{m} \times 1.350 + 446.19 \times 0.850 = 1,008.62\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
KIKUYU JUNCTION A SLIP ROAD

PAVING AREA

STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
0 + 83.958		4.50			
0 + 93.958	10.00	4.75	4.63	46.25	
0 + 93.958		3.75			
0 + 103.958	10.00	4.00	3.88	38.75	
0 + 530.147	426.19	4.00	4.00	1,704.76	
0 + 540.147	10.00	3.75	3.88	38.75	
0 + 540.147		4.75			
0 + 550.147	10.00	4.50	4.63	46.25	
TOTAL				1,874.76	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-1 (m)	TYPE-2 (m)	TYPE-3 (m)	TYPE-4 (m)	
LEFT SIDE					
0 + 83.958 ~ 0 + 180.000		96.04			
0 + 180.000 ~ 0 + 550.147	370.15				
RIGHT SIDE					
0 + 83.958 ~ 0 + 93.958			10.00		
0 + 93.958 ~ 0 + 540.147				446.19	
0 + 540.147 ~ 0 + 550.147			10.00		
TOTAL	370.15	96.04	20.00	446.19	

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU JUNCTION B SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$438.50\text{m}^2 \times 0.040 = 17.54\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$438.50\text{m}^2 \times 0.080 = 35.08\text{m}^3$$

3. LEAN CONCRETE BASE

$$438.50\text{m}^2 \times 0.200 + 137.3\text{m} \times 0.072 + 31.5\text{m} \times 0.070 + 75.0\text{m} \times 0.072 = 105.19\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$438.50\text{m}^2 \times 0.150 + 137.3\text{m} \times 0.354 + 31.5\text{m} \times 0.079 + 75.0\text{m} \times 0.319 = 140.79\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$137.3\text{m} \times 0.469 + 75.0\text{m} \times 0.319 = 88.32\text{m}^3$$

7. TACK COAT

$$438.5\text{m}^2$$

8. PRIME COAT

$$438.5\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$137.3\text{m} \times 1.350 + 75.0\text{m} \times 0.850 = 249.11\text{m}^2$$

11. SINGLE SURFACE DRESSING

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
KIKUYU JUNCTION B SLIP ROAD

PAVING AREA

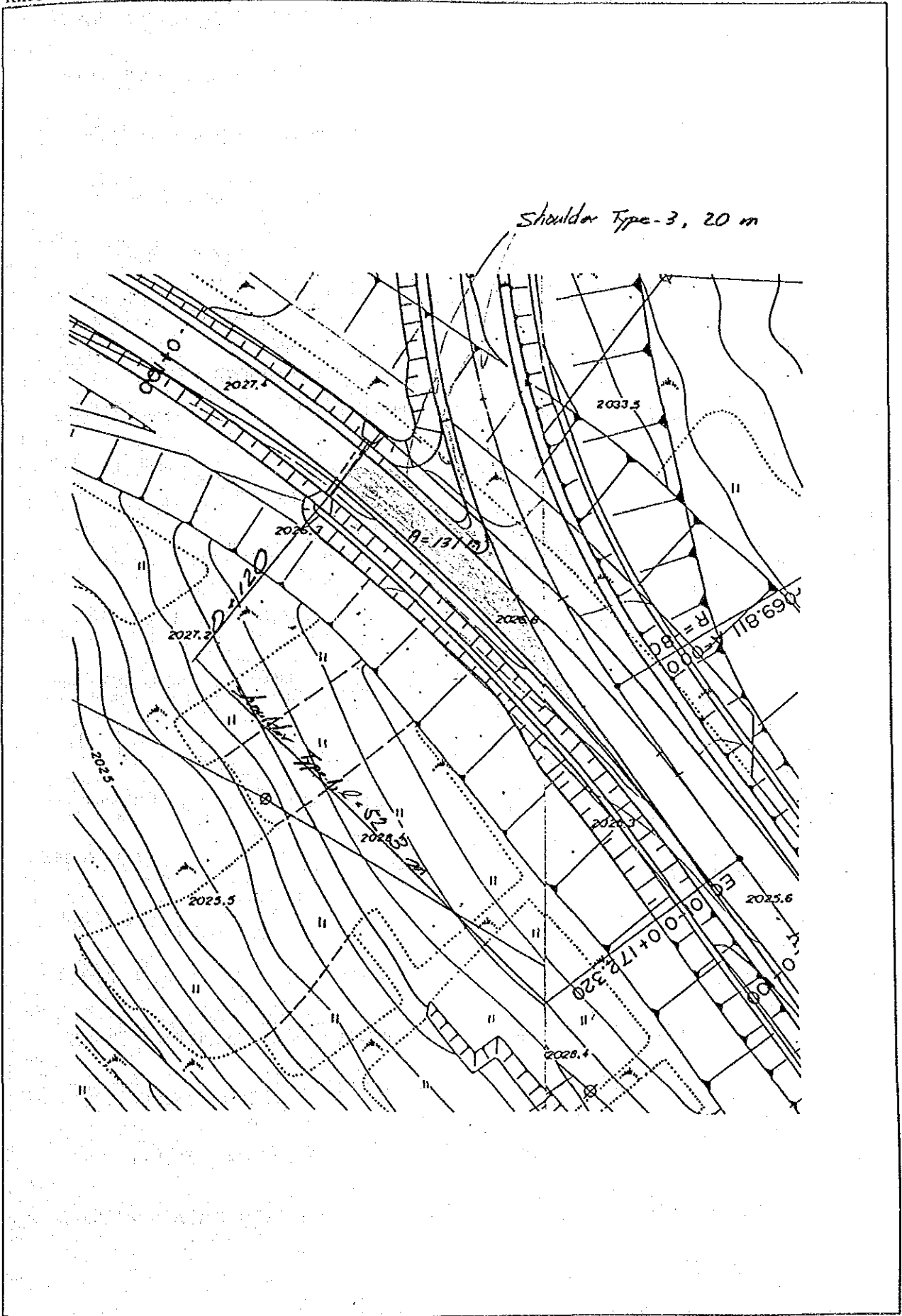
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
0 + 35.000		4.50			
0 + 45.000	10.00	4.50	4.50	45.00	
0 + 45.000		3.50			
0 + 120.000	75.00	3.50	3.50	262.50	
				131.00	
TOTAL				438.50	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-1 (m)	TYPE-2 (m)	TYPE-3 (m)	TYPE-4 (m)	
LEFT SIDE					
0 + 35.000 ~ 0 + 45.000			10.00		
0 + 45.000 ~ 0 + 120.000				75.00	
			21.50		
RIGHT SIDE					
0 + 35.000 ~ 0 + 120.000	85.00				
	52.30				
TOTAL	137.30		31.50	75.00	

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU JUNCTION B SLIP ROAD



COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU JUNCTION C SLIP ROAD

1. ASPHALT CONCRETE WEARING COURSE

$$2,033.81\text{m}^2 \times 0.040 = 81.35\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURSE

$$2,033.81\text{m}^2 \times 0.080 = 162.70\text{m}^3$$

3. LEAN CONCRETE BASE

$$2,033.81\text{m}^2 \times 0.200 + 400.9\text{m} \times 0.072 = 435.63\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$2,033.81\text{m}^2 \times 0.150 + 400.91\text{m} \times 0.354 + 120.7\text{m} \times 0.045 = 452.42\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$400.91\text{m} \times 0.469 = 188.03\text{m}^3$$

7. TACK COAT

$$2,033.81\text{m}^2$$

8. PRIME COAT

$$2,033.81\text{m}^2$$

9. FILLING

$$(309.0 + 89.8 + 16.1)\text{m}^2 \times 0.590 = 244.79\text{m}^3$$

10. DOUBLE SURFACE DRESSING

$$400.91\text{m} \times 1.350 = 541.23\text{m}^2$$

12. GRASSING

11. SINGLE SURFACE DRESSING

$$309.0 + 89.8 + 16.1 = 414.9\text{m}^2$$

COMPUTATION OF PAVING AREA AND SHOULDER LENGTH
KIKUYU JUNCTION C SLIP ROAD

PAVING AREA

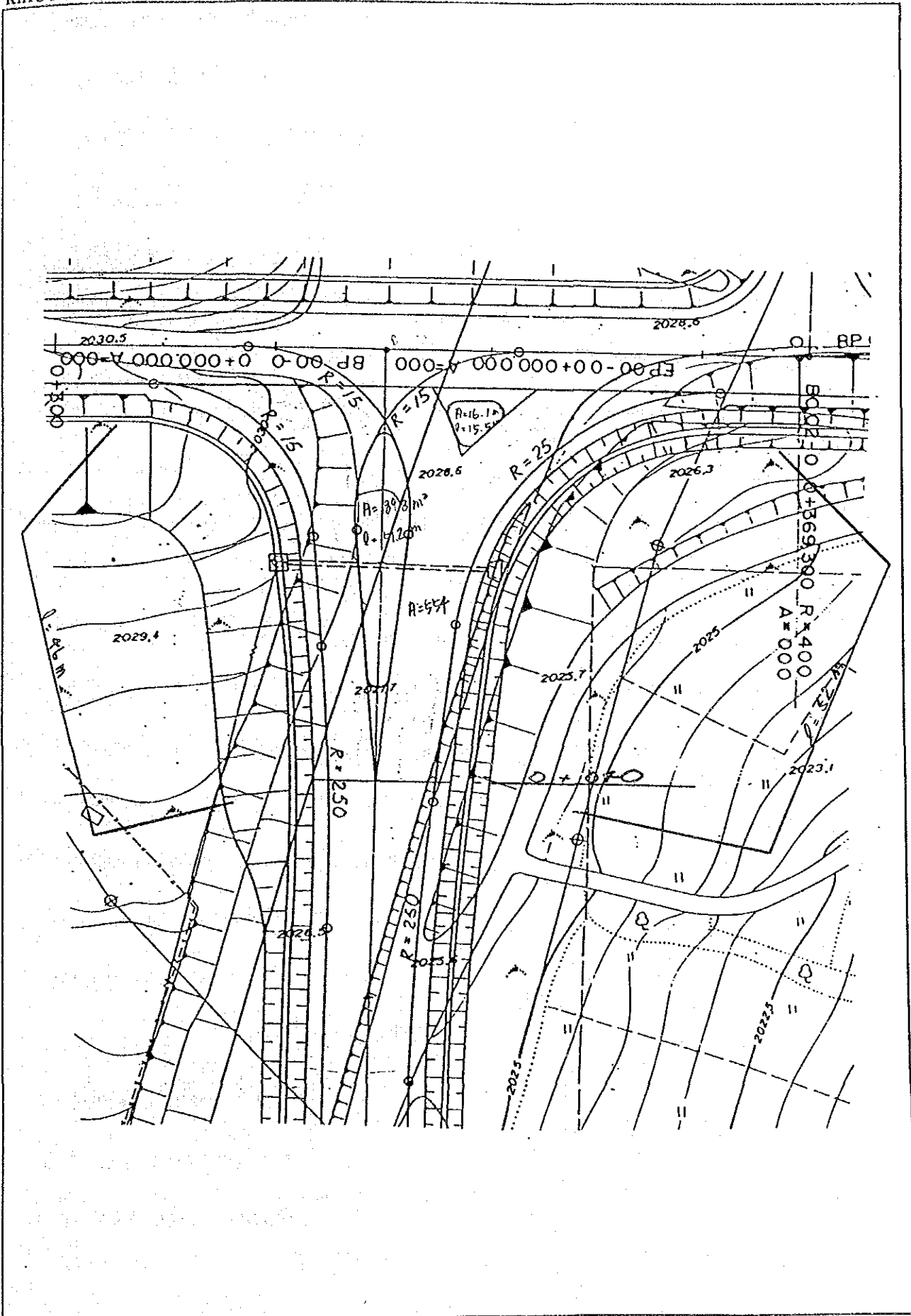
STATION	DISTANCE (m)	WIDTH (m)	AVERAGE (m)	AREA (m ²)	REMARKS
				554.00	
0 + 40.000		10.00			
0 + 60.000	20.00	8.20	9.10	182.00	
0 + 80.000	20.00	8.00	8.10	162.00	
0 + 100.000	20.00	8.40	8.20	164.00	
0 + 120.000	20.00	8.80	8.60	172.00	
0 + 140.000	20.00	11.00	9.90	198.00	
0 + 164.255	24.26	11.00	11.00	266.81	
				335.00	
TOTAL				2,033.81	

SHOULDER LENGTH

SECTION	SHOULDER				
	TYPE-1 (m)	TYPE-2 (m)	TYPE-15 (m)		
~ 0 + 40.000	98.00		66.70		
0 + 40.000 ~ 0 + 164.255	248.51				
0 + 164.255 ~	54.40		54.00		
TOTAL	400.91		120.70		

COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU JUNCTION C SLIP ROAD



COMPUTATION OF QUANTITIES FOR PAVEMENT

KIKUYU JUNCTION (ACCELERATION, DECELERATION LANE)

1. ASPHALT CONCRETE WEARING COURSE

$$1,276.1\text{m}^2 \times 0.040 = 51.04\text{m}^3$$

2. ASPHALT CONCRETE BINDER COURE

$$1,276.1\text{m}^2 \times 0.080 = 102.09\text{m}^3$$

3. LEAN CONCRETE BASE

$$1,276.1\text{m}^2 \times 0.200 + 363.0\text{m} \times 0.072 + 10\text{m} \times 0.070 = 282.06\text{m}^3$$

4. GRADED CRUSHED STONE BASE

5. GRADED CRUSHED STONE SUBBASE

$$1,276.1\text{m}^2 \times 0.150 + 363.0\text{m} \times 0.354 + 10.0\text{m} \times 0.079 + 32.0\text{m} \times 0.045 = 322.15\text{m}^3$$

6. GRADED CRUSHED STONE SHOULDER

$$363.0\text{m} \times 0.469 = 170.25\text{m}^3$$

7. TACK COAT

$$1,276.1\text{m}^2$$

8. PRIME COAT

$$1,276.1\text{m}^2$$

9. FILLING

10. DOUBLE SURFACE DRESSING

$$363.0\text{m} \times 1.350 = 490.05\text{m}^2$$

12. GRASSING

11. SINGLE SURFACE DRESSING

COMPUTATION OF QUANTITIES FOR PAVEMENT

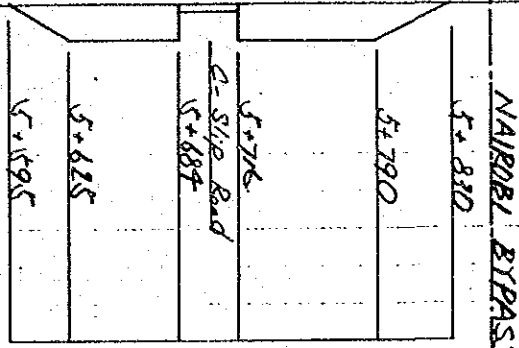
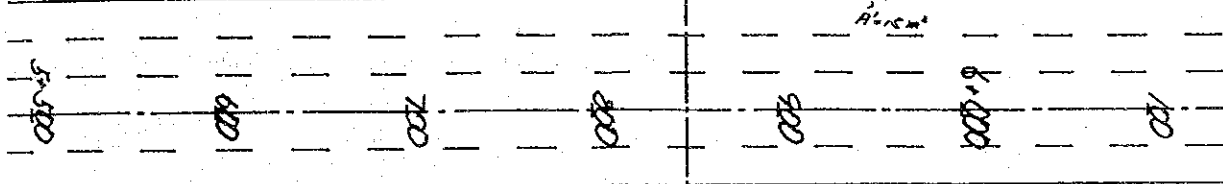
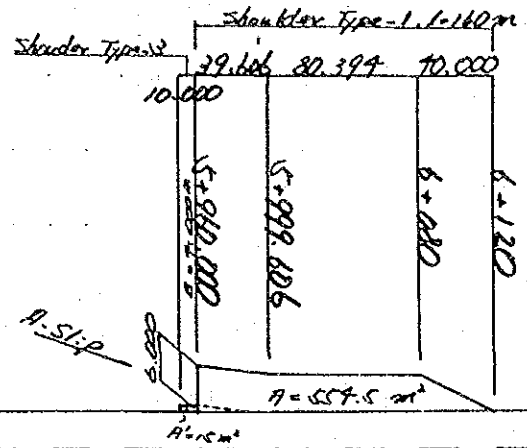
KIKUYU JUNCTION (ACCELERATION, DECELERATION LANE)

Paving Area : 1,276.1 m²

Shoulder Type-1: 363.0 m

Type-3: 10.0 m

Type-15 32.0 m



C-Slip Road

Paving Area : 721.6 m²

Shoulder Type-1 : 203.0 m

Type-3 : 32.0 m

