		· .		LOPE PROTEC	TION			
			The second secon	FILLING)		GRASSING	CUT)	
STATION	DISTANCE	LENGTH	AVERAGE	AREA	LENGTH	AVERAGE	AREA	TOTAL
	(m)	(m)	(m)	(m2)	(m)	(m)	(m2)	(m2)
(28 + 244,064)				*******************************	,			.,
0 + 083.958		0.00	0.00	0.00				
0 + 100.000	16.04	12,60	6.30	101.06	1.80	0.90	14,44	115.
0 + 120.000	20.00	12.00	12.30	246,00	1.70	1.75	35,00	281.
0 + 140.000		12,40	12.20	244.00	1.70	1.70	34,00	278
0 + 160,000	20.00	13.70	13.05	261.00	1.80	1.75	35.00	296.
0 + 180,000	20.00	13.90	13.80	276.00	1.40	1,60	32,00	308.
0 + 200,000	20.00	10.40	12.15	243.00	1.30	1.35	27.00	270.
0 + 220.000	20.00	7,40	8.90	178.00	1,40	1.35	27,00	205.
0 + 240.000		3.20	5.30	106.00	5.70	3.55	71.00	177.
0 + 260,000		2.00	2.60	52.00	11.20	8.45	169.00	221. 285.
0 + 280.000 0 + 300.000	20.00 20.00	2.00	2.00	40.00 40.00	13.30 14.00	12.25	245.00 273.00	313.
0 + 300.000 0 + 320.000	20.00	2.00	2.00	40.00	14.80	13.65 14.40	288.00	328.
0 + 340,000	20.00	2.00	2.00	40.00	14.80	14.40	296.00	336.
0 + 360.000	20.00	2.00	2.00	40.00	15.30	15.05	301.00	341.
0 + 365.819	5.82	2.00	2.00	11.64	16.30	15.80	91.94	103.
0 + 380.000	14.18	2.00	2.00	28.36	16.60	16.45	233.28	261.
0 + 400.000		2.00	2.00	40.00		16.05	321.00	361.
0 + 420.000		2.00	2.00	40.00	14.50	15.00	300.00	340.
0 + 432.486	12.49	3.90	2.95	36.83	5.60	10.05	125.48	162.
0 + 440.000		8.70	6.30	47.34	2.40	4.00	30.06	77.
0 + 460.000		12,60	10.65	213.00	2,30	2.35	47.00	260.
0 + 480.000	20.00	6.80	9.70	194,00	2.00	2.15	43.00	237.
0 + 500.000	20.00	3.00	4.90	98.00	4.90	3.45	69.00	167.
0 + 520.000	20.00	2.00	2.50	50.00	13.70	9.30	186.00	236.
0 + 524.703	4.70	4.90	3.45	16.23	8.20	10.95	51.50	67.
0 + 540.000	15.30	3,40	4.15	63.48	5.90	7.05	107.84	171.
0 + 550.147	10.15	0.00	1.70	17.25	0.00	2.95	29.93	47.
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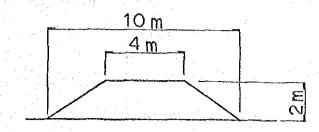
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STATI	ON	DISTANCE	LENGTH	AVERAGE	AREA	LENGTH	AVERAGE	AREA	TOTAL
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0 +	040.000	5.00	2.80	1.40	7.00	6.40	3.20	16.00	2
	060.000	20.00	2,10	2.45	49.00	4.90	5.65	113.00	16
	080.000	20.00	2.10	2.10	42.00	7.40	6,15	123.00	16
	100.000	20.00	2.10	2.10	42.00	5.20	6.30	126.00	16
	120.000	20.00	5.30		74.00	2.40		76.00	15
	140.000	20.00	0.00	2.65			3.80		
					53,00	0.00	1.20	24.00	7
	160.000	20.00	0.00	0.00	0,00	0.00	0.00	0.00	
0 +	172.320	12.32	0.00	0,00	0.00	·	0.00	0.00	
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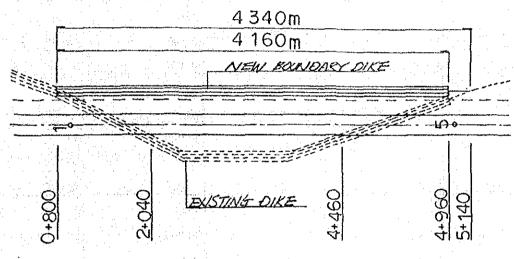
$\{i_1,\dots,i_n\}$	- 1	, · · · · · · · · · · · · · · · · · · ·			LOPE PROTEC		GRASSING (CUT)	
STATIO	N	DISTANCE	LENGTH	AVERAGE	AREA	LENGTH	AVERAGE	AREA	TOTA
		(m)	(m)	(m)	(m2)	(m)	(m)	(m2)	(m2)
0 +	016,500		0.00						
0 +	020,000	3.50	2.00	1,00	3,50	26.50	13.25	46.38	4
0 +	040.000	20,00	2.00	2.00	40.00	20.00	23.25	465.00	50
_0 +	060.000	20.00	2.00	2.00	40.00	16.60	18.30	366.00	4(
0 +	080.000	20.00	2.00	2.00	40.00	13.20	14.90	298.00	33
	100.000	20.00	1.00	1.50	30.00	6.70	9.95	199.00	22
	119.226	19.23	6.10	3.55	68.25	1.60	4.15	79.79	14
	120.000	0,77	6.80	6.45	4.99	1.90	1.75	1.35	
	140.000	20.00	10.90	8.85	177.00	0.00	0.95	19.00	19
	160.000	20.00	12.90	11.90	238.00	0.00	0.00		23
							T	0.00	
	165.205	5.21	11.20	12.05	62.72	0.00	0.00	0.00	6
	180.000	14.79	7.50	9.35	138.33	0.00	0.00	0.00	13
0 +	183,000	3,00	0.00	3.75	11.25	0.00	0.00	0.00	1
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2.7 New National Park Boundary Dike

QUANTITIES OF NEW NATINAL PARK BOUNDARY DIKE



STANDARD CROSS SECTION



LOCATION

1. SITE CLEARING

(New dike) $14m(width) \times 4160m(length) = 58,240m2$

(Existing dike) $14m(width) \times 2420m(length) = 33,880m2$

Total 92,120m2

2. REMOVAL OF BLACK COTTON SOIL

 $10m(width) \times 4160m(length) \times 0.6m(Ave.depth) = 24,960m3$

3. GRASSING

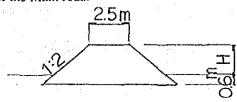
11.21m(width) x 4160m(length) = 46,633.6m2

4. FILLING

(4+10)m x 1/2 x 2m(hight) x 4160m(length)=58,240m3

STATION	DISTANCE	HIGHT OF EXISTING	SECTION (*)	VOLUME
		EMBANKMENT		
	(m)	(m)	(m2)	(m3)
0 + 700.00		1.60	12.43	
0 + 800.00		1.60	12.43	
1 + 0.00	200.00	1.00	7.12	1,424,00
1 + 100,00	100.00	1.80	14.52	1,452,00
1 + 180.00	80.00	0.60	4.38	350,40
1 + 740.00	560.00	1.60	12.43	6,960.80
1 + 880.00	140.00	1.00	7.12	996,80
1 + 960.00	80.00	1.20	8.73	698.40
2 + 40.00	80.00	1.20	8.73	698.40
2 + 60.00	20.00	1,20	8.73	174.60
2 + 580.00	520.00	1.40	10.50	5,460.00
2 + 700.00	120.00	1.20	8.73	1,047.60
2 + 860.00	160.00	1,30	9.60	1,535.20
3 + 0.00	140.00	1.00	7.12	996.80
3 + 140.00	140.00	0.80	5.67	793,80
3 + 200,00	60.00	2.00	16.77	1,006,20
3 + 660.00	460.00	1.20	8.73	4,015.80
3 + 740.00	80.00	1.20	8.73	698.40
3 + 920.00	180.00	1.00	7.12	1,281.60
4 + 160.00	240.00	0.70	5.01	1,201.20
4 + 200.00	40.00	1.40	10.50	420.00
4 + 460.00	260.00	1.30	9.60	2,494.70
4 + 500,00	40.00	1.20	8.73	349.20
4 + 560.00	60.00	1.50	11.45	686.70
4 + 660.00	100.00	0.80	5.67	567.00
4 + 760.00	100.00	1.00	7.12	712.00
4 + 800.00	40,00	1.60	12.43	497.20
4 + 960.00	160.00	1.00	7.12	1,139,20
TOTAL				37,658.00
			(**)	(19,026.8m3)

- (*) The sections were calculated useing the estimated standard section as shown.
- (**) The Volume is to be included in black cotton soil volume of the Main road.



2.8 Railway Embankment

SCHEDULE OF QUANTITIES FOR RAILWAY EMBANKMENT

ITEM		QUANTITY	REMARKS
			and and an angular property as a successful and a changing a minimum object property and an angular property of a changing an angular property and a changin
SITE CLEARIG	m2	5,349.6	IN OPEN COUNTRY
	<u> </u>		
REMOVAL OF TOPSOIL	m2	4,560.7	(456.1m3)
	<u> </u>		
FILLING	m3	6,930.4	
	<u> </u>		
GRASSING (IN FILL AREA)	m2	3,362.8	

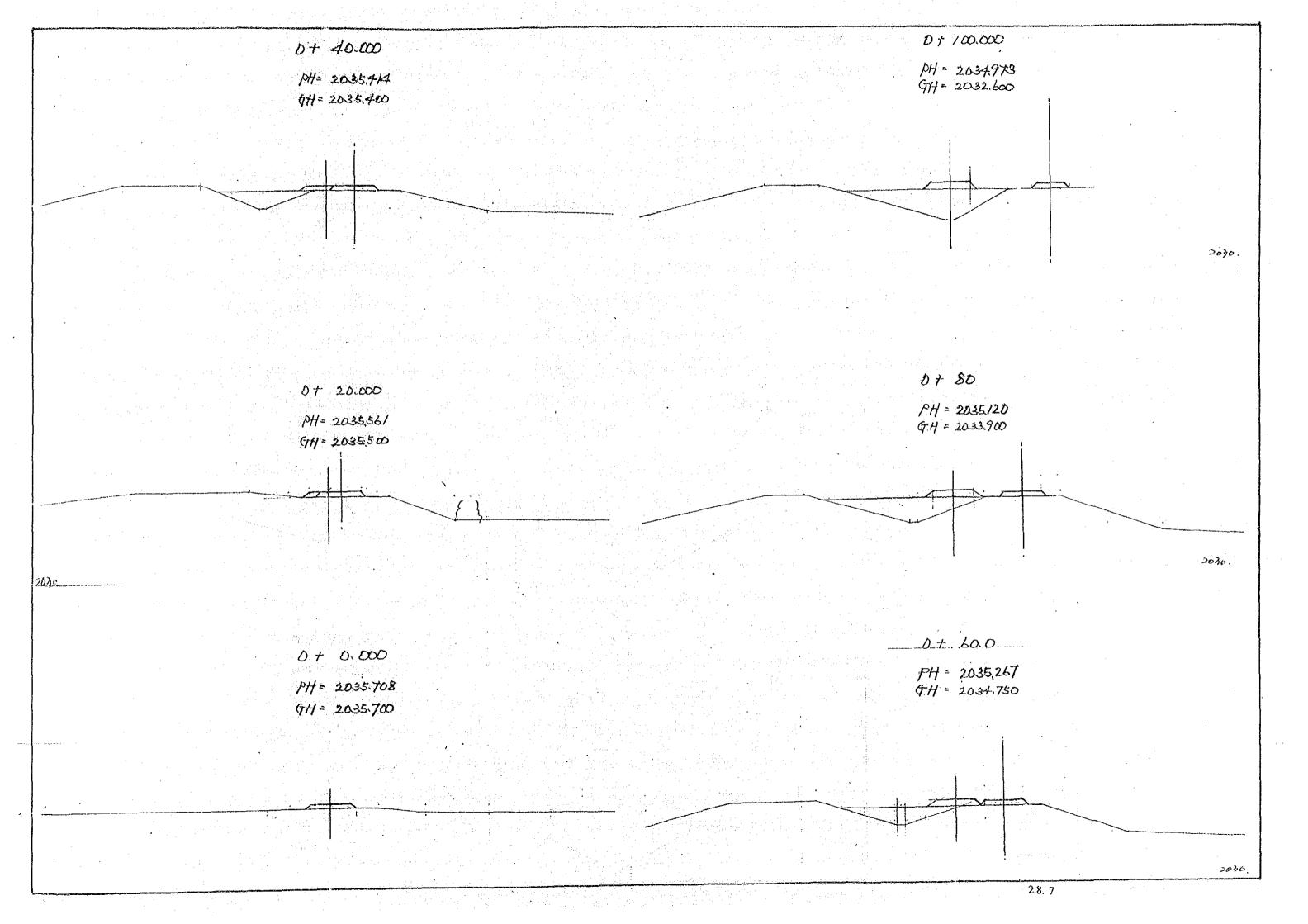
STATION	DISTANCE	LENGTH	AVERAGE	AREA
	(m)	(m2)	(m2)	(m3)
0 + 0.00				
0 + 20.00	20.0	0.0	0.0	0.0
0 + 40.00	20.0	8.0	4.0	80.0
0 + 60.00	20.0	10.0	9.0	180.0
0 + 80,00	20.0	12.5	11.3	225.
0 + 100.00	20.0	13.0	12.8	255.0
0 + 120.00	20.0	14.5	13.8	275.0
0 + 140.00	20.0	17.5	16.0	320.0
0 + 160.00	20.0	17.5	17.5	350.0
0 + 180.00	20.0	20,0	18.8	375.0
0 + 200.00	20.0	20.0	20.0	400.0
0 + 203.96	4.0	20.0	20.0	79.:
0 + 220.00	16.0	0.0	10,0	160.
0 + 240.00	20.0	0.0	0.0	0.
0 + 260.00	20.0	27.5	13.8	275.
0 + 280.00	20.0	19.5	23.5	470.
0 + 300.00	20.0	18.0	18.8	375.
0 + 320.00	20.0	16.5	17.3	345.
0 + 340,00	20.0	14.5	15.5	310.
0 + 360.00	20.0	14.5	14.5	290.
0 + 380.00	20.0	11.5	13.0	260.
0 + 400.00	20.0	10.5	11.0	220.
0 + 420.00	20.0	0.0	5.3	105.
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TOTAL				5,349

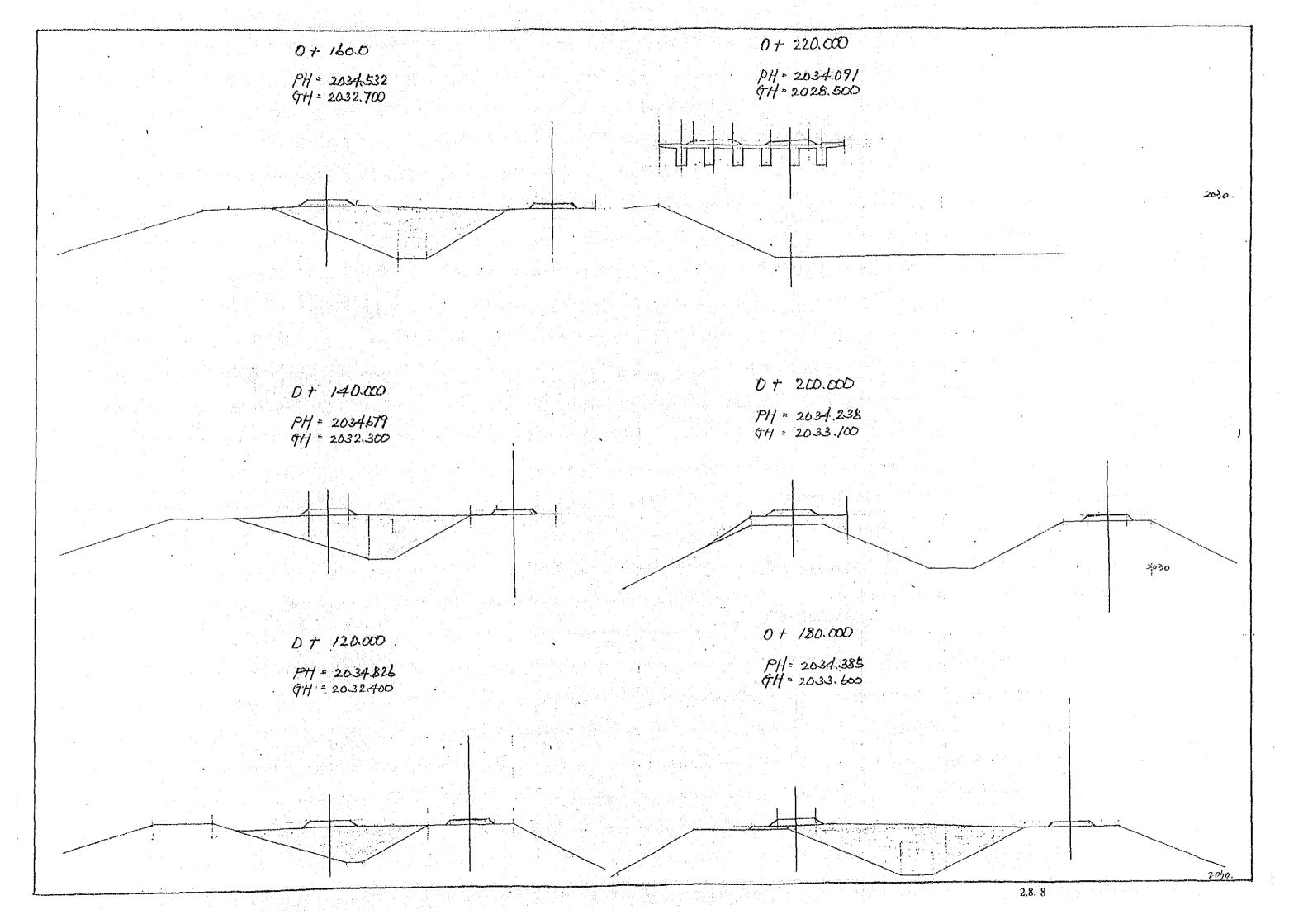
STATION	DISTANCE	LENGTH	AVERAGE	AREA
	(m)	(m2)	(m2)	(m3)
0.00				***
0 + 20.00	20.0	0.0	0.0	
0 + 40.00	20,0	6.0	3.0	
0 + 60.00	20.0	8.0	7.0	
0 + 80,00	20.0	10.5	9.3	
0 + 100.00	20.0	11.0	10.8	
0 + 120,00	20.0	12.5	11.8	
0 + 140,00	20.0	15.5	14.0	
0 + 160.00	20.0	15.5	15.5	
0 + 180.00	20.0	15.5	15.5	
0 + 200.00	20.0	15.5	15.5	
0 + 203,96	4.0	15.5	15,5	
0 + 220,00	16.0	0.0	7.8	
0 + 240.00	20.0	0.0	0.0	
0 + 260.00	20.0	25.5	12.8	
0 + 280.00	20.0	17.5	21.5	
0 + 300.00	20.0	16.0	16.8	
0 + 320.00	20.0	14.5	15.3	
0 + 340.00	20.0	12.5	13.5	
0 + 360.00	20.0	12.5	12.5	
0 + 380.00	20.0	9.5	11.0	
0 + 400.00	20.0	8.5	9.0	
0 + 420.00	20.0	0.0	4.3	
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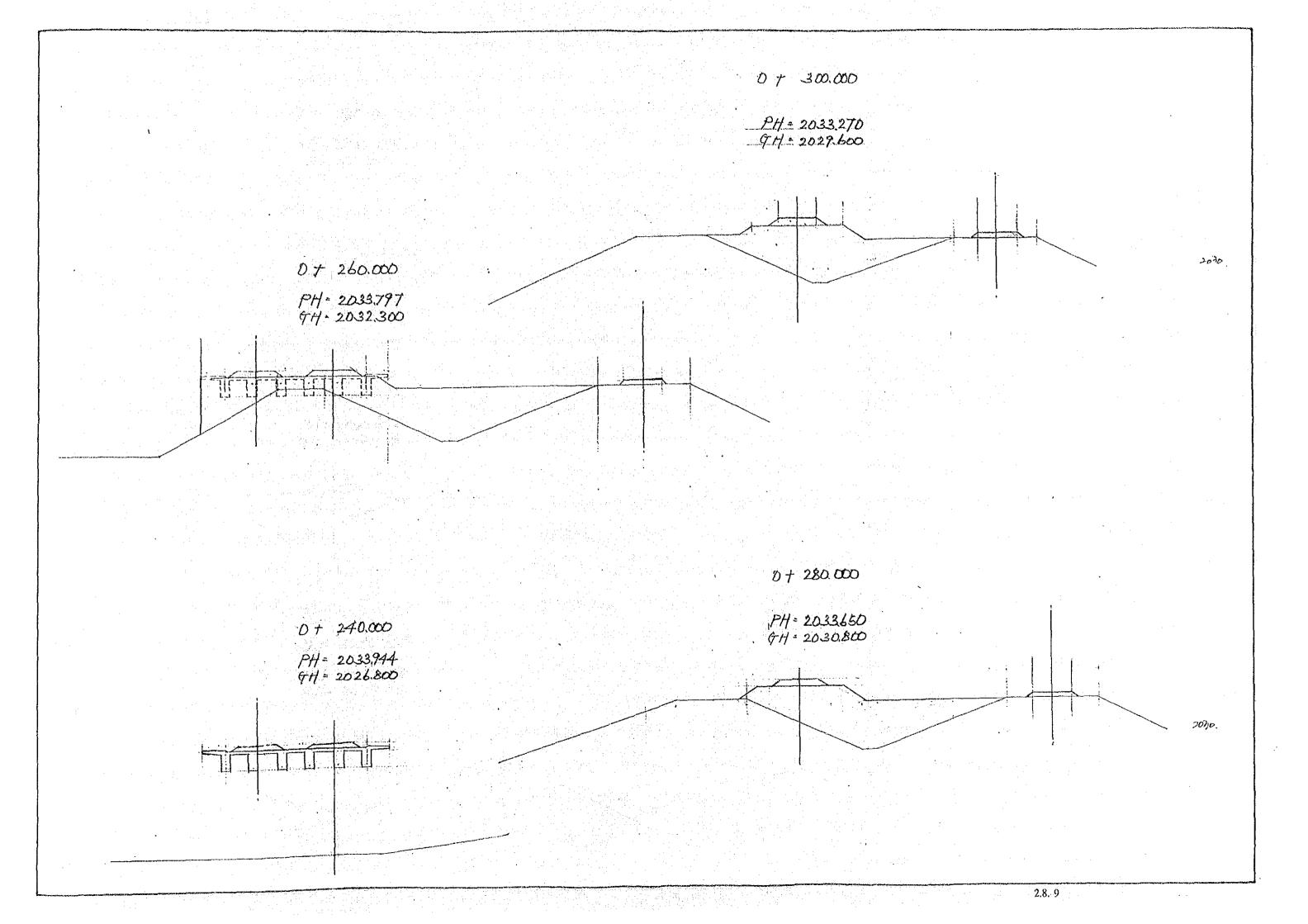
STATION	DISTANCE	SECTION	AVERAGE	VOLUME
			SECTION	
	(m)	(m2)	(m2)	(m3)
0+ 0.00				
0 + 20.00	20.0	0.0	0.0	0.
0 + 40.00	20.0	3.6	1.8	36.
0 + 60.00	20.0	4.8	4.2	84.
0 + 80.00	20.0	8.8	6.8	136.
0 + 100,00	20.0	11.3	10.1	201,
0 + 120,00	20.0	15.8	13.6	271.
0 + 140.00	20.0	24.4	20.1	402.
0 + 160,00	20.0	27.0	25.7	514.
0 + 180.00	20.0	29.5	28.3	565.
0 + 200.00	20.0	29.5	29.5	590.
0 + 203.96	4.0	29.5	29,5	116.
0 + 220.00	16.0	0.0	14.8	236.
0 + 240.00	20.0	0.0	0.0	0.
0 + 260.00	20.0	43.5	21.8	435
0 + 280.00	20.0	33.0	38.3	765
0 + 300.00	20.0	28.0	30.5	610.
0 + 320.00	20.0	26.0	27.0	540.
0 + 340.00	20.0	21.0	23.5	470.
0 + 360,00	20.0	17.9	19.5	389.
0 + 380.00	20.0	12.0	15.0	299.
0 + 400.00	20.0	7.5	9.8	195.
0 + 420.00	20.0	0.0	3.8	75.
TOTAL				6,930

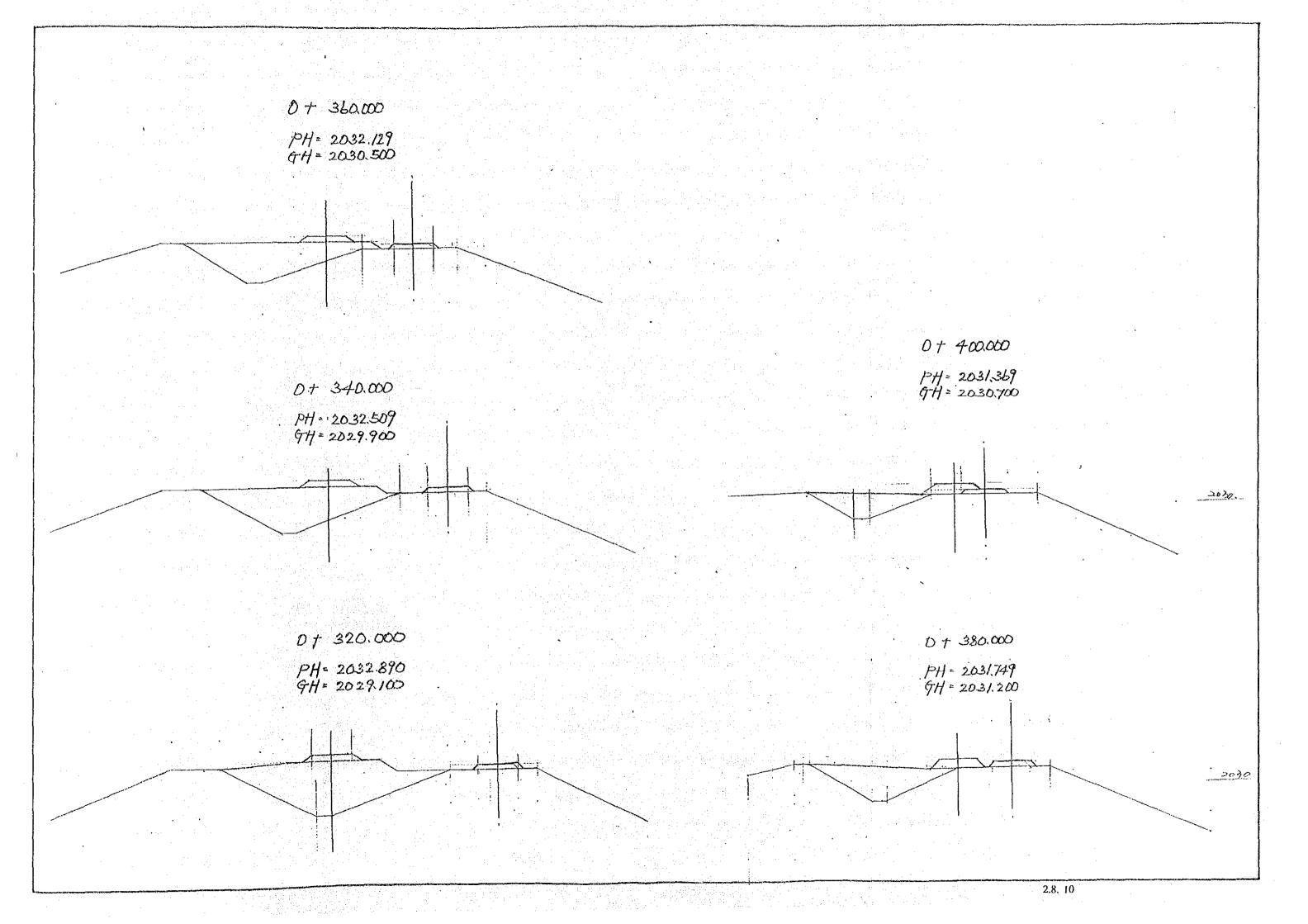
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STATION	DISTANCE	LENGTH	AVERAGE	AREA
				•
	(m)	(m2)	(m2)	(m3)
0 + 0.00				
0 + 20.00	20.0	0.0	0.0	0.0
0 + 40.00	20.0	5.0	2.5	50.0
0 + 60.00	20.0	8.0	6.5	130.0
0 + 80.00	20,0	7.0	7.5	150.0
0 + 100.00	20.0	7.0	7.0	140.0
0 + 120,00	20,0	8.0	7.5	150.0
0 + 140.00	20.0	13.0	10.5	210.0
0 + 160.00	20.0	11,5	12.3	245.0
0 + 180.00	20.0	11.5	11.5	230.0
0 + 200.00	20.0	11.5	11.5	230.0
0 + 203.96	4.0	15.5	13.5	53.5
0 + 220.00	16.0	0.0	7.8	124.3
0 + 240.00	20.0	0.0	0.0	0.0
0 + 260.00	20.0	15.0	7.5	150.0
0 + 280.00	20.0	13.0	14.0	280.0
0 + 300.00	20.0	12.0	12.5	250.0
0 + 320.00	20.0	10.0	11.0	220.0
0 + 340.00	20.0	8.0	9.0	180.0
0 + 360.00	20.0	9.0	8.5	170.0
0 + 380.00	20.0	8.0	8.5	170.0
0 + 400.00	20.0	7.5	7.8	155.0
0 + 420.00	20.0	0.0	3.8	75.0
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TOTAL				3,362.

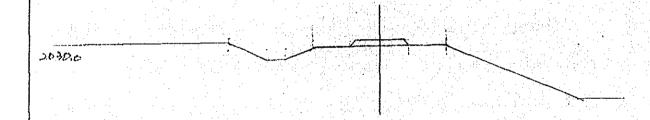






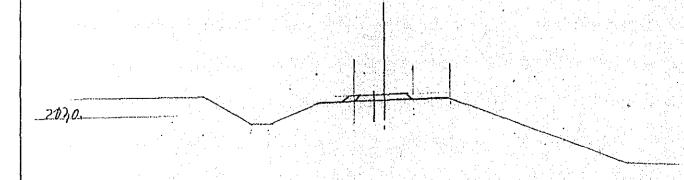


0+ 432.556 PH = 2030.750 GH = 2030.750



0+ 420,000

PH = 2030.989 GH = 2030.500



2.9 Spoil Bank Volume at Mombasa Road Junction

SCHEDULE OF SPOIL BANK VOLUMES

LOCATION	VOLUME (m3)	REMARKS
THE BANK BETWEEN A SLIP AND B SLIP ROAD	22,479.0	
THE BANK BETWEEN B SLIP AND MAIN ROAD	51,200.8	
THE BANK BETWEEN C SLIP AND D SLIP ROAD	12,849.0	:
THE BANK BETWEEN D SLIP AND MAIN ROAD	37,401.0	
THE BANK BETWEEN E SLIP AND F SLIP ROAD	4,488.0	
THE BANK BETWEEN F SLIP AND MAIN ROAD	29,333.1	
THE BANK BETWEEN G SLIP AND MAIN ROAD	8,170.8	
TOTAL	165,921.7	

THE AREA BETWEEN A SLIP AND B SLIP

STATION	DISTANCE	SECTION	AVERAGE	VOLUME
			SECTION	
	(m)	(m2)	(m2)	(m3)
0 + 120				
0 + 160	40.0	12.5	6.3	250.
0 + 200	40.0	3.9	8.2	328.
0 + 240	40.0	21.5	12.7	508.
0 + 280	20.0	16.1	18.8	376.
0 + 300	20.0	25.3	20.7	414.
0 + 320	20.0	46.5	35.9	718.
0 + 340	20.0	102.1	74.3	1,486.
0 + 360	20.0	341.0	221.6	4,431.
0 + 380	20.0	263.7	302.4	6,047.
0 + 400	20.0	160.9	212.3	4,246.
0 + 420	20.0	87.8	124.4	2,487.
0 + 440	20.0	31.0	59.4	1,188.
				
				<u></u>
TOTAL				22,479

THE AREA BETWEEN B SLIP AND MAIN ROAD

STATION	DISTANCE	SECTION	AVERAGE	VOLUME
	ĺ	<i>(</i> o .	SECTION	
(011.0.100)	(m)	(m2)	(m2)	(m3)
(CH.0+480)				
0 + 11	8.0			
19	4 AVA 1	663.7	331.9	2,654.8
39	20.0	942.5	803.1	16,062.0
59	20.0	793.4	868.0	17,359.0
	20.0	442.8	618.1	12,362.0
89	10.0	109.8	276.3	2,763.0
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TOTAL	f			51,200.

THE AREA BETWEEN C SLIP AND D SLIP

STATION	DISTANCE	SECTION	AVERAGE	VOLUME
			SECTION	,
	(m)	(m2)	(m2)	(m3)
0 + 20				· · · · · · · · · · · · · · · · · · ·
40	20.0	37.6	18.8	376,
60	20.0	280.9	159.3	3,185,0
80	20,0	37.8	159.4	3,187.
100	20.0	201.0		2,388.0
120	20.0	18.0	109.5	2,190,0
140	20.0	38.8	28.4	568.
160	20.0	19.0	28.9	578.0
180	20.0	5.5	12.3	245.
200	20.0	1.9	3.7	74.0
220	20.0	3.9	2.9	58.0
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TOTAL				12,849.

THE AREA BETWEEN D SLIP AND MAIN ROAD

STATION	DISTANCE	SECTION	AVERAGE	VOLUME
			SECTION	
	(m)	(m2)	(m2)	(m3)
(CH.0+480)				.: .:
0 + 10				
20	10.0	366.0	183.0	1,830.
40	20.0	535.7	450.9	9,017.
60	20.0	510.1	522.9	10,458
80	20.0	344.9	427.5	8,550.
100	20.0	192.0	268.5	5,369.
120	20.0	25.7	108.9	2,177.
	A Charles of the Control of the			
TOTAL				37,401

THE AREA BETWEEN E SLIP AND F SLIP

STATION	DISTANCE	SECTION	AVERAGE SECTION	VOLUME
	<u>(m)</u>	(m2)	(m2)	(m3)
0+ 20		-		
40	20.0	5.2	2.6	52.
60	20.0	4.0	4.6	92.
80	20.0	5.0	4.5	90.
100	20.0	10,4	7.7	154.
120	20.0	10.9	10.7	213.
140	20.0	14.4	12.7	253.
160	20.0	17.0	15.7	314.
180	20.0	27.3	22.2	443.
200	20.0	22.2	24.8	495.
220	20,0	37.5	29.9	597.
240	20.0	141.0	89.3	1,785.
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TOTAL				4,488

THE AREA BETWEEN F SLIP AND MAIN ROAD

STATION	DISTANCE	SECTION	AVERAGE	VOLUME
			SECTION	
	(m)	(m2)	(m2)	(m3)
(CH.0+320)				· · · · · · · · · · · · · · · · · · ·
0 + 10		0		:
30	20	406	203.0	4,060.
50	20	394.5	400.3	8,005.
70	20	349.5	372.0	7,440.
90	20	222.9	286.2	5,724.
110	20	110.3	166.6	3,332.
124	14	0	55.2	772.
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TOTAL				29,333.

THE AREA BETWEEN G SLIP AND MAIN ROAD

STATION	N	DISTANCE	SECTION	AVERAGE	VOLUME
				SECTION	
		(m)	(m2)	(m2)	(m3)
(CH.0+260)					
0 +	7				
*	12	5	275.5	137.8	688
	22	10	246.1	260.8	2,608
	32	10	170.5	208.3	2,083
	42	10	79.9	125,2	1,252
	52	10	57.1	68.5	685
	72	20	13.1		702
	92	20	2.1		152
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TOTAL					8,170

