

Attachment 2

Quantity Calculation (Closure Dike)

Volume Excavation and Embankment of Clouser Dike

No.	No. Station	Distance		Area			Quantity					
		Estapet	Acc.	Exc.	Emb.	Backfill	Exc.	Acc. Excavation	Emb.	Acc. Embankment	Backfill	Acc. Backfill
1	0+000	0	0	5.05			0.00	0.00	0.00	0.00	0.00	0.00
2	0+025	25	25		61.78		63.13	63.13	772.21	772.21	0.00	0.00
3	0+050	25	50		123.15		0.00	63.13	2311.53	3083.74	0.00	0.00
4	0+075	25	75		167.24		0.00	63.13	3629.75	6713.49	0.00	0.00
5	0+100	25	100		210.67		0.00	63.13	4723.81	11437.30	0.00	0.00
6	0+125	25	125		232.87		0.00	63.13	5544.25	16981.55	0.00	0.00
7	0+150	25	150		232.87		0.00	63.13	5821.75	22803.30	0.00	0.00
8	0+175	25	175		232.87		0.00	63.13	5821.75	28625.05	0.00	0.00
9	0+200	25	200		232.87		0.00	63.13	5821.75	34446.80	0.00	0.00
10	0+225	25	225		232.87		0.00	63.13	5821.75	40268.55	0.00	0.00
11	0+250	25	250		232.87		0.00	63.13	5821.75	46090.30	0.00	0.00
12	0+275	25	275		223.19		0.00	63.13	5700.73	51791.03	0.00	0.00
13	0+300	25	300		192.70		0.00	63.13	5198.64	56989.66	0.00	0.00
14	0+325	25	325		182.34		0.00	63.13	4687.98	61677.64	0.00	0.00
15	0+350	25	350		182.07		0.00	63.13	4555.06	66232.70	0.00	0.00
16	0+375	25	375		190.92		0.00	63.13	4662.36	70895.06	0.00	0.00
17	0+400	25	400		205.55		0.00	63.13	4955.83	75850.89	0.00	0.00
18	0+425	25	425		220.91		0.00	63.13	5330.76	81181.65	0.00	0.00
19	0+450	25	450		232.87		0.00	63.13	5672.30	86853.95	0.00	0.00
20	0+475	25	475		232.87		0.00	63.13	5821.75	92675.70	0.00	0.00
21	0+500	25	500		232.87		0.00	63.13	5821.75	98497.45	0.00	0.00
22	0+525	25	525		232.87		0.00	63.13	5821.75	104319.20	0.00	0.00
23	0+550	25	550		232.87		0.00	63.13	5821.75	110140.95	0.00	0.00
24	0+575	25	575		181.12		0.00	63.13	5174.88	115315.83	0.00	0.00
25	0+600	25	600		96.81		0.00	63.13	3474.16	118789.99	0.00	0.00
26	0+625	25	625		38.51		0.00	63.13	1691.51	120481.50	0.00	0.00
27	0+650	25	650		2.80		0.00	63.13	516.35	120997.85	0.00	0.00
28	0+675	25	675	7.49			93.63	156.75	35.00	121032.85	0.00	0.00
29	0+700	25	700	7.49			187.25	344.00	0.00	121032.85	0.00	0.00
30	0+725	25	725	7.49			187.25	531.25	0.00	121032.85	0.00	0.00
31	0+750	25	750	7.49			187.25	718.50	0.00	121032.85	0.00	0.00
32	0+775	25	775	4.76			153.16	871.66	0.00	121032.85	0.00	0.00
33	0+800	25	800		0.50		59.54	931.20	6.28	121039.13	0.00	0.00
34	0+825	25	825		3.27		0.00	931.20	47.15	121086.28	0.00	0.00
35	0+850	25	850		10.47		0.00	931.20	171.71	121257.99	0.00	0.00
36	0+875	25	875		18.07		0.00	931.20	356.71	121614.70	0.00	0.00
37	0+900	25	900		18.70		0.00	931.20	459.56	122074.26	0.00	0.00
38	0+925	25	925		21.66		0.00	931.20	504.39	122578.65	0.00	0.00
39	0+950	25	950		28.67		0.00	931.20	629.03	123207.68	0.00	0.00
40	0+975	25	975		38.83		0.00	931.20	843.65	124051.33	0.00	0.00
41	1+000	25	1000		38.87		0.00	931.20	971.20	125022.53	0.00	0.00
42	1+025	25	1025		38.87		0.00	931.20	971.75	125994.28	0.00	0.00
43	1+050	25	1050		39.14		0.00	931.20	975.06	126969.34	0.00	0.00
44	1+075	25	1075		48.85		0.00	931.20	1099.78	128069.11	0.00	0.00
45	1+100	25	1100		57.72		0.00	931.20	1332.11	129401.23	0.00	0.00
46	1+125	25	1125		75.61		0.00	931.20	1666.66	131067.89	0.00	0.00
47	1+150	25	1150		108.26		0.00	931.20	2298.40	133366.29	0.00	0.00
48	1+175	25	1175		86.42		0.00	931.20	2433.54	135799.83	0.00	0.00
49	1+200	25	1200		79.36		0.00	931.20	2072.33	137872.15	0.00	0.00
50	1+225	25	1225		70.25		0.00	931.20	1870.20	139742.35	0.00	0.00

No.	No. Station	Distance		Area			Quantity					
		Estapet	Acc.	Exc.	Emb.	Backfill	Exc.	Acc. Excavation	Emb.	Acc. Embankment	Backfill	Acc. Backfill
51	1+250	25	1250		65.77		0.00	931.20	1700.24	141442.59	0.00	0.00
52	1+275	25	1275		91.25		0.00	931.20	1962.66	143405.25	0.00	0.00
53	1+300	25	1300		143.74		0.00	931.20	2937.34	146342.59	0.00	0.00
54	1+325	25	1325		228.43		0.00	931.20	4652.09	150994.68	0.00	0.00
55	1+350	25	1350		115.94		0.00	931.20	4304.51	155299.19	0.00	0.00
56	1+ 375	25	1375		70.11		0.00	931.20	2325.60	157624.79	0.00	0.00
57	1+ 400	25	1400	104.57		22.99	1307.08	2238.28	876.41	158501.20	287.40	287.40
58	1+ 425	25	1425	140.93		22.99	3068.65	5306.93	0.00	158501.20	574.80	862.20
59	1+ 450	25	1450	146.41		22.99	3591.70	8898.63	0.00	158501.20	574.80	1437.00
60	1+ 475	25	1475	113.82		22.99	3252.88	12151.50	0.00	158501.20	574.80	2011.80
61	1+ 500	25	1500	86.36		22.99	2502.29	14653.79	0.00	158501.20	574.80	2586.60
62	1+ 525	25	1525	79.88		22.99	2078.08	16731.86	0.00	158501.20	574.80	3161.40
63	1+ 550	25	1550	87.97		22.99	2098.13	18829.99	0.00	158501.20	574.80	3736.20
64	1+ 575	25	1575	103.85		22.99	2397.73	21227.71	0.00	158501.20	574.80	4311.00
65	1+ 600	25	1600	104.80		22.99	2608.18	23835.89	0.00	158501.20	574.80	4885.80
66	1+ 625	25	1625	106.68		22.99	2643.48	26479.36	0.00	158501.20	574.80	5460.60
67	1+ 650	25	1650	119.08		22.99	2821.93	29301.29	0.00	158501.20	574.80	6035.40
68	1+ 675	25	1675	134.54		22.99	3170.24	32471.53	0.00	158501.20	574.80	6610.20
69	1+ 700	25	1700		31.76		1681.75	34153.28	396.95	158898.15	287.40	6897.60
70	1+ 725	25	1725		42.63		0.00	34153.28	929.78	159827.93	0.00	6897.60
71	1+ 750	25	1750				0.00	34153.28	532.83	160360.75	0.00	6897.60
72	1+ 775	25	1775		66.08		0.00	34153.28	825.98	161186.73	0.00	6897.60
73	1+ 800	25	1800		103.66		0.00	34153.28	2121.76	163308.49	0.00	6897.60
74	1+ 825	25	1825		101.72		0.00	34153.28	2567.23	165875.71	0.00	6897.60
75	1+ 850	25	1850		66.80		0.00	34153.28	2106.38	167982.09	0.00	6897.60
76	1+ 875	25	1875		33.73		0.00	34153.28	1256.60	169238.69	0.00	6897.60
77	1+ 900	25	1900		10.49		0.00	34153.28	552.78	169791.46	0.00	6897.60
78	1+ 925	25	1925	6.26			78.30	34231.58	131.11	169922.58	0.00	6897.60
79	1+ 950	25	1950	16.50			284.55	34516.13	0.00	169922.58	0.00	6897.60
80	1+ 975	25	1975	19.89			454.88	34971.00	0.00	169922.58	0.00	6897.60
81	1+ 1000	25	2000	19.89			497.25	35468.25	0.00	169922.58	0.00	6897.60
82	1+ 1025	25	2025	19.89			497.25	35965.50	0.00	169922.58	0.00	6897.60
83	1+ 1050	25	2050	5.29			314.74	36280.24	0.00	169922.58	0.00	6897.60
84	1+ 1075	25	2075	4.31			120.03	36400.26	0.00	169922.58	0.00	6897.60
85	1+ 1100	25	2100	5.90			127.60	36527.86	0.00	169922.58	0.00	6897.60
86	1+ 1125	25	2125	5.33			140.31	36668.18	0.00	169922.58	0.00	6897.60
87	1+ 1150	25	2150	4.50			122.85	36791.03	0.00	169922.58	0.00	6897.60
Total		2150					36,791.03		169,922.58		6,897.60	

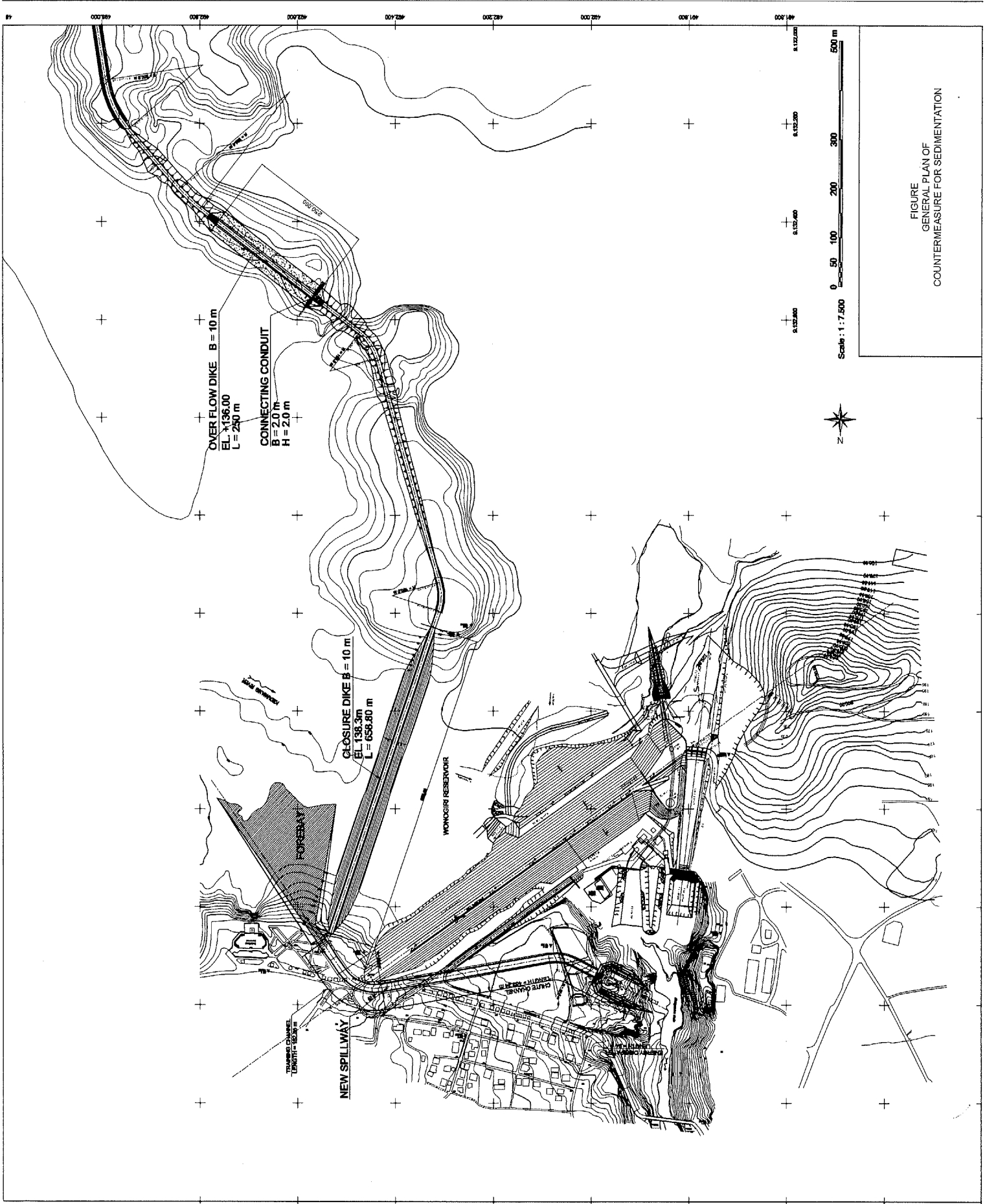
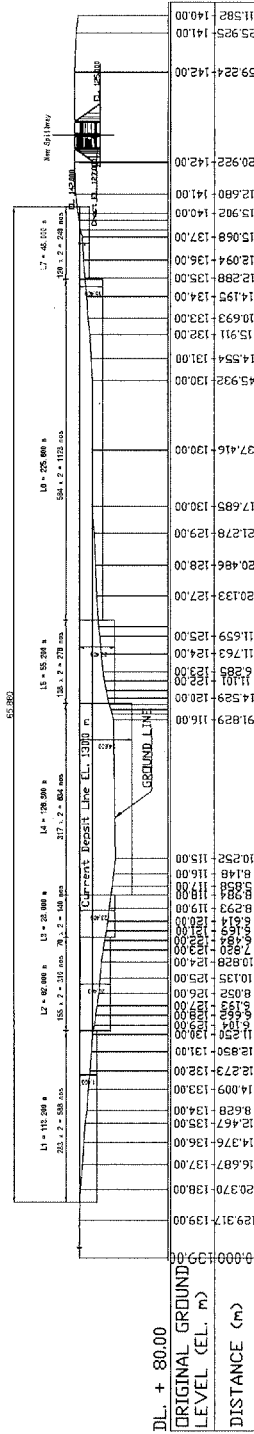
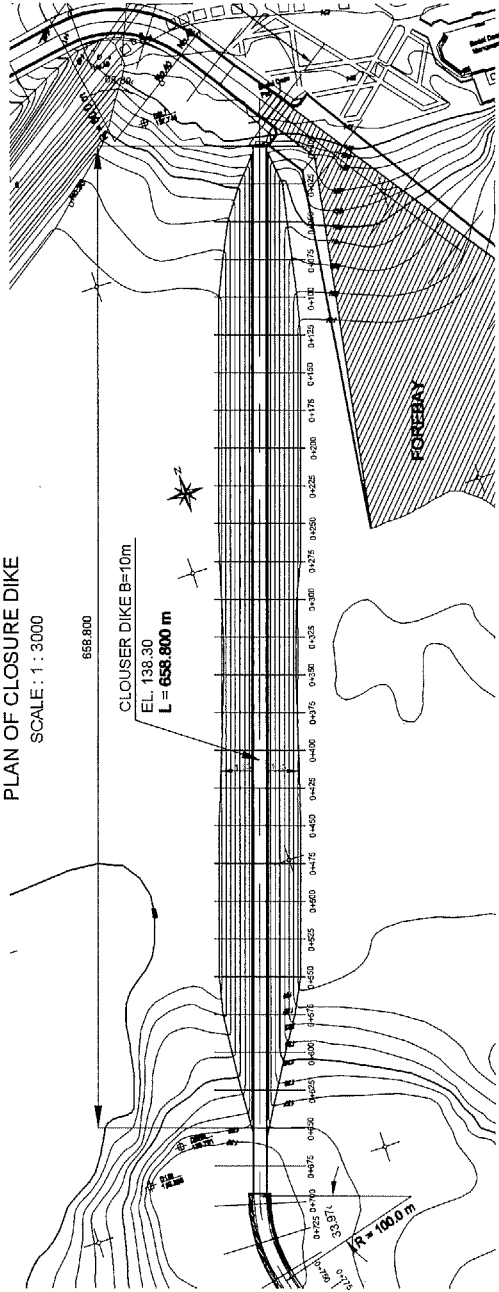
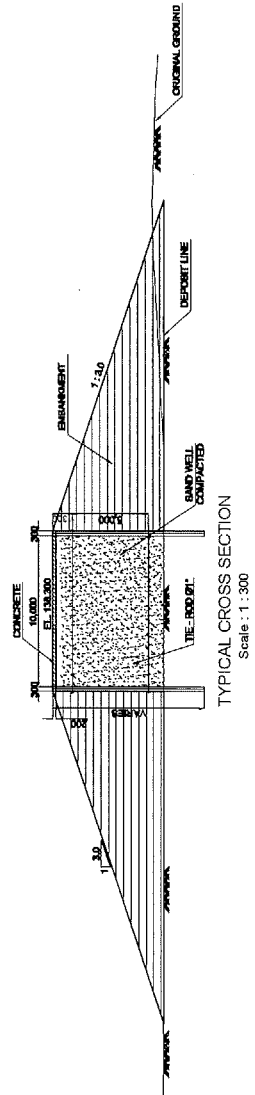


FIGURE
 GENERAL PLAN OF
 COUNTERMEASURE FOR SEDIMENTATION

PLAN OF CLOSURE DIKE
SCALE: 1:3000



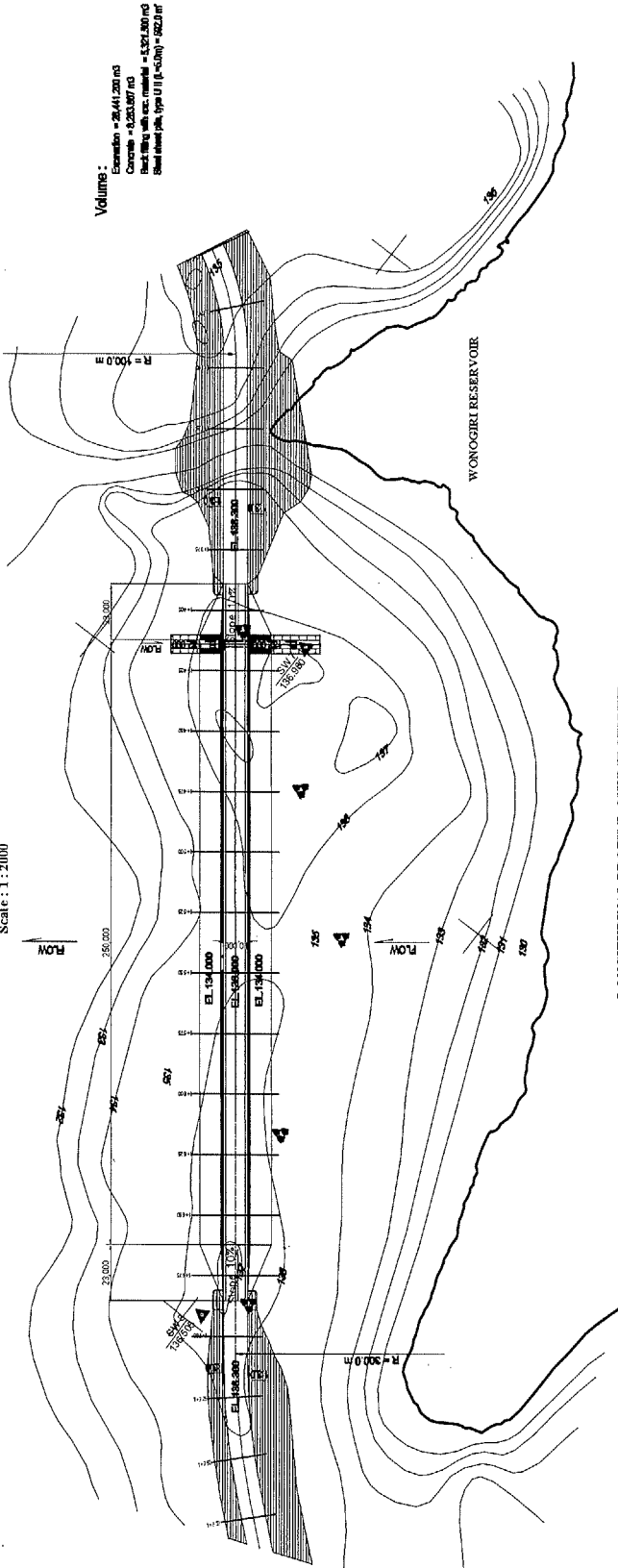
LONGITUDINAL PROFILE OF CLOSURE DIKE
Scale: 1:2500



TYPICAL CROSS SECTION
Scale: 1:3000

FIGURE
CLOSURE DIKE

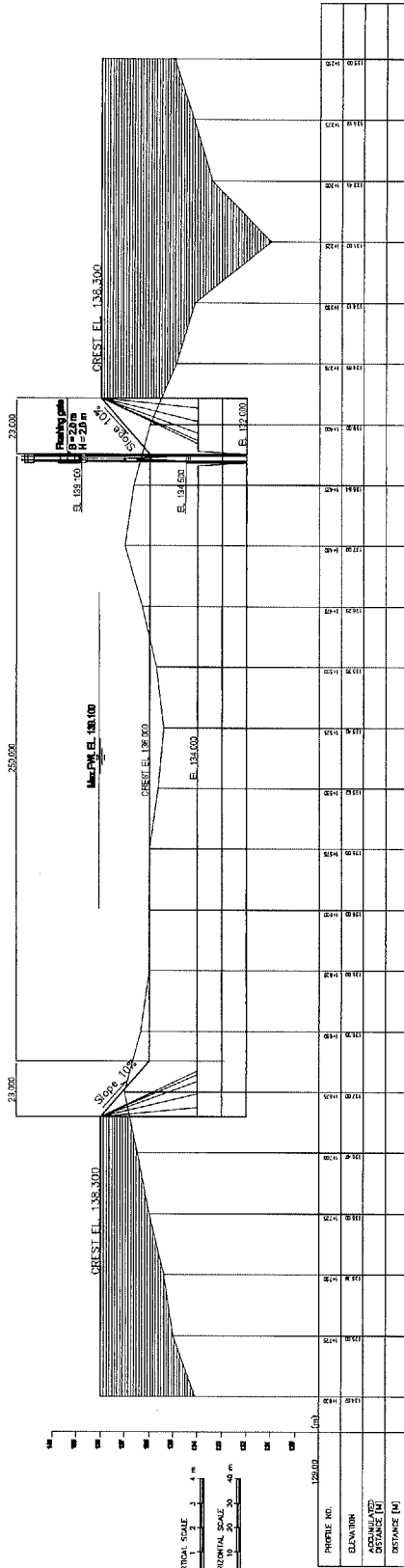
PLAN OF OVERFLOW DIKE
Scale: 1:2000

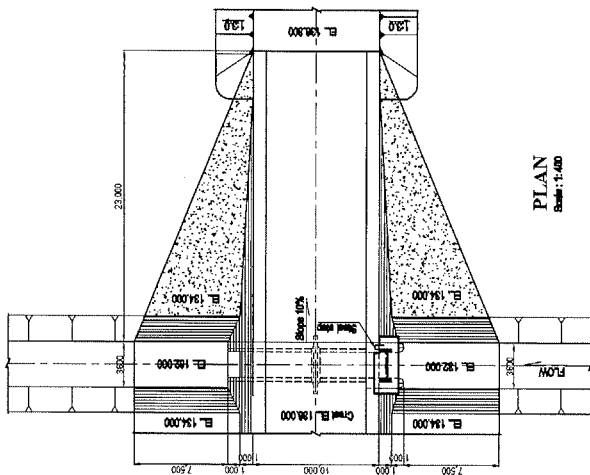


Volume:

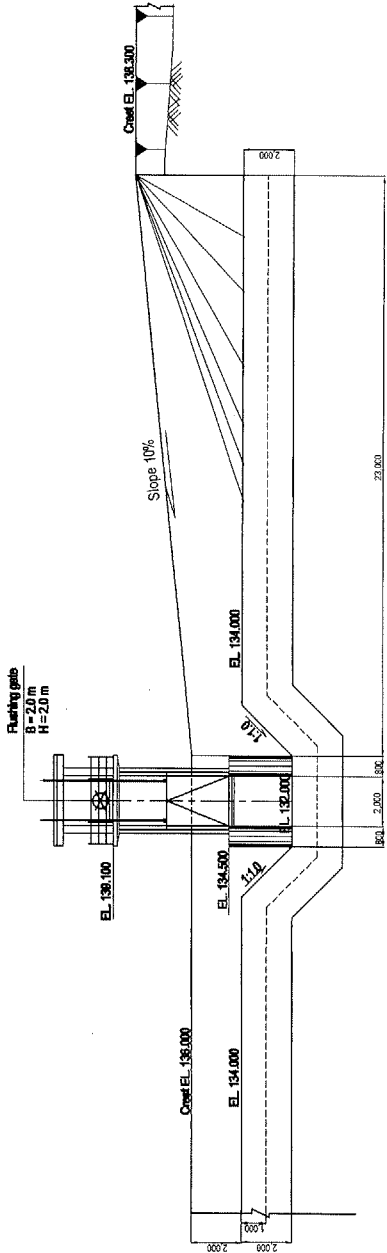
Excavation = 28,441.200 m³
Concrete = 8,233.897 m³
Back fill with exc. material = 1,521.800 m³
Steel sheet pile, type U (L=4.0m) = 862.0 m

LONGITUDINAL PROFILE OVERFLOW DIKE

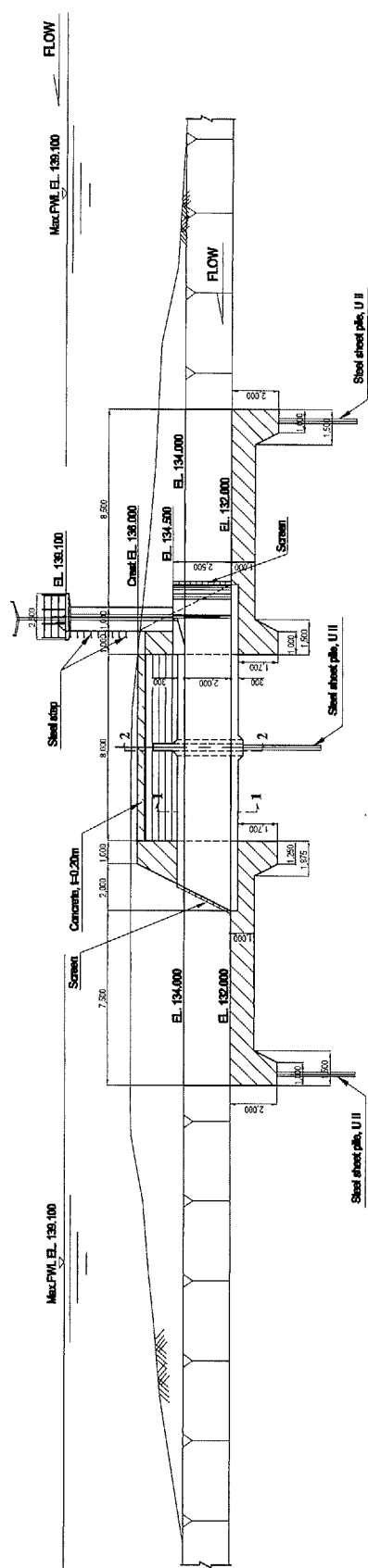




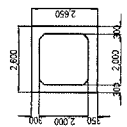
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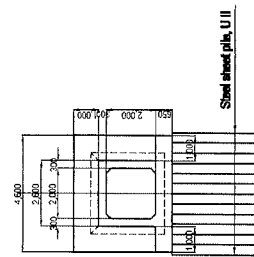
SECTION A-A
Scale: 1:200



SIDE VIEW OF FLUSHING GATE
Scale: 1:200



SECTION 1-1
Scale: 1:200



SECTION 2-2
Scale: 1:200

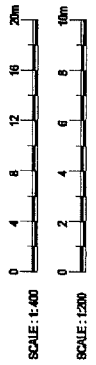
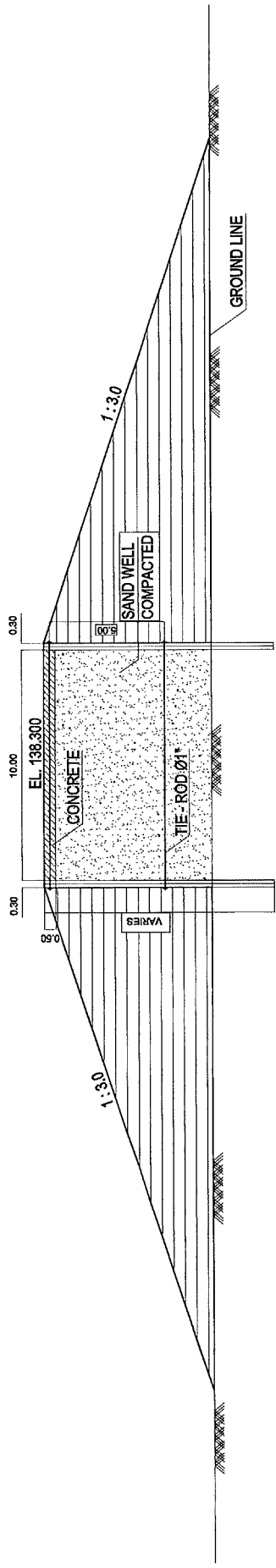
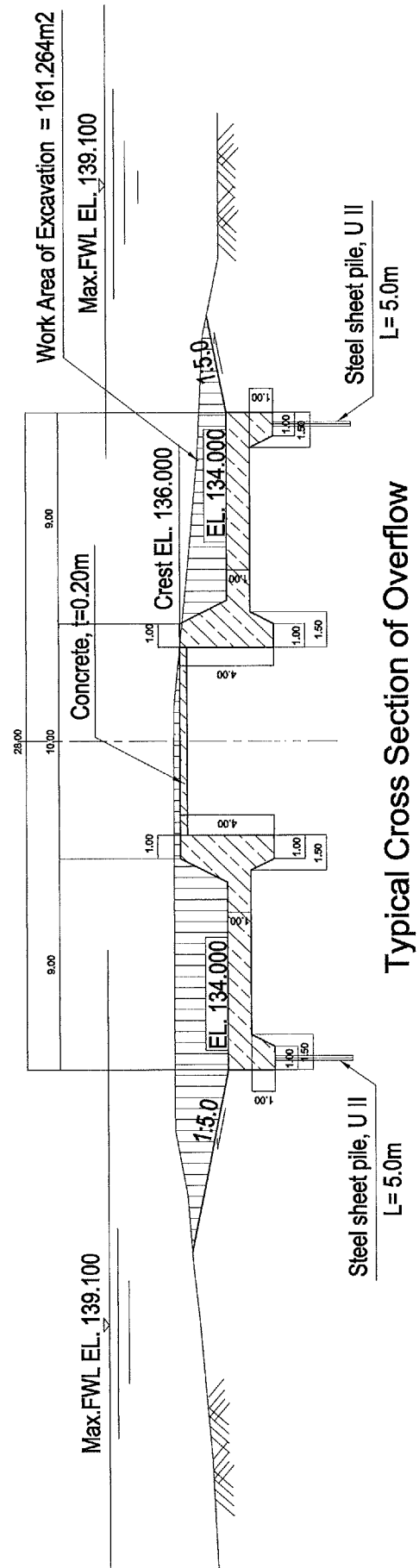


FIGURE
CONNECTING CONDUIT



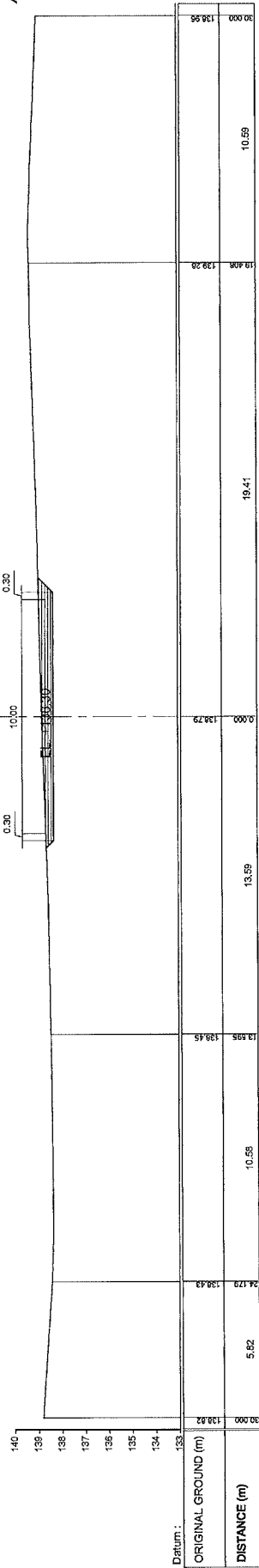
Typical Cross Section of Clouser Dike



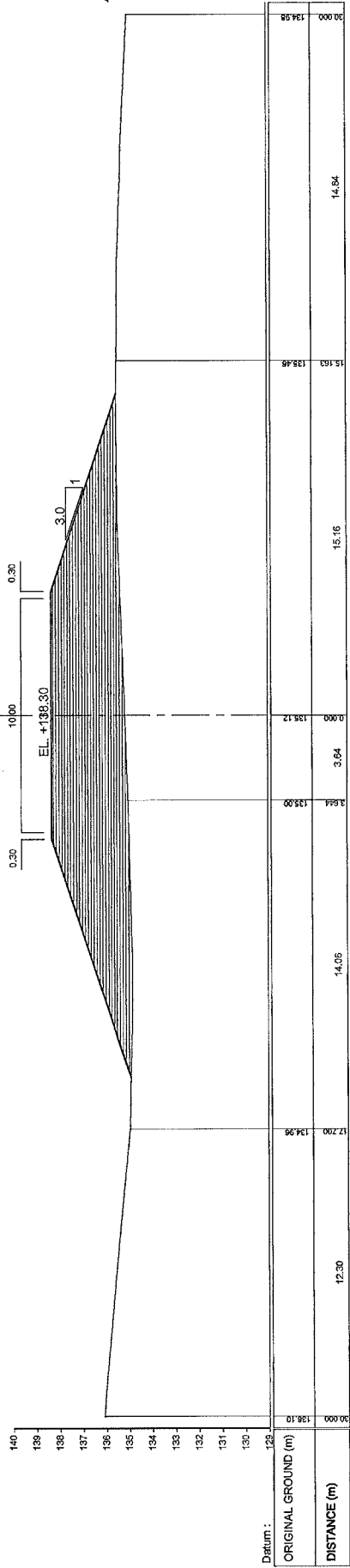
Typical Cross Section of Overflow



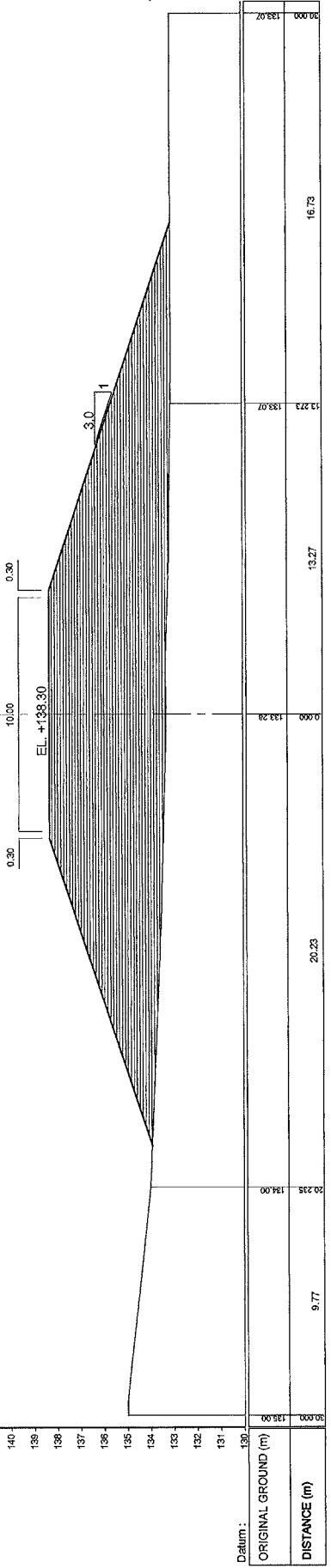
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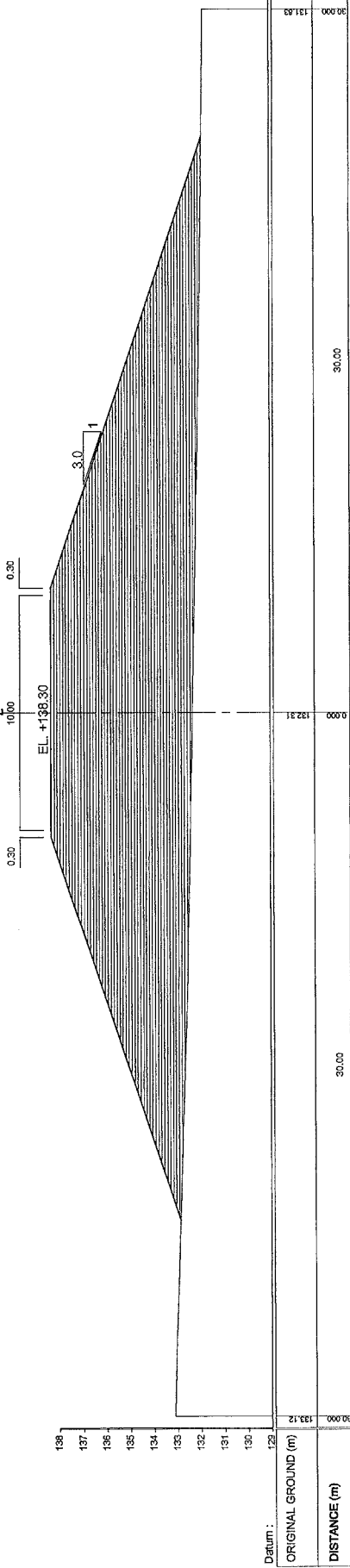


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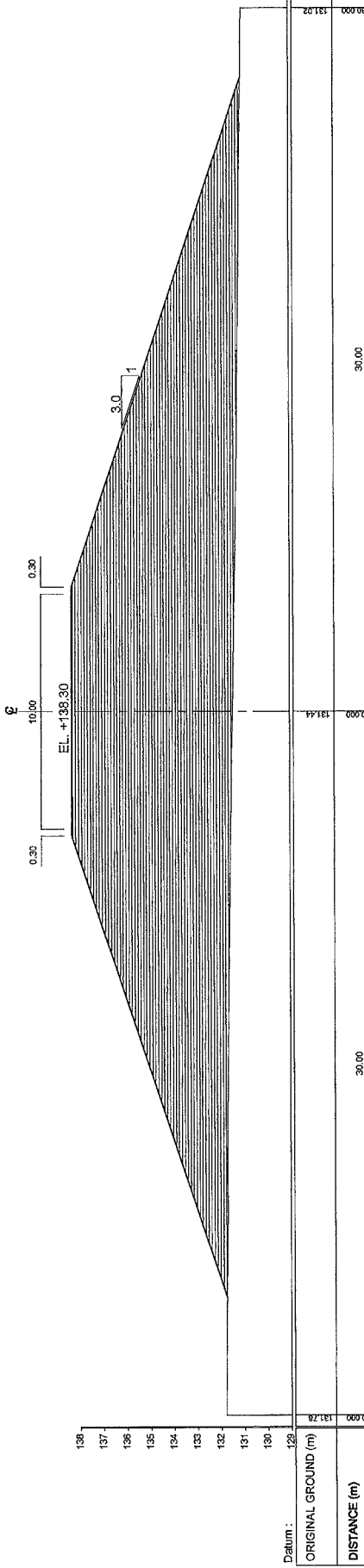


CROSS SECTION OF CLOUSER DIKE

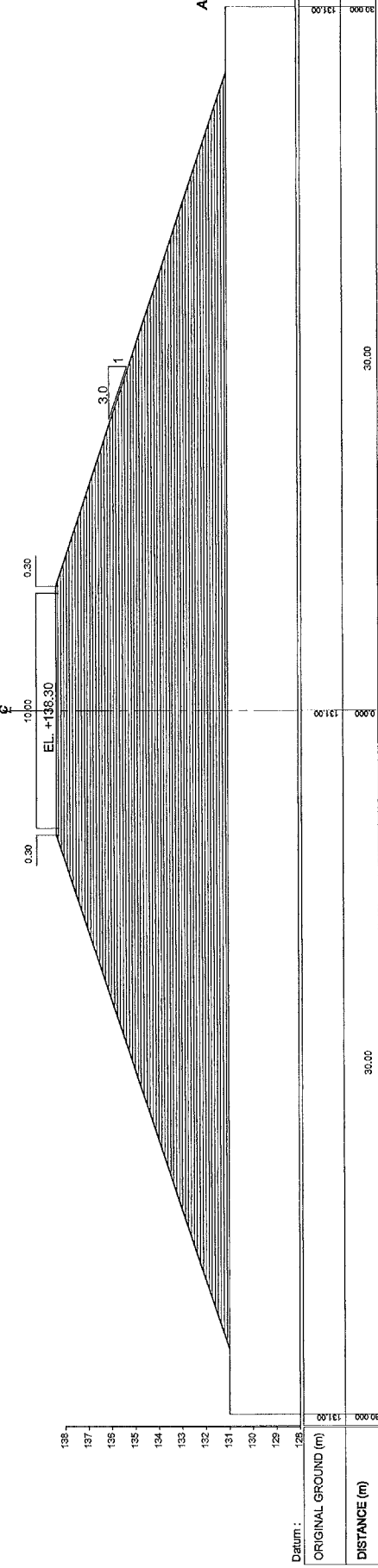
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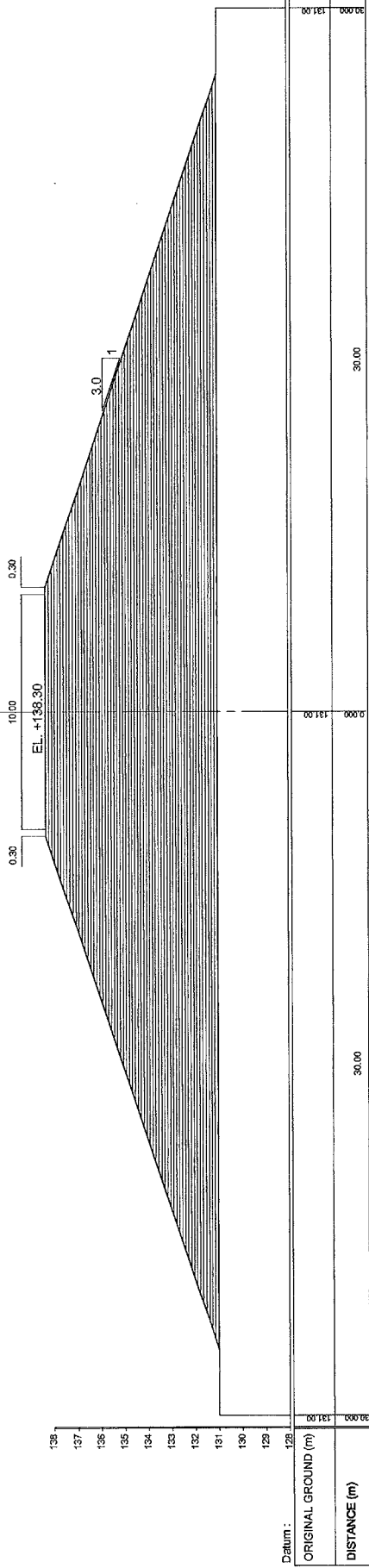


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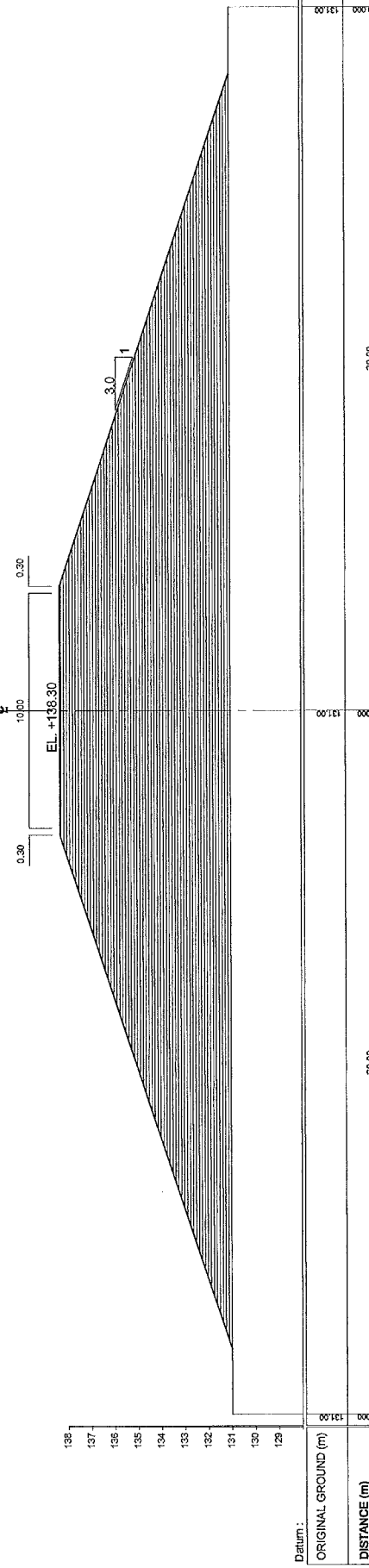


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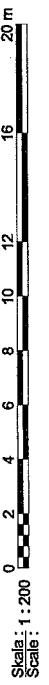
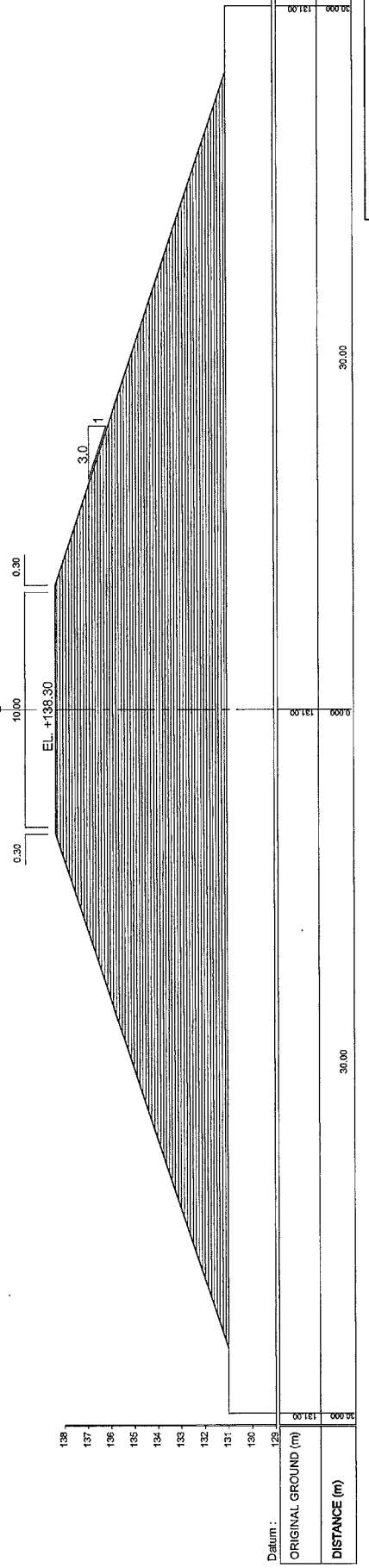
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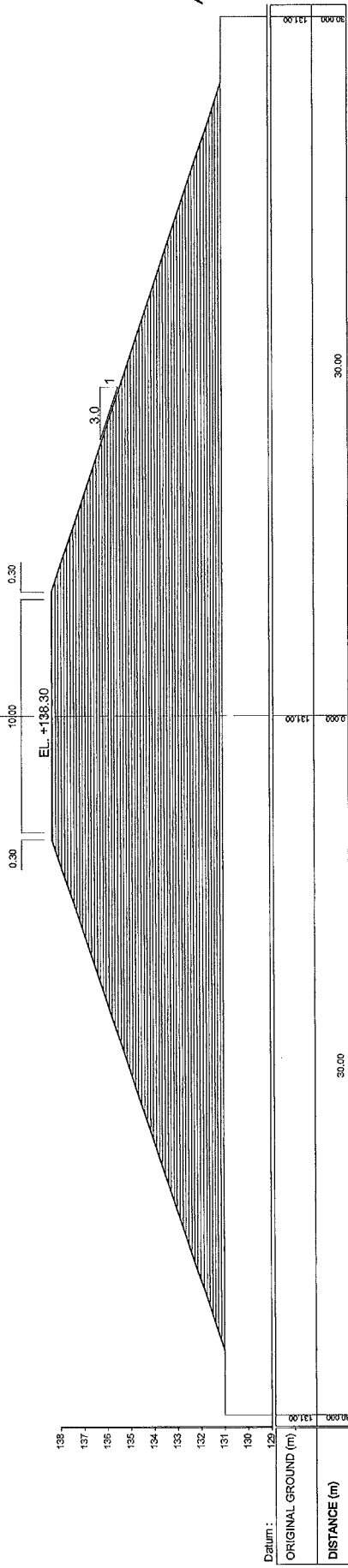


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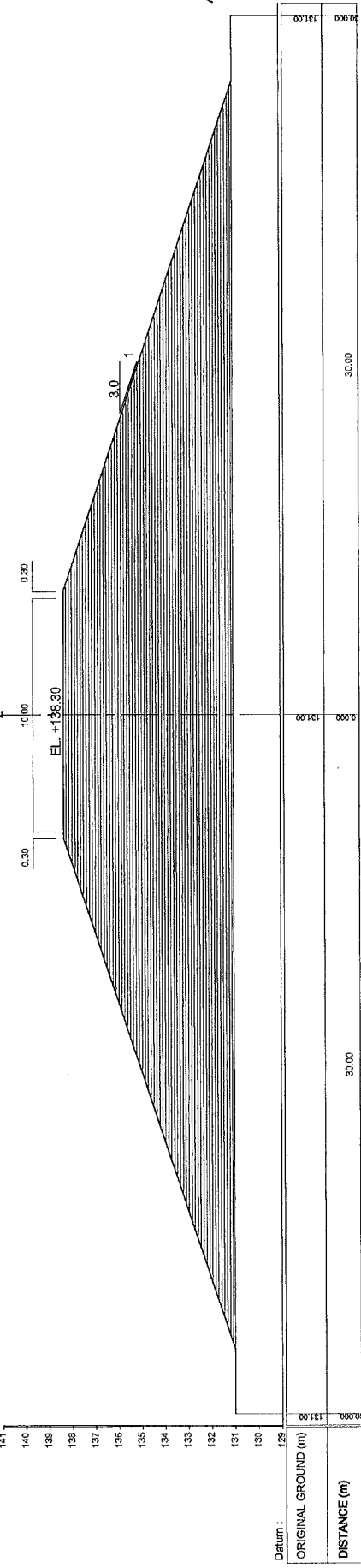


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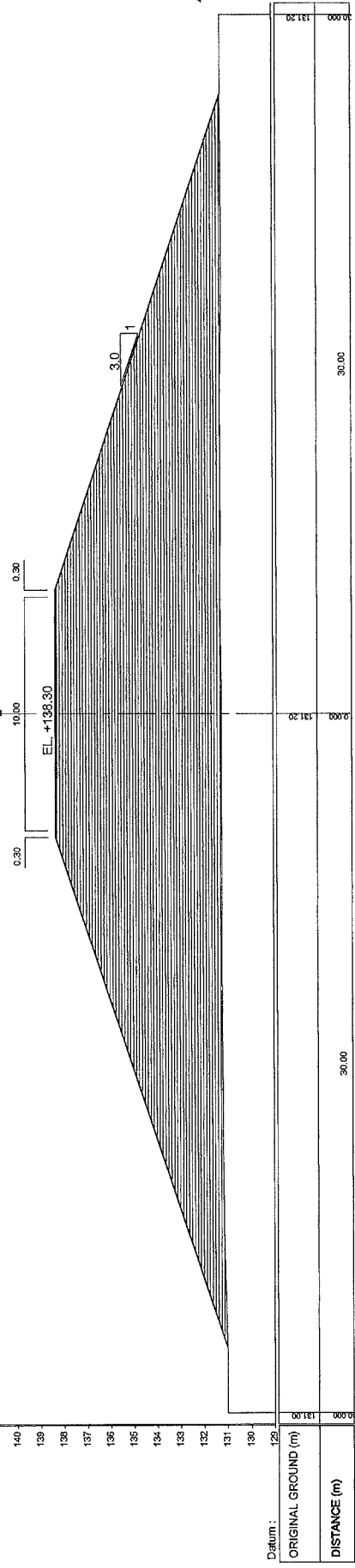
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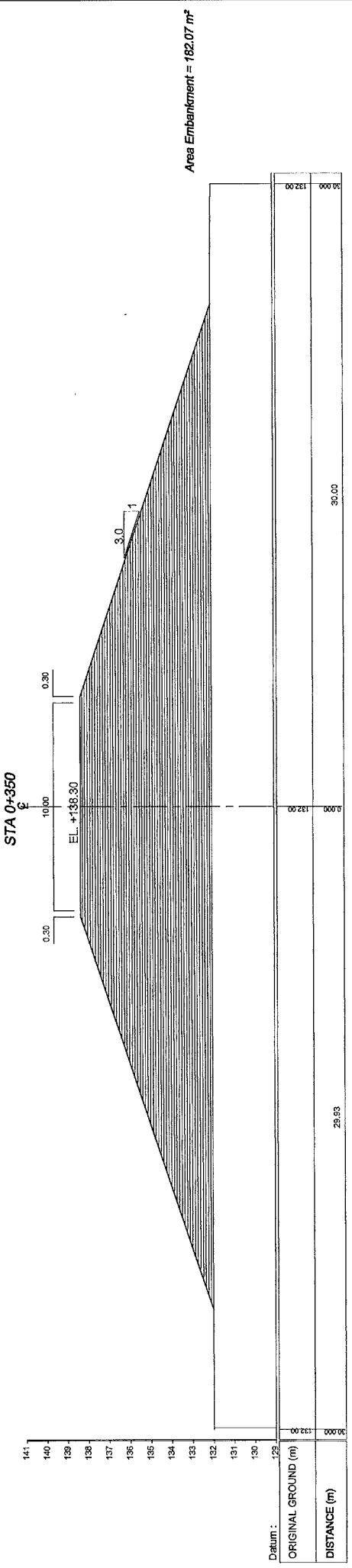
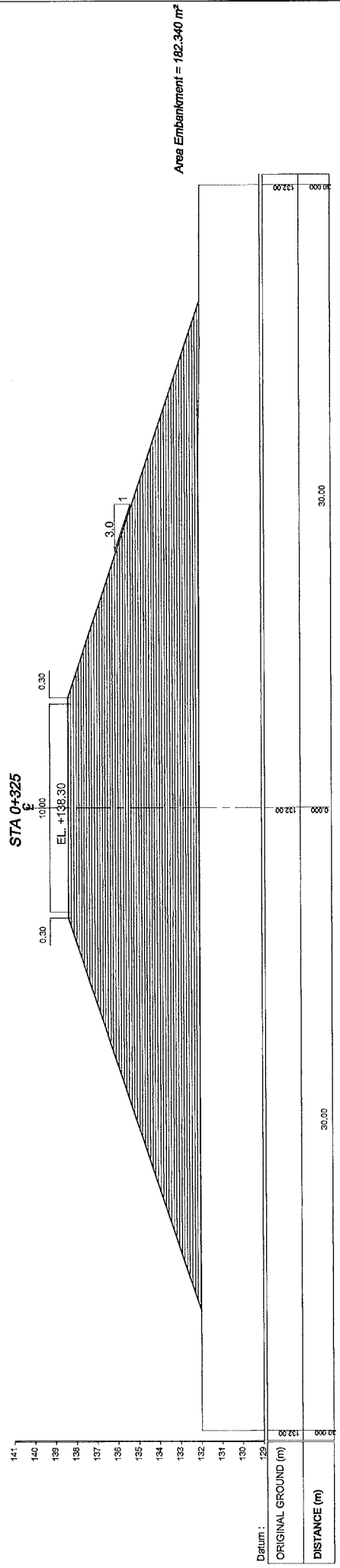
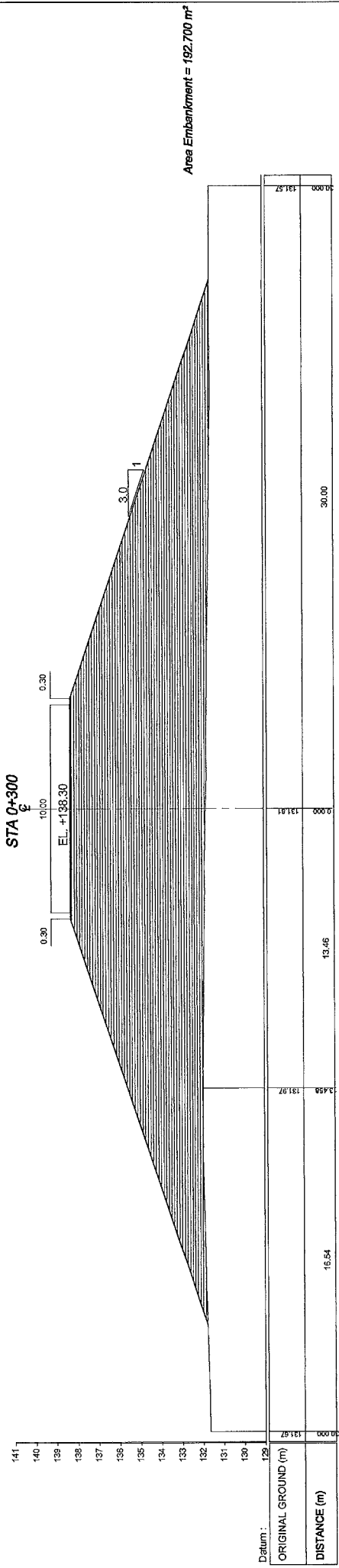
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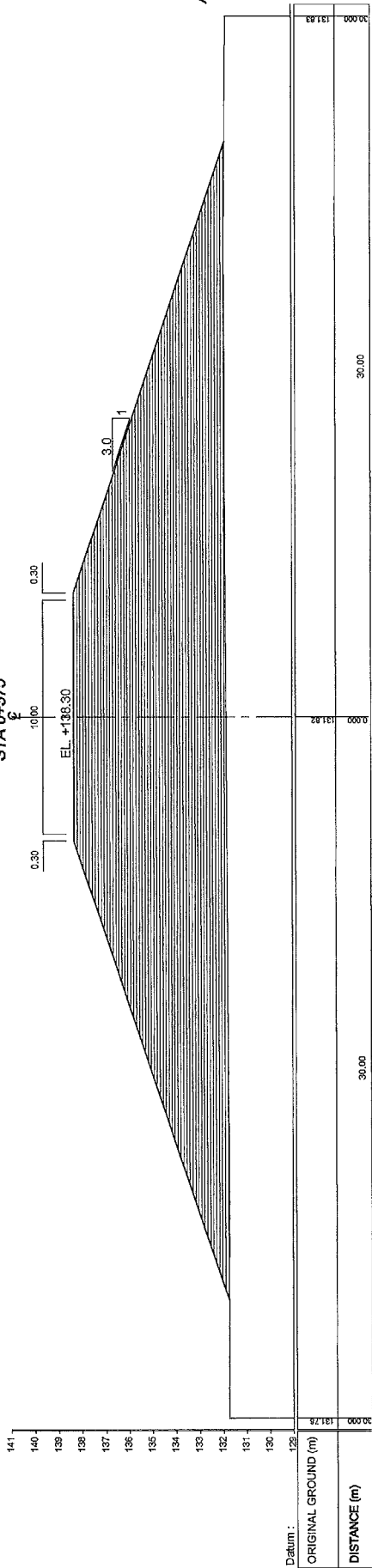
CROSS SECTION OF CLOUSER DIKE



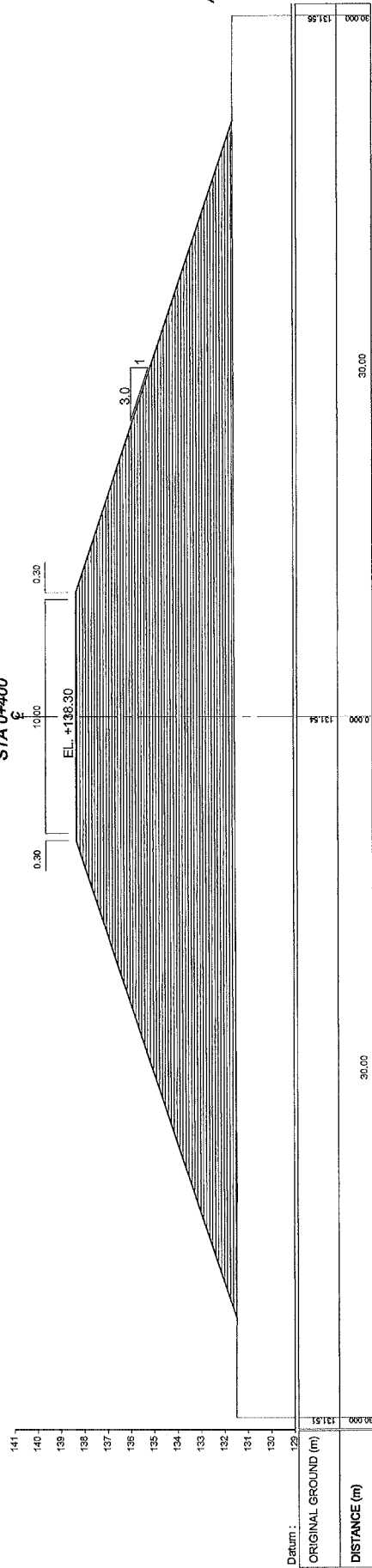
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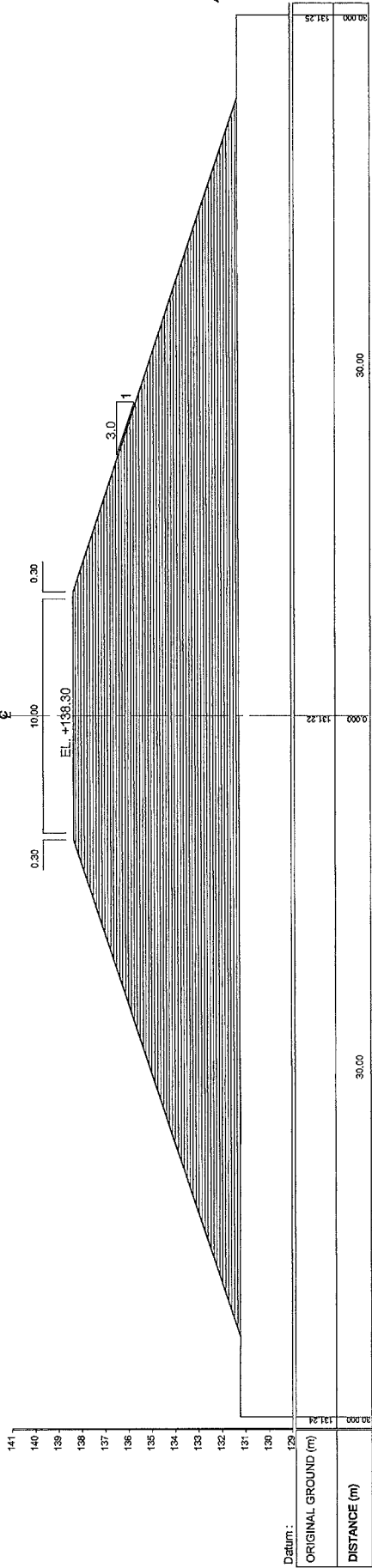
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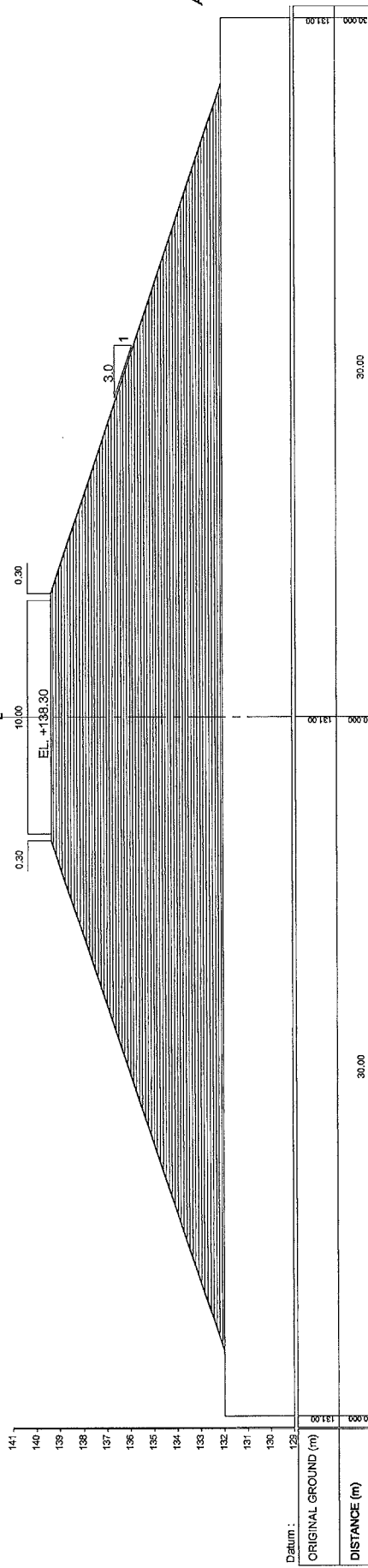


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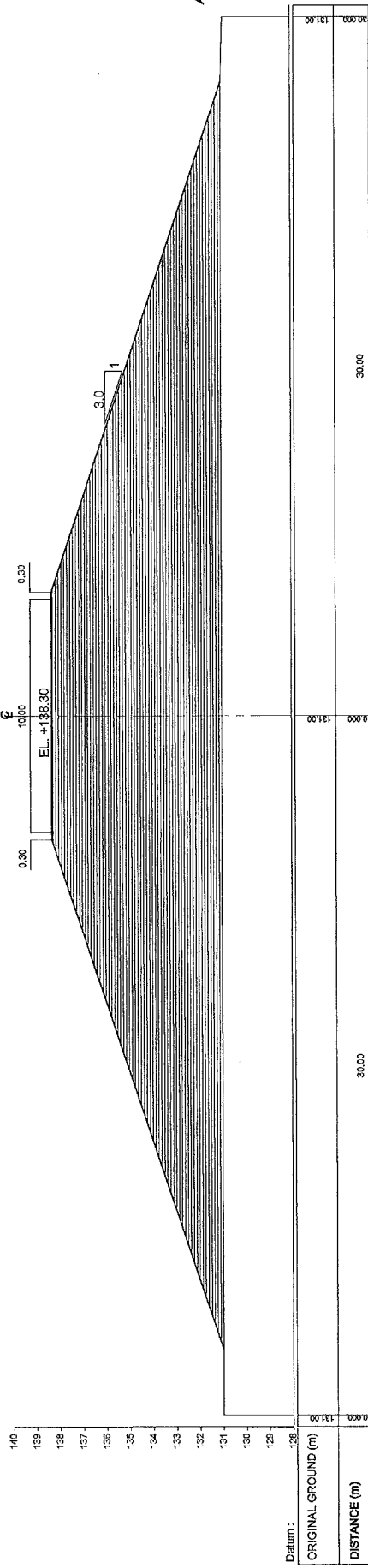


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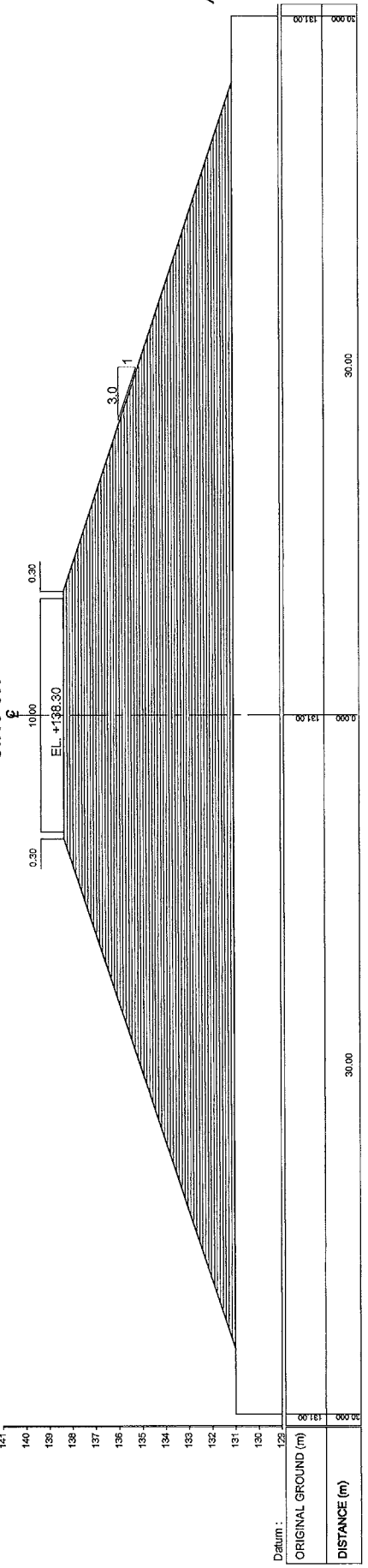
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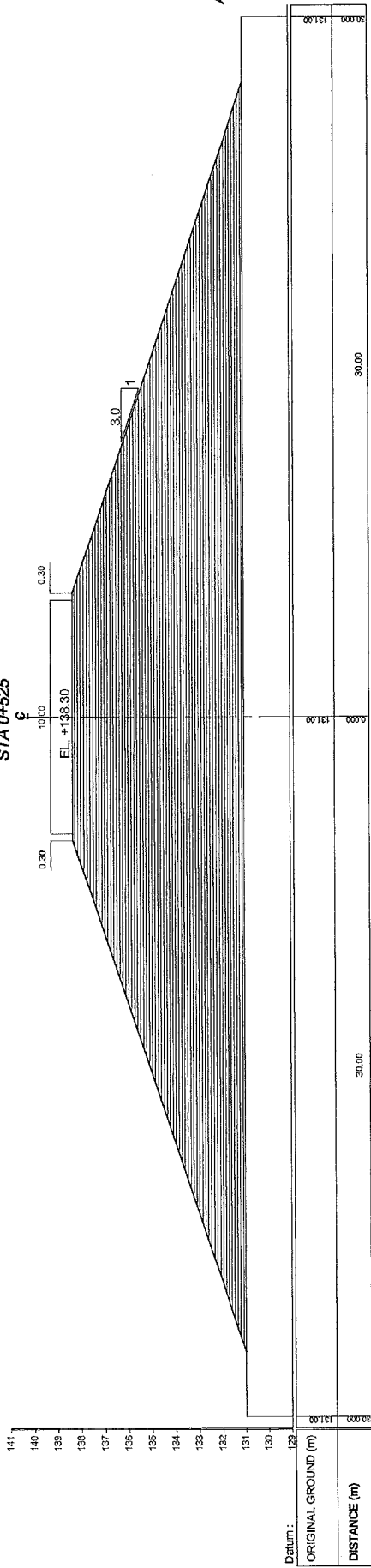


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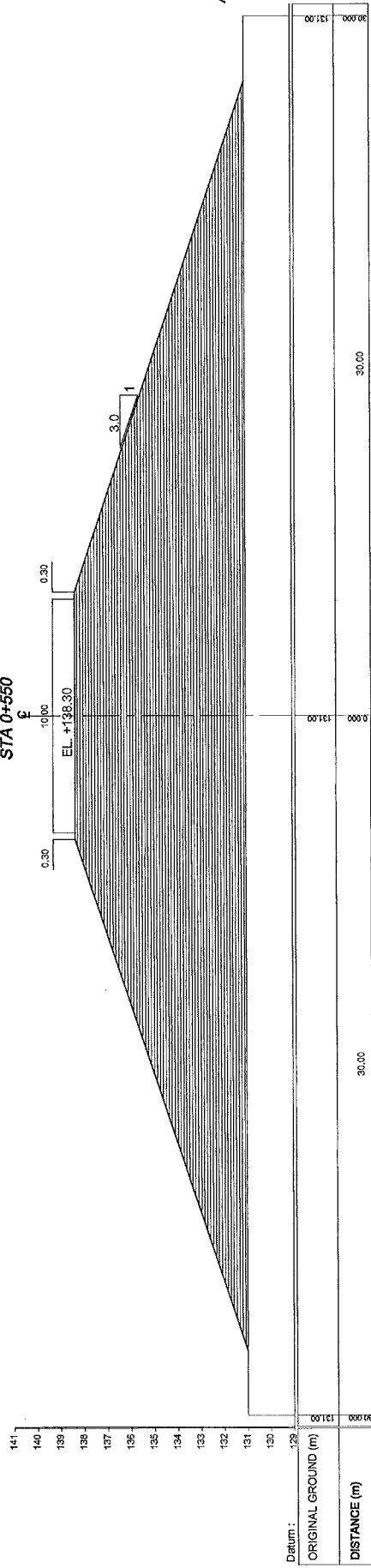


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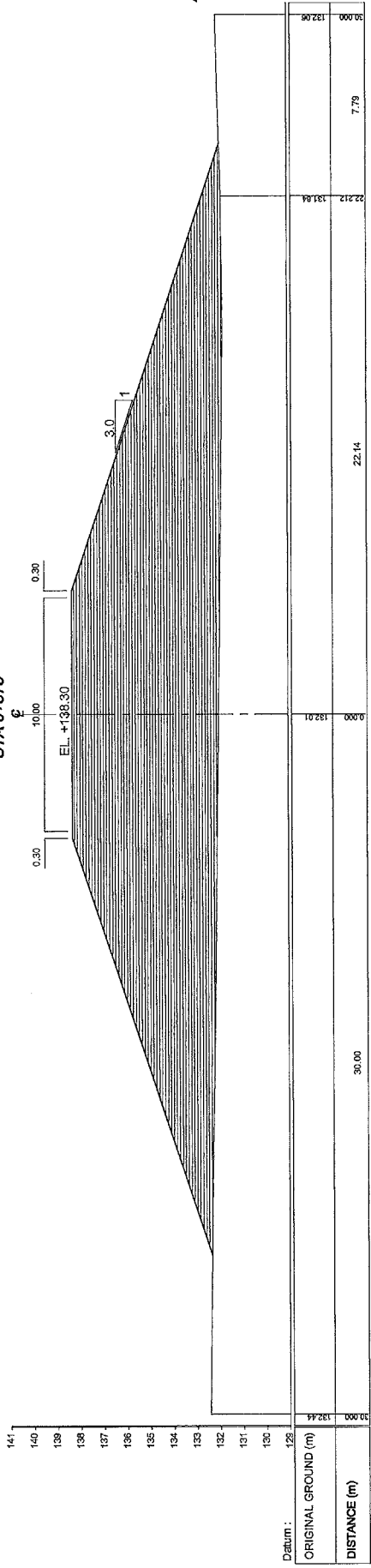
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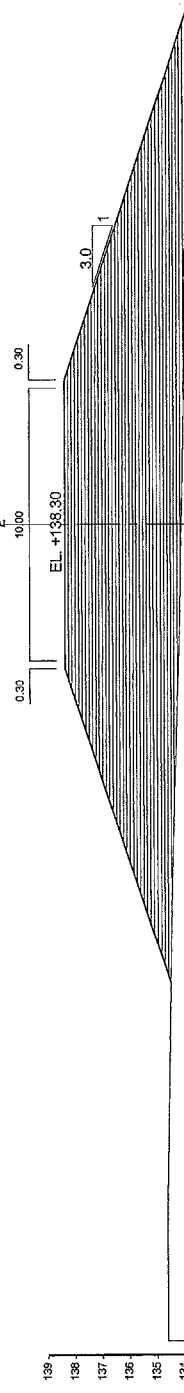


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CROSS SECTION OF CLOUSER DIKE

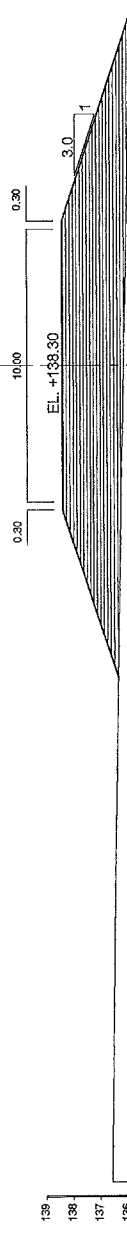
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Area Embankment = 96.81 m²

Datum :	134.61
ORIGINAL GROUND (m)	134.61
DISTANCE (m)	30.00
	134.00
	8.20
	133.87
	21.80
	133.77
	30.00

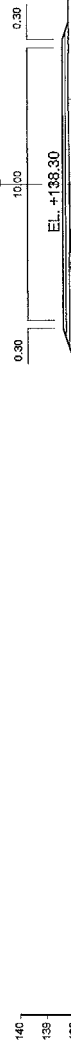
STA 0+625



Area Embankment = 38.510 m²

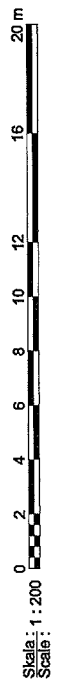
Datum :	136.03
ORIGINAL GROUND (m)	136.03
DISTANCE (m)	30.00
	136.03
	30.00
	135.61
	30.00

STA 0+650

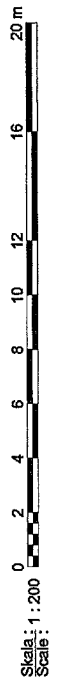
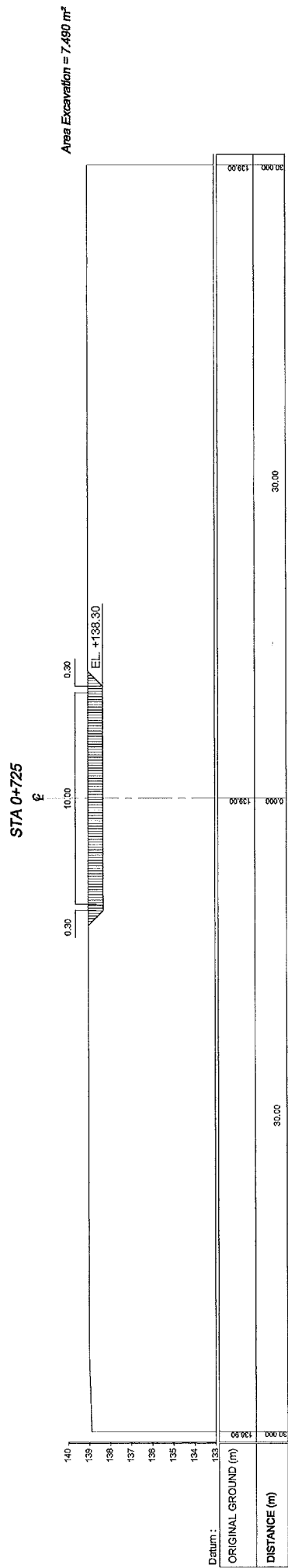
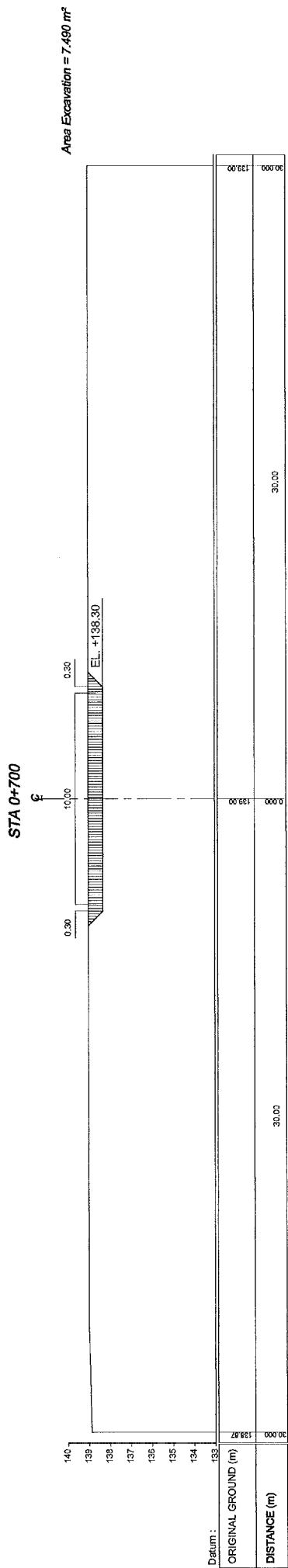
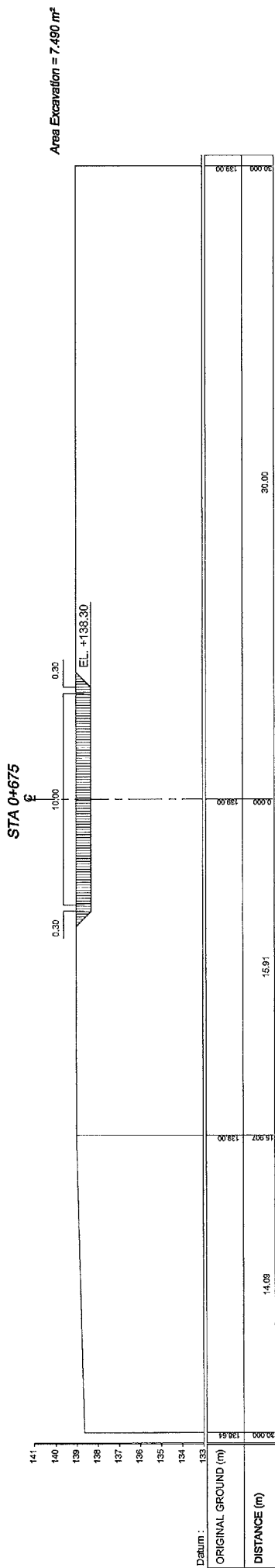


Area Embankment = 2.800 m²

Datum :	138.04
ORIGINAL GROUND (m)	138.04
DISTANCE (m)	30.00
	138.04
	3.11
	2.113
	138.08
	26.89
	137.67
	30.00



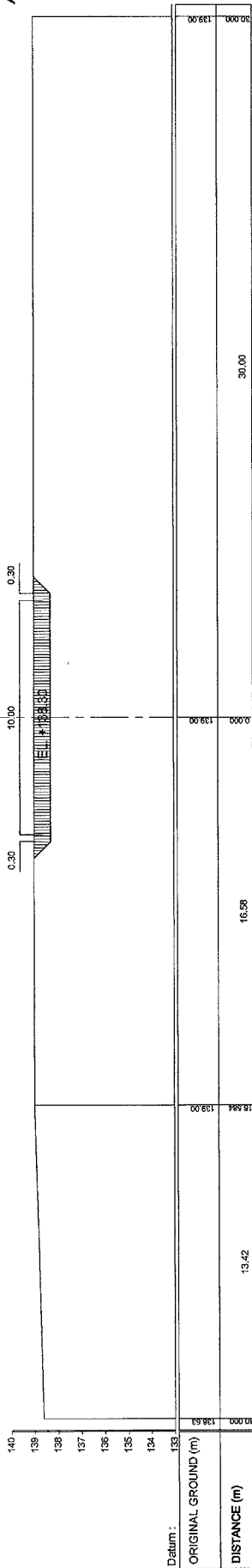
CROSS SECTION OF CLOUSER DIKE



CROSS SECTION OF CLOUSER DIKE

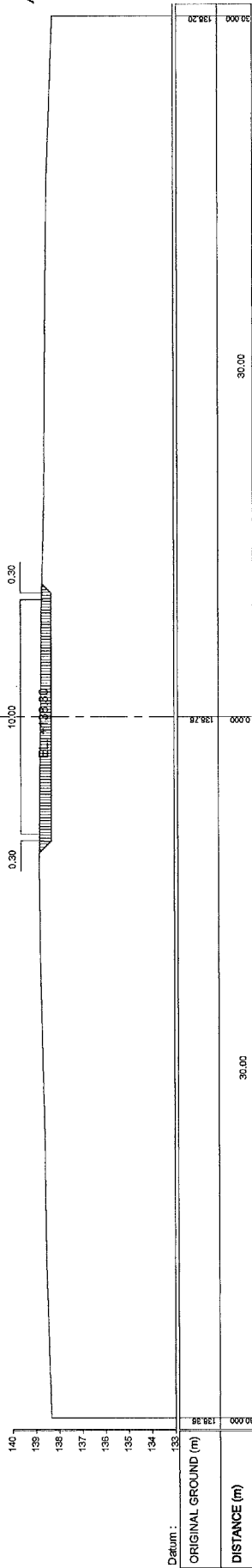
STA 0+750

Area Excavation = 7.490 m²



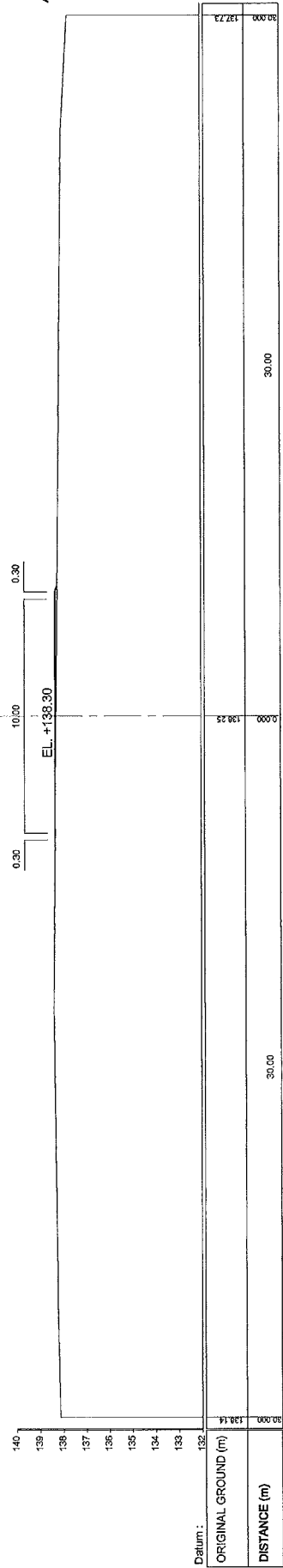
STA 0+775

Area Excavation = 4.760 m²



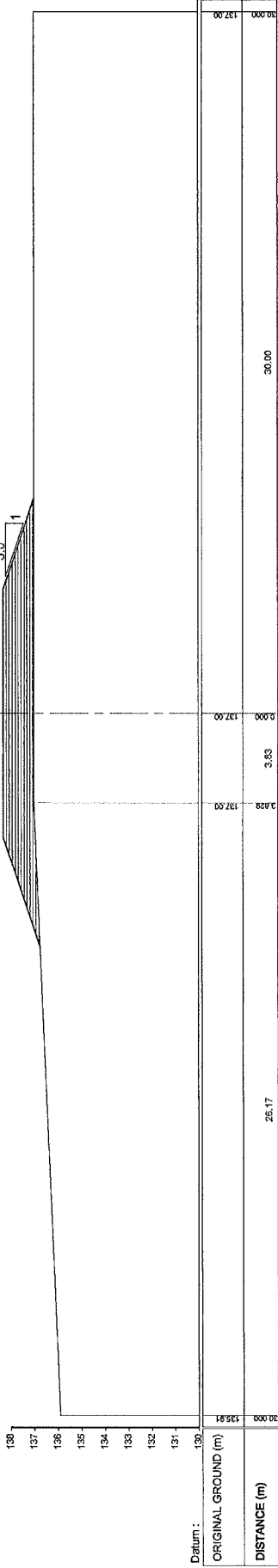
STA 0+800

Area Embankment = 0.500 m²

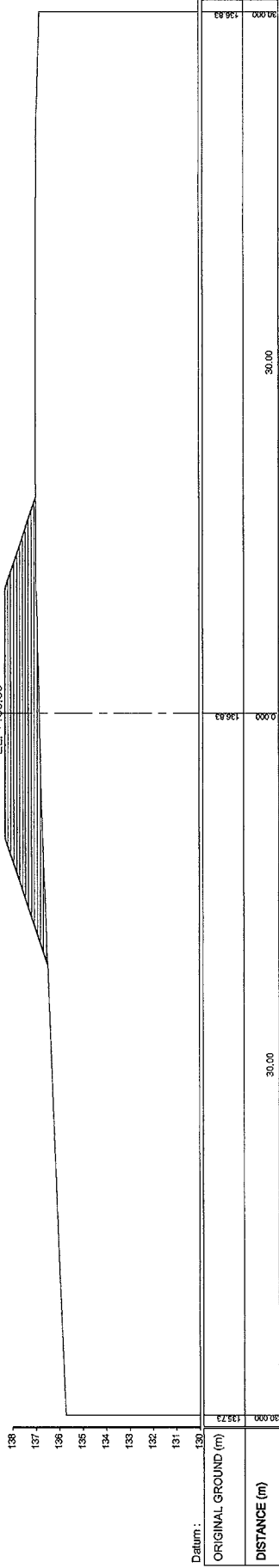


CROSS SECTION OF CLOUSER DIKE

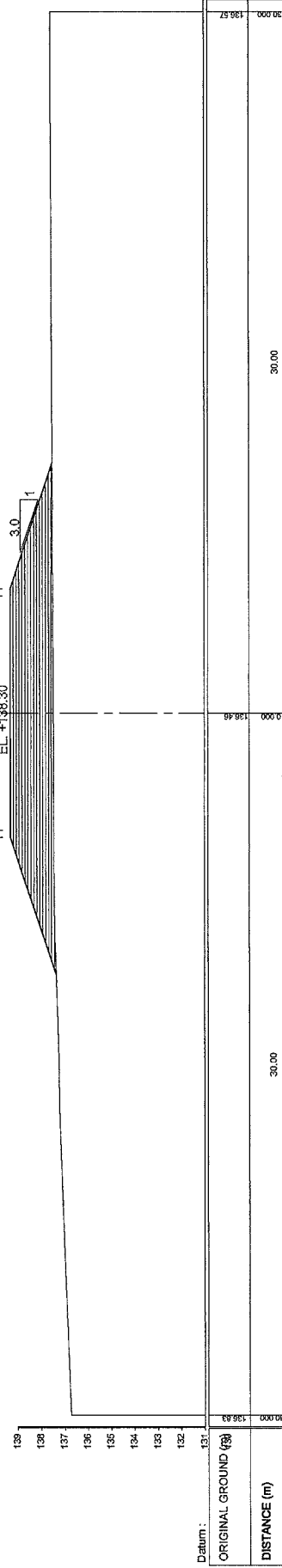
STA 0+900



STA 0+925

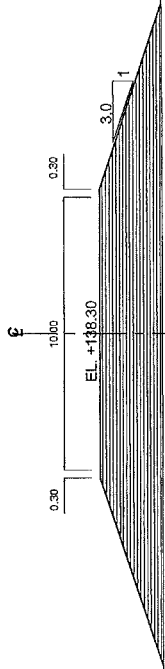


STA 0+950



CROSS SECTION OF CLOUSER DIKE

STA 0+975

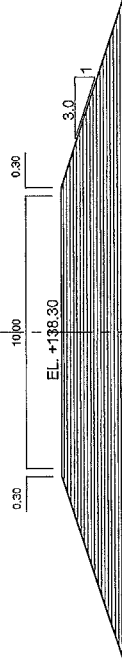


Area Embankment = 38.830 m²

139	
138	
137	
136	
135	
134	
133	
132	
131	
130	
Datum : 138.30	
ORIGINAL GROUND (m)	138.00
DISTANCE (m)	30.00

30.000	
136.00	
0.000	
Datum : 138.30	
ORIGINAL GROUND (m)	138.00
DISTANCE (m)	30.00

STA 1+000

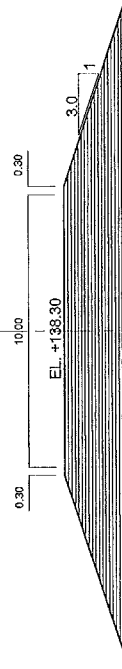


Area Embankment = 38.870 m²

139	
138	
137	
136	
135	
134	
133	
132	
131	
130	
Datum : 138.30	
ORIGINAL GROUND (m)	138.00
DISTANCE (m)	30.00

30.000	
136.00	
0.000	
Datum : 138.30	
ORIGINAL GROUND (m)	138.00
DISTANCE (m)	30.00

STA 1+025



Area Embankment = 38.870 m²

139	
137	
136	
135	
134	
133	
132	
131	
130	
Datum : 138.30	
ORIGINAL GROUND (m)	138.00
DISTANCE (m)	18.07

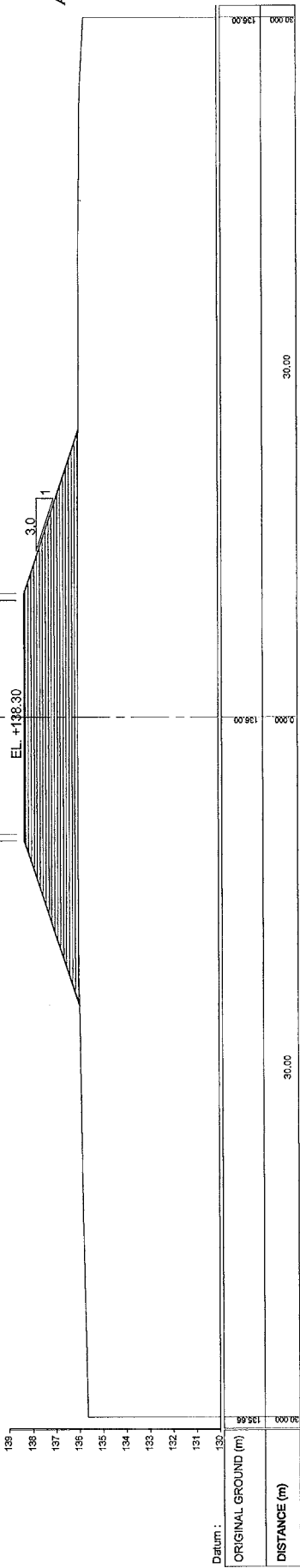
30.000	
136.00	
0.000	
Datum : 138.30	
ORIGINAL GROUND (m)	138.00
DISTANCE (m)	30.00

Skala : 1 : 200
Scale : 1 : 200



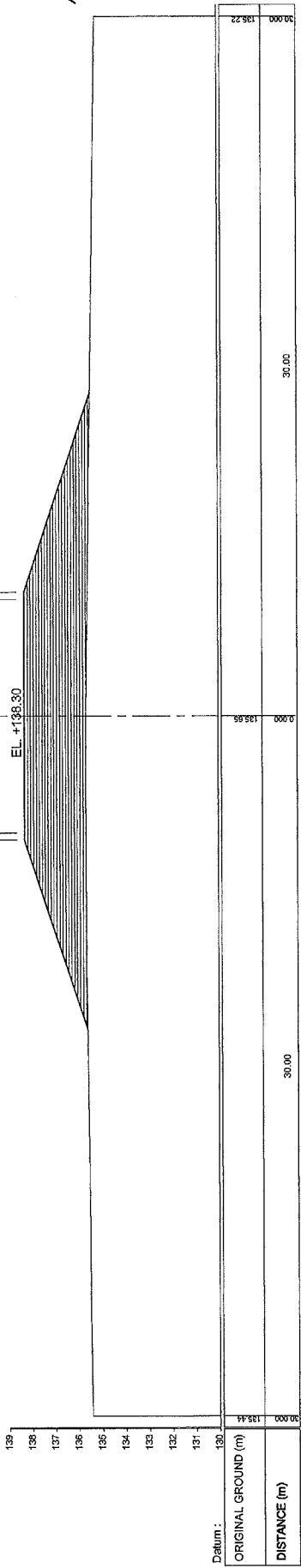
CROSS SECTION OF CLOUSER DIKE

STA 1+050



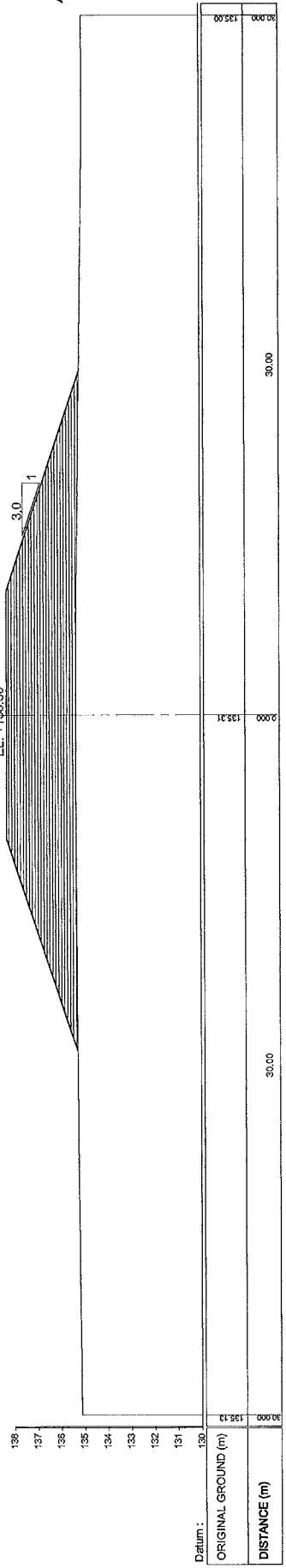
Area Embankment = 39.140 m²

STA 1+075

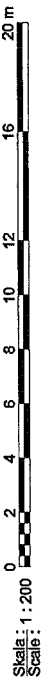


Area Embankment = 48.850 m²

STA 1+100

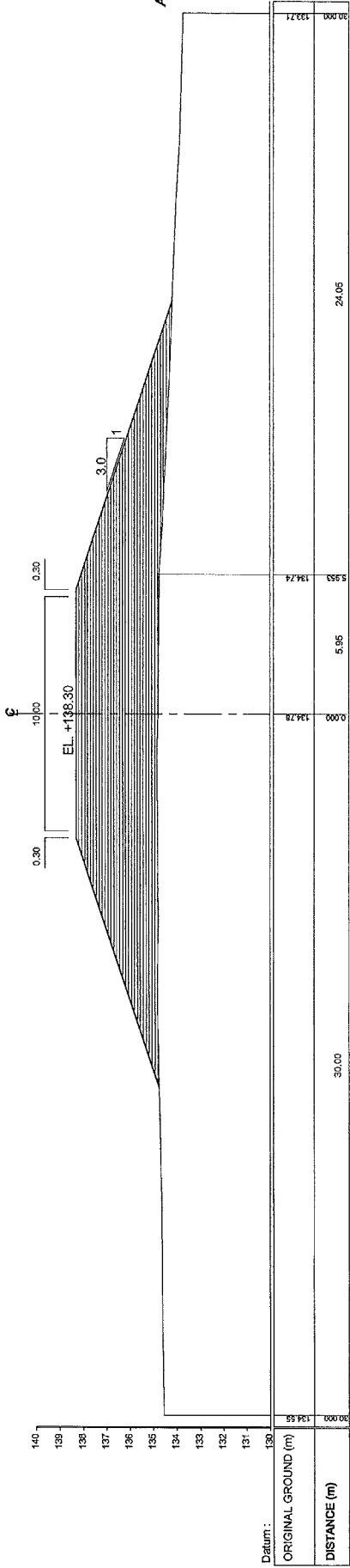


Area Embankment = 57.720 m²

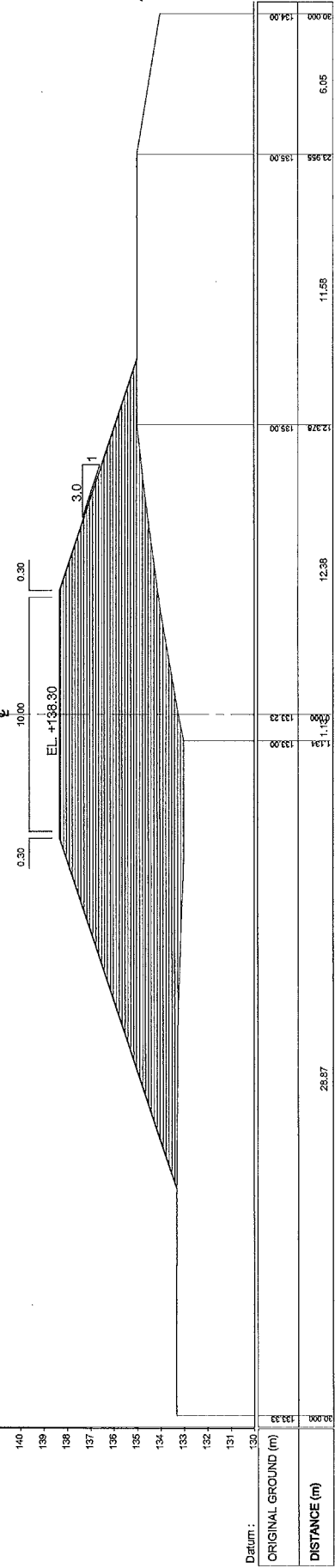


CROSS SECTION OF CLOUSER DIKE

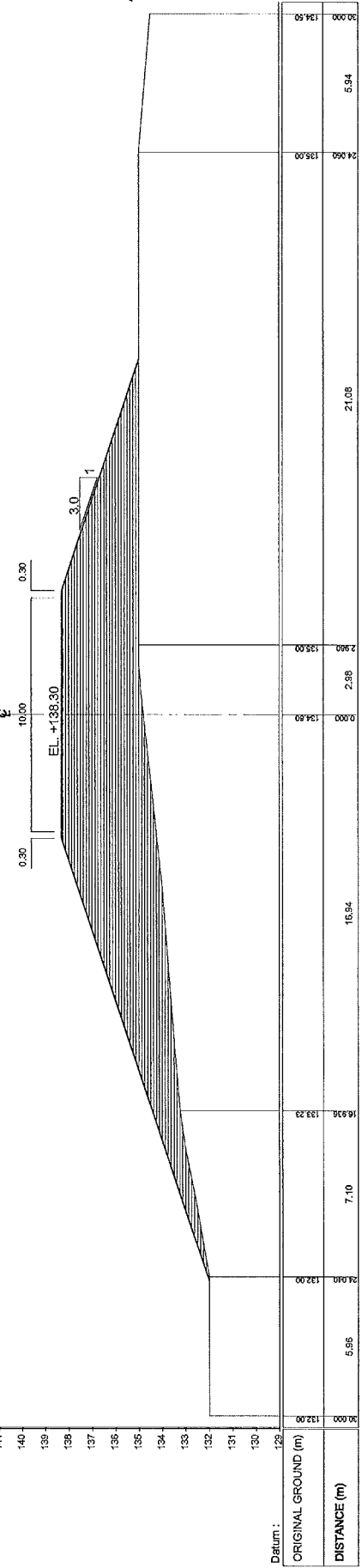
STA 1+125



STA 1+150

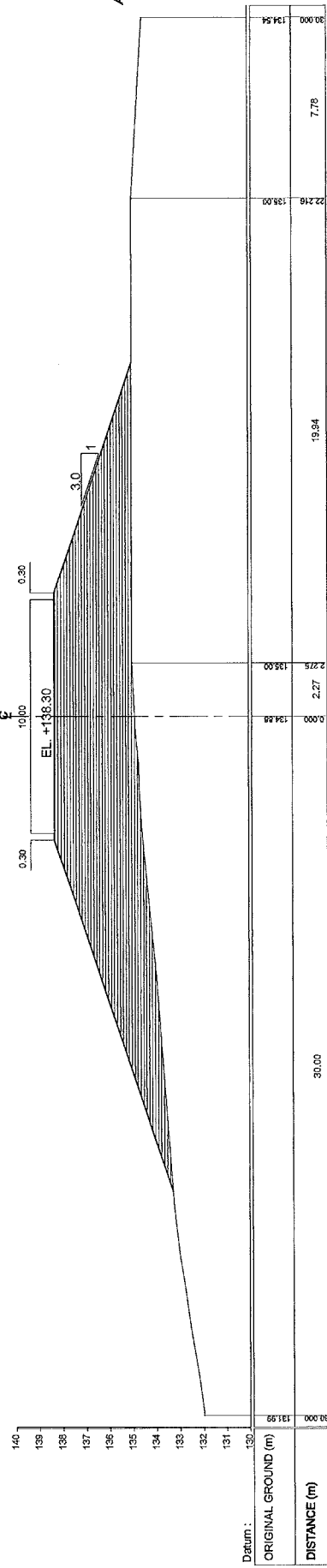


STA 1+175

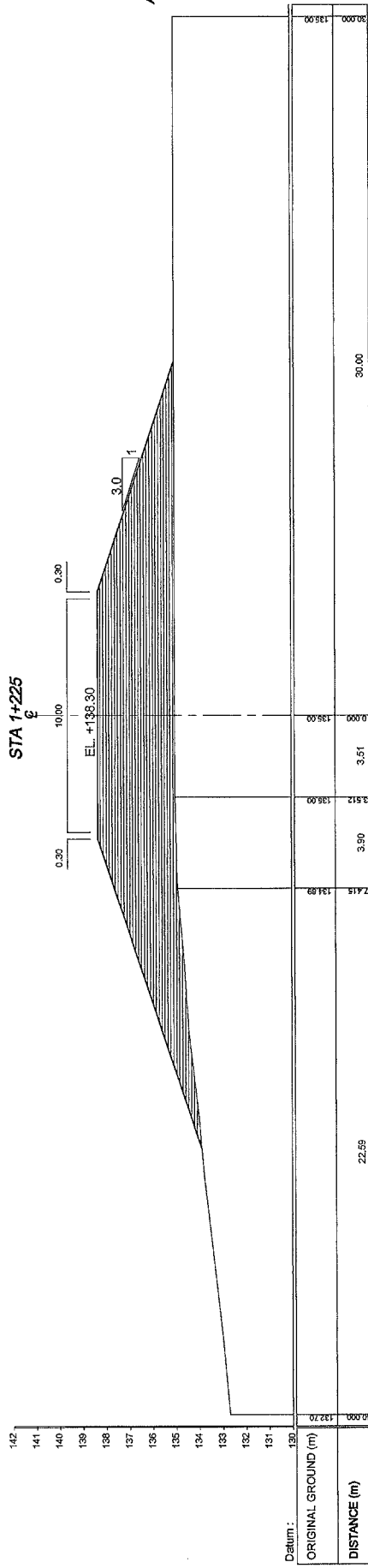


CROSS SECTION OF CLOUSER DIKE

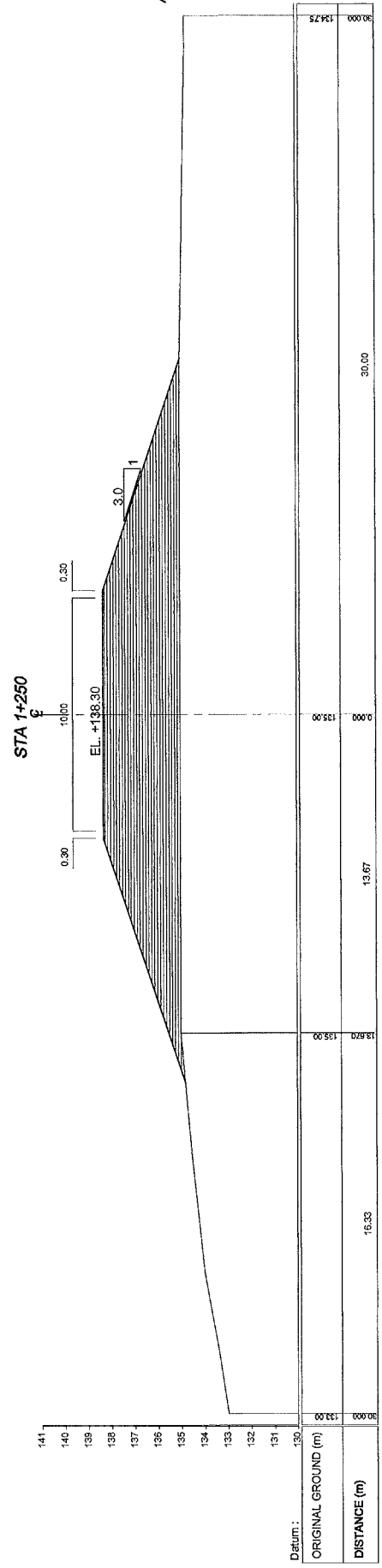
STA 1+200



STA 1+225

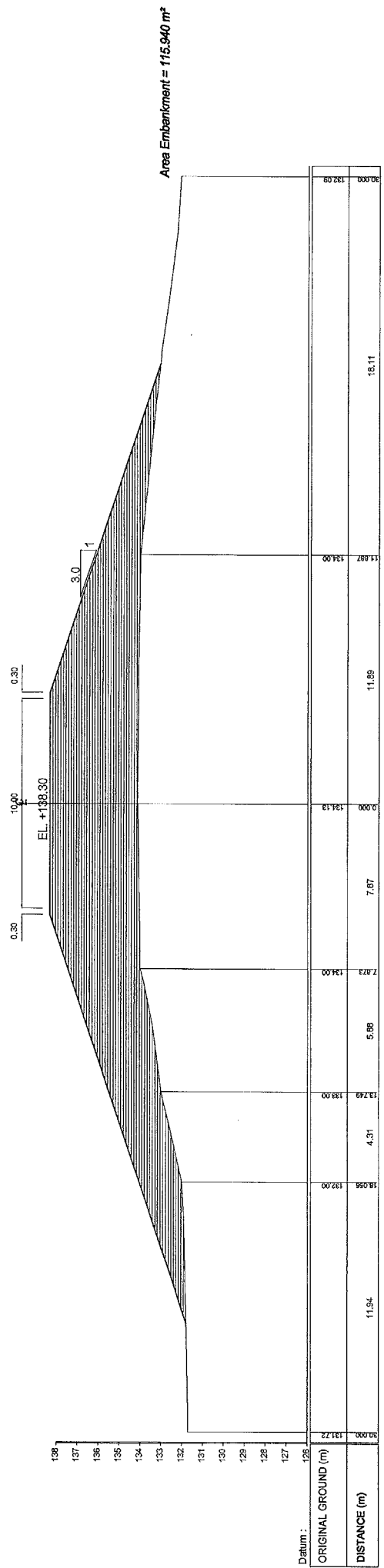


STA 1+250

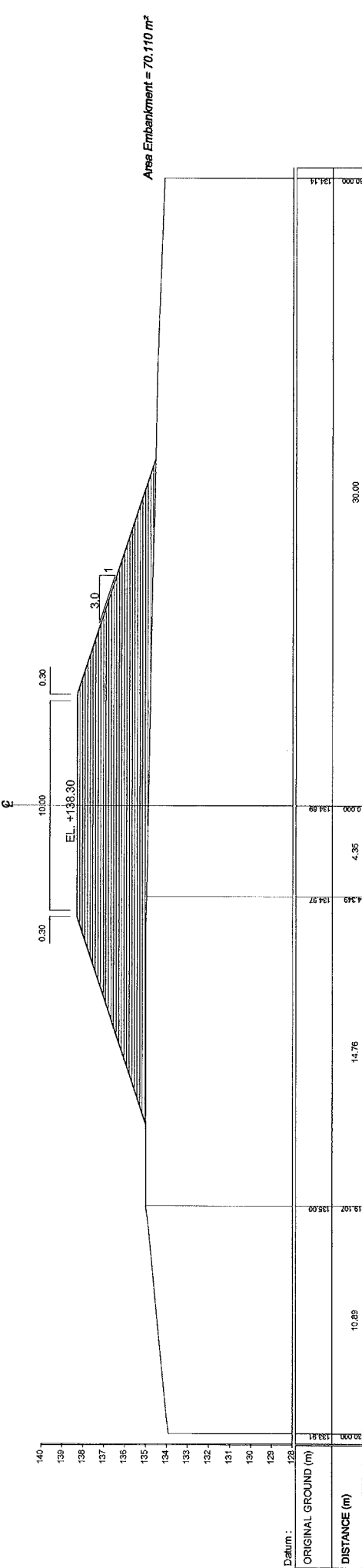


CROSS SECTION OF CLOUSER DIKE

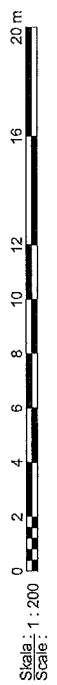
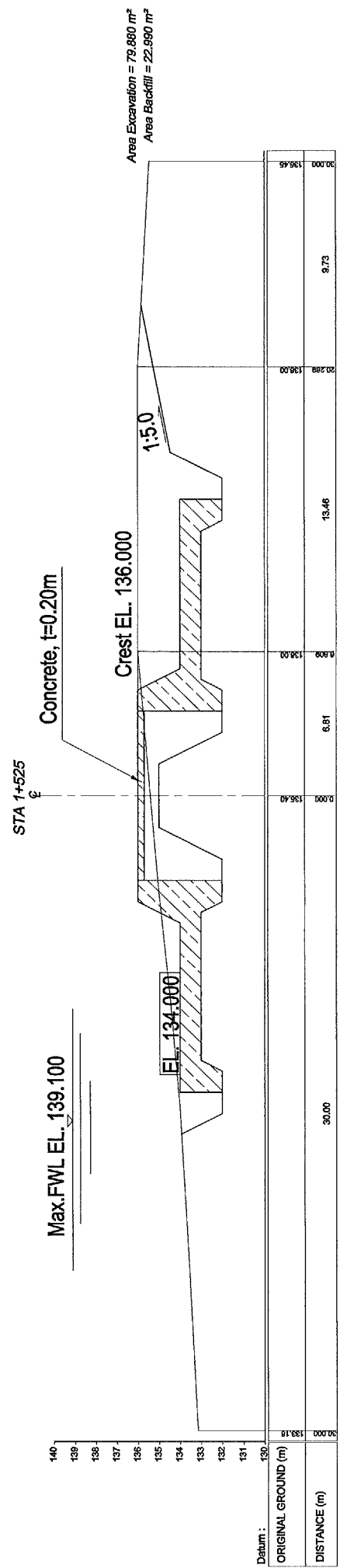
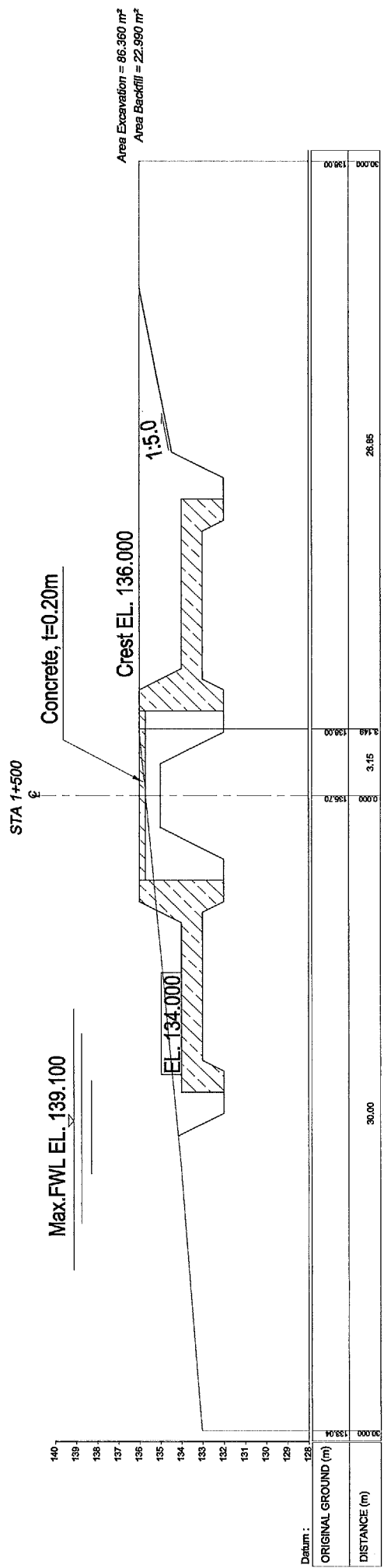
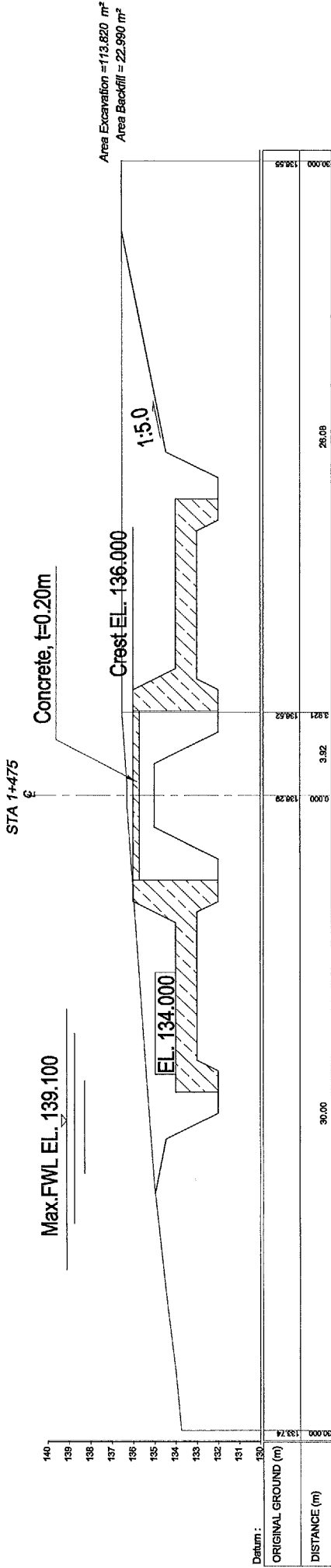
STA 1+350



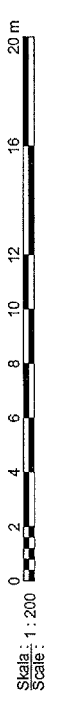
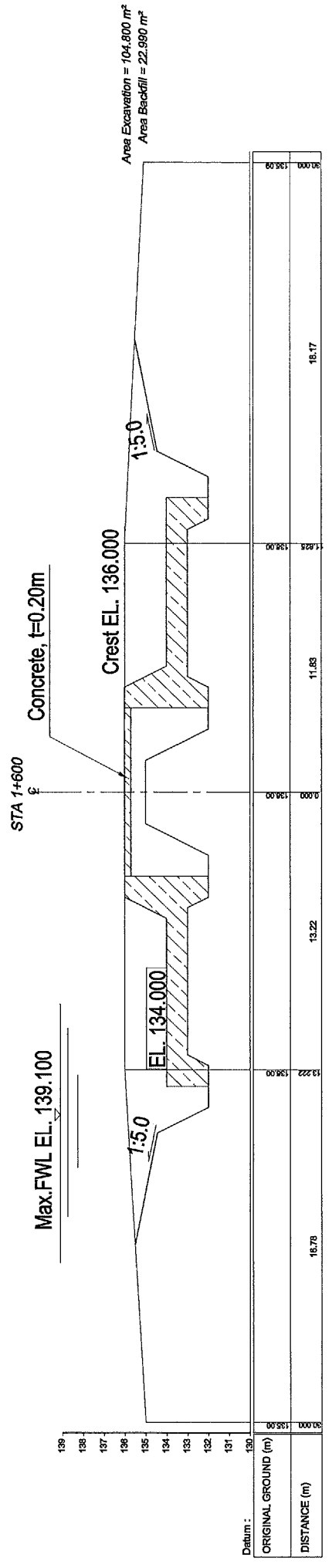
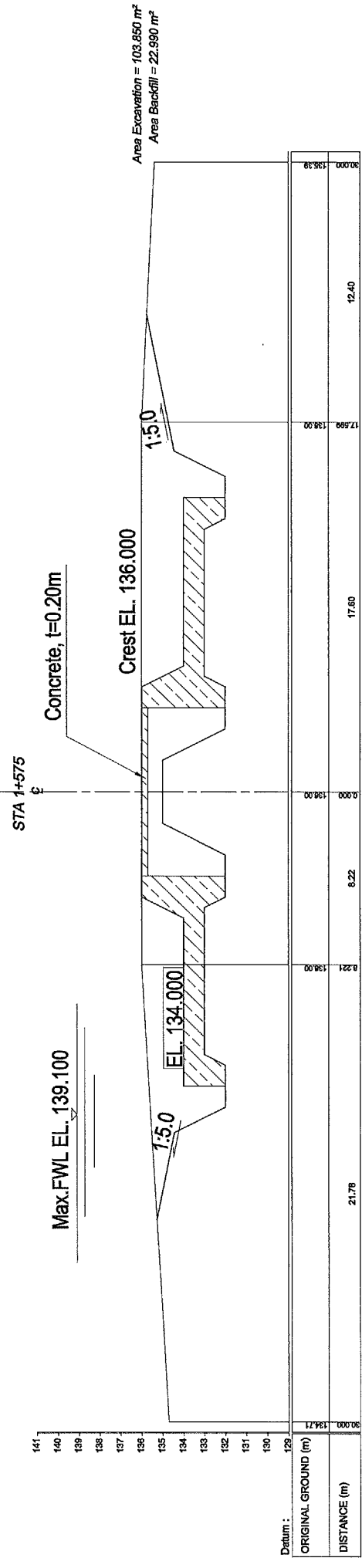
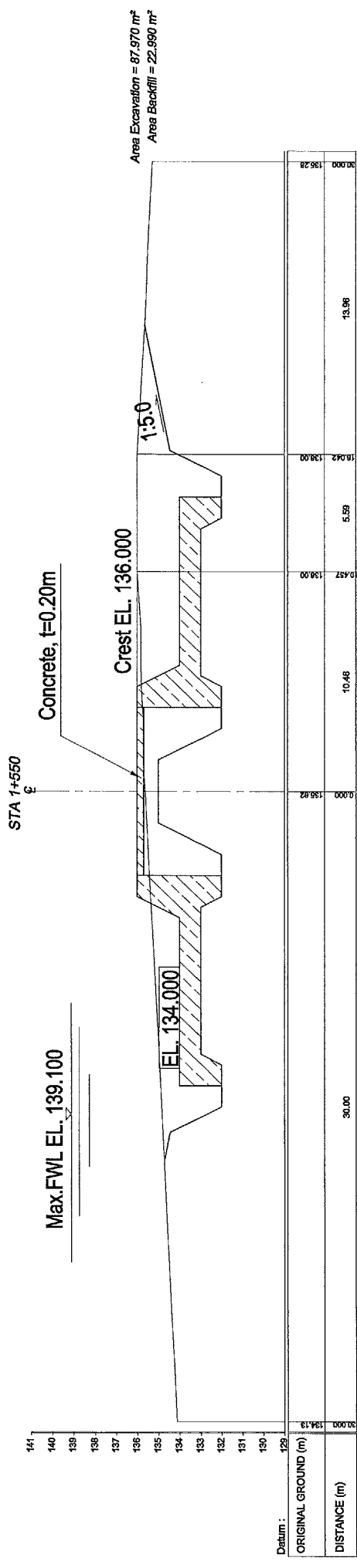
STA 1+375



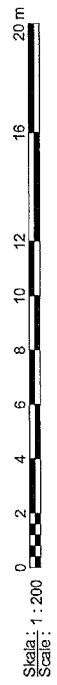
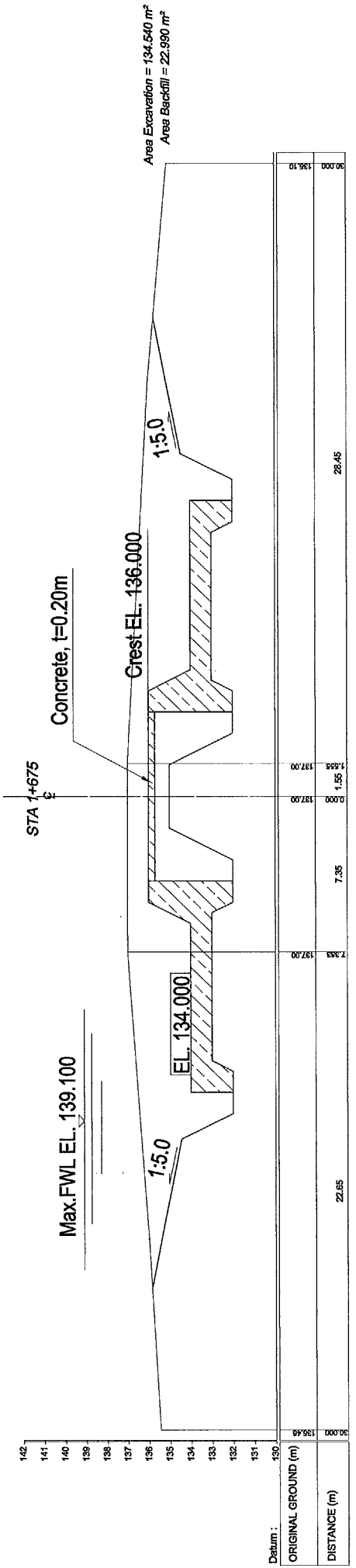
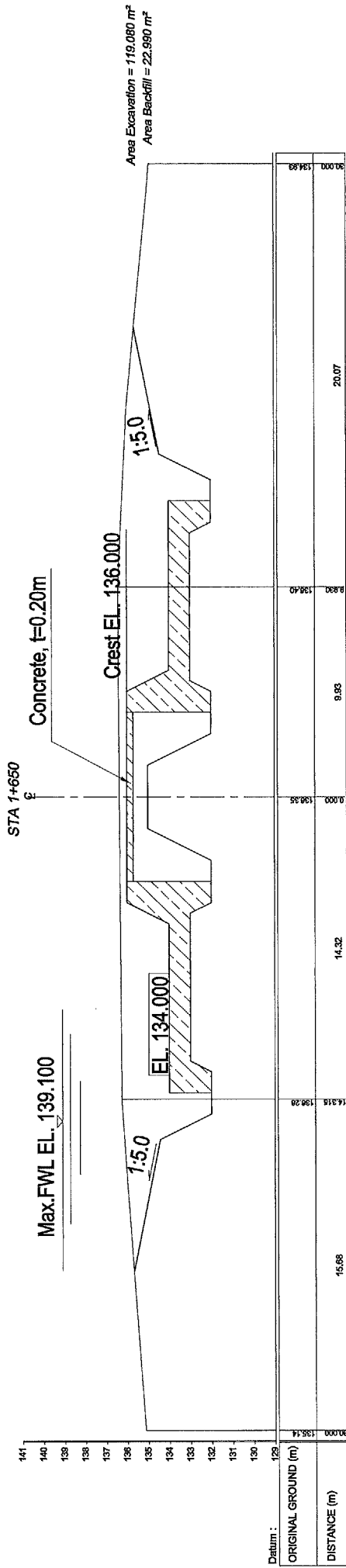
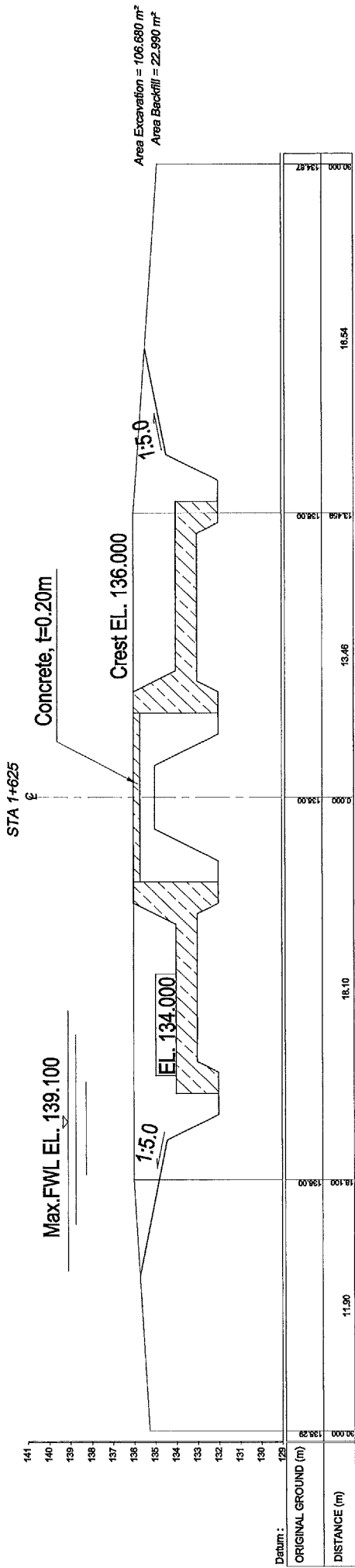
CROSS SECTION OF CLOUSER DIKE



CROSS SECTION OF CLOUSER DIKE

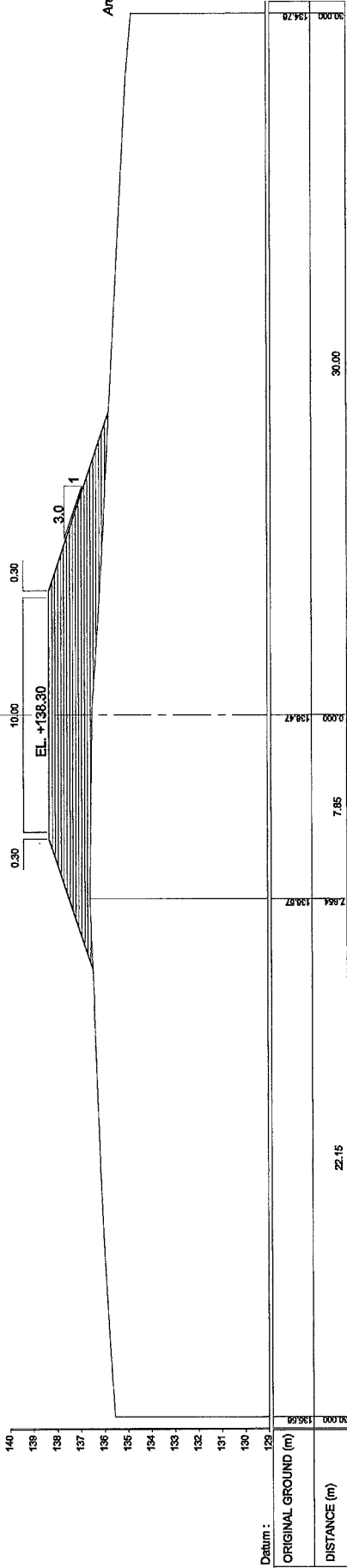


CROSS SECTION OF CLOUSER DIKE

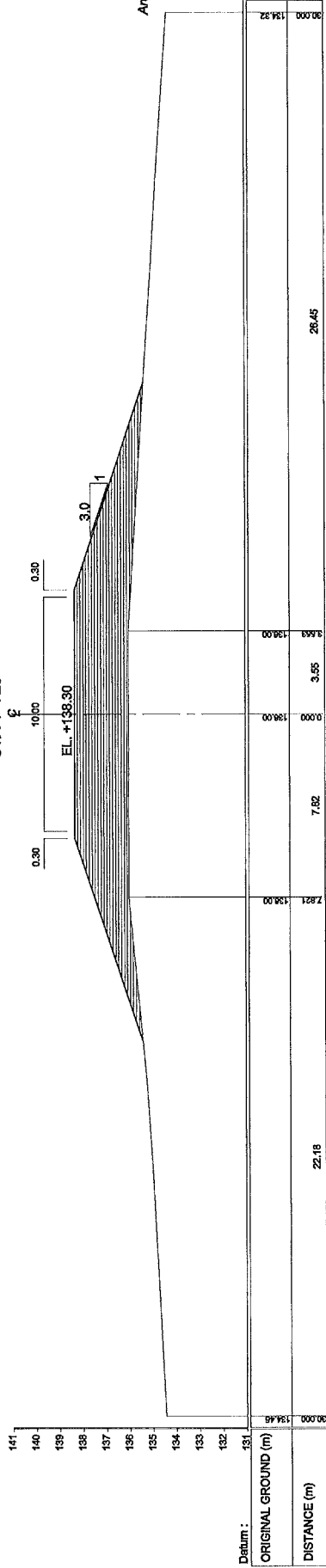


CROSS SECTION OF CLOUSER DIKE

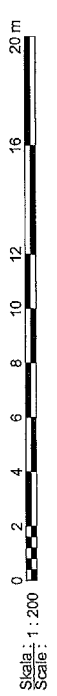
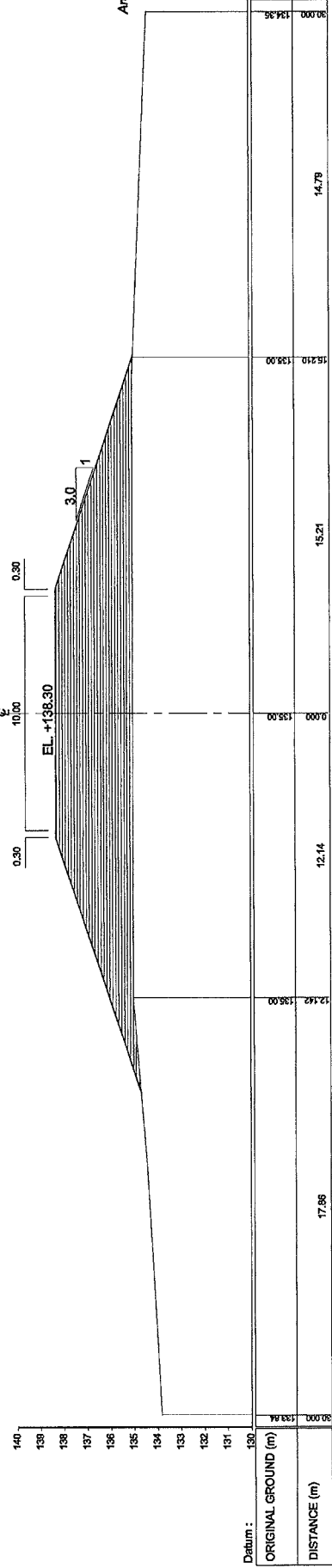
STA 1+700



STA 1+725

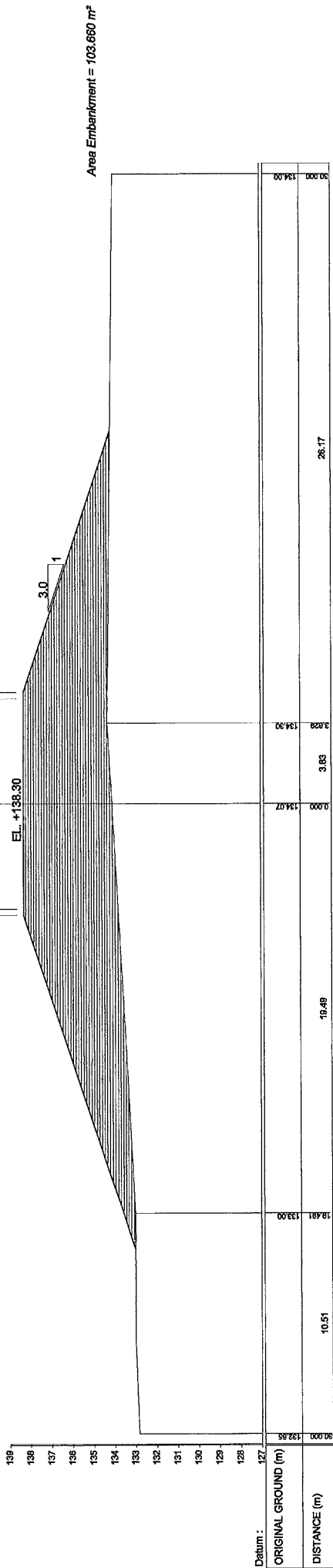


STA 1+775

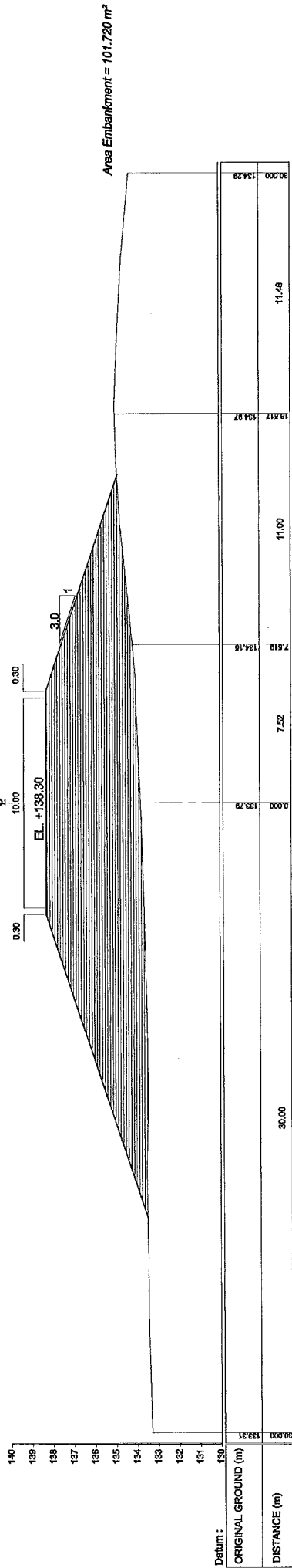


CROSS SECTION OF CLOUSER DIKE

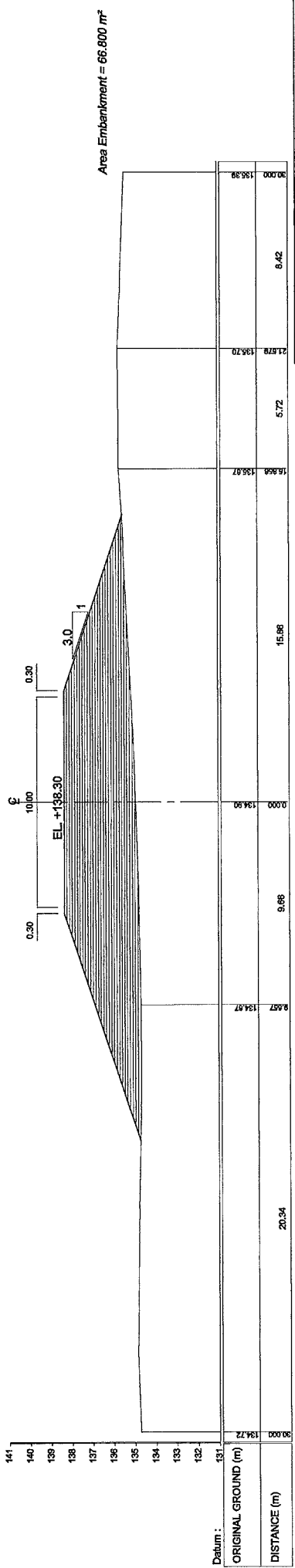
STA 1+800



STA 1+825



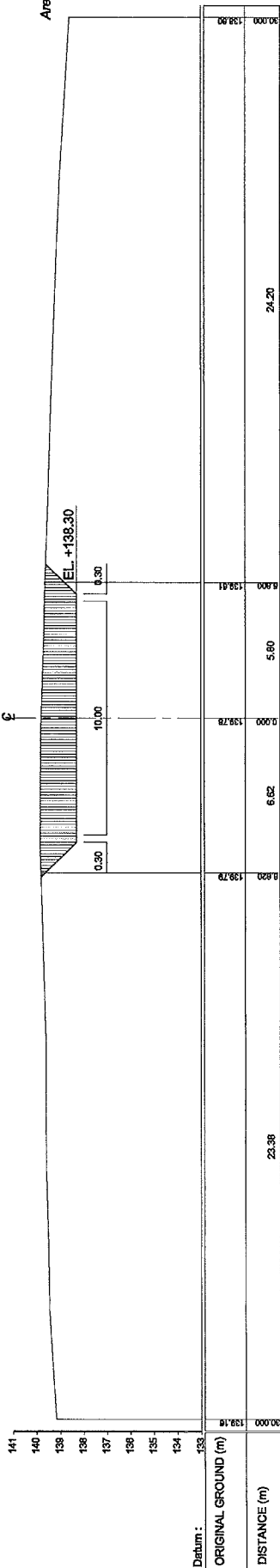
STA 1+850



CROSS SECTION OF CLOUSER DIKE

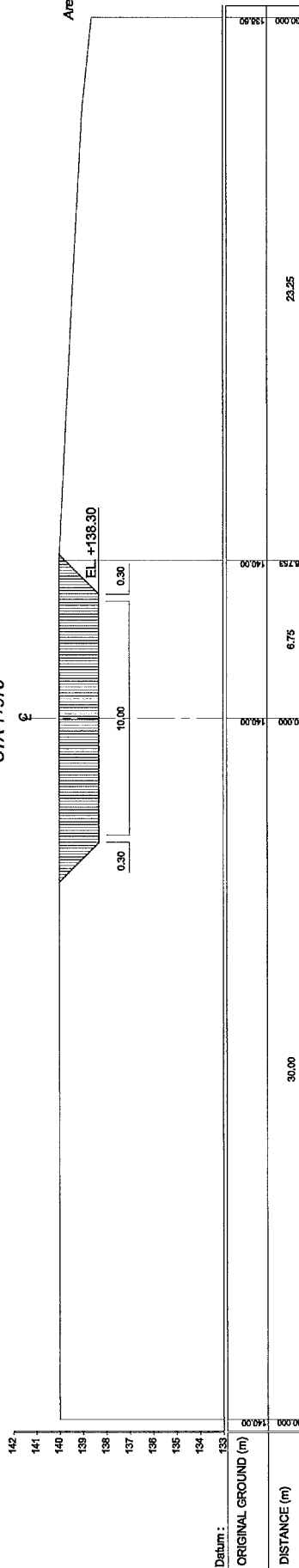
STA 1+950

Area Excavation = 16.500 m²



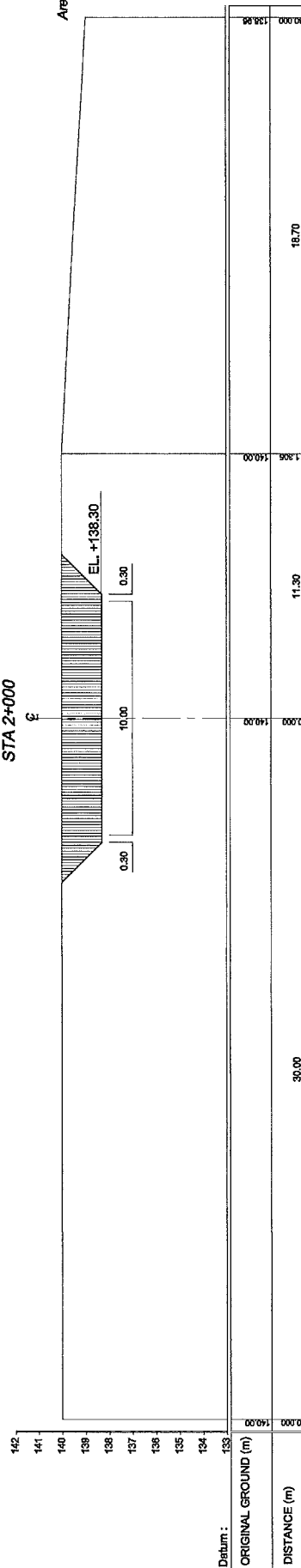
STA 1+975

Area Excavation = 19.890 m²



STA 2+000

Area Excavation = 19.890 m²

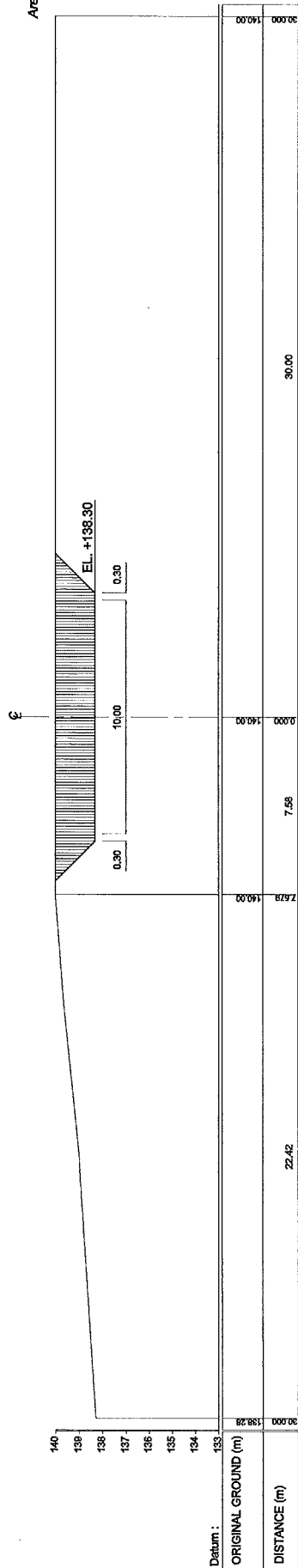


Skala : 1 : 200
Scale : 1 : 200

CROSS SECTION OF CLOUSER DIKE

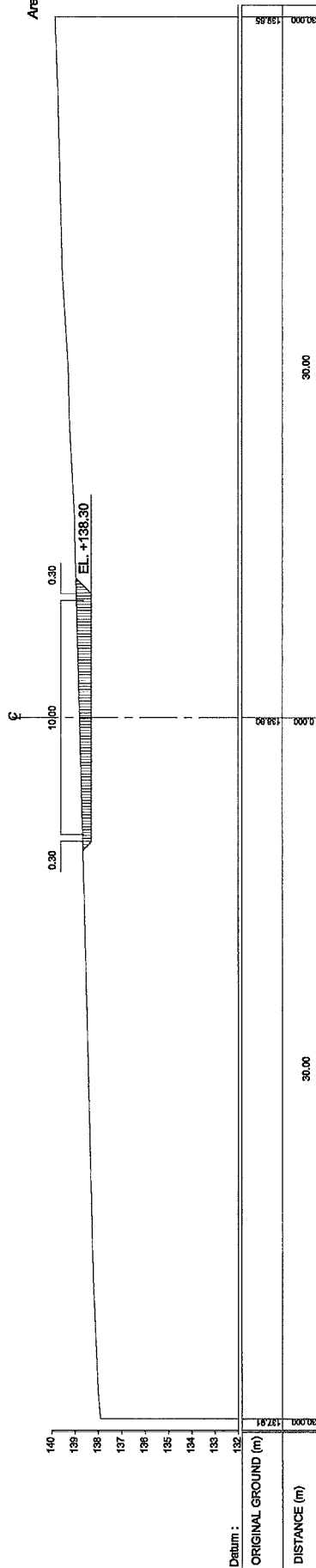
STA 2+025

Area Excavation = 19.980 m²



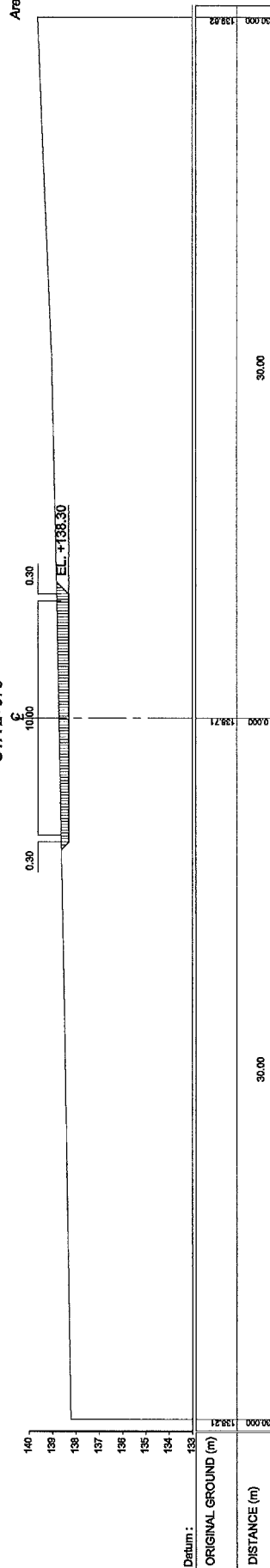
STA 2+050

Area Excavation = 5.290 m²



STA 2+075

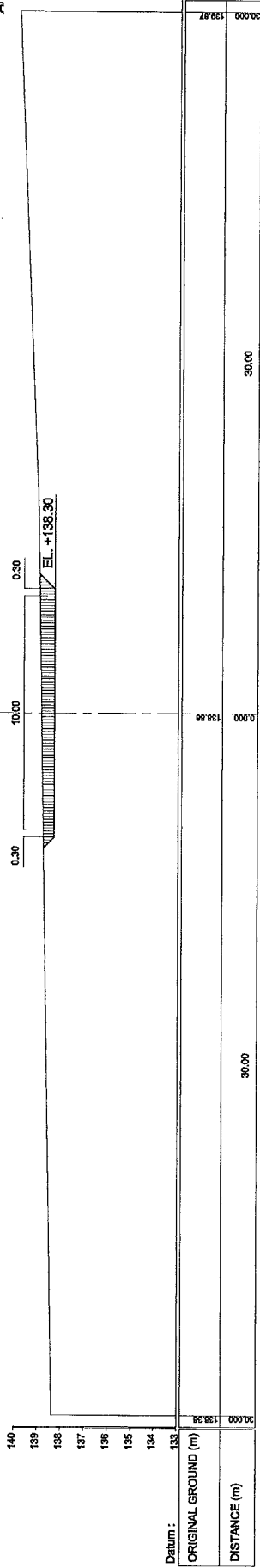
Area Excavation = 4.310 m²



CROSS SECTION OF CLOUSER DIKE

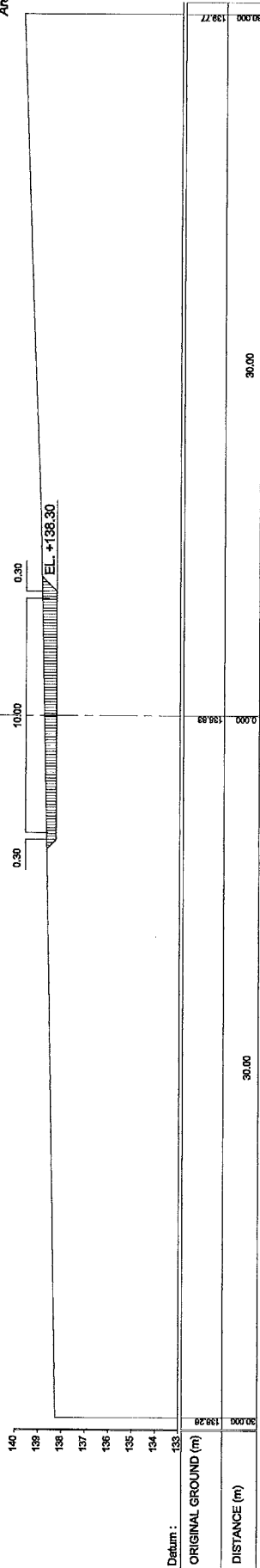
Area Excavation = 5.900 m²

STA 2+100



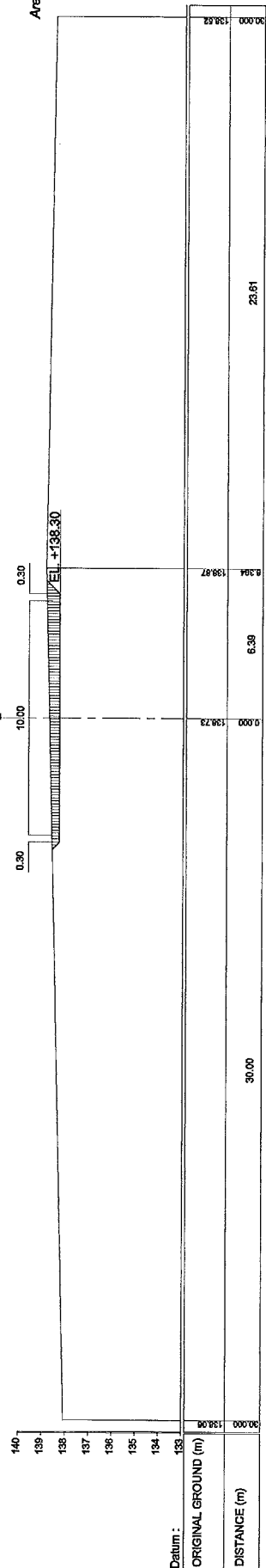
Area Excavation = 5.330 m²

STA 2+125



Area Excavation = 4.500 m²

STA 2+150



CROSS SECTION OF CLOUSER DIKE