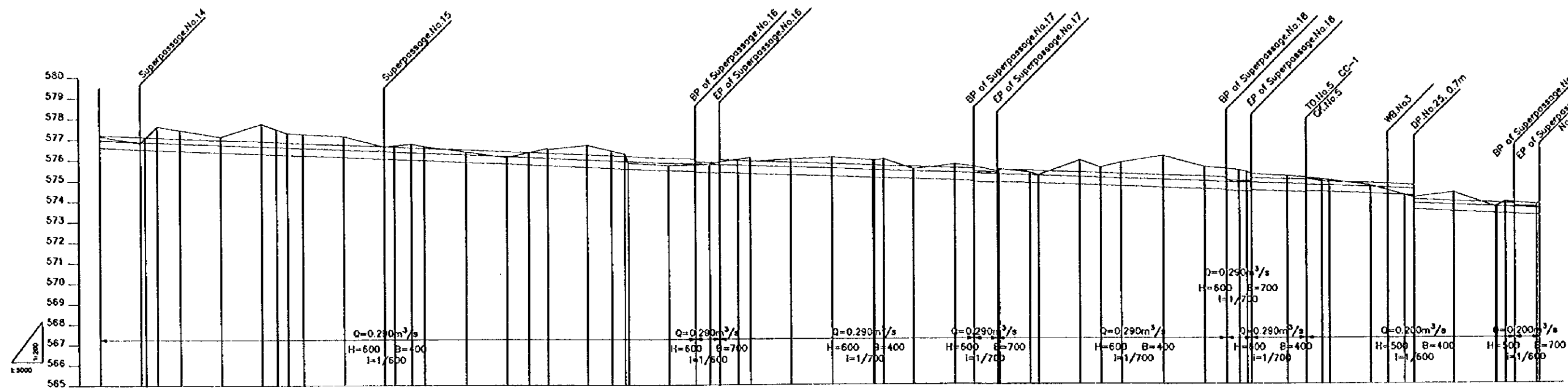


PROFILE OF LEFT MAIN CANAL (5/7)



CANAL TYPE	CANAL TYPE-III								CANAL TYPE-III								CANAL TYPE-III								CANAL TYPE-II														
CANAL BANK ELEVATION	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21	577.21			
WATER SURFACE ELEVATION	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97	576.97						
CANAL BASE ELEVATION	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61	576.61							
GROUND SURFACE ELEVATION	577.16	576.83	576.50	576.17	575.84	575.51	575.18	574.85	574.52	574.19	573.86	573.53	573.20	572.87	572.54	572.21	571.88	571.55	571.22	570.89	570.56	570.23	569.90	569.57	569.24	568.91	568.58	568.25	567.92	567.59	567.26	566.93							
REDUCED DISTANCE	7010.77	7060.76	7091.75	7110.04	7160.04	7210.04	7237.53	7240.91	7239.51	7309.51	7369.51	7371.27	7391.95	7407.45	7437.45	7507.45	7534.04	7558.38	7604.73	7634.13	7650.04	7653.64	7703.64	7728.64	7733.64	7782.64	7798.09	7804.40	7833.05	7863.05	7903.05	7928.05							
DISTANCE	50.00	50.00	14.97	28.29	50.00	50.00	17.48	13.39	18.60	50.00	50.00	11.76	20.66	15.50	50.00	26.59	22.32	44.17	29.40	15.91	3.60	50.00	32.60	0.00	17.20	16.69	22.45	13.31	0.00	46.85	50.00								
STATION NO.		BC 53 EC 53					BC 54 EC 54			BC 55 EC 55					BC 57 EC 57								BC 59 EC 59						IP 60	IP 61		IP 62	BC 64 EC 64						

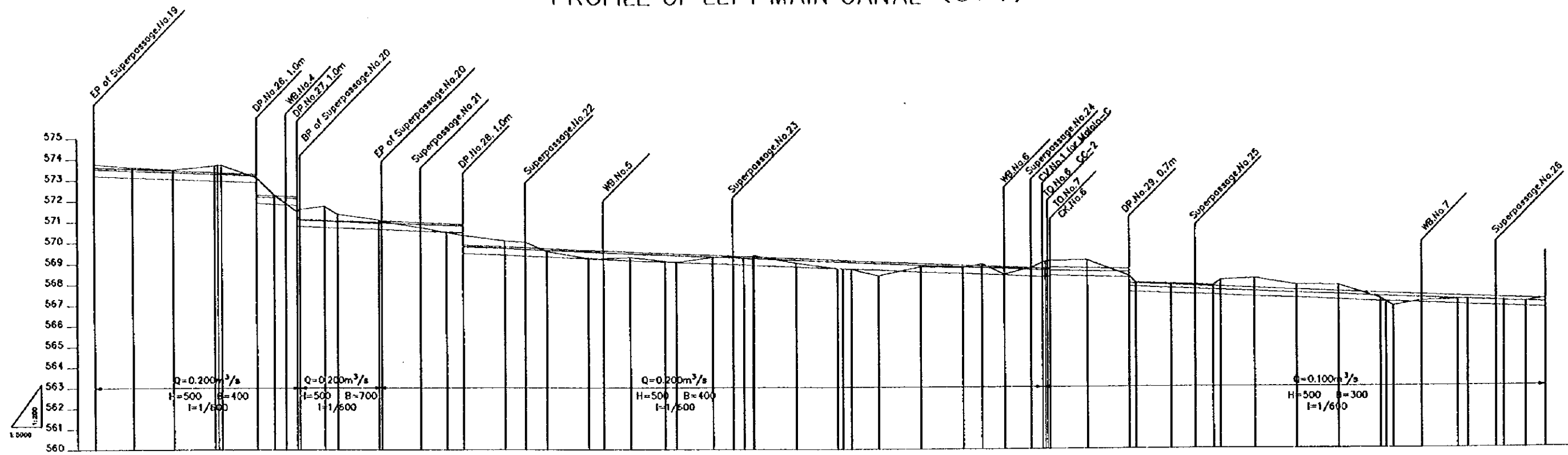
IP No.	IA	IL	CI	IP No.	IA	IL	CI
IP 52	-86° 19' 44"	18.76	30.13	IP 59	-33° 15' 46"	5.97	11.61
IP 53	+42° 52' 29"	7.85	14.97	IP 60	-16° 5' 9"	-	-
IP 54	-38° 21' 17"	6.96	13.39	IP 61	-8° 10' 10"	-	-
IP 55	+59° 14' 29"	11.37	20.58	IP 62	-17° 1' 47"	-	-
IP 56	-64° 30' 13"	12.62	22.52	IP 63	-32° 4' 44"	5.75	11.2
IP 57	+45° 34' 5"	8.4	15.91	IP 64	+30° 9' 22"	5.39	10.53
IP 58	+43° 50' 53"	8.05	15.31				

Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

TITLE OF DRAWING
CANAL
PROFILE OF LEFT MAIN CANAL(5/7)

Date | Oct. 1999 | Drawing No. | 3-11
NIPPON KOEI CO., LTD. TOKYO, JAPAN

PROFILE OF LEFT MAIN CANAL (6 / 7)



CANAL TYPE	CANAL TYPE-II										CANAL TYPE-I									
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CANAL BANK ELEVATION	573.71	573.63	573.54	573.48	573.42	573.36	573.30	573.24	573.18	573.12	573.06	573.00	572.94	572.88	572.82	572.76	572.70	572.64	572.58	572.52
WATER SURFACE ELEVATION	573.53	573.45	573.36	573.30	573.24	573.18	573.12	573.06	573.00	572.94	572.88	572.82	572.76	572.70	572.64	572.58	572.52	572.46	572.40	572.34
CANAL BASE ELEVATION	573.29	573.21	573.12	573.06	573.00	572.94	572.88	572.82	572.76	572.70	572.64	572.58	572.52	572.46	572.40	572.34	572.28	572.22	572.16	572.10
GROUND SURFACE ELEVATION	573.77	573.69	573.60	573.54	573.48	573.42	573.36	573.30	573.24	573.18	573.12	573.06	573.00	572.94	572.88	572.82	572.76	572.70	572.64	572.58
REDUCED DISTANCE	8733.46	8602.17	8652.17	8601.34	8651.34	8600.51	8650.51	8600.00	8650.00	8600.00	8650.00	8600.00	8650.00	8600.00	8650.00	8600.00	8650.00	8600.00	8650.00	8600.00
DISTANCE	0.00	46.71	50.00	49.17	48.33	47.50	46.67	45.83	45.00	44.17	43.33	42.50	41.67	40.83	40.00	39.17	38.33	37.50	36.67	35.83
STATION NO.				PC 65	EC 65		IP 66							IP 67						

IP. No.	IA	IL	CL	IP. No.	IA	IL	CL
P 65	+22° 56' 29"	4.06	8.01	P 72	-29° 43' 50"	5.31	10.38
P 66	+11° 47' 55"	-	-	P 73	+18° 56' 14"	-	-
P 67	-8° 40' 47"	-	-	P 74	-8° 37' 53"	-	-
P 68	+10° 59' 16"	-	-	P 75	+15° 20' 15"	-	-
P 69	+16° 4' 50"	-	-	P 76	-24° 3' 22"	4.26	8.4
P 70	-41° 2' 55"	7.49	14.33	P 77	-34° 20' 44"	6.18	11.99
P 71	+32° 21' 5"	5.8	11.29	P 78	+14° 8' 11"	-	-

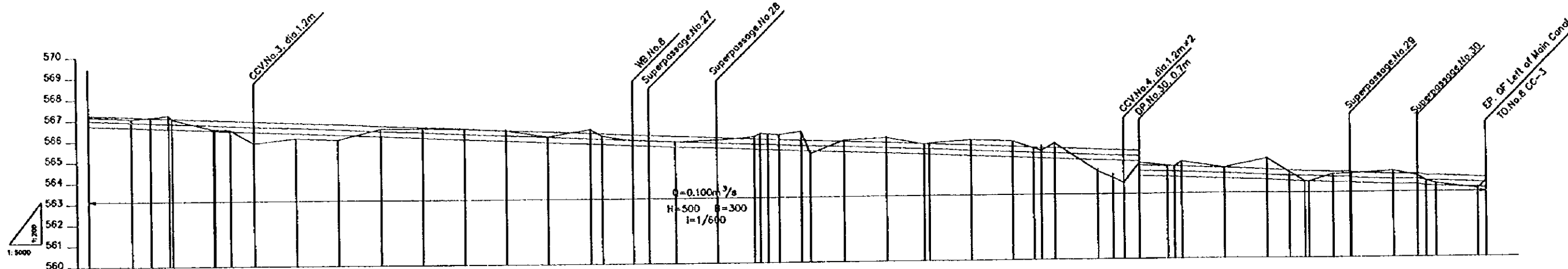
Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania

TITLE OF DRAWING
CANAL
PROFILE OF LEFT MAIN CANAL(6/7)

Date Oct. 1999 Drawing No. 3-12

NIPPON KOEI CO., LTD. TOKYO, JAPAN

PROFILE OF LEFT MAIN CANAL (7/7)



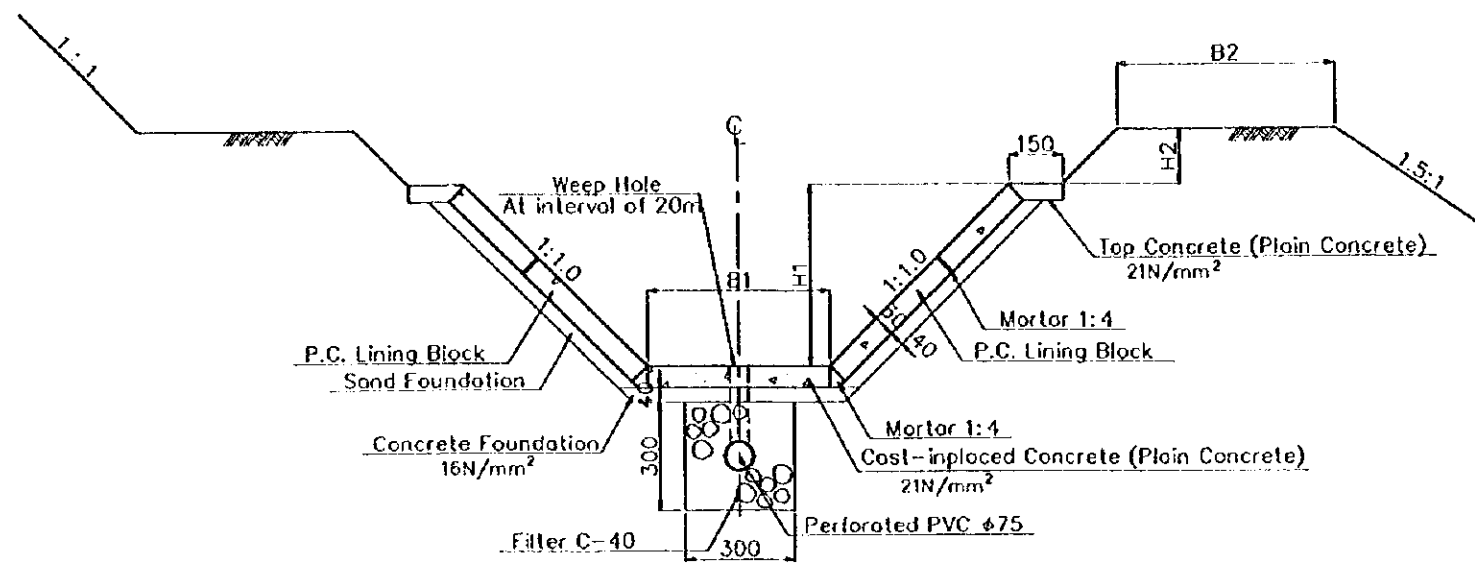
CANAL TYPE - I							
CANAL TYPE	CANAL BANK ELEVATION	WATER SURFACE ELEVATION	CANAL BASE ELEVATION	GROUND SURFACE ELEVATION	REDUCED DISTANCE	DISTANCE	STATION NO
	567.24	566.99	566.74	567.17	10500.37	23.83	
	567.16	566.91	566.66	567.08	10550.37	50.00	BC 79
	567.12	566.87	566.62	567.15	10572.88	72.81	
	567.08	566.83	566.58	567.05	10594.30	94.82	EC 79
	567.00	566.75	566.50	566.97	10648.05	50.00	
	566.98	566.73	566.48	566.94	10648.57	1.52	BC 80
	566.96	566.71	566.46	566.92	10668.28	18.71	EC 80
	566.91	566.66	566.41	566.88	10698.56	28.28	
	566.83	566.58	566.33	566.80	10746.56	50.00	
	566.75	566.50	566.25	566.72	10796.56	50.00	
	566.66	566.41	566.16	566.63	10848.56	50.00	
	566.58	566.33	566.08	566.55	10898.56	50.00	
	566.50	566.25	566.00	566.47	10946.56	50.00	
	566.41	566.16	565.91	566.38	10996.56	50.00	
	566.33	566.08	565.83	566.30	11046.56	50.00	
	566.23	565.98	565.73	566.21	11096.56	50.00	
	566.16	565.91	565.66	566.14	11110.13	13.57	IP 80A
	566.13	565.88	565.63	566.11	11165.13	56.43	
	566.08	565.83	565.58	566.06	11198.56	31.43	
	566.00	565.75	565.50	566.00	11246.56	50.00	
	565.93	565.68	565.43	565.91	11290.13	43.57	
	565.90	565.65	565.40	565.88	11328.08	9.83	BC 81
	565.88	565.63	565.38	565.86	11358.08	13.61	EC 81
	565.83	565.58	565.33	565.81	11379.70	28.21	
	565.75	565.50	565.25	565.73	11398.56	10.32	EC 82
	565.70	565.45	565.20	565.68	11429.56	36.22	
	565.67	565.42	565.17	565.65	11445.77	50.00	
	565.58	565.33	565.08	565.56	11489.85	43.88	IP 83
	565.58	565.33	565.08	565.56	11489.85	0.12	
	565.50	565.25	565.00	565.48	11545.77	50.00	
	565.42	565.17	564.92	565.40	11595.77	50.00	
	565.38	565.13	564.88	565.36	11657.08	25.31	BC 84
	565.35	565.10	564.85	565.33	11628.89	8.61	EC 84
	565.30	565.05	564.80	565.30	11643.62	15.73	
	565.25	565.00	564.75	565.25	11695.62	50.00	
	565.22	564.97	564.72	565.22	11732.24	17.62	BC 85
	565.20	564.95	564.70	565.20	11726.87	13.43	EC 85
	565.17	564.92	564.67	565.17	11745.08	18.00	
	565.14	564.89	564.64	565.14	11776.58	33.89	EC 86
	565.11	564.86	564.61	565.11	11784.89	18.00	EC 86
	565.08	564.83	564.58	565.08	11844.97	50.00	
	565.05	564.80	564.55	565.05	11894.97	50.00	
	565.02	564.77	564.52	565.02	11921.42	26.45	BC 87
	564.97	564.72	564.47	564.94	11925.99	4.50	EC 87
	564.94	564.69	564.44	564.91	11971.00	28.13	IP 88
	564.89	564.64	564.39	564.86	11991.00	20.00	
	564.86	564.61	564.36	564.83	11993.77	1.67	
	564.83	564.58	564.33	564.80	12043.77	50.00	
	564.77	564.52	564.27	564.74	12071.90	28.13	BC 89
	564.72	564.47	564.22	564.69	12082.56	10.68	EC 89
	564.64	564.36	564.14	564.61	12093.89	11.33	EC 89
	564.59	564.31	564.09	564.56	12143.46	49.57	BP CC-3
	564.50	564.22	564.00	564.45	12153.46	10.00	
	564.45	564.17	563.97	564.40			

IP. No.	I.A.	IL	CL	IP. No.	I.A.	IL	CL
IP 79	+61° 21' 36"	11.87	21.42	IP 85	+38° 28' 56"	6.98	13.43
IP 80	-53° 35' 24"	10.10	18.71	IP 86	+23° 2' 25"	4.08	8.04
IP 80A	-1° 7' 56"	-	-	IP 87	-50° 7' 38"	9.35	17.5
IP 81	+38° 59' 37"	7.08	13.61	IP 88	+6° 15' 40"	-	-
IP 82	-29° 34' 25"	5.28	10.32	IP 89	+32° 26' 40"	5.82	11.33
IP 83	-18° 32' 30"	-	-	E.P.	+28° 4' 58"	-	-
IP 84	-25° 13' 50"	4.48	8.81				

Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

TITLE OF DRAWING
CANAL
PROFILE OF LEFT MAIN CANAL(7/7)
Date | Oct. 1999 | Drawing No. | 3-13
NIPPON KOEI CO., LTD. TOKYO, JAPAN

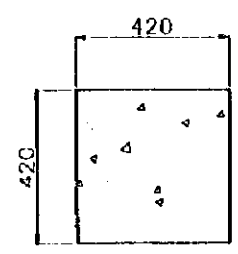
TYPICAL CROSS SECTION OF MAIN CANAL



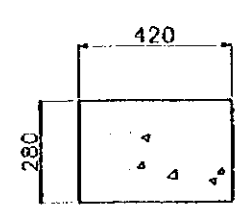
Note: Under Drain
 Left main Canal BP.-Turnout No.3
 Right main Canal BP.-Turnout No.5

P.C. LINING BLOCK

420x420x60



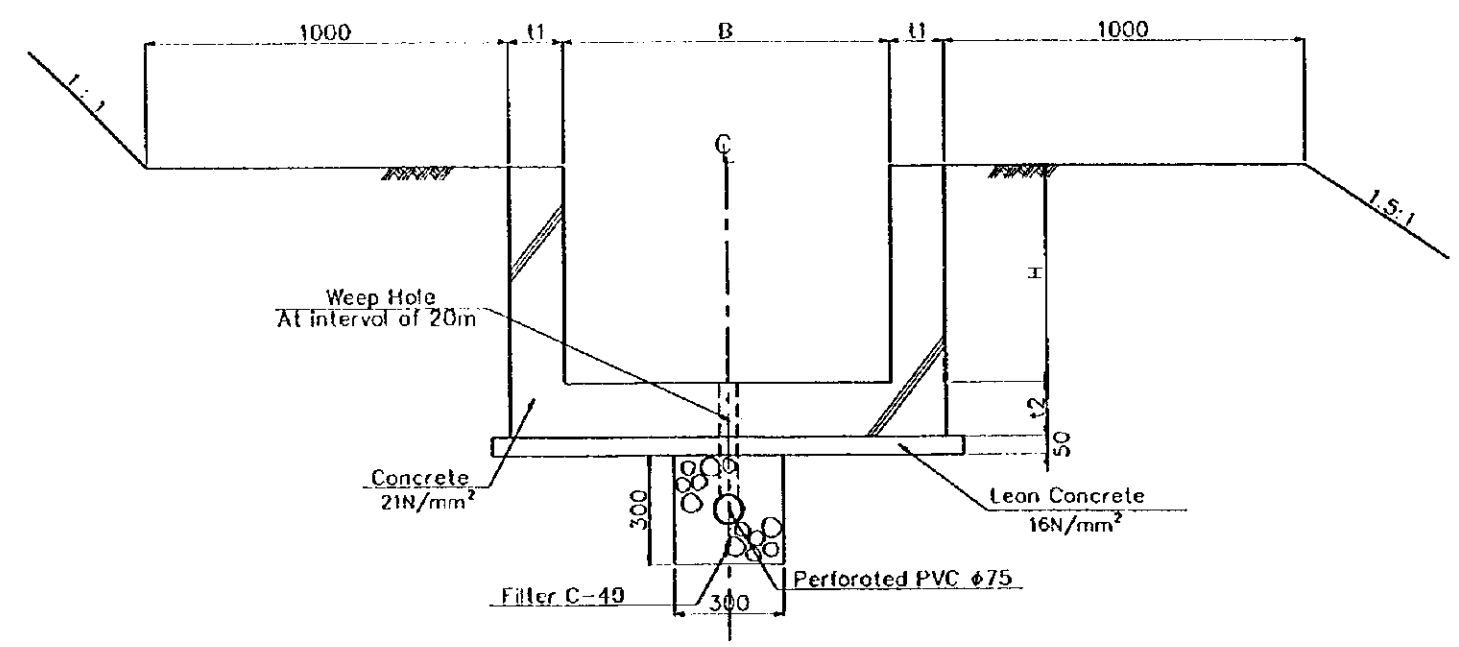
420x280x60



Dimension of Canal

(Unit mm)

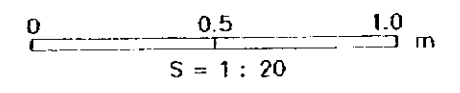
CANAL TYPE	H ₁	B ₁	H ₂	B ₂
TYPE-I	500	300	100	600
TYPE-II	500	400	100	600
TYPE-III	600	400	100	800
TYPE-IV	600	500	100	800
TYPE-V	700	500	150	1000
TYPE-VI	800	600	150	1000



Dimension of Flume

(Unit mm)

FLUME TYPE	H	B	t1	t2
TYPE-I	600	800	150	200
TYPE-II	600	900	150	200
TYPE-III	700	900	150	200
TYPE-IV	700	1000	150	200
TYPE-V	800	1200	150	200



Basic Design Study on the Project for
 Mwega Smallholder Irrigation Scheme
 in Morogoro Region
 in the United Republic of Tanzania

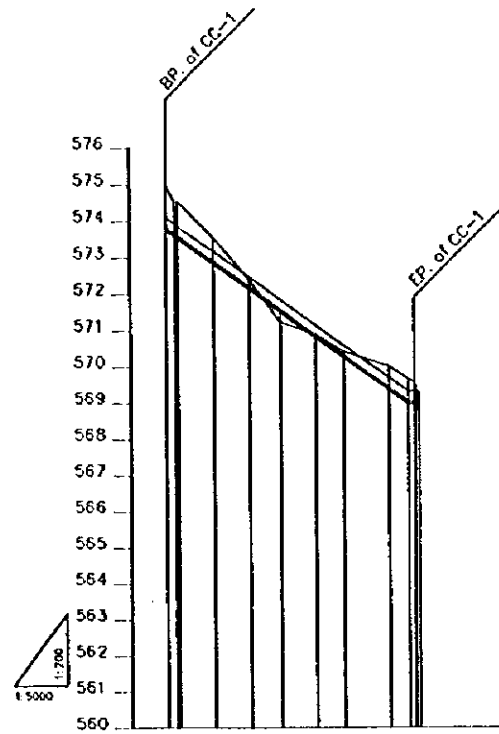
TITLE OF DRAWING
 CANAL
 TYPICAL CROSS SECTION OF MAIN CANAL

Date	Oct. 1999	Drawing No.	3-14
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NIPPON KOEI CO., LTD. TOKYO, JAPAN

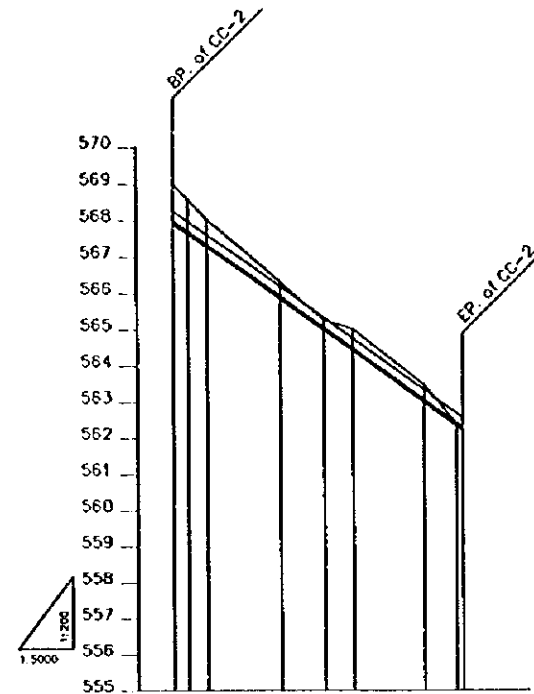
PROFILE OF CONNECTION CANALS

CONNECTION CANAL No.1



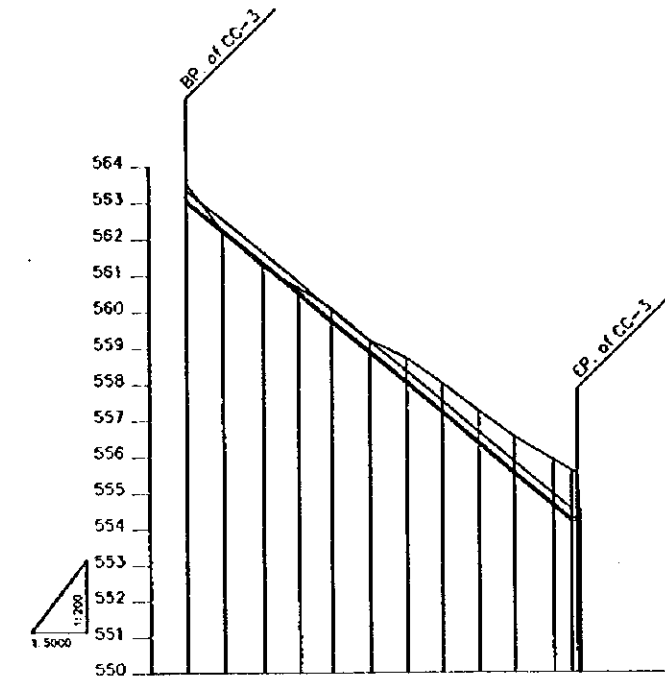
CANAL TYPE	Q=0.049m ³ /s h=0.08m	B=0.40m l=1/35	H=0.35m V=1.62m/s
CANAL BANK ELEVATION	574.25 573.86 573.47	573.16 572.77 572.38	571.64 571.25 570.86
WATER SURFACE ELEVATION	574.99 574.50 574.01	573.51 573.02 572.53	571.54 571.05 570.56
CANAL BASE ELEVATION	574.59 574.10 573.61	573.11 572.62 572.13	570.64 570.15 570.00
GROUND SURFACE ELEVATION	574.99 574.50 574.01	573.51 573.02 572.53	571.54 571.05 570.56
REDUCED DISTANCE	0.00 8.35 16.70	24.43 48.86 73.29	56.58 113.16 170.00
DISTANCE	0.00 8.35 16.70	24.43 48.86 73.29	56.58 113.16 170.00
STATION NO.	BP of CC-1 Top of Bank		EP of CC-1 Bank

CONNECTION CANAL No.2



CANAL TYPE	Q=0.056m ³ /s h=0.08m	B=0.40m l=1/35	H=0.35m V=1.69m/s
CANAL BANK ELEVATION	568.25 567.86 567.47	566.75 566.36 565.97	565.18 564.79 564.40
WATER SURFACE ELEVATION	568.91 568.42 567.93	567.43 566.94 566.45	565.46 564.97 564.48
CANAL BASE ELEVATION	568.51 568.02 567.53	566.53 566.04 565.55	564.56 564.07 563.58
GROUND SURFACE ELEVATION	568.91 568.42 567.93	567.43 566.94 566.45	565.46 564.97 564.48
REDUCED DISTANCE	0.00 8.80 17.60	22.50 45.00 67.50	72.50 145.00 217.50
DISTANCE	0.00 8.80 17.60	22.50 45.00 67.50	72.50 145.00 217.50
STATION NO.	BP of No.1	No.2 IP 1 No.3	No.4 EP

CONNECTION CANAL No.3



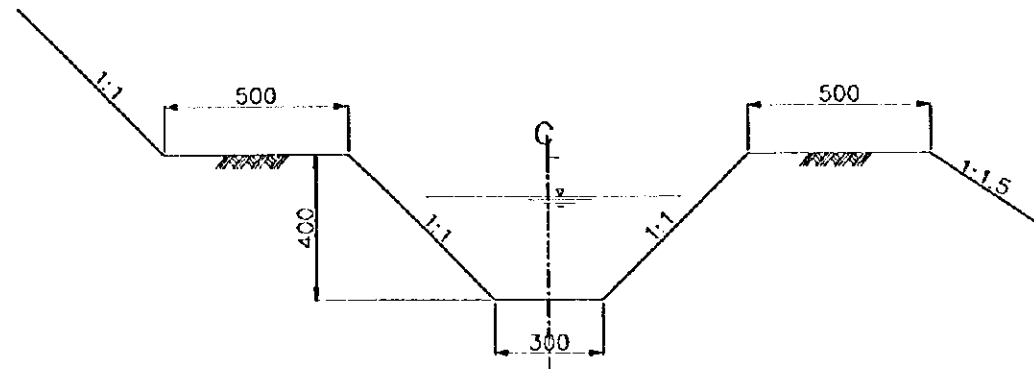
CANAL TYPE	Q=0.056m ³ /s h=0.08m	B=0.40m l=1/30	H=0.35m V=1.79m/s
CANAL BANK ELEVATION	563.34 562.95 562.56	561.06 560.67 560.28	559.18 558.79 558.40
WATER SURFACE ELEVATION	563.34 562.95 562.56	561.06 560.67 560.28	559.18 558.79 558.40
CANAL BASE ELEVATION	562.99 562.60 562.21	560.31 560.00 559.69	558.03 557.72 557.41
GROUND SURFACE ELEVATION	563.34 562.95 562.56	561.06 560.67 560.28	559.18 558.79 558.40
REDUCED DISTANCE	0.00 24.41 48.82	50.93 75.34 99.75	124.93 149.34 173.75
DISTANCE	0.00 24.41 48.82	50.93 75.34 99.75	124.93 149.34 173.75
STATION NO.	BP of CC-3	IP 1	EP of CC-3

Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
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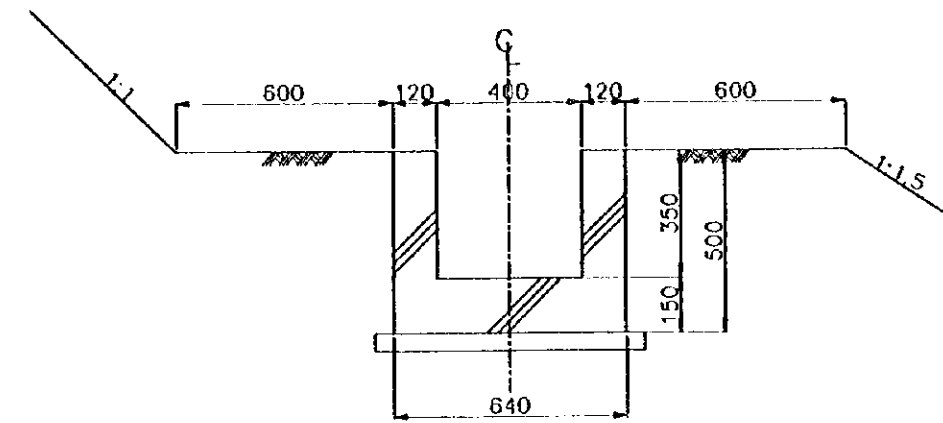
TITLE OF DRAWING CANAL			
CONNECTION CANALS			
Date	Oct. 1999	Drawing No.	3-15
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

TYPICAL CROSS SECTION OF CONNECTION CANAL AND LATERAL CANAL

LATERAL CANAL



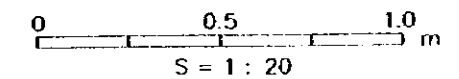
CONNECTION CANAL



List of Lateral Canals

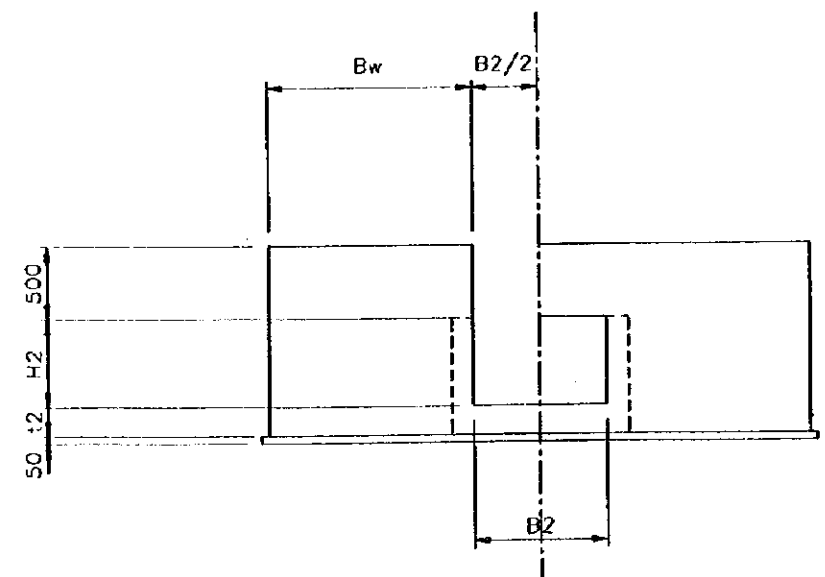
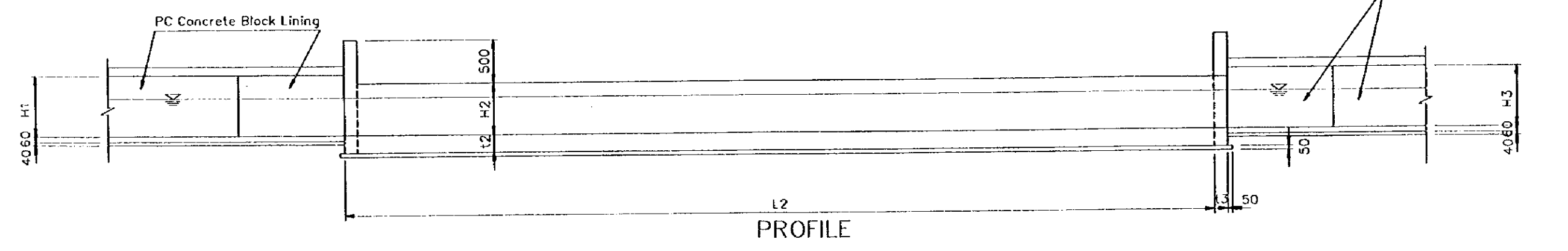
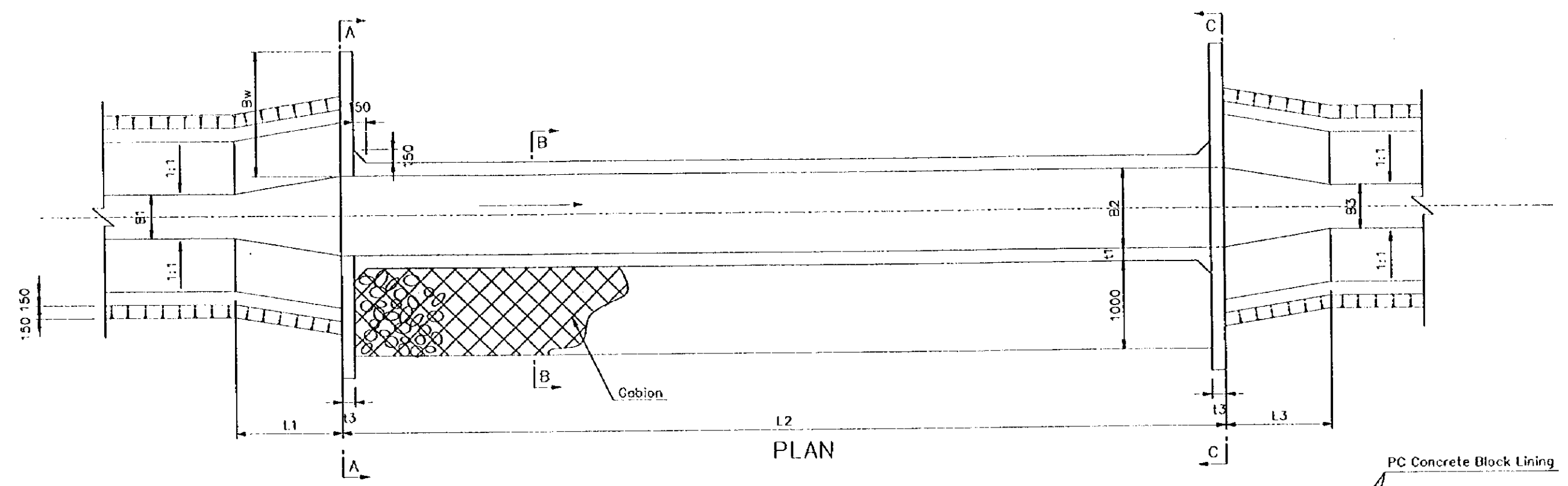
Name of Lateral	Design Discharge (m ³ /sec)	Length (m)	Remarks
(1). Right Main Canal Area			
RLC-2	0.03	200	from Turnout No.2 of RMC
RLC-3	0.03	100	from Turnout No.3 of RMC
RLC-5	0.08	1502	from Turnout No.4 of RMC
RLC-7	0.07	225	to existing Canal C
(2). Left Main Canal Area			
LLC-2	0.06	660	from Turnout No.2 of LMC
LLC-3	0.07	1134	from Turnout No.3 of LMC
LLC-4	0.07	534	from Turnout No.4 of LMC
LLC-5	0.04	930	from Turnout No.5 of LMC

Note; Excavation of Lateral Canal should be performed by formers.

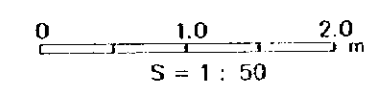
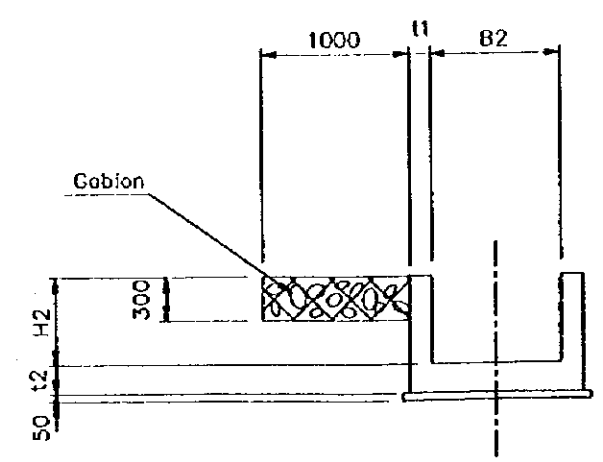


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING CANAL TYPICAL CROSS SECTION OF CONNECTION CANAL AND LATERAL CANAL			
Date	Oct. 1999	Drawing No.	3-16
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

SUPERPASSAGE WITHOUT COVER

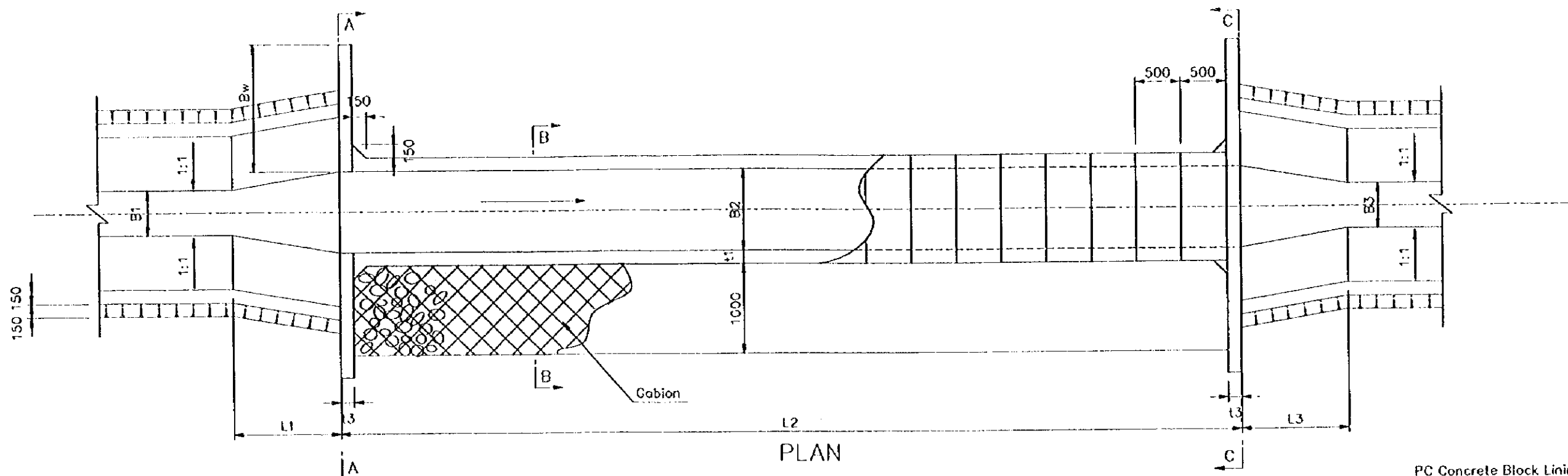


SECTION C-C

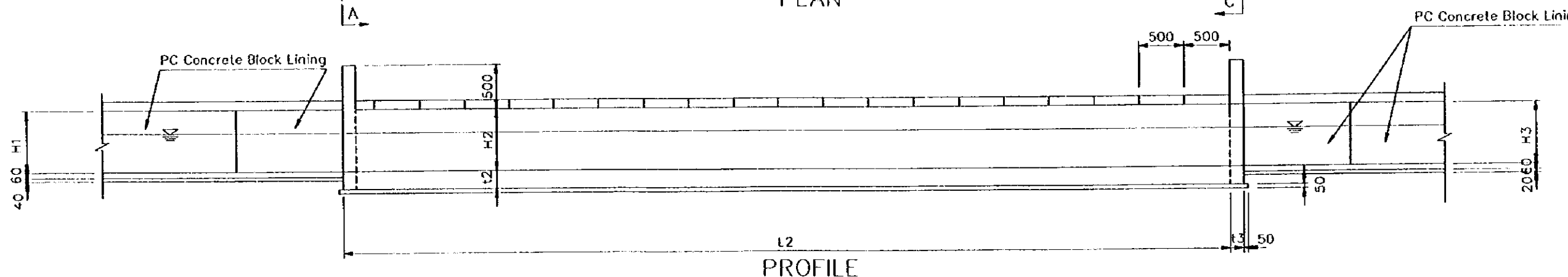


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING CANAL SUPERPASSAGE WITHOUT COVER			
Date	Oct. 1999	Drawing No.	3-17
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

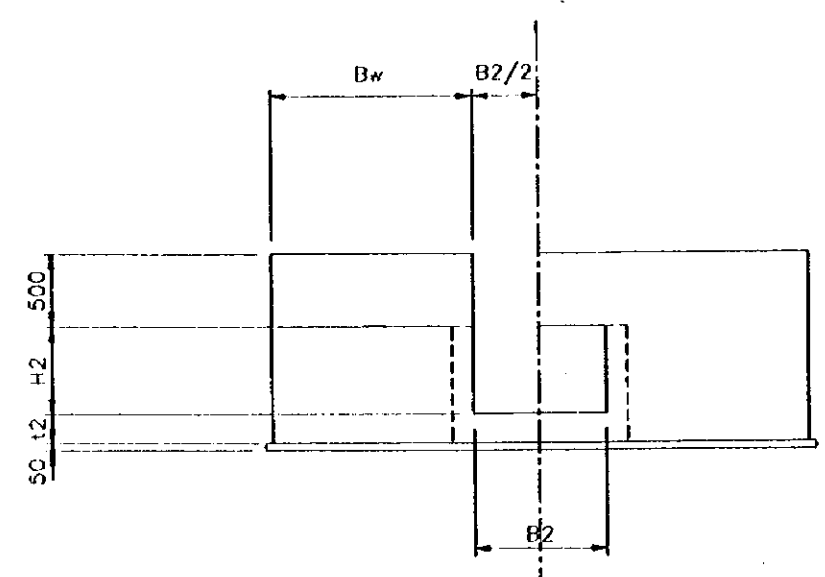
SUPERPASSAGE WITH COVER



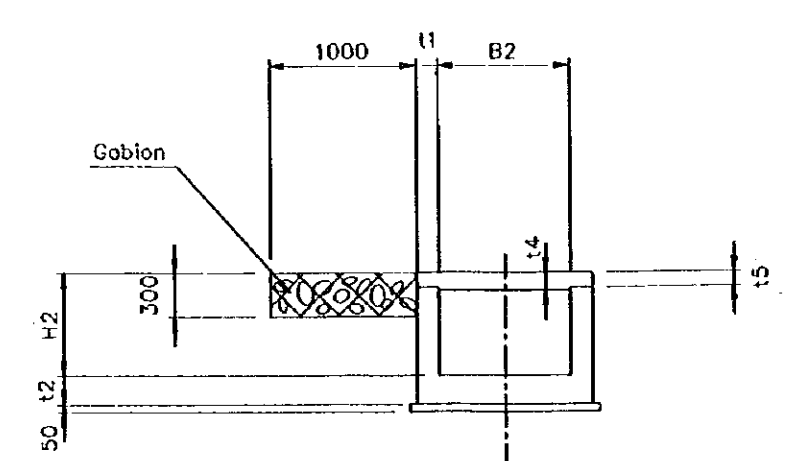
PLAN



PROFILE

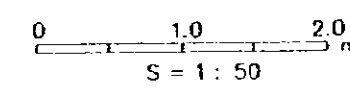


SECTION A-A



SECTION B-B

SECTION C-C



Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING CANAL			
SUPERPASSAGE WITH COVER			
Date	Oct. 1999	Drawing No.	3-18
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

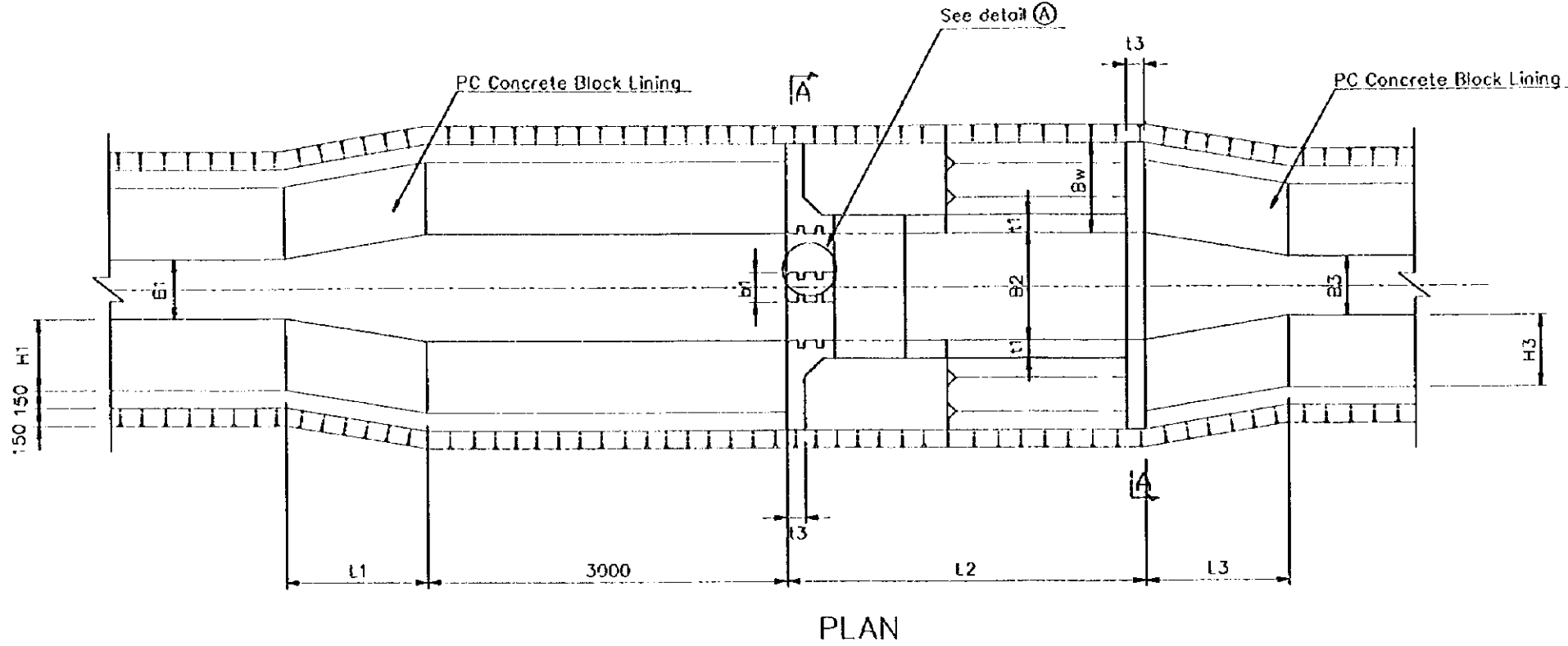
DIMENSION TABLE OF SUPERPASSAGE

Unit:(mm)																			
Nome of Canal	Nome of structure	Reduced Distance	Qi (m3/sec)	H1	H2	H3	L1(m)	L2(m)	L3(m)	B1	B2	B3	Bw	t1	t2	t3	t4	t5	Remarks
Right Main Canal	No.1 SUPERPASSAGE	680.43	0.37	700	700	700	1.2	6	1.2	500	900	900	1500	150	200	150	120	100	With concrete cover
	No.2 SUPERPASSAGE	1410.93	0.37	600	600	600	1.2	4	1.2	500	900	900	1400	150	200	150	120	100	With concrete cover
	No.3 SUPERPASSAGE	1770.11	0.37	600	600	600	1.2	4	1.2	500	900	500	1400	150	200	150	120	100	With concrete cover
	No.4 SUPERPASSAGE	2279.51	0.37	600	500	600	1.2	4	1.2	500	900	500	1400	150	200	150	-	-	
	No.5 SUPERPASSAGE	2625.37	0.37	600	500	600	1.2	5	1.2	500	800	500	1400	150	200	150	-	-	
	No.6 SUPERPASSAGE	3280.56	0.31	600	500	600	1.2	19	1.2	400	800	400	1400	150	200	150	-	-	
	No.7 SUPERPASSAGE	4344.34	0.31	600	500	600	1.2	4	1.2	400	800	400	1400	150	200	150	-	-	
	No.8 SUPERPASSAGE	4788.03	0.31	600	500	600	1.2	4	1.2	400	800	400	1400	150	200	150	-	-	
	No.9 SUPERPASSAGE	6357.11	0.18	500	500	500	1.2	4	1.2	300	600	300	1300	120	150	150	120	100	With concrete cover
	No.10 SUPERPASSAGE	7223.06	0.18	500	500	500	1.2	4	1.2	300	600	300	1300	120	150	150	120	100	With concrete cover
	No.11 SUPERPASSAGE	7418.79	0.18	500	400	500	1.2	4	1.2	300	600	300	1300	120	150	150	-	-	
	No.12 SUPERPASSAGE	8020.97	0.18	500	400	500	1.2	11	1.2	300	600	300	1300	120	150	150	-	-	
	No.13 SUPERPASSAGE	8512.65	0.18	500	400	500	1.2	10	1.2	300	600	300	1300	120	150	150	-	-	
Left Main Canal	No.1 SUPERPASSAGE	404.98	0.52	800	800	800	1.2	6	1.2	600	1200	600	1600	150	200	150	150	130	With concrete cover
	No.2 SUPERPASSAGE	936.93	0.52	700	700	700	1.2	4	1.2	500	1000	500	1500	150	200	150	120	100	With concrete cover
	No.3 SUPERPASSAGE	1313.67	0.52	700	700	700	1.2	4	1.2	500	1000	500	1500	150	200	150	120	100	With concrete cover
	No.4 SUPERPASSAGE	1880.89	0.52	700	600	700	1.2	15	1.2	1000	1000	1000	1500	150	200	150	-	-	
	No.5 SUPERPASSAGE	2751.79	0.43	700	700	700	1.2	4	1.2	500	900	500	1500	150	200	150	120	100	With concrete cover
	No.6 SUPERPASSAGE	3083.71	0.43	700	600	700	1.2	4	1.2	500	900	500	1500	150	200	150	-	-	
	No.7 SUPERPASSAGE	3540.46	0.43	700	600	700	1.2	14	1.2	900	900	900	1500	150	200	150	-	-	
	No.8 SUPERPASSAGE	3928.15	0.43	700	600	700	1.2	5	1.2	500	900	500	1500	150	200	150	-	-	
	No.9 SUPERPASSAGE	4540.44	0.43	700	600	700	1.2	4	1.2	500	900	500	1500	150	200	150	-	-	
	No.10 SUPERPASSAGE	5058.52	0.43	700	600	700	1.2	8	1.2	500	900	500	1500	150	200	150	-	-	
	No.11 SUPERPASSAGE	5704.49	0.43	700	600	700	1.2	9	1.2	500	900	500	1500	150	200	150	-	-	
	No.12 SUPERPASSAGE	6311.65	0.43	700	700	700	1.2	4	1.2	500	900	500	1500	150	200	150	-	-	
	No.13 SUPERPASSAGE	6533.12	0.25	600	600	600	1.2	4	1.2	400	700	400	1400	120	150	150	120	100	With concrete cover
	No.14 SUPERPASSAGE	7080.77	0.25	600	600	600	1.2	4	1.2	400	700	400	1400	120	150	150	120	100	With concrete cover
	No.15 SUPERPASSAGE	7359.51	0.25	600	600	600	1.2	4	1.2	400	700	400	1400	120	150	150	120	100	With concrete cover
	No.16 SUPERPASSAGE	7751.64	0.25	600	500	600	1.2	30	1.2	700	700	700	1400	120	150	150	-	-	
	No.17 SUPERPASSAGE	8088.87	0.25	600	500	600	1.2	30	1.2	700	700	700	1400	120	150	150	-	-	
No.18 SUPERPASSAGE	8393.19	0.25	600	500	600	1.2	30	1.2	700	700	700	1400	120	150	150	-	-		
No.19 SUPERPASSAGE	8739.46	0.20	500	400	500	1.2	30	1.2	700	700	700	1300	120	150	150	-	-		
No.20 SUPERPASSAGE	9055.29	0.20	500	500	500	1.2	100	1.2	700	700	700	1300	120	150	150	120	100	With concrete cover	
No.21 SUPERPASSAGE	9105.19	0.20	500	400	500	1.2	9	1.2	700	700	700	1300	120	150	150	-	-		
No.22 SUPERPASSAGE	9276.78	0.20	500	400	500	1.2	8	1.2	400	700	400	1300	120	150	150	-	-		
No.23 SUPERPASSAGE	9525.32	0.20	500	400	500	1.2	8	1.2	400	700	400	1300	120	150	150	-	-		
No.24 SUPERPASSAGE	9883.61	0.20	500	400	500	1.2	7	1.2	400	700	400	1300	120	150	150	-	-		
No.25 SUPERPASSAGE	10078.87	0.10	500	400	500	1.2	7	1.2	300	500	300	1300	120	150	150	-	-		
No.26 SUPERPASSAGE	10441.32	0.10	500	400	500	1.2	6	1.2	300	500	300	1300	120	150	150	-	-		
No.27 SUPERPASSAGE	11165.13	0.10	500	400	500	1.2	7	1.2	300	500	300	1300	120	150	150	-	-		
No.28 SUPERPASSAGE	11246.56	0.10	500	400	500	1.2	7	1.2	300	500	300	1300	120	150	150	-	-		
No.29 SUPERPASSAGE	11991.90	0.10	500	400	500	1.2	8	1.2	300	500	300	1300	120	150	150	-	-		
No.30 SUPERPASSAGE	12071.90	0.10	500	400	500	1.2	8	1.2	300	500	300	1300	120	150	150	-	-		

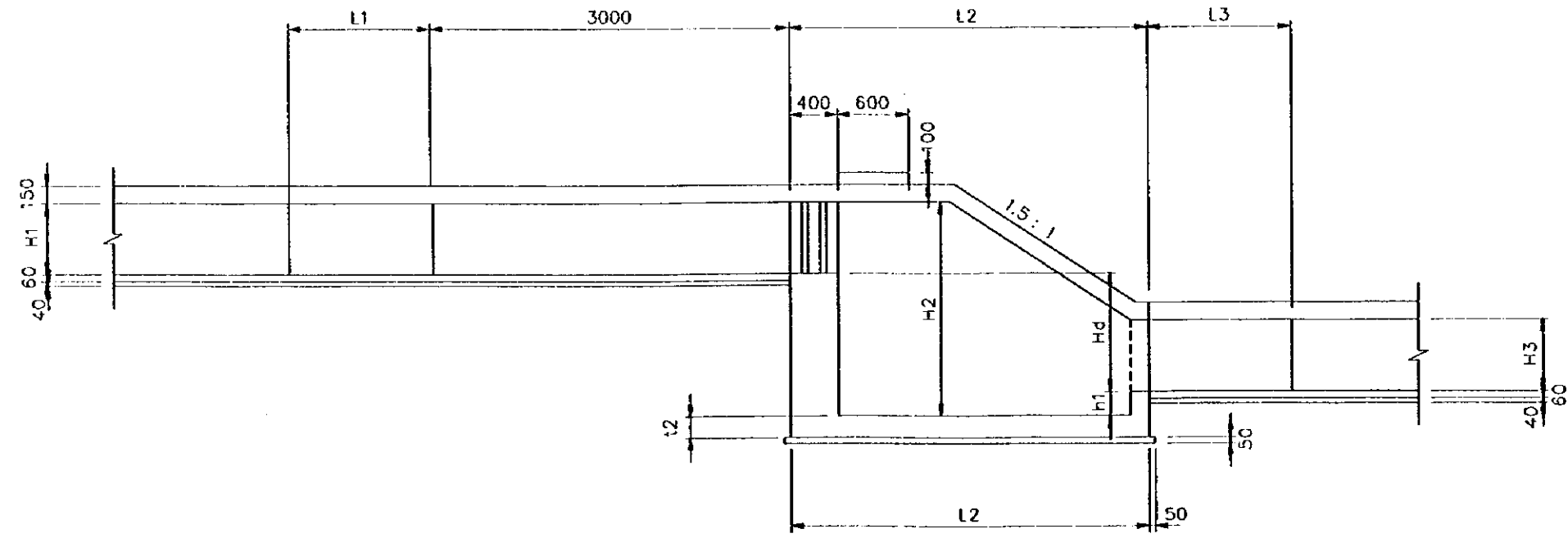
Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

TITLE OF DRAWING CANAL			
DIMENSION TABLE OF SUPERPASSAGE			
Date	Oct. 1999	Drawing No.	3-19
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

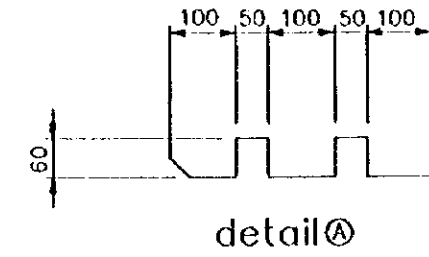
DROP



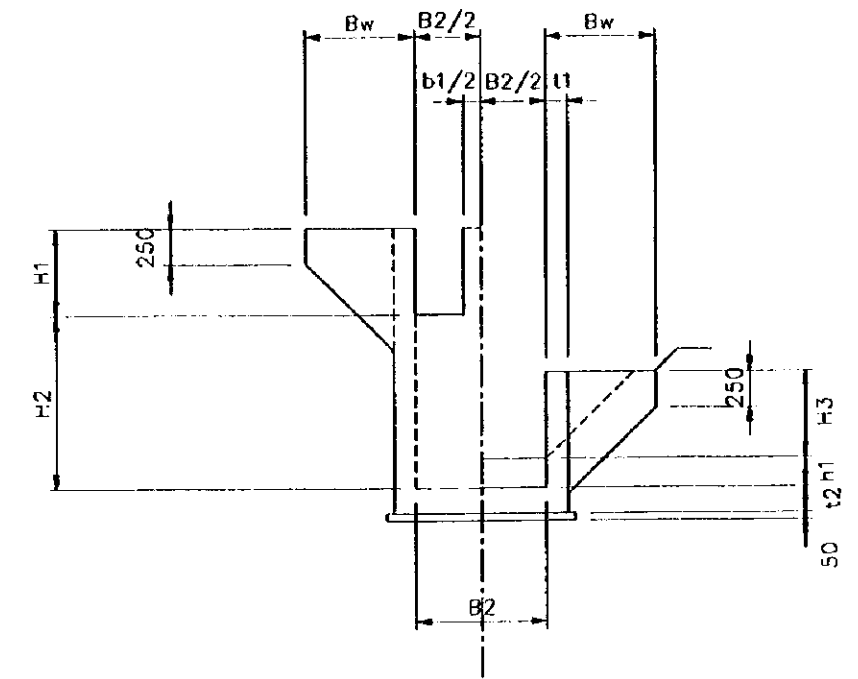
PLAN



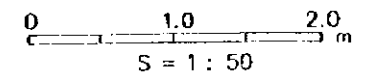
PROFILE



detail (A)



SECTION A-A



Note; Each dimension is mentioned on Plate No.39

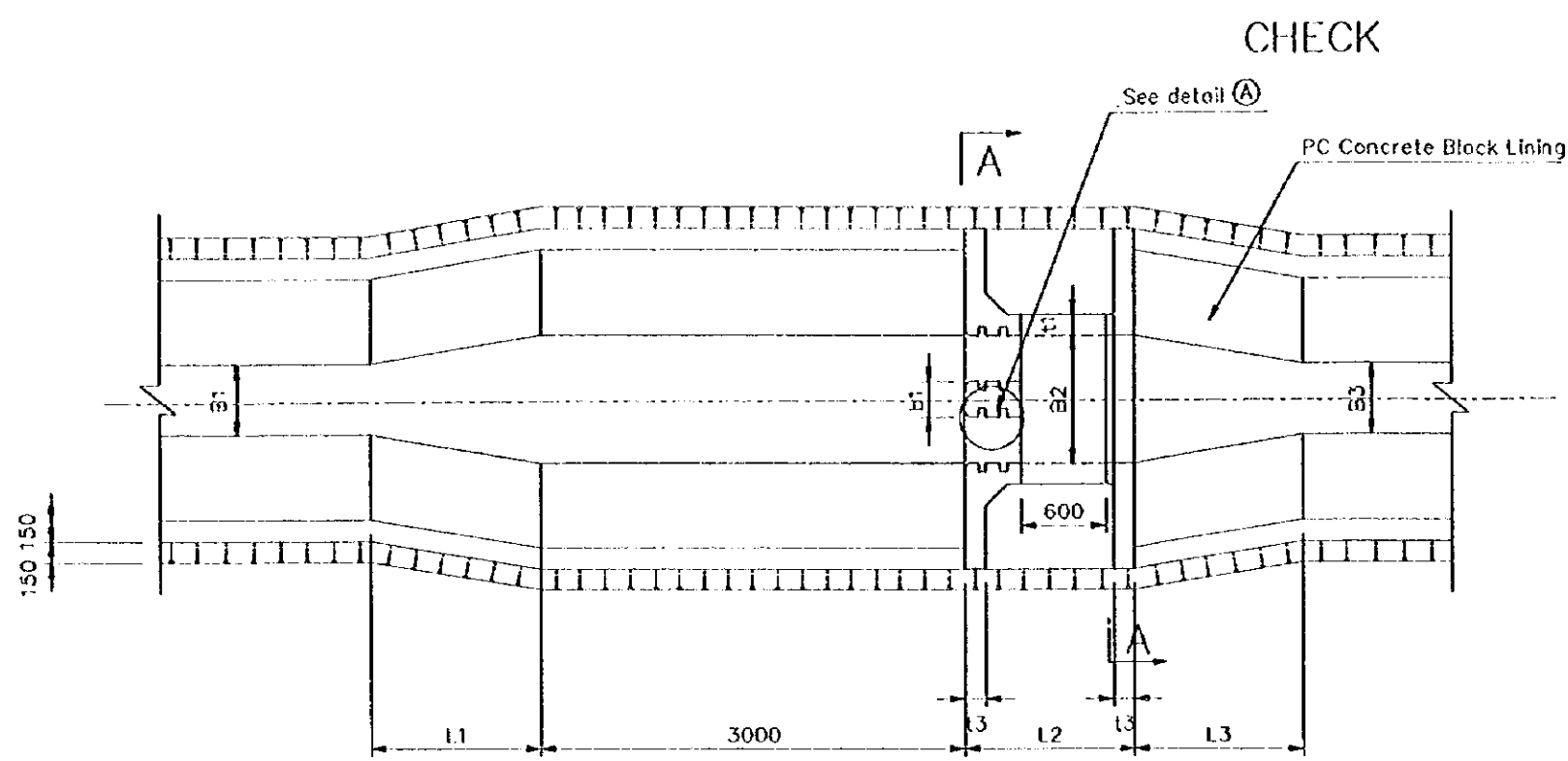
Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING CANAL			
DROP			
Date	Oct. 1999	Drawing No.	3-20
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

DIMENSION TABLE OF DROP

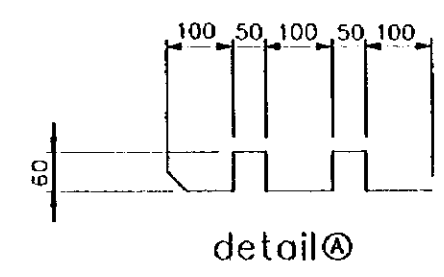
(Unit:mm)

Nome of Canal	Nome of structure	Reduced Distance(m)	Qi (m ³ /sec)	H1	H2	H3	Hd	h1	L1	L2	L3	B1	B2	B3	b1	Bw	t1	t2	t3
Right Main Canal	No.1Drop	1084.17	0.37	700	1720	600	820	200	1200	2460	1200	500	1050	500	250	850	200	200	150
	No.2Drop	1274.17	0.37	600	1500	600	700	200	1200	2200	1200	500	1050	500	250	750	200	200	150
	No.3Drop	1325.08	0.37	600	1500	600	700	200	1200	2200	1200	500	1050	500	250	750	200	200	150
	No.4Drop	1570.96	0.37	600	1500	600	700	200	1200	2200	1200	500	1050	500	250	750	200	200	150
	No.5Drop	1720.36	0.37	600	1500	600	700	200	1200	2200	1200	500	1050	500	250	750	200	200	150
	No.6Drop	2029.51	0.37	600	1800	600	1000	200	1200	3000	1200	500	1050	500	250	750	200	200	150
	No.7Drop	2329.51	0.37	600	1800	600	1000	200	1200	3000	1200	500	1050	500	250	750	200	200	150
	No.8Drop	3071.06	0.31	600	1800	600	1000	200	1200	3000	1200	400	1050	400	250	750	200	200	150
	No.9Drop	3221.06	0.31	600	1500	600	700	200	1200	2200	1200	400	1050	400	250	750	200	200	150
	No.10Drop	3825.82	0.31	600	1500	600	700	200	1200	2200	1200	400	1050	400	250	750	200	200	150
	No.11Drop	4541.03	0.31	600	1800	600	1000	200	1200	3000	1200	400	1050	400	250	750	200	200	150
	No.12Drop	4588.03	0.31	600	1800	600	1000	200	1200	3000	1200	400	1050	400	250	750	200	200	150
	No.13Drop	5082.30	0.31	600	1800	600	1000	200	1200	3000	1200	400	1050	400	250	750	200	200	150
	No.14Drop	5132.30	0.31	600	1800	600	1000	200	1200	3000	1200	400	1050	400	250	750	200	200	150
	No.15Drop	5182.30	0.31	600	1500	600	700	200	1200	2200	1200	400	1050	400	250	750	200	200	150
	No.16Drop	5282.30	0.31	600	1500	600	700	200	1200	2200	1200	400	1050	400	250	750	200	200	150
	No.17Drop	6280.30	0.18	500	1700	500	1000	200	1200	3000	1200	300	850	300	250	650	200	200	150
	No.18Drop	6328.94	0.18	500	1400	500	700	200	1200	2200	1200	300	850	300	250	650	200	200	150
	No.19Drop	6925.30	0.18	500	1700	500	1000	200	1200	3000	1200	300	850	300	250	650	200	200	150
	No.20Drop	6989.17	0.18	500	1400	500	700	200	1200	2200	1200	300	850	300	250	650	200	200	150
	No.21Drop	8189.47	0.18	500	1700	500	1000	200	1200	3000	1200	300	850	300	250	650	200	200	150
	No.22Drop	8215.37	0.18	500	1700	500	1000	200	1200	3000	1200	300	850	300	250	650	200	200	150
	No.23Drop	8714.60	0.14	500	1700	500	1000	200	1200	3000	1200	300	850	300	250	650	200	200	150
Left Main Canal	No.1 Drop	1166.84	0.52	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.2 Drop	1365.40	0.52	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.3 Drop	1556.64	0.52	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.4 Drop	1765.14	0.52	700	1800	700	700	200	1200	2200	1200	500	1050	500	250	850	200	200	150
	No.5 Drop	2609.34	0.52	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.6 Drop	2659.34	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.7 Drop	2771.85	0.43	700	1600	700	700	200	1200	2200	1200	500	1050	500	250	850	200	200	150
	No.8 Drop	2858.52	0.43	700	1600	700	700	200	1200	2200	1200	500	1050	500	250	850	200	200	150
	No.9 Drop	3208.52	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.10 Drop	3358.52	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.11 Drop	3608.52	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.12 Drop	3808.52	0.43	700	1600	700	700	200	1200	2200	1200	500	1050	500	250	850	200	200	150
	No.13 Drop	4008.52	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.14 Drop	4158.52	0.43	700	1800	700	700	200	1200	2200	1200	500	1050	500	250	850	200	200	150
	No.15 Drop	4358.52	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
	No.16 Drop	4458.52	0.43	700	1800	700	700	200	1200	2200	1200	500	1050	500	250	850	200	200	150
	No.17 Drop	4608.52	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150
No.18 Drop	4808.52	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150	
No.19 Drop	5154.38	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150	
No.20 Drop	5380.49	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150	
No.21 Drop	5555.87	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150	
No.22 Drop	6768.16	0.25	600	1800	600	1000	200	1200	3000	1200	400	850	400	250	750	200	200	150	
No.23 Drop	6818.16	0.25	600	1800	600	1000	200	1200	3000	1200	400	850	400	250	750	200	200	150	
No.24 Drop	6910.77	0.25	600	1800	600	1000	200	1200	3000	1200	400	850	400	250	750	200	200	150	
No.25 Drop	8604.46	0.20	500	1400	500	700	200	1200	2200	1200	400	850	400	250	650	200	200	150	
No.26 Drop	8952.06	0.20	500	1700	500	1000	200	1200	3000	1200	400	850	400	250	650	200	200	150	
No.27 Drop	9002.06	0.20	500	1700	500	1000	200	1200	3000	1200	400	850	400	250	650	200	200	150	
No.28 Drop	9202.06	0.20	500	1700	500	1000	200	1200	3000	1200	400	850	400	250	650	200	200	150	
No.29 Drop	10000.86	0.10	400	1300	400	700	200	1200	2200	1200	300	500	300	-	550	150	150	150	
No.30 Drop	11745.09	0.10	400	1300	400	700	200	1200	2200	1200	300	500	300	-	550	150	150	150	

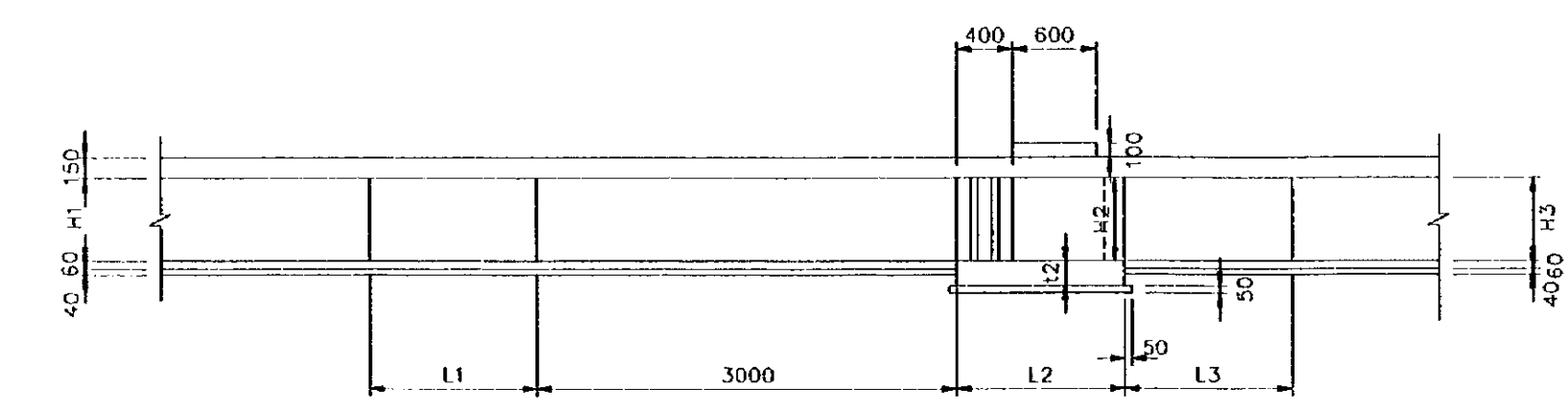
Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING CANAL DIMENSION TABLE OF DROP			
Date	Oct. 1999	Drawing No.	3-21
NIPPON KOEI CO., LTD. TOKYO, JAPAN			



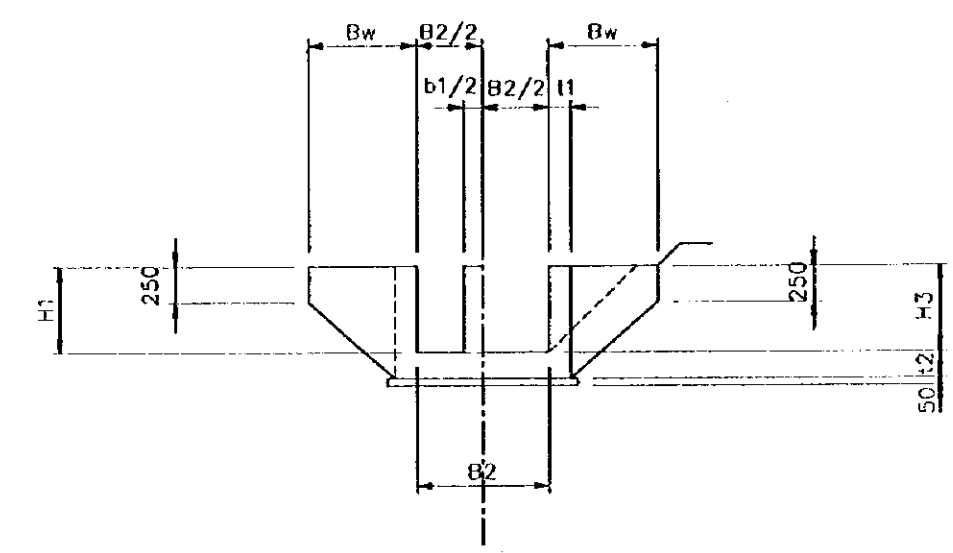
PLAN



detail A



PROFILE

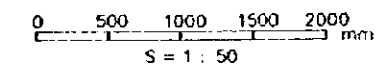


SECTION A-A

DIMENSION OF CHECK

Unit:(mm)

Name of Canal	Name of structure	Reduced Distance(m)	Qi (m ³ /sec)	H1	H2	H3	Hd	h1	L1	L2	L3	B1	B2	B3	b1	Bw	t1	t2	t3	Remarks
Right Main Canal	No.1 Check/Drop	1804.34	0.37	600	1800	600	1000	200	1200	3000	1200	500	1050	500	250	750	200	200	150	See Drawing of Drop
	No.2 Check/Drop	2971.06	0.31	600	1800	600	1000	200	1200	3000	1200	500	1050	400	250	750	200	200	150	See Drawing of Drop
	No.3 Check/Drop	4446.35	0.31	600	1500	600	700	200	1200	2200	1200	400	1050	400	250	750	200	200	150	See Drawing of Drop
	No.4 Check/Drop	6213.42	0.18	500	1700	500	1000	200	1200	3000	1200	300	850	300	250	650	200	200	150	See Drawing of Drop
	No.5 Check	8572.65	0.14	500	500	500	-	-	1200	1200	1200	300	500	300	-	650	150	150	150	
	No.6 Check	8963.20	0.14	500	500	500	-	-	1200	1200	1200	300	500	300	-	650	150	150	150	
Left Main Canal	No.1 Check/Drop	533.58	0.52	800	2000	800	1000	200	1200	3000	1200	1200	1050	600	250	950	200	200	150	See Drawing of Drop
	No.2 Check/Drop	2353.27	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150	See Drawing of Drop
	No.3 Check/Drop	4250.44	0.43	700	1900	700	1000	200	1200	3000	1200	500	1050	500	250	850	200	200	150	See Drawing of Drop
	No.4 Check	6326.65	0.25	700	700	600	-	-	1200	1200	1200	500	850	400	250	850	150	150	150	
	No.5 Check	8475.08	0.20	600	600	500	-	-	1200	1200	1200	400	850	400	250	750	150	150	150	
	No.6 Check	9908.61	0.10	500	500	500	-	-	1200	1200	1200	400	500	300	-	650	150	150	150	
	No.7 Check	12153.46	0.04	500	500	500	-	-	1200	1200	1200	300	500	300	-	650	150	150	150	



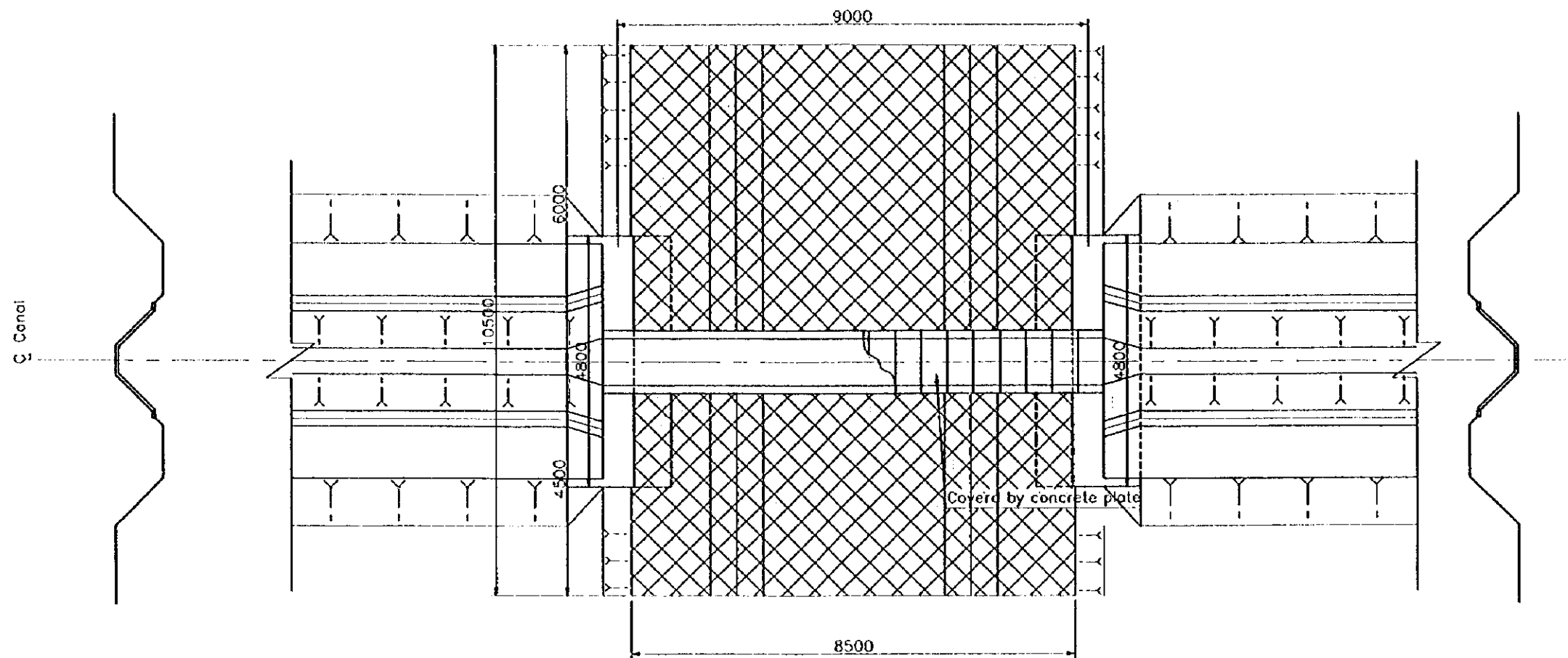
Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

TITLE OF DRAWING
CANAL

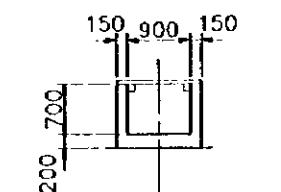
CHECK

Date | Oct. 1999 | Drawing No. | 3-22
NIPPON KOEI CO., LTD. TOKYO, JAPAN

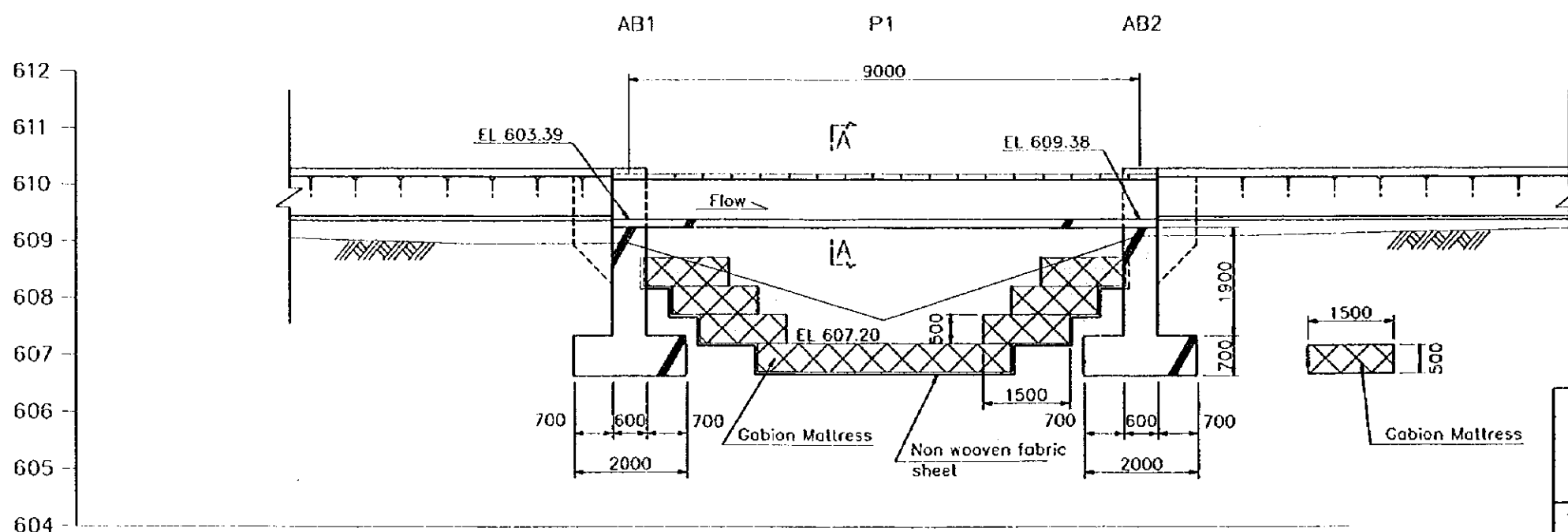
AQUEDUCT NO.1 ON RIGHT MAIN CANAL



PLAN

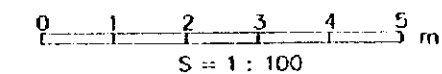


A-A SECTION



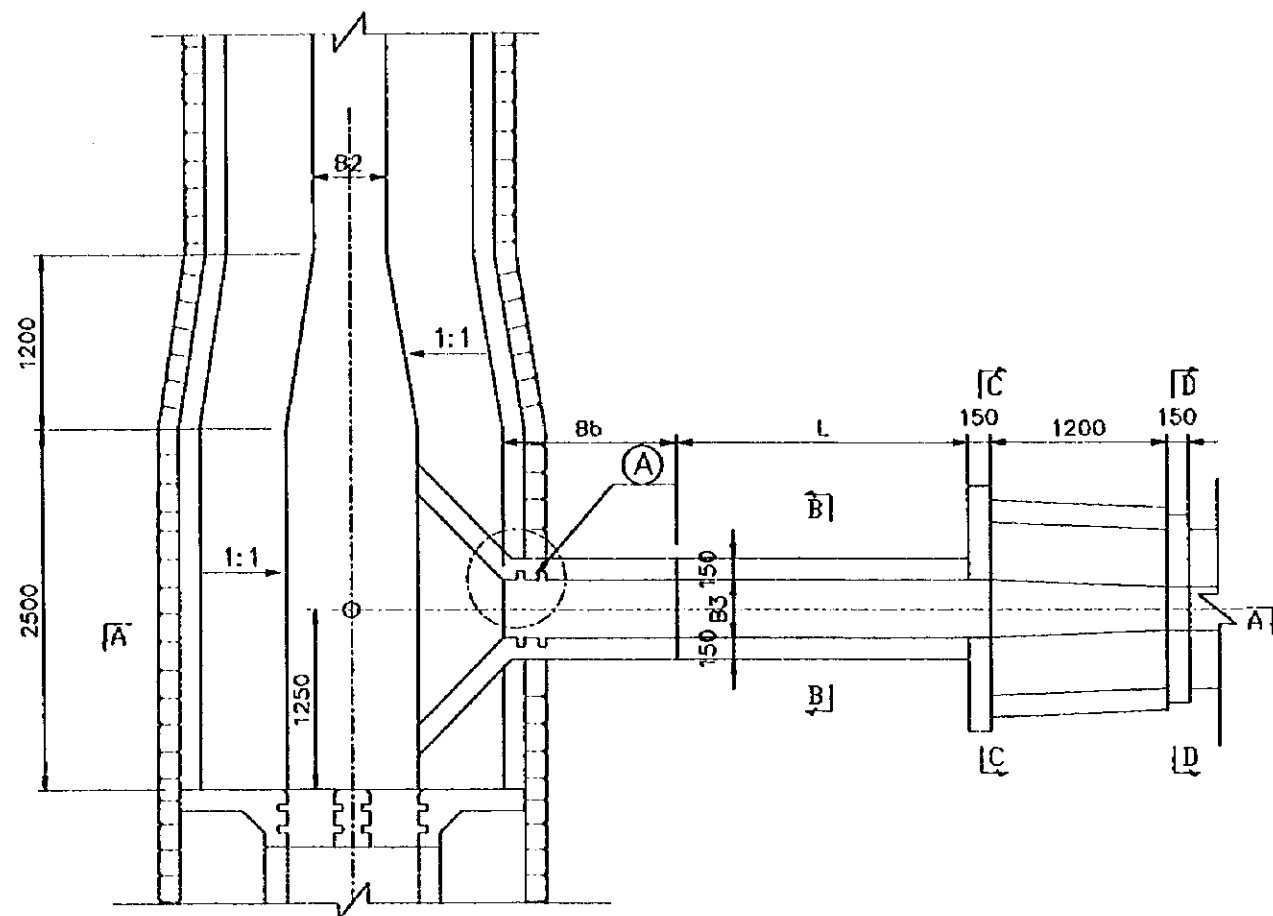
PROFILE

Note AB : Abutment
P : Pier

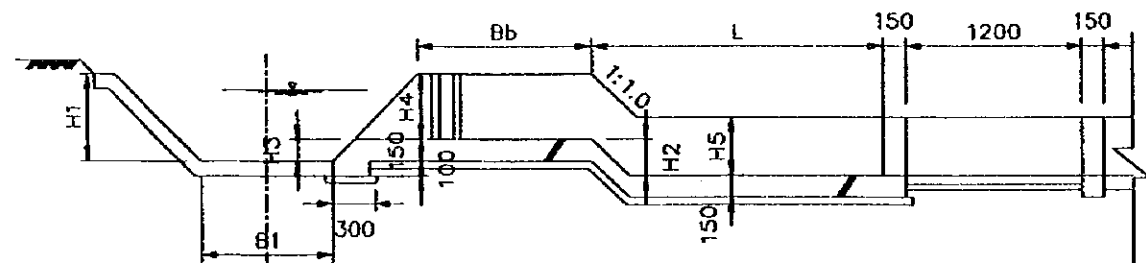


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING CANAL			
AQUEDUCT NO.1 ON RIGHT MAIN CANAL			
Date	Oct. 1999	Drawing No.	3-23
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

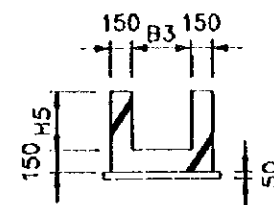
TURNOUT



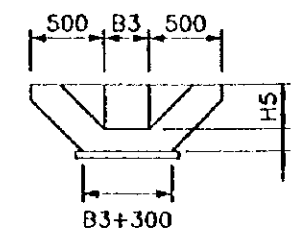
PLAN



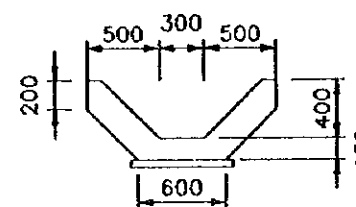
SECTION A-A



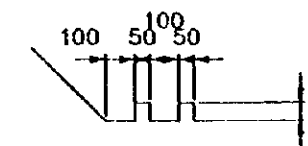
SECTION B-B



SECTION C-C



SECTION D-D



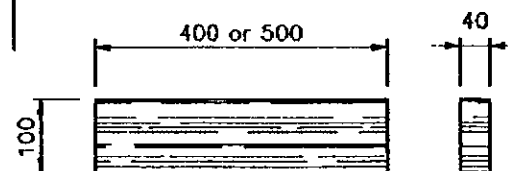
DETAIL A

Left Main Canal

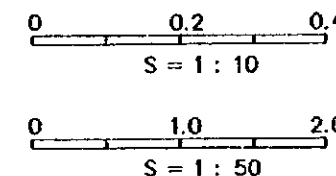
Name of Turnout	B1	B2	B3	H1	H2	H3	H4	H5	L	Bb	Direction	Remark
LTO1	1050	600	300	800	200	400	400	400	2000	1600	Right	LLC-1
LTO2	1050	500	300	700	150	300	400	400	2000	1600	Right	LLC-2
LTO3	1050	500	400	700	150	200	500	400	2000	1600	Right	LLC-3
LTO4	850	500	400	700	150	200	500	500	2000	1600	Right	LLC-4
LTO5	See PLATE No.44											
LTO6	See PLATE No.44											
LTO7	See PLATE No.44											

Right Main Canal

Name of Turnout	B1	B2	B3	H1	H2	H3	H4	H5	L	Bb	Direction	Remark
RT01	500	500	300	700	200	250	450	400	2000	1600	Left	RLC-1
RT02	1050	500	300	600	150	200	400	400	2000	1200	Left	RLC-2
RT03	1050	500	300	600	300	200	400	400	2000	1200	Left	RLC-3
RT04	1050	400	300	600	200	150	450	400	2000	1200	Left	RLC-4
RT05	500	400	400	600	500	100	500	400	2000	1200	Left	RLC-5
RT06	500	300	300	500	200	150	350	400	2000	1000	Left	RLC-6
RT07	500	300	400	500	200	0	500	400	2000	1000	Left	RLC-7



WOODEN STOPLOG
S = 1 : 10



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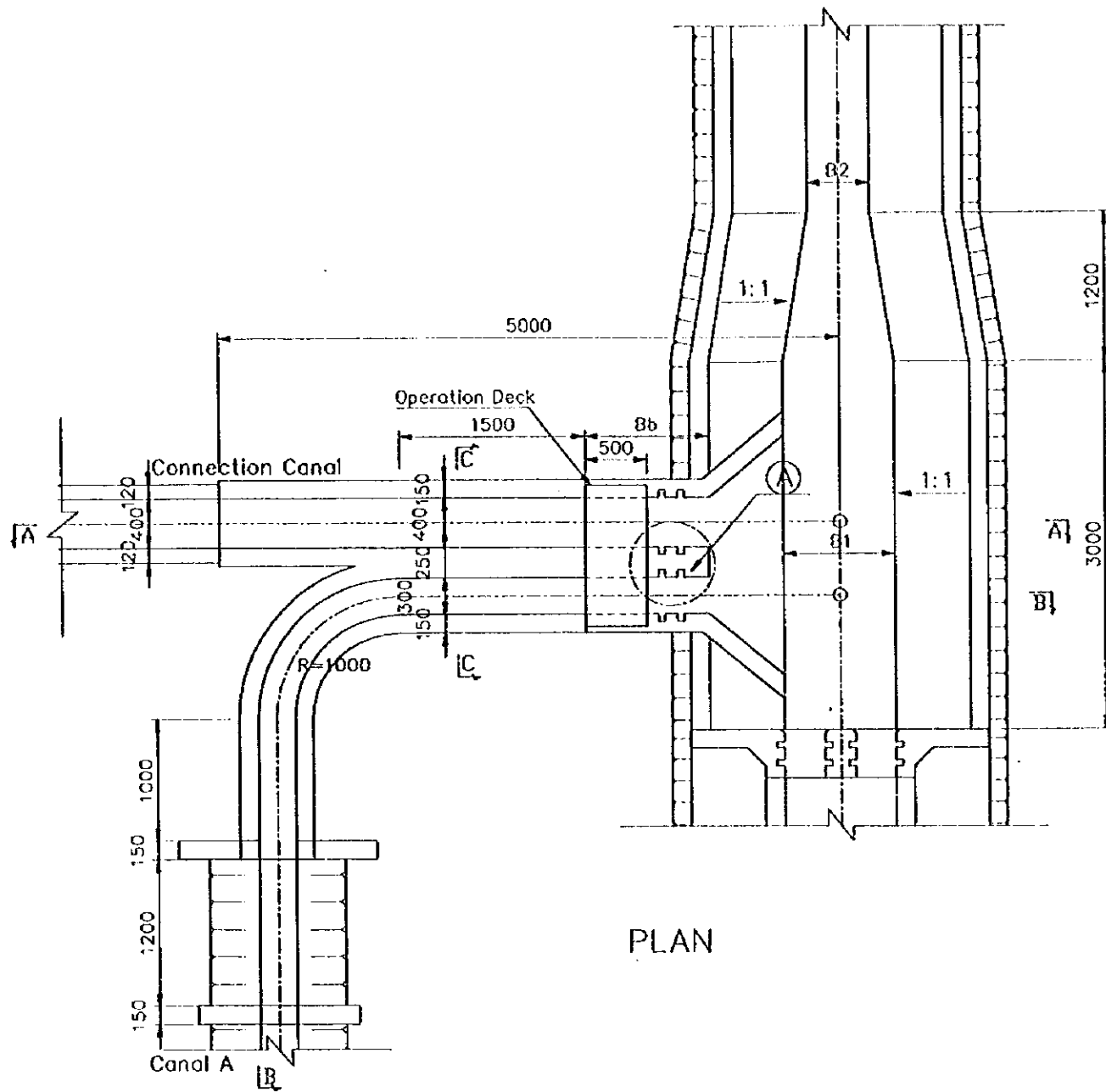
TITLE OF DRAWING
CANAL

TURNOUT

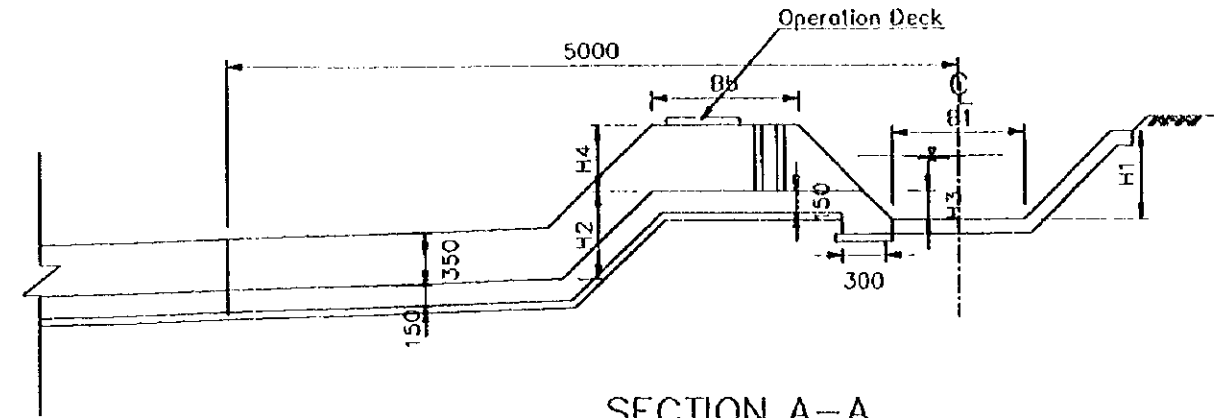
Date | Oct. 1999 | Drawing No. | 3-25

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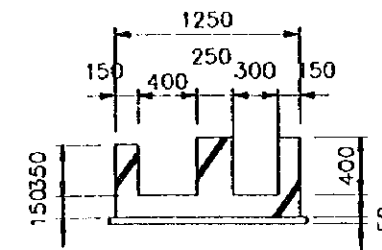
TURNOUT (TWO OFFTAKES TYPE)



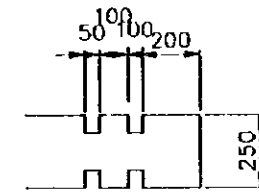
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SECTION A-A



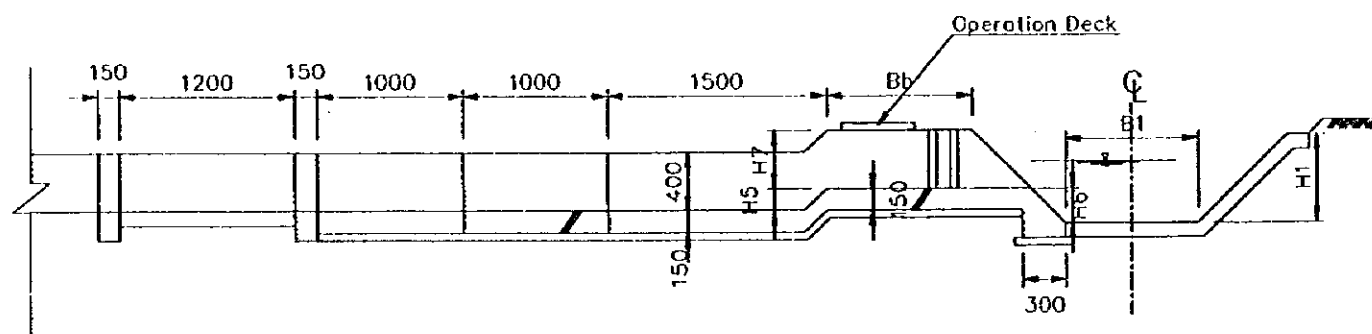
SECTION C-C



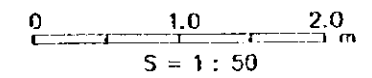
DETAIL A

Left Main Canal

Name of Turnout	B1	B2	H1	H2	H3	H4	H5	H6	H7	Bb	Remark
LT05	850	400	600	600	150	450	150	150	450	1200	CC-1
LT06	500	400	500	400	100	400	150	100	400	1000	CC-2
LT07	400	400	500	300	50	450	150	50	450	1000	CC-3



SECTION B-B



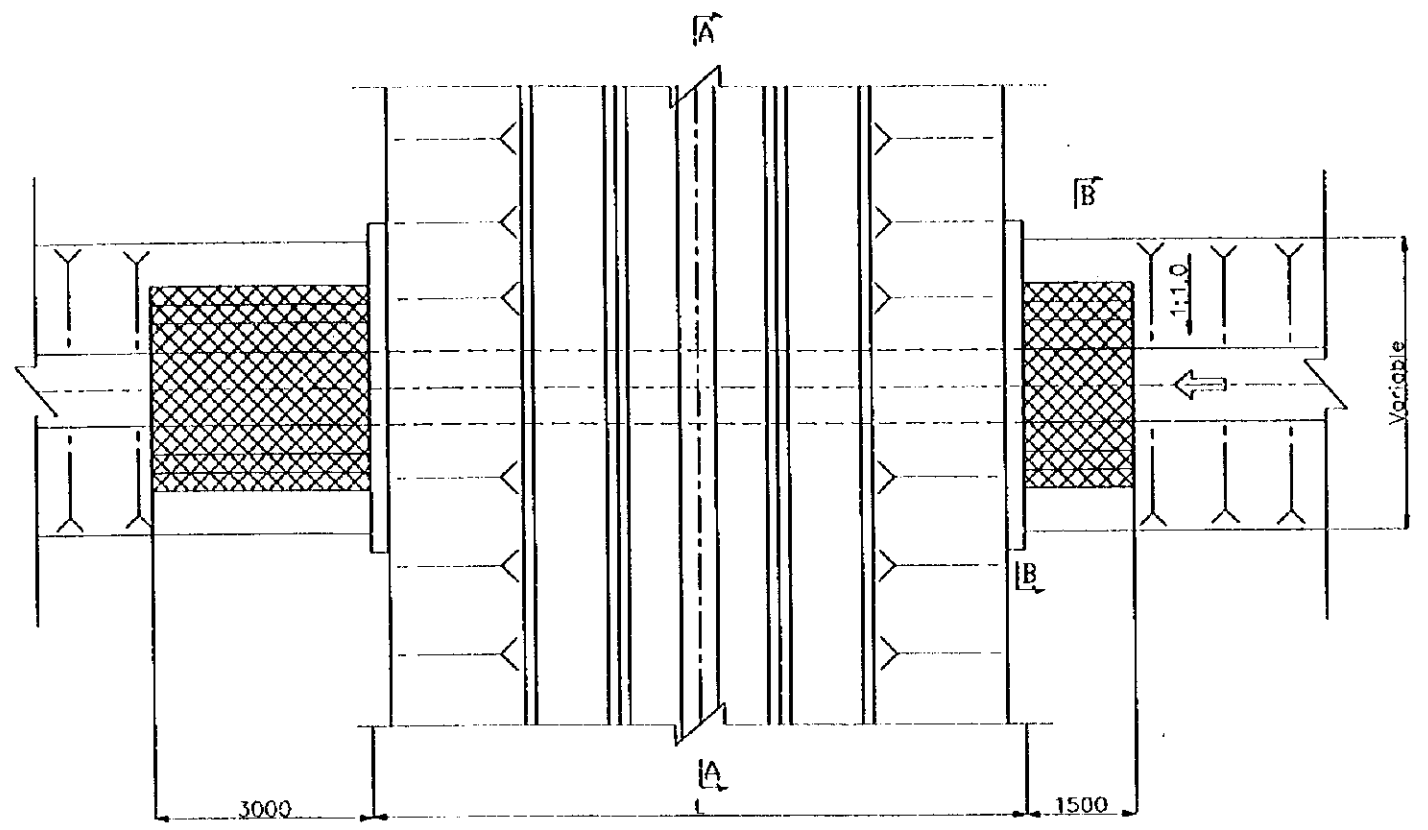
Basic Design Study on the Project for
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in Morogoro Region
in the United Republic of Tanzania

TITLE OF DRAWING
CANAL
TURNOUT(TWO OFFTAKES TYPE)

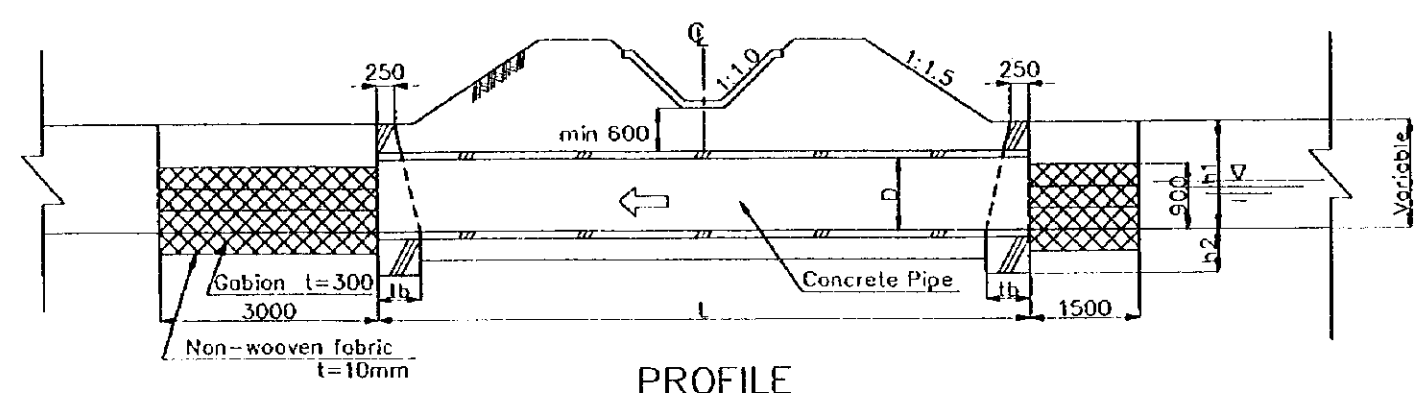
Date Oct. 1999 Drawing No. 3-26

NIPPON KOEI CO., LTD. TOKYO, JAPAN

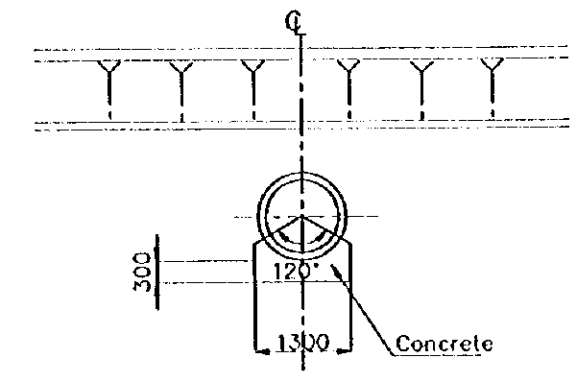
CROSS DRAIN CULVERT (CCV)



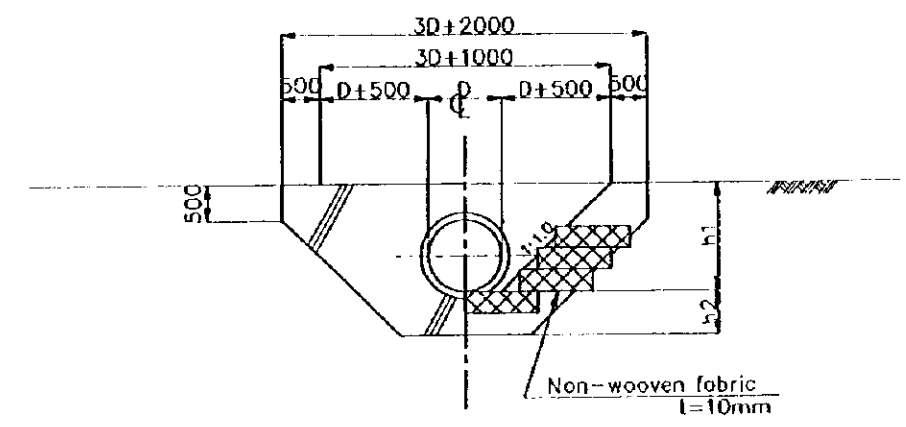
PLAN



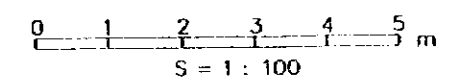
PROFILE



SECTION A--A



SECTION B--B



DEMENSION OF CROSS DRAIN CULVERT (CCV)

Name of Canal	Name of structure	Reduced Distance	Qi(m3/sec)	Qf(m3/sec)	L(mm)	D(mm)	h1(mm)	h2(mm)	tb(mm)
Right Main Canal	No.1 Cross Drain	924.31	0.37	1.00	9000	1000	1500	600	600
	No.2 Cross Drain	4033.28	0.78	1.60	9000	1200	1700	720	720
	No.3 Cross Drain	5482.30	0.78	1.00	9000	1000	1500	600	600
Left Main Canal	No.4 Cross Drain	6676.75	0.78	1.00	9000	1000	1500	600	600
	No.1 Cross Drain	2064.63	0.52	1.00	9000	1000	1500	600	600
	No.2 Cross Drain	4208.52	0.43	0.90	9000	1000	1500	600	600
	No.3 Cross Drain	10696.56	0.10	1.30	7000	1200	1700	720	720

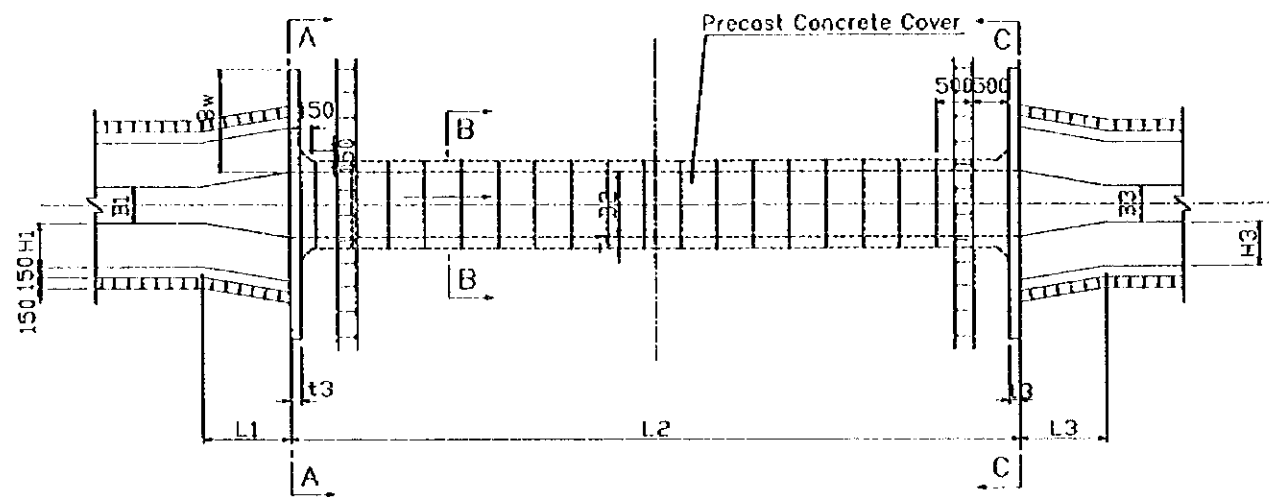
Basic Design Study on the Project for
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TITLE OF DRAWING
CANAL
CROSS DRAIN CULVERT(CCV)

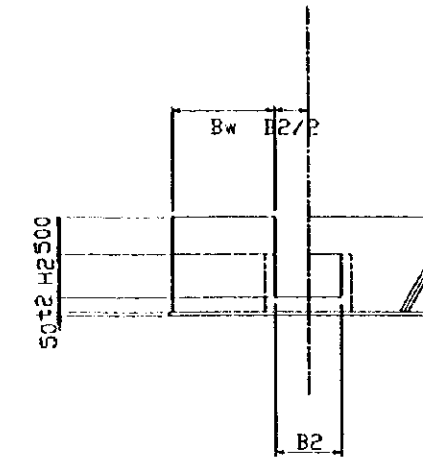
Date | Oct. 1999 | Drawing No. | 3-27

NIPPON KOEI CO., LTD. TOKYO, JAPAN

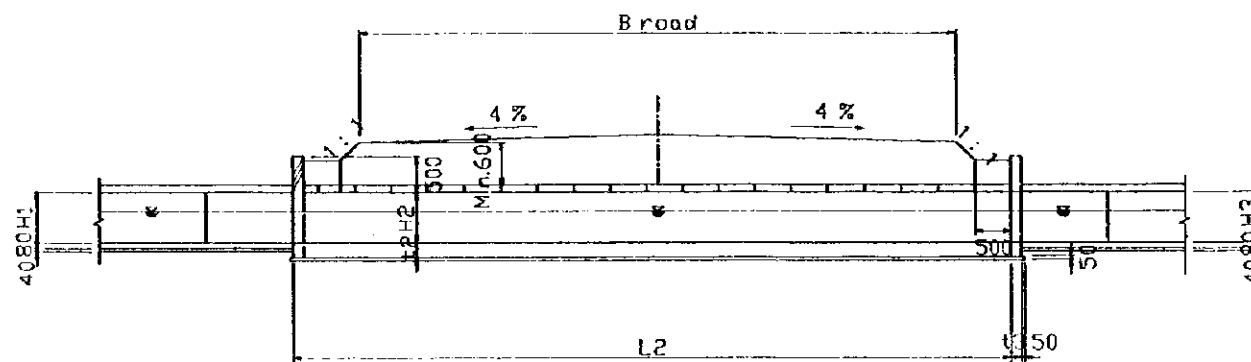
CULVERT



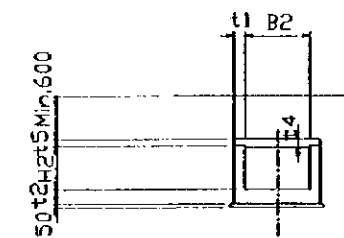
PLAN



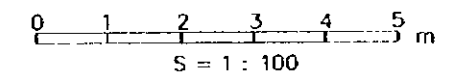
SECTION A-A



PROFILE



SECTION B-B



DIMENSION OF CULVERT

Nome of Canal	Nome of structure	Reduced Distance	Qi (m ³ /sec)	Unit:(mm)													
				H1	H2	H3	L1(m)	L2(m)	L3(m)	Broad	B1	B2	B3	Bw	t1	t2	t3
Right Main Canal	No.1CV	6188.42	0.31	600	600	600	1200	6500	1200	5000	400	800	400	1400	150	200	150
	No.2CV	7134.86	0.18	500	500	500	1200	6500	1200	5000	300	600	300	1300	120	150	150
	No.3CV	7321.14	0.18	500	500	500	1200	6500	1200	5000	300	600	300	1300	120	150	150
Left Main Canal	No.1CV	9897.61	0.20	500	500	500	1200	7500	1200	6000	400	700	400	1300	120	150	150

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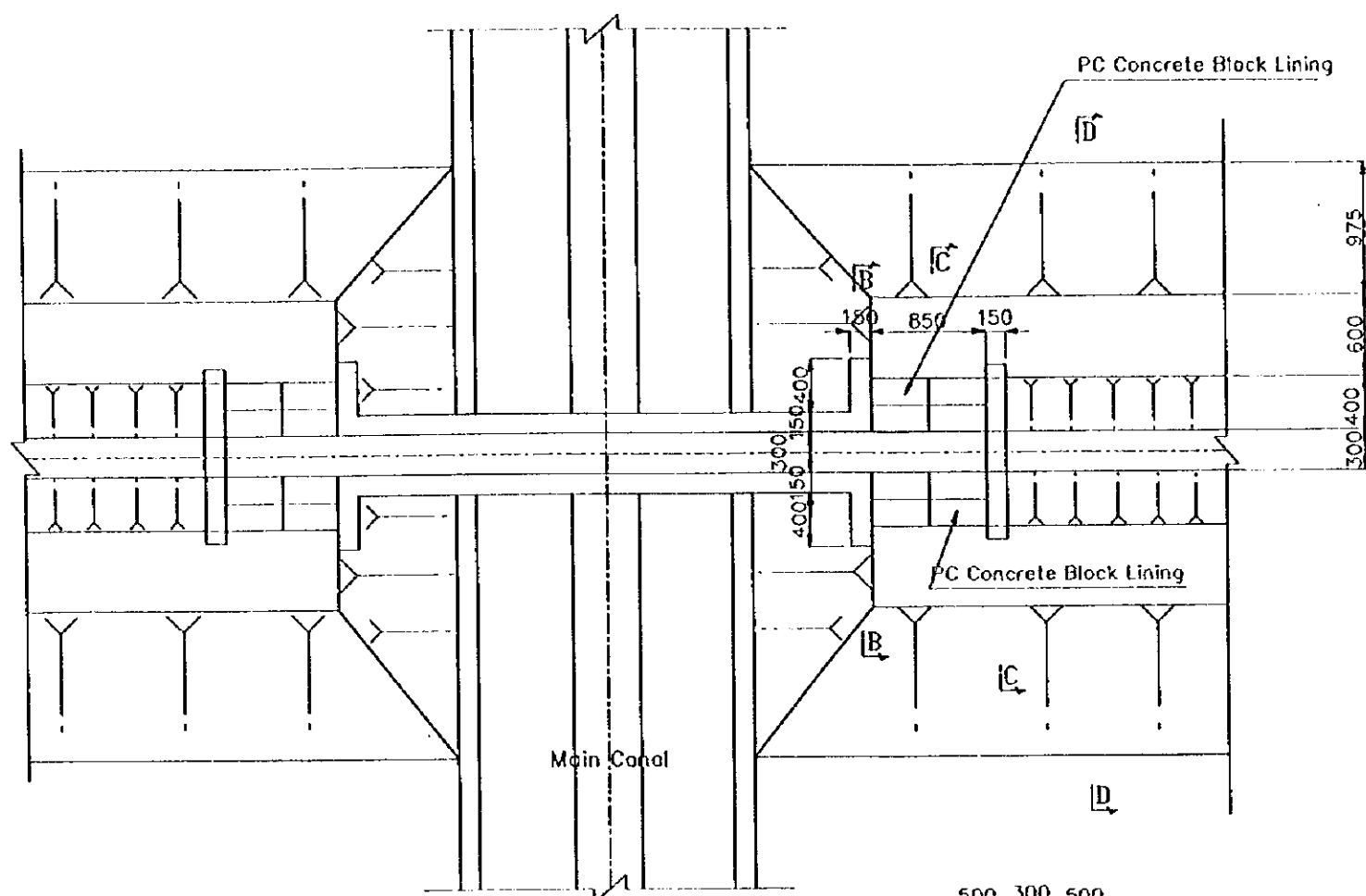
TITLE OF DRAWING
CANAL

CULVERT

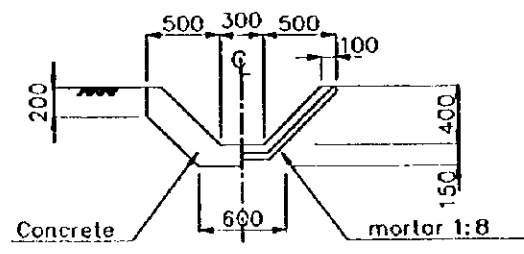
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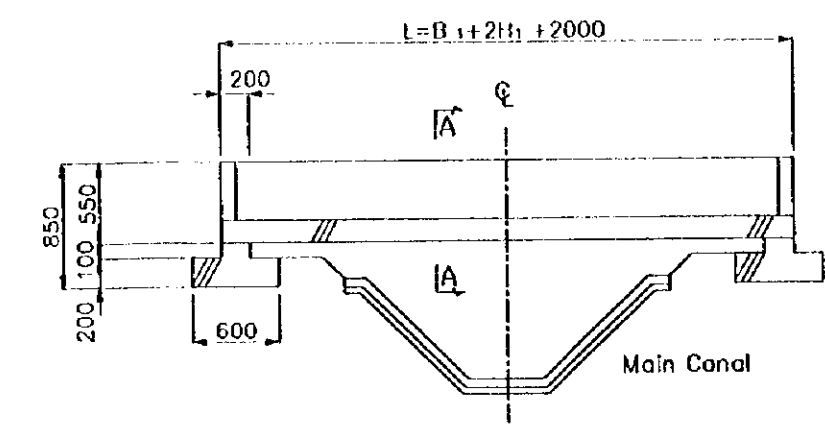
CROSS OVER FLUME



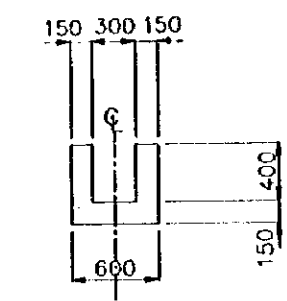
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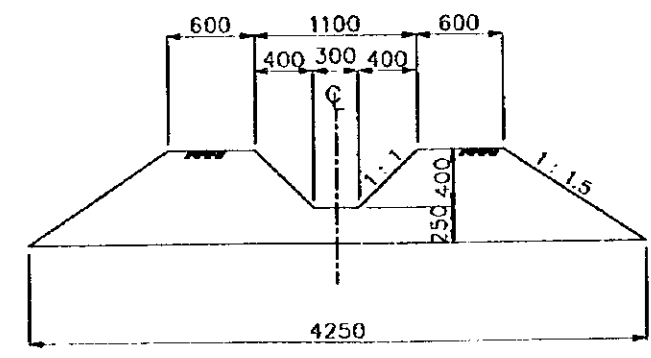
SECTION C-C



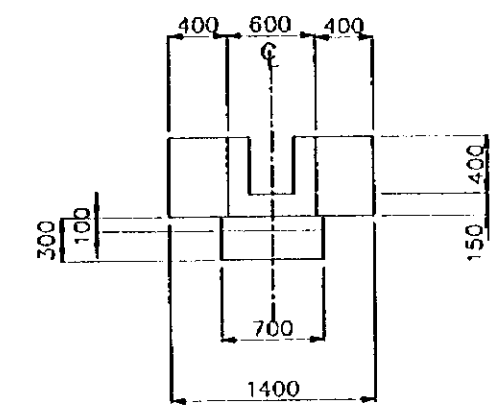
PROFILE



SECTION A-A

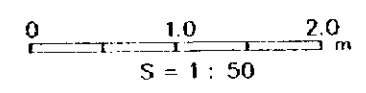


SECTION D-D



SECTION B-B

Name of Canal	Main Canal Type	Name of Structure	Reduced Distance	Q(m ³ /sec)	Dimension of Main Canal			
					H1(mm)	B1(mm)	H2(mm)	B2(mm)
Left Main Canal	Type-V	CF NO.1	1585.14	0.03	700	500	150	1000
Left Main Canal	Type-V	CF NO.2	2778.71	0.03	700	500	150	1000
Left Main Canal	Type-V	CF NO.3	3300.46	0.03	700	500	150	1000
Left Main Canal	Type-V	CF NO.4	3671.89	0.03	700	500	150	1000
Left Main Canal	Type-V	CF NO.5	4285.44	0.03	700	500	150	1000
Left Main Canal	Type-V	CF NO.6	4525.44	0.03	700	500	150	1000
Left Main Canal	Type-V	CF NO.7	5380.49	0.03	700	500	150	1000
Left Main Canal	Type-III	CF NO.8	6733.12	0.03	600	400	100	800
Right Main Canal	Type-IV	OCF NO.1	2000.11	0.03	600	500	100	800
Right Main Canal	Type-III	OCF NO.2	2981.06	0.03	600	400	100	800
Right Main Canal	Type-III	OCF NO.3	3526.40	0.03	600	400	100	800
Right Main Canal	Type-III	OCF NO.4	3843.66	0.03	600	400	100	800
Right Main Canal	Type-III	OCF NO.5	4572.10	0.03	600	400	100	800
Right Main Canal	Type-III	OCF NO.6	5162.52	0.03	600	400	100	800



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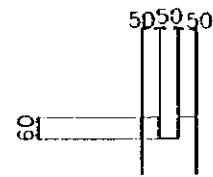
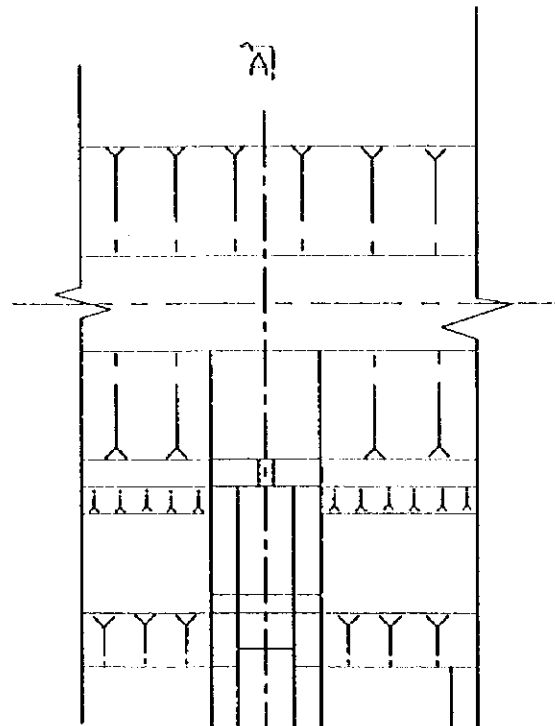
TITLE OF DRAWING
CANAL

CROSS OVER FLUME

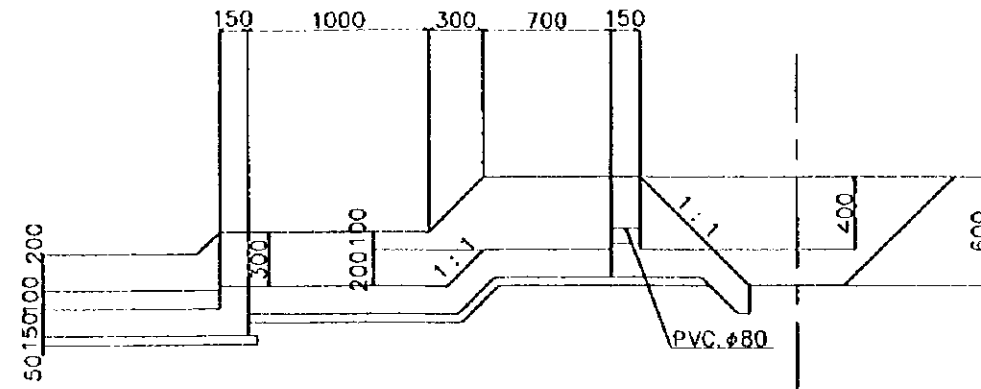
Date	Oct. 1999	Drawing No.	3-29
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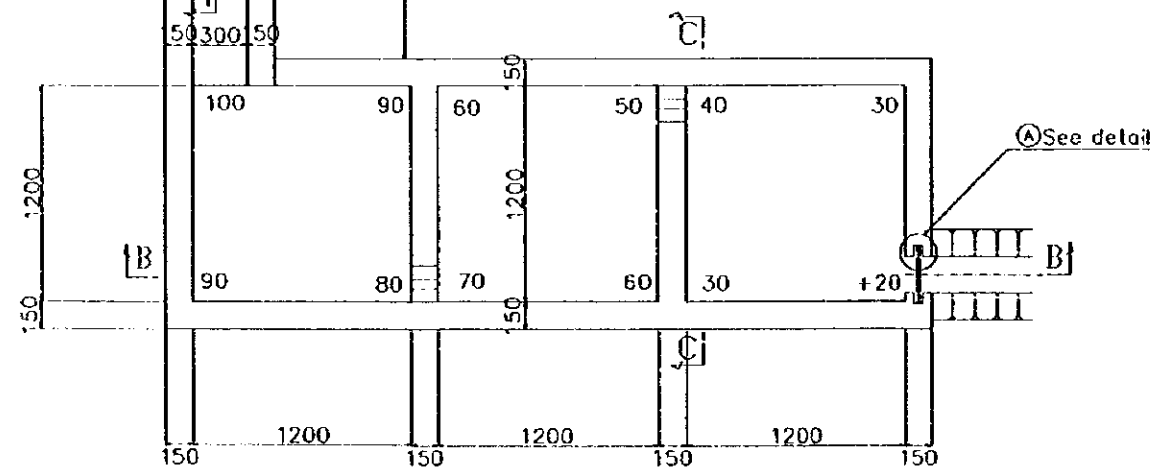
WASHING BASIN



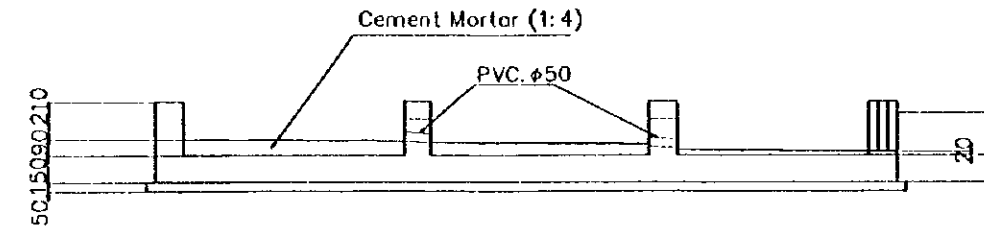
Detail (A)



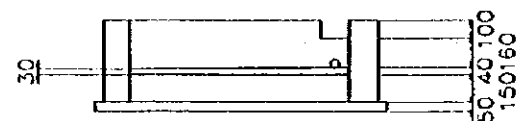
SECTION A-A



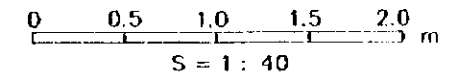
PLAN



SECTION B-B



SECTION C-C



DIMENSION OF WASHING BASIN

(Unit: m)

Name of Canal	Name of structure	Reduced Distance
Right Main Canal	No.1WB	6198.42
	No.2WB	6526.75
Left Main Canal	No.1WB	2163.46
	No.2WB	3194.46
	No.3WB	8572.72
	No.4WB	8988.77
	No.5WB	9402.06
	No.6WB	9850.86
	No.7WB	10350.74
	No.8WB	11146.56

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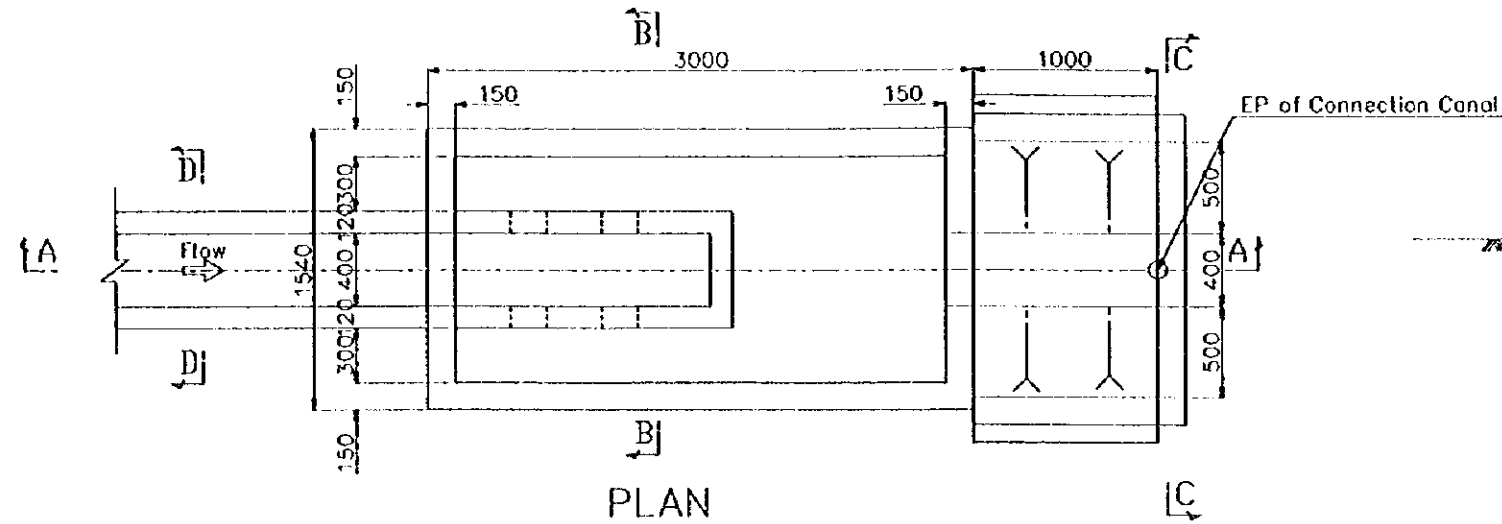
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WASHING BASIN

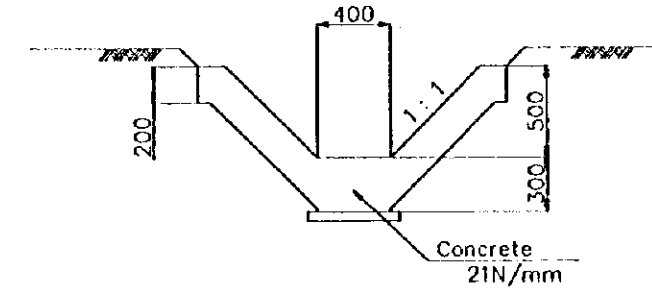
Date Oct. 1999 Drawing No. 3-30

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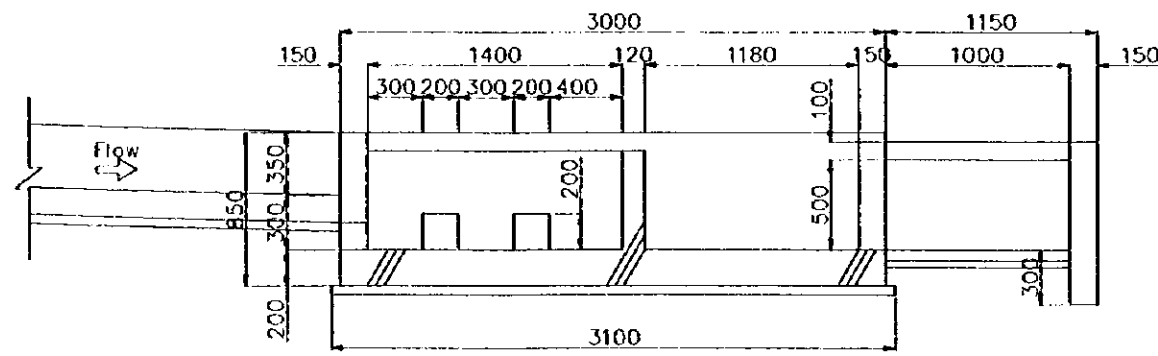
ENERGY DISSIPATOR



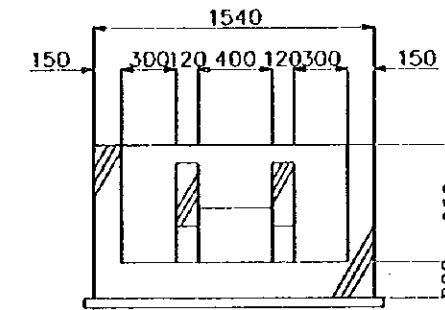
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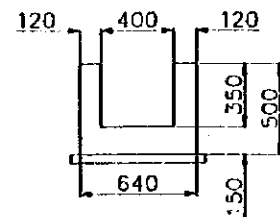
SECTION C-C



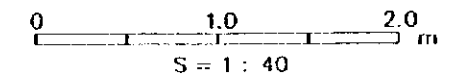
SECTION A-A



SECTION B-B



SECTION D-D



An energy dissipator is provided at each of connection canals.

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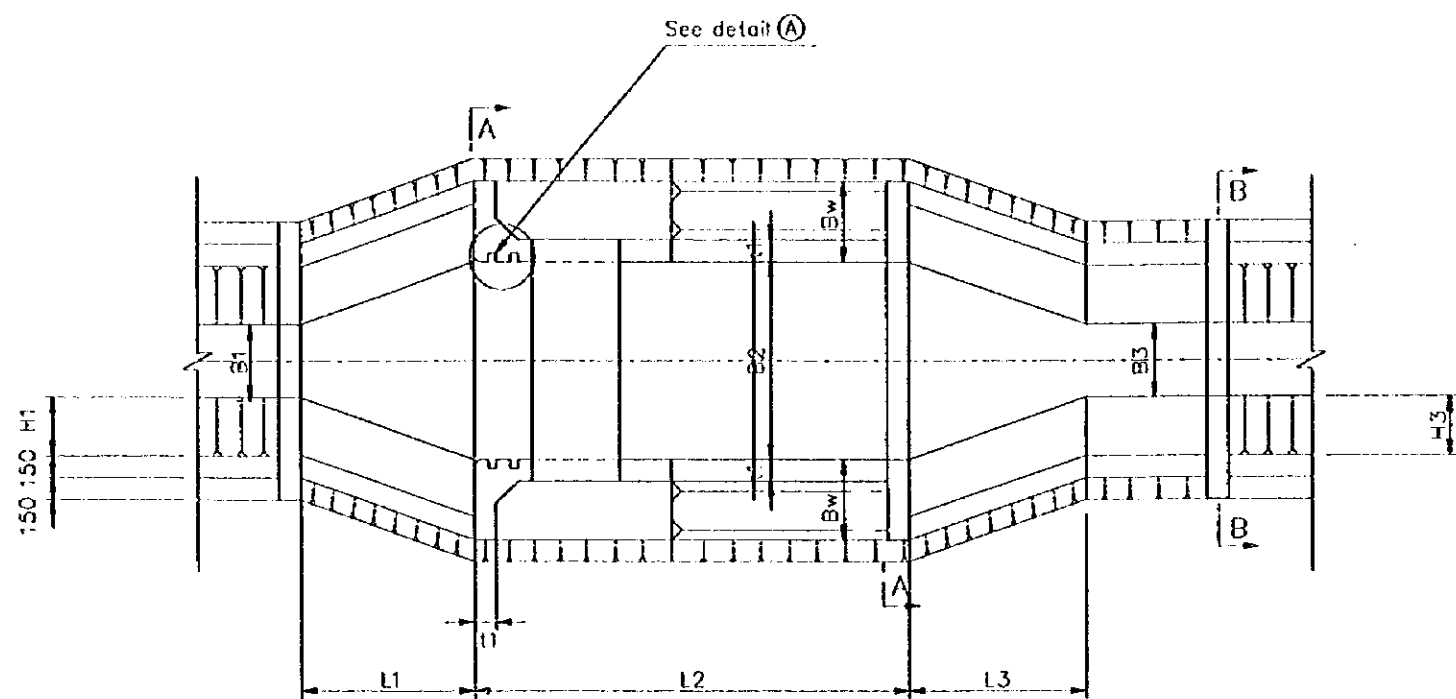
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CANAL

ENERGY DISSIPATOR

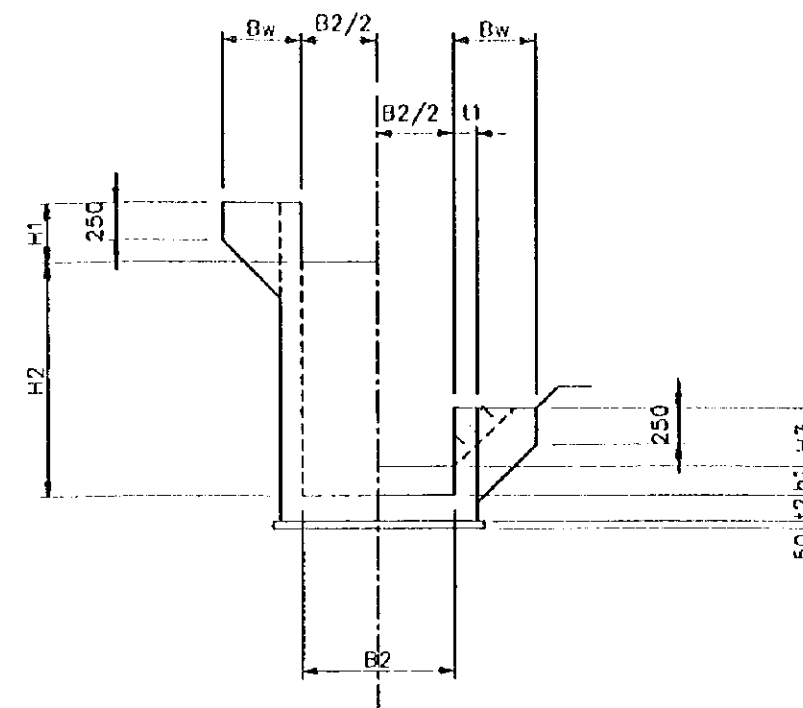
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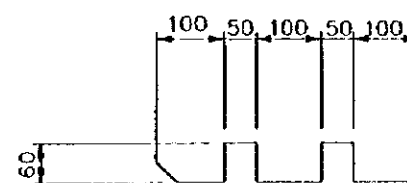
DROP FOR LATERAL CANAL



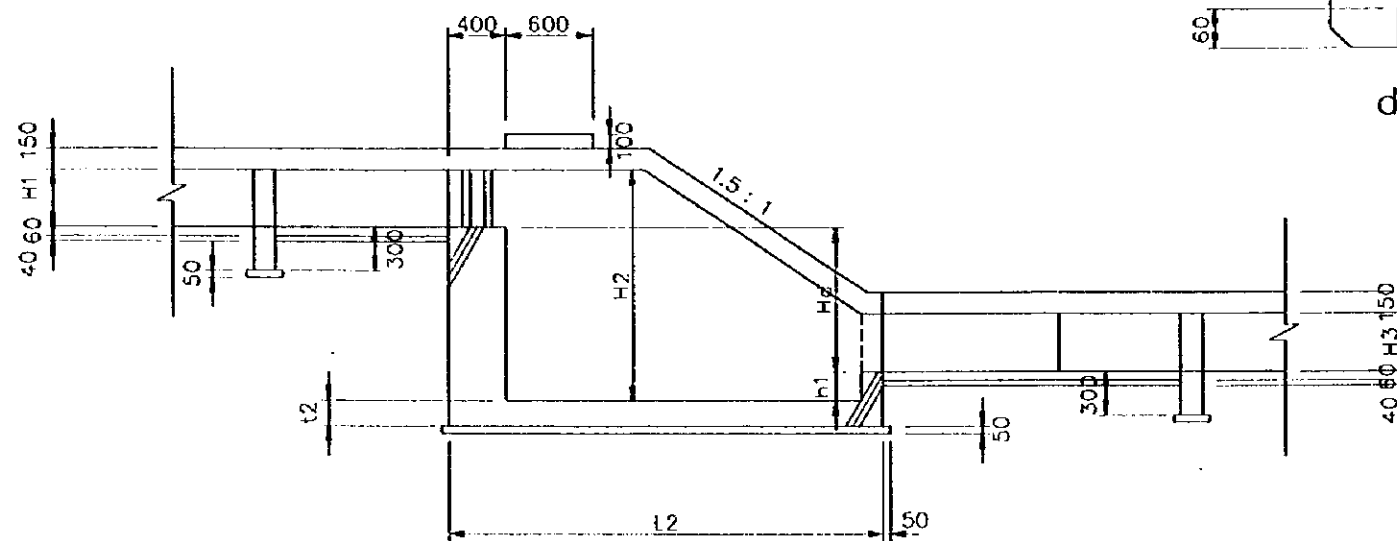
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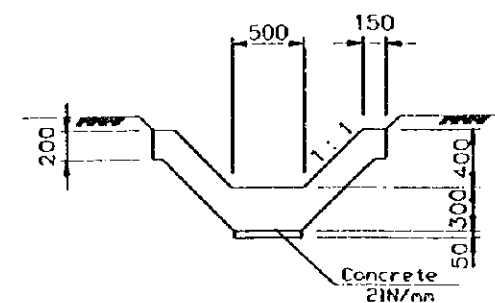
SECTION A-A



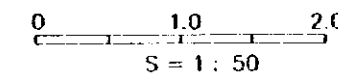
detail A



PROFILE



SECTION B-B



DIMENSION OF DROP FOR LATERAL CANAL

Name of Canal	Name of structure	Reduced Distance	Qi (m ³ /sec)	H1	H2	H3	Hd	h1	L1	L2	L3	B1	B2	B3	Bw	t1	t2
RBC-5	No.1Drop	583.59	0.083	400	1600	400	1000	200	1200	3000	1200	300	500	300	550	200	200
LBC-2	No.1Drop	306.07	0.060	400	1400	400	800	200	1200	2400	1200	300	500	300	550	200	200
LBC-3	No.1Drop	590.71	0.070	400	1600	400	1000	200	1200	3000	1200	300	500	300	550	200	200
	No.2Drop	588.78	0.070	400	1100	400	500	200	1200	2200	1200	300	500	300	550	200	200
LBC-4	No.1Drop	597.18	0.073	400	1600	400	1000	200	1200	3100	1200	300	500	300	550	200	200
LBC-5	No.1Drop	527.29	0.037	400	1600	400	1000	200	1200	3100	1200	300	500	300	550	200	200

(Unit: mm)

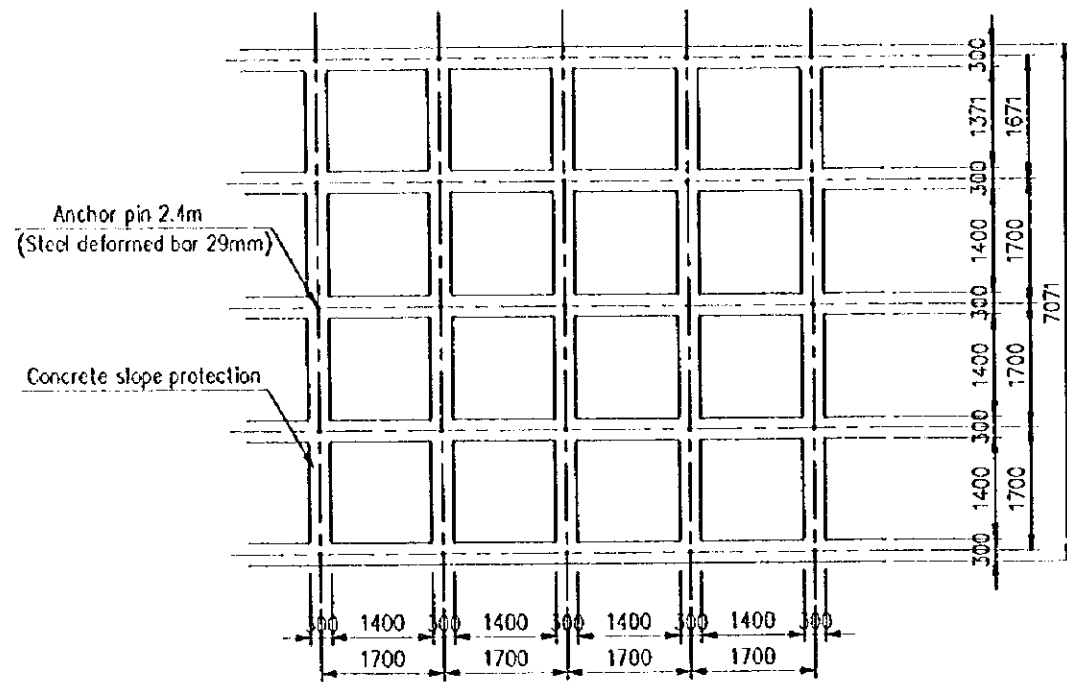
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TITLE OF DRAWING
CANAL
DROP FOR LATERAL CANAL

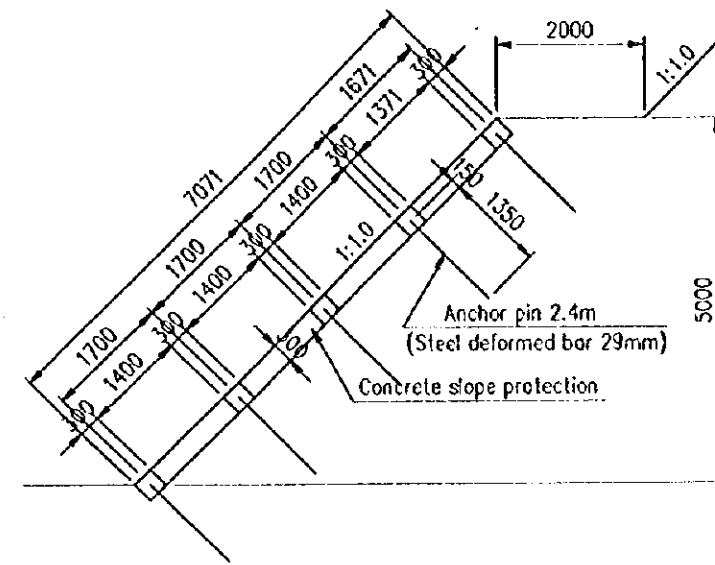
Date | Oct. 1999 | Drawing No. | 3-32

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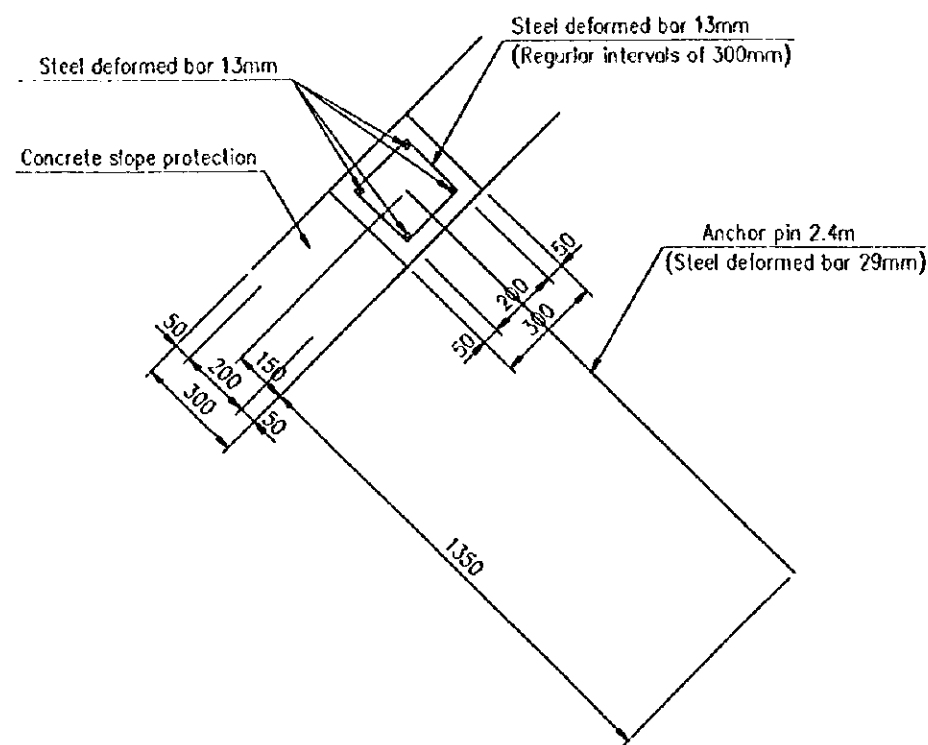
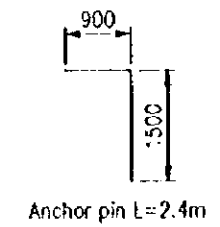
CONCRETE FRAME SLOPE PROTECTION



Spread plan



Cross section

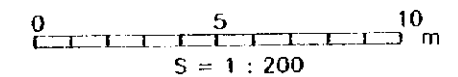


Cross section

Note ; Concrete frame slope protection works shall be provided on the slope having a height more than 3 meters in
 (i) the site of the headworks,
 (ii) the right side slope of the Right Main Canal and the left side slope of Left Main Canal.

Construction materials (10m²)

Concrete	1.03 m ³
Steel deformed bar	139.9 kg
Concrete mold	6.17 m ²
Building stone	2.00 m ³

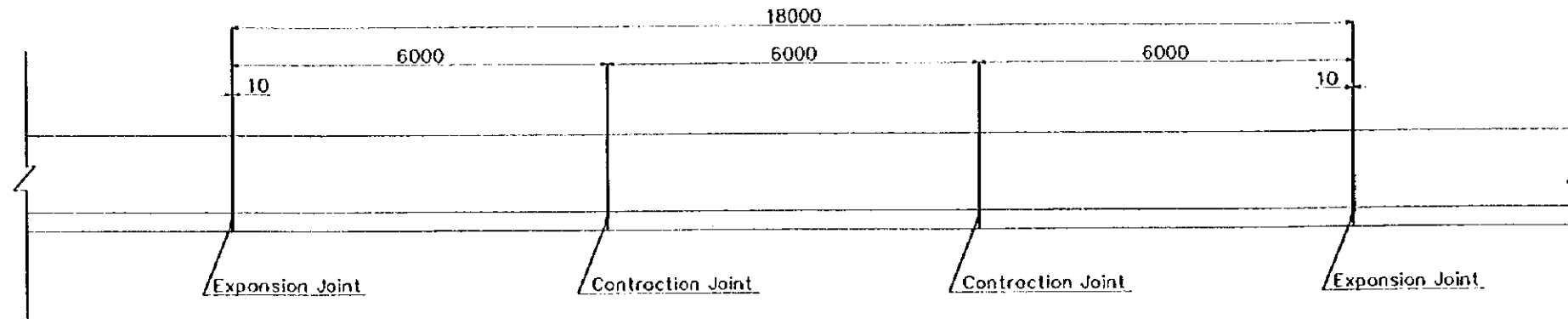


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING CANAL			
CONCRETE FRAME SLOPE PROTECTION			
Date	Oct. 1999	Drawing No.	3-33
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

JOINT OF FLUME

JOINT INTERVAL FOR FLUME

SCALE:A



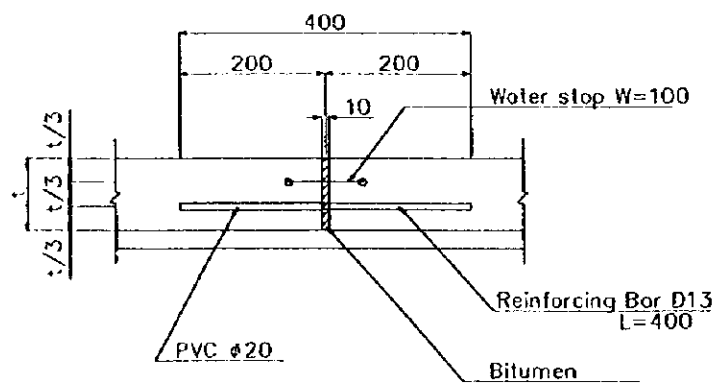
JOINT FOR CONNECTION CANALS

SCALE:B

SCALE:B

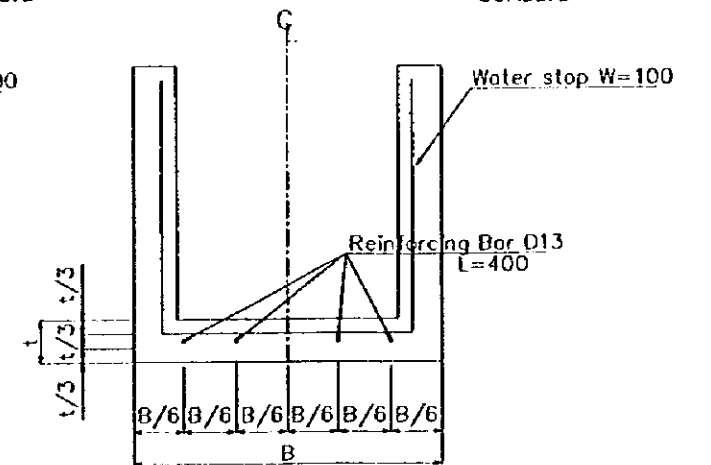
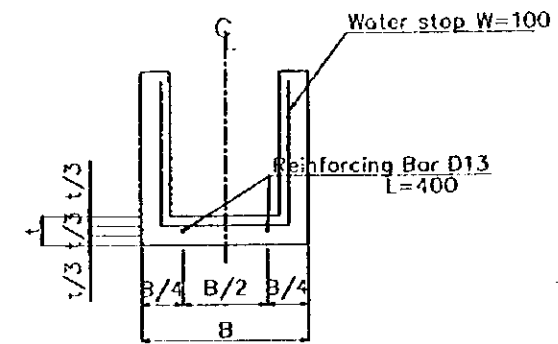
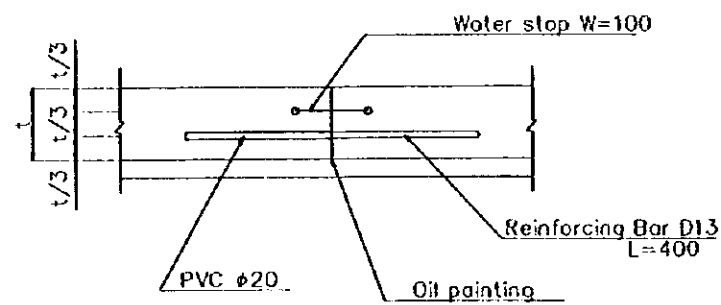
EXPANSION JOINT

SCALE:B

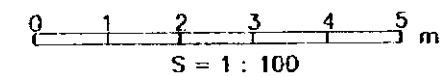


CONTRACTION JOINT

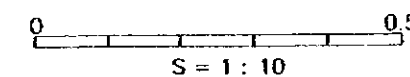
SCALE:B



SCALE:A



SCALE:B



Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

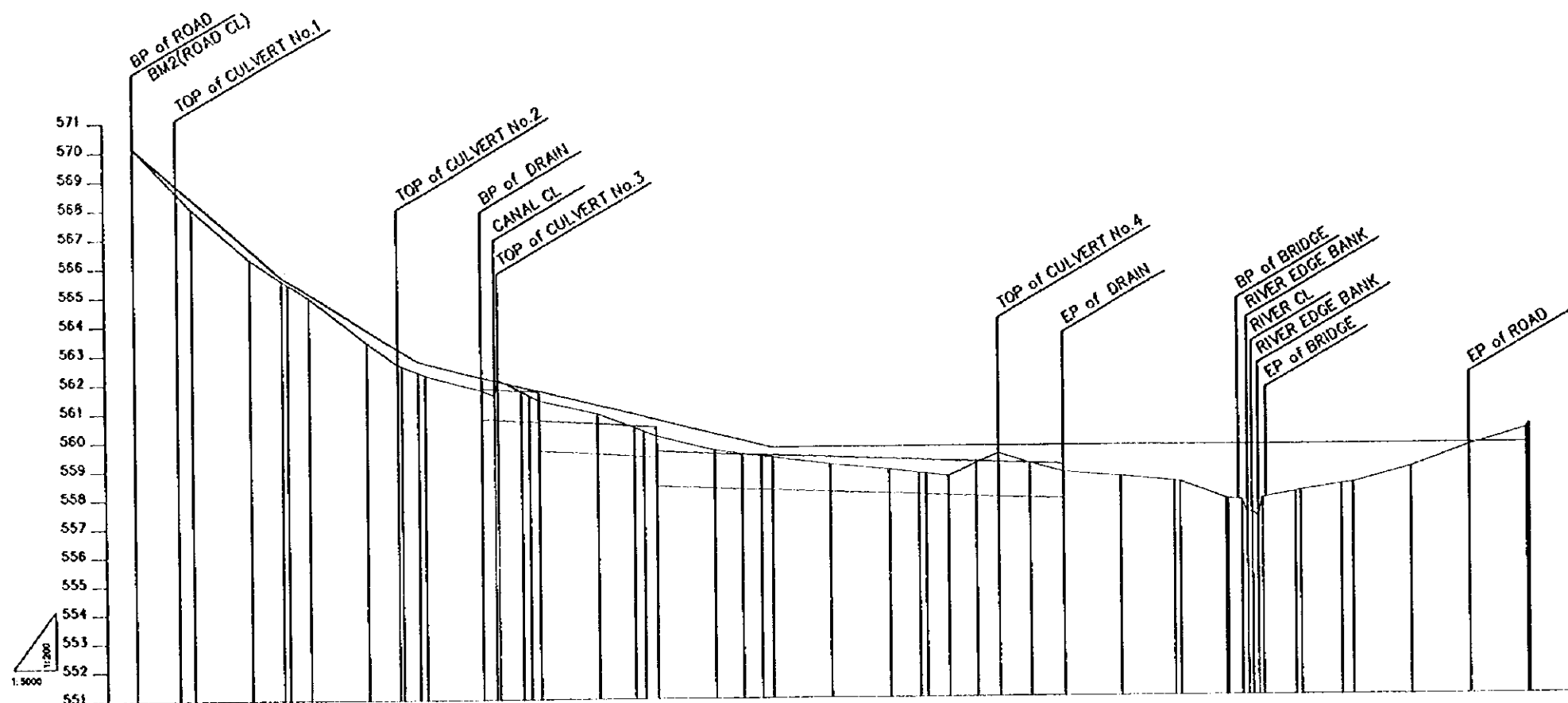
TITLE OF DRAWING
CANAL

JOINT OF FLUME

Date | Oct. 1999 | Drawing No. | 3-34

NIPPON KOEI CO., LTD. TOKYO, JAPAN

PROFILE OF MALOLO-CHABI ROAD & SIDE DRAIN



ROAD SURFACE SLOPE	3.5%	2.5%	1.0%	LEVEL
CANAL TYPE	Q=6.0m ³ /s B=4.00 i=1/400 h=1.05 v=1.03			Q=6.0m ³ /s B=4.00 i=1/650 h=1.19 v=0.87
CANAL BANK ELEVATION				
WATER SURFACE ELEVATION				
DESIGN ROAD ELEVATION	570.15	568.59	566.83	558.79
GROUND SURFACE ELEVATION	570.15	568.59	566.83	558.79
REDUCED DISTANCE	0.00	37.30	50.00	100.00
DISTANCE	0.00	37.30	127.69	27.69
STATION NO.	BP	No.1	No.2	BP.1

Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania

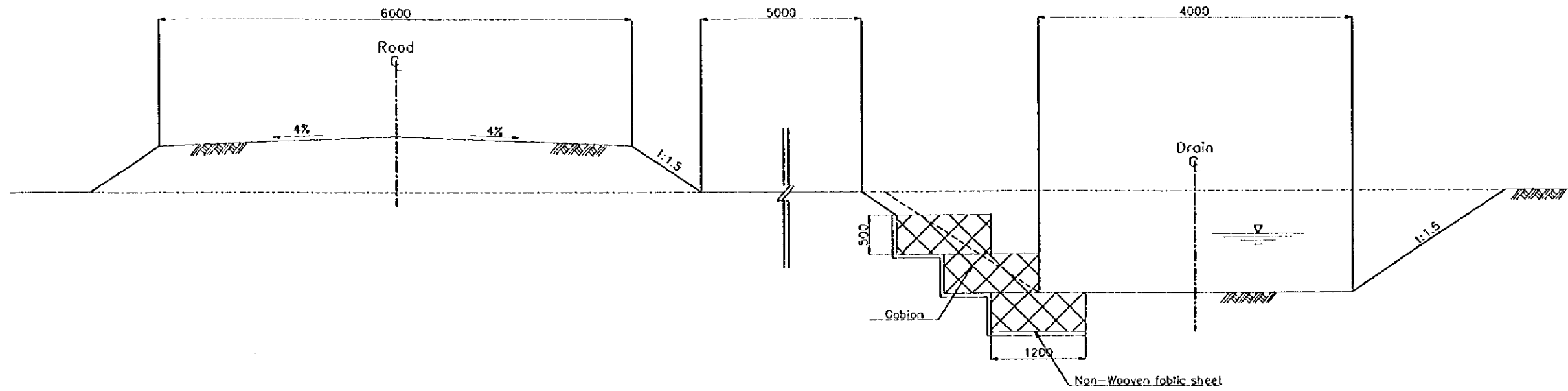
TITLE OF DRAWING
ROAD IMPROVEMENT
PROFILE OF MALOLO-CHABI ROAD & SIDE DRAIN

Date	Oct. 1999	Drawing No.	4-1
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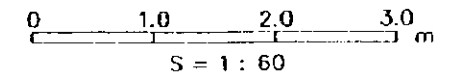
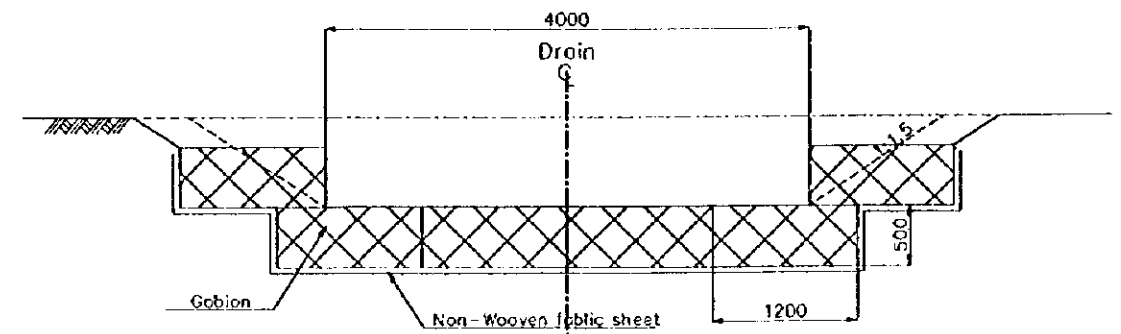
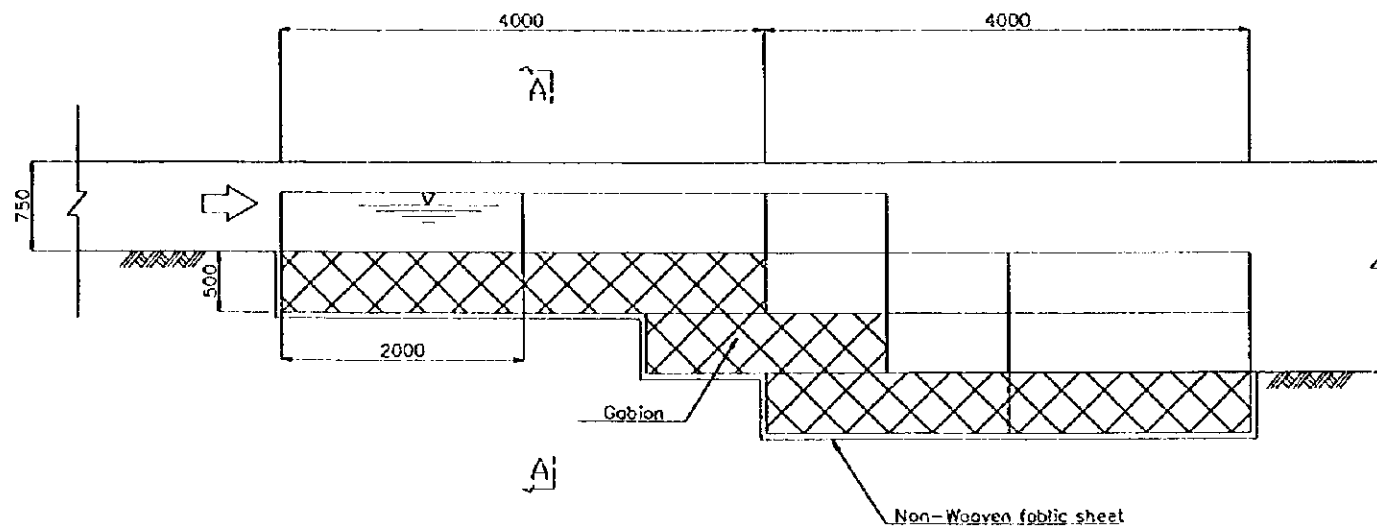
NIPPON KOEI CO., LTD. TOKYO, JAPAN

TYPICAL CROSS SECTION OF MALOLO-CHABI ROAD AND SIDE DRAIN

ROAD AND SIDE DRAIN



DROP FOR SIDE DRAIN



SECTION A-A

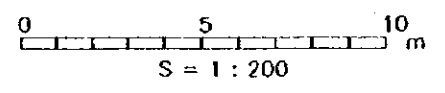
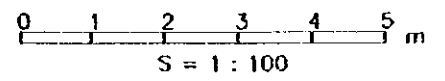
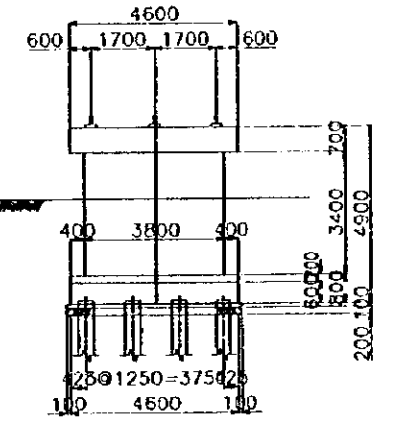
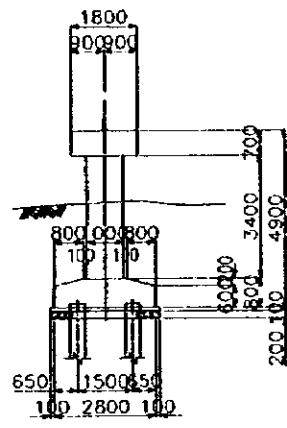
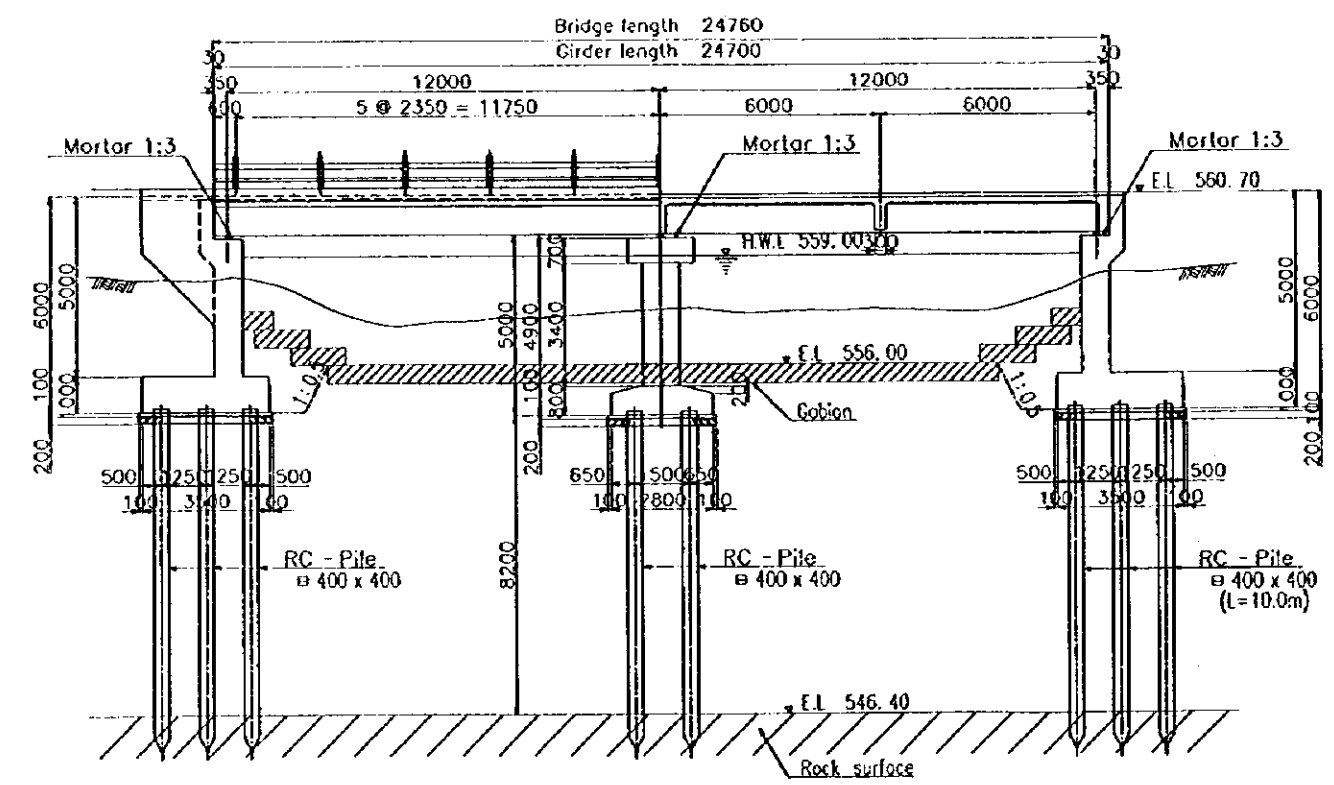
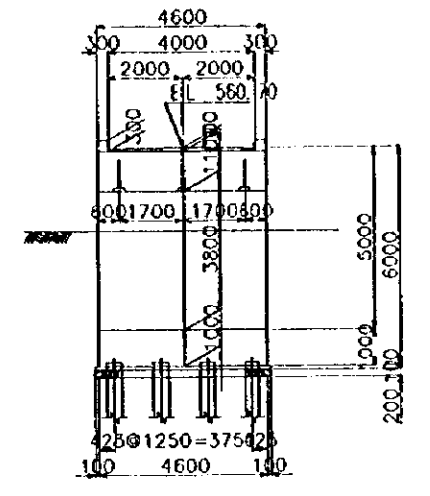
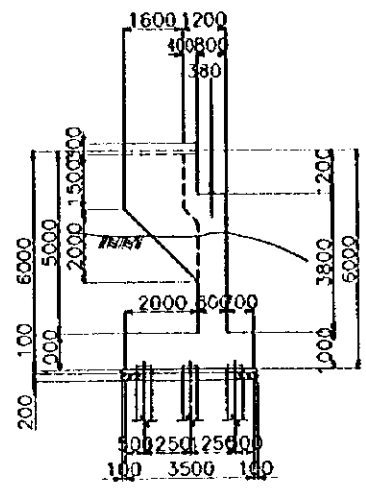
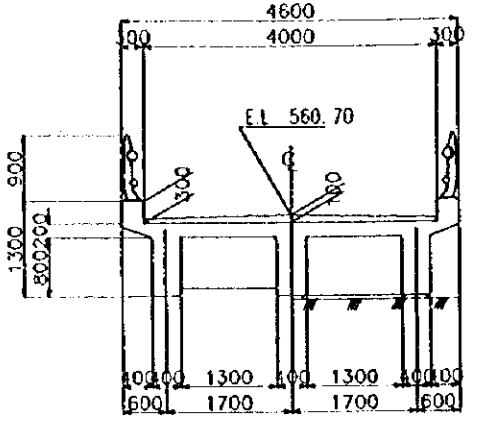
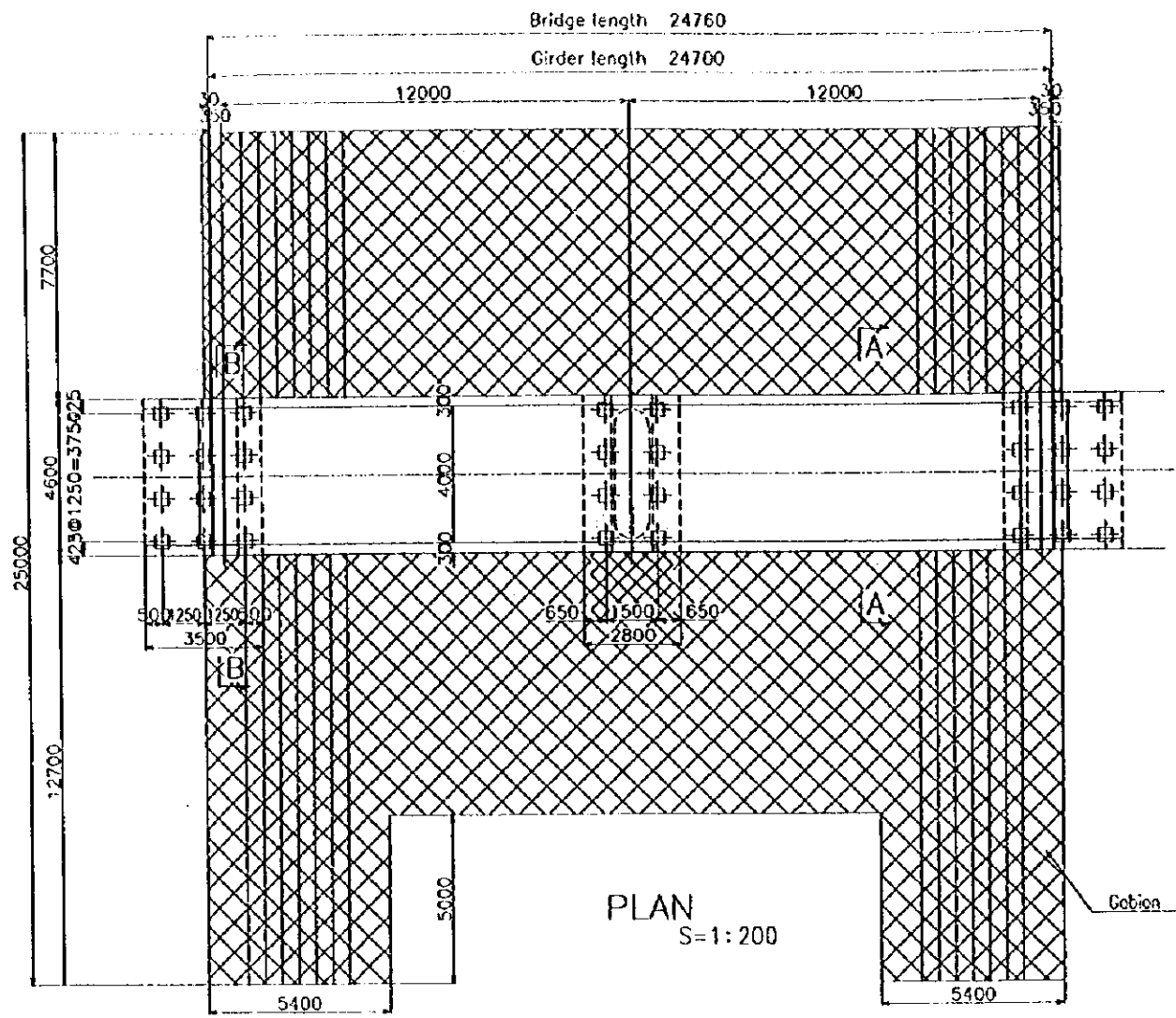
Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

TITLE OF DRAWING
ROAD IMPROVEMENT
TYPICAL CROSS SECTION OF MALOLO-CHABI ROAD
AND SIDE DRAIN

Date | Oct. 1999 | Drawing No. | 4-2

NIPPON KOEI CO., LTD. TOKYO, JAPAN

MALOLO-CHABI BRIDGE



Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

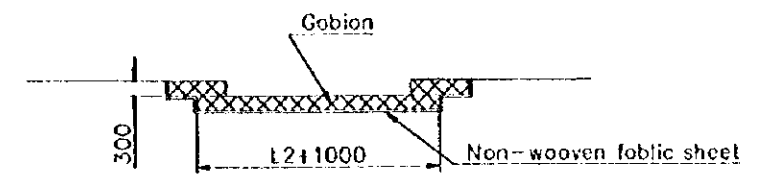
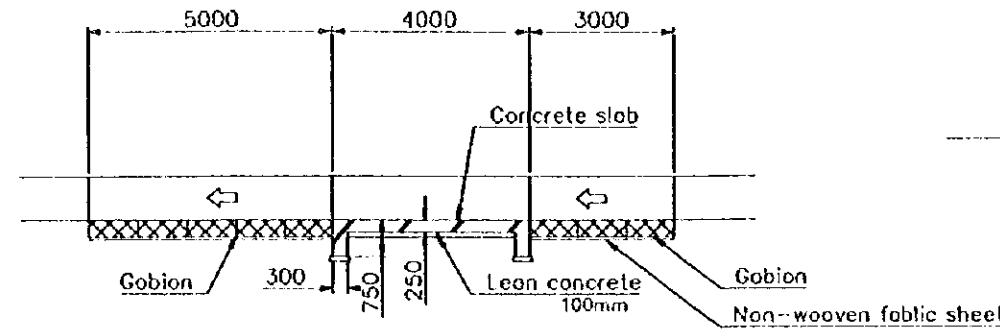
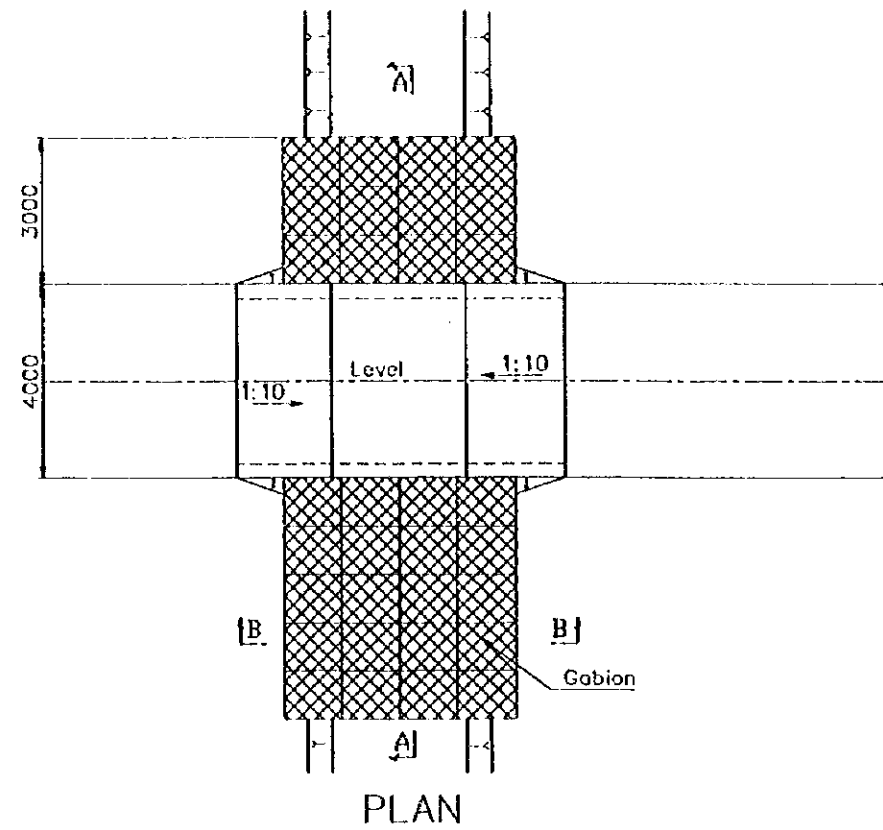
TITLE OF DRAWING
ROAD IMPROVEMENT

MALOLO-CHABI BRIDGE

Date	Oct. 1999	Drawing No.	4-3
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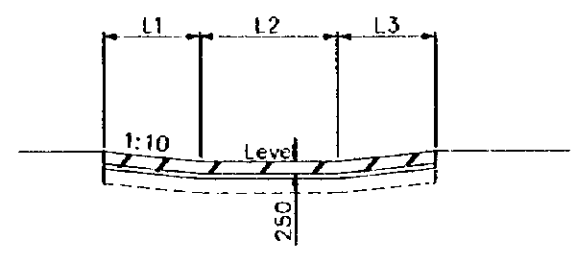
NIPPON KOEI CO., LTD. TOKYO, JAPAN

CAUSEWAY



SECTION A-A

SECTION B-B



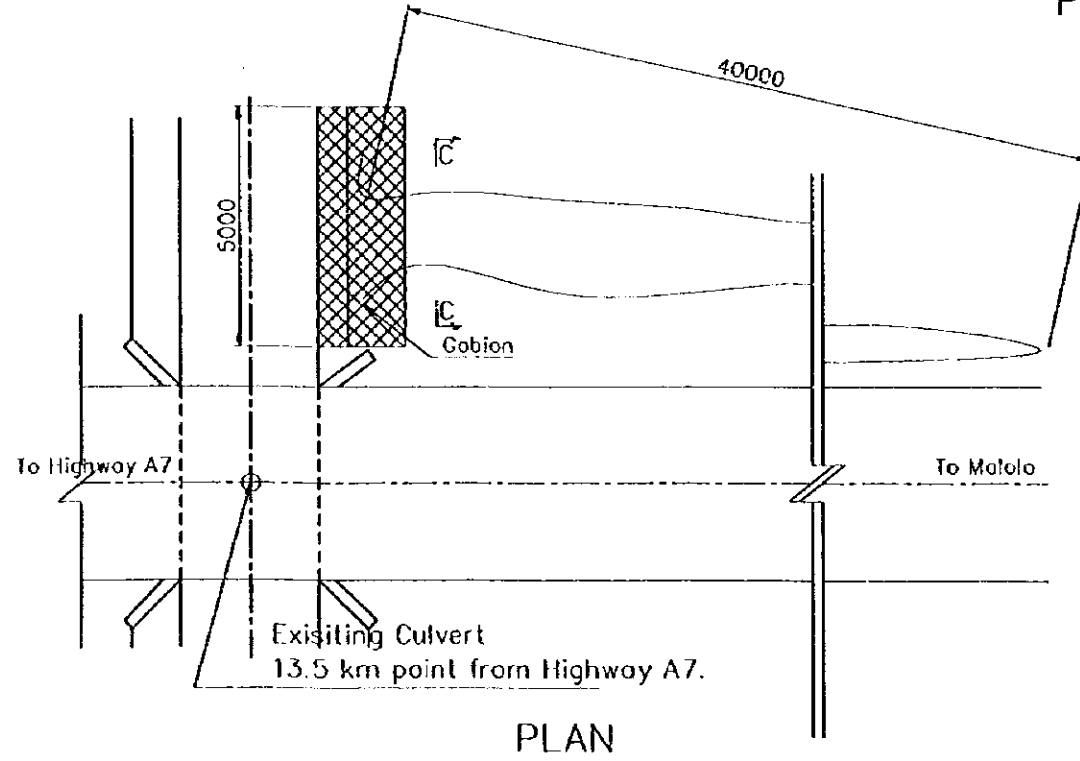
PROFILE

DIMENSION OF CAUSEWAY

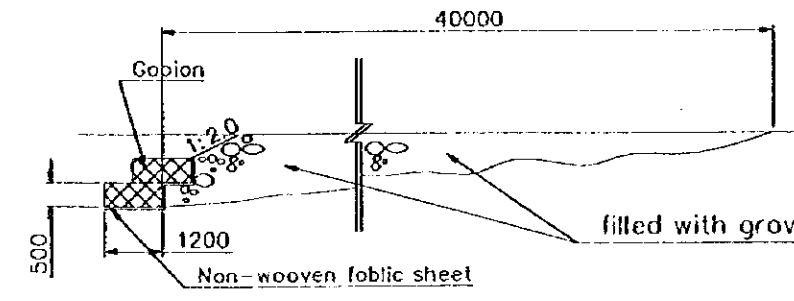
Causeway	L1	L2	L3	Distance from A-7
No.1	5.00	15.00	5.00	0.1Km
No.2	5.00	41.00	5.00	0.5Km
No.3	5.00	12.00	5.00	0.8Km
No.4	5.00	5.00	5.00	1.5Km
No.5	4.00	4.00	4.00	6.1Km
No.6	5.00	5.00	4.00	7.1Km

Note: These causeway structures are provided on the access road from A-7 highway to Malolo.

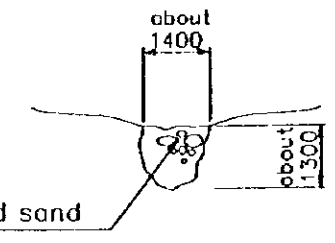
PROTECTION AGAINST GULLY EROSION



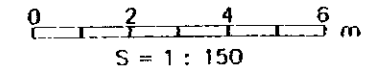
PLAN



PROFILE



SECTION C-C



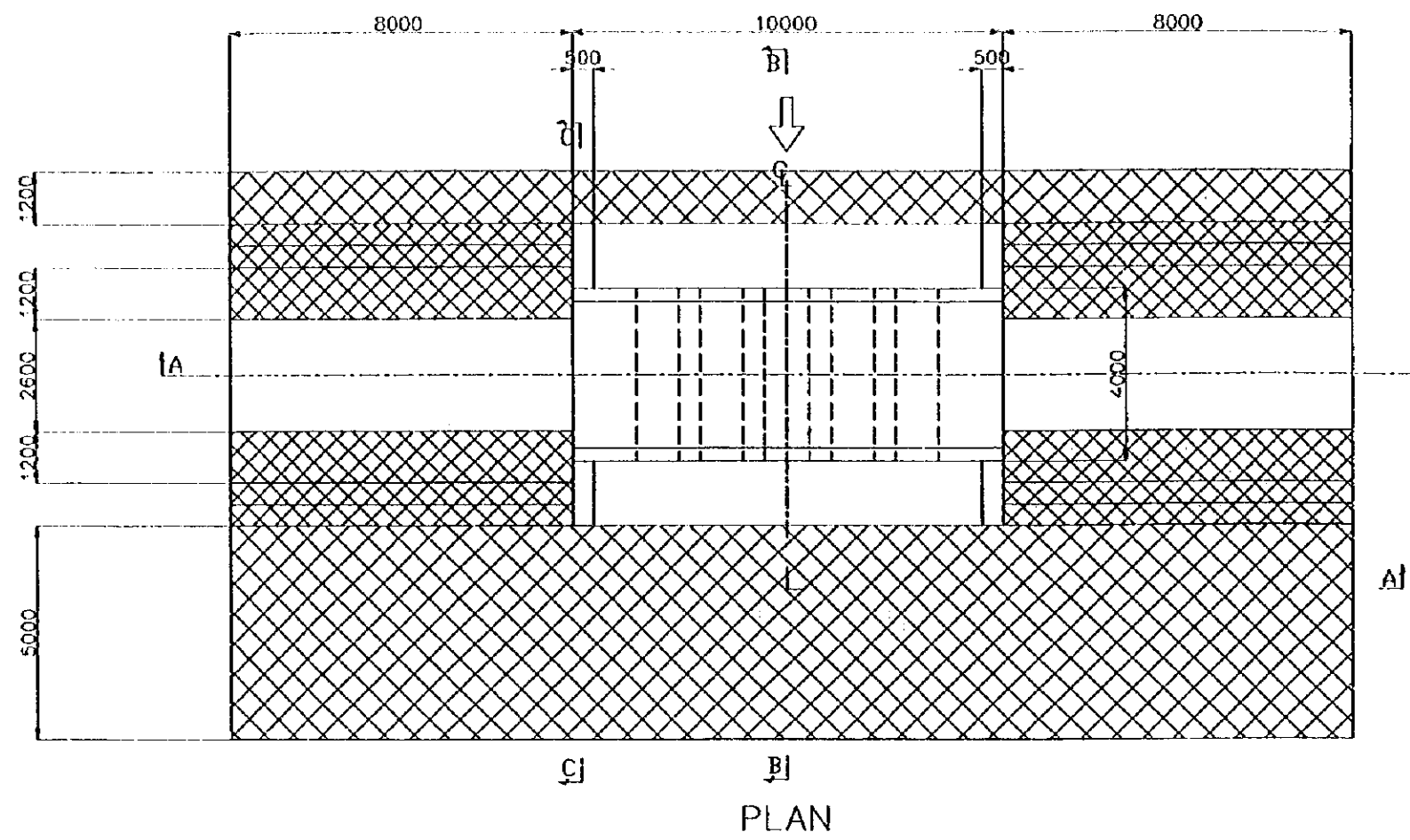
Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania

TITLE OF DRAWING
ROAD IMPROVEMENT
CAUSEWAY AND PROTECTION AGAINST GULLY EROSION

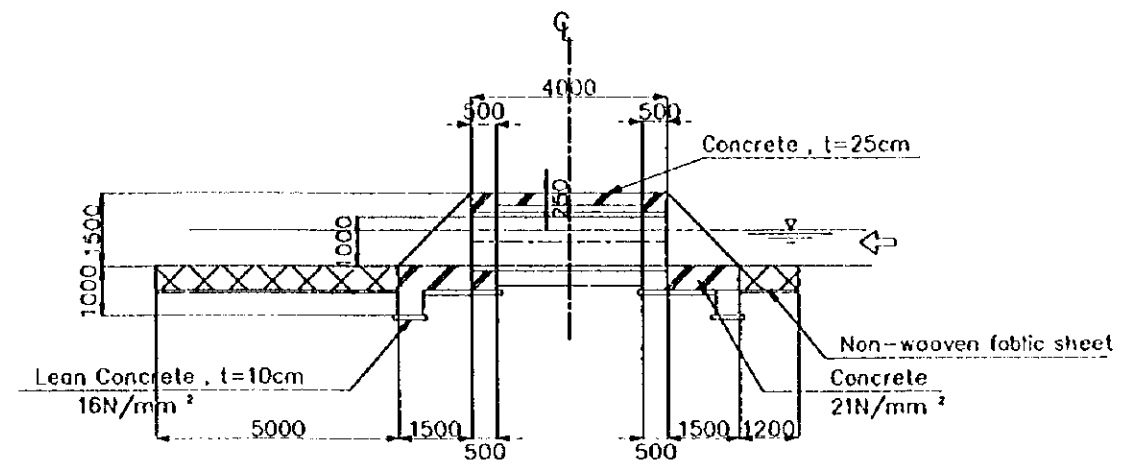
Date	Oct. 1999	Drawing No.	4-4
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NIPPON KOEI CO., LTD. TOKYO, JAPAN

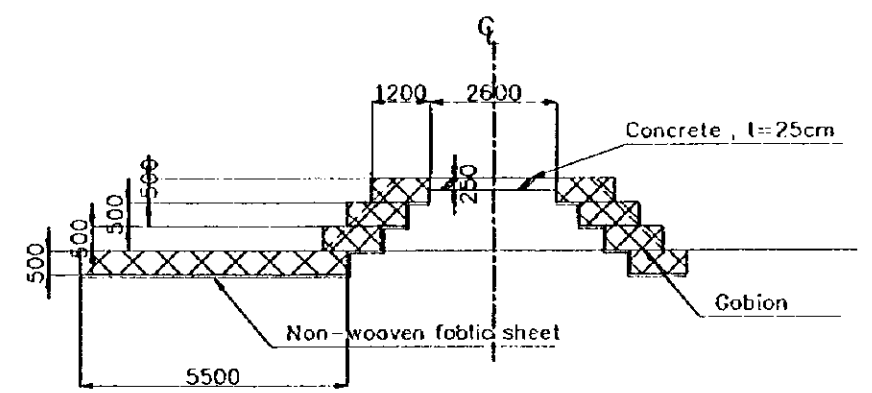
SUBMURGIBLE BRIDGE



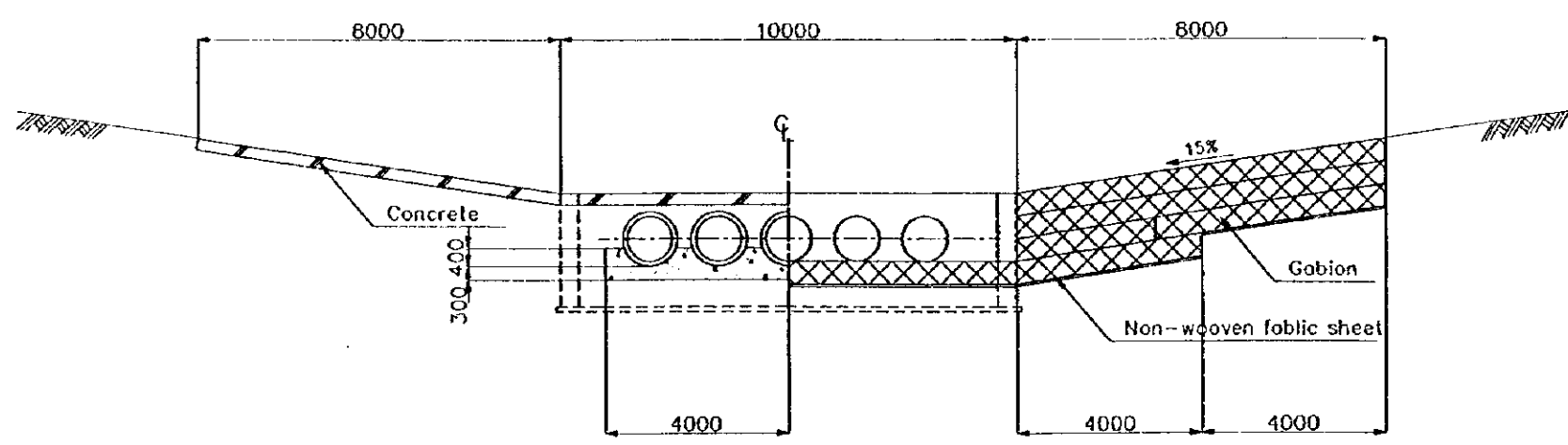
PLAN



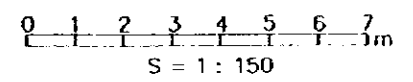
SECTION B-B



SECTION C-C

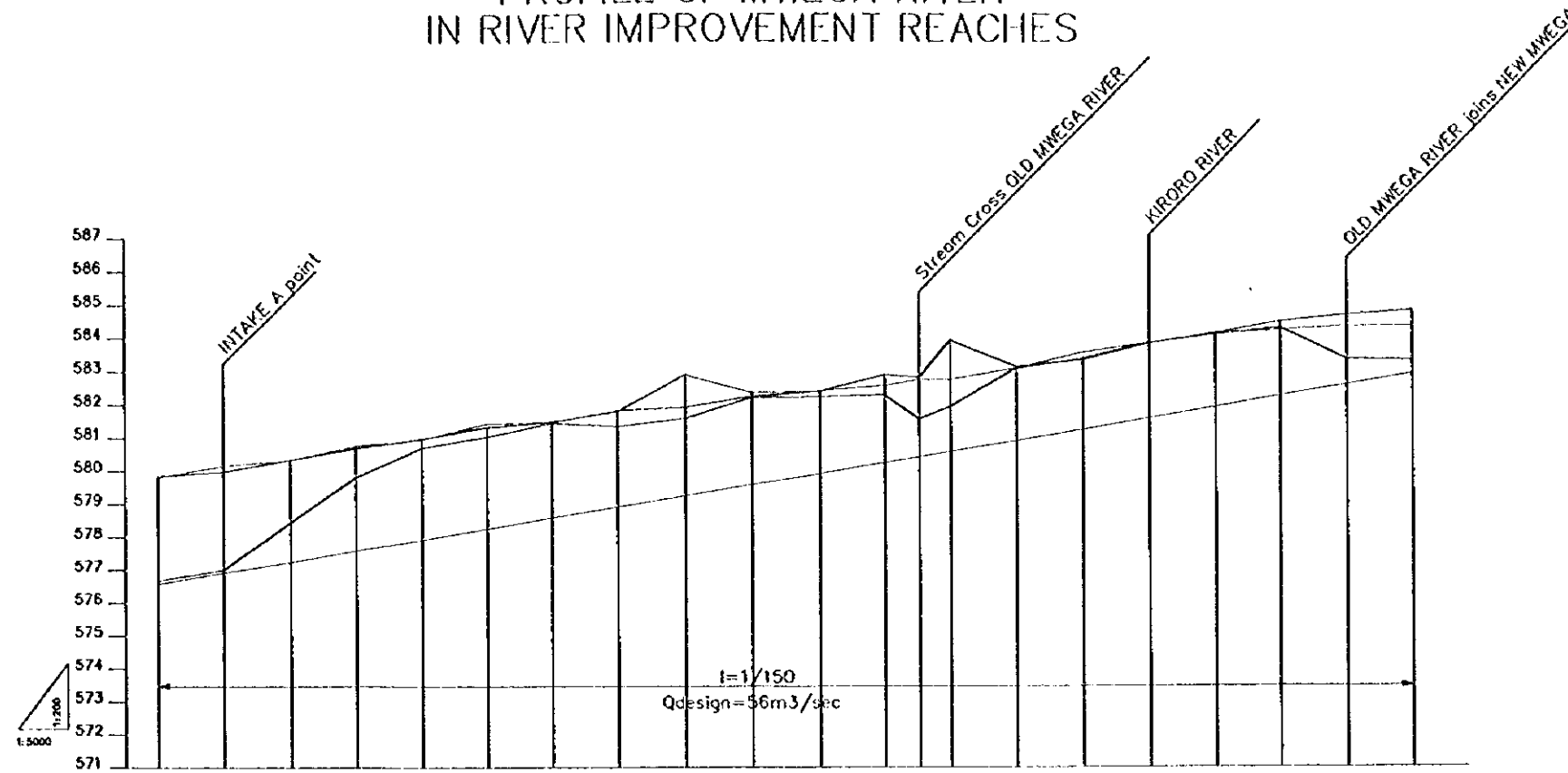


PROFILE
(SECTION A-A)

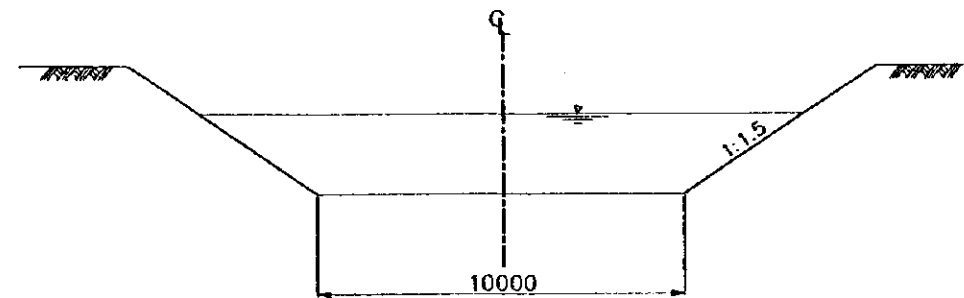


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING ROAD IMPROVEMENT SUBMURGIBLE BRIDGE			
Date	Oct. 1999	Drawing No.	4-5
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

PROFILE OF MWEGA RIVER IN RIVER IMPROVEMENT REACHES



DESIGN RIVER B.E. ELEVATION	RIVER LEFT BANK ELEVATION	RIVER RIGHT BANK ELEVATION	RIVER BED ELEVATION	REDUCED DISTANCE	DISTANCE	STATION NO.
576.59	579.85	579.82	576.69	0.00	0.00	No.0
576.92	579.99	580.15	577.00	50.00	50.00	No.1
577.25	580.34	580.50	578.44	100.00	50.00	No.2
577.59	580.70	580.76	578.81	150.00	50.00	No.3
577.92	580.98	580.96	580.72	200.00	50.00	No.4
578.25	581.34	581.45	581.00	250.00	50.00	No.5
578.59	581.49	581.50	581.46	300.00	50.00	No.6
578.92	581.82	581.83	581.36	350.00	50.00	No.7
579.25	582.02	582.03	581.60	400.00	50.00	No.8
579.59	582.37	582.25	582.22	450.00	50.00	No.9
579.92	582.40	582.43	582.23	500.00	50.00	No.10
580.25	582.80	582.57	582.31	550.00	50.00	No.11
580.42	582.83	582.76	581.59	576.00	26.00	No.11
580.59	583.05	582.76	581.95	600.00	24.00	No.12
580.92	583.16	583.10	583.10	650.00	50.00	No.13
581.25	583.35	583.37	583.39	700.00	50.00	No.14
581.59	583.85	583.86	583.86	750.00	50.00	No.15
581.92	584.13	584.11	584.10	800.00	50.00	No.16
582.25	584.48	584.22	584.28	850.00	50.00	No.17
582.59	584.69	584.36	583.33	900.00	50.00	No.18
582.92	584.81	584.33	583.32	950.00	50.00	No.19



Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania

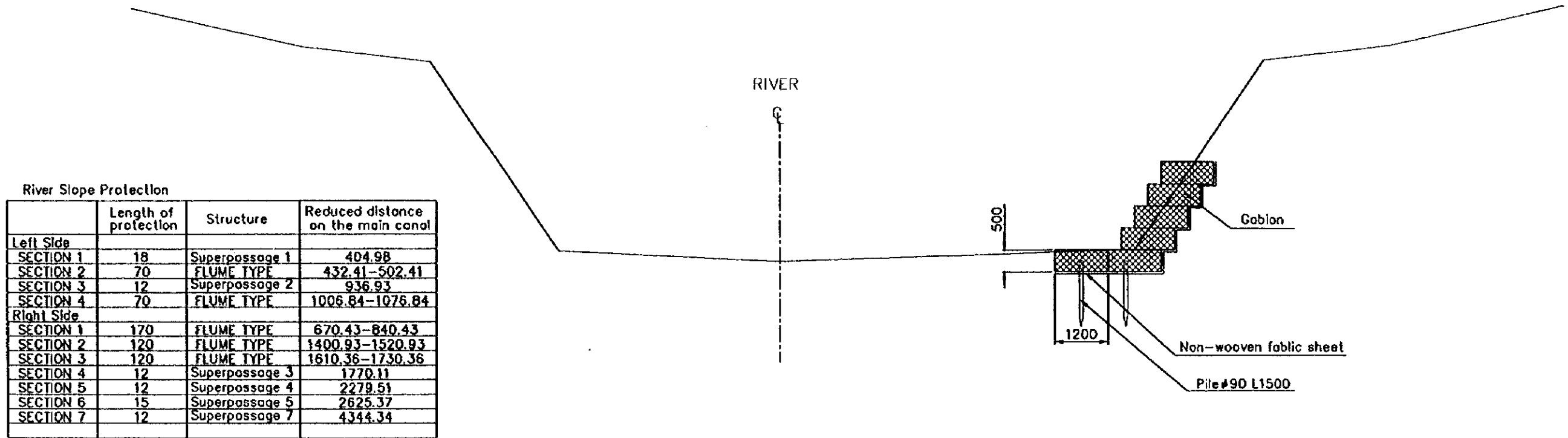
TITLE OF DRAWING
RIVER IMPROVEMENT
PROFILE OF MWEGA RIVER
IN RIVER IMPROVEMENT REACHES

Date	Oct. 1999	Drawing No.	5-1
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NIPPON KOEI CO., LTD. TOKYO, JAPAN

TYPICAL CROSS SECTION OF KIKALO RIVER IN RIVER IMPROVEMENT REACHES AND RIVER SLOPE PROTECTION

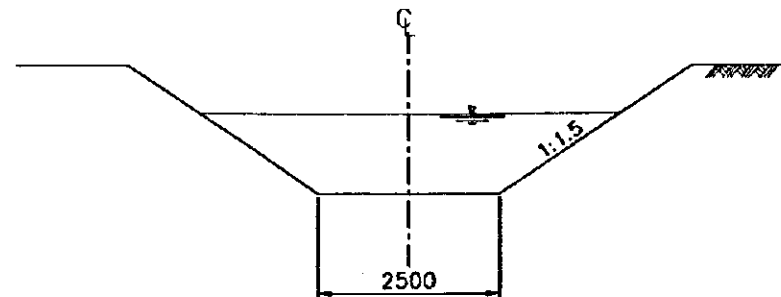
RIVER SLOPE PROTECTION



River Slope Protection

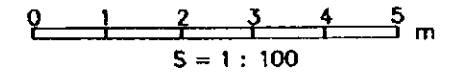
	Length of protection	Structure	Reduced distance on the main canal
Left Side			
SECTION 1	18	Superpassage 1	404.98
SECTION 2	70	FLUME TYPE	432.41-502.41
SECTION 3	12	Superpassage 2	936.93
SECTION 4	70	FLUME TYPE	1006.84-1076.84
Right Side			
SECTION 1	170	FLUME TYPE	670.43-840.43
SECTION 2	120	FLUME TYPE	1400.93-1520.93
SECTION 3	120	FLUME TYPE	1610.36-1730.36
SECTION 4	12	Superpassage 3	1770.11
SECTION 5	12	Superpassage 4	2279.51
SECTION 6	15	Superpassage 5	2625.37
SECTION 7	12	Superpassage 7	4344.34

KIKALO RIVER IMPROVEMENT



Section from the junction with the Mwega river to 0.31km joint of the upstream across the right main canal where an aqueduct(Aqueduct No.2) will be provided.

Note: River slope protection shall be provided along the concave side of the Mwega River where the proposed main irrigation canal will run within 15m from the river or in the river side where superpassage will be located within 50m from the river side.



Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING RIVER IMPROVEMENT TYPICAL CROSS SECTION OF KIKALO RIVER IN RIVER IMPROVEMENT REACHES AND RIVER SLOPE PROTECTION			
Date	Oct. 1999	Drawing No.	5-2
NIPPON KOEI CO., LTD. TOKYO, JAPAN			







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