

4. References

4. References

No.	Name of Documents	Year Issued	Publisher
1	Agricultural and Livestock Policy, 1997	Jan-1997	Ministry of Agriculture and Cooperatives
2	Farm System Study of Malolo Valley and Proposals of Development	Mar-1988	Sokoine University of Agriculture (S.V.A)
3	Staff Appraisal Report Tanzania River basin Management and Smallholder Irrigation Improvement Project	Jun-1996	The World Bank Agriculture and Environmental Operations Eastern Africa Department Africa Region
4	Agroforestry and Environment in Tanzania	1994	Ministry of Agriculture and Ministry of Tourism, National Resources and Environment
5	The National Irrigation Development Plan (Main Report)	Oct-1994	Ministry of Agriculture, Agriculture and Livestock Division, Irrigation Department
6	River Basin Management and Smallholder Irrigation Improvement project Smallholder Irrigation Improvement Component Project Implementation Plan 1996/97-2001/02	Oct-1996	Ministry of Agriculture, Agriculture and Livestock Division, Irrigation Department
7	National Environmental Policy	Dec-1997	Vice President's Office
8	Special Programme on Food reduction in Support of Food Security The Pilot Phase Plan of Operation	Sep-1995	Food and Agriculture Organization of the United Nations
9	Component Description Document Research on Utilization of Tanzanian Phosphate Rock for Crop Production	Jun-1997	Danida
10	Southern Highlands Extension and Rural Financial Services Project (Loan No. 324 TZ) Mid-term Review Report	Jan-1997	Ministry of Agriculture and Cooperatives
11	Report on the Selection of District / Pilot Schemes in Smallholder Traditional Irrigation in Morogoro Region	Feb-1999	Ministry of Agriculture and Cooperatives
12	Sector Programme Support Document Agricultural Sector Programme Support	Aug-1997	Danida
13	Smallholder Irrigation Improvement Programme Component Description Document	Jan-1998	
14	The National Special Programme Theme : Maximum Production with Optimum Inputs	Apr-1995	Food and Agriculture Organization of the United Nations
15	Special Programme for Food Security Plan of Operation - Addendum Diversification Components	Jun-1997	Food and Agriculture Organization of the United Nations
16	Basic Data Agriculture and Livestock Sector 1991/92 - 1997/98	Sep-1998	Ministry of Agriculture and Cooperatives
17	National Agricultural Extension Program (NAEP II) Program Implementation Plan	Jul-1996	Ministry of Agriculture and Cooperatives
18	Component Description Document Institutional Strengthening Agricultural Sector Programme Support	Jul-1997	Danida
19	Agricultural Sector Policy Paper for 1996/97 1998/99 Rolling Plan and Forward Budget	Mar-1996	Planning & Marketing Division Ministry of Agriculture and Cooperatives
20	The Rolling Plan and Forward Budget for Tanzania for the Period 1996/97 - 1998/99	Aug-1996	The President Office Planning Commission
21	The Explosives Act, 1963 Government Notice No. 257	Jul-1994	Ministry of Energy and Minerals
22	A guide to the Social Security Fund "NSSF"	1997	The National Social Security Fund
23	The National Social Security Fund Act, 1997	Jan-1998	Government of Tanzania

No.	Name of Documents	Year Issued	Publisher
24	Employer's Guide on Registration and Payment of Vetalevy	1997	Vocational Education and Training Authority
25	Tariff Book of Harbour Dues and Charges Vol.1	Jan-1994	Tanzania Harbours Authority
26	Chapter 113 of the Laws -Land Ordinance-	1967	Government of Tanzania
27	Town and Country Planning Act Chapter 387 of the Law	1962	Government of Tanzania
28	The Land Acquisition Act	1967	Government of Tanzania
29	Security of Employment Act (with Amendment of 1975)	1975	Government of Tanzania
30	Regulation of Wages and Terms of Employment	1956	Government of Tanzania
31	Research and Training Newsletter Vol.XIII, Nos.1-3	Sep-1998	Ministry of Agriculture and Cooperatives, Department of Research & Development
32	National Agricultural Extension Program Management of Agricultural Extension : Guideline for the District, Town and Municipal Councils		Ministry of Agriculture and Cooperatives
33	Kimani Irrigation Pilot Project Completion Report Vol.1 Main Report	Oct-1994	Government of Tanzania & Canadian International Development Agency
34	Usangu Village Irrigation Project	Apr-1992	Food and Agriculture Organization of the United Nations
35	Madibira Rice Project Review of Feasibility	Jun-1992	National Agricultural and Food Corporation
36	Smallholder Irrigated Rice Project Draft Project Completion Report	May-1998	Ministry of Agriculture, Agriculture and Livestock Division, Irrigation Department
37	Appraisal Report Small holder Irrigated Agriculture	Jan-1982	African Development Funds

BASIC DESIGN DRAWINGS

BASIC DESIGN DRAWING LIST

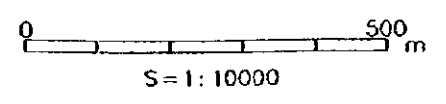
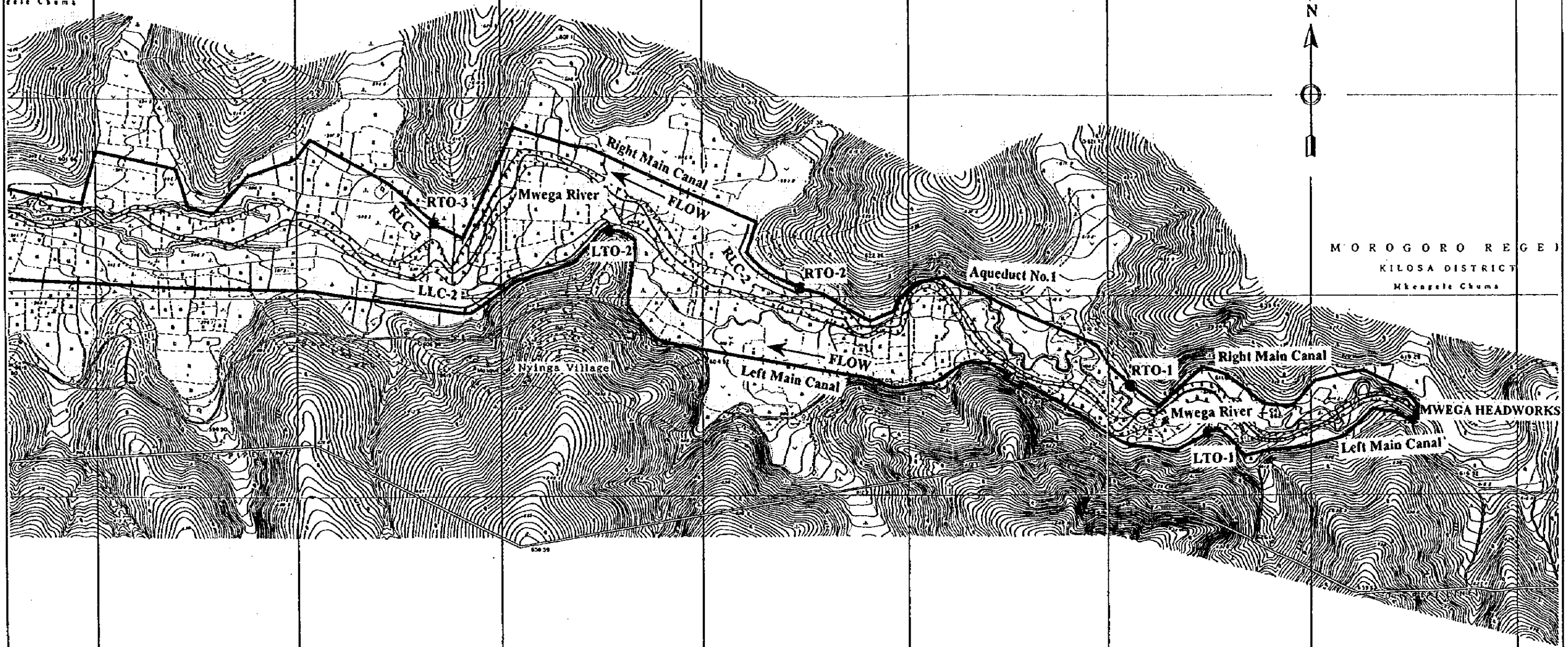
No.	Drawing No.	Title
I. GENERAL		
1	1 - 1	GENERAL LAYOUT (1/4)
2	1 - 2	GENERAL LAYOUT (2/4)
3	1 - 3	GENERAL LAYOUT (3/4)
4	1 - 4	GENERAL LAYOUT (4/4)
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6	2 - 2	PLAN(2/2)
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8	2 - 4	SECTION(1/5)
9	2 - 5	SECTION(2/5)
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13	2 - 9	SCREEN FOR RIGHT INTAKE
14	2 - 10	SCREEN FOR LEFT INTAKE
15	2 - 11	SAND-FLUSHING GATE
16	2 - 12	RIGHT INTAKE GATE
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20	3 - 2	PROFILE OF RIGHT MAIN CANAL(2/6)
21	3 - 3	PROFILE OF RIGHT MAIN CANAL(3/6)
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24	3 - 6	PROFILE OF RIGHT MAIN CANAL(6/6)
25	3 - 7	PROFILE OF LEFT MAIN CANAL(1/7)
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28	3 - 10	PROFILE OF LEFT MAIN CANAL(4/7)
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31	3 - 13	PROFILE OF LEFT MAIN CANAL(7/7)
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33	3 - 15	CONNECTION CANALS
34	3 - 16	TYPICAL CROSS SECTION OF CONNECTION CANAL AND LATERAL CANAL
35	3 - 17	SUPERPASSAGE WITHOUT COVER
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37	3 - 19	DIMENSION TABLE OF SUPERPASSAGE
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40	3 - 22	CHECK
41	3 - 23	AQUEDUCT NO.1 ON RIGHT MAIN CANAL
42	3 - 24	AQUEDUCT NO.2 ON RIGHT MAIN CANAL
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49	3 - 31	ENERGY DISSIPATOR
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MOROGORO REGION
KILOSA DISTRICT
Mkengale Chuma

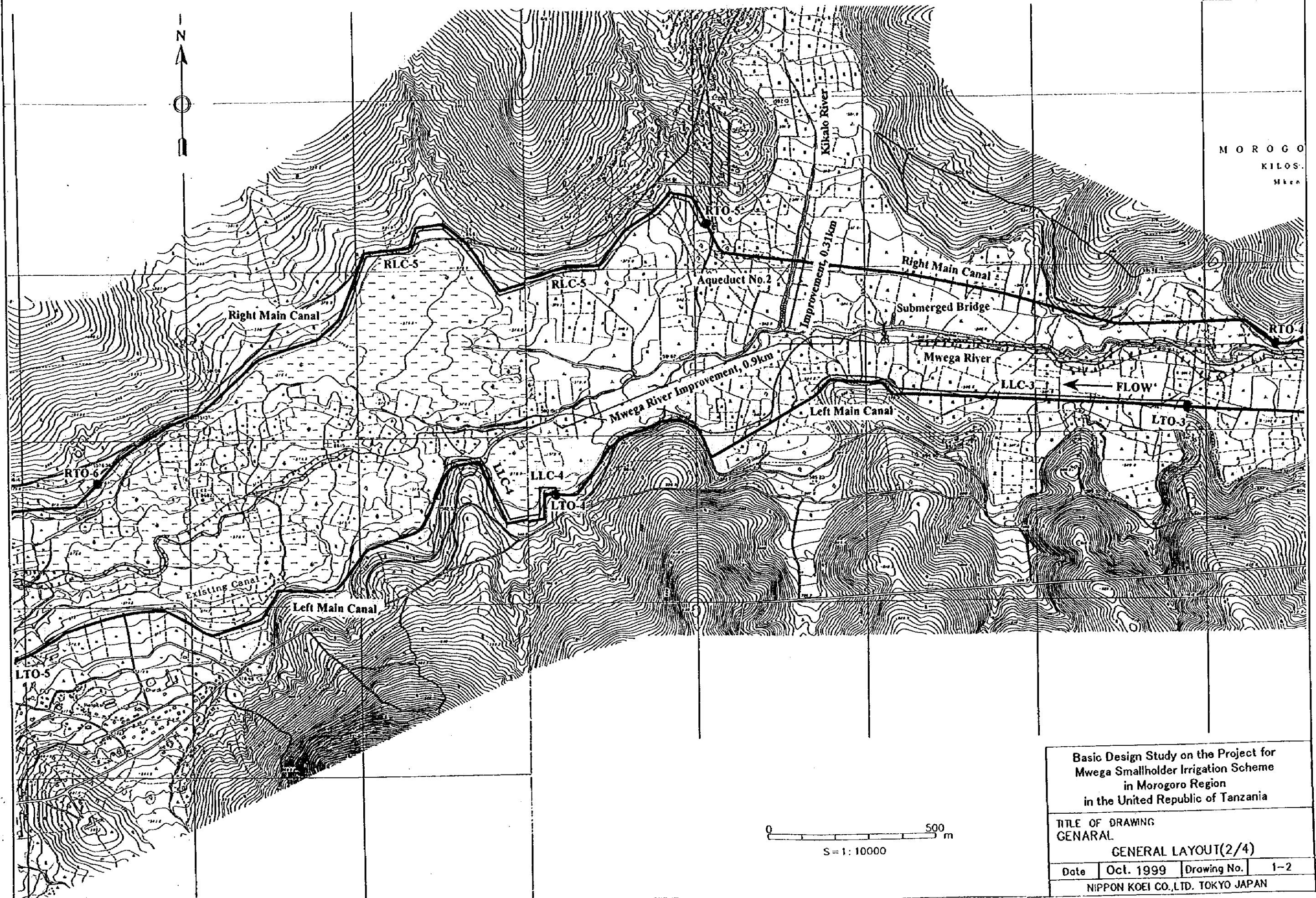


MOROGORO REGION
KILOSA DISTRICT
Mkengale Chuma

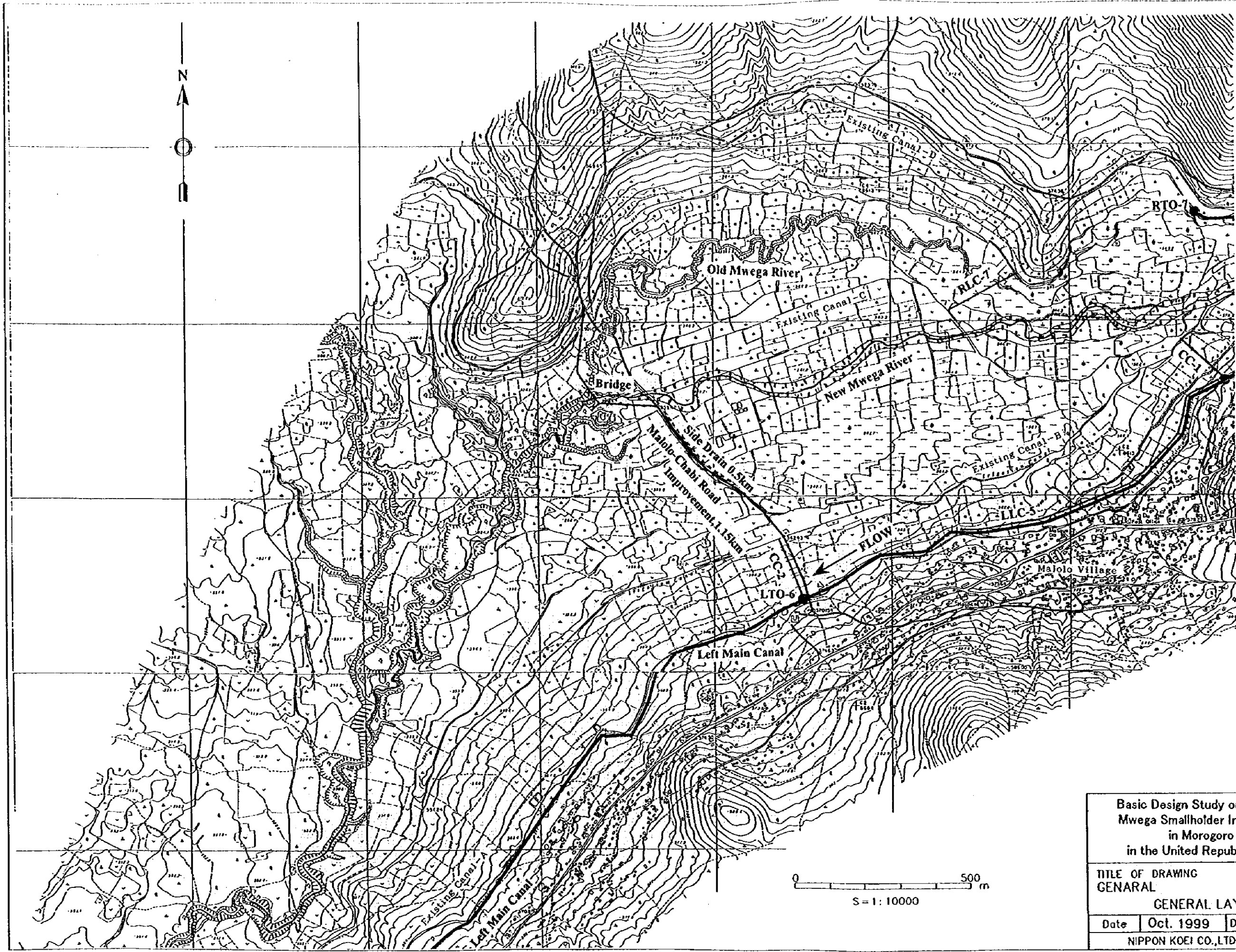


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
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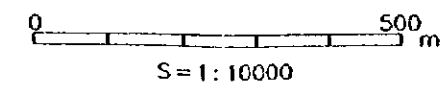
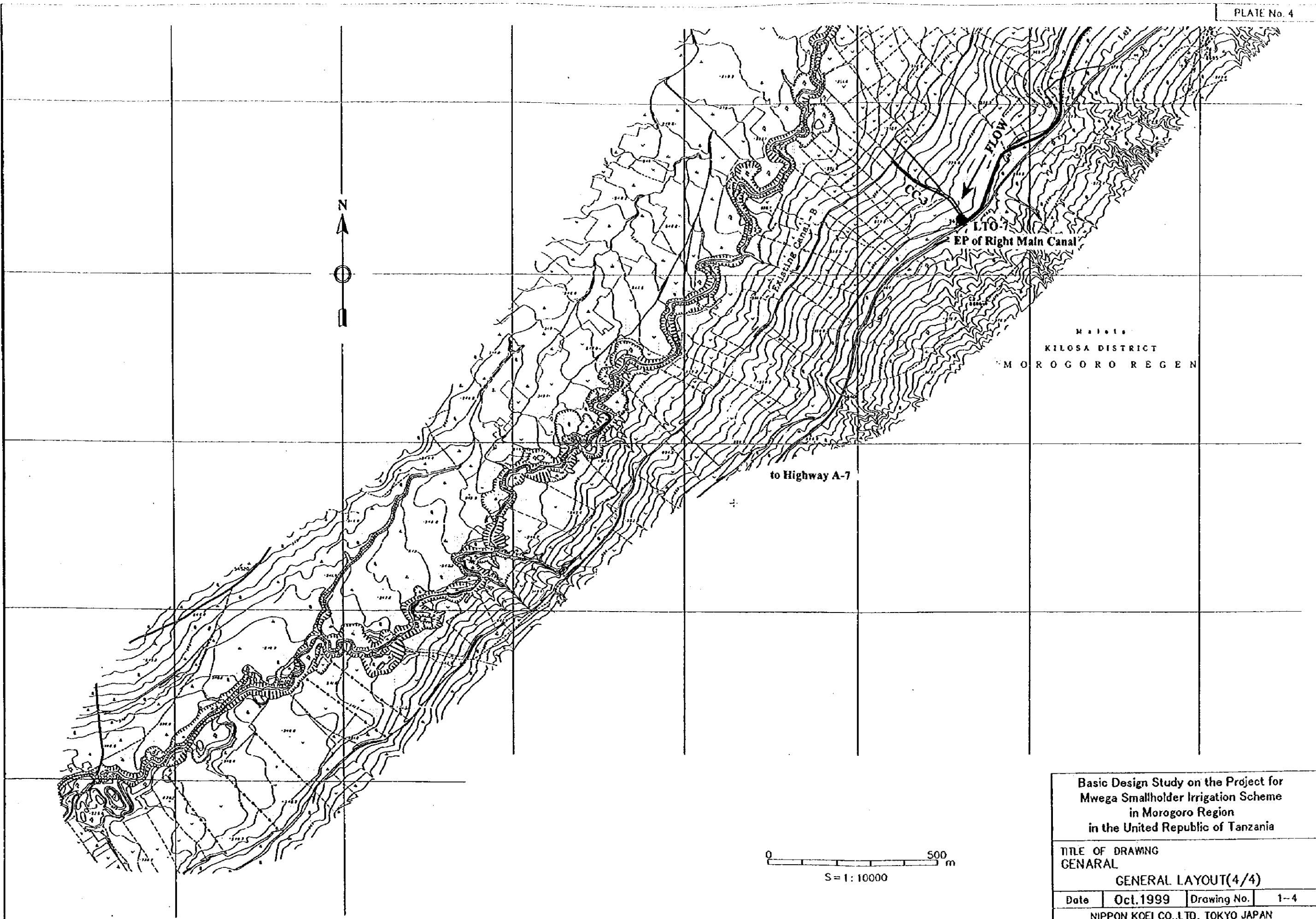
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Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
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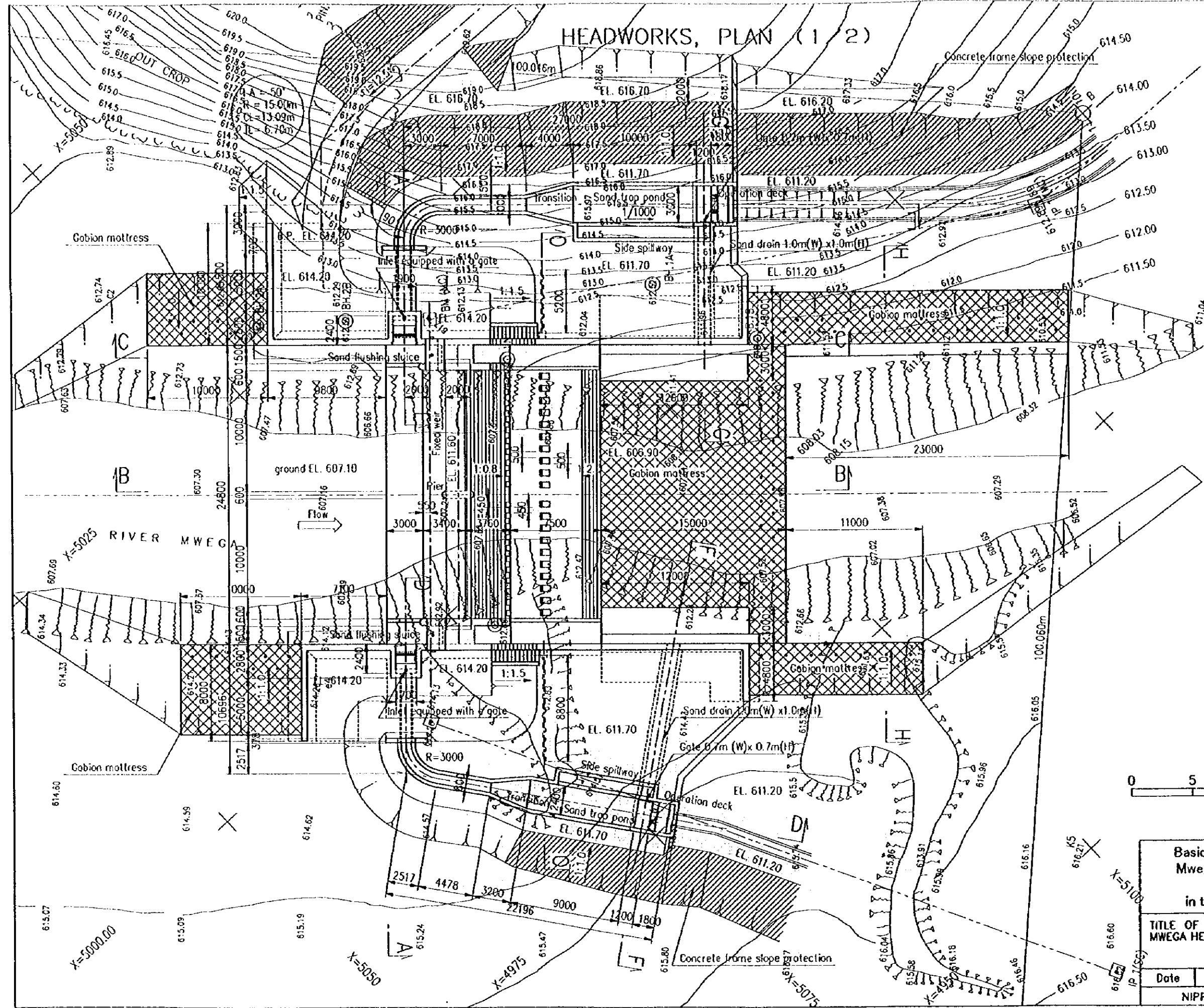


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
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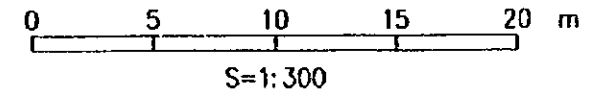


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GENERAL LAYOUT(4/4)			
Date	Oct.1999	Drawing No.	1-4
NIPPON KOEI CO.,LTD. TOKYO JAPAN			

HEADWORKS, PLAN (1/2)



Feature	
Name of Headworks	Mwega Headworks
Type of Weir	Fixed Overflow Weir
Design Flood Discharge	99 m ³ /sec.
Design Flood Water Level	613.37m
Weir Crest Level	611.60m
Weir Height	• 4.7m from the downstream apron sill elevation • 5.7m from foundation surface
Weir Length	24.8m in total length and 20m in the overflow section
Down Stream Energy Dissipater	USBR III type, 7.5m in length
Scouring Sluice Gate	Right: Ino., Left: Ino.
River Bed Protection Works	Gabion Works in the downstream of 15m in length
Design Intake Discharge	Right: 0.37m ³ /sec. Left: 0.52m ³ /sec.
Design Intake Water Level	611.50m



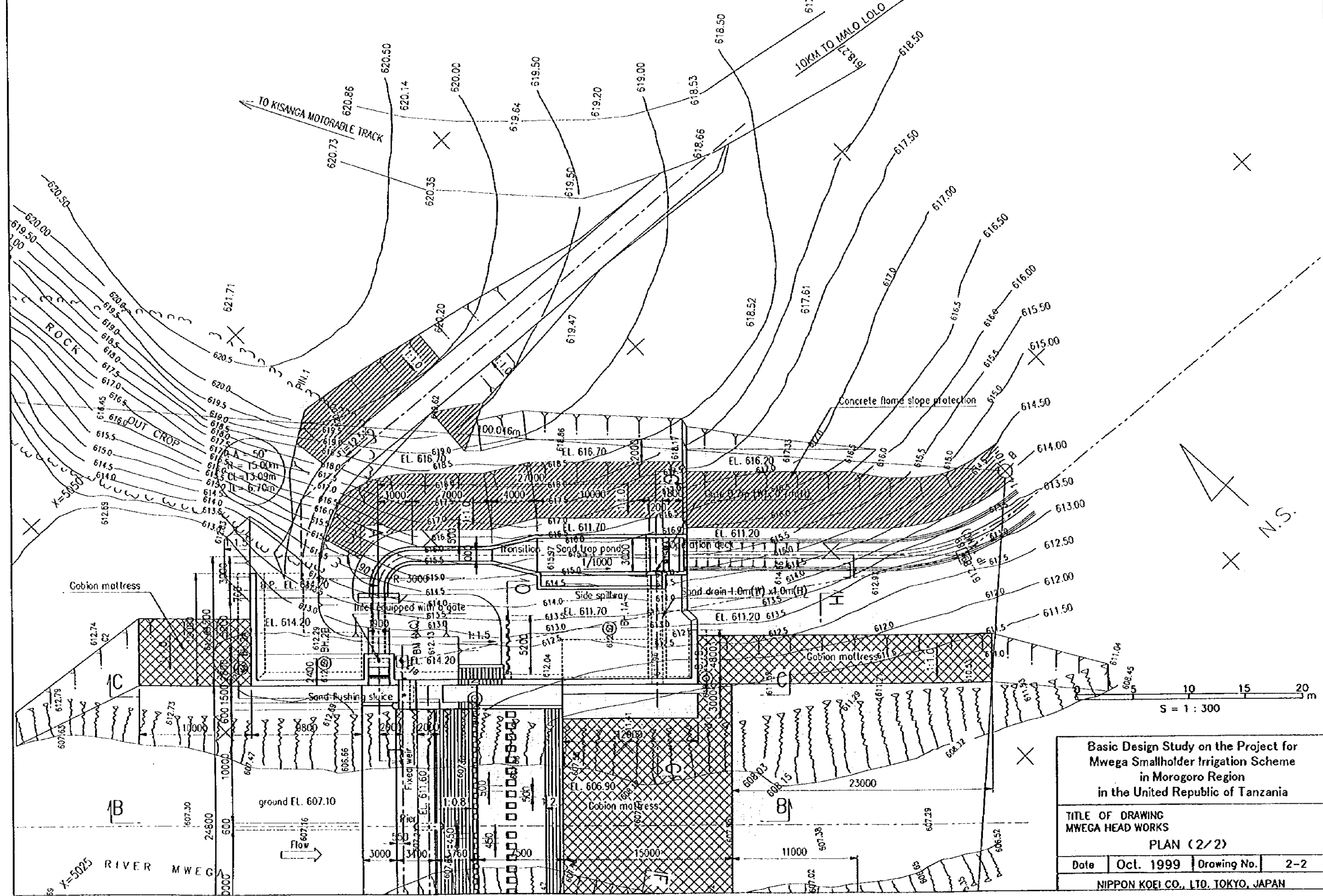
Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania

TITLE OF DRAWING
MWEGA HEAD WORKS
PLAN (1/2)

Date	Oct. 1999	Drawing No.	2-1
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HEADWORKS, PLAN (2/2)



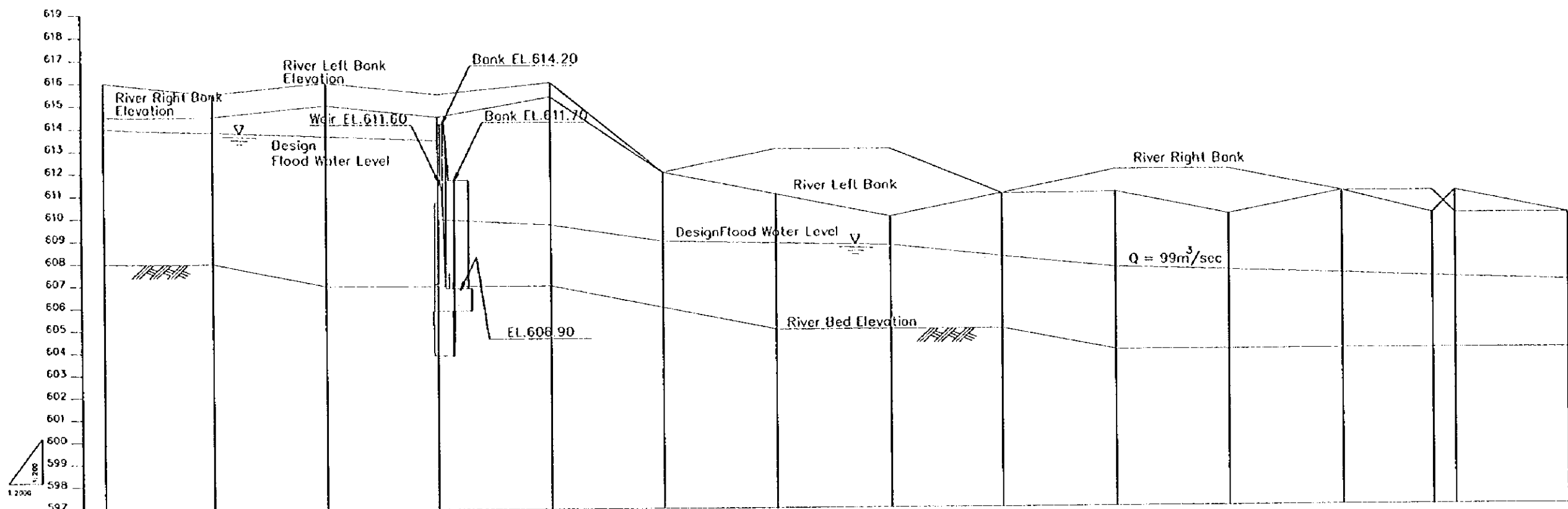
Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

TITLE OF DRAWING
MWEGA HEADWORKS
PLAN (2/2)

Date	Oct. 1999	Drawing No.	2-2
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PROFILE OF MWEGA RIVER (HEADWORKS)



DESIGN FLOOD WATER LEVEL																	
RIVER LEFT BANK ELEVATION																	
RIVER RIGHT BANK ELEVATION																	
RIVER BED ELEVATION																	
REDUCED DISTANCE																	
DISTANCE																	
STATION NO																	
	CH 0-150	CH 0-100	CH 0-050	CH 0-0	CH 0-50	CH 0-100	CH 0-150	CH 0-200	CH 0-250	CH 0-300	CH 0-350	CH 0-400	CH 0-440	CH 0-450	CH 0-500		

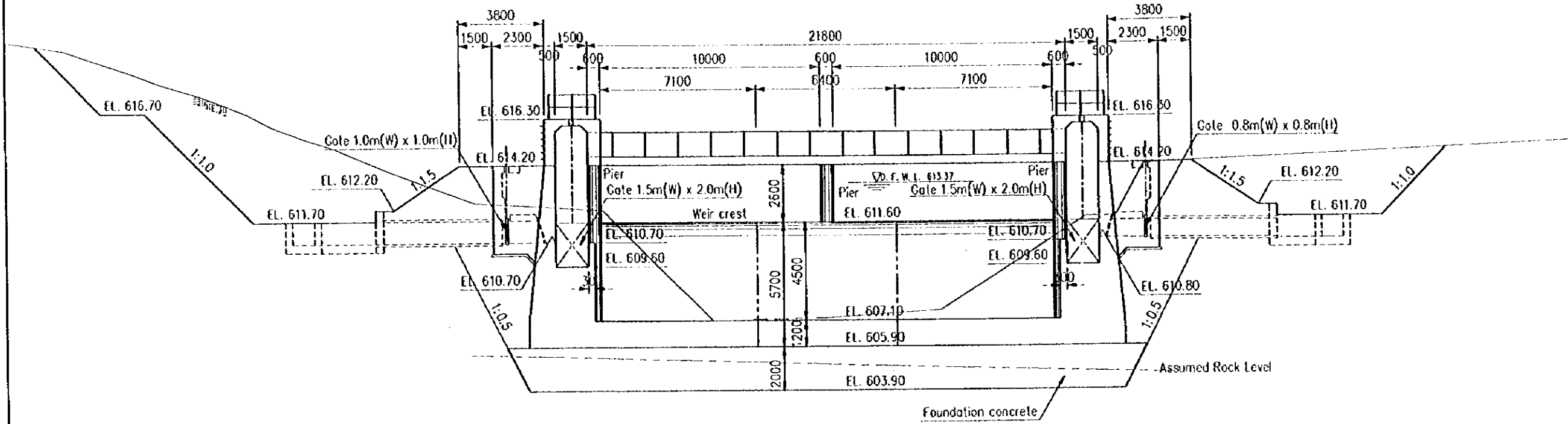
Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

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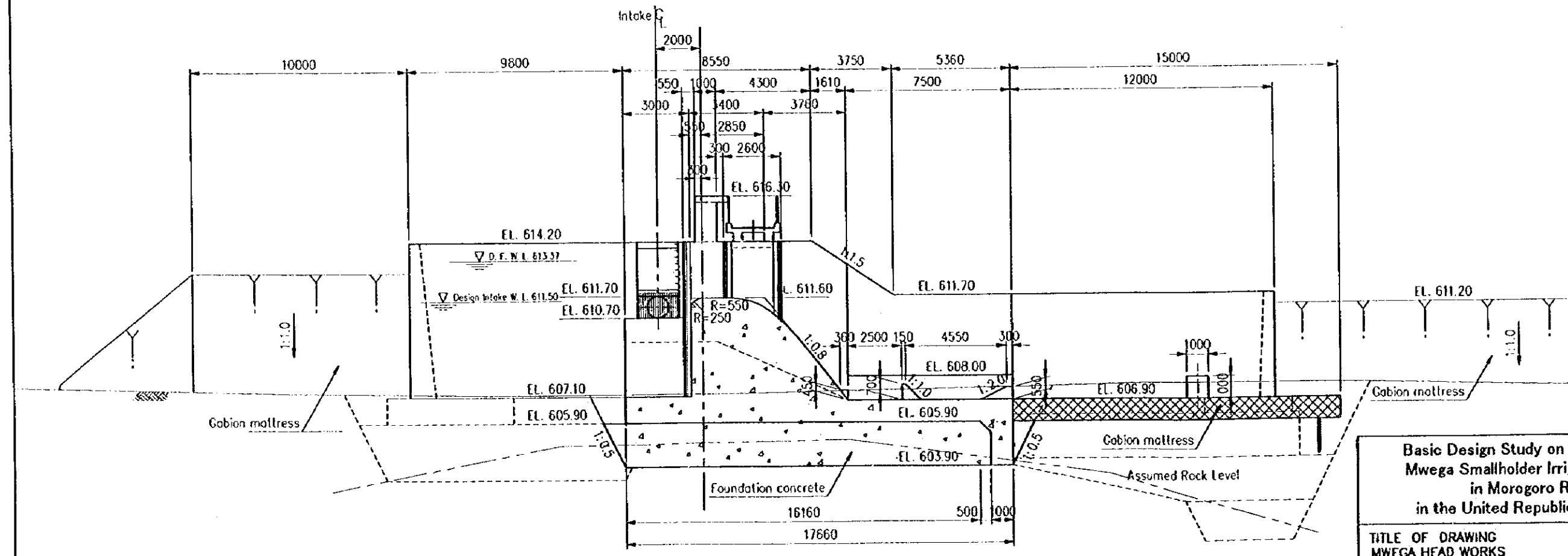
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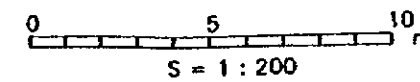
HEADWORKS, SECTION (1/5)



A-A Section

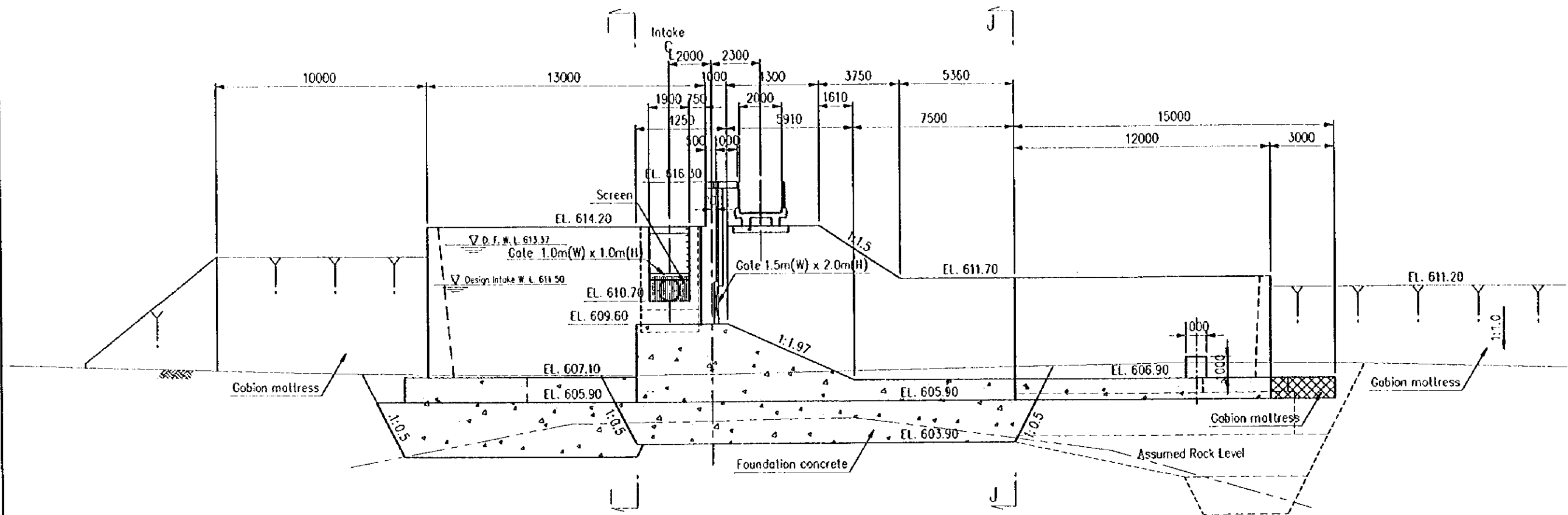


B-B Section

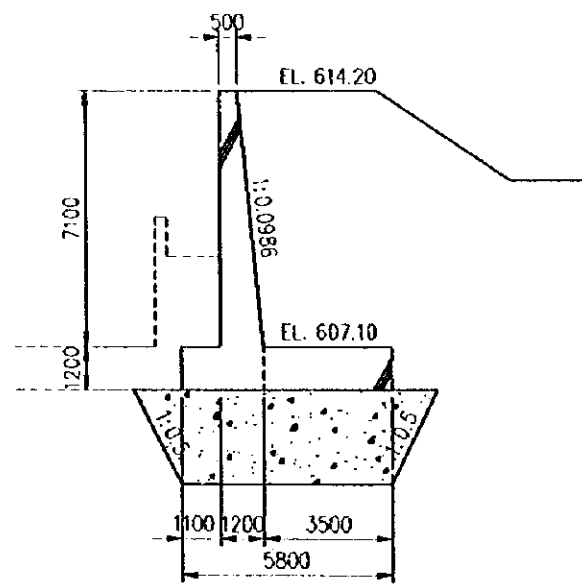


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
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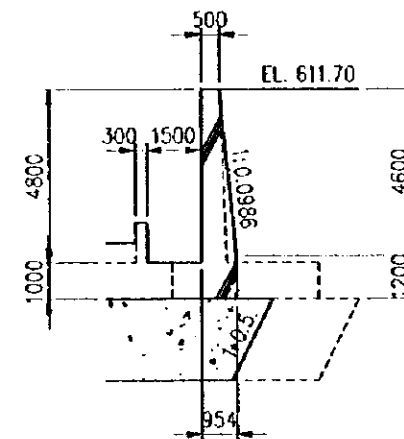
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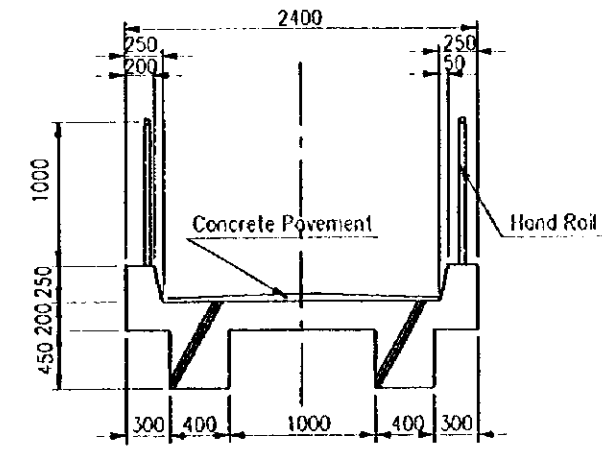
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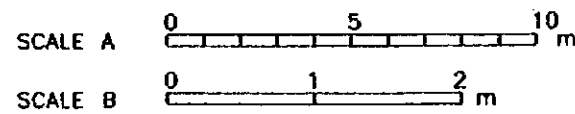
I-I Section
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J-J Section
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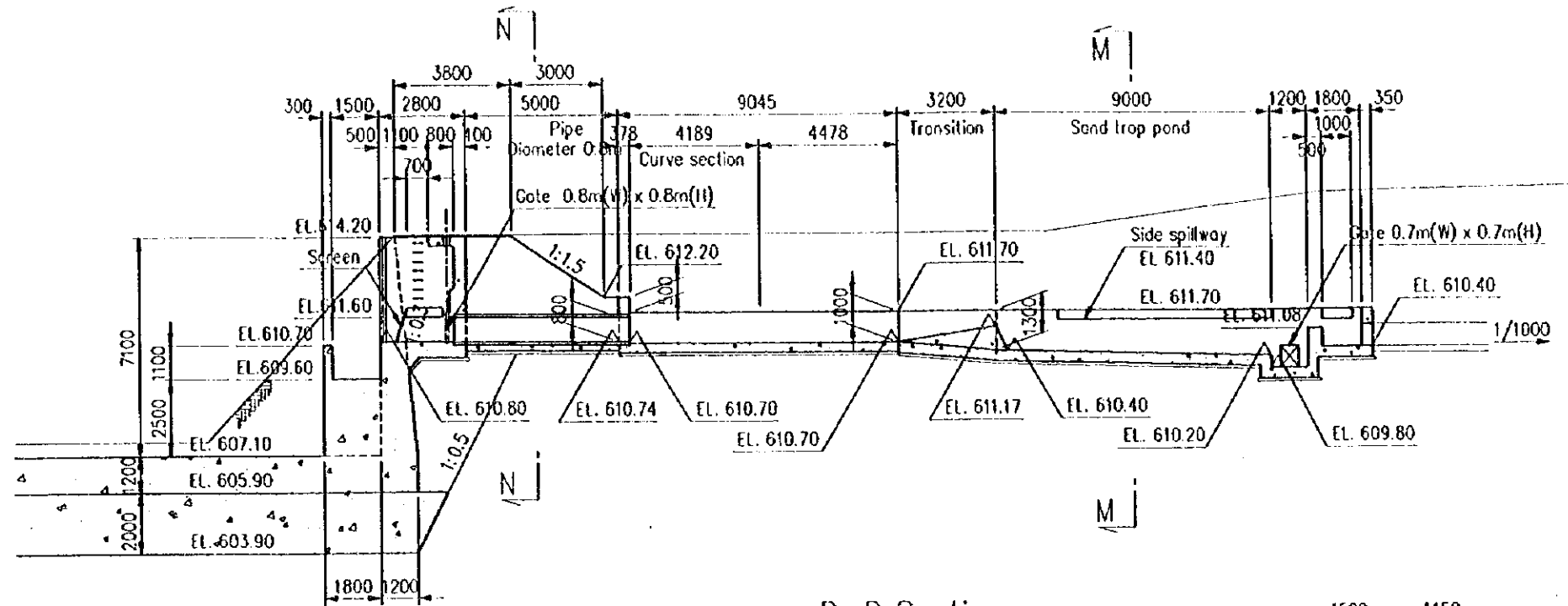


Administration Deck
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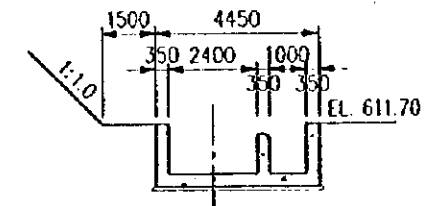


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ムウエガ頭首工、構造図 (2/5)			
Date	Oct. 1999	Drawing No.	2-5
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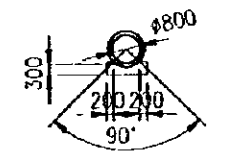
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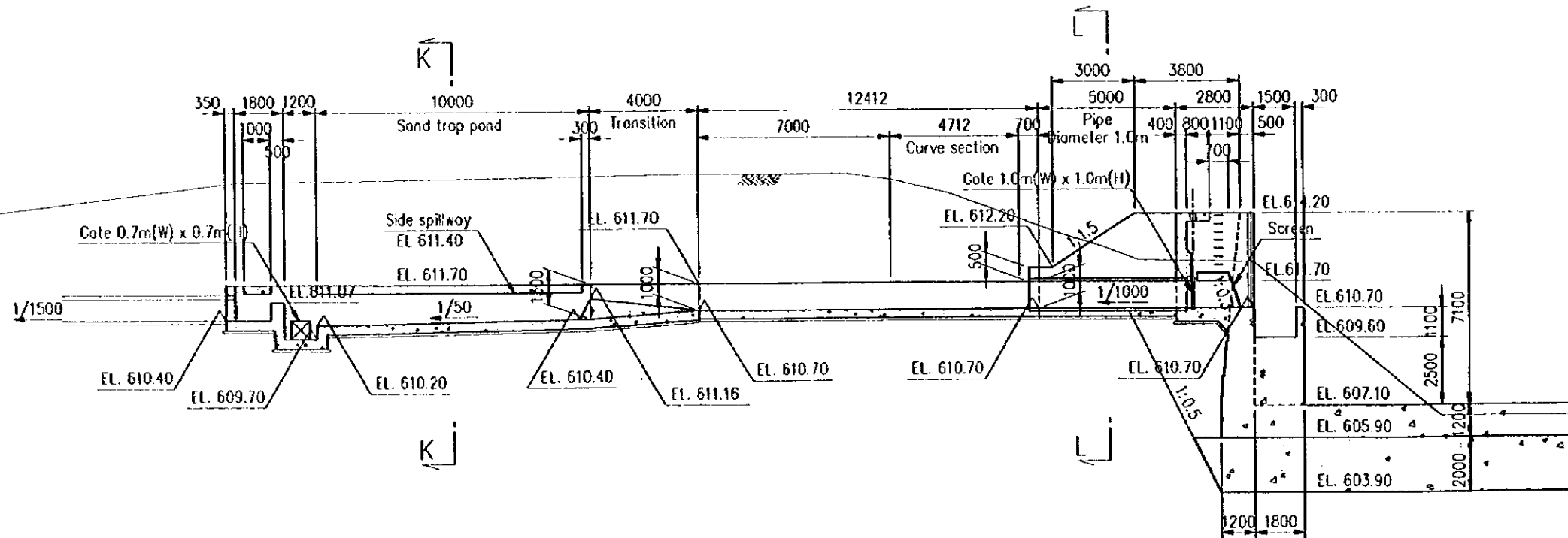
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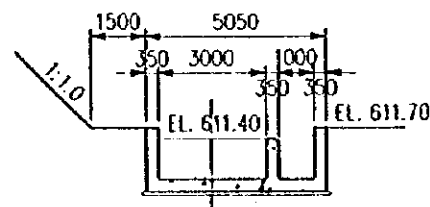
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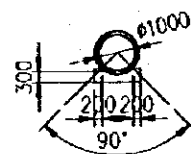
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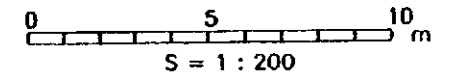
E-E Section



K-K Section



L-L Section



Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
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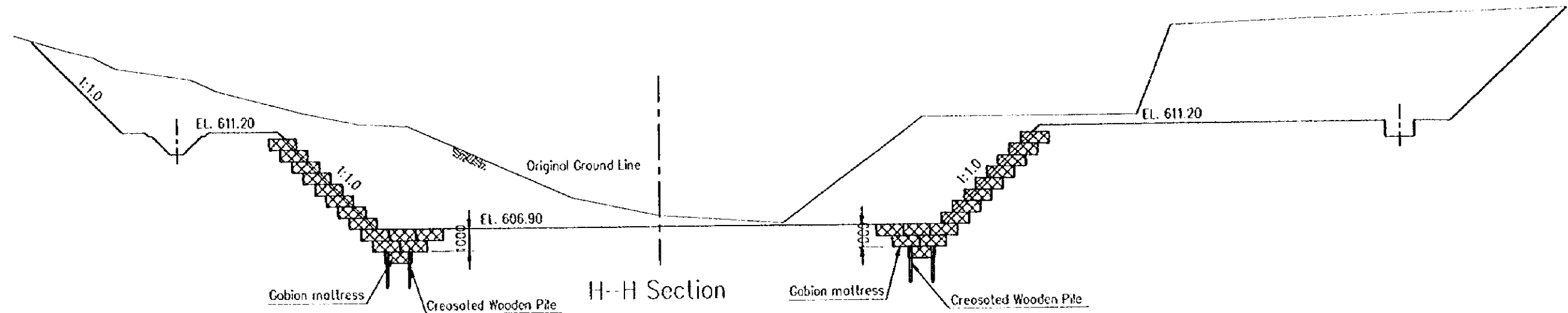
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MWEGA HEAD WORKS

SECTION(3/5)

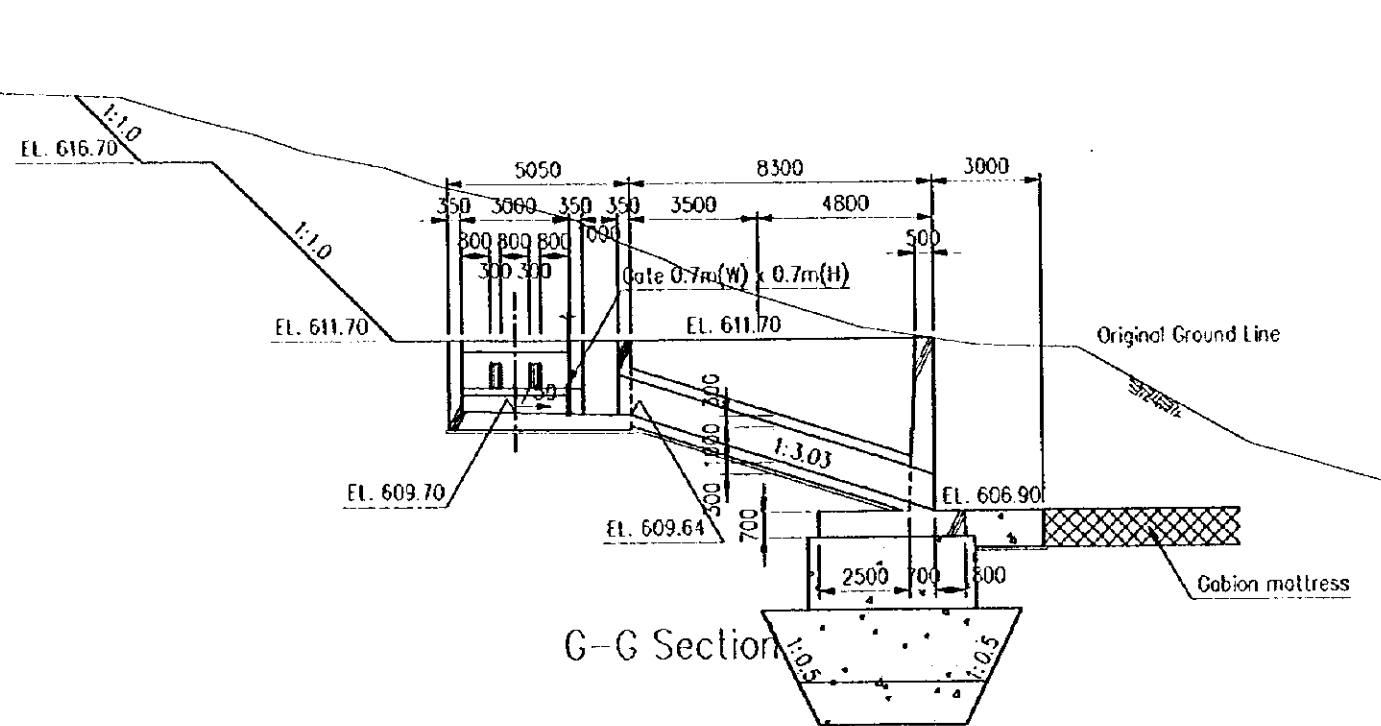
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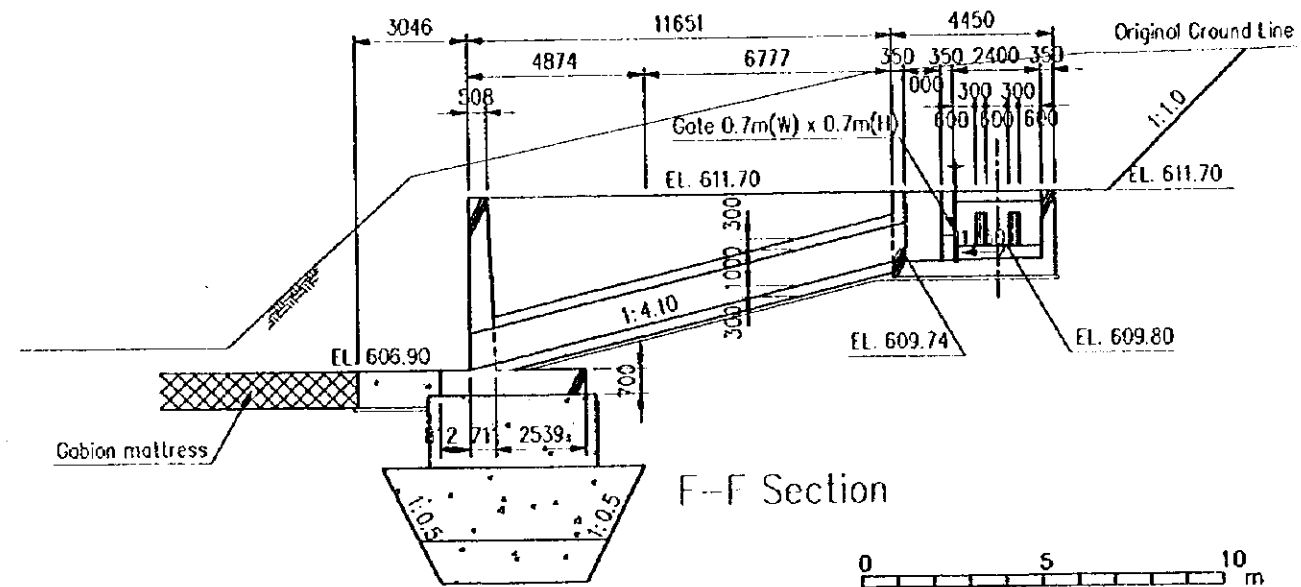
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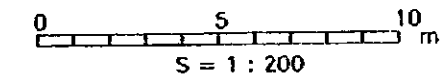
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G-G Section

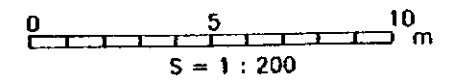
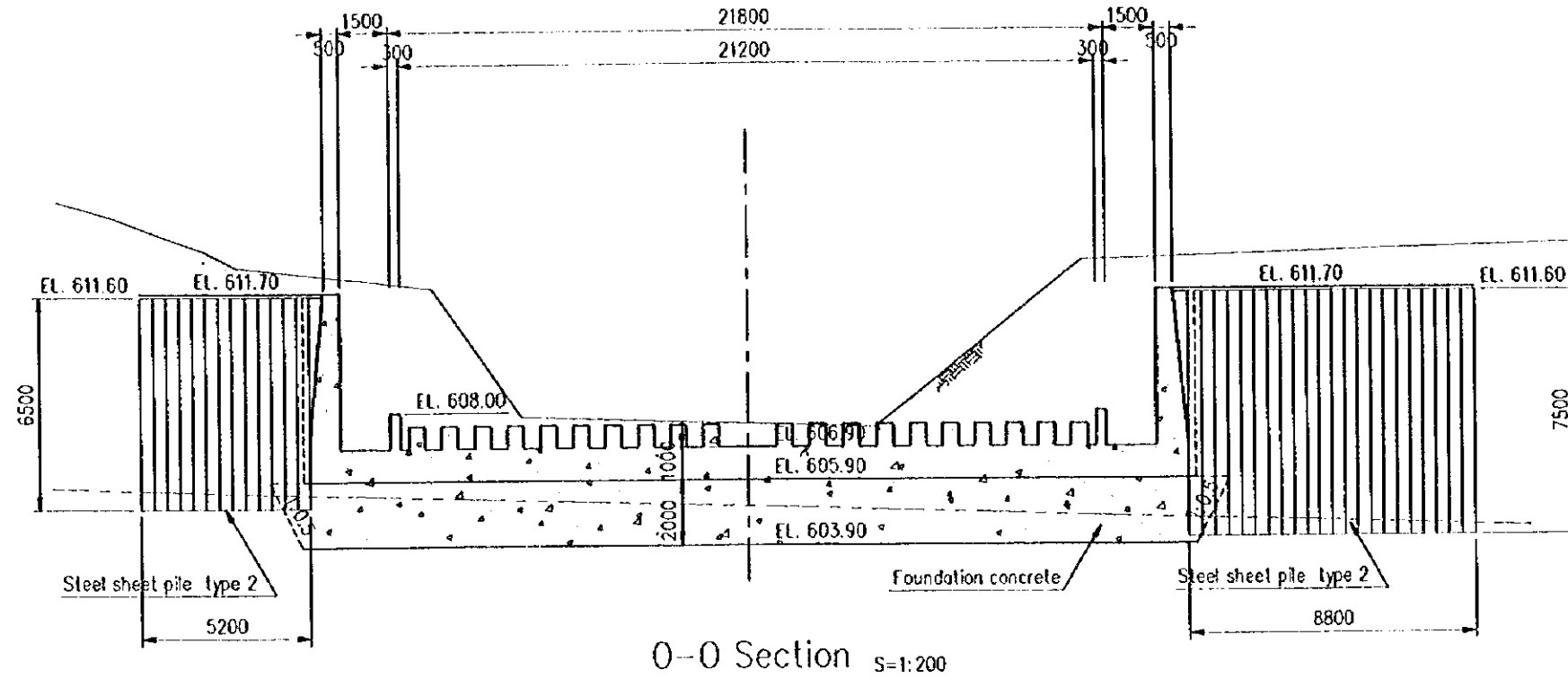


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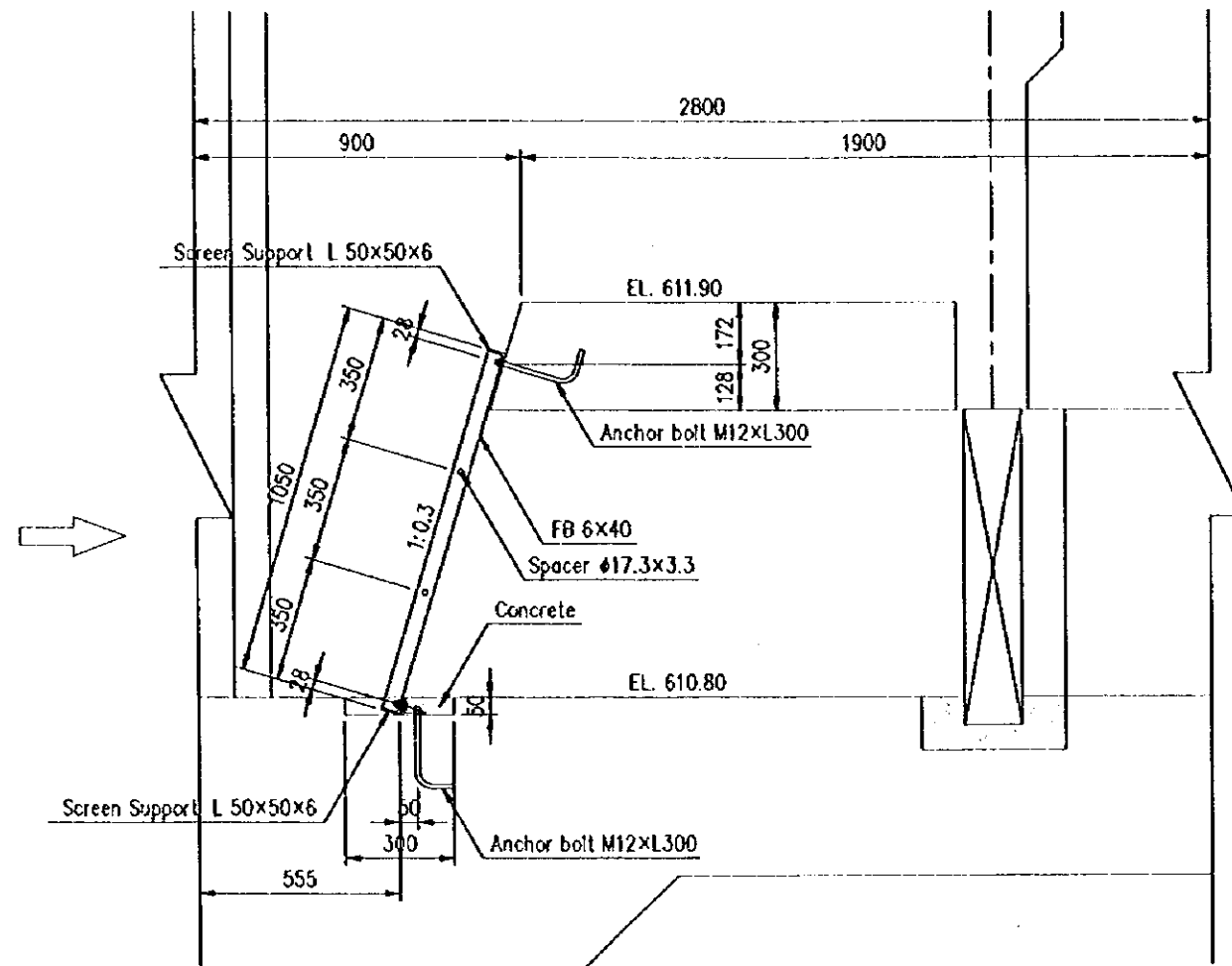
Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
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Date	Oct. 1999	Drawing No.	2-7
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

HEADWORKS, SECTION (5/5)

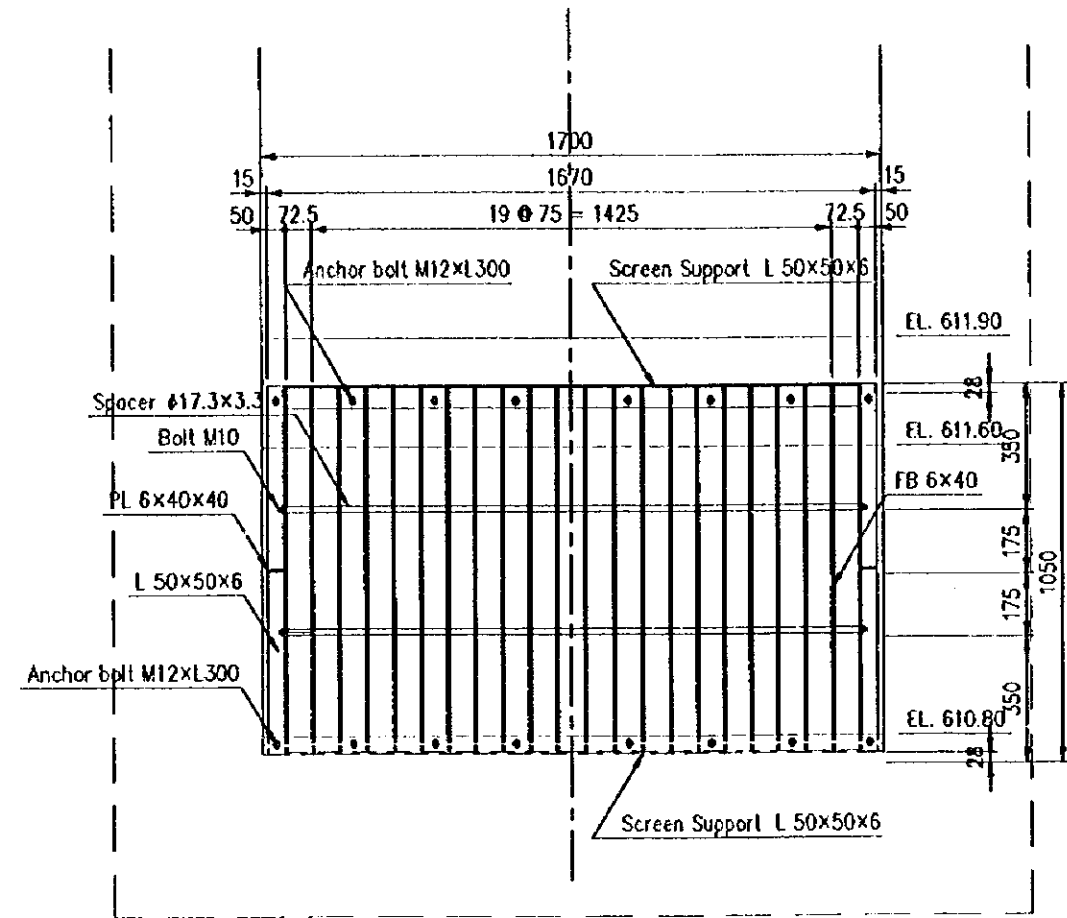


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
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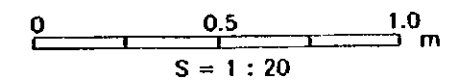
HEADWORKS, SCREEN FOR RIGHT INTAKE



Cross Section

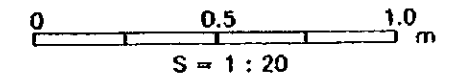
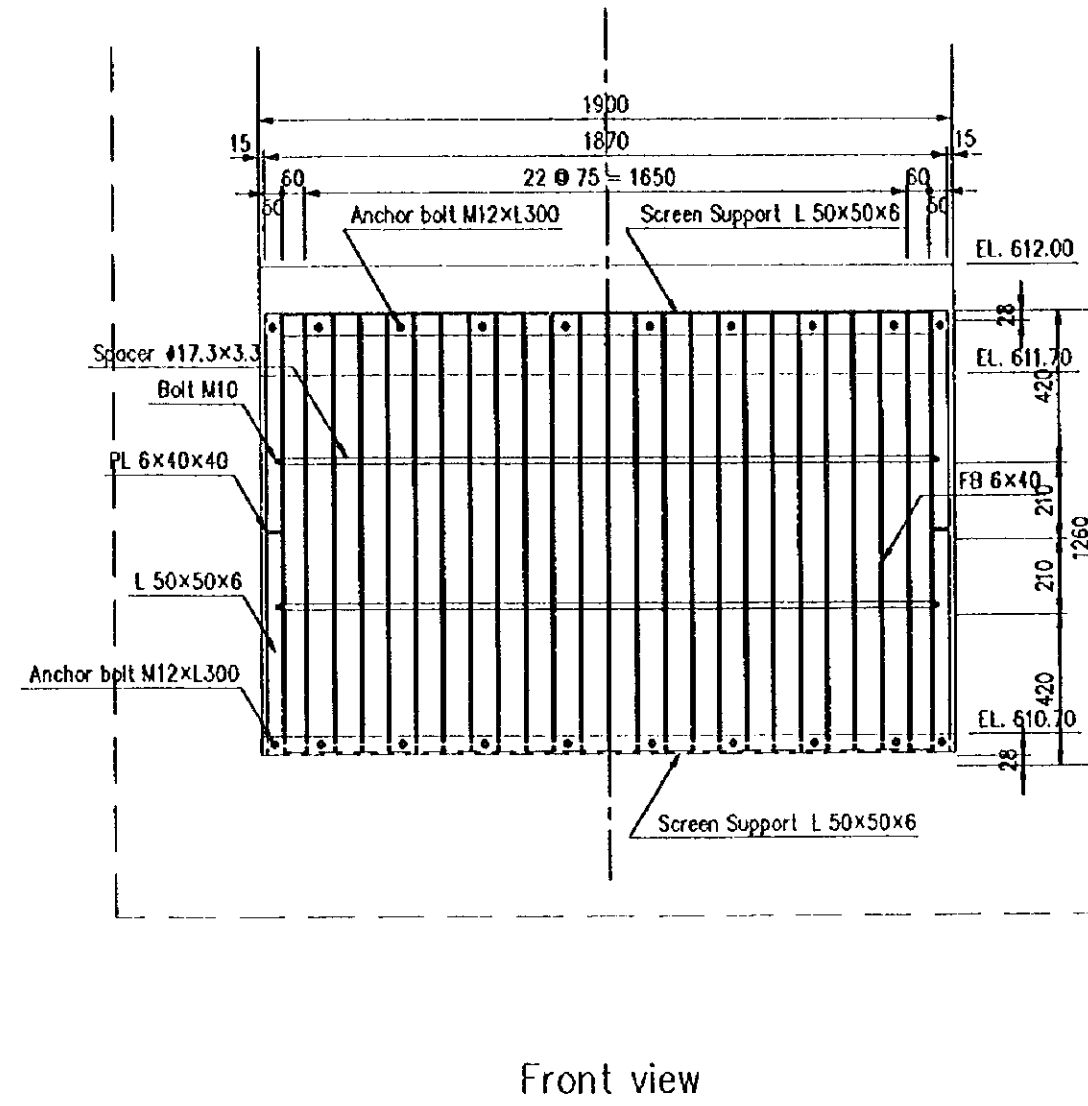
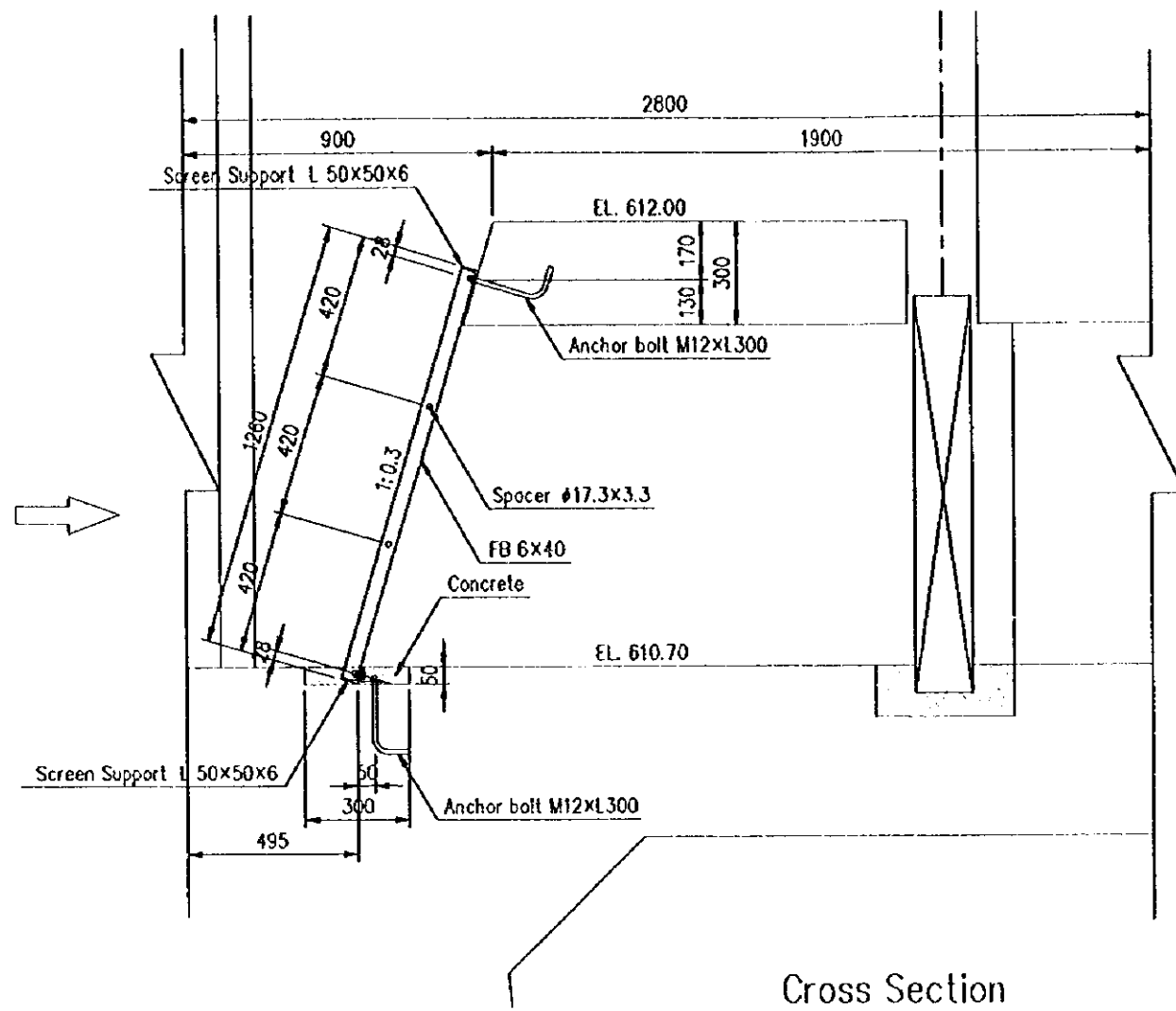


Front view



Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
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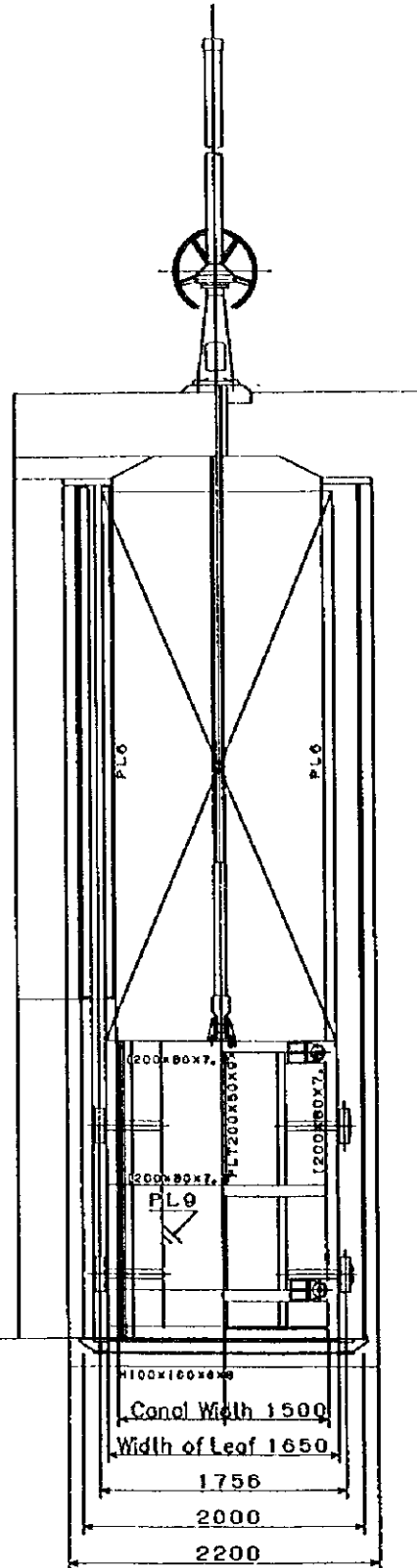
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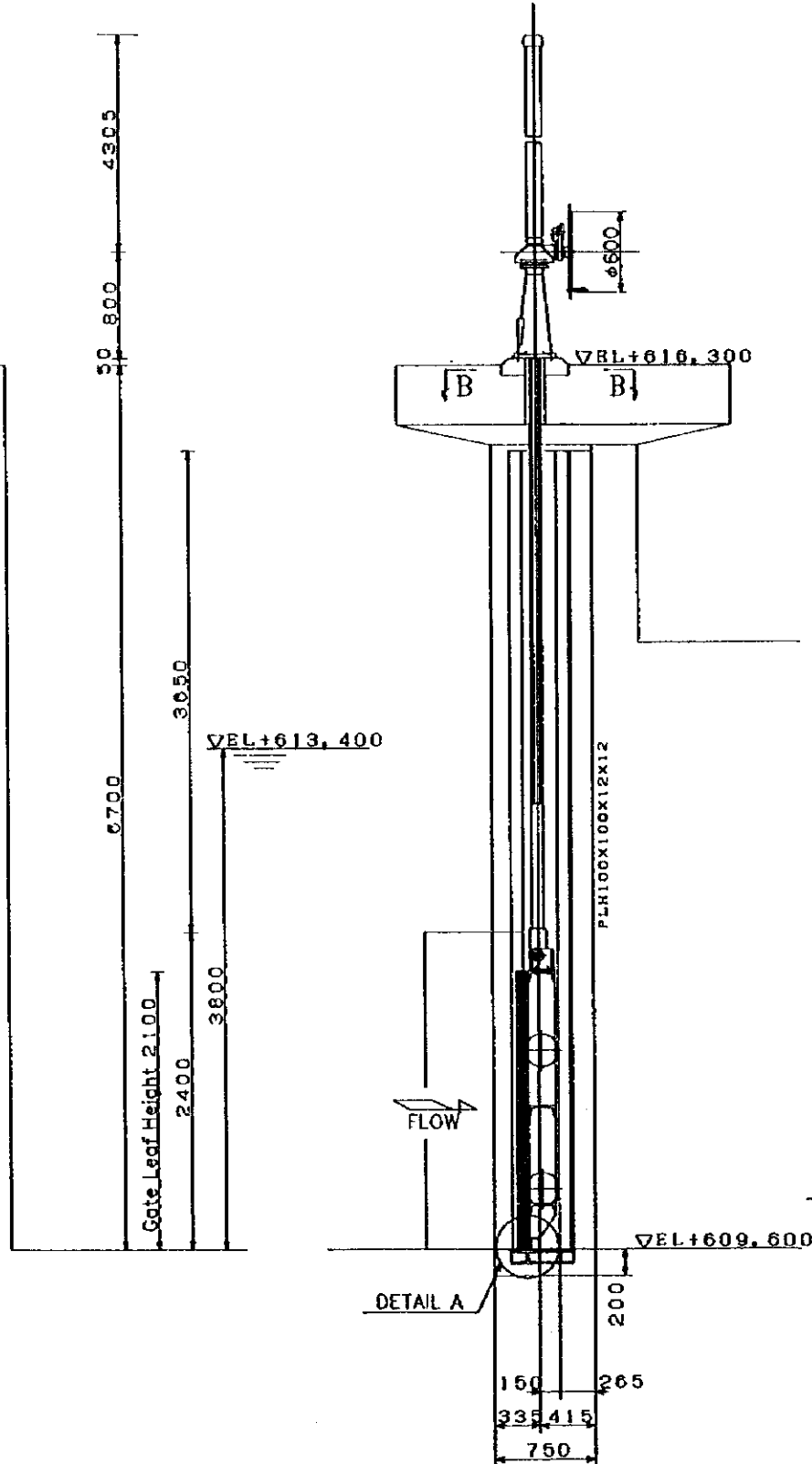
Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
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NIPPON KOEI CO., LTD. TOKYO, JAPAN			

HEADWORKS, SAND-FLUSHING GATE

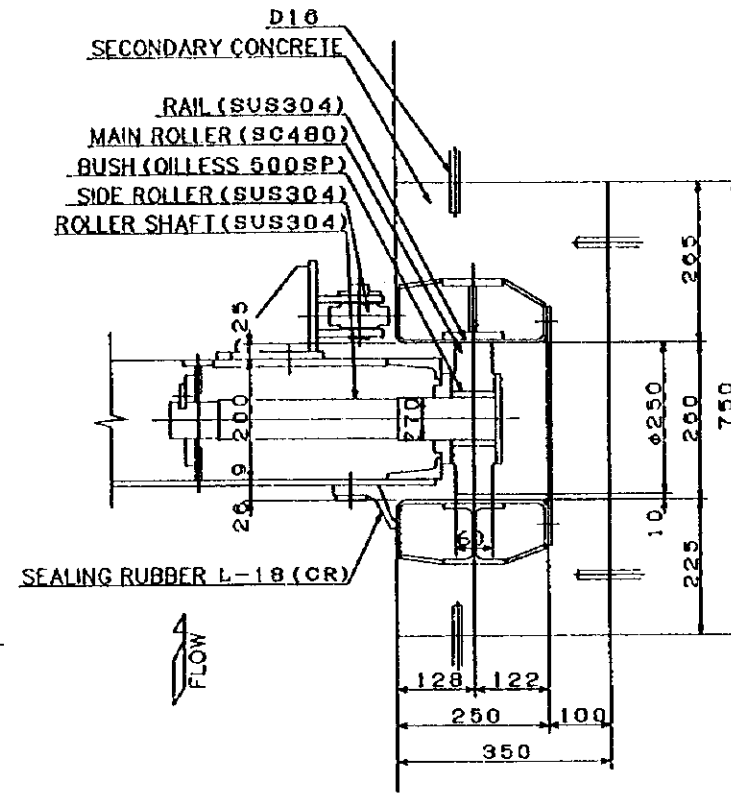
FRONT VIEW
SCALE A



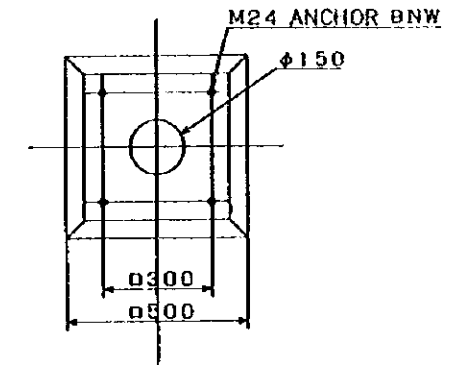
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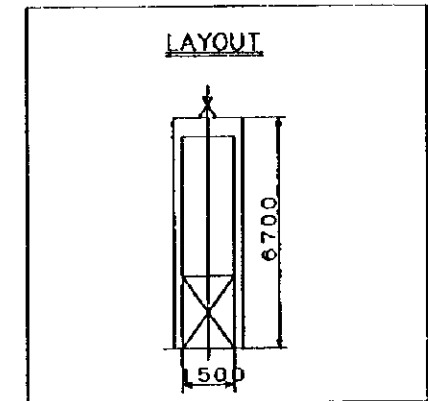
DETAIL OF SIDE WATER SEALING
SCALE C



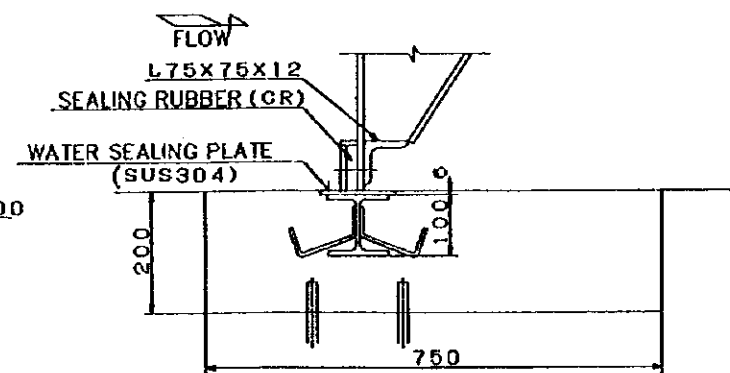
SECTION B-B
SCALE B



LAYOUT



DETAIL A
SCALE C



SCALE A 0 1.0 2.0 m

SCALE B 0 0.5 1.0 m

SCALE C 0 0.5 m

Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
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TITLE OF DRAWING
MWEGA HEAD WORKS

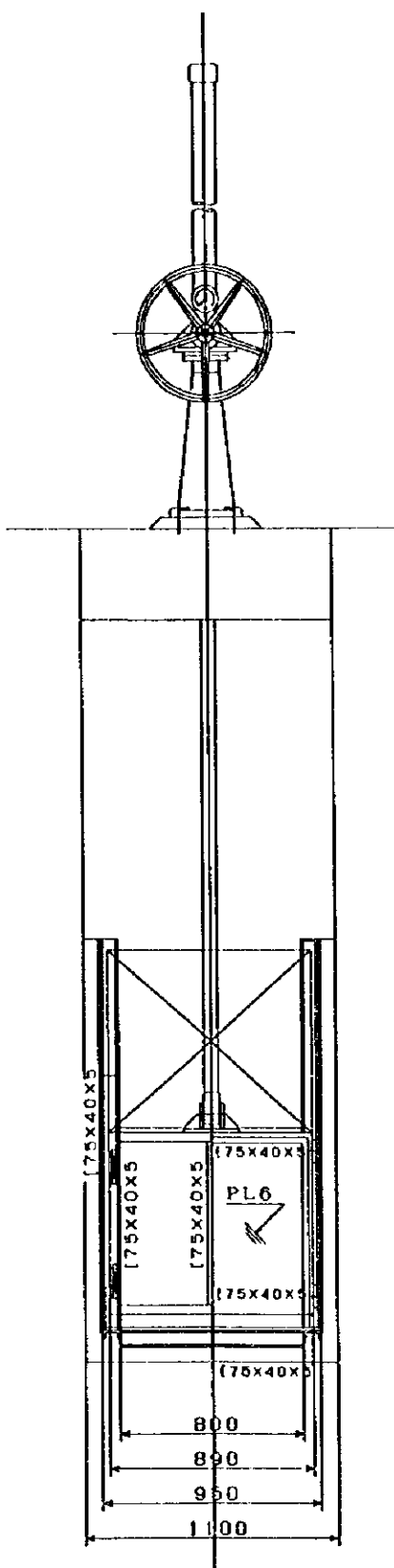
SAND-FLUSHING GATE

Date Oct. 1999 Drawing No. 2-11

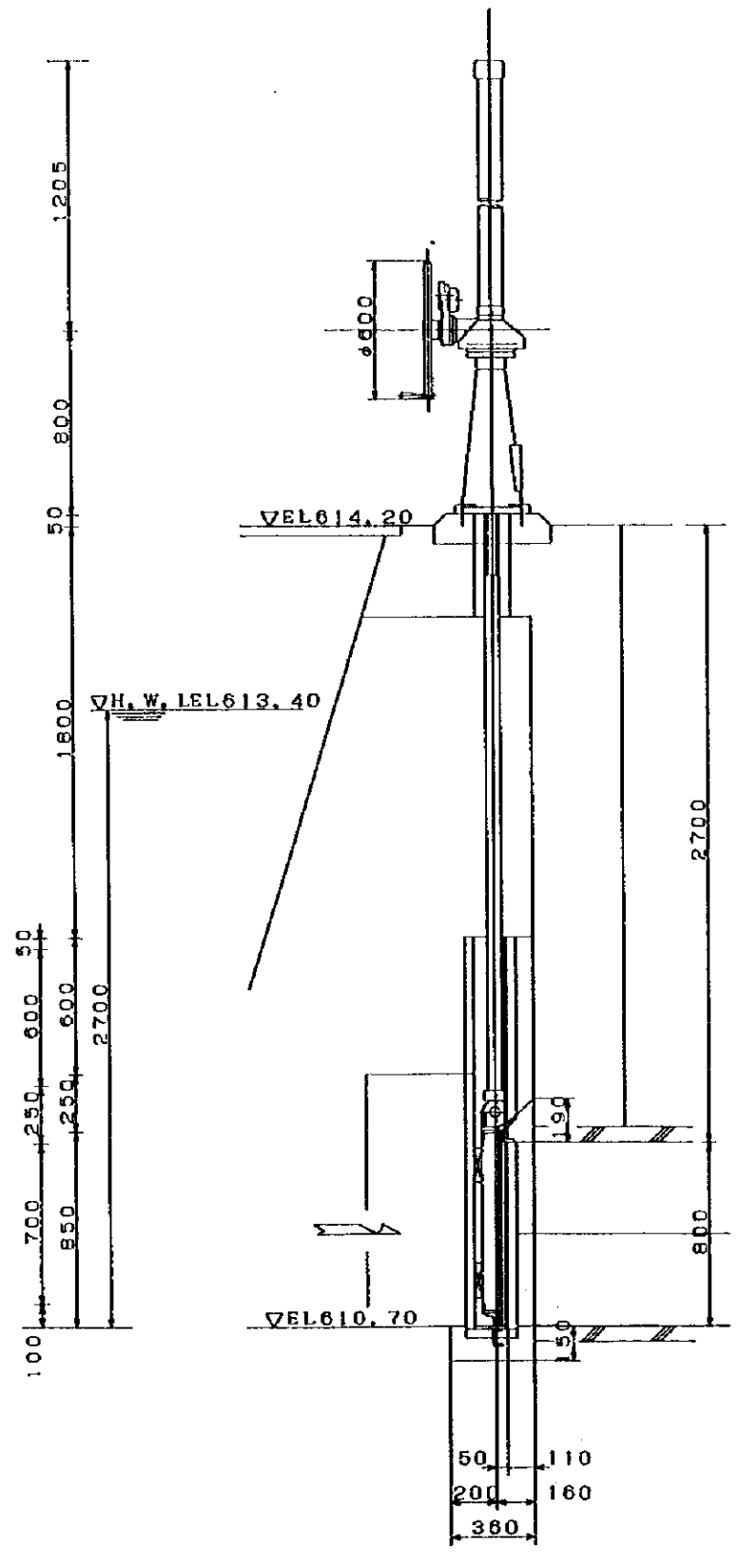
NIPPON KOEI CO., LTD. TOKYO, JAPAN

HEADWORKS, RIGHT INTAKE GATE

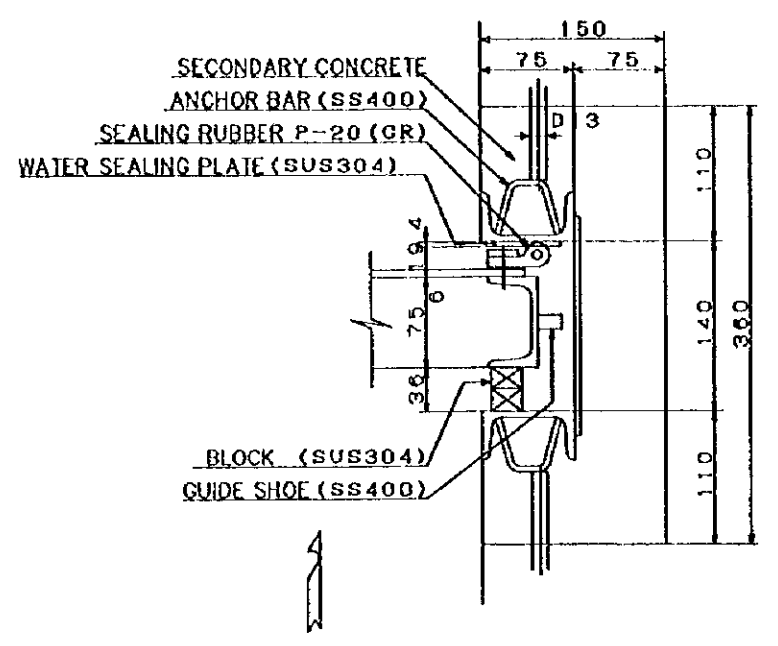
FRONT VIEW
SCALE A



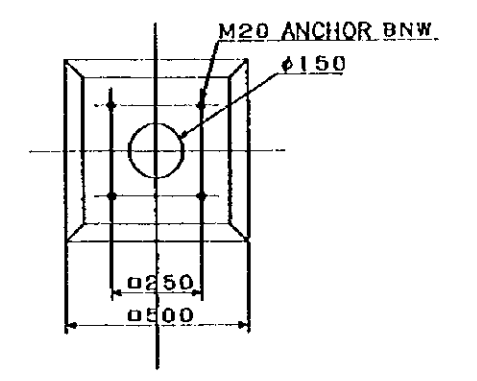
SECTION
SCALE A



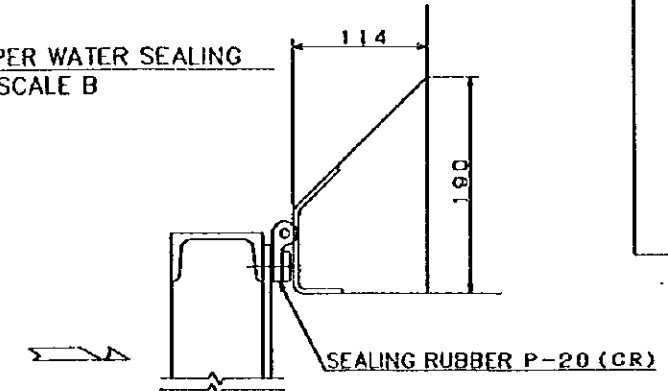
DETAIL OF SIDE WATER SEALING
SCALE B



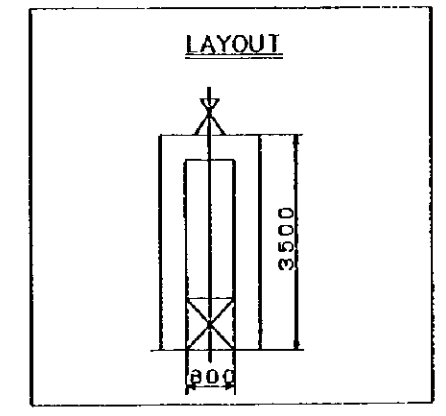
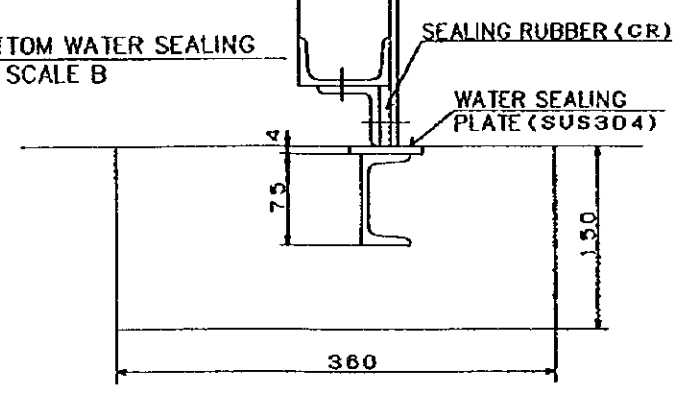
PLAN OF ANCHOR POSITION
SCALE C



DETAIL OF UPPER WATER SEALING
SCALE B



DETAIL OF BOTTOM WATER SEALING
SCALE B



SCALE A 0 0.5 1.0 1.5 m

SCALE B 0 0.1 0.2 0.3 m

SCALE C 0 0.05 0.1 m

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

TITLE OF DRAWING
MWEGA HEAD WORKS

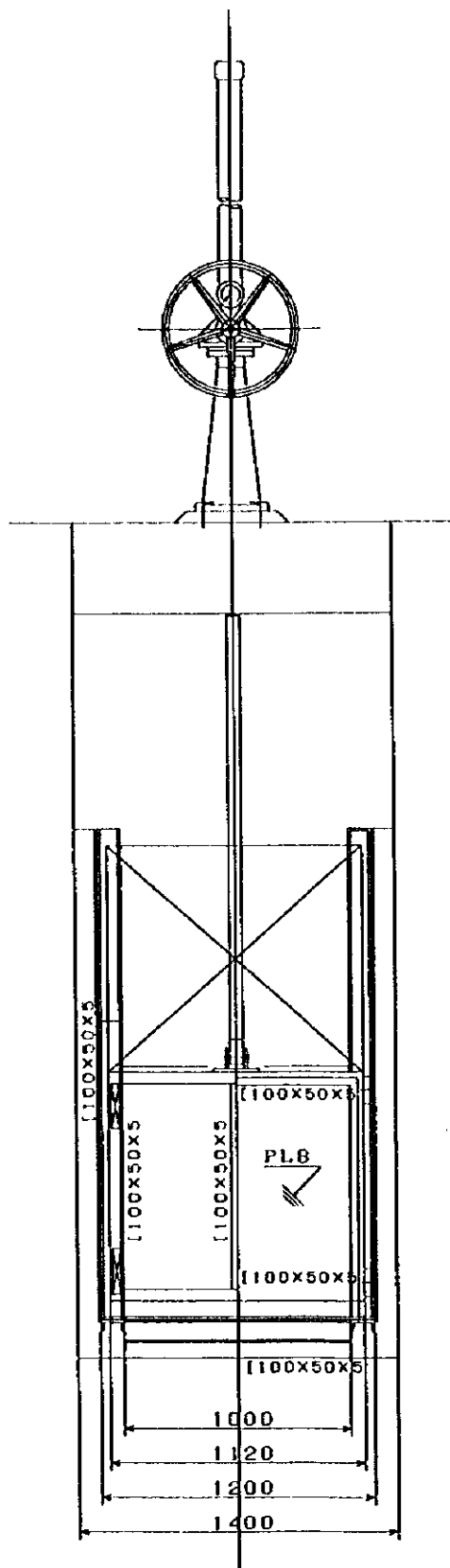
RIGHT INTAKE GATE

Date	Oct. 1999	Drawing No.	2-12
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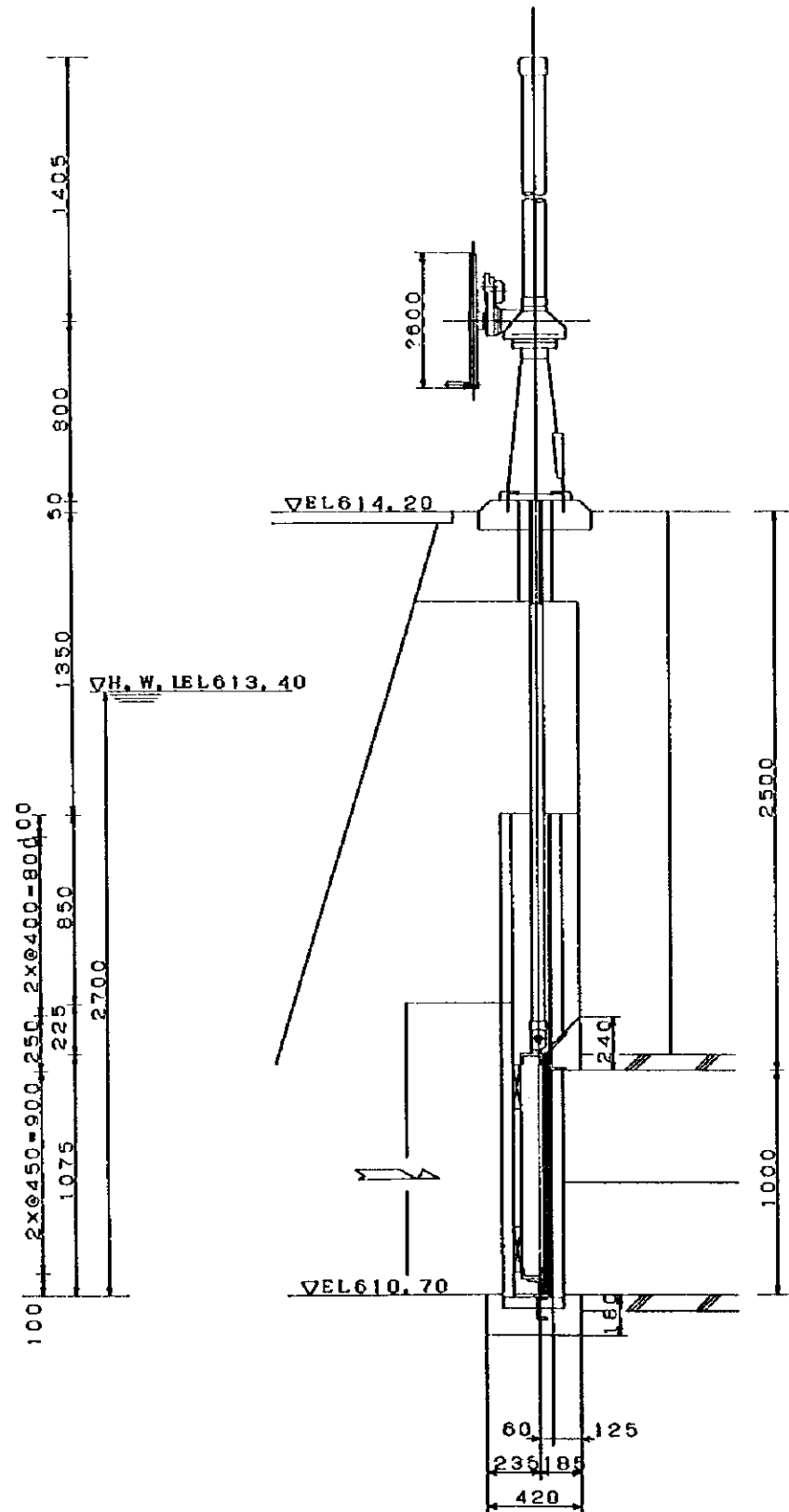
NIPPON KOEI CO., LTD. TOKYO, JAPAN

HEADWORKS, LEFT INTAKE GATE

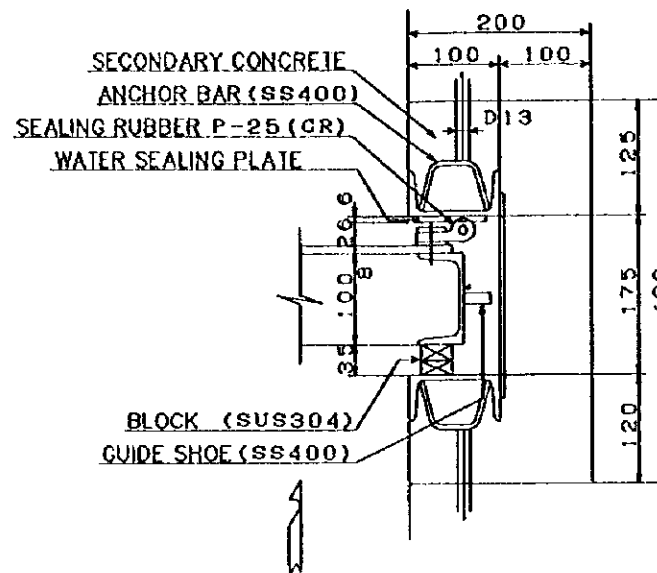
FRONT VIEW
SCALE A



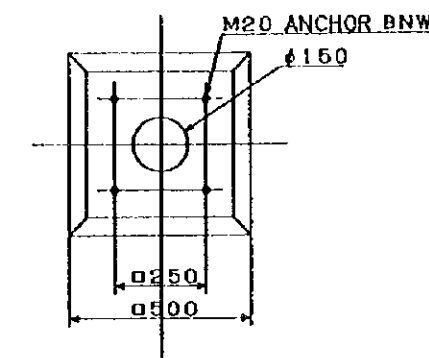
SECTION
SCALE A



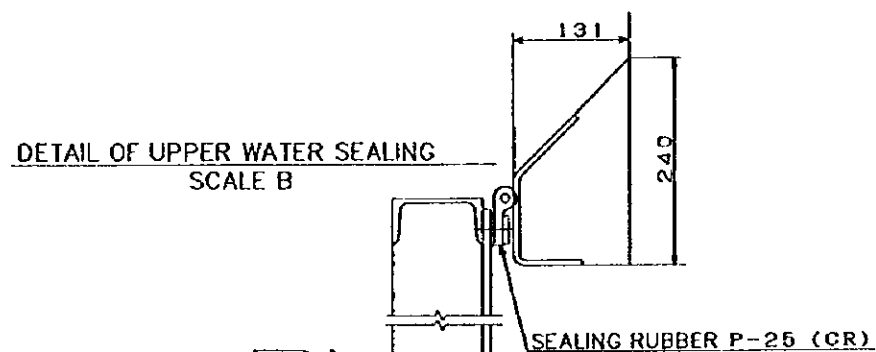
DETAIL OF SIDE WATER SEALING
SCALE B



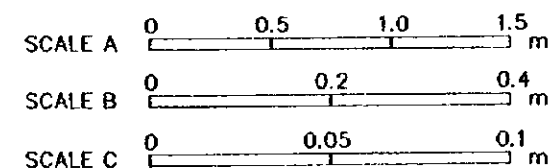
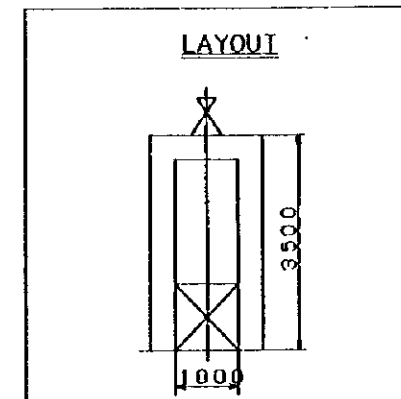
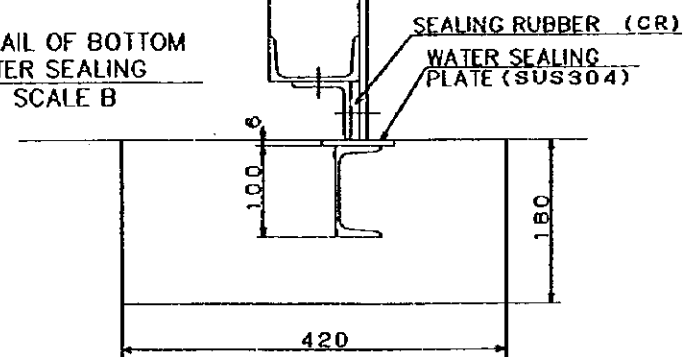
PLAN OF ANCHOR POSITION
SCALE C



DETAIL OF UPPER WATER SEALING
SCALE B

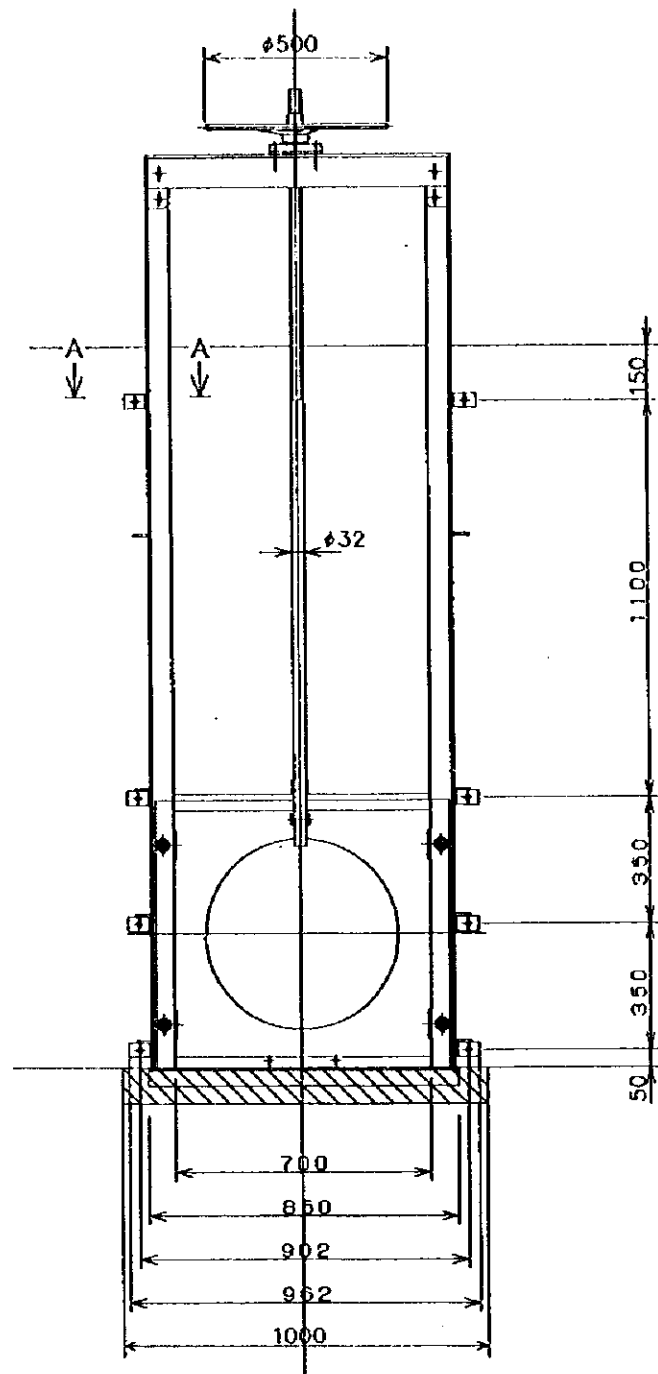


DETAIL OF BOTTOM
WATER SEALING
SCALE B

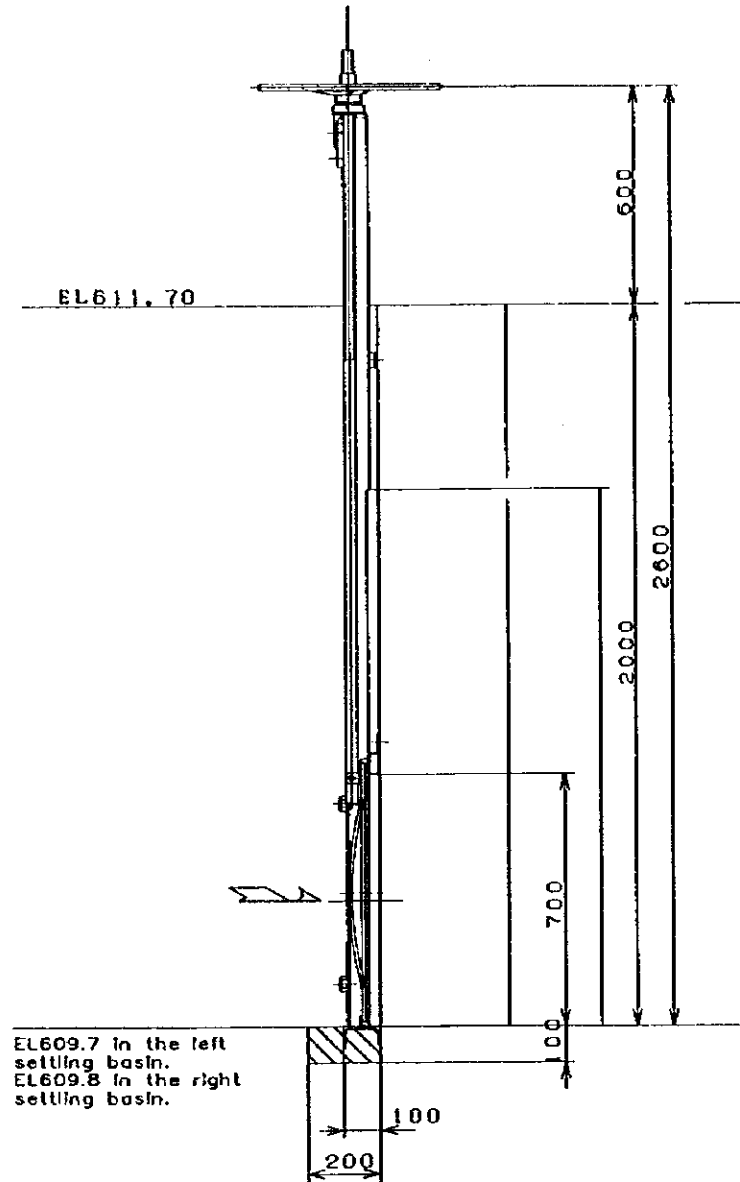


Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania			
TITLE OF DRAWING MWEGA HEADWORKS			
LEFT INTAKE GATE			
Date	Oct. 1999	Drawing No.	2-13
NIPPON KOEI CO., LTD, TOKYO, JAPAN			

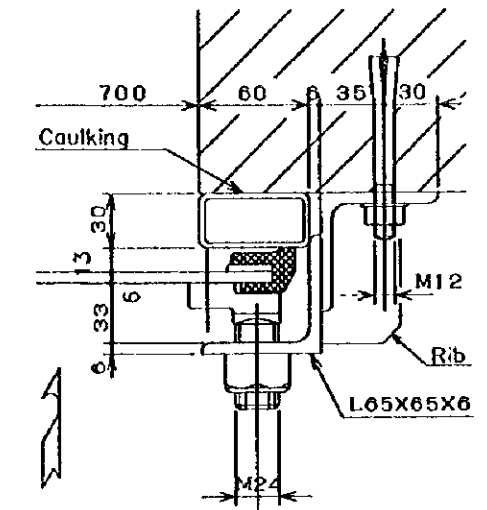
GATE FOR SETTLING BASIN



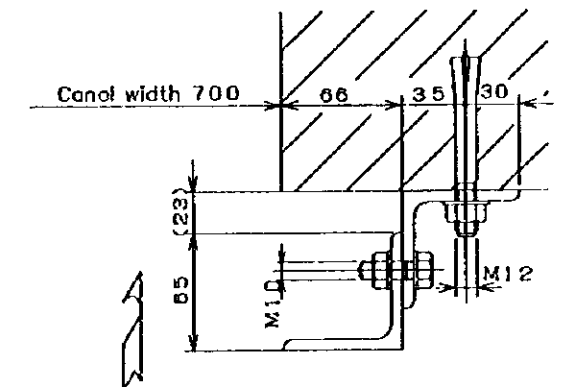
PLAN SCALE A



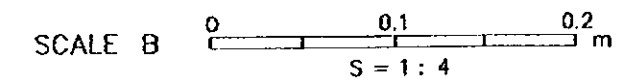
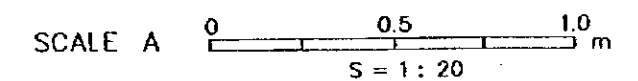
PROFILE SCALE A



Detail of Water Sealing SCALE B



SECTION A-A SCALE B



EL609.7 in the left settling basin.
EL609.8 in the right settling basin.

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

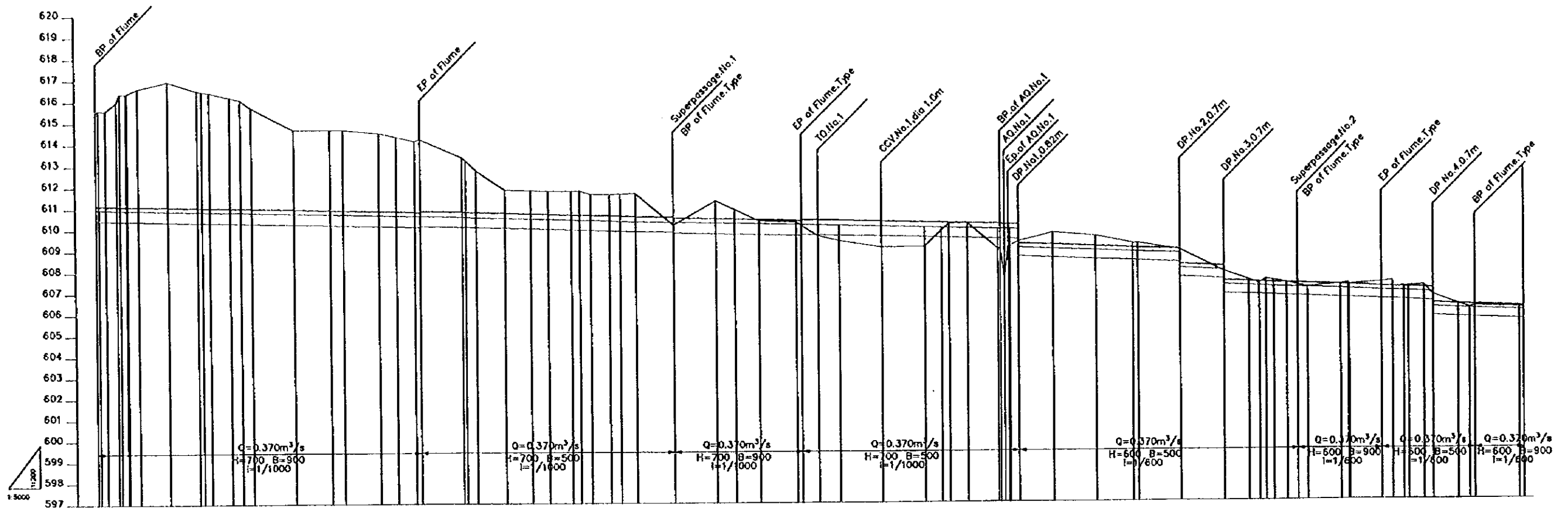
TITLE OF DRAWING
MWEGA HEAD WORKS

GATE FOR SETTLING BASIN

Date	Oct. 1999	Drawing No.	2-14
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NIPPON KOEI CO., LTD, TOKYO, JAPAN

PROFILE OF RIGHT MAIN CANAL (1/6)



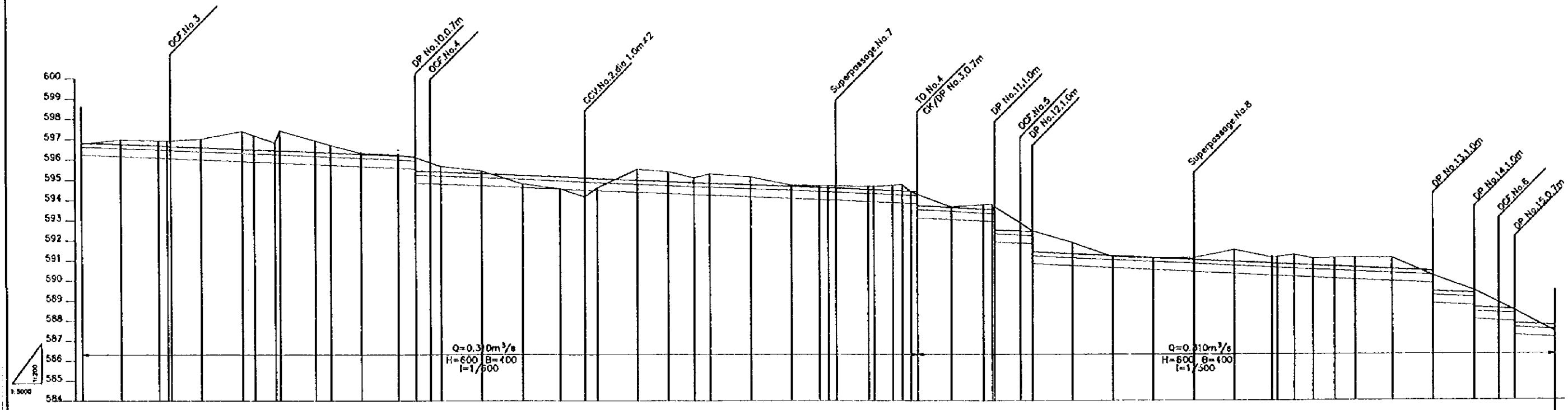
CANAL TYPE	FLUME TYPE-III				CANAL TYPE-V				FLUME TYPE-III				CANAL TYPE-V				CANAL TYPE-IV				FLUME TYPE-II	CANAL TYPE-IV		FLUME TYPE-II												
CANAL BANK ELEVATION	611.18	611.18	611.18	611.07	610.83	610.83	610.83	610.83	610.43	610.43	610.43	610.43	610.18	610.18	610.18	610.18	609.94	609.94	609.94	609.94	607.24	607.24	607.24	607.24	607.16	607.16	607.16	607.16	606.24	606.24	606.24	606.24				
WATER SURFACE ELEVATION	611.18	611.18	611.18	611.07	610.83	610.83	610.83	610.83	610.43	610.43	610.43	610.43	610.18	610.18	610.18	610.18	609.94	609.94	609.94	609.94	607.24	607.24	607.24	607.24	607.16	607.16	607.16	607.16	606.24	606.24	606.24	606.24				
CANAL BASE ELEVATION	611.18	611.18	611.18	611.07	610.83	610.83	610.83	610.83	610.43	610.43	610.43	610.43	610.18	610.18	610.18	610.18	609.94	609.94	609.94	609.94	607.24	607.24	607.24	607.24	607.16	607.16	607.16	607.16	606.24	606.24	606.24	606.24				
GROUND SURFACE ELEVATION	611.18	611.18	611.18	611.07	610.83	610.83	610.83	610.83	610.43	610.43	610.43	610.43	610.18	610.18	610.18	610.18	609.94	609.94	609.94	609.94	607.24	607.24	607.24	607.24	607.16	607.16	607.16	607.16	606.24	606.24	606.24	606.24				
REDUCED DISTANCE	0.00	17.63	35.26	52.89	70.52	88.15	105.78	123.41	141.04	158.67	176.30	193.93	211.56	229.19	246.82	264.45	282.08	299.71	317.34	334.97	352.60	370.23	387.86	405.49	423.12	440.75	458.38	476.01	493.63	511.26	528.89	546.52				
DISTANCE	0.00	17.63	35.26	52.89	70.52	88.15	105.78	123.41	141.04	158.67	176.30	193.93	211.56	229.19	246.82	264.45	282.08	299.71	317.34	334.97	352.60	370.23	387.86	405.49	423.12	440.75	458.38	476.01	493.63	511.26	528.89	546.52				
STATION NO.	BP.0	BC.1	EC.1	BC.2	EC.2	BC.3	EC.3	BC.4	EC.4	BC.5	EC.5	BC.6	EC.6	BC.7	EC.7	BC.8	EC.8	IP.9	BC.10	EC.10	IP.11	BC.12	EC.12	BC.13	EC.13	BC.14	EC.14	BC.15	EC.15	BC.16	EC.16	BC.17	EC.17	BC.18	EC.18	IP.19

IP.No.	IA	IL	CL	IP.No.	IA	IL	CL
BP.0	0' 0' 0"	-	-	IP.6	-28' 19' 6"	5.05	9.89
IP.0	+10' 27' 10"	-	-	IP.7	-55' 14' 42"	10.47	19.28
IP.1	-36' 58' 25"	6.69	12.91	IP.8	+81' 52' 40"	17.35	28.58
IP.2	-36' 5' 25"	6.52	12.60	IP.9	+9' 58' 10"	-	-
IP.3	-43' 3' 58"	7.89	15.03	IP.10	-25' 5' 14"	4.45	8.76
IP.4	+60' 43' 53"	11.72	21.20	IP.11	-3' 30' 27"	-	-
IP.5	+35' 44' 7"	6.45	12.47	IP.12	-14' 13' 3"	-	-
				IP.13	+34' 16' 54"	6.17	11.97
				IP.14	-44' 52' 47"	8.26	15.67
				IP.15	-27' 10' 2"	4.83	9.48
				IP.16	-37' 50' 20"	6.86	13.21
				IP.17	+51' 17' 27"	9.60	17.90
				IP.18	+40' 6' 37"	7.30	14.00
				IP.19	+15' 41' 8"	-	-

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 RIGHT MAIN CANAL(1/6)			
Date	Oct. 1999	Drawing No.	3-1
NIPPON KOEI CO., LTD. TOKYO, JAPAN			

PROFILE OF RIGHT MAIN CANAL (3/6)



CANAL TYPE	CANAL TYPE-III				CANAL TYPE-III			
	STATION	REDUCED DISTANCE	CANAL BASE ELEVATION	WATER SURFACE ELEVATION	STATION	REDUCED DISTANCE	CANAL BASE ELEVATION	WATER SURFACE ELEVATION
	17.81	2414.56	596.79	596.52				
	50.00	2484.56	596.86	596.54				
	48.34	3311.10	596.91	596.46				
	10.88	3327.98	596.90	596.43				
	4.42	3328.40	596.91	596.43				
	37.86	3564.28	596.09	596.37				
	50.00	3614.28	597.36	595.89				
	14.73	3629.01	597.16	595.86				
	25.08	3654.09	596.81	596.72				
	6.29	3660.36	597.40	595.81				
	42.18	3702.57	596.90	595.74				
	16.90	3721.07	596.68	595.71				
	37.87	3736.94	596.30	595.64				
	45.03	3803.87	596.20	595.57				
	0.00	3803.87	596.20	595.57				
	21.85	3825.82	596.10	595.53				
	0.00	3843.66	595.94	595.30				
	17.81	3856.47	595.86	594.78				
	12.81	3856.47	595.86	594.78				
	50.00	3906.47	595.43	594.70				
	50.00	3956.47	594.79	594.62				
	45.88	4002.45	594.45	594.54				
	30.83	4033.28	594.17	594.49				
	15.18	4048.48	594.60	594.46				
	50.00	4098.48	593.32	594.39				
	35.80	4137.87	593.39	594.31				
	32.33	4169.40	593.10	594.28				
	19.51	4188.91	593.28	594.23				
	50.00	4238.91	593.12	594.14				
	50.00	4288.91	594.70	594.06				
	35.24	4324.15	594.66	594.00				
	10.64	4334.78	594.68	593.98				
	8.55	4344.34	594.67	593.97				
	41.88	4488.33	593.64	593.01				
	23.44	4415.72	594.71	593.85				
	11.59	4427.31	594.74	593.83				
	0.00	4437.31	594.74	593.83				
	31.07	4572.10	592.86	591.83				
	15.93	4588.03	592.45	592.22				
	0.00	4588.03	592.45	592.22				
	50.00	4638.03	591.85	590.72				
	50.00	4688.03	591.18	590.62				
	50.00	4738.03	591.09	590.52				
	50.00	4788.03	591.11	590.42				
	50.00	4838.03	591.30	590.32				
	47.00	4887.03	591.11	590.22				
	8.51	4891.54	591.25	590.17				
	21.25	4912.79	591.08	590.12				
	22.99	4933.76	591.09	590.07				
	26.36	4962.14	591.12	590.02				
	24.24	4986.38	591.12	590.02				
	43.92	5032.30	591.10	590.93				
	50.00	5082.30	590.21	589.83				
	50.00	5132.30	589.47	589.03				
	30.22	5162.30	588.87	587.97				
	19.78	5182.30	588.48	587.93				
	0.00	5182.30	588.48	587.93				
	50.00	5232.30	587.43	587.13				

IP.No.	IA	TL	CL	IP.No.	IA	TL	CL
IP.34	-31° 10' 30"	5.58	10.88	IP.40	-30° 29' 11"	5.45	10.64
IP.35	+71° 50' 24"	14.49	25.08	IP.41	+20° 31' 45"	3.62	7.17
IP.36	+52° 59' 30"	9.97	18.50	IP.42	+33° 11' 27"	5.96	11.59
IP.37	-62° 35' 13"	12.16	21.85	IP.43	-31° 44' 51"	5.69	11.08
IP.38	-88° 18' 34"	19.42	30.83	IP.44	-60° 52' 58"	11.75	21.25
IP.39	+92° 37' 7"	20.94	32.33	IP.45	+69° 26' 32"	13.86	24.24

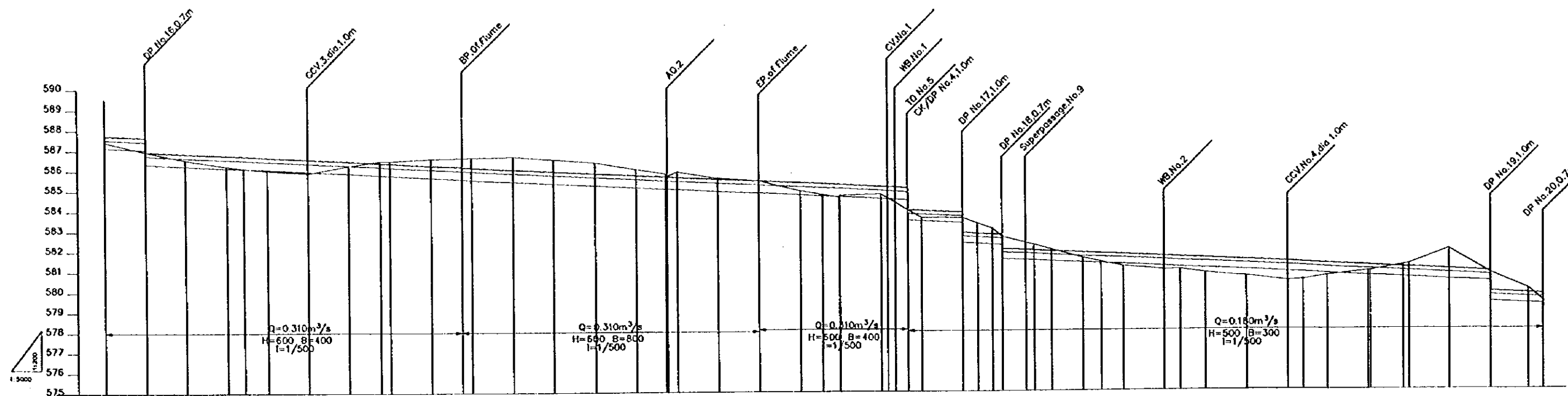
Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania

TITLE OF DRAWING
CANAL
PROFILE OF RIGHT MAIN CANAL(3/6)

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

NIPPON KOEI CO., LTD. TOKYO, JAPAN

PROFILE OF RIGHT MAIN CANAL (4/6)



CANAL TYPE	CANAL TYPE-III						FLUME TYPE-I						CANAL TYPE-III						CANAL TYPE-I															
CANAL BANK ELEVATION	587.43	587.13	587.53	587.73	586.83	586.63	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12
WATER SURFACE ELEVATION	587.53	587.13	587.53	587.73	586.83	586.63	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12
CANAL BASE ELEVATION	586.84	586.54	586.94	587.14	586.24	586.04	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53	584.53
GROUND SURFACE ELEVATION	587.43	587.13	587.53	587.73	586.83	586.63	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12	585.12
REDUCED DISTANCE	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30	5232.30
DISTANCE	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
STATION NO.	IP.46	IP.46	IP.46	IP.46	IP.47	IP.47	IP.47	IP.47	IP.47	IP.47	IP.47	IP.47	IP.47	IP.47	IP.48	IP.48	IP.48	IP.48	IP.48	IP.48	IP.48	IP.48	IP.48	IP.48	IP.49	IP.49	IP.49	IP.49	IP.50	IP.50	IP.50	IP.50	IP.50	IP.50

IP.No.	IA	IL	CL	IP.No.	IA	IL	CL
IP.46	+5° 35' 23"	-	-	IP.51	+11° 48' 59"	-	-
IP.47	-14° 46' 54"	-	-	IP.52	-16° 0' 49"	-	-
IP.48	+58° 37' 20"	11.23	20.46	IP.53	+53° 8' 35"	10.00	18.55
IP.49	-52° 0' 44"	9.76	18.16	IP.54	-8° 18' 14"	-	-
IP.50	-60° 15' 23"	11.61	21.03	IP.55	+50° 11' 11"	9.37	17.52

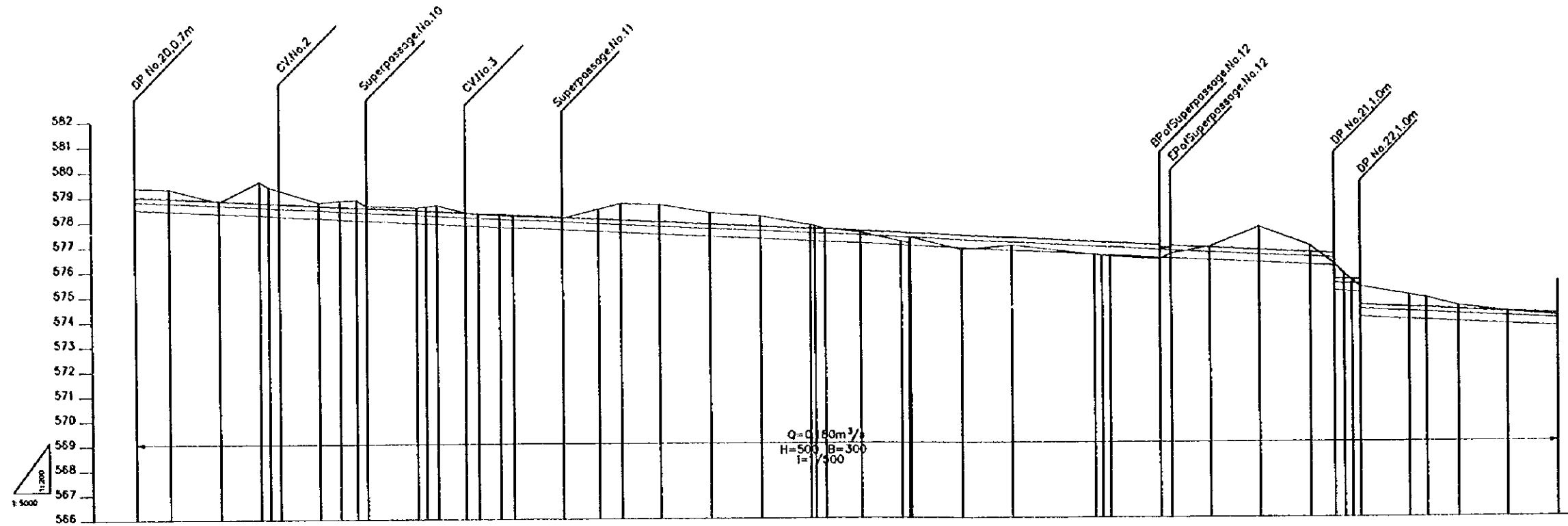
Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

TITLE OF DRAWING
CANAL
PROFILE OF RIGHT MAIN CANAL(4/6)

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

PROFILE OF RIGHT MAIN CANAL (5/6)



CANAL TYPE		CANAL TYPE-I																				
CANAL BANK ELEVATION		578.63	578.94	578.94	578.76	578.72	578.04	578.60	578.37	578.55	578.45	578.41	578.35	578.32	578.32	578.32	578.32	578.32	578.32	578.32	578.32	578.32
WATER SURFACE ELEVATION		578.63	578.76	578.66	578.76	578.72	578.04	578.60	578.37	578.55	578.45	578.41	578.35	578.32	578.32	578.32	578.32	578.32	578.32	578.32	578.32	578.32
CANAL BASE ELEVATION		578.37	578.44	578.34	578.66	578.72	578.04	578.60	578.37	578.55	578.45	578.41	578.35	578.32	578.32	578.32	578.32	578.32	578.32	578.32	578.32	578.32
GROUND SURFACE ELEVATION		578.37	578.32	578.44	578.76	578.72	578.04	578.60	578.37	578.55	578.45	578.41	578.35	578.32	578.32	578.32	578.32	578.32	578.32	578.32	578.32	578.32
REDUCED DISTANCE		8888.17	7024.08	7074.08	7114.08	7124.08	7134.08	7144.08	7154.08	7164.08	7174.08	7184.08	7194.08	7204.08	7214.08	7224.08	7234.08	7244.08	7254.08	7264.08	7274.08	7284.08
DISTANCE		0.00	34.91	50.00	40.78	9.22	10.78	39.22	21.83	18.54	10.91	40.78	9.10	11.07	28.07	12.84	21.51	13.30	50.00	36.58	22.98	57.54
STATION NO.		EC-55	IP-56	BC-57	EC-57	BC-58	EC-58	BC-59	EC-59	BC-60	EC-60	BC-61	EC-61	BC-62	EC-62	BC-63	EC-63	IP-64	BC-65	EC-65	BC-66	IP-65

IP.No.	IA	IL	CL	IP.No.	IA	IL	CL
IP.55	+50' 11' 11"	9.37	17.52	IP.61	+28' 53' 48"	5.15	10.09
IP.56	-3' 33' 16"	-	-	IP.62	+21' 38' 6"	3.82	7.55
IP.57	-47' 23' 11"	8.78	16.54	IP.63	-22' 0' 34"	3.89	7.68
IP.58	-57' 55' 6"	11.07	20.22	IP.64	+21' 52' 44"	3.87	7.64
IP.59	+61' 36' 56"	11.93	21.51	IP.65	-12' 21' 40"	-	-
IP.60	-65' 50' 6"	12.95	22.98				

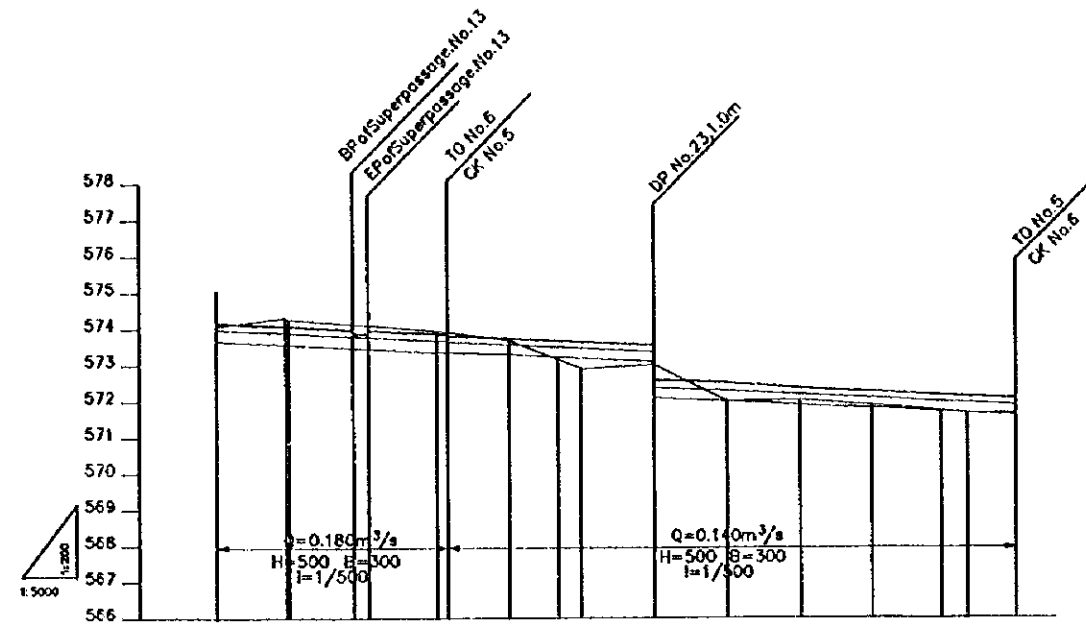
Basic Design Study on the Project for Mwega Smallholder Irrigation Scheme in Morogoro Region in the United Republic of Tanzania

TITLE OF DRAWING
CANAL
PROFILE OF RIGHT MAIN CANAL(5/6)

Date | Oct. 1999 | Drawing No. | 3-5

NIPPON KOEI CO., LTD. TOKYO, JAPAN

PROFILE OF RIGHT MAIN CANAL (6/6)



CANAL TYPE	CANAL TYPE-I		CANAL TYPE-I	
CANAL BANK ELEVATION	574.06	574.16	572.80	572.80
WATER SURFACE ELEVATION	573.98	574.07	572.80	572.80
CANAL BASE ELEVATION	573.66	573.56	572.80	572.80
GROUND SURFACE ELEVATION	574.06	574.26	572.80	572.80
REDUCED DISTANCE	8415.37	8485.57	8572.85	8572.85
DISTANCE	50.00	47.92	42.28	19.00
STATION NO.	ARI		BC.66	EC.67

IP.No.	IA	TL	CL
ARI-IP15	-15' 21' 4"	-	-
IP.66	+43' 24' 38"	7.96	15.15
IP.67	+51' 26' 47"	9.64	17.96
E.P.		-	-

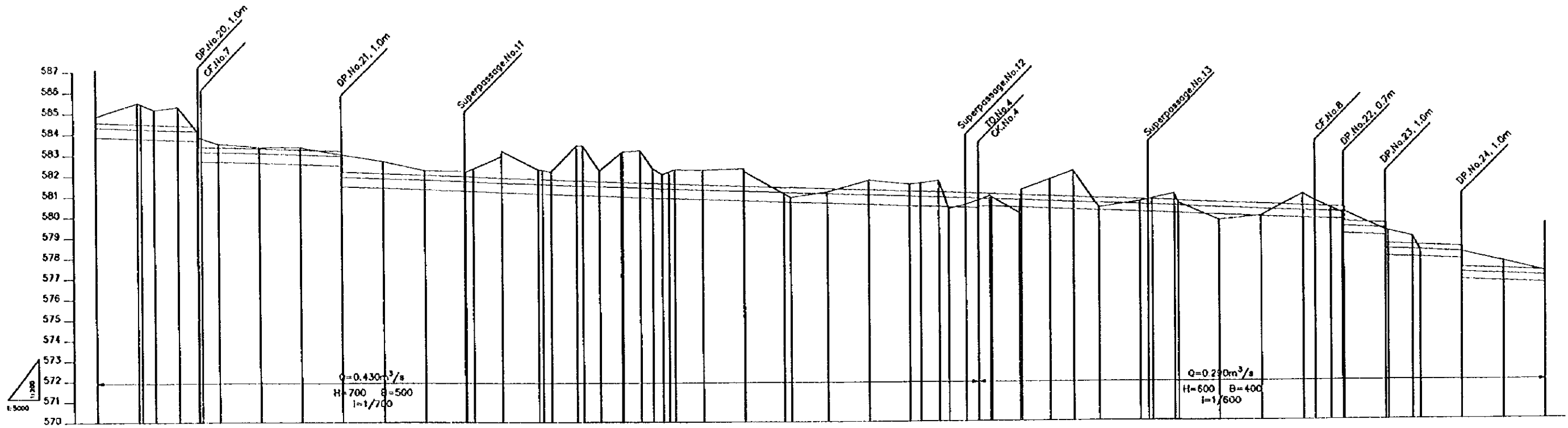
Basic Design Study on the Project for
Mwega Smallholder Irrigation Scheme
in Morogoro Region
in the United Republic of Tanzania

TITLE OF DRAWING
CANAL
PROFILE OF RIGHT MAIN CANAL(6/6)

Date	Ocl. 1999	Drawing No.	3-6
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NIPPON KOEI CO., LTD. TOKYO, JAPAN

PROFILE OF LEFT MAIN CANAL (4/7)



CANAL TYPE	CANAL TYPE-V										CANAL TYPE-III									
CANAL BANK ELEVATION	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57	584.57
WATER SURFACE ELEVATION	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33	584.33
CANAL BASE ELEVATION	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67	583.67
GROUND SURFACE ELEVATION	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86	584.86
REDUCED DISTANCE	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87	5256.87
DISTANCE	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
STATION NO	BC 35	EC 35	IP 36	BC 37	EC 37	BC 38	EC 38	IP 39	EC 39	IP 40	IP 41	IP 42	IP 43	IP 44	IP 45	EC 46	BC 47	EC 47	BC 48	EC 48

IP. No.	IA	TL	CL	IP. No.	IA	TL	CL	IP. No.	IA	TL	CL
IP 35	-47° 9' 35"	8.73	16.46	IP 41	-13° 24' 59"	-	-	IP 47	+63° 49' 8"	12.45	22.28
IP 36	+15° 59' 47"	-	-	IP 42	-9° 59' 51"	-	-	IP 48	-97° 18' 39"	22.73	33.97
IP 37	+98° 9' 20"	23.07	34.26	IP 43	-12° 13' 13"	-	-	IP 49	+81° 9' 27"	17.13	28.33
IP 38	-28° 42' 24"	5.12	10.02	IP 44	+20° 40' 37"	3.65	7.22	IP 50	+75° 43' 17"	15.55	26.43
IP 39	-21° 33' 56"	3.81	7.53	IP 45	-19° 58' 9"	-	-	IP 51	-40° 28' 58"	7.38	14.13
IP 40	-18° 14' 57"	-	-	IP 46	-22° 55' 16"	4.05	8				

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TITLE OF DRAWING
CANAL

PROFILE OF LEFT MAIN CANAL(4/7)

Date	Oct. 1999	Drawing No.	3-10
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NIPPON KOEI CO., LTD. TOKYO, JAPAN