

Typical Cross Section

Canal Type : R-T-7
 B= :2300
 H= :1800
 d= :1372

STATION No.	DISTANCE	REDUCED DISTANCE	GROUND SURFACE ELEVATION	CANAL BASE ELEVATION	WATER SURFACE ELEVATION	CANAL BANK ELEVATION	CANAL TYPE
47+685	50.00	47685.00	895.460	891.881	893.253	893.681	HL=1,359.00 m Q=3.506 m ³ /s
47+735	50.00	47735.00	895.590	891.874	893.246	893.674	
47+785	50.00	47785.00	894.500	891.868	893.240	893.668	Culvert R-T-7 Q=3.506 m ³ /s
47+835	50.00	47835.00	894.720	891.861	893.233	893.661	
47+885	50.00	47885.00	894.490	891.855	893.227	893.655	HL=7,802.00 m
47+935	50.00	47935.00	894.130	891.848	893.220	893.648	
47+980	45.00	47980.00	893.790	891.843	893.215	893.643	28.00 m
48+035	55.00	48035.00	893.750	891.835	893.208	893.635	
48+085	50.00	48085.00	893.750	891.825	893.201	893.629	IP.67
48+135	50.00	48135.00	893.880	891.823	893.195	893.623	
48+185	50.00	48185.00	894.140	891.815	893.188	893.616	Bridge-R-7
48+235	50.00	48235.00	894.220	891.810	893.182	893.610	
48+285	50.00	48285.00	894.380	891.803	893.175	893.603	IP.69
48+335	50.00	48335.00	894.280	891.797	893.169	893.597	
48+385	50.00	48385.00	894.160	891.790	893.162	893.590	IP.70
48+425	40.00	48425.00	894.088	891.438	893.157	893.585	
48+453	28.00	48453.00	894.131	891.407	893.126	893.554	Culvert R-T-7 Q=3.506 m ³ /s
48+485	32.00	48485.00	894.240	891.750	893.122	893.550	
48+535	50.00	48535.00	893.800	891.743	893.115	893.543	HL=7,802.00 m
48+585	50.00	48585.00	893.430	891.737	893.109	893.537	
48+635	50.00	48635.00	893.490	891.730	893.102	893.530	IP.69
48+685	50.00	48685.00	893.500	891.724	893.096	893.524	
48+735	50.00	48735.00	893.480	891.717	893.089	893.517	IP.70
48+785	50.00	48785.00	893.450	891.711	893.083	893.511	
48+835	50.00	48835.00	893.650	891.704	893.076	893.504	Culvert R-T-7 Q=3.506 m ³ /s
48+885	50.00	48885.00	893.750	891.698	893.070	893.498	
48+935	50.00	48935.00	893.960	891.691	893.063	893.491	IP.69
48+985	50.00	48985.00	894.340	891.685	893.057	893.485	
49+035	50.00	49035.00	894.630	891.677	893.050	893.477	IP.70
49+085	50.00	49085.00	894.630	891.665	893.037	893.465	
49+135	50.00	49135.00	894.380	891.659	893.031	893.459	Culvert R-T-7 Q=3.506 m ³ /s
49+185	50.00	49185.00	894.240	891.653	893.025	893.453	
49+235	50.00	49235.00	894.260	891.646	893.018	893.446	IP.69
49+285	50.00	49285.00	894.320	891.640	893.012	893.440	
49+335	50.00	49335.00	894.300	891.633	893.005	893.433	IP.70
49+385	50.00	49385.00	894.460	891.627	892.999	893.427	
49+435	50.00	49435.00	894.530	891.620	892.992	893.420	Culvert R-T-7 Q=3.506 m ³ /s
49+485	50.00	49485.00	894.360	891.614	892.986	893.414	
49+535	50.00	49535.00	894.460	891.607	892.979	893.407	IP.69
49+585	50.00	49585.00	894.500	891.601	892.973	893.401	
49+635	50.00	49635.00	894.810	891.593	892.965	893.393	IP.70
49+685	62.00	49687.00	894.770	891.588	892.960	893.388	
49+735	36.00	49735.00	894.770	891.581	892.953	893.381	Culvert R-T-7 Q=3.506 m ³ /s
49+785	50.00	49785.00	894.910	891.575	892.947	893.375	
49+835	50.00	49835.00	895.000	891.568	892.940	893.368	IP.69
49+885	50.00	49885.00	895.020	891.562	892.934	893.362	
49+935	50.00	49935.00	895.380	891.556	892.927	893.355	IP.70
49+985	50.00	49985.00	894.860	891.549	892.921	893.349	
50+035	50.00	50035.00	895.200	891.542	892.914	893.342	Culvert R-T-7 Q=3.506 m ³ /s
50+085	50.00	50085.00	895.380	891.536	892.908	893.336	
50+135	50.00	50135.00	894.860	891.529	892.901	893.329	IP.69
50+185	50.00	50185.00	894.840	891.523	892.895	893.323	
50+235	50.00	50235.00	894.720	891.516	892.888	893.316	IP.70
50+285	50.00	50285.00	894.690	891.510	892.882	893.310	
50+335	50.00	50335.00	894.610	891.503	892.875	893.303	Culvert R-T-7 Q=3.506 m ³ /s
50+385	50.00	50385.00	894.440	891.497	892.869	893.297	
50+435	50.00	50435.00	894.260	891.490	892.862	893.290	IP.69
50+485	50.00	50485.00	893.970	891.484	892.856	893.284	
50+535	50.00	50535.00	893.330	891.476	892.848	893.276	IP.70
50+582	57.00	50592.00	892.960	891.471	892.843	893.271	
50+635	43.00	50635.00	892.870	891.464	892.836	893.264	Culvert R-T-7 Q=3.506 m ³ /s
50+685	50.00	50685.00	892.870	891.454	892.830	893.258	

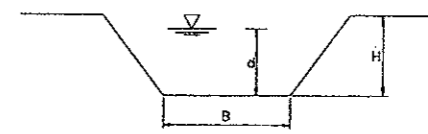
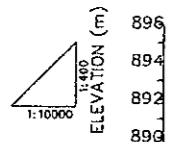
REPUBLIC OF ZIMBABWE

FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
 AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
 MAIN IRRIGATION CANAL
 PROFILE OF RIGHT MAIN CANAL (17/25)
 (STA. No.47+685 - STA. No.50+685 m)

Date	Oct. 30, 2000	Drawing No.	3052
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JAPAN INTERNATIONAL COOPERATION AGENCY



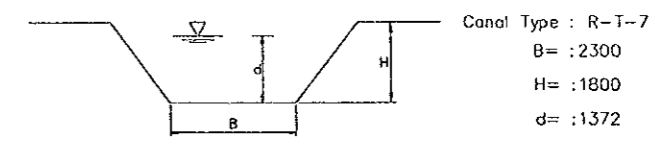
Canal Type : R-T-7
 B = : 2300
 H = : 1800
 d = : 1372

Typical Cross Section

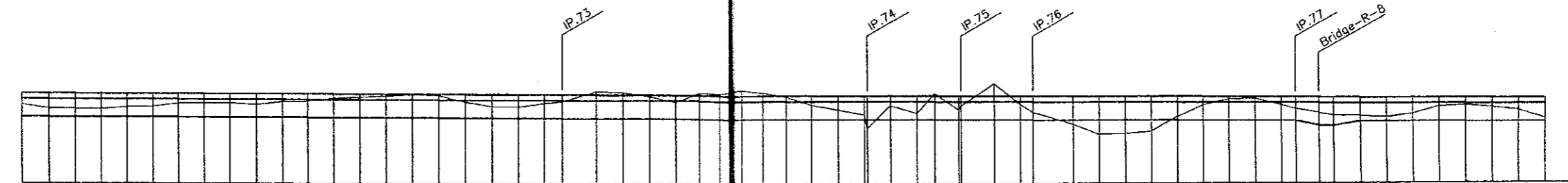
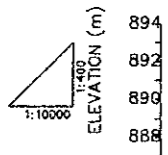
CANAL TYPE	R-T-7									
CANAL BANK ELEVATION	893.264	893.258	893.251	893.245	893.238	893.232	893.225	893.219	893.212	893.206
WATER SURFACE ELEVATION	892.836	892.830	892.823	892.817	892.810	892.804	892.797	892.791	892.784	892.778
CANAL BASE ELEVATION	891.464	891.458	891.451	891.445	891.438	891.432	891.425	891.419	891.412	891.406
GROUND SURFACE ELEVATION	892.870	892.850	892.830	892.810	892.790	892.770	892.750	892.730	892.710	892.690
REDUCED DISTANCE	50685.00	50735.00	50785.00	50835.00	50885.00	50935.00	50985.00	51035.00	51085.00	51135.00
DISTANCE	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
STATION No.	50+685	50+735	50+785	50+835	50+885	50+935	50+985	51+035	51+085	51+135
	51+185	51+235	51+285	51+335	51+385	51+435	51+485	51+535	51+585	51+637
	51+685	51+735	51+785	51+835	51+885	51+935	51+985	52+035	52+085	52+135
	52+185	52+235	52+285	52+335	52+385	52+435	52+485	52+535	52+585	52+635
	52+685	52+735	52+785	52+835	52+885	52+935	52+985	53+035	53+085	53+135
	53+185	53+235	53+285	53+335	53+385	53+435	53+485	53+535	53+585	53+635
	53+685									

HL=7,802.00 m
 R-T-7 3.506 m³/s

REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING MAIN IRRIGATION CANAL PROFILE OF RIGHT MAIN CANAL (18/25) (STA. No.50+685 - STA. No.53+685 m)			
Date	Oct. 30, 2000	Drawing No.	3053
JAPAN INTERNATIONAL COOPERATION AGENCY			



Typical Cross Section



STATION No.	DISTANCE	REDUCED DISTANCE	GROUND SURFACE ELEVATION	CANAL BASE ELEVATION	WATER SURFACE ELEVATION	CANAL BANK ELEVATION	CANAL TYPE
53+685	50.00	53665.00	892.020	891.075	892.447	892.875	HL=7,802.00 m Q=3.506 m³/s
53+735	50.00	53735.00	891.740	891.068	892.440	892.868	
53+785	50.00	53785.00	891.700	891.062	892.434	892.862	Culvert R-T-7 Q=3.506 m³/s
53+835	50.00	53835.00	891.680	891.055	892.427	892.855	
53+885	50.00	53885.00	891.820	891.049	892.421	892.849	
53+935	50.00	53935.00	891.870	891.042	892.414	892.842	
53+985	50.00	53985.00	892.080	891.036	892.408	892.836	
54+035	50.00	54035.00	892.080	891.030	892.402	892.830	
54+085	50.00	54085.00	892.120	891.023	892.395	892.823	
54+135	50.00	54135.00	892.010	891.017	892.389	892.817	
54+185	50.00	54185.00	892.210	891.010	892.382	892.810	
54+235	50.00	54235.00	892.250	891.004	892.376	892.804	
54+285	50.00	54285.00	892.500	890.997	892.369	892.797	
54+335	50.00	54335.00	892.560	890.991	892.363	892.791	
54+385	50.00	54385.00	892.640	890.984	892.356	892.784	
54+435	50.00	54435.00	892.760	890.978	892.350	892.778	
54+485	50.00	54485.00	892.690	890.971	892.343	892.771	
54+535	50.00	54535.00	892.190	890.965	892.337	892.765	
54+585	50.00	54585.00	891.860	890.958	892.330	892.758	
54+635	50.00	54635.00	891.840	890.952	892.324	892.752	
54+685	50.00	54685.00	892.100	890.945	892.317	892.745	
54+720	35.00	54720.00	892.240	890.941	892.313	892.741	
54+785	65.00	54785.00	893.010	890.932	892.304	892.732	
54+835	50.00	54835.00	892.950	890.925	892.298	892.726	
54+885	50.00	54885.00	892.620	890.919	892.291	892.719	
54+935	50.00	54935.00	892.200	890.913	892.285	892.713	
54+985	50.00	54985.00	892.910	890.908	892.278	892.706	
55+035	50.00	55035.00	892.840	890.900	892.272	892.700	
55+135	50.00	55135.00	893.130	890.887	892.259	892.687	
55+185	50.00	55185.00	892.940	890.880	892.252	892.680	
55+235	50.00	55235.00	892.630	890.874	892.246	892.674	
55+285	50.00	55285.00	891.990	890.867	892.239	892.667	
55+335	50.00	55335.00	891.590	890.861	892.233	892.661	
55+385	50.00	55385.00	892.270	890.854	892.228	892.654	
55+435	44.00	55435.00	891.920	890.848	892.220	892.648	
55+485	50.00	55485.00	891.340	890.841	892.213	892.641	
55+520	35.00	55520.00	892.860	890.837	892.209	892.637	
55+570	47.00	55570.00	891.890	890.830	892.202	892.630	
55+635	64.00	55635.00	893.610	890.822	892.194	892.622	
55+685	50.00	55685.00	892.040	890.815	892.187	892.615	
55+709	24.00	55709.00	891.420	890.812	892.184	892.612	
55+785	76.00	55785.00	890.500	890.802	892.174	892.602	
55+835	50.00	55835.00	899.720	890.796	892.168	892.596	
55+885	50.00	55885.00	899.770	890.789	892.161	892.589	
55+935	50.00	55935.00	899.930	890.783	892.155	892.583	
55+985	50.00	55985.00	891.060	890.776	892.148	892.576	
56+035	50.00	56035.00	891.940	890.770	892.142	892.570	
56+085	50.00	56085.00	892.380	890.763	892.135	892.563	
56+135	50.00	56135.00	892.460	890.757	892.129	892.557	
56+185	50.00	56185.00	891.980	890.750	892.122	892.550	
56+213	28.00	56213.00	891.660	890.747	892.119	892.547	
56+258	45.00	56258.00	891.376	890.739	892.113	892.541	
56+285	27.00	56285.00	891.160	890.734	892.083	892.511	
56+335	50.00	56335.00	891.110	890.704	892.076	892.504	
56+385	50.00	56385.00	891.010	890.698	892.070	892.498	
56+435	50.00	56435.00	891.290	890.691	892.063	892.491	
56+485	50.00	56485.00	891.840	890.685	892.057	892.485	
56+535	50.00	56535.00	891.940	890.678	892.050	892.478	
56+585	50.00	56585.00	891.760	890.671	892.043	892.471	
56+635	50.00	56635.00	891.530	890.665	892.037	892.465	
56+685	50.00	56685.00	890.930	890.658	892.030	892.458	

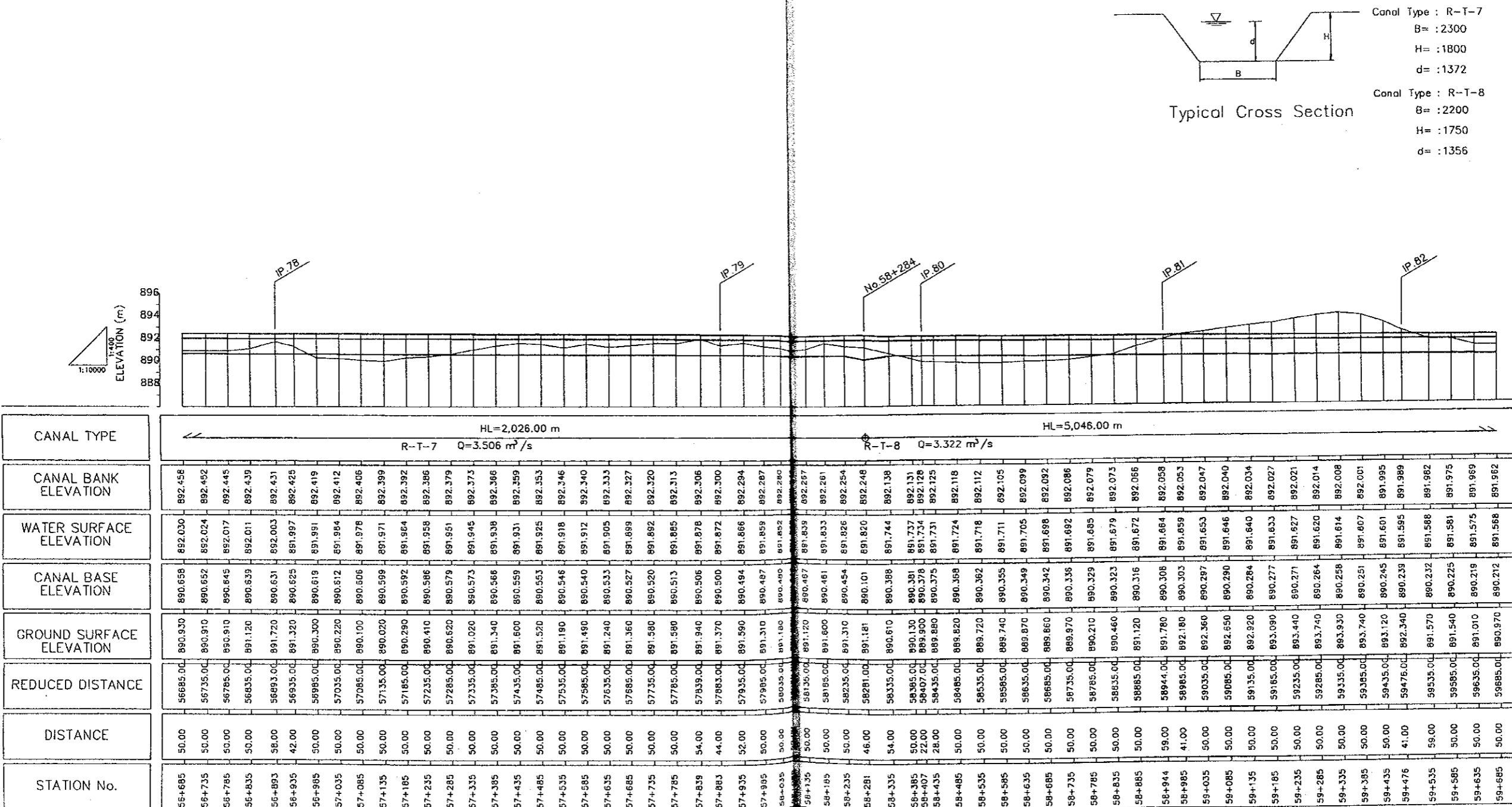
REPUBLIC OF ZIMBABWE

FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
 AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
 MAIN IRRIGATION CANAL
 PROFILE OF RIGHT MAIN CANAL (19/25)
 (STA. No.53+685 - STA. No.56+685 m)

Date	Oct. 30, 2000	Drawing No.	3054
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JAPAN INTERNATIONAL COOPERATION AGENCY



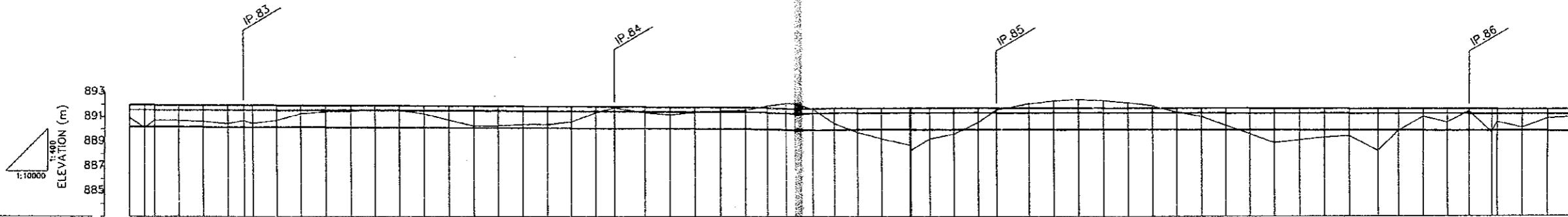
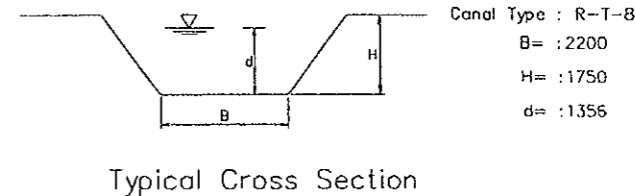
REPUBLIC OF ZIMBABWE

FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
 AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
 MAIN IRRIGATION CANAL
 PROFILE OF RIGHT MAIN CANAL (20/25)
 (STA. No.56+685 - STA. No.59+685 m)

Date Oct. 30, 2000 Drawing No. 3055

JAPAN INTERNATIONAL COOPERATION AGENCY



STATION No.	DISTANCE	REDUCED DISTANCE	GROUND SURFACE ELEVATION	CANAL BASE ELEVATION	WATER SURFACE ELEVATION	CANAL BANK ELEVATION	CANAL TYPE
59+685	50.00	59885.00	890.970	890.212	891.568	891.962	R-T-8 HL=5.000 m D=3.322 m
59+715	30.00	59715.00	890.130	890.208	891.564	891.958	
59+735	20.00	59735.00	890.770	890.206	891.562	891.956	
59+785	50.00	59785.00	890.710	890.199	891.555	891.949	
59+835	50.00	59835.00	890.670	890.193	891.549	891.943	
59+885	50.00	59885.00	890.460	890.186	891.542	891.936	
59+917	32.00	59917.00	890.740	890.182	891.538	891.932	
59+935	18.00	59935.00	890.510	890.180	891.535	891.930	
59+985	50.00	59985.00	890.720	890.173	891.529	891.923	
60+035	50.00	60035.00	891.260	890.167	891.523	891.917	
60+085	50.00	60085.00	891.400	890.160	891.516	891.910	
60+135	50.00	60135.00	891.450	890.154	891.510	891.904	
60+185	50.00	60185.00	891.580	890.147	891.503	891.897	
60+235	50.00	60235.00	891.510	890.141	891.497	891.891	
60+285	50.00	60285.00	891.240	890.134	891.490	891.884	
60+335	50.00	60335.00	890.750	890.128	891.484	891.878	
60+385	50.00	60385.00	890.280	890.121	891.477	891.871	
60+435	50.00	60435.00	890.310	890.115	891.471	891.865	
60+485	50.00	60485.00	890.400	890.108	891.464	891.858	
60+535	50.00	60535.00	890.410	890.102	891.458	891.852	
60+585	50.00	60585.00	890.620	890.095	891.451	891.845	
60+635	50.00	60635.00	891.360	890.089	891.445	891.839	
60+673	38.00	60673.00	891.760	890.084	891.440	891.834	
60+735	62.00	60735.00	891.360	890.076	891.432	891.826	
60+785	50.00	60785.00	891.210	890.069	891.425	891.819	
60+835	50.00	60835.00	891.380	890.063	891.419	891.813	
60+885	50.00	60885.00	891.520	890.056	891.412	891.806	
60+935	50.00	60935.00	891.580	890.050	891.406	891.800	
60+985	50.00	60985.00	891.980	890.043	891.399	891.793	
61+035	50.00	61035.00	892.200	890.037	891.393	891.787	
61+135	50.00	61135.00	891.760	890.024	891.380	891.774	
61+185	50.00	61185.00	890.570	890.017	891.373	891.767	
61+235	50.00	61235.00	889.820	890.011	891.367	891.761	
61+285	50.00	61285.00	889.300	890.004	891.360	891.754	
61+345	39.00	61345.00	888.280	889.997	891.353	891.747	
61+365	38.00	61365.00	889.180	889.991	891.347	891.741	
61+435	50.00	61435.00	889.160	889.985	891.341	891.735	
61+485	50.00	61485.00	890.560	889.978	891.334	891.728	
61+521	36.00	61521.00	891.560	889.974	891.330	891.724	
61+585	64.00	61585.00	892.060	889.965	891.321	891.715	
61+635	50.00	61635.00	892.300	889.959	891.315	891.709	
61+685	50.00	61685.00	892.380	889.952	891.308	891.702	
61+735	50.00	61735.00	892.280	889.946	891.302	891.696	
61+785	50.00	61785.00	892.120	889.939	891.295	891.689	
61+835	50.00	61835.00	891.870	889.933	891.289	891.683	
61+885	50.00	61885.00	891.330	889.926	891.282	891.676	
61+935	50.00	61935.00	891.030	889.920	891.276	891.670	
61+985	50.00	61985.00	890.300	889.913	891.269	891.663	
62+035	50.00	62035.00	889.620	889.907	891.263	891.657	
62+085	50.00	62085.00	888.890	889.900	891.256	891.650	
62+135	50.00	62135.00	889.140	889.894	891.250	891.644	
62+185	50.00	62185.00	889.310	889.887	891.243	891.637	
62+235	50.00	62235.00	889.440	889.881	891.237	891.631	
62+285	50.00	62285.00	888.200	889.873	891.229	891.623	
62+335	41.00	62335.00	889.830	889.866	891.224	891.618	
62+385	50.00	62385.00	890.990	889.861	891.217	891.611	
62+435	50.00	62435.00	890.540	889.855	891.211	891.605	
62+479	44.00	62479.00	891.400	889.849	891.205	891.599	
62+535	46.00	62535.00	890.730	889.842	891.198	891.592	
62+585	50.00	62585.00	890.090	889.835	891.191	891.585	
62+635	50.00	62635.00	890.850	889.829	891.185	891.579	
62+685	50.00	62685.00	890.960	889.822	891.178	891.572	

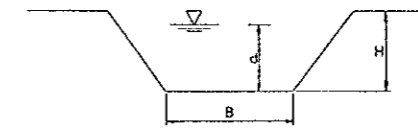
REPUBLIC OF ZIMBABWE

FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
 AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
 MAIN IRRIGATION CANAL
 PROFILE OF RIGHT MAIN CANAL (21/25)
 (STA. No.59+685 - STA. No.62+685 m)

Date Oct. 30, 2000 Drawing No. 3056

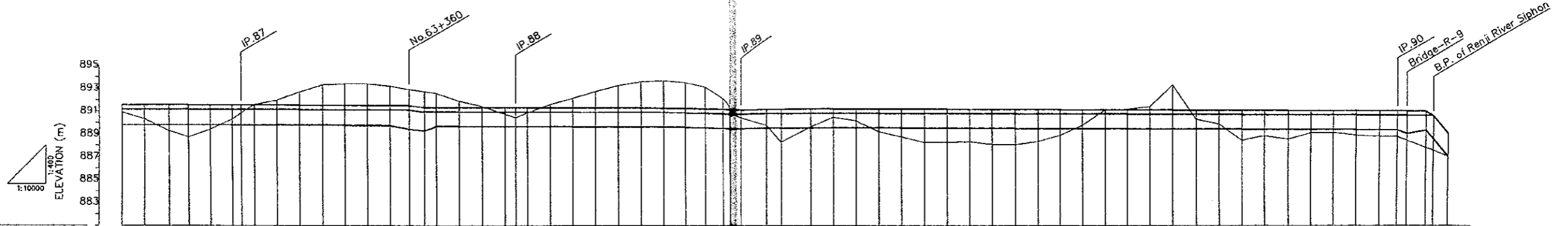
JAPAN INTERNATIONAL COOPERATION AGENCY



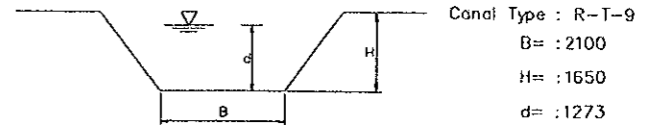
Canal Type : R-T-8
 B= : 2200
 H= : 1750
 d= : 1356

Canal Type : R-T-9
 B= : 2100
 H= : 1650
 d= : 1273

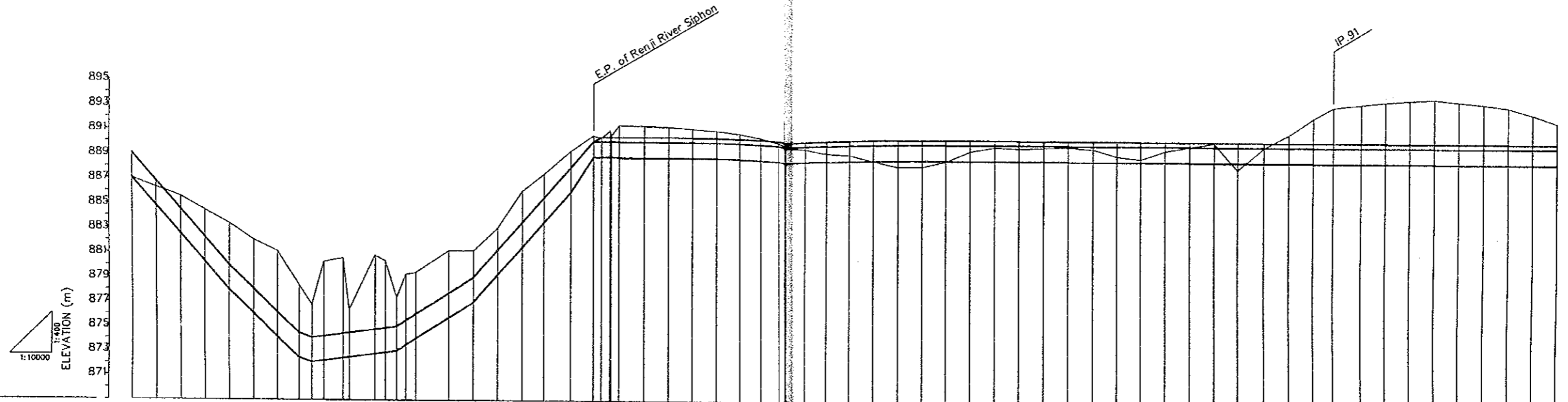
Typical Cross Section



STATION No.	DISTANCE	REDUCED DISTANCE	GROUND SURFACE ELEVATION	CANAL BASE ELEVATION	WATER SURFACE ELEVATION	CANAL BANK ELEVATION	CANAL TYPE
62+685	0.00	62685.00	890.960	889.822	891.178	891.572	R-T-8 Q=3.322 m ³ /s HL=5.043.00 m
62+735	50.00	62735.00	890.350	889.816	891.172	891.566	
62+791	56.00	62791.00	889.300	889.809	891.165	891.559	R-T-9 Q=2.838 m ³ /s HL=2.400 m
62+835	44.00	62835.00	888.750	889.803	891.159	891.553	
62+885	50.00	62885.00	888.410	889.796	891.152	891.546	Culvert
62+935	50.00	62935.00	890.300	889.790	891.146	891.540	
62+956	21.00	62956.00	890.840	889.787	891.143	891.537	Siphon
62+985	29.00	62985.00	891.570	889.783	891.139	891.533	
63+035	50.00	63035.00	891.560	889.777	891.133	891.527	R-T-8 Q=3.322 m ³ /s HL=5.043.00 m
63+085	50.00	63085.00	892.670	889.770	891.126	891.520	
63+135	50.00	63135.00	893.290	889.764	891.120	891.514	R-T-9 Q=2.838 m ³ /s HL=2.400 m
63+185	50.00	63185.00	893.410	889.757	891.113	891.507	
63+235	50.00	63235.00	893.400	889.751	891.107	891.501	Culvert
63+285	50.00	63285.00	893.190	889.744	891.100	891.494	
63+327	42.00	63327.00	892.921	889.745	891.095	891.489	Siphon
63+360	23.00	63360.00	892.720	889.739	891.095	891.489	
63+385	25.00	63385.00	892.570	889.689	891.094	891.488	R-T-8 Q=3.322 m ³ /s HL=5.043.00 m
63+435	50.00	63435.00	891.900	889.662	891.035	891.312	
63+485	50.00	63485.00	891.430	889.656	891.029	891.306	R-T-9 Q=2.838 m ³ /s HL=2.400 m
63+535	50.00	63535.00	890.740	889.649	891.022	891.299	
63+559	24.00	63559.00	890.460	889.646	891.019	891.296	Culvert
63+595	26.00	63595.00	890.840	889.643	891.016	891.293	
63+635	50.00	63635.00	891.600	889.636	891.009	891.286	Siphon
63+685	50.00	63685.00	892.120	889.630	891.003	891.280	
63+735	50.00	63735.00	892.710	889.623	891.006	891.273	R-T-8 Q=3.322 m ³ /s HL=5.043.00 m
63+785	50.00	63785.00	893.230	889.617	891.000	891.267	
63+835	50.00	63835.00	893.570	889.610	891.003	891.260	R-T-9 Q=2.838 m ³ /s HL=2.400 m
63+885	50.00	63885.00	893.640	889.604	891.000	891.254	
63+935	50.00	63935.00	893.530	889.597	891.000	891.247	Culvert
63+985	50.00	63985.00	893.180	889.591	891.000	891.241	
64+035	50.00	64035.00	892.230	889.584	891.000	891.234	Siphon
64+185	67.00	64185.00	889.820	889.565	891.000	891.215	
64+219	34.00	64219.00	888.330	889.560	891.000	891.210	R-T-8 Q=3.322 m ³ /s HL=5.043.00 m
64+285	66.00	64285.00	889.630	889.552	891.000	891.202	
64+335	50.00	64335.00	890.500	889.545	891.000	891.195	R-T-9 Q=2.838 m ³ /s HL=2.400 m
64+385	50.00	64385.00	890.150	889.539	891.000	891.189	
64+435	50.00	64435.00	889.230	889.532	891.000	891.182	Culvert
64+485	50.00	64485.00	888.770	889.526	891.000	891.176	
64+535	50.00	64535.00	888.280	889.519	891.000	891.169	Siphon
64+585	50.00	64585.00	888.280	889.513	891.000	891.163	
64+635	50.00	64635.00	888.340	889.506	891.000	891.156	R-T-8 Q=3.322 m ³ /s HL=5.043.00 m
64+685	50.00	64685.00	888.100	889.500	891.000	891.150	
64+735	50.00	64735.00	888.060	889.494	891.000	891.144	R-T-9 Q=2.838 m ³ /s HL=2.400 m
64+785	50.00	64785.00	888.360	889.487	891.000	891.137	
64+835	50.00	64835.00	888.900	889.481	891.000	891.131	Culvert
64+885	50.00	64885.00	889.760	889.474	891.000	891.124	
64+935	50.00	64935.00	891.130	889.468	891.000	891.118	Siphon
64+985	50.00	64985.00	891.180	889.461	891.000	891.111	
65+035	50.00	65035.00	891.390	889.455	891.000	891.105	R-T-8 Q=3.322 m ³ /s HL=5.043.00 m
65+085	50.00	65085.00	893.300	889.448	891.000	891.098	
65+135	50.00	65135.00	890.300	889.442	891.000	891.092	R-T-9 Q=2.838 m ³ /s HL=2.400 m
65+185	50.00	65185.00	889.910	889.435	891.000	891.085	
65+235	50.00	65235.00	888.450	889.429	891.000	891.079	Culvert
65+285	50.00	65285.00	888.670	889.422	891.000	891.072	
65+335	50.00	65335.00	888.560	889.416	891.000	891.066	Siphon
65+385	50.00	65385.00	889.130	889.409	891.000	891.059	
65+435	50.00	65435.00	889.140	889.403	891.000	891.053	R-T-8 Q=3.322 m ³ /s HL=5.043.00 m
65+485	50.00	65485.00	888.920	889.396	891.000	891.046	
65+535	50.00	65535.00	888.810	889.390	891.000	891.040	R-T-9 Q=2.838 m ³ /s HL=2.400 m
65+574	39.00	65574.00	888.790	889.385	891.000	891.035	
65+594	20.00	65594.00	888.450	889.380	891.000	891.030	Culvert
65+635	41.00	65635.00	887.860	889.374	891.000	891.024	
65+651	16.00	65651.00	887.801	889.369	891.000	891.019	Siphon
65+685	34.00	65685.00	887.050	889.363	891.000	891.013	



Typical Cross Section



STATION No.	DISTANCE	REDUCED DISTANCE	GROUND SURFACE ELEVATION	CANAL BASE ELEVATION	WATER SURFACE ELEVATION	CANAL BANK ELEVATION	CANAL TYPE
65+685	34.00	65685.00	887.076	887.076			Siphon HL=981.00 m
65+735	50.00	65735.00	886.280	884.807			
65+785	50.00	65785.00	885.580	882.538			R-T-9 Q=2.838 m³/s
65+835	50.00	65835.00	884.450	880.269			
65+885	50.00	65885.00	883.400	878.000			HL=3,161.00 m
65+935	50.00	65935.00	882.050	876.077			
65+985	50.00	65985.00	881.120	874.154			
66+029	44.00	66029.00	878.370	872.462			
66+055	25.00	66055.00	876.760	872.074			
66+080	25.00	66080.00	880.300	872.206			
66+119	39.00	66119.00	876.340	872.481			
66+165	53.00	66165.00	880.800	872.762			
66+206	21.00	66206.00	880.340	872.873			
66+230	24.00	66230.00	877.390	873.000			
66+249	19.00	66249.00	879.270	873.490			
66+289	20.00	66289.00	879.390	874.006			
66+335	66.00	66335.00	881.210	875.710			
66+385	50.00	66385.00	881.170	877.000			
66+435	50.00	66435.00	883.020	879.235			
66+485	50.00	66485.00	886.020	881.470			
66+530	45.00	66530.00	887.410	883.481			
66+585	55.00	66585.00	889.260	885.939			
66+632	74.00	66632.00	890.521	888.757			
66+678	76.00	66678.00	890.350	888.765			
66+685	77.00	66685.00	890.330	888.763			
66+735	50.00	66735.00	891.310	888.754			
66+785	50.00	66785.00	891.240	888.747			
66+835	50.00	66835.00	891.120	888.741			
66+885	50.00	66885.00	891.010	888.734			
66+935	50.00	66935.00	890.810	888.728			
66+985	50.00	66985.00	890.550	888.721			
67+035	50.00	67035.00	890.210	888.715			
67+135	50.00	67135.00	889.750	888.702			
67+185	50.00	67185.00	889.380	888.695			
67+235	50.00	67235.00	889.200	888.689			
67+285	50.00	67285.00	888.660	888.682			
67+335	50.00	67335.00	888.190	888.676			
67+385	50.00	67385.00	888.170	888.669			
67+435	50.00	67435.00	888.600	888.663			
67+485	50.00	67485.00	889.440	888.656			
67+535	50.00	67535.00	889.780	888.650			
67+585	50.00	67585.00	889.590	888.643			
67+635	50.00	67635.00	889.750	888.637			
67+685	50.00	67685.00	889.810	888.630			
67+735	50.00	67735.00	889.640	888.624			
67+785	50.00	67785.00	889.110	888.617			
67+835	50.00	67835.00	888.970	888.611			
67+885	50.00	67885.00	888.540	888.604			
67+935	50.00	67935.00	889.880	888.598			
67+985	50.00	67985.00	890.190	888.591			
68+032	47.00	68032.00	888.070	888.585			
68+085	53.00	68085.00	889.810	888.578			
68+135	50.00	68135.00	890.890	888.572			
68+185	50.00	68185.00	892.190	888.565			
68+227	42.00	68227.00	893.090	888.560			
68+285	58.00	68285.00	893.340	888.552			
68+335	50.00	68335.00	893.540	888.546			
68+385	50.00	68385.00	893.660	888.539			
68+435	50.00	68435.00	893.770	888.533			
68+485	50.00	68485.00	893.580	888.526			
68+535	50.00	68535.00	893.380	888.520			
68+585	50.00	68585.00	893.110	888.513			
68+635	50.00	68635.00	892.570	888.507			
68+685	50.00	68685.00	891.910	888.500			

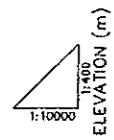
REPUBLIC OF ZIMBABWE

FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
AGRICULTURAL DEVELOPMENT PROJECT

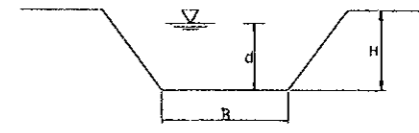
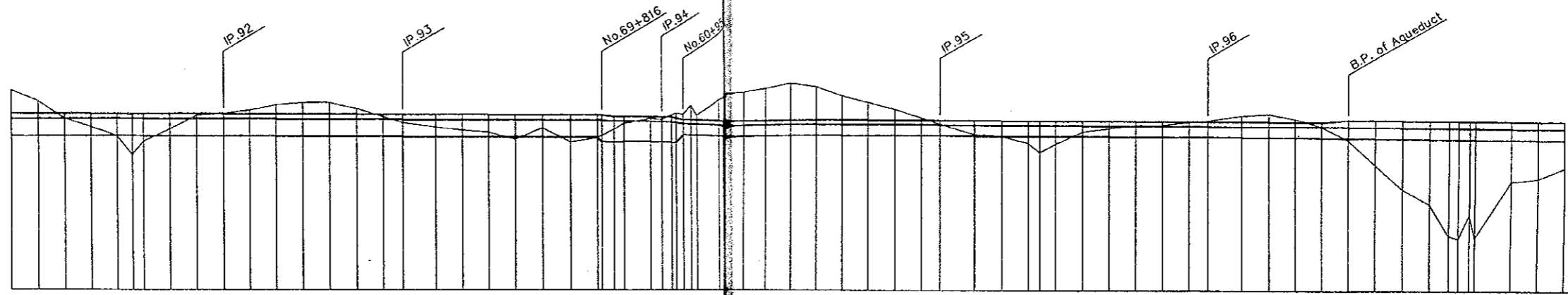
TITLE OF DRAWING
MAIN IRRIGATION CANAL
PROFILE OF RIGHT MAIN CANAL (23/25)
(STA. No.65+685 - STA. No.68+685 m)

Date	Oct. 30, 2000	Drawing No.	3058
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JAPAN INTERNATIONAL COOPERATION AGENCY



ELEVATION (m)



Typical Cross Section

Canal Type : R-T-10
 B= :
 H= :
 d= :
 Canal Type : R-T-11
 B= :
 H= :
 d= :

CANAL TYPE	HL=3,161.00 m		HL=110.00 m		HL=1,335.00 m		HL=500.00 m	
CANAL BANK ELEVATION	R-T-10		R-T-10		R-T-11		Aqueduct	
WATER SURFACE ELEVATION	Q=2.838 m ³ /s		Q=2.472 m ³ /s		Q=0.828 m ³ /s			
CANAL BASE ELEVATION								
GROUND SURFACE ELEVATION								
REDUCED DISTANCE								
DISTANCE								
STATION No.								
68+685	886.500	889.773	891.910	886.500	889.773	891.910	886.500	889.773
68+735	888.494	889.767	891.100	888.494	889.767	891.100	888.494	889.767
68+785	888.487	889.760	889.790	888.487	889.760	889.790	888.487	889.760
68+835	888.481	889.754	889.170	888.481	889.754	889.170	888.481	889.754
68+885	888.474	889.747	888.470	888.474	889.747	888.470	888.474	889.747
68+914	889.120	889.743	887.090	889.120	889.743	887.090	889.120	889.743
68+935	888.468	889.741	888.060	888.468	889.741	888.060	888.468	889.741
68+985	888.461	889.734	888.970	888.461	889.734	888.970	888.461	889.734
69+035	888.455	889.728	889.990	888.455	889.728	889.990	888.455	889.728
69+086	888.448	889.721	890.130	888.448	889.721	890.130	888.448	889.721
69+135	888.442	889.715	890.360	888.442	889.715	890.360	888.442	889.715
69+185	888.435	889.708	890.750	888.435	889.708	890.750	888.435	889.708
69+235	888.429	889.702	890.930	888.429	889.702	890.930	888.429	889.702
69+285	888.422	889.695	890.930	888.422	889.695	890.930	888.422	889.695
69+335	888.416	889.689	890.510	888.416	889.689	890.510	888.416	889.689
69+385	888.409	889.682	889.890	888.409	889.682	889.890	888.409	889.682
69+423	888.404	889.677	889.450	888.404	889.677	889.450	888.404	889.677
69+485	888.396	889.669	889.120	888.396	889.669	889.120	888.396	889.669
69+535	888.390	889.663	888.900	888.390	889.663	888.900	888.390	889.663
69+585	888.383	889.656	888.740	888.383	889.656	888.740	888.383	889.656
69+635	888.377	889.650	888.220	888.377	889.650	888.220	888.377	889.650
69+685	888.370	889.643	889.070	888.370	889.643	889.070	888.370	889.643
69+735	888.364	889.637	888.030	888.364	889.637	888.030	888.364	889.637
69+785	888.357	889.630	888.368	888.357	889.630	888.368	888.357	889.630
69+816	888.350	889.624	888.300	888.350	889.624	888.300	888.350	889.624
69+835	888.344	889.618	889.360	888.344	889.618	889.360	888.344	889.618
69+885	888.337	889.612	889.800	888.337	889.612	889.800	888.337	889.612
69+907	888.330	889.606	889.590	888.330	889.606	889.590	888.330	889.606
69+926	888.324	889.600	889.336	888.324	889.600	889.336	888.324	889.600
69+935	888.318	889.594	889.700	888.318	889.594	889.700	888.318	889.594
69+959	888.311	889.588	889.890	888.311	889.588	889.890	888.311	889.588
70+035	888.304	889.582	891.330	888.304	889.582	891.330	888.304	889.582
70+085	888.297	889.576	891.840	888.297	889.576	891.840	888.297	889.576
70+135	888.290	889.570	892.110	888.290	889.570	892.110	888.290	889.570
70+185	888.283	889.564	892.460	888.283	889.564	892.460	888.283	889.564
70+235	888.276	889.558	892.170	888.276	889.558	892.170	888.276	889.558
70+285	888.269	889.552	891.500	888.269	889.552	891.500	888.269	889.552
70+335	888.262	889.546	891.000	888.262	889.546	891.000	888.262	889.546
70+385	888.255	889.540	890.460	888.255	889.540	890.460	888.255	889.540
70+435	888.248	889.534	889.840	888.248	889.534	889.840	888.248	889.534
70+485	888.241	889.528	889.390	888.241	889.528	889.390	888.241	889.528
70+520	888.234	889.522	888.960	888.234	889.522	888.960	888.234	889.522
70+585	888.227	889.516	888.520	888.227	889.516	888.520	888.227	889.516
70+635	888.220	889.510	888.080	888.220	889.510	888.080	888.220	889.510
70+685	888.213	889.504	887.640	888.213	889.504	887.640	888.213	889.504
70+706	888.206	889.498	887.200	888.206	889.498	887.200	888.206	889.498
70+735	888.200	889.492	886.760	888.200	889.492	886.760	888.200	889.492
70+785	888.193	889.486	886.320	888.193	889.486	886.320	888.193	889.486
70+835	888.186	889.480	885.880	888.186	889.480	885.880	888.186	889.480
70+885	888.179	889.474	885.440	888.179	889.474	885.440	888.179	889.474
70+935	888.172	889.468	885.000	888.172	889.468	885.000	888.172	889.468
70+985	888.165	889.462	884.560	888.165	889.462	884.560	888.165	889.462
71+020	888.158	889.456	884.120	888.158	889.456	884.120	888.158	889.456
71+065	888.151	889.450	883.680	888.151	889.450	883.680	888.151	889.450
71+135	888.144	889.444	883.240	888.144	889.444	883.240	888.144	889.444
71+185	888.137	889.438	882.800	888.137	889.438	882.800	888.137	889.438
71+235	888.130	889.432	882.360	888.130	889.432	882.360	888.130	889.432
71+285	888.123	889.426	881.920	888.123	889.426	881.920	888.123	889.426
71+335	888.116	889.420	881.480	888.116	889.420	881.480	888.116	889.420
71+365	888.109	889.414	881.040	888.109	889.414	881.040	888.109	889.414
71+435	888.102	889.408	880.600	888.102	889.408	880.600	888.102	889.408
71+471	888.095	889.402	880.160	888.095	889.402	880.160	888.095	889.402
71+489	888.088	889.396	879.720	888.088	889.396	879.720	888.088	889.396
71+509	888.081	889.390	879.280	888.081	889.390	879.280	888.081	889.390
71+585	888.074	889.384	878.840	888.074	889.384	878.840	888.074	889.384
71+635	888.067	889.378	878.400	888.067	889.378	878.400	888.067	889.378
71+685	888.060	889.372	877.960	888.060	889.372	877.960	888.060	889.372

REPUBLIC OF ZIMBABWE

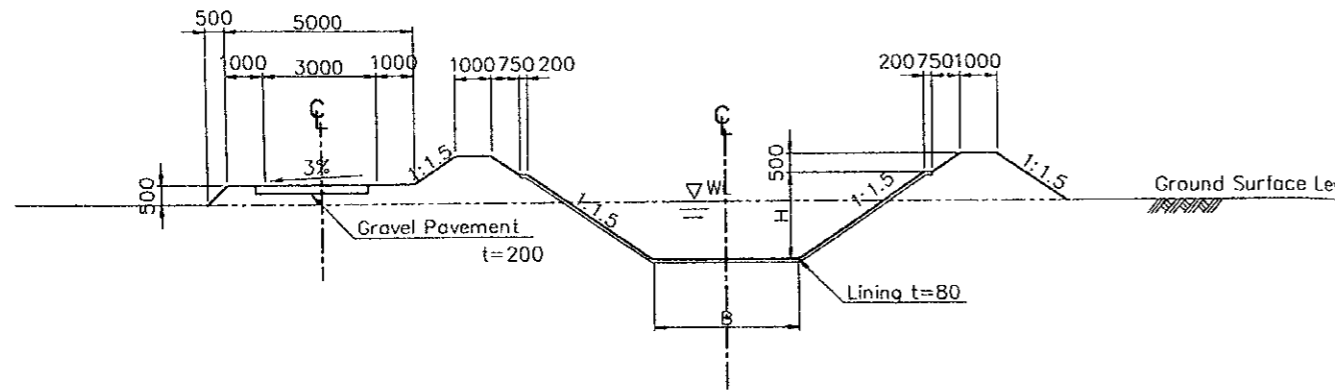
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
 AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
 MAIN IRRIGATION CANAL
 PROFILE OF RIGHT MAIN CANAL (24/25)
 (STA. No.68+685 - STA. No.71+685 m)

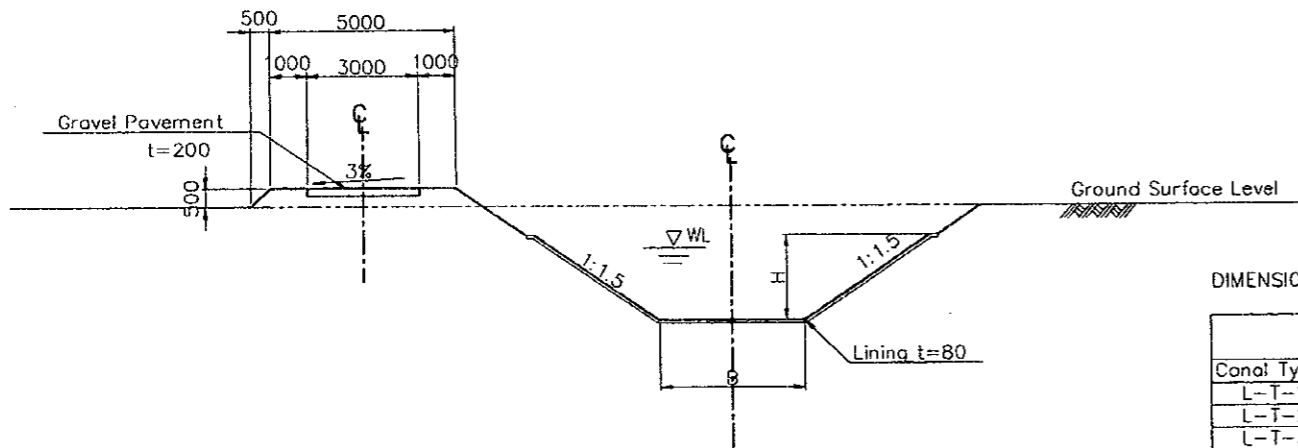
Date Oct. 30, 2000 Drawing No. 3059

JAPAN INTERNATIONAL COOPERATION AGENCY

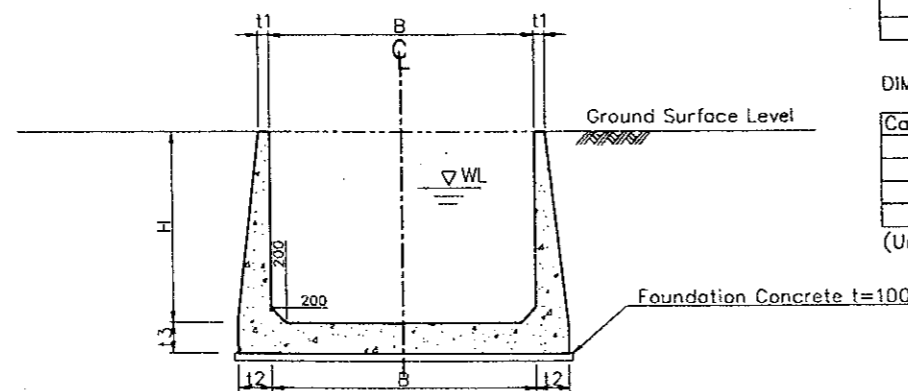
TYPICAL CROSS SECTION OF CANAL



CANAL TYPE-A

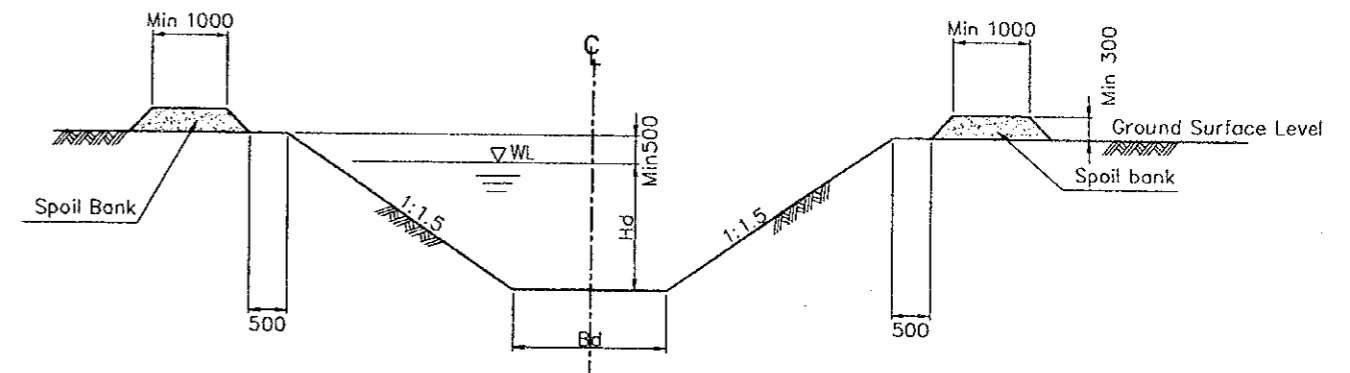


CANAL TYPE-B



FLUME TYPE-F

IRRIGATION CANAL



DRAINAGE CANAL

DIMENSION TABLE OF IRRIGATION CANAL : TRAPEZOIDAL SECTION)

Canal Type	Left Main Canal			Right Main Canal			
	H	d	Bd	Canal Type	B	H	d
L-T-1	3000	2864	3200	R-T-1	3200	2350	1913
L-T-2	2900	2445	3100	R-T-2	3100	2350	1913
L-T-3	2850	2439	3100	R-T-3	3100	2300	1900
L-T-4	2850	2430	3100	R-T-4	3100	2250	1850
L-T-5	2800	2375	3000	R-T-5	3000	2250	1852
L-T-6	2800	2351	2900	R-T-6	2900	2150	1724
L-T-7	2750	2330	2300	R-T-7	2300	1800	1372
L-T-8	2700	2297	2200	R-T-8	2200	1750	1356
L-T-9	2650	2253	2100	R-T-9	2100	1650	1273
L-T-10	2650	2248	2000	R-T-10	2000	1550	1207
L-T-11	2500	2079	1300	R-T-11	1300	1150	807
L-T-12	2300	1900					
L-T-13	2250	1872					
L-T-14	2250	1864					
L-T-15	2200	1848					
L-T-16	2150	1800					

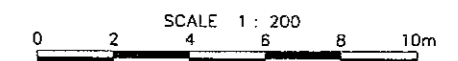
DIMENSION TABLE OF IRRIGATION CANAL : FLUME SECTION)

Canal Type	H	t1	t2	t3
L-F-1	4200	300	600	500
L-F-2	3500	300	600	500
R-F-1	2800	250	450	350
R-F-2	1850	250	450	300

(Unit: mm)

DIMENSION TABLE OF DRAINAGE CANAL (Unit : mm)

Discharge (m ³ /sec)	Free Board	Bd	Ratio Bd/Hd
Q < 0.3	500	600	1.0
0.30 ≤ Q < 0.50	500	700	1.0~1.2
0.50 ≤ Q < 1.00	500	1500	1.2~1.5
1.00 ≤ Q < 1.50	500	2000	1.5~1.8
1.50 ≤ Q < 5.00	600	2500	1.8~2.9
5.00 ≤ Q < 10.00	750	4000	2.9~3.9
10.00 ≤ Q < 15.00	850	6000	3.9~4.9
15.00 ≤ Q	8000	8000	4.9~9.0



REPUBLIC OF ZIMBABWE

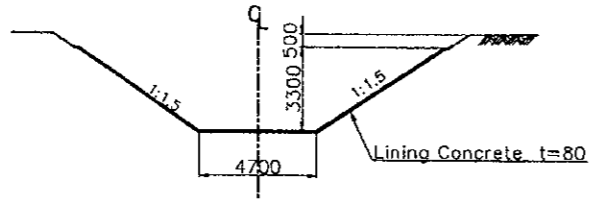
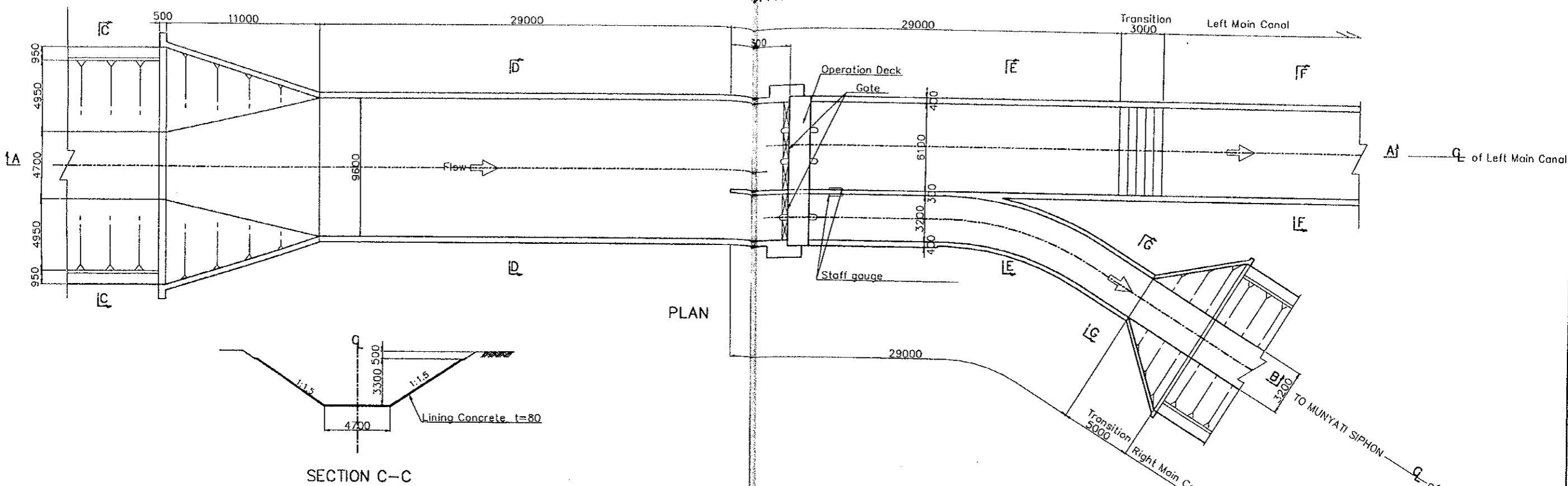
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
MAIN IRRIGATION CANAL
TYPICAL CROSS SECTION & DRAINAGE CANAL

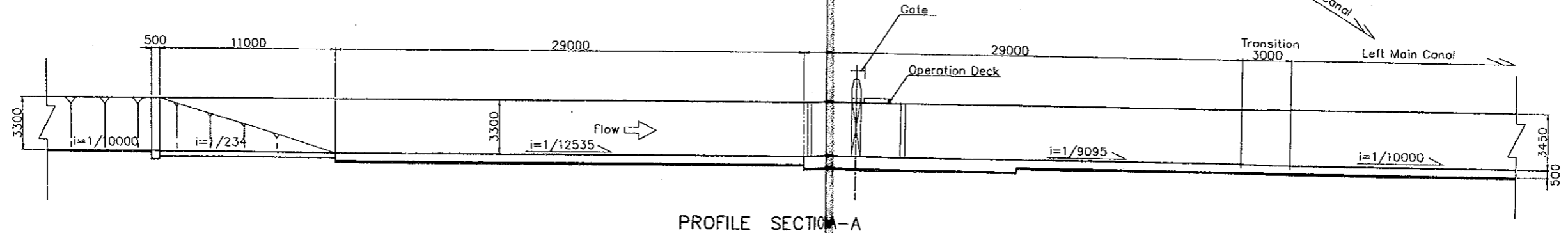
Date | Oct. 30, 2000 | Drawing No. | 3061

JAPAN INTERNATIONAL COOPERATION AGENCY

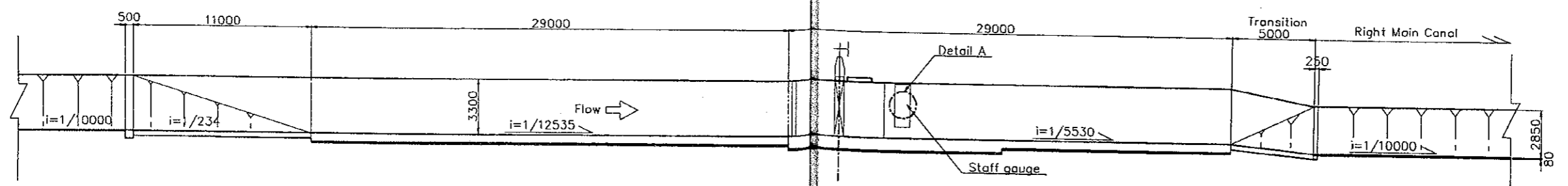
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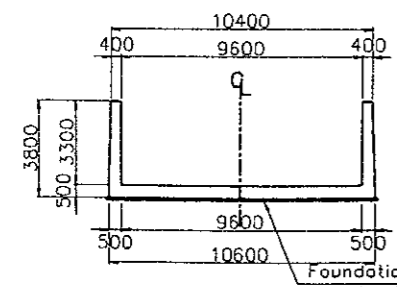
SECTION C-C



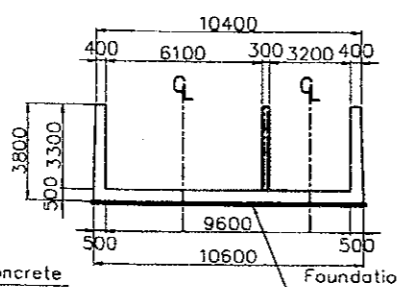
PROFILE SECTION A



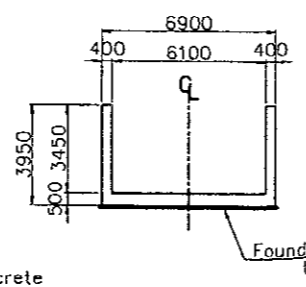
PROFILE SECTION B



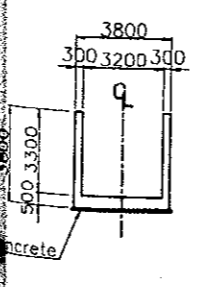
SECTION D-D



SECTION E-E

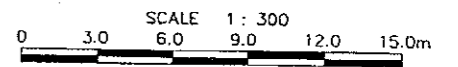


SECTION F-F



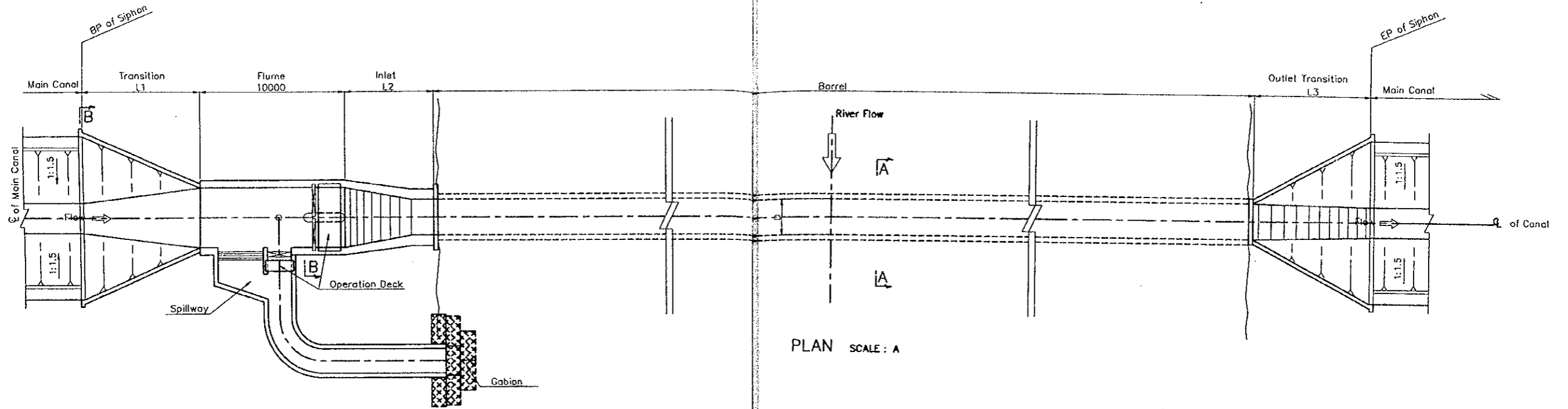
SECTION G-G

Detail A: Staff gauge

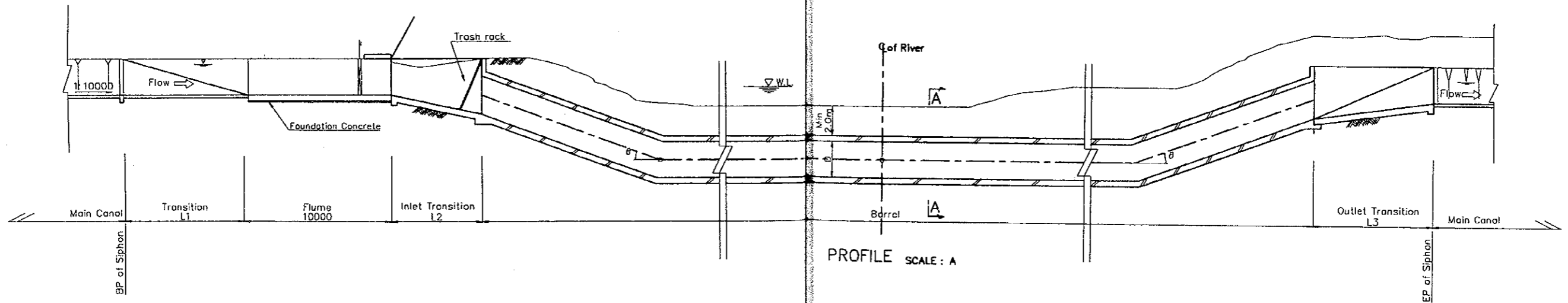


REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING CANAL RELATED STRUCTURE BIFURCATION OF MAIN CANAL			
Date	Oct. 30, 2000	Drawing No.	4001
JAPAN INTERNATIONAL COOPERATION AGENCY			

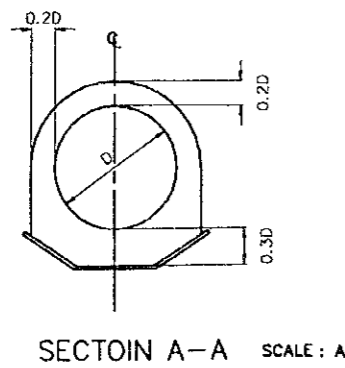
SIPHON (TYPICAL)



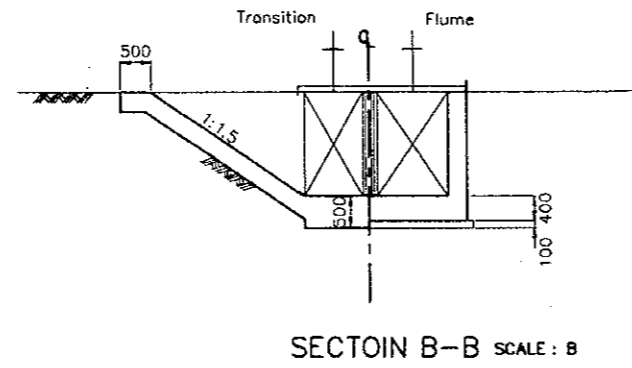
PLAN SCALE : A



PROFILE SCALE : A



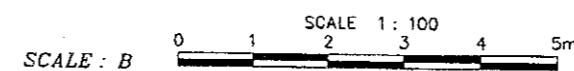
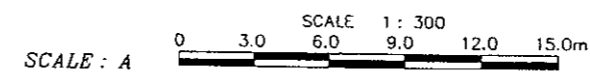
SECTION A-A SCALE : A



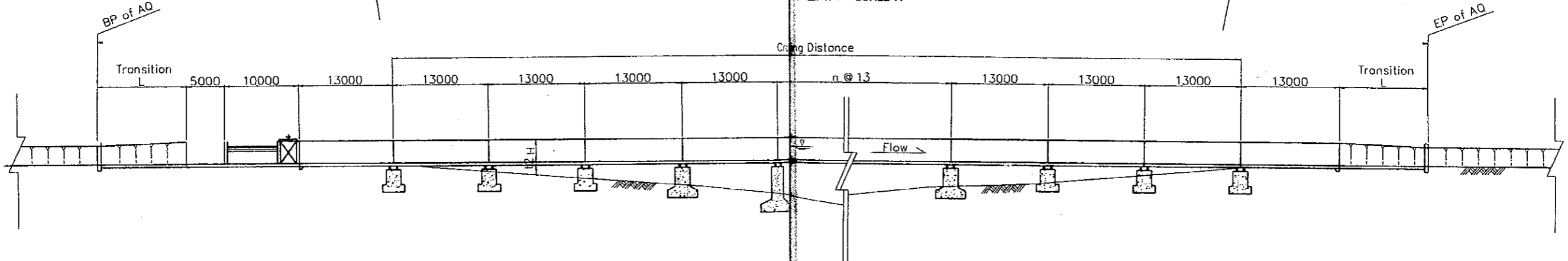
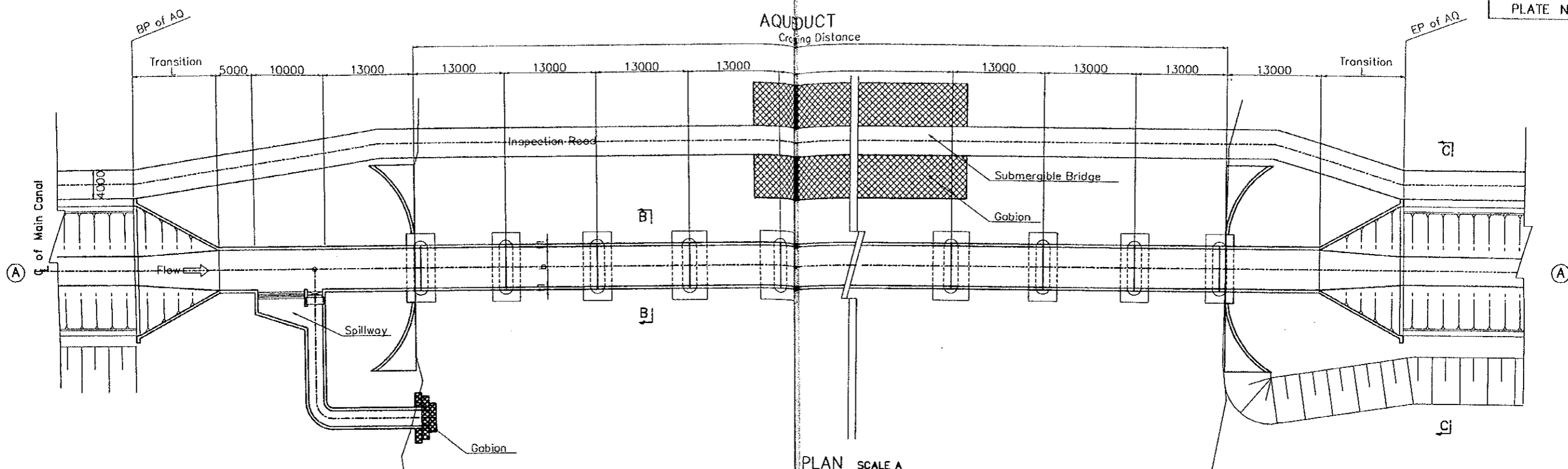
SECTION B-B SCALE : B

DIMENSION TABLE OF SIPHON (Unit : mm)

	Q (m ³ /s)	D	Barrel	L1	L2	L3
Munyati Siphon	8.493	2600	406000	—	8000	8000
Renji Siphon	2.838	2000	981000	7000	6000	7000
Gwenya Siphon	16.018	3500	1216000	12000	10000	10000



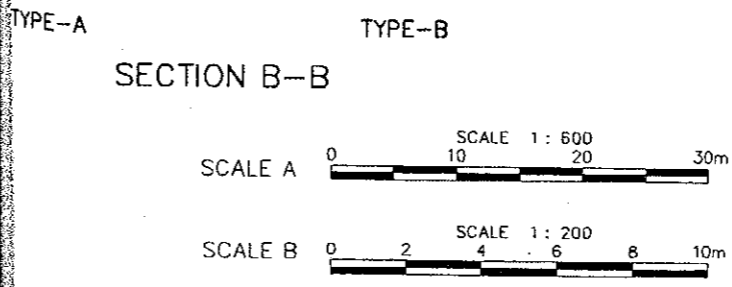
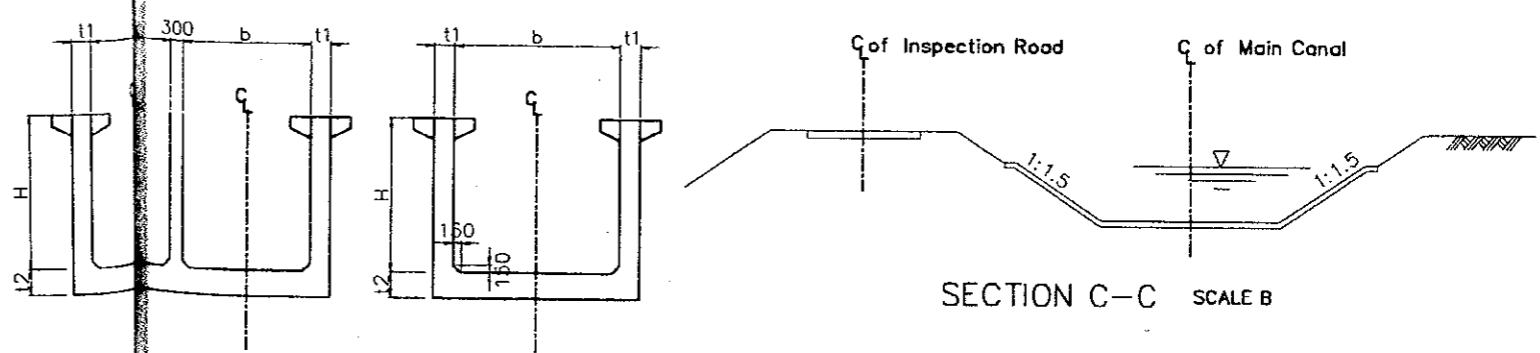
REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING CANAL RELATED STRUCTURE SIPHON (TYPICAL)			
Date	Oct. 30, 2000	Drawing No.	4002
JAPAN INTERNATIONAL COOPERATION AGENCY			



DIMENSION TABLE OF AQUEDUCT (Unit : mm)

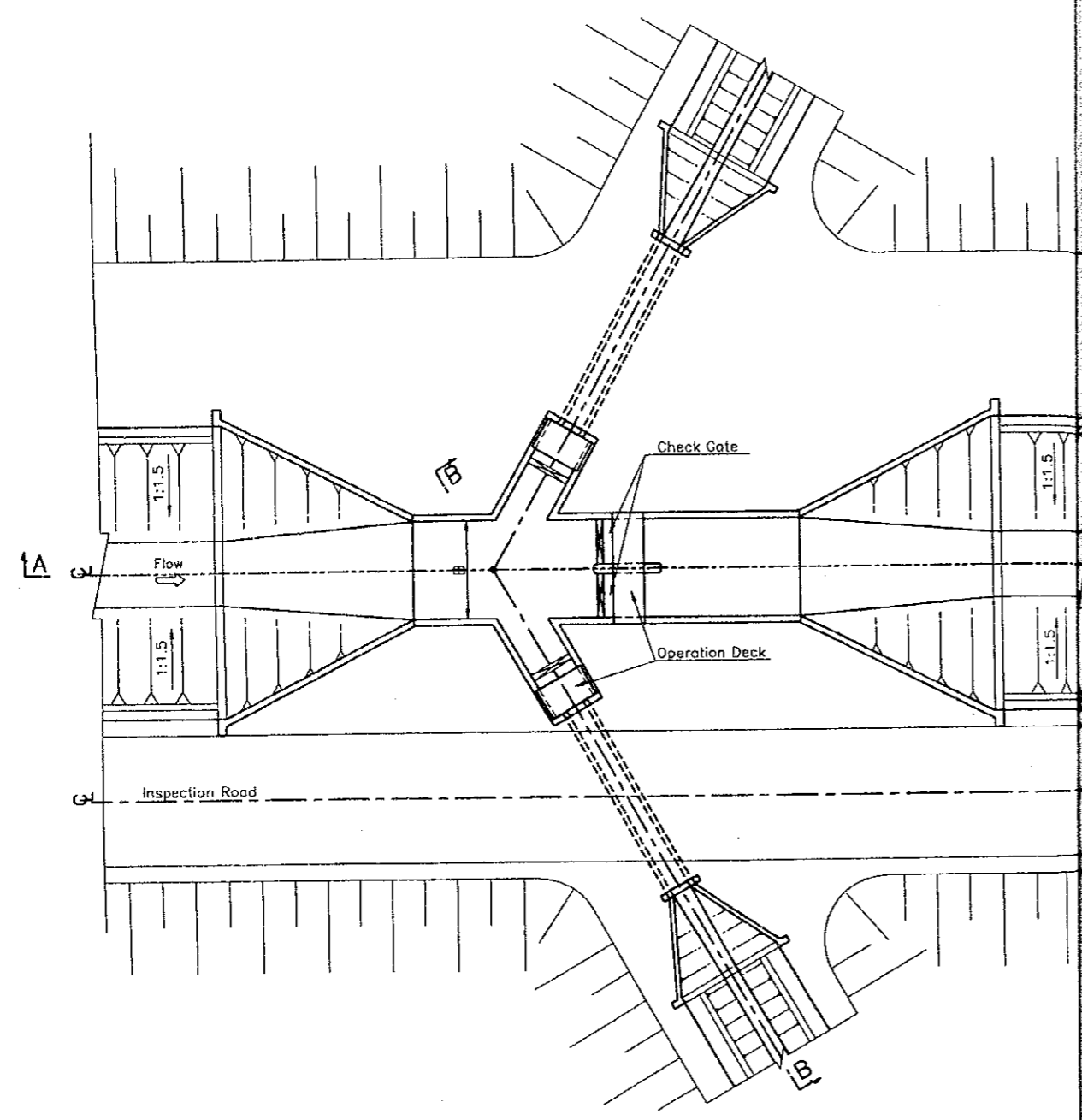
RIVER	Code	Crossing Distance	Discharge (m ³ /s)	TYPE	L	b	H	t1	t2
Ngondoma River	Aq-L-1	241000	24.600	A	10000	4500	3300	300	500
Aqueduct at Criff	Aq-L-2	170000	16.107	A	6000	4000	3600	300	500
Aqueduct at Criff	Aq-L-3	60000	16.107	A	6000	4000	3600	300	500
Aqueduct at Criff	Aq-L-4	176000	16.107	A	6000	4000	3600	300	500
Gwanika River	Aq-L-5	201000	15.908	A	10000	4000	3000	300	500
Mutanke Tributary-1	Aq-L-6	60000	15.908	A	10000	4000	3000	300	500
Mutanke Tributary-2	Aq-L-7	332000	15.908	A	10000	4000	3000	300	500
Mutanke River	Aq-L-8	62000	15.908	A	10000	4000	3000	300	500
Unkown	Aq-L-9	90000	14.634	A	10000	4000	2800	300	450
Musorowa Parkwa River	Aq-L-10	406000	14.373	A	10000	4000	2800	300	450
Unkown	Aq-L-11	104000	14.373	A	10000	4000	2800	300	450
Nyamachenye River	Aq-L-12	207000	14.373	A	10000	4000	2800	300	450
Nyarupakwe Tributary	Aq-L-13	430000	13.739	A	10000	4000	2800	300	450
Nyarupakwe River	Aq-L-14	119000	13.739	A	9000	4000	2600	250	400
Muzongwe River	Aq-L-15	389000	10.650	A	8000	3700	2400	250	400
Korayo River	Aq-L-16	320000	10.650	A	8000	3700	2400	250	400
Umuchichi River	Aq-L-18	432000	10.650	A	8000	3700	2400	250	400
Mabiribiri River	Aq-L-19	445000	10.650	A	8000	3700	2400	250	400
Ncherechere River	Aq-R-1	62000	8.493	B	12000	4000	3000	300	400
Grisnake River	Aq-R-2	180000	8.493	B	12000	4000	3000	300	400
Unkown	Aq-R-3	270000	8.306	B	11000	4000	3000	300	400
Chenveri River	Aq-R-4	250000	7.774	B	11000	4000	3000	300	400
Unkown	Aq-R-5	89000	7.626	B	11000	4000	2600	250	400
Unkown	Aq-R-6	98000	7.626	B	11000	4000	2600	250	400
Unkown	Aq-R-7	490000	0.828	B	5000	1700	1300	200	300
Unkown	Aq-R-8	255000	0.828	B	5000	1700	1300	200	300

PROFILE SECTION A-A SCALE A

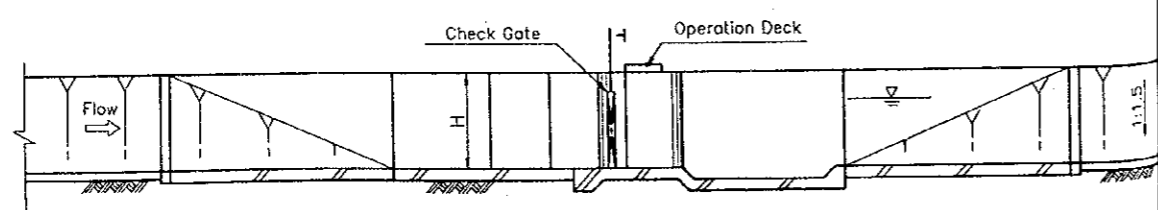


REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING CANAL RELATED STRUCTURE AQUEDUCT			
Date	Oct. 30, 2000	Drawing No.	4003
JAPAN INTERNATIONAL COOPERATION AGENCY			

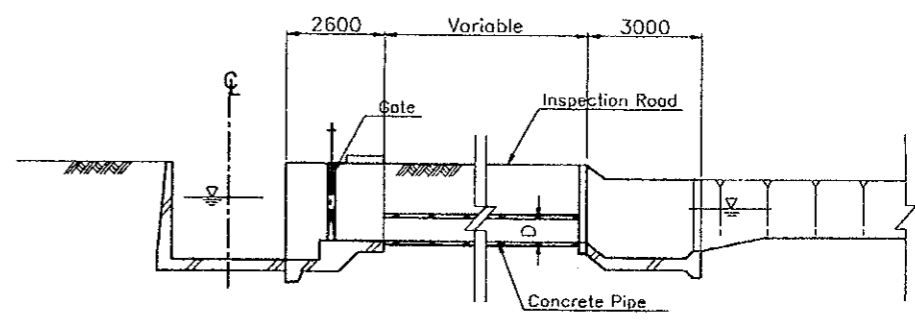
TURNOUT



PLAN



SECTION A-A



SECTION B-B

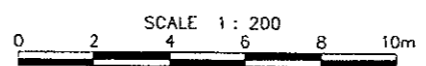
Discharge(m ³ /s)	TYPE		Gate
	Both side	One side	
0.30 ≤ Q	A-1	A-2	With Check Gate
0.10 ≤ Q < 0.30	B-1	B-2	Without Check Gate
Q < 0.10	C-1	C-2	Division Box

DIMENSION TABLE OF CANAL

Discharge(m ³ /s)	B	H
10.0 ≤ Q	5.0~6.1	3.0~4.0
5.0 ≤ Q < 10.0	3.5~5.0	2.2~3.0
1.0 ≤ Q < 5.0	3.0~3.5	1.9~2.2
Q < 1.0	~ 3.0	~ 1.9

DIMENSION TABLE OF CONCRETE PIPE

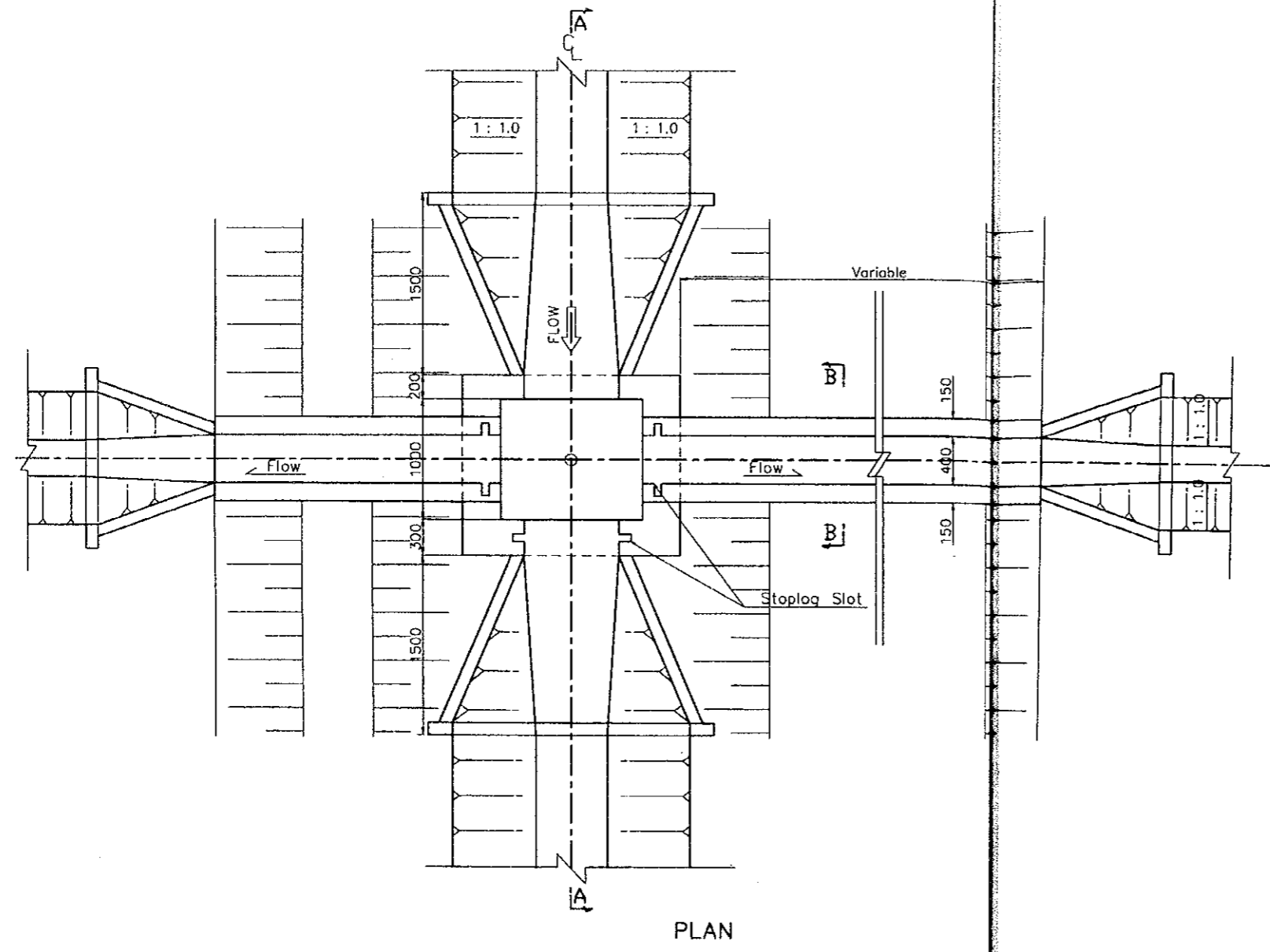
Discharge(m ³ /s)	D
2.0 ≤ Q	1500
1.0 ≤ Q < 2.0	1000
0.5 ≤ Q < 1.0	800
0.1 ≤ Q < 0.5	500
Q < 0.1	300



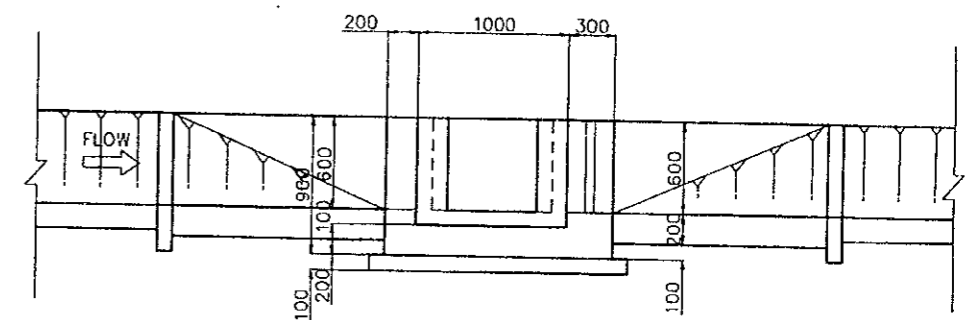
REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING CANAL RELATED STRUCTURE TYPICAL DRAWING OF TURNOUT			
Date	Oct. 30, 2000	Drawing No.	4004
JAPAN INTERNATIONAL COOPERATION AGENCY			

DIVISION BOX

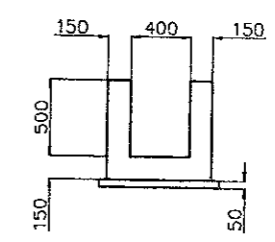
Discharge (m ³ /s)	TYPE		Gate
	Both side	One side	
0.30 ≤ Q	A-1	A-2	With Check Gate
0.10 ≤ Q < 0.30	B-1	B-2	Without Check Gate
Q < 0.10	C-1	C-2	Division Box



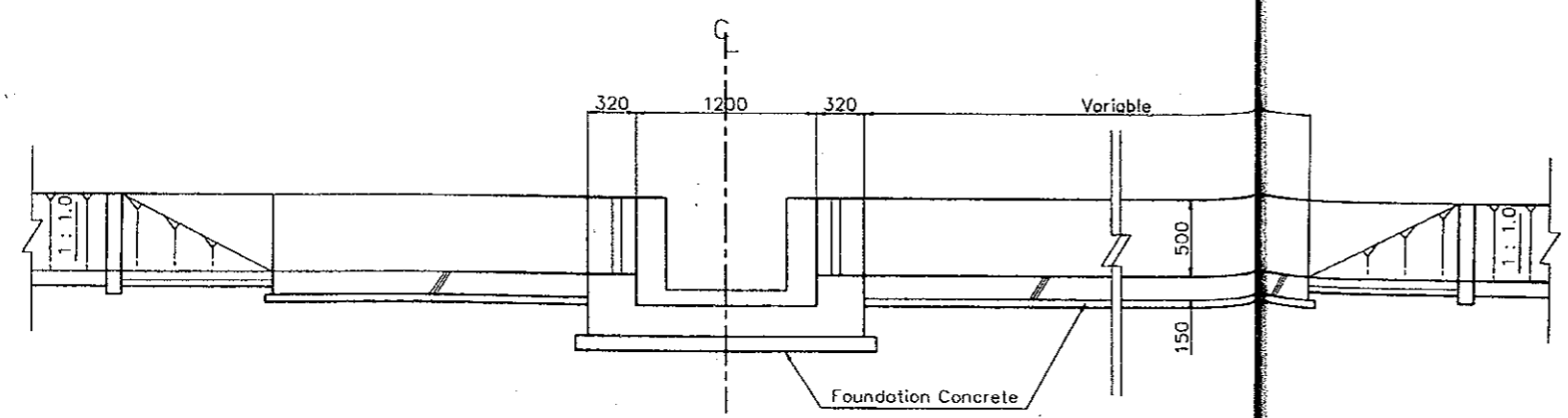
PLAN



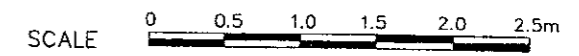
SECTION A - A



SECTION B-B



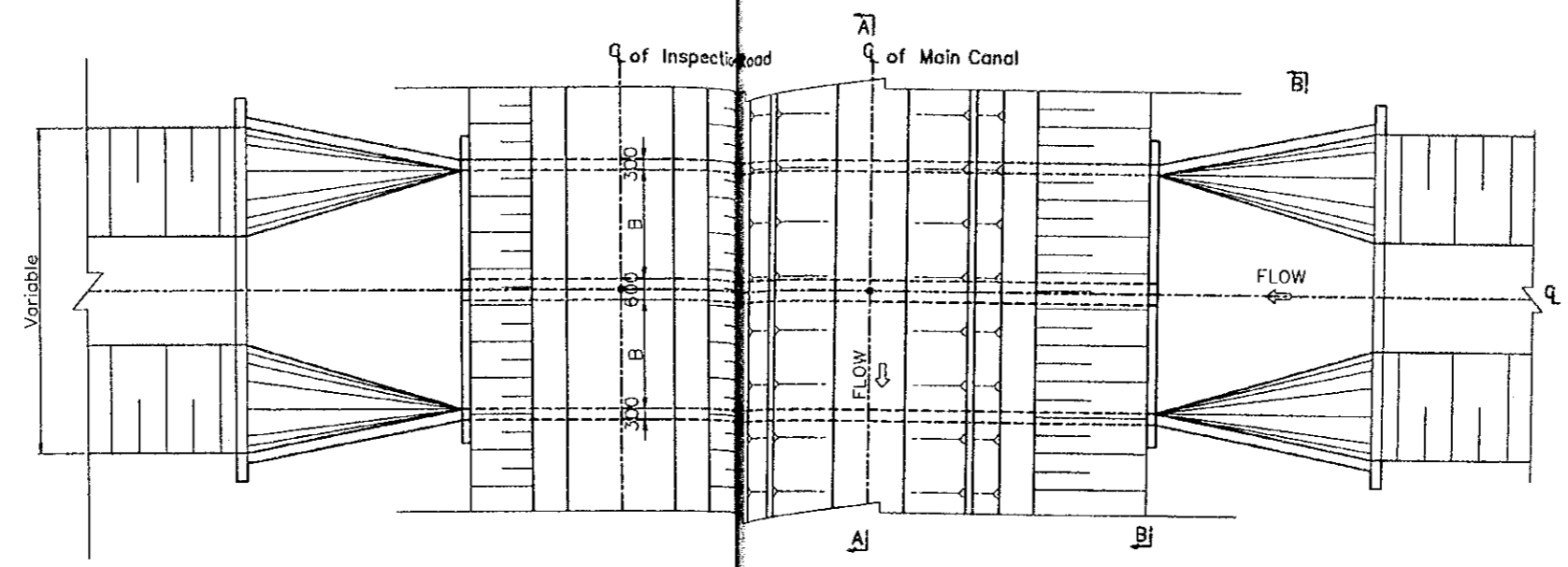
PROFILE



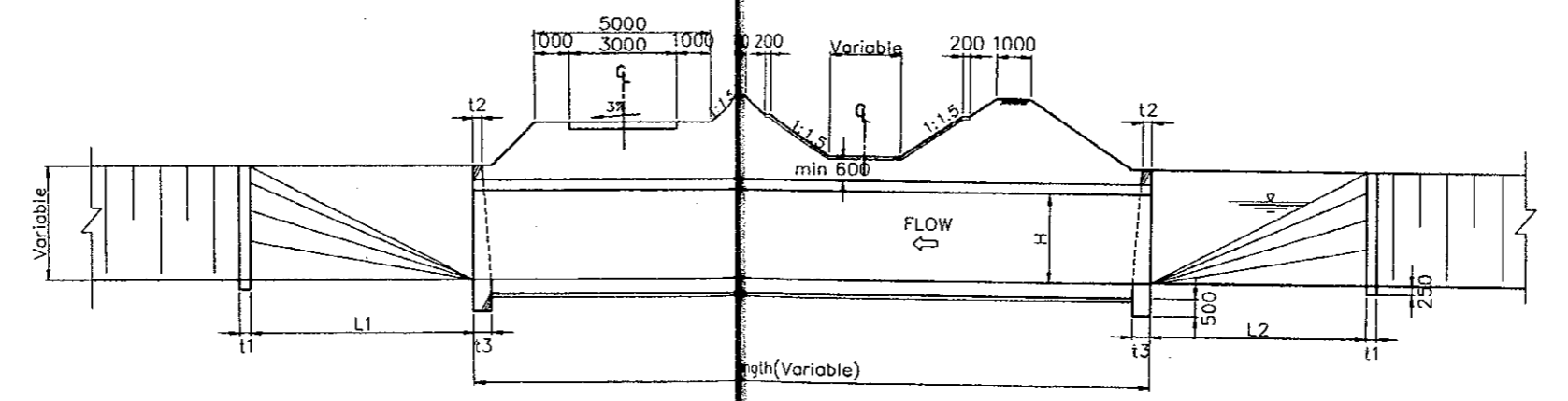
REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING CANAL RELATED STRUCTURE DIVISION BOX			
Date	Oct. 30, 2000	Drawing No.	4005
JAPAN INTERNATIONAL COOPERATION AGENCY			

CROSS DRAIN (TYPE-A)

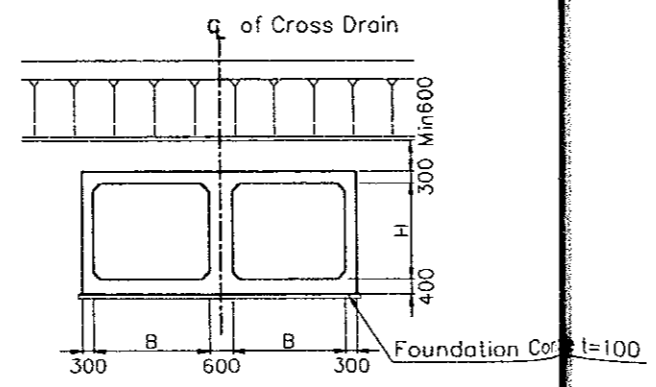
TYPE-A



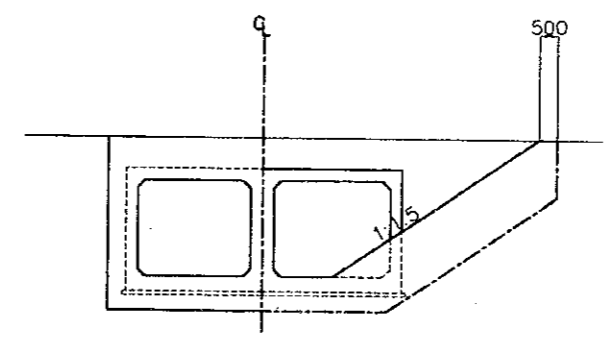
PLAN



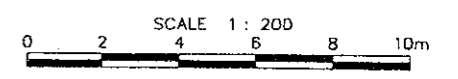
PROFILE



SECTION A-A



SECTION B-B



DIMENSION TABLE OF CROSS DRAIN (mm)

Discharge (m ³ /s)	TYPE	B	L1	L2	t1	t2	t3
10.0 ≤ Q	A-1	4000	4000	4000	300	250	500
5.0 ≤ Q < 10.0	A-2	3000	5000	5000	300	250	500

REPUBLIC OF ZIMBABWE

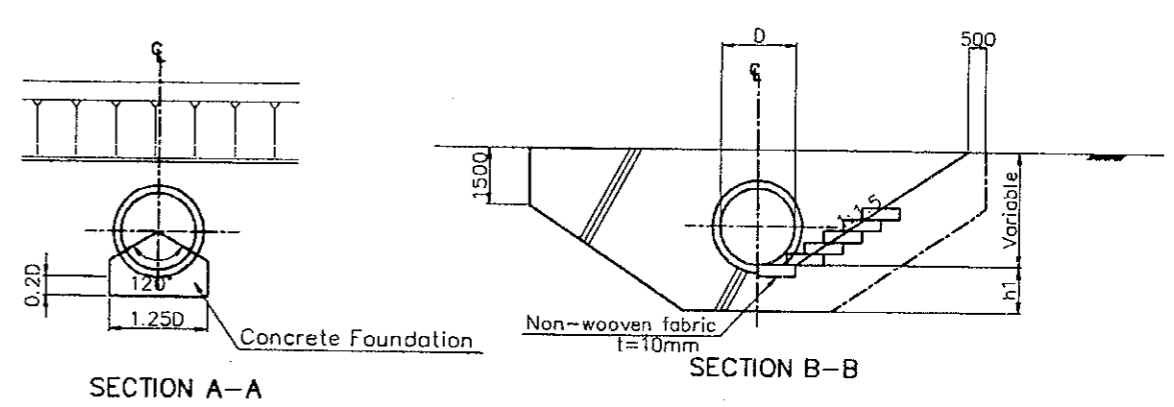
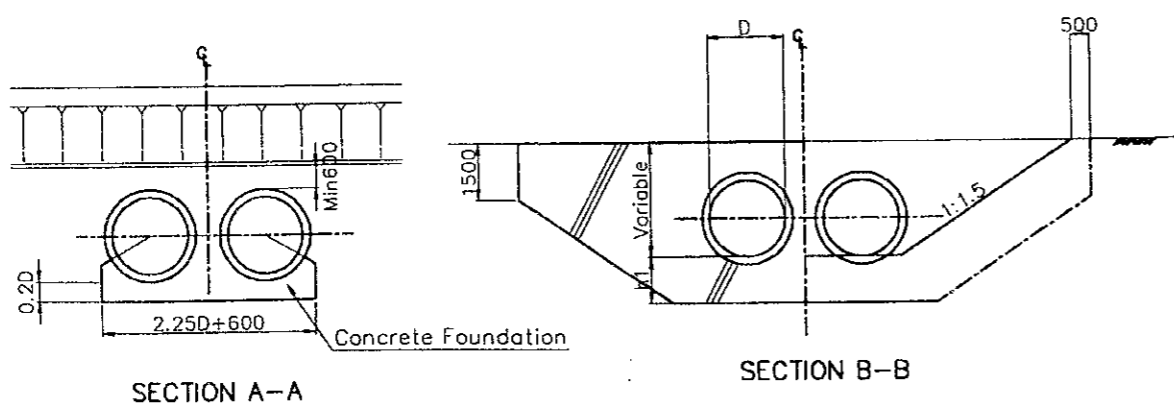
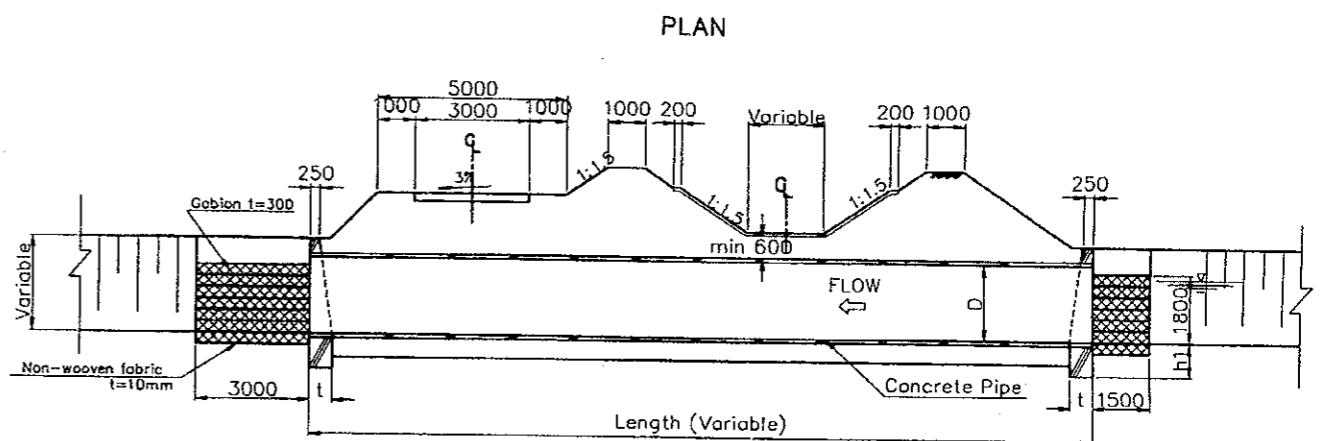
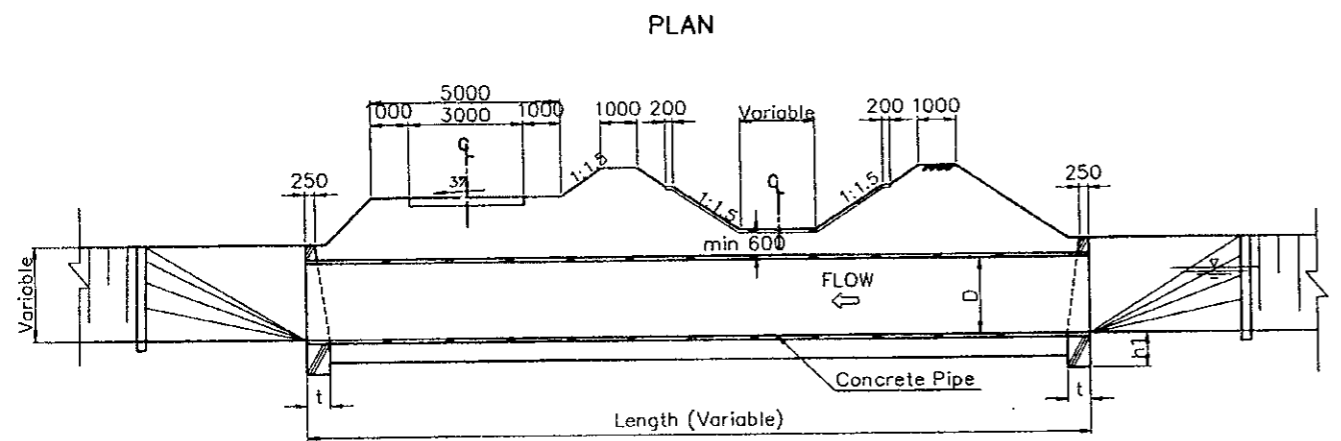
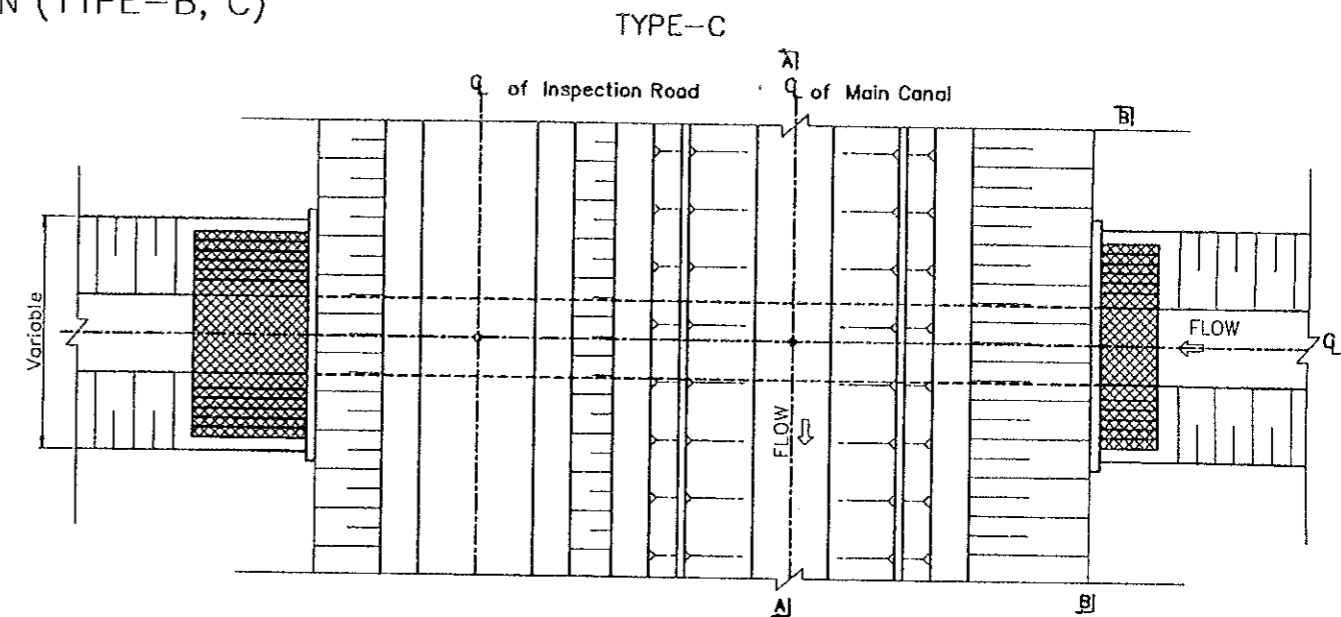
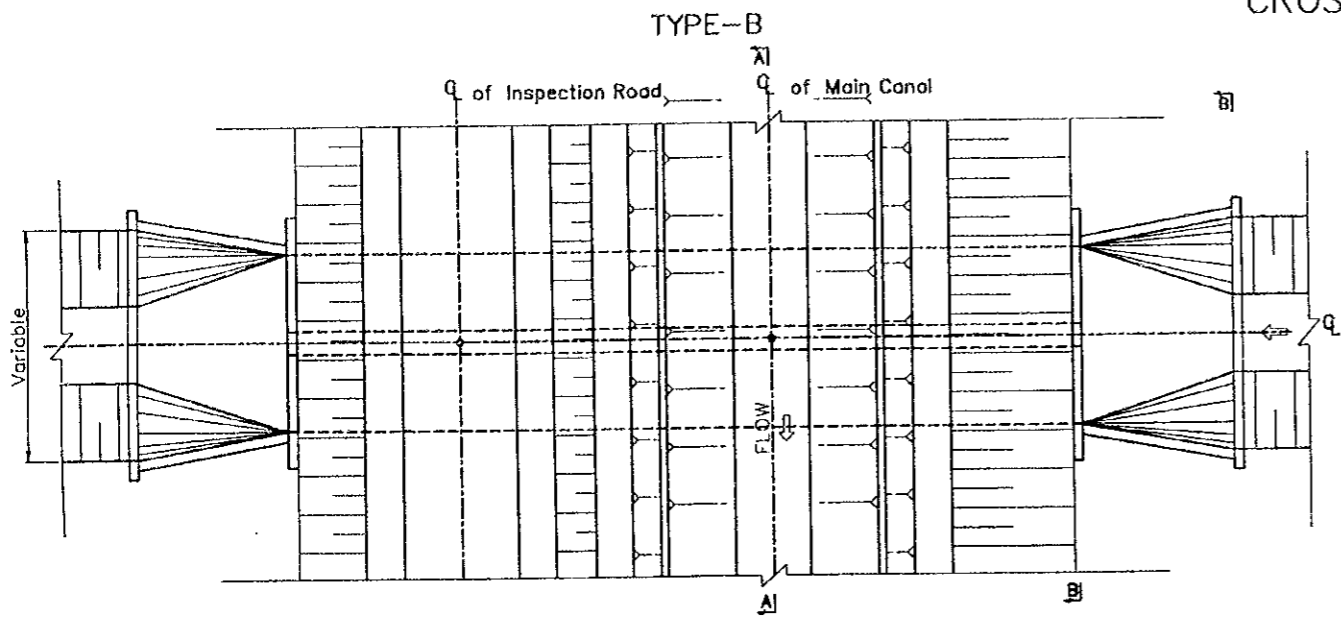
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
CANAL RELATED STRUCTURE
CROSS DRAIN (TYPE-A)

Date	Oct. 30, 2000	Drawing No.	4006
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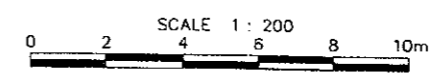
JAPAN INTERNATIONAL COOPERATION AGENCY

CROSS DRAIN (TYPE-B, C)



DIMENSION TABLE OF CROSS DRAIN (Unit : mm)

Discharge (m ³ /s)	TYPE	D	t	h1
2.5 ≤ Q < 5.0	B	1500	500	500
1.0 ≤ Q < 2.5	C-1	1500	500	500
Q < 1.0	C-2	1000	400	500



REPUBLIC OF ZIMBABWE

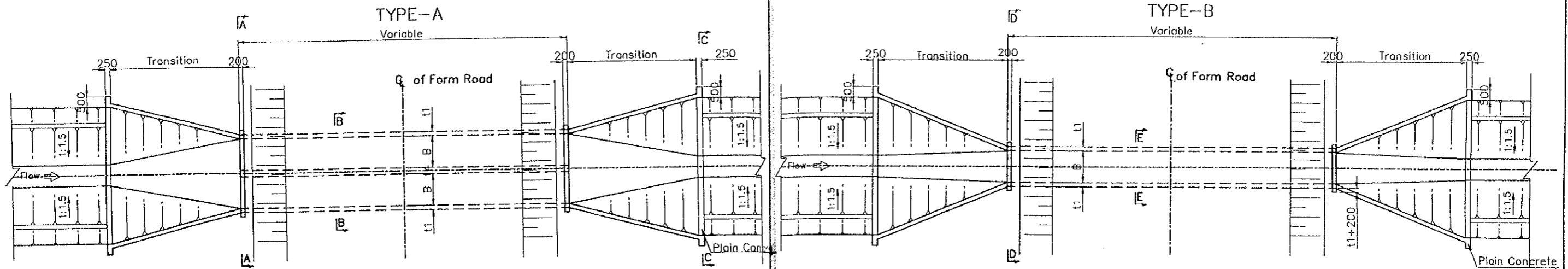
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
CANAL RELATED STRUCTURE
CROSS DRAIN (TYPE-B, C)

Date	Oct. 30, 2000	Drawing No.	4007
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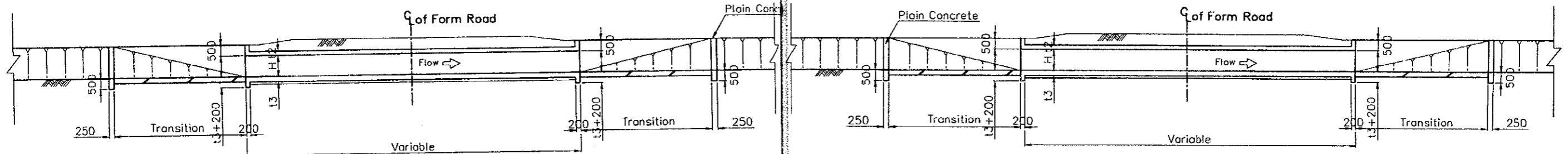
JAPAN INTERNATIONAL COOPERATION AGENCY

CULVERT



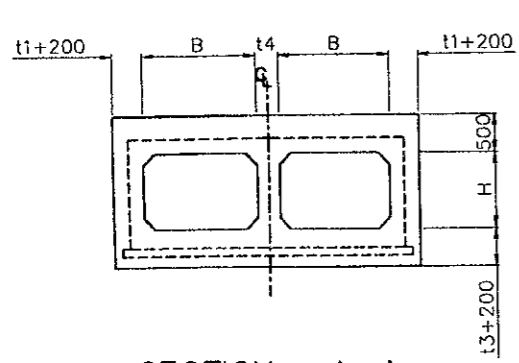
PLAN

PLAN

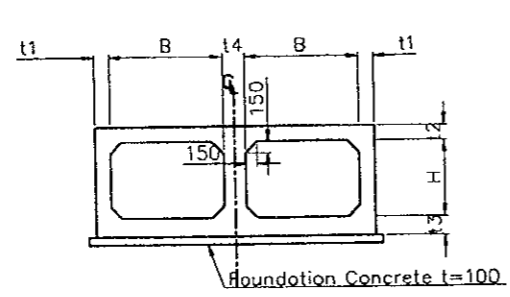


PROFILE

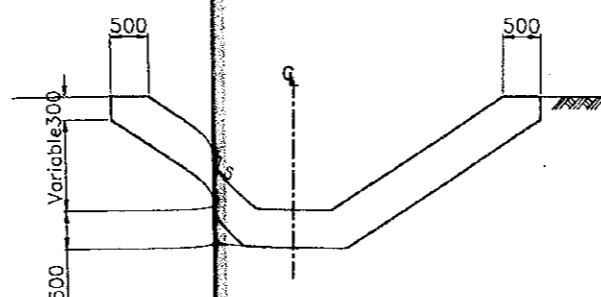
PROFILE



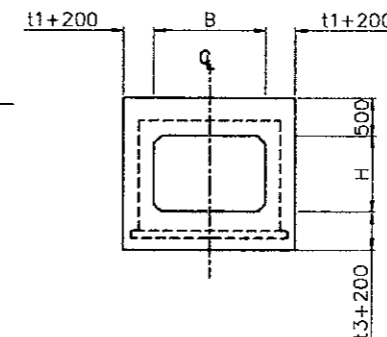
SECTION A-A



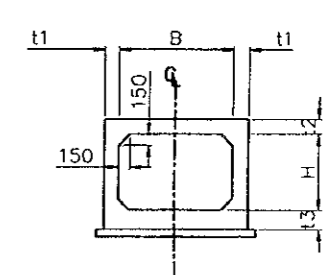
SECTION B-B



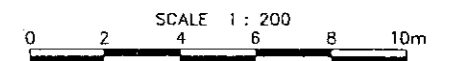
SECTION C-C



SECTION D-D



SECTION E-E



DIMENSION TABLE OF BOX CULVERT (Unit : mm)

Q(m ³ /s)	TYPE	B	H	t1	t2	t4
15.0 ≤ Q	A	4000	2500	500	500	650
10.0 ≤ Q < 15.0	A	4000	2300	450	450	600
5.0 ≤ Q < 10.0	B	4000	2500	400	400	—
2.0 ≤ Q < 5.0	B	3500	2300	400	400	—
Q < 2.0	B	2500	2000	300	300	—

REPUBLIC OF ZIMBABWE

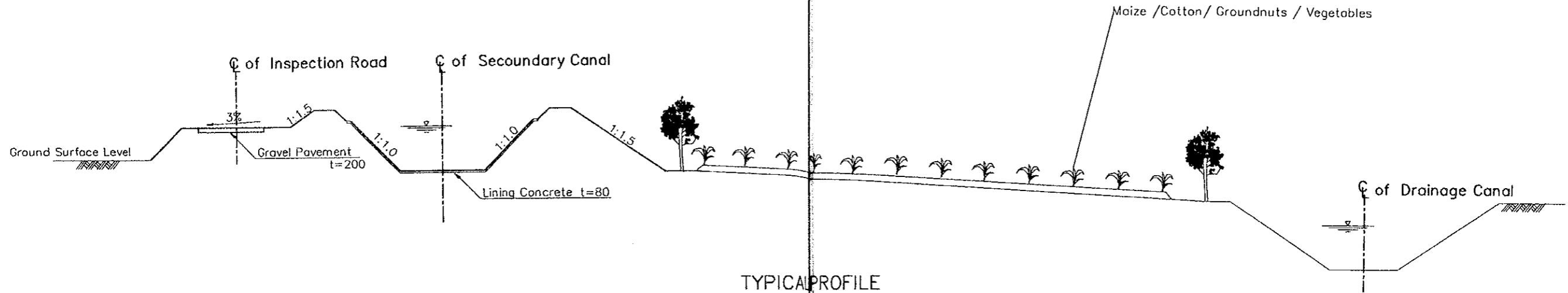
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
CANAL RELATED STRUCTURE
BOX CULVERT

Date | Oct. 30, 2000 | Drawing No. | 4008

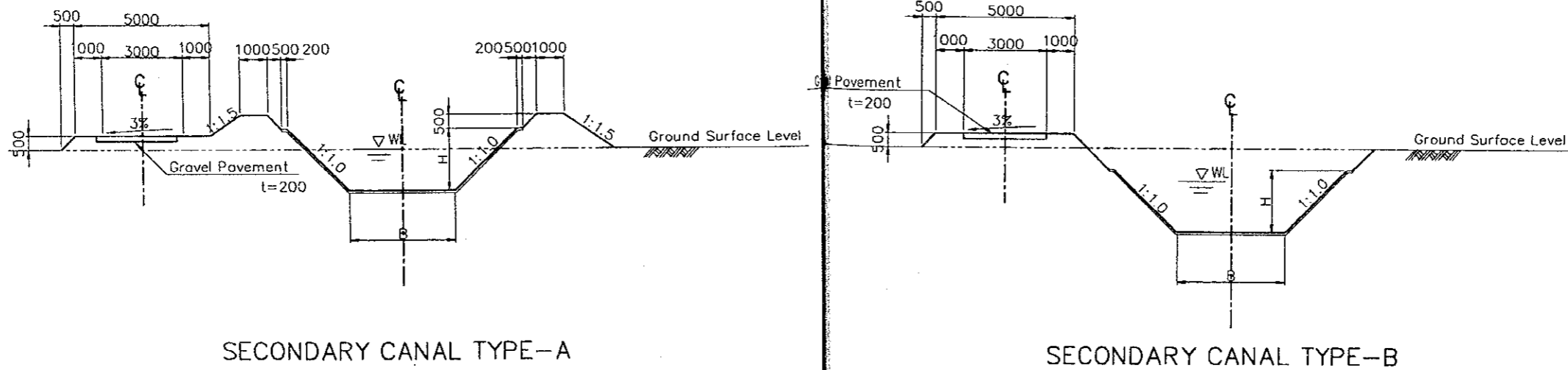
JAPAN INTERNATIONAL COOPERATION AGENCY

TYPICAL CROSS SECTION



TYPICAL PROFILE

TYPICAL CROSS SECTION OF SECONDARY CANAL

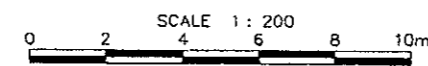


SECONDARY CANAL TYPE-A

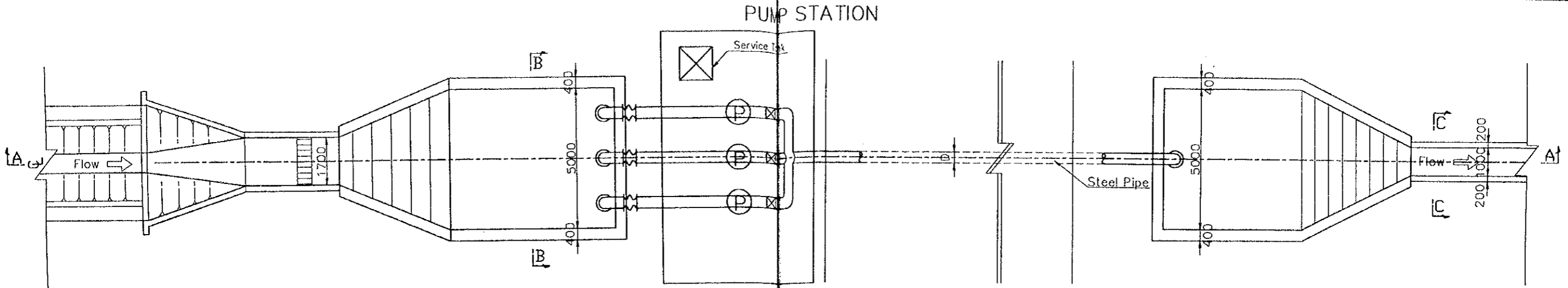
SECONDARY CANAL TYPE-B

DIMENSION TABLE OF SECONDARY CANAL
(Unit : mm)

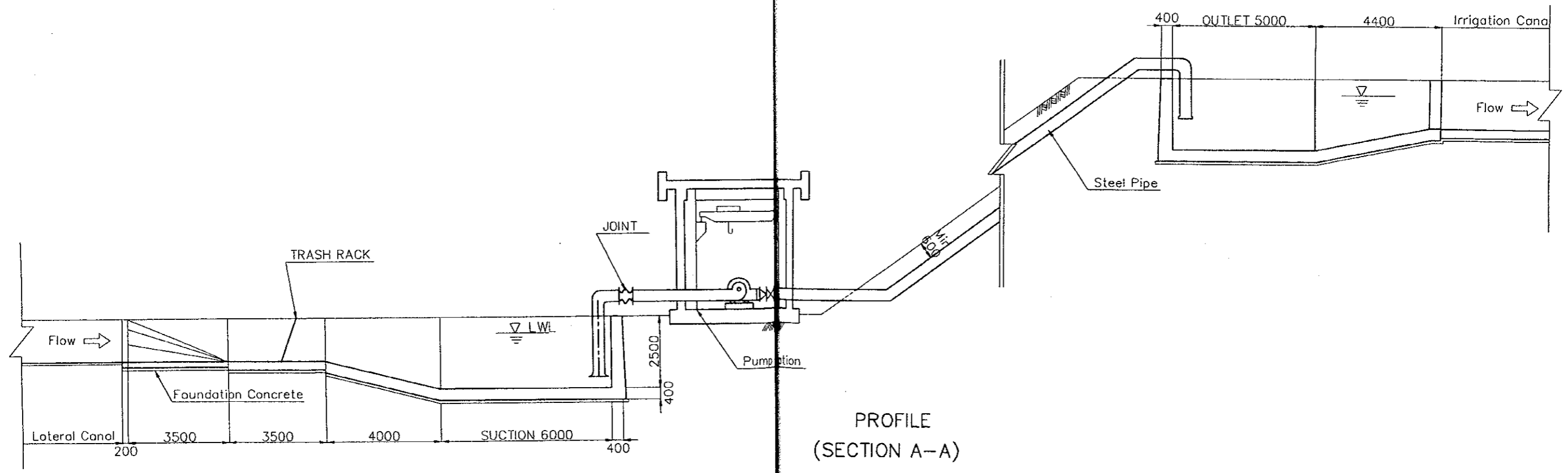
Discharge (m ³ /s)	B
Q < 0.1	300
0.10 ≤ Q < 0.20	400
0.20 ≤ Q < 0.50	500
0.50 ≤ Q < 1.00	700
1.00 ≤ Q < 2.00	800
2.00 ≤ Q < 3.00	1000



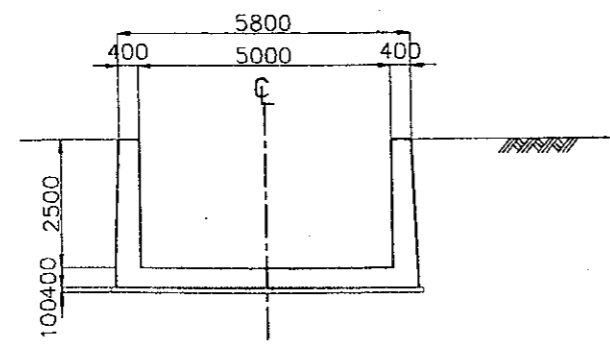
REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING TYPICAL CROSS SECTION OF SECONDARY CANAL			
Date	Oct. 30, 2000	Drawing No.	4009
JAPAN INTERNATIONAL COOPERATION AGENCY			



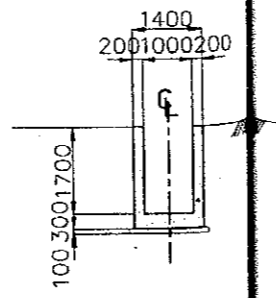
PLAN



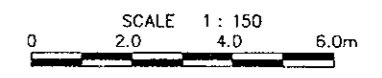
PROFILE
(SECTION A-A)



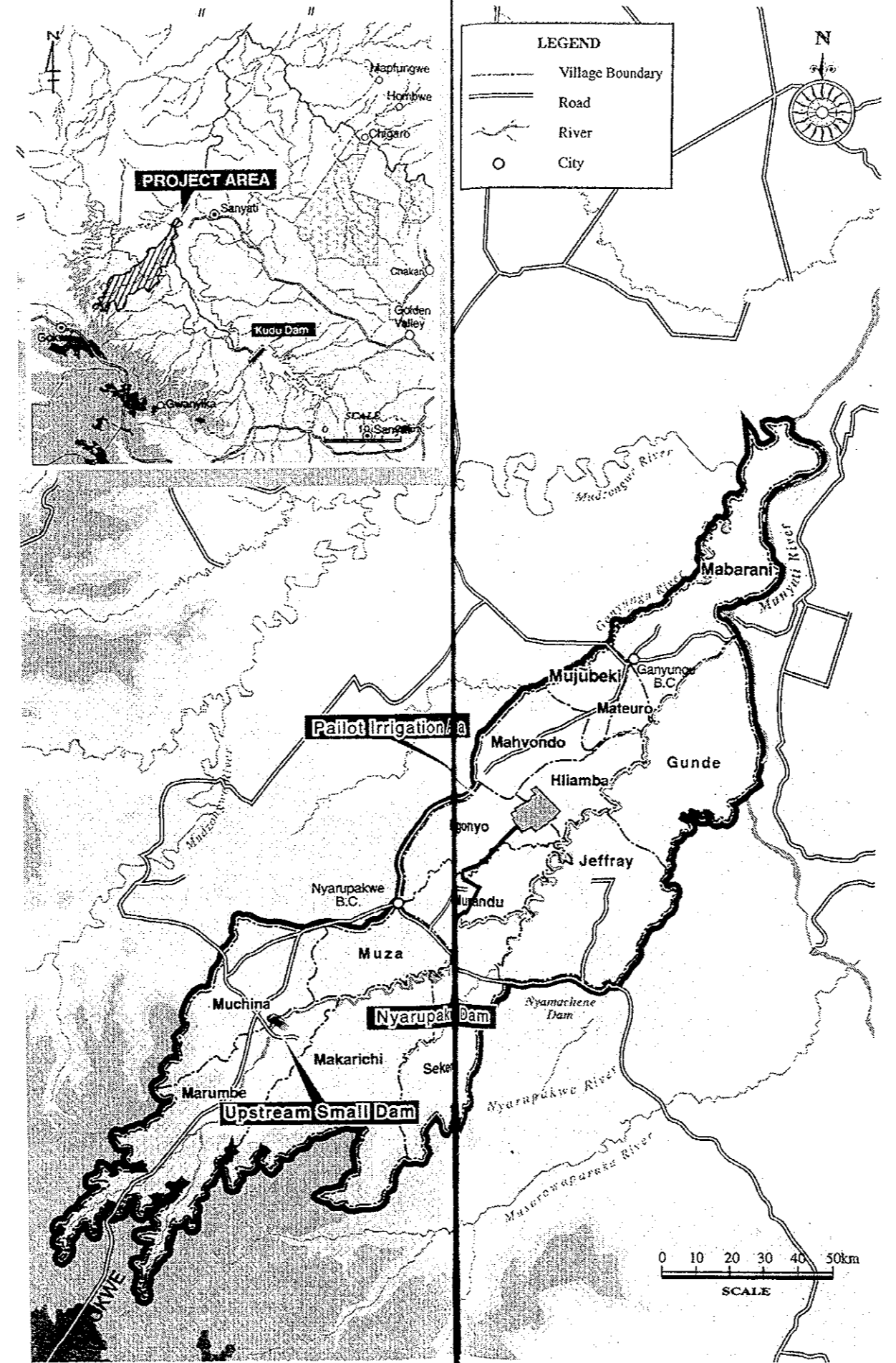
SECTION B-B



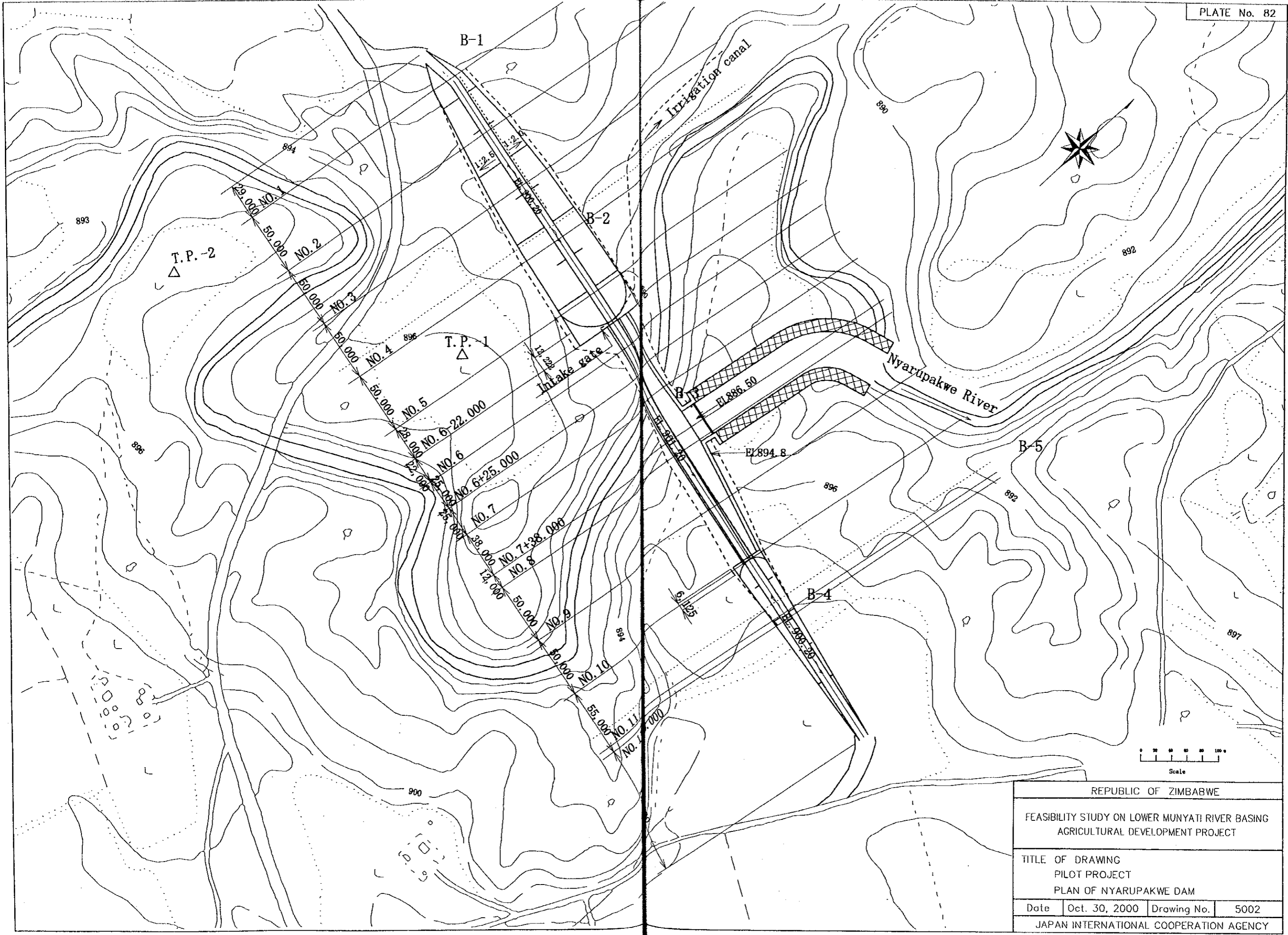
SECTION C-C



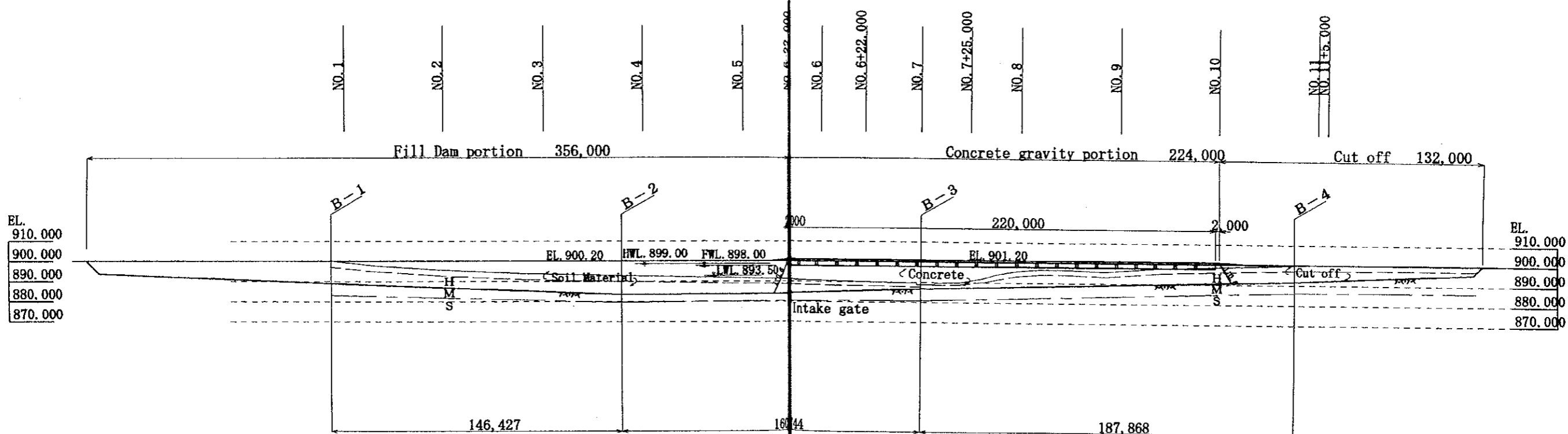
REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING CANAL RELATED STRUCTURE PUMP STATION (PUMP IRRIGATION)			
Date	Oct. 30, 2000	Drawing No.	4010
JAPAN INTERNATIONAL COOPERATION AGENCY			



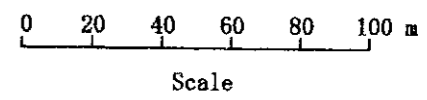
REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASING AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING PILOT PROJECT GENERAL PLAN OF PILOT PROJECT			
Date	Oct. 30, 2000	Drawing No.	5001
JAPAN INTERNATIONAL COOPERATION AGENCY			



REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASING AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING PILOT PROJECT PLAN OF NYARUPAKWE DAM			
Date	Oct. 30, 2000	Drawing No.	5002
JAPAN INTERNATIONAL COOPERATION AGENCY			



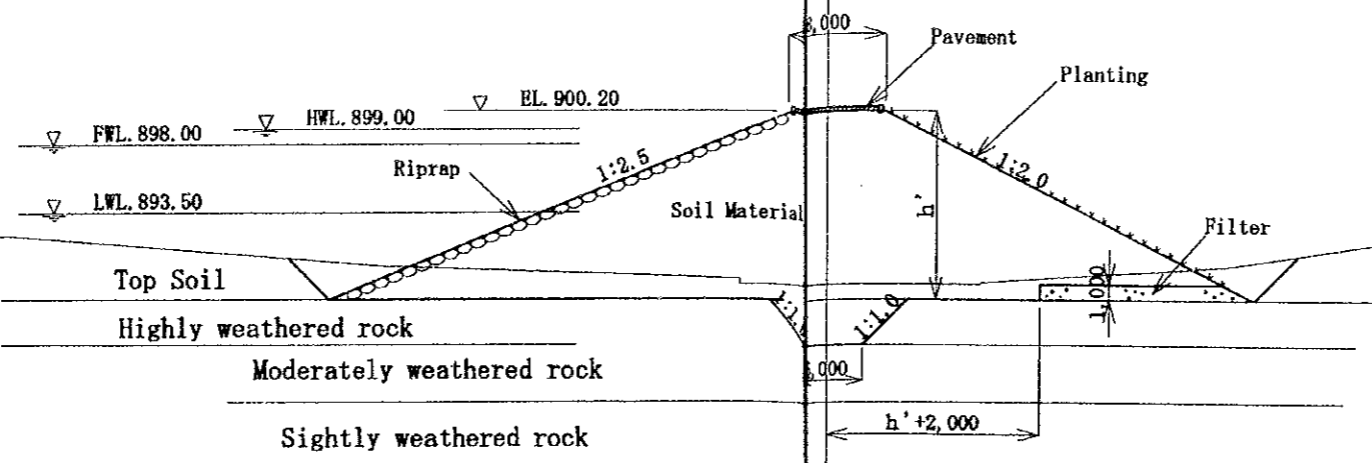
H : Highly weatherd rock
 M : Moderately weatherd rock
 S : Slightely weatherd rock



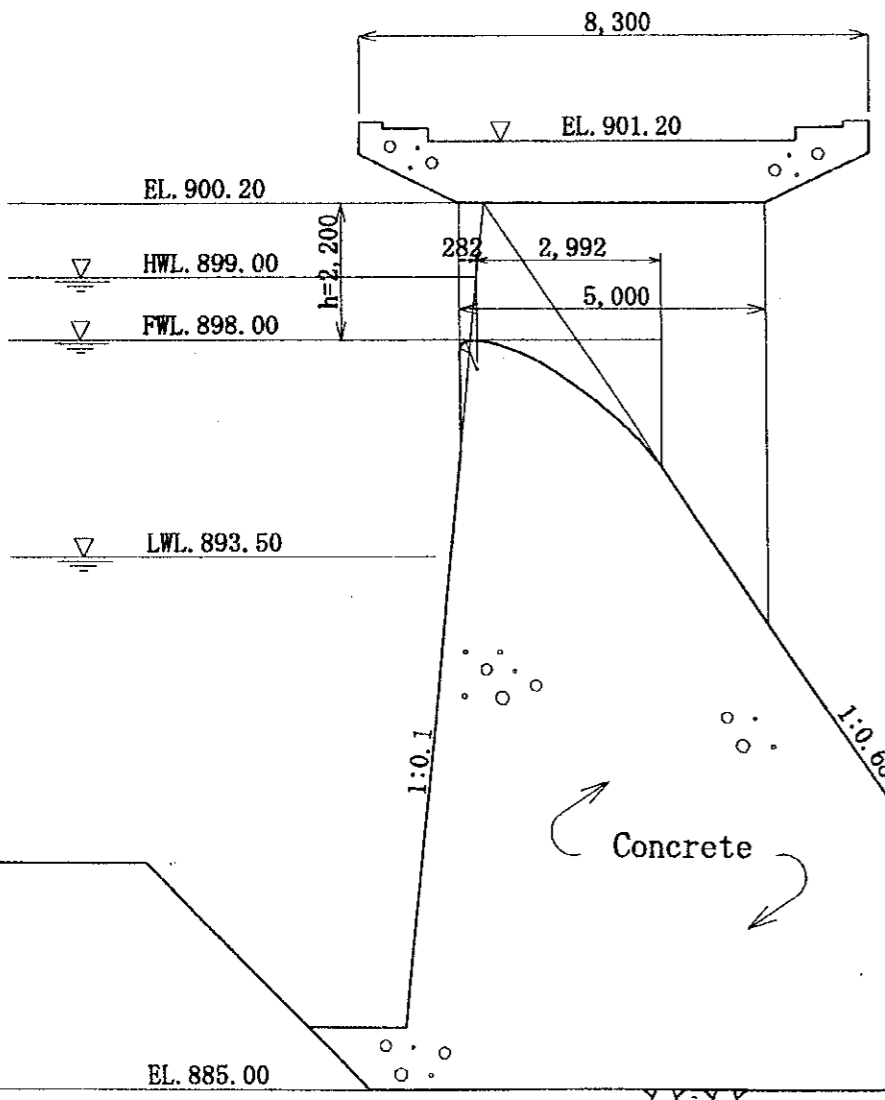
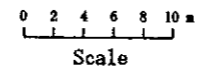
REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASING AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING PILOT PROJECT PROFILE OF NYARUPAKWE DAM AXIS			
Date	Oct. 30, 2000	Drawing No.	5003
JAPAN INTERNATIONAL COOPERATION AGENCY			

EL.
900.000
895.000
890.000
885.000
880.000

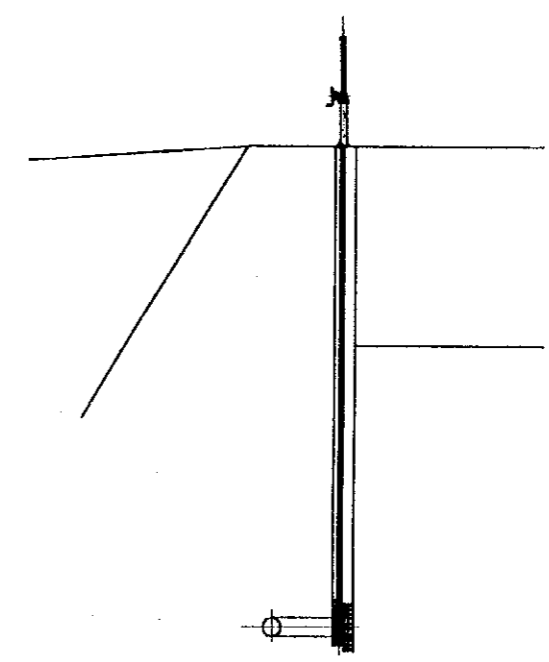
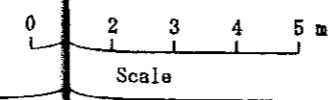
EL.
900.000
895.000
890.000
885.000
880.000



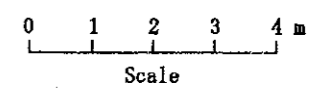
Fill Dam



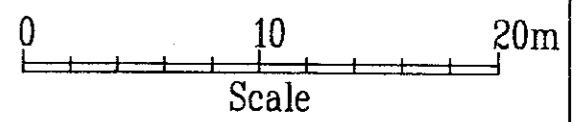
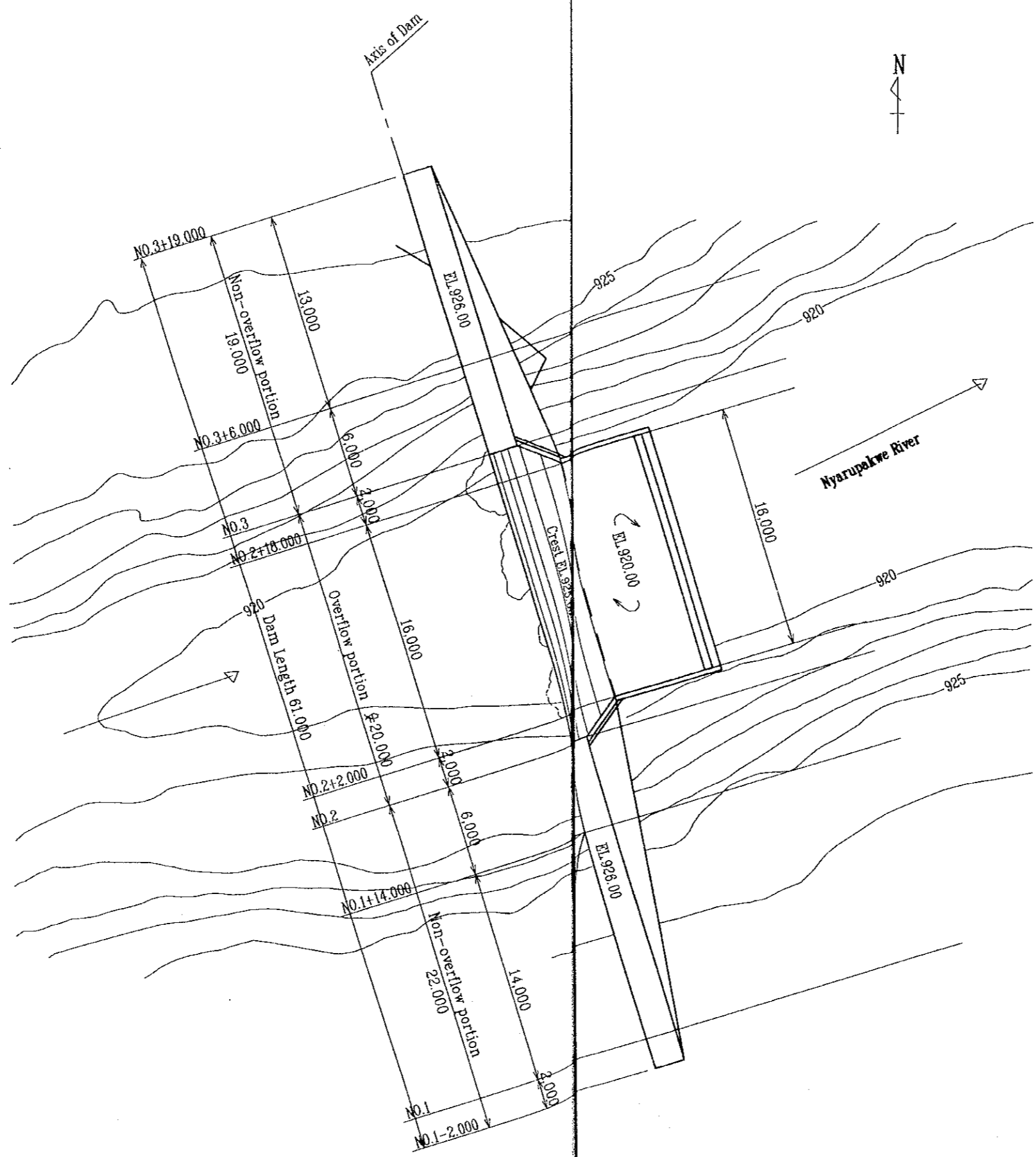
Concrete Gravity Dam



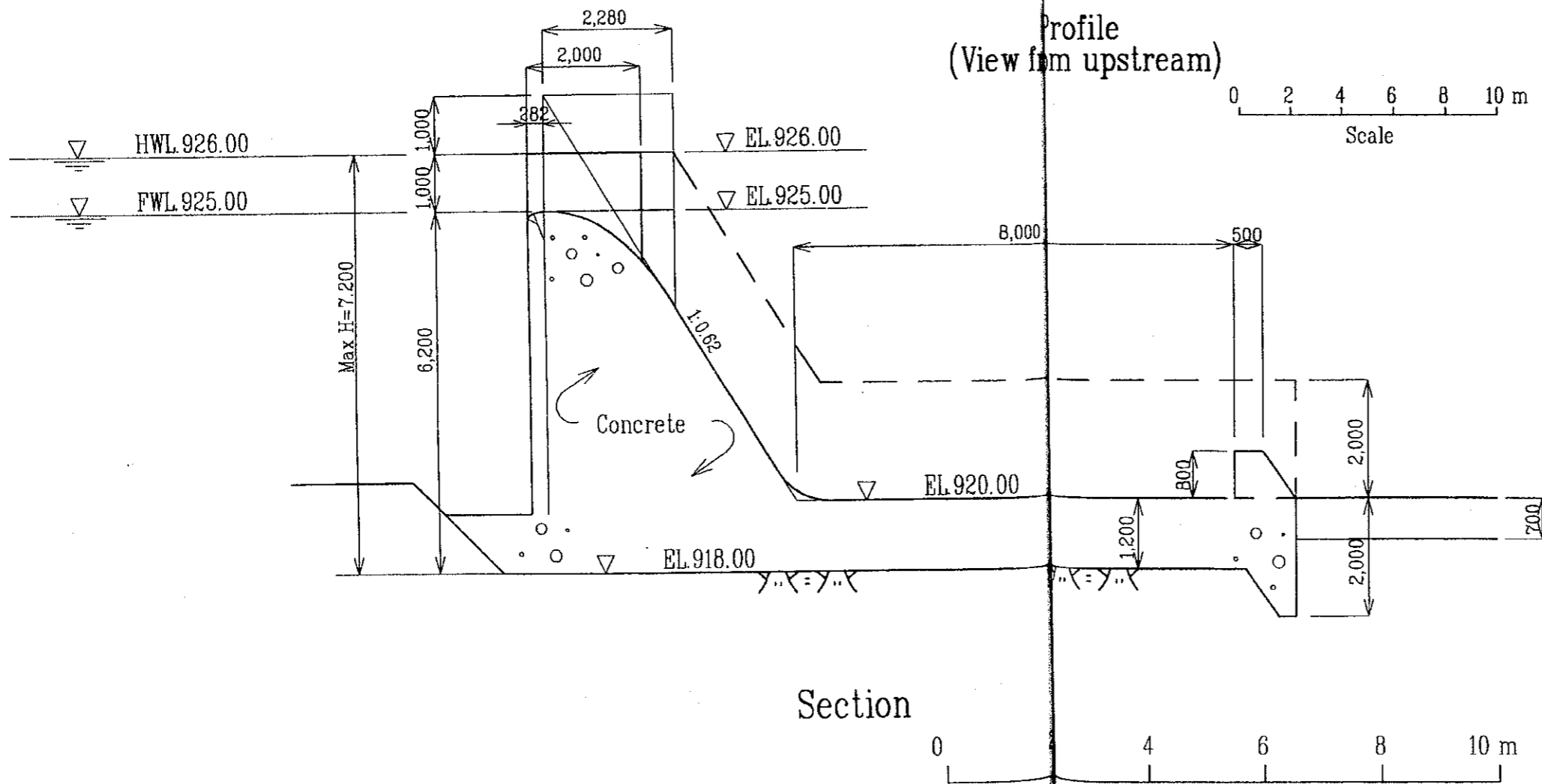
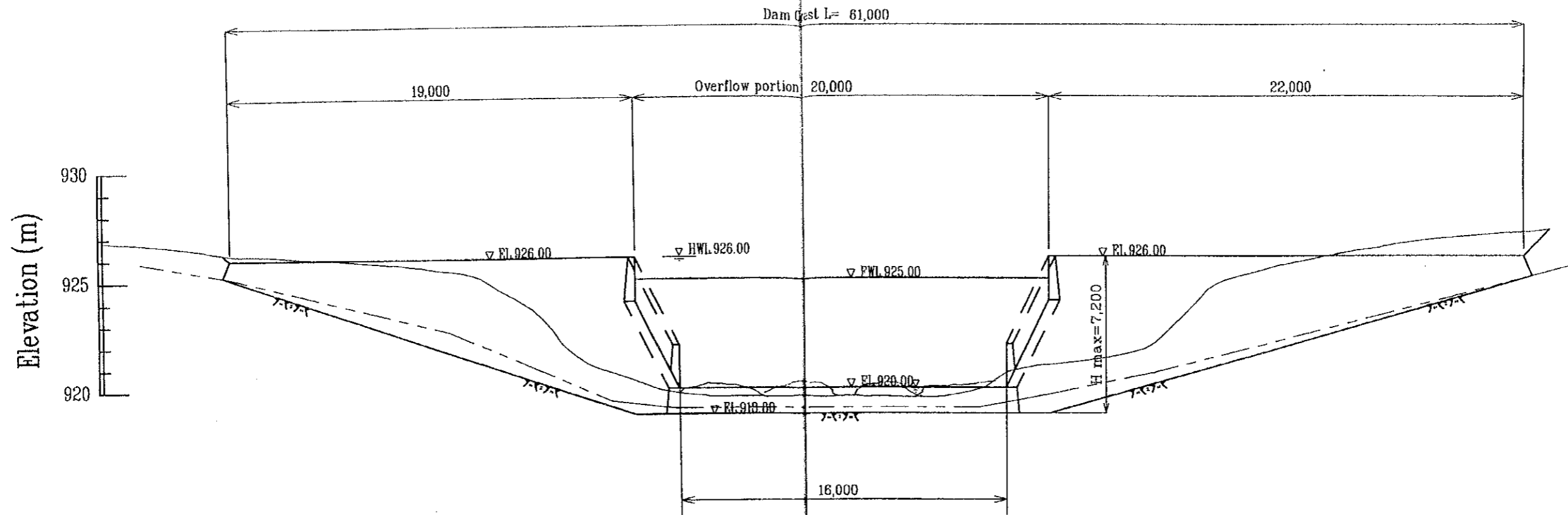
Intake gate



REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASING AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING PILOT PROJECT TYPICAL CROSS SECTION OF NYARUPAKWE DAM			
Date	Oct. 30, 2000	Drawing No.	5004
JAPAN INTERNATIONAL COOPERATION AGENCY			








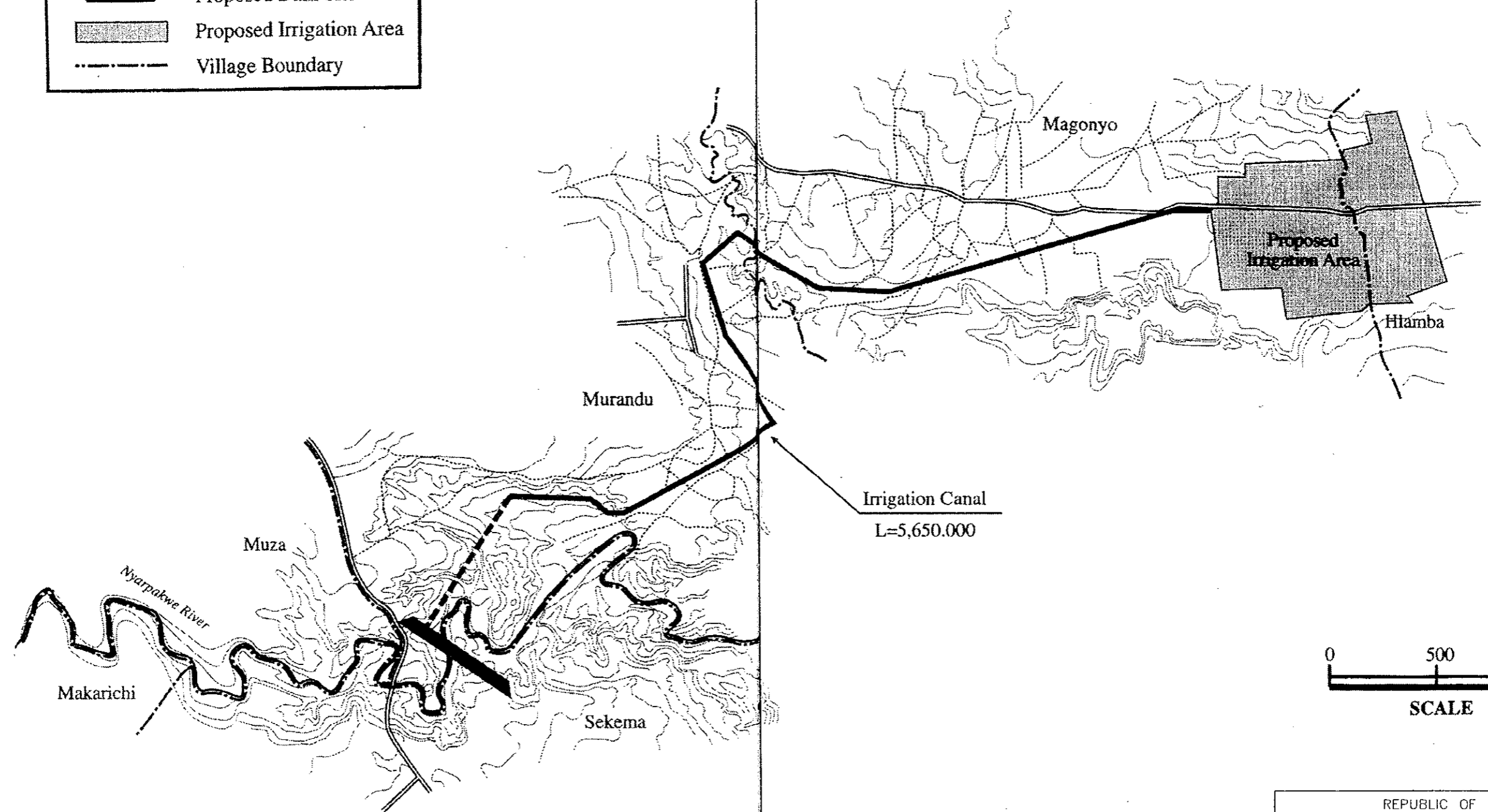
REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASING AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING PILOT PROJECT PLAN OF UPSTREAM SMALL DAM			
Date	OCT. 30, 2000	Drawing No.	5005
JAPAN INTERNATIONAL COOPERATION AGENCY			



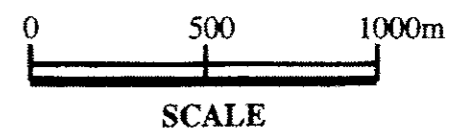
REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING PILOT PROJECT UPSTERAM SMALL DAM PROFILE AND SECTION			
Date	OCT. 30, 2000	Drawing No.	5006
JAPAN INTERNATIONAL COOPERATION AGENCY			

LEGEND

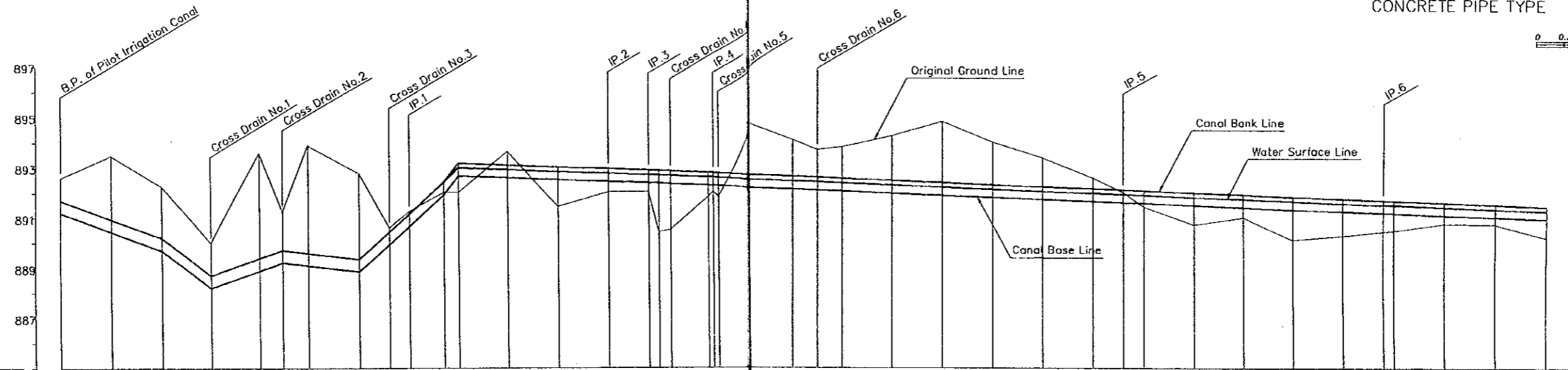
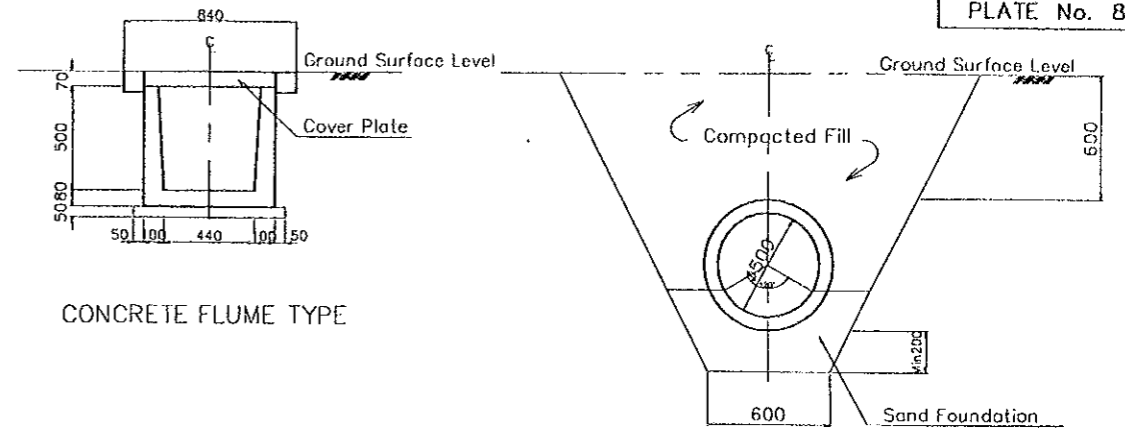
-  Proposed Pipe Line
-  Proposed Open Canal
-  Proposed Dam Site
-  Proposed Irrigation Area
-  Village Boundary



Irrigation Canal
L=5,650.000



REPUBLIC OF ZIMBABWE			
FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASING AGRICULTURAL DEVELOPMENT PROJECT			
TITLE OF DRAWING PILOT PROJECT PLAN OF IRRIGATION CANAL			
Date	Oct. 30, 2000	Drawing No.	5007
JAPAN INTERNATIONAL COOPERATION AGENCY			



CANAL TYPE	Pipe Line HL=800.00 m															Open Canal Q=0.085 m ³ /s															Open Canal L=4,850.00														
CANAL BANK ELEVATION																																													
WATER SURFACE ELEVATION																																													
CANAL BASE ELEVATION																																													
GROUND SURFACE ELEVATION																																													
REDUCE DISTANCE																																													
DISTANCE																																													
STATION No.																																													

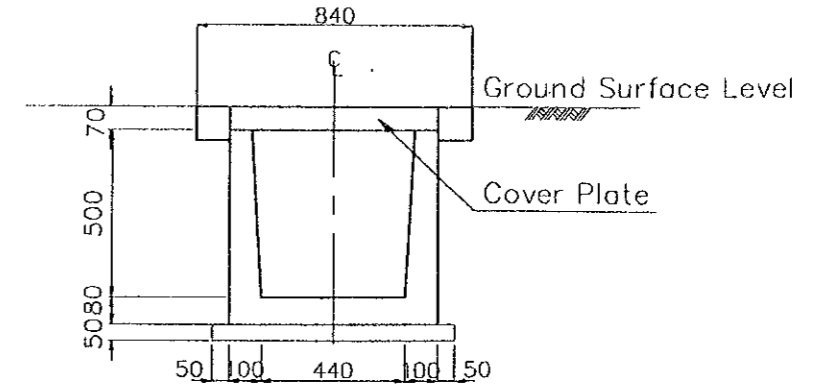
REPUBLIC OF ZIMBABWE

FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
PILOT PROJECT
PROFILE OF IRRIGATION CANAL (1/2)
(STA. No.0+0.00 - STA. No.3+0.00m)

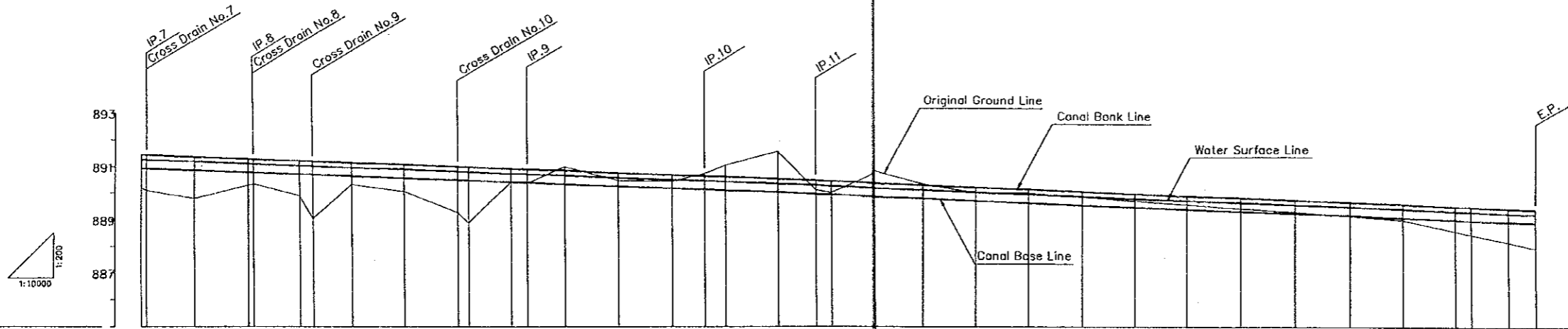
Date	Oct. 30, 2000	Drawing No.	5008
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JAPAN INTERNATIONAL COOPERATION AGENCY



CONCRETE FLUME TYPE

SCALE 1 : 20
0 0.2 0.4 0.6 0.8 1.0m.



CANAL TYPE	Open Canal = 4,850.00 m																																		
CANAL BANK ELEVATION	891.433	891.364	891.295	891.209	891.190	891.132	891.055	890.975	890.875	890.798	890.782	890.721	890.697	890.643	890.566	890.489	890.443	890.412	890.335	890.281	890.258	889.283	889.206	889.129	889.052	889.975	889.897	889.820	889.743	889.666	889.589	889.512	889.488	889.434	889.396
WATER SURFACE ELEVATION	891.253	891.184	891.099	891.029	891.010	890.952	890.875	890.798	890.782	890.721	890.697	890.643	890.566	890.489	890.443	890.412	890.335	890.281	890.258	889.103	889.026	889.949	889.872	889.795	889.717	889.640	889.563	889.486	889.409	889.332	889.308	889.254	889.216		
CANAL BASE ELEVATION	890.943	890.864	890.796	890.709	890.690	890.632	890.555	890.478	890.462	890.401	890.377	890.323	890.246	890.169	890.123	890.092	890.015	889.961	889.938	889.783	889.706	889.629	889.552	889.475	889.397	889.320	889.243	889.166	889.089	889.012	888.988	888.934	888.896		
GROUND SURFACE ELEVATION	890.700	889.800	890.300	889.900	889.050	890.320	890.050	889.250	888.890	890.400	890.350	890.970	890.470	890.440	890.710	891.030	891.530	890.100	890.000	890.330	890.000	890.000	889.880	889.710	889.570	889.430	889.290	889.140	889.000	888.580	888.460	888.170	887.950		
REDUCE DISTANCE	3000.00	3100.00	3200.00	3300.00	3325.00	3400.00	3500.00	3600.00	3620.00	3700.00	3730.00	3800.00	3900.00	4000.00	4060.00	4100.00	4200.00	4270.00	4300.00	4500.00	4600.00	4700.00	4800.00	4900.00	5000.00	5100.00	5200.00	5300.00	5400.00	5500.00	5530.00	5600.00	5650.00		
DISTANCE	100.00	90.00	100.00	90.00	25.00	75.00	100.00	100.00	20.00	90.00	30.00	70.00	100.00	100.00	60.00	40.00	100.00	70.00	30.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	30.00	70.00	50.00				
STATION No.	3+000	3+100	3+200	3+300	3+325	3+400	3+500	3+600	3+620	3+700	3+730	3+800	3+900	4+000	4+060	4+100	4+200	4+270	4+300	4+500	4+600	4+700	4+800	4+900	5+000	5+100	5+200	5+300	5+400	5+500	5+530	5+600	5+650		

REPUBLIC OF ZIMBABWE

FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
PILOT PROJECT
PROFILE OF IRRIGATION CANAL (2/2)
(STA. No.3+0.00 – STA. No.5+850 m)

Date Oct. 30, 2000 Drawing No. 5009

JAPAN INTERNATIONAL COOPERATION AGENCY

NET IRRIGATION AREA

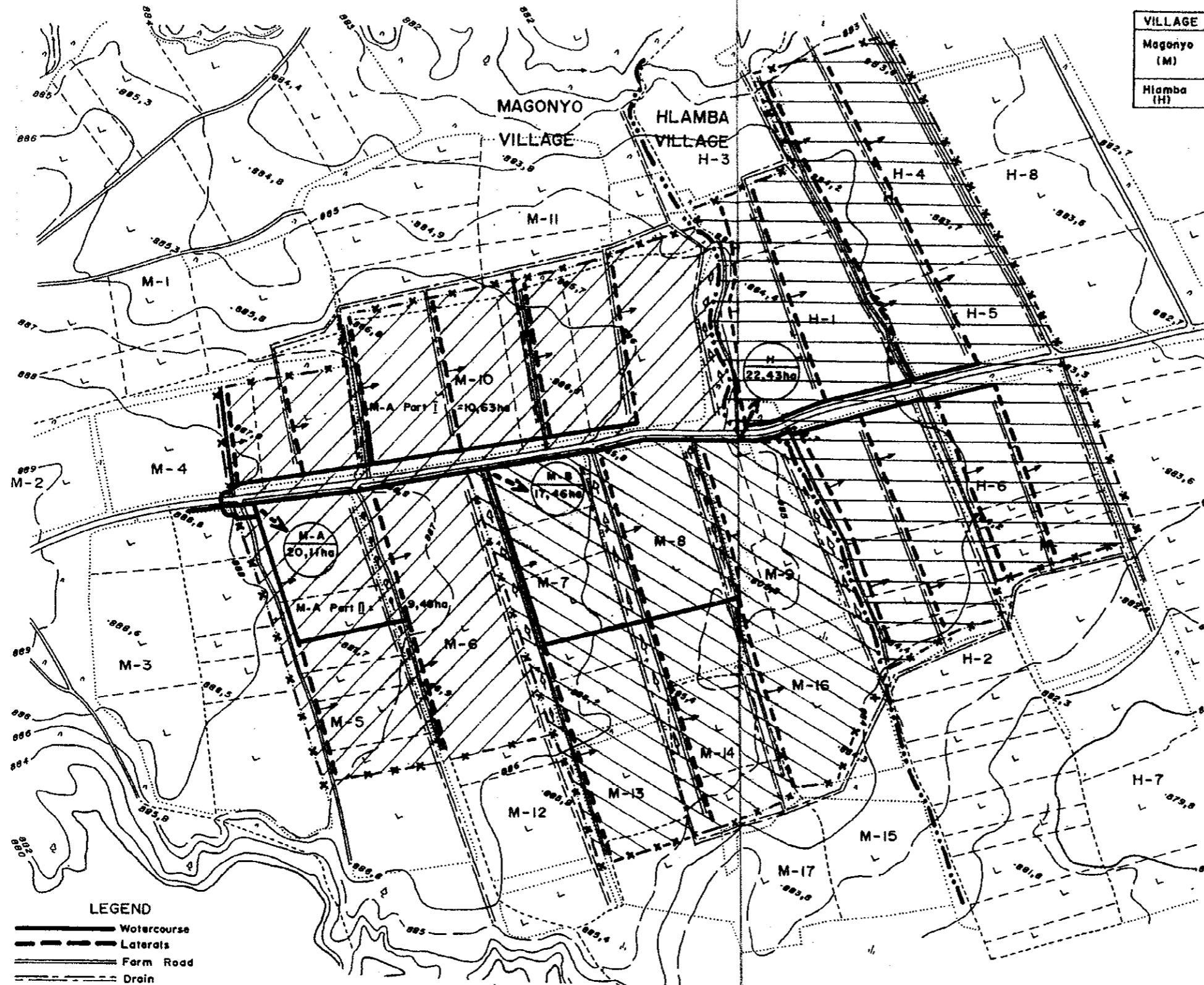
VILLAGE	AREA IN HECTARES	DISCHARGE IN L/S
Magonyo (M)	Section A = 20,11 Section B = 17,46	21,7 18,9
Hlamba (H)	22,13	24,2

IDENTIFIED AREA
MAGONYO VILLAGE

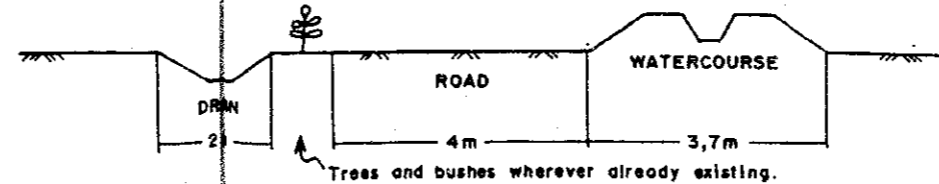
	Hectares
M-1	6,38
M-2	2,10
M-3	8,40
M-4	4,25
M-5	6,70
M-6	4,83
M-7	4,08
M-8	3,58
M-9	2,80
M-10	9,13
M-11	6,93
M-12	2,15
M-13	2,90
M-14	2,60
M-15	2,00
M-16	2,35
M-17	2,60
Total	73,78

HLAMBA VILLAGE

	Hectares
H-1	5,35
H-2	10,50
H-3	3,08
H-4	7,75
H-5	2,30
H-6	6,35
H-7	5,15
H-8	6,43
Total	46,91



TYPICAL CROSS-SECTION



REPUBLIC OF ZIMBABWE

FEASIBILITY STUDY ON LOWER MUNYATI RIVER BASIN
AGRICULTURAL DEVELOPMENT PROJECT

TITLE OF DRAWING
PILOT PROJECT
LAYOUT OF PILOT IRRIGATION AREA

Date | Oct. 30, 2000 | Drawing No. | 5010

JAPAN INTERNATIONAL COOPERATION AGENCY

JICA