

REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF
WATER RESOURCES DEVELOPMENT

FEASIBILITY STUDY
ON
THE K.C.C. IRRIGATION DEVELOPMENT PROJECT
(STAGE I)
VOLUME 4
DRAWINGS

JULY 1983

JAPAN INTERNATIONAL COOPERATION AGENCY

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DIRECTORATE GENERAL OF
WATER RESOURCES DEVELOPMENT

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ON
THE K-C-C IRRIGATION DEVELOPMENT PROJECT
(STAGE I)

VOLUME 4
DRAWINGS

JICA LIBRARY

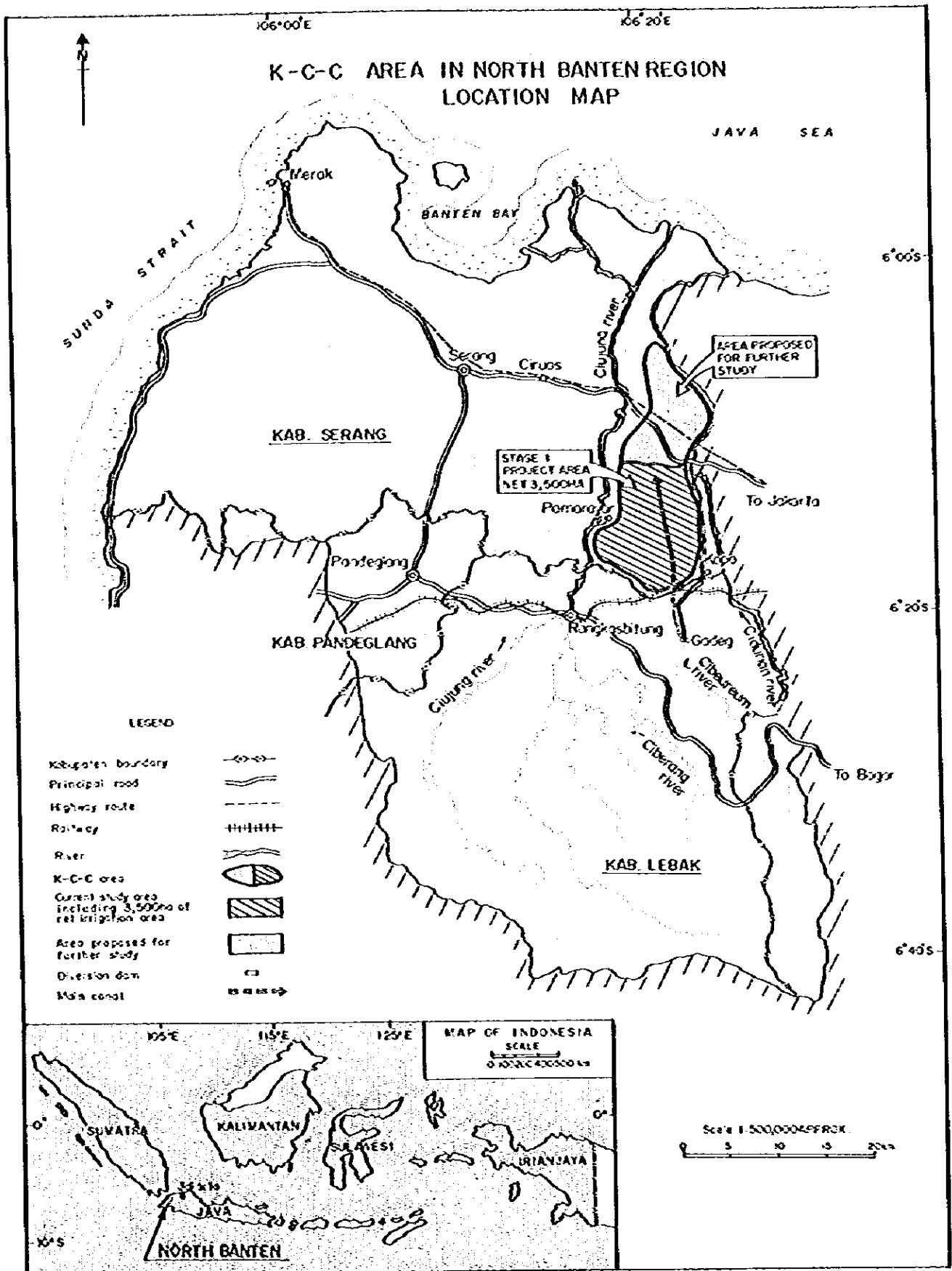


1031094(4)

JULY 1983

JAPAN INTERNATIONAL COOPERATION AGENCY

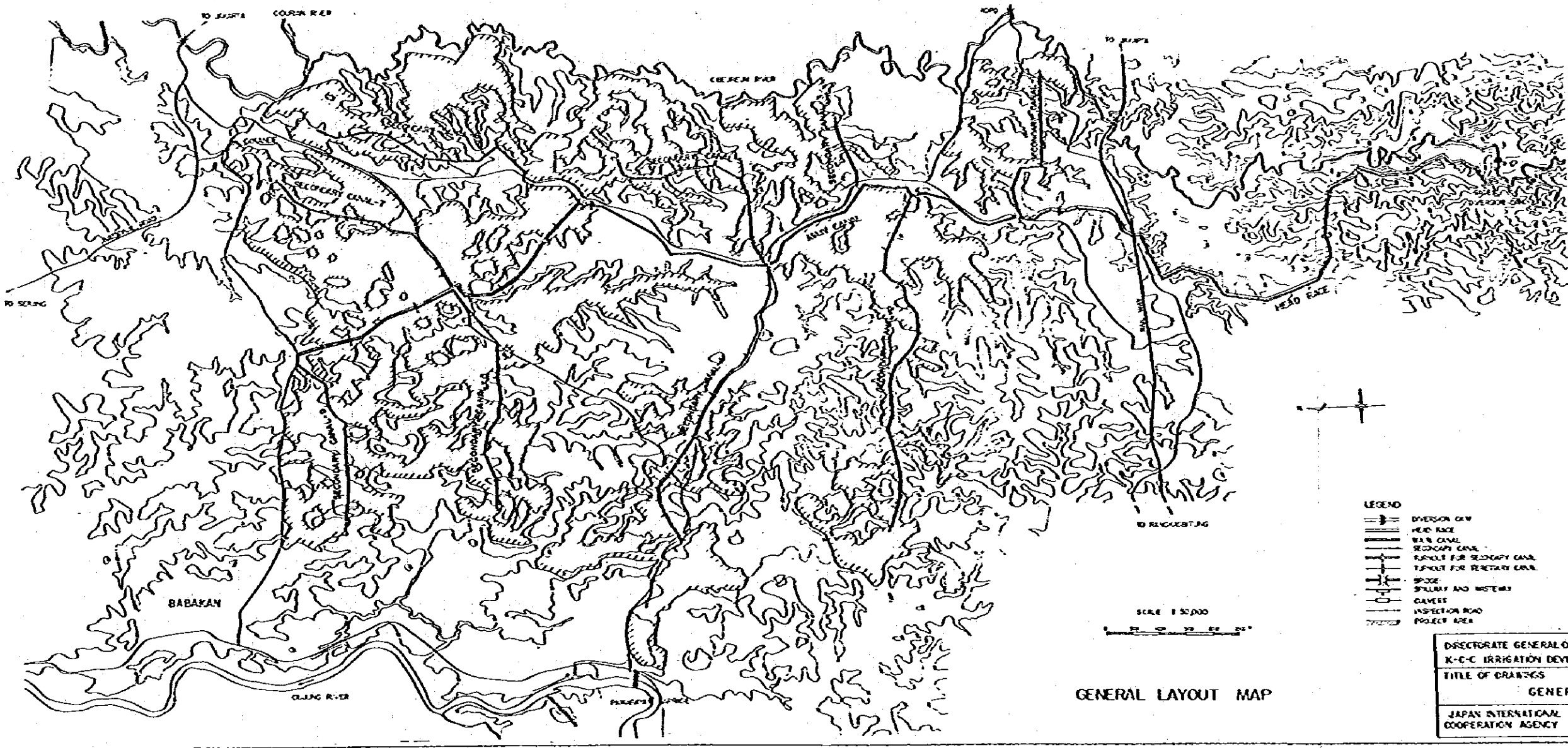
国際協力事業団	
受入 月日 84.9.26	108
登録No. 9153	83.3
	AFT



K-C-C IRRIGATION DEVELOPMENT PROJECT

LIST OF DRAWINGS

<u>PLATE NO.</u>	<u>DWG. NO.</u>	<u>TITLE</u>
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3	II-02	SECTION OF DAM AND SPILLWAY
4	III-01	PLAN OF INTAKE
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6	IV-02	MAIN CANAL (2)
7	IV-03	MAIN CANAL (3)
8	IV-04	MAIN CANAL (4)
9	IV-05	MAIN CANAL (5)
10	IV-06	MAIN CANAL (6)
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13	V-02	SECONDARY CANAL-2
14	V-03	SECONDARY CANAL-3
15	V-04	SECONDARY CANAL-4
16	V-05	SECONDARY CANAL-5
17	V-06	SECONDARY CANAL-6
18	V-07	SECONDARY CANAL-7
19	V-08	SECONDARY CANAL-8
20	V-09	SECONDARY CANAL-9
21	VI-01	SYPHON
22	VI-02	CHECK GATE
23	VI-03	TURNOUT
24	VI-04	CULVERT
25	VI-05	BRIDGE, SPILLWAY AND WASTEWAY
26	VI-06	CROSS DRAIN
27	VI-07	TERTIARY BOX AND DROP
28	VII-01	NORTH BOUNDARY OF PROJECT AREA
29	I-02	GENERAL LAYOUT MAP-2

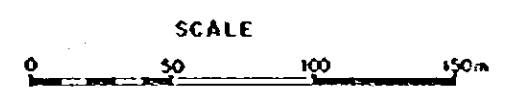
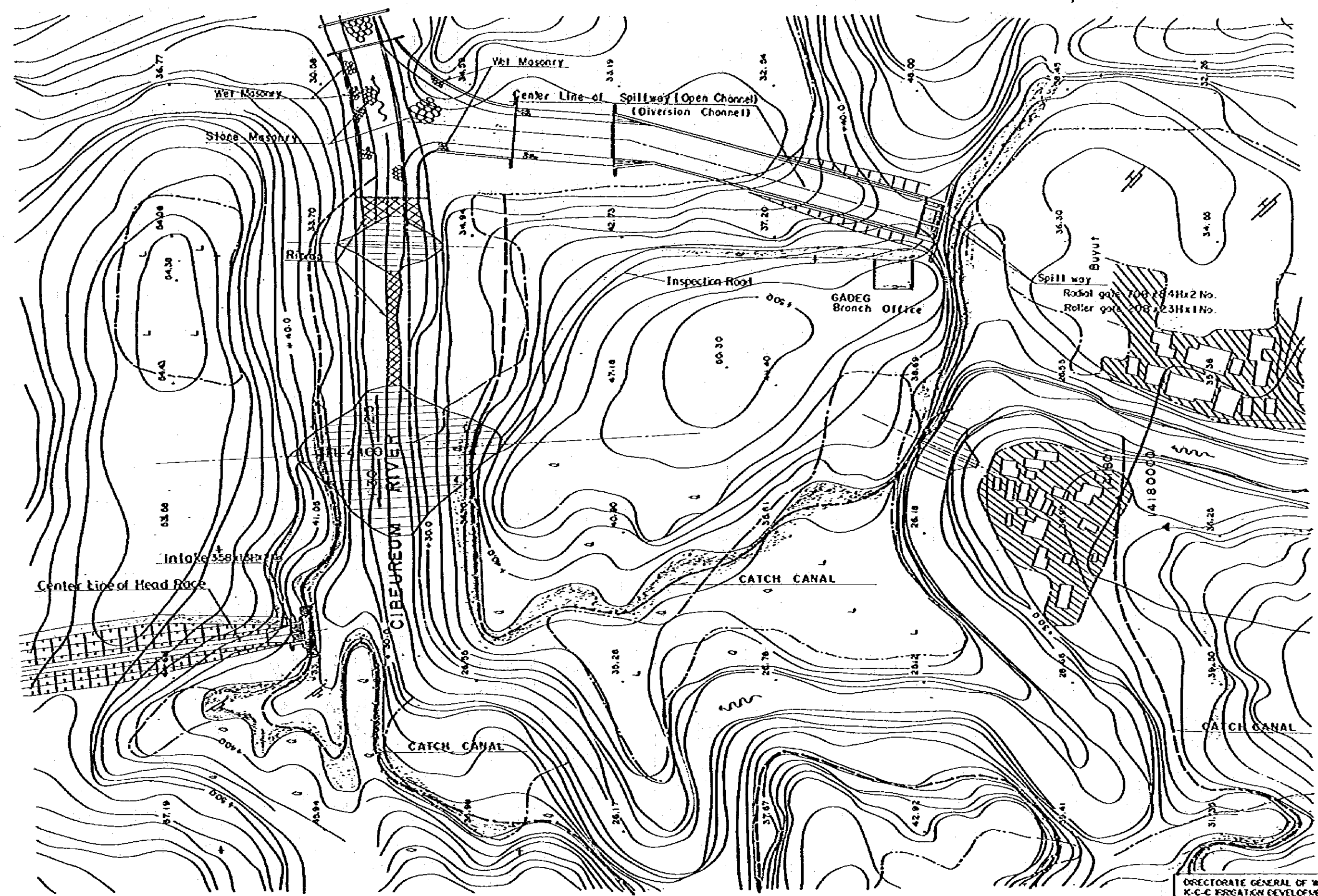
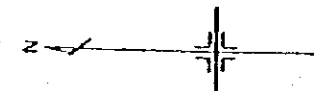


- LEGEND
- DIVERSION DAM
 - HEAD RACE
 - MAIN CANAL
 - SECONDARY CANAL
 - TUNNEL FOR SECONDARY CANAL
 - TUNNEL FOR SECONDARY CANAL
 - BRIDGE
 - SPILLWAY AND WEIRWAY
 - GAVES
 - INSPECTION ROAD
 - PROJECT AREA

SCALE 1:50,000

GENERAL LAYOUT MAP

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT	
K-C-C IRRIGATION DEVELOPMENT PROJECT	
TITLE OF DRAWING	
GENERAL LAYOUT MAP - I	
JAPAN INTERNATIONAL COOPERATION AGENCY	TOKYO
198.85.	1-01

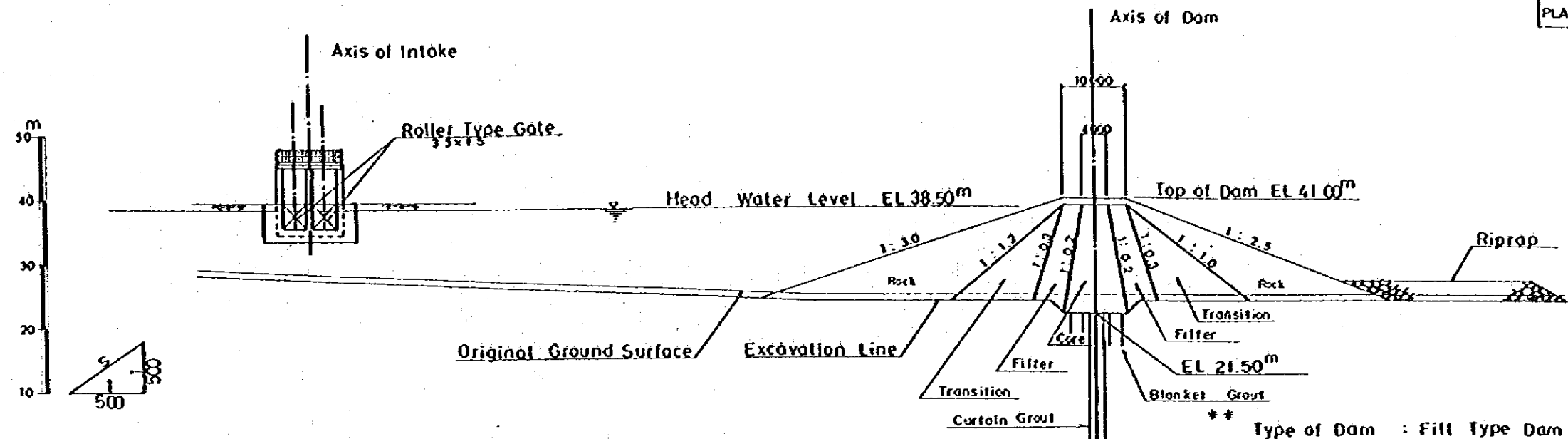


DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
K-C-C IRRIGATION DEVELOPMENT PROJECT

TITLE OF DRAWINGS
PLAN OF PROPOSED DIVERSION DAM AND
RELATED STRUCTURES

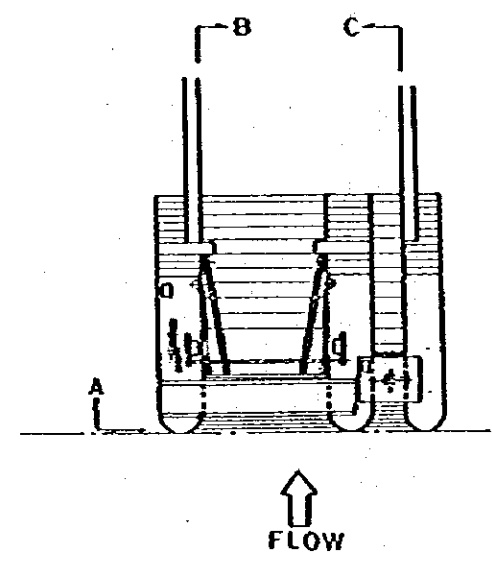
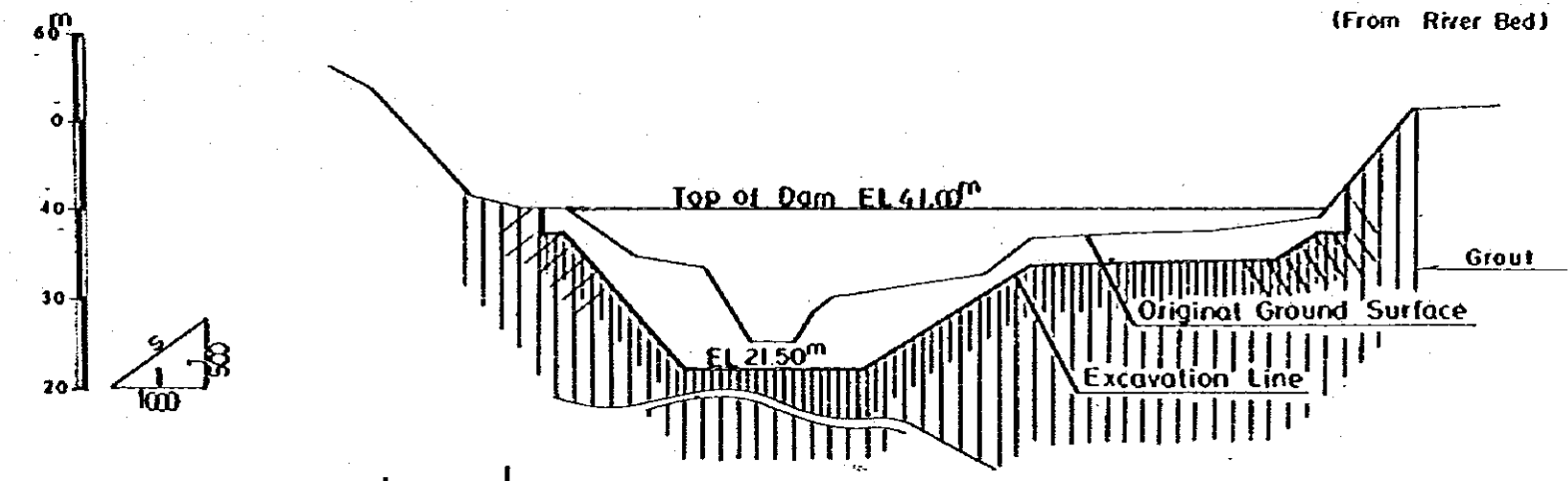
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO

DWG. NO.
I - 01

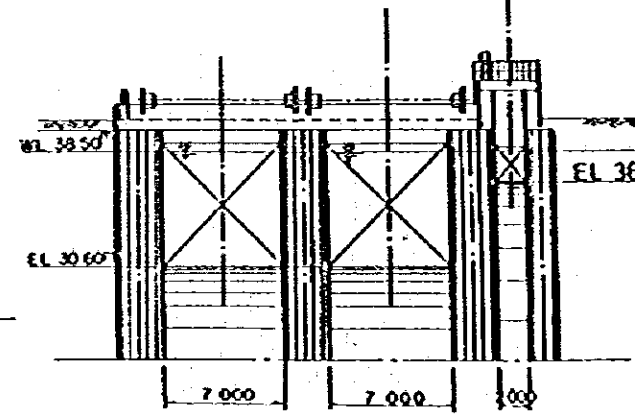


TYPICAL CROSS SECTION OF DAM

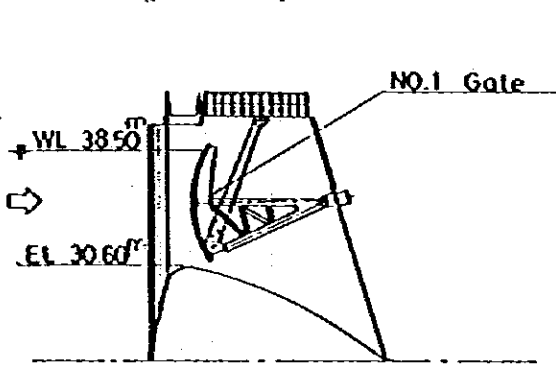
Type of Dam : Fill Type Dam
 Length of Dam : 160.0^m
 Height of Dam : 16.0^m
 (From River Bed)



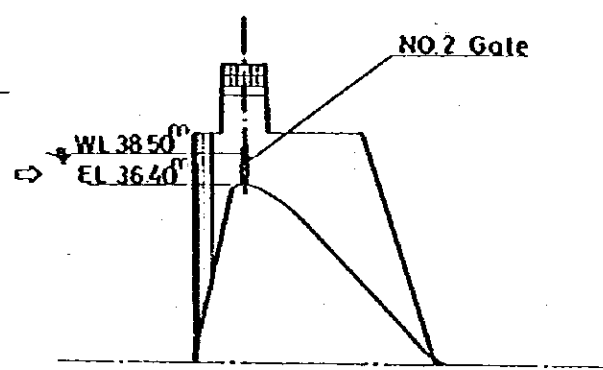
PLAN



SECTION A-A



SECTION B-B



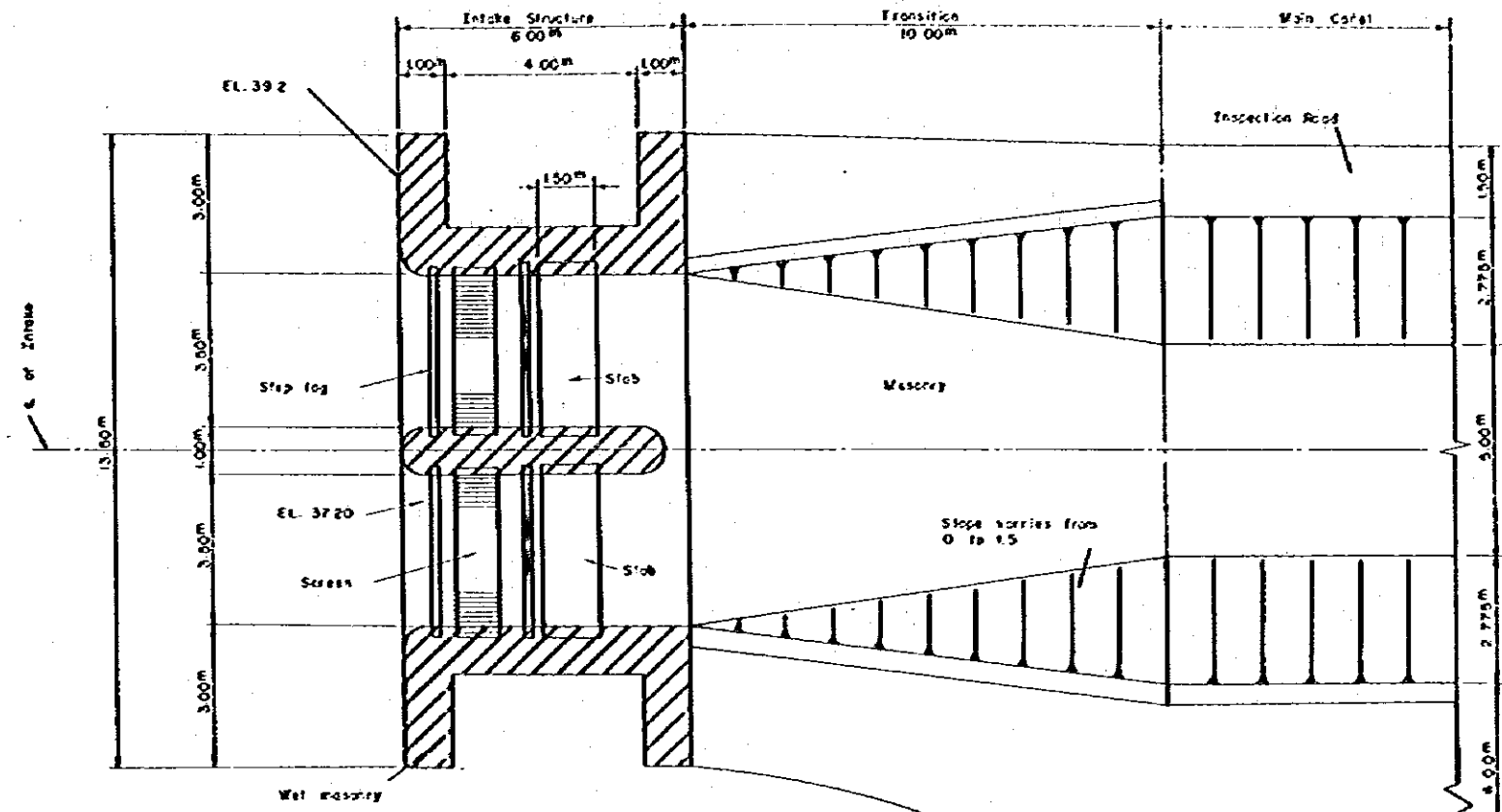
SECTION C-C

NO.1 Gate : Radial Gate 8.0^m x 8.4^m
 NO.2 Gate : Roller Type Gate 2.0^m x 2.4^m

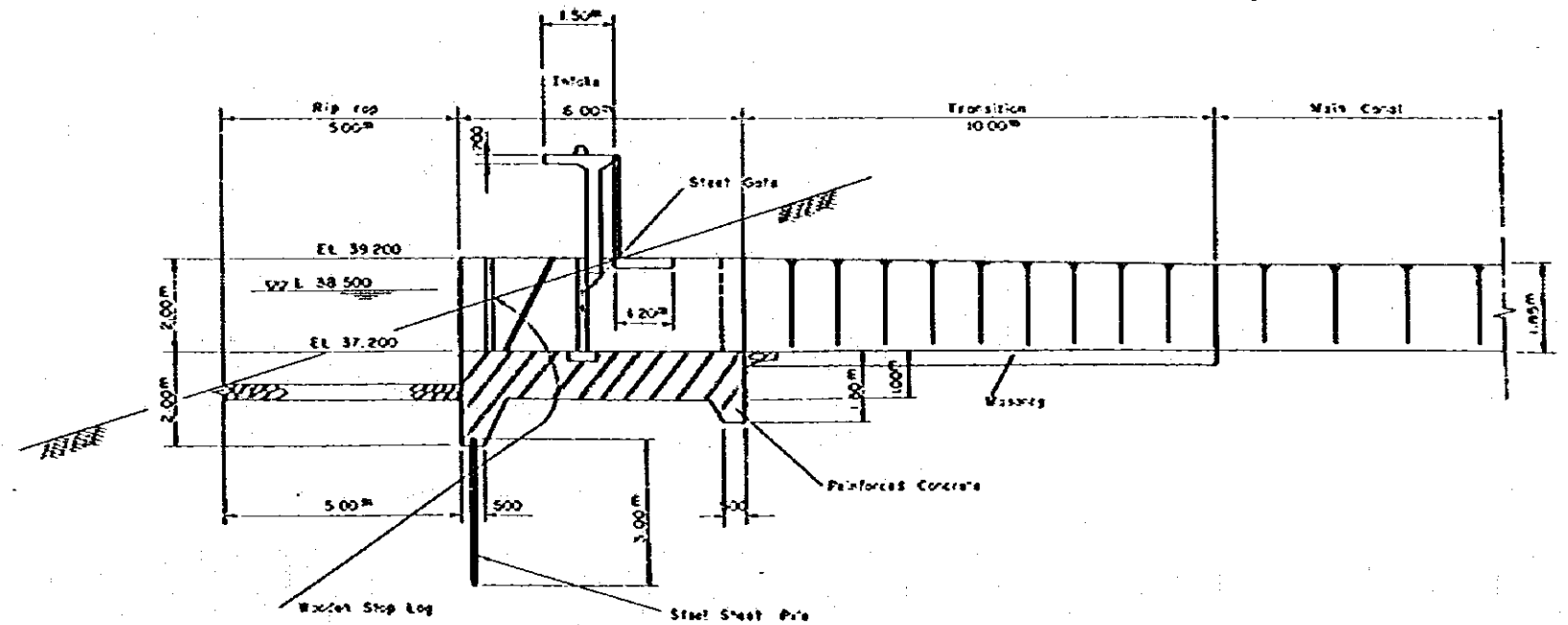
SPILLWAY GATES

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT K-C-C IRRIGATION DEVELOPMENT PROJECT	
TITLE OF DRAWINGS SECTION OF DAM AND SPILLWAY	
JAPAN INTERNATIONAL COOPERATION AGENCY	TOKYO
CWS. NO. R-02	

PLAN OF INTAKE
S=1:100



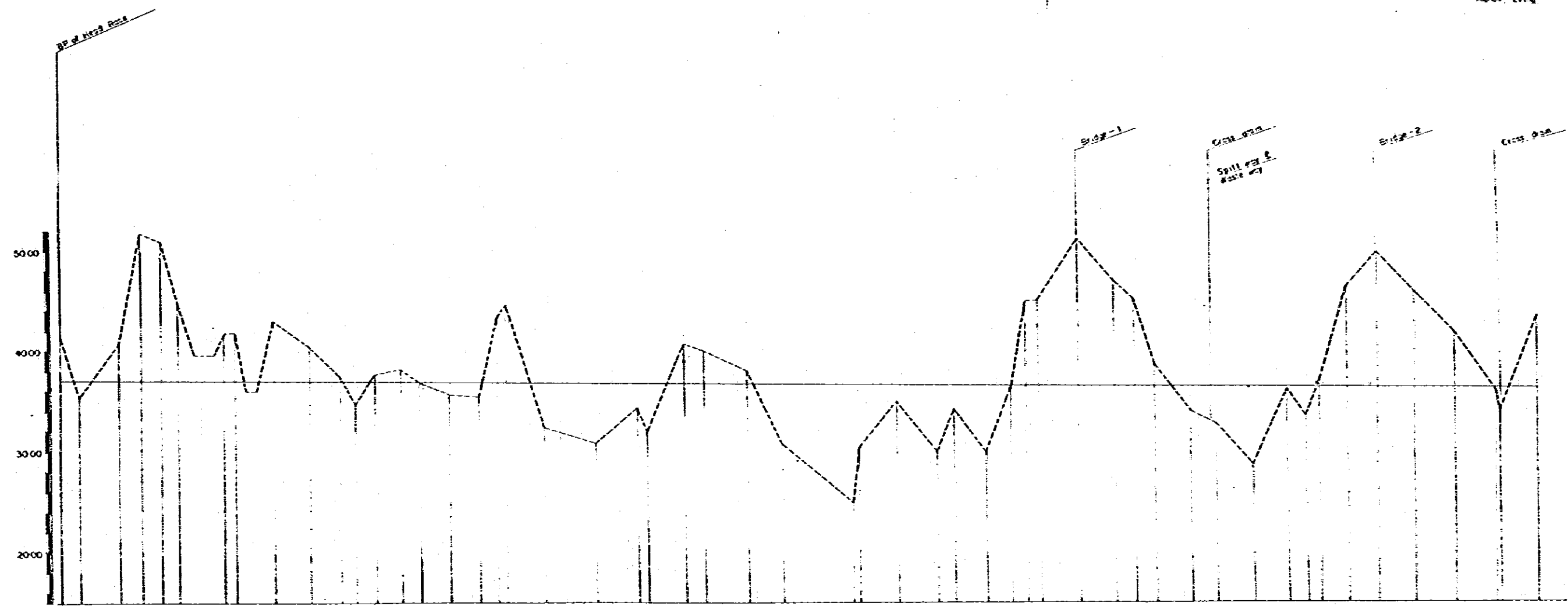
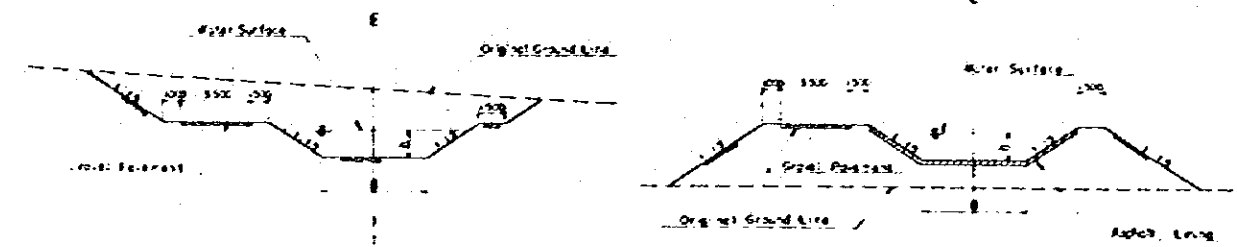
PROFILE OF INTAKE
S=1:100



DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT K-C-C IRRIGATION DEVELOPMENT PROJECT		
TITLE OF DRAWINGS PLAN OF INTAKE		
JAPAN INTERNATIONAL COOPERATION AGENCY	TOKYO	DWG. NO. II - 01

COOPERATE GENERAL OF WATER RESOURCES DEVELOPMENT
 R.C.C. EFFICIENCY DEVELOPMENT PROJECT
 TITLE OF DRAWING
 MAIN CANAL (11)
 JAPAN INTERNATIONAL
 COOPERATION AGENCY
 1964
 CASE NO.
 M-01

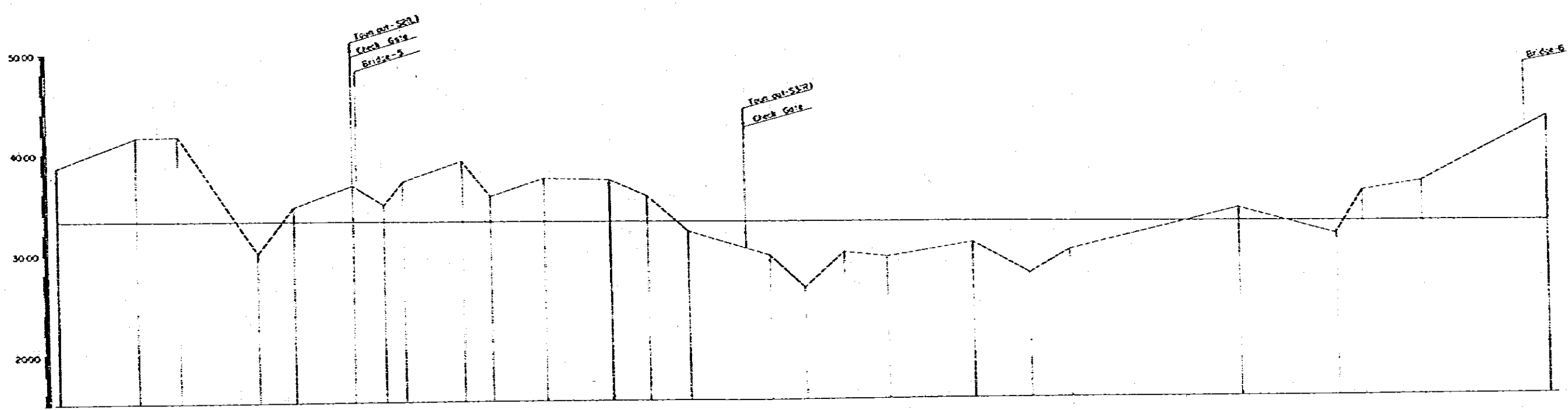
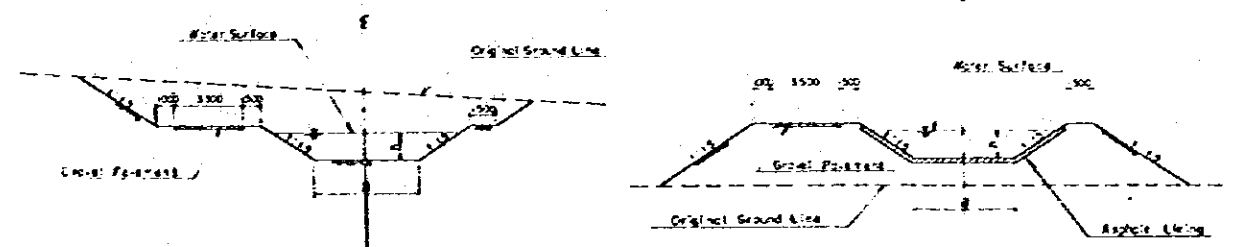
TYPICAL CROSS SECTION



CANAL BASE ELEVATION	37.00	36.00	35.00	34.00	33.00	32.00	31.00	30.00	29.00	28.00	27.00	26.00	25.00	24.00	23.00	22.00	21.00	20.00	19.00	18.00	17.00	16.00	15.00	14.00	13.00	12.00	11.00	10.00	9.00	8.00	7.00	6.00	5.00	4.00	3.00	2.00	1.00	0.00
WATER SURFACE ELEVATION	37.00	36.00	35.00	34.00	33.00	32.00	31.00	30.00	29.00	28.00	27.00	26.00	25.00	24.00	23.00	22.00	21.00	20.00	19.00	18.00	17.00	16.00	15.00	14.00	13.00	12.00	11.00	10.00	9.00	8.00	7.00	6.00	5.00	4.00	3.00	2.00	1.00	0.00
GROUND SURFACE ELEVATION	37.00	36.00	35.00	34.00	33.00	32.00	31.00	30.00	29.00	28.00	27.00	26.00	25.00	24.00	23.00	22.00	21.00	20.00	19.00	18.00	17.00	16.00	15.00	14.00	13.00	12.00	11.00	10.00	9.00	8.00	7.00	6.00	5.00	4.00	3.00	2.00	1.00	0.00
REDUCED DISTANCE	0.00	48.82	100.00	142.67	220.00	284.84	320.00	340.00	375.00	387.00	410.00	420.00	430.00	440.00	450.00	460.00	470.00	480.00	490.00	500.00	510.00	520.00	530.00	540.00	550.00	560.00	570.00	580.00	590.00	600.00	610.00	620.00	630.00	640.00	650.00	660.00	670.00	680.00
STATIONS	0+00	0+48.82	1+00.00	1+42.67	2+20.00	2+84.84	3+20.00	3+40.00	3+75.00	3+87.00	4+10.00	4+20.00	4+30.00	4+40.00	4+50.00	4+60.00	4+70.00	4+80.00	4+90.00	5+00.00	5+10.00	5+20.00	5+30.00	5+40.00	5+50.00	5+60.00	5+70.00	5+80.00	5+90.00	6+00.00	6+10.00	6+20.00	6+30.00	6+40.00	6+50.00	6+60.00	6+70.00	6+80.00

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
 I.R.C. IRRIGATION DEVELOPMENT PROJECT
 TITLE OF DRAWING: MAIN CANAL (4)
 JAPAN INTERNATIONAL COOPERATION AGENCY: TOKYO
 CAS NO: M-04

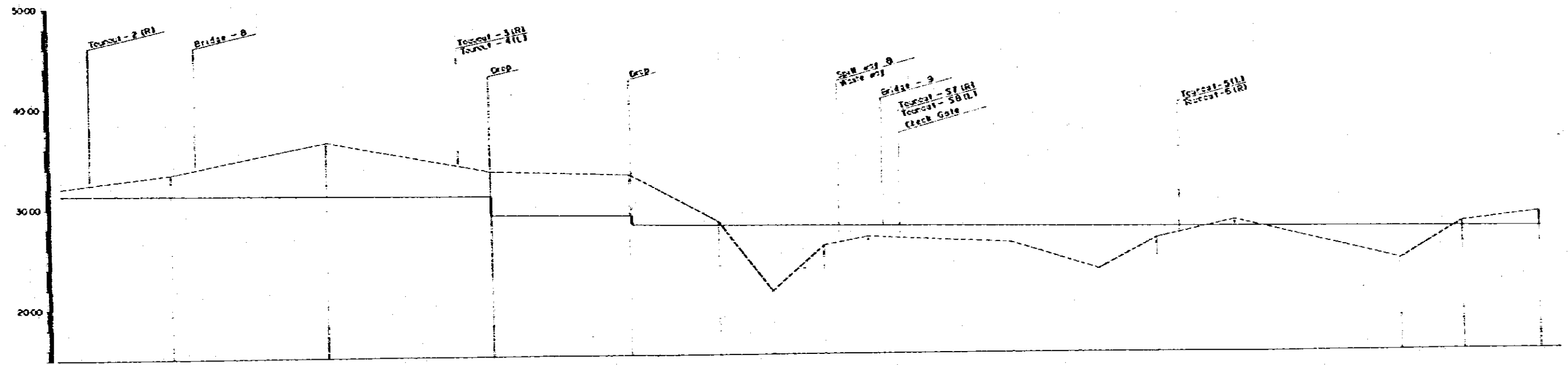
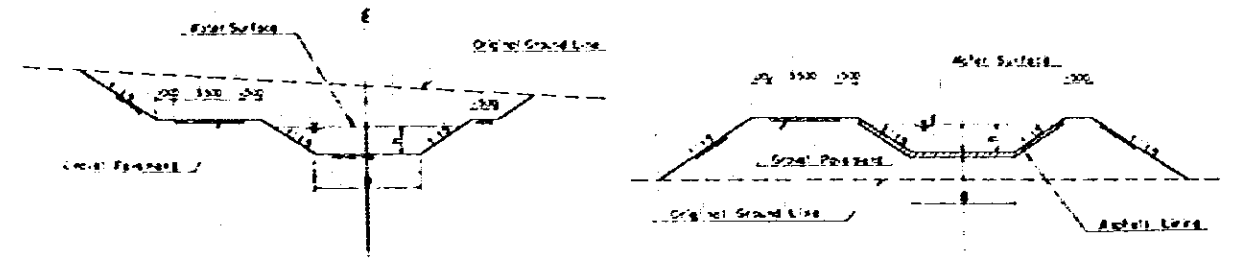
TYPICAL CROSS SECTION



CANAL BASE ELEVATION	3285	3286	3287	3288	3289	3290	3291	3292	3293	3294	3295	3296	3297	3298	3299	3300	3301	3302	3303	3304	3305	3306	3307	3308	3309	3310	3311	3312	3313	3314	3315	3316	3317	3318	3319	3320	3321	3322																																		
WATER SURFACE ELEVATION	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400																																		
GROUND SURFACE ELEVATION	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400																																		
REDUCED DISTANCE	074026	080000	086000	092000	098000	104000	110000	116000	122000	128000	134000	140000	146000	152000	158000	164000	170000	176000	182000	188000	194000	200000	206000	212000	218000	224000	230000	236000	242000	248000	254000	260000	266000	272000	278000	284000	290000	296000	302000	308000	314000	320000	326000	332000	338000	344000	350000	356000	362000	368000	374000	380000	386000	392000	398000	404000	410000	416000	422000	428000	434000	440000	446000	452000	458000	464000	470000	476000	482000	488000	494000	500000
STATIONS	1+074	1+080	1+086	1+092	1+098	1+104	1+110	1+116	1+122	1+128	1+134	1+140	1+146	1+152	1+158	1+164	1+170	1+176	1+182	1+188	1+194	1+200	1+206	1+212	1+218	1+224	1+230	1+236	1+242	1+248	1+254	1+260	1+266	1+272	1+278	1+284	1+290	1+296	1+302	1+308	1+314	1+320	1+326	1+332	1+338	1+344	1+350	1+356	1+362	1+368	1+374	1+380	1+386	1+392	1+398	1+404	1+410	1+416	1+422	1+428	1+434	1+440	1+446	1+452	1+458	1+464	1+470	1+476	1+482	1+488	1+494	1+500

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
 K-C-C IRRIGATION DEVELOPMENT PROJECT
 TITLE OF DRAWING
 MAIN CANAL (G)
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO CAS NO. W-06

TYPICAL CROSS SECTION

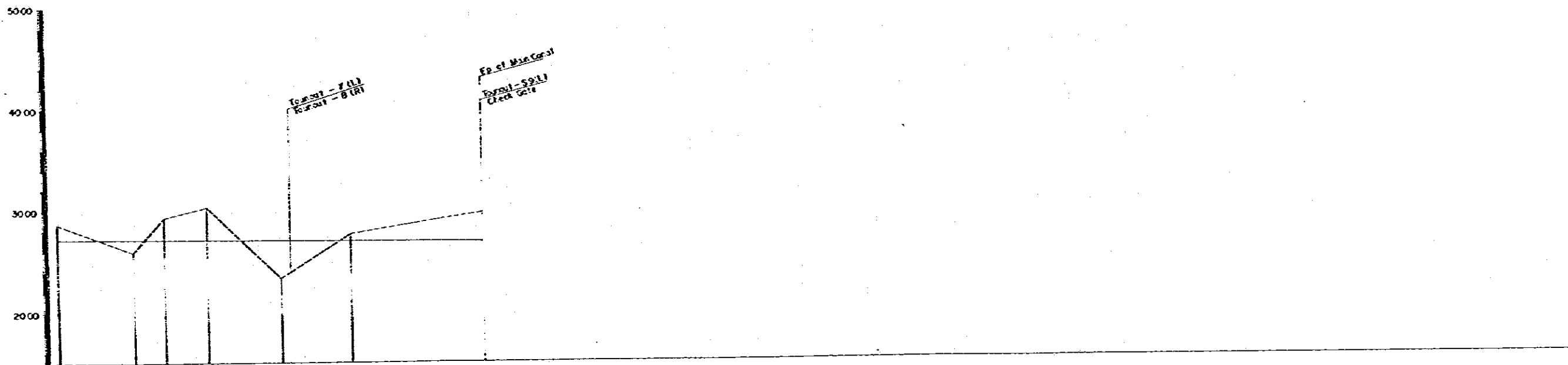


CANAL BASE ELEVATION	18000.00	18100.00	18200.00	18300.00	18400.00	18500.00	18600.00	18700.00	18800.00	18900.00	19000.00	19100.00	19200.00	19300.00	19400.00	19500.00	19600.00	19700.00	19800.00	19900.00	20000.00	20100.00	20200.00	20300.00	20400.00	20500.00	20600.00	20700.00	20800.00	20900.00	21000.00	21100.00	21200.00	21300.00	21400.00	21500.00	21600.00	21627.00			
WATER SURFACE ELEVATION	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10		
GROUND SURFACE ELEVATION	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	27.10	
REDUCED DISTANCE	0.00	100.00	200.00	300.00	400.00	500.00	600.00	700.00	800.00	900.00	1000.00	1100.00	1200.00	1300.00	1400.00	1500.00	1600.00	1700.00	1800.00	1900.00	2000.00	2100.00	2200.00	2300.00	2400.00	2500.00	2600.00	2700.00	2800.00	2900.00	3000.00	3100.00	3200.00	3300.00	3400.00	3500.00	3600.00	3700.00	3800.00	3900.00	4000.00
STATIONS	18000.00	18100.00	18200.00	18300.00	18400.00	18500.00	18600.00	18700.00	18800.00	18900.00	19000.00	19100.00	19200.00	19300.00	19400.00	19500.00	19600.00	19700.00	19800.00	19900.00	20000.00	20100.00	20200.00	20300.00	20400.00	20500.00	20600.00	20700.00	20800.00	20900.00	21000.00	21100.00	21200.00	21300.00	21400.00	21500.00	21600.00	21627.00			

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
 R-C-E IRRIGATION DEVELOPMENT PROJECT

TITLE OF DRAWING
MAIN CANAL (7E)

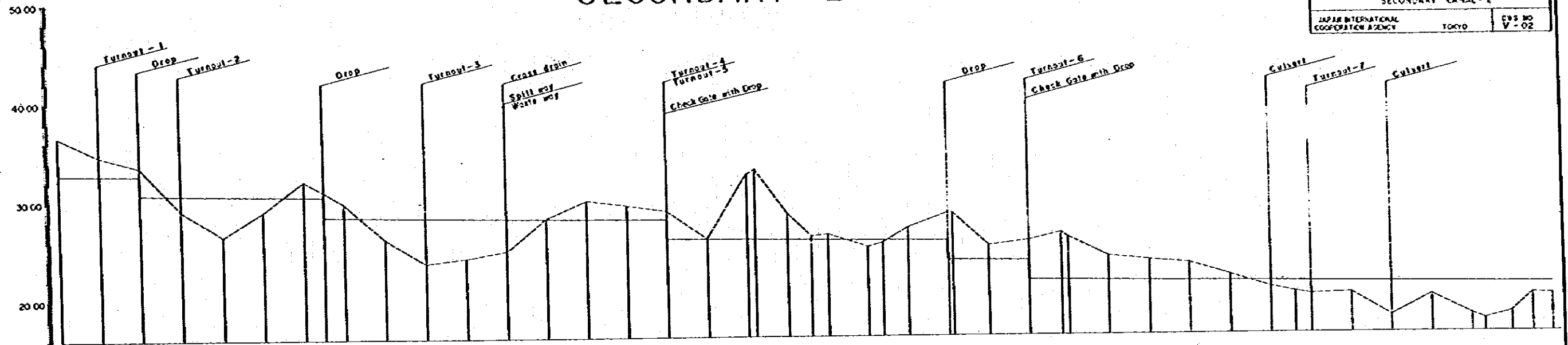
JAPAN INTERNATIONAL
 COOPERATION AGENCY TOKYO ERS NO
 R-07



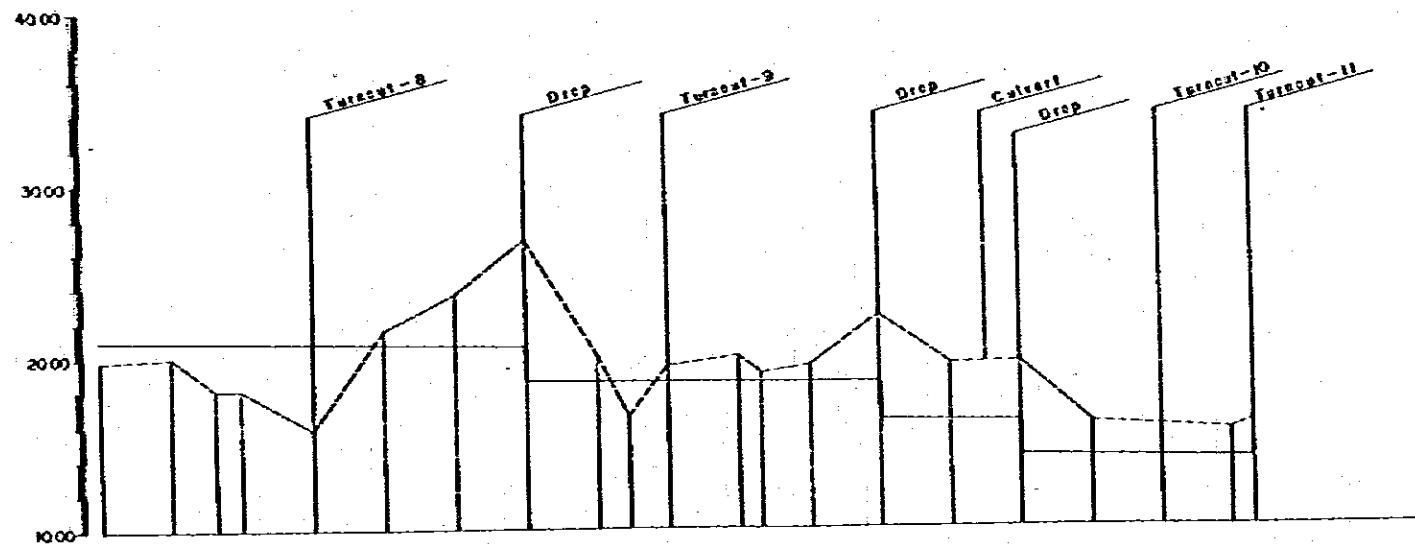
CANAL BASE ELEVATION	26.94										26.72			
WATER SURFACE ELEVATION	28.00													
GROUND SURFACE ELEVATION	21627.60	21700.00	21800.00	21913.00	22000.00	22030.00	22050.00	22080.00	22100.00	22170.29	22200.00	22600.00	22600.00	22605.16
REDUCED DISTANCE	0.00	72.40	144.80	217.20	299.60	372.00	444.40	516.80	589.20	661.60	734.00	806.40	878.80	951.20
STATIONS	10+00	10+72.40	11+44.80	12+17.20	12+89.60	13+62.00	14+34.40	15+06.80	15+79.20	16+51.60	17+24.00	17+96.40	18+68.80	19+41.20

SECONDARY - 2

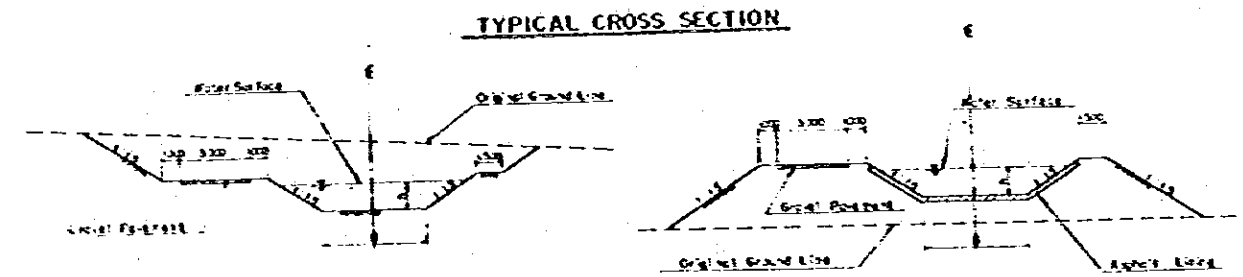
EXECUTIVE GENERAL OF WATER RESOURCES DEVELOPMENT
 P.C.E. PROJECT DEVELOPMENT PROJECT
 TITLE OF DRAWING
 SECONDARY CANAL - 2
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO DWS NO
 V-02



CANAL BASE ELEVATION	32.80	32.70	32.50	32.40		32.25	28.35		25.05	24.95		22.20	21.90		21.20																													
WATER SURFACE ELEVATION	B = 2.00 I = 1/2000																																											
GROUND SURFACE ELEVATION	28.70	28.80	23.40	28.10	28.00	28.00	31.00	28.20	25.70	24.20	28.00	28.70	24.00	22.00	23.00	27.00	25.00	25.20	25.70	24.00	24.00	24.00	23.40	23.20	28.00	20.70	20.20	19.60	20.10	17.70	19.40	18.00	18.90	18.80										
REDUCED DISTANCE	0.00	100.00	200.00	300.00	400.00	500.00	600.00	700.00	800.00	900.00	1000.00	1100.00	1200.00	1300.00	1400.00	1500.00	1600.00	1700.00	1718.00	1800.00	1808.00	1900.00	2000.00	2037.00	2100.00	2200.00	2300.00	2400.00	2403.00	2500.00	2600.00	2700.00	2800.00	2900.00	3000.00	3040.00	3100.00	3200.00	3300.00	3400.00	3500.00	3600.00	3682.00	3700.00
STATIONS	0+0	1+0	2+0	3+0	4+0	5+0	6+0	7+0	8+0	9+0	10+0	11+0	12+0	13+0	14+0	15+0	16+0	17+0	1718	18+0	1808	19+0	20+0	2037	21+0	22+0	23+0	24+0	2403	25+0	26+0	27+0	28+0	29+0	30+0	3040	31+0	32+0	33+0	34+0	35+0	36+0	3682	37+0

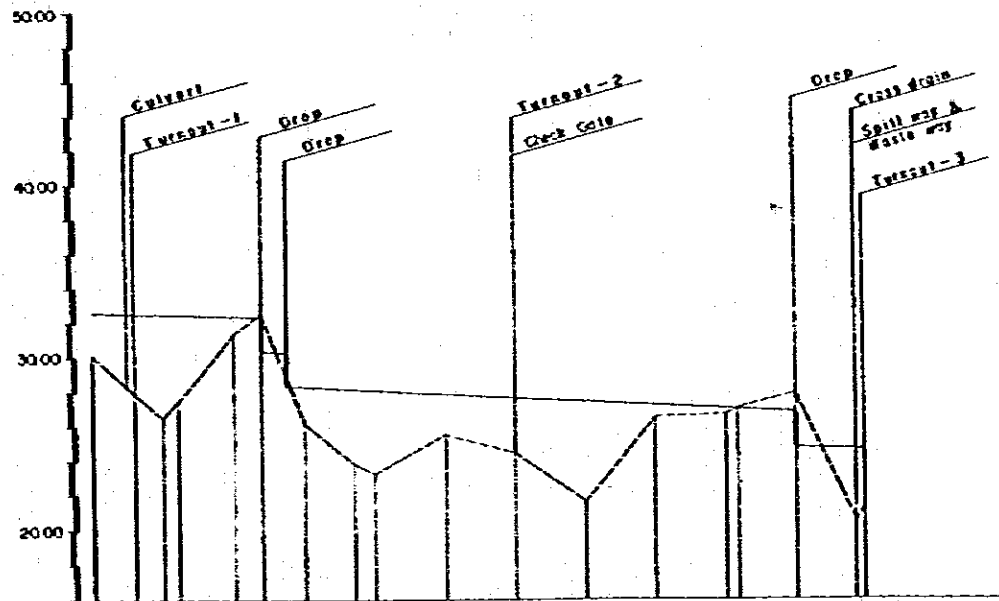


CANAL BASE ELEVATION				20.80		18.87		18.77	18.16		14.01	13.89							
WATER SURFACE ELEVATION	B = 2.00 I = 1/2000												B = 1.00 I = 1/1500						
GROUND SURFACE ELEVATION	18.80	20.00	18.10	18.10	18.80	21.60	23.80	28.70	20.00	18.00	18.00	18.40	22.30	18.00	21.60	16.00	10.80	10.60	16.00
REDUCED DISTANCE	3700.00	3800.00	3880.00	3900.00	4000.00	4100.00	4200.00	4300.00	4400.00	4480.00	4500.00	4700.00	4800.00	4900.00	5000.00	5100.00	5200.00	5300.00	5300.00
STATIONS	40+0	41+0	4180	42+0	43+0	44+0	45+0	46+0	47+0	48+0	49+0	50+0	51+0	52+0	53+0	54+0	55+0	56+0	57



DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT K-C-E IRRIGATION DEVELOPMENT PROJECT	
TITLE OF DRAWING SECONDARY CANAL - 3	
JAPAN INTERNATIONAL COOPERATION AGENCY	10710
	DWG NO V-03

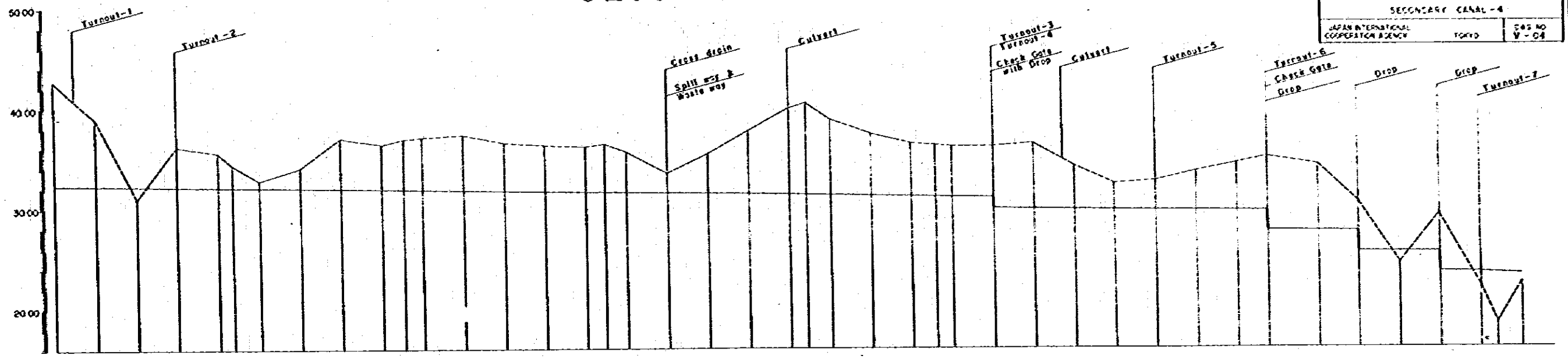
SECONDARY - 3



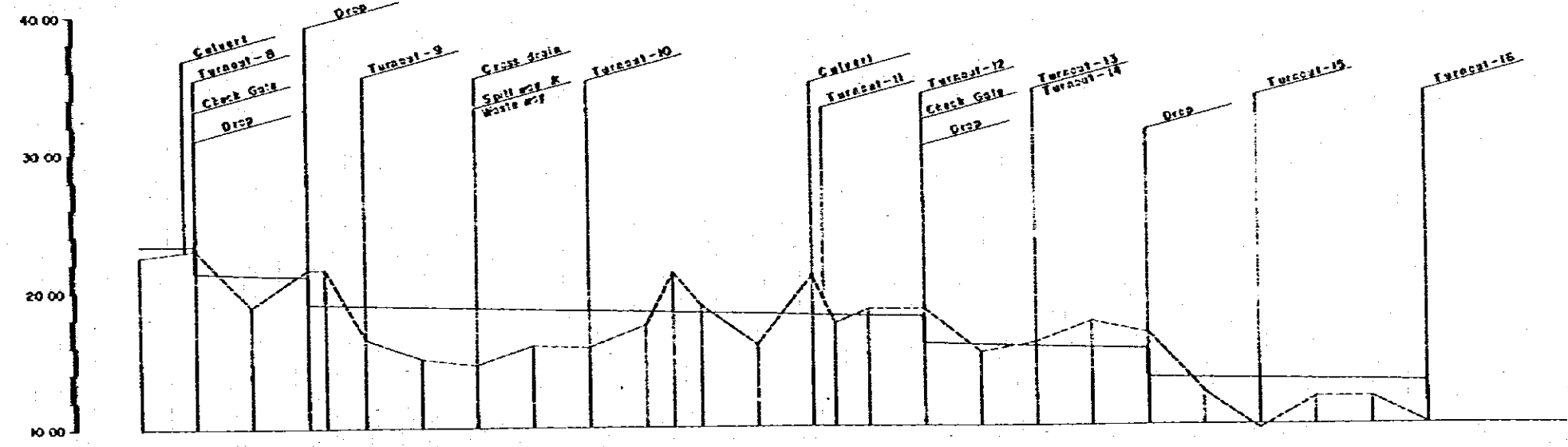
CANAL BASE ELEVATION	24 00	24 50	25 00	25 50	26 00	26 50	27 00	27 50	28 00
WATER SURFACE ELEVATION	B=100 1:1000		B=100 1:500						
GROUND SURFACE ELEVATION	29 00	28 40	27 00	26 40	26 20	25 80	25 30	25 00	24 50
REDUCED DISTANCE	0 00	100 00	181 00	200 00	238 00	300 00	371 00	400 00	500 00
STATIONS	24 00	24 10	24 20	24 30	24 40	24 50	25 00	25 10	25 20

SECONDARY - 4

DIRECTOR GENERAL OF WATER RESOURCES DEVELOPMENT
 R.E.C. RESEARCH & DEVELOPMENT PROJECT
 TITLE OF DRAWING
 SECONDARY CANAL - 4
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO CASE NO. V-04



CANAL BASE ELEVATION	38.72																				38.57	38.67	37.73	37.45	33.35	25.97	23.37																
WATER SURFACE ELEVATION	S = 2.00 1 = 1/2000																																										
GROUND SURFACE ELEVATION	41.72	38.00	38.10	38.20	38.30	38.40	38.50	38.60	38.70	38.80	38.90	39.00	39.10	39.20	39.30	39.40	39.50	39.60	39.70	39.80	39.90	40.00	40.10	40.20	40.30	40.40	40.50	40.60	40.70	40.80	40.90	41.00											
REDUCED DISTANCE	0.00	100.00	200.00	300.00	400.00	500.00	600.00	700.00	800.00	900.00	1000.00	1100.00	1200.00	1300.00	1400.00	1500.00	1600.00	1700.00	1800.00	1840.00	1900.00	2000.00	2100.00	2160.00	2200.00	2300.00	2400.00	2500.00	2600.00	2700.00	2800.00	2900.00	3000.00	3100.00	3200.00	3300.00	3400.00	3500.00	3600.00	3700.00	3800.00	3900.00	4000.00
STATIONS	40+00	40+10	40+20	40+30	40+40	40+50	40+60	40+70	40+80	40+90	40+100	40+110	40+120	40+130	40+140	40+150	40+160	40+170	40+180	40+184	40+190	40+200	40+210	40+216	40+220	40+230	40+240	40+250	40+260	40+270	40+280	40+290	40+300	40+310	40+320	40+330	40+340	40+350	40+360	40+370	40+380	40+390	40+400

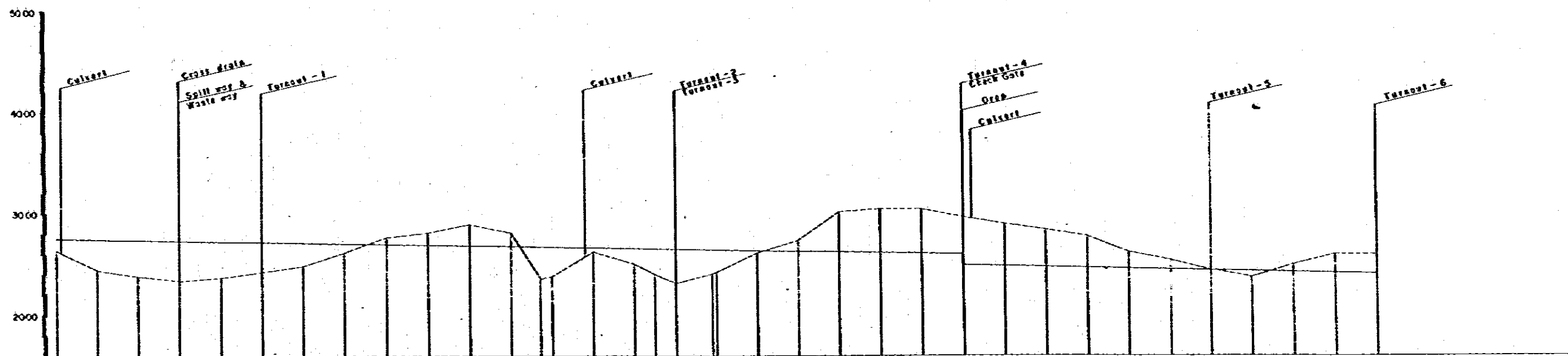
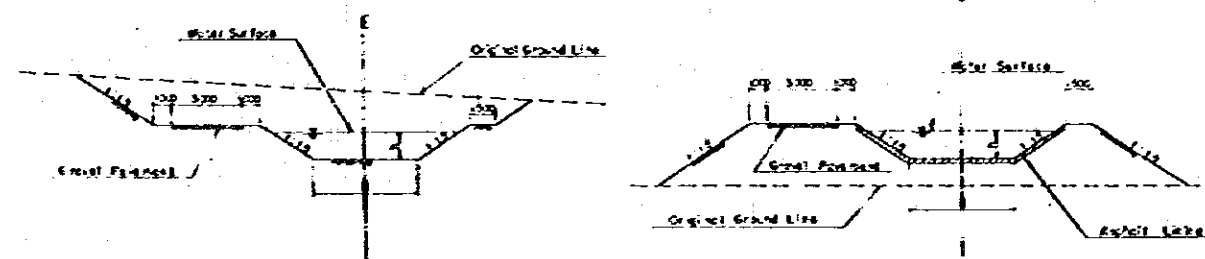


CANAL BASE ELEVATION	23.37	27.31	21.04	18.84												18.14	17.84	15.34	13.04																											
WATER SURFACE ELEVATION	S = 1.50 1 = 1/1000																	S = 1.00 1 = 1/1000																												
GROUND SURFACE ELEVATION	28.50	25.00	17.40	21.50	21.00	18.40	15.00	14.50	14.00	13.50	13.00	12.50	12.00	11.50	11.00	10.50	10.00	9.50	9.00	8.50	8.00	7.50	7.00	6.50	6.00	5.50	5.00	4.50	4.00	3.50	3.00	2.50	2.00	1.50	1.00	0.50	0.00									
REDUCED DISTANCE	3400.00	3700.00	3800.00	3900.00	3950.00	4000.00	4100.00	4200.00	4300.00	4400.00	4500.00	4600.00	4700.00	4800.00	4900.00	5000.00	5100.00	5200.00	5300.00	5400.00	5500.00	5600.00	5700.00	5800.00	5900.00	6000.00	6100.00	6200.00	6300.00	6400.00	6500.00	6600.00	6700.00	6800.00	6900.00	7000.00	7100.00	7200.00	7300.00	7400.00	7500.00					
STATIONS	40+39	40+55	40+71	40+87	40+97	40+107	40+117	40+127	40+137	40+147	40+157	40+167	40+177	40+187	40+197	40+207	40+217	40+227	40+237	40+247	40+257	40+267	40+277	40+287	40+297	40+307	40+317	40+327	40+337	40+347	40+357	40+367	40+377	40+387	40+397	40+407	40+417	40+427	40+437	40+447	40+457	40+467	40+477	40+487	40+497	40+507

SECONDARY-7

DIRECTOR GENERAL OF WATER RESOURCES DEVELOPMENT
 K-C-C IRRIGATION DEVELOPMENT PROJECT
 TITLE OF DRAWING
 SECONDARY CANAL-7
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO ERS NO V-07

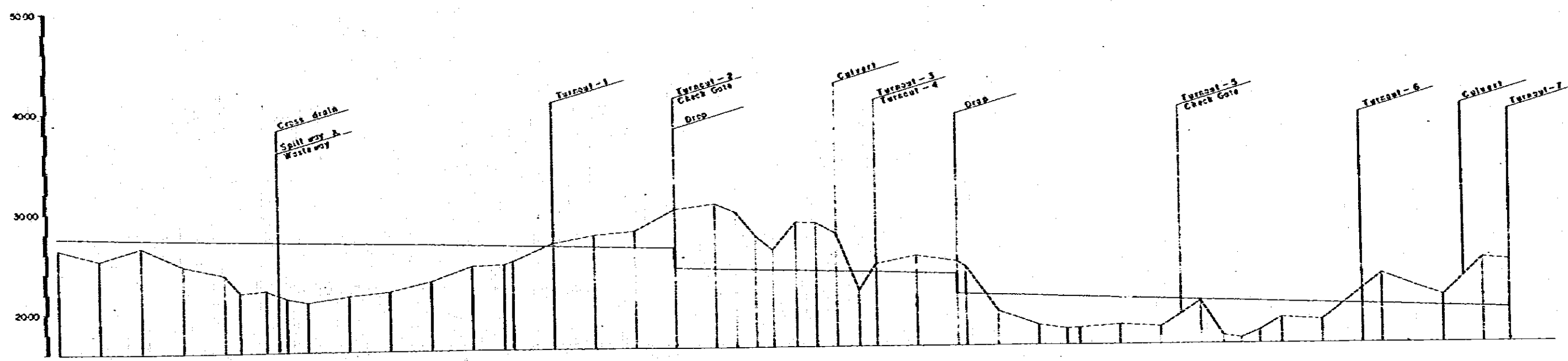
TYPICAL CROSS SECTION



CANAL BASE ELEVATION	27.26	27.24	28.26	28.12	28.08	28.12																																			
WATER SURFACE ELEVATION	B=150 I=1/1500																B=100 I=1/1000																								
GROUND SURFACE ELEVATION	26.00	26.40	23.90	23.40	23.80	24.30	24.80	24.20	27.70	28.20	28.60	29.00	28.20	23.80	23.80	24.30	24.80	25.10	24.00	22.20	24.30	24.80	27.40	30.20	30.20	30.00	30.00	28.70	28.00	28.00	27.40	24.20	25.00	24.50	23.40	25.00	26.00	26.00	26.00	26.00	26.00
REDUCED DISTANCE	0.00	100.00	200.00	300.00	400.00	500.00	600.00	700.00	800.00	900.00	1000.00	1100.00	1171.00	1200.00	1233.00	1266.00	1300.00	1400.00	1458.00	1500.00	1533.00	1566.00	1600.00	1700.00	1800.00	1900.00	2000.00	2100.00	2200.00	2300.00	2400.00	2500.00	2600.00	2700.00	2800.00	2900.00	3000.00	3100.00	3200.00		
STATIONS	0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+1000	0+1100	0+1171	0+1200	0+1233	0+1266	0+1300	0+1400	0+1458	0+1500	0+1533	0+1566	0+1600	0+1700	0+1800	0+1900	0+2000	0+2100	0+2200	0+2300	0+2400	0+2500	0+2600	0+2700	0+2800	0+2900	0+3000	0+3100	0+3200		

SECTOR GENERAL OF WATER RESOURCES DEVELOPMENT
 K-C-E PRODUCTION DEVELOPMENT PROJECT
 TITLE OF DRAWING
SECONDARY - B
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO CAS NO
V - 08

SECONDARY - 8

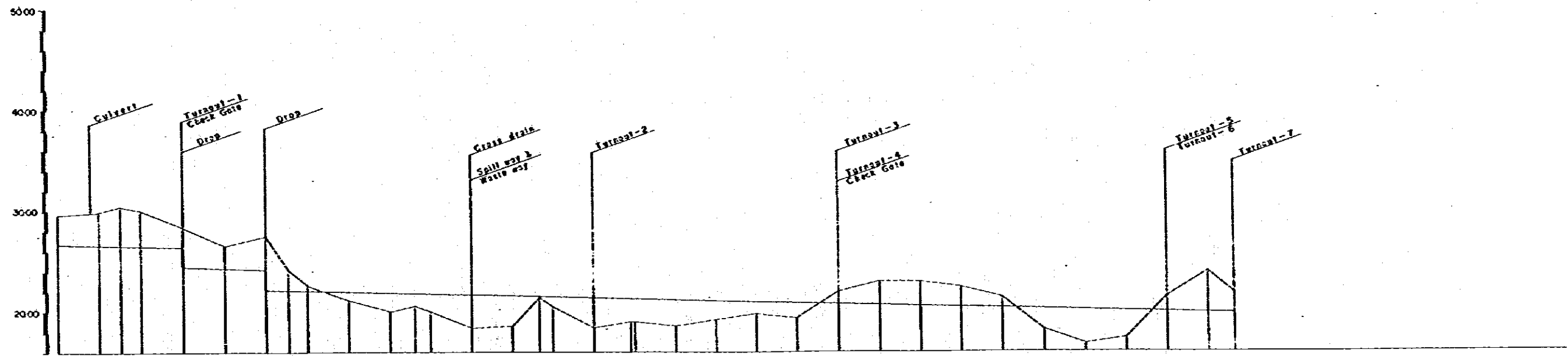
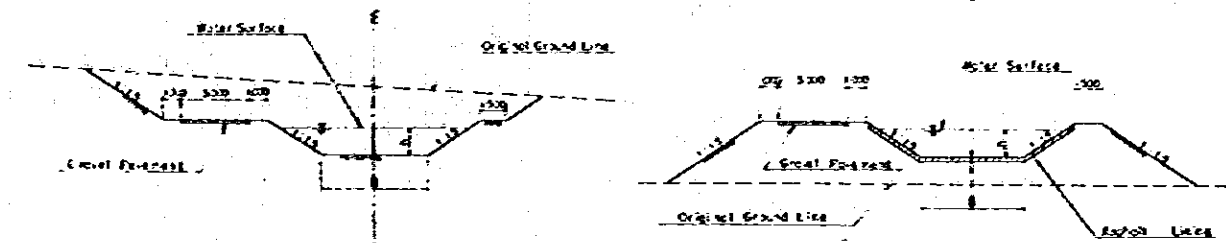


CANAL BASE ELEVATION	STATION
26.00	0+00
26.50	0+100
26.60	0+200
24.70	0+300
23.00	0+400
22.00	0+500
22.20	0+600
21.60	0+700
21.40	0+800
23.00	0+900
24.30	0+1000
26.60	0+1075
26.80	0+1100
26.70	0+1180
27.00	0+1200
27.80	0+1300
30.00	0+1400
30.00	0+1500
30.00	0+1600
29.80	0+1650
29.80	0+1700
27.20	0+1750
25.80	0+1800
26.50	0+1850
27.40	0+1900
21.40	0+1950
24.30	0+2000
25.10	0+2100
24.50	0+2200
24.00	0+2250
18.40	0+2300
18.00	0+2400
17.60	0+2475
17.70	0+2500
17.80	0+2600
17.80	0+2700
20.40	0+2800
16.80	0+2850
16.60	0+2900
17.30	0+2950
18.60	0+3000
18.40	0+3100
21.40	0+3200
22.00	0+3250
21.00	0+3300
20.40	0+3400
24.30	0+3500
24.50	0+3600

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
 R.C.G. IRRIGATION DEVELOPMENT PROJECT
 TITLE OF SPANNING
SECONDARY - 9
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO EPS NO V-09

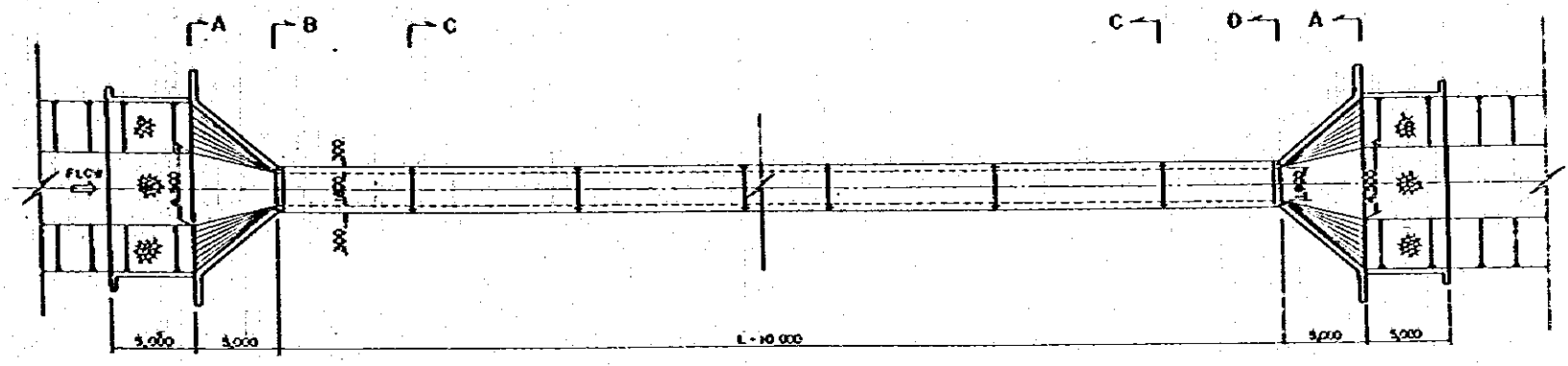
SECONDARY - 9

TYPICAL CROSS SECTION

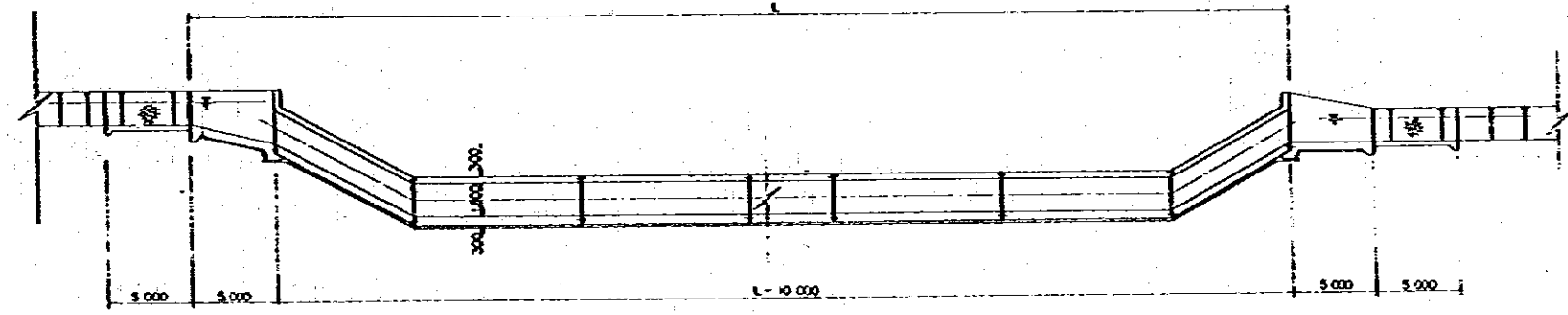


CANAL BASE ELEVATION	FT	21.72	21.55																20.42											18.84																																																			
WATER SURFACE ELEVATION		B = 1.50 S = 1/1000																												B = 1.00 S = 1/1000																																																			
GROUND SURFACE ELEVATION	FT	28.00	28.00	27.00	26.00	25.00	24.00	23.00	22.00	21.00	20.00	19.00	18.00	17.00	16.00	15.00	14.00	13.00	12.00	11.00	10.00	9.00	8.00	7.00	6.00	5.00	4.00	3.00	2.00	1.00	0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00	25.00	26.00	27.00	28.00	29.00	30.00	31.00	32.00	33.00	34.00	35.00	36.00	37.00	38.00	39.00	40.00	41.00	42.00	43.00	44.00	45.00	46.00	47.00	48.00	49.00	50.00
REDUCED DISTANCE	FT	0.00	100.00	200.00	300.00	400.00	500.00	600.00	700.00	800.00	900.00	1000.00	1100.00	1200.00	1300.00	1400.00	1500.00	1600.00	1700.00	1800.00	1900.00	2000.00	2100.00	2200.00	2300.00	2400.00	2500.00	2600.00	2700.00	2800.00	2900.00	3000.00	3100.00	3200.00	3300.00	3400.00	3500.00	3600.00	3700.00	3800.00	3900.00	4000.00	4100.00	4200.00	4300.00	4400.00	4500.00	4600.00	4700.00	4800.00	4900.00	5000.00																													
STATIONS		0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	0+1000	0+1100	0+1200	0+1300	0+1400	0+1500	0+1600	0+1700	0+1800	0+1900	0+2000	0+2100	0+2200	0+2300	0+2400	0+2500	0+2600	0+2700	0+2800	0+2900	0+3000	0+3100	0+3200	0+3300	0+3400	0+3500	0+3600	0+3700	0+3800	0+3900	0+4000	0+4100	0+4200	0+4300	0+4400	0+4500	0+4600	0+4700	0+4800	0+4900	0+5000																													

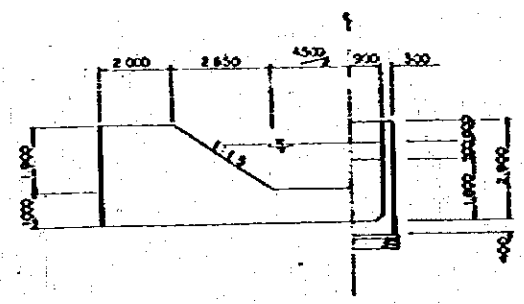
SYPHON



PLAN

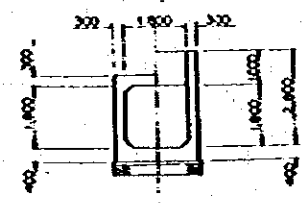


PROFILE



SECTION A-A

SECTION B-B



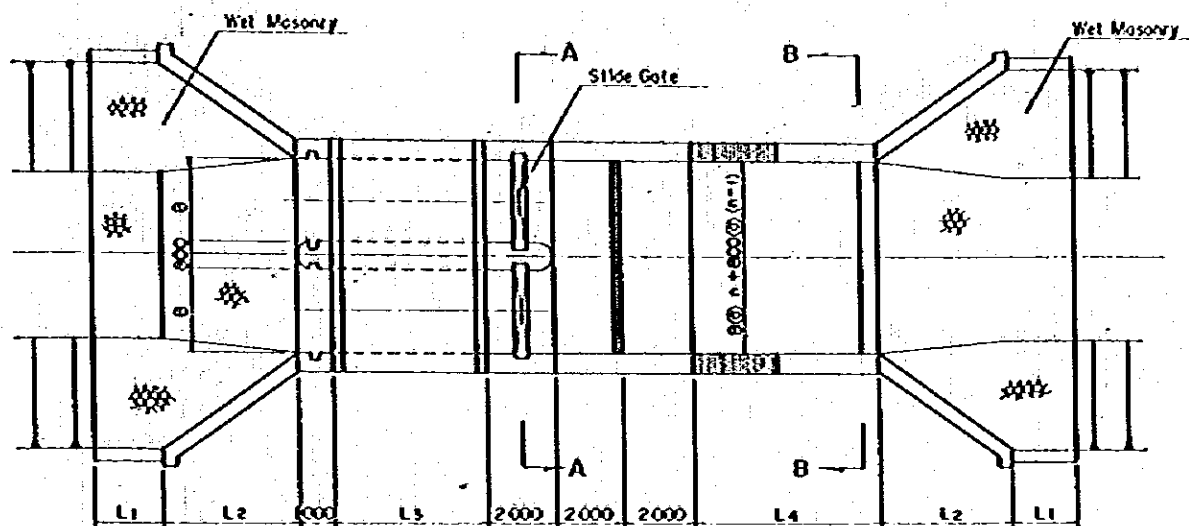
SECTION C-C

SECTION D-D

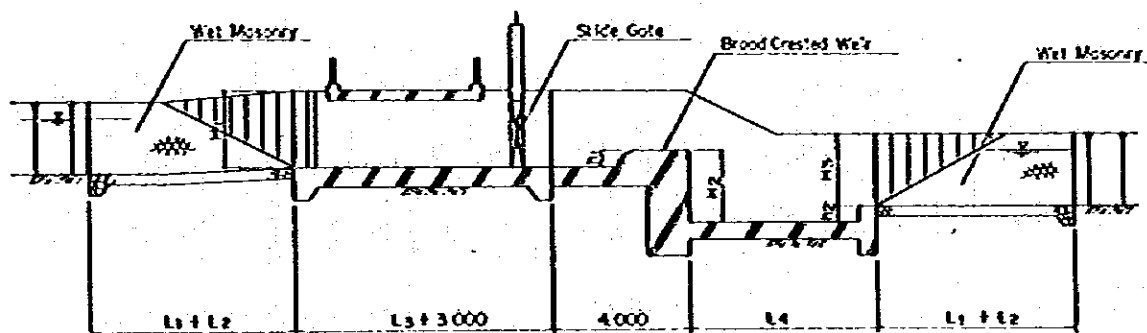
NOTE
 NO 1 Siphon L = 300m
 NO 2 Siphon L = 130m

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT		
R.G.A. IRRIGATION DEVELOPMENT PROJECT		
TITLE OF DRAWING		
SYPHON		
JAPAN INTERNATIONAL COOPERATION AGENCY	10000	ENG NO. V-01

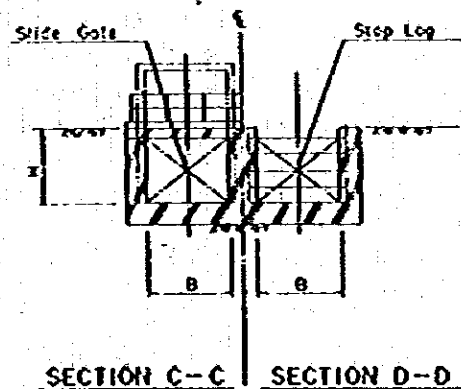
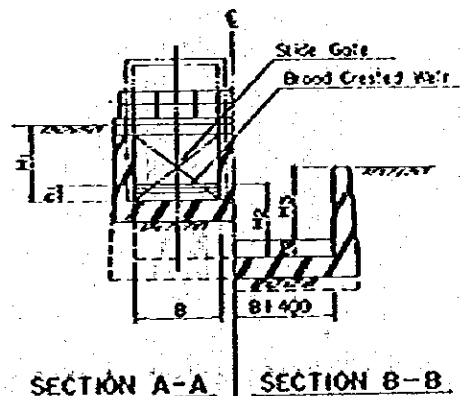
CHECK GATE TYPE - I



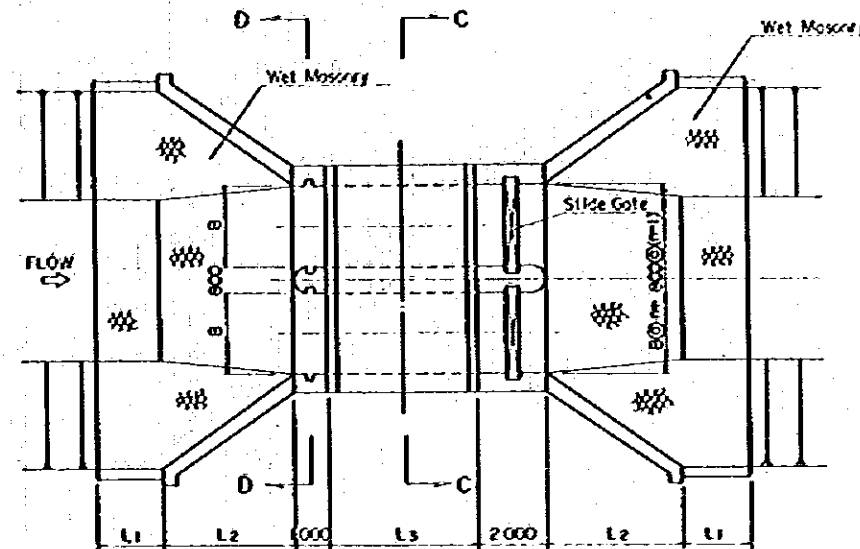
PLAN



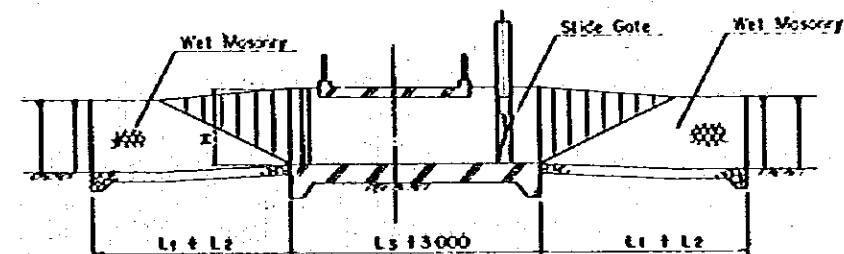
PROFILE



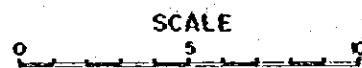
CHECK GATE TYPE - II



PLAN



PROFILE



Discharge (m ³ /s)	L1	L2	L3	L4	B	n	H1	H2			H3	h1	h2	Gate	
								Drop 20~25%	Drop 40~50%	Drop 65%					
100 ~ 50	3000	4000	4500	7000	2500	2	2500	3200	2700	2200	1700	2500	750	500	25x20
50 ~ 20	*	*	*	*	*	1	*	*	*	*	*	*	650	*	*
20 ~ 10	*	3000	*	6000	1500	1	1800	*	*	*	*	1800	450	*	15x15

Discharge (m ³ /s)	L1	L2	L3	B	n	H	Gate
100 ~ 50	3000	4000	4000	2500	2	2500	25x20
50 ~ 20	*	*	*	*	1	*	*
20 ~ 10	*	3000	*	1500	1	1800	15x15
10 ~ 05	*	*	*	1000	1	1500	10x10
05 ~	1500	2000	3000	600	1	800	→

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
K-C-C IRRIGATION DEVELOPMENT PROJECT

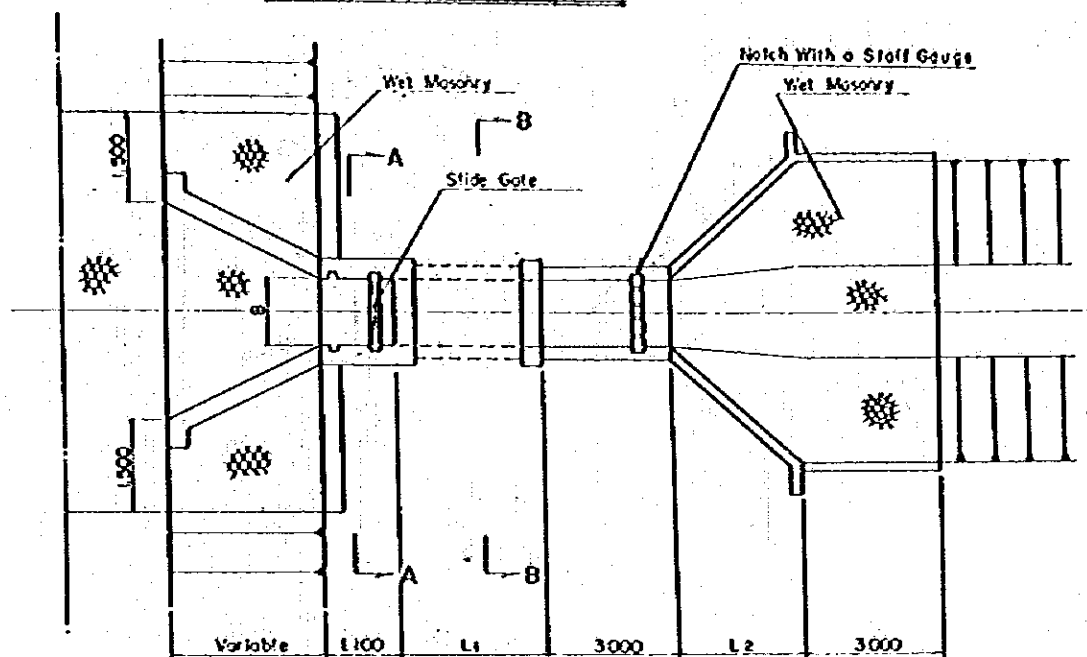
TITLE OF DRAWINGS
CHECK GATE

JAPAN INTERNATIONAL
COOPERATION AGENCY

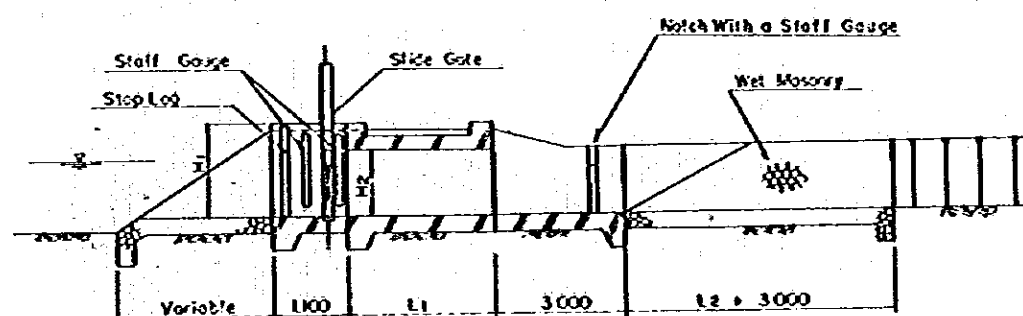
TOKYO

DWG NO.
M - 02

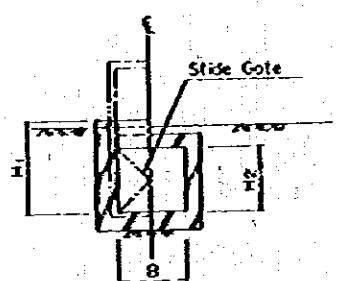
TURNOUT TYPE - I



PLAN



PROFILE

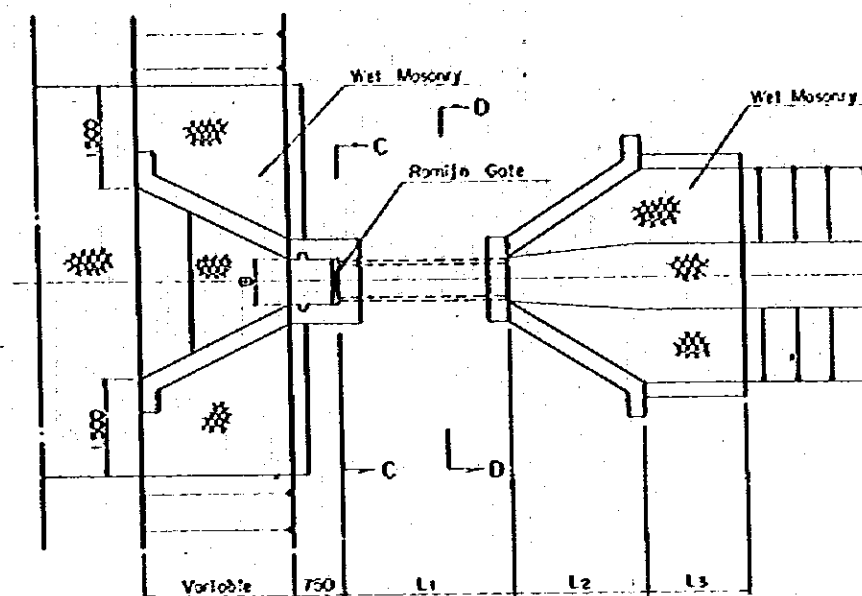


SECTION A-A SECTION B-B

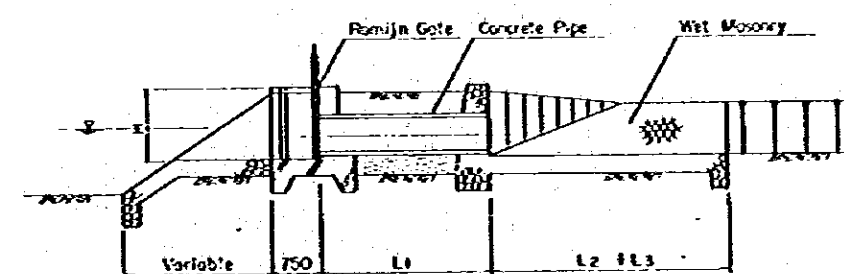
TYPE - I DIMENSIONS OF TURNOUTS

Discharge (m ³ /s)	L1	L2	B	H1	H2	Gate
500 ~ 350	6000	4000	2000	3000	2200	20x20
350 ~ 250	•	•	•	2500	1600	20x16
250 ~ 200	•	•	1500	•	•	15x16
200 ~ 150	•	•	•	2200	1500	15x15
150 ~ 100	•	3000	1300	2000	1300	13x15
100 ~ 80	•	•	1100	1800	1100	11x11
80 ~ 60	•	•	1000	1700	1000	10x10

TURNOUT TYPE - II



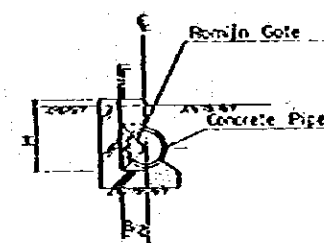
PLAN



PROFILE

TYPE - II DIMENSIONS OF TURNOUTS

Discharge (m ³ /s)	L1	L2	L3	B	H	Pipe φ	Gate
0.60 ~ 0.40	6000	3000	3000	1000	1800	φ800	φ800
0.40 ~ 0.20	•	•	•	800	1600	φ600	φ600
0.20 ~ 0.10	•	•	•	700	1400	φ500	φ500
0.10 ~ 0.05	•	2000	2000	600	1300	φ400	φ400
0.05 ~	•	•	•	500	1200	φ300	φ300



SECTION C-C SECTION D-D

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
K-C-C IRRIGATION DEVELOPMENT PROJECT

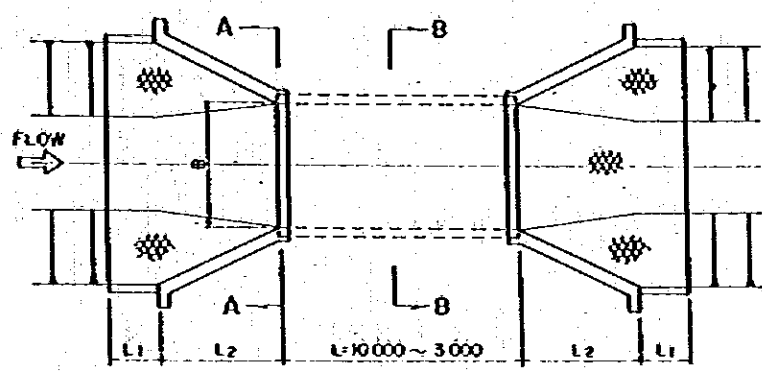
TITLE OF DRAWINGS
TURNOUT

JAPAN INTERNATIONAL
COOPERATION AGENCY

TOKYO

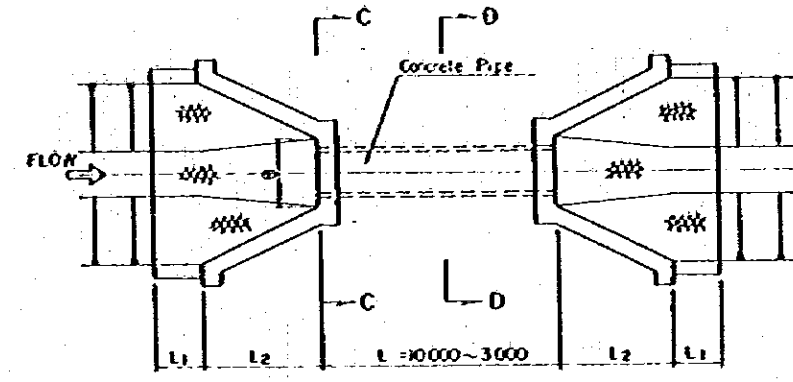
DWG NO.
W-03

CULVERT TYPE - I

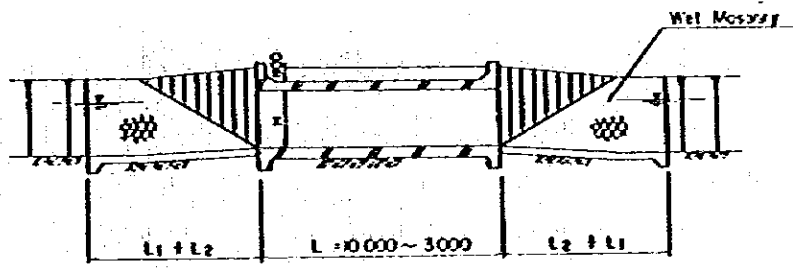


PLAN

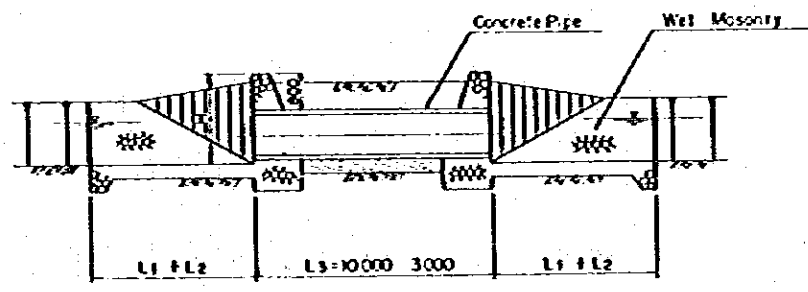
CULVERT TYPE - II



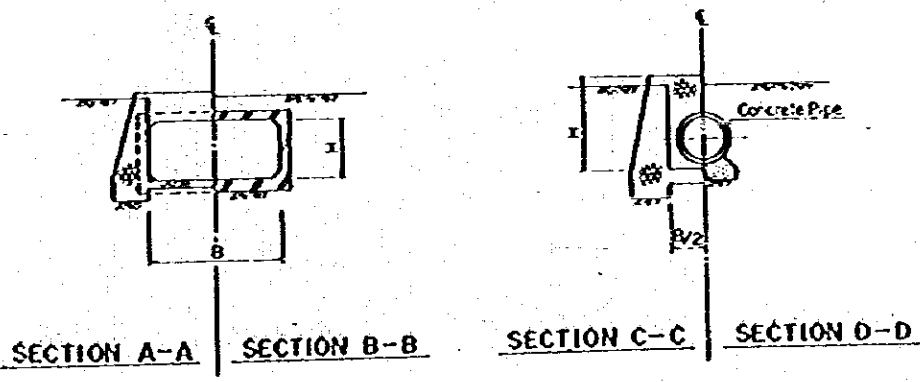
PLAN



PROFILE



PROFILE



DEMONSTRATIONS OF CULVERTS

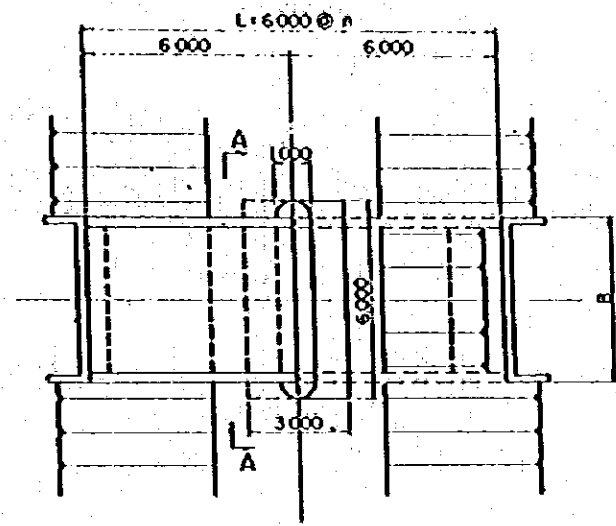
TYPE	Discharge (m ³ /s)	L1	L2	B	H	l	Pipe φ
TYPE - I	60 ~ 30	2000	5000	5000	2500	300	—
	30 ~ 20	•	•	4000	2000	250	—
	20 ~ 10	1500	4000	3000	1500	•	—
	10 ~ 06	•	•	2000	1000	200	—
TYPE - II	06 ~ 04	1000	3000	1300	2000	—	φ800
	04 ~ 01	•	•	1100	1800	—	φ600

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
K-C-C IRRIGATION DEVELOPMENT PROJECT

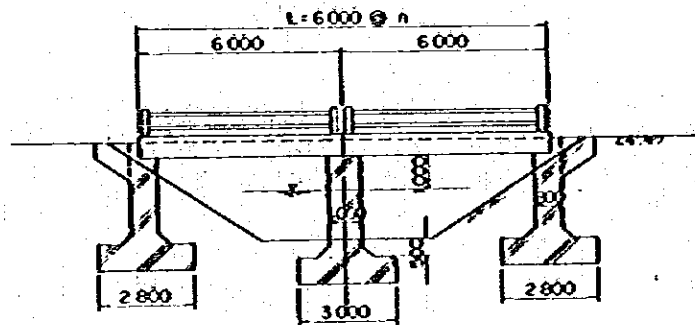
TITLE OF DRAWINGS
CULVERT

JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO DWG. NO. VI-04

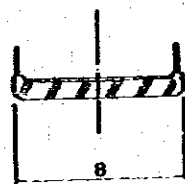
BRIDGE



PLAN

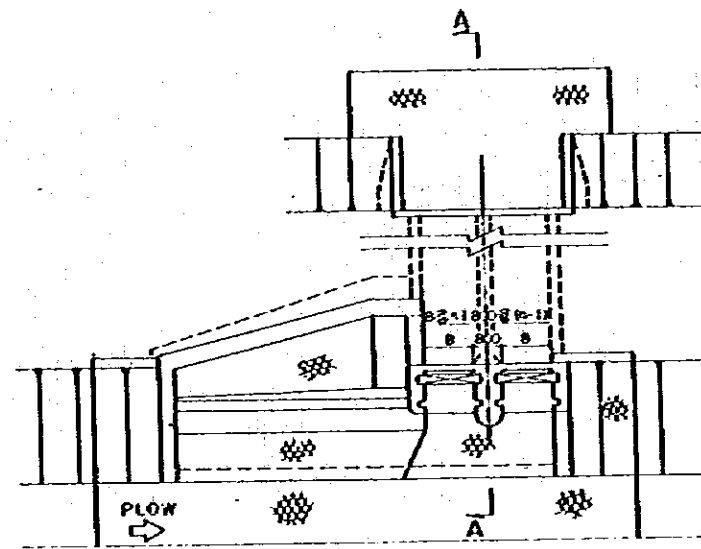


PROFILE

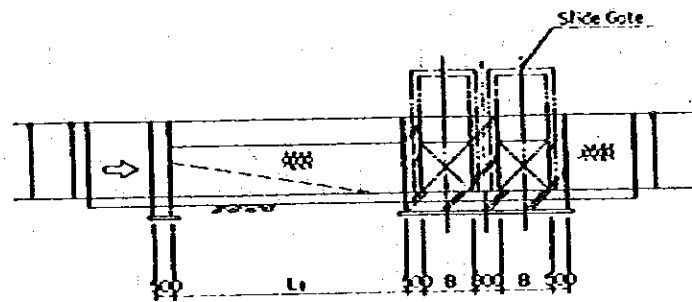


SECTION A-A

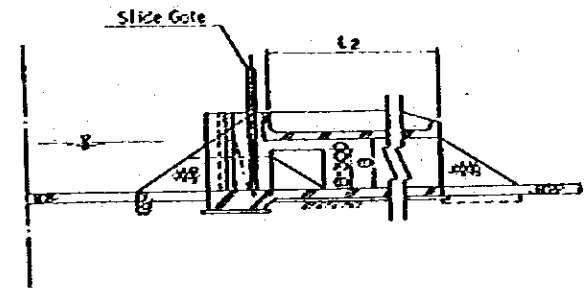
SPILL WAY AND WASTE WAY



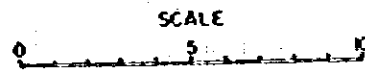
PLAN



PROFILE



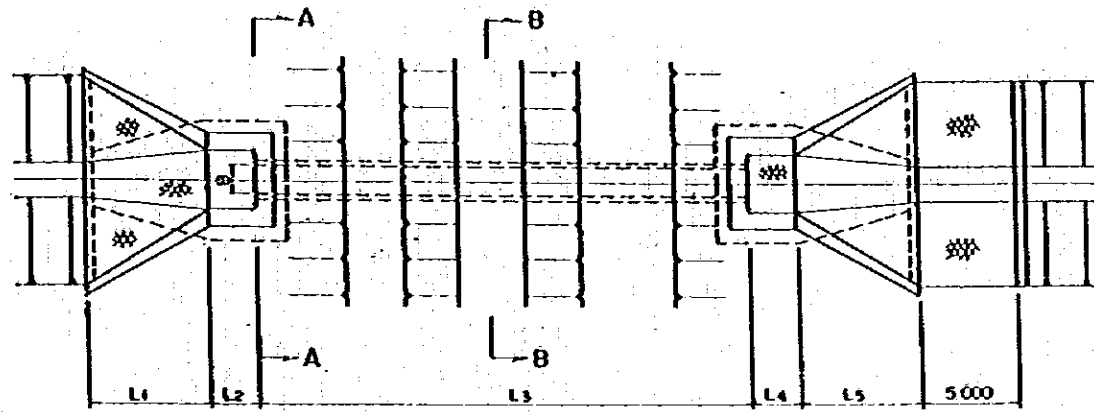
SECTION A-A



Discharge(m ³ /s)	B	n	L ₁	L ₂
16.0 ~ 9.0	2000	2	15000 ~ 10000	15000 ~ 5000
9.0 ~ 4.5	1500	2	15000 ~ 5000	15000 ~ 5000
4.5 ~ 2.5	1500	1	10000 ~ 5000	15000 ~ 3000
2.5 ~ 2.0	1200	1	10000 ~ 5000	15000 ~ 3000
2.0 ~ 1.0	1000	1	10000 ~ 5000	15000 ~ 3000

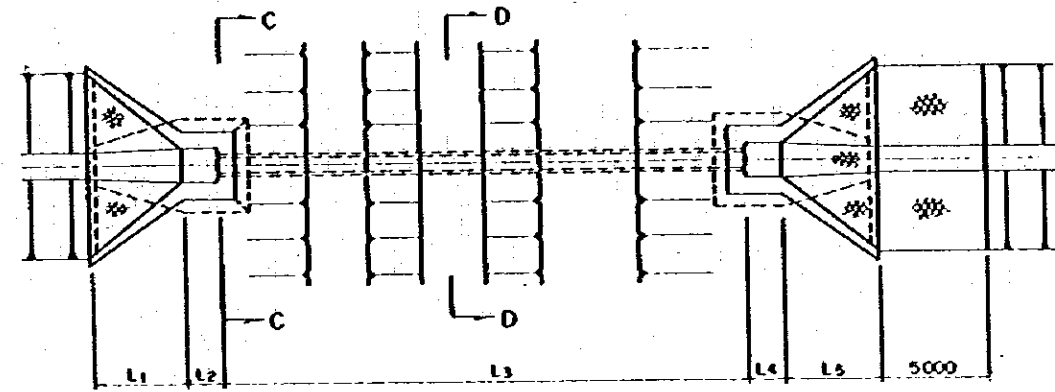
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
 K-C-C IRRIGATION DEVELOPMENT PROJECT
 TITLE OF DRAWINGS
BRIDGE, SPILL WAY AND WASTE WAY
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO
 DWS. NO.
 VI - 05

CROSS DRAIN TYPE - I.

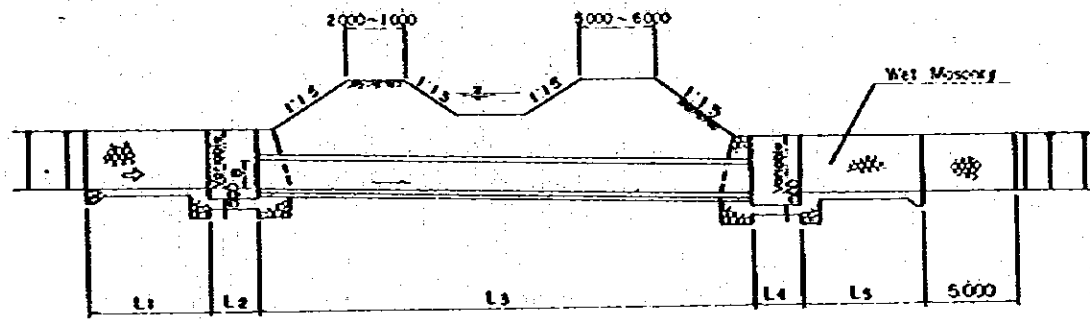


PLAN

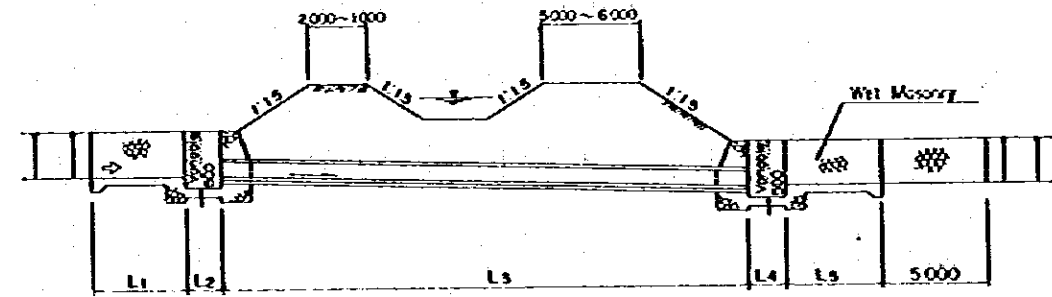
CROSS DRAIN TYPE - II.



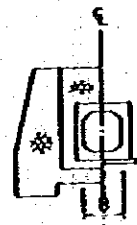
PLAN



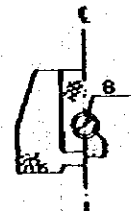
PROFILE



PROFILE



SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

DEMONSTRATIONS OF CROSS DRAINS

TYPE	Discharge (m ³ /s)	L ₁	L ₂	L ₃	L ₄	L ₅	B
TYPE - I	60 ~ 30	7000	3000	40000-30000	3000	7000	2500
	30 ~ 20	6000	2500	40000-30000	2500	6000	2000
	20 ~ 12	5000	2000	40000-30000	2000	5000	1500
	12 ~ 08	5000	2000	40000-30000	2000	5000	1200
TYPE - II	08 ~ 06	4500	1500	40000-30000	1500	4500	1000
	06 ~ 04	4000	1500	40000-25000	1500	4000	800
	04 ~ 02	4000	1500	40000-25000	1500	4000	600

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
K-C-C IRRIGATION DEVELOPMENT PROJECT

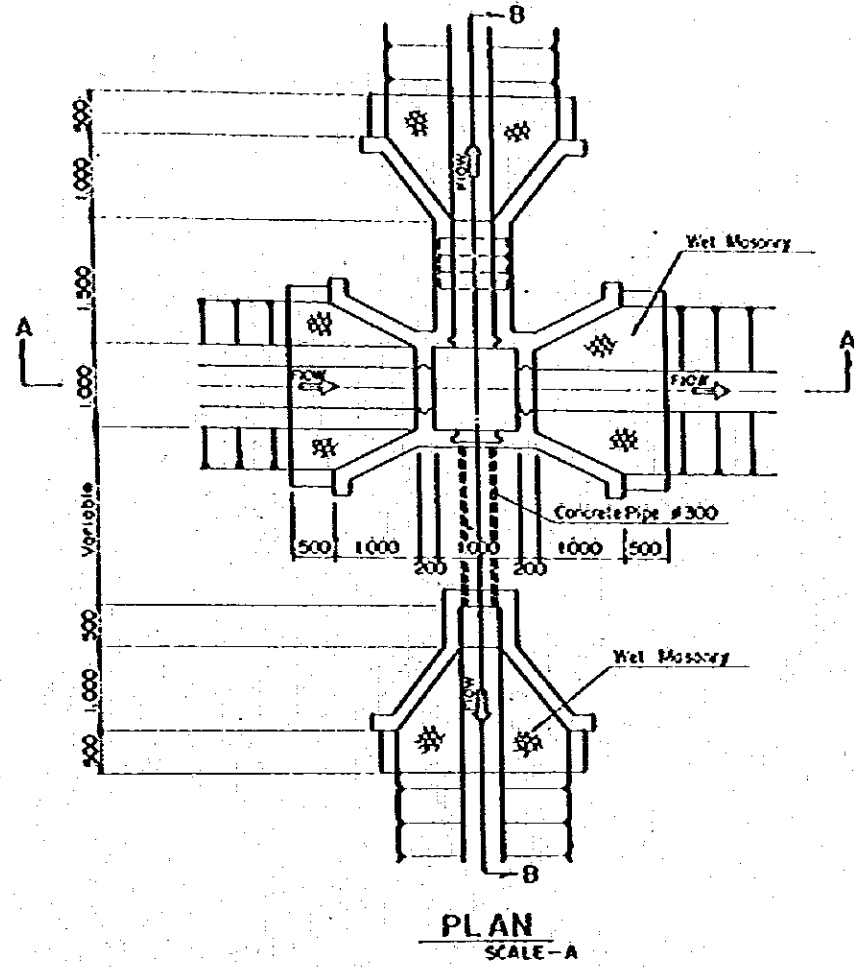
TITLE OF DRAWINGS
CROSS DRAIN

JAPAN INTERNATIONAL
COOPERATION AGENCY

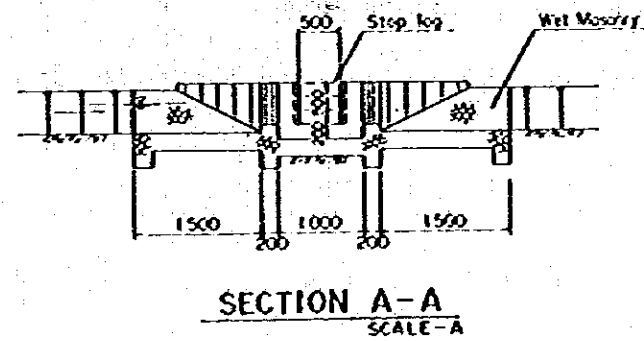
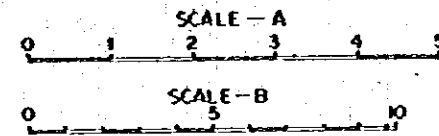
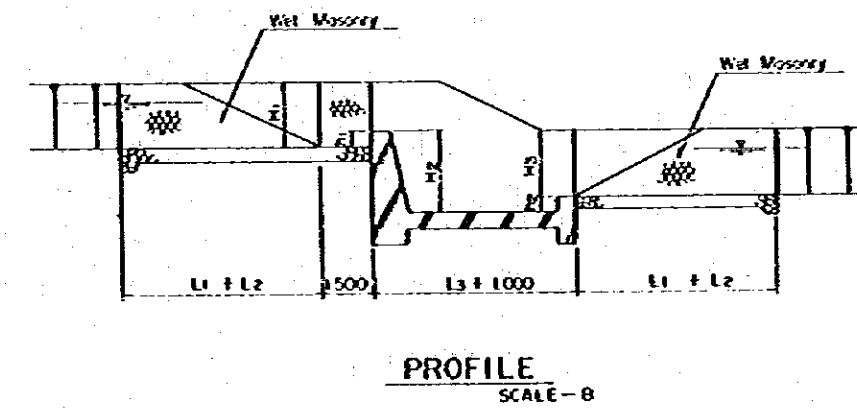
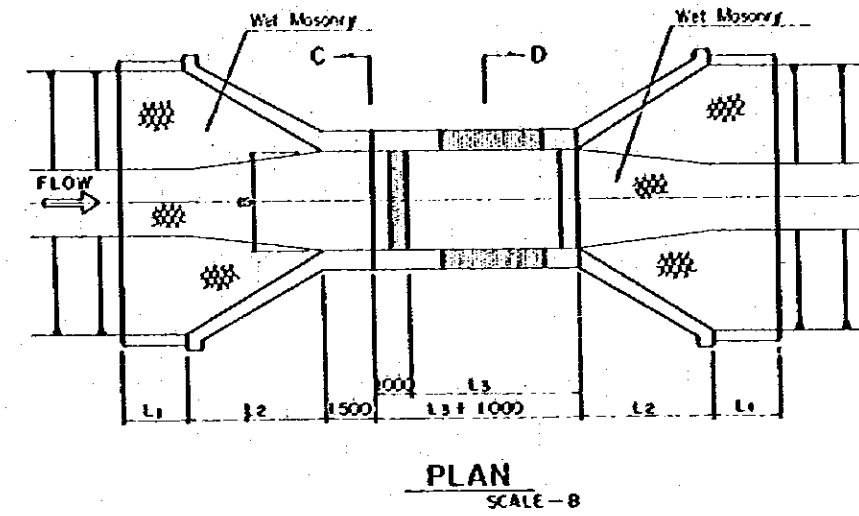
1000

DWG. NO.
VI - 06

TERTIARY BOX

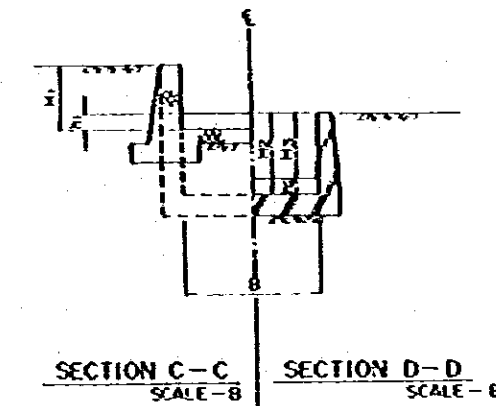
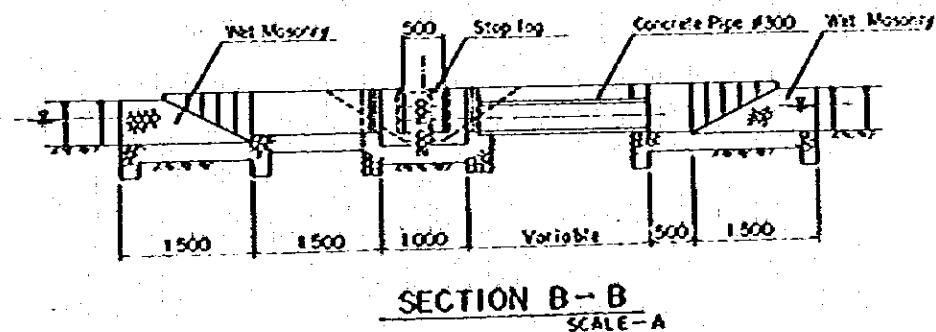


DROP



DIMENSIONS OF DROPS

Discharge (m ³ /s)	L ₁	L ₂	L ₃	B	H ₁	H ₂			H ₃	h ₁	h ₂
						Drop 20	Drop 15	Drop 10			
30 ~ 20	3000	4000	6000	2000	2000	3300	2800	2300	2000	800	500
20 ~ 12	"	3000	"	1500	1800	3100	2600	2100	1800	600	"
12 ~ 08	"	"	4000	1200	1500	2900	2400	1900	1500	400	"
08 ~ 06	2000	2000	"	1000	1200	2600	2100	1600	1200	300	300
06 ~ 04	"	"	3000	"	1000	2500	2000	1500	1000	200	"
04 ~ 02	"	"	"	"	800	2300	1800	1300	800	"	"
02 ~ 01	"	"	"	"	500	"	"	"	500	"	"

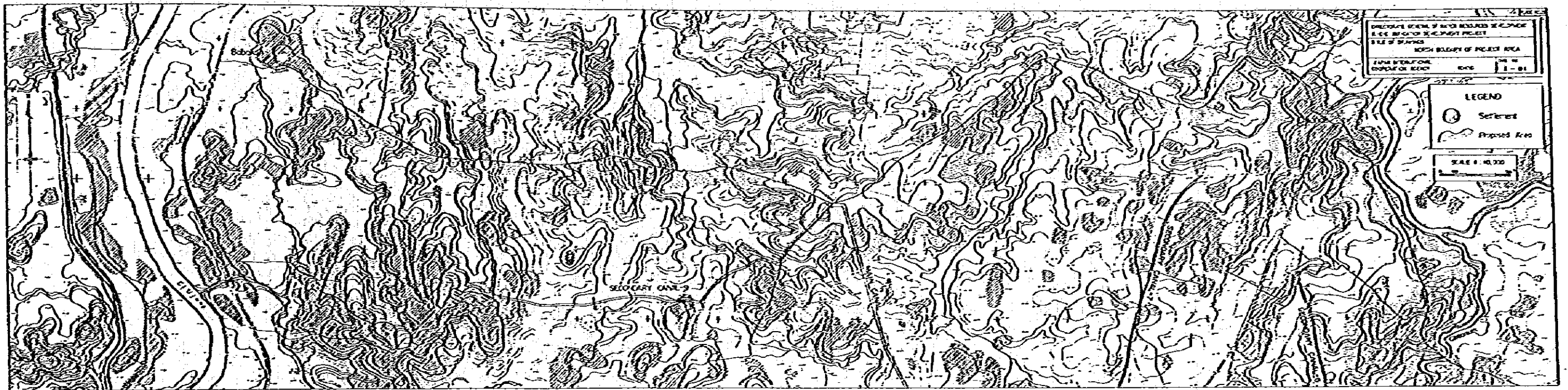


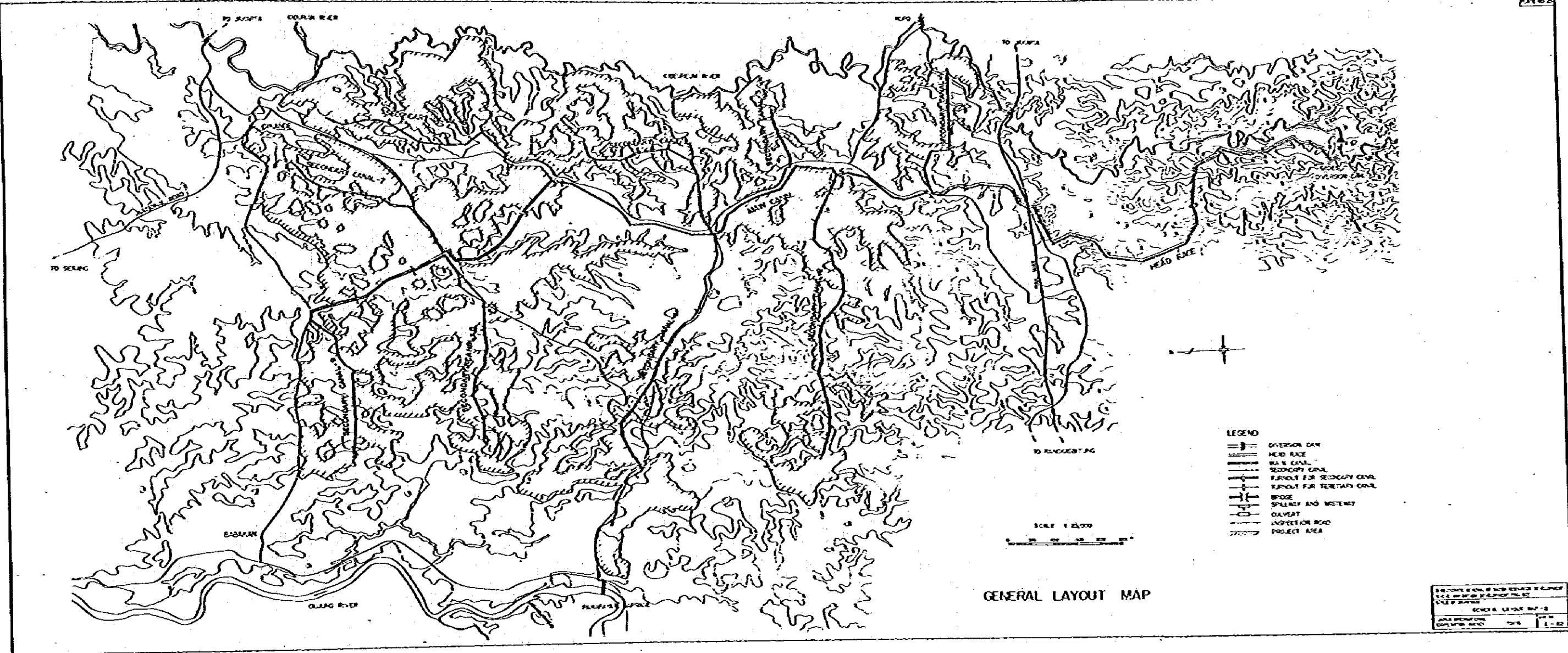
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
K-C-C IRRIGATION DEVELOPMENT PROJECT

TITLE OF DRAWINGS
TERTIARY BOX AND DROP

JAPAN INTERNATIONAL COOPERATION AGENCY
TOKYO

DWG. NO.
VI - 07





GENERAL LAYOUT MAP

1. PROJECT NAME: ...
 2. PROJECT NO.: ...
 3. SCALE: ...
 4. SHEET NO.: ...
 5. DATE: ...
 6. DRAWN BY: ...
 7. CHECKED BY: ...
 8. APPROVED BY: ...

JICA