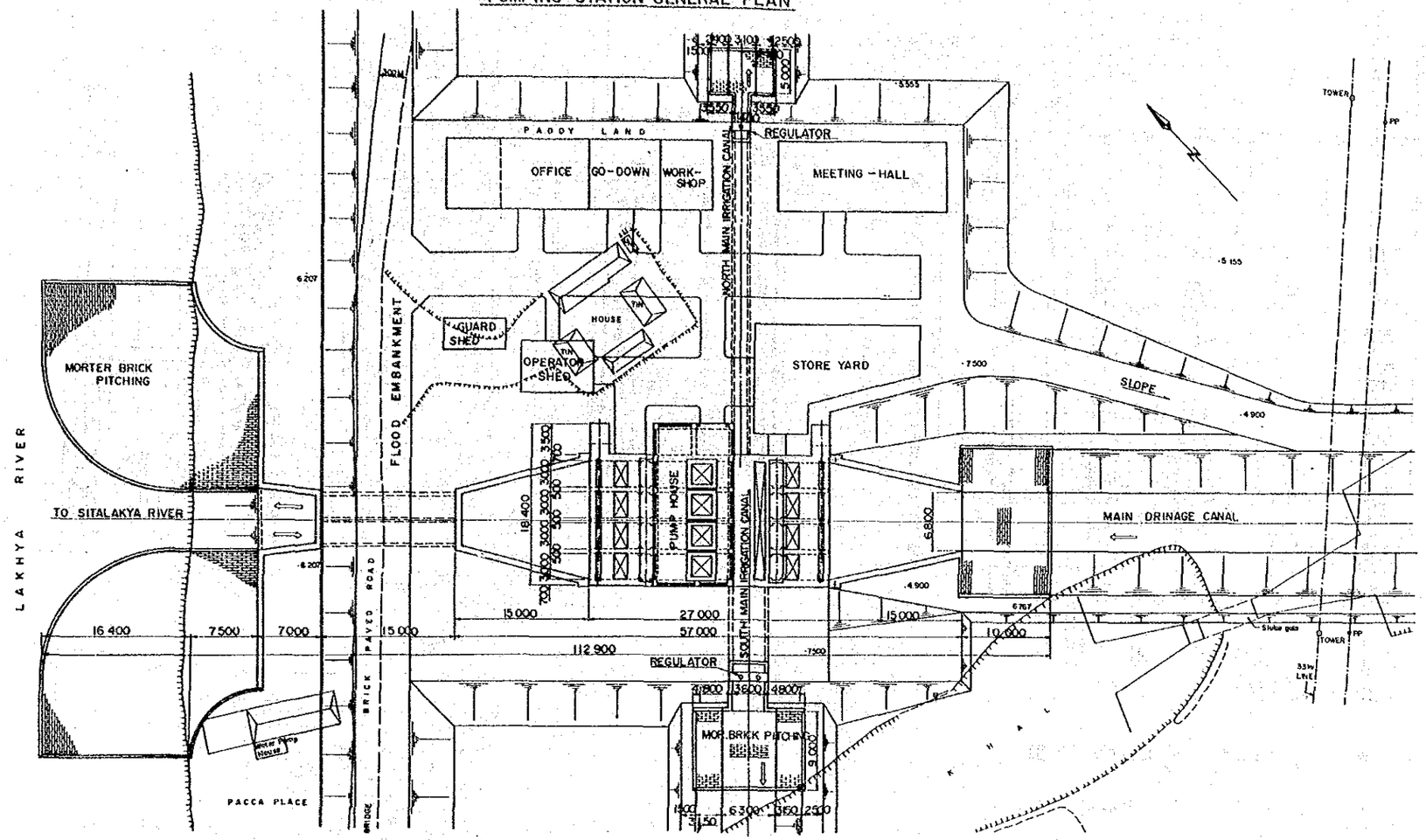
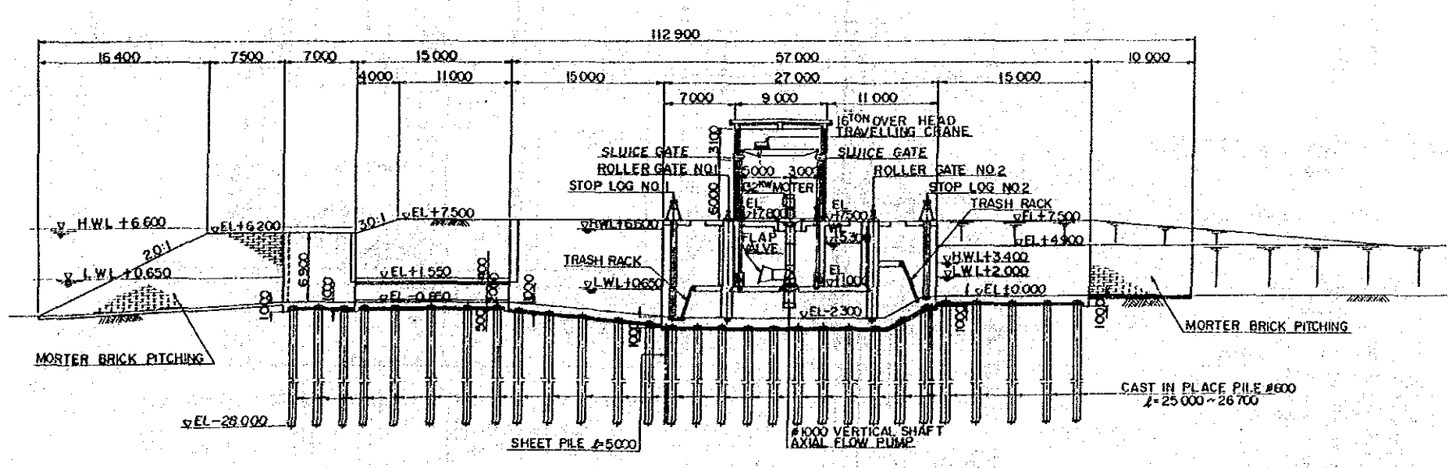
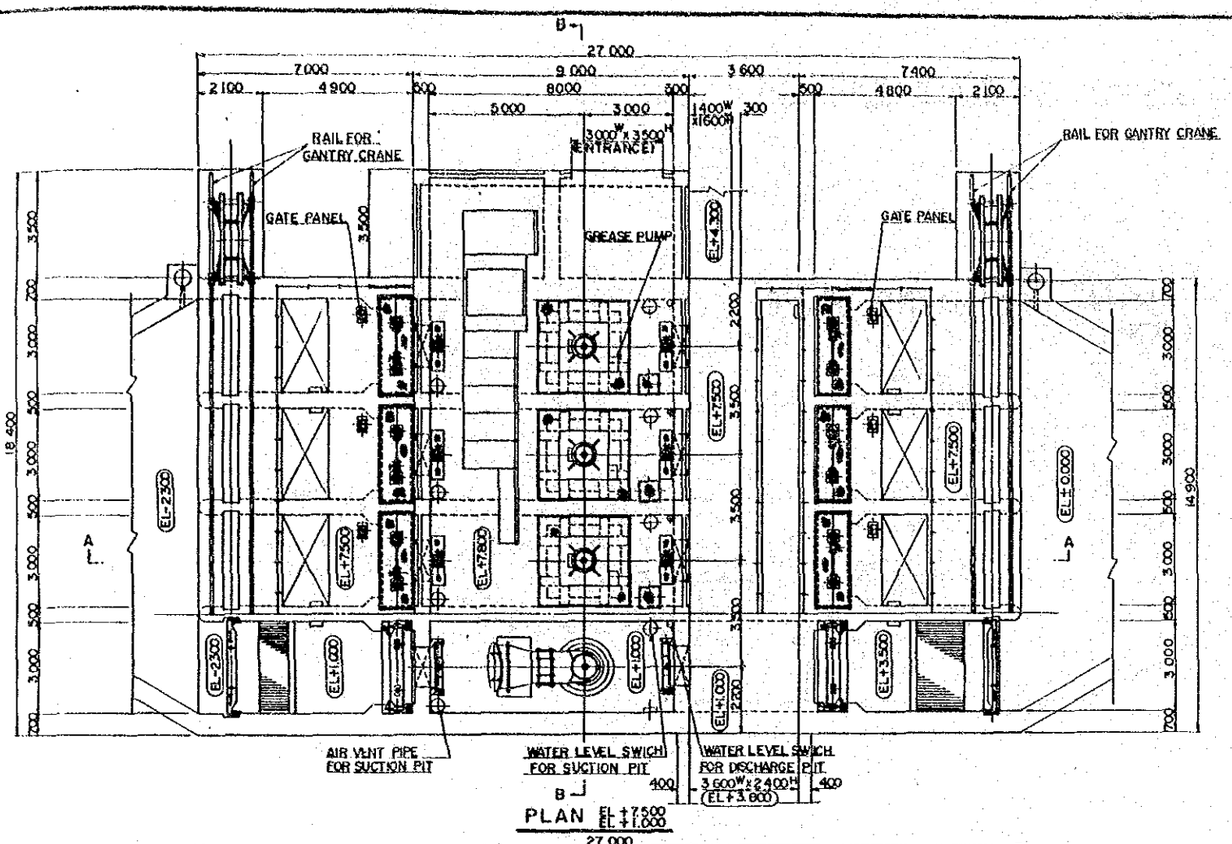
PUMPING STATION GENERAL PLAN

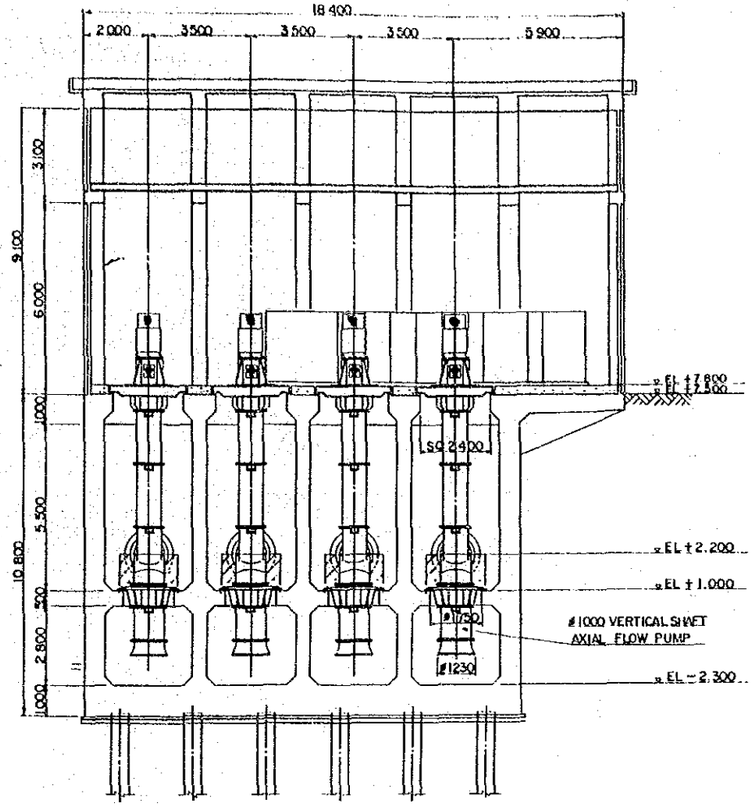


PUMPING STATION GENERAL PROFILE



NARAYANGANJ-NARSINGDI IRRIGATION PROJECT (BLOCK-A-1) THE PEOPLE'S REPUBLIC OF BANGLADESH	
GENERAL PLAN & PROFILE OF PUMPING STATION	
Date; Jan 1988	D.W.G NO. 4
JAPAN INTERNATIONAL COOPERATION AGENCY	





SECTION B-B

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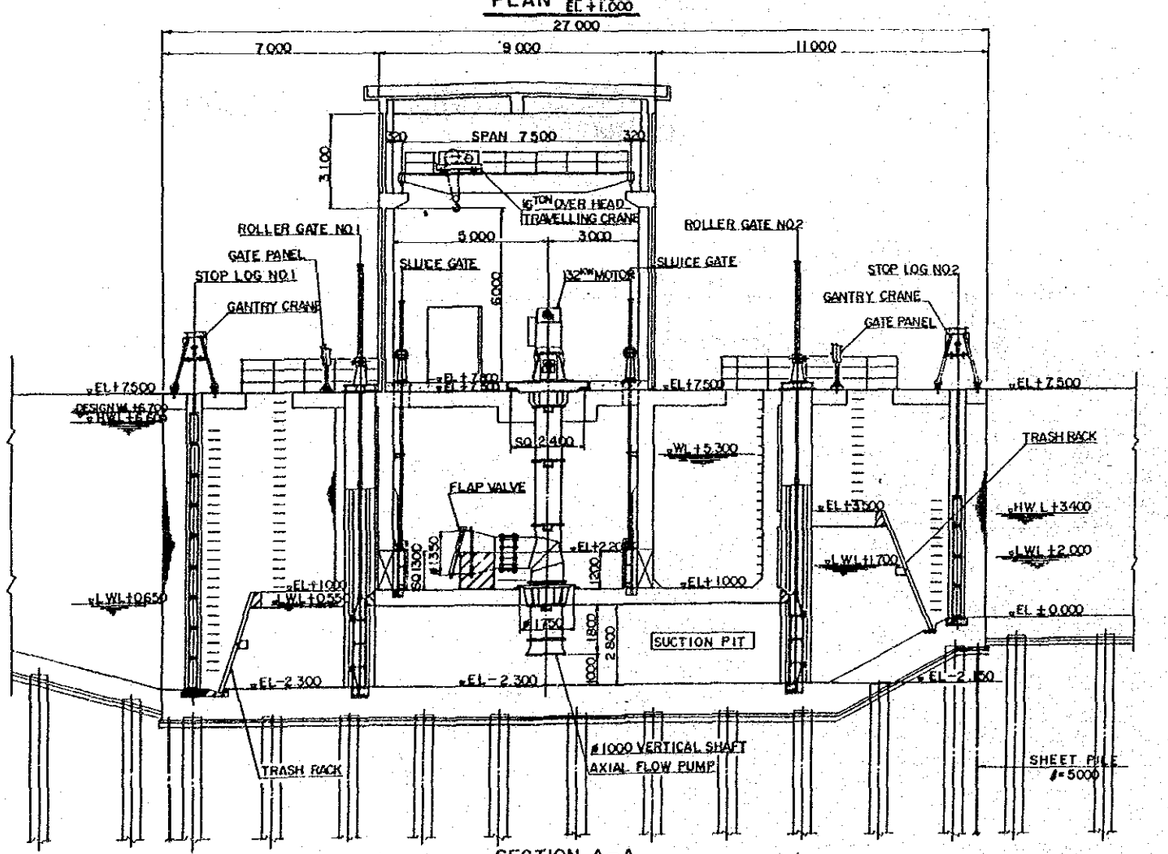
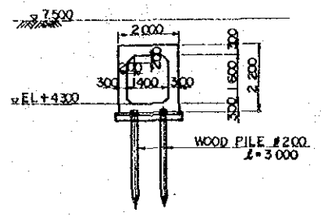
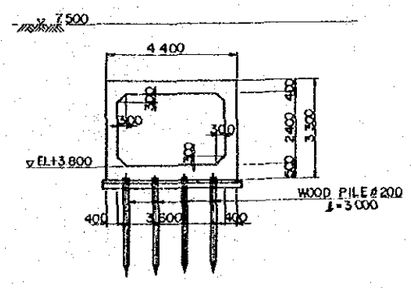


SECTION A-A

NORTH MAIN IRRIGATION CANAL SECTION
(Box Culvert)



SOUTH MAIN IRRIGATION CANAL SECTION
(Box Culvert)



NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK-A-1)
THE PEOPLE'S REPUBLIC OF BANGLADESH

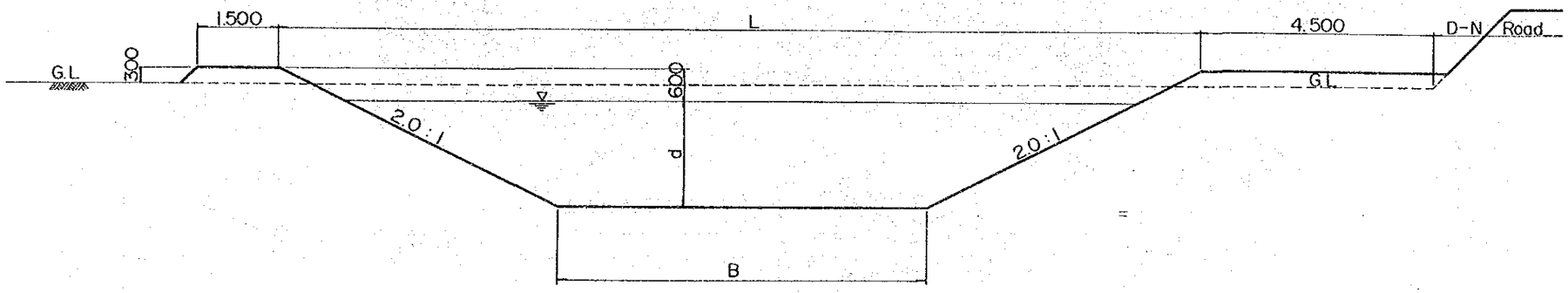
PLAN AND SECTIONS OF PUMPING STATION

Date; Jan 1988 | D.W.G NO. 5

JAPAN INTERNATIONAL COOPERATION AGENCY

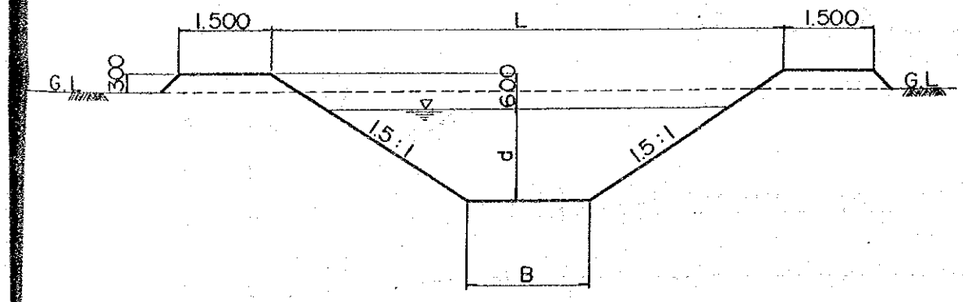
TYPICAL SECTIONS OF PROPOSED CANALS

MAIN DRAINAGE CANAL (NEW)



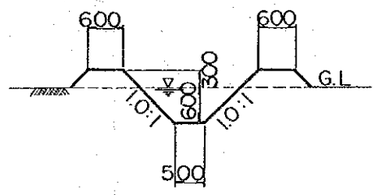
Type	B (m)	d (m)	L (m)
M.D.C I	1.800	1.500	10.200
〃 II	2.000	2.000	12.400
〃 III	3.000	2.000	13.400
〃 IV	4.000	2.000	14.400
〃 V	4.700	2.000	15.100
〃 VI	6.800	2.000	17.200

SECONDARY DRAINAGE CANAL (NEW)



Canal	B (m)	d (m)	L (m)
S.D.C 1	0.500	1.500	6.800
〃 2	1.000	1.000	5.800
〃 3	1.000	1.000	5.800
〃 4	1.000	1.000	5.800
〃 5	0.800	1.500	7.100
〃 6	0.500	1.000	5.300
〃 7	1.500	1.200	6.900
〃 7-1	0.500	1.000	5.300
〃 7-2	0.500	1.000	5.300

TERTIARY DRAINAGE CANAL (NEW)



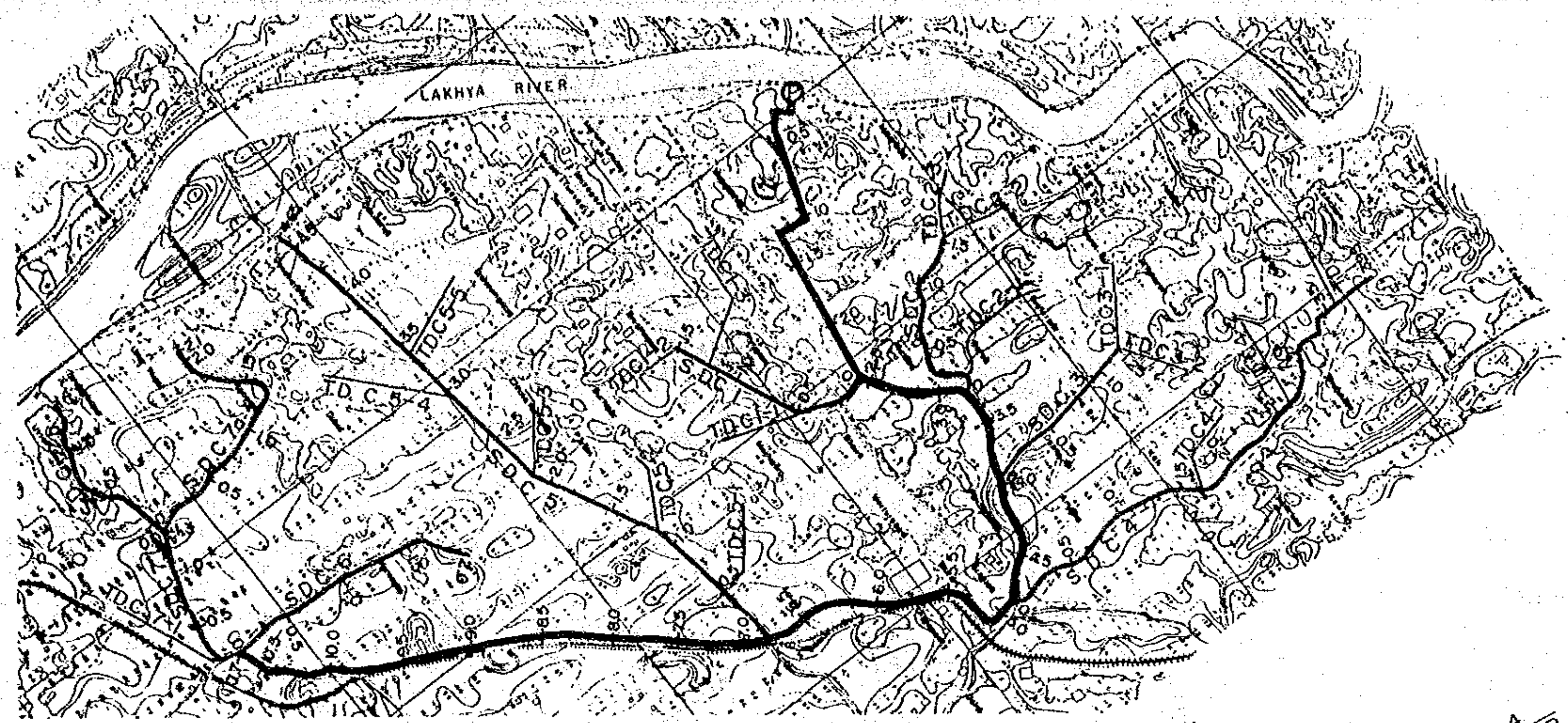
Note : 1. Existing natural channels will be utilized to the drainage canal as much as possible.
2. The width of 1.5m will be applied in the portion excepting the portion along D-N road.

NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK – A – 1)
THE PEOPLE'S REPUBLIC OF BANGLADESH

TYPICAL SECTIONS OF DRAINAGE CANALS

Date ; Jan 1988 | D.W.G NO. 6

JAPAN INTERNATIONAL COOPERATION AGENCY



SCALE
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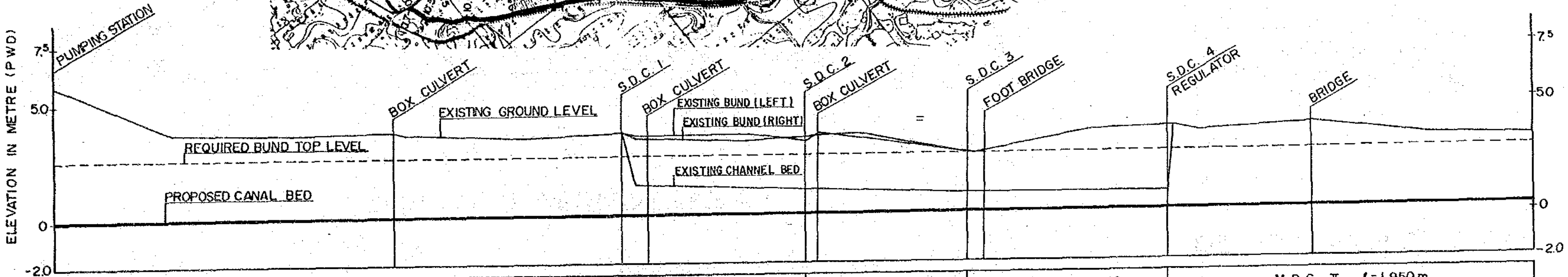
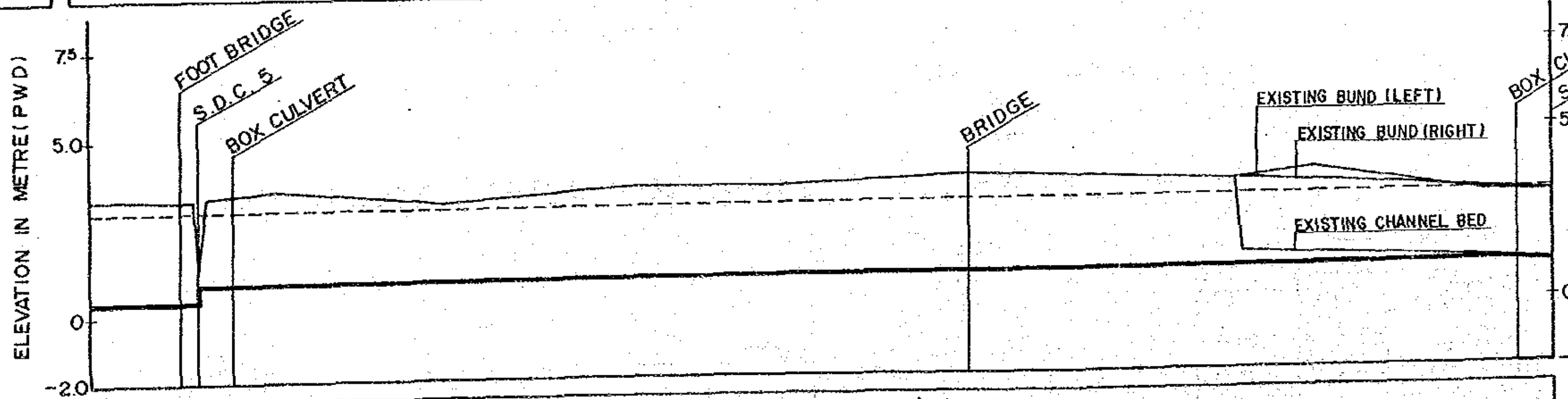


TYPE OF MAIN DRAINAGE CANAL	M.D.C VI ℓ=2430m						M.D.C V ℓ=810m				M.D.C IV ℓ=710m			M.D.C III ℓ=900m				M.D.C II ℓ=1950m					
BUND TOP LEVEL	6.10	4.08	3.99	4.11	3.96	3.78	4.05	3.90	3.90	3.92	3.90	3.90	3.90	3.10	3.10	3.10	3.99	4.28	4.20	3.96	4.29	3.71	3.62
CANAL BED LEVEL	0.00	0.03	0.05	0.08	0.08	0.10	0.12	0.13	0.13	0.15	0.16	0.16	0.18	0.20	0.20	0.20	0.23	0.24	0.24	0.25	0.28	0.30	0.33
EXISTING GROUND LEVEL	5.800	3.78	3.69	3.81	3.66	3.48	3.75	1.40	1.40	1.27	1.20	1.19	1.13	1.01	1.00	1.00	1.00	1.00	3.90	3.66	3.99	3.41	3.32
DISTANCE	0	500	1000	1450	1500	2000	2430	2500	2550	3000	3240	3290	3500	3950	4000	4020	4500	4850	4870	5000	5500	6000	6500



Note : S.D.C.= Secondary Drainage Canal.

TYPE OF MAIN DRAINAGE CANAL	M.D.C II ℓ=1950m				M.D.C I ℓ=3900m													
BUND TOP LEVEL	3.62	3.50	3.56	3.65	3.65	3.70	3.81	3.44	3.84	3.81	4.05	3.87	3.81	3.81	4.08	3.41	3.41	3.41
CANAL BED LEVEL	0.33	0.34	0.34	0.84	0.84	0.85	0.85	0.88	0.90	0.93	0.95	0.98	0.98	0.98	1.00	1.03	1.03	1.04
EXISTING GROUND LEVEL	3.32	3.20	3.26	3.20	3.35	3.40	3.51	3.14	3.54	3.51	3.75	3.57	3.51	1.40	1.28	1.08	1.05	1.00
DISTANCE	m 6.500	6.750	6.780	6.800	6.820	6.900	7.000	7.500	8.000	8.500	9.000	9.500	9.780	9.800	10.000	10.500	10.600	10.700

0 5 10 (m)
VERTICAL SCALE
0 500 1000(m)
HORIZONTAL SCALE

NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK - A - I)
THE PEOPLE'S REPUBLIC OF BANGLADESH

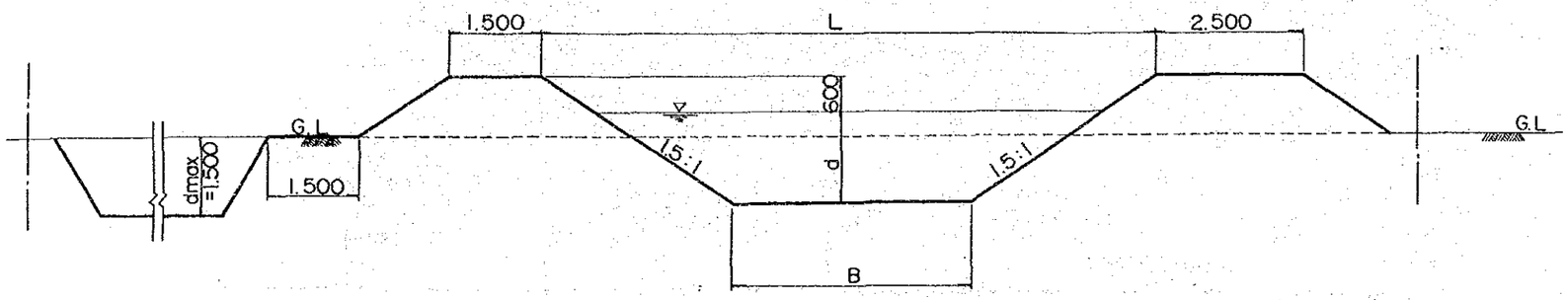
PROFILE OF MAIN DRAINAGE CANAL

Date ; Jan 1988 | D.W.G NO. 7

JAPAN INTERNATIONAL COOPERATION AGENCY

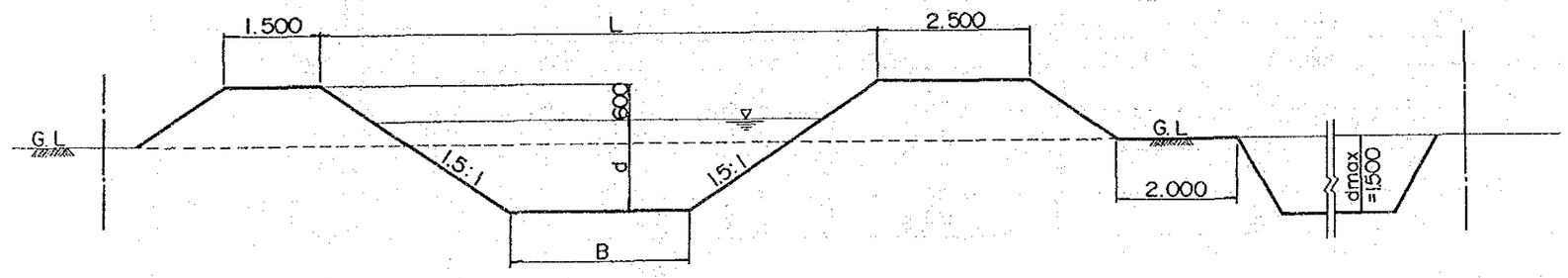
TYPICAL SECTIONS OF PROPOSED CANALS

NORTH MAIN IRRIGATION CANAL

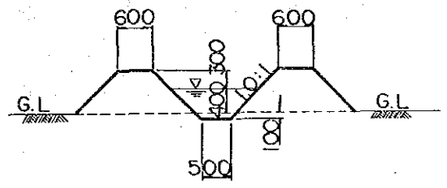


	Type	B (m)	d (m)	L (m)
North	N.M.I.C I	3.100	1.000	7.900
	〃 II	2.200	1.000	7.000
	〃 III	1.200	1.000	6.000
South	S.M.I.C I	6.300	1.500	12.600
	〃 II	5.800	1.500	12.100
	〃 III	5.500	1.500	11.800
	〃 IV	4.300	1.500	10.600
	〃 V	2.700	1.500	9.000
	〃 VI	2.400	1.500	8.700
	〃 VII	2.100	1.500	8.400

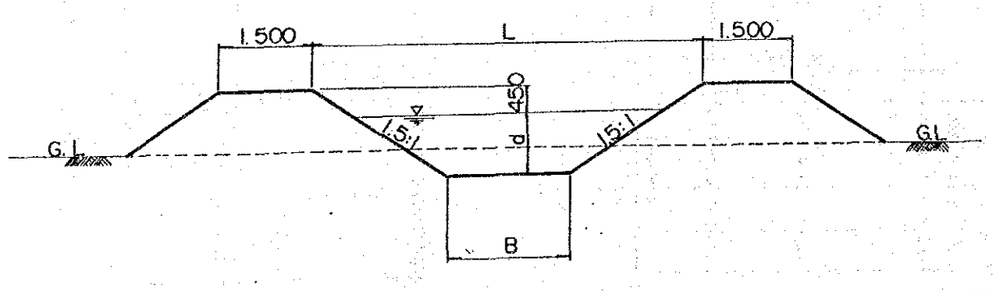
SOUTH MAIN IRRIGATION CANAL



TERTIARY IRRIGATION CANAL



SECONDARY IRRIGATION CANAL



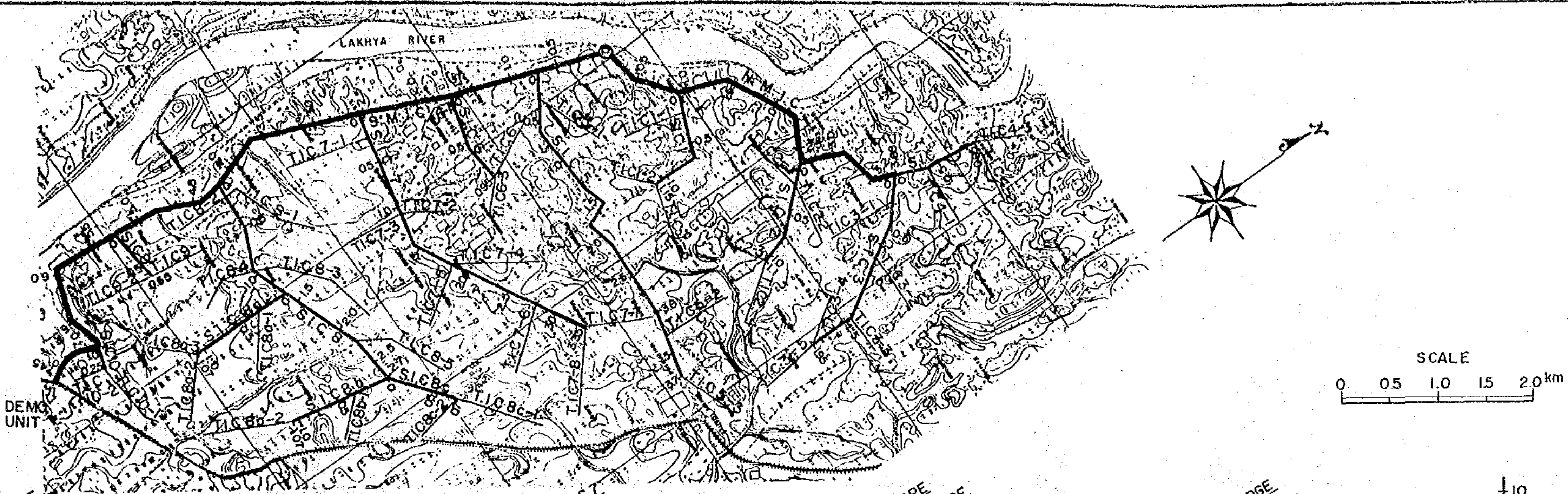
	Canal	B (m)	d (m)	L (m)
North	S.I.C 1	1.100	0.750	4.700
	〃 2	1.100	0.750	4.700
	〃 3	1.700	0.750	5.300
	〃 4	0.600	0.750	4.200
South	〃 5	1.100	0.750	4.700
	〃 6	0.600	1.000	4.200
	〃 7	1.700	1.000	6.050
	〃 8	2.400	0.750	6.750
	〃 8-a	0.600	0.750	4.200
	〃 8-b	0.600	0.750	4.200
	〃 8-c	0.600	0.750	4.200
	〃 9	0.600	0.750	4.200
	〃 10	0.600	0.750	4.200

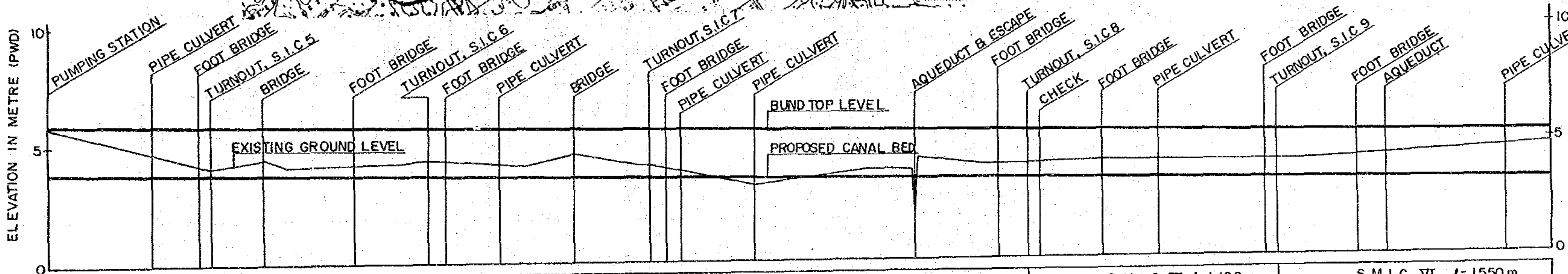
NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK - A - 1)
THE PEOPLE'S REPUBLIC OF BANGLADESH

TYPICAL SECTIONS OF IRRIGATION CANALS

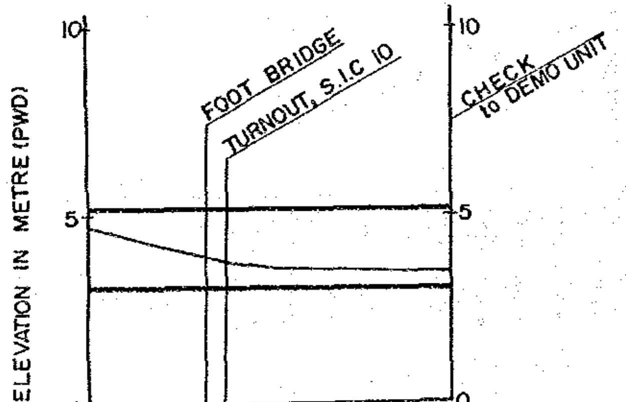
Date ; Jan 1988 | D.W.G NO. 8

JAPAN INTERNATIONAL COOPERATION AGENCY

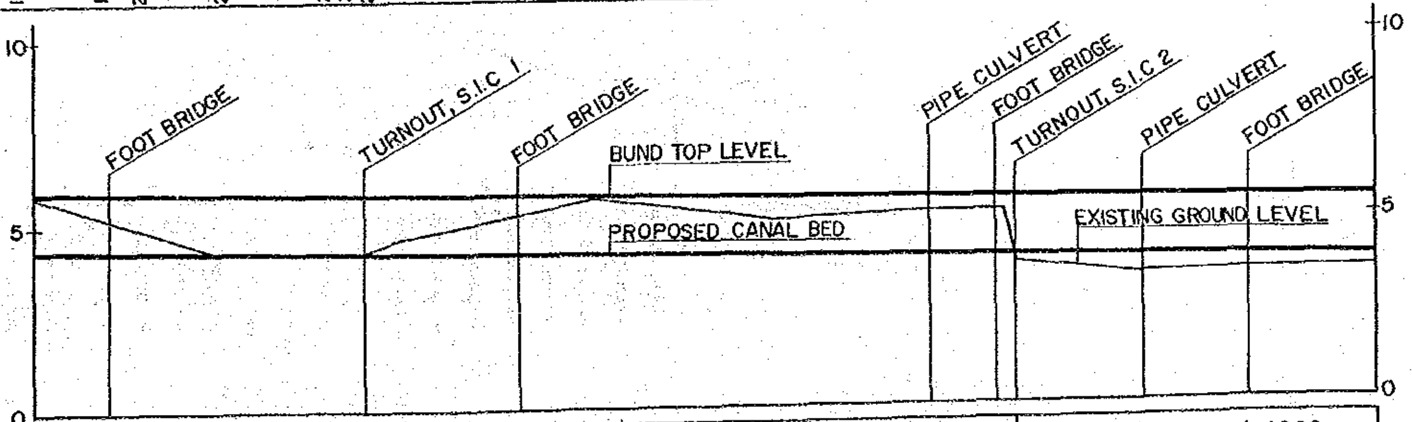




TYPE OF MAIN IRRIGATION CANAL	DISTANCE	BUND TOP LEVEL	CANAL BED LEVEL	EXISTING GROUND LEVEL
S.M.I.C I ℓ=680m	0m	5.90	3.80	5.80
	430	5.86	3.76	4.70
	500	5.85	3.75	4.57
	630	5.84	3.74	4.15
	680	5.83	3.73	4.11
S.M.I.C II ℓ=920m	900	5.81	3.71	4.48
	1000	5.80	3.70	4.11
	1280	5.77	3.67	4.15
	1500	5.75	3.65	4.30
	1600	5.74	3.64	4.39
S.M.I.C III ℓ=950m	1670	5.73	3.63	4.30
	1900	5.71	3.61	4.15
	2000	5.70	3.60	4.11
	2220	5.68	3.58	5.12
	2500	5.65	3.55	4.15
	2550	5.65	3.55	4.15
S.M.I.C IV ℓ=1650m	2620	5.64	3.54	3.95
	3000	5.60	3.50	3.26
	3500	5.55	3.45	3.87
	3690	5.53	3.43	3.87
	3700	5.53	3.43	1.80
	3710	5.53	3.43	4.33
	4000	5.50	3.40	4.11
	4070	5.49	3.39	4.11
	4200	5.48	3.38	4.08
S.M.I.C V ℓ=1100m	4250	5.48	3.38	4.05
	4500	5.45	3.35	4.11
	4520	5.45	3.35	4.11
	4770	5.42	3.32	4.11
	5000	5.40	3.30	4.11
	5250	5.38	3.28	4.11
	5300	5.37	3.27	4.11
S.M.I.C VI ℓ=1550m	5500	5.35	3.25	4.11
	5650	5.34	3.24	4.20
	5780	5.32	3.22	4.30
	6000	5.30	3.20	4.39
	6300	5.27	3.17	4.60
	6500	5.25	3.15	4.77

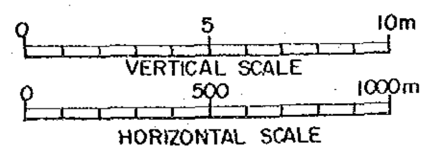


TYPE OF MAIN IRRIGATION CANAL	DISTANCE	BUND TOP LEVEL	CANAL BED LEVEL	EXISTING GROUND LEVEL
S.M.I.C VI ℓ=1550m	6500	5.25	3.15	4.72
	6800	5.22	3.12	3.90
	6850	5.22	3.12	3.78
S.M.I.C VII ℓ=600m	7000	5.20	3.10	3.57
	7450	5.16	3.06	3.44



TYPE OF MAIN IRRIGATION CANAL	DISTANCE	BUND TOP LEVEL	CANAL BED LEVEL	EXISTING GROUND LEVEL
N.M.I.C I ℓ=900m	0m	5.90	4.30	5.80
	200	5.88	4.28	5.15
	500	5.85	4.25	4.27
	900	5.81	4.21	4.27
N.M.I.C II ℓ=1780m	1000	5.80	4.20	4.66
	1320	5.77	4.17	5.25
	1500	5.75	4.15	5.64
	2000	5.70	4.10	5.03
	2450	5.66	4.06	5.15
	2500	5.65	4.05	5.15
	2630	5.64	4.04	5.15
	2650	5.64	4.04	5.15
	2680	5.63	4.03	3.75
N.M.I.C III ℓ=1000m	3000	5.60	4.00	3.47
	3030	5.60	4.00	3.45
	3330	5.57	3.97	3.50
	3500	5.55	3.95	3.51
	3680	5.53	3.93	3.51

Note : S.I.C = Secondary Irrigation Canal



NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK – A – I)
THE PEOPLE'S REPUBLIC OF BANGLADESH

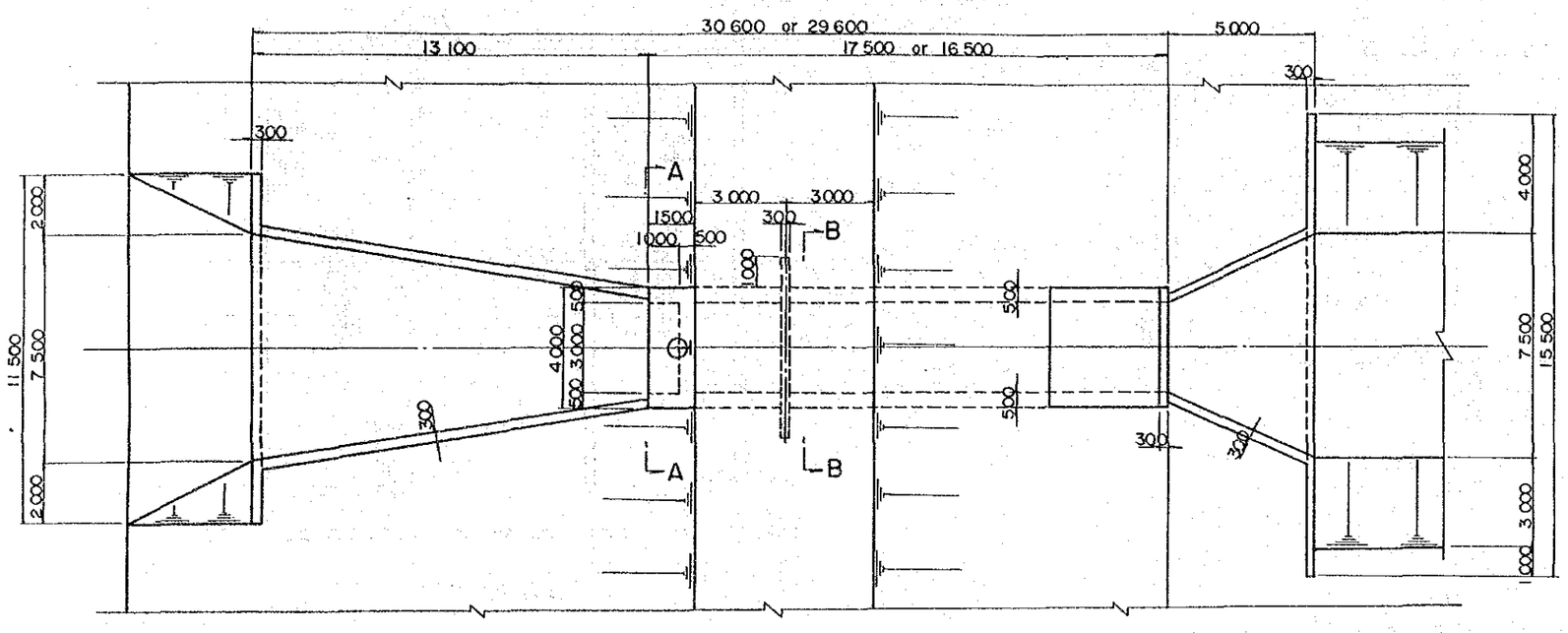
PROFILE OF MAIN IRRIGATION CANALS

Date ; Jan 1988 | D.W.G NO. 9

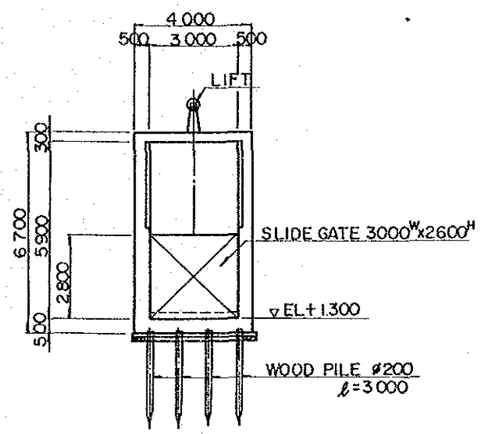
JAPAN INTERNATIONAL COOPERATION AGENCY

REGULATOR

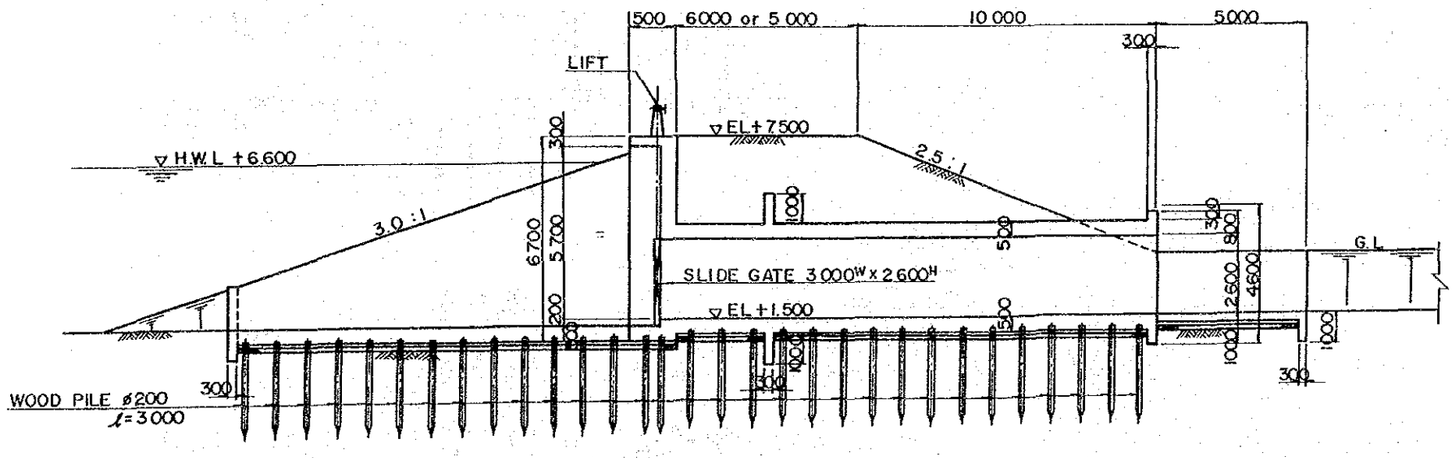
PLAN



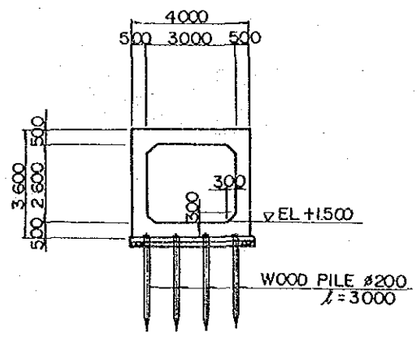
A — A



PROFILE



B — B

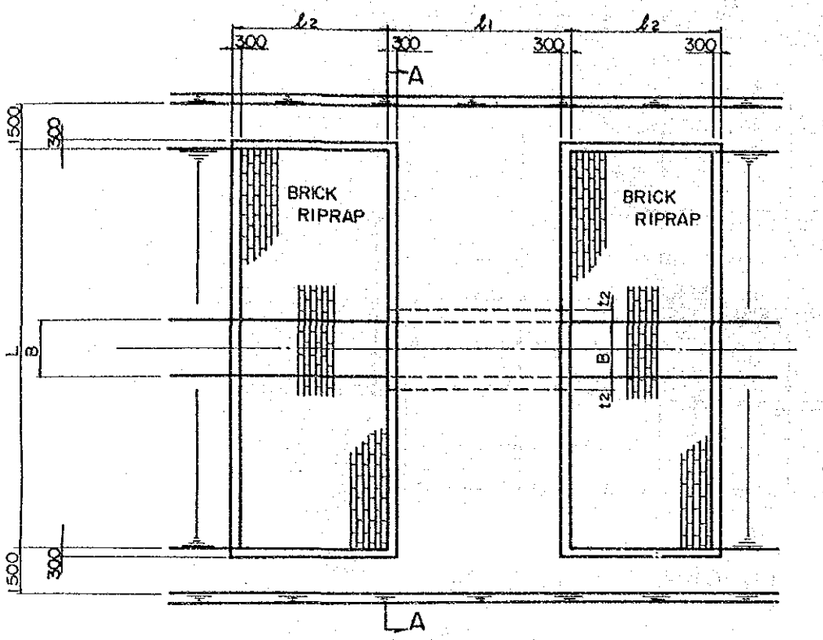


SCALE
0 5m

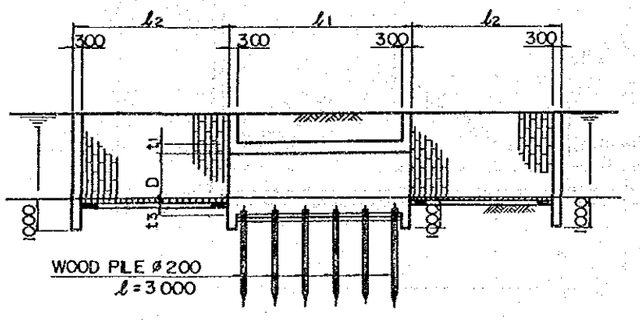
NARAYANGANJ-NARSINGDI IRRIGATION PROJECT (BLOCK--A--1) THE PEOPLE'S REPUBLIC OF BANGLADESH	
REGULATOR	
Date ; Jan 1988	D.W.G NO. 10
JAPAN INTERNATIONAL COOPERATION AGENCY	

BOX CULVERT

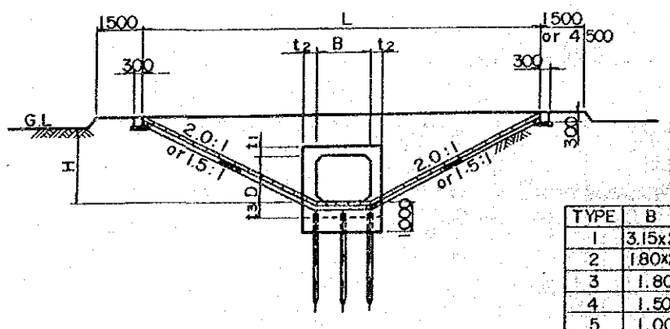
PLAN



PROFILE



A — A

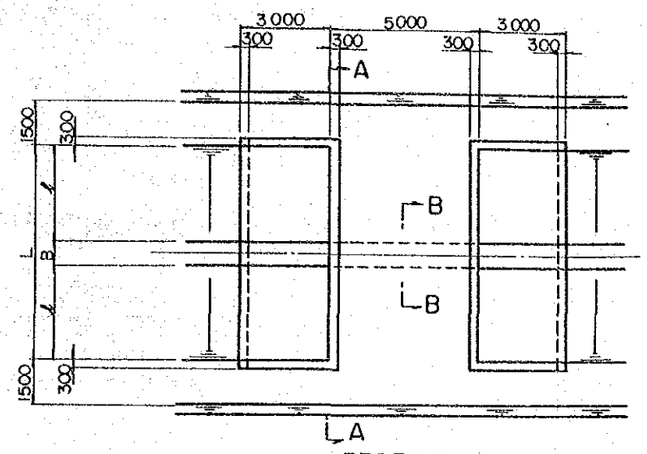


(Dimension : m)

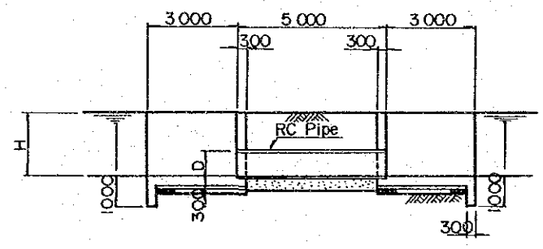
TYPE	B	D	t1	t2	t3	H	L	ℓ1	ℓ2
1	3.15x2	2.00	0.50	0.50	0.60	3.50	22.00	6.00	20.00
2	1.80x2	2.00	0.40	0.40	0.50	8.50	19.20	6.00	12.00
3	1.80	1.50	0.30	0.40	0.50	2.50	13.00	6.00	5.00
4	1.50	1.20	0.30	0.30	0.30	1.30	6.30	5.00	4.50
5	1.00	1.00	0.30	0.30	0.30	1.50	5.80	5.00	3.00
6	1.50	1.50	0.30	0.30	0.30	1.80	6.80	5.00	1.50

PIPE CULVERT

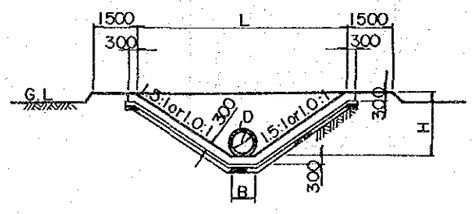
PLAN



PROFILE



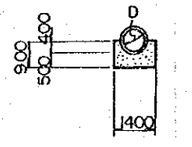
A — A



(Dimension : m)

TYPE	B	ℓ	L	H	D
1	1.00	2.40	5.80	1.60	0.80
2	0.80	3.15	7.10	2.10	0.80
3	0.50	2.40	5.30	1.60	0.80
4	0.50	0.80	2.10	0.80	0.60

B — B
(D = 800)



SCALE
0 5m

NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK – A – 1)
THE PEOPLE'S REPUBLIC OF BANGLADESH

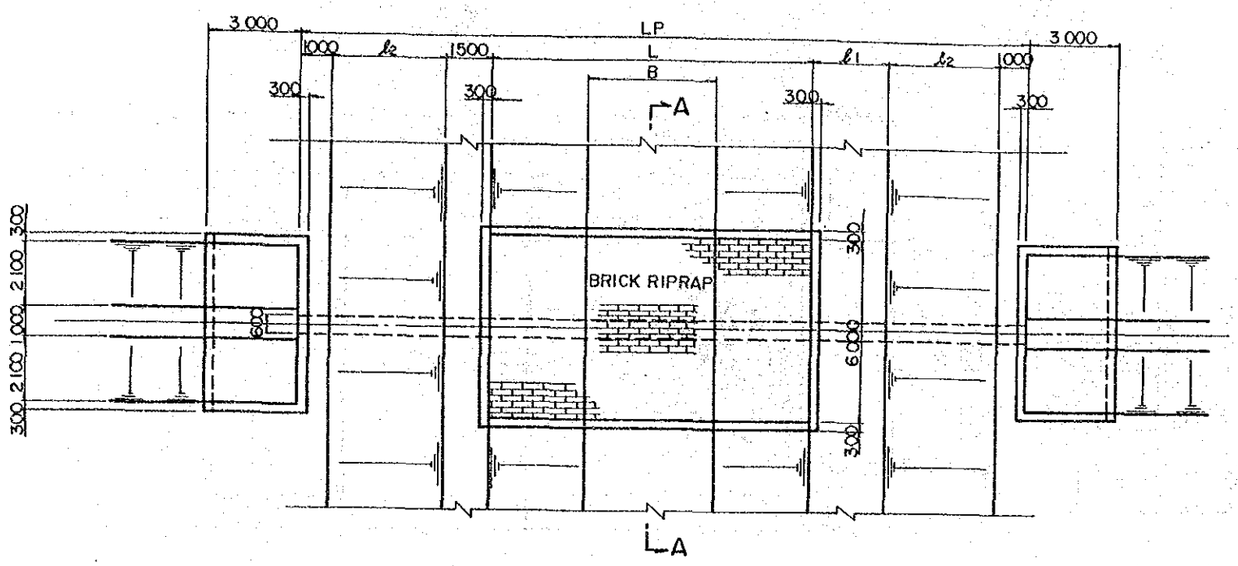
BOX CULVERT &
PIPE CULVERT

Date ; Jan 1988 | D.W.G NO. 11

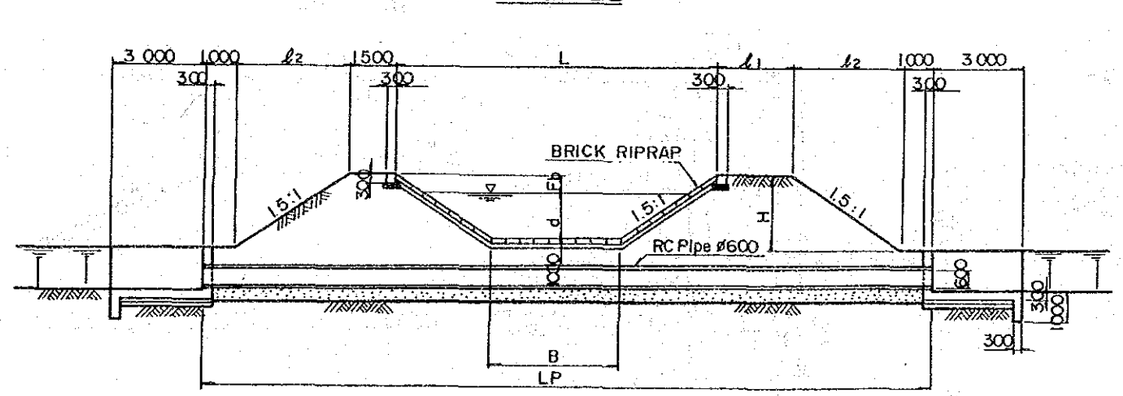
JAPAN INTERNATIONAL COOPERATION AGENCY

PIPE CULVERT

PLAN



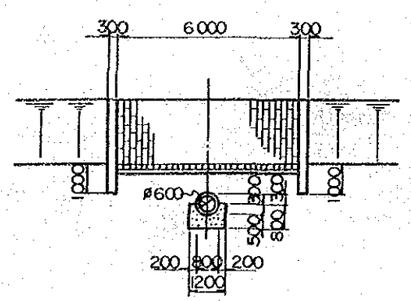
PROFILE



(Dimension : m)

TYPE	B	d	Fb	H	L	ℓ1	ℓ2	LP
1	6.30	1.50	0.60	1.40	12.60	2.50	2.10	22.80
2	4.30	1.50	0.60	2.50	10.60	2.50	3.75	24.10
3	2.70	1.50	0.60	2.60	9.00	2.50	3.90	22.80
4	2.20	1.00	0.60	2.00	7.00	2.50	3.00	19.00
5	1.70	1.00	0.45	1.80	6.05	1.50	2.70	14.35
6	1.20	1.00	0.60	2.70	6.00	2.50	4.05	20.10
7	0.60	0.75	0.45	2.20	4.20	1.50	3.30	12.50

A — A



SCALE
0 5m

NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK – A – I)
THE PEOPLE'S REPUBLIC OF BANGLADESH

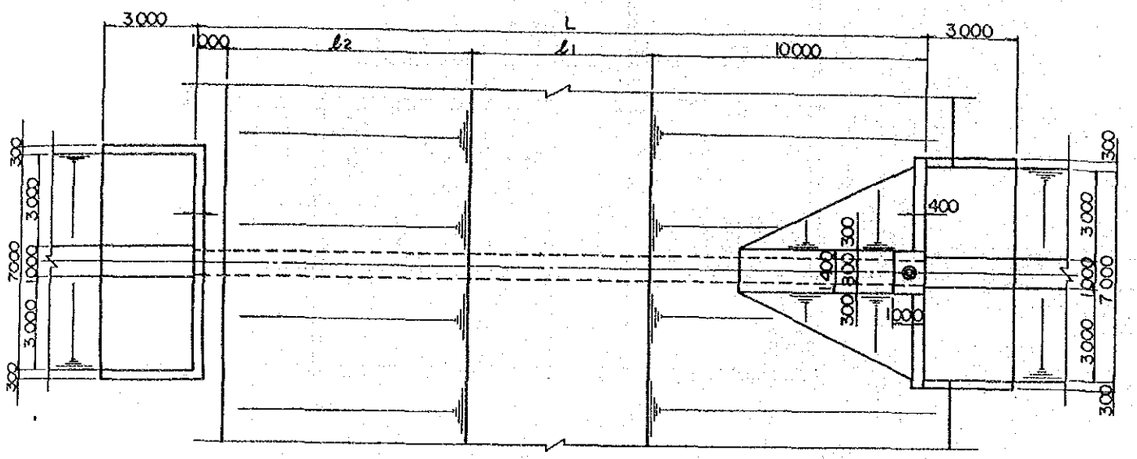
PIPE CULVERT

Date ; Jan 1988 | D.W.G NO. 12

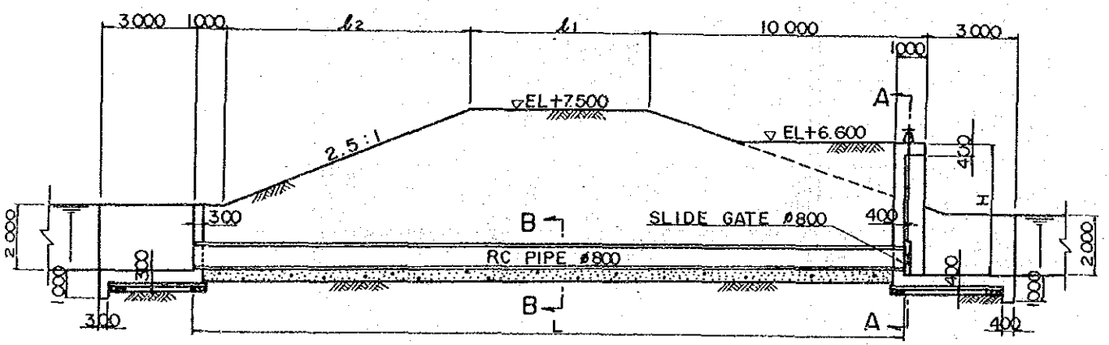
JAPAN INTERNATIONAL COOPERATION AGENCY

PIPE SLUICE

PLAN

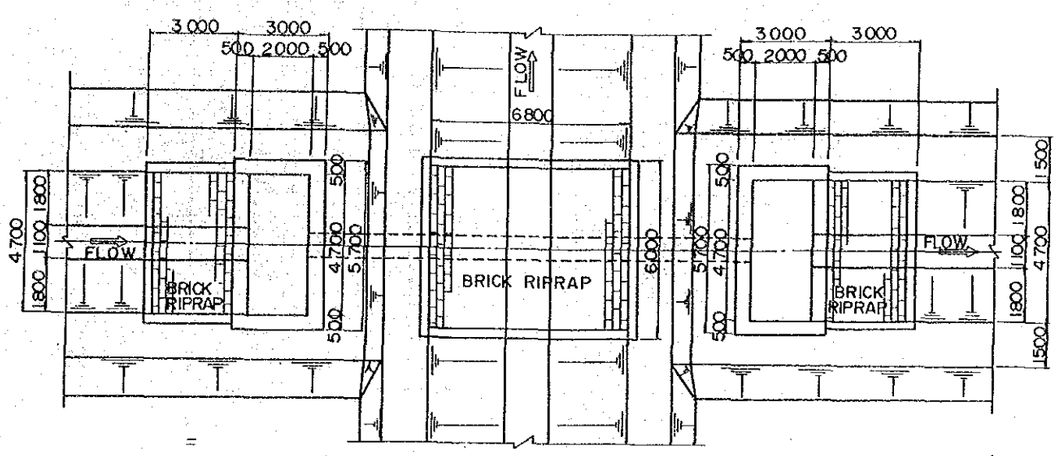


PROFILE

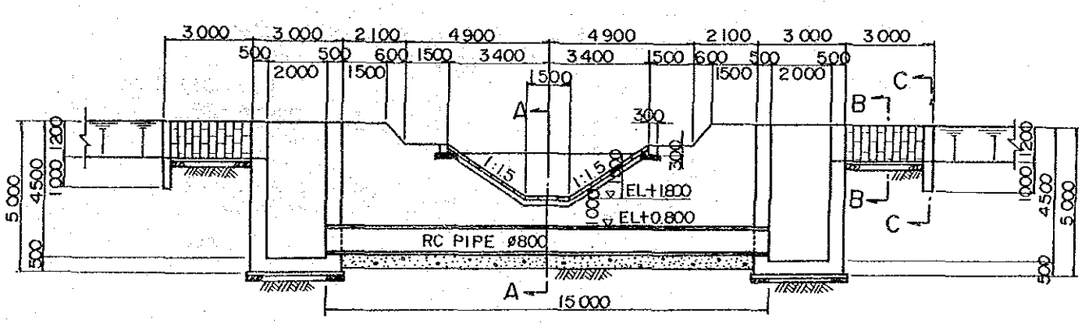


SIPHON

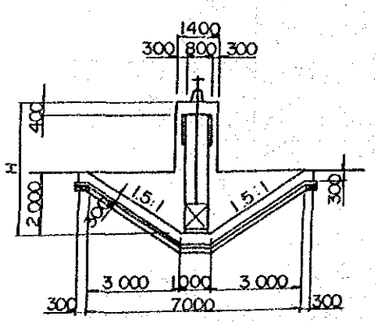
PLAN



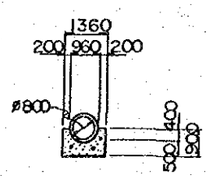
PROFILE



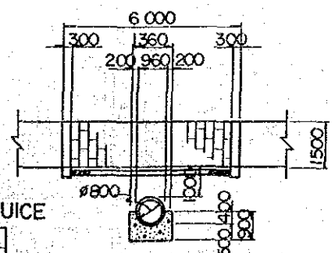
A – A



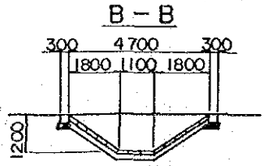
B – B



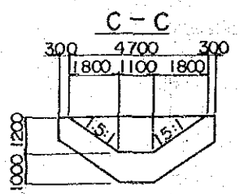
A – A



B – B



C – C



DIMENSION TABLE OF PIPE SIUICE

TYPE	ℓ1	ℓ2	L	H
1	6 000	8000	24 400	4300
2	5 000	9500	24 900	4900
3	5 000	10000	25 000	5 100

SCALE 0 5m

NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK – A – I)
THE PEOPLE'S REPUBLIC OF BANGLADESH

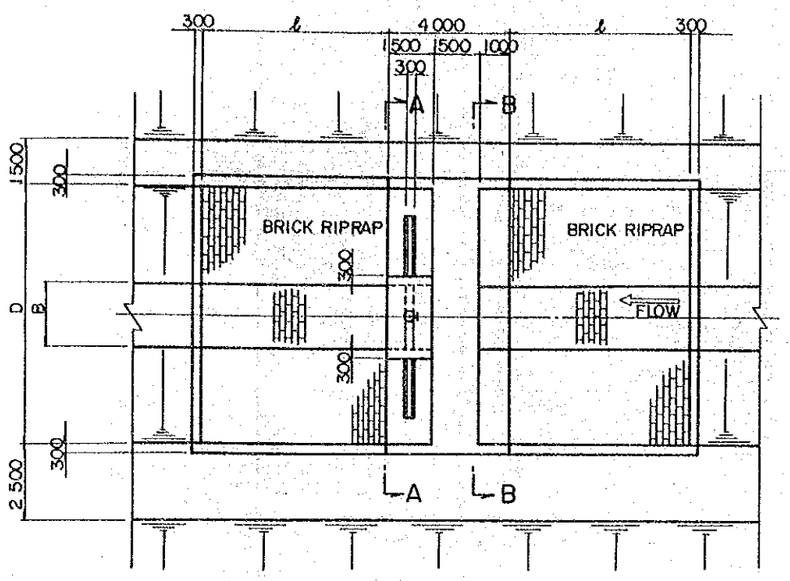
PIPE SLUICE & SIPHON

Date ; Jan 1988 | D.W.G NO. 13

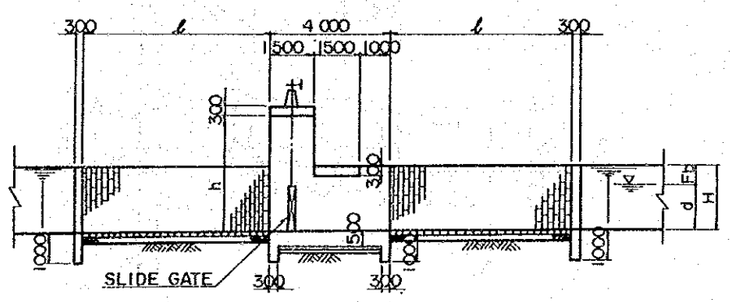
JAPAN INTERNATIONAL COOPERATION AGENCY

CHECK

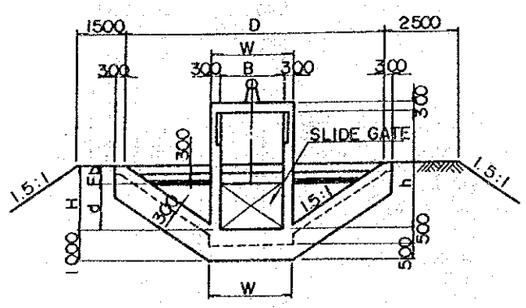
PLAN



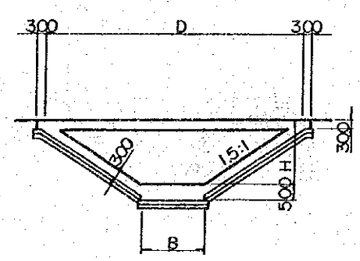
PROFILE



A — A



B — B

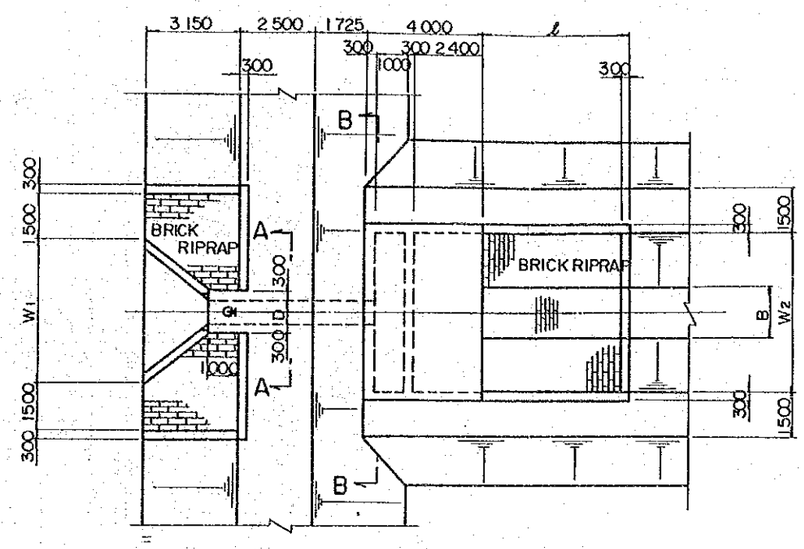


(Dimension : m)

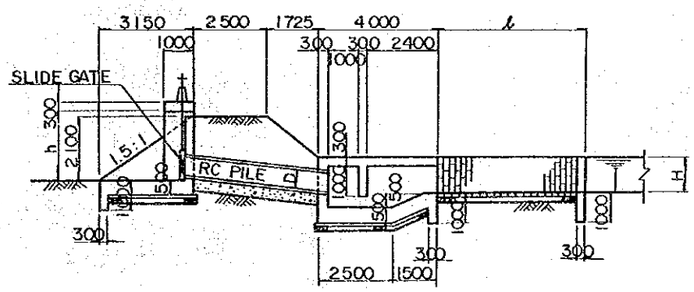
TYPE	B	d	F	H	h	D	ℓ
1	2.70	1.50	0.60	2.10	3.80	9.00	6.00
2	2.40	1.00	0.45	1.45	2.65	6.75	6.00
3	2.10	1.50	0.60	2.10	3.80	8.40	6.00
4	0.60	1.00	0.45	1.20	2.15	4.20	3.00

TURNOUT. I

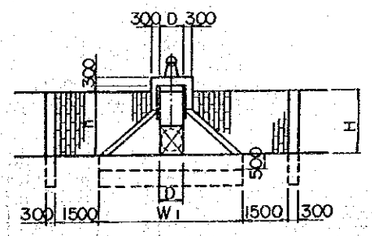
PLAN



PROFILE

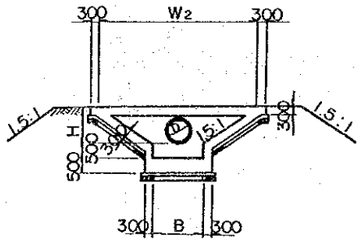


FRONT ELEVATION



A — A

B — B



(Dimension : m)

TYPE	B	H	D	W1	W2	h	ℓ
1	2.40	1.45	0.80×2	5.80	6.75	2.30	7.00
2	1.70	1.20	0.80	4.80	5.30	2.30	5.00
3	1.10	1.20	0.70	4.70	4.70	2.00	3.00
4	0.60	1.20	0.60	4.60	4.20	1.80	2.00

SCALE

0 5m

NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK — A - 1)
THE PEOPLE'S REPUBLIC OF BANGLADESH

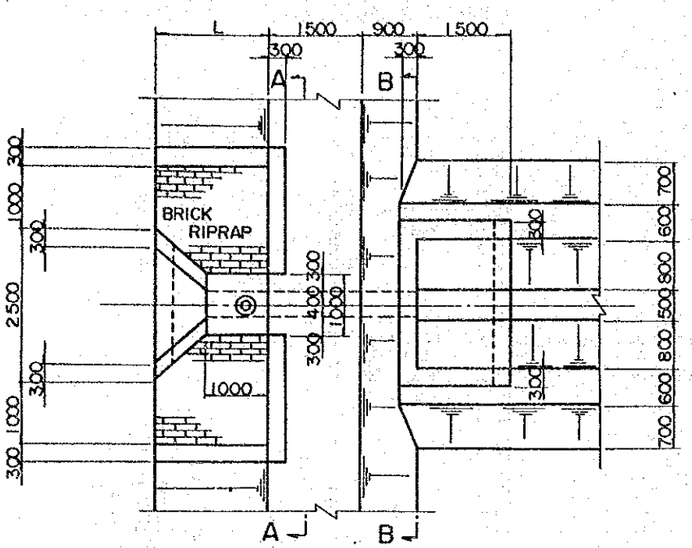
TURNOUT. I & CHECK

Date ; Jan 1988 | D.W.G NO. 14

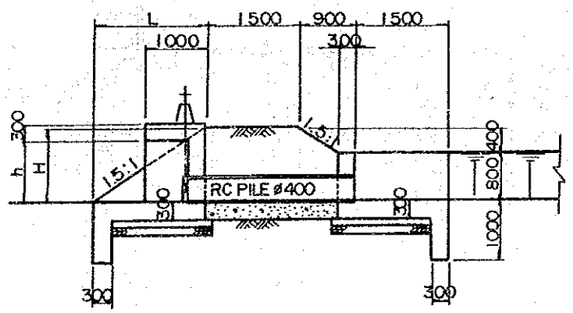
JAPAN INTERNATIONAL COOPERATION AGENCY

TURNOUT. II

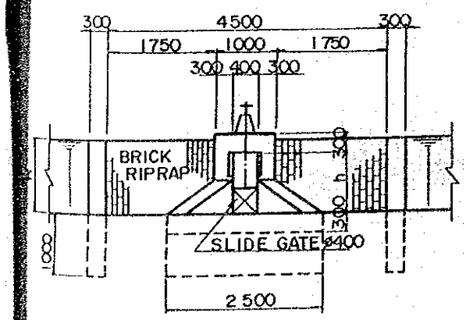
PLAN



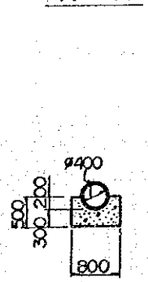
PROFILE



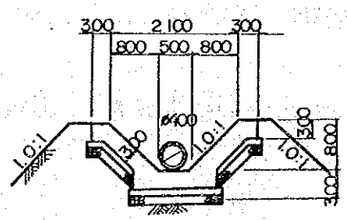
FRONT ELEVATION



A — A



B — B



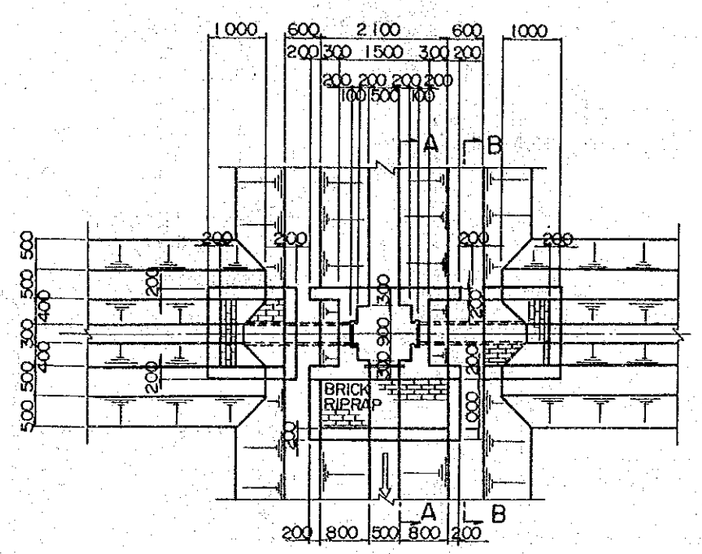
(Dimension : m)

TYPE	H	L	h
1	1.20	1.80	1.00
2	1.45	2.175	1.25

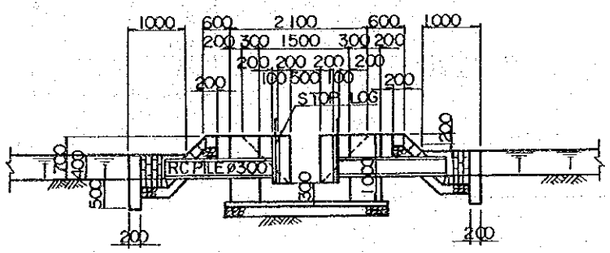
SCALE 0 3 m

DIVISIONBOX

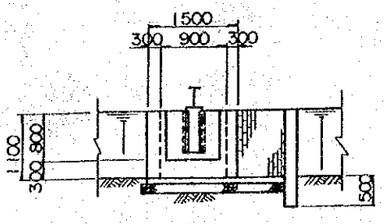
PLAN



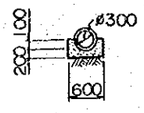
PROFILE



A — A

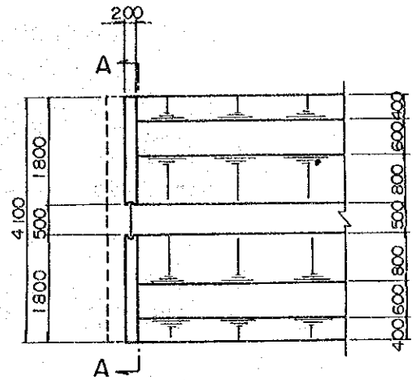


B — B

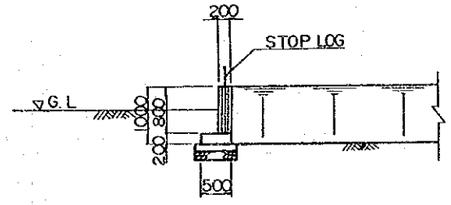


END STRUCTURE

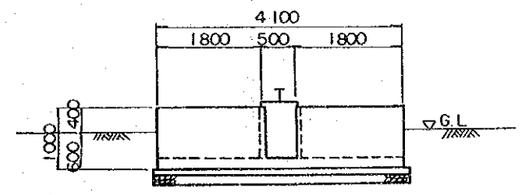
PLAN



PROFILE



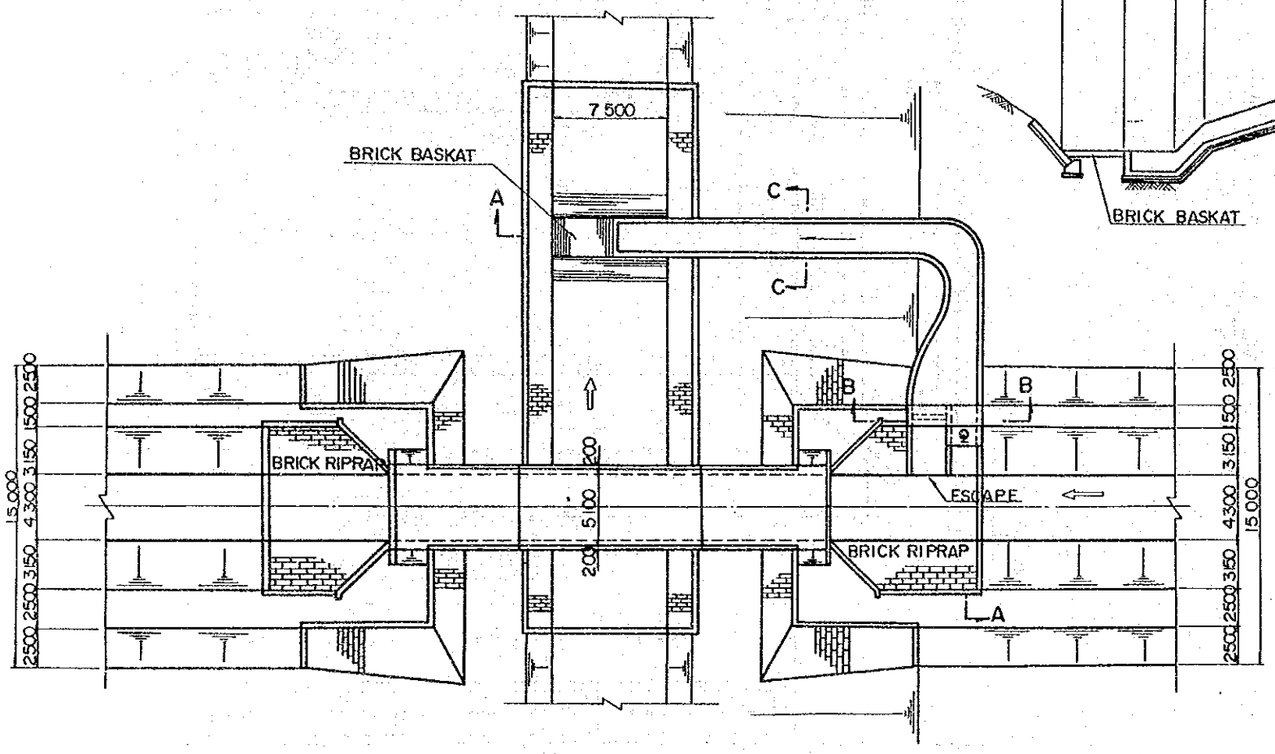
A — A



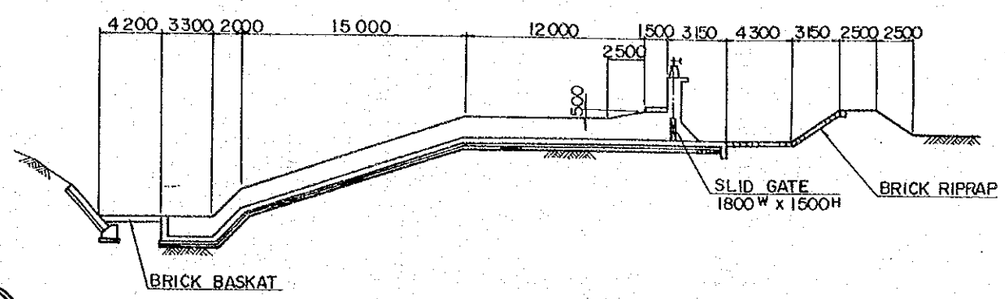
NARAYANGANJ-NARSINGDI IRRIGATION PROJECT (BLOCK – A – I) THE PEOPLE'S REPUBLIC OF BANGLADESH
TURNOUT– II, DIVISION BOX & END STRUCTURE
Date; Jan 1988 | D.W.G NO. 15
JAPAN INTERNATIONAL COOPERATION AGENCY

AQUEDUCT & ESCAPE

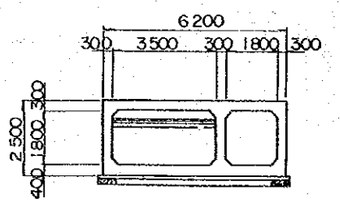
PLAN SCALE : A



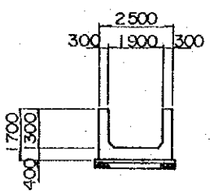
SECTION A – A SCALE : B



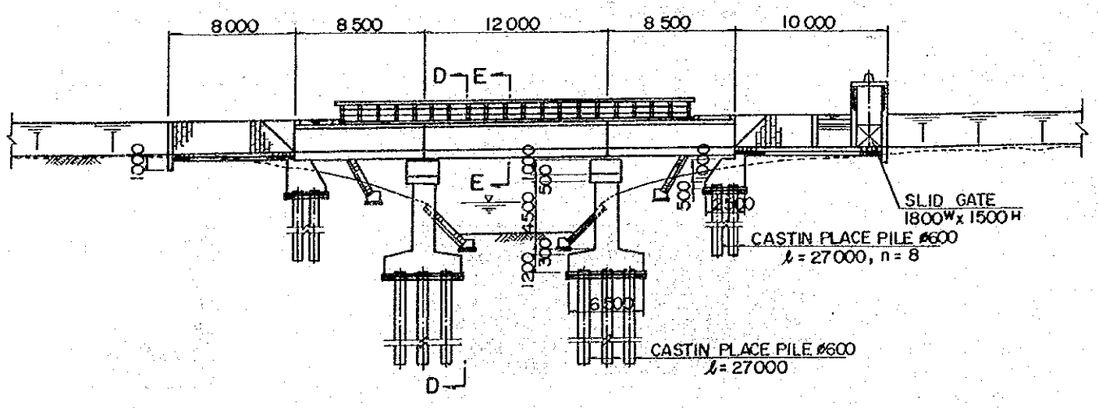
SECTION B – B SCALE : B



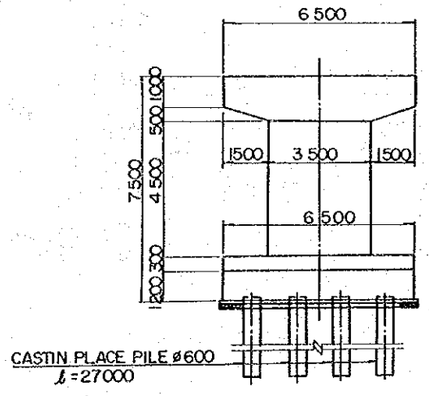
SECTION C – C SCALE : B



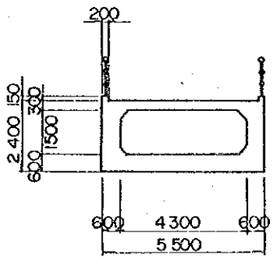
PROFILE SCALE : A



SECTION D – D SCALE : B



SECTION E – E SCALE : B



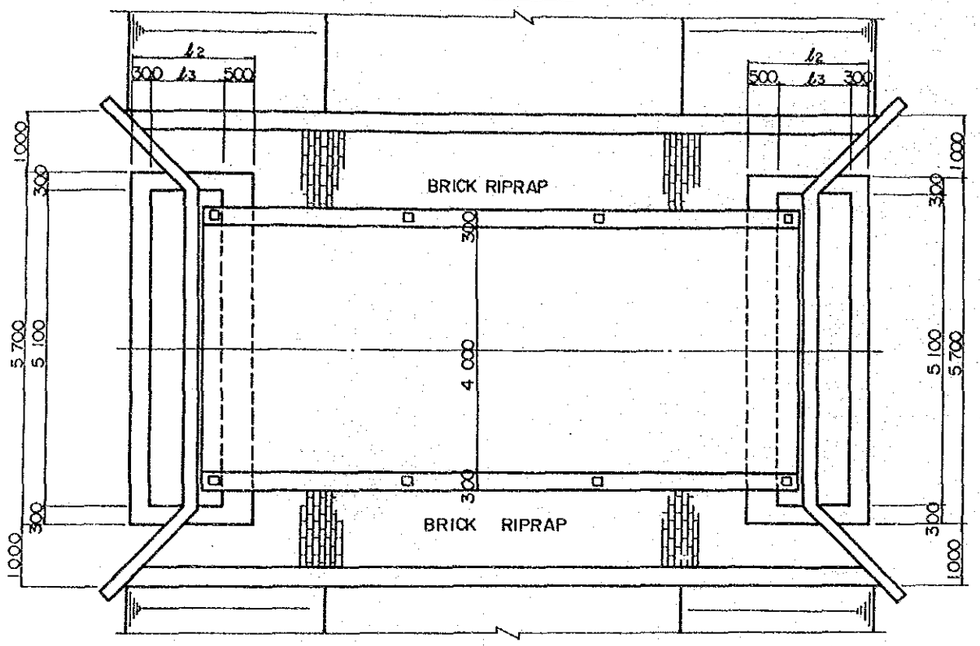
SCALE : A
0 5.0m

SCALE : B
0 5.0m

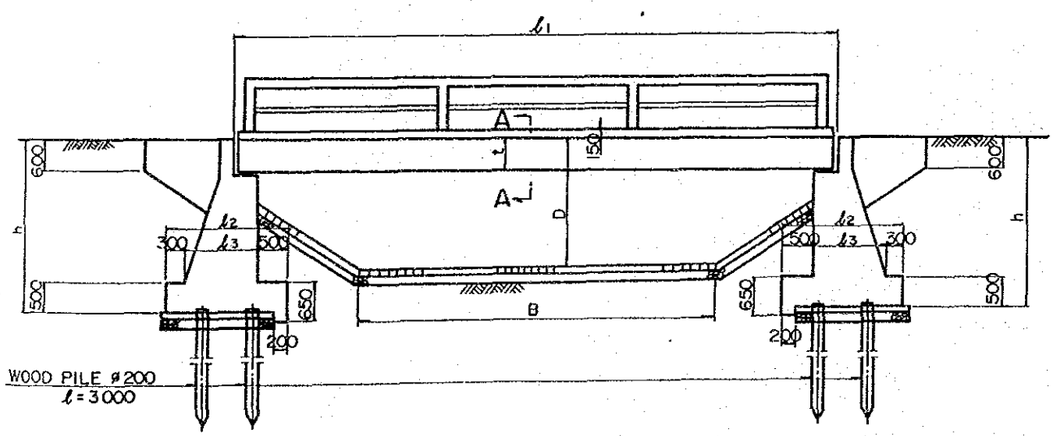
NARAYANGANJ-NARSINGDI IRRIGATION PROJECT (BLOCK – A – I) THE PEOPLE'S REPUBLIC OF BANGLADESH	
AQUEDUCT & ESCAPE	
Date ; Jan 1988	D.W.G NO. 16
JAPAN INTERNATIONAL COOPERATION AGENCY	

BRIDGE

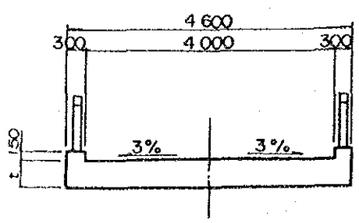
PLAN



PROFILE



A – A

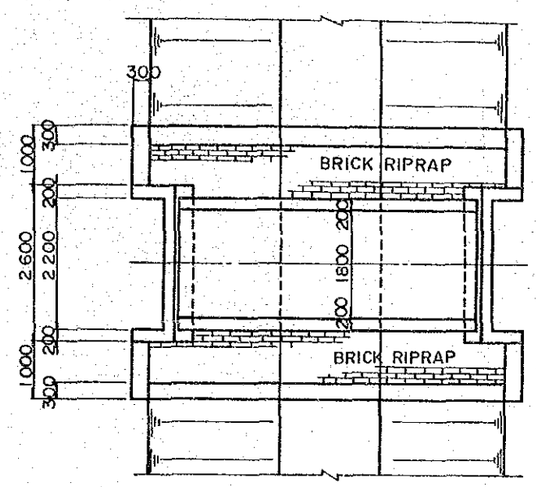


(Dimension : m)

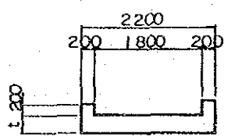
TYPE	B	D	ℓ1	ℓ2	ℓ3	h	b	t
1	6800	2 600	2800	2200	1400	3300	2200	600
2	5800	2 100	9800	2000	1200	2800	2000	550
3	2000	2600	8000	2 100	1300	3300	2 100	500
4	2400	1 450	5500	1900	1100	2 150	1 900	350
5	1700	1 450	4700	1800	1000	2 150	1800	300
6	1 100	1 200	3800	1800	1000	1900	1800	300

FOOT BRIDGE

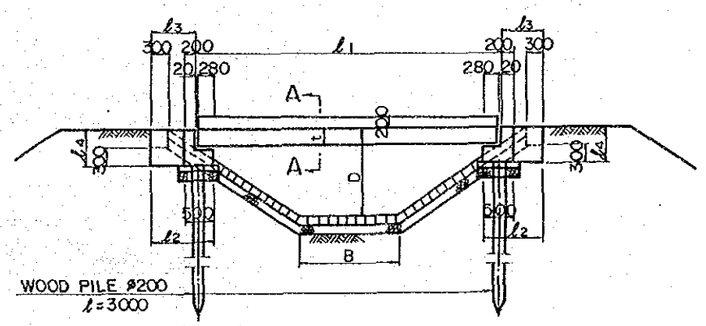
PLAN



A – A



PROFILE



(Dimension : m)

TYPE	B	D	ℓ1	ℓ2	ℓ3	h	t	ℓ4
1	3000	2600	11600	1500	1200	750	450	750
2	5500	2 100	10600	1 200	900	700	400	700
3	1 700	1 450	5 150	1050	750	600	300	600
4	1 100	1 200	4 100	900	600	500	200	500
5	600	1 200	3600	900	600	500	200	500
6	600	1 200	3000	900	600	500	200	500

SCALE 0 3m

NARAYANGANJ-NARSINGDI IRRIGATION PROJECT
(BLOCK – A – I)
THE PEOPLE'S REPUBLIC OF BANGLADESH

BRIDGE & FOOT BRDGE

Date ; Jan 1988 | D.W.G NO. 17

JAPAN INTERNATIONAL COOPERATION AGENCY

2－2　付　表

2－2－1　気象・水文データ

表　A2－2－1－1　　ラキヤ川の最大高水位（デムラ観測所）

(unit: m PWD)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1974	-	-	-	2.56	3.46	4.63	6.16	6.60	5.96	5.64	3.70	2.91
1975	2.16	2.18	2.01	2.72	3.26	3.96	5.28	5.60	5.16	4.75	3.63	2.74
1976	2.10	1.96	2.22	2.50	2.96	4.36	5.53	5.39	5.39	4.50	2.80	2.36
1977	2.03	1.86	1.92	2.62	3.52	4.91	5.46	5.76	5.81	4.66	3.22	2.56
1978	1.98	1.92	1.98	2.26	3.69	4.80	5.12	5.43	4.97	4.69	3.84	2.45
1979	2.00	1.71	2.18	-	-	-	-	5.49	5.21	4.62	3.09	2.53
1980	2.01	2.09	2.26	2.18	3.29	4.44	5.48	6.16	6.02	4.85	3.34	2.37
1981	2.05	1.87	2.11	2.75	2.87	3.61	5.42	5.65	5.42	4.61	2.92	2.95
1982	1.95	1.78	1.80	2.70	2.85	4.44	4.89	5.35	5.07	4.68	2.73	2.15
1983	2.03	2.03	2.45	2.81	3.14	4.09	4.89	5.47	5.81	5.54	3.69	2.45
1984	2.23	1.97	2.25	2.68	3.98	4.84	5.87	6.04	6.00	5.71	3.23	2.15
1985	1.87	1.97	2.33	2.55	3.15	4.32	5.37	5.57	5.14	4.74	3.58	2.48
1986	1.98	1.78	2.07	2.77	2.84	3.69	4.87	5.14	5.10	5.00	3.72	2.57
Average	2.03	1.92	2.12	2.59	3.25	4.34	5.36	5.67	5.47	4.92	3.35	2.51

表　A2－2－1－2　　ラキヤ川の平均高水位（デムラ観測所）

(unit: m PWD)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1974	-	-	-	2.18	3.08	3.81	5.50	6.30	5.76	4.57	2.99	2.14
1975	1.77	1.67	1.69	2.09	2.62	3.33	4.52	5.24	5.06	4.29	2.92	2.12
1976	1.70	1.62	1.73	2.03	2.60	3.80	5.19	5.06	4.93	3.61	2.50	2.10
1977	1.65	1.52	1.68	2.41	3.18	4.35	4.99	5.48	5.26	4.29	2.73	2.10
1978	1.60	1.54	1.61	1.92	2.93	4.27	4.95	5.23	4.75	3.83	2.52	1.91
1979	1.61	1.38	1.59	-	-	-	-	5.10	4.98	4.22	2.57	2.13
1989	1.68	1.63	1.77	2.14	3.03	3.86	4.73	5.69	5.42	4.21	2.81	2.10
1981	1.70	1.55	1.66	2.19	2.55	3.33	4.82	5.42	5.16	3.64	2.57	1.99
1982	1.57	1.51	1.48	2.14	2.51	3.44	4.70	5.05	4.88	3.40	2.22	1.87
1983	I.66	1.50	1.90	2.15	2.85	3.44	4/58	5.16	5.51	4.76	3.04	2.05
1984	1.75	1.49	1.68	2.16	3.03	4.37	5.20	5.46	5.48	4.43	2.54	1.95
1985	1.56	1.57	1.92	2.23	2.61	3.95	4.88	5.13	4.95	4.32	2.78	2.04
1986	1.65	1.50	1.61	2.06	2.49	2.70	4.40	4.76	4.83	4.57	3.02	1.94
Average	1.65	1.54	1.69	2.14	2.79	3.72	4.87	5.31	5.15	4.16	2.71	2.03

表　A2－2－1－3　　ラキヤ川の最小高水位（デムラ観測所）

(unit: m PWD)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1974	–	–	–	1.69	2.53	3.38	4.68	5.72	5.43	3.66	2.23	1.65
1975	1.43	1.28	1.36	1.44	1.96	2.68	3.87	4.93	4.73	3.47	2.24	1.70
1976	1.37	1.31	1.46	1.66	2.26	2.82	4.42	4.75	4.60	2.80	2.12	1.57
1977	1.19	1.22	1.28	1.86	2.62	3.66	4.60	5.27	4.69	3.34	2/36	1.80
1978	1.34	1.13	1.16	1.59	1.95	3.60	4.83	5.00	4.57	2.90	2.07	1.43
1979	1.28	1.13	1.22	–	–	–	–	4.86	4.56	3.12	2.10	1.68
1980	1.36	1.28	1.31	1.68	2.75	3.31	4.35	5.39	4.95	3.52	1.99	1.59
1981	1.26	1.29	1.35	1.50	2.05	2.92	3.72	5.18	4.17	2.91	2.29	1.53
1982	1.23	1.23	1.15	1.75	2.14	2.40	4.47	4.73	4.72	2.29	1.64	1.61
1983	1.29	1.10	1.35	1.74	2.32	3.04	4.05	4.76	5.13	3.65	2.34	1.67
1984	1.36	0.91	1.22	1.67	2.05	3.85	4.61	4.80	5.00	3.32	1.95	1.53
1985	1.28	1.23	1.48	1.63	2.29	3.11	4.34	4.80	4.68	3.65	2.20	1.70
1986	1.27	1.10	1.19	1.41	2.19	2.06	3.90	4.36	4.65	3.58	2.28	1.53
Average	1.30	1.19	1.29	1.64	2.26	3.07	4.32	4.97	4.76	3.25	2.14	1.61

表　A2－2－1－4　　ラキヤ川の最大低水位（デムラ観測所）

(unit: m PWD)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1974	-	-	-	2.19	3.25	4.57	6.14	6.58	5.96	5.50	3.54	2.29
1975	1.71	1.60	1.43	2.27	2.88	3.77	5.27	5.56	5.13	4.72	3.47	2.16
1976	1.67	1.43	1.58	1.98	2.56	4.33	5.50	5.38	5.39	4.43	2.56	1.94
1977	1.51	1.22	1.43	2.26	3.28	4.85	5.41	5.72	5.79	4.60	3.00	2.10
1978	1.43	1.40	1.34	1.79	3.51	4.81	5.10	5.41	4.95	4.63	2.68	2.09
1979	1.52	1.30	1.51	-	-	-	-	5.46	5.20	4.59	3.05	2.13
1980	1.61	1.49	1.60	2.14	3.17	4.36	5.45	6.14	5.99	4.82	3.22	1.90
1981	1.53	1.23	1.45	2.26	2.47	3.30	3.57	5.63	5.40	4.58	2.61	2.26
1982	1.43	1.28	1.25	2.14	2.50	4.40	4.87	5.31	5.02	4.57	2.37	1.64
1983	1.44	1.27	1.82	2.33	3.00	4.00	4.85	5.43	5.48	5.49	3.55	1.96
1984	1.53	1.28	1.47	2.33	3.65	4.77	5.80	6.01	6.00	5.62	3.07	1.75
1985	1.33	1.34	1.80	2.13	2.56	4.21	5.31	5.53	5.10	4.67	3.37	1.98
1986	1.38	1.21	1.49	2.19	2.29	3.36	4.82	5.08	5.03	4.96	3.50	2.15
Average	1.51	1.35	1.50	2.17	2.93	4.23	5.17	5.63	5.42	4/86	3.08	2.03

表　A２－２－１－５　　ラキヤ川の平均低水位（デムラ観測所）

(unit: m PWD)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1974	-	-	-	1.78	2.85	3.64	5.45	6.27	5.74	4.52	2.71	1.72
1975	1.33	1.17	1.18	1.61	2.26	3.07	4.40	5.21	5.03	4.23	2.68	1.72
1976	1.26	1.12	1.24	1.57	2.21	3.65	5.14	5.03	4.91	3.41	2.15	1.68
1977	1.19	0.94	1.21	2.05	2.96	4.25	4.94	5.45	5.23	4.21	2.47	1.69
1978	1.15	1.03	1.06	1.39	2.35	3.93	4.92	5.20	4.74	3.70	2.17	1.54
1979	1.16	0.94	1.05	-	-	-	-	5.06	4.95	4.18	2.25	1.71
1980	1.23	1.10	1.23	1.57	2.75	3.73	4.68	5.66	5.40	4.13	2.48	1.64
1981	1.23	1.07	1.14	1.75	2.12	3.08	4.74	5.40	5.13	3.50	2.21	1.62
1982	1.15	1.06	0.99	1.70	2.20	3.17	4.66	5.00	4.83	3.25	1.86	1.41
1983	1.16	0.95	1.36	1.69	2.56	3.25	4.51	5.10	5.48	4.69	2.76	1.62
1984	1.30	1.01	1.13	1.67	2.66	4.25	5.16	5.42	4.69	4.32	2.23	1.51
1985	1.12	1.06	1.41	1.75	2.20	3.78	4.82	5.08	4.90	4.19	2.47	1.66
1986	1.29	0.96	1.05	1.55	2.10	2.63	4.30	4.67	4.75	4.49	2.76	1.56
Average	1.21	1.04	1.16	1.67	2.44	3.54	4.81	5.27	5.06	4.06	2.40	1.62

表 A2－2－1－6　ラキヤ川の最小低水位（デムラ観測所）

(unit: m PWD)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1974	-	-	-	1.34	2.13	3.08	4.63	5.70	5.41	3.57	1.98	1.28
1975	1.04	0.88	0.91	1.02	1.63	2.46	3.76	4.87	4.77	3.36	2.07	1.43
1976	0.99	0.85	0.97	1.19	1.74	2.53	4.34	4.72	4.57	2.50	1.87	1.17
1977	0.73	0.76	0.79	1.40	2.23	3.43	4.56	5.24	4.65	3.09	1.98	1.40
1978	0.91	0.79	0.72	1.01	1.88	3.41	4.75	4.98	4.54	2.71	1.79	1.17
1979	0.89	0.79	0.75	-	-	-	-	4.80	4.53	3.08	1.86	1.34
1980	1.01	0.82	0.91	1.47	2.17	3.14	4.27	5.36	4.91	3.43	1.71	1.20
1981	0.95	0.97	0.91	1.04	1.62	2.63	3.52	5.13	4.63	2.61	1.93	1.24
1982	0.90	0.85	0.79	1.30	1.85	2.02	4.43	4.67	4.66	2.17	1.37	1.19
1983	0.93	0.71	0.93	1.30	1.98	2.86	3.96	4.69	5.15	3.57	2.02	1.35
1984	1.03	0.48	0.69	1.22	1.96	3.62	4.56	4.76	4.97	3.19	1.55	1.15
1985	0.94	0.83	1.11	1.23	1.85	2.63	4.23	4.75	4.62	3.44	1.98	1.33
1986	0.85	0.58	0.72	0.9;	1.89	1.93	3.78	4.27	4.58	3.48	2.01	1.21
	0.93	0.78	0.85	1.20	1.91	2.81	4.23	4.92	4.77	3.09	1.86	1.27

表A 2－2－1－7　平　均　気　温（℃）

Station: Dhaka

YEAP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AVERAGE
1975	18.7	21.9	26.0	28.1	28.1	28.0	26.3	25.8	27.3	21.5	22.2	17.8	24.8
1976	19.1	21.6	26.3	27.5	27.5	28.4	27.3	27.4	27.6	26.8	23.8	19.0	25.2
1977	18.1	21.3	27.7	27.0	27.0	27.7	28.7	28.5	29.1	25.5	24.4	19.4	25.4
1978	17.5	20.7	25.1	27.6	27.6	28.4	28.5	28.6	28.5	28.2	24.6	19.8	25.4
1979	19.2	20.6	26.4	27.3	27.3	26.5	28.1	28.9	28.7	27.6	25.6	19.8	25.5
1980	18.3	21.6	25.7	27.4	27.4	28.4	28.1	28.4	28.8	26.9	23.6	20.8	25.5
1981	19.2	20.4	25.1	27.8	27.8	29.6	28.3	29.5	28.9	28.0	24.1	19.6	25.7
1982	19.1	21.2	24.4	27.7	29.2	28.9	29.4	28.5	29.0	27.6	23.0	19.7	25.6
1983	17.8	20.6	26.1	28.4	28.4	29.5	29.4	28.7	28.7	27.2	24.9	20.0	25.8
1984	19.0	21.0	27.8	27.9	27.9	28.4	28.5	28.8	28.4	28.7	24.2	20.7	25.9
1985	20.4	22.6	28.4	28.2	28.2	28.9	28.4	29.2	28.9	28.2	24.6	21.7	26.5
AVERAGE	18.8	21.2	26.3	27.7	27.9	28.4	28.3	28.4	28.5	26.9	24.1	19.8	25.5

表A２－２－１－８　最　高　気　温（℃）

Station: Dhaka

YEAP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANUAL
1975	25.1	28.2	33.1	34.7	32.7	32.0	29.8	31.1	30.4	30.6	27.3	25.2	34.7
1976	25.8	28.0	31.4	34.7	32.1	30.8	30.7	30.3	31.5	31.3	30.1	26.0	34.7
1977	25.0	27.6	33.2	31.3	30.9	30.2	31.1	31.4	32.2	30.0	28.6	25.6	33.2
1978	24.4	27.3	31.9	32.9	31.3	31.1	31.1	31.6	31.3	31.8	30.0	27.1	32.9
1979	26.7	27.2	32.9	34.4	35.1	31.6	31.4	31.5	31.4	31.3	30.3	25.3	35.1
1980	24.6	27.9	31.7	35.2	31.8	31.6	30.9	31.4	31.4	30.4	29.4	26.7	35.2
1981	25.1	26.9	30.4	30.7	31.9	32.8	30.6	32.4	31.7	32.4	30.0	25.5	32.8
1982	26.3	27.3	30.5	32.8	34.6	31.6	32.0	31.0	32.1	32.0	28.1	25.0	34.6
1983	23.7	26.7	31.5	32.9	32.3	32.9	32.0	31.1	31.1	30.6	30.3	25.9	32.9
1984	24.8	27.6	34.5	34.4	31.4	30.9	30.9	31.3	31.4	31.9	29.6	26.8	34.5
1985	26.2	29.2	34.0	33.6	32.3	31.7	30.7	31.4	31.8	32.6	30.3	28.0	34.0
AVERAGE	25.2	27.6	32.3	33.4	32.4	31.6	31.0	31.3	31.5	31.4	29.5	26.2	

表A２－２－１－９　最　低　気　温　(℃)

Station: Dhaka

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANUAL
1975	12.3	15.5	20.0	23.8	24.5	25.9	25.6	25.7	25.2	24.3	17.9	11.6	11.6
1976	12.3	16.4	21.2	24.1	23.8	25.0	25.8	25.3	25.7	23.2	20.1	12.1	12.1
1977	11.7	14.9	22.1	22.2	23.1	25.2	26.2	26.6	26.0	22.8	20.2	13.2	11.7
1978	10.6	14.1	18.3	22.0	23.9	25.6	25.7	26.6	25.7	24.4	19.2	12.5	10.6
1979	12.5	14.1	19.8	23.9	26.2	26.3	26.5	26.5	26.0	23.8	20.8	14.4	12.5
1980	11.9	15.2	20.7	25.0	22.8	26.3	26.1	26.5	26.2	23.4	17.8	14.6	11.9
1981	13.3	15.4	19.8	21.9	23.6	26.4	26.0	26.5	26.1	23.5	18.1	13.0	13.0
1982	11.9	15.0	19.1	22.8	25.0	25.9	26.8	26.1	25.9	23.3	17.9	13.7	11.9
1983	11.9	14.1	20.6	25.6	24.4	26.1	26.9	26.3	26.2	23.8	19.4	14.1	11.9
1984	13.1	15.0	21.0	24.5	24.4	25.8	26.0	26.2	25.4	25.5	18.5	14.7	13.1
1985	14.5	16.1	22.7	24.6	24.1	26.1	25.9	26.7	25.9	23.9	18.9	15.3	14.5
AVERAGE	12.4	15.1	20.5	23.7	24.2	25.9	26.1	26.3	25.8	23.8	19.0	13.6	

表A 2－2－1－10　平均相対湿度（%）

Station: Dhaka

YEAP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	69.1	63.2	58.6	71.4	79.5	84.8	89.2	85.5	87.9	86.2	77.6	71.0	924.0
1976	66.7	67.5	64.6	66.9	80.6	90.3	87.3	87.8	83.8	79.5	74.5	71.2	920.7
1977	66.7	66.9	69.0	81.8	83.3	88.5	87.8	84.2	85.1	79.4	78.6	74.2	945.5
1978	67.4	61.6	53.2	73.3	84.6	88.2	87.1	83.7	86.3	81.0	73.0	68.6	908.0
1979	68.5	62.2	57.6	66.2	71.9	83.4	86.2	85.6	85.4	79.7	75.4	77.1	899.2
1980	69.9	66.7	64.5	68.7	81.1	85.6	86.7	85.2	85.2	82.2	70.7	69.5	916.0
1981	70.5	67.7	66.0	76.6	78.9	81.3	88.6	84.4	84.0	70.5	67.1	71.5	907.1
1982	68.9	63.3	63.7	73.0	73.9	86.3	85.1	86.0	84.1	78.4	75.6	73.7	912.0
1983	73.1	64.6	69.9	72.8	80.3	84.6	85.3	86.7	87.7	84.6	70.3	72.6	932.5
1984	69.3	61.6	56.7	70.5	83.7	86.3	86.9	86.1	83.2	79.0	68.5	72.4	904.2
1985	70.9	60.3	69.9	74.5	79.4	85.0	85.3	83.9	84.4	75.4	71.2	70.6	910.8
AVERAGE	69.2	64.1	63.1	72.3	79.7	85.8	86.9	85.4	85.2	79.6	73.0	72.0	916.3

表A２－２－１－11　日　照　時　間 (hr／日)

Station: Dhaka

YEAP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	9.6	9.6	9.6	10.2	8.7	7.3	4.2	7.1	5.4	6.5	8.4	9.6	96.2
1976	9.5	9.5	10.1	10.0	8.4	4.6	5.8	5.7	8.5	9.2	7.8	8.9	98.0
1977	7.5	8.3	9.6	7.8	7.6	4.7	5.1	6.2	7.2	7.8	7.1	8.1	87.6
1978	8.9	9.0	7.5	7.9	5.7	4.1	4.2	6.3	5.1	7.5	8.4	8.6	83.2
1979	7.7	8.8	8.6	8.6	0.0	4.6	4.5	5.4	5.2	8.4	7.0	8.1	76.9
1980	8.1	8.4	8.2	8.8	7.0	4.4	4.0	5.8	5.7	6.7	9.2	7.6	83.9
1981	6.9	8.4	6.7	7.6	7.8	7.0	4.3	6.5	5.1	8.6	8.6	7.8	85.3
1982	7.6	7.2	7.4	7.5	8.2	5.1	5.5	6.2	6.0	8.6	8.3	7.5	84.5
1983	7.5	8.0	7.6	7.3	7.9	5.9	0.0	6.7	5.1	7.8	0.0	8.1	71.9
1984	7.9	8.2	8.6	8.7	6.9	4.5	4.8	4.6	5.9	6.2	9.5	8.3	84.1
1985	7.8	8.6	8.2	7.4	6.8	4.4	4.4	6.1	6.0	8.7	8.2	8.0	84.6
AVERAGE	8.1	8.5	8.4	8.3	7.5	5.1	4.7	6.1	5.9	7.8	8.3	8.2	86.9

表Ａ２－２－12　風　　速　(km／日)

Station: Dhaka

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	44.4	53.3	62.2	231.1	177.8	133.3	142.2	120.0	66.7	26.7	31.1	17.8	1106.6
1976	35.6	53.3	146.7	182.2	142.2	173.3	182.2	128.9	106.7	53.3	22.2	13.3	1239.9
1977	44.4	71.1	133.3	217.8	155.6	182.2	168.9	186.7	62.2	31.1	22.2	22.2	1297.9
1978	44.4	53.3	84.5	137.8	160.0	173.3	120.0	142.2	62.2	40.0	48.9	40.0	1106.6
1979	26.7	48.9	128.9	120.0	160.0	191.1	168.9	137.8	57.8	53.3	26.7	35.6	1155.7
1980	31.1	44.4	75.6	235.6	151.1	115.6	115.6	106.7	62.2	57.8	4.4	17.8	1017.9
1981	44.4	13.3	66.7	124.5	111.1	102.2	120.0	111.1	57.8	22.2	22.2	17.8	813.3
1982	22.2	53.3	62.2	231.1	133.3	146.7	160.0	217.8	80.0	26.7	17.8	22.2	1173.3
1983	48.9	62.2	182.2	213.4	151.1	200.0	173.3	168.9	133.3	48.9	53.3	26.7	1462.2
1984	22.2	40.0	97.8	182.2	133.3	146.7	111.1	111.1	57.8	53.3	17.8	26.7	1000.0
1985	13.3	40.0	168.9	164.5	142.2	195.6	151.1	111.1	93.3	44.4	13.3	22.2	1159.9
AVERAGE	34.3	48.5	109.9	185.5	147.1	160.0	146.7	140.2	76.4	41.6	25.4	23.8	1139.4

表A２－２－１－13　昼・夜における風速比率

Station: Dhaka

YEAP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1975	1.2	1.3	1.1	1.2	1.3	1.2	1.3	1.0	1.1	1.3	0.8	1.5	14.3
1976	1.3	1.3	1.3	1.4	1.4	1.1	1.1	1.1	1.2	1.6	1.3	1.0	15.1
1977	1.8	1.4	1.4	1.2	1.2	1.1	1.2	1.1	1.1	1.0	2.0	1.3	15.8
1978	1.8	1.3	1.6	1.5	1.2	1.1	1.1	1.0	1.1	1.0	1.4	1.3	15.4
1979	1.0	1.8	1.4	1.0	1.3	1.1	1.2	1.1	1.0	1.1	1.7	1.0	14.7
1980	1.7	1.4	1.4	1.7	1.6	1.3	1.3	1.6	1.1	1.3	1.0	1.5	16.9
1981	1.5	2.0	1.7	1.5	1.6	1.5	1.4	1.5	1.5	2.0	1.3	1.5	19.0
1982	1.3	1.3	1.7	1.6	1.3	1.3	0.9	1.0	1.0	1.0	1.0	0.7	14.1
1983	1.0	1.0	1.0	1.2	1.1	1.1	1.0	1.1	1.1	0.8	1.0	1.0	12.4
1984	2.0	1.2	1.2	1.3	1.3	1.1	1.1	1.2	1.0	1.2	1.5	1.3	15.3
1985	1.0	1.2	1.1	1.1	0.9	1.2	1.3	1.4	1.1	0.8	1.0	1.0	13.1
AVERAGE	1.4	1.4	1.4	1.3	1.3	1.2	1.2	1.2	1.1	1.2	1.3	1.2	15.2

表　A２－２－１－１４　　最近２０年間における降雨量

(mm)

年	年間降雨量	乾期の降雨量 (11～4 月)
1967	1866.4	258.9
1968	1890.0	252.8
1969	1667.8	185.9
1970	2058.7	136.0
1971	—	—
1972	1715.0	272.2
1973	2397.8	357.0
1974	2209.3	265.2
1975	2051.1	191.9
1976	2117.3	165.1
1977	2166.2	496.8
1978	2337.0	203.2
1979	1840.5	175.3
1980	2182.6	225.0
1981	1630.0	454.0
1982	1743.0	251.0
1983	2443.0	598.0
1984	3028.0	145.0
1985	2065.0	381.0
1986	2479.0	435.0

表　A２－２－１－１５　　最大５日連続降雨量

(mm)

年	月	降雨量					計
		1st	2nd	3rd	4th	5th	
1964	Jul	0.0	0.0	36.1	80.0	115.3	231.4
1965	Aug	3.6	87.1	7.9	0.0	114.3	212.8
1966	Sep	4.6	16.0	283.2	55.4	0.5	359.7
1967	Aug	73.7	39.9	47.2	55.1	7.4	223.3
1968	Jul	38.9	54.6	23.4	75.7	132.8	325.4
1969	Aug	33.0	44.4	32.5	14.7	74.9	199.6
1970	Oct	49.5	95.2	41.1	31.7	30.5	248.1
1971	Jul	0.0	76.5	195.6	23.4	0.0	295.4
1972	Jun	101.6	34.8	50.8	38.1	38.1	263.4
1973	May	175.3	25.4	20.8	28.4	21.3	271.3
1974	Aug	76.2	106.7	33.0	7.6	12.7	236.2
1975	Jul	158.0	99.1	109.2	30.0	48.8	445.1
1976	Jun	157.5	117.3	62.2	82.6	27.4	447.0
1977	May	4.8	0.8	50.3	0.0	142.5	198.4
1978	May	43.7	59.4	40.6	77.5	23.1	244.3
1979	Jun	0.0	1.3	41.1	127.0	11.0	180.4
1980	Oct	91.0	15.0	84.0	41.0	28.0	259.0
1981	Sep	2.0	81.0	67.0	10.0	8.0	168.0
1982	Jul	1.0	1.0	40.0	46.0	105.0	193.0
1983	Aug	28.0	133.0	66.0	20.0	8.0	255.0
1984	Jun	5.0	44.0	77.0	68.0	102.0	296.0
1985	Aug	69.0	21.0	0.0	68.0	11.0	169.0
1986	Sep	37.0	145.0	176.0	2.0	41.0	401.0
1987							

2－2－2　農業関係データ

表　A２－２－２－１　　バングラデシュにおける土地利用状況

(Thousand acres)

Year	Forest	Not available for cultivation	Culturable waste (a)	Current fallows (b)	Net cropped area	Area sown more than once	Total cropped area (c)
1971-72	5507	6566	734	2101	20371	7798	28169
1972-73	5507	6572	681	1679	20840	8199	29039
1973-74	5507	6575	672	1550	20977	8447	29424
1974-75	5466	6576	670	2009	20559	8078	28637
1975-76	5438	6622	662	1591	20968	8718	29686
1976-77	5449	6626	661	2100	20445	8534	28979
1977-78	5425	6669	665	1838	20693	9009	29702
1978-79	5423	6674	623	1760	20801	11045	31846
1979-80	5427	6686	615	1706	20873	11100	31973
1980-81	5416	6712	619	1404	21158	11363	32521
1981-82	5298	6837	611	1350	21212	11426	32638
1982-83	5296	6876	582	1278	21276	11629	32905
1983-84	5205	7156	825	1136	21378	11364	32742
1984-85	5297	7193	721	1199	21353	11143	32496

Notes: (a) Culturable waste is the area suitable for cultivation but lying fallow for more than one year.
(b) Current fallow is the area already brought under cultivation, but not cultivated during the year.
(c) Total cropped area is the sum of the net cropped area and the area sown more than once.

Source : B.B.S.

表　A２－２－２－２　　バングラデシュにおける作物別灌漑面積（1976/77 ～ 1984/85）

(Acre)

Crop	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
Rice: Aus ...	189060	211030	228371	227040	295780	279330	309615	358295	347455
Aman ...	203370	208045	241439	317765	347030	455437	480050	392480	385855
Boro ...	2022925	2575285	2436490	2491750	2467500	2574043	2816785	2959685	3175860
Total Rice ...	2420355	2934360	2906300	3036555	3110310	3308810	3606450	3710460	3909170
Wheat ...	178620	231805	351927	426225	481320	468478	478225	529915	699950
Other cereals ...	6025	3960	3549	7975	10795	12605	9040	15850	8230
Pulses ...	2635	2255	2392	3045	11465	6077	3955	4535	8035
Oilseeds ...	9710	8010	9354	7880	11595	10481	11890	17785	27955
Potato ...	139815	156370	164477	159615	176375	189998	180685	182255	172425
Vegetables ...	94145	103855	121336	98790	107480	115969	123745	109640	121530
Sugarcane ...	22315	25135	22753	2:065	23215	24194	15940	19570	18740
Cotton ...	50	472	1067	3035	4315	5746	8220	16120	8565
Others ...	135400	137120	110619	110125	112970	121979	128170	138345	146845
Grand Total :	3009070	3600042	3693775	3877310	4049840	4264337	4566320	4744475	5121445

Source : B. B. S.

表　A 2－2－2－3　　水稲の品種別生産性（1974～84）

T Aman

Year	Average yield (t/ha)										
	BR3	BR4	BR5	BR6	BR7	BR9	BR10	BR11	IR5	IR20	Pajam
1974	3.48	3.30	—	—	—	—	—	—	3.71	3.65	—
1975	3.68	3.87	—	—	—	—	—	—	—	3.70	—
1976	5.36	5.40	—	—	—	—	—	—	—	4.74	4.08
1977	3.90	5.00	4.00	—	—	—	—	—	—	—	4.30
1978	3.54	5.33	—	2.80	3.00	—	—	—	—	—	4.26
1979	3.83	4.41	—	—	3.37	2.86	—	—	—	—	4.00
1980	—	4.29	—	—	—	—	4.93	5.52	—	—	4.48
1981	—	3.80	—	—	—	—	3.50	3.85	—	—	—
1982	—	—	—	—	—	—	4.29	4.36	—	—	—
1983	—	3.24	—	—	—	—	3.60	3.40	—	—	—
1984	—	—	—	—	—	—	3.64	4.90	—	—	—
Av. yield	3.96	4.28	4.00	2.8	3.19	2.86	4.00	4.41	3.71	4.03	4.22

Aus

Year	Average yield (t/ha)											
	BR1	BR2	BR3	BR6	BR7	BR8	BR9	BR12	BR14	BR15	BR16	IR8
1975	3.33	2.35	—	—	—	—	—	—	—	—	—	3.28
1977	3.00	—	4.65	—	—	—	—	—	—	—	—	3.60
1978	3.00	—	3.78	2.95	2.57	2.96	3.56	—	—	—	—	—
1979	3.37	—	—	2.54	—	3.55	3.52	—	—	—	—	—
1980	3.34	—	3.92	2.57	2.94	3.14	3.29	—	—	—	—	—
1981	4.31	—	4.68	2.98	3.36	3.70	4.23	—	—	—	—	—
1982	4.13	—	4.48	—	—	4.10	4.60	5.00	—	5.00	4.93	—
1983	3.05	2.17	—	—	—	—	—	—	—	—	—	—
1984	—	—	—	—	—	—	3.46	3.37	3.49	3.19	3.48	—
Av. yield	3.50	2.26	4.30	2.76	2.96	3.49	3.74	4.19	3.49	4.10	4.21	3.44

Boro

Year	Average yield (t/ha)											
	BR1	BR3	BR6	BR7	BR8	BR9	BR12	BR14	BR15	BR16	IR8	Pajam
1975	4.14	5.46	—	—	—	—	—	—	—	—	5.05	—
1976	3.80	5.75	—	—	—	—	—	—	—	—	5.51	4.71
1977	2.92	4.05	2.93	2.97	—	—	—	—	—	—	—	—
1978	4.04	4.48	3.72	4.13	—	—	—	—	—	—	—	4.08
1979	5.20	6.60	—	5.00	5.3	6.3	—	—	—	—	—	6.00
1980	3.86	4.99	—	4.57	4.63	4.74	—	—	—	—	4.51	3.94
1981	4.62	5.26	3.86	4.41	4.60	4.42	—	—	—	—	—	4.34
1982	4.50	4.77	—	—	5.20	4.56	4.13	4.94	4.27	4.72	—	—
1983	—	4.94	4.94	—	—	—	4.95	5.04	5.27	4.24	—	—
1984	—	5.64	—	—	—	—	5.00	5.44	4.65	4.95	—	—
Av. yield	4.14	5.19	3.50	4.22	5.93	5.00	4.69	5.14	5.73	4.64	5.02	4.61

表　A２－２－２－４　　土地所有形態別農家戸数と面積（1981年）

Type of Tenancy	Number of households	Percent of Total	Area (acres)	Percent of Total	Land Taken In Area (acres)	Land Taken In Percent of Total
Owner	4211269	64.78	11910962	60.49	-	-
Owner-cum-tenant	2026984	31.18	4341847	22.05	3099593	15.74
Tenant	262831	4.04	-	-	339828	1.73
Total:	6501084	100.00	16252809	82.53	3439421	17.47

- Number of rural households excluding those households which:
- do not own land other than homestead;
- do not take land in from others.
- Owned land excluding homestead land.
- Percentages of lands are taken over operated lands.

表　A2－2－2－5　　農村における土地所有状況（1981年）

Landsize (acres)	Number of Household	Percent of Total	Number of Persons	Percent of Total	Area of Land(acres)	Percent of Total
Zero	2697283	20.09	14250902	18.27	-	-
0.01-1.00	5408206	40.28	29718325	38.10	1651404.3	7.65
1.01-2.00	2030179	15.12	11358532	14.56	2866751.7	13.28
2.01-3.00	1053790	7.85	6211395	7.96	2599072.9	12.04
3.01-4.00	673766	5.02	4202787	5.39	2262313.6	10.48
4.01-5.00	425703	3.17	2798792	3.59	1850320.7	8.57
5.01-6.00	288665	2.15	2003850	2.57	1560737.8	7.23
6.01-7.00	213486	1.59	1560700	2.00	1379408.2	6.39
7.01-8.00	137989	1.03	1052204	1.35	1021062.4	4.73
8.01-9.00	92627	0.69	733085	0.94	803034.1	3.72
9.01-10.00	63126	0.47	537363	0.69	606848.9	2.81
10.01-11.00	69787	0.52	624914	0.80	738274.5	3.42
11.01-12.00	52341	0.39	497711	0.64	611036.2	2.83
12.01-13.00	28232	0.21	281053	0.36	356185.3	1.63
13.01-14.00	32356	0.24	335931	0.43	436057.1	2.02
14.01-15.00	25377	0.19	273757	0.35	369137.2	1.71
15.01-above	134182	1.00	1561018	2.00	2475330.1	11.47
Total:	13427095	100.00	78002319	100.00	21586975.0	100.00

- Rural Bangladesh exclude only '79 Pourashavas.

表　A2－2－2－6　　農作物の作付面積・生産量及び単収

Crops	1983-84			1984-85			1985-86		
	Acreage (000)	Production (000 tons)	Per acre yield (ton)	Acreage (000)	Production (000 tons)	Per acre yield (ton)	Acreage (000)	Production (000 tons)	Per acre yield (ton)
Cereals									
Rice- aus ...	7756	3171	0.41	7260	2739	0.38	7030	2783	0.40
Rice-aman ...	14845	7811	0.53	14112	7806	0.55	14875	8407	0.57
Rice-boro ...	3463	3297	0.95	3891	3847	0.99	3790	3613	0.95
Wheat ...	1300	1192	0.92	1671	1440	0.86	1335	1026	0.77
Barley ...	24	6	0.27	20	5	0.26	18	5	0.27
Rabi jower ...	1	...	0.27	1	...	0.27	1	...	0.27
Bhadoi Jower ...	1	...	0.25	1	...	0.25	1	...	0.27
Bajra ...	...	...	0.27	...	...	0.26	...	...	0.31
Maize ...	3	1	0.31	3	1	0.32	2	...	0.34
Cheena ...	42	16	0.38	39	14	0.35	32	11	0.33
Other rabi cereals ...	24	8	0.35	23	7	0.31	20	6	0.30
Other bhadoi cereals ...	24	7	0.28	20	6	0.30	22	6	0.29
Total	27.483	15509		27041	15865		27126	15857	

表　A 2 － 2 － 2 － 7　　D－N－D計画の農業生産状況

Area Divided	Name of Crop	Acreage	Yield Per Acre in Maunds	Production in Maunds	Cropping Intensity (%)
Area-I	HYV T. Aman	6,510	43.25	281,557.50	-
	LIV T. Aman	1,376	27.50	37,840.00	-
	HYV Boro	7,339	41.25	302,733.75	-
	Local Boro	37	22.00	814.00	-
	Pulses	7	14.00	98.00	-
	HYV T. Aus	2,627	37.50	98,512.50	-
	Local T. Aus	126	27.00	3,402.00	-
	HYV B. Aus	60	35.50	2,130.00	-
	Local B. Aus	307	20.00	6,140.00	-
	Jute	21	17.00	357.00	-
	Summer Vegetables	34	115.00	3,910.00	-
	Total	18,444	-	-	248
Area-II	Deep Water T. Aman	547	16.00	8,752.00	-
	HYV Boro	3,275	42.00	137,550.00	-
	Total	3,822	-	-	n.a.

Notes: (a) Figures in the table are for the year 1981-82.

(b) The cropping intensity in Area-II is not available.

2－2－3　ポンプ台数比較

表　A2－2－3－1　　ポンプ台数総合比較表

Plan	A	B	C	D
Number of units	3	4	5	6
Drainage capacity ratio when one pump fails to operate	67% ▲	75% ○	80% ○	83.3% ◎
Adaptability in terms of the capacity required for irrigation service	△	○	○	◎
Maintenance	◎	○	○	▲
Space (m2)	28.7 m x 13.2 m = 378.84 m^2 ◎	27 m x 14.9 m = 402.3 m^2 ○	26.4 m x 16.9 m = 446.16 m^2 ○	25.3 m x 18.3 m = 462.99 m^2 △
Volume of excavation (m2)	28.7 m x 13.2 m x (EL+7.50 - EL-2.65) = 3845.226 m^3 ◎	27 m x 14.9 m x (EL+7.50 - EL-2.15) = 3882.195 m^3 ◎	26.4 m x 16.9 m x (EL+7.50 - EL-1.95) = 4216.212 m^3 ○	25.3 m x 18.3 m x (EL+7.50 - EL-1.65) = 4236.359 m^3 △
Equipment cost	103% ○	100% ◎	105% △	110% ▲
Total Evaluation	○	◎	○	△

表　A2－2－3－2　　ポンプ台数と設計緒元

Plan		A	B	C	D
Number of units		3	4	5	6
Capacity per unit (m3/s)		2.5	1.88	1.5	1.25
Pump nominal diameter (mm)		1200	1000	900	800
Total head (m)		5.4	〃	〃	〃
Rotaion speed (r/m)		423	493	493	593
Motor output (kw)		185	132	110	90
Auxiliary equipment	Motor	185KW x 14P x AC400V x 50Hz squirrel cage x 3	132KW x 12P x AC400V x 50Hz 〃 x 4	110KW x 12P x AC400V x 50Hz 〃 x 5	90KW x 10P x AC400V x 50Hz 〃 x 6
	Overhead travelling crane	20 ton x 1	16 ton x 1	13 ton x 1	13 ton x 1
	Roller gate	2500mm^{W} x 3150mm^{h} x 6	2000mm^{W} x 2650mm^{h} x 8	1800mm^{W} x 2450 mm^{h} x 10	1600mm^{W} x2150 mm^{h} x 12
	Sluice gate for pump channel	1500mm^{W} x 1500mm^{h} x 6	1300 mm^{W} x1300mm^{h} x 8	1200 mm^{W} x1200 mm^{h} x 10	1100 mm^{W} x1100 mm^{h} x 12
	Stop log	3600 mm^{W}	3000 mm^{W}	2700 mm^{W}	2400 mm^{W}
	Screen	3600mm^{W} x5300 mm^{h} x 3 3600mm^{W} x3650 mm^{h} x 3	3000mm^{W} x 4800 mm^{h} x 4 3000mm^{W} x 3150 mm^{h} x 4	2700mm^{W} x 4600 mm^{h} x 5 2700mm^{W} x 2950 mm^{h} x 5	2400mm^{W} x4300 mm^{h} x 6 2400mm^{W} x2650 mm^{h} x 6
	Bilge pump	80dia. x 2	〃	〃	〃
	Sluice gate for discharge cannal	3600 mm^{W} x 1600 mm^{h} x 1 1400 mm^{W} x 1000 mm^{h} x 1	〃	〃	〃
	Flap valve	1500 mm dia. x 3	1350 mm dia. x 4	1200 mm dia. x 5	1000 mm dia. x 6
	Electrical equipment	H.V. Incoming x 1 Transformer 11 KV/400V x 1 L.V. Incoming x 1 Motor starter panel x 3 Station service panel x 1	x 1 x 1 x 1 x 4 x 1	x 1 x 1 x 1 x 5 x 1	x 1 x 1 x 1 x 6 x 1
	Instrument	Water level indicator x 2 Water level switch x 6	〃 x 8	〃 x 10	〃 x 12
	Miscellaneous	Cables x 1lot	〃	〃	〃

表　A2－2－3－3　　概算設備価格比較表

	A　（3 台 案）	B　（4 台 案）	C　（5 台 案）	D　（6 台 案）
立 軸 軸 流 ポ ン プ	口径1200㎜ 87,000,000円/台×3台 ＝ 261,000,000円	口径1000㎜ 62,000,000円/台×4台 ＝ 248,000,000円	口径900㎜ 54,000,000円/台×5台 ＝ 270,000,000円	口径800㎜ 47,000,000円/台×6台 ＝ 282,000,000円
立軸開放防滴電型電動機 400V－50HZ	185kw－14P 19,300,000円/台×3台 ＝ 57,900,000円	132kw－12P 11,000,000円/台×4台 ＝ 44,000,000円	110kw－12P 9,000,000円/台×5台 ＝ 45,000,000円	90kw－10P 6,100,000円/台×6台 ＝ 36,600,000円
フ ラ ッ プ 弁	1500㎜φ 4,700,000円/台×3台 ＝ 14,100,000円	1350㎜φ 4,000,000円/台×4台 ＝ 16,000,000円	1200㎜φ 2,600,000円/台×5台 ＝ 13,000,000円	1000㎜φ 2,300,000円/台×6台 ＝ 13,800,000円
電 動 式 ク レ ー ン	20TON 37,000,000円/基	16TON 33,000,000円/基	13TON 29,500,000円/基	13TON 29,500,000円/基
ロ ー ラ ー ゲ ー ト	2.5m×3.15m□ 10,900,000円/台×6台 ＝ 65,400,000円	2m×2.65m□ 9,200,000円/台×8台 ＝ 73,600,000円	1.8m×2.45m□ 8,800,000円/台×10台 ＝ 88,000,000円	1.6m×2.15m□ 8,600,000円/台×12台 ＝ 103,200,000円
ス ル ー ス ゲ ー ト	1500㎜□ 5,400,000円/台×6台 ＝ 32,400,000円	1300㎜□ 4,600,000円/台×8台 ＝ 36,800,000円	1200㎜□ 4,100,000円/台×10台 ＝ 41,000,000円	1100㎜□ 3,700,000円/台×12台 ＝ 44,400,000円
角 落 し	46,000,000円/式	43,000,000円/式	30,000,000円/式	32,000,000円/式
ス ク リ ー ン	27,000,000円/式	28,000,000円/式	30,000,000円/式	29,000,000円/式
排 水 ポ ン プ	500,000円/台×2台 ＝ 1,000,000円	500,000円/台×2台 ＝ 1,000,000円	500,000円/台×2台 ＝ 1,000,000円	500,000円/台×2台 ＝ 1,000,000円
受 配 電 盤 類	53,300,000円/式	57,500,000円/式	62,200,000円/式	65,900,000円/式
据付・配管・配線工事	123,900,000円/式	122,100,000円/式	128,300,000円/式	134,600,000円/式
合 計	719,000,000 円 (102)	703,000,000 円 (100)	738,000,000 円 (105)	772,000,000 円 (110)

2－2－4　灌漑用水量関係資料

表　A２－２－４－１　　修正ペンマン法による蒸発散能

Month	ETo (mm/Month)
January	92.0
February	107.0
March	156.0
April	159.0
May	141.0
June	106.0
July	106.0
Auzust	120.0
September	104.0
Otober	116.0
November	108.0
December	94.0
Total	1,409.0

表 A2－2－4－2　計画基準年の有効雨量

(Unit: mm)

Month	Period	Rainfall	Effective Rainfall For Paddy	Effective Rainfall for Other Crops
January	I	0.0	0.0	0.0
	II	0.0	0.0	0.0
February	I	1.3	0.0	0.0
	II	0.0	0.0	0.0
March	I	0.0	0.0	0.0
	II	66.0	40.6	52.3
April	I	0.0	0.0	0.0
	II	86.1	62.0	73.4
May	I	41.7	26.4	34.0
	II	52.8	22.6	34.3
June	I	148.3	103.9	124.2
	II	100.8	61.7	77.5
July	I	141.0	98.6	108.2
	II	161.8	89.2	67.8
August	I	280.4	227.3	250.0
	II	251.7	201.2	193.5
September	I	48.0	22.9	32.3
	II	152.7	120.4	135.6
Octobev	I	102.6	75.7	85.9
	II	0.0	0.0	0.0
Novembev	I	32.5	26.2	28.7
	II	0.0	0.0	0.0
December	I	0.0	0.0	0.0
	II	0.0	0.0	0.0
Annual		1,667.8	1,178.6	1,297.7

表　A 2－2－4－3　　半月別作物系数

Crops	Growing Period	Remarks	1st		2nd		3rd		4th		5th		6th		7th	
			I	II	I	II	I	II	I	II	I	II	I	II	I	II
Boro	days 135※	HYV	1.20	1.25	1.25	1.30	1.35	1.40	1.45	1.50	1.30					
T.Aus	125※	HYV	1.20	1.25	1.25	1.30	1.35	1.40	1.45	1.50	1.35					
T.Aman	140※	HYV	1.20	1.25	1.25	1.30	1.35	1.40	1.45	1.50	1.35					
L.T.Aman	175※	Local	1.20	1.25	1.25	1.30	1.30	1.35	1.35	1.40	1.40	1.45	1.45	1.30		
Wheat	105		0.50	0.60	0.70	1.00	1.15	1.25	1.00							
Jute	120		0.50	0.65	0.95	1.15	1.50	1.40	1.40	1.40						
Pulses	90		0.50	0.70	0.95	1.10	1.10	0.95								
Others	90	Winter Crops	0.40	0.50	0.80	0.90	0.90	0.70								
Others	90	Summer Crops	0.40	0.65	0.80	0.90	0.95	0.85								

※ Including nurcery period

表 A2－2－4－4　半月別“作物要水量－有効雨量”

Months	ETo	ETo	Effective Rainfall		Water Requirement																													
			Paddy	Other Crops	Boro			T-Aus			T-Aman (HYV)			T-Aman (LOCAL)			Wheat			Jute			Pulses			Winter Crop			Summer Crop			Summer Crop		
	(mm/day)	(mm/15days)			Kc	U_t	U_r	Kc	U_t	U_r	Kc	U_t	U_r	Kc	U_t	U_r	Kc	U_t	U_r	Kc	U_t	U_r	Kc	U_t	U_r	Kc	U_t	U_r	Kc	U_t	U_r	Kc	U_t	U_r
Jan	2.96	46.0	0.0	0.0	0.21	9.7	9.7										0.85	39.1	39.1				0.60	27.6	27.6	0.55	25.3	25.3						
		46.0	0.0	0.0	0.63	29.0	29.0										1.08	49.7	49.7				0.83	38.2	38.2	0.75	34.5	34.5						
Feb	3.82	53.5	0.0	0.0	0.98	52.4	52.4										1.20	64.2	64.2				1.03	55.1	55.1	0.88	47.1	47.1						
		53.5	0.0	0.0	1.33	71.2	71.2										1.13	60.5	60.5				1.10	58.9	58.9	0.85	45.5	45.5						
Mar	5.02	78.0	0.0	0.0	1.38	107.6	107.6										0.50	39.0	39.0				1.03	80.2	80.3	0.58	45.2	45.2						
		78.0	40.6	52.3	1.43	111.5	70.9													0.13	10.1	–	0.48	37.4	–	0.18	14.0	–						
Apr	5.31	79.5	0.0	0.0	1.30	103.4	103.4	0.63	50.1	50.1										0.41	32.6	32.6												
		79.5	62.0	73.4	1.18	93.8	31.8	1.28	101.8	39.8										0.68	54.1	–							0.10	8.0	–			
May	4.54	70.5	26.4	34.0	0.68	47.9	21.5	1.33	93.8	67.4										0.90	63.5	29.5							0.26	25.4	–			
		70.5	22.6	34.3	0.22	15.5	–	1.38	97.3	74.7										1.18	83.2	48.9							0.63	44.4	10.1			
Jun	3.53	53.0	103.9	124.2				1.43	75.8	–										1.39	73.7	–							0.79	41.9	–			
		53.0	61.7	77.5				1.48	78.4	16.7										1.43	75.8	–							0.89	47.2	–			
Jul	3.41	53.0	93.6	108.2				1.43	75.8	–				0.31	16.4	–				1.40	74.2	–							0.91	48.2	–			
		53.0	89.2	67.8				0.90	47.7	–	0.03	1.6	–	0.95	50.4	–				1.05	55.7	–							0.66	35.0	–			
Aug	3.88	60.0	227.3	250.0				0.08	4.8	–	0.49	29.4	–	1.29	77.4	–				0.35	21.0	–							0.21	12.6	–	0.20	12.0	–
		60.0	201.2	193.5							0.91	54.6	–	1.31	78.6	–																0.53	31.8	–
Sep	3.46	52.0	22.9	32.3							1.35	70.2	47.3	1.34	69.7	46.8																0.73	38.0	5.7
		52.0	120.4	135.6							1.33	69.2	–	1.36	70.7	–																0.85	44.2	–
Oct	3.75	58.0	75.7	85.9							1.38	80.0	4.3	1.39	80.6	4.9																0.93	53.9	–
		58.0	0.0	0.0							1.43	82.9	82.9	1.40	81.2	81.2																0.90	52.2	52.2
Nov	3.59	54.0	26.2	28.7							1.44	77.8	51.6	1.44	77.8	51.6																0.46	24.8	–
		54.0	0.0	0.0							1.19	64.3	64.3	1.41	76.1	76.1	0.25	13.5	13.5															
Dec	3.04	47.0	0.0	0.0							0.70	32.9	32.9	1.01	47.5	47.5	0.55	25.9	25.9							0.10	4.7	4.7						
		47.0	0.0	0.0							0.23	10.8	10.8	0.33	15.5	15.5	0.65	30.6	30.6				0.25	11.8	11.8	0.33	15.5	15.5						

ETo = Crop Evapotranspiration
Kc = Crop factor

U_t = ETo × Kc (mm)
U_r = U_t − Effective Rainfall (mm)

表　A 2 － 2 － 4 － 5　　排水の出入計算

Day	Rainfall (m)	Storage Volume (m3)	Runoff Volume (m3)	Drainage by Pump (m3)	Remaining Volume (m3)	Water Level (m)	Inundated Area (ha)
1	0.005	96,600	41,400	41,400	0	2.600	50
2	0.016	336,000	144,000	144,000	0	2.600	50
3	0.283	4,817,400	3,678,600	594,000	3,084,600	3.291	1,132
4	0.055	0	1,662,000	594,000	4,152,600	3.378	1,276
5	0.001	0	15,000	594,000	3,573,600	3.331	1,198
6	-	-	-	594,000	2,979,600	3.282	1,117
7	-	-	-	594,000	2,385,600	3.234	1,037
8	-	-	-	594,000	1,791,600	3.169	893
9	-	-	-	594,000	1,197,600	3.063	596
10	-	-	-	594,000	603,600	2.957	299
11	-	-	-	594,000	9,600	2.610	53
12	-	-	-	9,600	0	2.600	50
13	-	-	-	0	0	2.600	50

H-A, H-V

H(m)	A(ha)	V(m3)
2.6	50	0
2.9	140	285,000
3.2	980	1,965,000
3.5	1,480	5,655,000
3.8	2,210	11,235,000
4.1	2,540	18,480,000
4.4	2,850	26,610,000
>4.7	3,000	35,355,000

AREA= 3,000ha (Gross)
2,100ha (Paddy Field)

Pump Capacity 7.5(m3/sec)
Maximum Operation Hours 22(hr/day)

2－2－5　経済評価関係資料

表 A2-2-5-1　生産費の計算価格

Unit: ¥/ha

	費目	米作 B. アマン		米作 Mix アウス/アマン		米作 L. ボロ		米作 H. ボロ		小麦		ジュート		ポテト		豆類		菜種	
		数量	金額	数量	金額	数量	金額	数量	金額	数量	金額	数量	金額	数量	金額	数量	金額	数量	金額
現況生産費	労働費	人 107	8,025	127	9,525	163	12,225	213	15,975	117	8,775	231	17,325	222	16,650	50	3,750	78	5,850
	種子	kg 100	4,600	100	5,200	30	1,560	30	1,560	140	5,600	10	300	1,200	30,000	33	1,782	10	540
	肥料	kg –	–	14	580	50	2,000	54	2,160	248	9,920	50	2,000	170	6,800	–	–	113	4,520
	農薬	kg –	–	–	–	0.12	216	0.50	900	0.25	450	0.50	900	0.50	900	–	–	0.50	900
	畜力	頭 42	6,720	43	6,880	41	6,560	52	8,320	42	6,720	53	8,480	50	8,000	33	5,280	40	6,400
	計		19,345		22,185		22,561		28,915		31,465		29,005		62,350		10,812		18,210

	費目	米作 L. T-アマン		米作 T-アマン		米作 T-アウス		米作 H. ボロ		小麦		ジュート		豆類		野菜			
		数量	金額	数量	金額	数量	金額	数量	金額	数量	金額	数量	金額	数量	金額	数量	金額		
計画生産費	労働費	人 145	10,875	203	15,225	221	16,575	227	17,025	123	9,225	254	19,050	55	4,125	372	27,900		
	種子	kg 30	1,380	30	1,560	30	1,560	30	1,560	140	5,600	11	330	35	1,890	8	400		
	肥料	kg 78	3,120	280	11,200	423	16,920	311	12,440	315	12,600	75	3,000	–	–	327	13,080		
	農薬	kg 0.30	540	0.75	1,350	0.75	1,350	0.75	1,350	0.40	720	0.75	1,350	–	–	0.25	450		
	畜力	頭 43	6,880	48	7,680	52	8,320	54	8,640	43	6,880	58	9,280	35	5,600	54	8,640		
	計		22,795		37,015		44,725		41,015		35,025		33,010		11,615		50,470		

出典　数量は TECHNICAL REPORT NO14 MPO-AGRICULTURAL PRODUCTION SYSTEM
価格は ECONOMIC PLANNING DIRECTORATE, BWDB (1985) and 1986 STATISTICAL YEARBOOK OF BANGLADESH

表 A2-2-5-2　便益計算書　（計画前）

区分		米作							小麦	ジュート	ポテト	豆類	菜種	計
		雨期				乾期								
		B. アマン	L. T-アマン	T-アマン	Mix アウス/アマン	T-アウス	L. ボロ	H. ボロ						
① 生産量	t/ha	1.10			1.60		1.50	3.00	2.50	1.40	8.94	0.68	0.80	
② 単価	¥/t	38,100			38,100		38,100	38,100	32,600	23,900	14,040	55,200	55,200	
③ 生産高 ① x ②	¥/ha	41,910			60,960		57,150	114,300	81,500	33,460	125,518	37,536	44,160	
④ 生産費	¥/ha	19,345			22,185		22,561	28,915	31,465	29,005	62,350	10,812	18,210	
⑤ 純生産高 ③ - ④	¥/ha	22,565			38,775		34,589	85,385	50,253	4,891	63,604	26,724	26,386	
⑥ 作付面積	ha	1,110			170		410	705	50	75	15	50	25	2,610
⑦ 純生産便益 ⑤x⑥	¥1,000	25,047			6,592		14,181	60,196	2,513	367	954	1,336	660	111,846

出典は表 A2-2-5-1 と同じ

表 A2-2-5-3　便益計算書　（計画後）

区分		米作							小麦	ジュート	ポテト	豆類	野菜	計
		雨期				乾期								
		B. アマン	L. T-アマン	T-アマン	Mix アウス/アマン	T-アウス	L. ボロ	H. ボロ						
① 生産量	t/ha		3.88	4.14		4.87		4.73	2.77	1.80		1.00	12.43	
② 単価	¥/t		38,100	38,100		38,100		38,100	32,600	23,900		55,200	18,720	
③ 生産高 ① x ②	¥/ha		147,828	157,734		185,547		180,213	90,302	43,020		55,200	232,690	
④ 生産費	¥/ha		22,795	37,015		44,725		41,015	35,025	33,010		11,615	50,470	
⑤ 純生産高 ③ - ④	¥/ha		125,033	120,719		140,822		139,198	55,277	10,010		43,585	182,220	
⑥ 作付面積	ha		223	1,784		446		1,338	446	223		111	1,004	5,575
⑦ 純生産便益 ⑤x⑥	¥1,000		27,882	215,363		62,807		186,247	24,654	2,232		4,838	182,949	706,972
便益 ⑦-計画前便益	¥1,000													595,126
洪水便益	¥1,000													30,000
輸送便益	¥1,000		100 台 x 2,000 円/時間 x (1.0 時間/日 x 60 + 0.5 時間/日 x 300) = 42,000 雨期 乾期											42,000
合計	¥1,000													667,126

出典は表 A2-2-5-1 と同じ

付属資料　3

3-1 土質調査

土質調査の数量

Bor.hole No.	Depth (m)	S.P.T.*1 (nos.)	U.S *2 (pieces)	I.P.T.*3 (nos.)	Digging Pits	I.D.T.*4 (nos.)	D.S.*5 (piece)	Remarks
1	32	32	-	-	-	-	-	for the pumping station
2	10	10	1	1	-	-	1	beside the embankment
3	10	10	1	-	-	-	1	"
4	10	10	2**	-	1	1	-	on the embankment
5	10	10	2**	1	1	1	-	"
Total	72	72	6	2	2	2	2	

*1 S.P.T.: Standard Penetration Test

*2 U.S. : Undisturbed Soil Sampling

**: including one sample from the test pit

*3 I.P.T.: In-situ Permiability Test

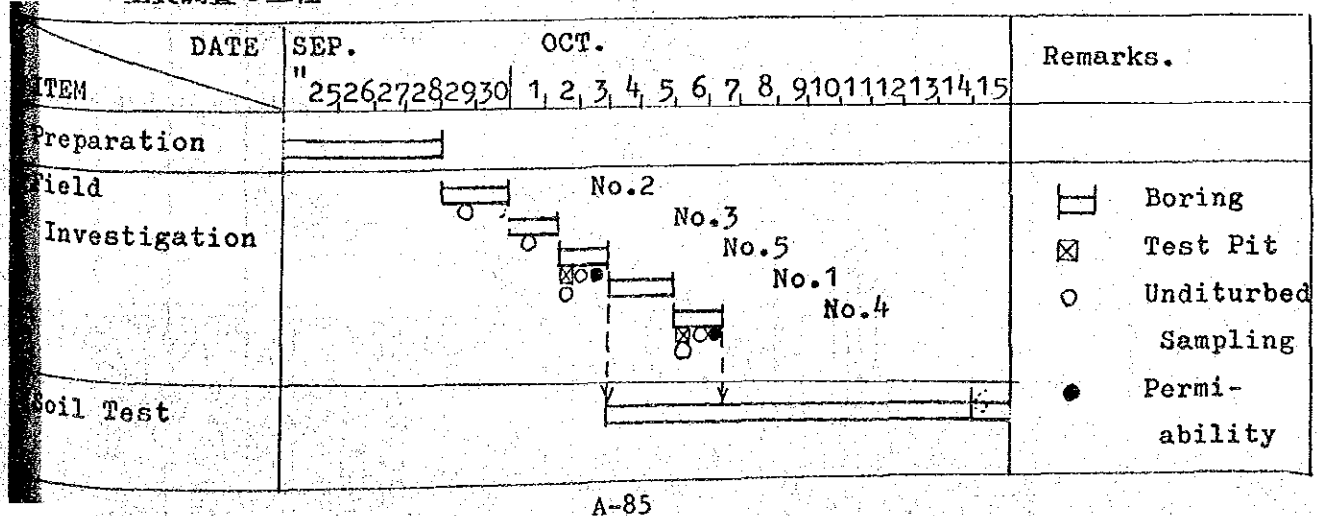
*4 I.D.T.: In-situ Density Test in the pits

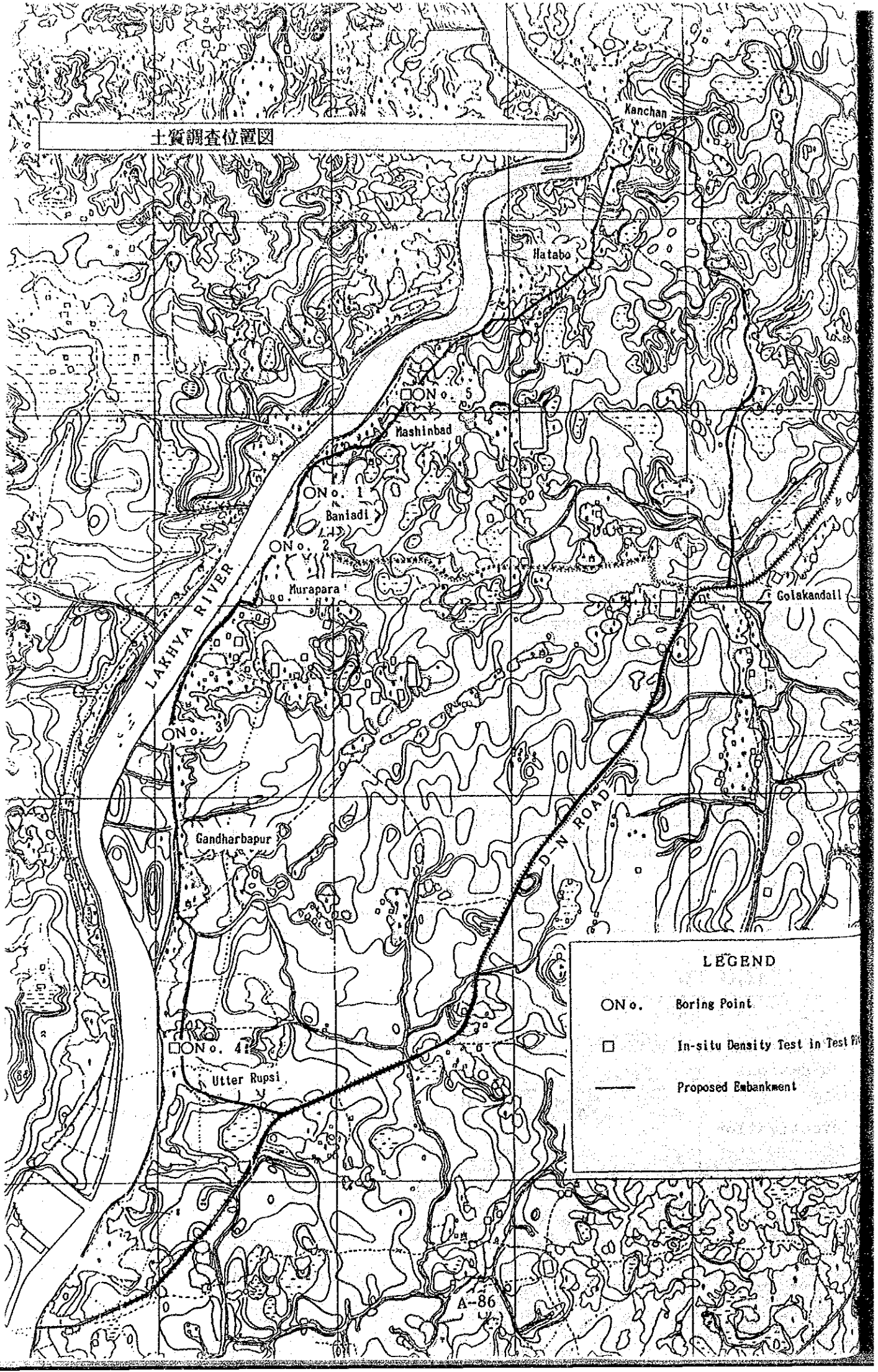
*5 D.S. : Disturbed soil sampling for Compaction test

土質試験の数量

Items	Quant.	Items	Quant.
Specific Gravity	10	Bulk dencity	4
Pertic1 Size	10	Consoldation	4
Moistur Content	10	Triaxial compression	6
Liquid limit	10	Permiability	2
Plastic limit	10	Compaction	2

土質調査の工程




土質調査位置図
Kanchan
Hatabo
Mashinbad
ON o. 5
ON o. 1
Baniadi
ON o. 2
Murapara
LAKHYA RIVER
Golakandail
ON o. 3
Gandharbapur
D-N ROAD
ON o. 4
Utter Rupsi
LEGEND
ON o. Boring Point
In-situ Density Test in Test Pit
Proposed Embankment

Soiltreat Equipment & Engg.Ltd.
76A, Segun Bagicha. Dhaka

Project :- N-N Irrigation Project
Client :- Japan Engineering Consultant Co. Ltd.
Site :- Narsinghdi
Bore chart of boring no. 1

Method of boring :- Percussion
Diameter of boring :- 100 mm
Inclination :- Vertical

Date started. 3-10-87
Date completed. 5-10-87
GRW.Table. 0.5m

reduced elevation	depth mm	thickness m	strata encountered	log	standard penetration tests blows/30cm (10 20 30 40 50 60 70 80 90)	remarks (e.w.r, soil samples vane shear test lbs/sq in.
	4300	4300	Brown clay with some silt		3 7 9 9	
	7300	3000	Grey clayey silt, trace sand		7 8 8	
	25300	18000	Grey, silt, with clay, trace fine sand		5 5 5 4 5 7 5 3 3 3 4 5 5 5 7 7 5 4	
	32300	7000	Grey fine to medium sand trace clay		16 29 37 35 32 30 29	

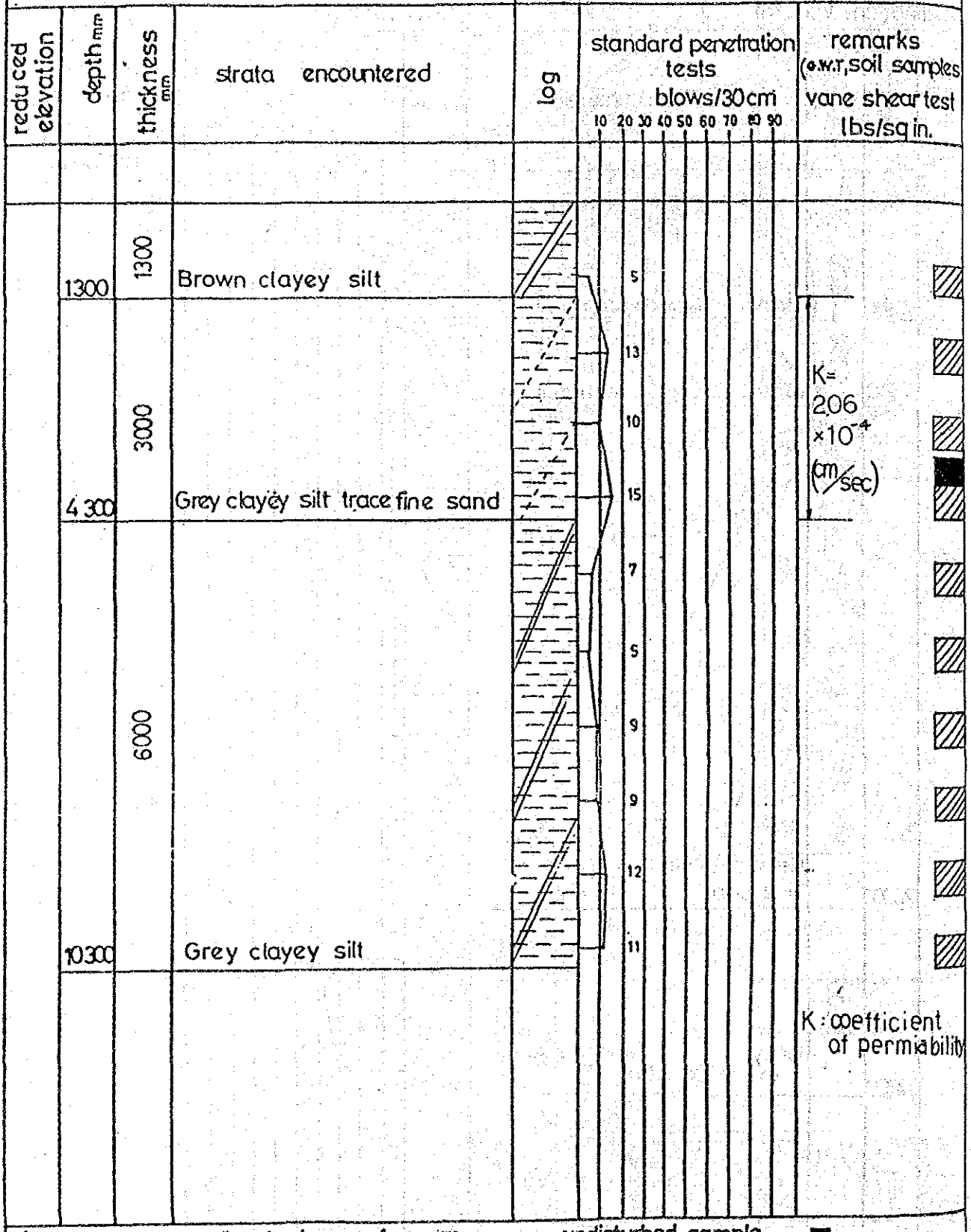
drn:- disturbed sample..... undisturbed sample.....
checked:- date:- scale:- 1:200 plan no.

Soiltreat Equipment & Engg.Ltd.
76A, Segun Bagicha. Dhaka

Project :- N-N Irrigation Project
Client:- Japan Engineering Consultant Co. Ltd.
Site:-Narsingdi
Bore chart of boring no. 2

Method of boring:-Percussion
Diameter of boring:- 100 mm
Inclination:-Vertical

Date started. 29-9-87
Date completed. 30-9-87
GRW.Table 0.63 m on 29-9-87



drn:- disturbed sample..... undisturbed sample.....
checked:- date:- scale:-1:75 plan no.

Soiltreat Equipment & Engg.Ltd.
76/A, Segun Bagicha. Dhaka

Project :- N-N Irrigation Project
Client:- Japan Engineering Consultant Co. Ltd.
Site:-Narsinghdi
Bore chart of boring no. 3

Method of boring:-Percussion
Diameter of boring:- 100 mm
Inclination:-Vertical

Date started. 1-10-87
Date completed. 1-10-87
GR.W.Table. 0.68 m

reduced elevation	depth mm	thickness mm	strata encountered	log	standard penetration tests blows/30cm (10 20 30 40 50 60 70 80 90)	remarks (g.w.r, soil samples vane shear test lbs/sq in.
	2300	2300	Brown clay with silt		3 4	
	5300	3000	Grey clayey silt trace fine sand		7 8 4	
	10300	5000	Grey clayey silt		13 12 5 6 4	

drn:- disturbed sample..... undisturbed sample.....
checked:- date:- scale:- 1:75 plan no.

Soiltreat Equipment & Engg.Ltd.
76/A, Segun Bagicha. Dhaka

Project :- N-N Irrigation Project
Client :- Japan Engineering Consultant Co. Ltd.
Site :- Narsinghdi
Bore chart of boring no. 4

Method of boring :- Percussion
Diameter of boring :- 100 mm
Inclination :- Vertical

Date started. 6-10-87
Date completed. 6-10-87
GR.W.Table. 1.15 m

reduced elevation	depth mm	thickness mm	strata encountered	log	standard penetration tests blows/30cm (10 20 30 40 50 60 70 80 90)	remarks (e.w.r, soil samples vane shear test lbs/sq in.)
	4300	4300	Brown clayey silt trace fine sand		3, 3, 5, 7	
	8300	4000	Brown to grey silt with some fine sand, trace clay		13, 12, 13, 13	K = 1.88 × 10^{-4} (cm/sec)
	10300	2000	Grey clayey silt		16, 21	

drn:- disturbed sample..... ▭ undisturbed sample..... ■
checked:- date:- scale:- 1:75 plan no.

Soiltreat Equipment & Engg.Ltd.
76A, Segun Bagicha, Dhaka

Project :- N-N Irrigation Project
Client :- Japan Engineering Consultant Co. Ltd.
Site :- Narsingdi
Bore chart of boring no. 5

Method of boring :- Percussion
Diameter of boring :- 100 mm
Inclination :- Vertical

Date started. 2-10-87
Date completed. 2-10-87
GRW. Table. 1.14 m

reduced elevation	depth mm	thickness mm	strata encountered	log	standard penetration tests blows/30cm (10 20 30 40 50 60 70 80 90)	remarks (e.w.r, soil samples vane shear test lbs/sq in.)
	2300	2300	Brown clayey silt		3 5	
	4300	2000	Brown to grey silt with trace sand		8 4	K = 2.09 x 10^{-4} (cm/sec)
	10300	6000	Brown silty clay		6 9 5 3 2 4	

drn:-
checked:-
disturbed sample.....
date:-
undisturbed sample.....
scale:-1:75
plan no.

土質試験結果一覧表

B/H No.	Depth (m)	Particle size distribution (%)				Atterberg Limits		SG	MC (%)	UW g/cm³	Classification of Soils	Compaction		Consolidation Test				U.C.S.	Triaxial Test		Permiability	Remarks
		> 2mm	2mm-60 μm	60-2 μm	2 μm>	W_L	PI					M.D.D. (g/cm³)	O.M.C. (%)	e_o	c_c	c_v cm²/d	Pc kg/cm²	q_u kg/cm²	C kg/cm²	φ °	K(cm/sec)	
1	4.85~5.30	—	6	57	37	79.40	22.45	2.54	44.86		MC											SG: Specific Gravity
1	9.85~10.30	—	10	67	23	82.50	52.98	2.59	44.82		CH											MC: Natural Moisture Content
2	0.85~1.30	—	—	67	33	51.35	25.16	2.70	27.25		CH	1.618	17.90									UW: UnitWeight
2	2.85~3.30	—	4	74	22	40.50	11.91	2.59	35.02		ML											Class: TheUnified Soil Classification System
2	3.40~3.85							2.61	29	1.82	ML			0.85	0.20	220	0.060		0.545	0		
3	0.85~1.30	—	—	72	28	40.65	22.68	2.66	29.77		CL	1.479	17.50									e_o : Initial Void Ratio
3	2.85~3.30	—	5	62	33	37.10	23.29	2.60	29.32		CL											
3	4.40~4.85							2.61	38		CL			1.00	0.21	120	0.052		0.408	0		C_c : Compression Index
4(P)	0.50~0.80								43	1.716 *	CL								0.300	0		
4	1.85~2.30	—	—	57	43	49.90	34.53	2.65	38.39		CL											C_v : Coeficient of Consolidation
4	2.85~3.30	—	6	54	40	44.50	26.40	2.60	40.89		CL											
4	4.40~4.85							2.60	43	2.00	CL			0.82	0.21	255	0.044		0?	28?	3.15×10^{-8}	q_u : Unconfind Compression Strength
5(P)	0.50~0.80							2.53	29	1.806 *	CL								0.460	16		
5	1.85~2.30	—	—	64	36	40.72	26.70	2.63	27.86		CL											C : Cohesion
5	2.85~3.30	—	—	91	9	41.80	32.56	2.56	30.11		CL											
5	4.40~4.85							2.58	30	1.90	CL			0.76	0.14	155	0.067		0.306	0	1.20×10^{-6}	φ : internal friction
	Reference Materials (Baniadi Regulator 1983)																					
H-1	7.60~8.20	—	6	65	29	43	17		42.26	1.89	CL							0.746				* : In-situ density test
H-2	4.60~5.20	—	3	83	14	42	17	2.682	27.62	1.86	CL			0.72	0.163	259	0.200	1.903				
H-3	6.10~6.70	—	13	77	10	59	29	2.665	42.18	1.75	CH			1.15	0.34	69	0.040	0.285				