G. Cost Recovery

NIA has the authority to collect irrigation fees from users of national irrigation systems to finance operations. Ilocos Norte Province has eight national irrigation systems of which five are of gravity irrigation and three of pump irrigation.

Irrigation fees of the gravity systems are equivalent to two cavans of paddy per hectare in the wet season and three cavans in the dry season and fees of pump systems are three cavans in the wet season and five cavans in the dry season. Cash has been collected only since 1977.

According to the information of the Provincial Irrigation Office in Ilocos Norte, the irrigation fee collection rate amounts to 54.7 percent as of 1977 crop season. This low collection rate of irrigation fees has several reasons. (see Appendix 6G-1).

On-farm facilities of the project would be constructed based on the NIA criteria and many Farmers Irrigators' Associations would be organized to operate and maintain such facilities. This Farmers Irrigators' Association should be responsible to collect the irrigation fee.

Irrigation fees of the Project would be estimated as an equivalent value to the operation and maintenance cost at the maximum rate. The US$57 of operation and maintenance cost per hectare, corresponds to 7.7 cavans per year of irrigation fees. This rate is almost the same to 7.9 cavans which were proposed by the World Bank to apply to the NISIP I systems.

In determining the extent of cost recovery, cost recovery index is used for the project. This index is measured at the ratio of incremental water charges paid by all project beneficiaries to incremental project construction and operation and maintenance costs.

Water charge and costs are measured based on the present values discounted at ten percent annual rate of interest over the 50 year life of the project. The proposed fee charges (7.7 cavans) would result in a cost recovery index of 17 percent.

In order to determined the extent of benefit recovery, benefit recovery index is used. This index is measured at the ratio of incremental water charges paid by a typical farm family to incremental income accruing to the family before paying water charges.

As incremental income is indicated in the previous farm budget study, the proposed fee charges would result in a benefit recovery index of seven percent to an amotisation owner and 11 percent to a leaseholder.

Project Costs represent financial flows from the public sector, then correspond to taxes and other transfer payments.

After completion of the Project the tax to be levied would increase because of plenty of incremental benefit. The tax to be levied in future would be contribute to cost recovery of this Project.

H. Socio-Economic Impact

The project economy should be also evaluated by indirect benefits. Besides the direct benefits mentioned above, the project would create the indirect benefit and would affect the socio-economic impact to both farm economy in the vicinity of Project Area and national or provincial economy.

In a view point of farm economy, the following impacts would be considered:

i) Increase of cash income, then increase of input volumes of materials. This process would bring higher yields and more progressive agricultural techniques.

ii) Increase of cash income, then improvement of the standard of living. This process would associate with regional walfare.

iii) Increase of cash income, then increase of farmer's capital stock. This process would contribute to the progress of agrarian reform.

In a view point of national or provincial economy, the following items are enumerated.

iv) Contribution of the self-sufficiency of staple food

The balance of demand and supply of rice at present in Ilocos Norte Province is still under the instability. After completion of the Project, Ilocos Norte would be able to obtain the surplus rice. And, this incremental rice would contribute to the solution of deficit balance of rice in other provinces, that is, La Union and Benguet.

The government forecasted that the self-sufficiency of staple food will be attained in the next five years, 1978 - 1982. In fact, the Philippines has just become a marginal exporter since 1977. The incremental rice after completion of the Project would contribute to the international trade of the Philippines.

v) Increase of employment

The raise of cropping intensity would increase a employment capacity of family labor and hired labor. According to the labor analysis, the farming labor demand was projected to increase from the total man-days of 1,115,000 without project to 1,516,000 with project. It was forecasted that the introduce of farm machine and intensive family labor would compete with hired labor. If the farmer operate less labor days than presumption, labor to be hired would increase to be greater. This Project would create many job opportunities for the unemployment labor.

vi) Correction of income inequality

The per capita income in 1971 in this region reveals at only 477 pesos per annum, which is much lower than that of the national average, 566 pesos per annum.

According to the farm budget analysis, per capita net production value in the Project Area was estimated at about 410 pesos at present and 1,450 pesos with Project.

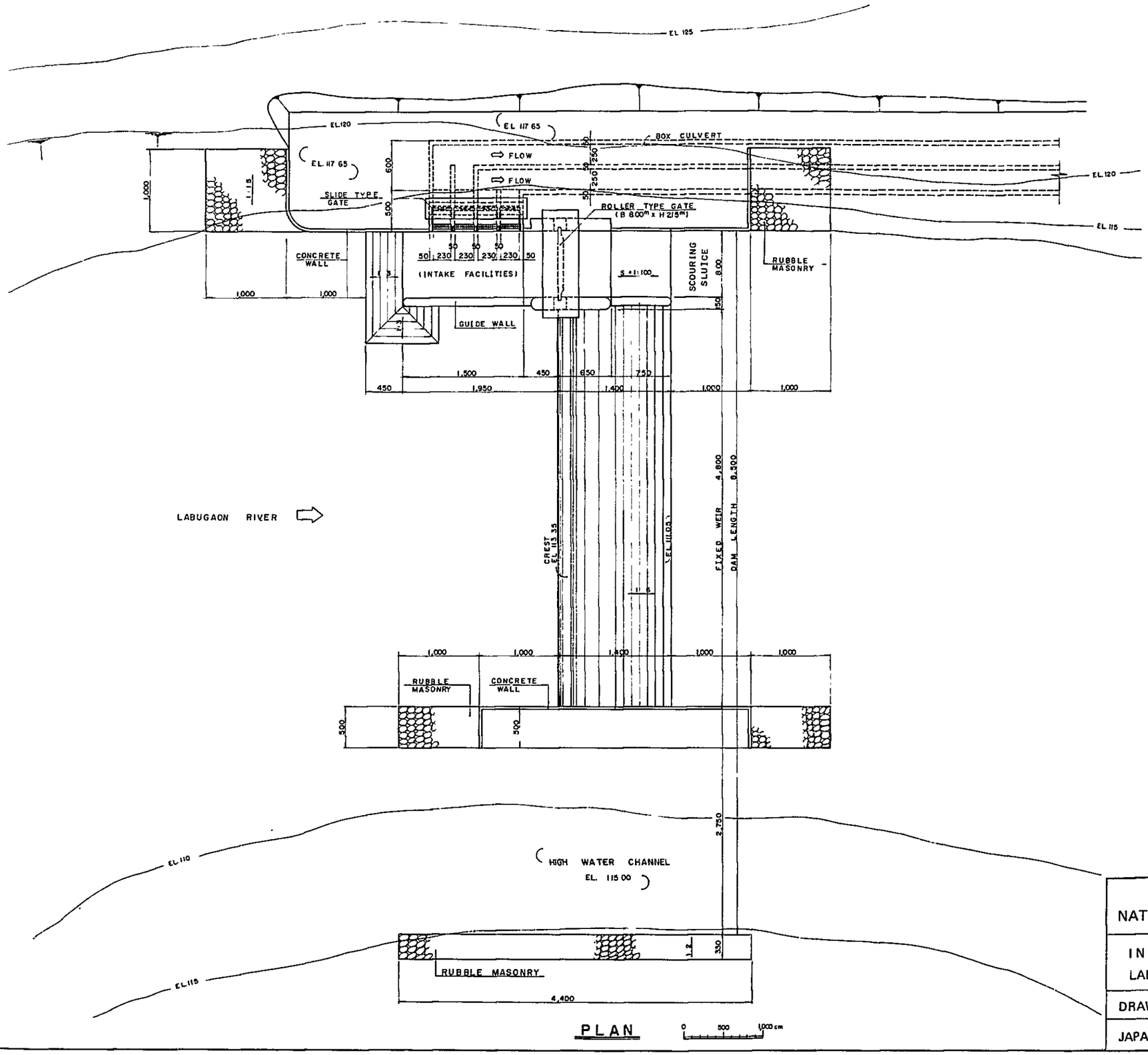
vii) Improvement of transportation network

The operation and maintenance roads constructed by the Project would speed up to transport the input and output materials respectively.

viii) Income increase during construction

Many farmers will be employed during the construction of the Project. The required unskilled labor wages are estimated at about 9.6 million peso at peak in 1983. This income is about 33 percent of gross net production value without Project.

	DRAWINGS	NO.
1.	LABUGAON DIVERSION DAM, GENERAL PLAN	INIS (I) - DD - 001
2.	LABUGAON DIVERSION DAM, TYPICAL SECTION	INIS (I) - DD - 002
3.	SOLSONA DIVERSION DAM, GENERAL PLAN	INIS (I) - DD - 003
4.	SOLSONA DIVERSION DAM, TYPICAL SECTION	INIS (I) - DD - 004
5.	MADONGAN DIVERSION DAM, GENERAL PLAN	INIS (I) - DD - 005
6.	MADONGAN DIVERSION DAM, TYPICAL SECTION	INIS (I) - DD - 006
7.	PAPA DIVERSION DAM, GENERAL PLAN	INIS (I) - DD - 007
8.	PAPA DIVERSION DAM, TYPICAL SECTION	INIS (I) - DD - 008
9.	NUEVA ERA DIVERSION DAM, GENERAL PLAN	INIS (I) - DD - 009
10.	NUEVA ERA DIVERSION DAM, TYPICAL SECTION	INIS (I) - DD - 010
11.	PROFILE OF MAIN CANAL (N_{L-1})	INIS (I) - IC - 011
12.	PROFILE OF MAIN CANAL (M_{R-1})	INIS (I) - IC - 012
13.	TYPICAL ROAD CROSSING WITH CHECK AND DROP	INIS (I) - IC - 013
14.	TYPICAL RCP CROSSING	INIS (I) - IC - 014
15.	TYPICAL SECTION OF IRRIGATION CANAL	INIS (I) - IC - 015
16.	TYPICAL BOX SIPHON WITH CROSSING	INIS (I) - IC - 016
17.	TYPICAL RCP SIPHON WITH CROSSING	INIS (I) - IC - 017
18.	TYPICAL CHECK AND VERTICAL DROP	INIS (I) - IC - 018
19.	TYPICAL SUB-LATERAL DROP	INIS (I) - IC - 019
20.	TYPICAL HEADGATE WITH BOX CULVERT	INIS (I) - IC - 020
21.	TYPICAL HEADGATE WITH PIPE CULVERT	INIS (I) - IC - 021
22.	TYPICAL PARSHALL FLUME	INIS (I) - IC - 022
23.	TYPICAL DRAINAGE CULVERT	INIS (I) - IC - 023
24.	TYPICAL DRAINAGE INLET	INIS (I) - IC - 024
25.	TYPICAL DRAINAGE CANAL SECTION	INIS (I) - DC - 025
26.	TYPICAL DRAINAGE DROP	INIS (I) - DC - 026
27.	TYPICAL ROAD SECTION	INIS (I) - RW - 027
28.	LAYOUT OF ON-FARM FACILITY (SAMPLE AREA NO.1)	INIS (I) - OF - 028
29.	LAYOUT OF ON-FARM FACILITY (SAMPLE AREA NO.2)	INIS (I) - OF - 029
30.	TYPICAL TURN-OUT	INIS (I) - OF - 030
31.	TYPICAL FARMDITCH SECTION AND DIVERSION BOX	INIS (I) - OF - 031

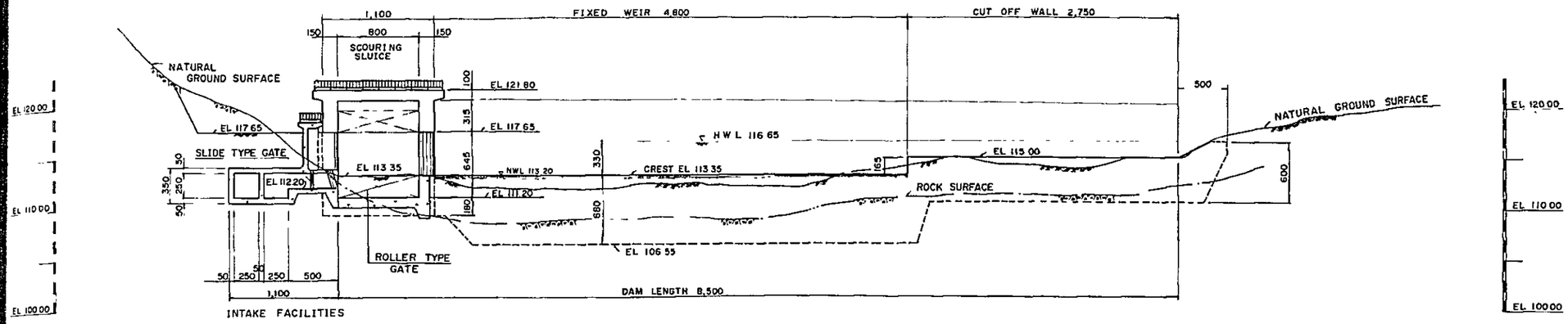


REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP
LABUGAON DIVERSION DAM, GENERAL PLAN

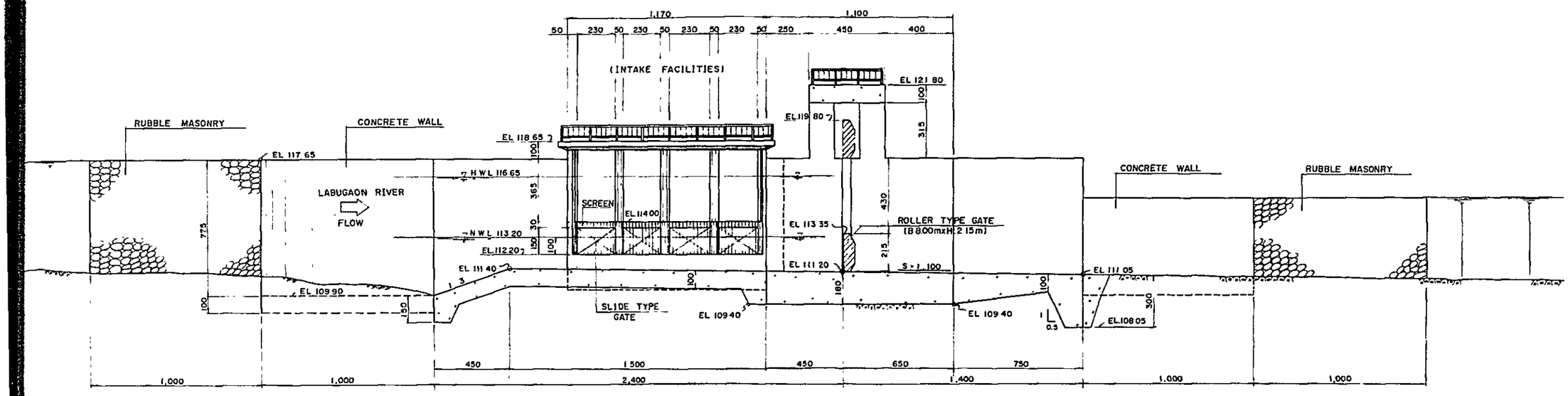
DRAWING NO.	INIS (I) - DD - 001

JAPAN INTERNATIONAL COOPERATION AGENCY



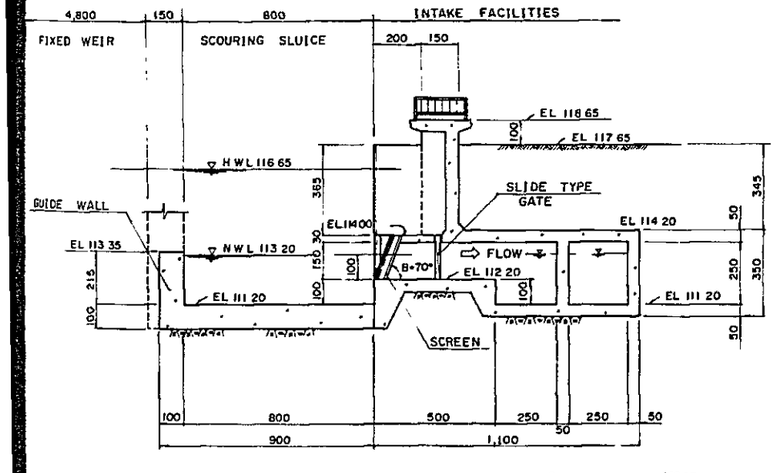
UPSTREAM ELEVATION

0 500 1,000cm



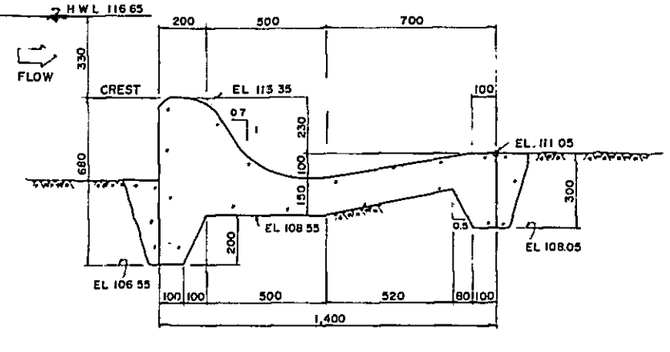
PROFILE OF SCOURING SLUICE

0 500 cm



INTAKE FACILITIES

0 500 cm



STANDARD CROSS SECTON OF FIXED WEIR

0 50

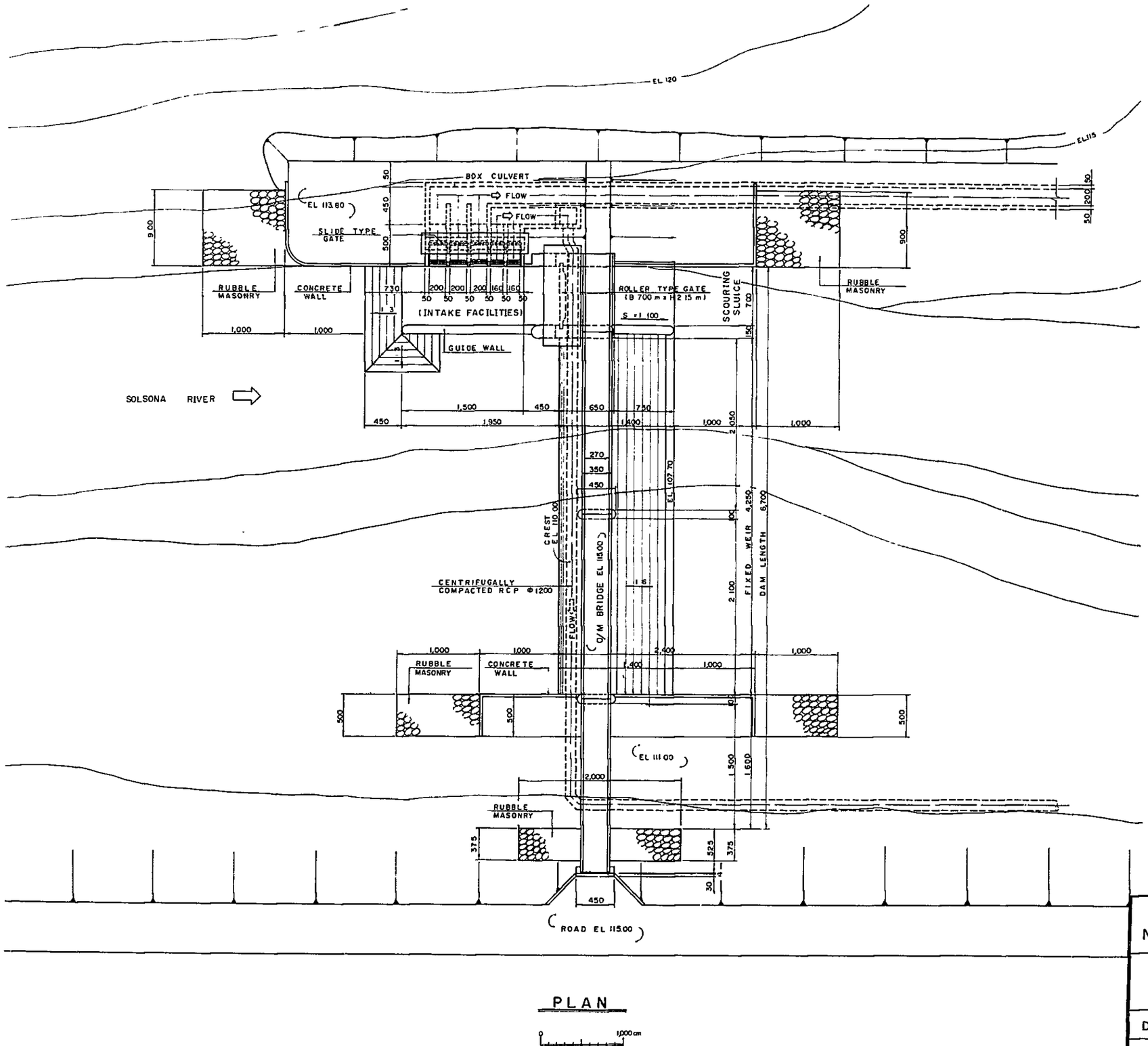
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

I N I P

LABUGAON DIVERSION DAM, TYPICAL SECTION

DRAWING NO. INIS (I) - DD - 002

JAPAN INTERNATIONAL COOPERATION AGENCY



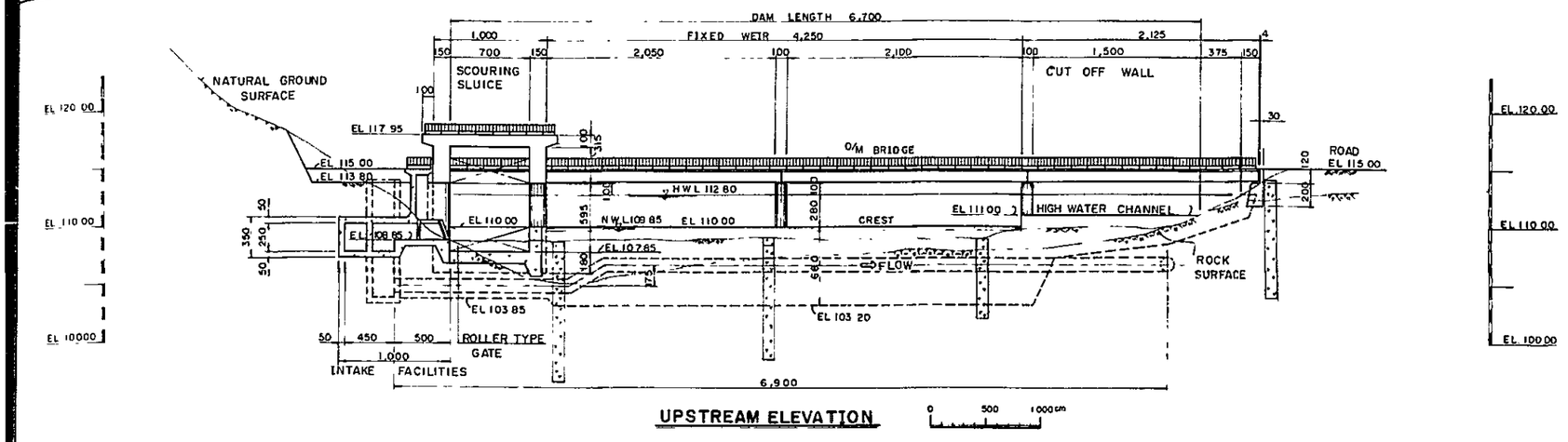
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP

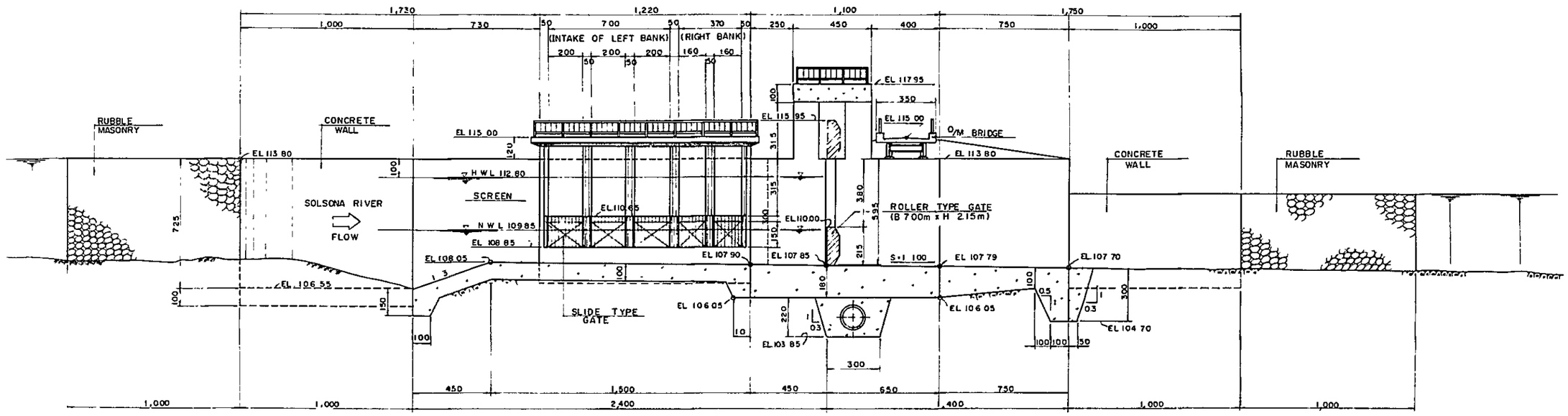
SOLSONA DIVERSION DAM, GENERAL PLAN

DRAWING NO.	INIS (I) - DD - 003

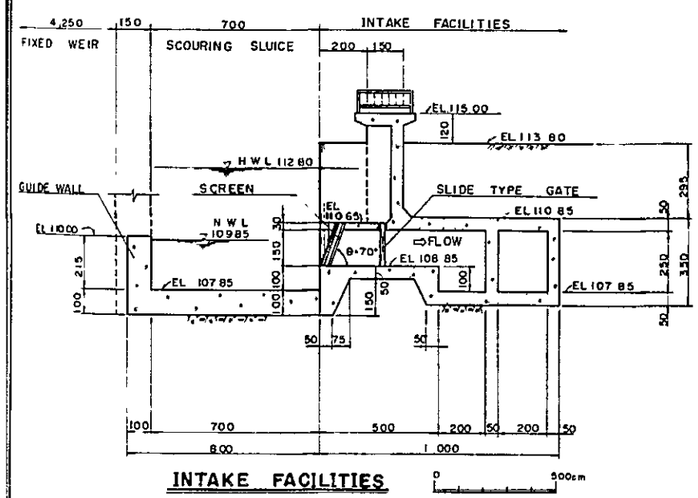
JAPAN INTERNATIONAL COOPERATION AGENCY



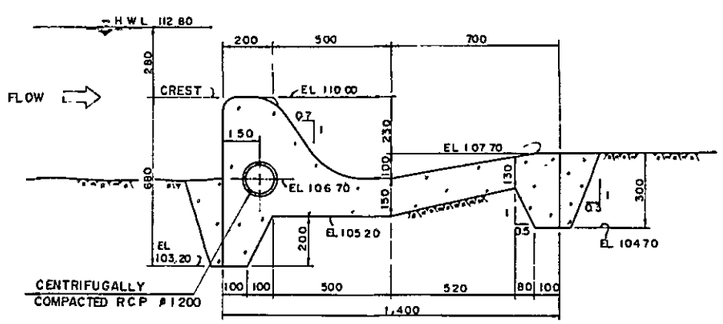
UPSTREAM ELEVATION



PROFILE OF SCOURING SLUICE



INTAKE FACILITIES



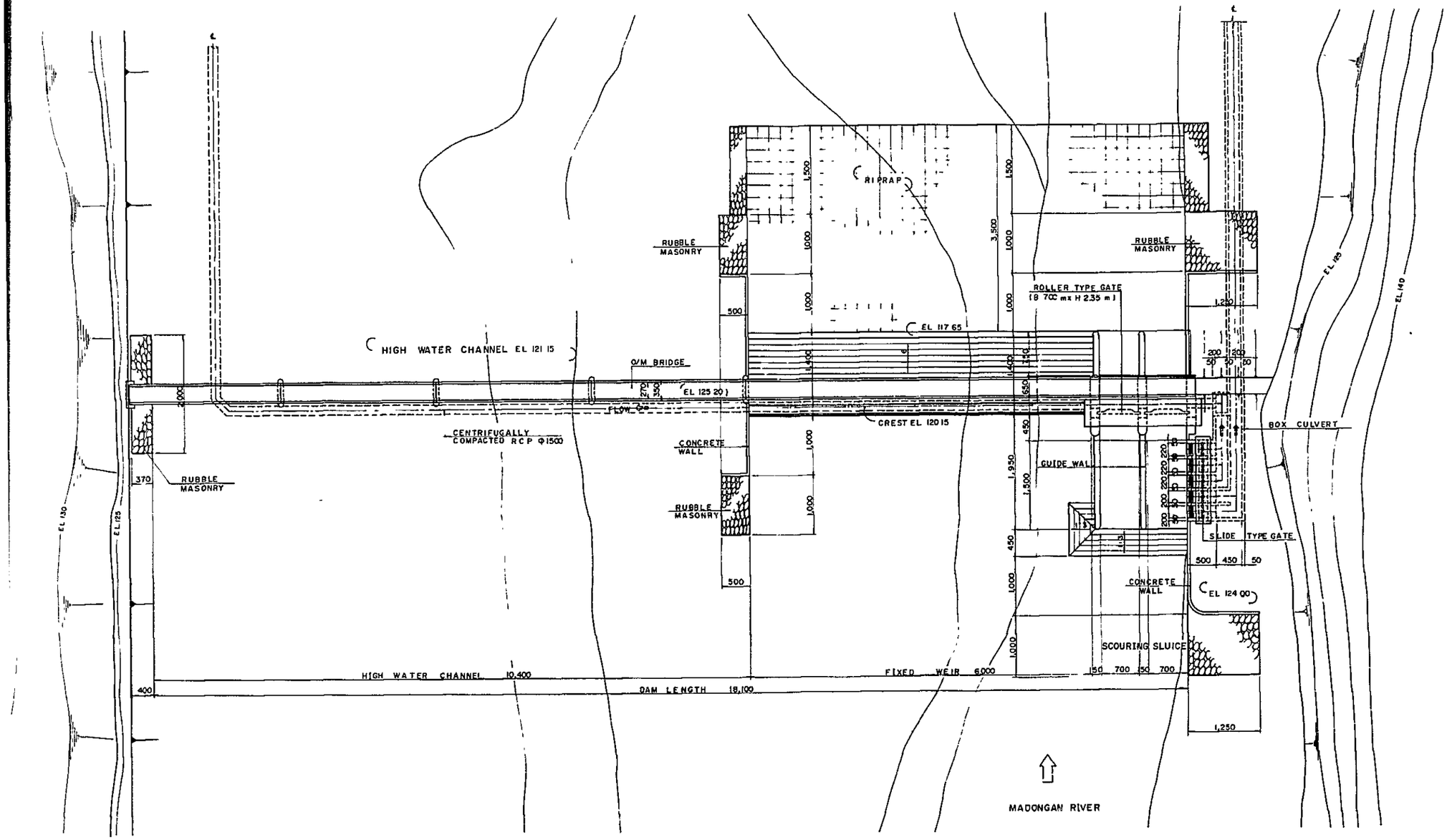
STANDARD COSS SECTON OF FIXED WEIR

REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP
SOLSONA DIVERSION DAM, GENERAL PLAN

DRAWING NO.	INIS (I) - DD - 004

JAPAN INTERNATIONAL COOPERATION AGENCY



PLAN

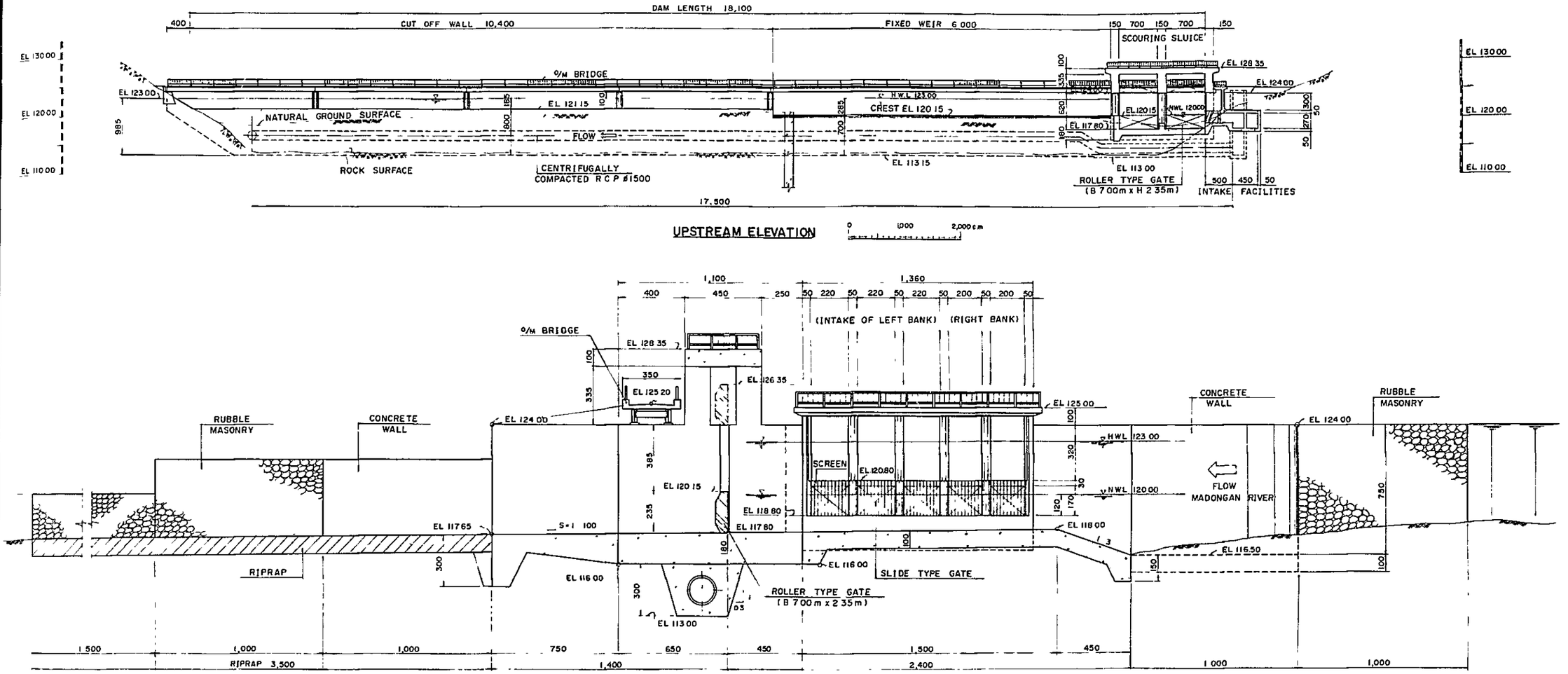
0 1,000 2,000 cm

REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP
MADONGAN DIVERSION DAM, GENERAL PLAN

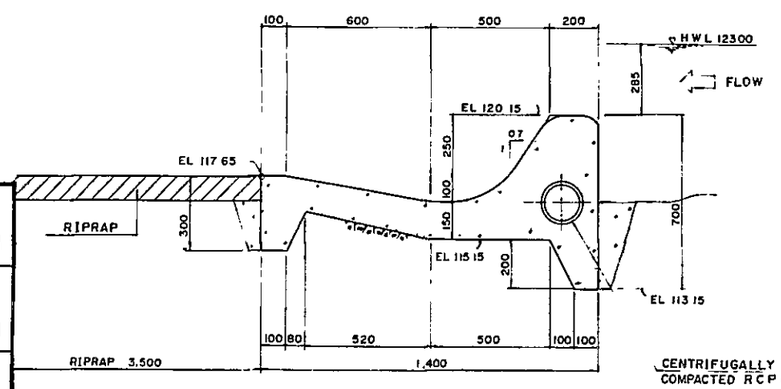
DRAWING NO.	INIS (I) - DD - 005

JAPAN INTERNATIONAL COOPERATION AGENCY



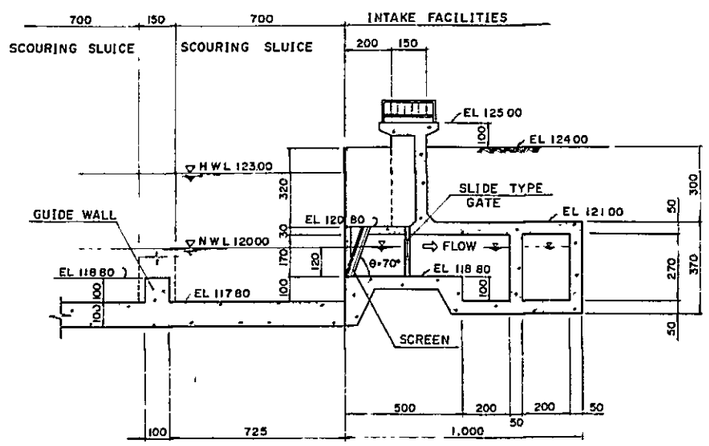
UPSTREAM ELEVATION 0 1000 2,000 cm

PROFILE OF SCOURING SLUICE 0 500 cm



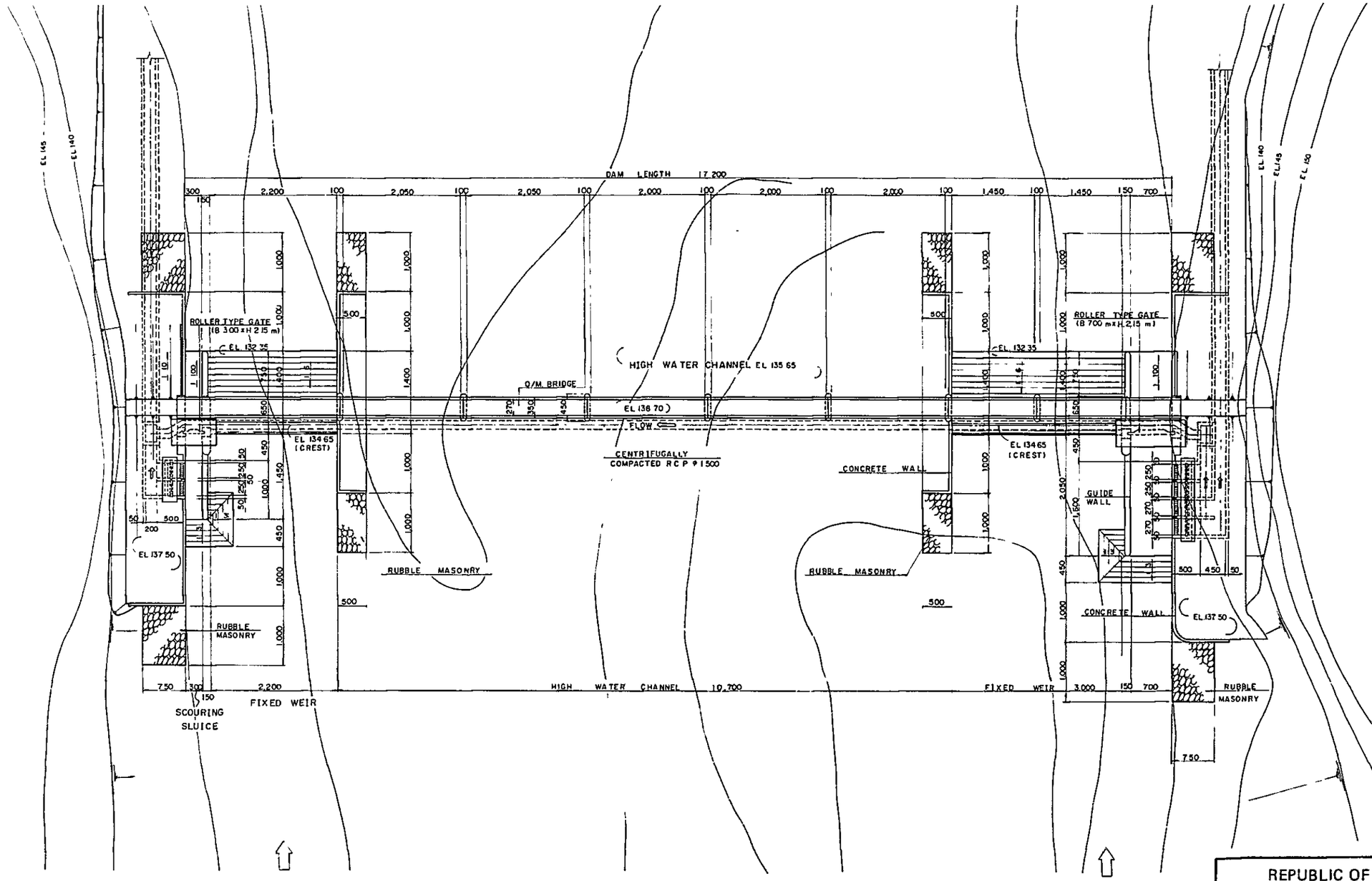
0 500 cm

STANDARD CROSS SECTION OF FIXED WEIR



INTAKE FACILITIES 0 500 cm

REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP MADONGAN DIVERSION DAM, TYPICAL SECTION	
DRAWING NO.	INIS (I) - DD - 006
JAPAN INTERNATIONAL COOPERATION AGENCY	



PLAN

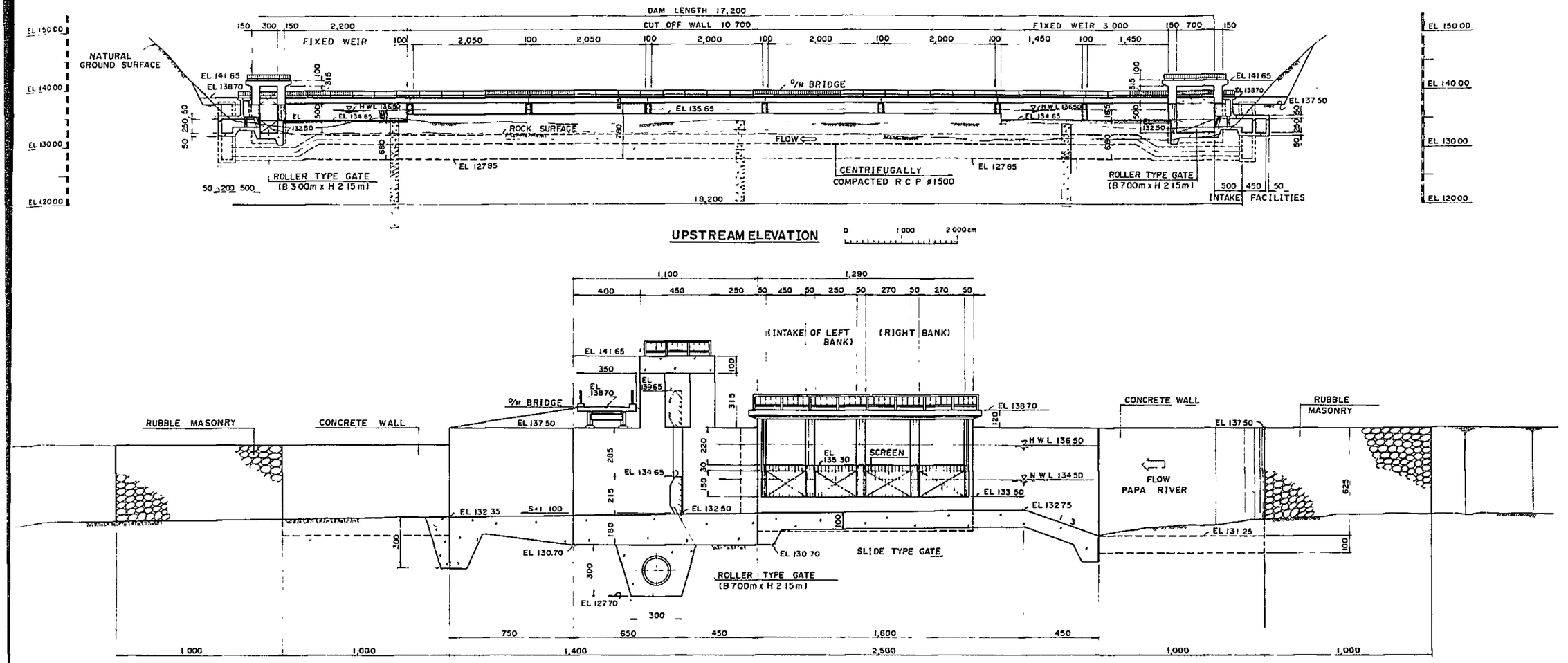
0 1000 2,000 cm

REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP
PAPA DIVERSION DAM, GENERAL PLAN

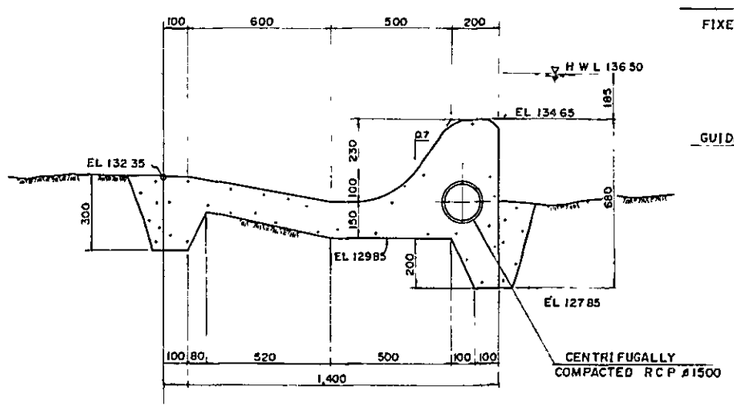
DRAWING NO.	INIS (I) - DD - 007

JAPAN INTERNATIONAL COOPERATION AGENCY

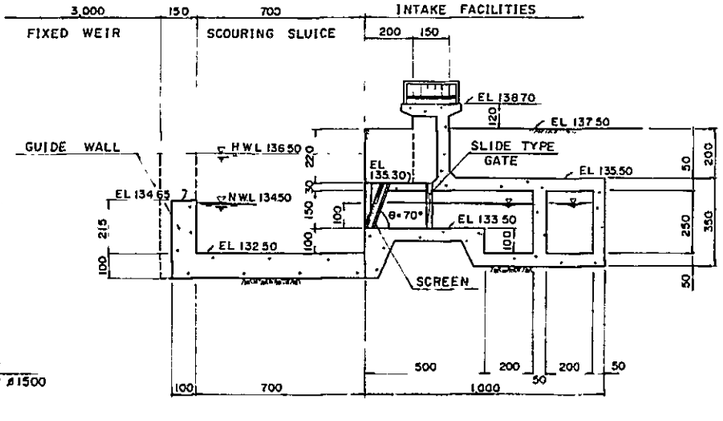


UPSTREAM ELEVATION 0 1 000 2 000cm

PROFILE OF SCOURING SLUICE 0 500 cm

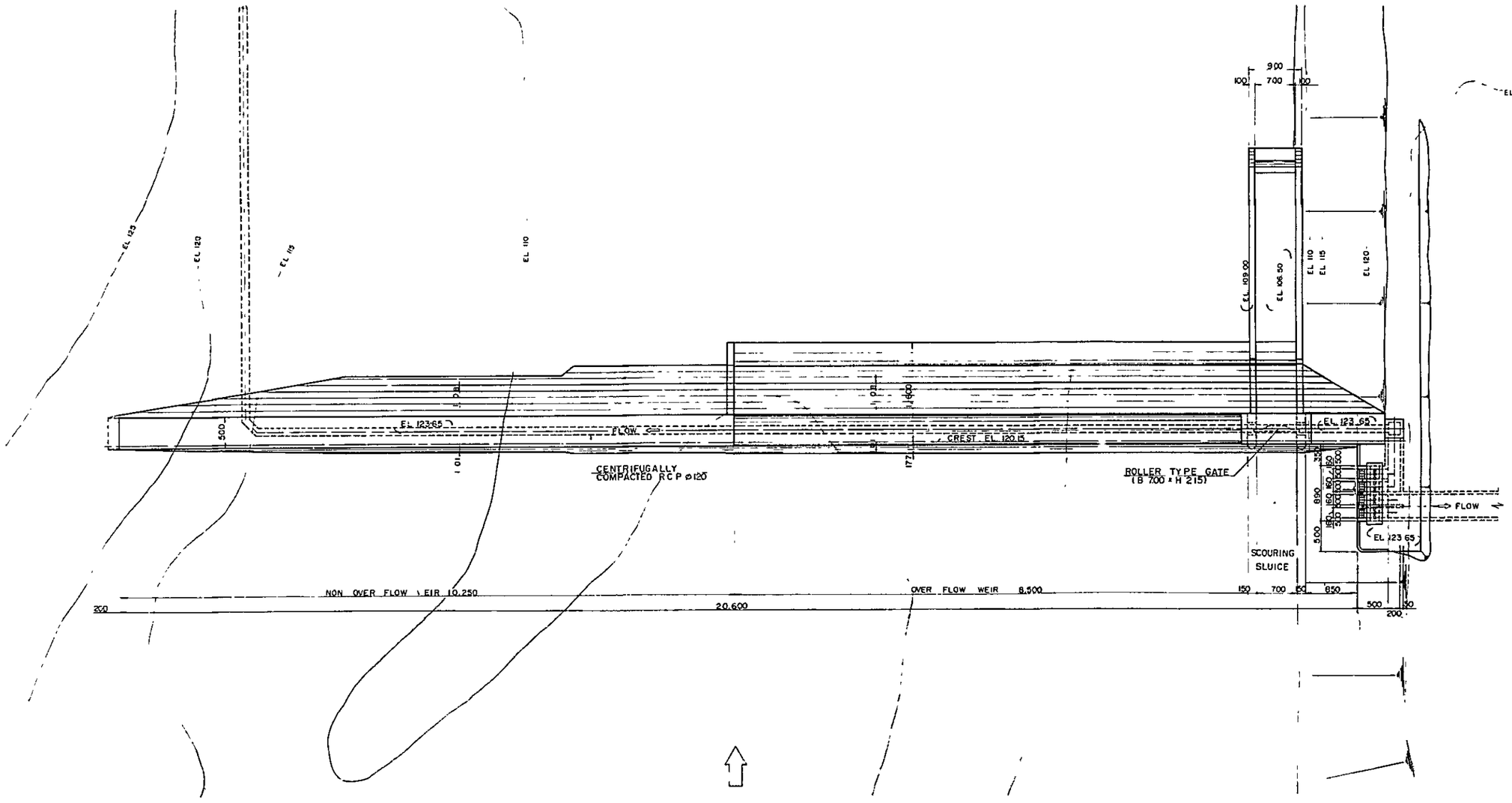


STANDARD CROSS SECTION OF FIXED WEIR 0 500 cm



INTAKE FACILITIES 0 500 cm

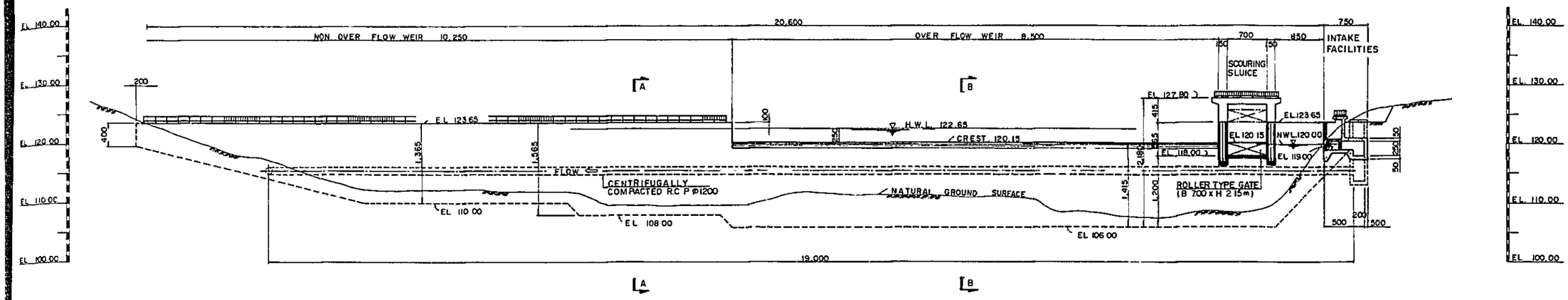
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP PAPA DIVERSION DAM, TYPICAL SECTION	
DRAWING NO.	INIS (I) - DD - 008
JAPAN INTERNATIONAL COOPERATION AGENCY	



PLAN

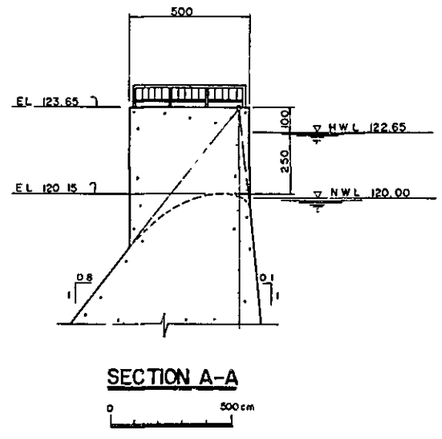
0 1000 2000 cm

REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP NUEVA ERA DIVERSION DAM, GENERAL PLAN	
DRAWING NO.	INIS (I) - DD - 009
JAPAN INTERNATIONAL COOPERATION AGENCY	



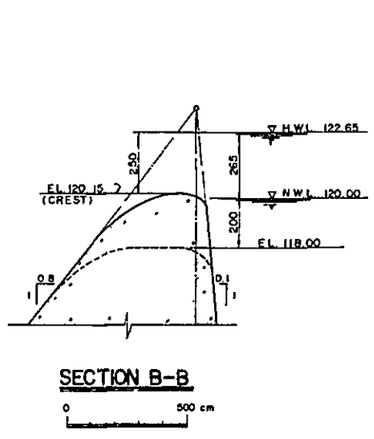
UPSTREAM ELEVATION

0 1,000 2,000 cm



SECTION A-A

0 500 cm



SECTION B-B

0 500 cm

PROFILE OF SCOURING SLUICE

0 500 cm

REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

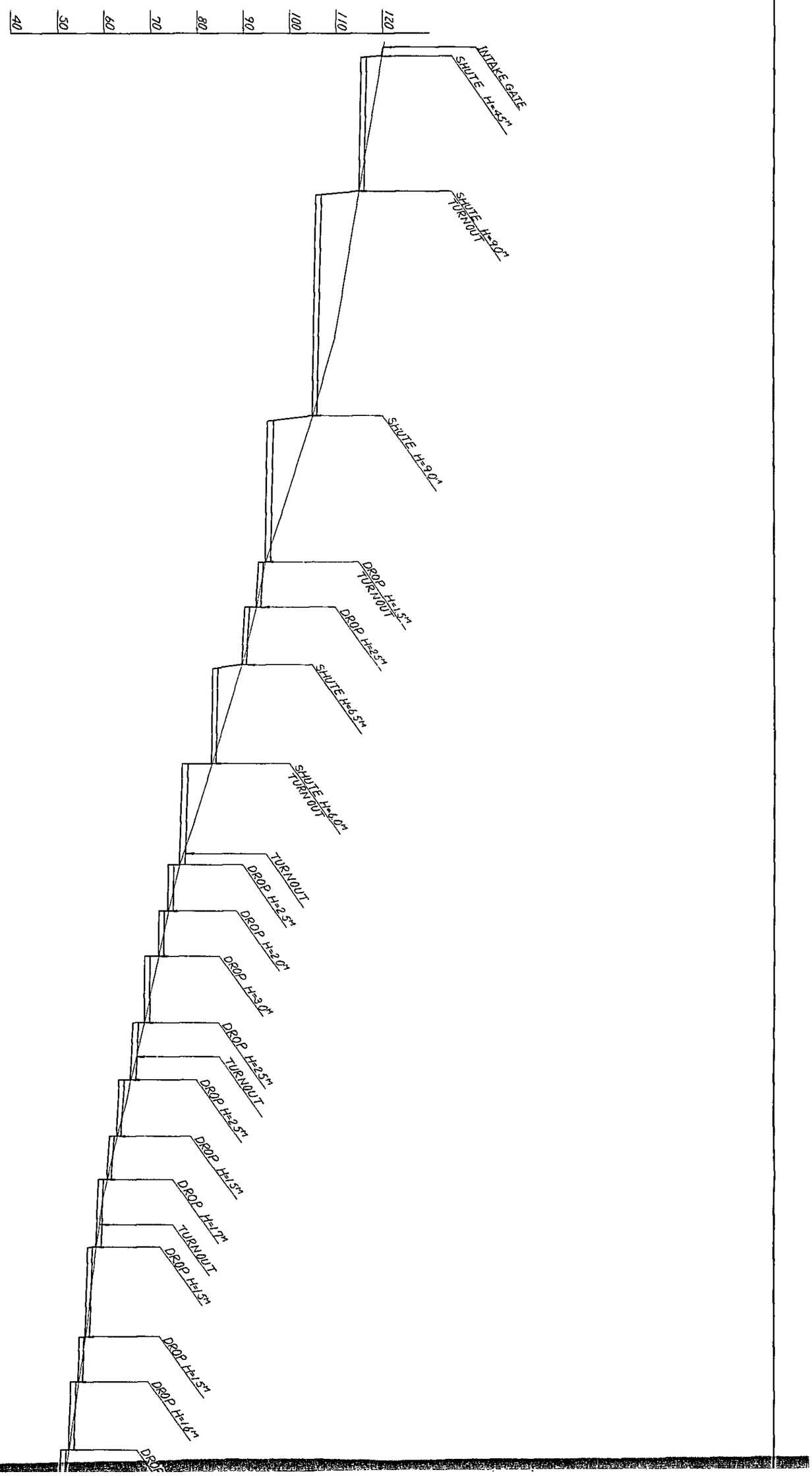
I N I P

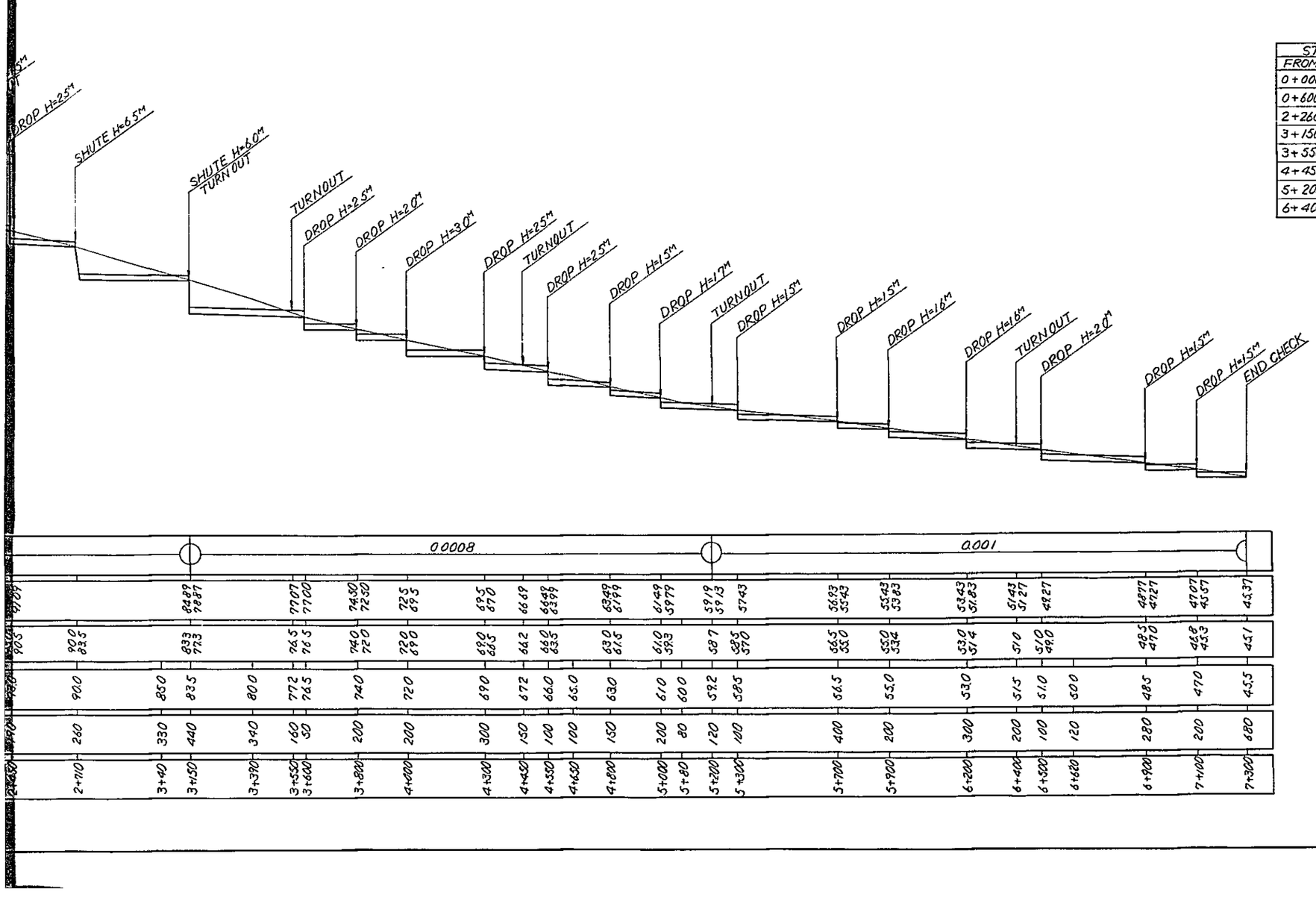
NUEVA ERA DIVERSION DAM, TYPICAL SECTION

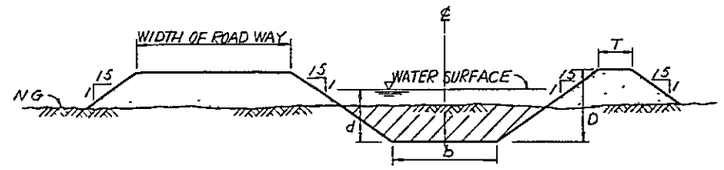
DRAWING NO.	INIS (I) - DD - 010

JAPAN INTERNATIONAL COOPERATION AGENCY

STA	DIST	NGS	PLAN CBEL	PLAN WSEL	PLAN SLOPE
0+00	000	120.0			
0+600	600	115.0	1148 1038	11598	
1+250	650	110.0			
1+620	370	105.0	1047 957	10587	
1+930	370	100.0			
2+260	330	95.0	950 935	9617 9499	
2+450	190	93.0	930 905	9109	
2+710	260	90.0	900 835		
3+40	330	85.0			
3+150	440	83.5	833 773	8489 7887	
3+390	340	80.0			
3+550	160	77.2	76.5	7707	
3+600	50	76.5	76.5	7700	
3+800	200	74.0	74.0 720	7450 7250	
4+000	200	72.0	720 690	725 695	
4+300	300	69.0	690 665	695 670	
4+450	150	67.2	66.2	66.89	
4+550	100	66.0	660 635	6649 6399	
4+650	100	65.0			
4+800	150	63.0	63.0 61.5	6349 6199	
5+000	200	61.0	610 593	6149 5979	
5+80	80	60.0			
5+200	120	59.2	58.7	5919 5913	
5+300	100	58.5	585 570	5743	
5+700	400	56.5	565 550	5693 5543	
5+900	200	55.0	550 534	5543 5383	
6+200	300	53.0	53.0 51.4	5343 5183	







TYPICAL CANAL SECTION

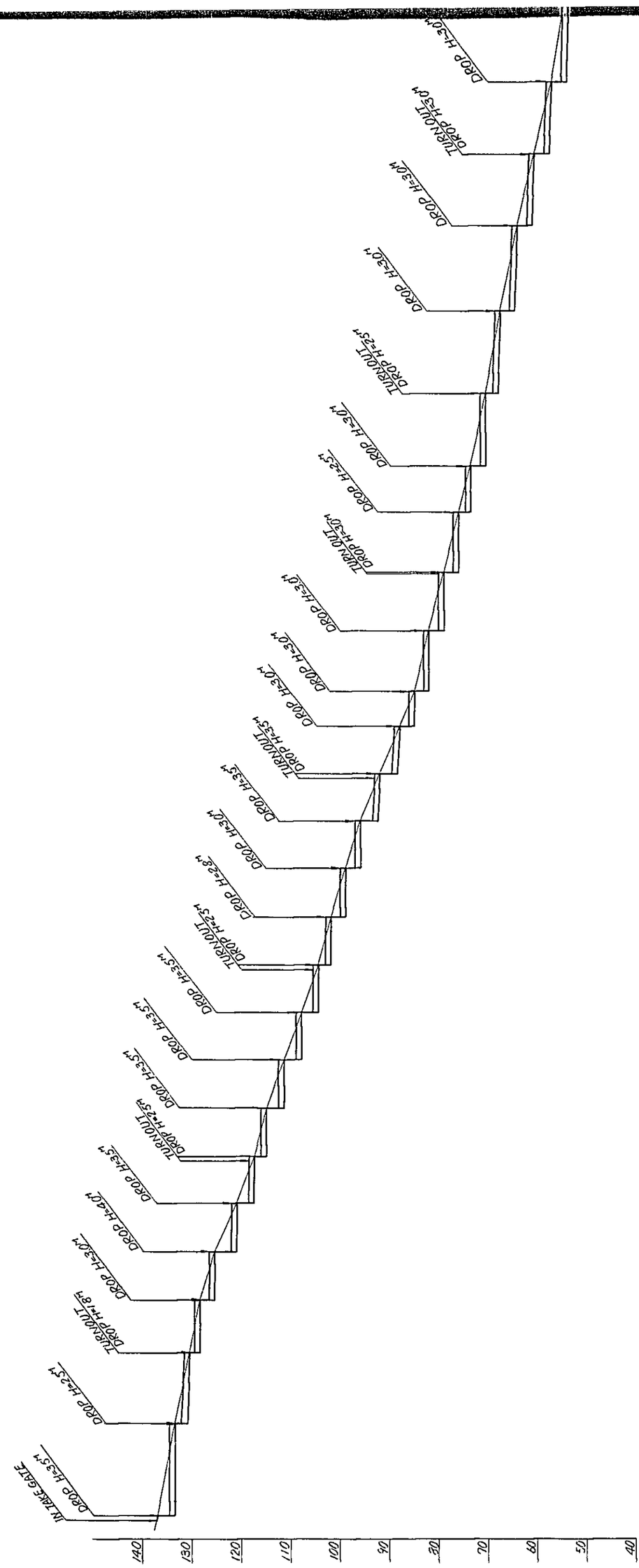
STATION		CANAL ELEMENTS							
FROM	TO	Q	V	A	b	d	D	n	S
0+000	0+600	4.636	0.833	5.57	3.00	1.18	1.70	0.025	1/00006
0+600	2+260	4.508	0.823	5.48	2.90	1.17	1.70	〃	〃
2+260	3+150	0.830	0.597	1.39	1.50	0.59	0.90	〃	1/0.0008
3+150	3+550	0.757	0.587	1.30	1.40	0.57	0.90	〃	〃
3+550	4+450	0.632	0.632	1.00	1.30	0.50	0.80	〃	1/0.001
4+450	5+200	0.567	0.591	0.96	1.20	0.49	0.80	〃	〃
5+200	6+400	0.415	0.561	0.74	1.10	0.43	0.75	〃	〃
6+400	7+300	0.119	0.410	0.29	0.70	0.27	0.60	〃	〃

REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

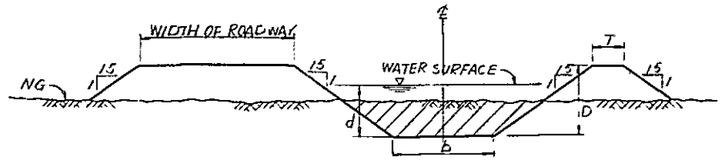
INIP
PROFILE OF MAIN CANAL (N_L – 1)

DRAWING NO.	INIS (I) - IC - 011

JAPAN INTERNATIONAL COOPERATION AGENCY

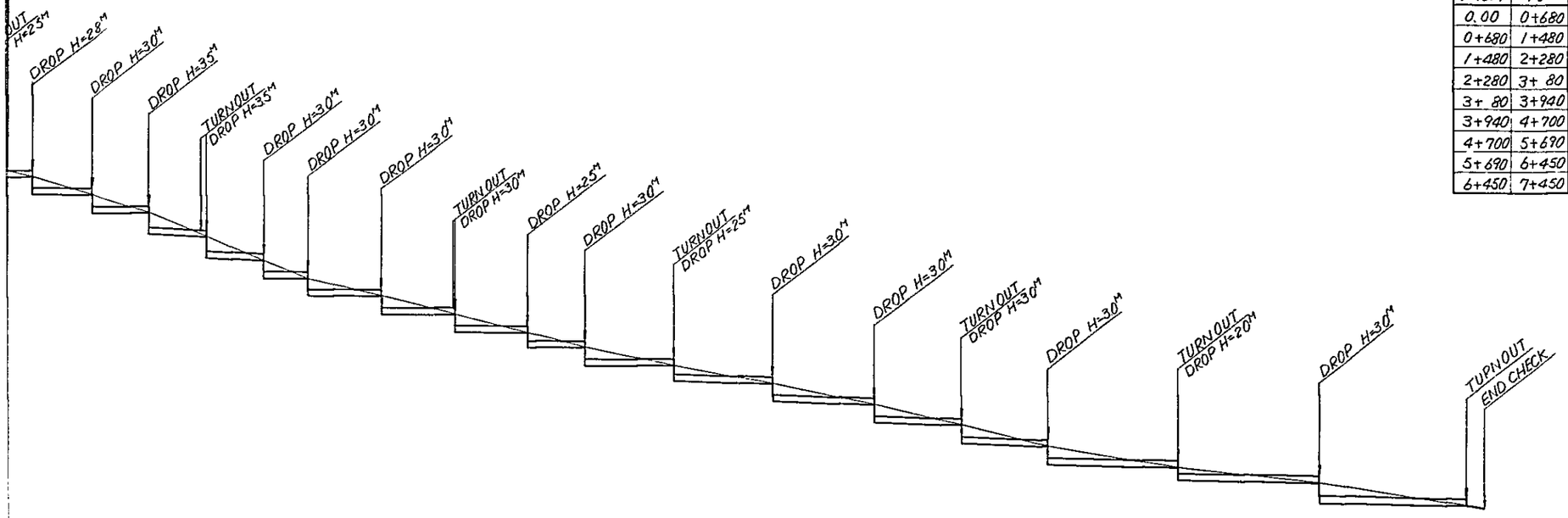


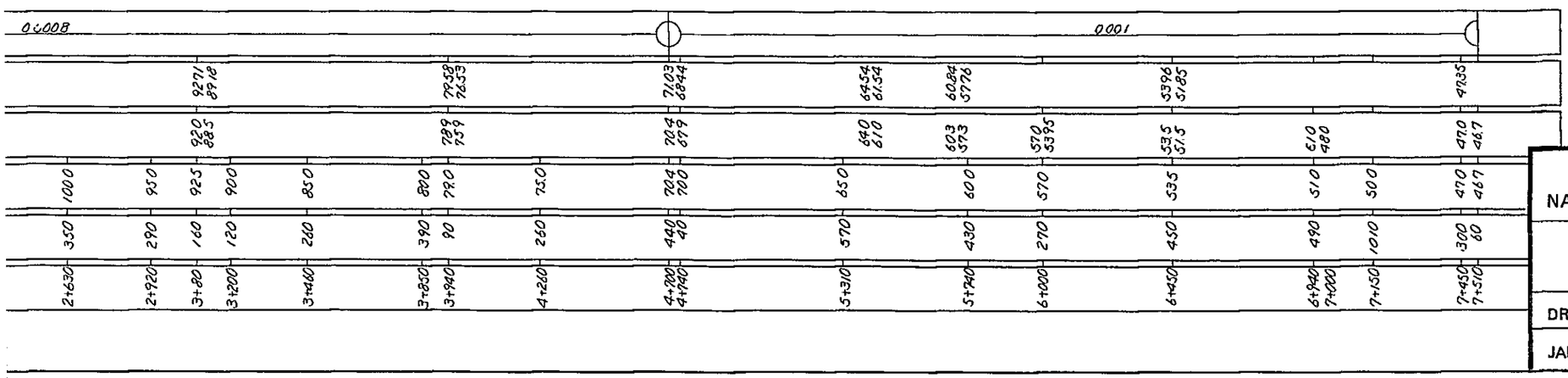
STA	DIST	NGS	PLAN CREL	WSEL	SLOPE
0+00	000	1370	1370 1335	13802 13452	
					0.0006
0+680	680	1305	1305 1287	13152 12945	
0+770	90	1300			
1+120	350	1250			
1+330	210	1200			
1+480 1+500	150 20	1180 1175	1177 1150	11845 11574	
1+670	340	1150			
1+910	300	1100			
					0.0090
2+280	310	1050	1045 1020	10524 10271	
2+630	350	1000			
2+920	290	950			
3+80	160	925	920 825	9271 8918	
3+200	120	900			
3+460	260	850			
3+850	390	800			
3+940	90	790	789 759	7958 7653	
4+260	260	750			
4+700 4+740	440 40	704 700	704 679	7103 6844	
5+310	570	650			
			640 610	6454 6154	
5+740	430	600	603 573	6084 5776	
6+000	270	570	570 539.5		
					0.00



TYPICAL CANAL SECTION

STATION		CANAL ELEMENTS							
FROM	TO	Q	V	A	b	d	D	n	S
0.00	0+680	3.122	0751	4 16	2 60	102	150	0025	1/00006
0+680	1+480	1.600	0.840	2 25	1 90	075	1 10	"	1.0008
1+480	2+280	1.547	0 710	2 19	1 90	074	110	"	"
2+280	3+ 80	1.392	0689	202	180	071	110	"	"
3+ 80	3+940	1.207	0652	185	170	068	1.00	"	"
3+940	4+700	1.000	0629	159	160	0.63	100	"	"
4+700	5+690	0.754	0.644	1.17	140	054	090	"	1 0001
5+690	6+450	0.503	0.592	085	120	046	080	"	"
6+450	7+450	0.238	0486	049	090	035	070	"	"



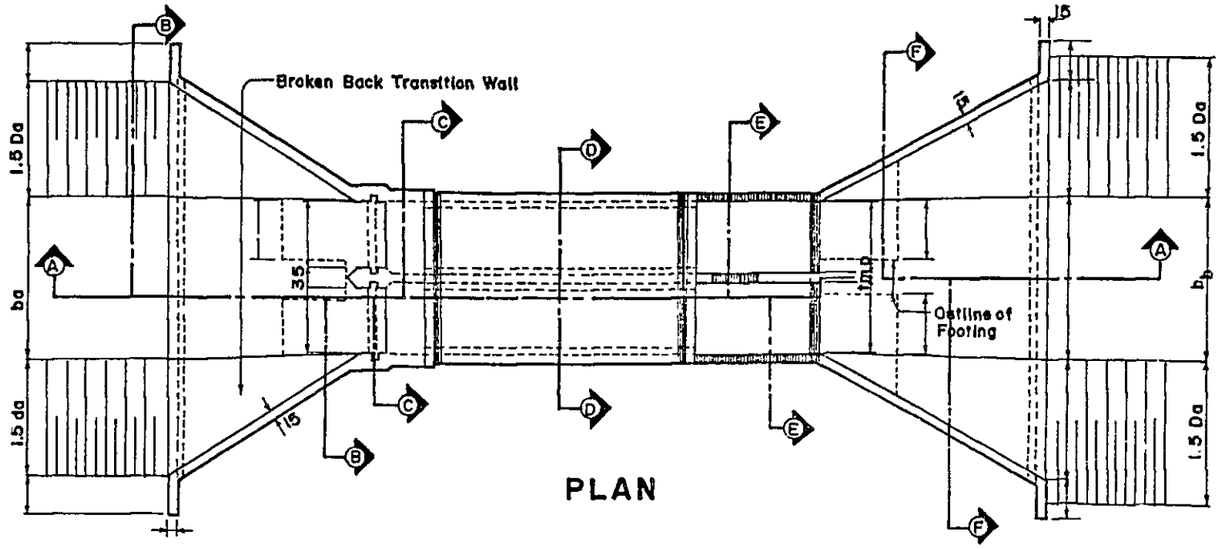


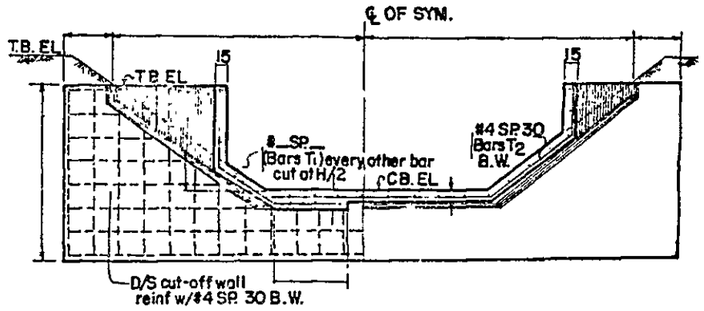
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP
PROFILE OF MAIN CANAL (MR – 1)

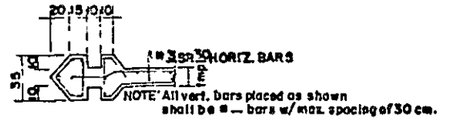
DRAWING NO. INIS (I) - IC - 012

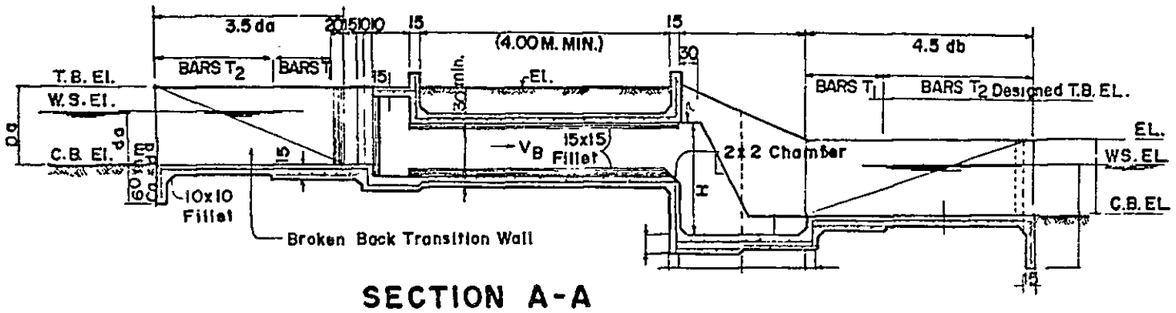
JAPAN INTERNATIONAL COOPERATION AGENCY



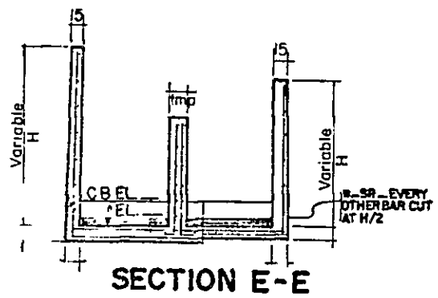


SECTION F-F

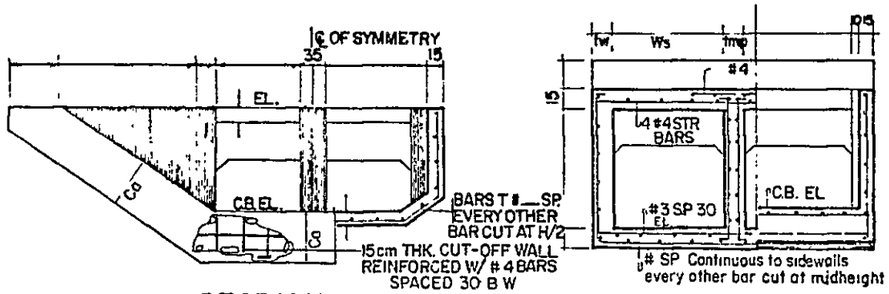




SECTION A-A

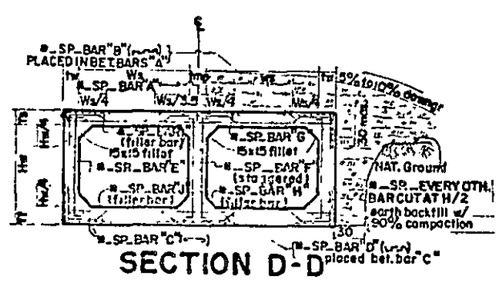


SECTION E-E



SECTION B-B

SECTION C-C



SECTION D-D

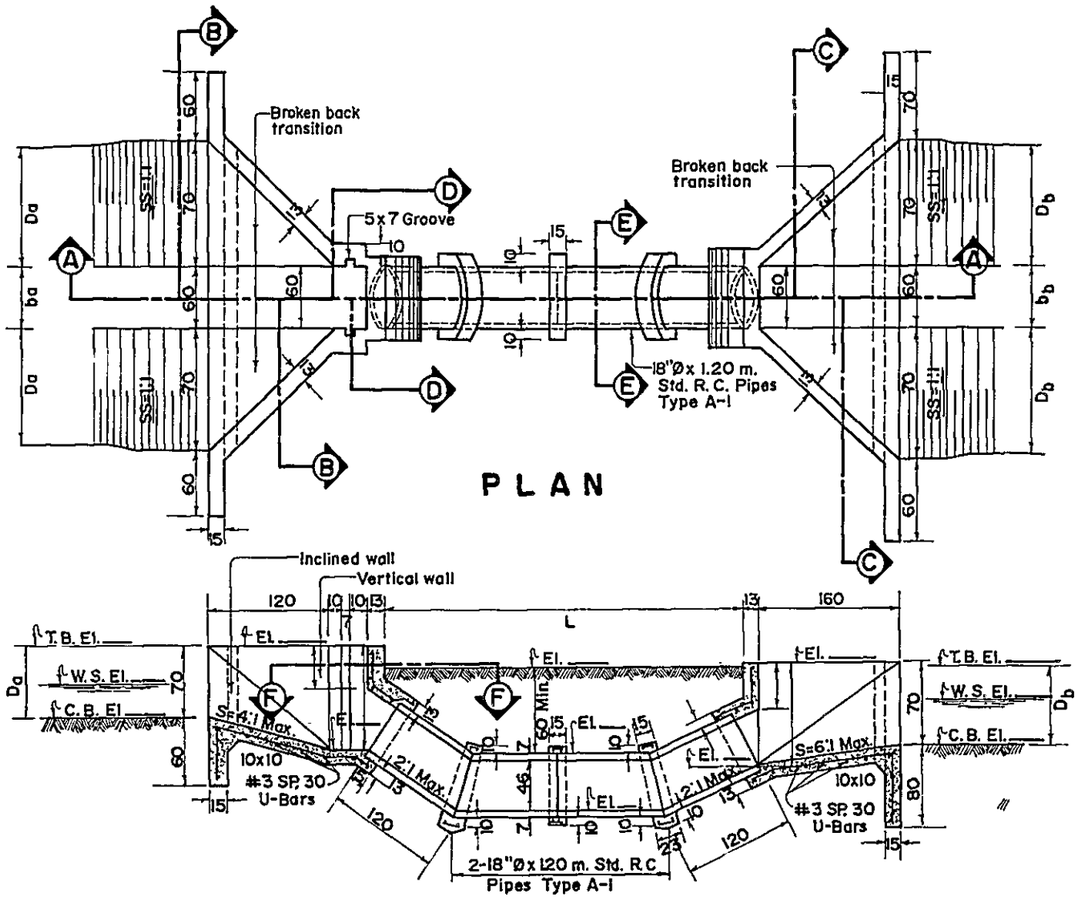
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

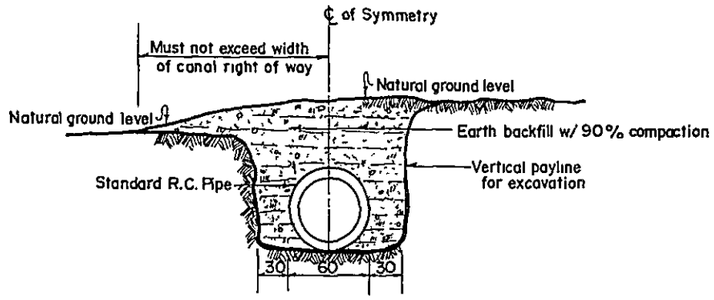
INIP

TYPICAL ROAD CROSSING WITH CHECK AND DROP

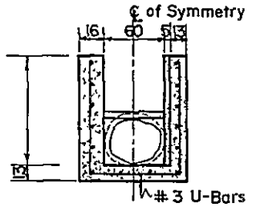
DRAWING NO.	INIS (I) - IC - 013

JAPAN INTERNATIONAL COOPERATION AGENCY

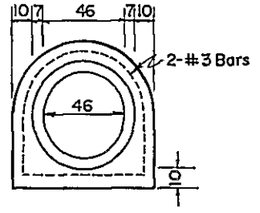




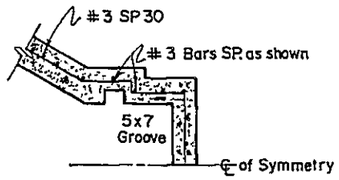
TYPICAL SECTION FOR LAYING PRECAST R. C. PIPE



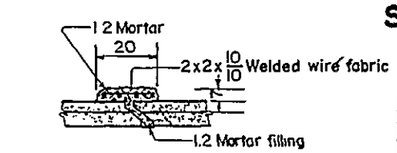
SECTION 'D-D'



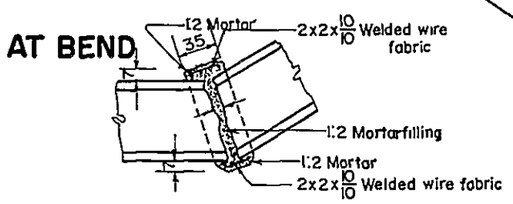
SECTION 'E-E'



HALF SECTION 'F-F'

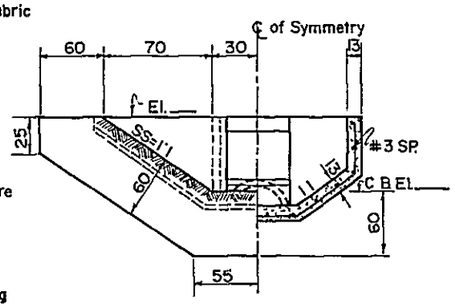


FOR HORIZONTAL JOINT

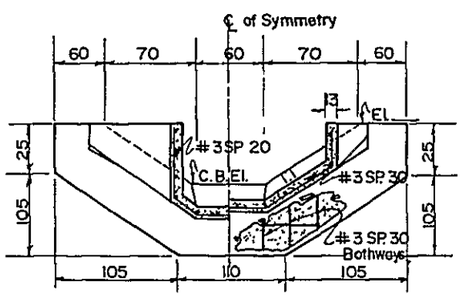


AT BEND

ALTERNATE PIPE COLLAR



SECTION 'B-B'



SECTION 'C-C'

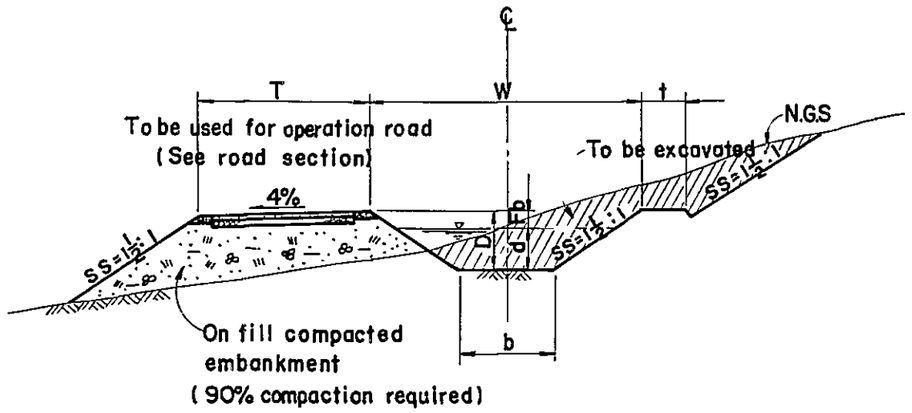
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

I N I P

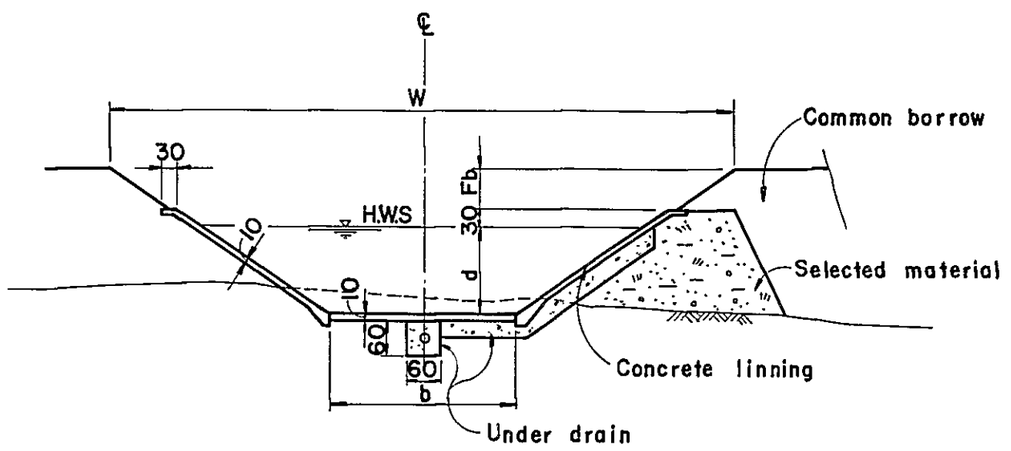
TYPICAL RCP CROSSING

DRAWING NO.	INIS (I) - IC - 014

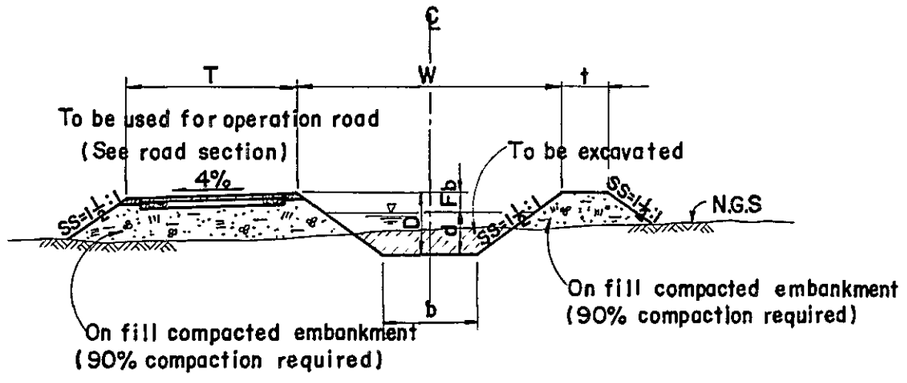
JAPAN INTERNATIONAL COOPERATION AGENCY



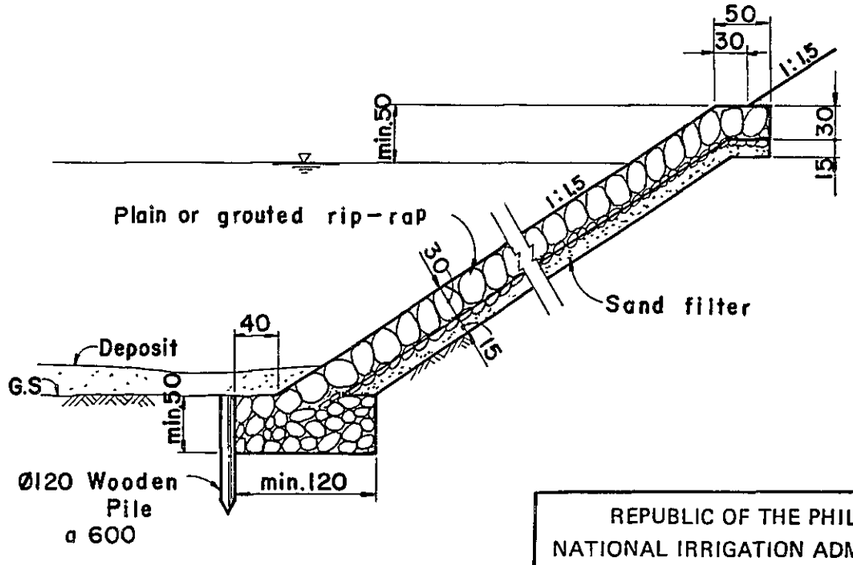
TYPICAL SECTION FOR INCLINED GROUND SURFACE



CONCRET LINNING

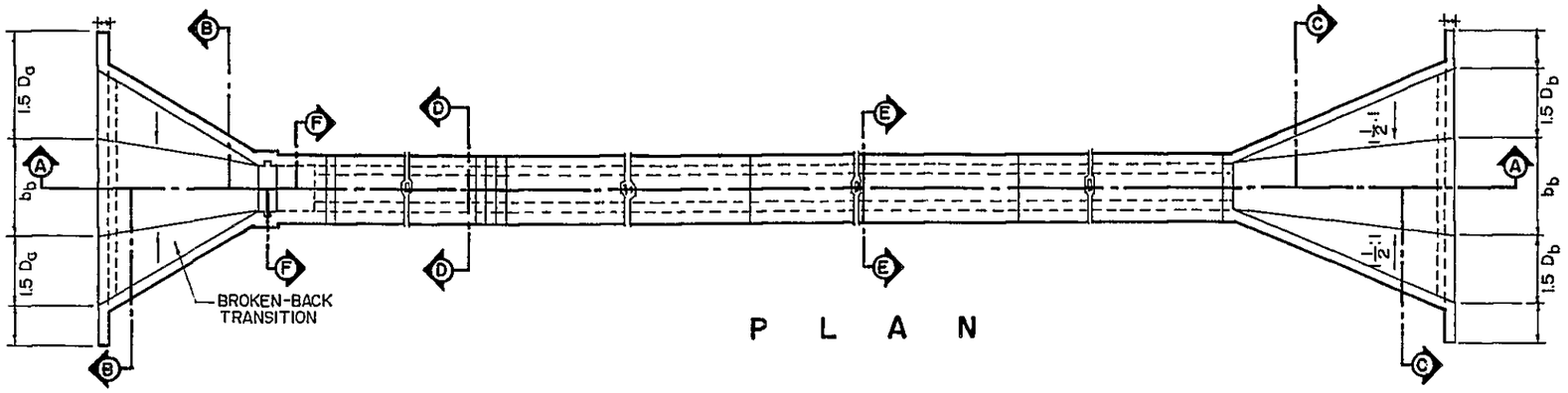


TYPICAL SECTION FOR FLAT GROUND SURFACE

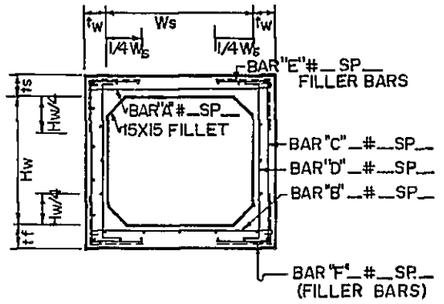


GRAVEL PAVEMENT

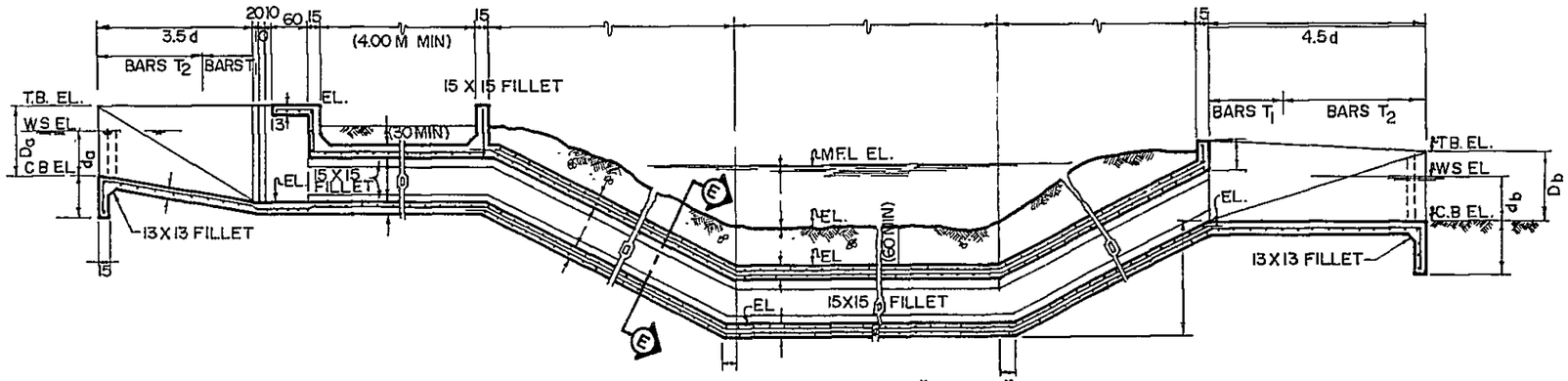
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP TYPICAL SECTION OF IRRIGATION CANAL	
DRAWING NO.	INIS (I) - IC - 015
JAPAN INTERNATIONAL COOPERATION AGENCY	



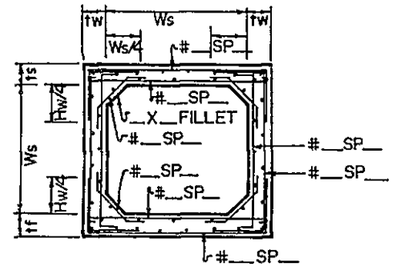
PLAN



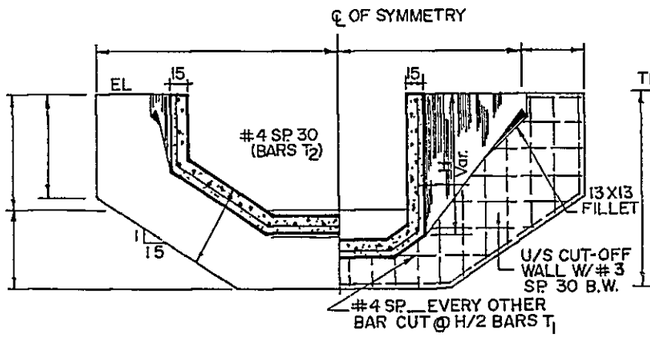
SECTION "D - D"



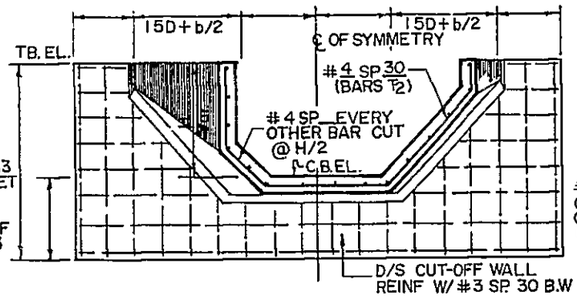
SECTION "A - A"



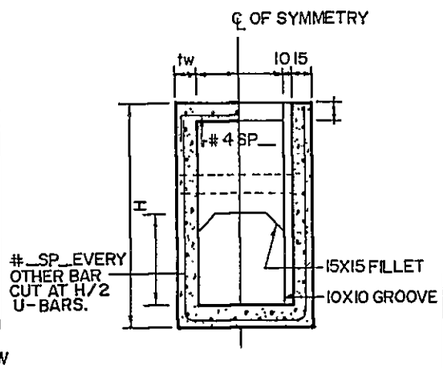
SECTION "E - E"



SECTION "B-B"

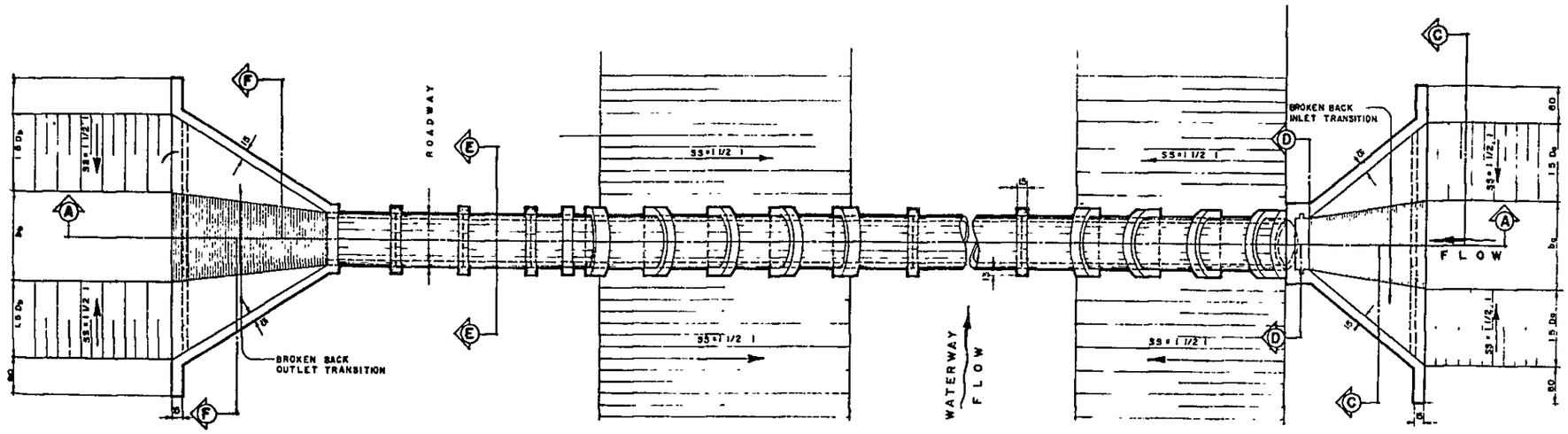


SECTION "C - C"

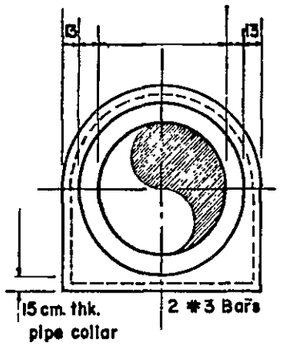


SECTION "F - F"

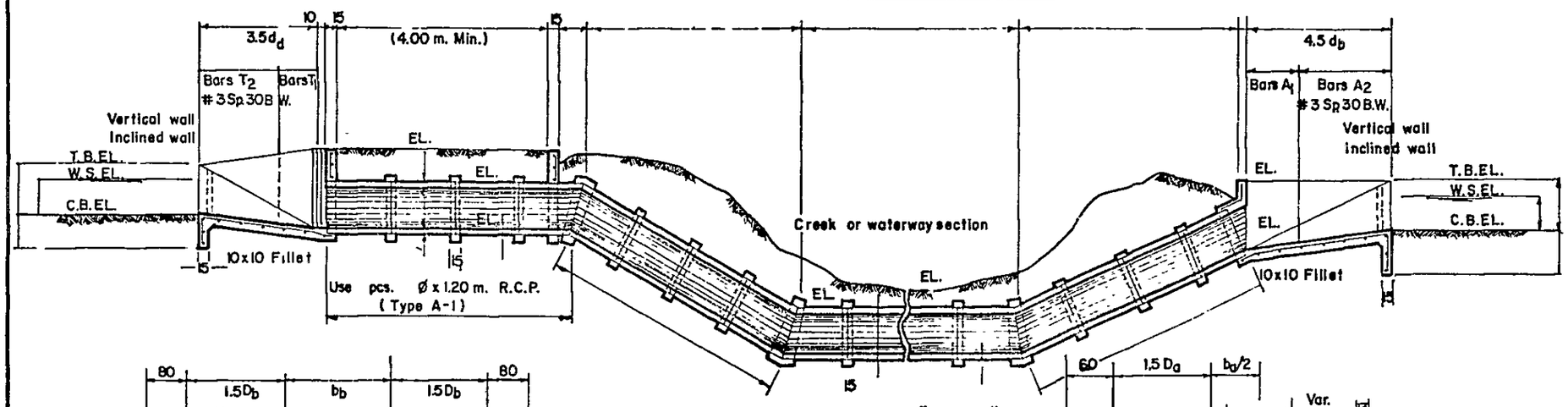
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP TYPICAL BOX SIPHON WITH CROSSING	
DRAWING NO.	INIS (I) - IC - 016
JAPAN INTERNATIONAL COOPERATION AGENCY	



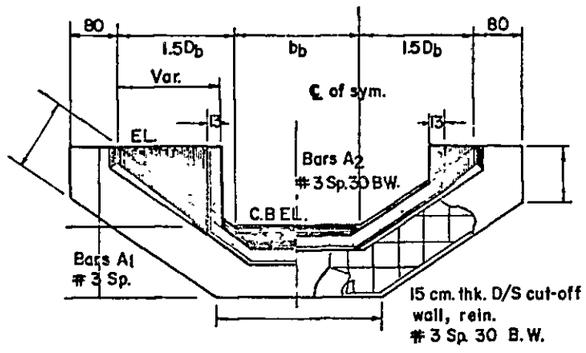
P L A N



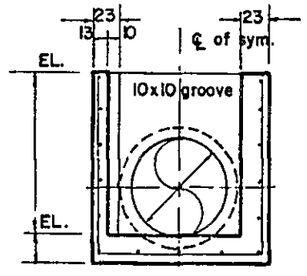
SECTION "E-E"



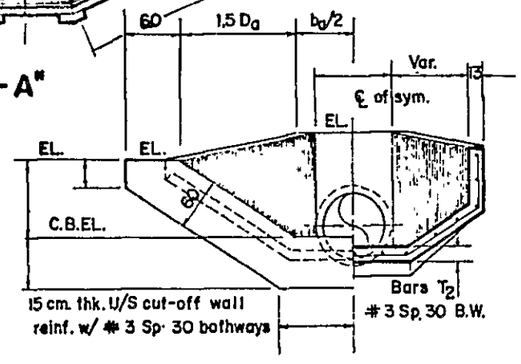
SECTION "A-A"



SECTION "F-F"

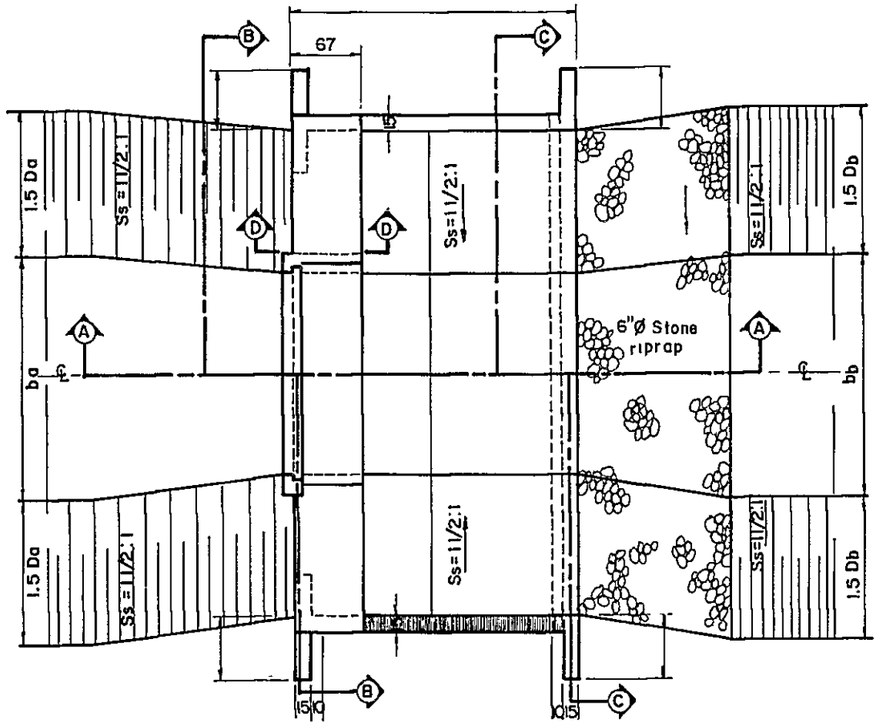


SECTION "D-D"

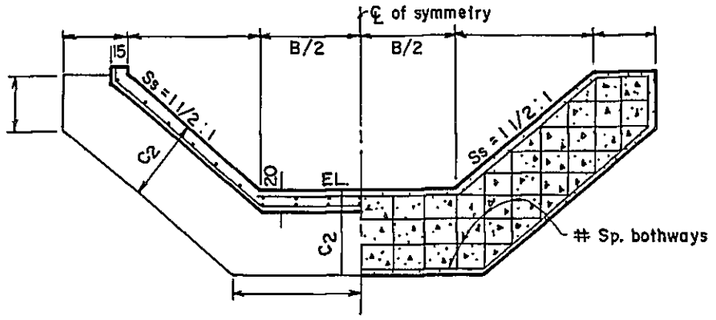


SECTION "C-C"

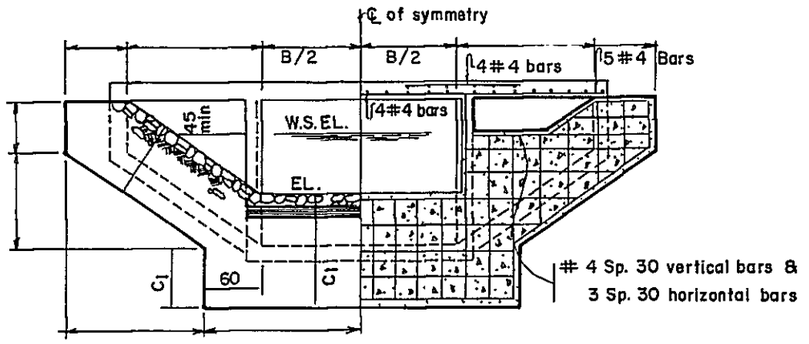
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
I N I P TYPICAL RCP SIPHON WITH CROSSING	
DRAWING NO.	INIS (I) - IC - 017
JAPAN INTERNATIONAL COOPERATION AGENCY	



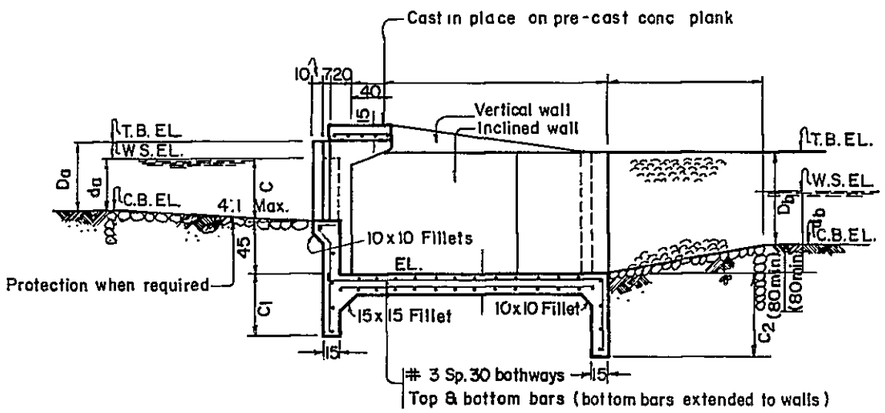
PLAN



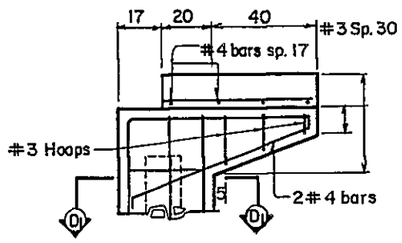
SECTION "C-C"



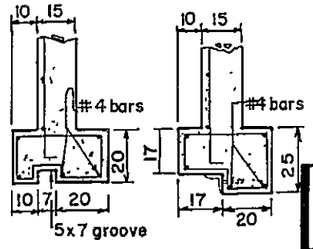
SECTION "B-B"



LONGITUDINAL SECTION "A-A"



SECTION "D-D"



(FOR STOP LOGS) (FOR STEEL GATES)

SECTION "D1-D1"

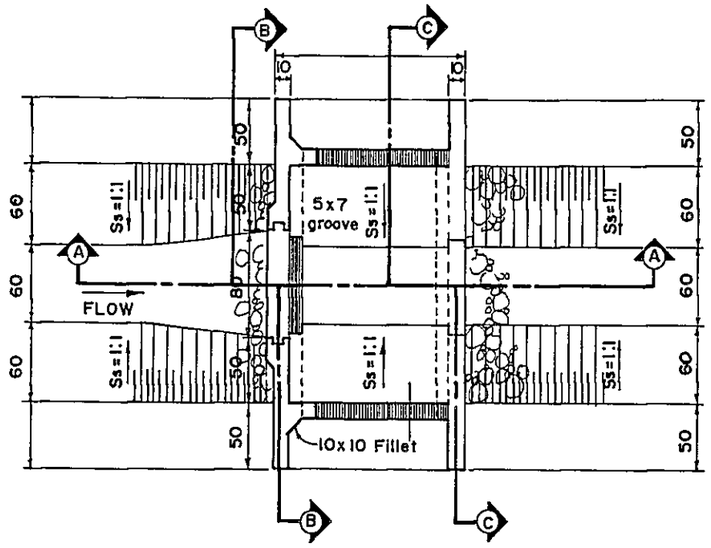
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP

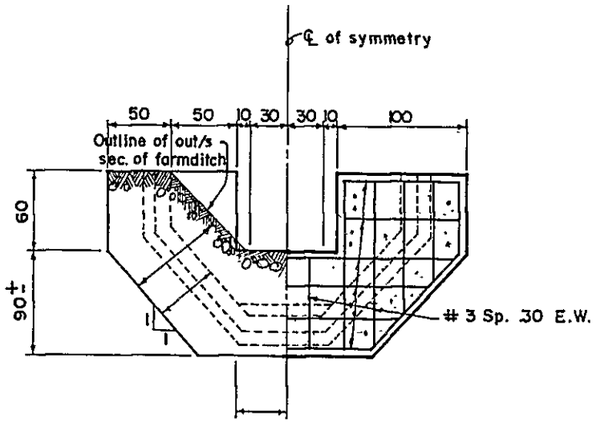
TYPICAL CHECK AND VERTICAL DROP

DRAWING NO.	INIS (I) - IC - 018

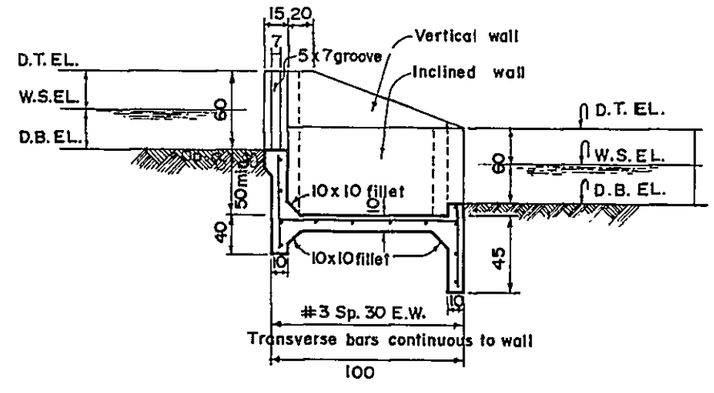
JAPAN INTERNATIONAL COOPERATION AGENCY



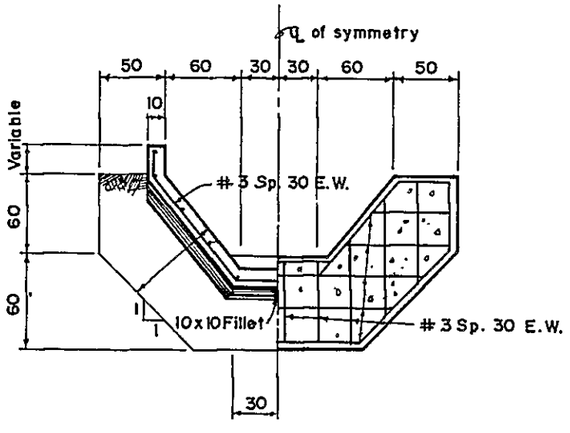
PLAN



SECTION " B-B"

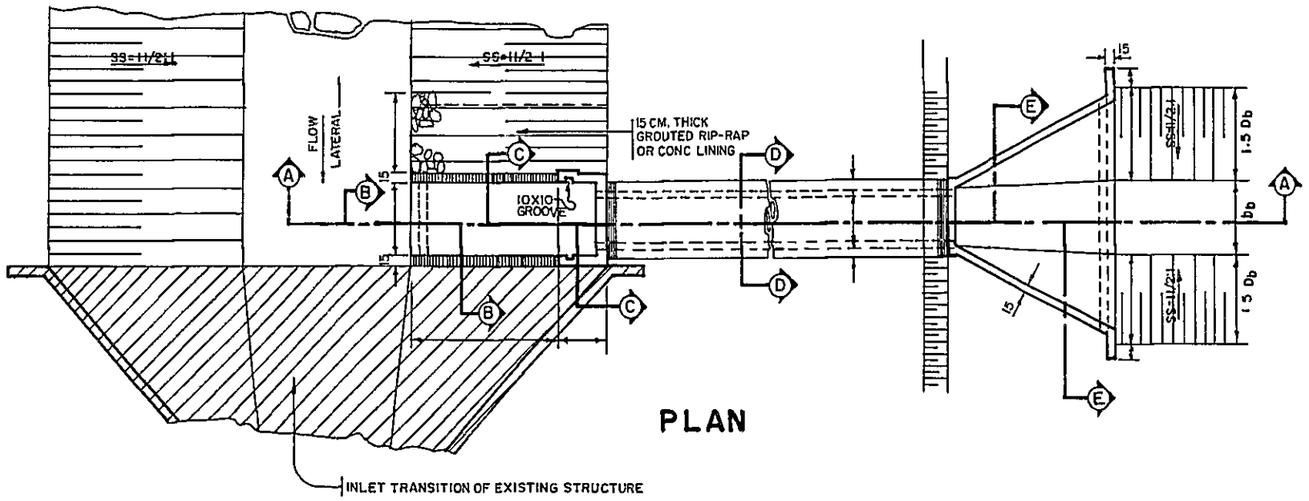


SECTION "A-A"

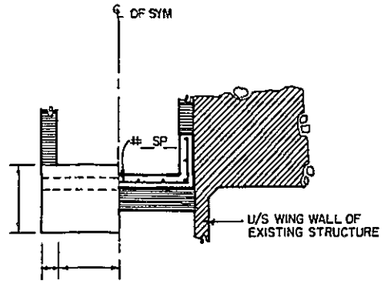


SECTION "C-C"

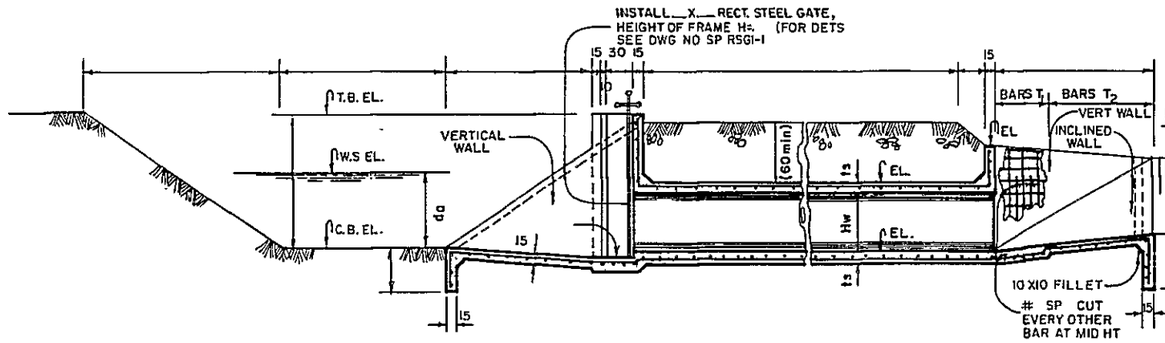
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP TYPICAL SUB-LATERAL DROP	
DRAWING NO.	INIS (I) - IC - 019
JAPAN INTERNATIONAL COOPERATION AGENCY	



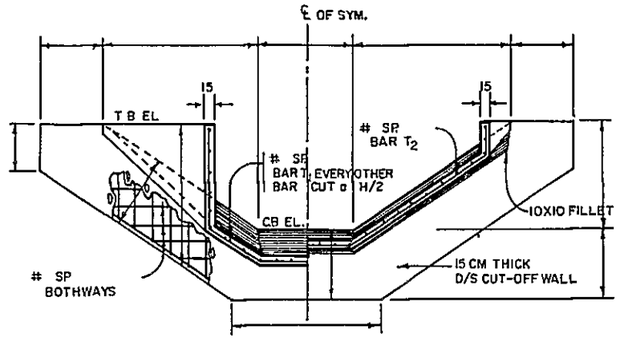
PLAN



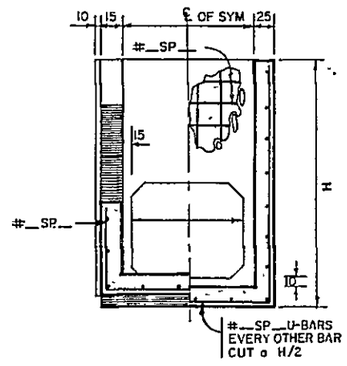
SECTION "B-B"



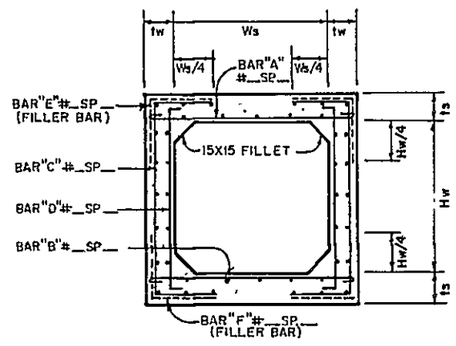
SECTION "A-A"



SECTION "D-D"



SECTION "C-C"



SECTION "D-D"

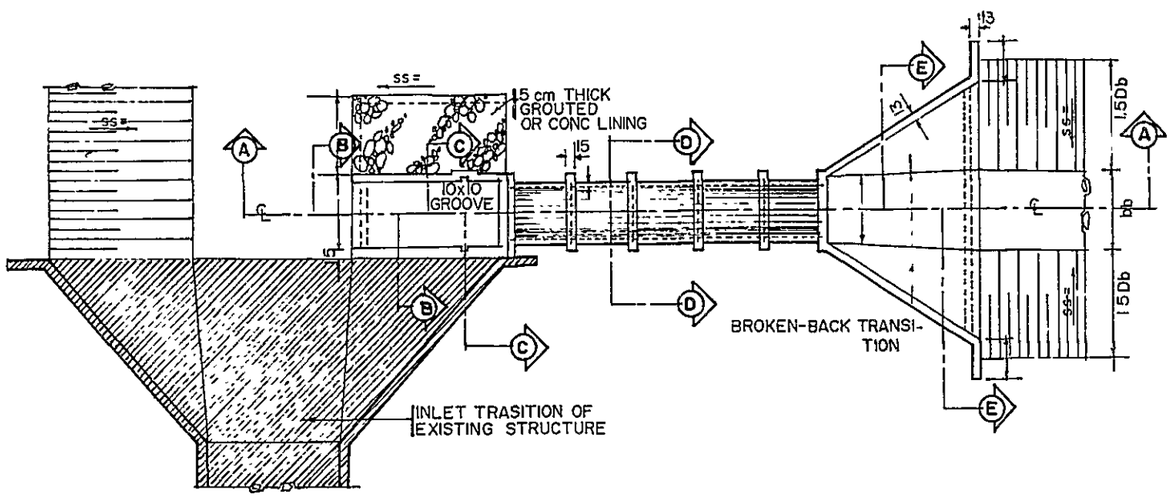
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP

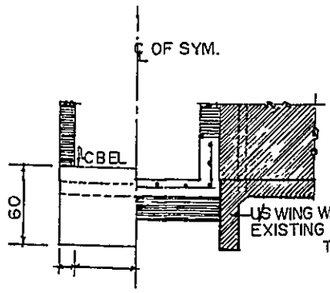
TYPICAL HEADGATE WITH BOX CULVERT

DRAWING NO.	INIS (I) - IC - 020

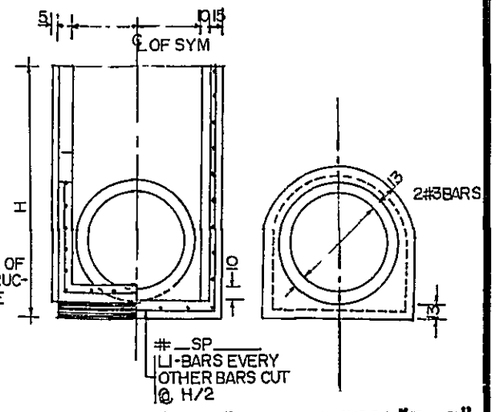
JAPAN INTERNATIONAL COOPERATION AGENCY



PLAN

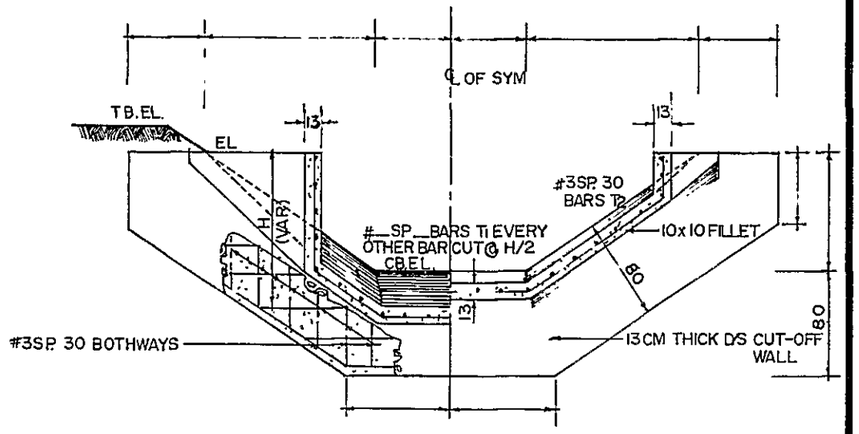


SECTION "B-B"

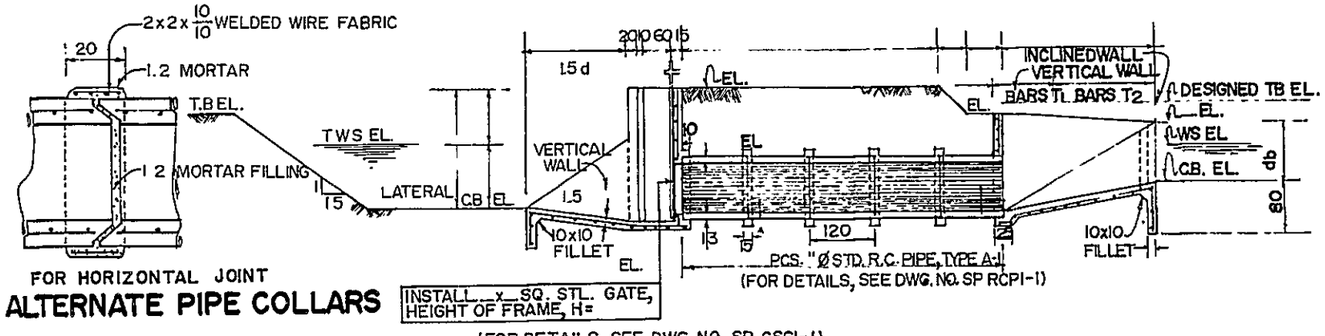


SECTION "C-C"

SECTION "D-D"



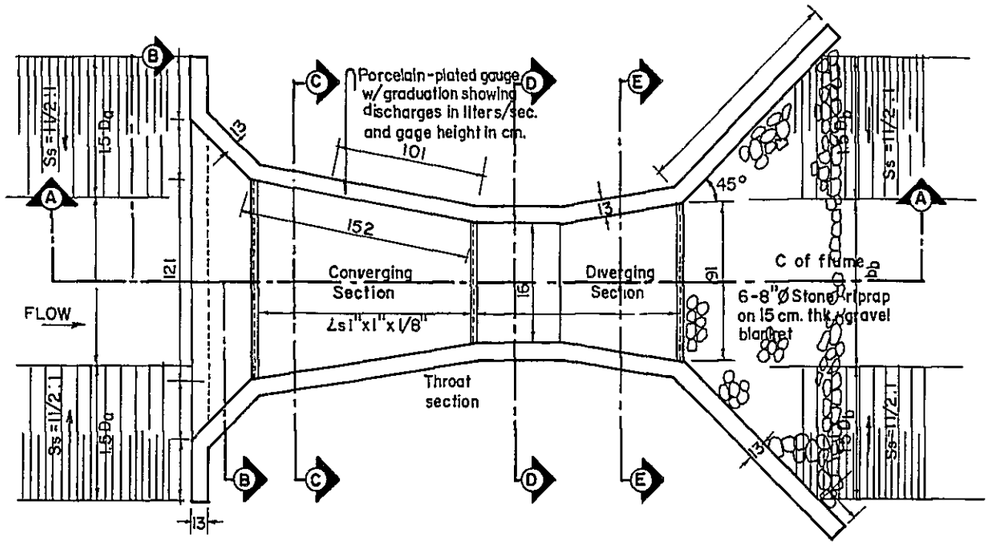
SECTION "E - E"



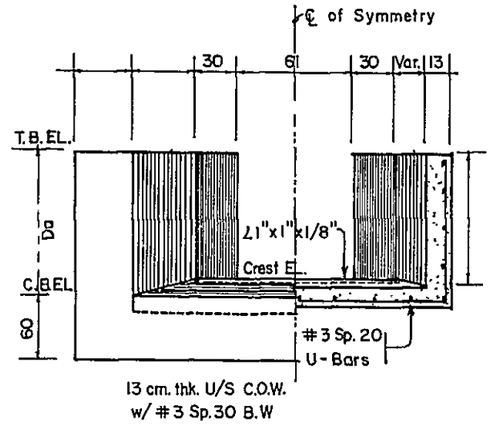
FOR HORIZONTAL JOINT
ALTERNATE PIPE COLLARS

SECTION "A - A"

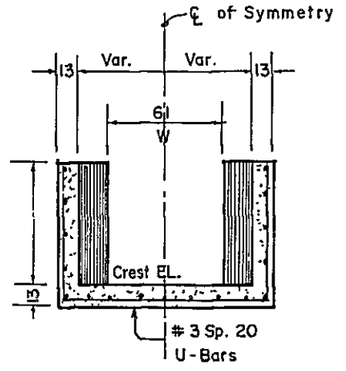
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP TYPICAL HEADGATE WITH PIPE CULVERT	
DRAWING NO.	INIS (I) - IC - 021
JAPAN INTERNATIONAL COOPERATION AGENCY	



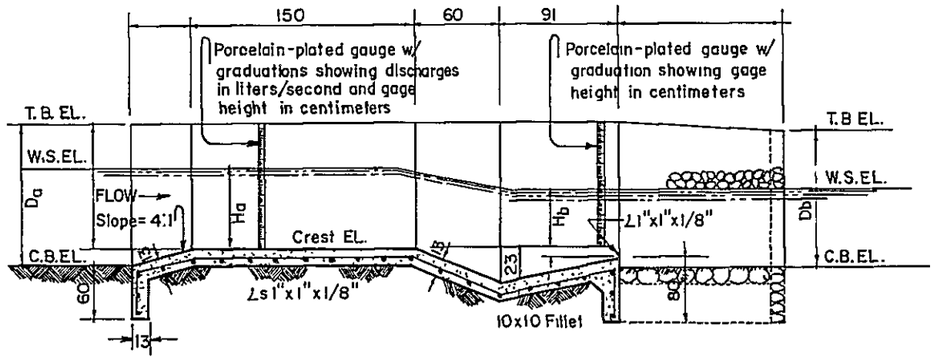
PLAN



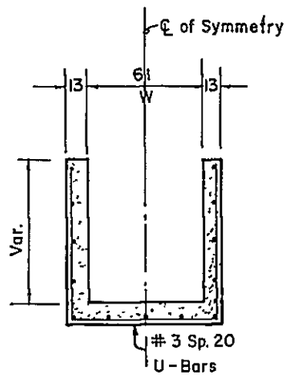
SECTION "B-B"



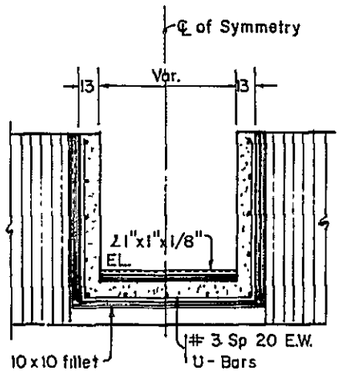
SECTION "C-C"



LONGITUDINAL SECTION "A-A"



SECTION "D-D"



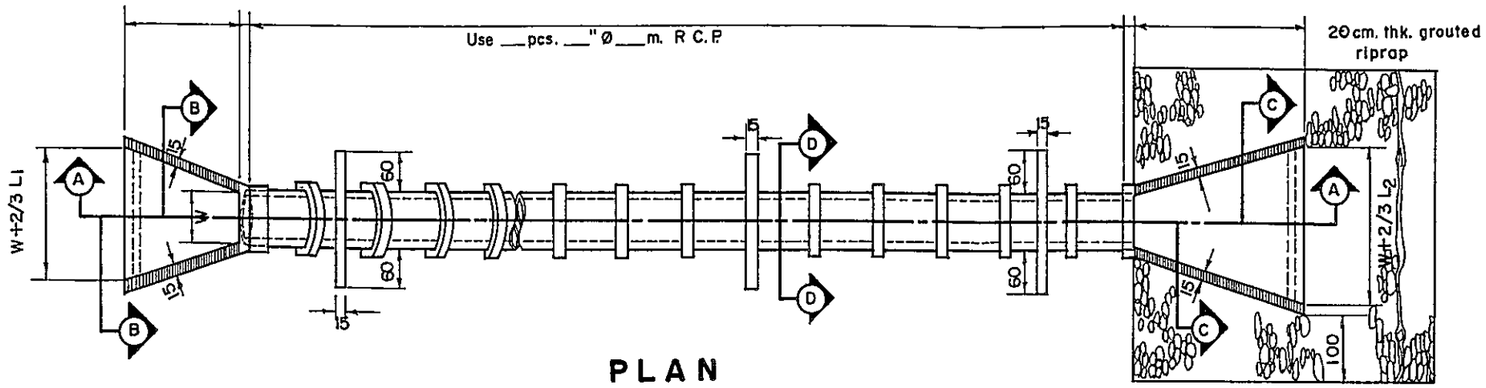
SECTION "E-E"

REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

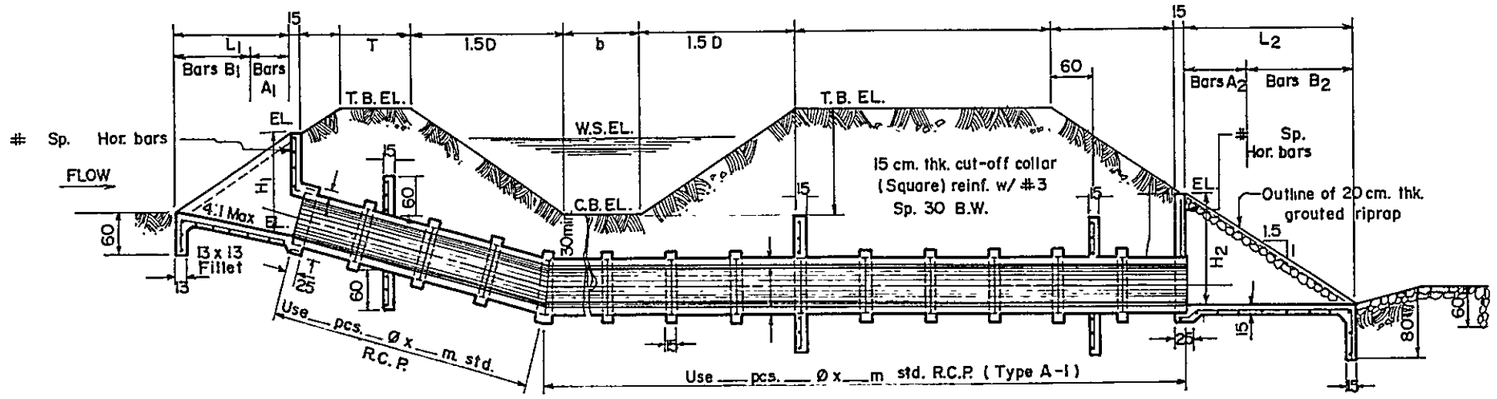
INIP
TYPICAL PARSHALL FLUME

DRAWING NO.	INIS (I) - IC - 022

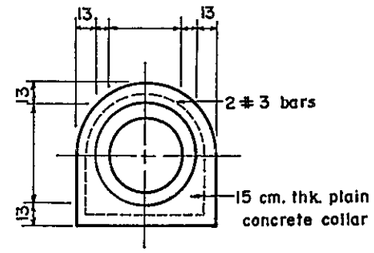
JAPAN INTERNATIONAL COOPERATION AGENCY



PLAN

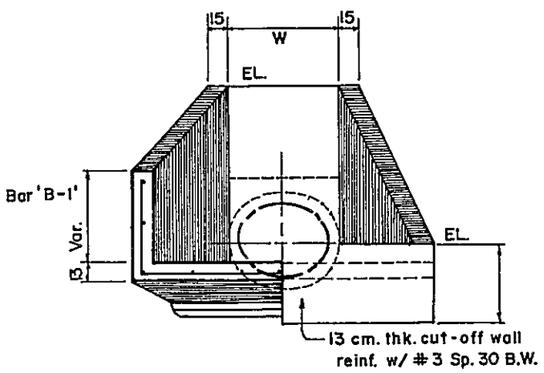


SECTION "A-A"

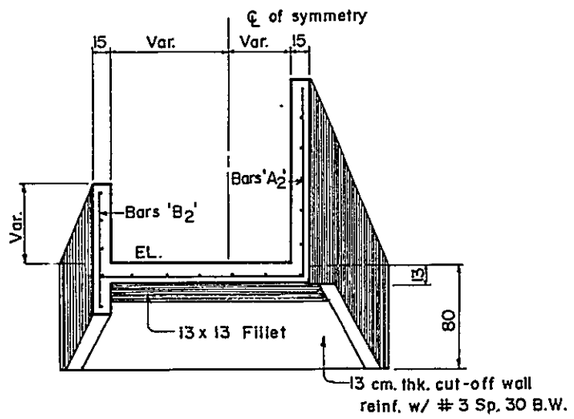


SECTION "D-D"

ALTERNATE PIPE COLLAR

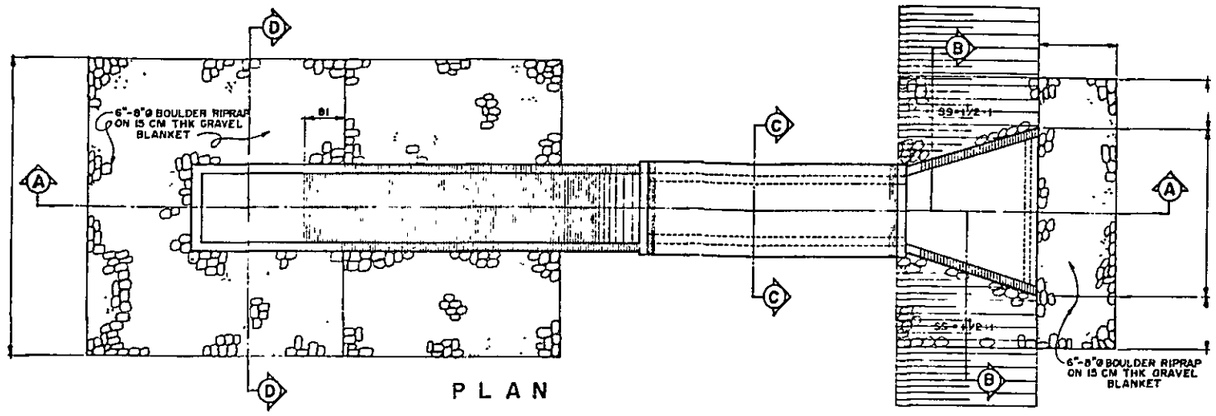


SECTION "B-B"

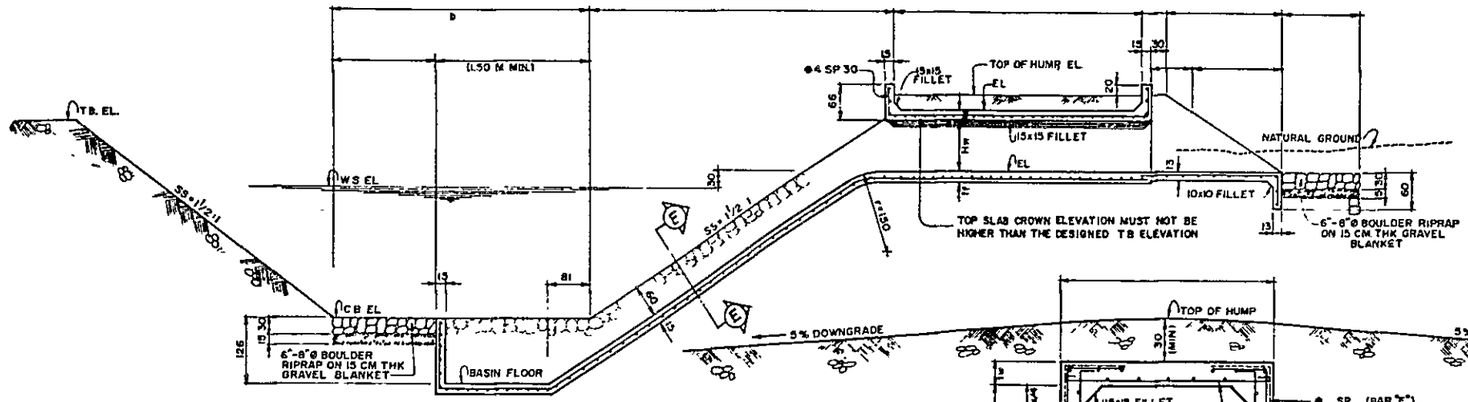


SECTION "C-C"

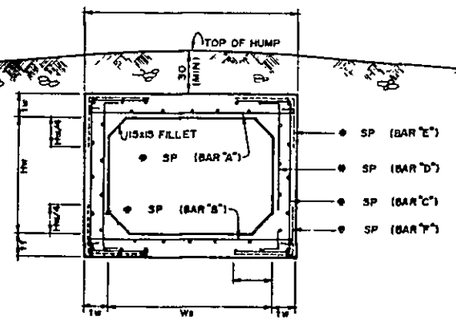
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP TYPICAL DRAINAGE CULVERT	
DRAWING NO.	INIS (I) - IC - 023
JAPAN INTERNATIONAL COOPERATION AGENCY	



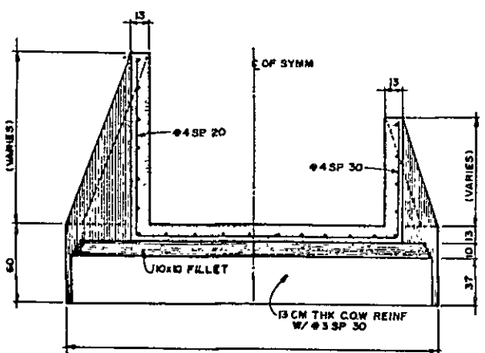
PLAN



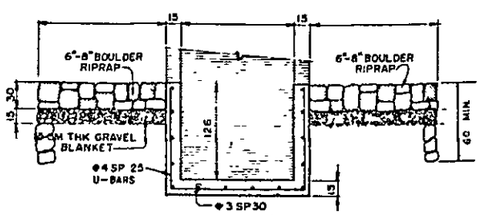
SECTION "A-A"



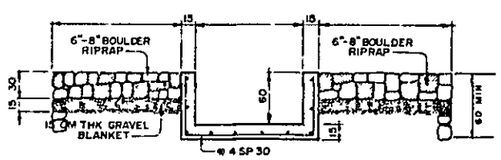
SECTION "C-C"



SECTION "B-B"



SECTION "D-D"



SECTION "E-E"

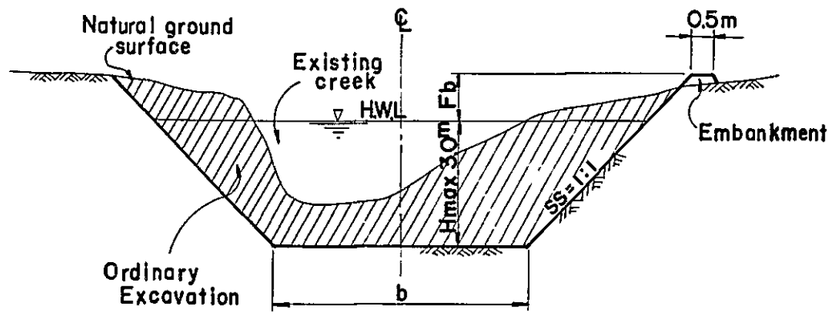
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP

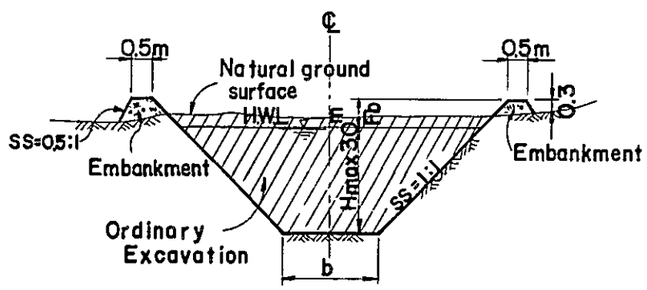
TYPICAL DRAINAGE INLET

DRAWING NO.	INIS (I) - IC - 024

JAPAN INTERNATIONAL COOPERATION AGENCY

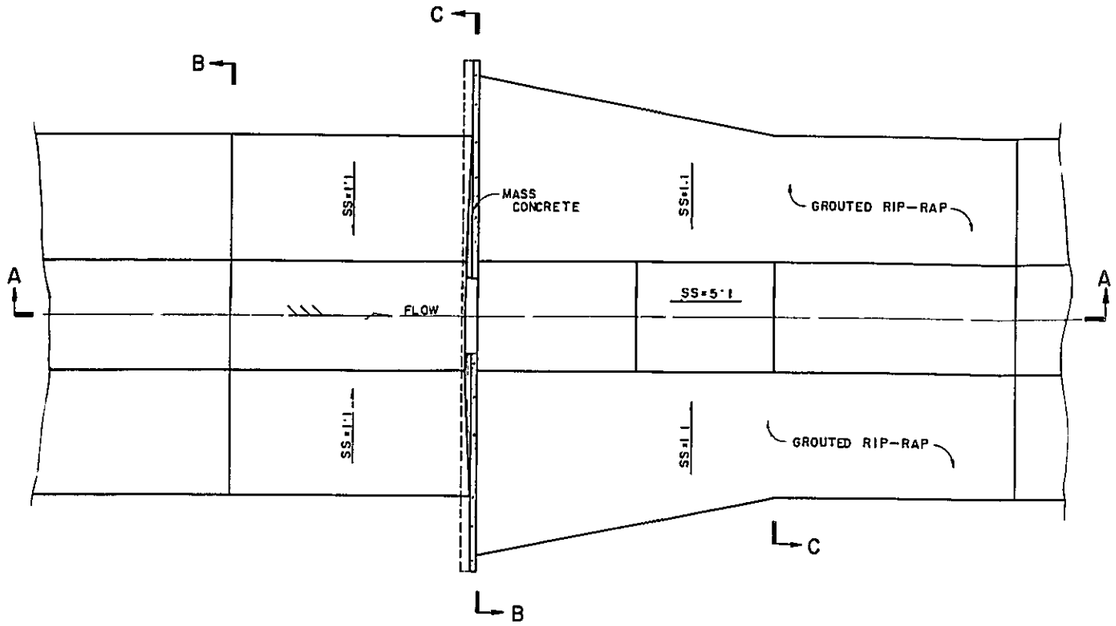


TYPICAL SECTION OF IMPROVEMENT CANALS

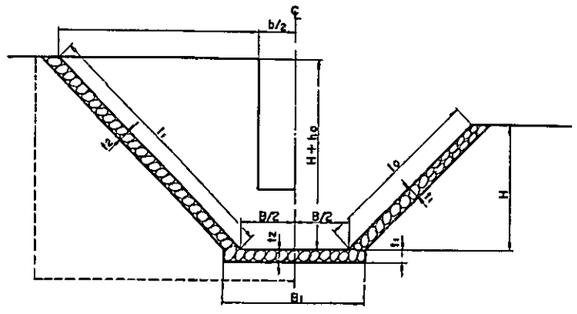


TYPICAL SECTION OF NEWLY CONSTRUCTED CANALS

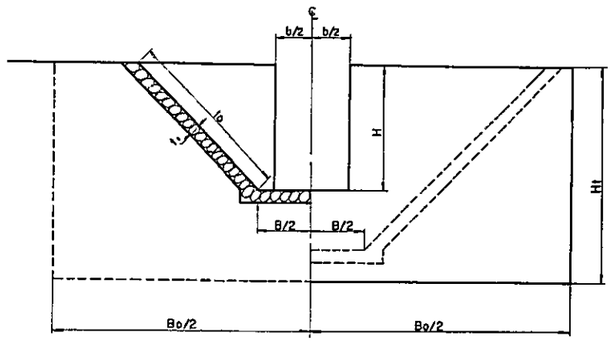
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP TYPICAL DRAINAGE CANAL SECTION	
DRAWING NO.	INIS (I) - DC - 025
JAPAN INTERNATIONAL COOPERATION AGENCY	



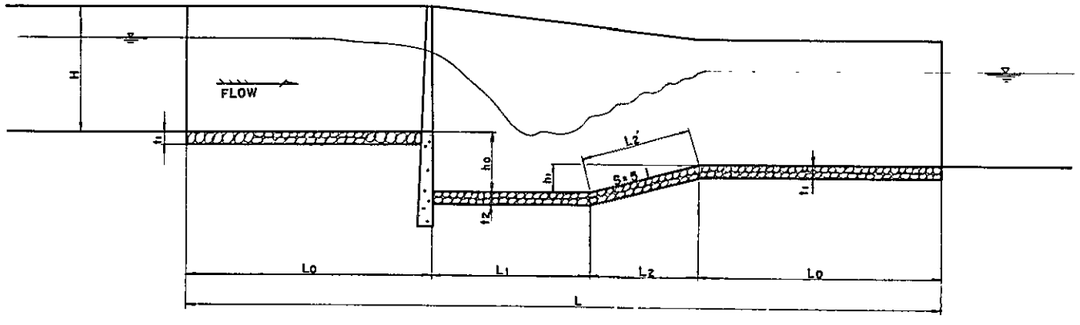
PLAN



SECTION "B-B"



SECTION "C-C"



SECTION "A-A"

DIMENSION

(UNIT m)

TYPE	H	Lo	L1	L2	L	H	ho	h1	t1	t2	B	b	lo	Ht	Bo	l1	B1	t3	t4	L2'		
I	3.0	8.0	5.2	4.5	25.7	4.0	1.9	0.9	0.4	0.4	3.5	2.4	4.0	7.3	16.3	5.9	4.63	0.15	0.6	4.59		
II	1.3	3.6	3.5	3.0	10.1	1.7	1.6	0.6	0.3	0.3	1.1	1.0	1.7	4.6	8.7	3.3	1.95	0.15	0.5	3.06		
III	0.9	2.8	2.9	2.5	8.2	1.2	1.5	0.5	0.3	0.3	0.9	0.7	1.2	4.0	7.3	2.7	1.55	0.15	0.4	2.55		

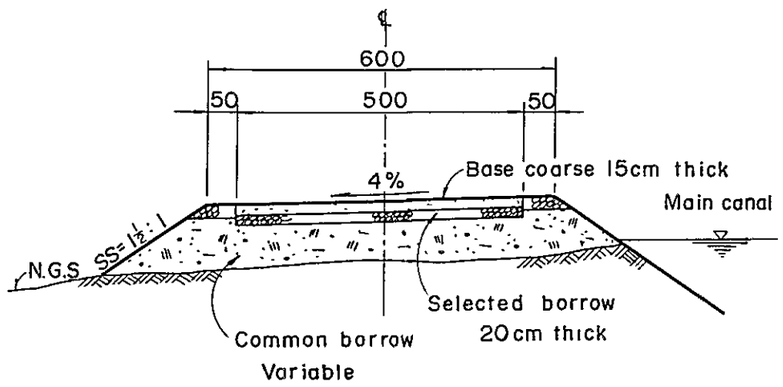
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

INIP
TYPICAL DRAINAGE DROP

DRAWING NO. INIS (1) - DC - 026

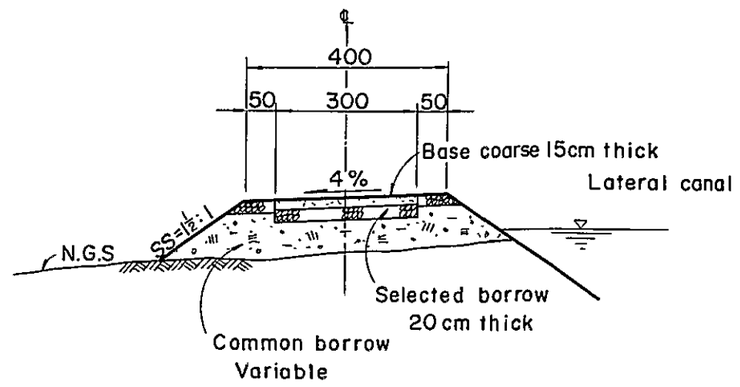
JAPAN INTERNATIONAL COOPERATION AGENCY

TYPE A



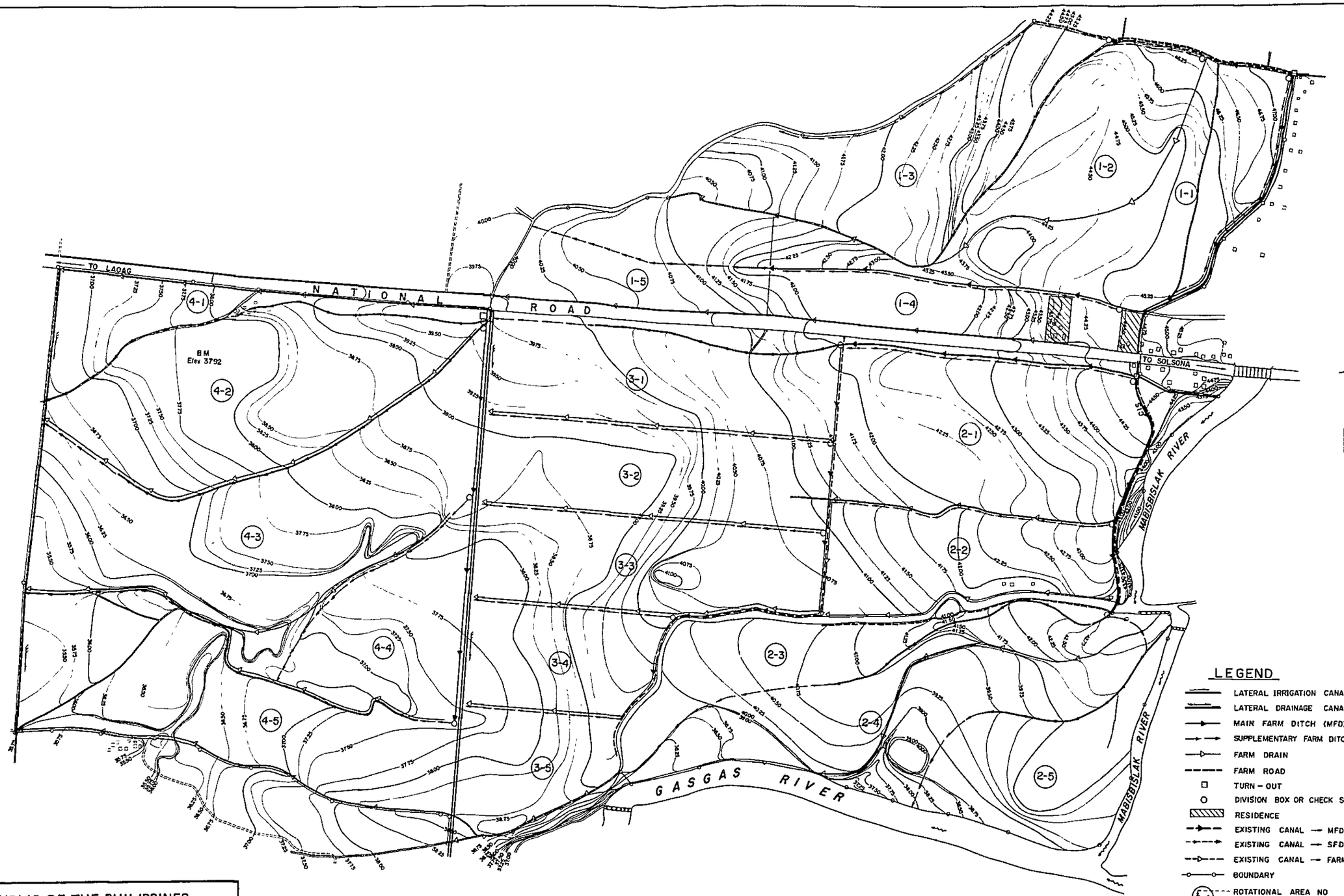
SERVICE ROAD ALONG MAIN CANALS

TYPE B

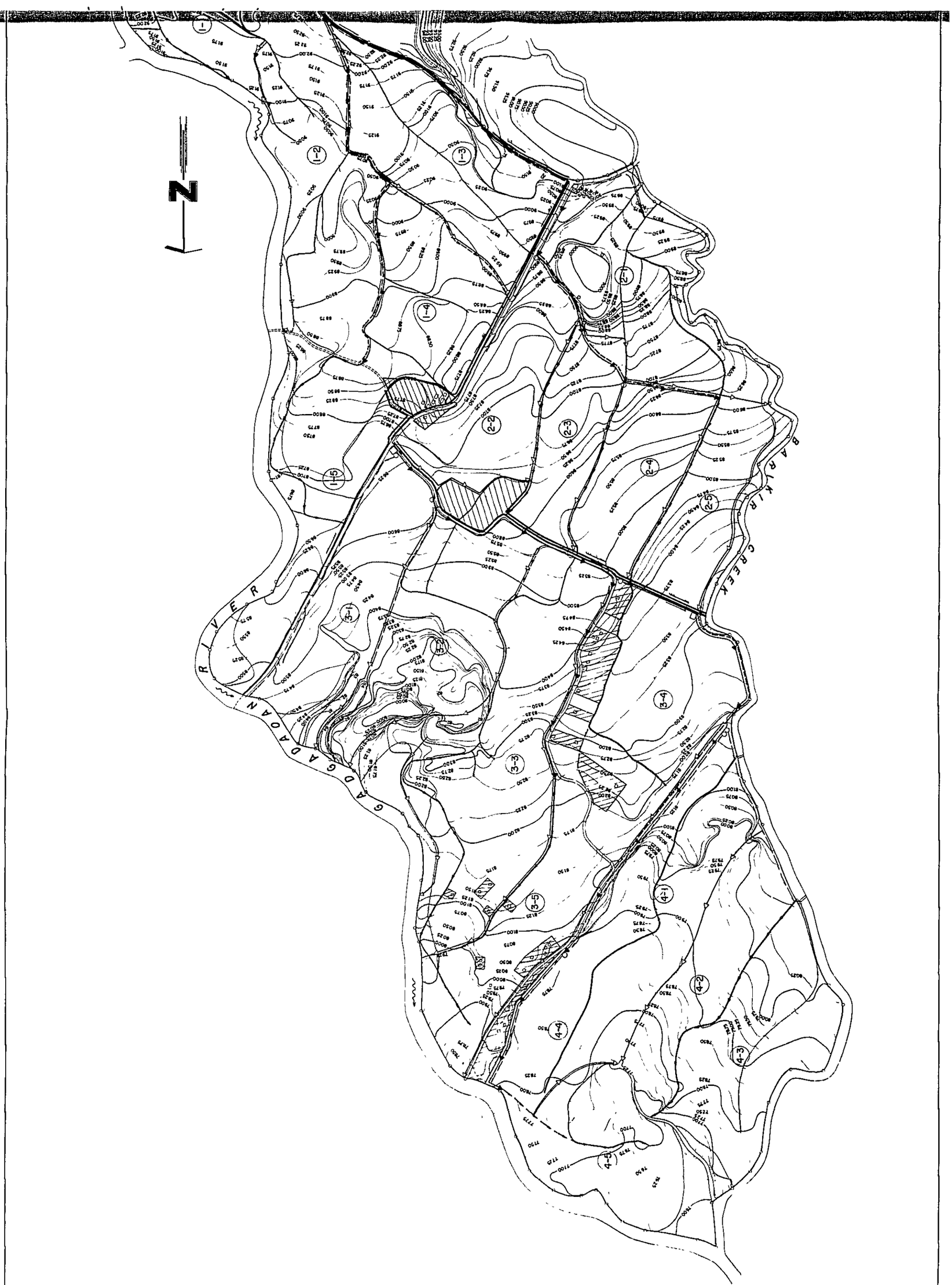


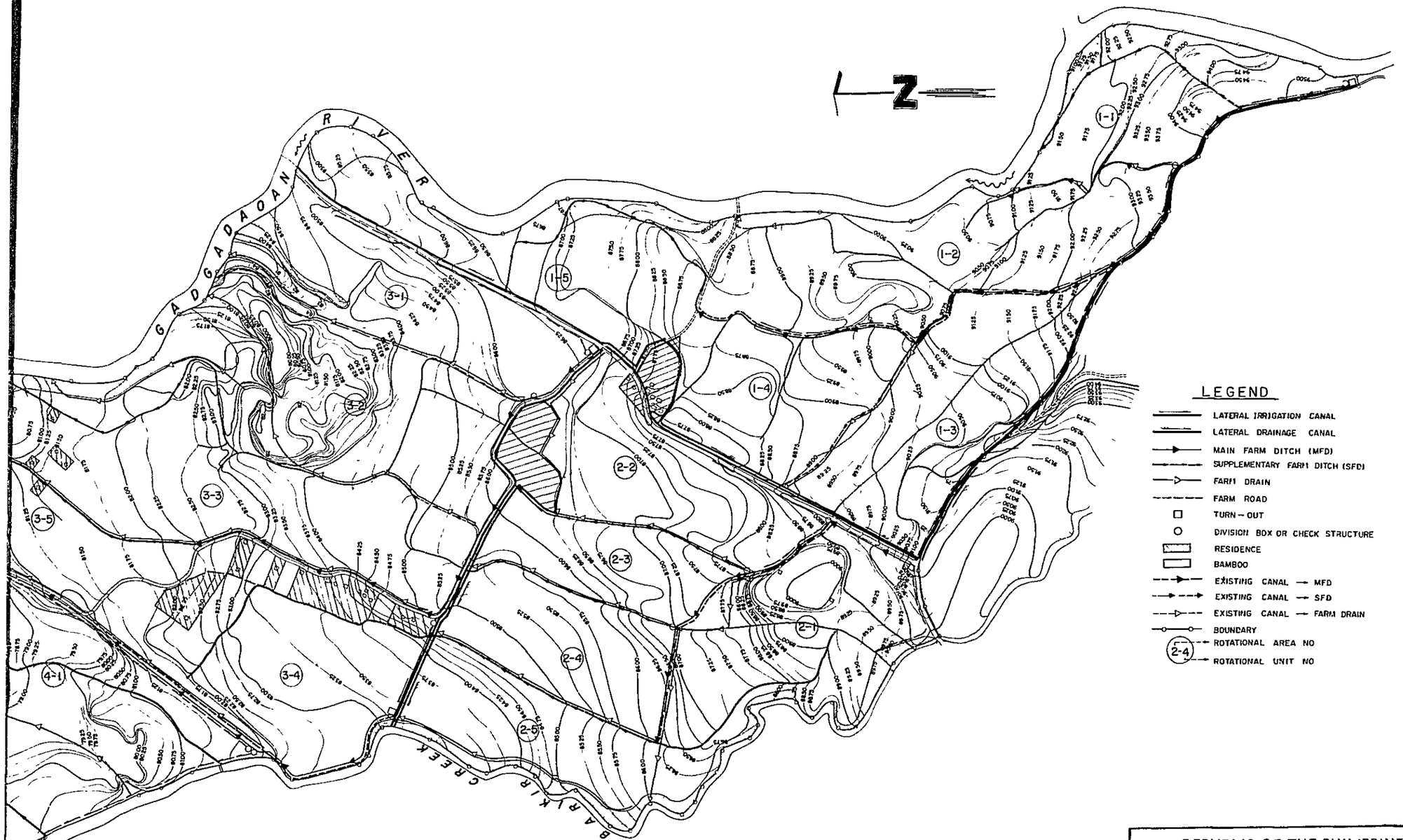
SERVICE ROAD ALONG LATERAL CANALS

REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP TYPICAL ROAD SECTION	
DRAWING NO.	INIS (I) - RW - 027
JAPAN INTERNATIONAL COOPERATION AGENCY	



REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP LAYOUT OF ON-FARM FACILITY (SAMPLE AREA NO.1)	
DRAWING NO.	INIS (I) - OF - 028
JAPAN INTERNATIONAL COOPERATION AGENCY	


N
RIO GUADALUPE
BARYR CREEK
1
2-1
2-2
2-3
2-4
2-5
3-1
3-2
3-3
3-4
3-5
4-1
4-2
4-3
4-4
4-5

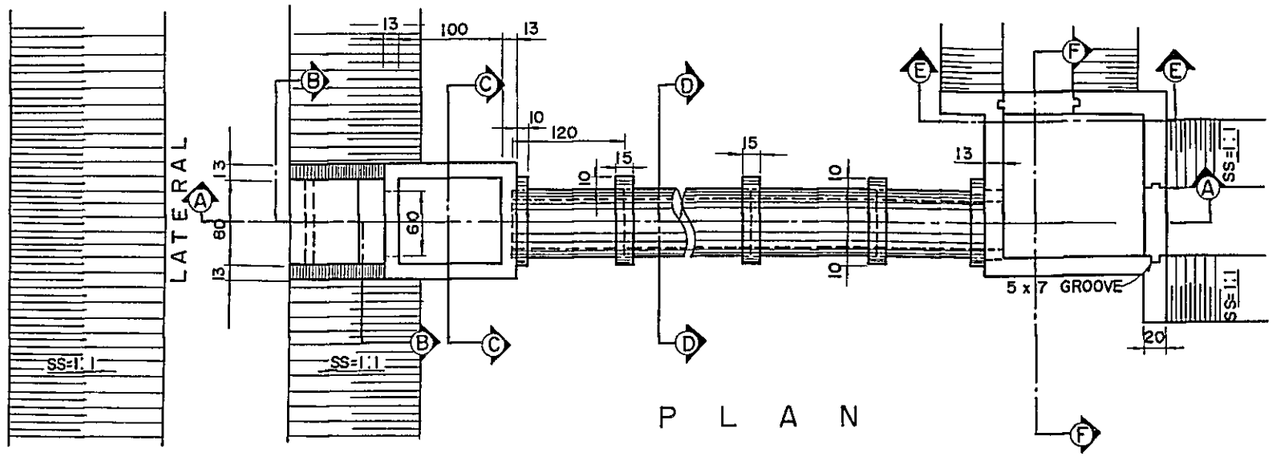


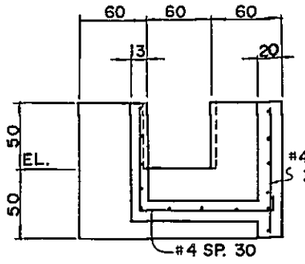
REPUBLIC OF THE PHILIPPINES
NATIONAL IRRIGATION ADMINISTRATION

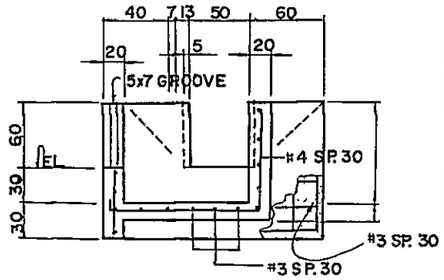
INIP
LAYOUT OF ON-FARM FACILITY
(SAMPLE AREA NO.2)

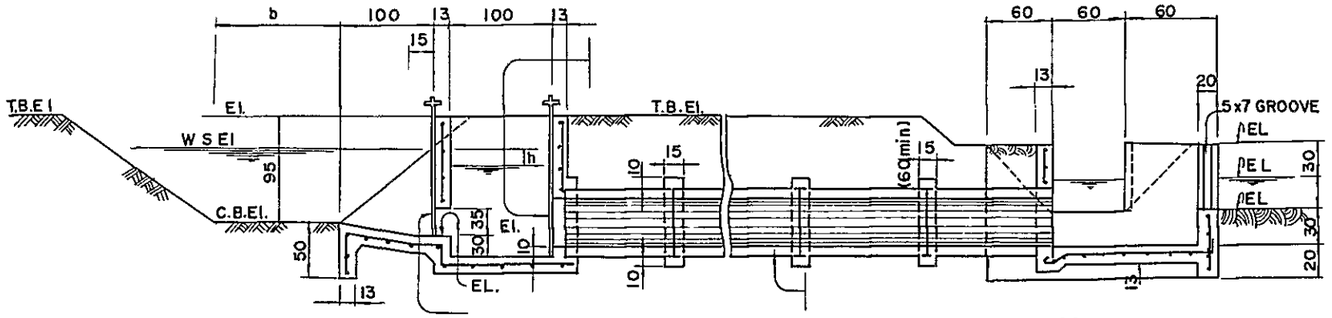
DRAWING NO.	INIS (I) - OF - 029

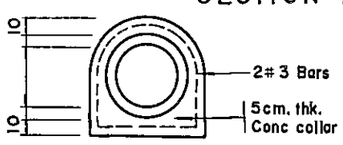
JAPAN INTERNATIONAL COOPERATION AGENCY

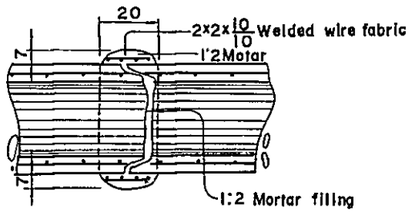


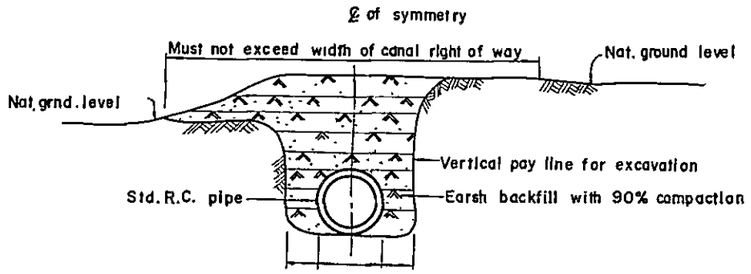


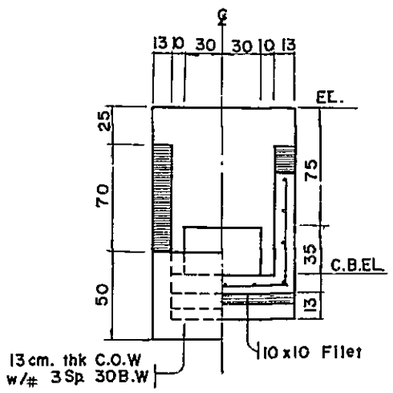


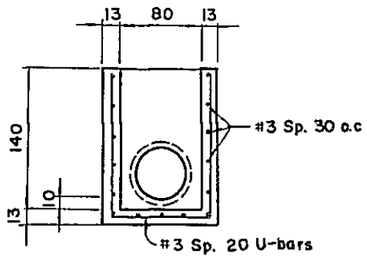




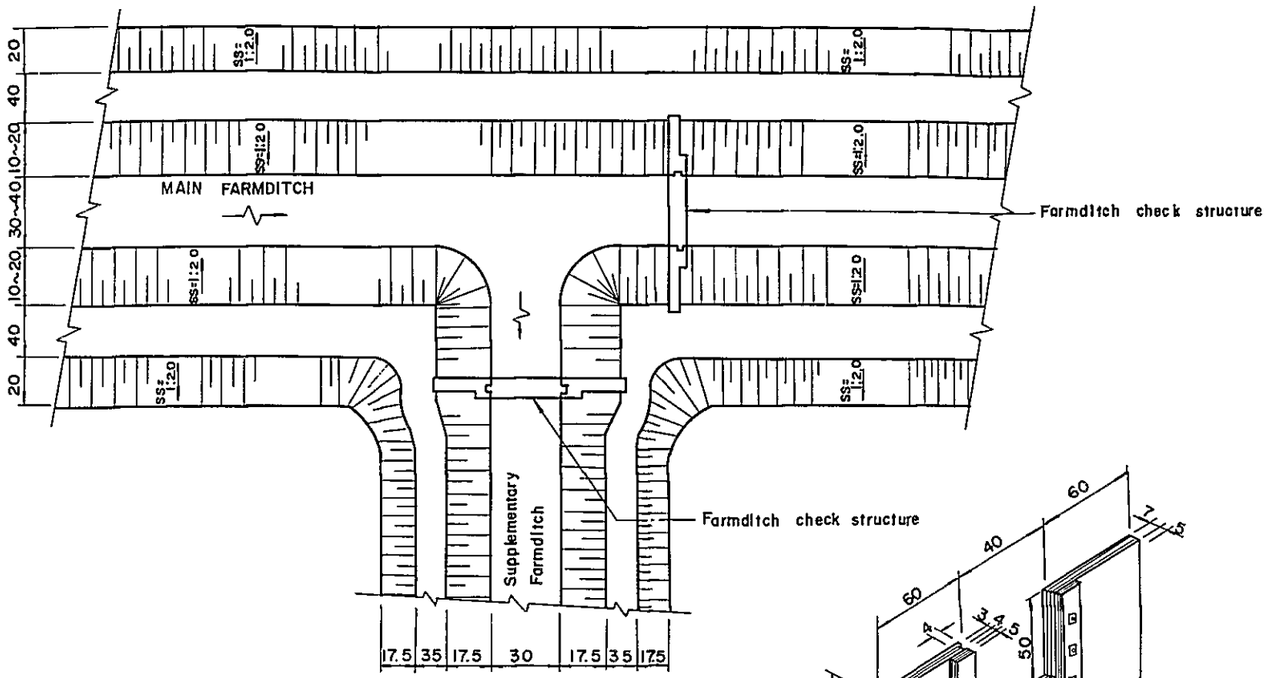








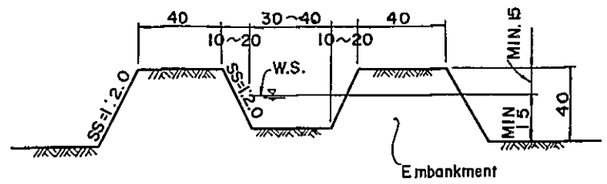
REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP TYPICAL TURN-OUT	
DRAWING NO.	INIS (I) - OF - 030
JAPAN INTERNATIONAL COOPERATION AGENCY	



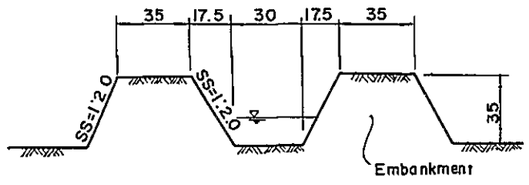
SCHEMATIC PLAN
FOR DIVISION BOX

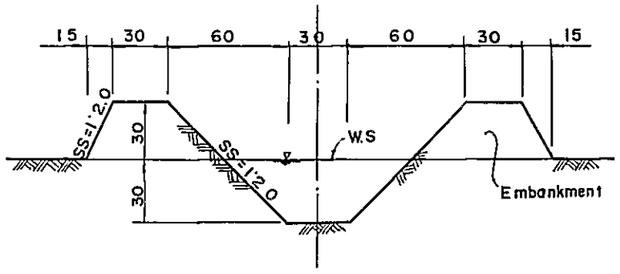
ISOMETRIC VIEW
FARMDITCH CHECK STRUCTURE

MAIN FARMDICH

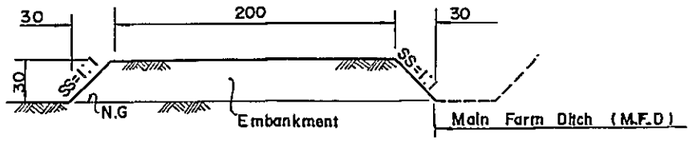


SUPPLEMENTARY FARMDITCH





FARM DRAIN



FARM ROAD

REPUBLIC OF THE PHILIPPINES NATIONAL IRRIGATION ADMINISTRATION	
INIP TYPICAL FARMDITCH SECTION AND DIVERSION BOX	
DRAWING NO.	INIS (I) - OF - 031
JAPAN INTERNATIONAL COOPERATION AGENCY