

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

FEASIBILITY STUDY  
ON  
AIR SELAGAN IRRIGATION PROJECT  
IN BENGKULU PROVINCE

VOLUME III  
DRAWINGS

NOVEMBER 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

TOKYO, JAPAN

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国際協力事業団









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FEASIBILITY STUDY  
ON  
AIR SELAGAN IRRIGATION PROJECT




















LIST OF DRAWINGS

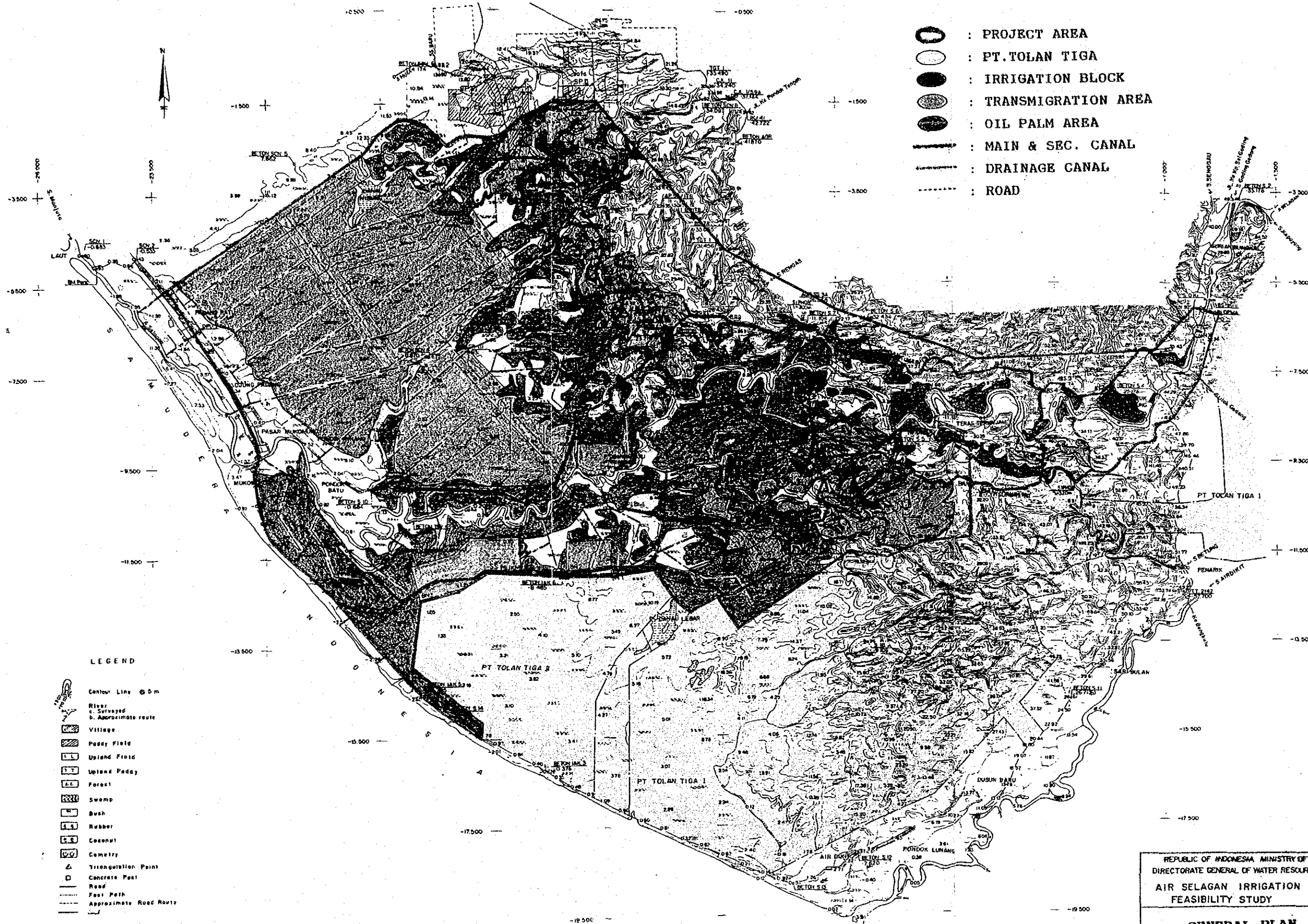
<u>DWG NO.</u>	<u>TITLE</u>
1	GENERAL PLAN
2	DISTRIBUTION DIAGRAM FOR MAIN AND SECONDARY SYSTEM
3	SOIL MAP
4	LAND SUITABILITY MAP FOR PADDY RICE
5	LAND SUITABILITY MAP FOR PALAWIJA
6	LAND SUITABILITY MAP FOR NON-IRRIGATED TREE CROPS
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8	GEOLOGICAL MAP
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17	PLAN & PROFILE OF LINK CANAL(3/5)
18	PLAN & PROFILE OF LINK CANAL(4/5)
19	PLAN & PROFILE OF LINK CANAL(5/5)
20	PROFILE OF RIGHT BANK MAIN CANAL(1/2)
21	PROFILE OF RIGHT BANK MAIN CANAL(2/2)
22	PROFILE OF LEFT BANK MAIN CANAL(1/2)
23	PROFILE OF LEFT BANK MAIN CANAL(2/2)
24	PLAN & PROFILE FOR AIR SELAGAN RIVER CROSSING SIPHON

**LEGEND**

-  : PROJECT AREA
-  : PT. TOLAN TIGA
-  : IRRIGATION BLOCK
-  : TRANSMIGRATION AREA
-  : OIL PALM AREA
-  : MAIN & SEC. CANAL
-  : DRAINAGE CANAL
-  : ROAD

**LEGEND**

-  Contour Line @ 5 m
-  River
-  a. Surveyed
-  b. Approximate route
-  Village
-  Paddy Field
-  Upland Field
-  Upland Paddy
-  Forest
-  Swamp
-  Bush
-  Rubber
-  Coconut
-  Cemetery
-  Triangulation Point
-  Concrete Post
-  Road
-  Foot Path
-  Approximate Road Route

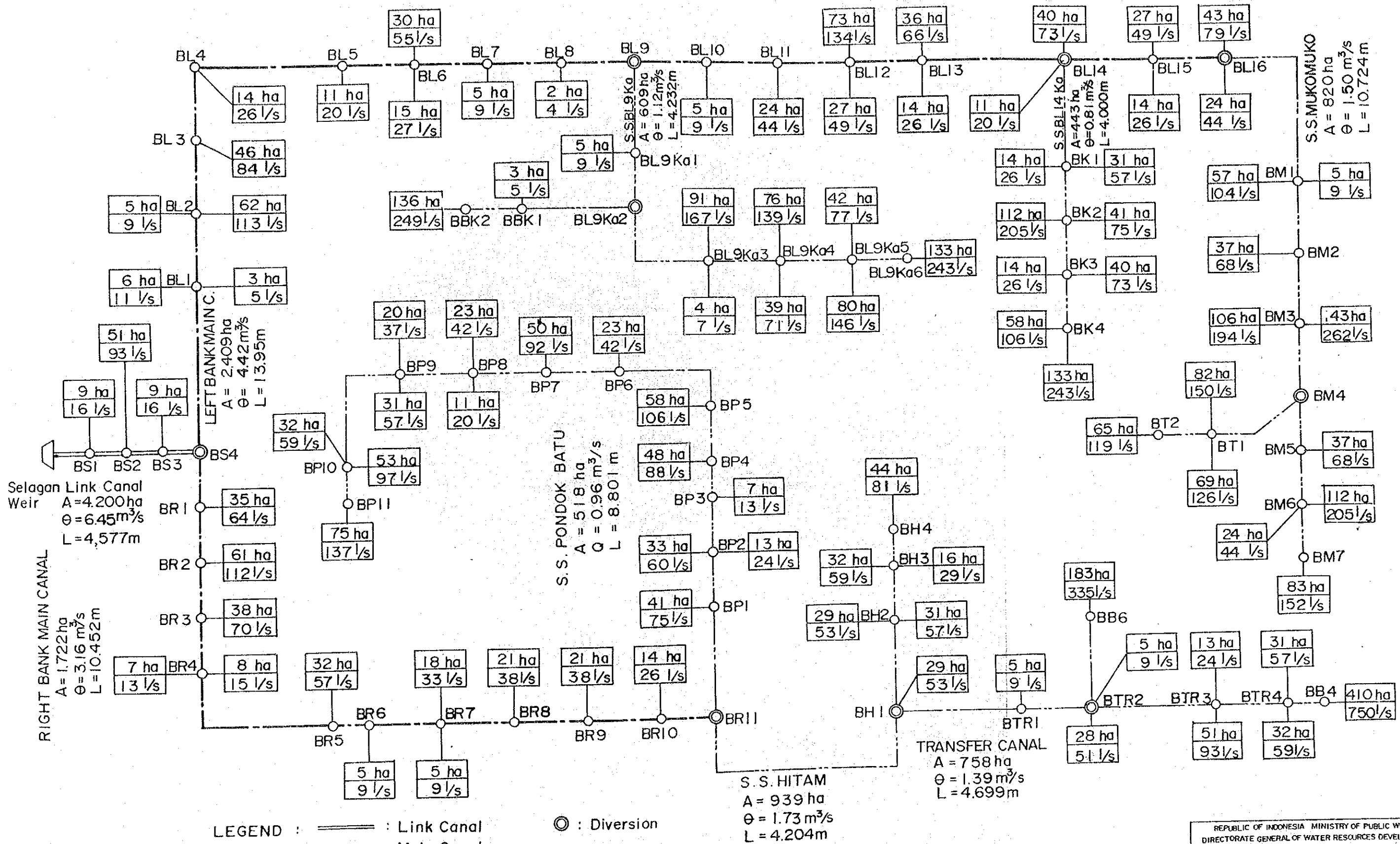


SCALE



REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AIR SELAGAN IRRIGATION PROJECT FEASIBILITY STUDY	
<b>GENERAL PLAN</b>	
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO (JICA)	DWG. NO. 1


















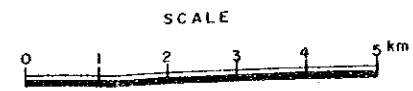
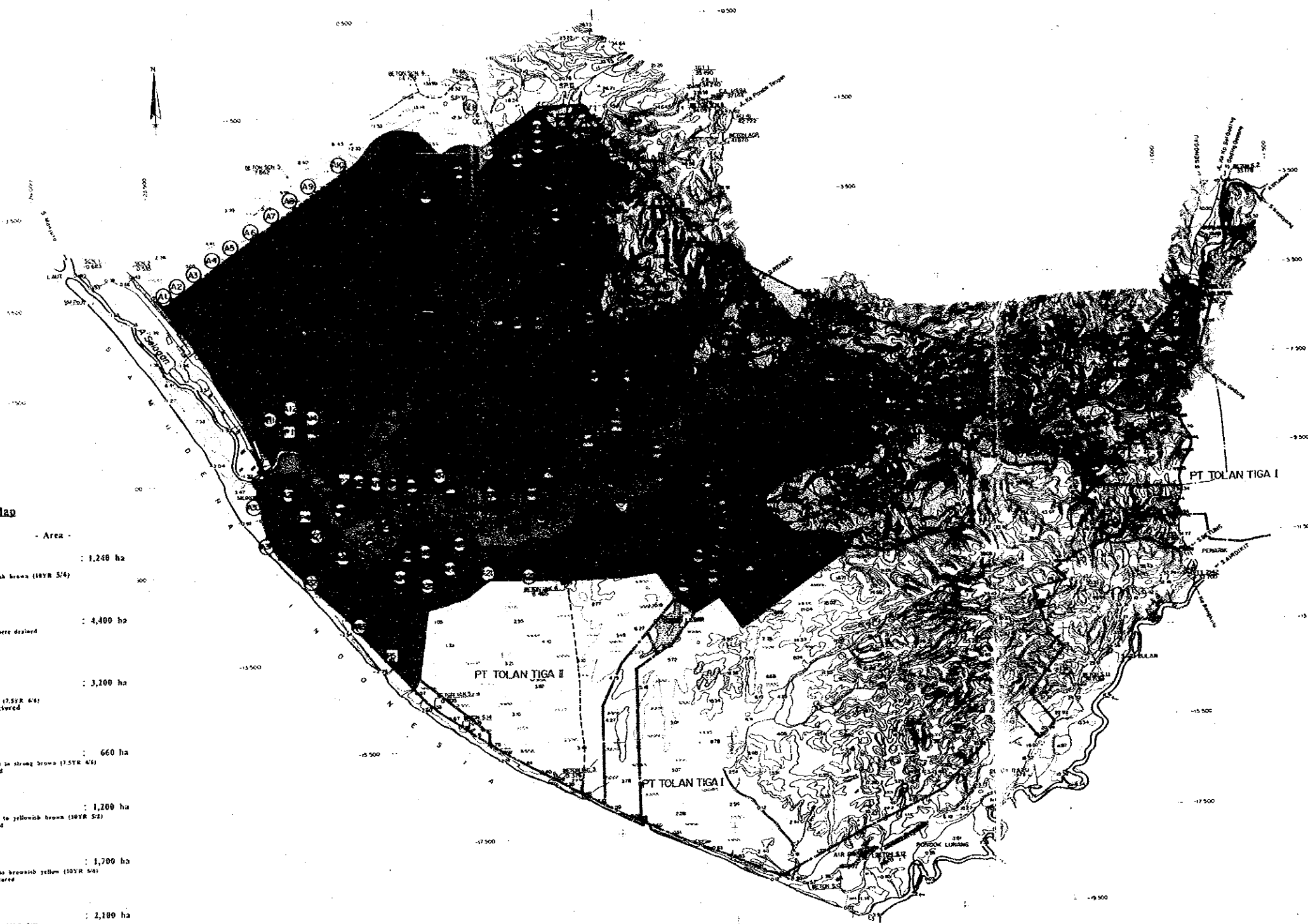
LEGEND :

- : Link Canal
- : Main Canal
- : Secondary Canal
- : Tertiary Canal
- ⊙ : Diversion
- : Turnout

**Legend for Soil Map**

	- Area -
	<b>Rd : Regosols, dystic</b> : 1,240 ha Sandy to sandy clay loam Dark reddish brown (15R 2.5/2) to yellowish brown (10YR 5/4) Weakly structured Low fertility Drainage frequently impeded
	<b>Od : Histosols, dystic</b> : 4,400 ha Very immature, fibric to hemic or sapric where drained Dark red (10R 2.5/1) Low fertility Medium very liquid Low bearing capacity
	<b>Fo : Ferralsol, orthic</b> : 3,200 ha Deep forest soil Dark brown (7.5YR 3/2) to reddish yellow (7.5YR 6/4) Silty to silty clay loams, weakly structured Well drained, weakly acid Deeply incised Severe erosion hazard
	<b>Ep : Ferralsol, plinthic</b> : 660 ha Forest soil, dark reddish brown (5YR 3/2) to strong brown (7.5YR 4/3) Silty to silty clay loams, weakly structured Well drained, weakly acid Moderate erosion hazard
	<b>Fr : Ferralsol, rhodic</b> : 1,200 ha Deep forest soil, reddish brown (5YR 4/3) to yellowish brown (10YR 5/3) Silty to silty clay loams, weakly structured Well drained, weakly acid Moderate erosion hazard
	<b>Fx : Ferralsol, xanthic</b> : 1,700 ha Deep forest soil, dark brown (10YR 3/3) to brownish yellow (10YR 6/4) Silty clay to clay loams, moderately structured Fluvisol to well drained Erosion hazard
	<b>Jd : Fluvisol, dystic</b> : 2,100 ha Dark grayish brown (10YR 3/2) to yellow (10YR 7/6) Stratified Clay to silty clay loam Swampy in places Moderate to strongly structured Drainage poor, flooding common

- Others-**
-  : Roads.
  -  : Survey boundary
  -  : Existing canal.
  -  : Project boundary
  -  : Soil pit.
  -  : Auger hole.



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**AIR SELAGAN IRRIGATION PROJECT**  
**FEASIBILITY STUDY**

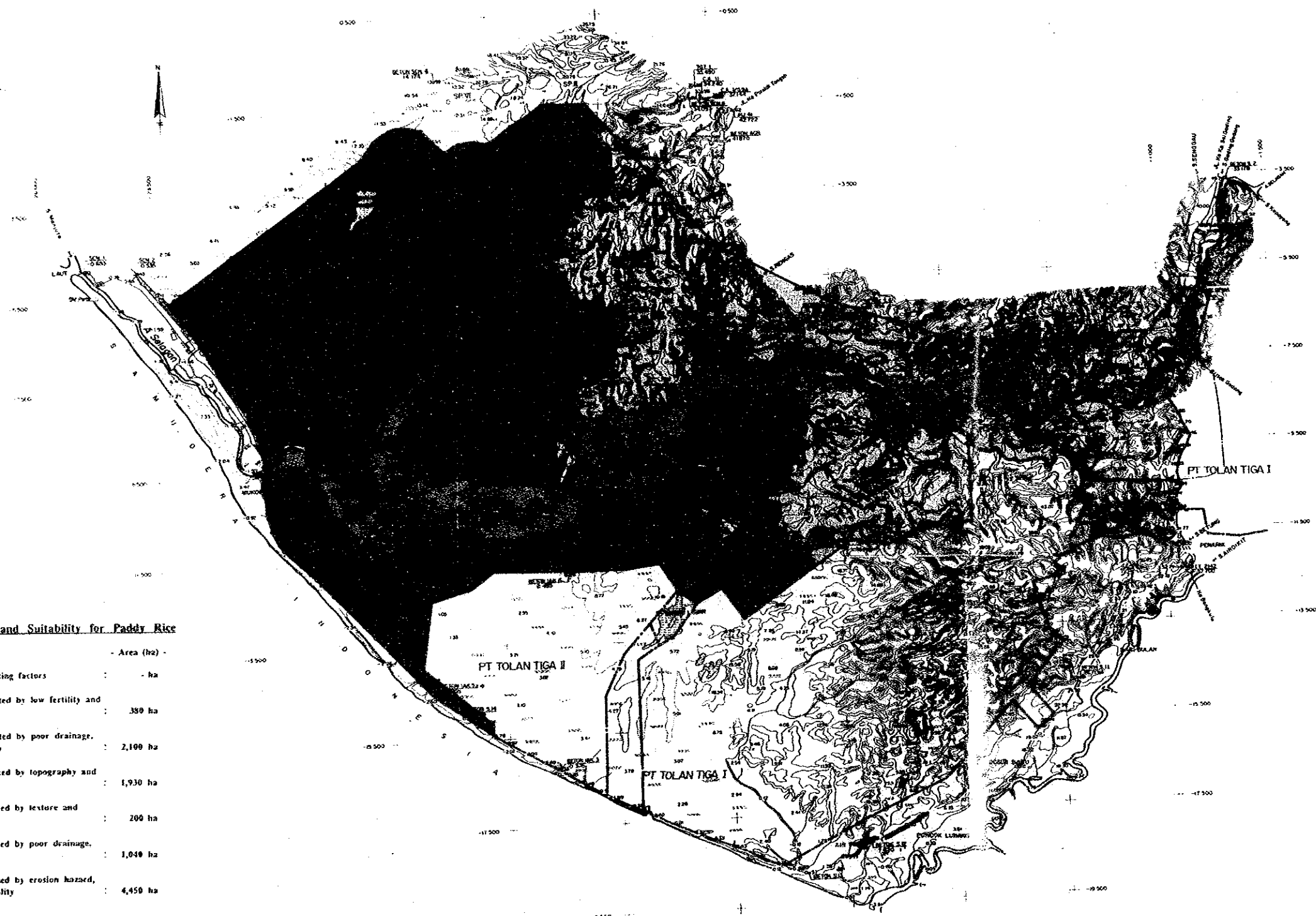
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**SOIL MAP**

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JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO (JICA)

DWG. NO. **3**

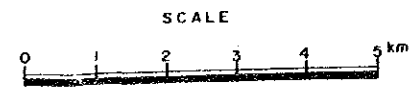


**Legend for Land Suitability for Paddy Rice**

Class	Description	Area (ha)
S1	Highly suitable, no limiting factors	- ha
S2y	Moderately suitable, limited by low fertility and occasional flooding	380 ha
S2fy	Moderately suitable, limited by poor drainage, flooding and low fertility	2,100 ha
S2ly	Moderately suitable, limited by topography and low fertility	1,930 ha
S2ly	Moderately suitable, limited by texture and low fertility	200 ha
S3vyd	Marginally suitable, limited by poor drainage, texture and low fertility	1,040 ha
S3tye	Marginally suitable, limited by erosion hazard, topography and low fertility	4,450 ha
N1p	Currently not suitable, deep peat	4,400 ha
N2	Permanently unsuitable	- ha

- Subscripts -**
- d : drainage
  - e : erosion hazard
  - f : flooding/drainage
  - l : texture, sandy loams
  - p : peat
  - t : topography
  - v : S2 slopes : < 20%, vertical interval < 15m
  - y : S3 slopes : > 20%, vertical interval > 15m
  - v : texture, coarse sand
  - y : low fertility

- Others -**
- : Survey boundary
  - : Project boundary

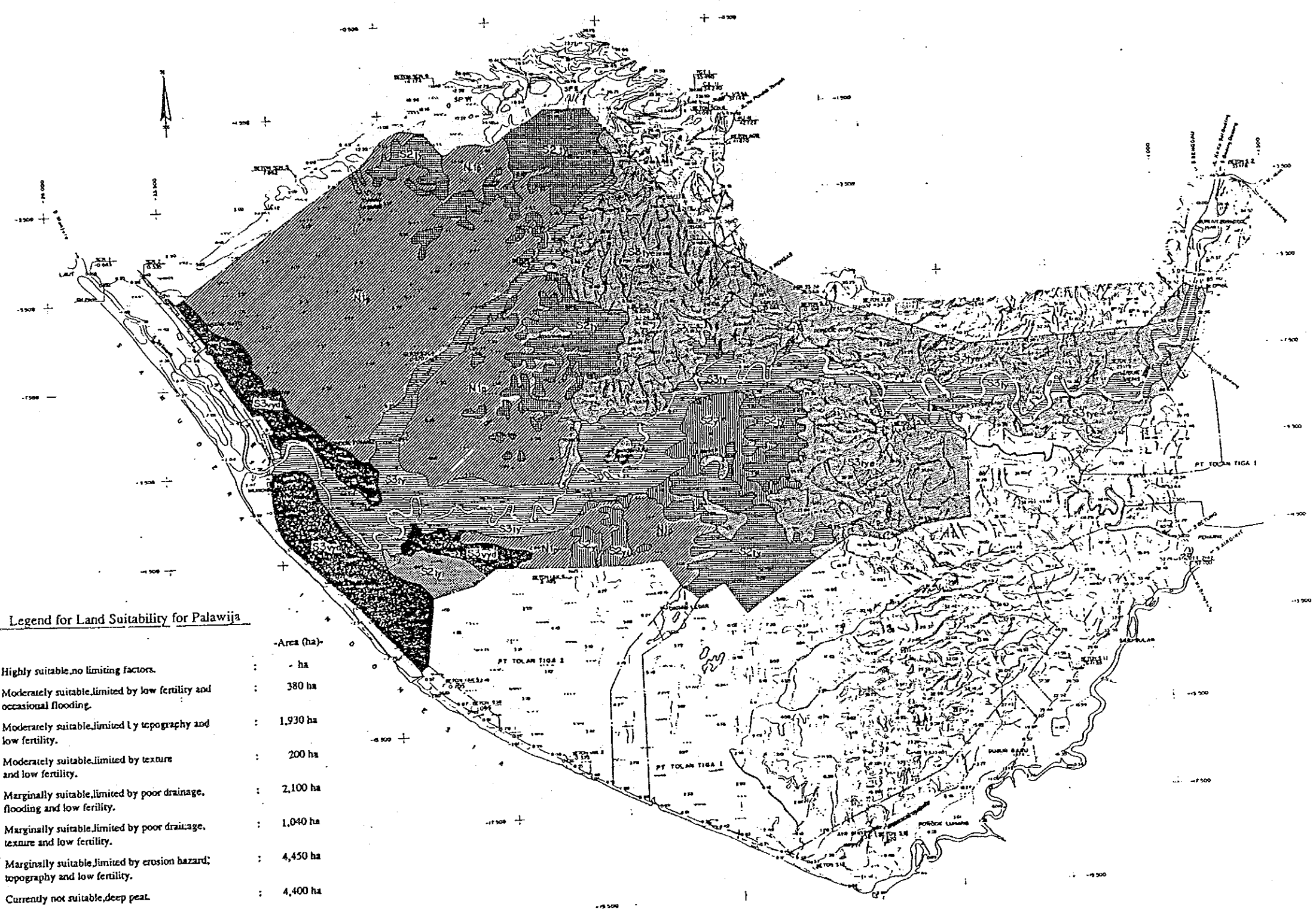


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 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
**AIR SELAGAN IRRIGATION PROJECT**  
 FEASIBILITY STUDY

**LAND SUITABILITY MAP**  
**FOR PADDY RICE**

JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO (JICA)

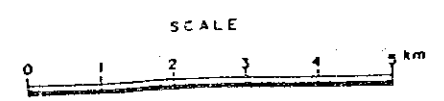
DWG. NO. **4**



Legend for Land Suitability for Palawija

Class	Description	Area (ha)
S1	Highly suitable, no limiting factors.	- ha
S2y	Moderately suitable, limited by low fertility and occasional flooding.	380 ha
S2ty	Moderately suitable, limited by topography and low fertility.	1,930 ha
S2ly	Moderately suitable, limited by texture and low fertility.	200 ha
S3fy	Marginally suitable, limited by poor drainage, flooding and low fertility.	2,100 ha
S3vyd	Marginally suitable, limited by poor drainage, texture and low fertility.	1,040 ha
S3tye	Marginally suitable, limited by erosion hazard, topography and low fertility.	4,450 ha
N1p	Currently not suitable, deep peat.	4,400 ha
N2	Permanently unsuitable.	- ha

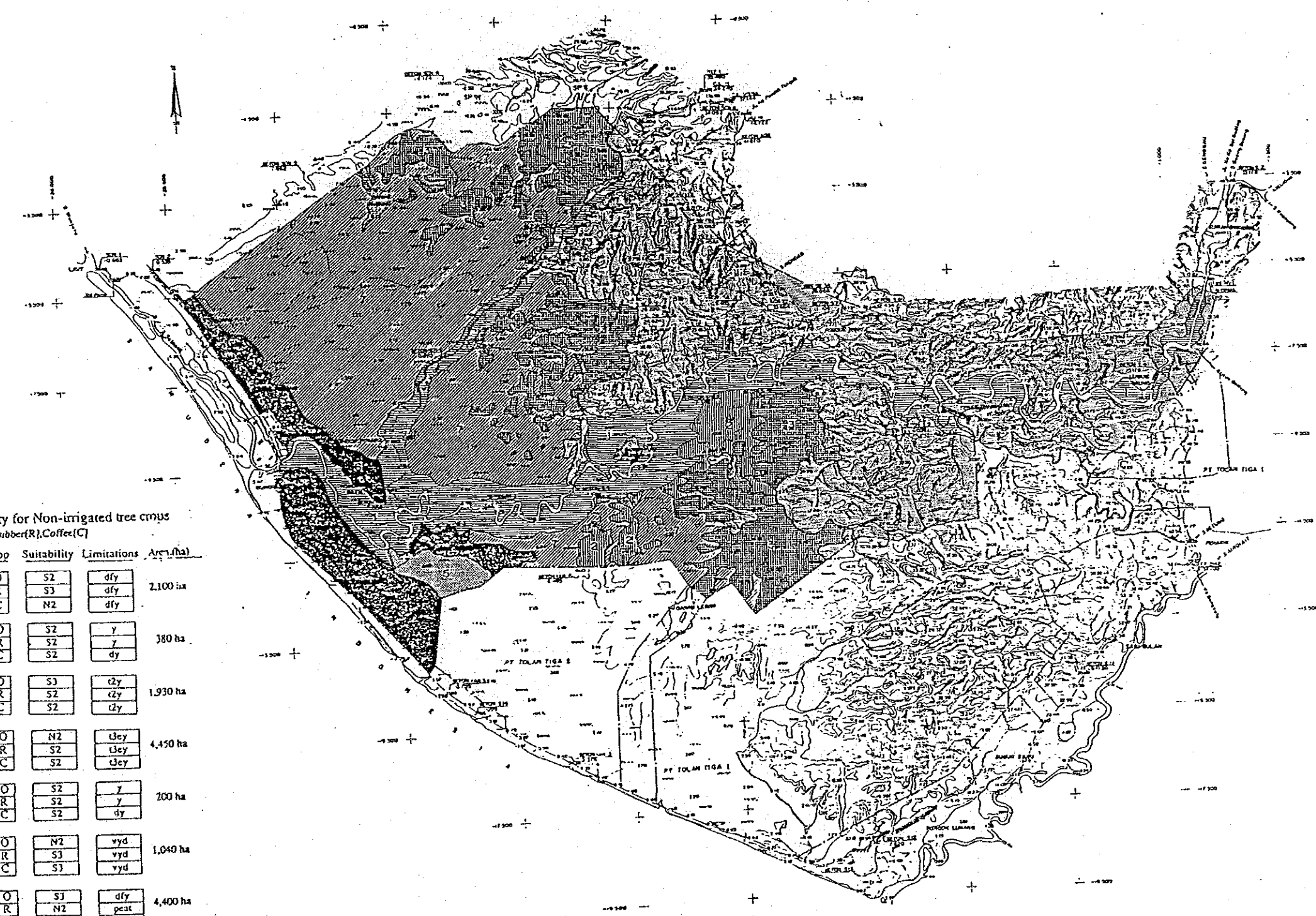
- Subscripts-
- d : drainage.
  - e : erosion hazard.
  - f : flooding/drainage.
  - t : texture, sandy loams.
  - p : peat.
  - r : topography.
  - s2 slopes : < 20%, vertical interval < 15m.
  - s3 slopes : > 20%, vertical interval > 15m.
  - v : texture, coarse sand.
  - y : low fertility.



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 AIR SELAGAN IRRIGATION PROJECT  
 FEASIBILITY STUDY

**LAND SUITABILITY MAP  
 FOR PALAWIJA**

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) TOKYO  
 DWG. NO. 5



Legend for Land Suitability for Non-irrigated tree crops  
Oil Palm(O), Rubber(R), Coffee(C)

Land Group	Crop	Suitability	Limitations	Area (ha)
1	O	S2	d/y	2,100 ha
	R	S3	d/y	
	C	N2	d/y	
2	O	S2	y	380 ha
	R	S2	y	
	C	S2	dy	
3	O	S3	t/y	1,930 ha
	R	S2	t/y	
	C	S2	t/y	
4	O	N2	t/y	4,450 ha
	R	S2	t/y	
	C	S2	t/y	
5	O	S2	y	200 ha
	R	S2	y	
	C	S2	dy	
6	O	N2	vyd	1,040 ha
	R	S3	vyd	
	C	S3	vyd	
7	O	S3	d/y	4,400 ha
	R	N2	peat	
	C	N2	peat	

-Limitations-

- d : drainage.
- s : erosion hazard.
- f : flooding.
- l : coarse sandy loam.
- p : peat.
- t : topography, slopes < 20%, vertical interval < 15m.
- v : coarse sand to sandy loam.
- y : soil fertility.
- U : topography, slopes > 20%, vertical interval > 15m.

SCALE



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AIR SELAGAN IRRIGATION PROJECT  
FEASIBILITY STUDY

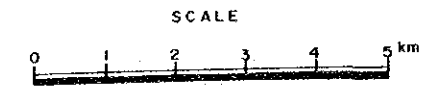
LAND SUITABILITY MAP FOR  
NON-IRRIGATED TREE CROPS

JAPAN INTERNATIONAL COOPERATION AGENCY DWG. NO. 6  
TOKYO (JICA)



Legend for Present Land Use  
(November 1989)

	- Area (ha) -
H : Hevea brasiliensis (Rubber)	2,300 ha
F : Natural forest	8,620 ha
G : Uplandfield, mixed cropping	1,200 ha
Ru : Upland rice, padi gogo	950 ha
Rp : Lowland rice, padi sawah	140 ha
C : Cleared and half burnt forest	250 ha
S : Scrubland and secondary growth	1,040 ha



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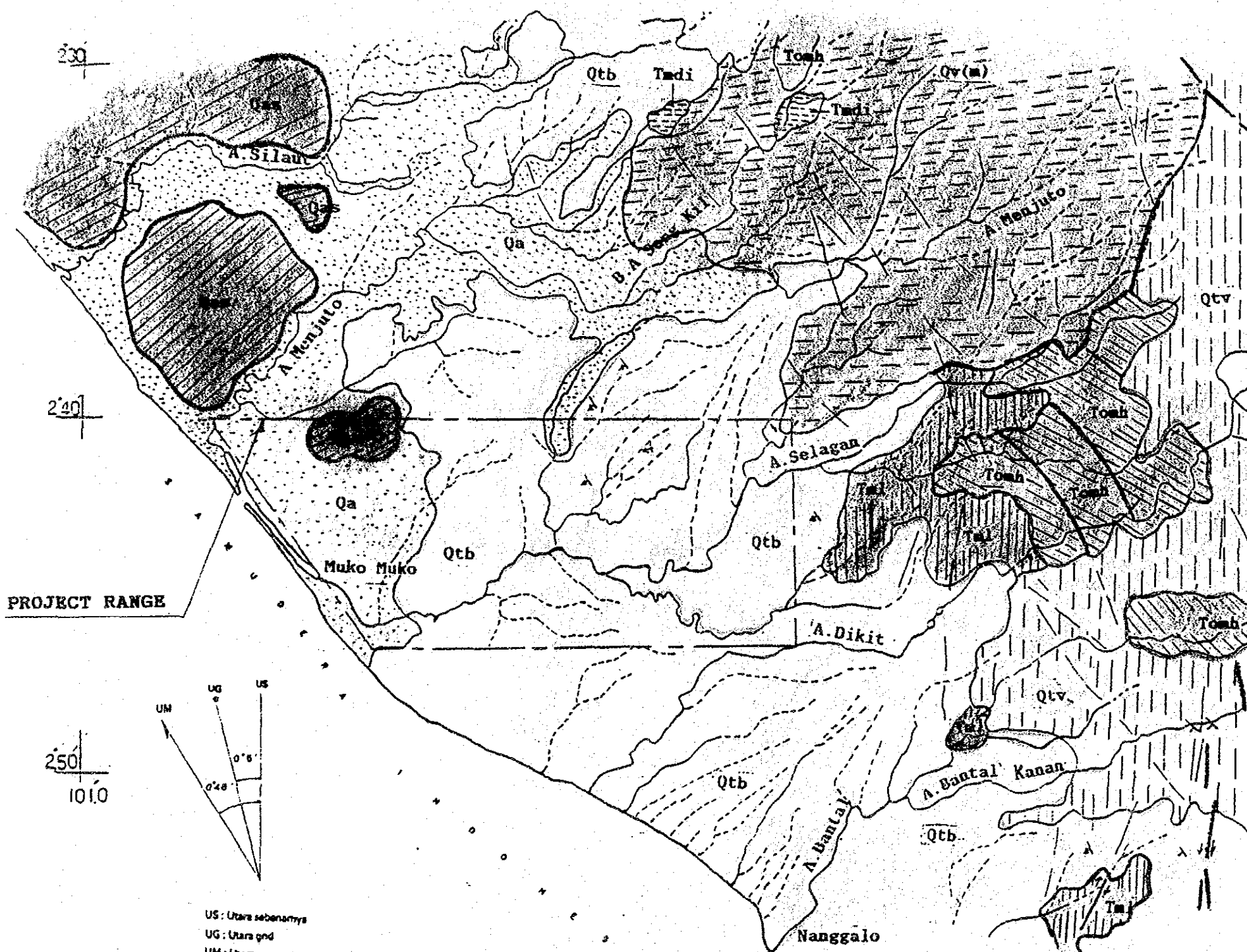
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**PRESENT LAND USE MAP**

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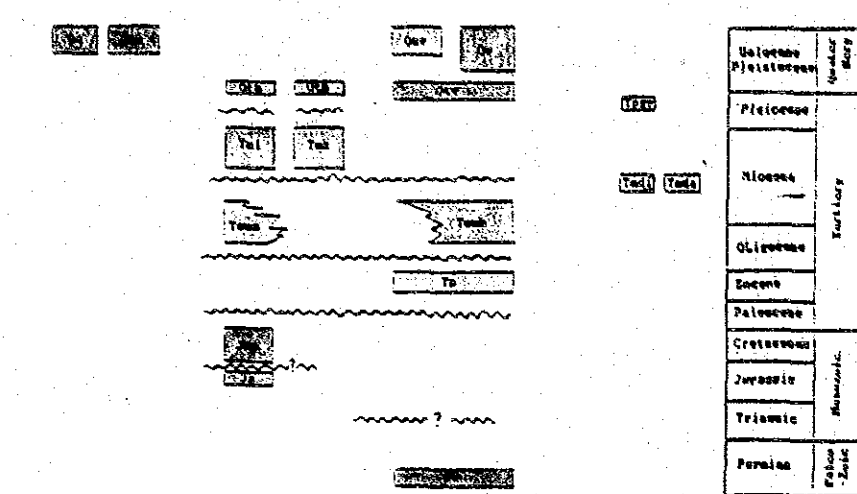
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO (JICA) DWG. NO. 7

S=1:250,000



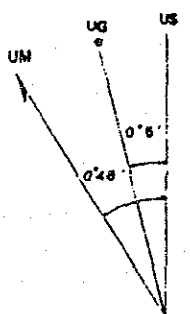
CORRELATION OF MAP UNITS

SURFICIAL DEPOSITS    SEDIMENTARY ROCKS    VOLCANIC ROCKS    INTRUSIVE ROCKS



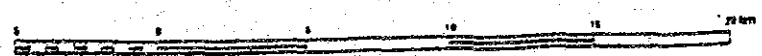
- Q a       ALLUVIUM  
(Blocks Gravel sand silt Mud and clay)
  - Q aa       SWAMP DEPOSIT  
(Sand silt mud clay contain plant remains)
  - Qtb       BINTUHAN FORMATION  
(Polytuff conglomerate pumiceous sandstone and silt stone clay stone with plant remains lignite and limestone intercalations thickness 250m)
  - Tmb       LEMAU FORMATION  
(Breccia dentitic tuff and stone with lignite inter calations clay stone containing mollusca and calcareous sandstone thickness 100m)
  - Tomh       HULUSHIMPANG FORMATION  
(Lava volcanic breccia and altered tuff and siltic to basaltic compositions thickness 700m)
  - Tedi       DIORITE
  - Qv       RIO-ANDESITE VOLCANIC ROCK UNIT  
(Plivollitic, dentitic and andesitic lavas, welded tuff hybrid tuff, pumiceous lithic tuff and volcanic breccia)
  - Qv       ANDESITE-BASALT VOLCANIC ROCK UNIT  
(Andesitic to basaltic lavas tuffs and lahric breccia)
- G. Pandan (QVP), G. Kunyit (QVK), G. Raya (QVR)  
G. Keboneang (QVKB)

PROJECT RANGE



250  
1010

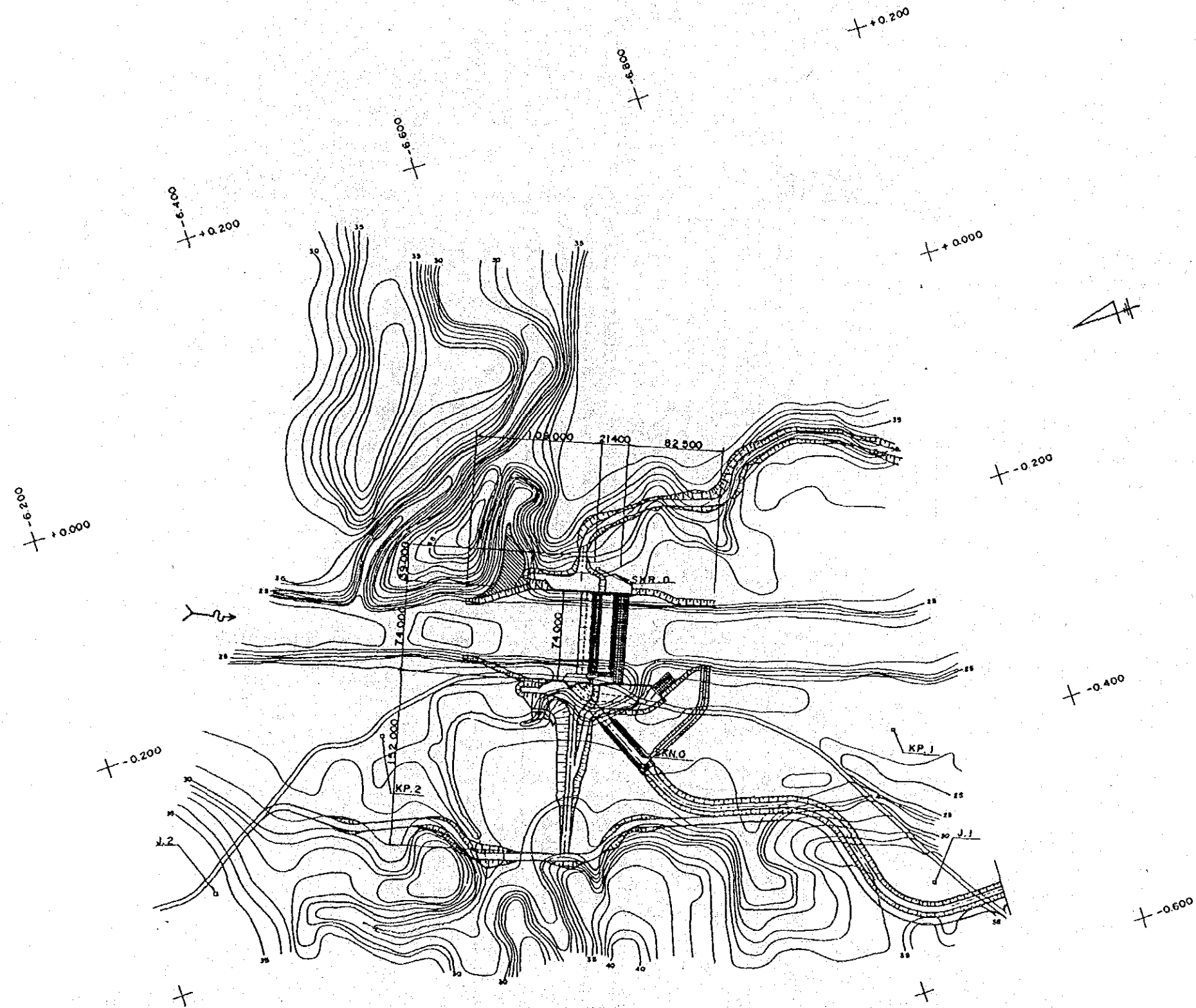
US : Utara sebenarnya  
UG : Utara grid  
UM : Utara magnetik










REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
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AIR SELAGAN IRRIGATION PROJECT  
FEASIBILITY STUDY

**GEOLOGICAL MAP**

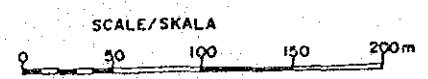
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)    DWG. NO. 18



LEGENDA  
LEGEND

-  LADANG  
NON IRRIGATED FARMING
-  ALANG ALANG  
MEADOW
-  HUTAN BELUKAR  
PRIMA FOREST
-  JALAN  
ROAD
-  TITIK PORIGON  
TRAVERSE POINT
-  ARAH ALIRAN  
FLOW DIRECTION
-  TITIK TETAP  
BENCH MARK

NO BM	COORDINATE		ELEVATION
	X	Y	
KP.1	-380,00	-6.844,00	+26,608
KP.2	-248	-6.426,150	+27,198
J.1	-512	-6.839	+34,822
J.2	-329	6.252	+36,520
SKN.0	-275,522	-6.802,572	+27,148
SKR.0	-169,162	-6.643,603	+28,414



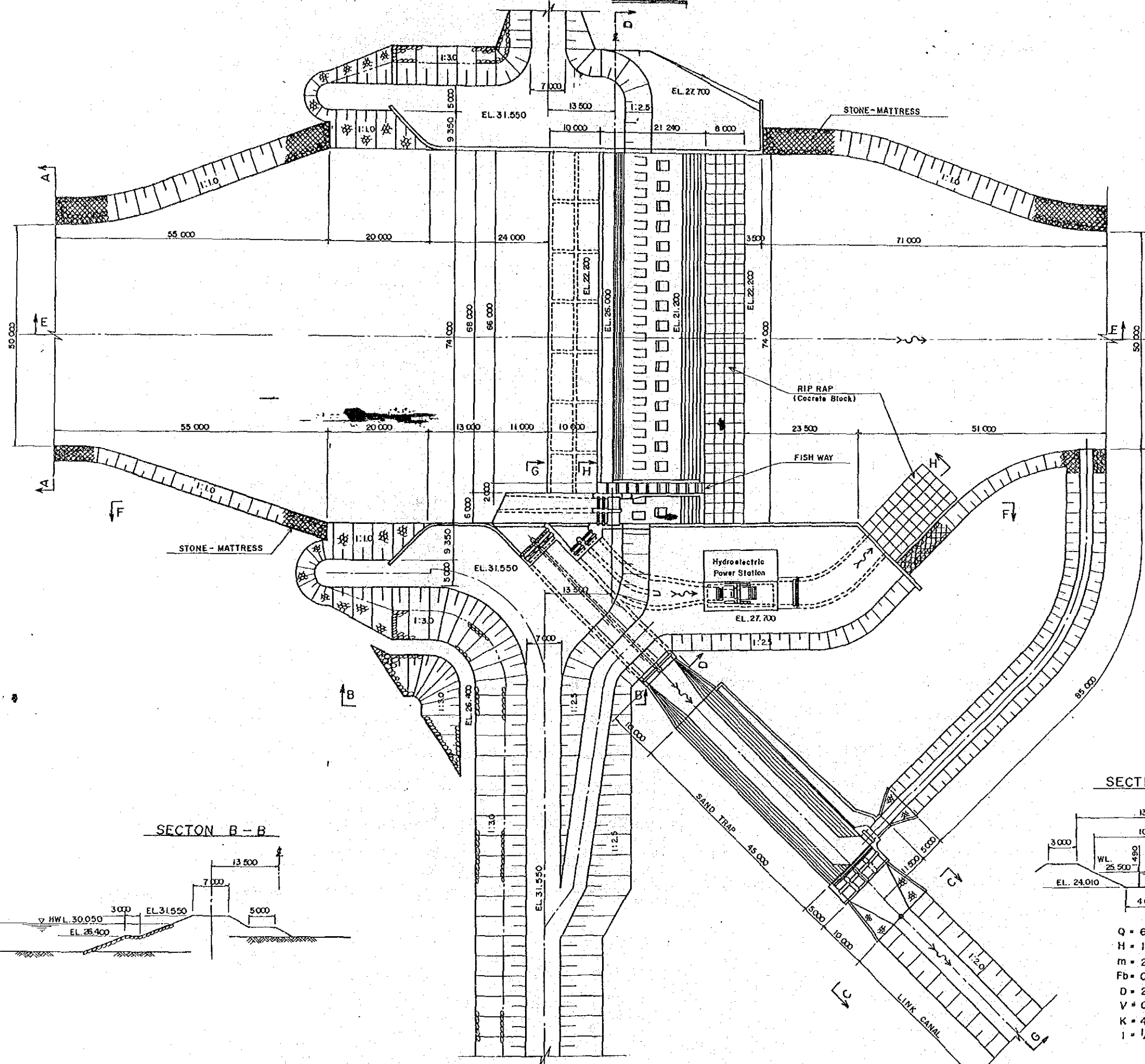
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FEASIBILITY STUDY

PLAN OF SELAGAN WEIR (1)

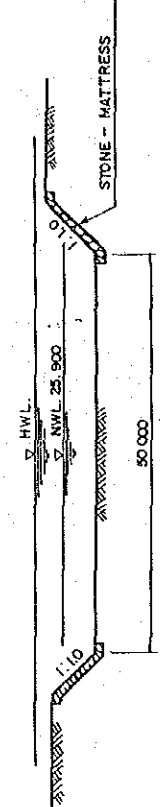
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) TOKYO, JAPAN  
DWG. NO. 9



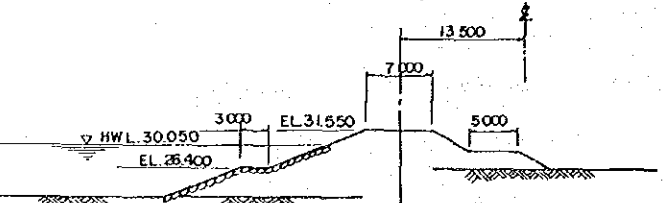
PLAN



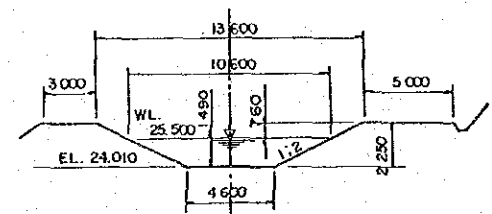
SECTION A - A



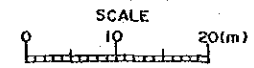
SECTION B - B



SECTION C - C



$Q = 6.45 \text{ m}^3/\text{s}$   
 $H = 1.49 \text{ m}$   
 $m = 2.0$   
 $Fb = 0.76 \text{ m}$   
 $D = 2.25 \text{ m}$   
 $V = 0.573 \text{ m/s}$   
 $K = 42$   
 $l = 1/5522$

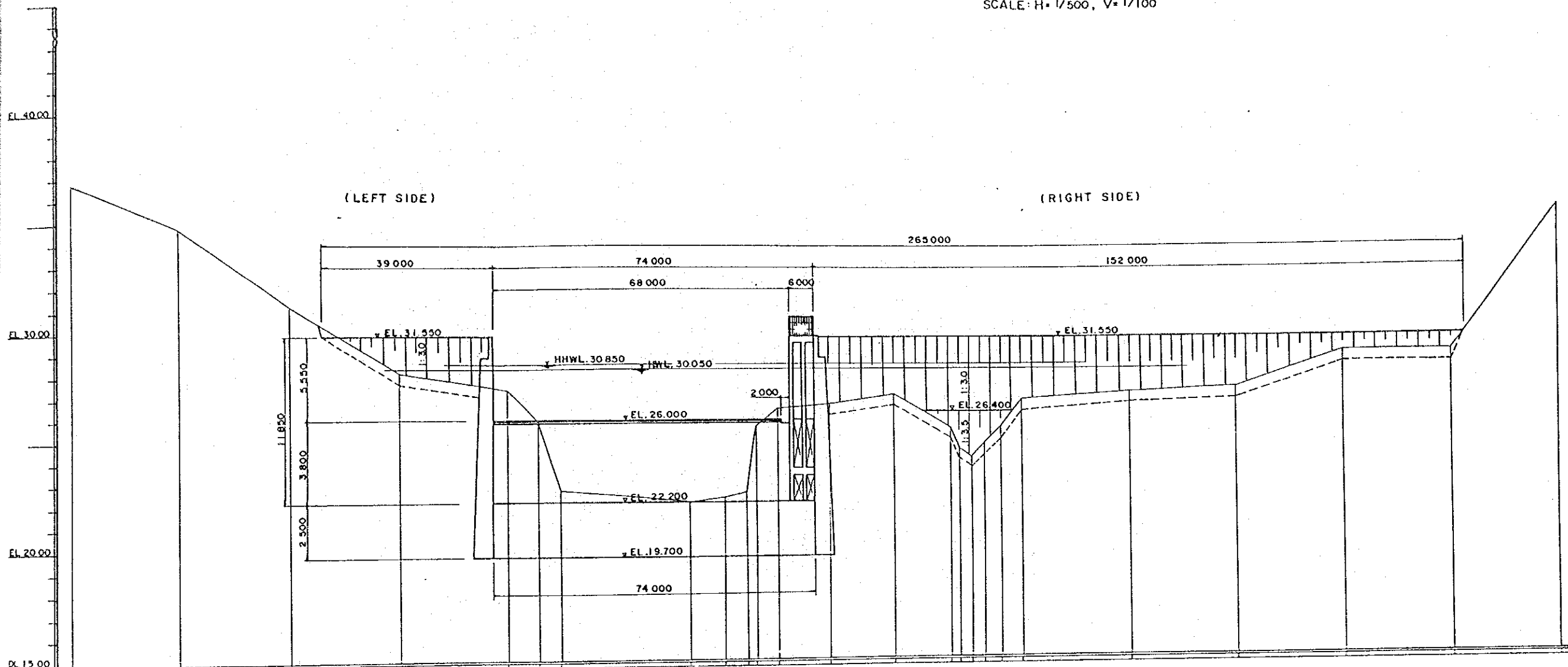


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**AIR SELAGAN IRRIGATION PROJECT**  
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PLAN OF SELAGAN WEIR (2)

PROFILE OF WEIR AXIS

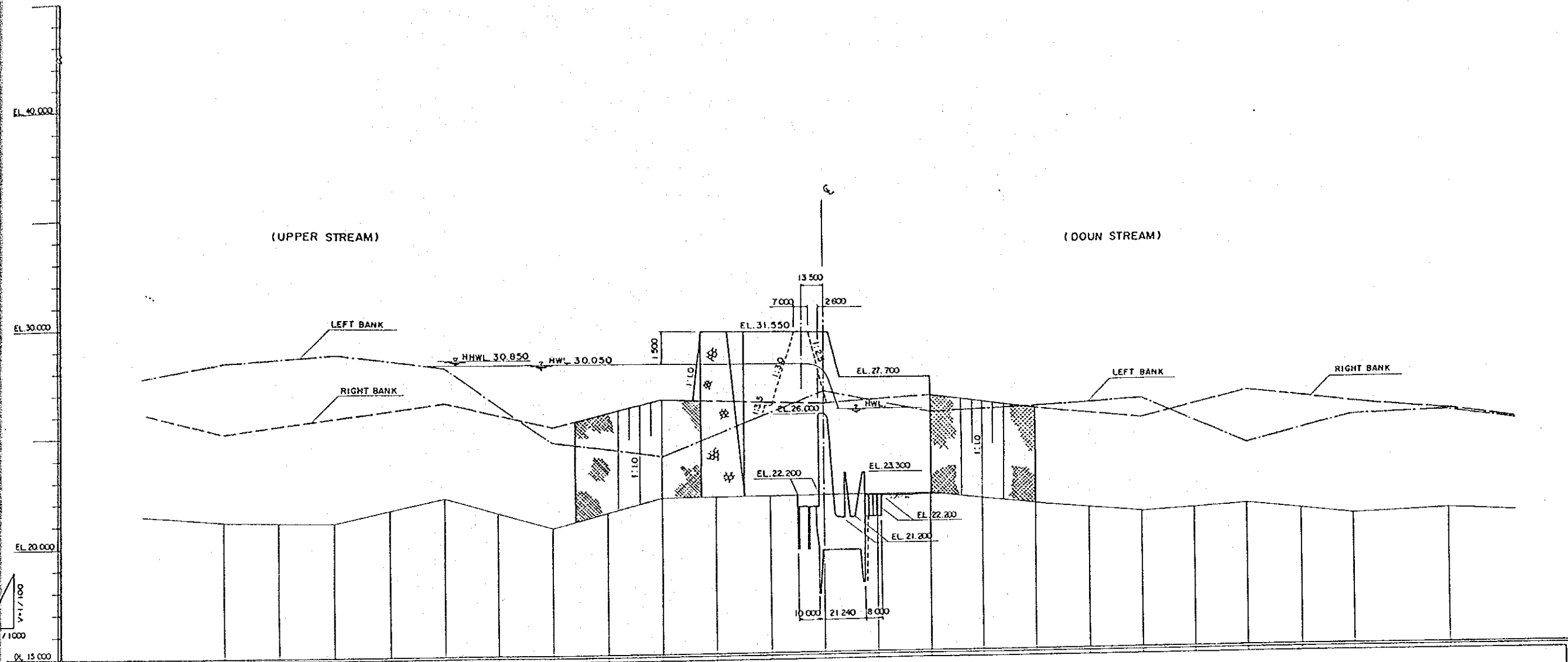
SCALE: H= 1/500, V= 1/100



STATION	DISTANCE	TOTAL DISTANCE	GROUND HEIGHT
P. 23	0.00	0.00	36.802
P. 22	25.00	25.00	34.763
P. 31	25.00	50.00	31.258
S.M.S.O	25.00	75.00	28.174
P. 30	25.00	100.00	27.409
+55.00	7.00	107.00	25.980
+50.00	5.00	112.00	22.760
+20.26	29.74	141.74	22.200
+12.22	8.04	149.78	22.380
+6.98	5.24	155.02	22.600
+4.95	2.53	157.55	22.680
B.M	4.93	162.48	26.499
P. 1	12.00	174.00	26.703
S.M.S.O	15.00	189.00	27.748
+17.00	3.00	192.00	25.920
+15.00	2.00	194.00	24.620
+12.00	3.00	197.00	24.180
+9.00	3.00	200.00	24.870
+5.00	4.00	204.00	23.580
P. 23	5.00	209.00	26.887
P. 24	23.00	232.00	27.215
P. 25	25.00	257.00	27.425
B. 1	25.00	282.00	28.026
P. 26	25.00	307.00	28.048
P. 27	23.00	330.00	33.672

PROFILE OF RIVER AXIS

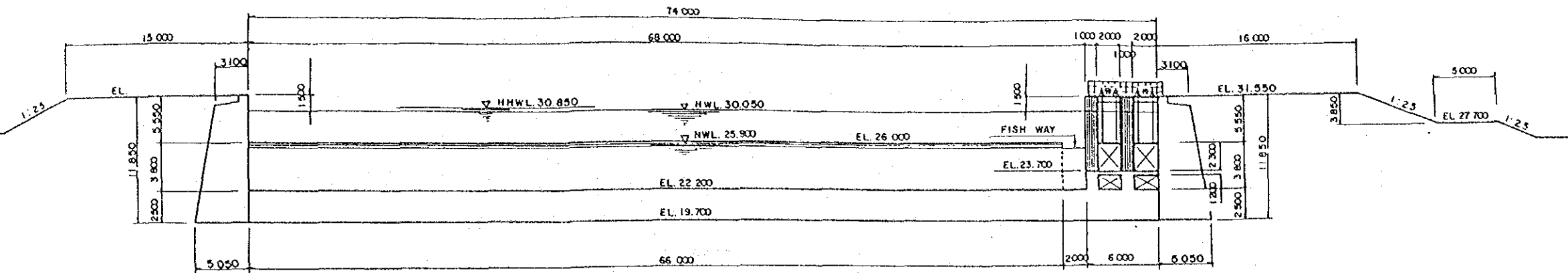
SCALE: H=1/1000, V=1/100



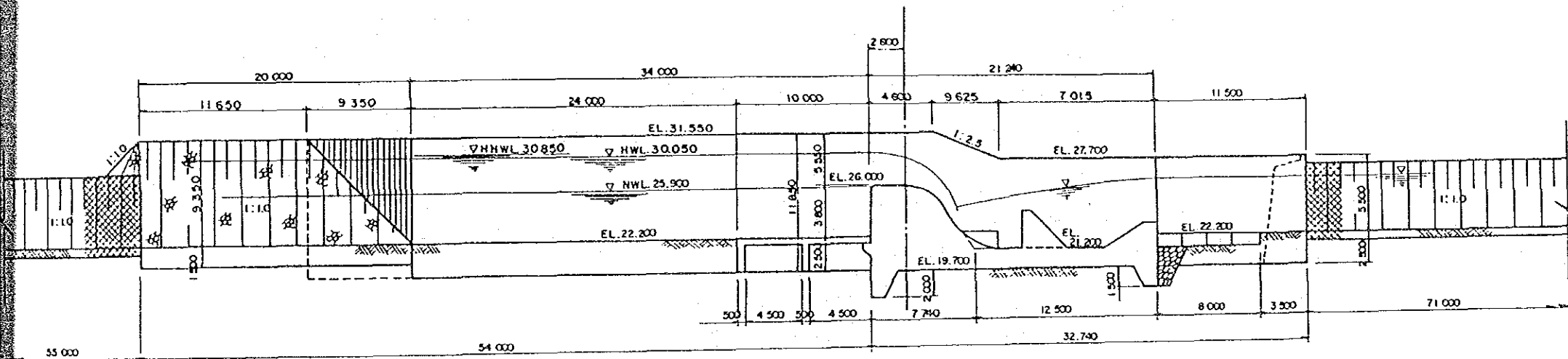
STATION	DISTANCE	TOTAL DISTANCE	EXISTING GROUND HEIGHT	DESIGN	
				TOP EL.	CANAL BED EL.
P. 12	0.00	479.95	21.17		
P. 11	25.00	504.95			
P. 10	25.10	530.05	21.08		
P. 9	25.00	555.00			
P. 8	25.00	580.05	22.22		
P. 7	25.00	605.00			
P. 6	25.00	630.05	20.81		
P. 5	25.00	655.05			
P. 4	25.00	680.05	22.17		
P. 3	25.00	705.00			
P. 2	25.00	730.05			
P. 1	25.00	755.05	22.20		
P. 13	25.00	780.05			
P. 14	25.00	805.05	22.28		
P. 15	25.00	830.05			
P. 16	25.00	855.05	21.75		
P. 17	25.00	880.05			
P. 18	25.00	905.05	21.31		
P. 19	25.00	930.05			
P. 20	25.00	955.05	21.61		
P. 21	25.00	980.05			
P. 22	25.00	1005.05	21.04		
P. 1029	45.00	1050.05	21.23		

REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
 AIR SELAGAN IRRIGATION PROJECT  
 FEASIBILITY STUDY  
 PROFILE OF RIVER AXIS  
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) TOKYO  
 DWG. NO. 12

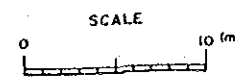
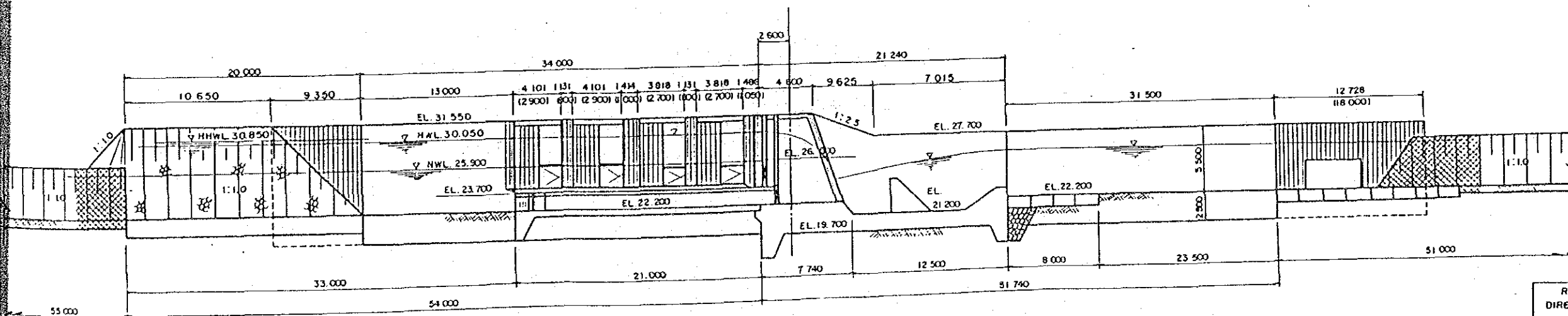
SECTION D - D



SECTION E - E



SECTION F - F



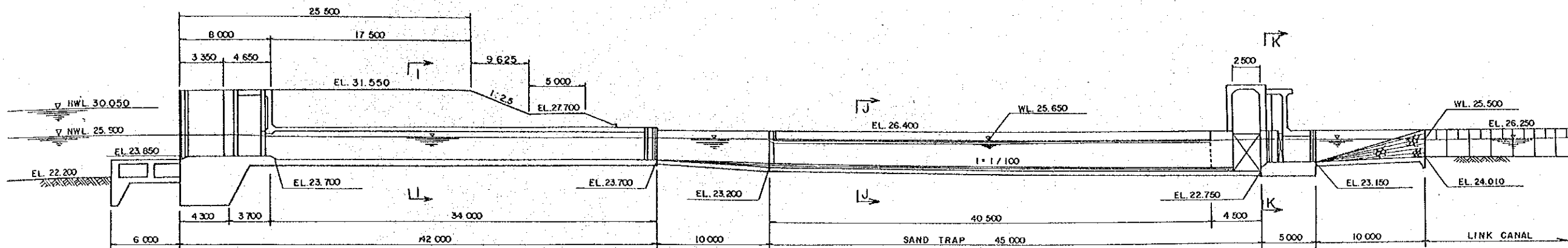
REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
 AIR SELAGAN IRRIGATION PROJECT  
 FEASIBILITY STUDY

SECTION OF SELAGAN WEIR (1)

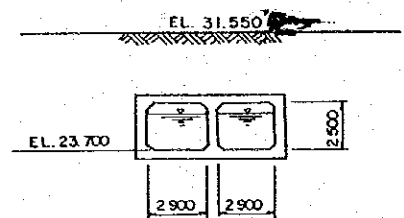
JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO (JICA)

DWG. NO. 13

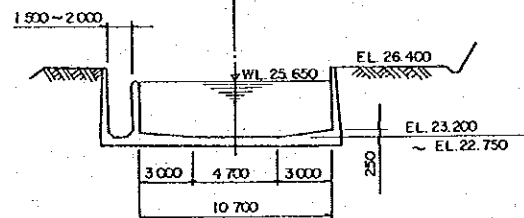
SECTION G-G



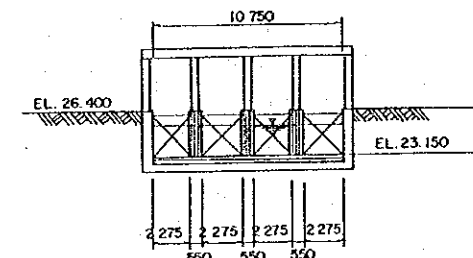
SECTION I-I



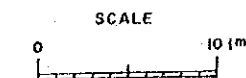
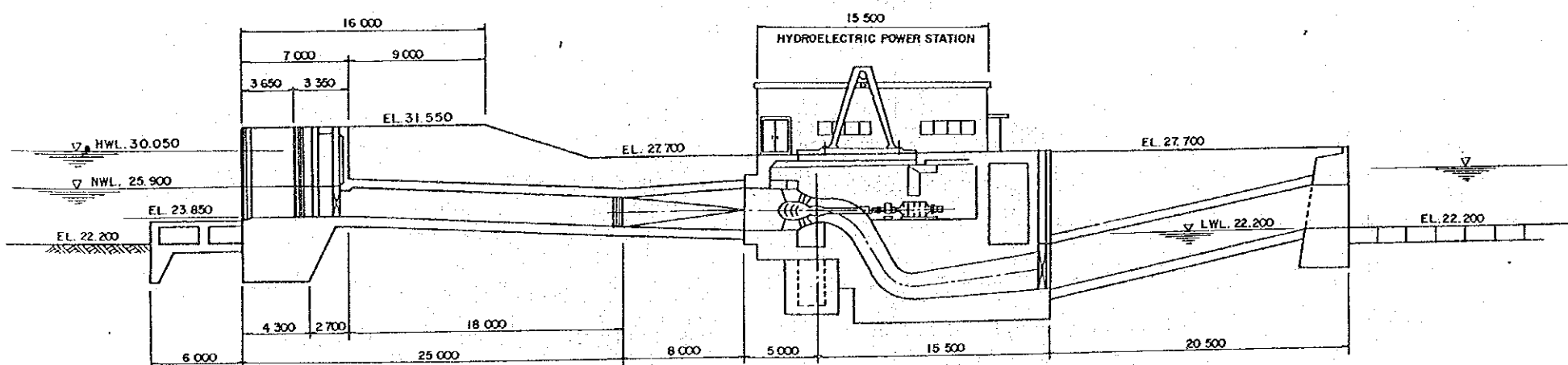
SECTION J-J



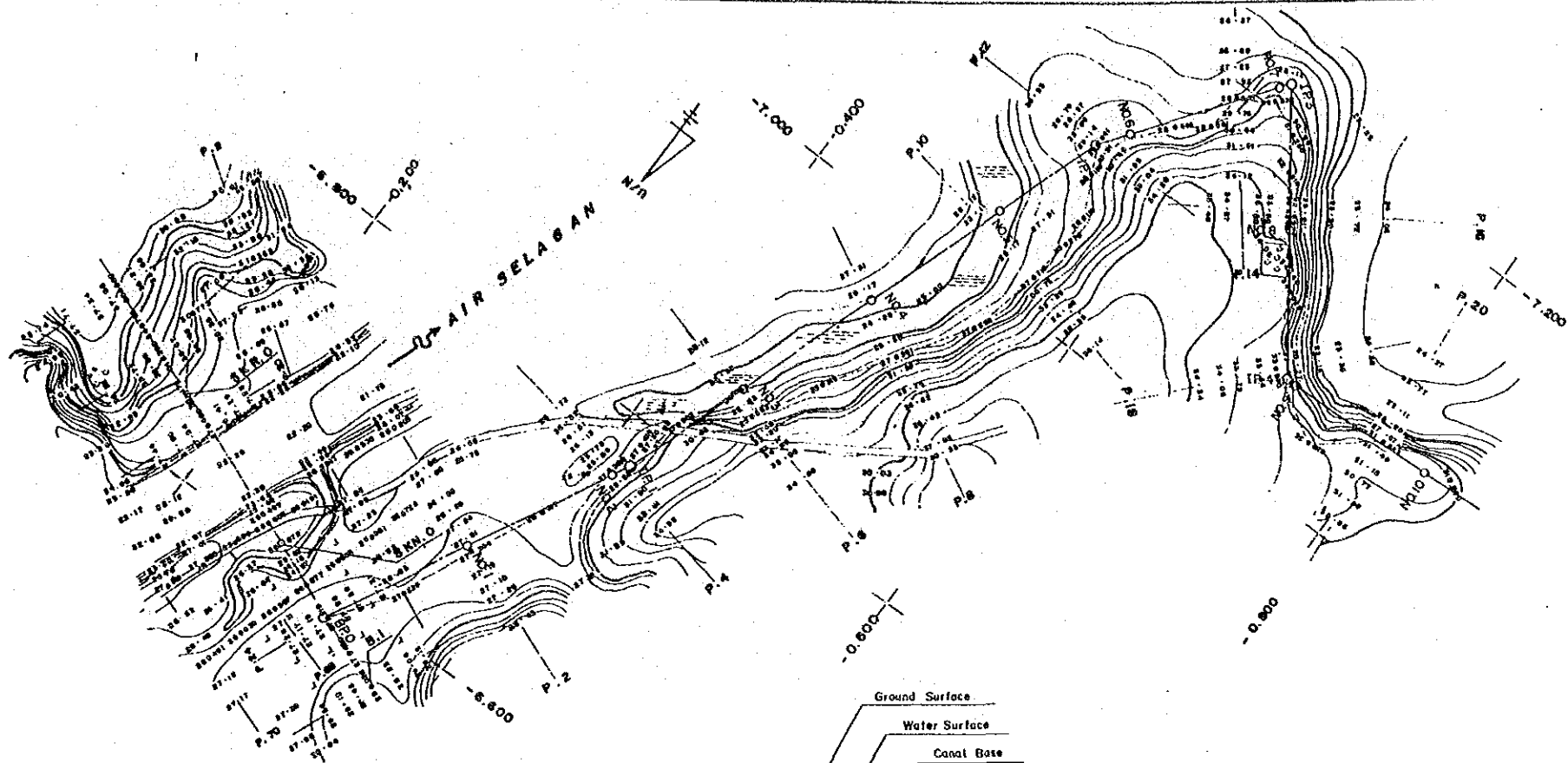
SECTION K-K



SECTION H-H



REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
 AIR SELAGAN IRRIGATION PROJECT  
 FEASIBILITY STUDY  
 SECTION OF SELAGAN WEIR (2)  
 JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO (JICA) DWG. NO. 14



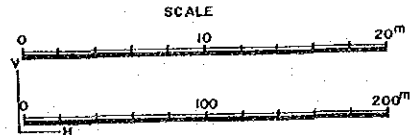
ELEVATION (m)

BP of Link Canal  
Selogan Weir

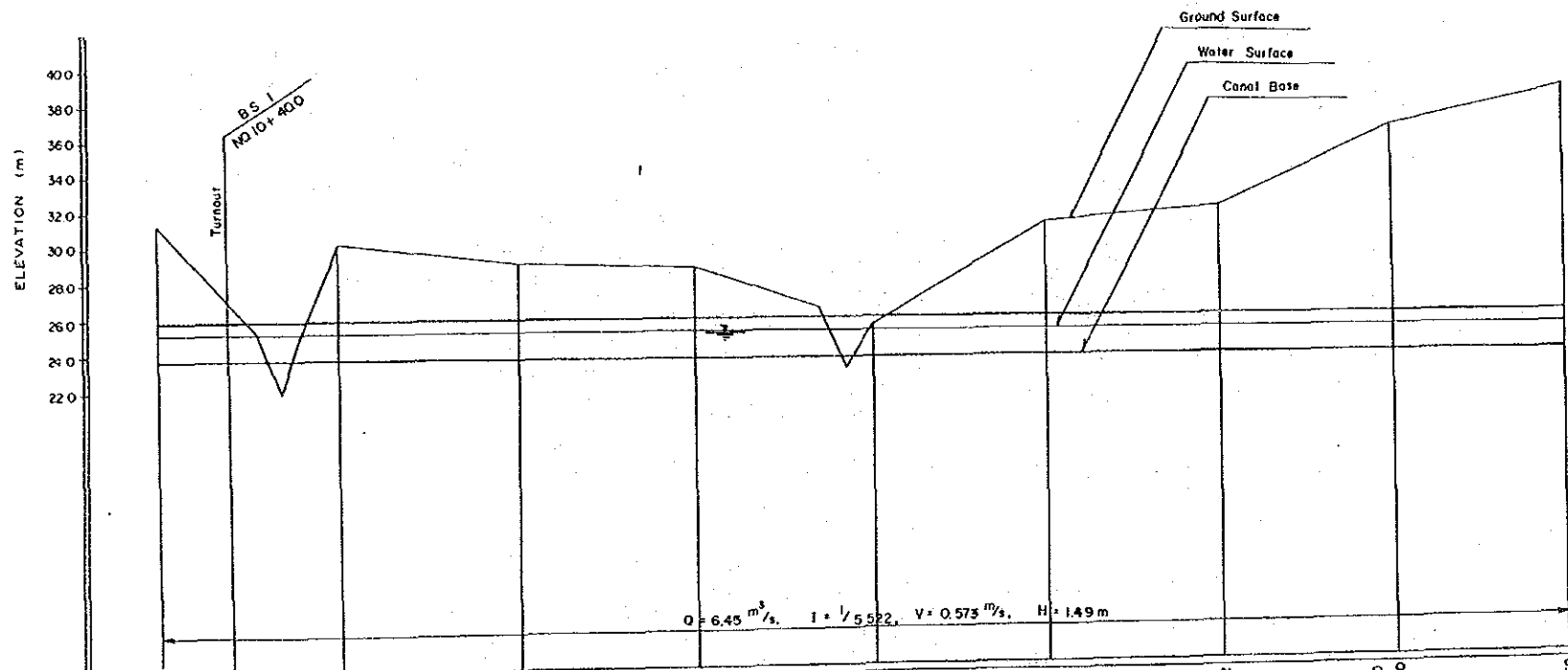
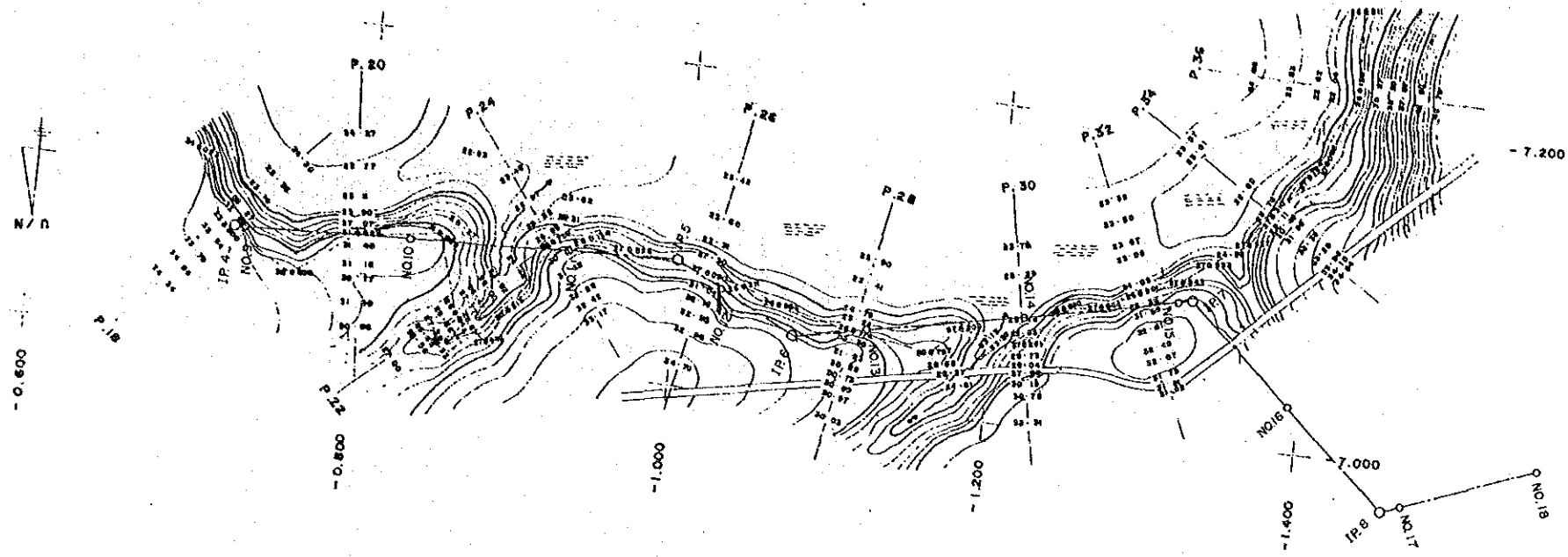
Ground Surface  
Water Surface  
Canal Base

$$Q = 6.4 \text{ m}^3/\text{s}, I = 1/5522, V = 0.573 \text{ m/s}, H = 1.49 \text{ m}$$

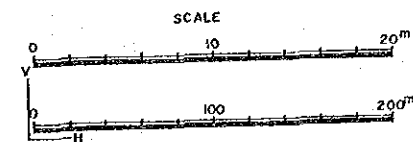
CANAL BASE ELEVATION	240.1	23.99	23.97	23.97	23.96	23.94	23.92	23.91	23.88	23.87	23.85	23.83	
WATER SURFACE ELEVATION	25.50	25.48	25.46	25.46	25.45	25.43	25.41	25.40	25.37	25.36	25.34	25.32	
GROUND SURFACE ELEVATION	27.22	27.59	27.52	25.03	26.17	24.90	25.41	25.39	25.30	33.62	29.00	31.40	
TOTAL DISTANCE	0.0	100.0	200.0	214.0	300.0	400.0	500.0	576.0	700.0	800.0	893.0	1000.0	
DISTANCE	0.0	100.0	100.0	14.0	86.0	100.0	100.0	76.0	100.0	90.0	95.0	100.0	
STATION	BP 0	NO. 1	NO. 2	IP 1	NO. 3	NO. 4	NO. 5	IP 2	NO. 6	NO. 7	IP 4	NO. 9	NO. 10



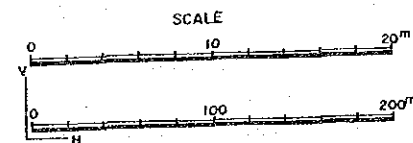
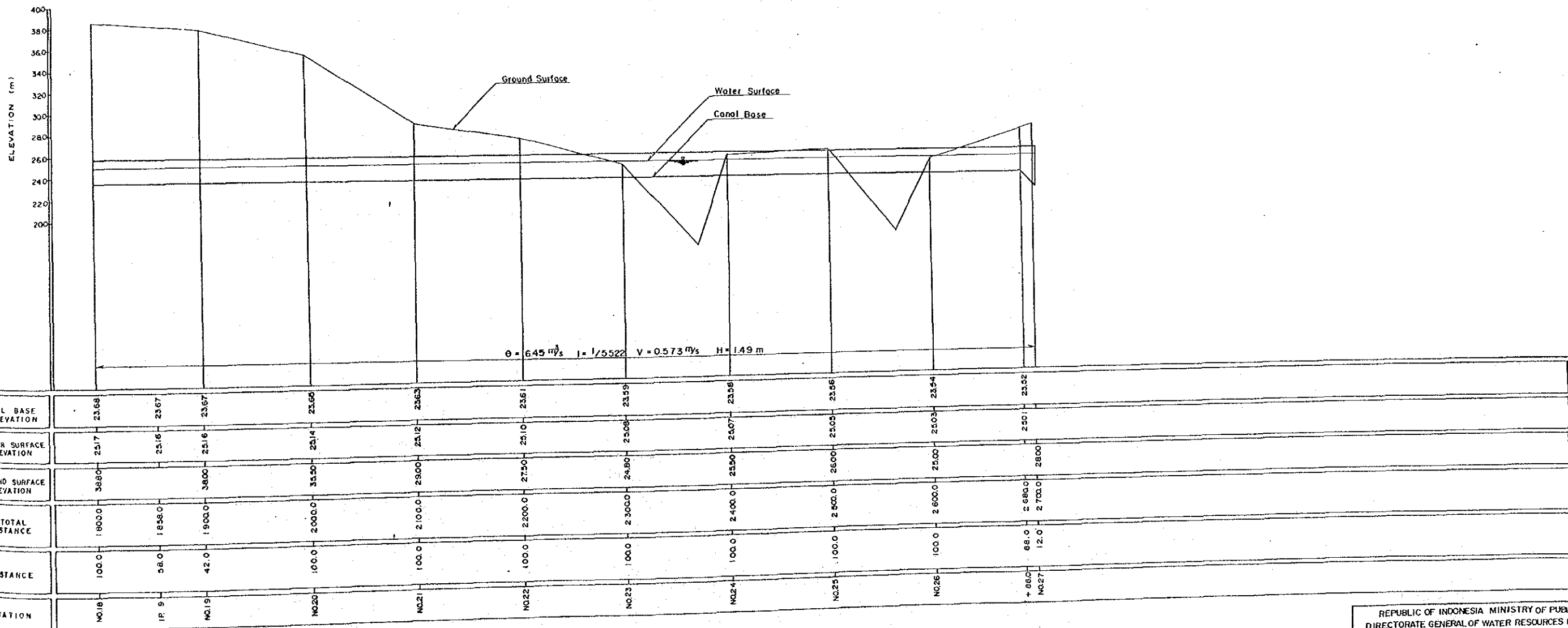
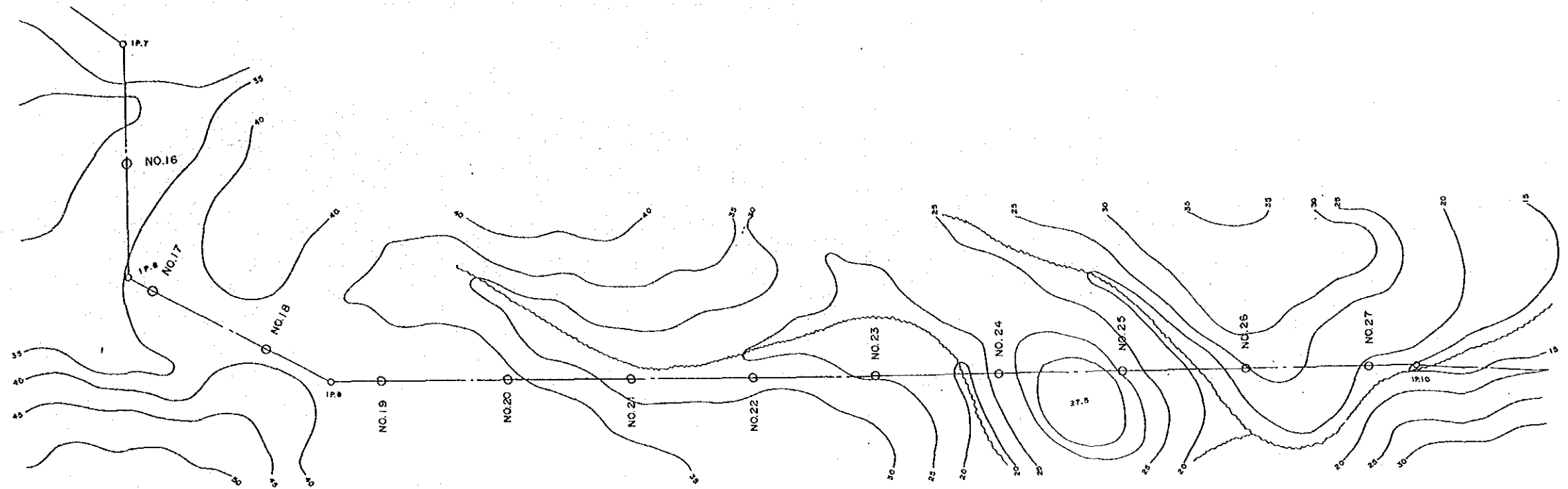
REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
**AIR SELAGAN IRRIGATION PROJECT**  
FEASIBILITY STUDY  
**PLAN & PROFILE OF LINK CANAL**  
(1/5)  
JAPAN INTERNATIONAL COOPERATION AGENCY  
TOKYO (JICA) DWG. NO. 15



CANAL BASE ELEVATION	23.85		23.81	23.80	23.79	23.78	23.77		23.76		23.74	23.74	23.72		23.70	23.70	23.68
WATER SURFACE ELEVATION	25.32		25.30	25.29	25.28	25.27	25.26		25.22		25.23	25.23	25.21		25.19	25.19	25.17
GROUND SURFACE ELEVATION	31.40		30.28		29.10		28.77		25.45		31.20	31.20	32.00		36.50	36.50	36.80
TOTAL DISTANCE	1000.0	1040.0	1100.0	1168.0	1200.0	1254.0	1300.0		1400.0		1500.0	1510.0	1600.0		1687.0	1700.0	1800.0
DISTANCE	100.0	40.0	60.0	68.0	32.0	54.0	46.0		100.0		100.0	10.0	90.0		87.0	13.0	100.0
STATION	NO.10	+400	NO.11	IP.5	NO.12	IP.6	NO.13		NO.14		NO.15 IP.7		NO.16		IP.8 NO.17		NO.18

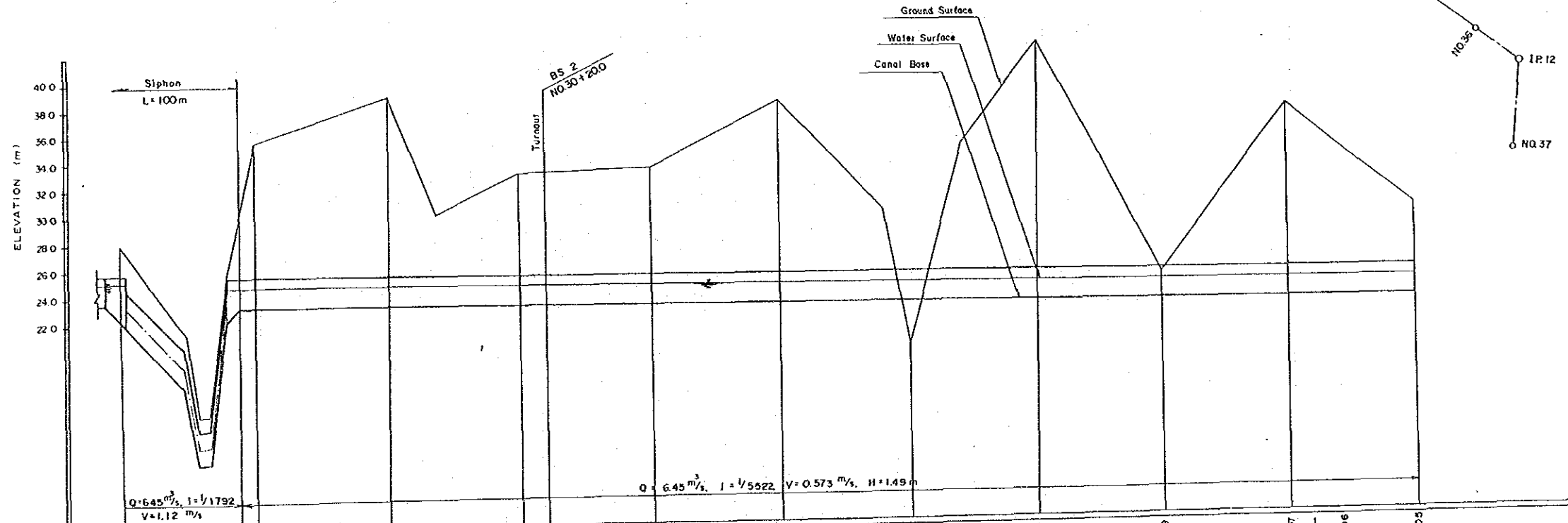
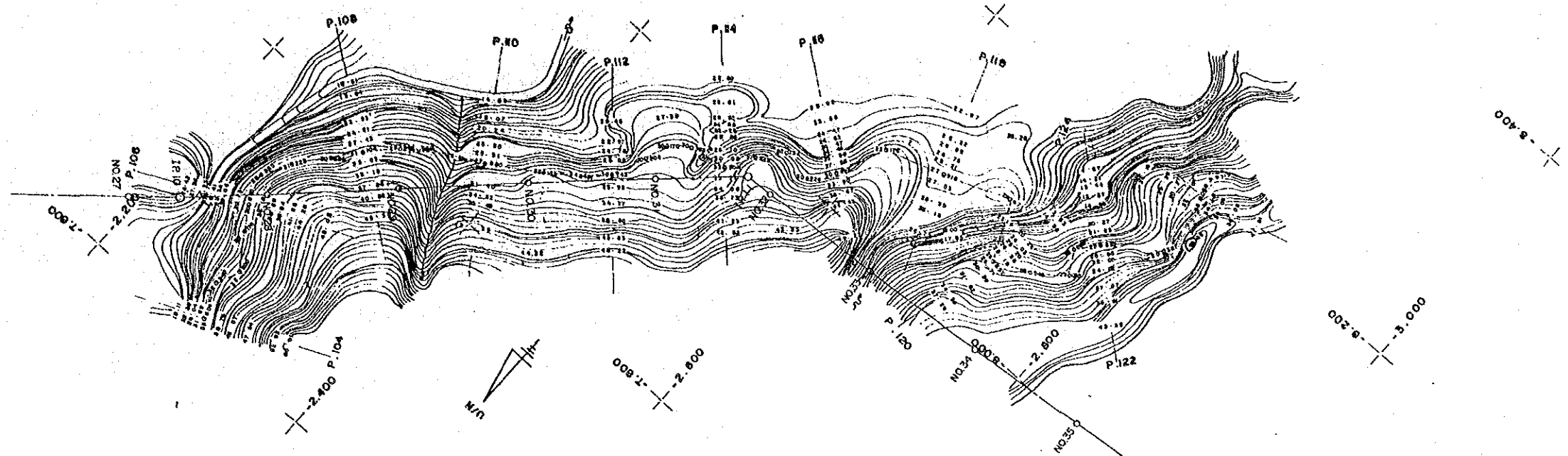


REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
 AIR SELAGAN IRRIGATION PROJECT  
 FEASIBILITY STUDY  
 PLAN & PROFILE OF LINK CANAL  
 (2/5)  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO (JICA) DWG. NO. 16

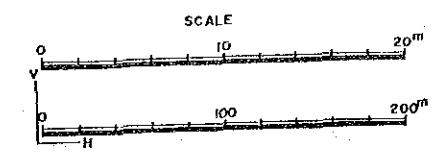


REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
AIR SELAGAN IRRIGATION PROJECT  
FEASIBILITY STUDY  
PLAN & PROFILE OF LINK CANAL  
(3/5)  
JAPAN INTERNATIONAL COOPERATION AGENCY TOKYO (JICA) DWG. NO. 17

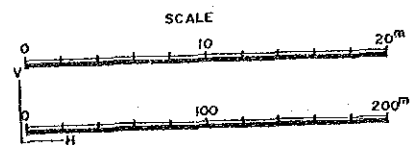
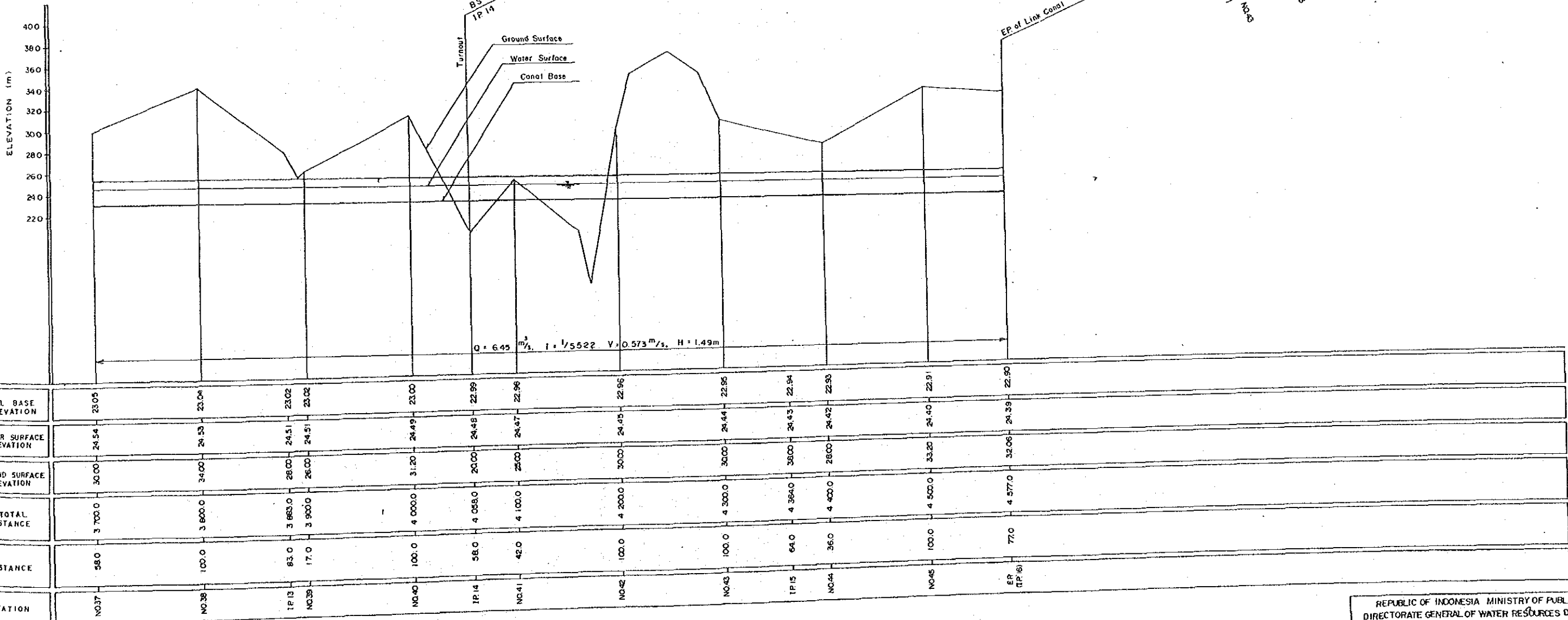
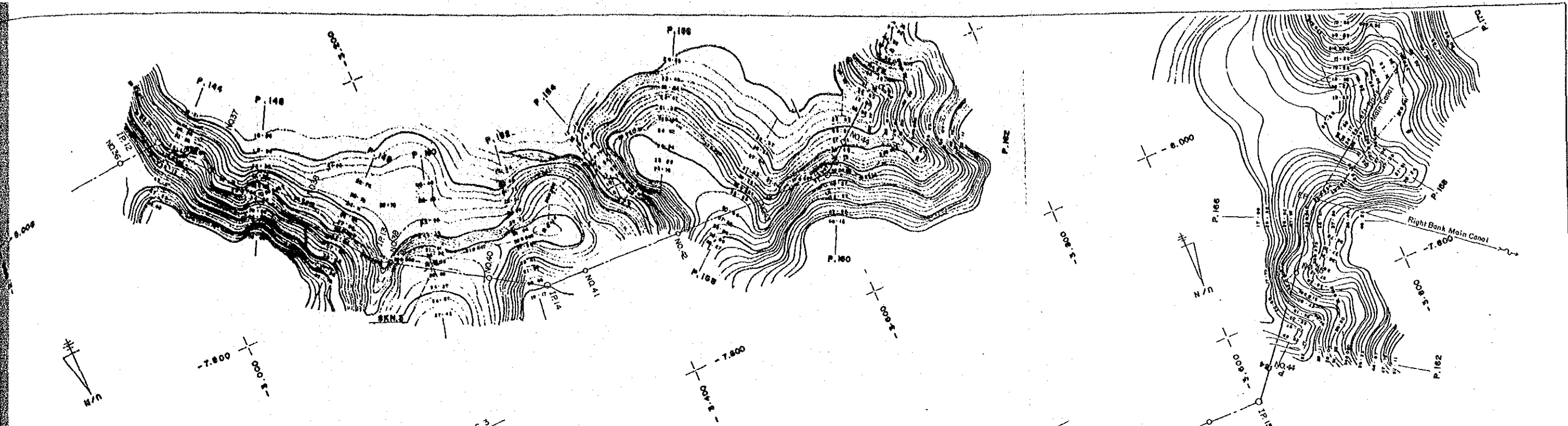




	2700.0	2738.0	2768.0	2800.0	2800.0	3000.0	3000.0	3100.0	3178.0	3200.0	3300.0	3400.0	3500.0	3600.0	3642.0	3700.0
CANAL BASE ELEVATION			23.22	23.22	23.20	23.18	23.16	23.15	23.15	23.13	23.11	23.09	23.07	23.06	23.05	
WATER SURFACE ELEVATION			24.71	24.71	24.69	24.67	24.65	24.64	24.64	24.62	24.60	24.58	24.56	24.55	24.54	
GROUND SURFACE ELEVATION	28.00	28.00	35.90	35.00	33.10	33.50	33.50	36.50	36.50	20.00	43.00	25.00	38.00	34.00	30.00	25.00
TOTAL DISTANCE																
DISTANCE		38.0	50.0	12.0	100.0	100.0	80.0	78.0	22.0	100.0	100.0	100.0	100.0	42.0	38.0	
STATION	NO.27	IP.10	1880 NO.28		NO.29	NO.30 1200	NO.31	IP.11 NO.32	NO.33	NO.34	NO.35	NO.36	IP.12	NO.37		



REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
**AIR SELAGAN IRRIGATION PROJECT**  
 FEASIBILITY STUDY  
**PLAN & PROFILE OF LINK CANAL**  
 (4/5)  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO (JICA) DWG. NO. 18

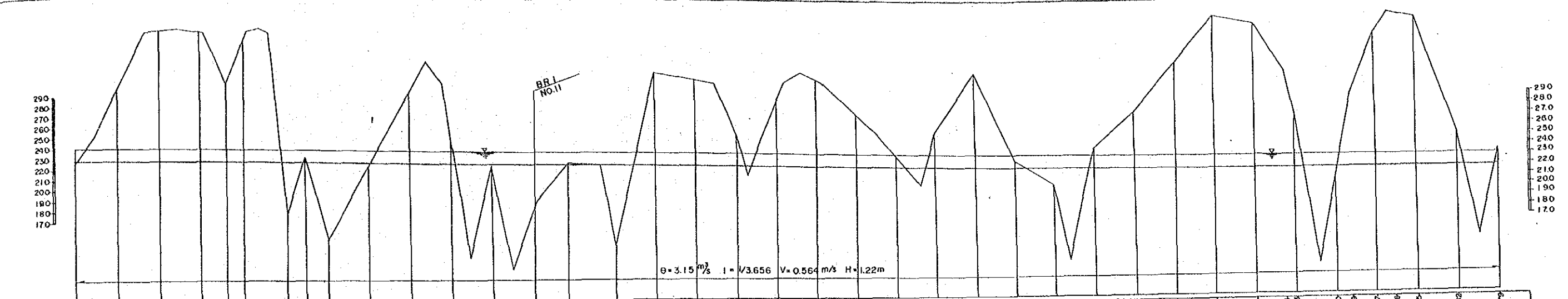


REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
**AIR SELAGAN IRRIGATION PROJECT**  
 FEASIBILITY STUDY

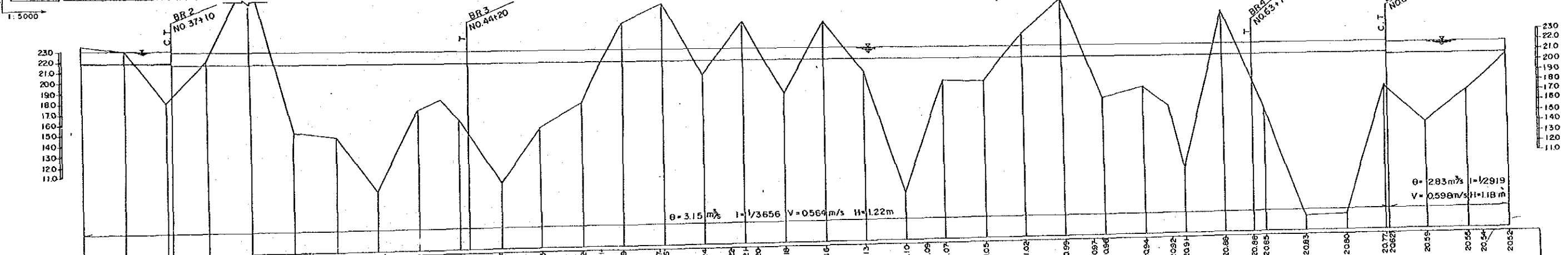
**PLAN & PROFILE OF LINK CANAL**  
 (5/5)

JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO (JICA)

DWA. NO. 19

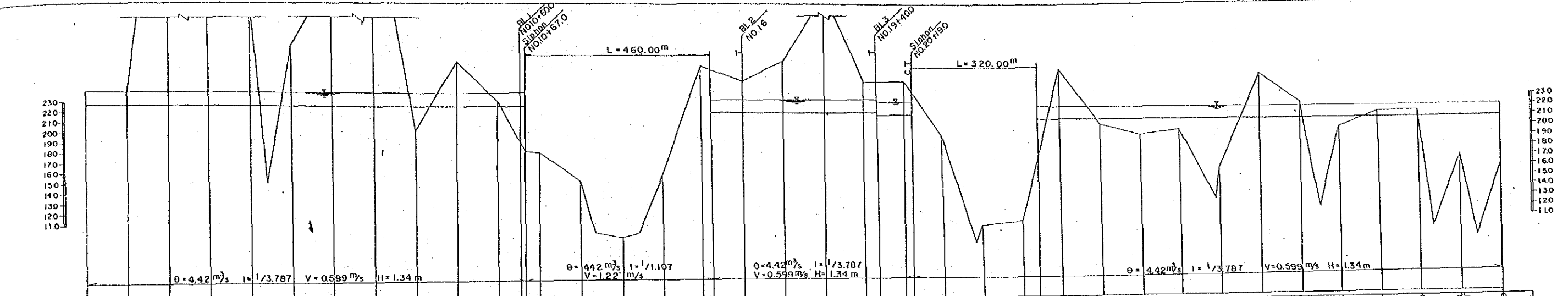


STATION	DISTANCE	TOTAL DISTANCE	GROUND SURFACE ELEVATION	WATER SURFACE ELEVATION	CANAL BASE ELEVATION
BP	0.0	0.0	32.06	23.97	22.75
NO. 1	100.0	100.0	29.60	23.94	22.72
NO. 2	100.0	200.0	35.30	23.92	22.70
NO. 3	100.0	300.0	35.20	23.89	22.67
IP 1	67.0	367.0	33.87	23.87	22.65
NO. 4	33.0	400.0	34.40	23.86	22.64
NO. 5	100.0	500.0	17.30	23.83	22.61
IP 2	49.0	549.0	23.20	23.82	22.60
NO. 6	51.0	600.0	16.00	23.81	22.59
NO. 7	100.0	700.0	22.20	23.78	22.56
NO. 8	100.0	800.0	29.40	23.75	22.53
NO. 9	100.0	900.0	24.90	23.72	22.50
NO. 10	100.0	1000.0	22.30	23.70	22.48
IP 3					
NO. 11	100.0	1100.0	18.70	23.67	22.45
IP 4	89.0	1189.0	23.65	23.65	22.43
NO. 12	15.0	1200.0	22.60	23.64	22.42
NO. 13	100.0	1300.0	14.40	23.61	22.39
NO. 14	100.0	1400.0	31.50	23.59	22.37
IP 5	3.0	1403.0			
NO. 15	97.0	1500.0	30.80	23.56	22.34
NO. 16	100.0	1600.0	25.20	23.53	22.31
NO. 17	100.0	1700.0	28.80	23.51	22.29
NO. 18	100.0	1800.0	31.80	23.48	22.26
IP 6	13.0	1813.0			
NO. 19	87.0	1900.0	27.40	23.45	22.23
NO. 20	100.0	2000.0	23.30	23.42	22.20
NO. 21	100.0	2100.0	28.50	23.40	22.18
NO. 22	100.0	2200.0	31.00	23.37	22.15
NO. 23	100.0	2300.0	27.30	23.34	22.12
IP 7	65.0	2365.0	23.35	23.32	22.10
NO. 24	35.0	2400.0	20.00	23.31	22.09
NO. 25	100.0	2500.0	25.50	23.29	22.07
IP 8	71.0	2571.0	27.00	23.27	22.05
NO. 26	29.0	2600.0	30.00	23.26	22.04
NO. 27	100.0	2700.0	35.40	23.23	22.01
IP 9	36.0	2736.0			
NO. 28	64.0	2800.0	36.50	23.20	21.98
NO. 29	100.0	2900.0	36.00	23.18	21.96
IP 10	76.0	2976.0	31.00	23.16	21.94
NO. 30	24.0	3000.0	27.00	23.15	21.93
NO. 31	100.0	3100.0	21.00	23.12	21.90
IP 11	40.0	3140.0	29.00	23.11	21.89
NO. 32	60.0	3200.0	35.00	23.09	21.87
IP 12	46.0	3246.0	37.30	23.08	21.86
NO. 33	54.0	3300.0	36.70	23.07	21.85
NO. 34	100.0	3400.0	25.00	23.04	21.82
NO. 35	100.0	3500.0	23.50	23.01	21.79

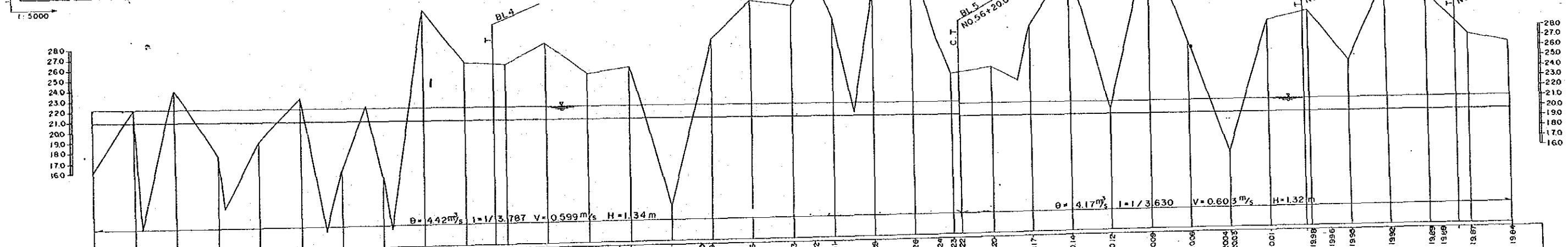


STATION	DISTANCE	TOTAL DISTANCE	GROUND SURFACE ELEVATION	WATER SURFACE ELEVATION	CANAL BASE ELEVATION
NO. 35	100.0	3500.0	23.50	23.01	21.79
NO. 36	100.0	3600.0	23.00	22.99	21.77
IP 13	1.0	3601.0			
NO. 37	99.0	3700.0	18.00	22.96	21.74
IP 14	10.0	3710.0			
NO. 38	90.0	3800.0	22.00	22.79	21.57
IP 14					
NO. 39	100.0	3900.0	30.00	22.76	21.54
NO. 40	100.0	4000.0	15.00	22.73	21.51
NO. 41	100.0	4100.0	14.50	22.70	21.48
IP 15	18.0	4118.0			
NO. 42	82.0	4200.0	9.20	22.69	21.46
NO. 43	100.0	4300.0	17.00	22.65	21.43
IP 16	33.0	4333.0	18.00	22.63	21.41
NO. 44	47.0	4400.0	16.00	22.60	21.40
+20.0	20.0	4420.0			
NO. 45	80.0	4500.0	9.80	22.59	21.37
NO. 46	100.0	4600.0	15.00	22.57	21.35
NO. 47	100.0	4700.0	17.50	22.54	21.32
IP 17	44.0	4744.0	21.00	22.53	21.31
NO. 48	56.0	4800.0	25.10	22.51	21.29
IP 18	88.0	4888.0			
NO. 49	12.0	4900.0	27.00	22.48	21.26
NO. 50	100.0	5000.0	20.00	22.46	21.24
IP 19	67.0	5067.0			
NO. 51	33.0	5100.0	23.20	22.44	21.22
IP 20	31.0	5131.0			
NO. 52	69.0	5200.0	18.00	22.40	21.18
NO. 53	100.0	5300.0	25.00	22.38	21.16
NO. 54	100.0	5400.0	20.00	22.35	21.13
NO. 55	100.0	5500.0	8.00	22.32	21.10
IP 21	35.0	5535.0			
NO. 56	47.0	5600.0	19.00	22.29	21.07
NO. 57	100.0	5700.0	19.00	22.27	21.05
NO. 58	100.0	5800.0	23.50	22.24	21.02
NO. 59	100.0	5900.0	27.00	22.22	20.99
IP 22	69.0	5969.0			
NO. 60	31.0	6000.0	17.00	22.18	20.96
NO. 61	100.0	6100.0	18.00	22.15	20.94
IP 23	66.0	6166.0			
NO. 62	34.0	6200.0	10.00	22.13	20.92
NO. 63	100.0	6300.0	25.30	22.10	20.89
IP 24	70.0	6370.0			
NO. 64	30.0	6400.0	14.30	22.07	20.86
NO. 65	100.0	6500.0	4.80	22.05	20.83
NO. 66	100.0	6600.0	5.00	22.02	20.80
IP 24	10.0	6700.0			
NO. 67	93.0	6800.0	14.00	21.77	20.55
IP 25	35.0	6835.0			
NO. 68	100.0	6900.0	17.00	21.73	20.52
IP 25	65.0	7000.0			

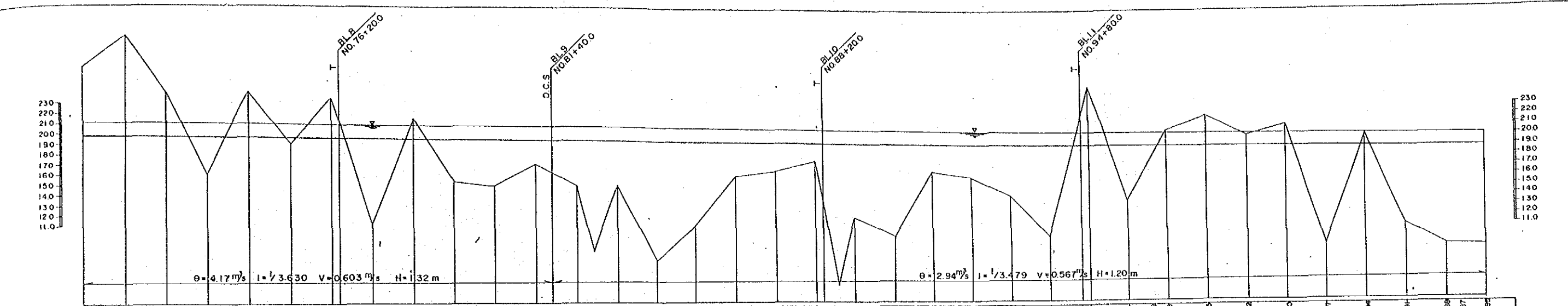




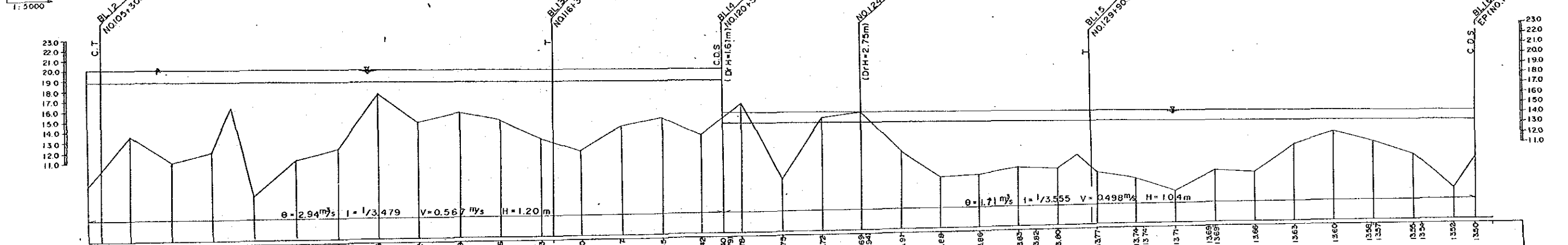
STATION	DISTANCE	TOTAL DISTANCE	GROUND SURFACE ELEVATION	WATER SURFACE ELEVATION	CANAL BASE ELEVATION
NO. 0	0.0	0.0	32.06	24.09	22.75
NO. 1	100.0	100.0	33.50	24.08	22.72
IP. 1	64.0	164.0	42.00	24.05	22.71
NO. 2	36.0	200.0	45.00	24.04	22.70
NO. 3	100.0	300.0	39.00	24.01	22.67
NO. 4	100.0	400.0	34.00	23.99	22.64
IP. 2	43.0	443.0	15.00	23.97	22.63
NO. 5	57.0	500.0	28.50	23.96	22.62
NO. 6	100.0	600.0	35.00	23.93	22.59
IP. 3	12.0	612.0	44.00	23.90	22.56
NO. 7	88.0	700.0	20.00	23.88	22.54
IP. 4	5.0	705.0	27.00	23.85	22.51
NO. 8	95.0	800.0	27.00	23.81	22.47
NO. 9	100.0	900.0	23.00	23.63	22.49
NO. 10	100.0	1000.0	18.00	23.58	22.47
IP. 5	67.0	1067.0	17.00	23.16	21.82
NO. 11	33.0	1100.0	15.50	23.14	21.80
NO. 12	100.0	1200.0	9.50	23.11	21.77
NO. 13	100.0	1300.0	26.50	23.09	21.75
IP. 6	27.0	1327.0	25.00	22.90	21.56
NO. 14	103.0	1400.0	25.00	22.88	21.54
NO. 15	100.0	1500.0	10.50	22.86	21.52
IP. 7	39.0	1539.0	10.50	22.43	21.09
NO. 16	73.0	1600.0	20.00	22.42	21.08
NO. 17	100.0	1700.0	16.10	22.41	21.07
NO. 18	100.0	1800.0	10.50	22.39	21.05
NO. 19	100.0	1900.0	10.50	22.36	21.02
IP. 8	81.0	1981.0	19.50	22.33	20.99
NO. 20	100.0	2000.0	15.00	22.31	20.97
IP. 9	15.0	2015.0	25.50	22.28	20.94
NO. 21	100.0	2100.0	22.50	22.26	20.92
NO. 22	100.0	2200.0	20.00	22.23	20.89
NO. 23	100.0	2300.0	21.50	22.20	20.86
NO. 24	100.0	2400.0	17.00	22.18	20.84
NO. 25	100.0	2500.0	17.00	22.15	20.81
NO. 26	94.0	2594.0	16.00	22.12	20.78



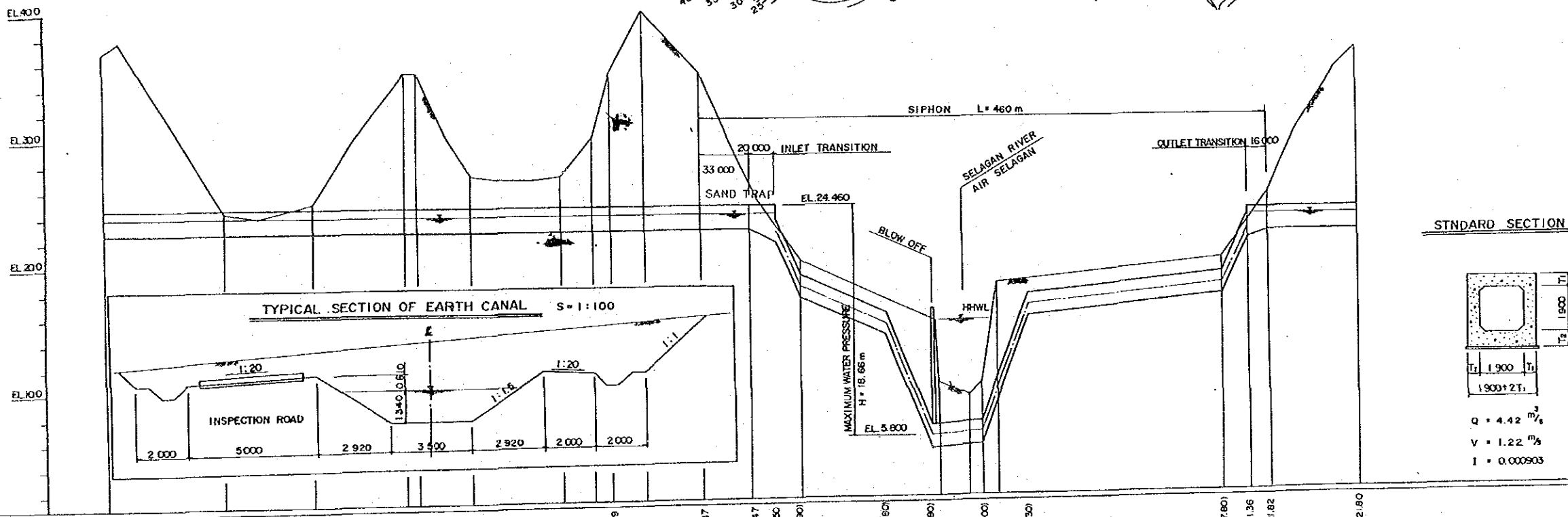
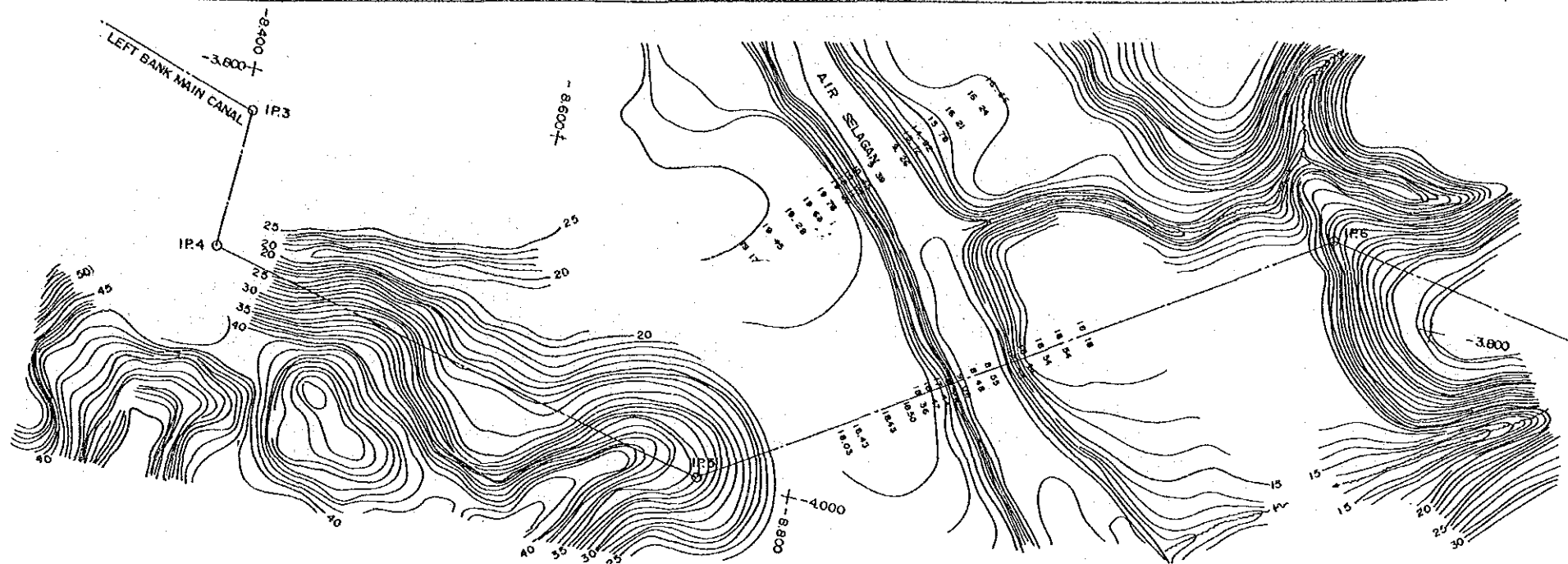
STATION	DISTANCE	TOTAL DISTANCE	GROUND SURFACE ELEVATION	WATER SURFACE ELEVATION	CANAL BASE ELEVATION
NO. 35	94.0	3500.0	16.00	22.12	20.78
NO. 36	100.0	3600.0	22.00	22.10	20.76
NO. 37	100.0	3700.0	23.06	22.07	20.73
IP. 11	29.0	3729.0	22.06	22.06	20.72
NO. 38	71.0	3800.0	17.50	22.04	20.70
IP. 12	77.0	3877.0	22.02	22.02	20.68
NO. 39	23.0	3900.0	18.90	22.02	20.68
NO. 40	100.0	4000.0	23.00	21.99	20.65
NO. 41	100.0	4100.0	16.00	21.96	20.62
NO. 42	100.0	4200.0	13.00	21.94	20.60
NO. 43	100.0	4300.0	31.50	21.91	20.57
NO. 44	100.0	4400.0	26.40	21.89	20.55
IP. 13	70.0	4470.0	21.87	21.87	20.53
NO. 45	30.0	4500.0	26.00	21.86	20.52
IP. 14	30.0	4530.0	21.85	21.85	20.51
NO. 46	70.0	4600.0	28.00	21.83	20.49
NO. 47	100.0	4700.0	25.00	21.81	20.47
IP. 15	74.0	4774.0	21.79	21.79	20.45
NO. 48	26.0	4800.0	23.50	21.78	20.44
NO. 49	100.0	4900.0	11.80	21.75	20.41
IP. 16	74.0	4974.0	21.74	21.74	20.40
NO. 50	26.0	5000.0	28.00	21.73	20.39
NO. 51	100.0	5100.0	32.00	21.70	20.36
NO. 52	100.0	5200.0	31.50	21.67	20.33
IP. 17	65.0	5265.0	28.00	21.66	20.32
NO. 53	44.0	5300.0	30.00	21.65	20.31
NO. 54	100.0	5400.0	32.50	21.62	20.28
NO. 55	100.0	5500.0	36.20	21.60	20.26
IP. 18	65.0	5565.0	28.00	21.58	20.24
NO. 56	35.0	5600.0	24.50	21.57	20.23
IP. 19	20.0	5620.0	21.54	21.54	20.22
NO. 57	80.0	5700.0	25.00	21.52	20.20
NO. 58	100.0	5800.0	28.00	21.49	20.17
NO. 59	100.0	5900.0	35.00	21.46	20.14
NO. 60	100.0	6000.0	20.50	21.44	20.12
NO. 61	100.0	6100.0	37.50	21.41	20.09
NO. 62	100.0	6200.0	27.00	21.38	20.06
IP. 20	87.0	6287.0	21.36	21.36	20.04
NO. 63	13.0	6300.0	16.00	21.35	20.03
NO. 64	100.0	6400.0	29.00	21.33	20.01
NO. 65	100.0	6500.0	30.00	21.30	19.98
IP. 21	50.0	6550.0	21.28	21.28	19.96
NO. 66	50.0	6600.0	25.00	21.27	19.95
NO. 67	100.0	6700.0	32.60	21.24	19.92
IP. 22	23.0	6823.0	31.70	21.21	19.89
NO. 68	77.0	6900.0	27.50	21.19	19.87
NO. 69	100.0	7000.0	26.50	21.16	19.84



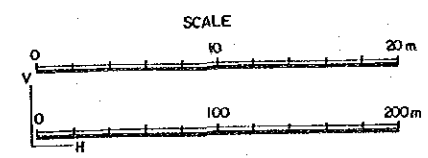
CANAL BASE ELEVATION	WATER SURFACE ELEVATION	GROUND SURFACE ELEVATION	TOTAL DISTANCE	DISTANCE	STATION
19.84	21.16	26.30	7000.0	100.0	NO. 70
19.84	21.13	29.90	7100.0	100.0	NO. 71
19.78	21.10	24.00	7200.0	100.0	NO. 72
19.76	21.08	16.00	7300.0	100.0	NO. 73
19.75	21.05	24.00	7400.0	100.0	NO. 74
19.72	21.04	7431.0	7431.0	51.0	IP. 21
19.70	21.02	19.00	7500.0	49.0	NO. 75
19.67	20.99	23.50	7600.0	100.0	NO. 76
19.65	20.97	11.00	7700.0	100.0	NO. 77
19.62	20.94	21.30	7800.0	100.0	NO. 78
19.59	20.91	15.50	7893.0	93.0	IP. 22
19.59	20.91	15.50	7900.0	7.0	NO. 79
19.56	20.88	15.00	8000.0	100.0	NO. 80
19.54	20.86	17.20	8100.0	100.0	NO. 81
19.53	20.85	8112.0	8112.0	12.0	IP. 23
19.53	20.85	8140.0	8140.0	28.0	BL. 9
19.51	20.83	15.00	8200.0	60.0	NO. 82
19.48	20.81	15.00	8300.0	100.0	NO. 83
19.48	20.81	8309.0	8309.0	9.0	IP. 24
19.46	20.78	7.50	8400.0	91.0	NO. 84
19.43	20.75	11.00	8500.0	100.0	NO. 85
19.41	20.73	8573.0	8573.0	73.0	IP. 25
19.40	20.72	16.00	8600.0	27.0	NO. 86
19.37	20.69	16.50	8700.0	100.0	NO. 87
19.34	20.66	17.50	8800.0	100.0	NO. 88
19.33	20.65	11.50	8900.0	80.0	NO. 89
19.31	20.63	10.00	9000.0	100.0	NO. 90
19.28	20.60	9008.0	9008.0	8.0	IP. 26
19.25	20.57	16.50	9100.0	92.0	NO. 91
19.23	20.55	16.00	9200.0	100.0	NO. 92
19.20	20.52	14.00	9300.0	100.0	NO. 93
19.19	20.51	9331.0	9331.0	31.0	IP. 27
19.17	20.49	10.00	9400.0	69.0	NO. 94
19.14	20.46	25.00	9500.0	100.0	NO. 95
19.11	20.43	13.50	9600.0	100.0	NO. 96
19.08	20.40	9665.0	9665.0	65.0	IP. 28
19.08	20.39	20.50	9700.0	35.0	NO. 97
19.05	20.36	22.00	9800.0	100.0	NO. 98
19.02	20.33	20.00	9900.0	100.0	NO. 99
19.00	20.31	21.00	10000.0	100.0	NO. 100
18.97	20.28	9.00	10100.0	100.0	NO. 101
18.94	20.25	20.00	10200.0	100.0	NO. 102
18.91	20.22	11.00	10300.0	100.0	NO. 103
18.88	20.19	8.80	10400.0	100.0	NO. 104
18.87	20.18	8.80	10433.0	33.0	IP. 29
18.85	20.16	8.80	10500.0	67.0	NO. 105



CANAL BASE ELEVATION	WATER SURFACE ELEVATION	GROUND SURFACE ELEVATION	TOTAL DISTANCE	DISTANCE	STATION
18.85	20.05	8.80	10500.0	67.0	NO. 105
18.84	20.04	10.330.0	10530.0	30.0	IP. 30
18.82	20.02	13.50	10600.0	70.0	NO. 106
18.79	19.99	11.00	10700.0	100.0	NO. 107
18.76	19.96	12.00	10800.0	100.0	NO. 108
18.72	19.93	7.50	10900.0	100.0	NO. 109
18.70	19.90	11.00	11000.0	100.0	NO. 110
18.68	19.88	12.00	11100.0	100.0	NO. 111
18.65	19.85	17.50	11200.0	100.0	NO. 112
18.62	19.82	14.50	11300.0	100.0	NO. 113
18.61	19.81	11.328.0	11328.0	28.0	IP. 31
18.59	19.79	15.50	11400.0	72.0	NO. 114
18.56	19.76	14.80	11500.0	100.0	NO. 115
18.53	19.73	12.90	11600.0	100.0	NO. 116
18.50	19.70	11.50	11700.0	100.0	NO. 117
18.47	19.67	14.00	11800.0	100.0	NO. 118
18.45	19.65	14.80	11900.0	100.0	NO. 119
18.42	19.62	13.00	12000.0	100.0	NO. 120
18.40	19.60	12.558.0	12558.0	58.0	BL. 14
18.37	19.57	16.782.0	12622.0	42.0	NO. 121
18.35	19.55	8.50	12700.0	100.0	NO. 122
18.32	19.52	14.50	12800.0	100.0	NO. 123
18.29	19.49	15.00	12900.0	100.0	NO. 124
18.27	19.47	11.00	13000.0	100.0	NO. 125
18.25	19.45	8.30	13100.0	100.0	NO. 126
18.23	19.43	8.50	13200.0	100.0	NO. 127
18.20	19.40	9.20	13300.0	100.0	NO. 128
18.18	19.38	12.843.0	13343.0	43.0	IP. 32
18.16	19.36	9.00	13400.0	57.0	NO. 129
18.14	19.34	13.000.0	13400.0	100.0	NO. 130
18.11	19.31	7.80	13500.0	100.0	NO. 131
18.09	19.29	13.121.0	13521.0	21.0	IP. 33
18.07	19.27	6.50	13600.0	79.0	NO. 132
18.05	19.25	14.73	13700.0	96.0	IP. 34
18.03	19.23	8.50	13800.0	2.0	NO. 133
18.00	19.20	6.30	13900.0	100.0	NO. 134
17.97	19.17	11.00	14000.0	100.0	NO. 135
17.94	19.14	12.30	14100.0	100.0	NO. 136
17.91	19.11	11.30	14200.0	97.0	IP. 35
17.88	19.08	13.700.0	14270.0	3.0	NO. 137
17.85	19.05	10.00	14350.0	100.0	NO. 138
17.82	19.02	13.821.0	14381.0	21.0	IP. 36
17.79	18.99	6.50	14450.0	79.0	NO. 139
17.76	18.96	9.50	14550.0	53.0	EP



CANAL BASE ELEVATION	22.59	22.56	22.54	22.51	22.49	22.47	22.47	21.50	17.90	14.80	15.90	16.00	17.80	21.36	21.82	21.90	
WATER SURFACE ELEVATION	23.93	23.90	23.88	23.85	23.83	23.81	23.81	23.84	20.00	15.00	10.00	9.55	20.00	23.20	23.16	23.14	
GROUND SURFACE ELEVATION	37.00	37.90	24.30	25.10	35.20	35.20	27.10	27.00	30.00	35.00	40.00	40.0	108.0	144.0	184.0	223.0	
TOTAL DISTANCE																	
DISTANCE	0.0	12.0	86.0	95.0	100.0	100.0	67.0	33.0	7.0	20.0	20.0	68.0	36.0	40.0	39.0	150.14	
STATION	NO. 6 IP. 3	NO. 7 IP. 4	NO. 8	NO. 9	NO. 10	IP. 5	NO. 11 +7.00	+27.00	+47.00	NO. 12 +15.00	+51.00	+91.00 NO. 13	+30.00	NO. 14	+69.00 NO. 15 +10.00	IP. 6	NO. 16



REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS  
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT  
**AIR SELAGAN IRRIGATION PROJECT**  
**FEASIBILITY STUDY**  
**PLAN & PROFILE FOR**  
**AIR SELAGAN CROSSING SIPHON**  
 JAPAN INTERNATIONAL COOPERATION AGENCY  
 TOKYO (JICA) DWG. NO. 24

JICA

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