



Japan International  
Cooperation Agency  
(JICA)



Directorate General of  
Water Resources Development,  
Ministry of Public Works

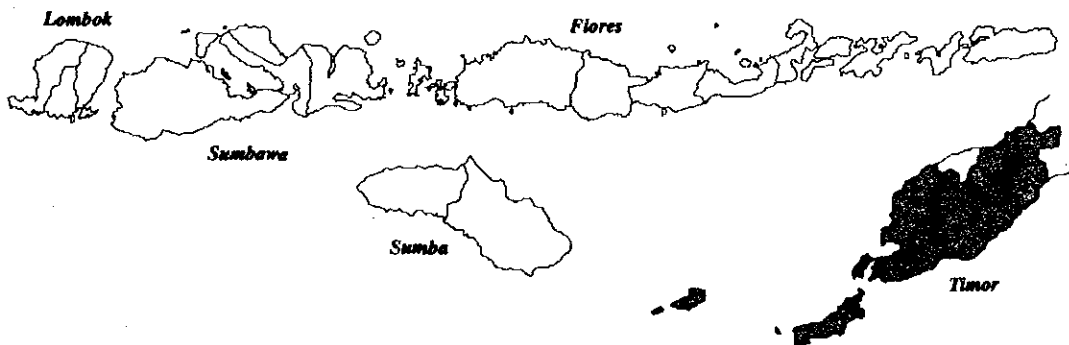
No. 52

*The Study  
on  
The Embung Development Project  
(Small Scale Impounding Pond Development Project)  
in  
East Nusa Tenggara and West Nusa Tenggara  
in  
The Republic of Indonesia*

**Final Report  
(Volume 7)**

Feasibility Study Report  
on  
Six Embung Development Projects  
in  
Timor Island in East Nusa Tenggara

**DRAWINGS**



May 1995

NIPPON KOEI CO., LTD.

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Directorate General of Water Resources Development,  
Ministry of Public Works

The Study on The Embung Development Project  
in East Nusa Tenggara and West Nusa Tenggara in The Republic of Indonesia

Volume 7

Feasibility Study Report on Six Embung Development Projects  
in Timor Island in East Nusa Tenggara

DRAWINGS





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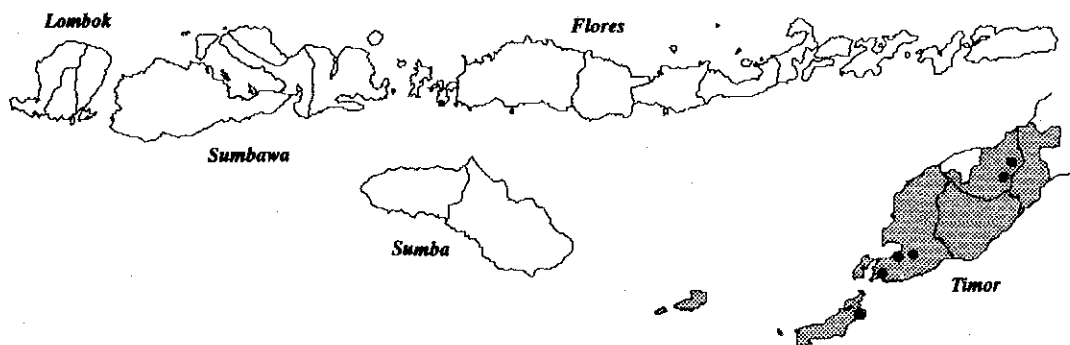
Directorate General of  
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**DRAWINGS**



**May 1995**

**NIPPON KOEI CO., LTD.**

**LIST OF DRAWINGS****Bimoku Embung Development Project**

Dwg.-101	General Layout (1/2)
Dwg.-102	General Layout (2/2)
Dwg.-103	Embung (1/5) : General Plan & Typical Section
Dwg.-104	Embung (2/5) : Spillway
Dwg.-105	Embung (3/5) : River Diversion works / Outlet Works
Dwg.-106	Embung (4/5) : Valve House
Dwg.-107	Embung (5/5) : Leakage Protection Works
Dwg.-108	Domestic Water Supply Facilities

**Oeltua Embung Development Project**

Dwg.-201	General Layout (1/2)
Dwg.-202	General Layout (2/2)
Dwg.-203	Embung (1/5) : General Plan & Typical Section
Dwg.-204	Embung (2/5) : Spillway
Dwg.-205	Embung (3/5) : River Diversion Works / Outlet Works
Dwg.-206	Embung (4/5) : Valve House
Dwg.-207	Embung (5/5) : Leakage Protection Works
Dwg.-208	Domestic Water Supply Facilities

**Tasiepah Embung Development Project**

Dwg.-301	General Layout (1/3)
Dwg.-302	General Layout (2/3)
Dwg.-303	General Layout (3/3)
Dwg.-304	Embung (1/5) : General Plan & Typical Section
Dwg.-305	Embung (2/5) : Spillway
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Dwg.-307	Embung (4/5) : Valve House
Dwg.-308	Embung (5/5) : Leakage Protection Works
Dwg.-309	Domestic Water Supply Facilities
Dwg.-310	Irrigation Facilities (1/2)
Dwg.-311	Irrigation Facilities (2/2)

**Benkoko Embung Development Project**

Dwg.-401	General Layout
Dwg.-402	Embung (1/5) : General Plan & Typical Section
Dwg.-403	Embung (2/5) : Spillway
Dwg.-404	Embung (3/5) : River Diversion Works / Outlet Works
Dwg.-405	Embung (4/5) : Valve House
Dwg.-406	Embung (5/5) : Leakage Protection Works
Dwg.-407	Domestic Water Supply Facilities
Dwg.-408	Irrigation Facilities

**Oebuain Embung Development Project**

Dwg.-501	General Layout (1/3)
Dwg.-502	General Layout (2/3)
Dwg.-503	General Layout (3/3)
Dwg.-504	Embung (1/5) : General Plan & Typical Section
Dwg.-505	Embung (2/5) : Spillway
Dwg.-506	Embung (3/5) : River Diversion Works / Outlet Works
Dwg.-507	Embung (4/5) : Valve House
Dwg.-508	Embung (5/5) : Leakage Protection Works
Dwg.-509	Domestic Water Supply Facilities

**Matasio Embung Development Project**

Dwg.-601	General Layout
Dwg.-602	Embung (1/4) : General Plan & Typical Section
Dwg.-603	Embung (2/4) : Spillway
Dwg.-604	Embung (3/4) : River Diversion Works / Outlet Works
Dwg.-605	Embung (4/4) : Valve House
Dwg.-606	Domestic Water Supply Facilities
Dwg.-607	Irrigation Facilities

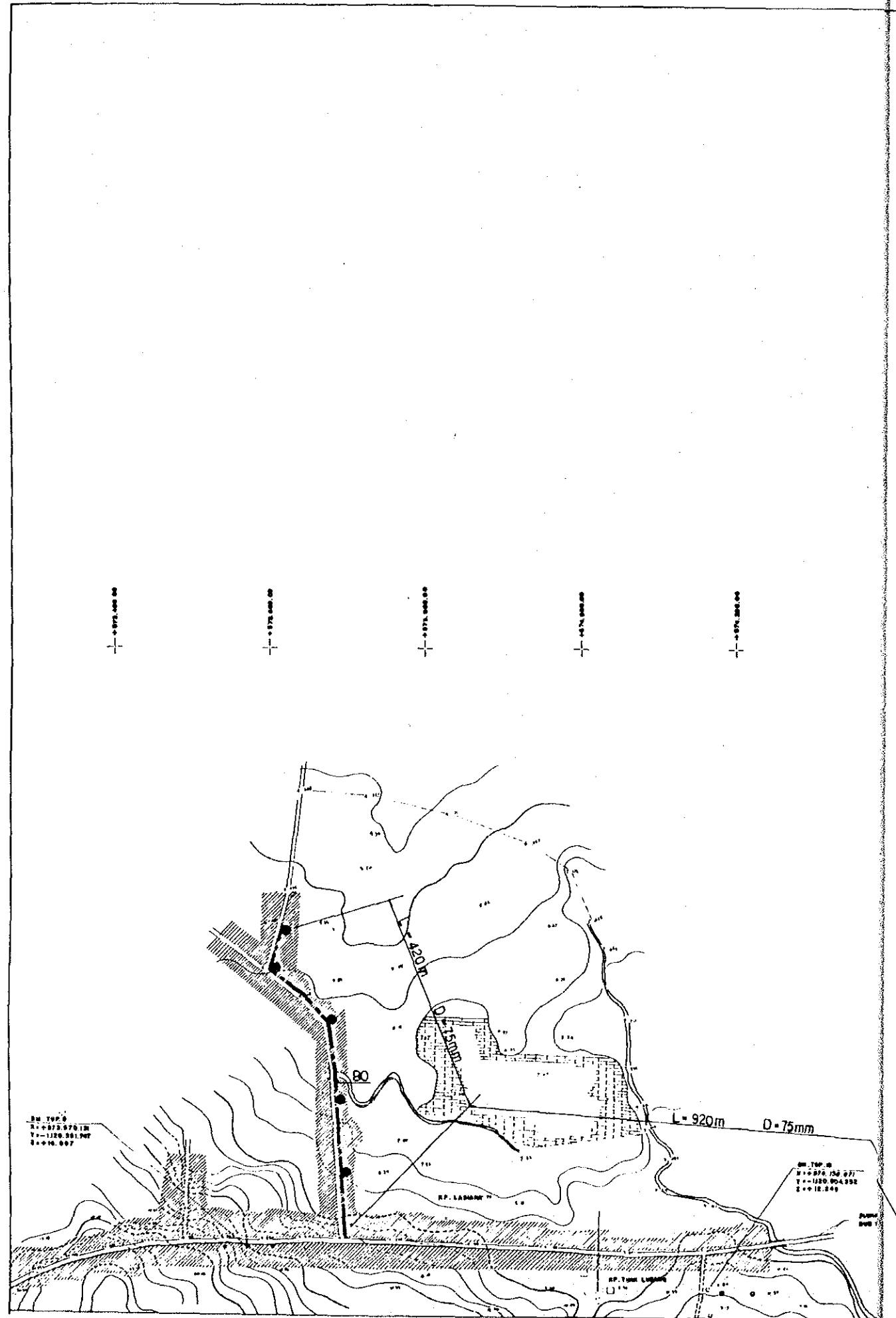


LEGEND

- — — Pipe Line
- - - - Irrigation Canal
- Division Box for Inhabitants
- △ Division Box for Livestock
- Valve House /Irrigation Inlet Box
- Irrigation Division Box
- CV = Check Valve
- AV = Air Valve
- BO = Blow Off

LEGEND:

- Contour
- Tranche Permas (Approximate Contour)
- Sungai (River)
- Aliran (Flow Direction)
- Perumahan (Settlement)
- Jambak (Flood Line)
- Titik Tetapan (Fixed Point)
- Titik Poligon (Polygon Point)
- △ Titik Arah (Direction Point)
- Jalan Perumahan (Settlement Road)
- Jalan Desa (Village Road)
- Jalan Provinsi (Province Road)
- Jalan Tanah (Earth Road)
- Jalan Sampung (Village Boundary)



Dwg.-102 Bimoku General Layout (2/2)

DIRECTORATE GENERAL OF  
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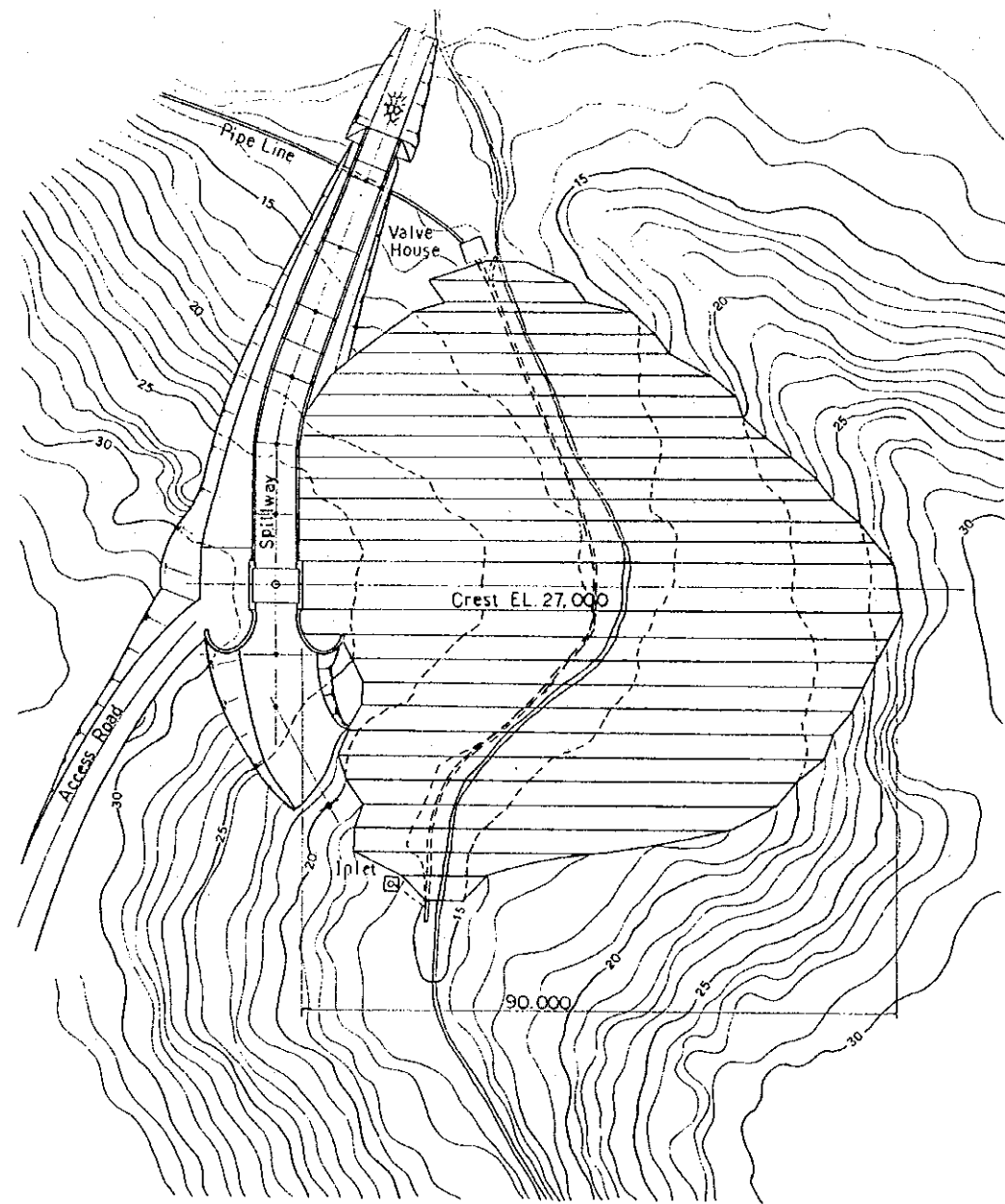
The Embung Development Project in  
East Nusa Tenggara and West Nusa Tenggara

IMPOUNDING AREA AND BENEFICIARY AREA

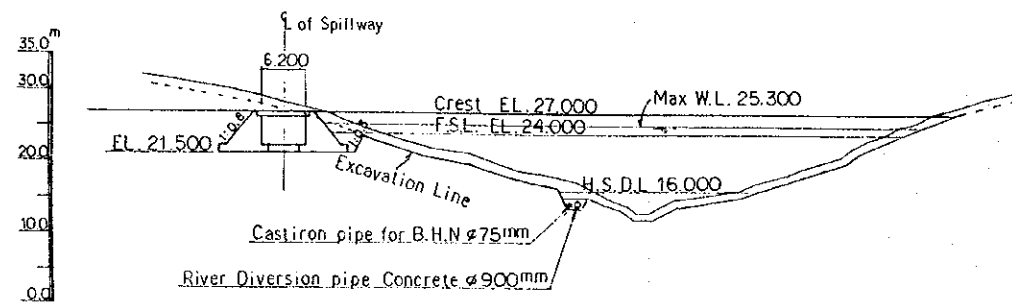
EMBLING BIMOKU  
EAST NUSA TENGGARA

JAPAN INTERNATIONAL COOPERATION AGENCY

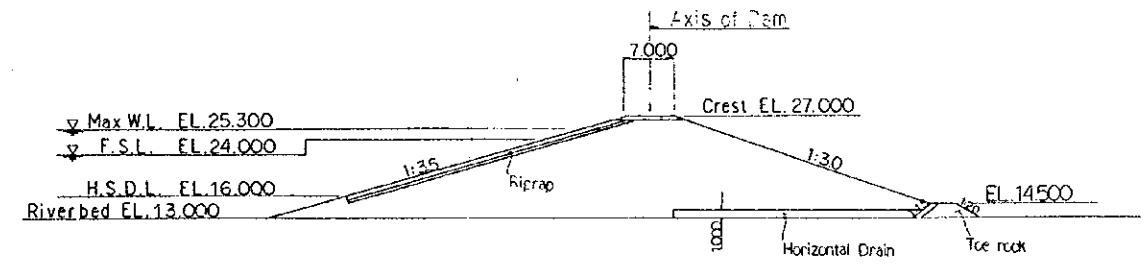




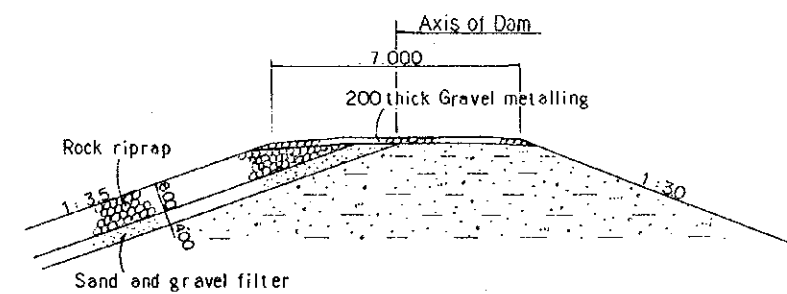
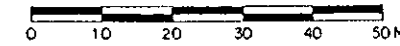
PLAN OF EMBUNG BIMOKU



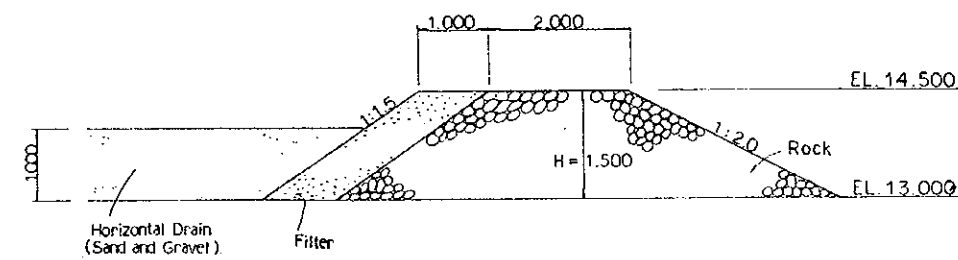
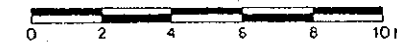
PROFILE OF DAM AXIS



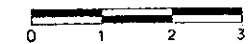
TYPICAL CROSS SECTION

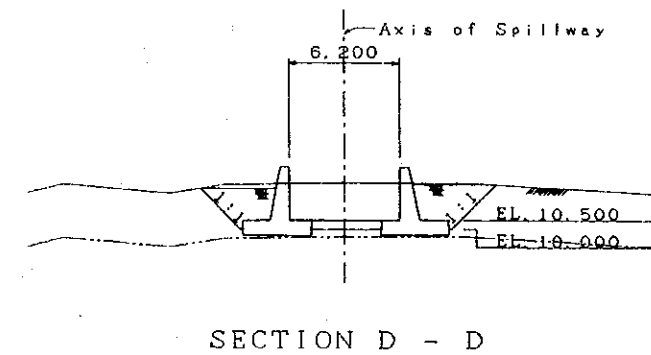
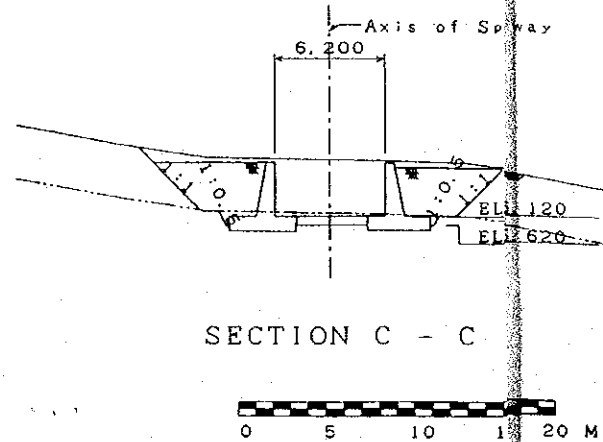
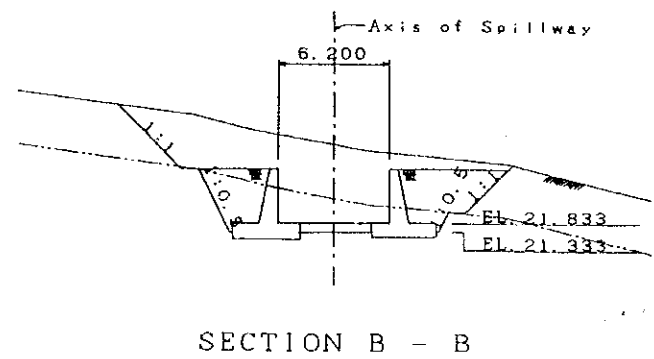
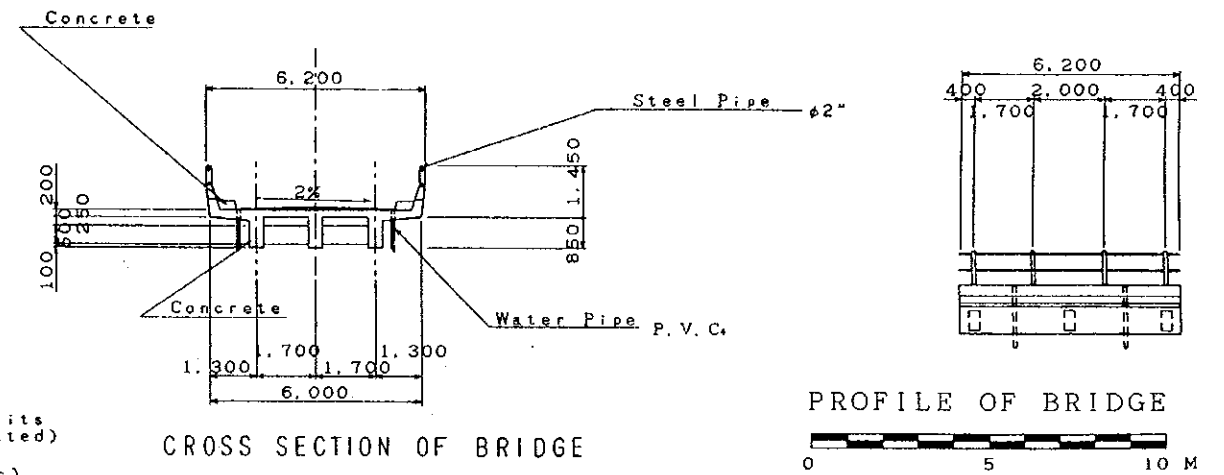
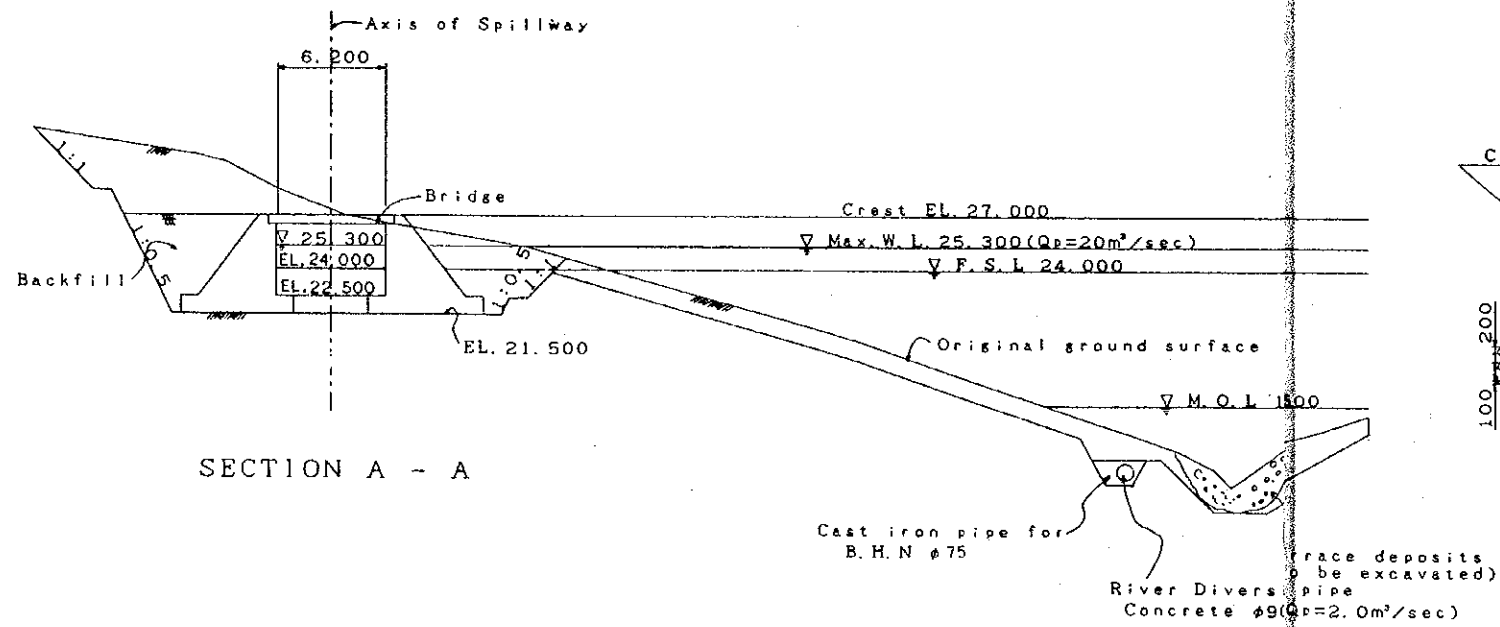
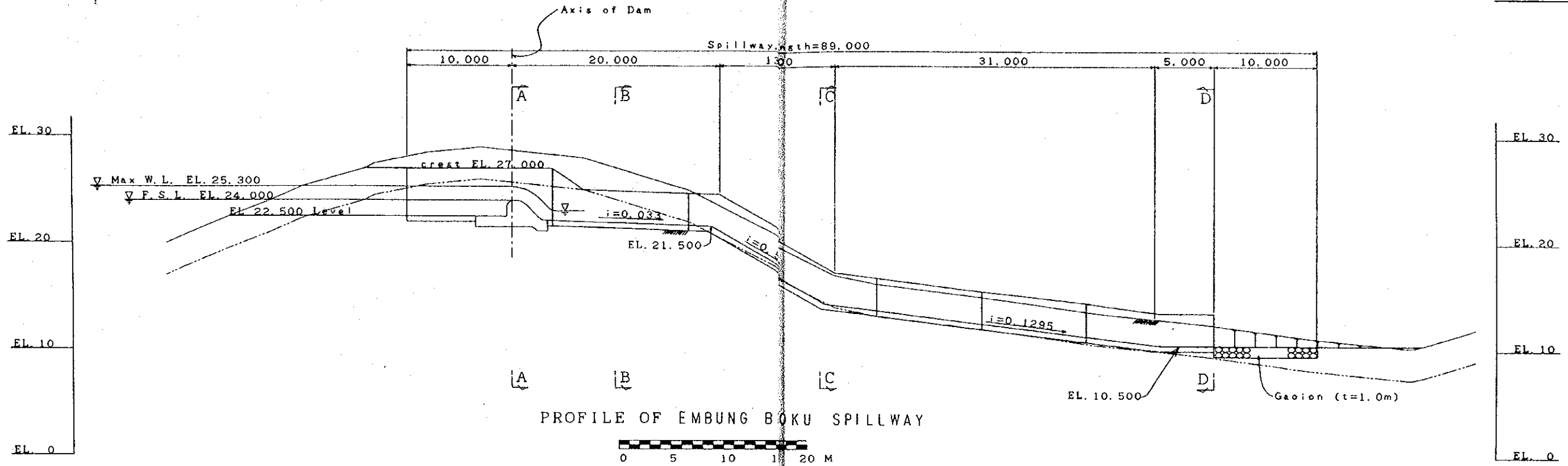


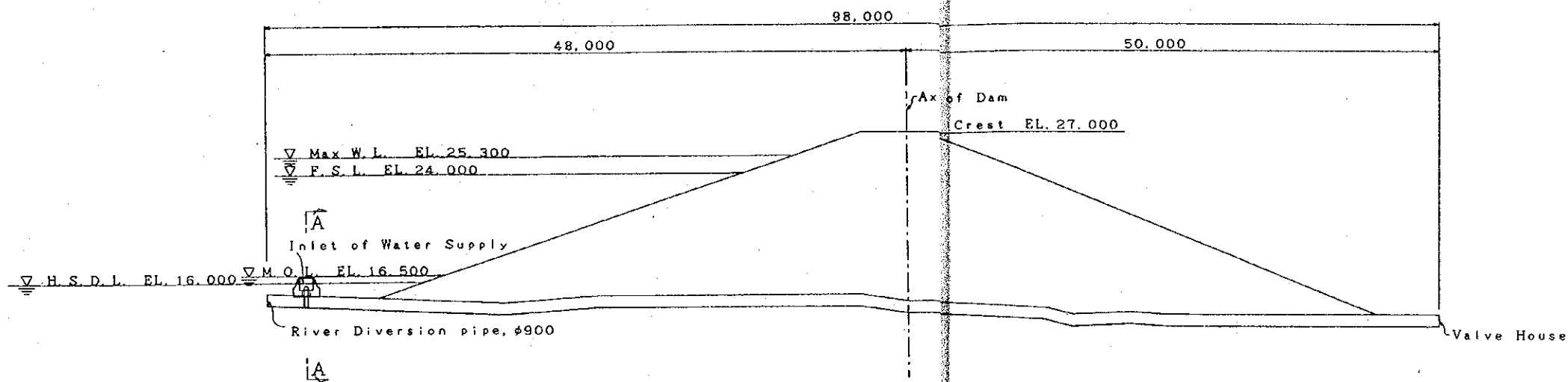
DETAIL OF EMBANKMENT CREST



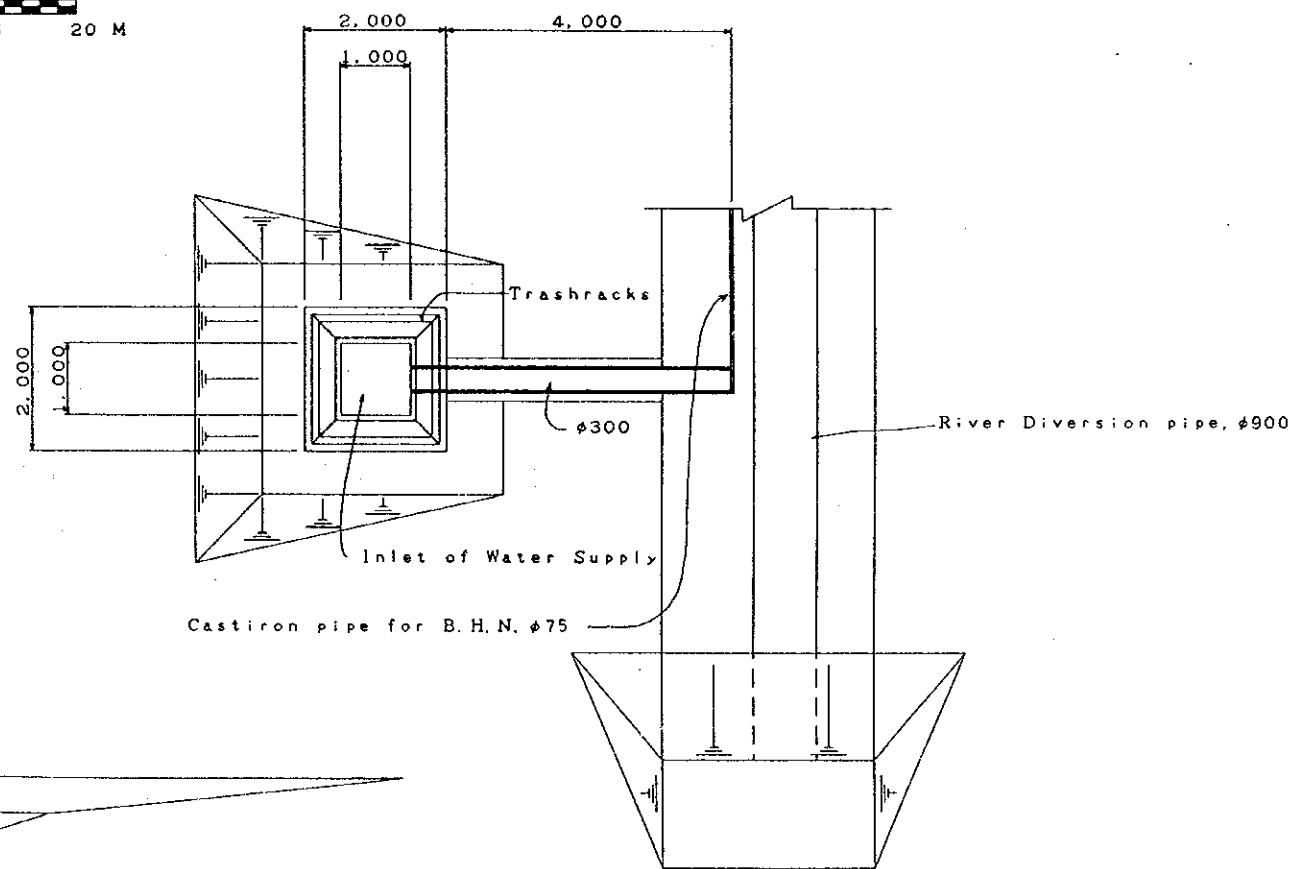
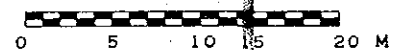
DETAIL OF DRAIN AND TOEROCK



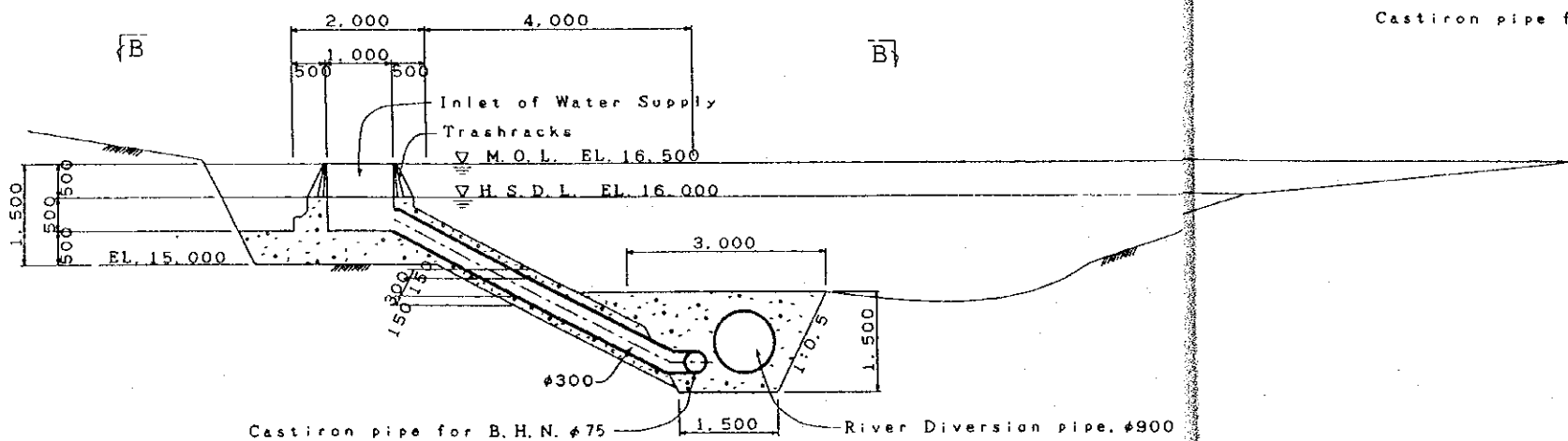
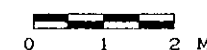




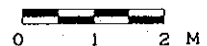
LONGITUDINAL SECTION OF EMNG BIMOKU OUTLET WORKS

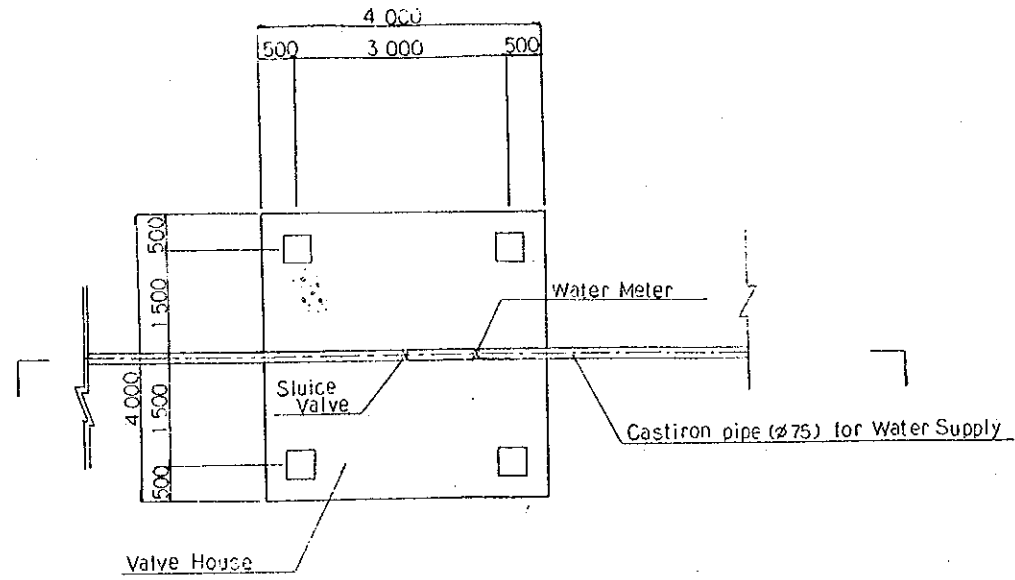


SECTION B - B

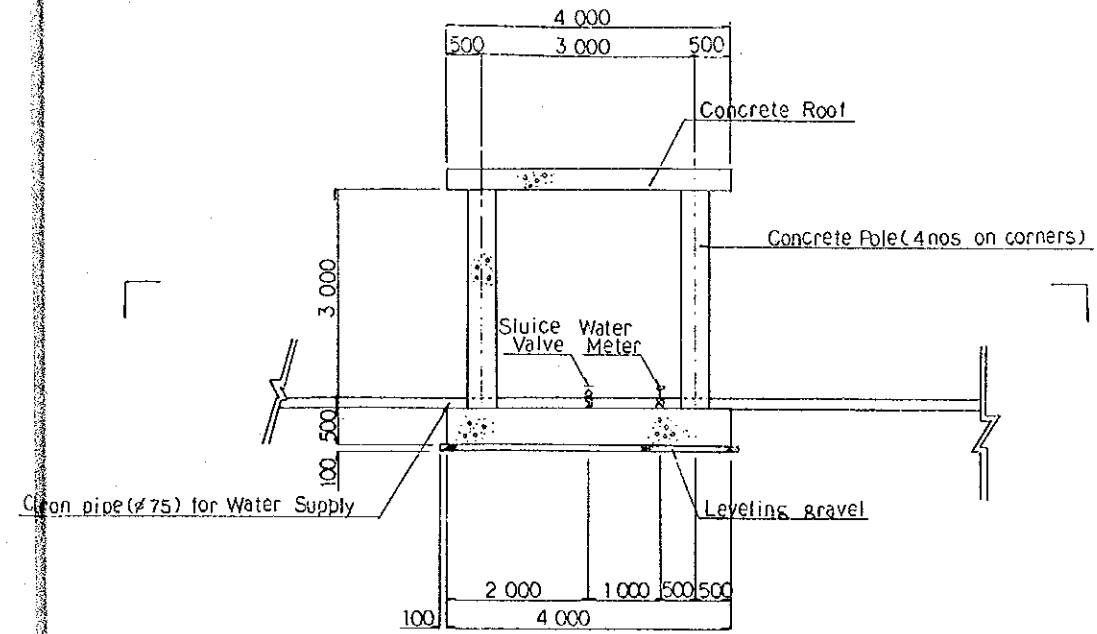
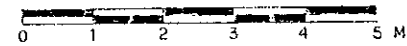


SECTION A - A

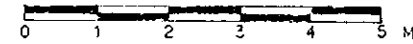


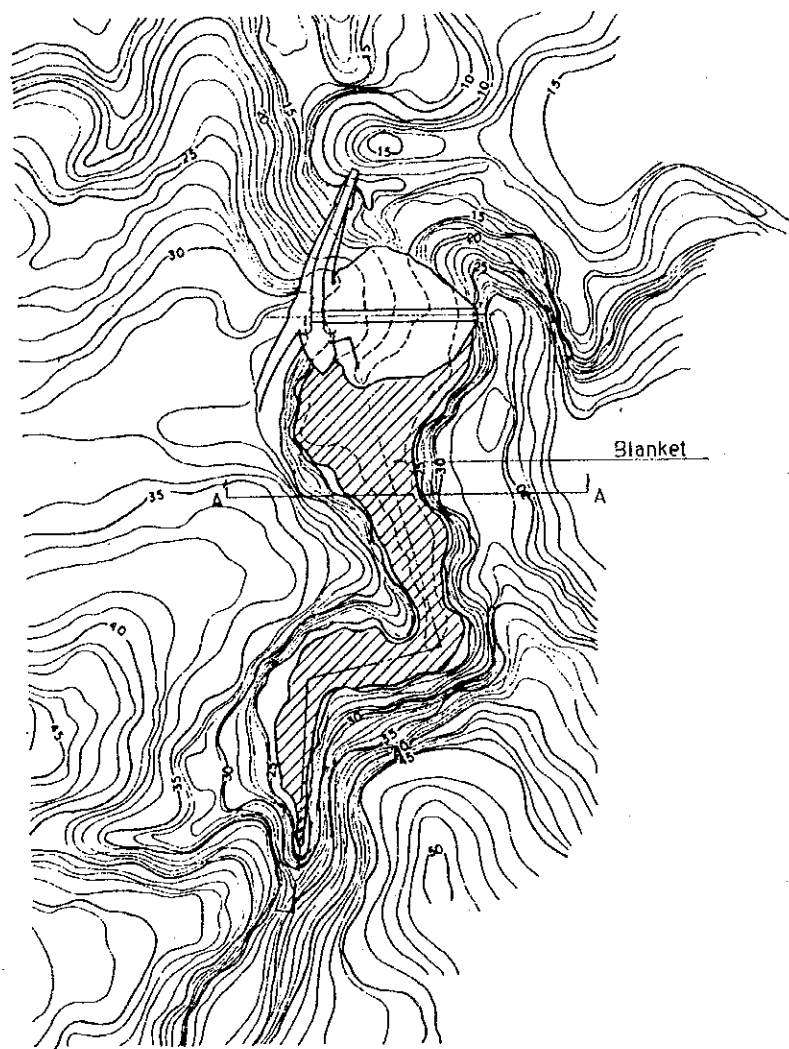


PLAN OF EMBUNG BIMOKU VALVE HOUSE

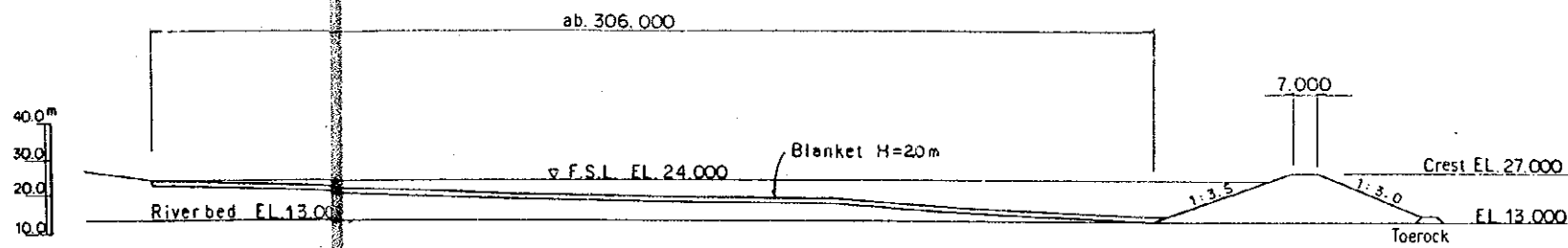
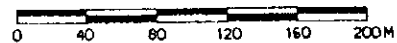


LONGITUDINAL SECTION OF VALVE HOUSE

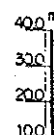
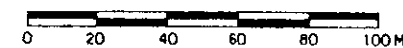




PLAN OF BIMOKU RESERVOIR AREA BLANKET



LONGITUDINAL SECTION OF BLANKET



A - A

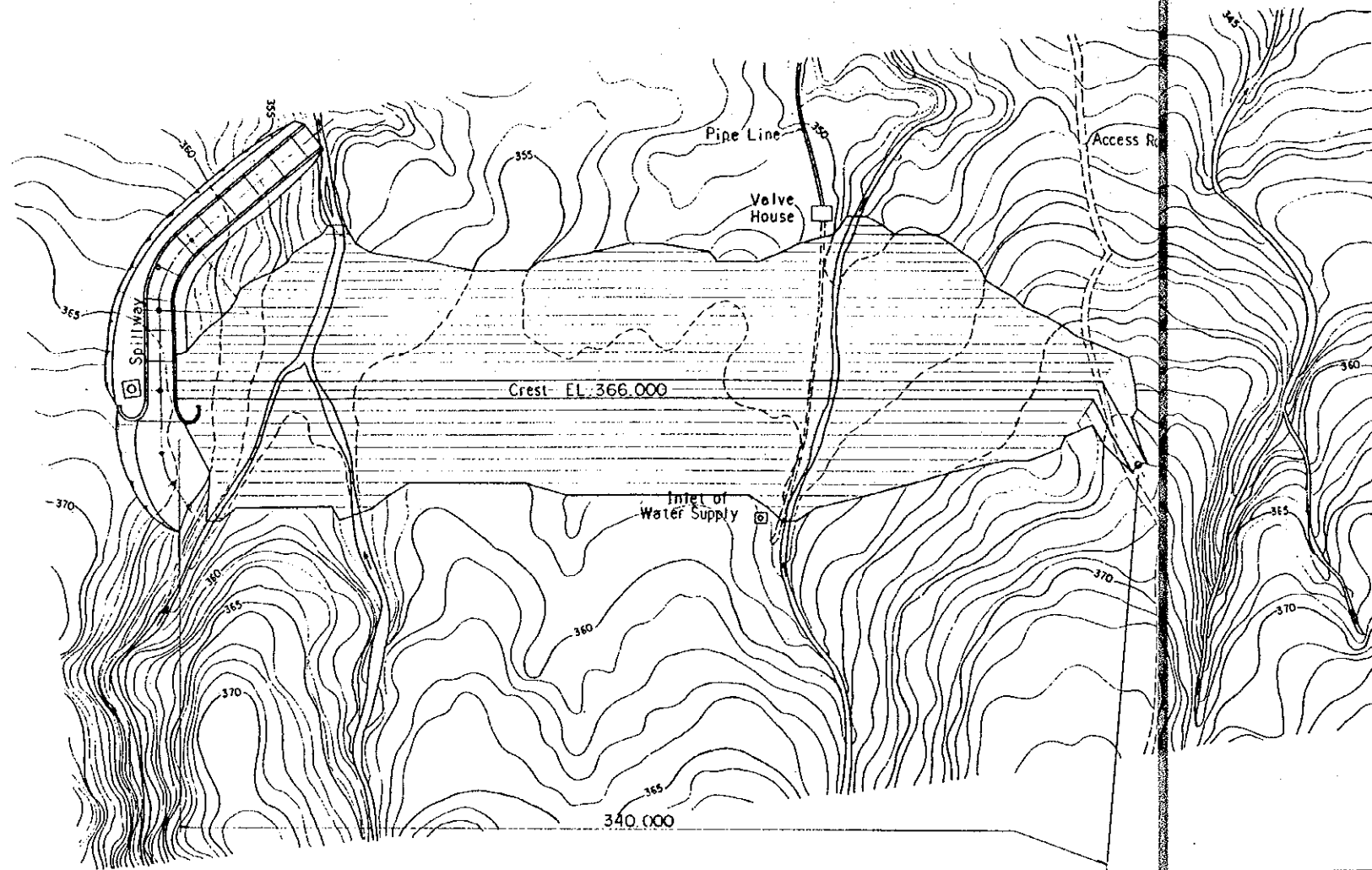




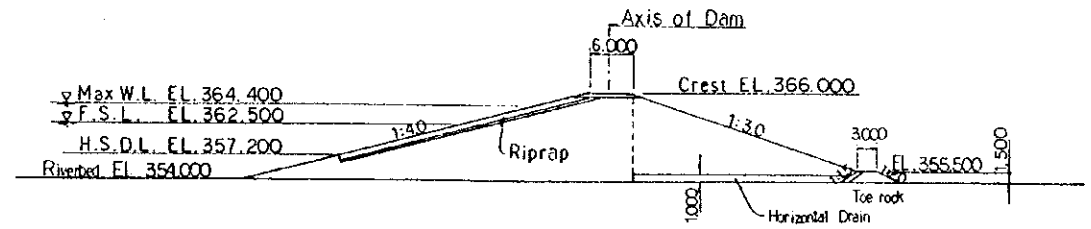
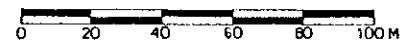




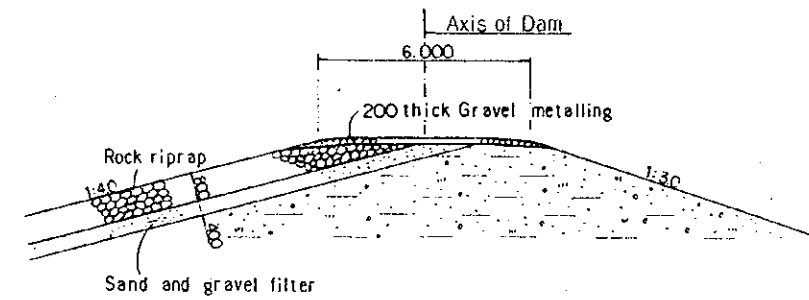
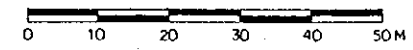




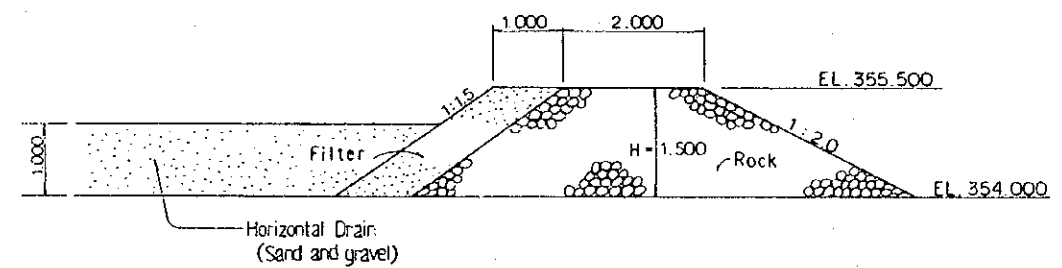
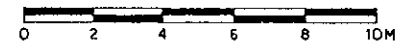
PLAN OF EMBUNG OELTUA



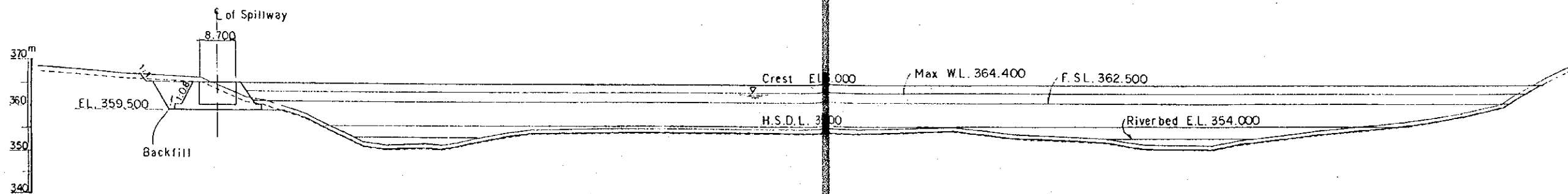
TYPICAL CROSS SECTION



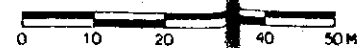
DETAIL OF EMBANKMENT CREST

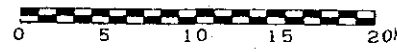
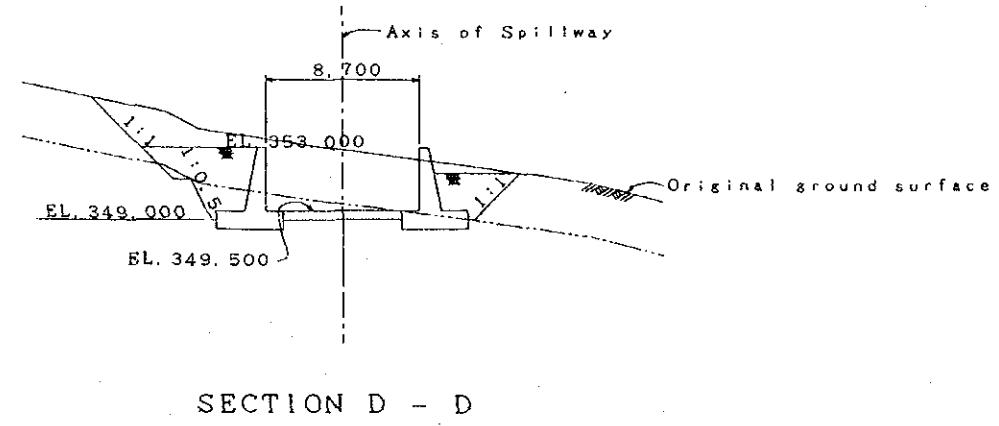
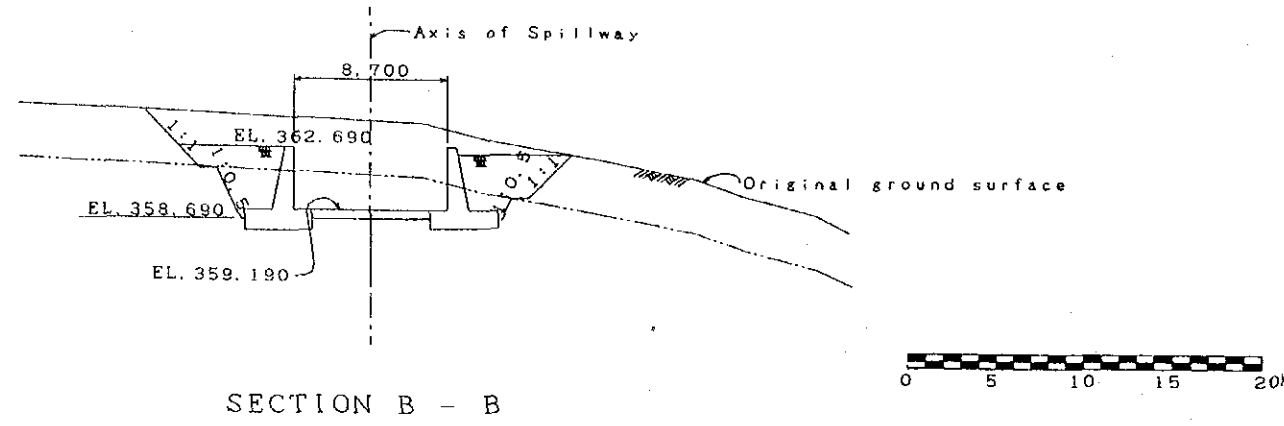
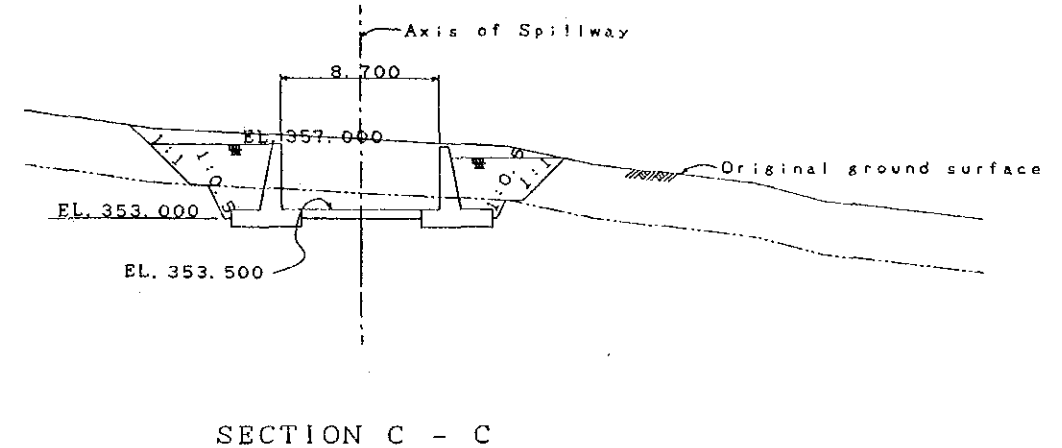
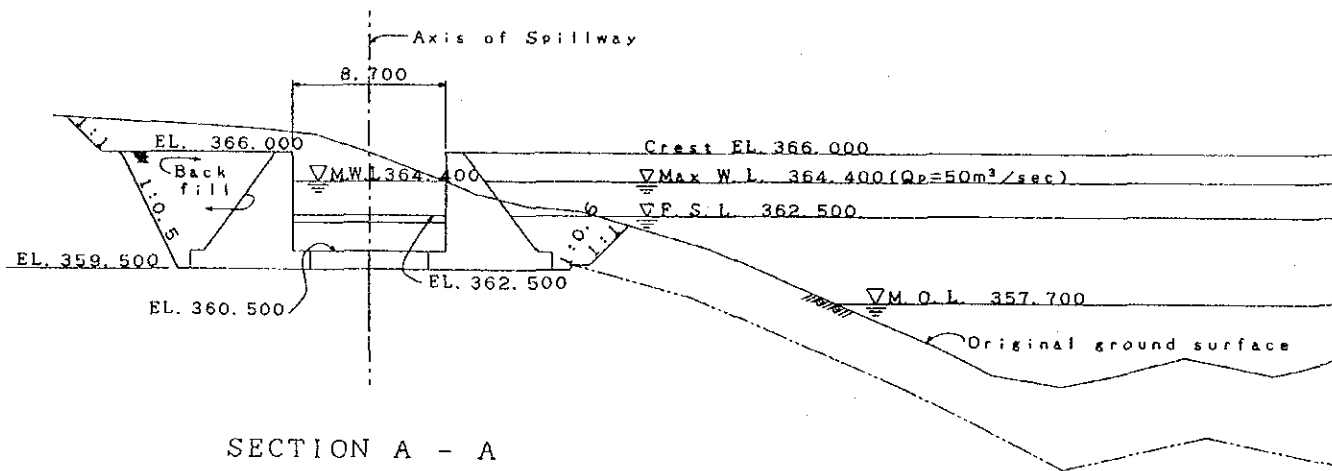
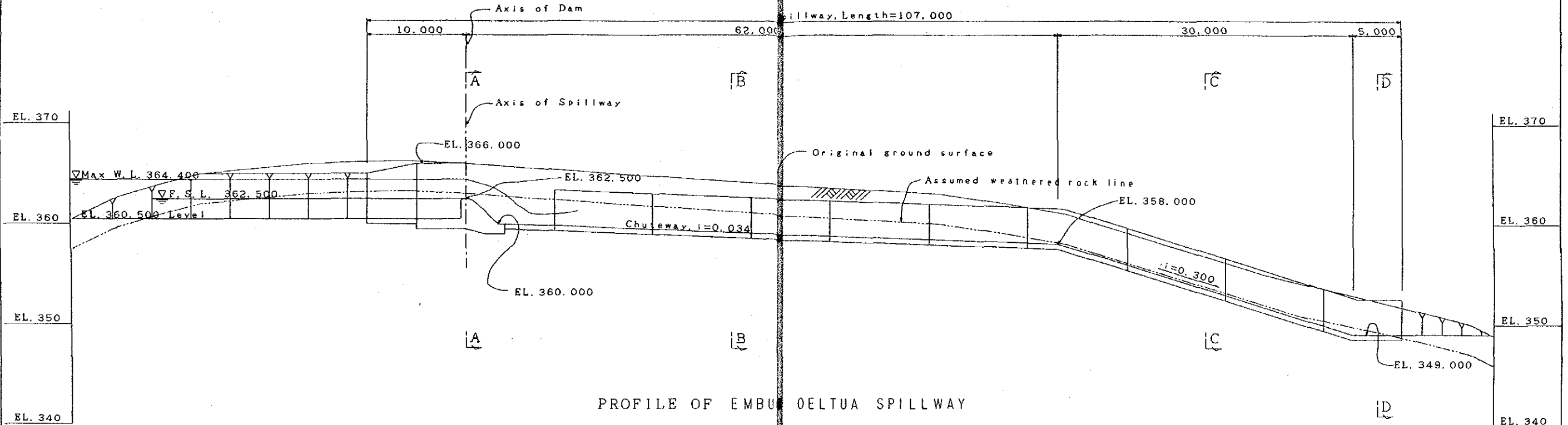


DETAIL OF DRAIN AND TOE ROCK

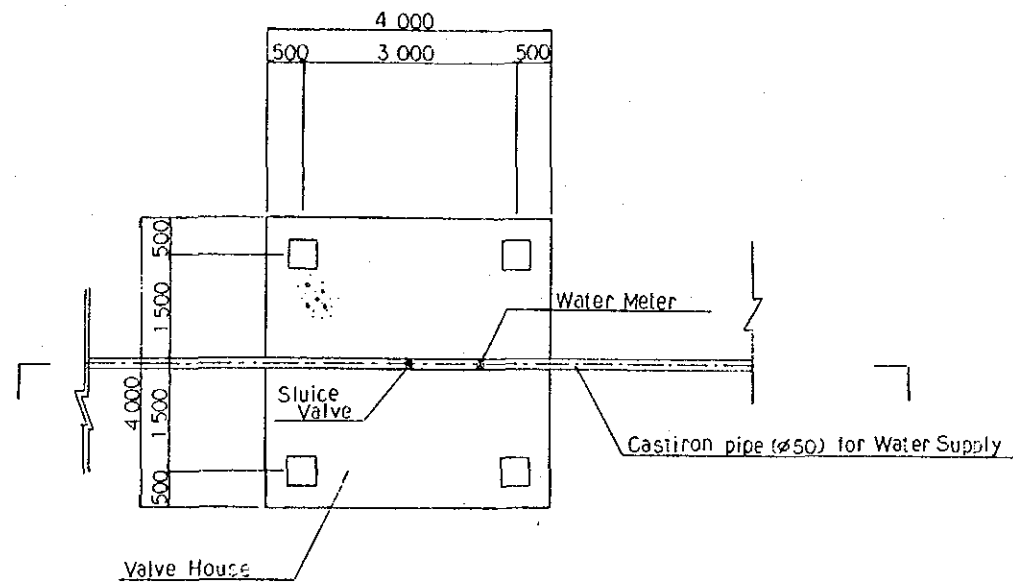


PROFILE OF M AXIS

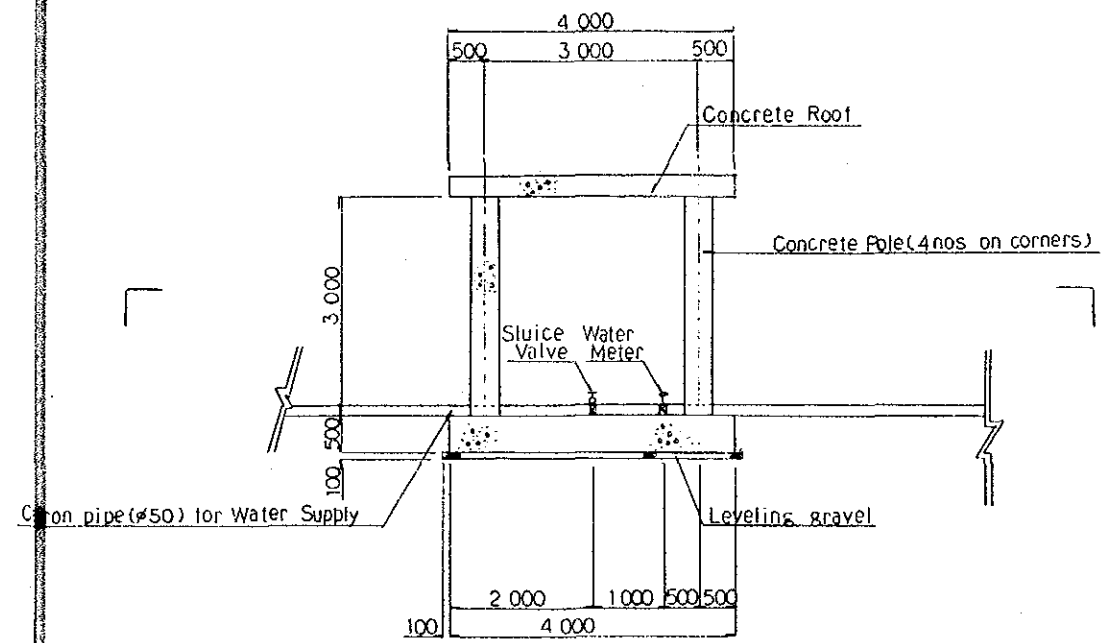
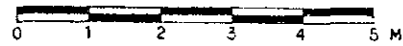




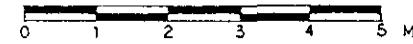


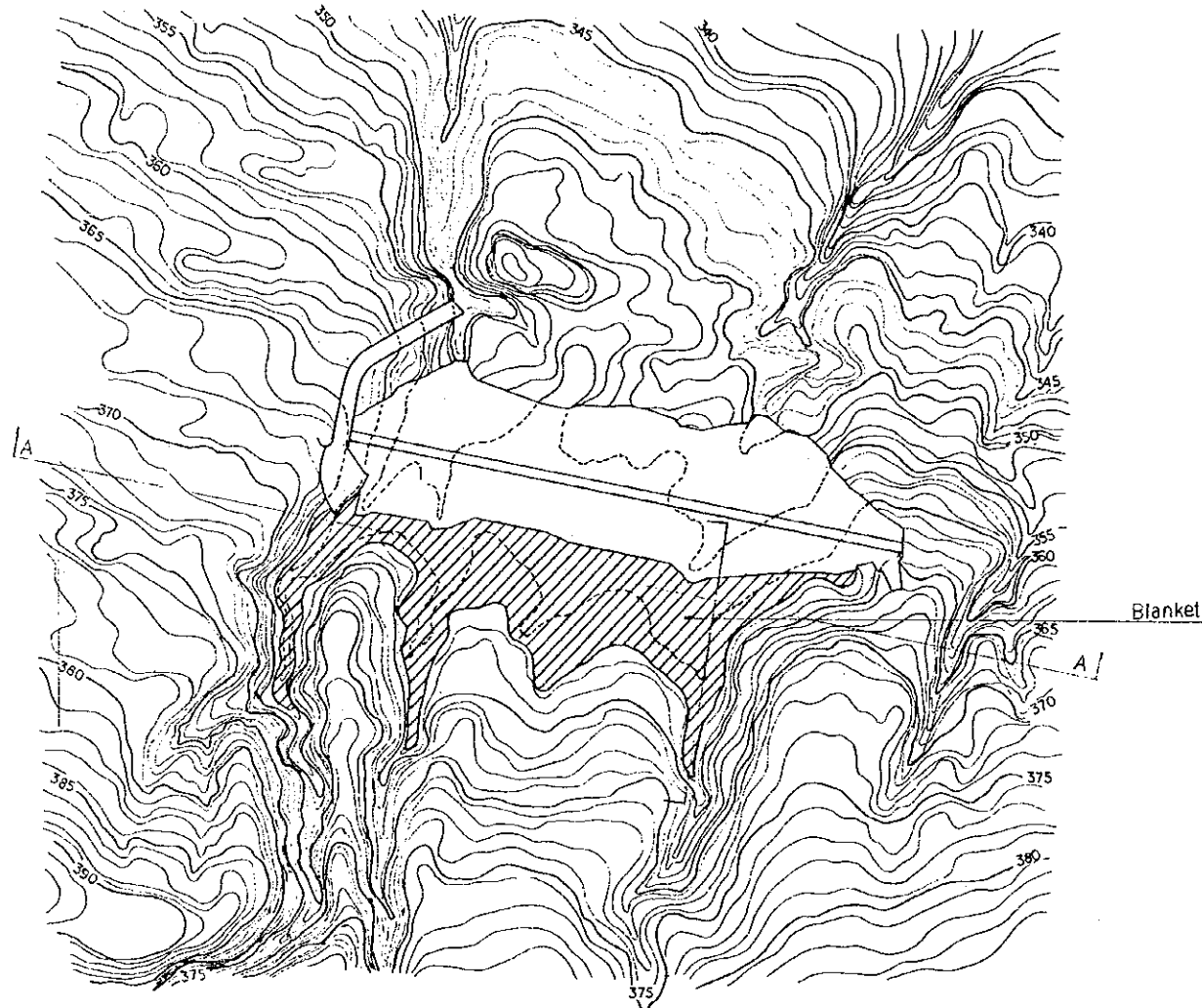


PLAN OF EMBUNG OELTUA VALVE HOUSE

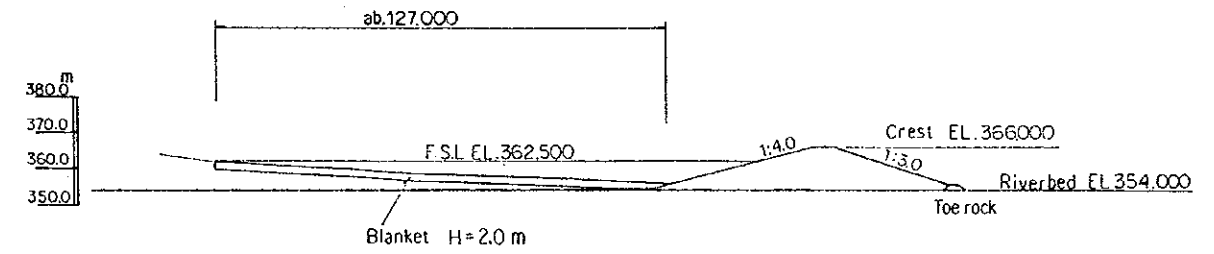
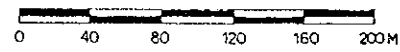


LONGITUDINAL SECTION OF VALVE HOUSE

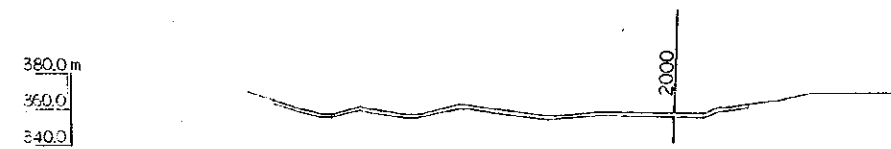
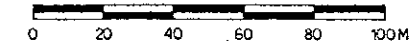




PLAN OF OELTUA RESERVOIR AREA BLANKET



LONGITUDINAL SECTION OF BLANKET

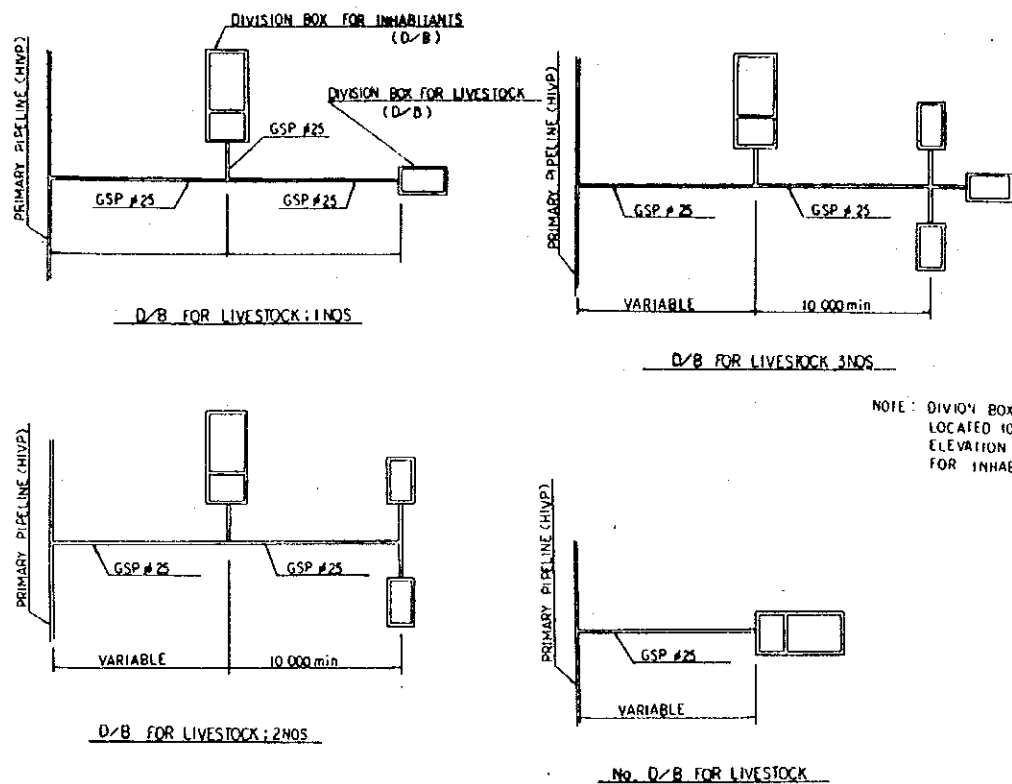


A - A



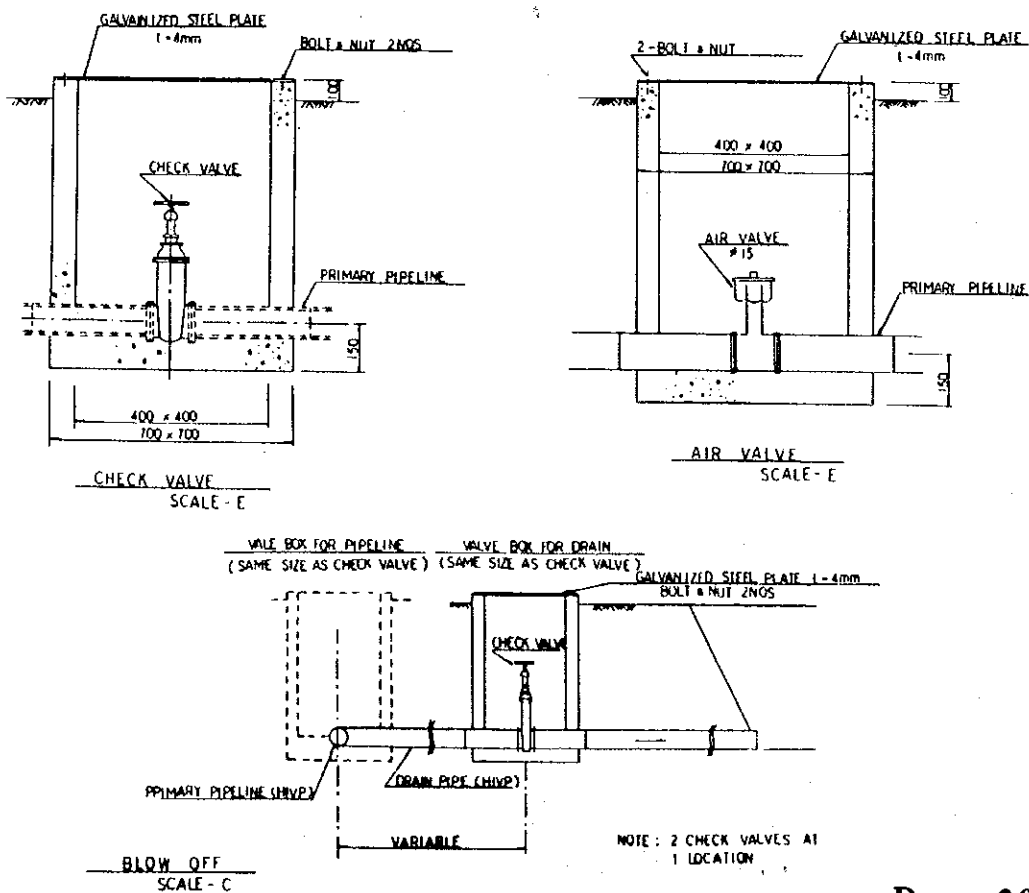
TYPICAL ARRANGEMENT OF DIVISION BOXES FOR INHABITANTS AND LIVESTOCK

SCALE - A



NOTE: DIVISION BOX FOR LIVESTOCK SHALL BE LOCATED 10m FAR AND LOWER ELEVATION FROM DIVISION BOX FOR INHABITANT.

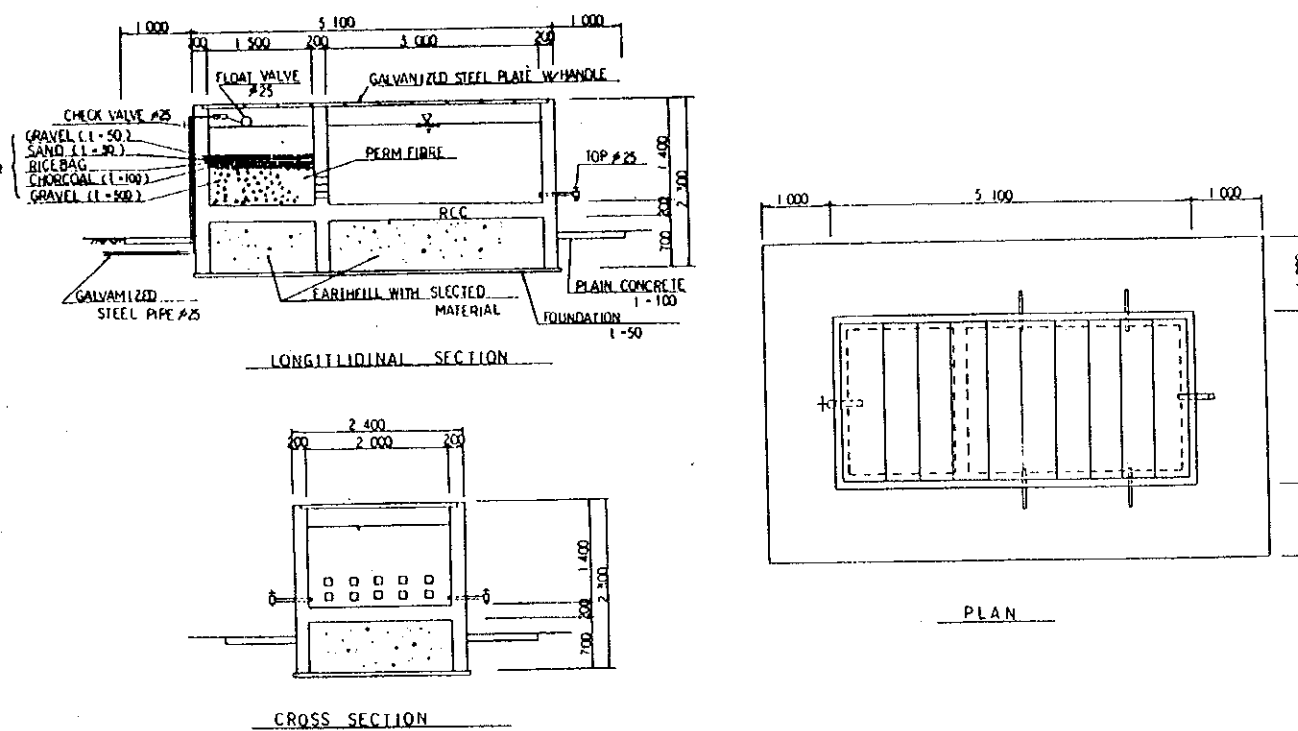
RELATED FACILITIES



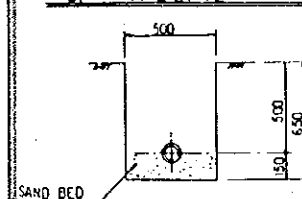
NOTE: 2 CHECK VALVES AT 1 LOCATION

DIVISION BOX FOR INHABITANTS

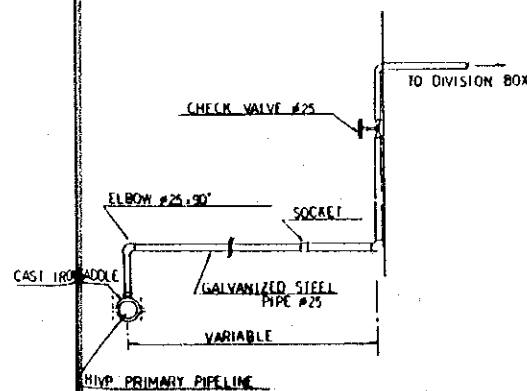
SCALE - B



TYPICAL EXCAVATION OF PIPE LINE

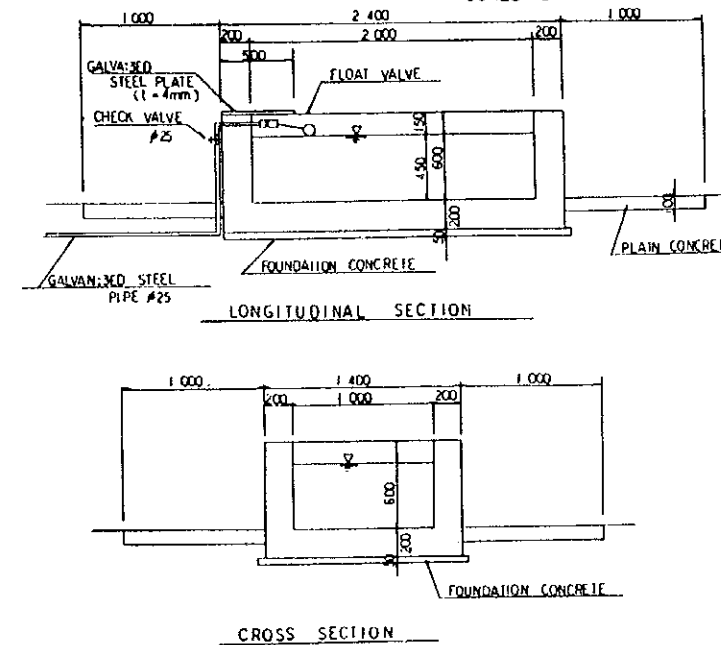


TYPICAL ARRANGEMENT OF INCOMING LINE



DIVISION BOX FOR LIVESTOCK

SCALE - D



SCALE - A : 0 5 10m

SCALE - B : 0 1 2 3m

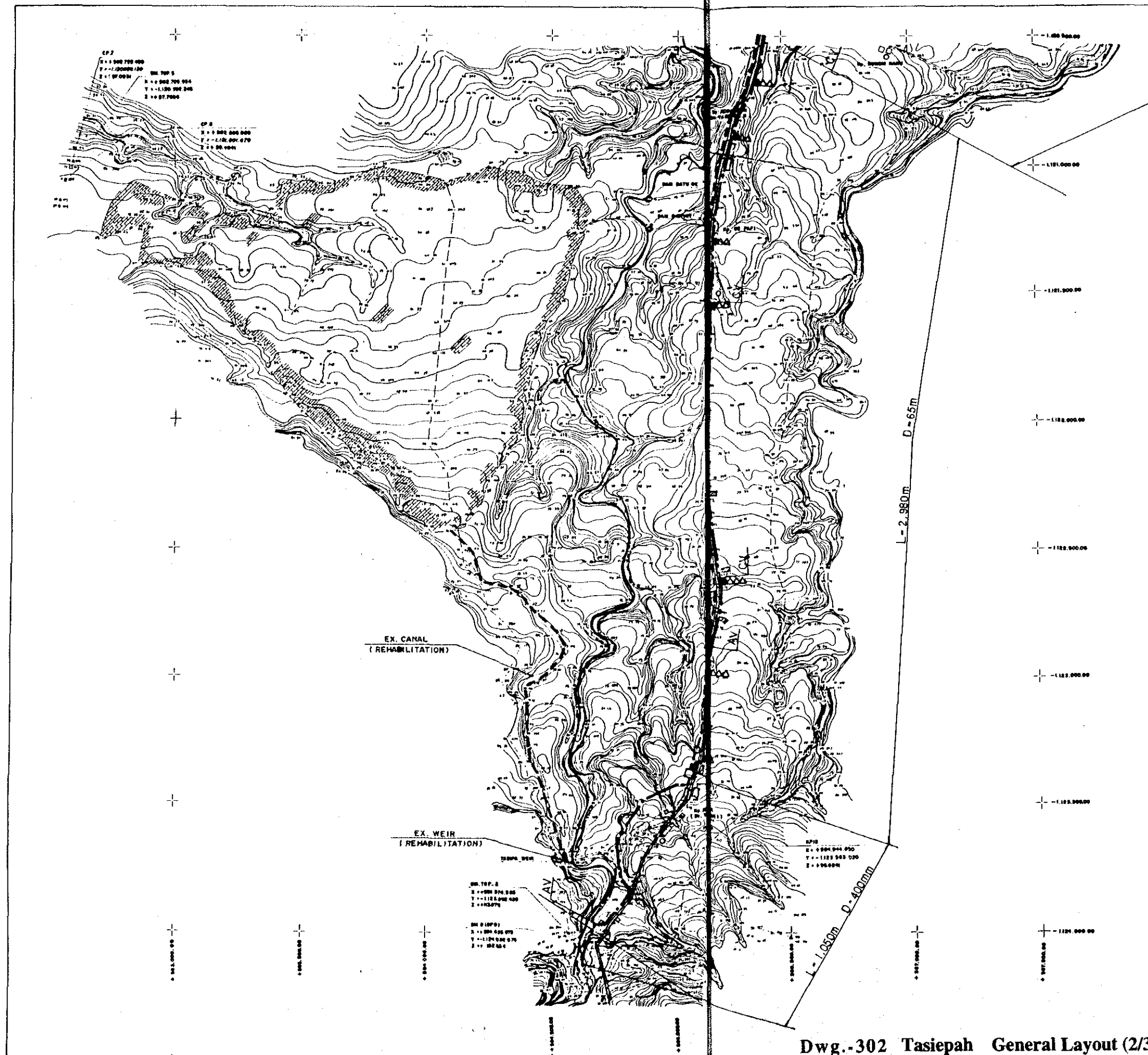
SCALE - C : 0 1 2 3m

SCALE - D : 0 1 2m

SCALE - E : 0 1m

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS	
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara	
No.	Area
JAPAN INTERNATIONAL COOPERATION AGENCY	





**LEGEND**

- — — — — Pipe Line
- - - - - Irrigation Canal
- Division Box for Inhabitants
- △ Division Box for Livestock
- Valve House /Irrigation Inlet Box
- Irrigation Division Box
- CV = Check Valve
- AV = Air Valve
- BO = Blow Off

**LEGEND**

- BONTUN CONTOUR
- TRANCHE PERUBAH APPROXIMATE CONTOUR
- SUNGAI
- ALIRAN FLOW DIRECTION
- BENDUNGAN DAM
- ZONAL FLOOD ZONE
- IKTIN TETAP BENCHMARK
- IKTIN POL. HDG. TRIANGULATION POINT
- TRIANGULATION SYSTEM
- JALUR PENGUKURAN SURVEYED ALIGNMENT
- PERSEKUTUAN BRID AND CROSS
- SAWAH RICEFELD
- LADANG NON IRRIGATED FARMING
- DERA
- TELAGA
- JALAN TANAH EARTH ROAD

SCALE 1:2000

DIRECTORATE GENERAL OF  
WATER RESOURCES DEVELOPMENT  
MINISTRY OF PUBLIC WORKS

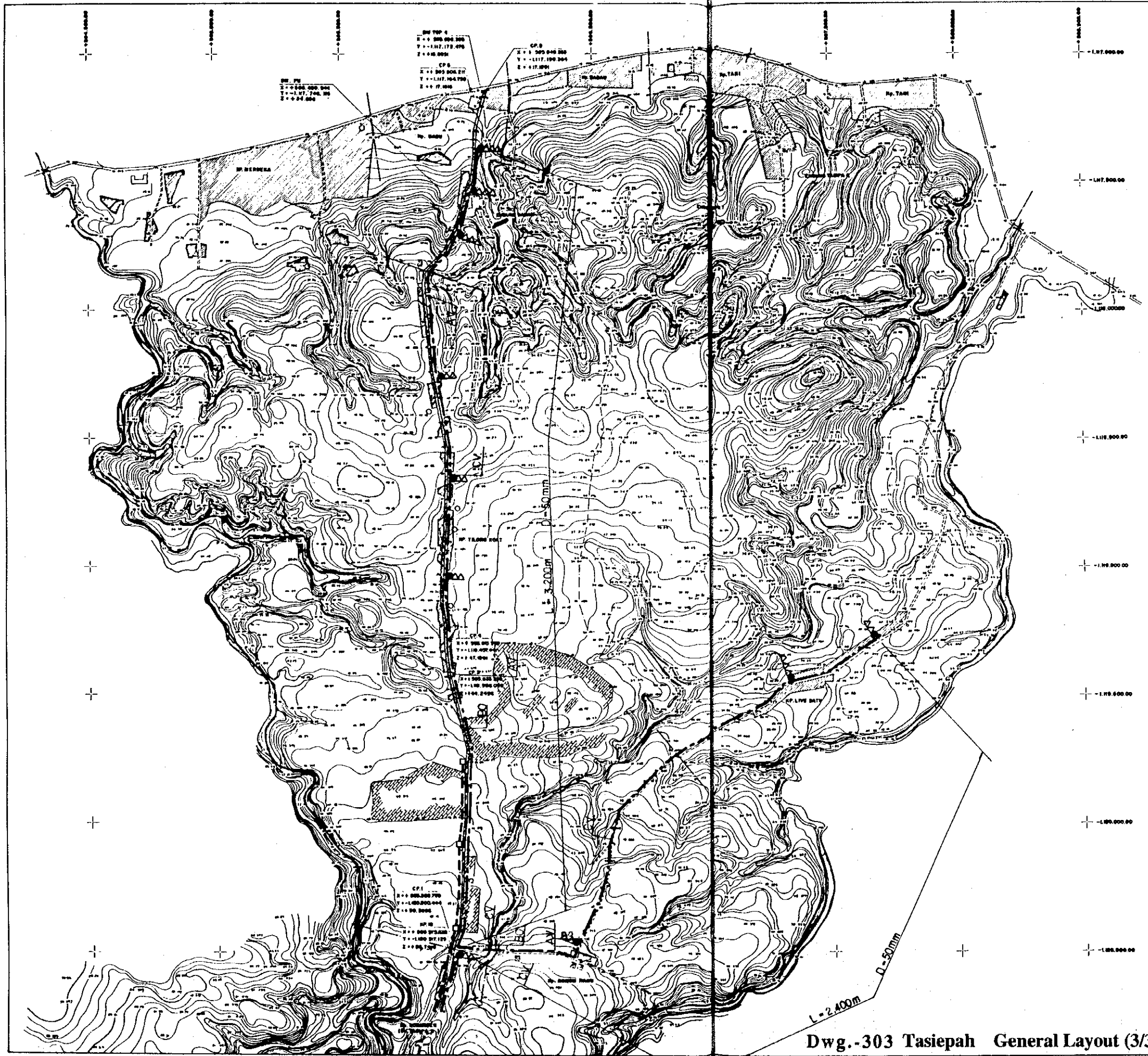
The Embung Development Project In  
East Nusa Tenggara and West Nusa Tenggara

BENEFICIARY AREA  
EMBUG TASIPAH  
EAST NUSA TENGGARA

JAPAN INTERNATIONAL COOPERATION AGENCY

Dwg.-302 Tasiepah General Layout (2/3)





- LEGEND**
- Pipe Line
  - - - Irrigation Canal
  - Division Box for Inhabitants
  - △ Division Box for Livestock
  - Valve House /Irrigation Inlet Box
  - Irrigation Division Box
  - CV = Check Valve
  - AV = Air Valve
  - BO = Blow Off

U/N

**LEGEND:**

- KONTUR
- KONTOUR
- TRACES PERUMAHAN
- APPROXIMATE CONTOUR
- SUNGAI
- RIVER
- ALIRAN
- FLOW DIRECTION
- BENDUNGAN
- DAM
- TANGGUL
- FLOOD ONE
- SITI
- SETAP
- BENDUNGAN
- SITI
- POLIHON
- TRAVEL POINT
- TRANSISI
- TRANSLATION STATION
- JALUR
- PEMODURAN
- SUPPLIED ALIGNMENT
- PERENCANAAN
- ROAD
- TAWAN
- MEXFIELD
- LABANG
- NON MANGKAT
- JALAN
- YALAGE
- JALAN
- PROPHET
- JALAN
- TANAH
- EARTH
- ROAD

1

2

3

SCALE 1:5000

Dwg.-303 Tasiepah General Layout (3/3)

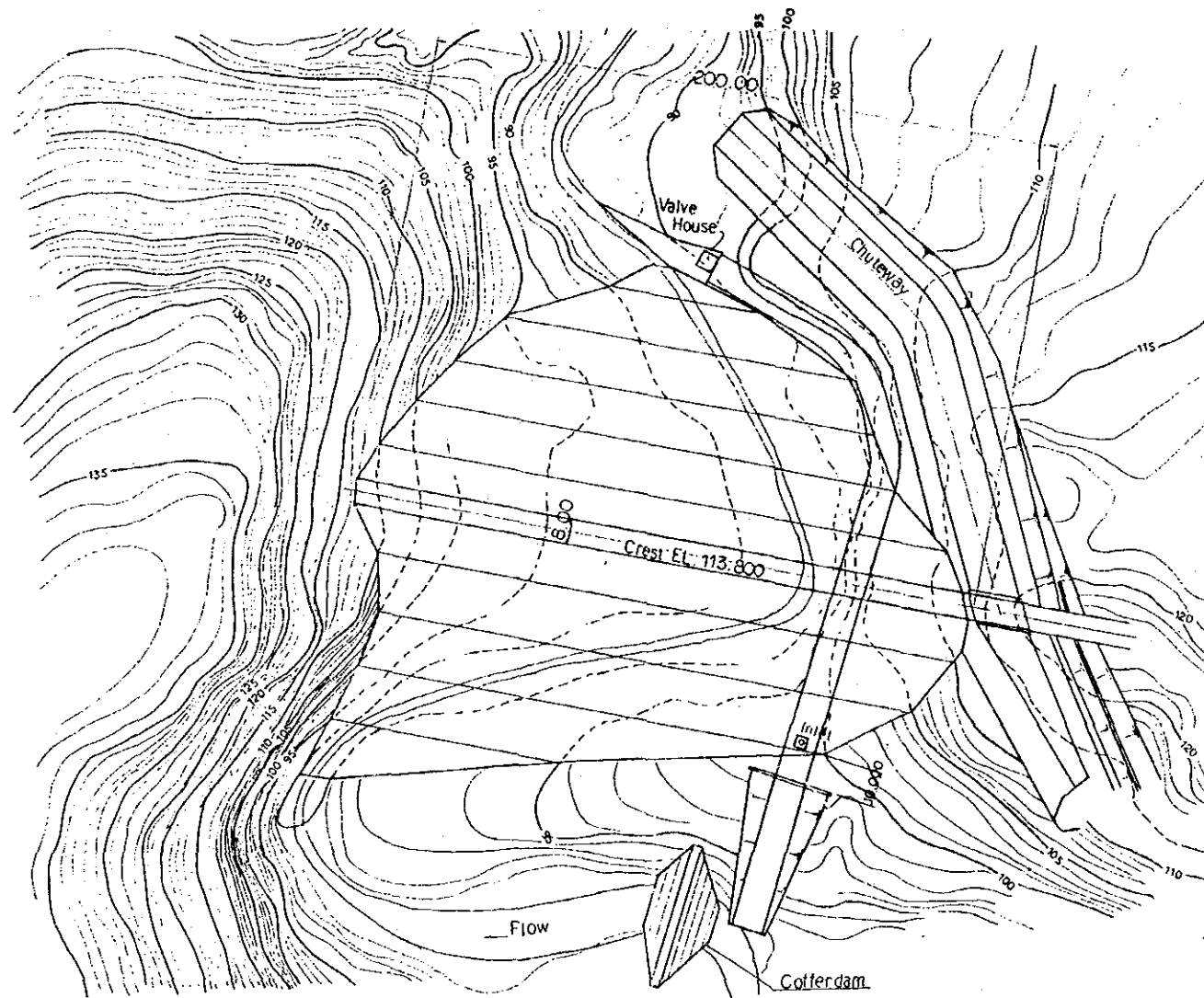
DIRECTORATE GENERAL OF  
WATER RESOURCES DEVELOPMENT  
MINISTRY OF PUBLIC WORKS

The Embung Development Project in  
East Nusa Tenggara and West Nusa Tenggara

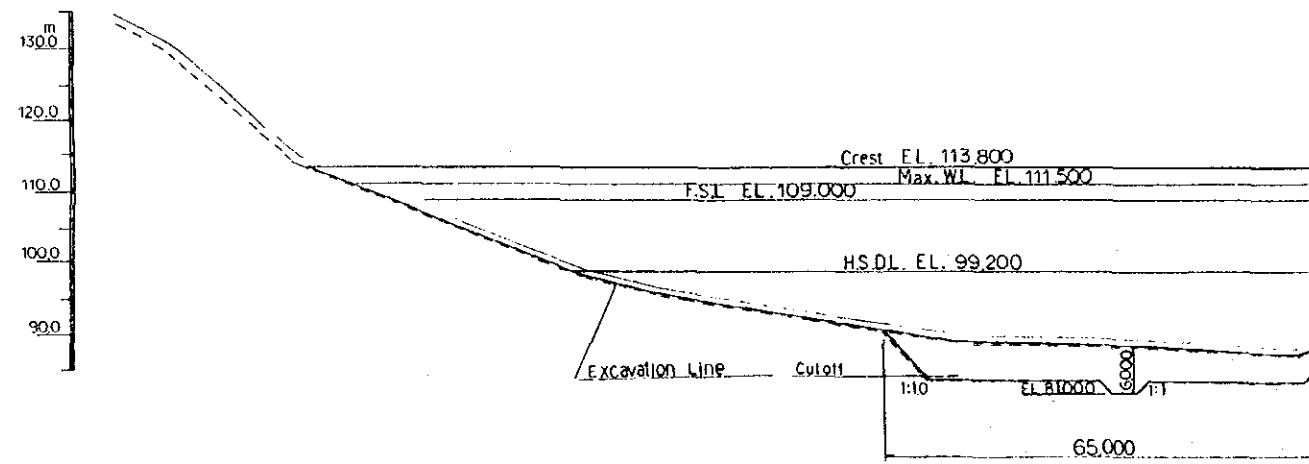
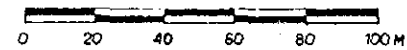
BENEFICARY AREA  
EMBUNG TASIEPAH  
EAST NUSA TENGGARA

No. Area

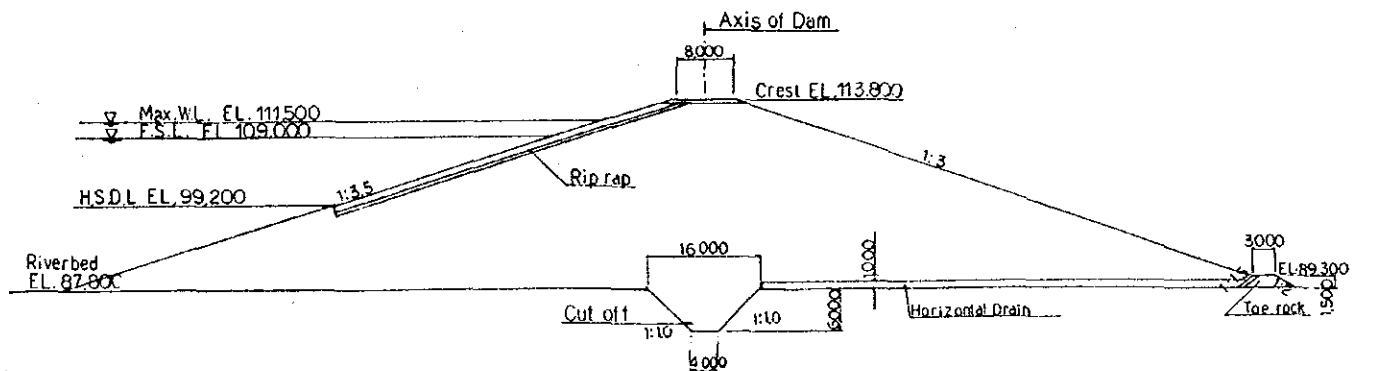
JAPAN INTERNATIONAL COOPERATION AGENCY



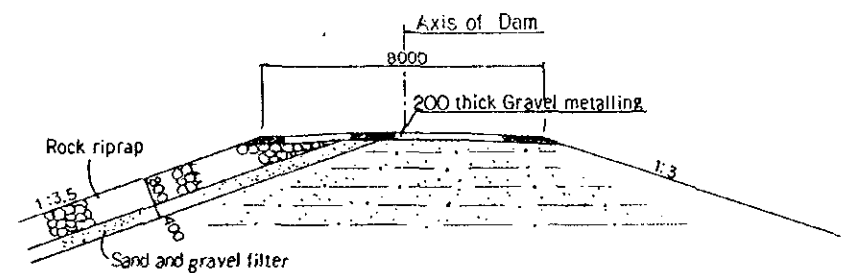
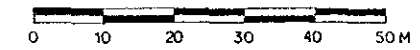
PLAN OF EMBUNG TASIEPAH



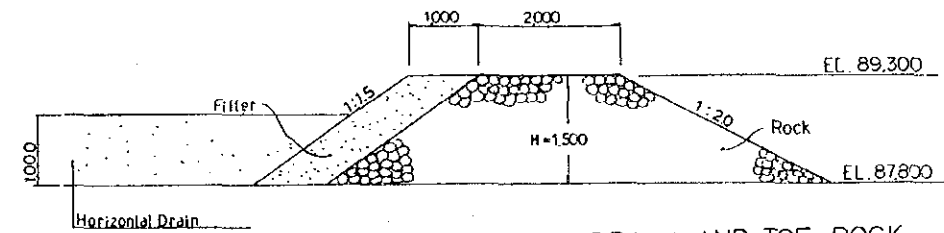
PROFILE OF DAM AXIS



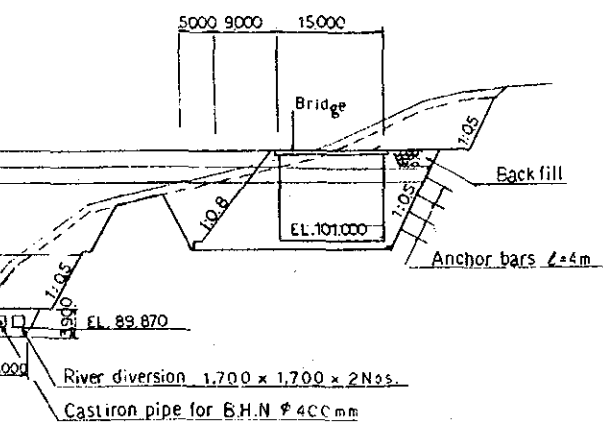
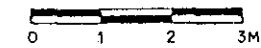
TYPICAL CROSS SECTION

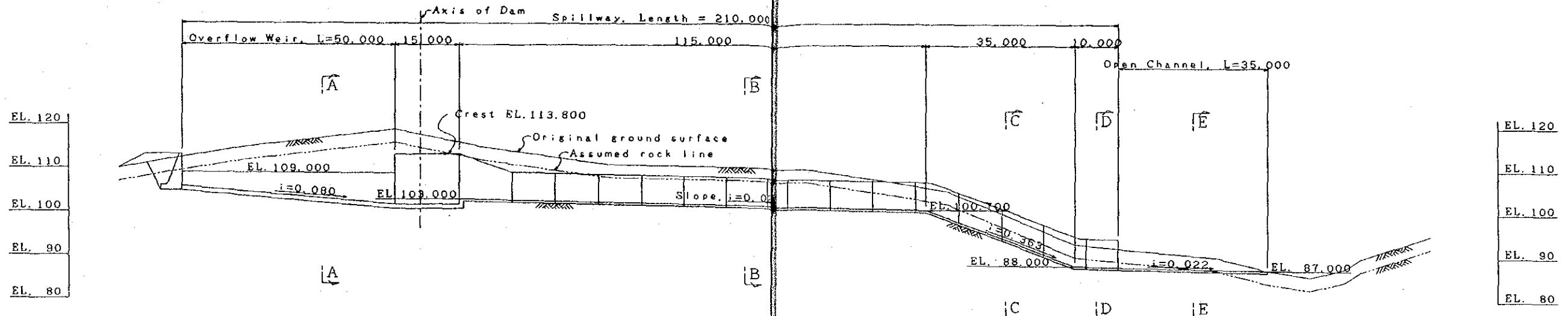


DETAIL OF EMBANKMENT CREST

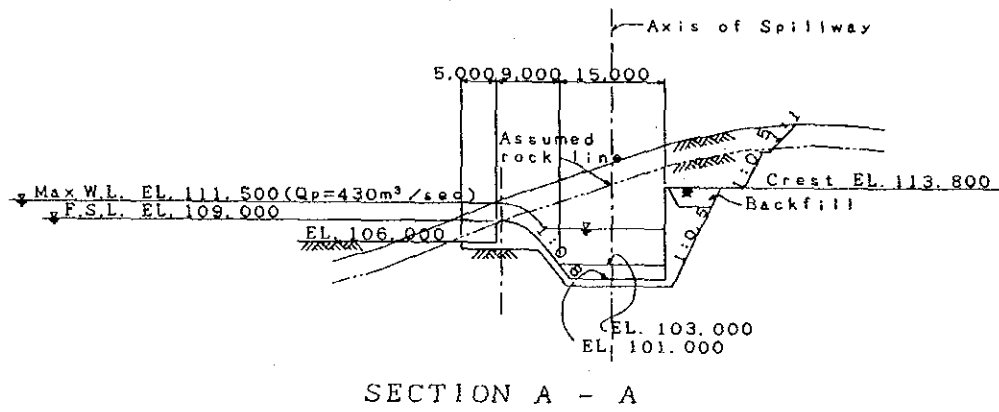


DETAIL OF DRAIN AND TOE ROCK

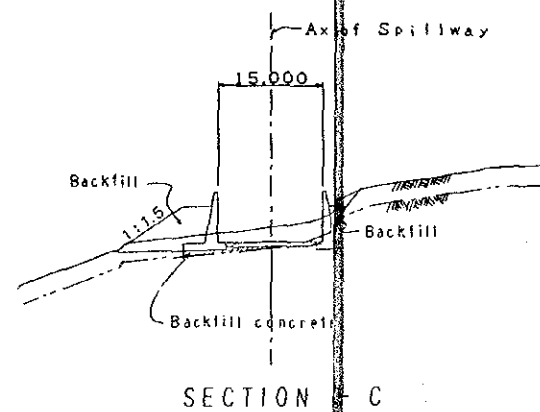




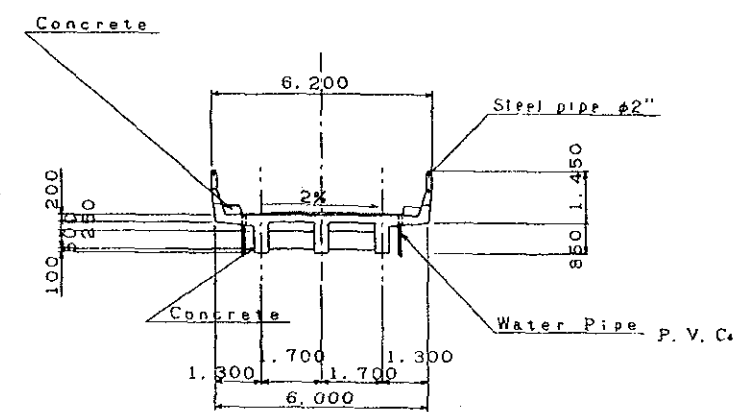
PROFILE OF EMBUNG TASIEPAH SPILLWAY



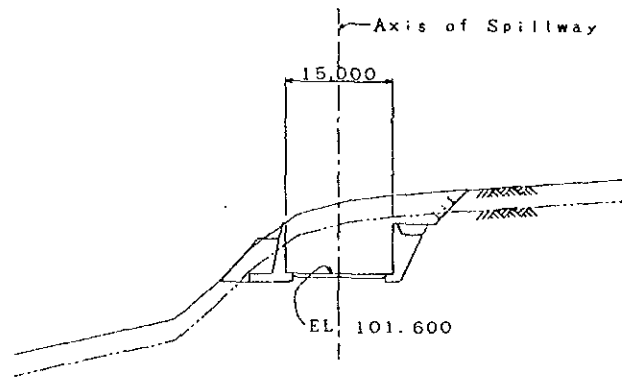
SECTION A - A



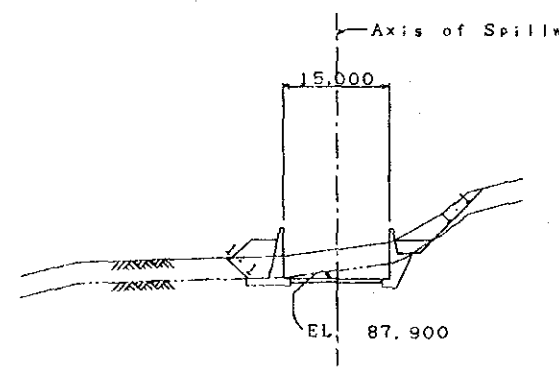
SECTION C



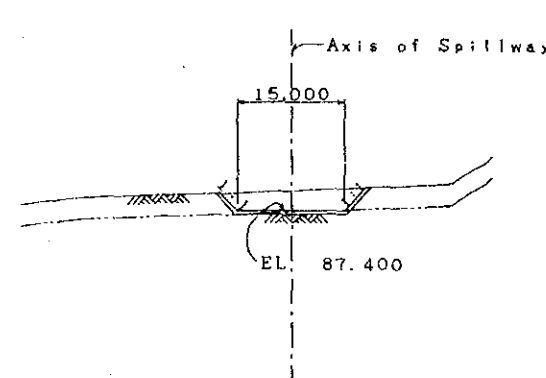
CROSS SECTION OF BRIDGE



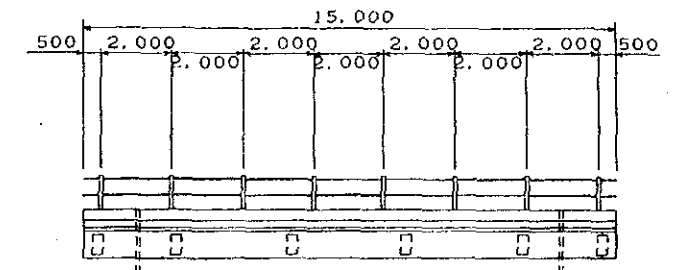
SECTION B - B



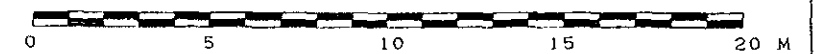
SECTION D - D

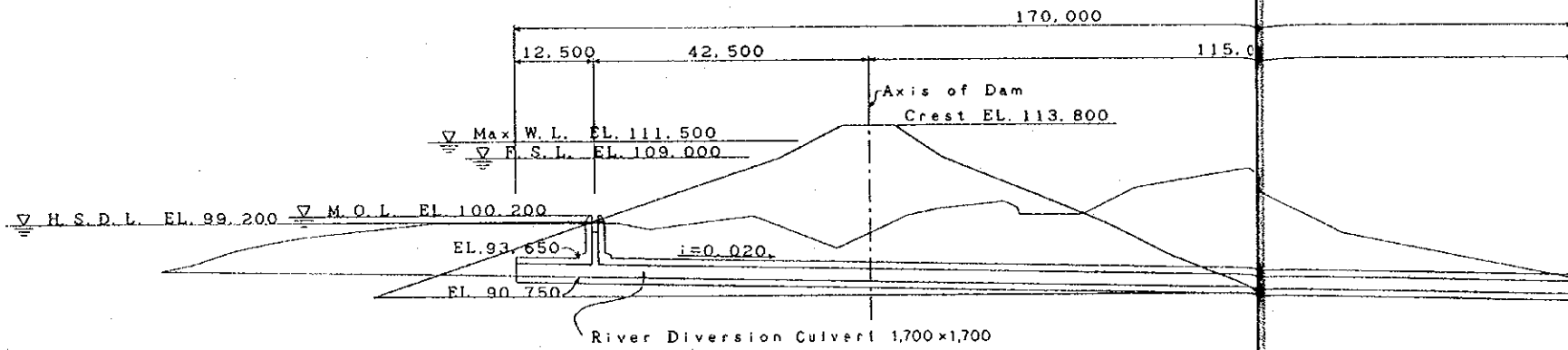


SECTION E - E

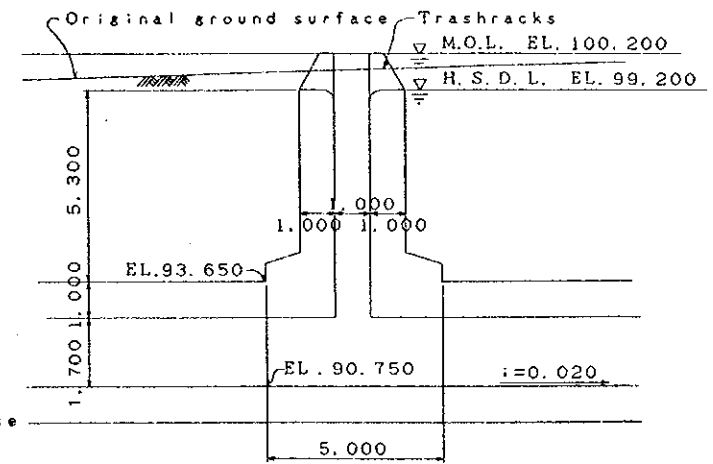
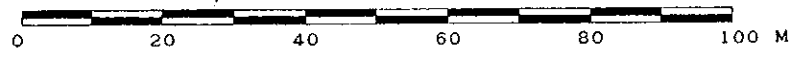


PROFILE OF BRIDGE

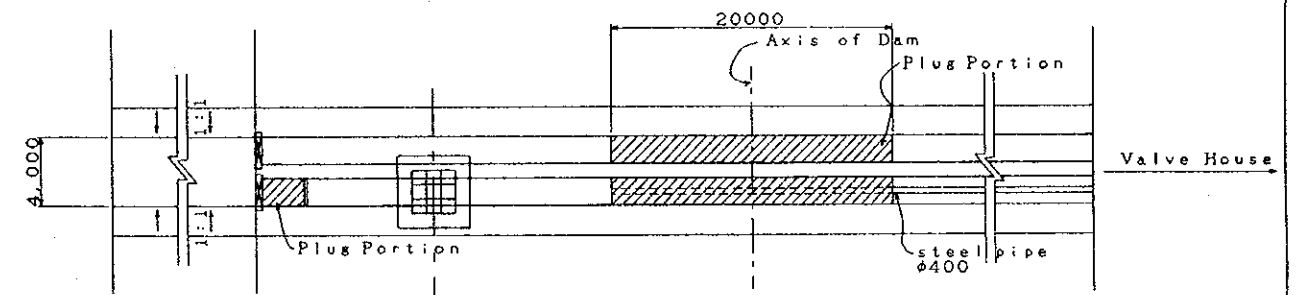
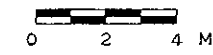




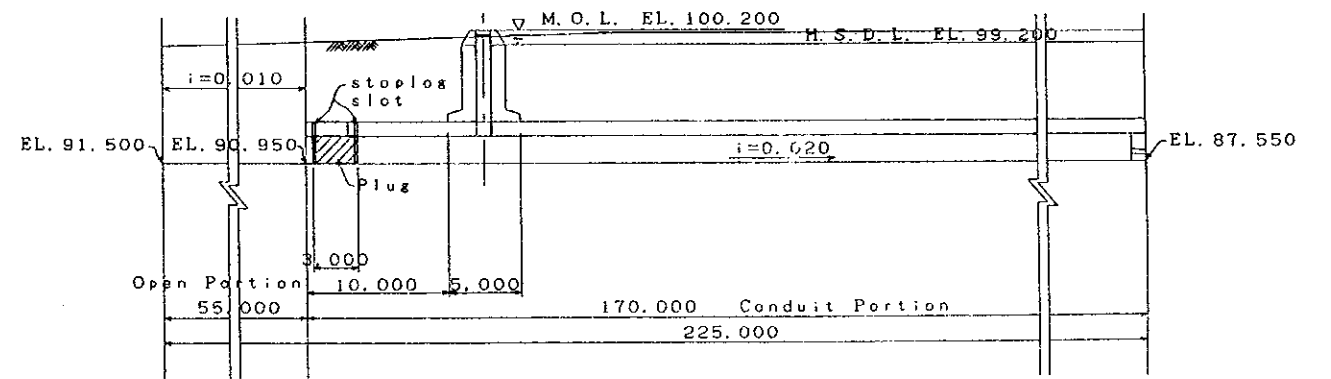
LONGITUDINAL SECTION OF EMBUNG TASIEPAH OUTLET WORKS



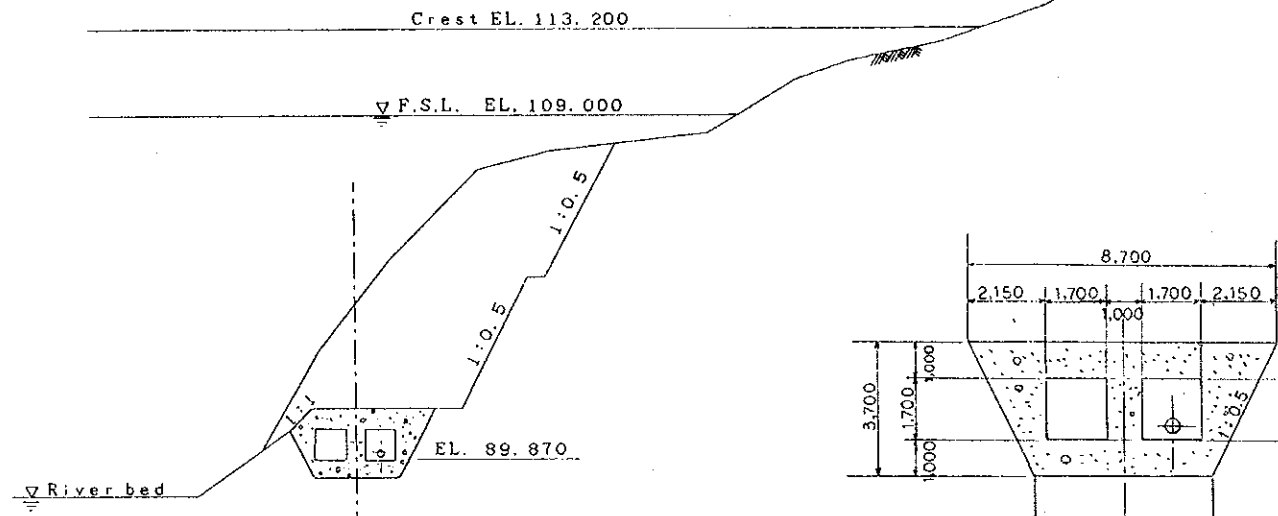
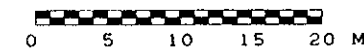
DETAIL OF INLET STRUCTURE



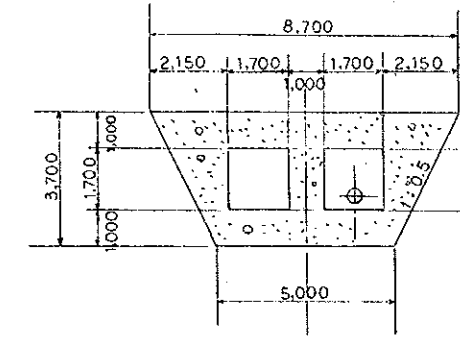
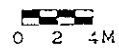
PLAN OF INLET PORTION



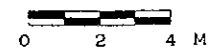
PROFILE OF INLET PORTION

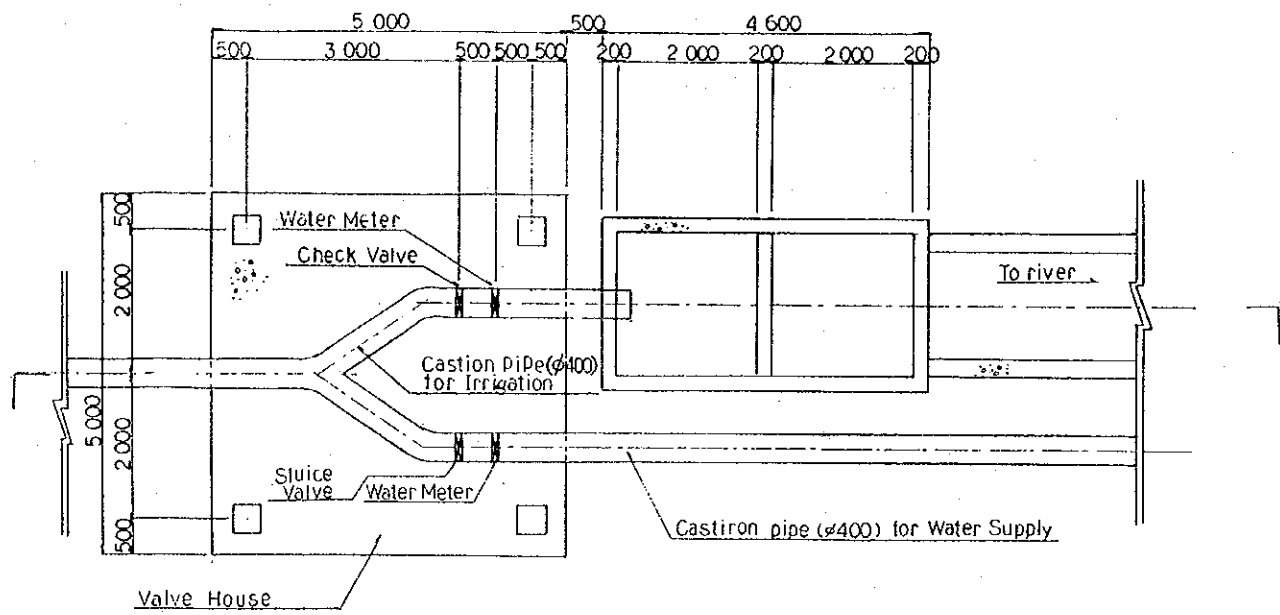


CROSS SECTION AT DAM AXIS

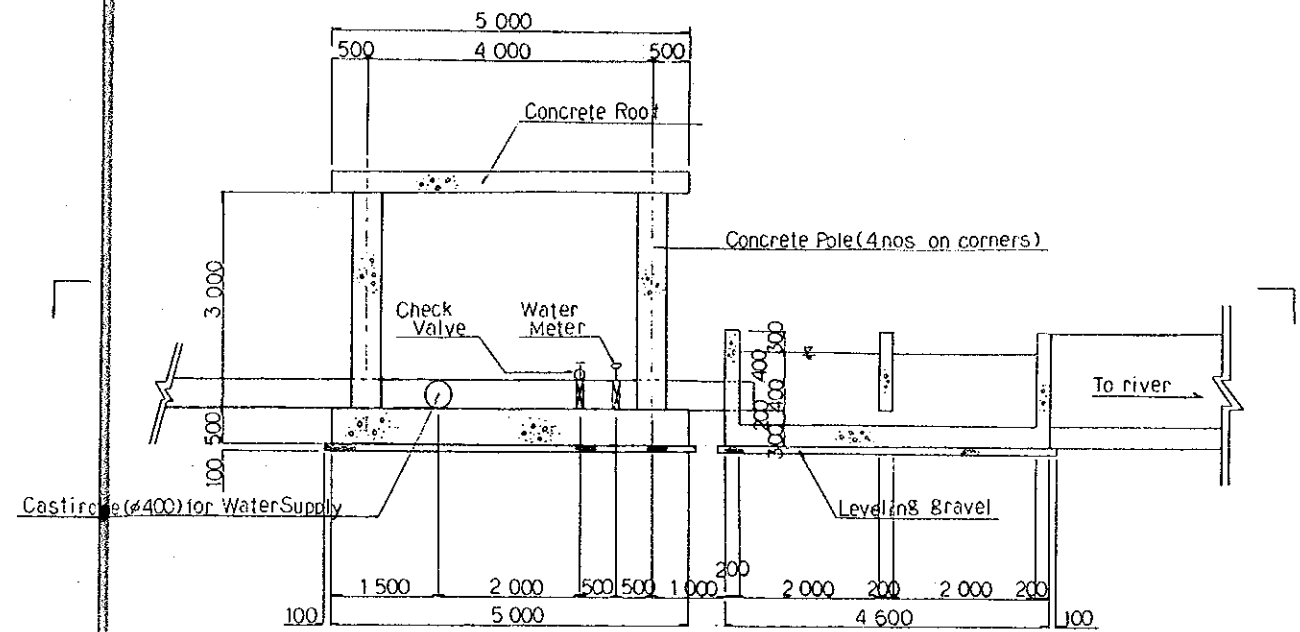
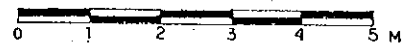


DETAIL OF RIVER DIVERSION CULVERT

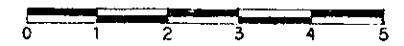


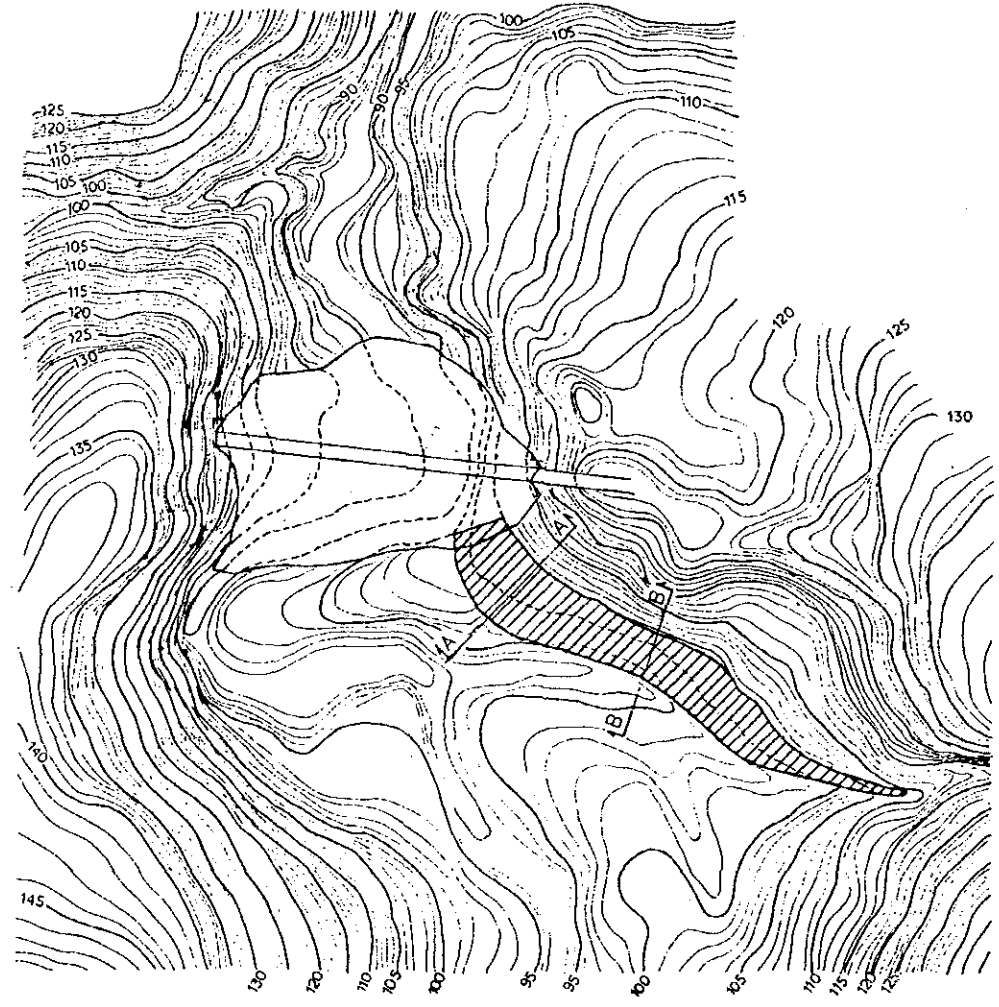


PROFILE OF EMBUNG TASIEPAH VALVE HOUSE

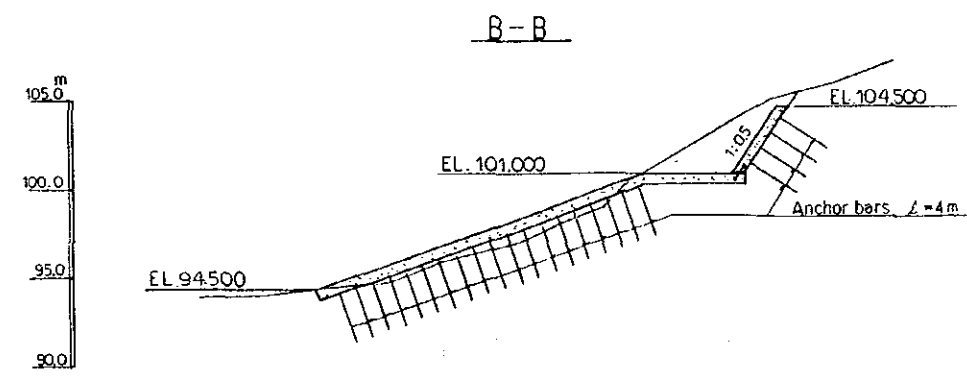
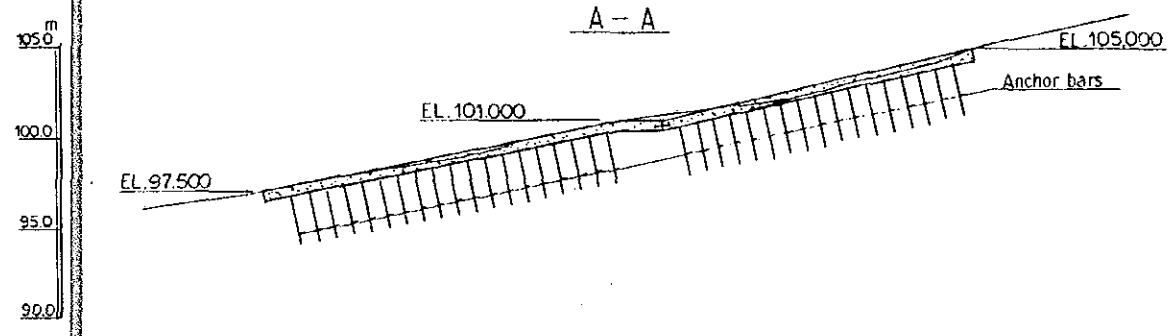
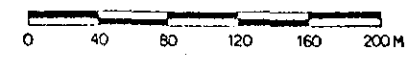


LONGITUDINAL SECTION OF VALVE HOUSE

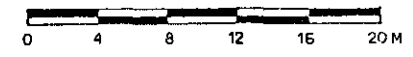




PLAN OF EMBUNG TASIEPAH CONCRETE LINING

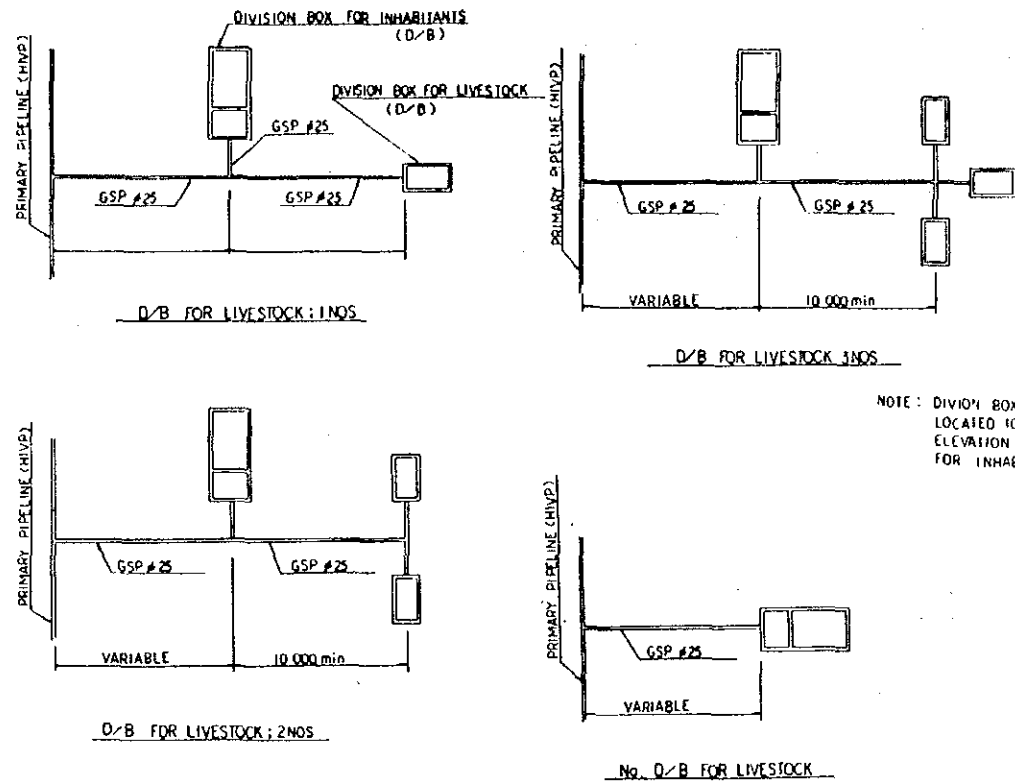


TYPICAL CROSS SECTION OF CONCRETE LINING

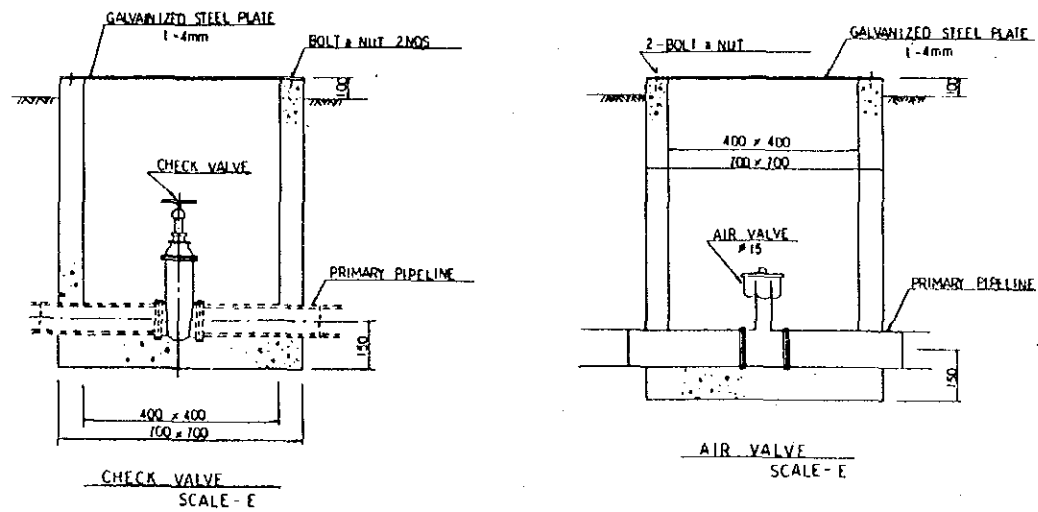


TYPICAL ARRANGEMENT OF DIVISION BOXES FOR INHABITANTS AND LIVESTOCK

SCALE - A

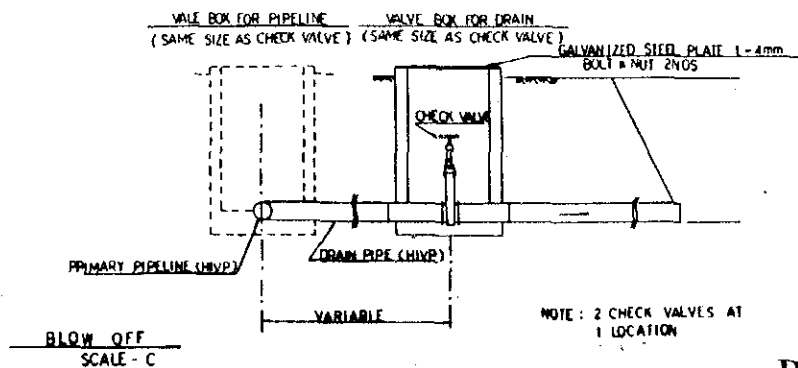


RELATED FACILITIES



CHECK VALVE SCALE - E

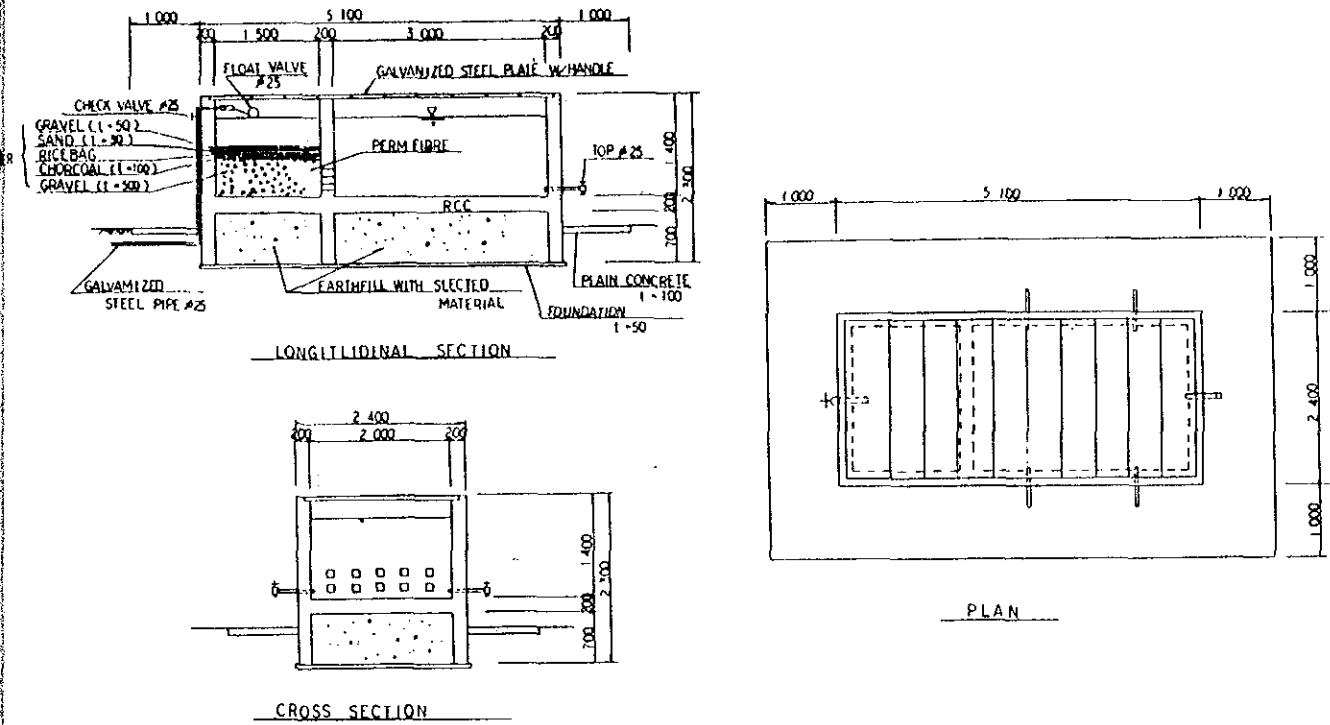
AIR VALVE SCALE - E



BLOW OFF SCALE - C

DIVISION BOX FOR INHABITANTS

SCALE - B

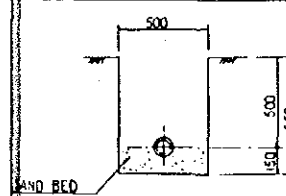


LONGITUDINAL SECTION

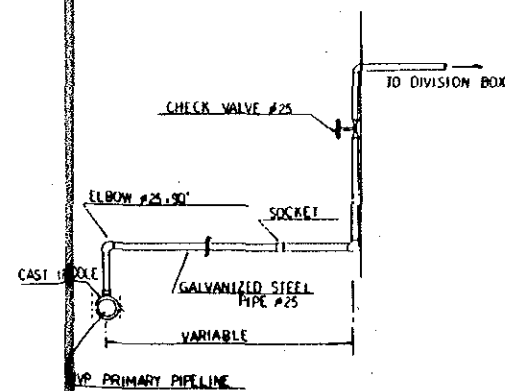
PLAN

CROSS SECTION

TYPICAL EXCAVATION OF PIPE LINE

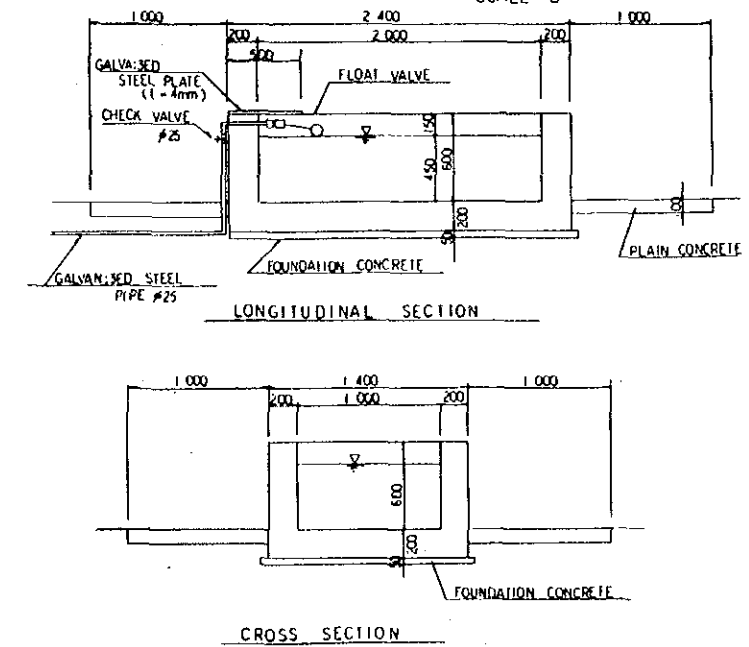


TYPICAL ARRANGEMENT OF INCOMING LINE



DIVISION BOX FOR LIVESTOCK

SCALE - D



LONGITUDINAL SECTION

CROSS SECTION

SCALE - A : 0 5 10m

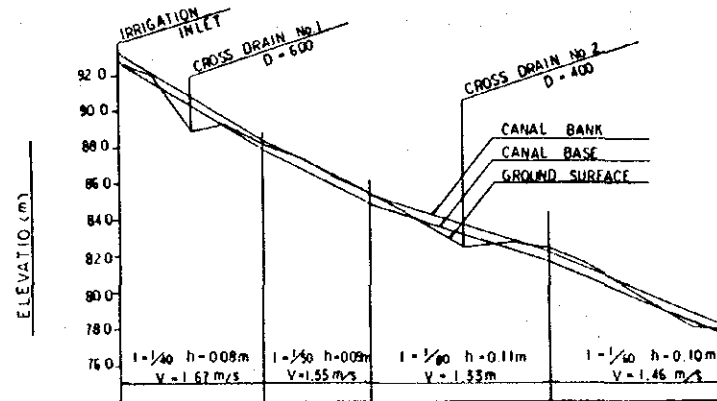
SCALE - B : 0 1 2 3m

SCALE - C : 0 1 2 3m

SCALE - D : 0 1 2m

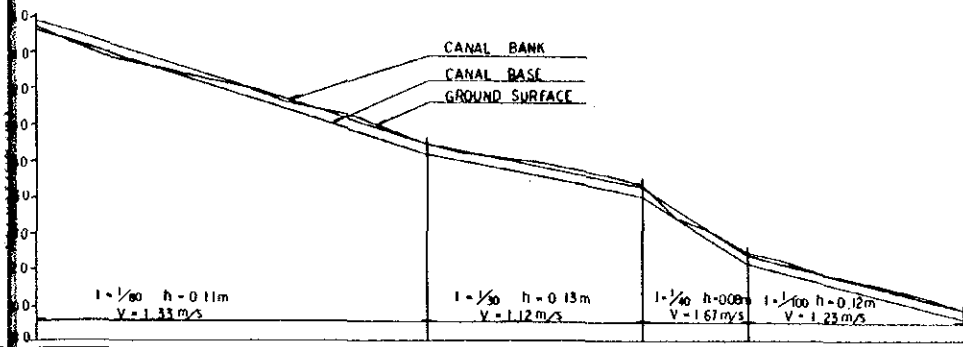
SCALE - E : 0 1m

RIGHT SIDE CANAL PROFILE (1/3)



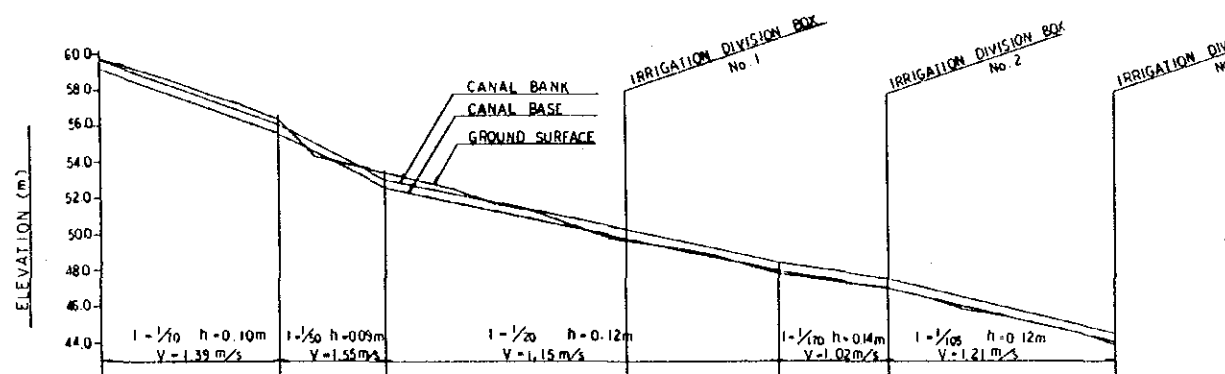
CANAL BANK ELEVATION	83.42	82.17	80.92	80.67	80.42	80.17	80.41	80.41	80.41	80.77	81.14	81.73	82.52	83.89	85.27	86.44	88.61	90.61	92.79	94.94	97.28	99.79	102.44	105.21	108.11
CANAL BASE ELEVATION	82.92	81.67	80.42	80.17	80.42	80.67	80.91	81.16	81.41	81.77	82.14	82.51	82.88	83.25	83.62	83.99	84.36	84.73	85.10	85.47	85.84	86.21	86.58	86.95	87.32
GROUND SURFACE ELEVATION	92.90	92.00	89.00	89.40	89.80	89.20	88.60	88.00	87.40	86.80	86.20	85.60	85.00	84.40	83.80	83.20	82.60	82.00	81.40	80.80	80.20	79.60	79.00	78.40	77.80
REDUCED DISTANCE	0.00	50.00	100.00	150.00	200.00	250.00	300.00	350.00	400.00	450.00	500.00	550.00	600.00	650.00	700.00	750.00	800.00	850.00	900.00	950.00	1000.00	1050.00	1100.00	1150.00	
DISTANCE	0.00	50.00	100.00	150.00	200.00	250.00	300.00	350.00	400.00	450.00	500.00	550.00	600.00	650.00	700.00	750.00	800.00	850.00	900.00	950.00	1000.00	1050.00	1100.00	1150.00	
STATION No.	BP	+50.00	No. 1	+50.00	No. 2	+50.00	No. 3	+50.00	No. 4	+50.00	No. 5	+50.00	No. 6	+50.00	No. 7	+50.00	No. 8	+50.00	No. 9	+50.00	No. 10	+50.00	No. 11	+50.00	

RIGHT SIDE CANAL PROFILE (2/3)

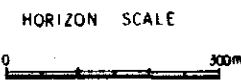


CANAL BANK ELEVATION	75.61	74.98	74.35	73.73	73.10	72.48	71.85	71.23	70.60	69.98	69.35	68.73	68.10	67.48	66.85	66.23	65.60	64.98	64.35	63.73	63.10	62.48	61.85	61.23
CANAL BASE ELEVATION	75.11	74.48	73.85	73.23	72.60	71.98	71.35	70.73	70.10	69.48	68.85	68.23	67.60	66.98	66.35	65.73	65.10	64.48	63.85	63.23	62.60	61.98	61.35	60.73
GROUND SURFACE ELEVATION	75.40	74.40	73.70	73.30	72.80	72.30	71.80	71.30	70.80	70.30	69.80	69.30	68.80	68.30	67.80	67.30	66.80	66.30	65.80	65.30	64.80	64.30	63.80	63.30
REDUCED DISTANCE	0.00	50.00	100.00	150.00	200.00	250.00	300.00	350.00	400.00	450.00	500.00	550.00	600.00	650.00	700.00	750.00	800.00	850.00	900.00	950.00	1000.00	1050.00	1100.00	
DISTANCE	0.00	50.00	100.00	150.00	200.00	250.00	300.00	350.00	400.00	450.00	500.00	550.00	600.00	650.00	700.00	750.00	800.00	850.00	900.00	950.00	1000.00	1050.00	1100.00	
STATION No.	No. 10	+50.00	No. 11	+50.00	No. 12	+50.00	No. 13	+50.00	No. 14	+50.00	No. 15	+50.00	No. 16	+50.00	No. 17	+50.00	No. 18	+50.00	No. 19	+50.00	No. 20	+50.00	No. 21	+50.00

RIGHT SIDE CANAL PROFILE (3/3)



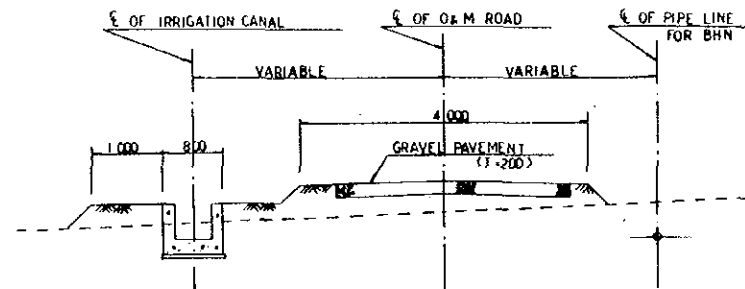
CANAL BANK ELEVATION	55.66	56.96	58.25	59.53	60.82	62.10	63.38	64.66	65.94	67.22	68.50	69.78	71.06	72.34	73.62	74.90	76.18	77.46	78.74	80.02	81.30	82.58	83.86	85.14
CANAL BASE ELEVATION	55.16	56.46	57.75	59.03	60.32	61.60	62.88	64.16	65.44	66.72	68.00	69.28	70.56	71.84	73.12	74.40	75.68	76.96	78.24	79.52	80.80	82.08	83.36	84.64
GROUND SURFACE ELEVATION	55.70	55.20	54.50	53.80	53.10	52.40	51.70	51.00	50.30	49.60	48.90	48.20	47.50	46.80	46.10	45.40	44.70	44.00	43.30	42.60	41.90	41.20	40.50	39.80
REDUCED DISTANCE	0.00	250.00	500.00	750.00	1000.00	1250.00	1500.00	1750.00	2000.00	2250.00	2500.00	2750.00	3000.00	3250.00	3500.00	3750.00	4000.00	4250.00	4500.00	4750.00	5000.00	5250.00	5500.00	5750.00
DISTANCE	0.00	250.00	500.00	750.00	1000.00	1250.00	1500.00	1750.00	2000.00	2250.00	2500.00	2750.00	3000.00	3250.00	3500.00	3750.00	4000.00	4250.00	4500.00	4750.00	5000.00	5250.00	5500.00	5750.00
STATION No.	No. 23	+50.00	No. 24	+50.00	No. 25	+50.00	No. 26	+50.00	No. 27	+50.00	No. 28	+50.00	No. 29	+50.00	No. 30	+50.00	No. 31	+50.00	No. 32	+50.00	No. 33	+50.00	No. 34	+50.00



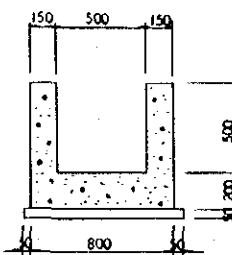
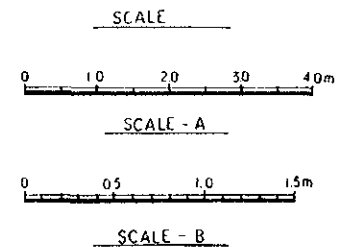
HORIZONTAL SCALE



CANAL SECTION



TYPICAL SECTION SCALE - A



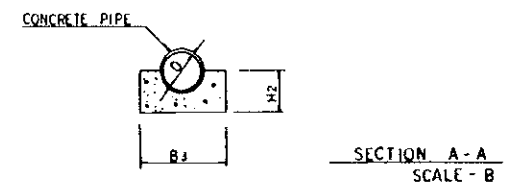
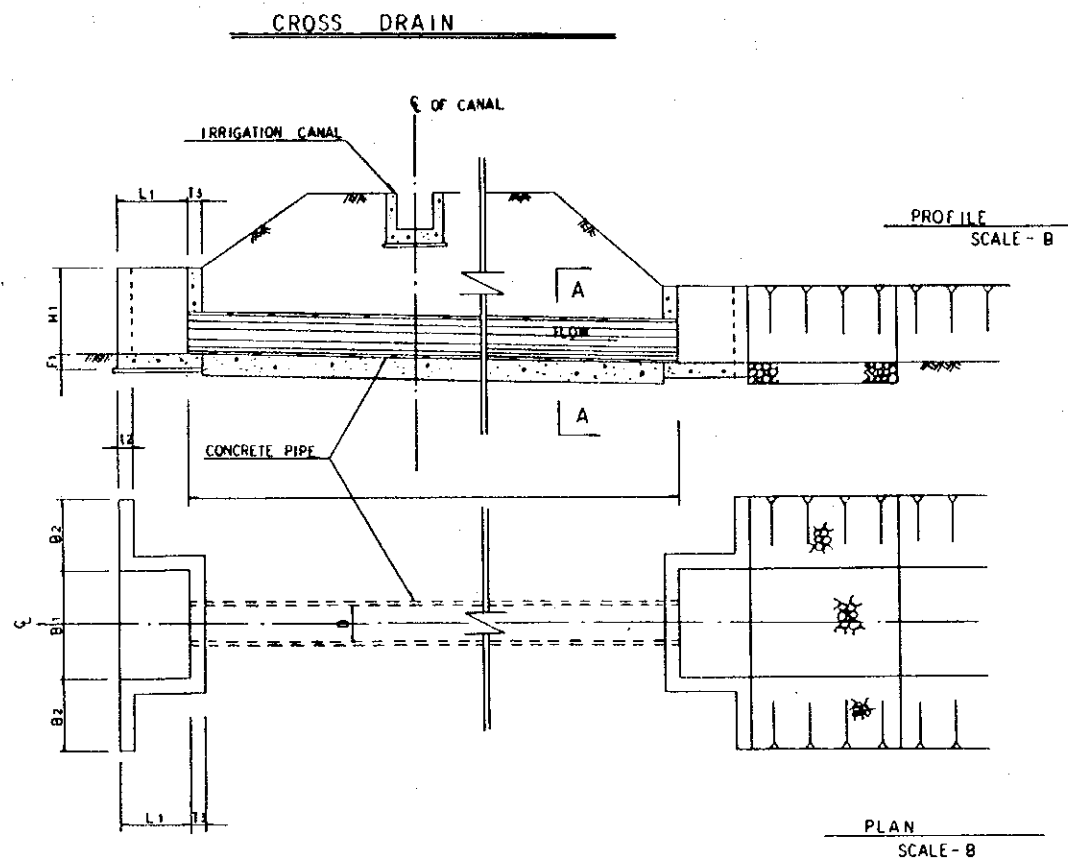
DETAIL OF SECTION SCALE - B

Dwg.-310 Tasielah Irrigation Facilities (1/2)

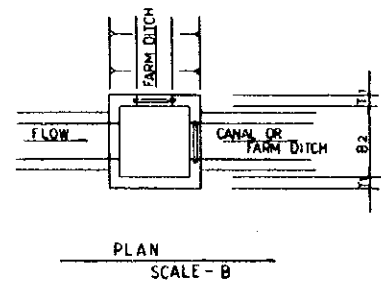
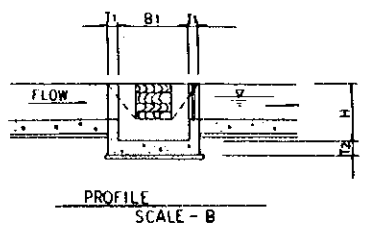
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS  
 The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara  
 TASIEPAH SCHEME  
 IRRIGATION FACILITIES (1/2)  
 No. \_\_\_\_\_ Area \_\_\_\_\_  
 JAPAN INTERNATIONAL COOPERATION AGENCY



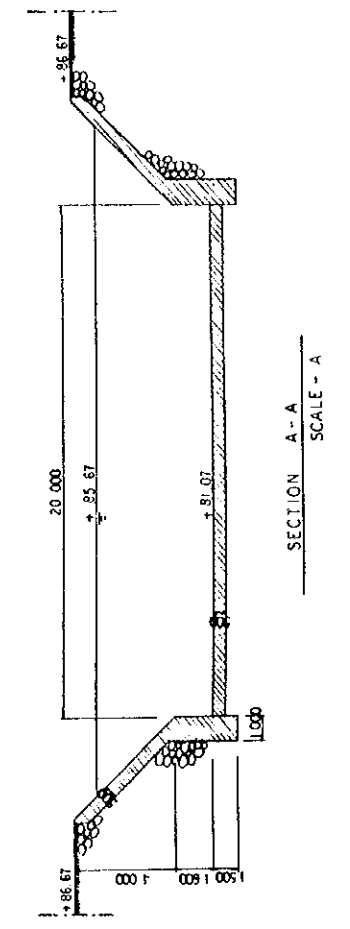
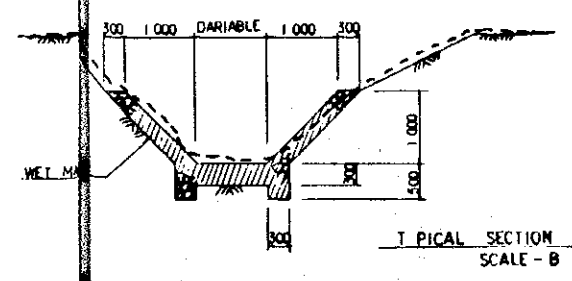
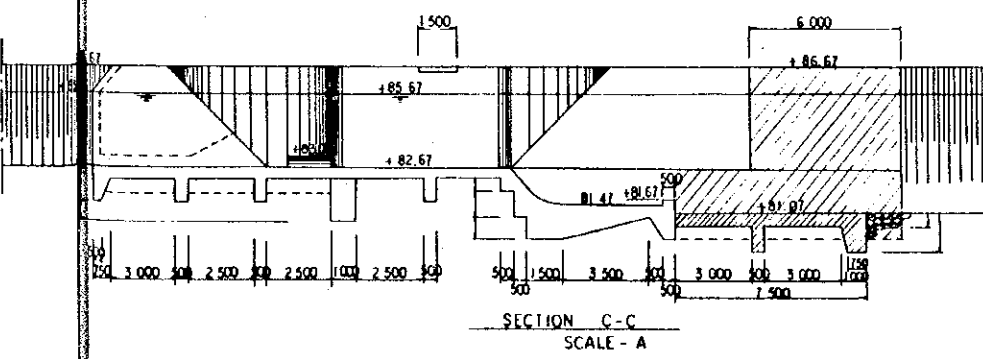
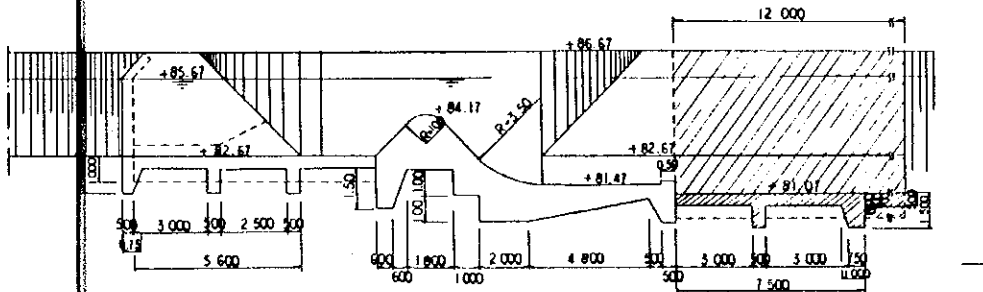
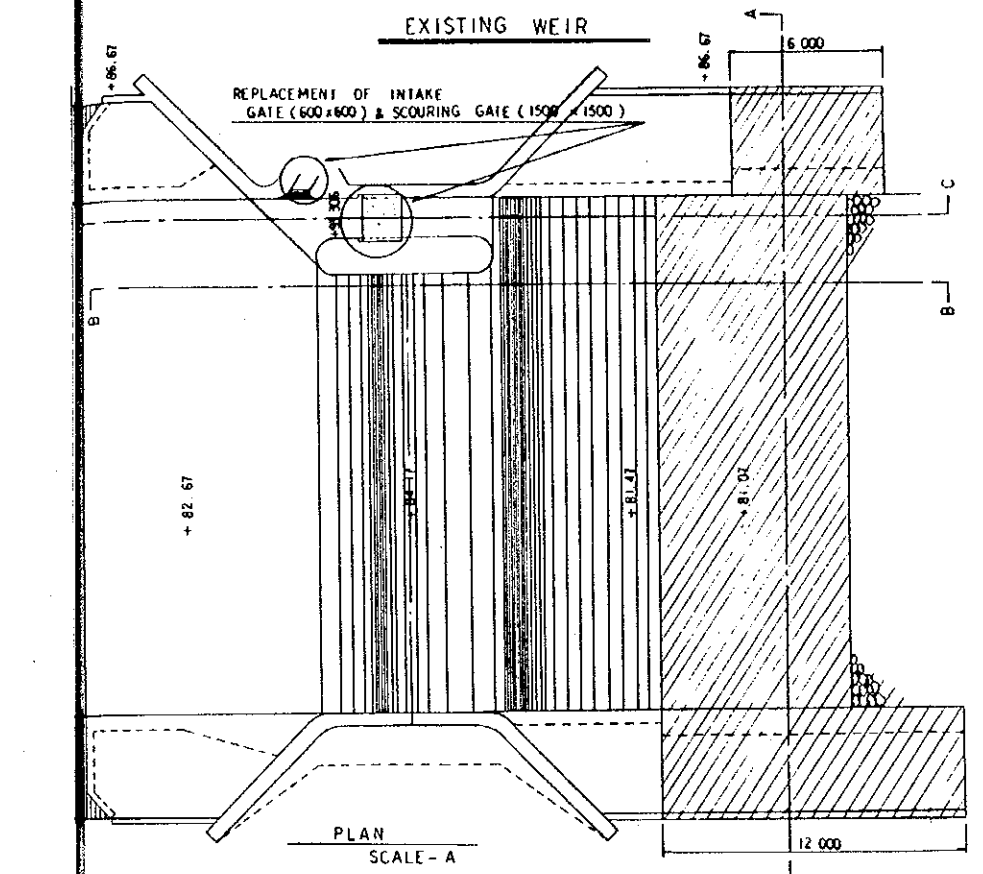
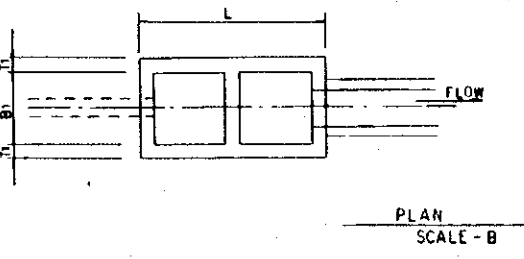
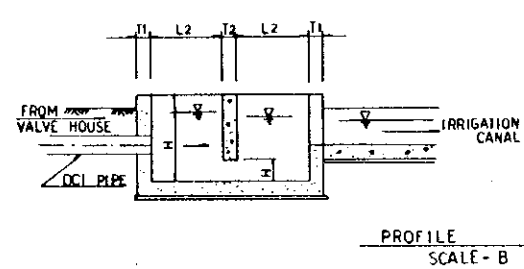
REHABILITATION OF RIGHT SIDE FACILITIES



IRRIGATION DIVISION BOX



IRRIGATION INLET



LEGEND

REHABILITATION WORKS

SCALE

0 50 100 150m

SCALE - A

0 1.0 2.0 3.0 4.0m

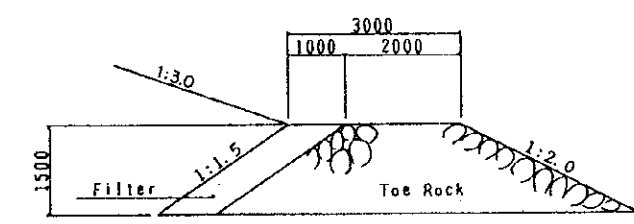
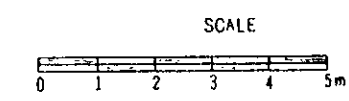
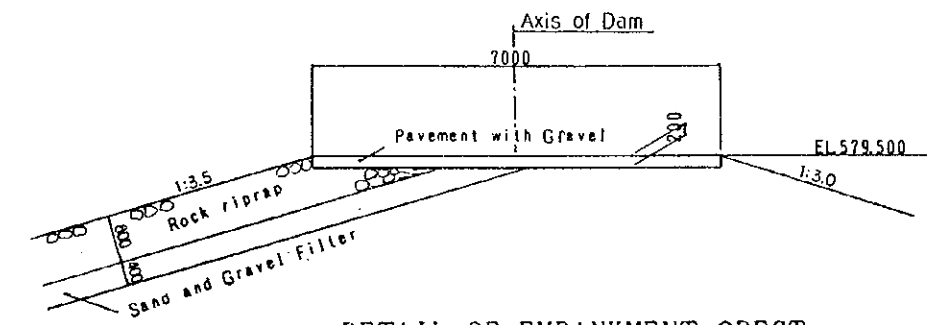
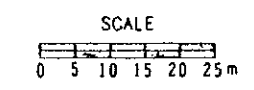
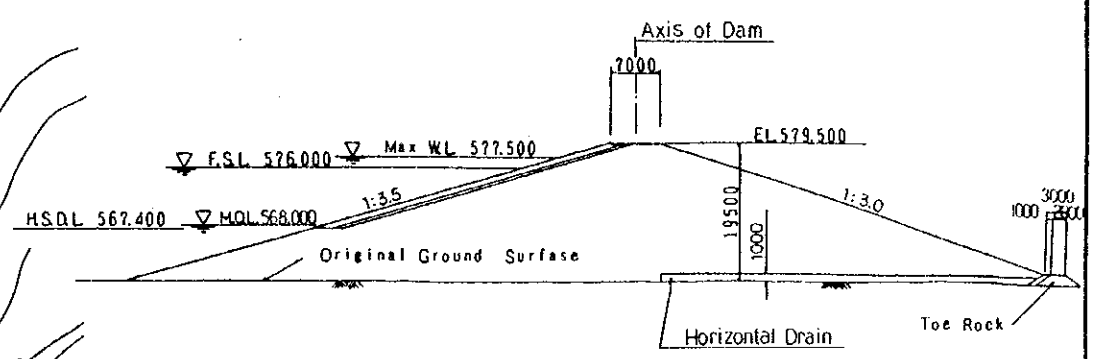
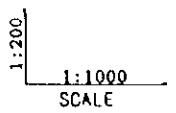
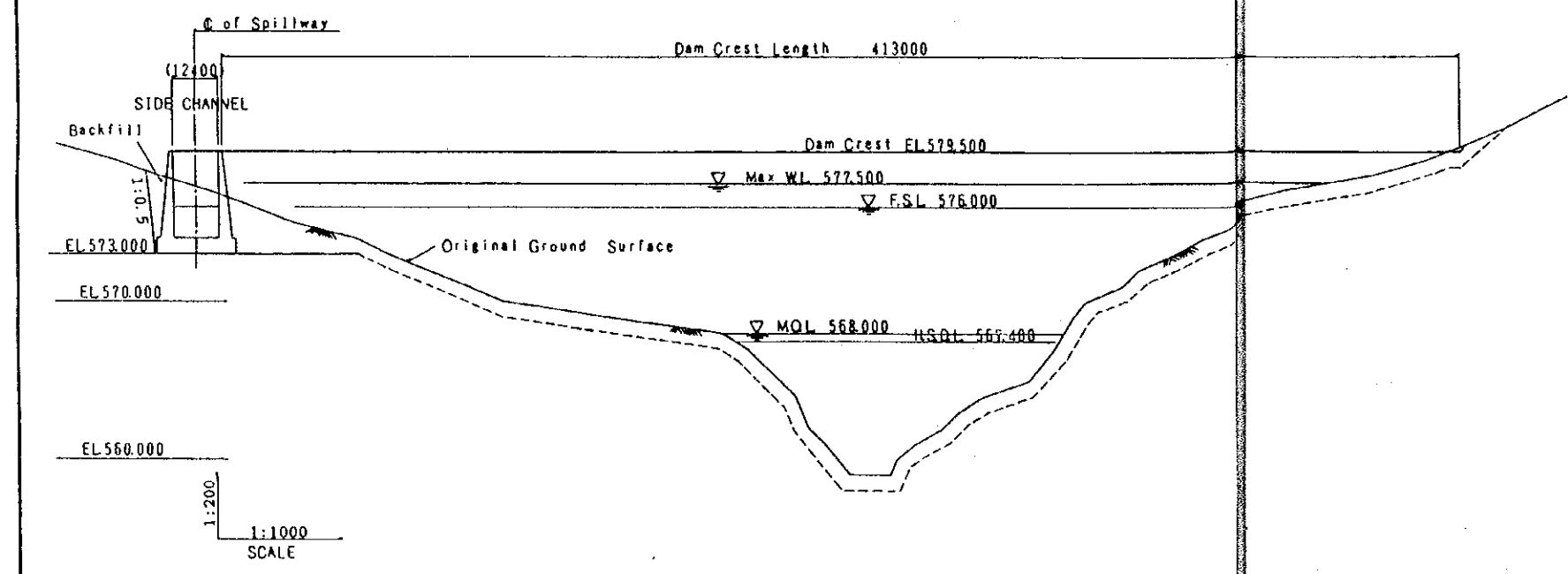
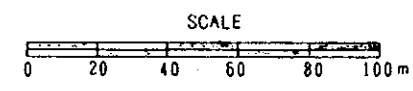
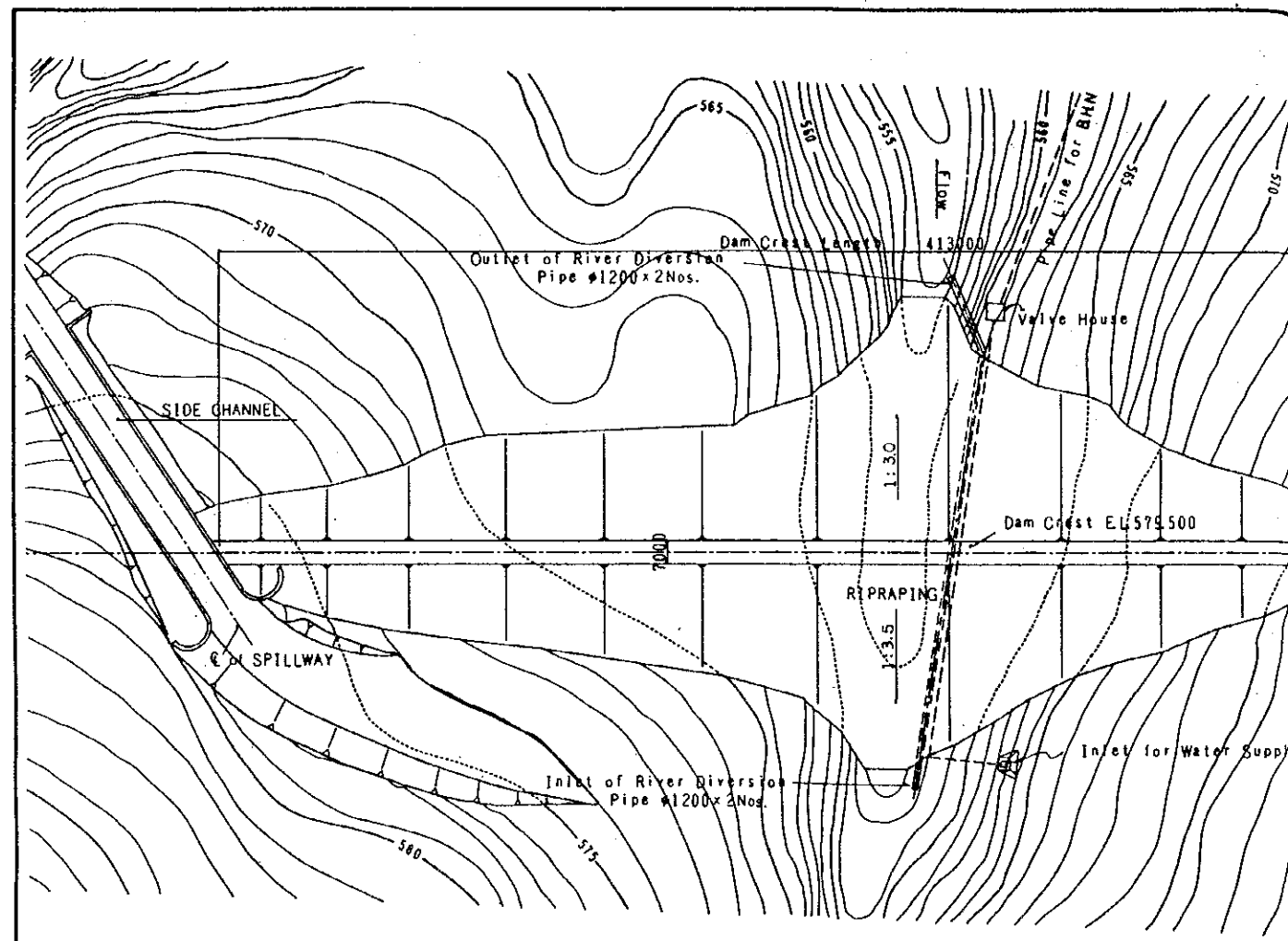
SCALE - B

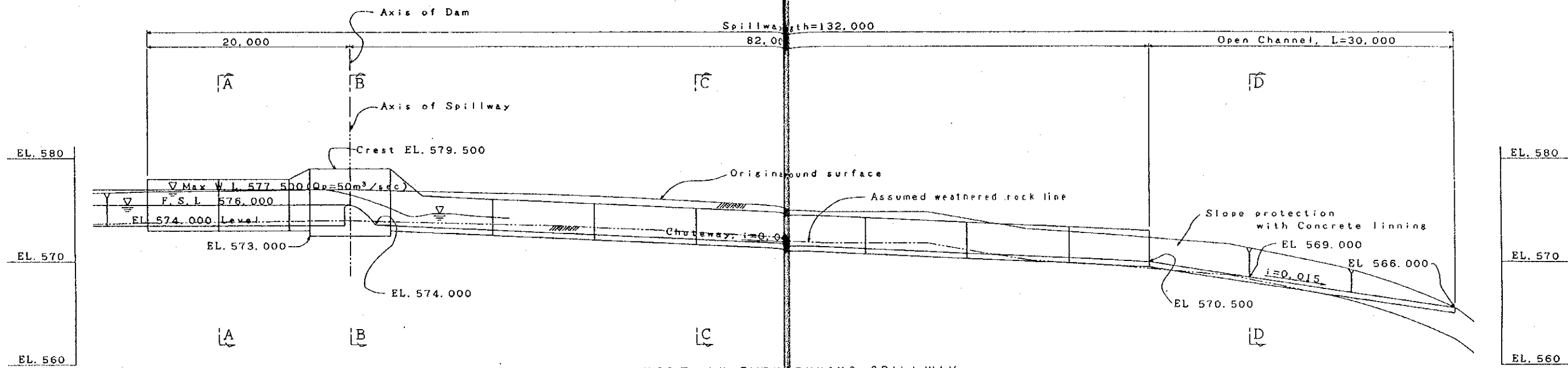
REHABILITATION PLAN FOR EXISTING CANAL

Dwg.-311 Tasiepah  
Irrigation Facilities (2/2)

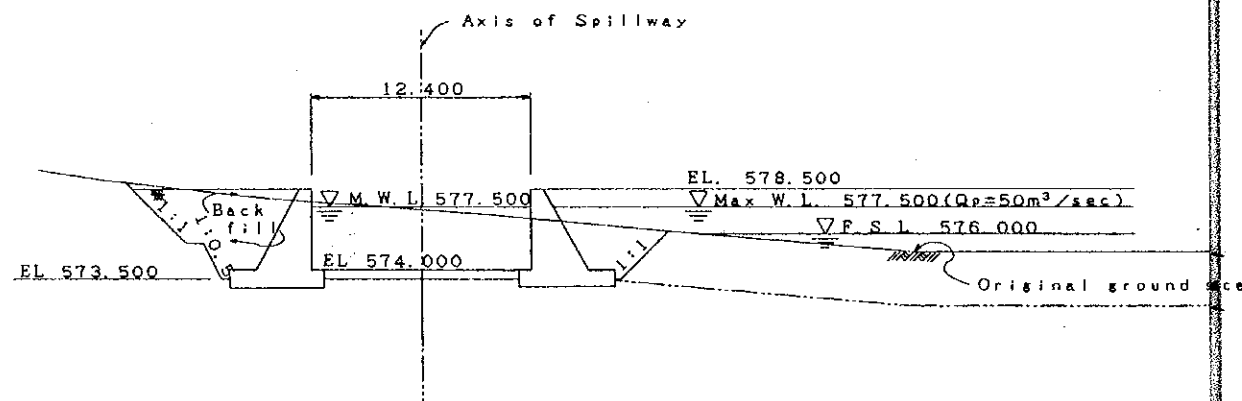
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS	
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara	
TASIEPAH SCHEME	
IRRIGATION FACILITIES (2/2)	
No.	Area
JAPAN INTERNATIONAL COOPERATION AGENCY	



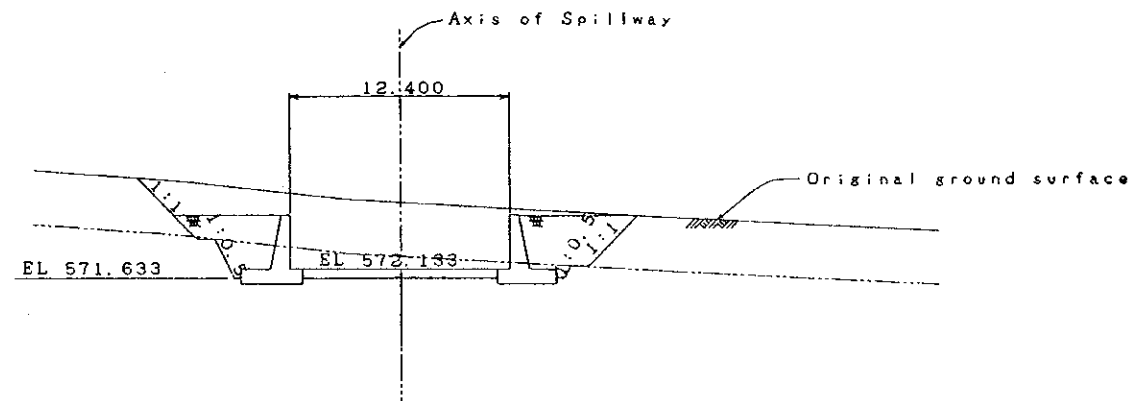




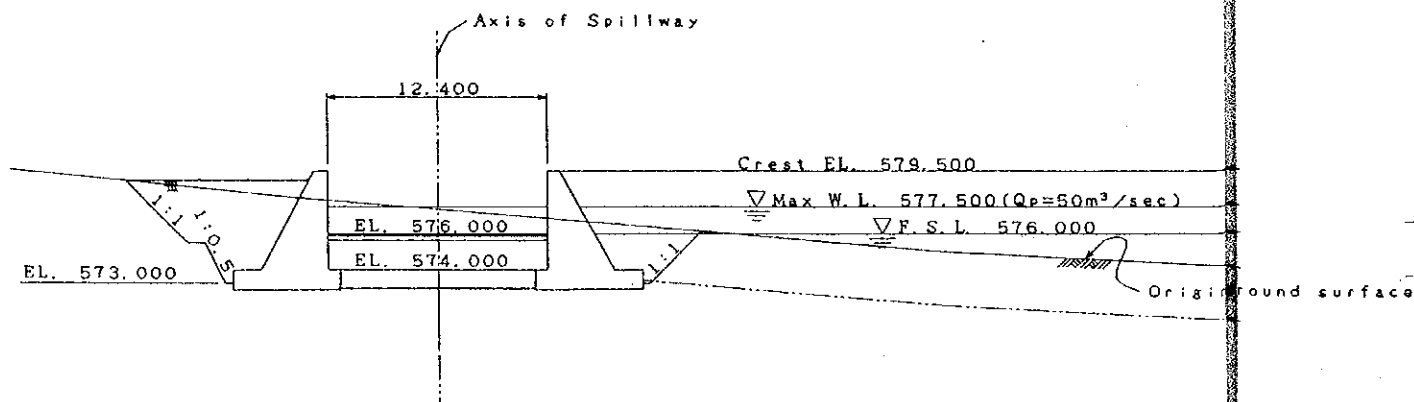
PROFILE OF EMBUKENKOKO SPILLWAY



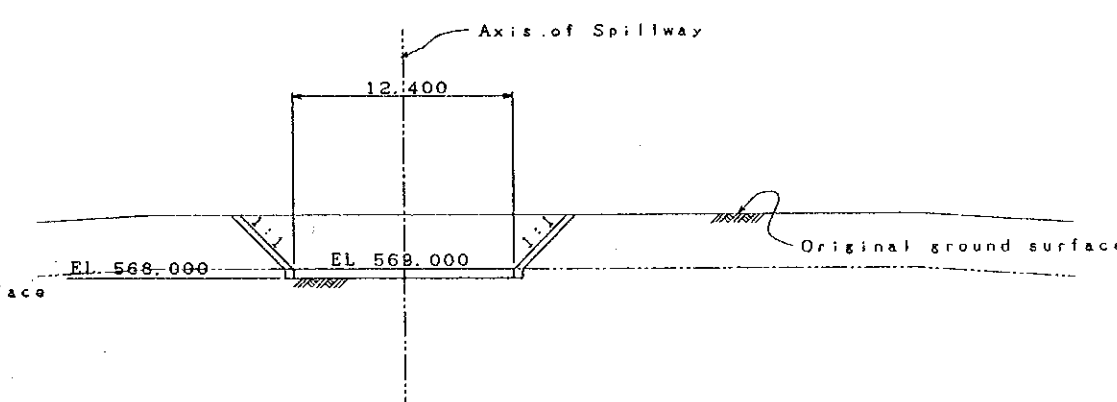
SECTION A - A



SECTION C - C

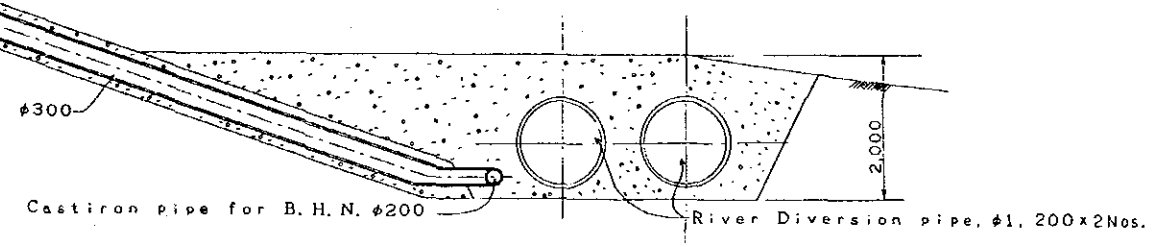
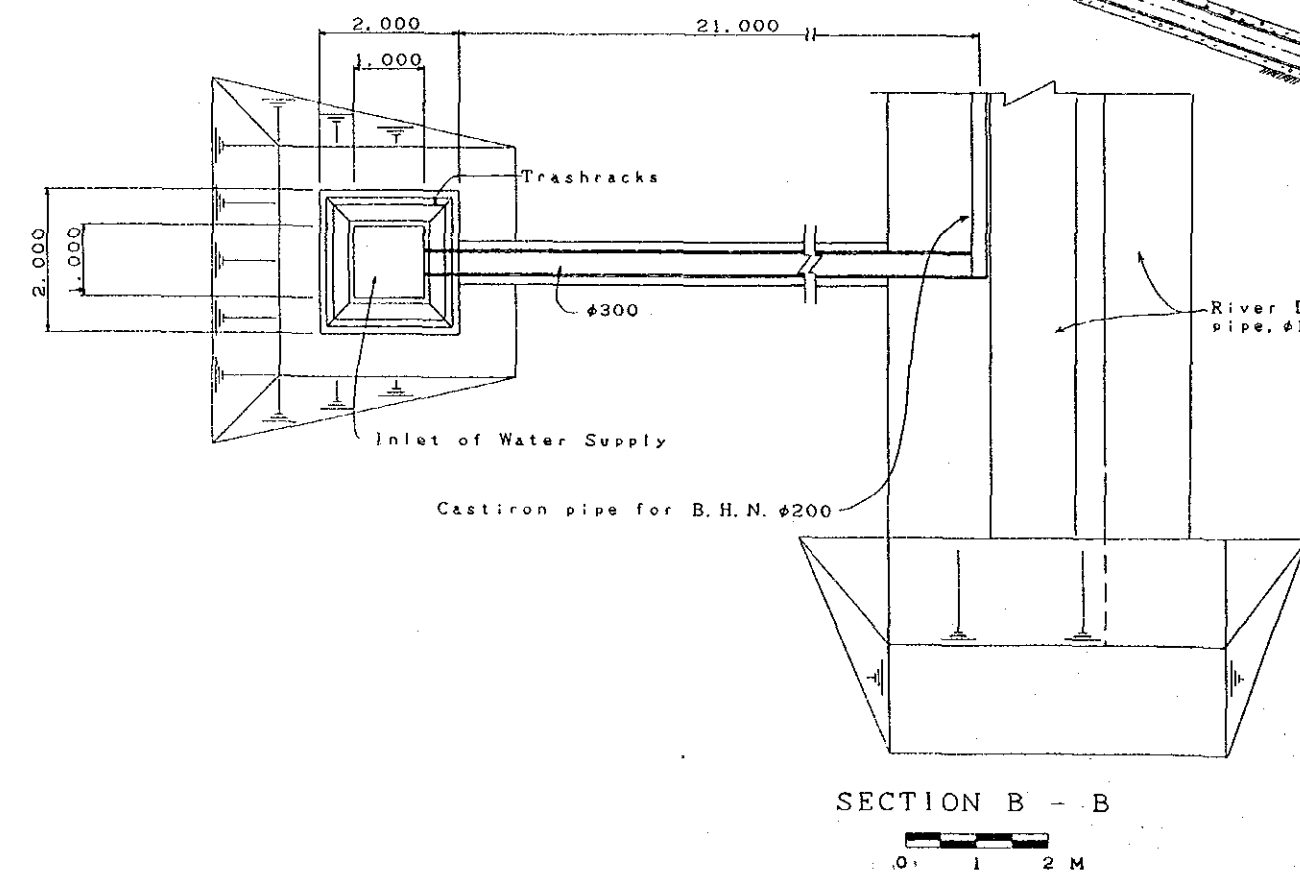
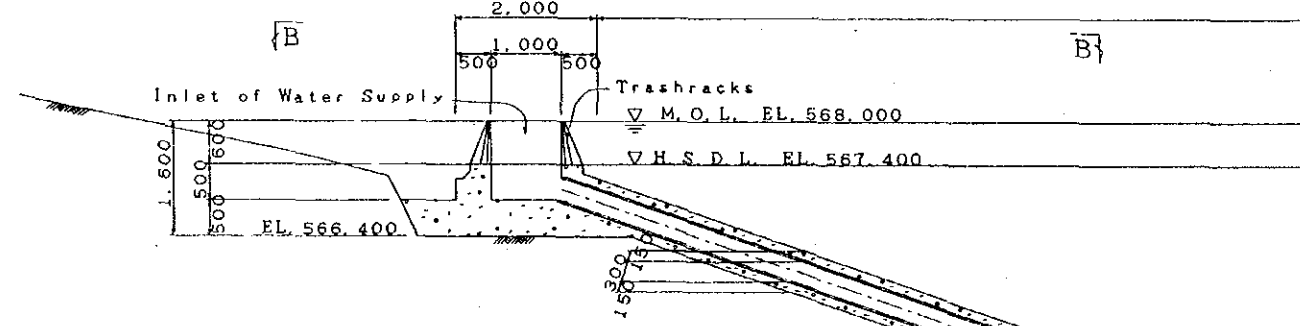
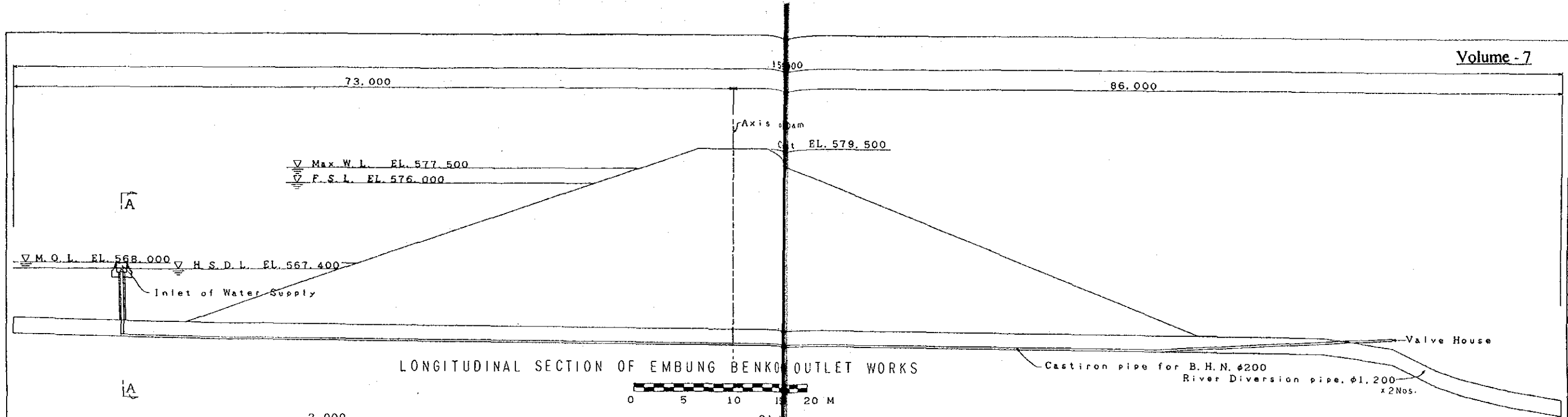


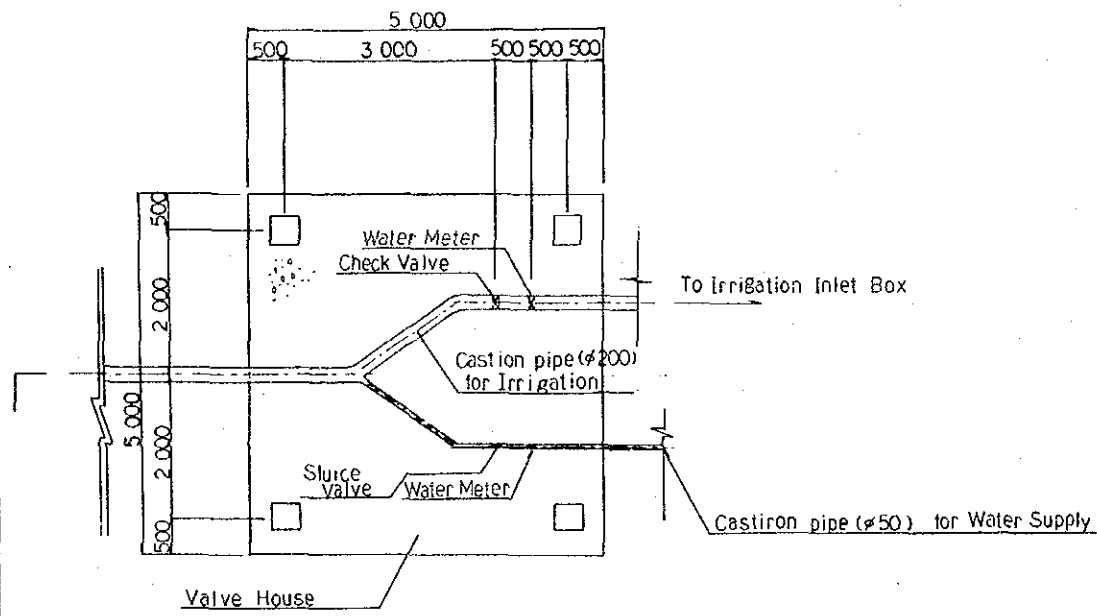
SECTION B - B



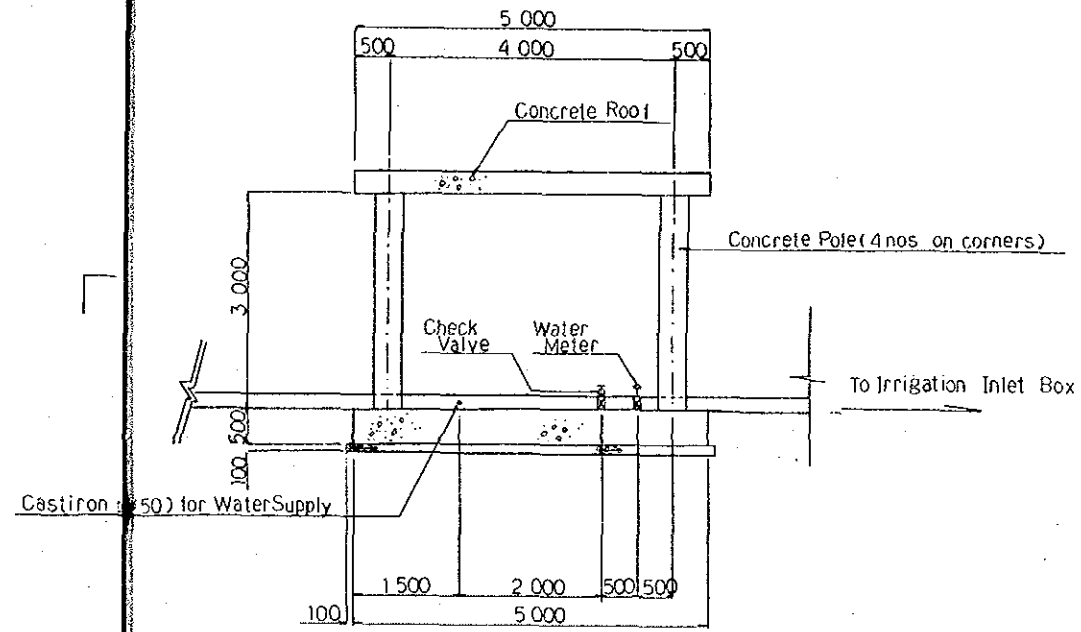
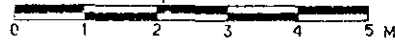
SECTION D - D



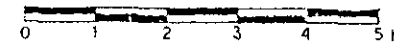




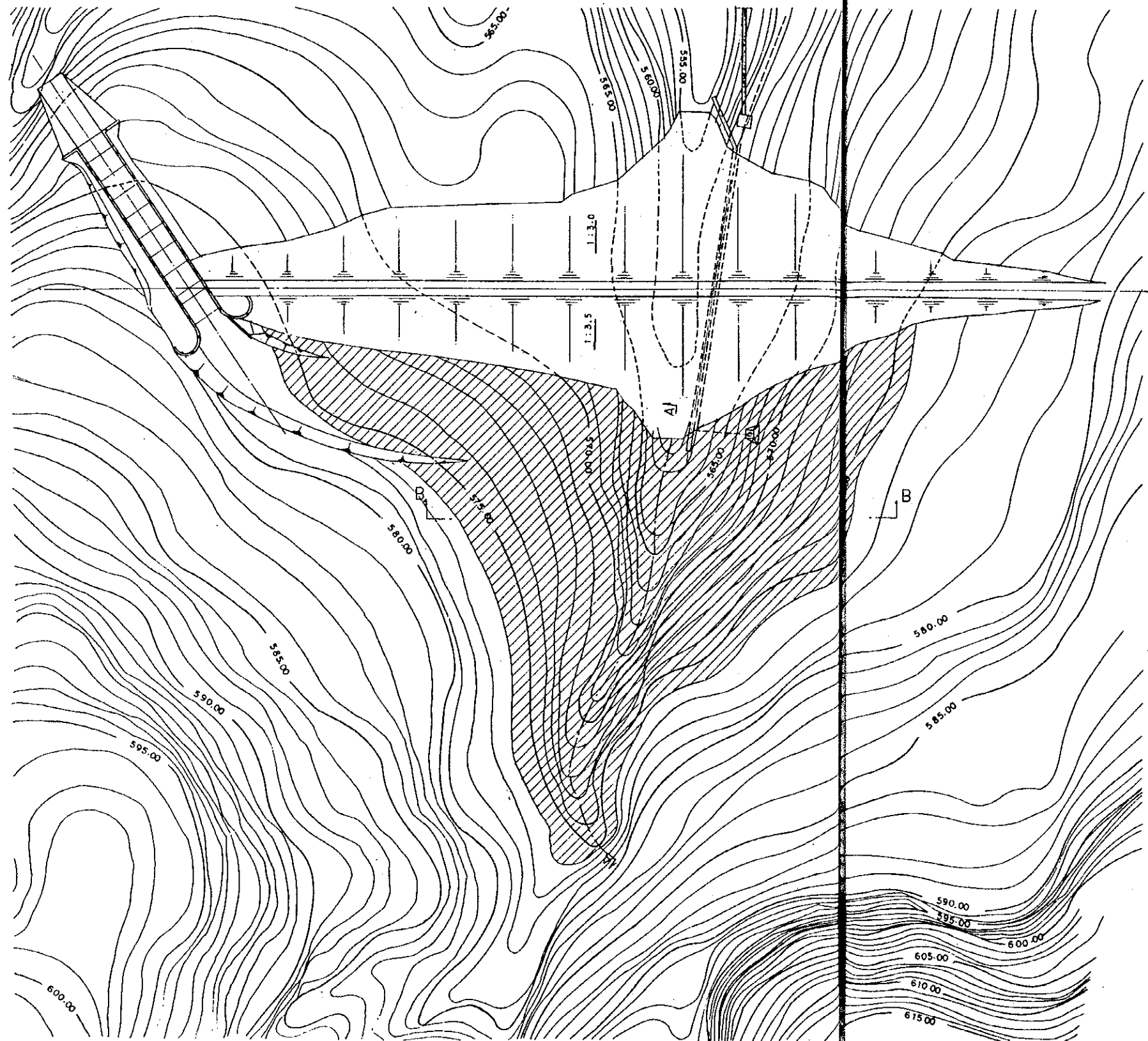
PROFILE OF EMBUNG BENKOKO VALVE HOUSE



LONGITUDINAL SECTION OF VALVE HOUSE

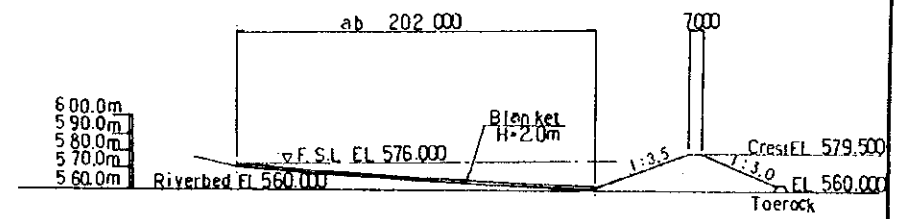


PLAN OF BENKOKO RESERVOIR AREA BLANKET

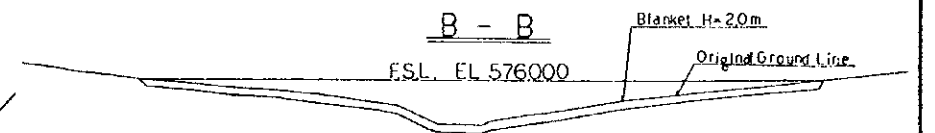


SCALE 1 : 1000  
 0 10 20 30 40 50M

LONGITUDINAL SECTION OF BLANKET



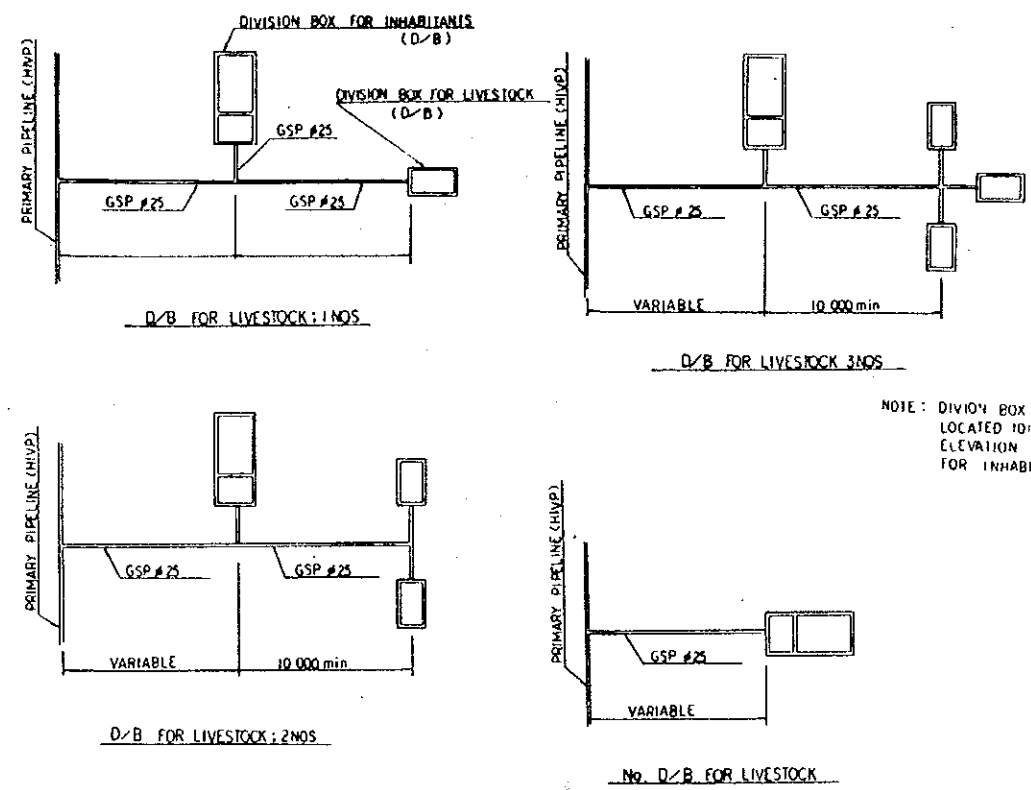
SCALE 1 : 2000  
 0 20 40 60 80 100M



SCALE 1 : 1000  
 0 10 20 30 40 50M

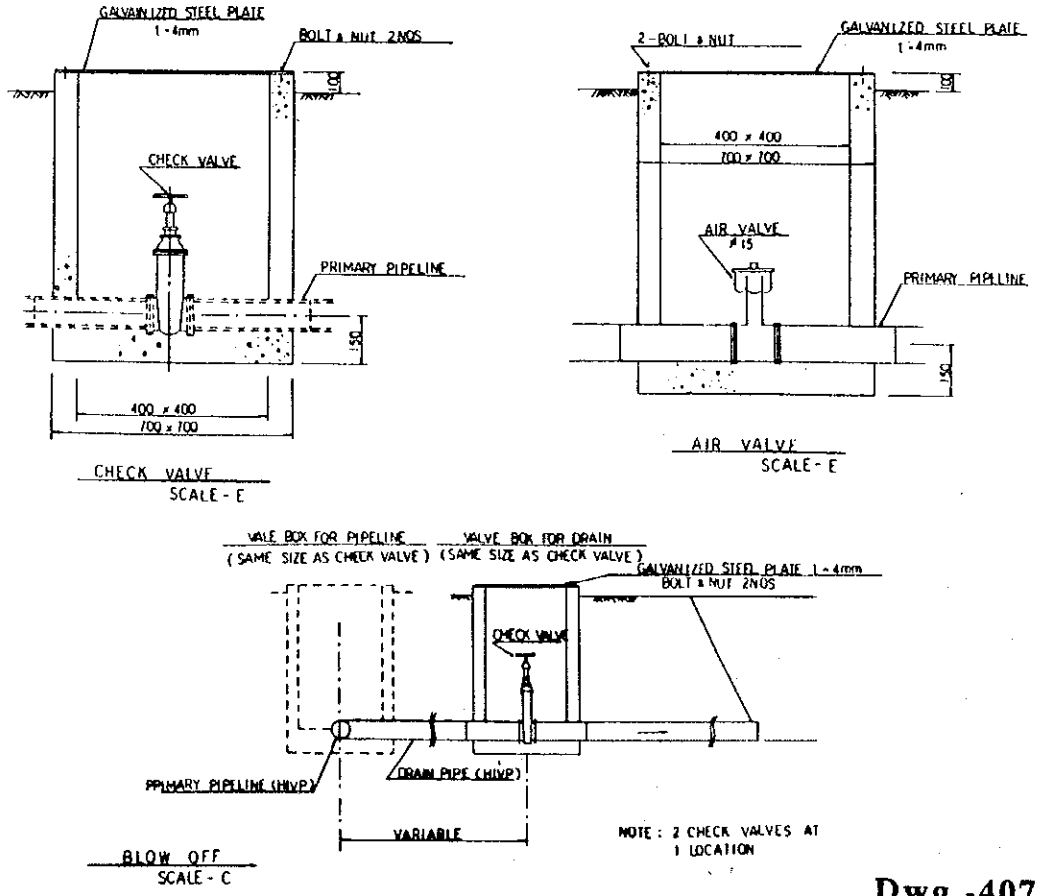
TYPICAL ARRANGEMENT OF DIVISION BOXES FOR INHABITANTS AND LIVESTOCK

SCALE - A



NOTE: DIVISION BOX FOR LIVESTOCK SHALL BE LOCATED 10m FAR AND LOWER ELEVATION FROM DIVISION BOX FOR INHABITANT.

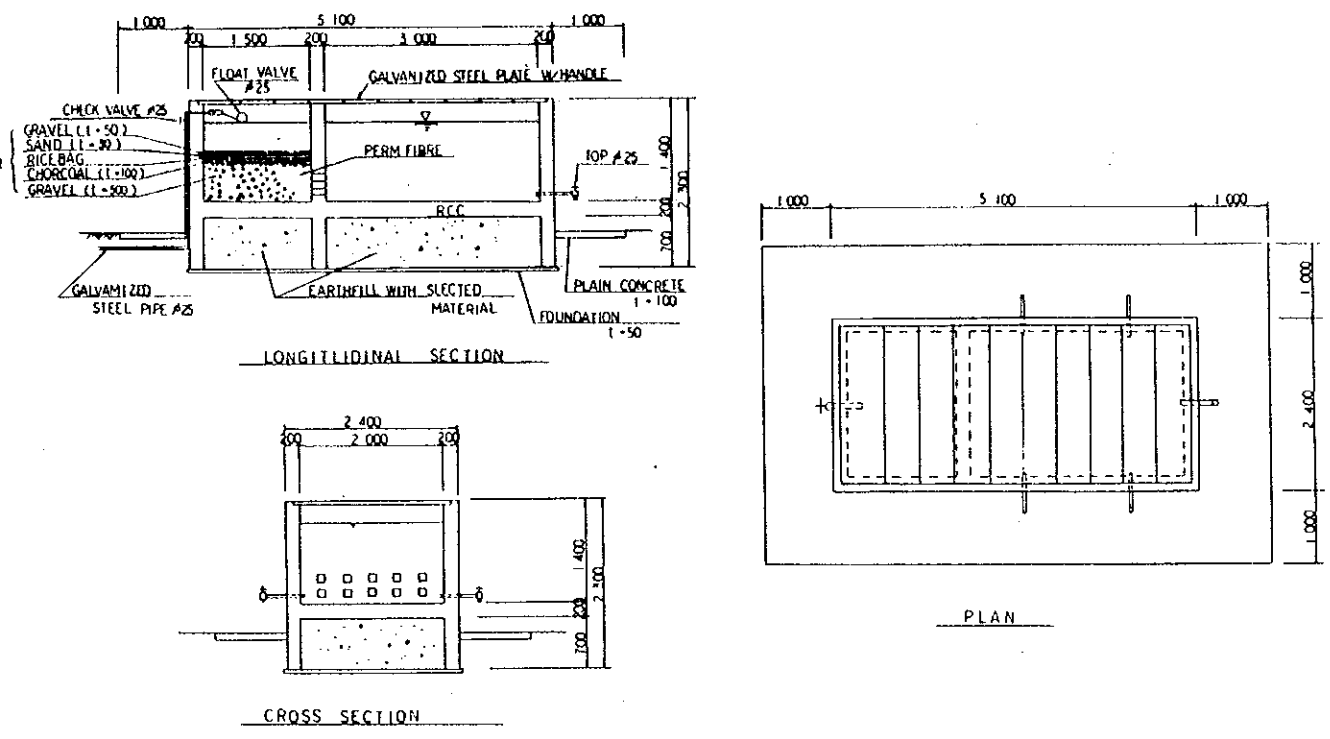
RELATED FACILITIES



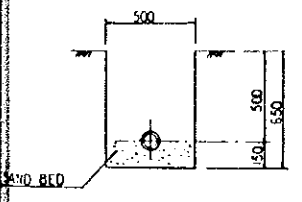
NOTE: 2 CHECK VALVES AT 1 LOCATION

DIVISION BOX FOR INHABITANTS

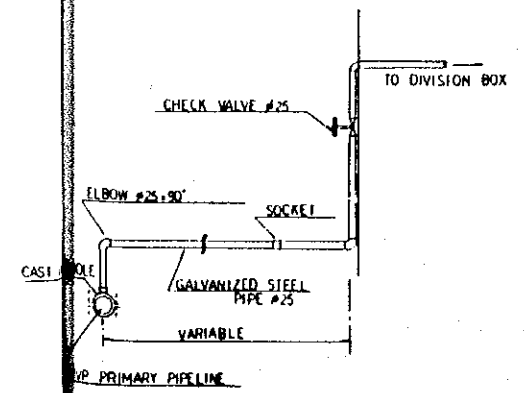
SCALE - B



TYPICAL EXCAVATION OF PIPELINE

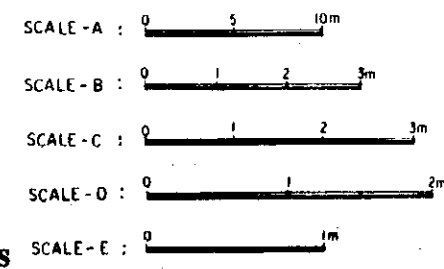
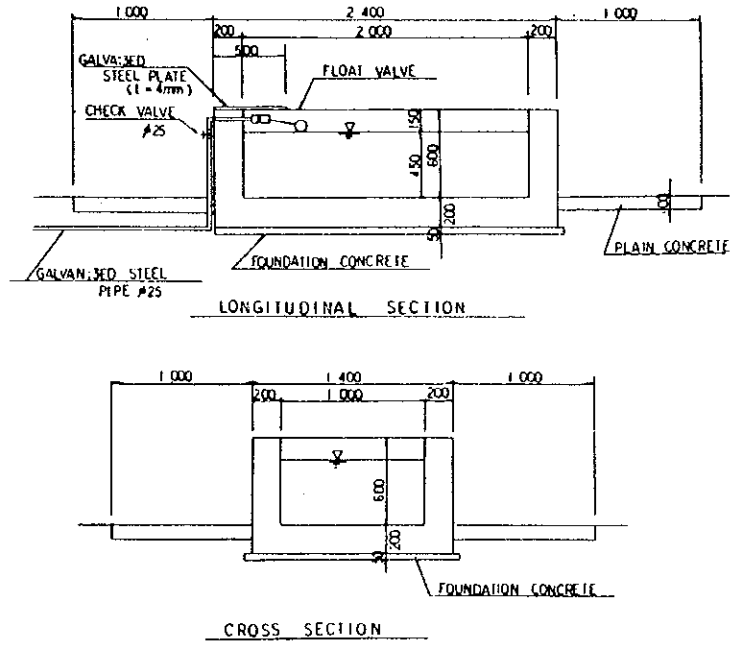


TYPICAL ARRANGEMENT OF INCOMING LINE



DIVISION BOX FOR LIVESTOCK

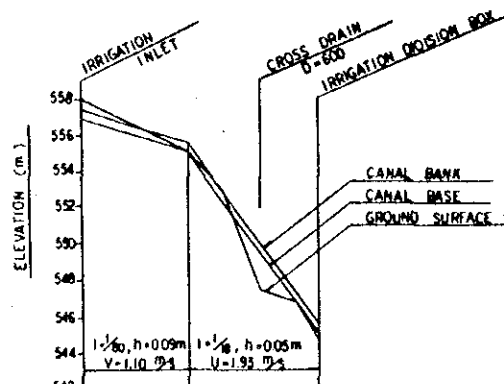
SCALE - D



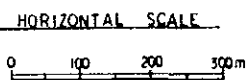
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS	
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara	
No.	Area
JAPAN INTERNATIONAL COOPERATION AGENCY	



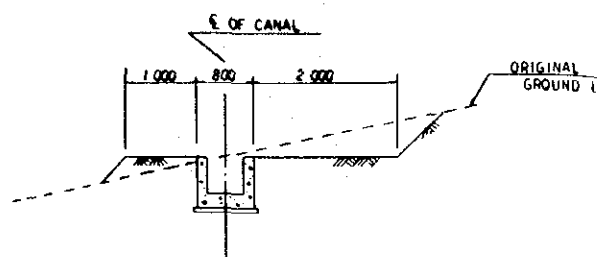
CANAL PROFILE



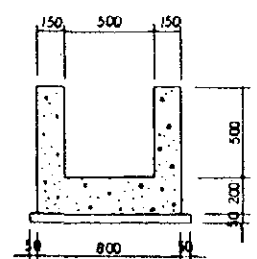
CANAL BANK ELEVATION	557.42	556.73	556.17	555.54	552.76	549.98	547.21	545.54
CANAL BASE ELEVATION	556.92	556.29	555.67	555.04	552.26	549.48	546.71	545.04
GROUND SURFACE ELEVATION	558.00	557.00	556.00	555.10	552.90	549.50	546.70	544.70
REDUCED DISTANCE	0.00	50.00	100.00	150.00	200.00	250.00	300.00	350.00
DISTANCE	0.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
STATION No.	BP	No.1	No.2	No.3	EP			



CANAL SECTION

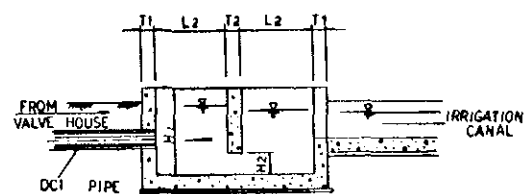


TYPICAL SECTION SCALE - A

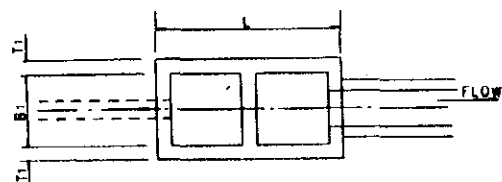


DETAIL OF CANAL SECTION SCALE - B

IRRIGATION INLET

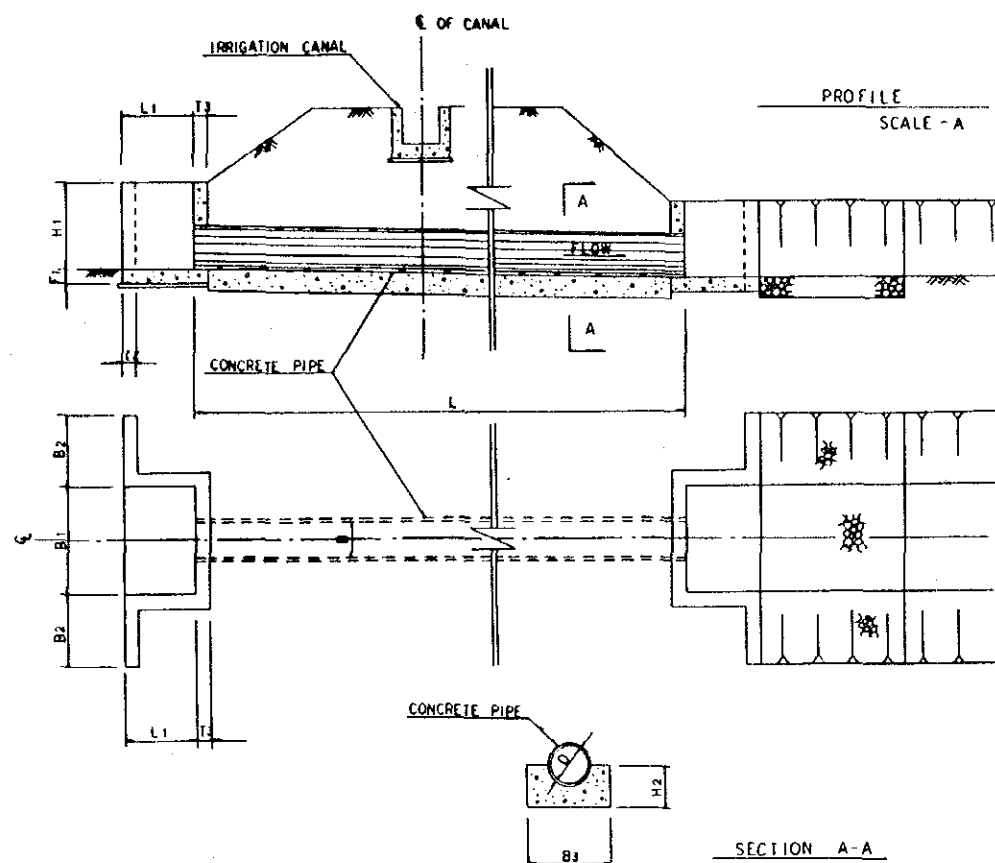


PROFILE SCALE - A

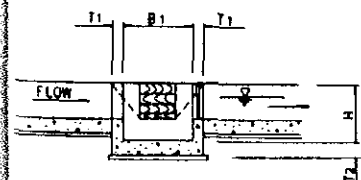


PLAN SCALE - A

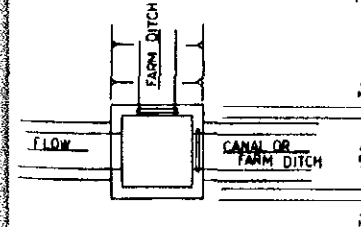
CROSS DRAIN



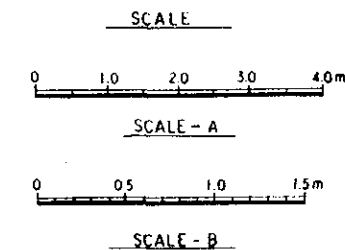
IRRIGATION DIVISION BOX



PROFILE SCALE - A

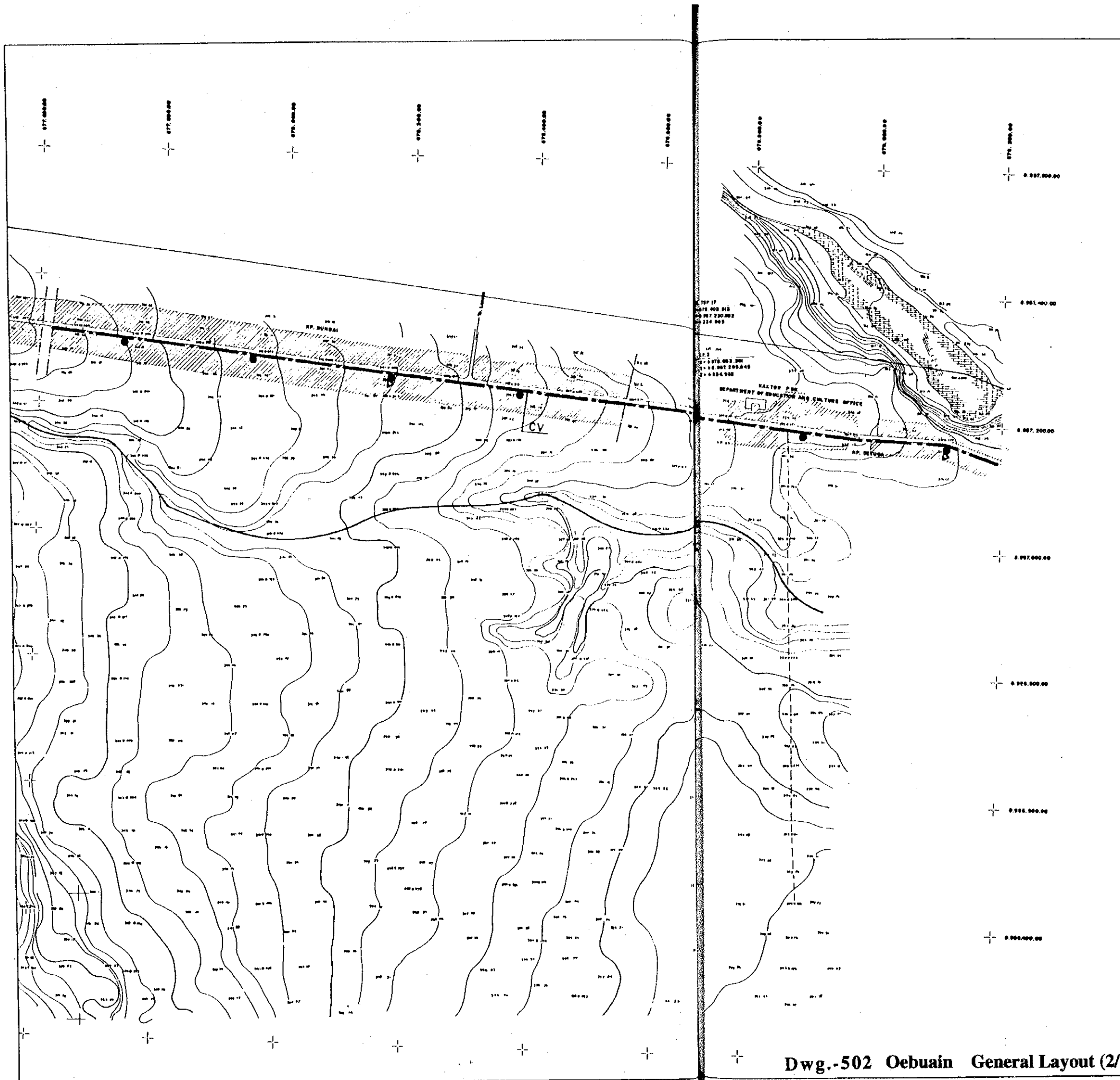


PLAN SCALE - A



DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS	
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara	
BENKOKO SCHEME	
IRRIGATION FACILITIES	
No.	Area
JAPAN INTERNATIONAL COOPERATION AGENCY	





**LEGEND**

- — — — — Pipe Line
- - - - - Irrigation Canal
- Division Box for Inhabitants
- △ Division Box for Livestock
- Valve House /Irrigation Inlet Box
- Irrigation Division Box
- CV = Check Valve
- AV = Air Valve
- BO = Blow Off

U/N  
↑

**LEGEND :**

- BENTUK KONTOUR
- TRANSEK PENGUKURAN APPROXIMATE CONTOUR
- SUNGAI RIVER
- ALIRAN FLOW DIRECTION
- BENDUNGAN DAM
- TAMBANAN FLOOD SIDE
- TITIK TETAP BENCANA
- TITIK POLIGON TRANSIENSI POINT
- STASIUN TRIANGULASI STATION
- GARIS SURVEI SURVEY LINE SURVEI
- GRID TAPAK GRID
- SAWAH RICEFIELD
- LADANG NON PERMILITAN
- RISA PADDY
- JALAN PROPINSI PROVINCE ROAD
- BATAS KAMPUNG SUB-VILLAGE BOUNDARY

1 2 4

3

SCALE 1:2000

DIRECTORATE GENERAL OF  
WATER RESOURCES DEVELOPMENT  
MINISTRY OF PUBLIC WORKS

The Embung Development Project in  
East Nusa Tenggara and West Nusa Tenggara

**IMPOUNDING AREA AND BENEFICIARY AREA**

**EMBUNG CE BUAIN**

**EAST NUSA TENGGARA**

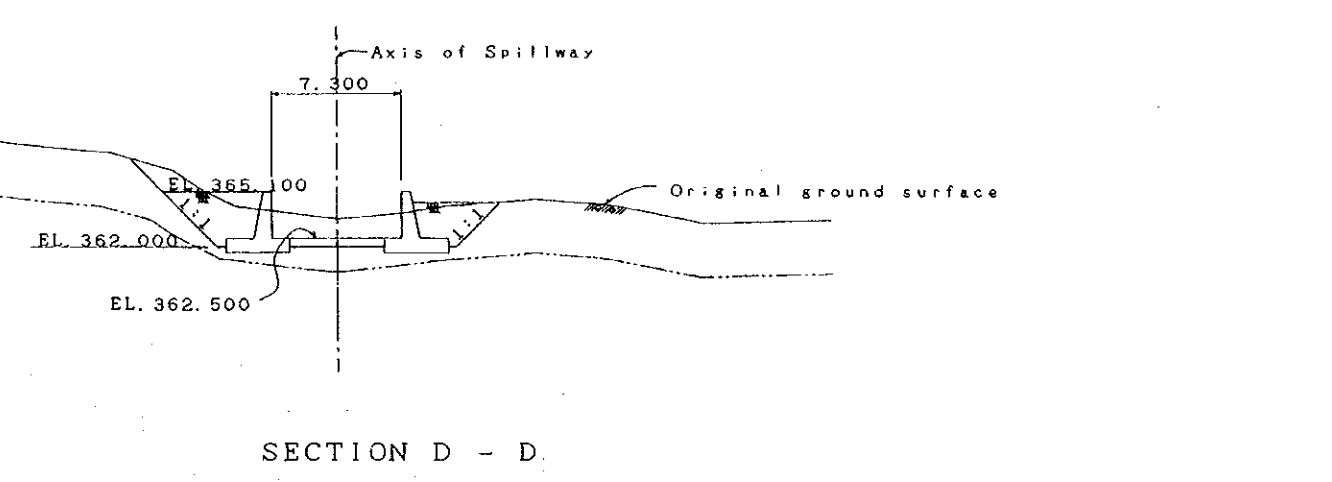
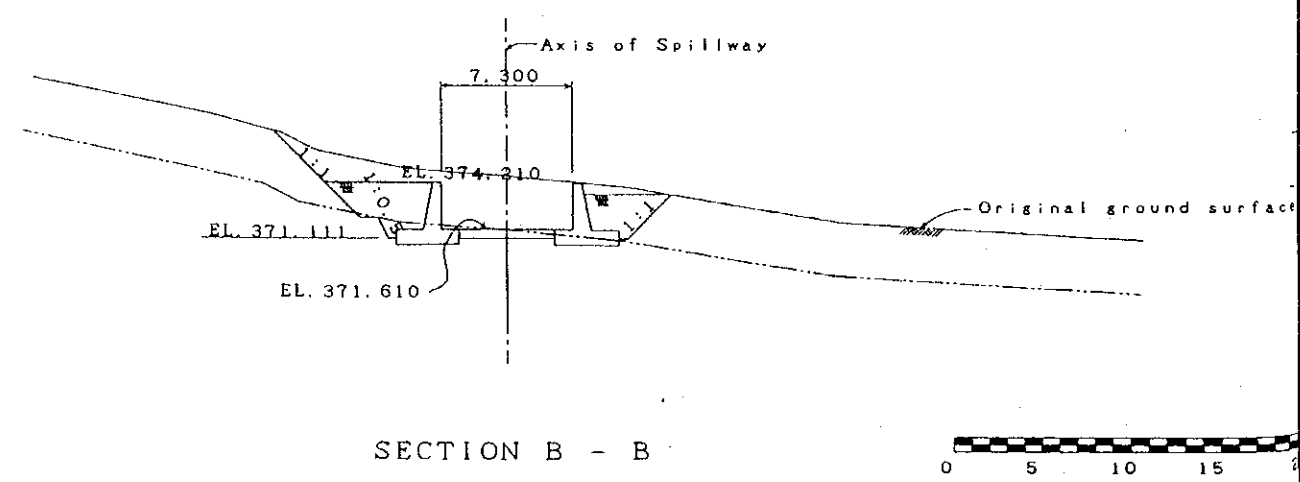
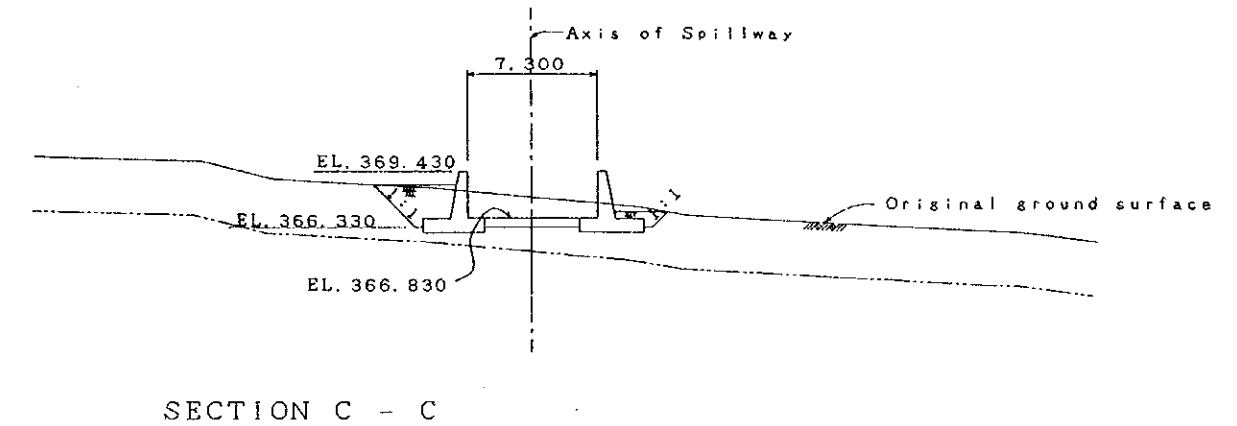
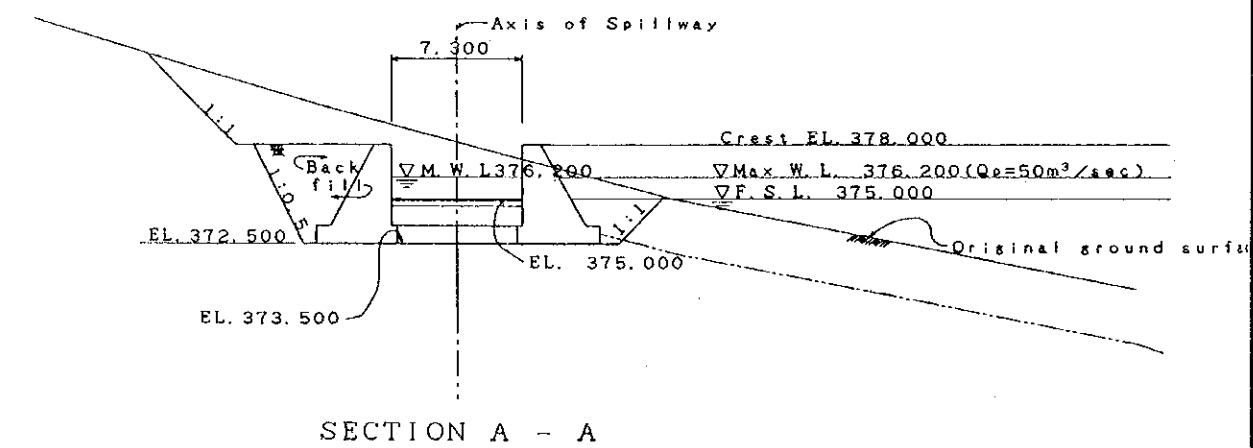
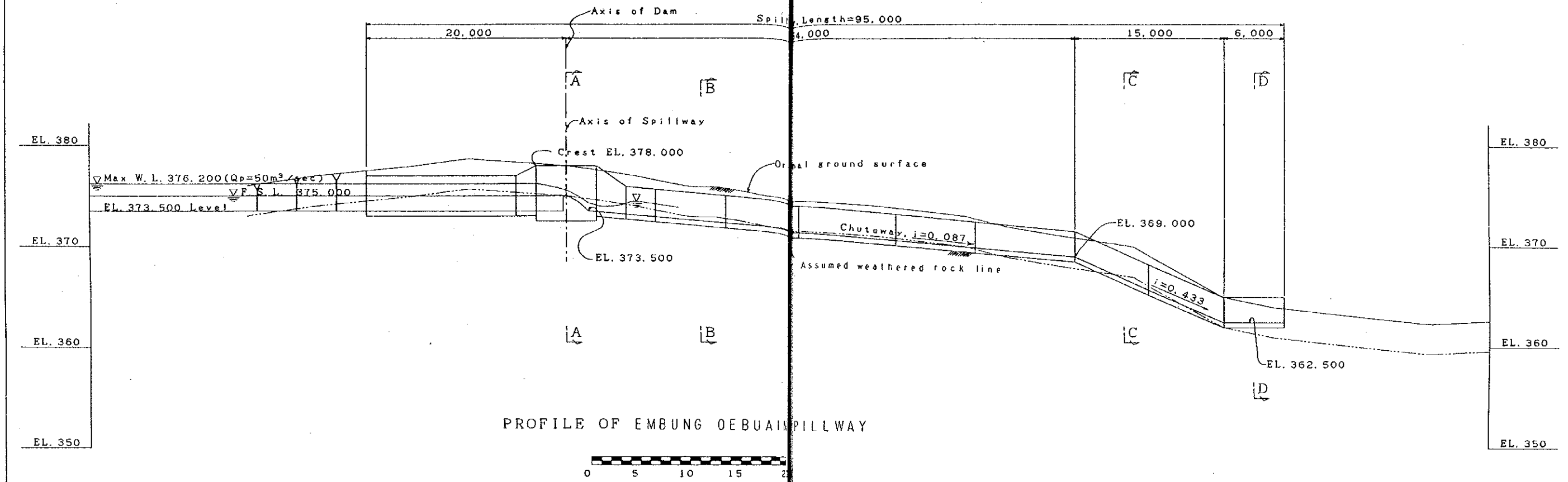
No. \_\_\_\_\_ Date \_\_\_\_\_

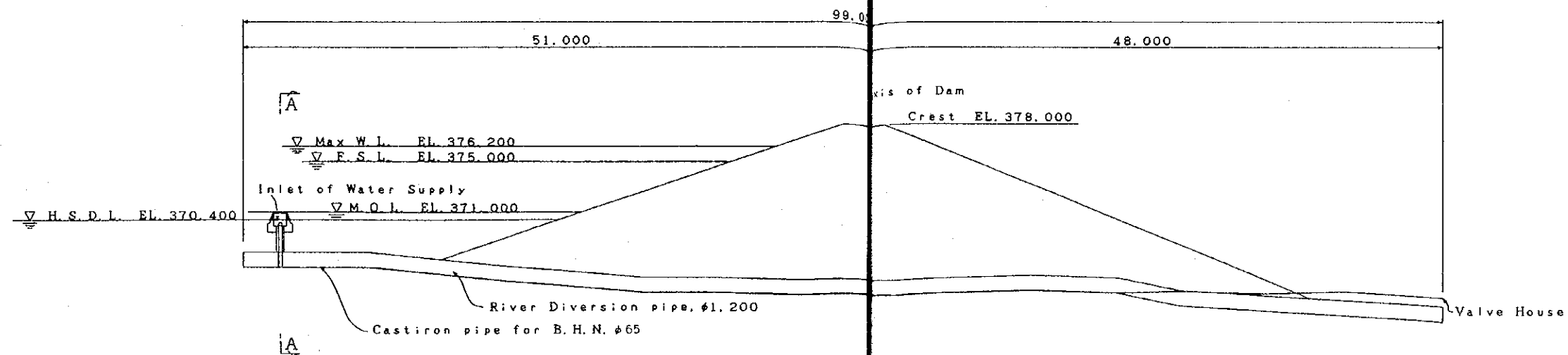
JAPAN INTERNATIONAL COOPERATION AGENCY

**Dwg.-502 Oebuain General Layout (2/3)**

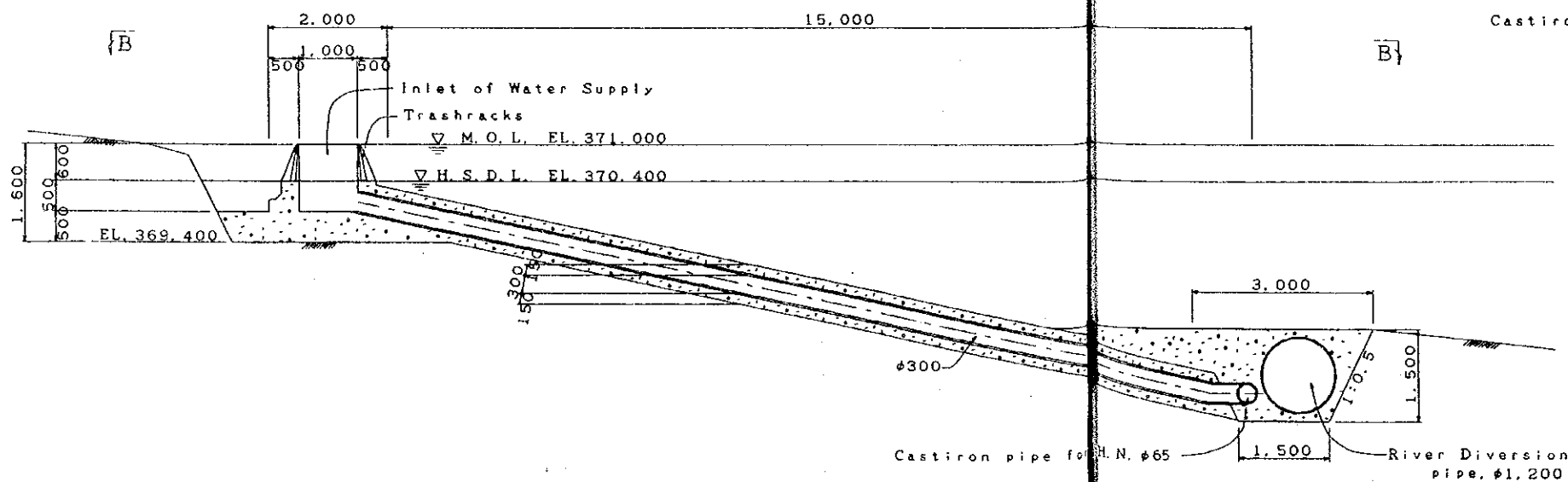
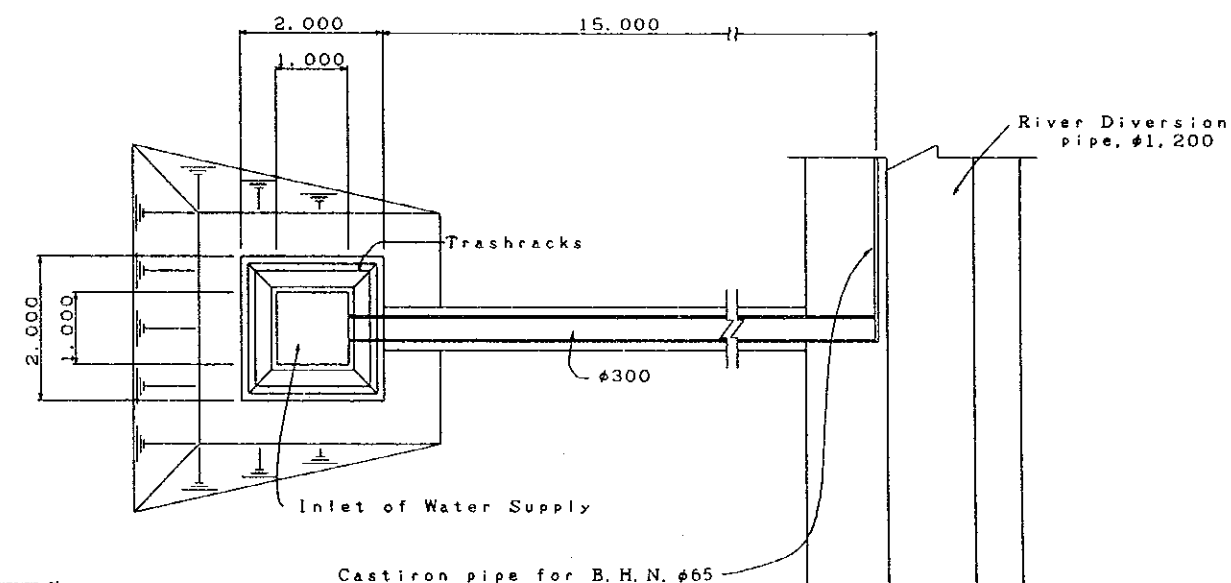




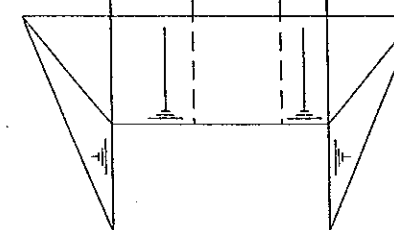
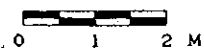




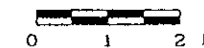
LONGITUDINAL SECTION OF EMBUNG OEBUAIN OUTLET WORKS

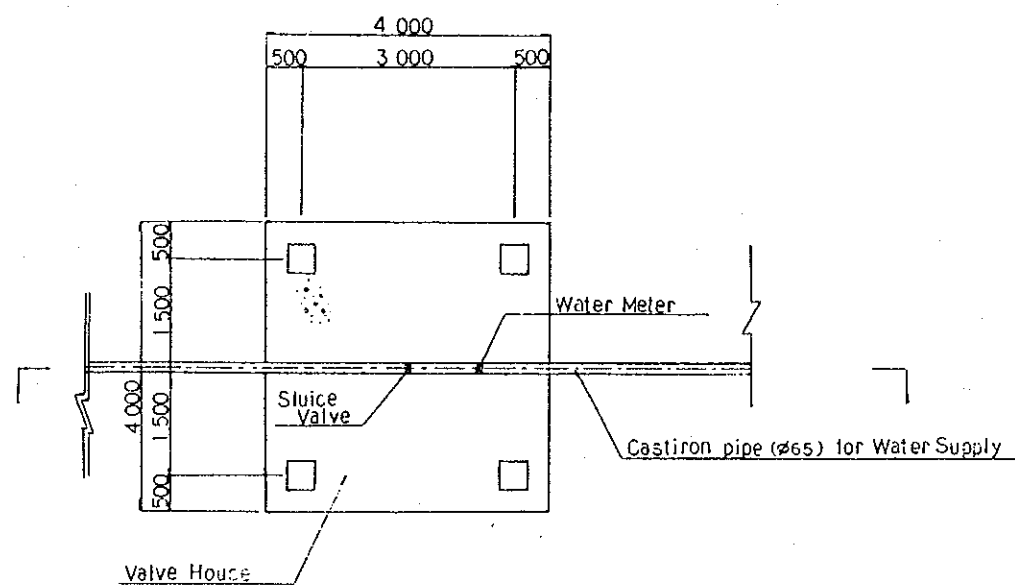


SECTION A - A

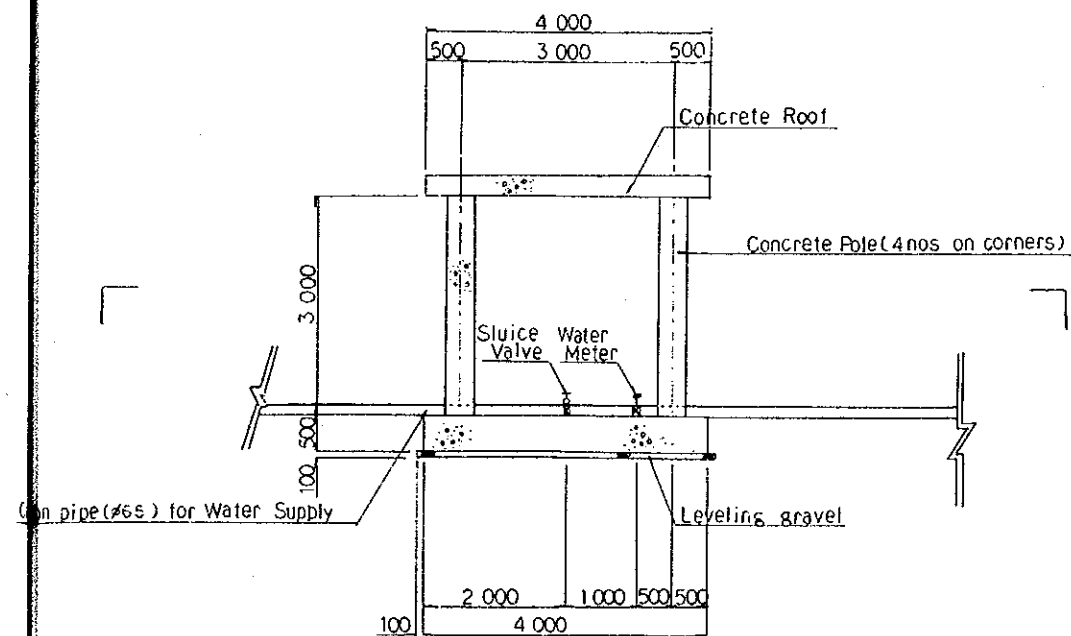


SECTION B - B

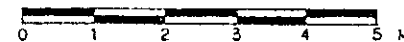




PLAN OF EMBUNG OEBUAIN VALVE HOUSE

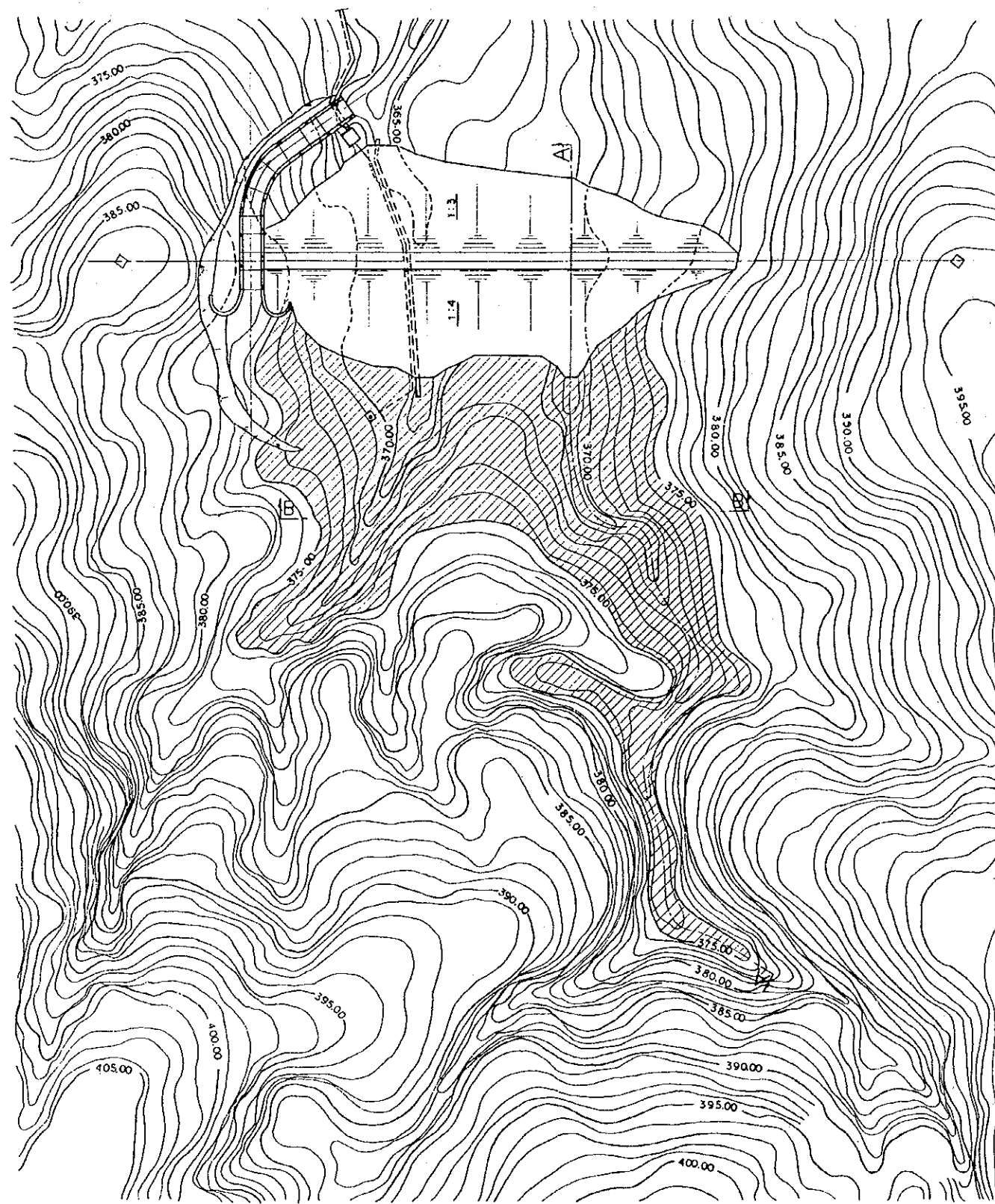


LONGITUDINAL SECTION OF VALVE HOUSE



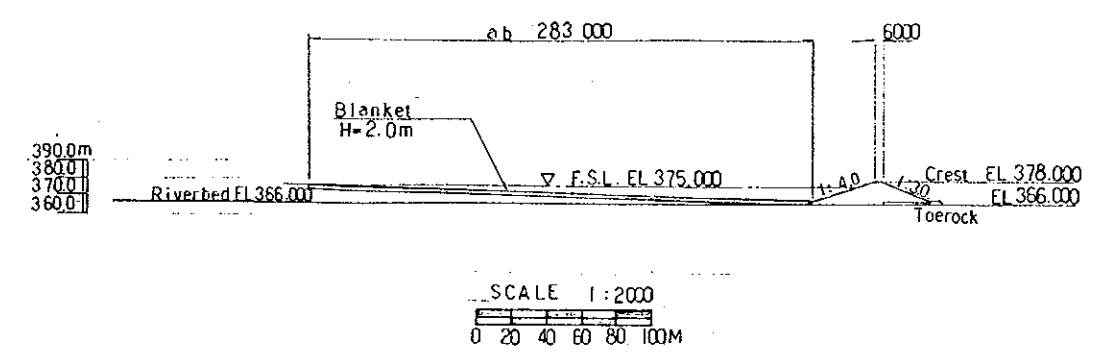


PLAN OF OEBUAIN RESERVOIR AREA BLANKET

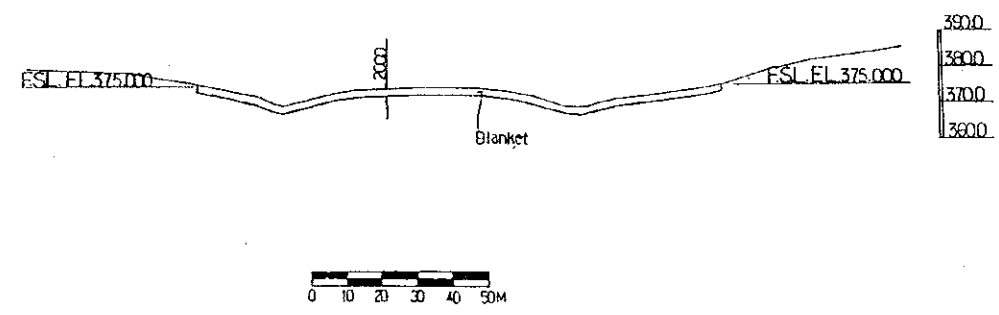


SCALE 1:1000  
 0 10 20 30 40 50M

LONGITUDINAL SECTION OF BLANKET (A-A)

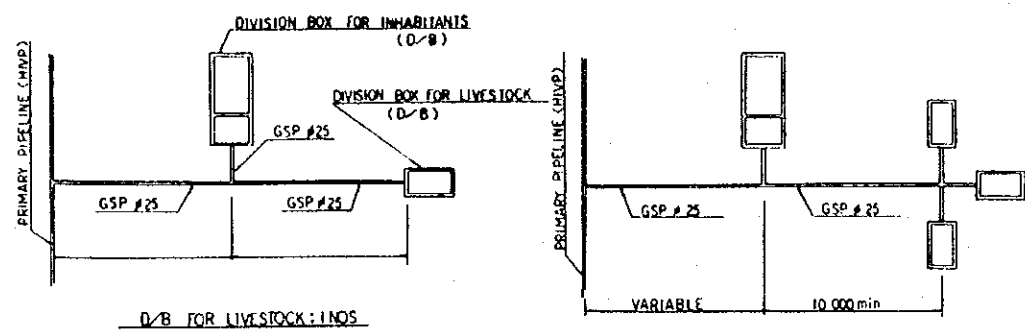


B-B

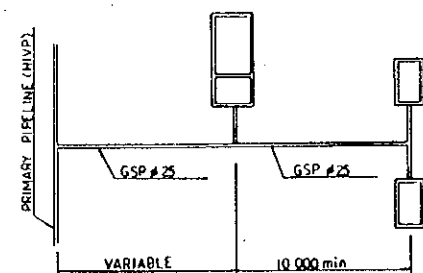


TYPICAL ARRANGEMENT OF DIVISION BOXES FOR INHABITANTS AND LIVESTOCK

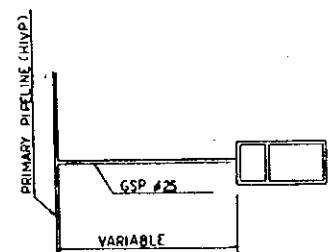
SCALE - A



D/B FOR LIVESTOCK: 1 NOS.



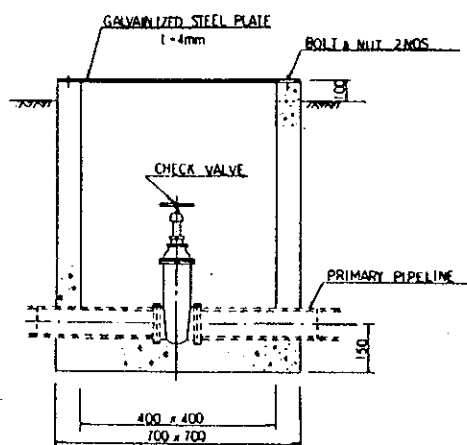
D/B FOR LIVESTOCK: 2 NOS.



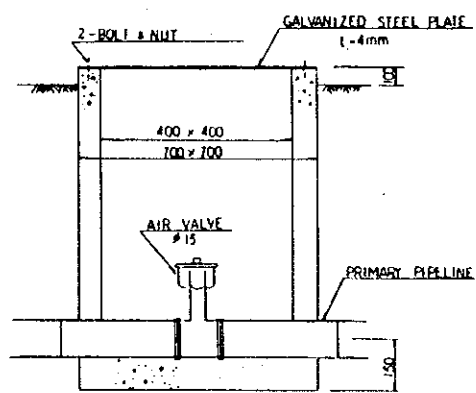
No. D/B FOR LIVESTOCK

NOTE: DIVISION BOX FOR LIVESTOCK SHALL BE LOCATED 10m FAR AND LOWER ELEVATION FROM DIVISION BOX FOR INHABITANT.

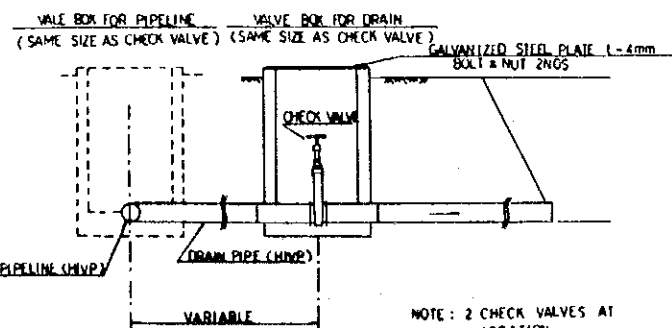
RELATED FACILITIES



CHECK VALVE SCALE - E



AIR VALVE SCALE - E



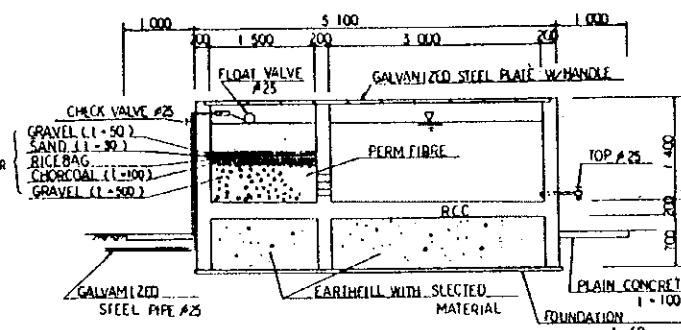
BLOW OFF SCALE - C

NOTE: 2 CHECK VALVES AT 1 LOCATION

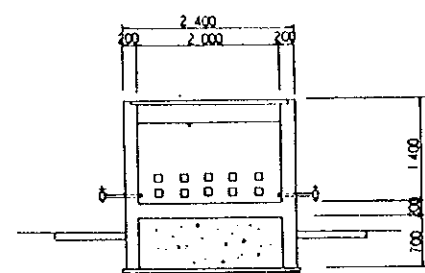
DIVISION BOX FOR INHABITANTS

SCALE - B

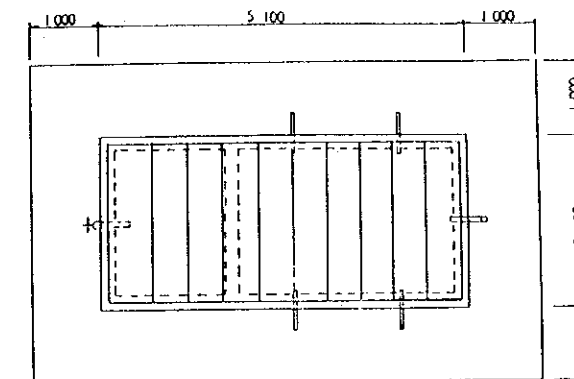
Volume - 7



LONGITUDINAL SECTION



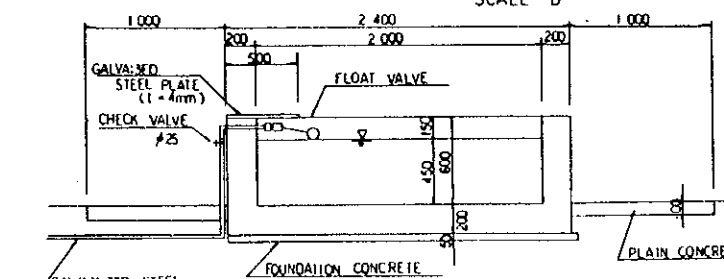
CROSS SECTION



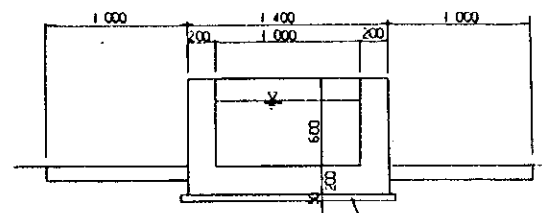
PLAN

DIVISION BOX FOR LIVESTOCK

SCALE - D

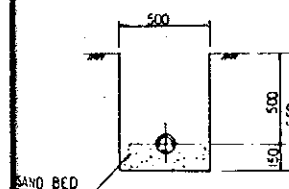


LONGITUDINAL SECTION

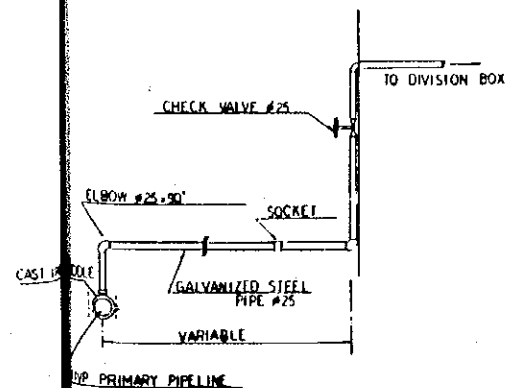


CROSS SECTION

TYPICAL EXCAVATION OF PIPE LINE



TYPICAL ARRANGEMENT OF INCOMING LINE



SCALE - A : 0 5 10m

SCALE - B : 0 1 2 5m

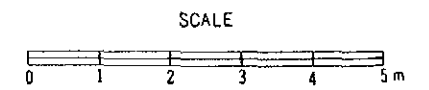
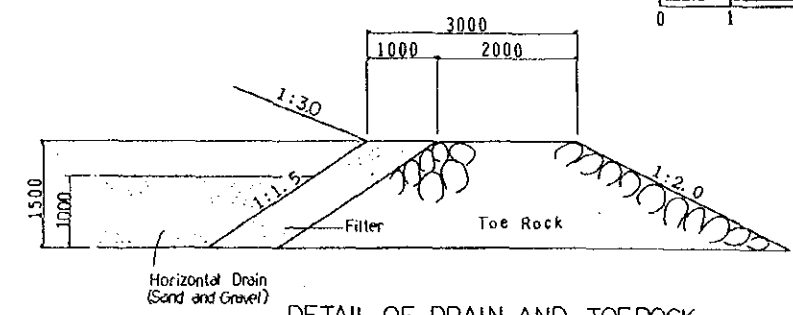
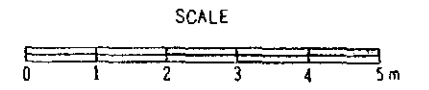
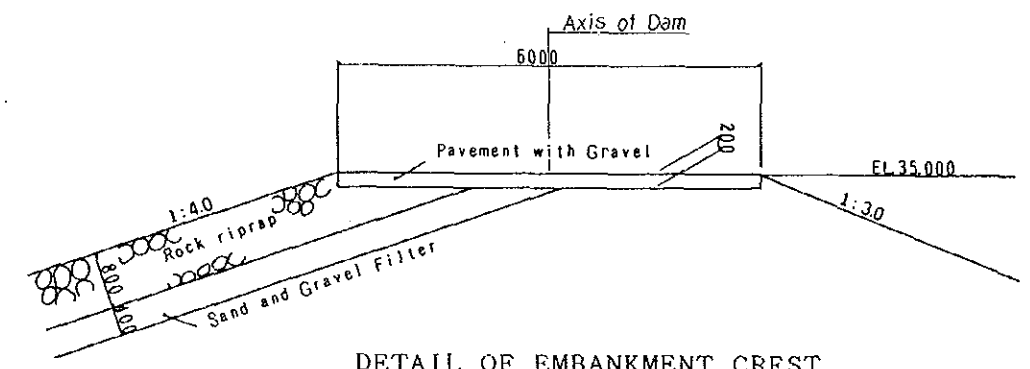
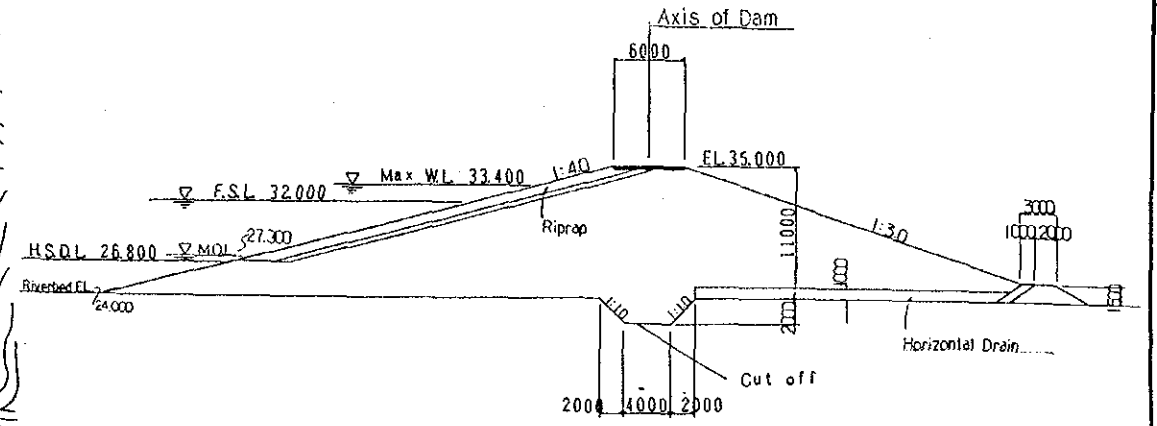
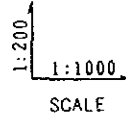
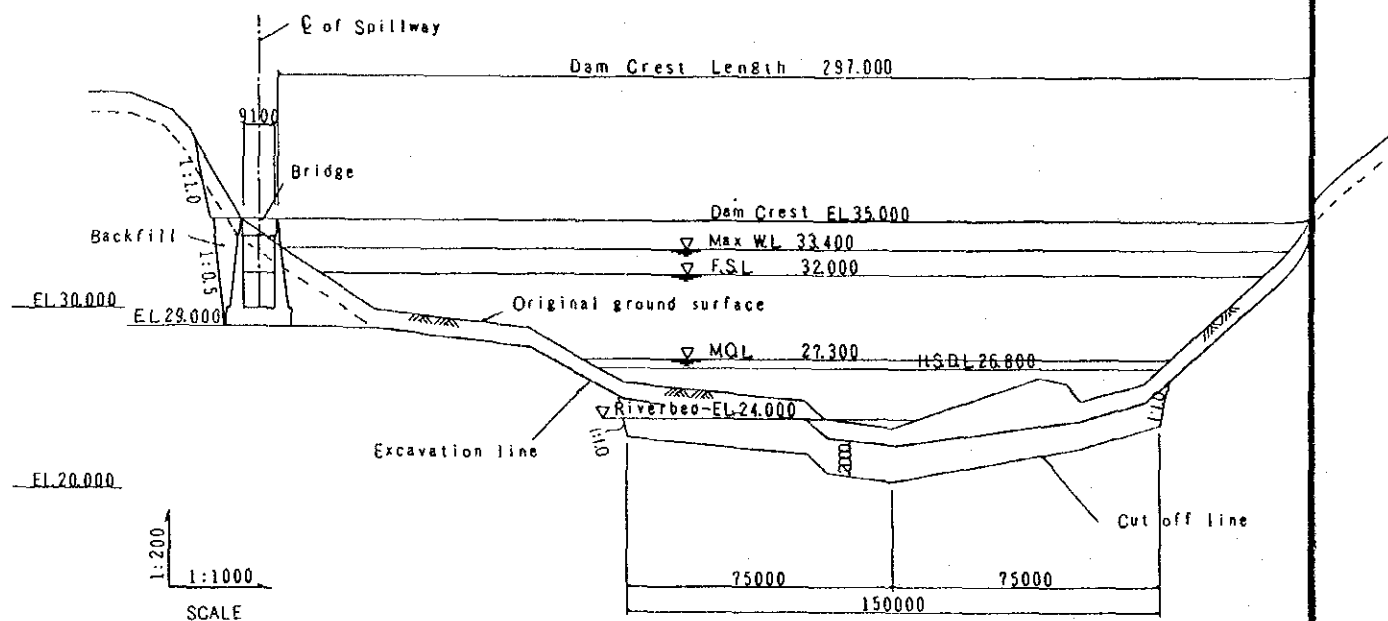
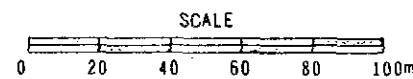
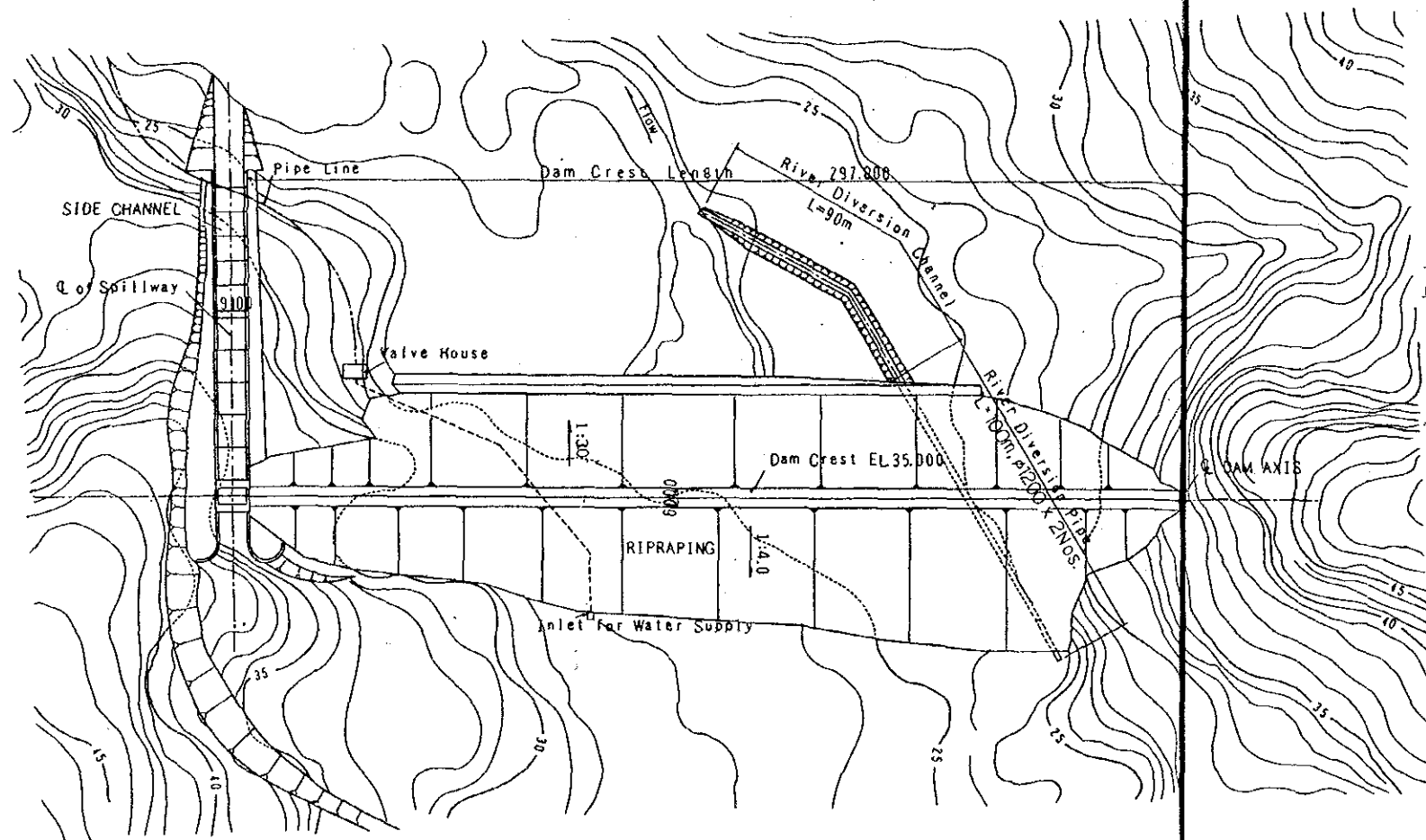
SCALE - C : 0 1 2 5m

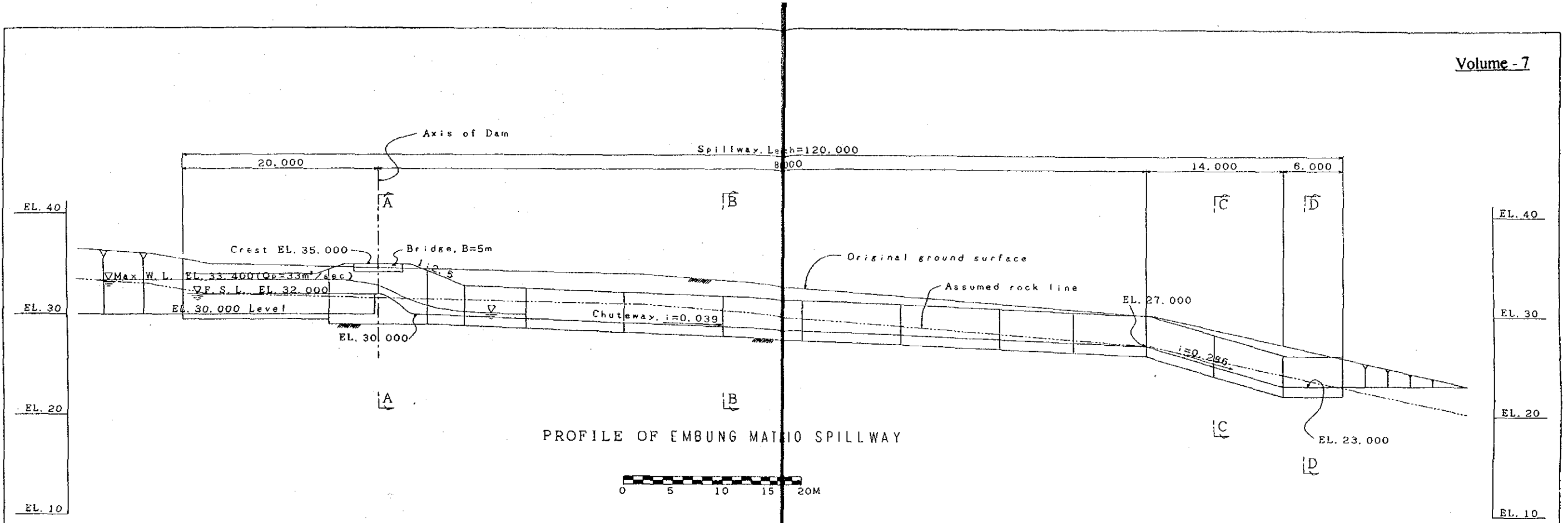
SCALE - D : 0 1 2m

SCALE - E : 0 1m

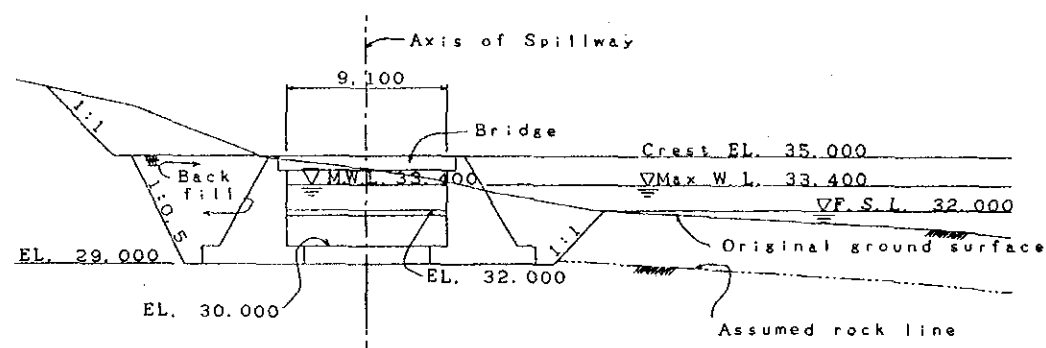
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS		
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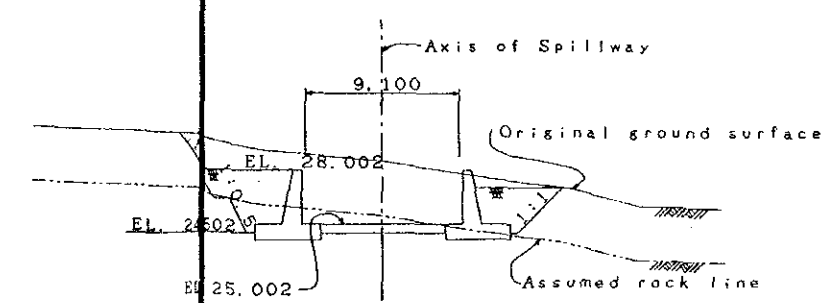




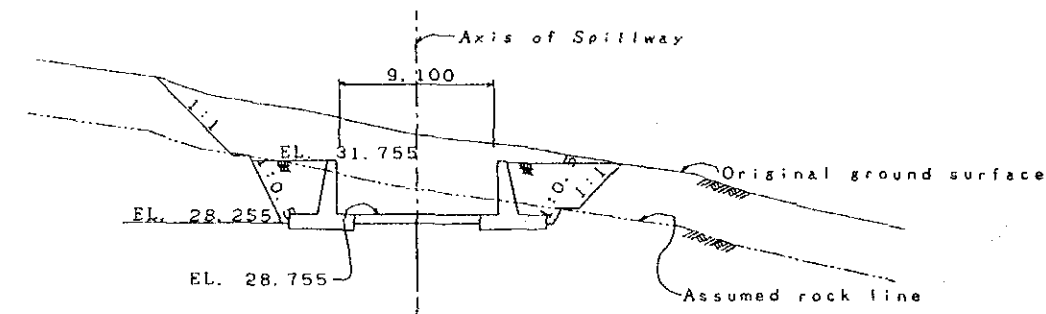
PROFILE OF EMBUNG MATASIO SPILLWAY



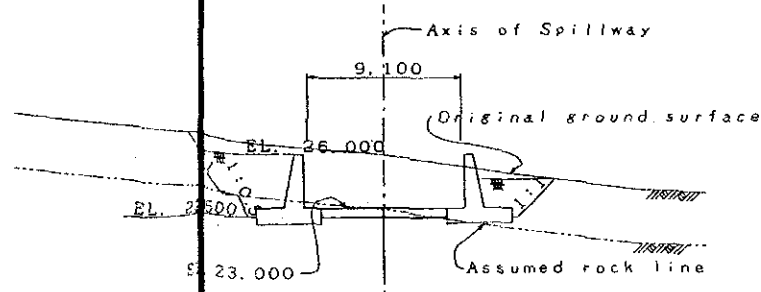
SECTION A - A



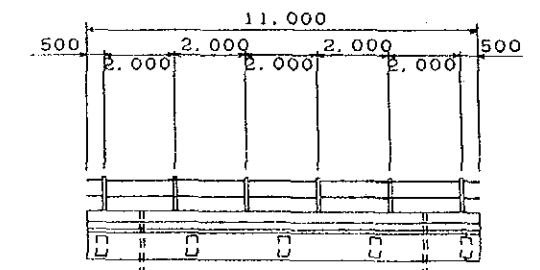
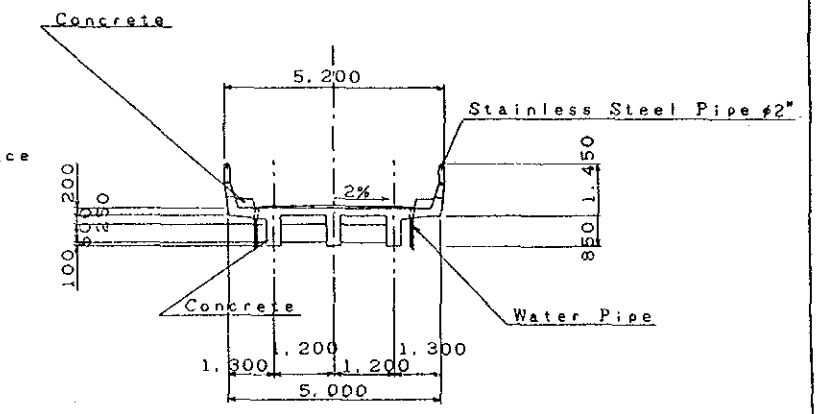
SECTION C - C



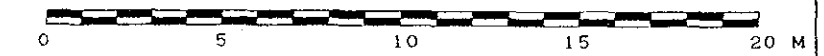
SECTION B - B

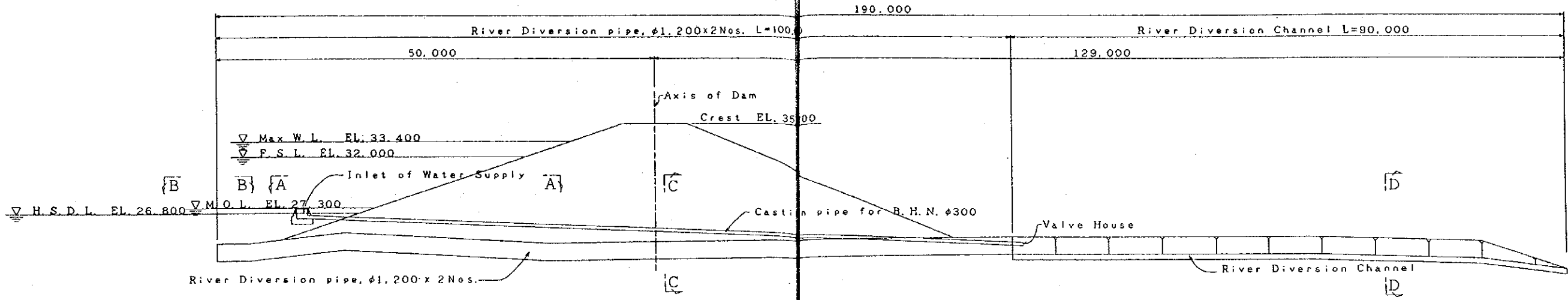


SECTION D - D

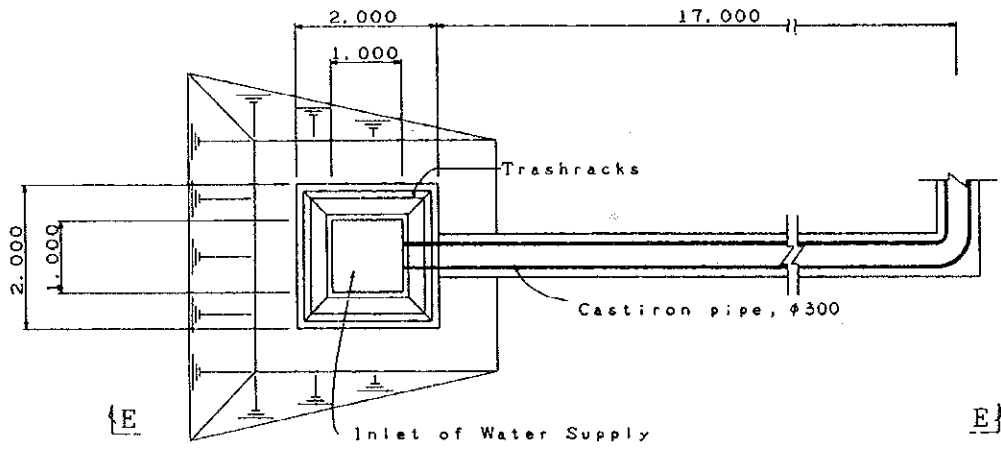
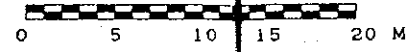


PROFILE OF BRIDGE

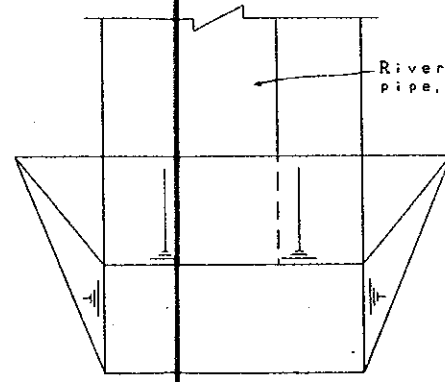
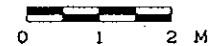




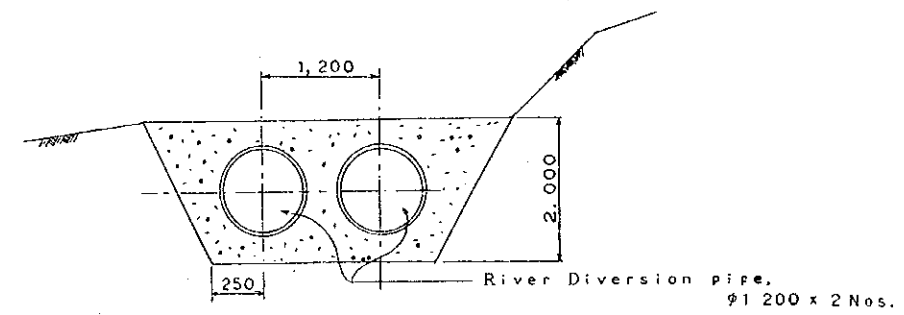
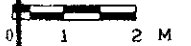
LONGITUDINAL SECTION OF MATASIO DAM OUTLET WORKS



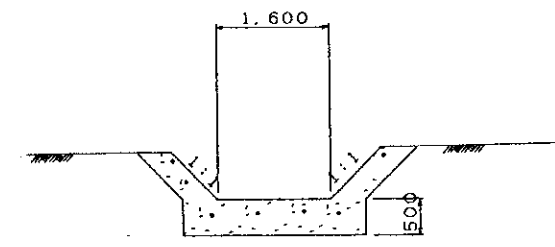
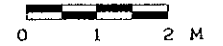
SECTION A - A



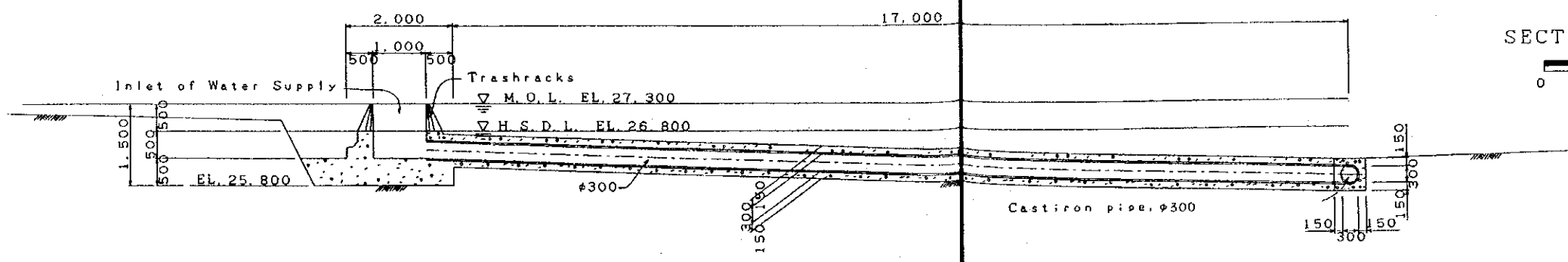
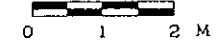
SECTION B - B



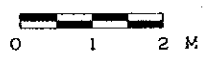
SECTION C - C

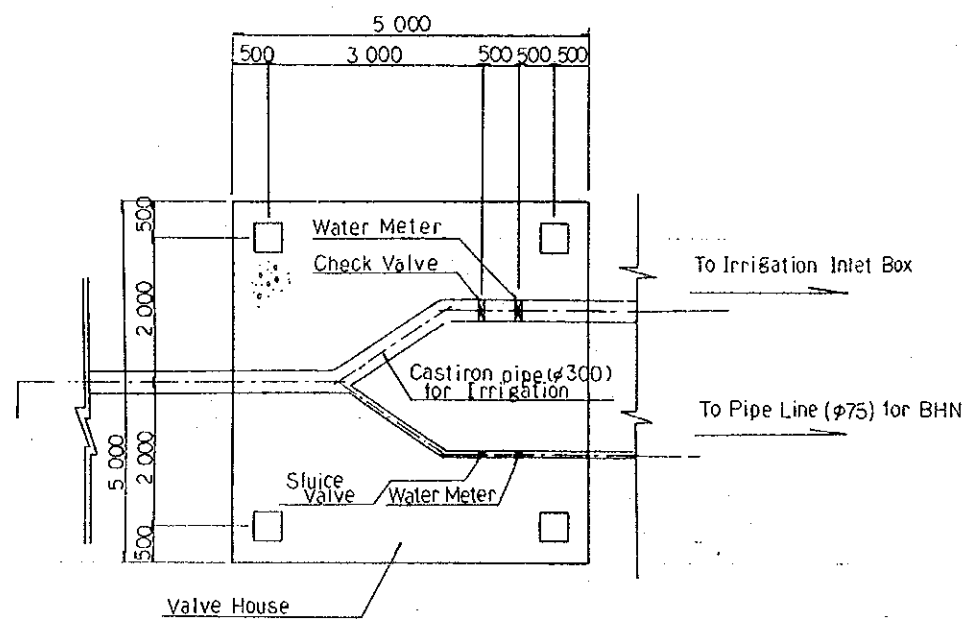


SECTION D - D

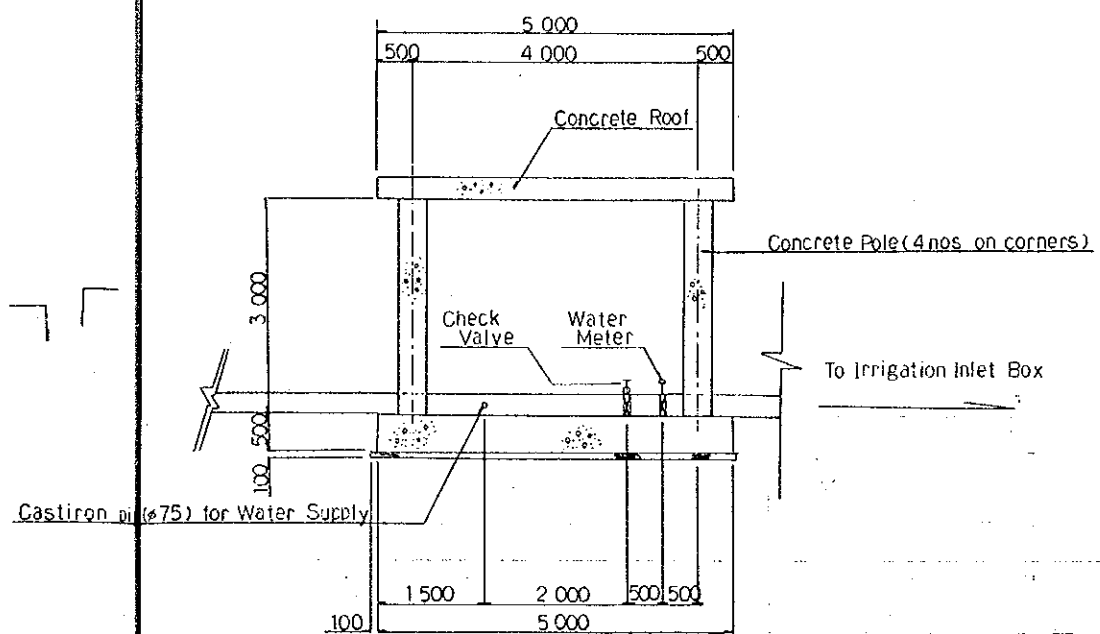


SECTION E - E

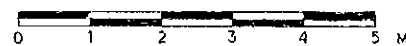




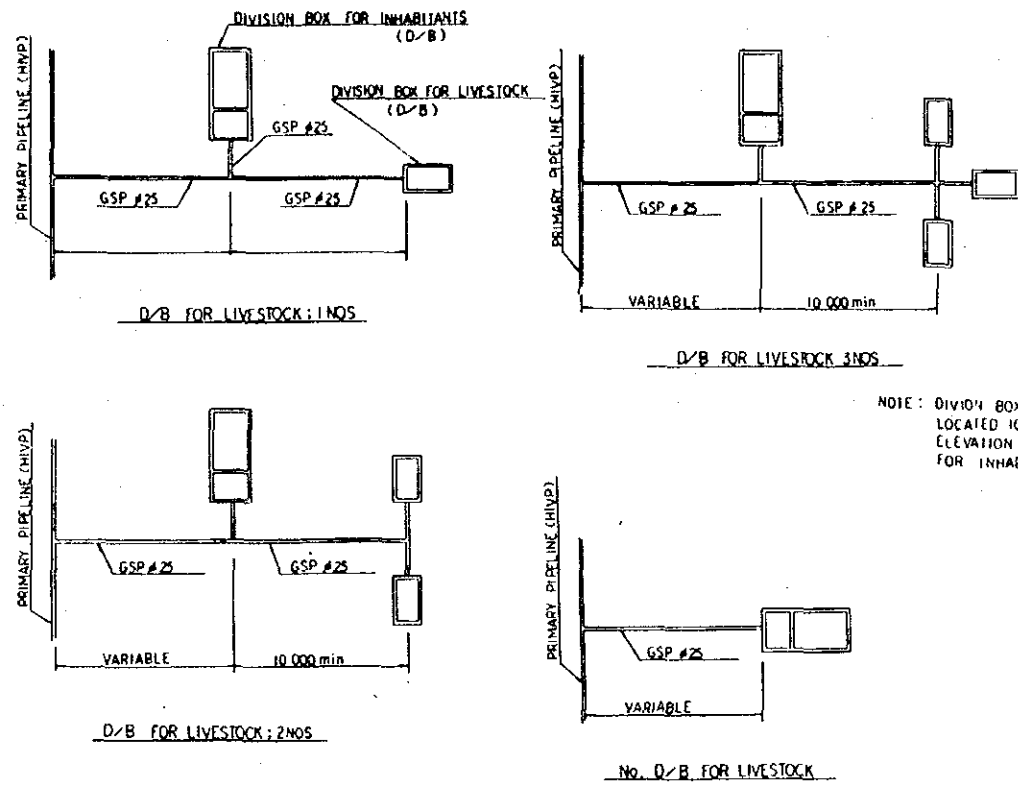
PLAN OF EMBUNG MATASIO VALVE HOUSE



LONGITUDINAL SECTION OF VALVE HOUSE

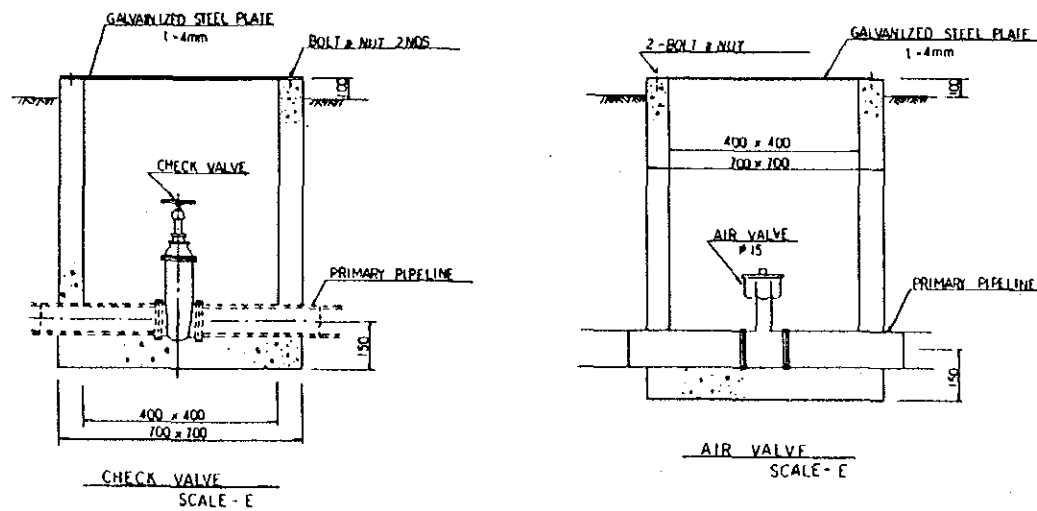


TYPICAL ARRANGEMENT OF DIVISION BOXES FOR INHABITANTS AND LIVESTOCK  
SCALE - A



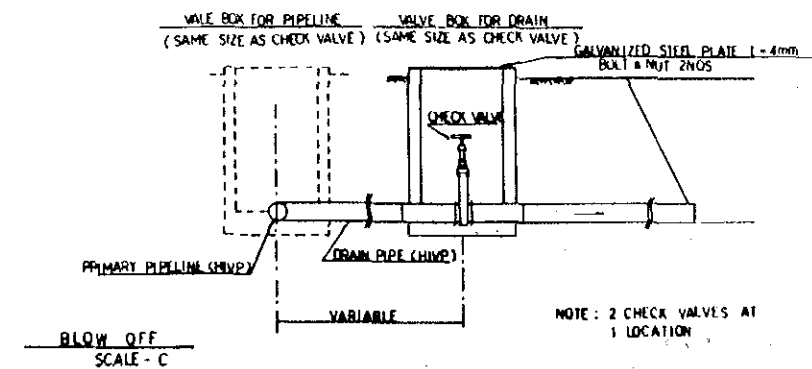
NOTE: DIVISION BOX FOR LIVESTOCK SHALL BE LOCATED 10m FAR AND LOWER ELEVATION FROM DIVISION BOX FOR INHABITANT.

RELATED FACILITIES



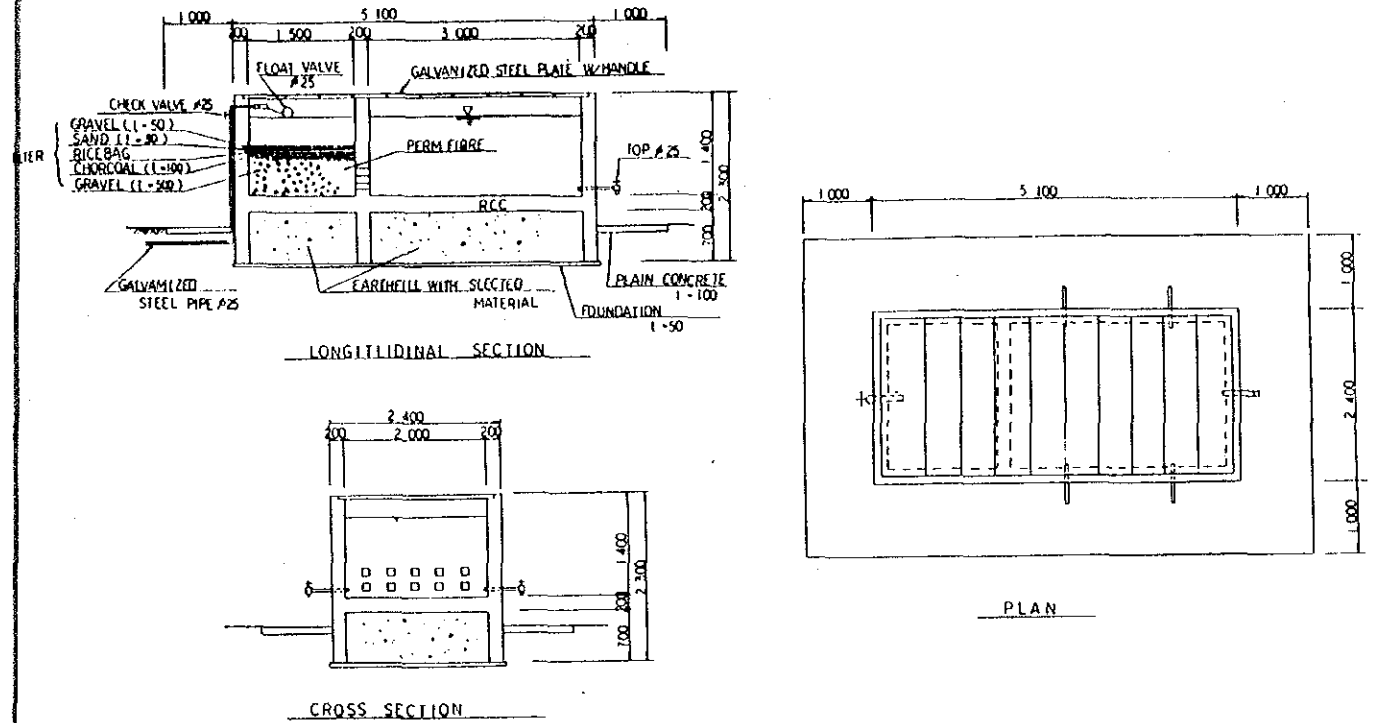
CHECK VALVE  
SCALE - E

AIR VALVE  
SCALE - E



BLOW OFF  
SCALE - C

DIVISION BOX FOR INHABITANTS  
SCALE - B

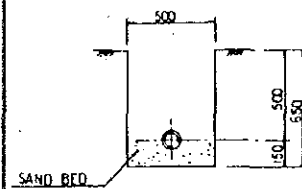


LONGITUDINAL SECTION

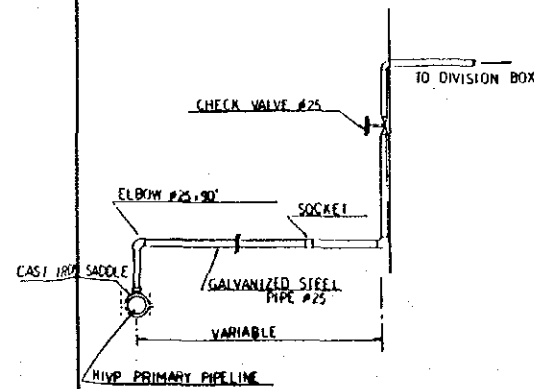
CROSS SECTION

PLAN

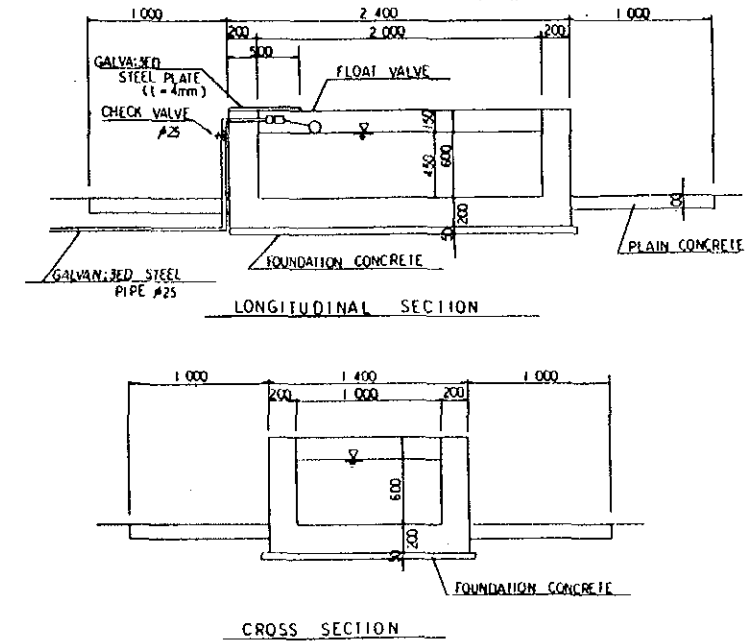
TYPICAL EXCAVATION OF PIPELINE



TYPICAL ARRANGEMENT OF INCOMING LINE



DIVISION BOX FOR LIVESTOCK  
SCALE - D



LONGITUDINAL SECTION

CROSS SECTION

SCALE - A : 0 5 10m

SCALE - B : 0 1 2 3m

SCALE - C : 0 1 2 3m

SCALE - D : 0 1 2m

SCALE - E : 0 1m

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