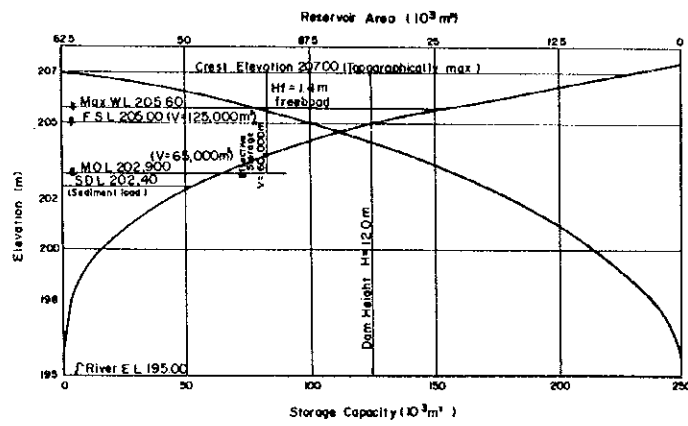
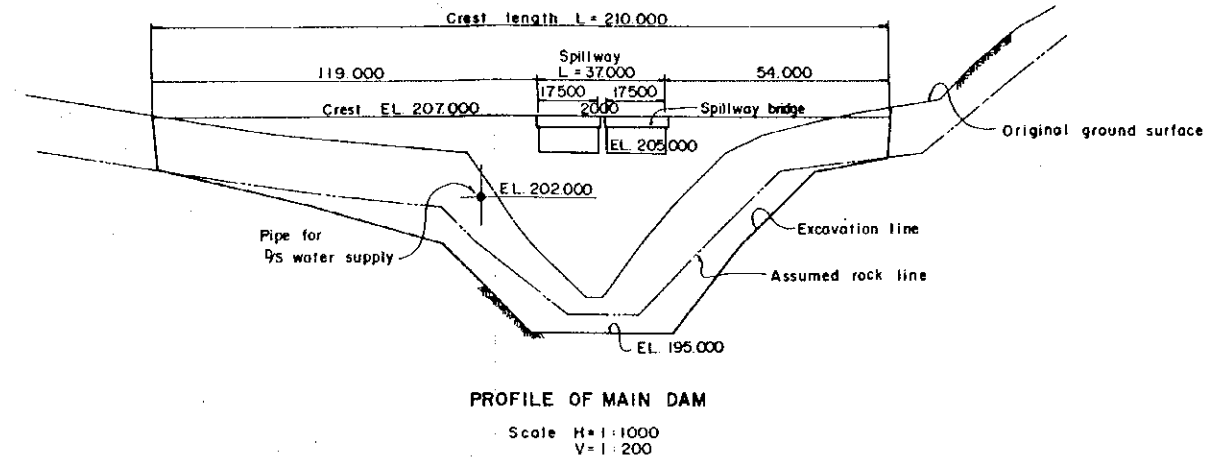


PLAN Scale A

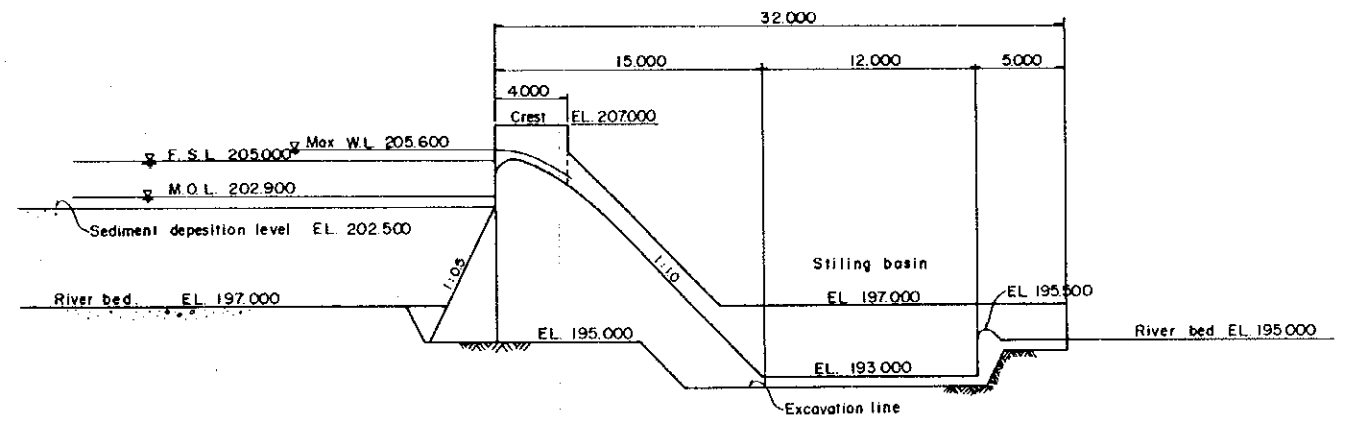


RESERVOIR STORAGE CAPACITY CURVE AT MONTONG KRARAK



PROFILE OF MAIN DAM

Scale H=1:1000
V=1:200



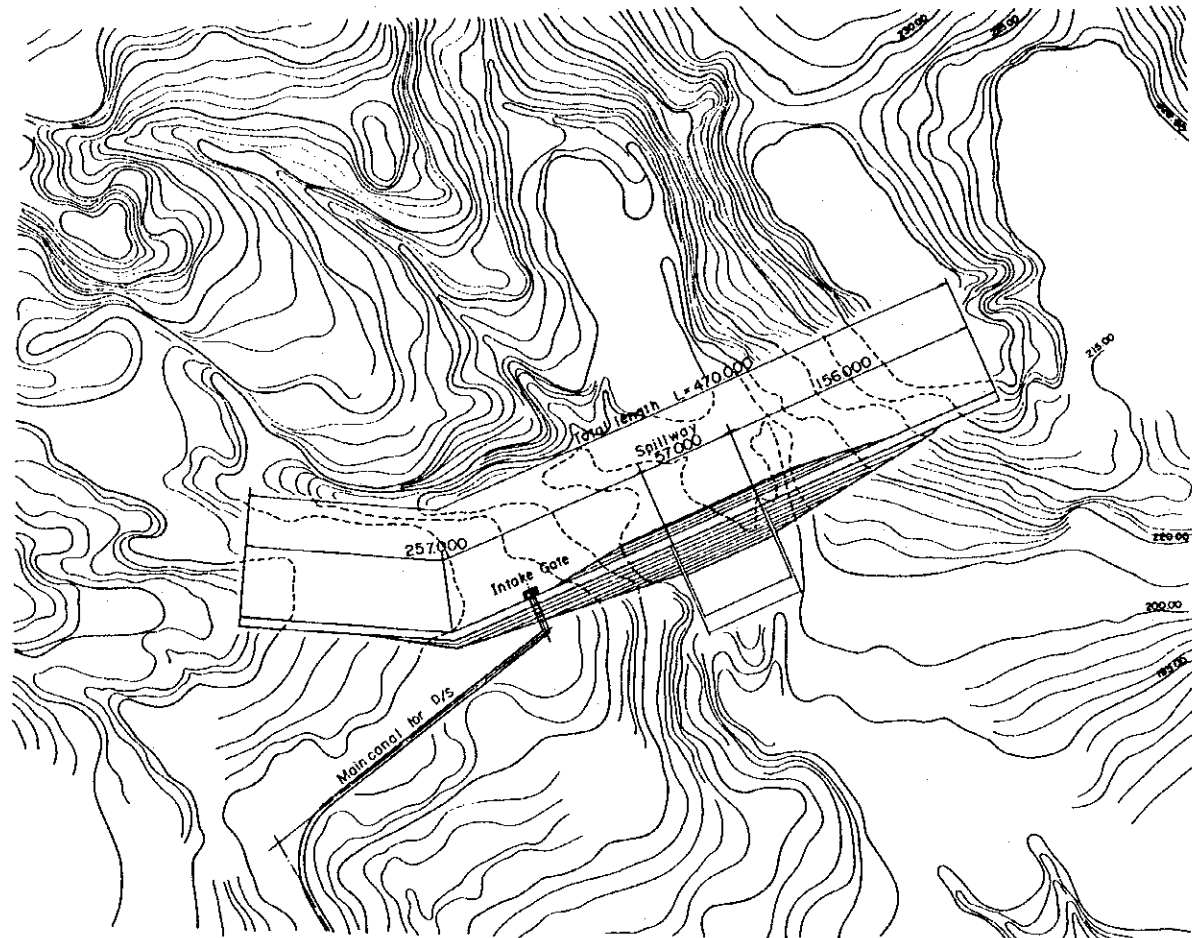
OVERFLOW SECTION OF MAIN DAM

Scale B

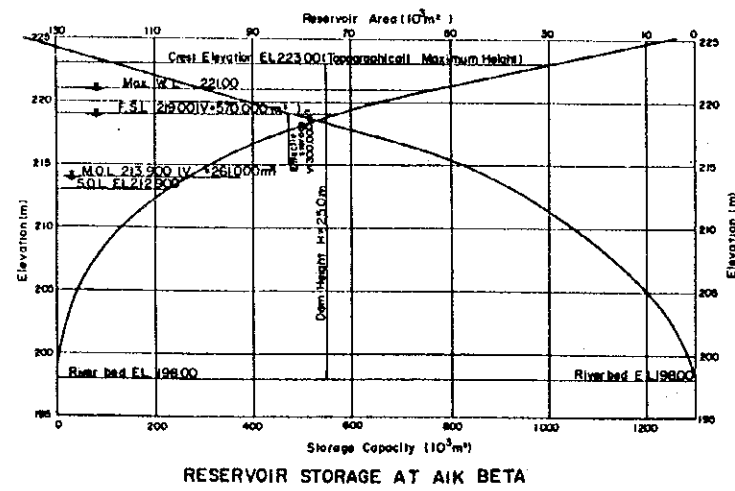


Figure 6.13 General Plan of Montong Krarak Embung

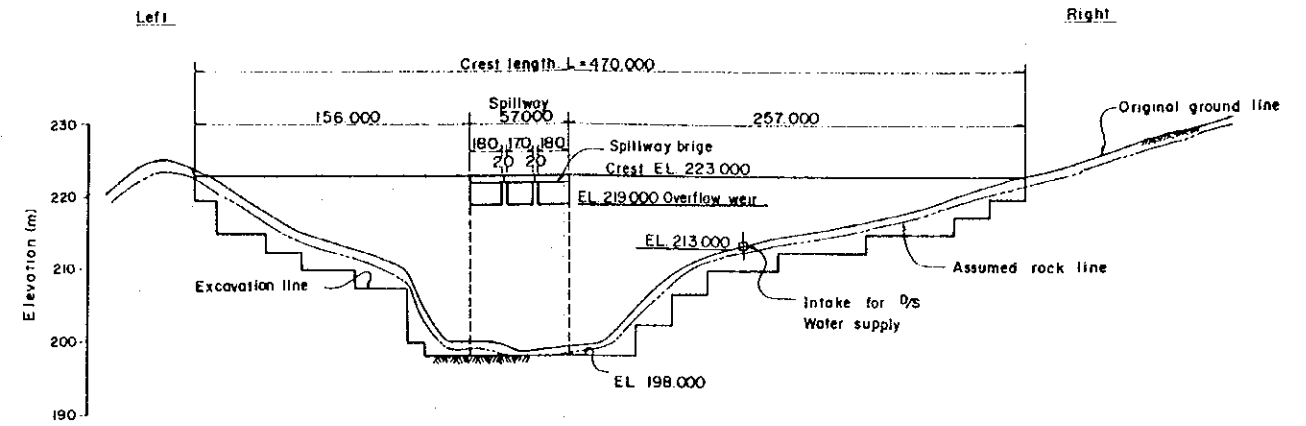
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS		
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara		
GENERAL PLAN OF MONTONG KRARAK EMBUNG		
No.	Area	
JAPAN INTERNATIONAL COOPERATION AGENCY		



PLAN Scale A

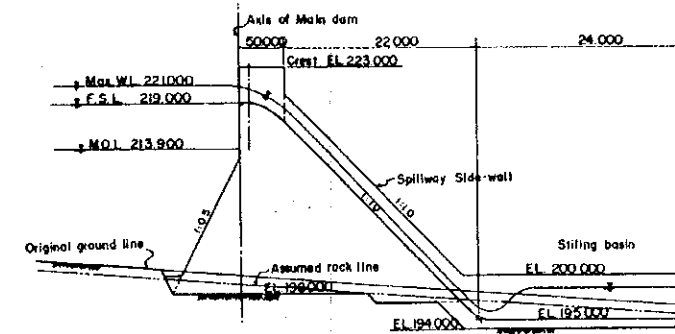


RESERVOIR STORAGE AT AIK BETA



PROFILE OF MAIN DAM

Scale : H = 1 : 2000
V = 1 : 500



OVERFLOW SECTION OF MAIN DAM

Scale B

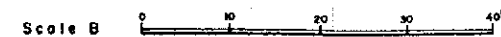
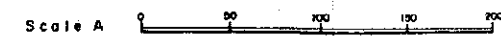
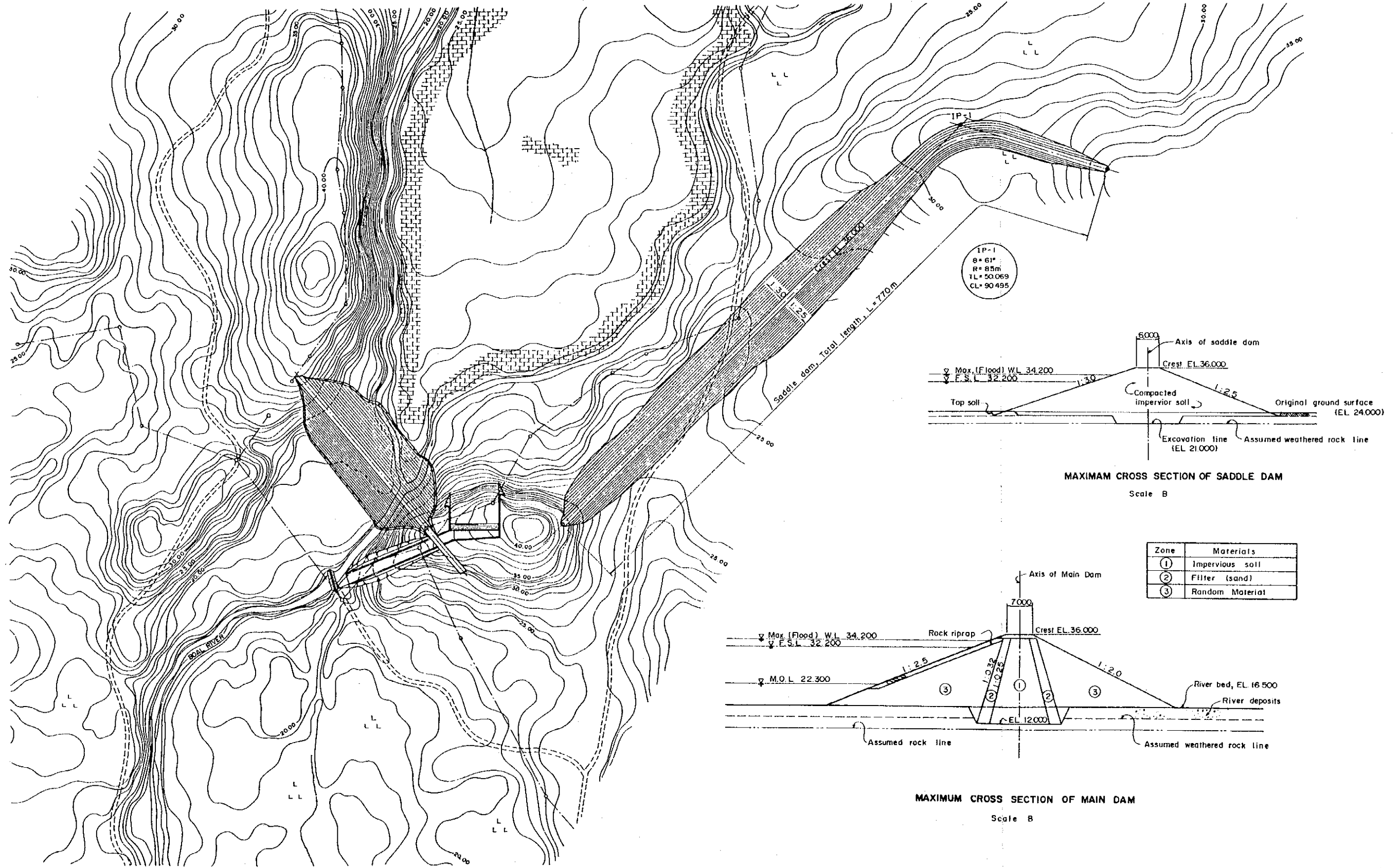


Figure 6.14 General Plan of Aik Beta Embung

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



GENERAL PLAN OF MAIN DAM & SADDLE DAM
Scale A

MAXIMUM CROSS SECTION OF SADDLE DAM
Scale B

MAXIMUM CROSS SECTION OF MAIN DAM
Scale B

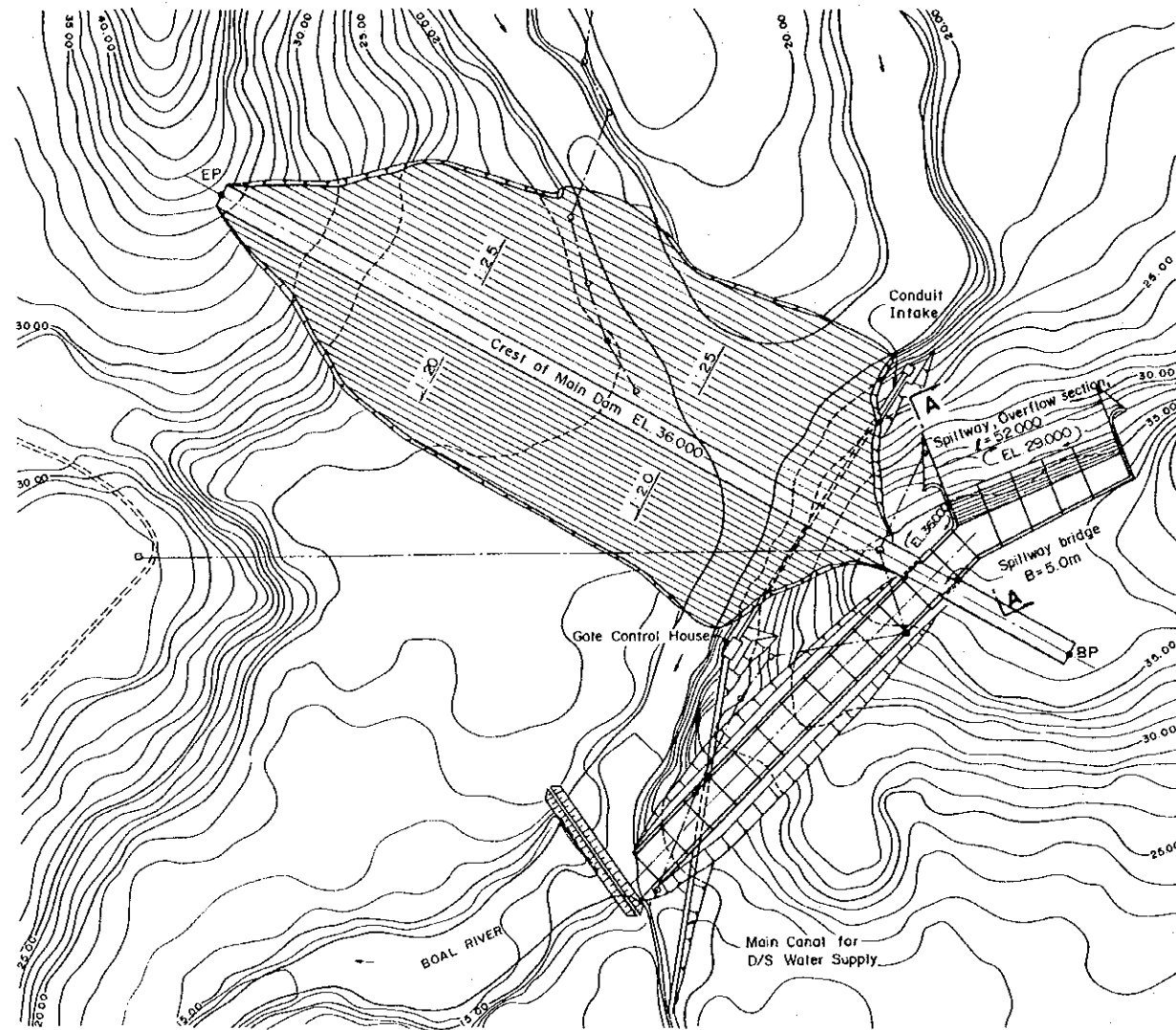
Zone	Materials
①	Impervious soil
②	Filter (sand)
③	Random Material

Scale A 0 50 100 150 200m

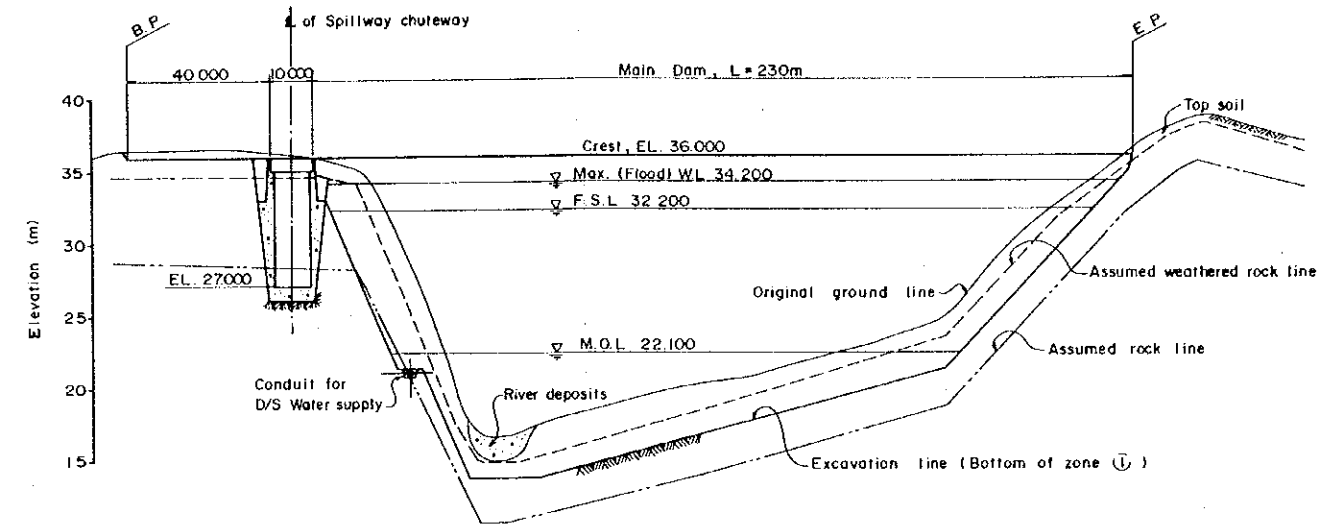
Scale B 0 10 20 30 40 50m

DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS		
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara		
GENERAL PLAN OF TIU TUI EMBUNG (1)		
No.	Area	
JAPAN INTERNATIONAL COOPERATION AGENCY		

Figure 6.15 General Plan of Tiu Tui Embung (1/2)

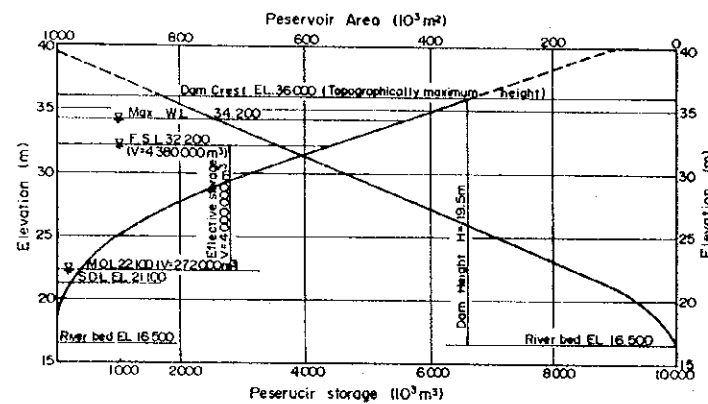


PLAN Scale A

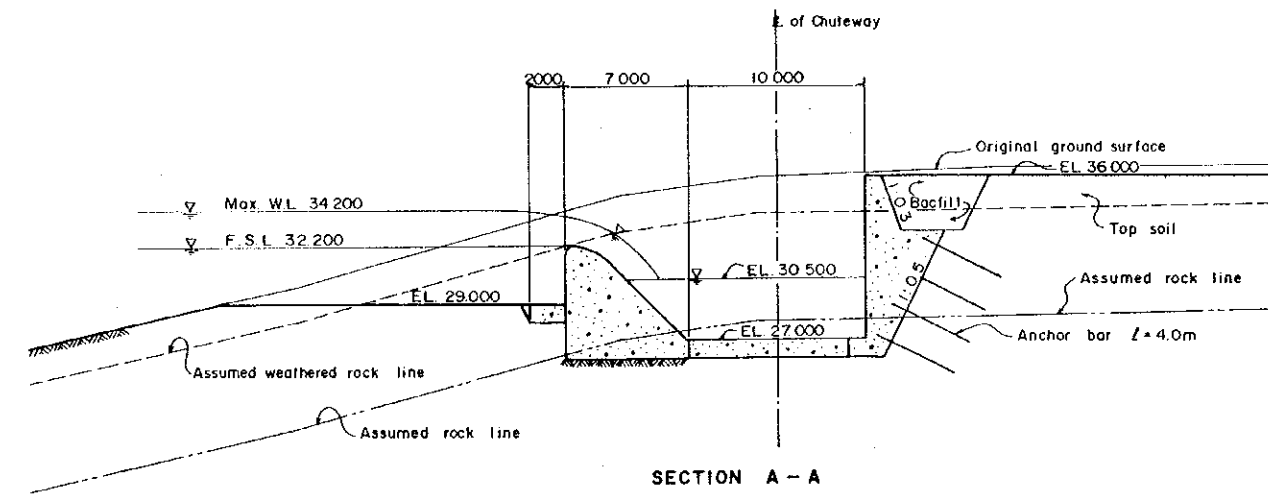


PROFILE OF MAIN DAM

Scale H = 1 : 1 000
V = 1 : 250

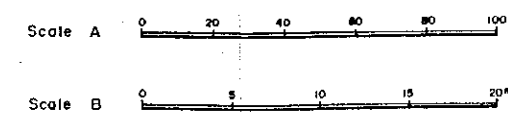


RESERVOIR STORAGE CURVE AT TIU TUI



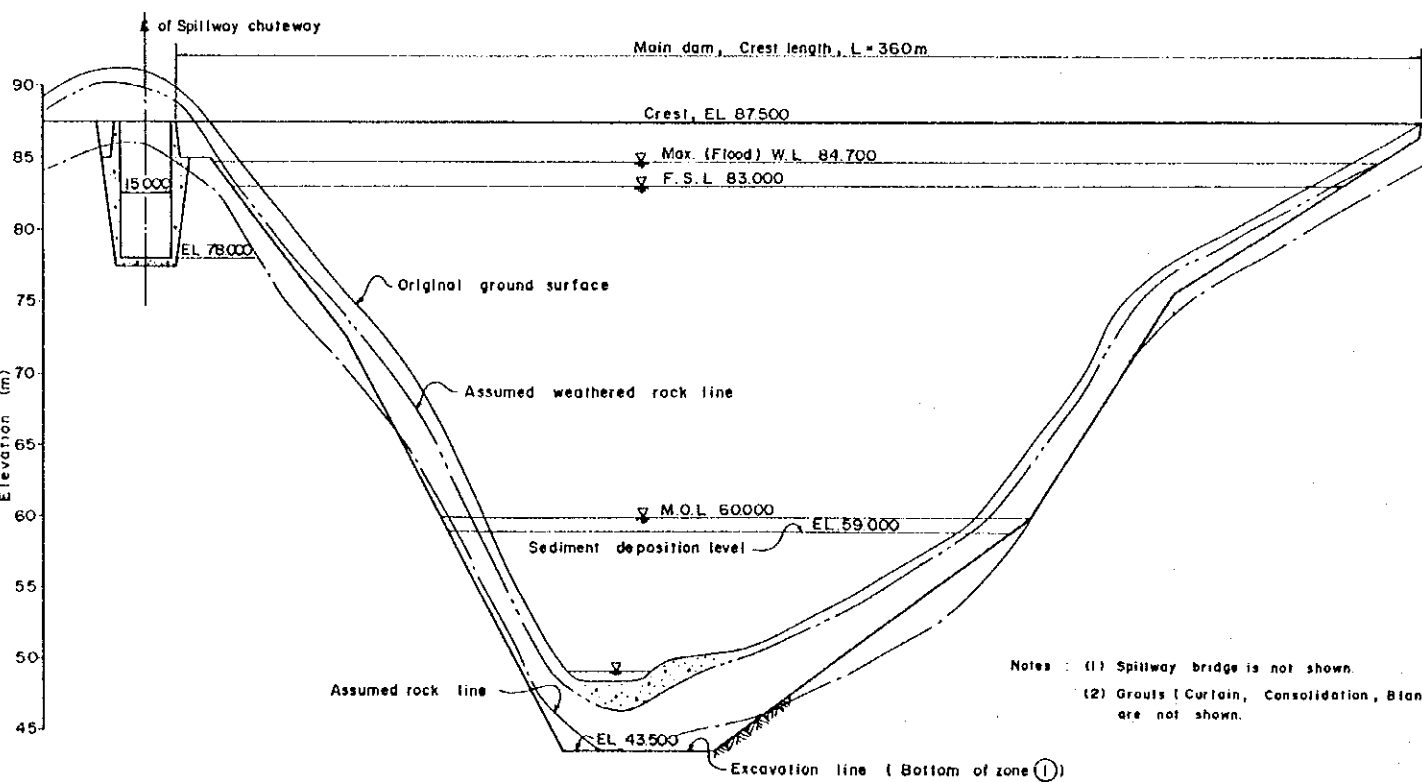
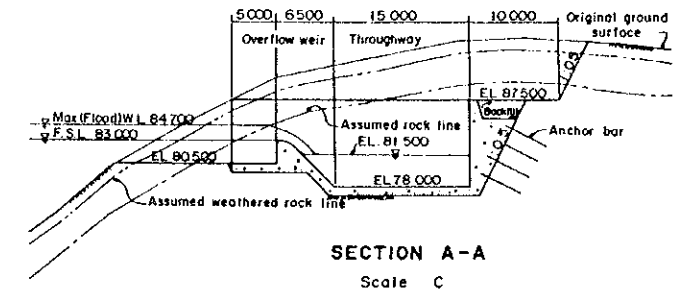
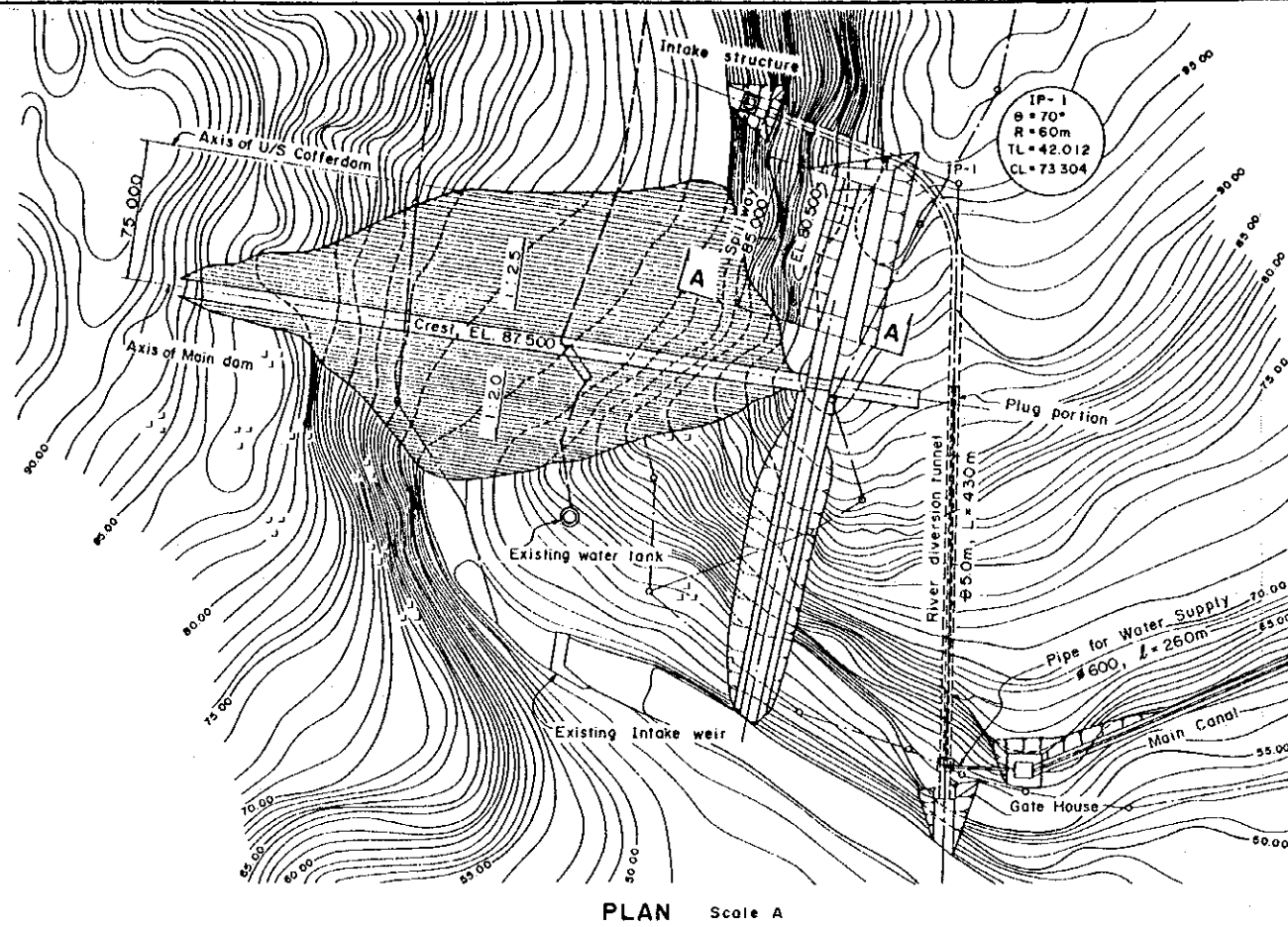
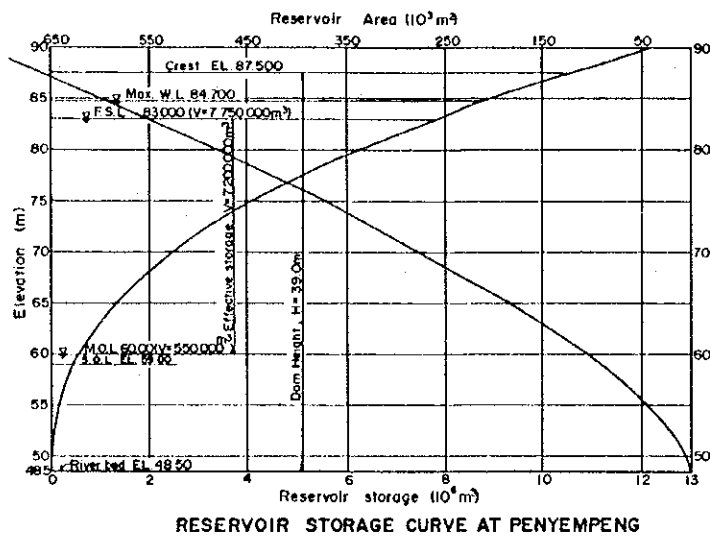
SECTION A - A

Scale B

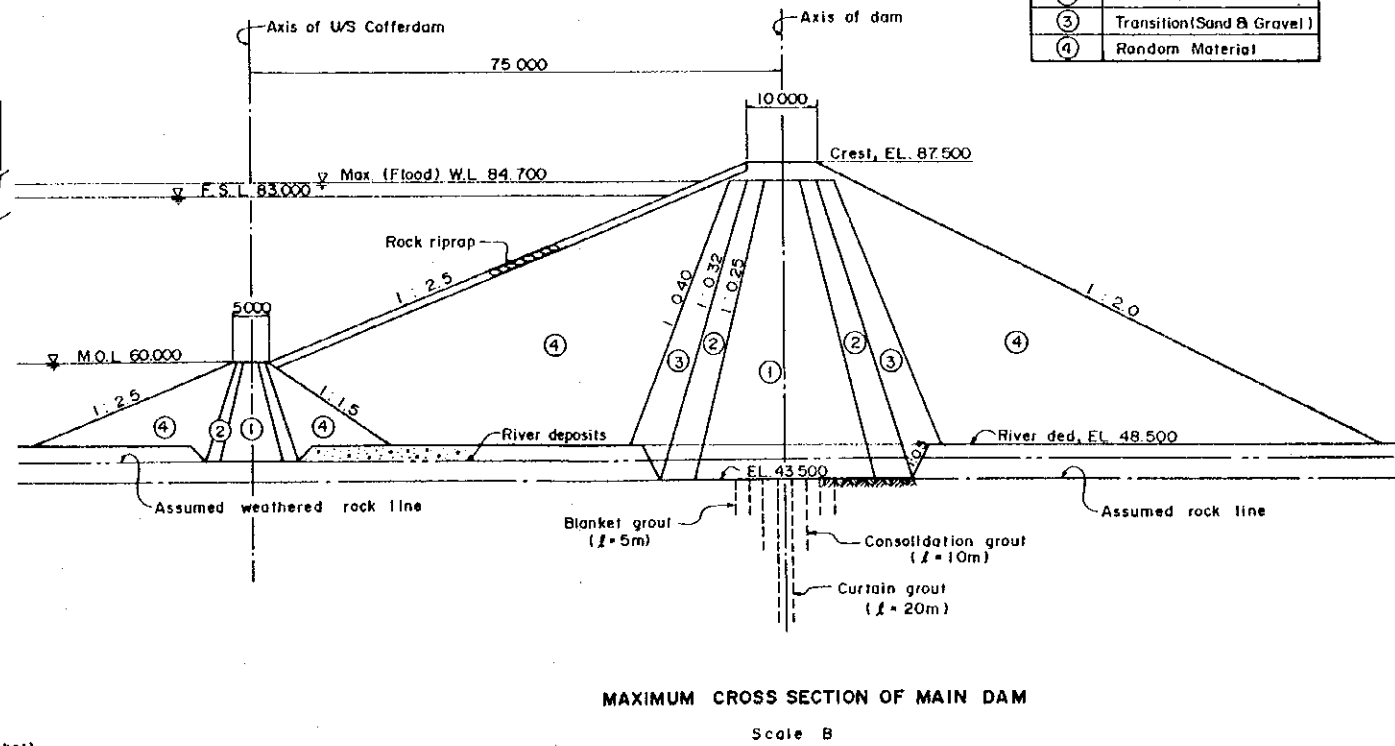


DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS	
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara	
GENERAL PLAN OF TIU TUI EMBUNG (2)	
No.	Area
JAPAN INTERNATIONAL COOPERATION AGENCY	

Figure 6.15 General Plan of Tiu Tui Embung (2/2)



Notes : (1) Spillway bridge is not shown.
(2) Grouts (Curtain, Consolidation, Blanket) are not shown.



Zone	Material
①	Impervious soil
②	Filter (Sand)
③	Transition (Sand & Gravel)
④	Random Material



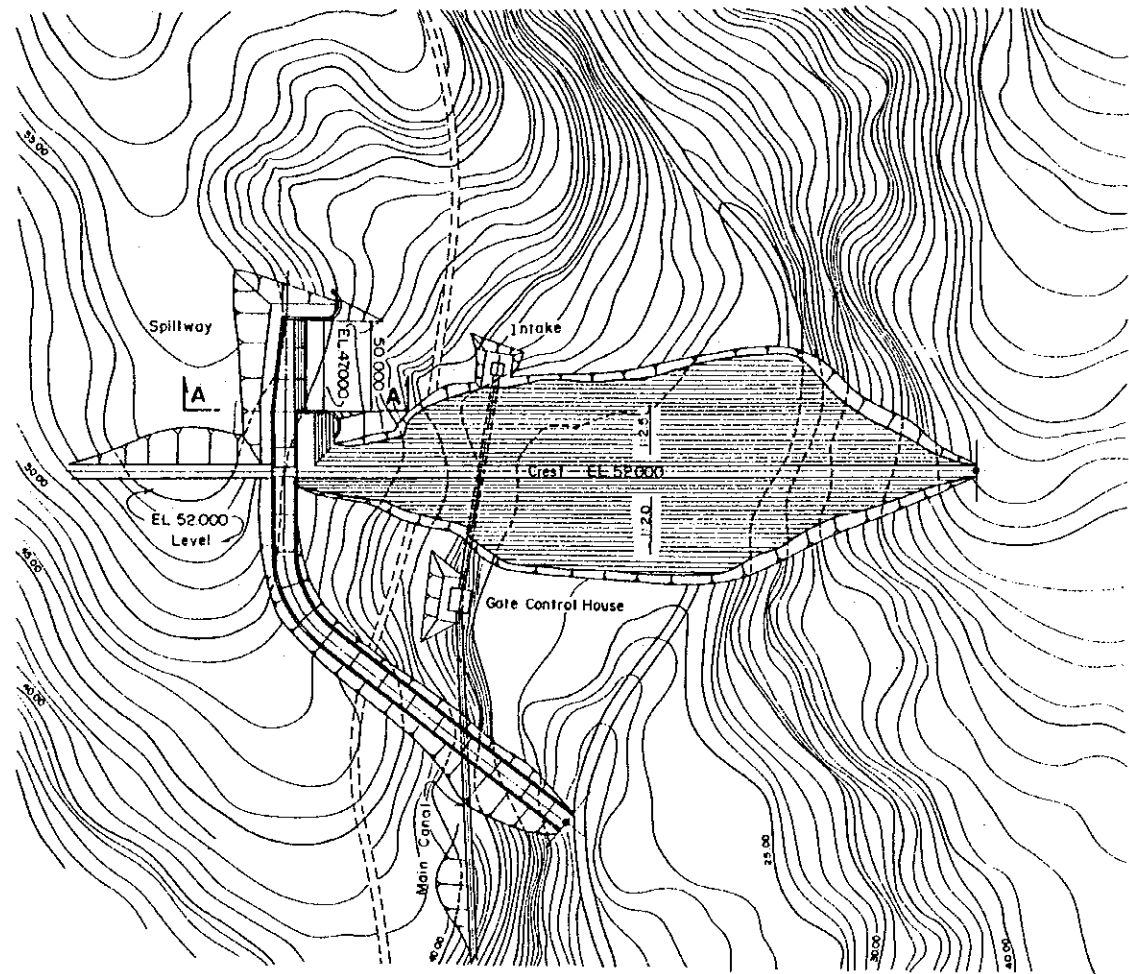
Figure 6.16
General Plan of Penyempeng Embung

DIRECTORATE GENERAL OF
WATER RESOURCES DEVELOPMENT,
MINISTRY OF PUBLIC WORKS

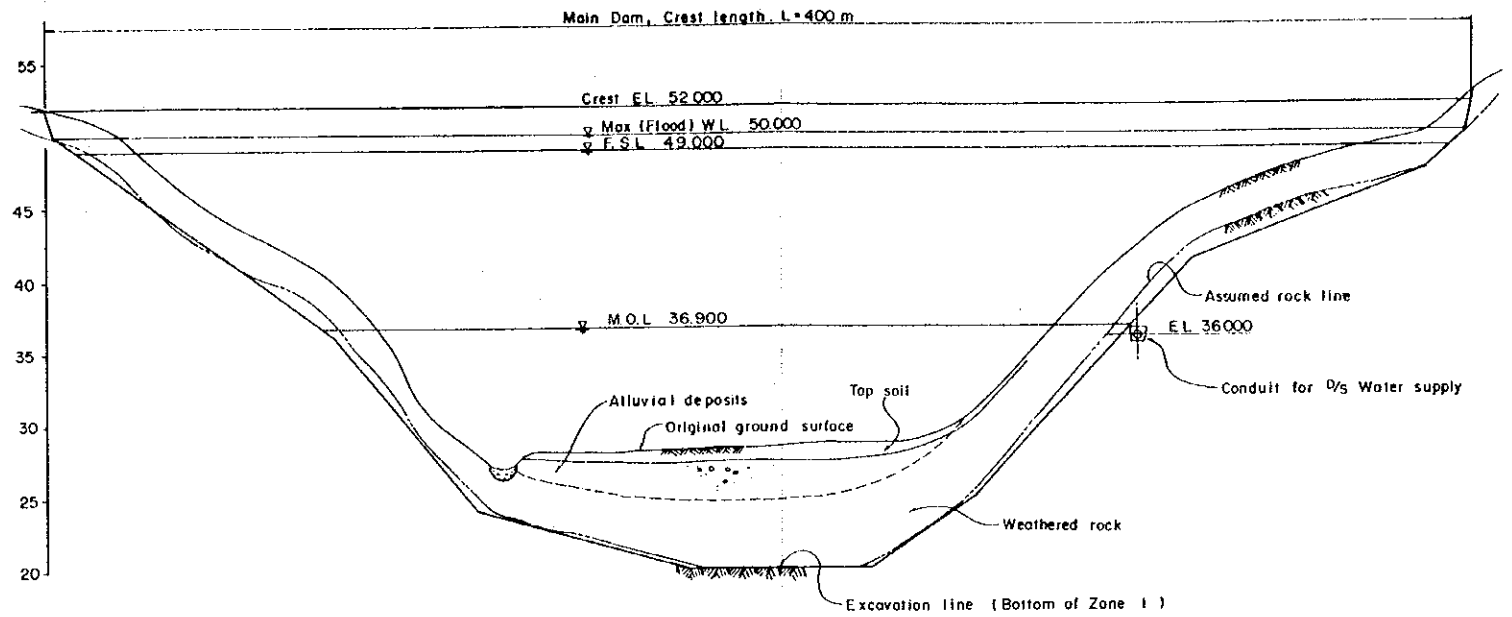
The Embung Development Project in
East Nusa Tenggara and West Nusa Tenggara

GENERAL PLAN OF PEYEMPENG EMBUNG

No.	Area
JAPAN INTERNATIONAL COOPERATION AGENCY	

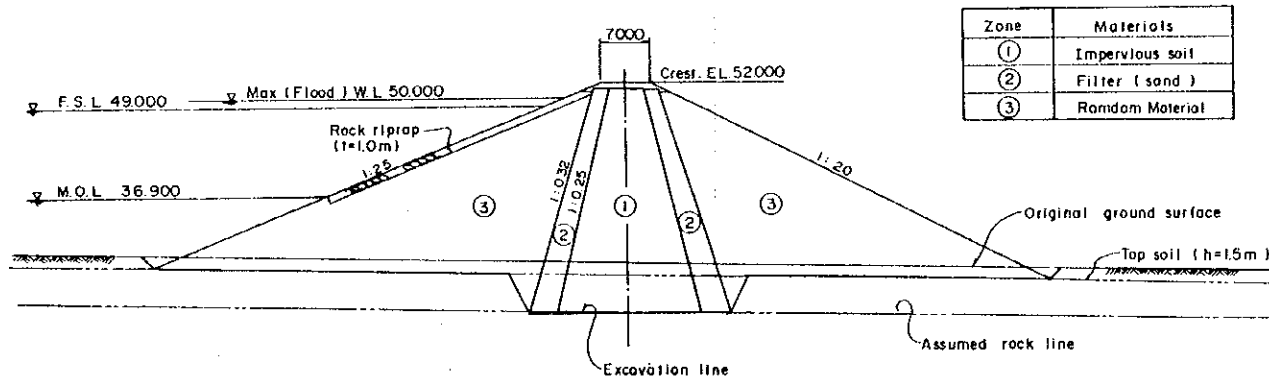


PLAN Scale A



PROFILE OF MAIN DAM

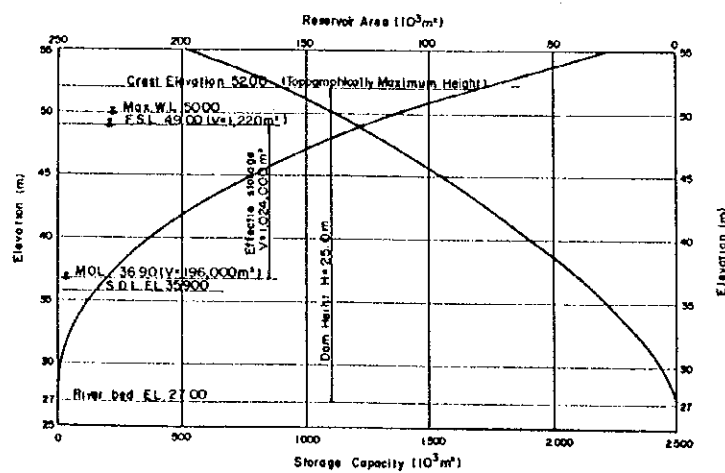
Scale H = 1 : 1000
V = 1 : 250



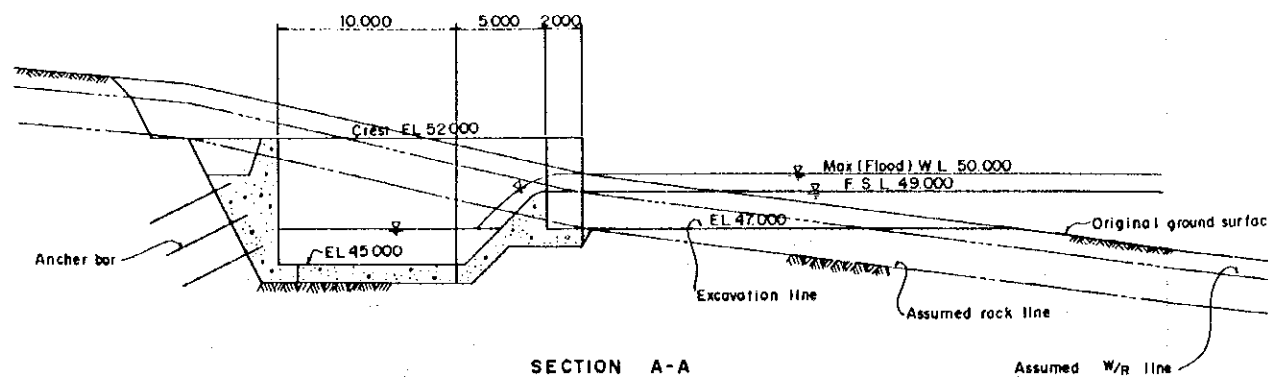
Zone	Materials
①	Impervious soil
②	Filter (sand)
③	Random Material

MAXIMUM CROSS SECTION

Scale B

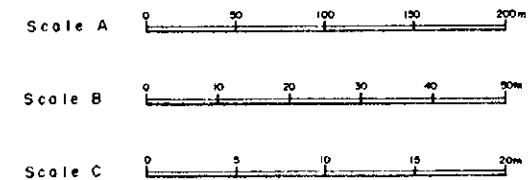


RESERVOIR STORAGE CURVE AT NCOHA-II



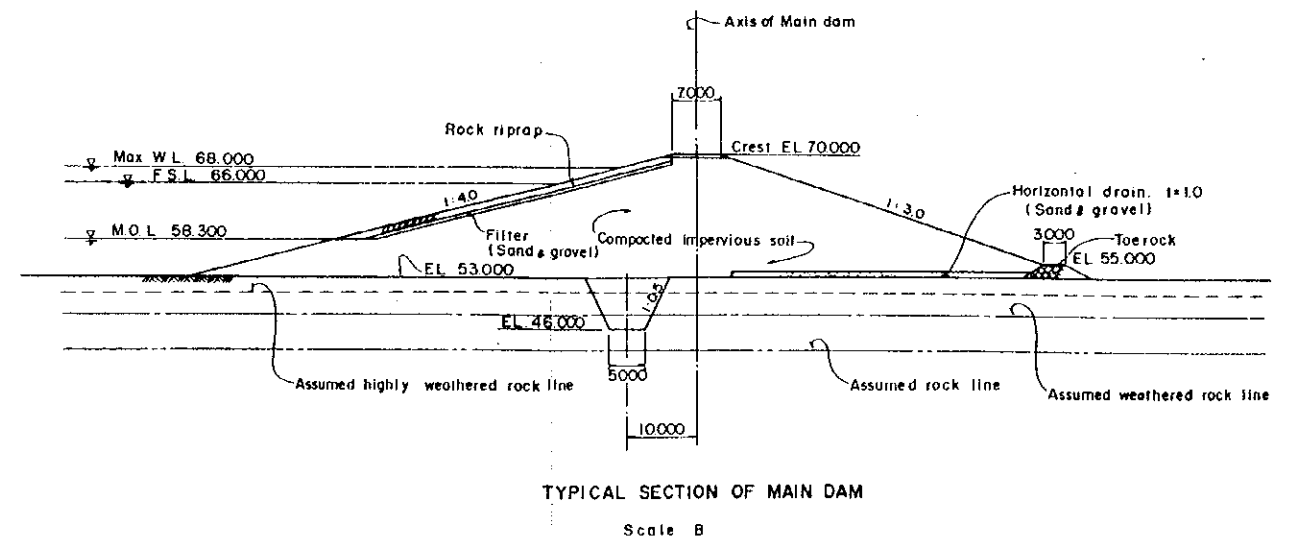
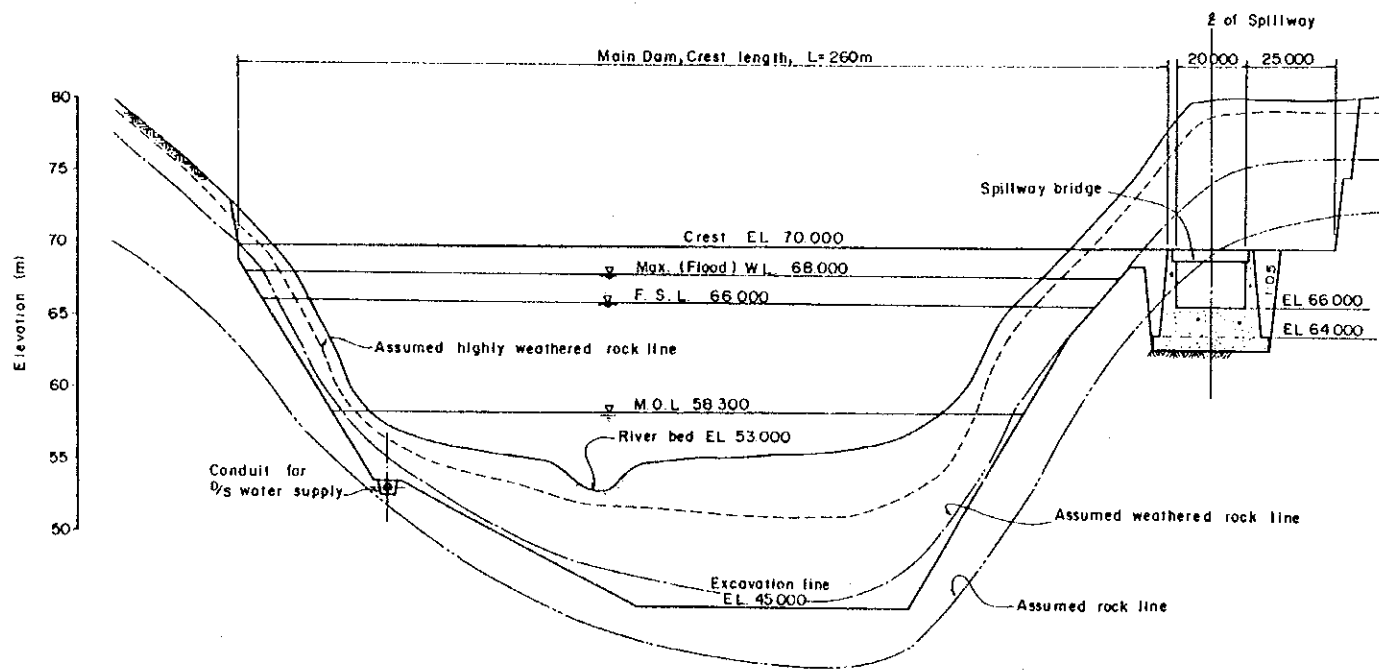
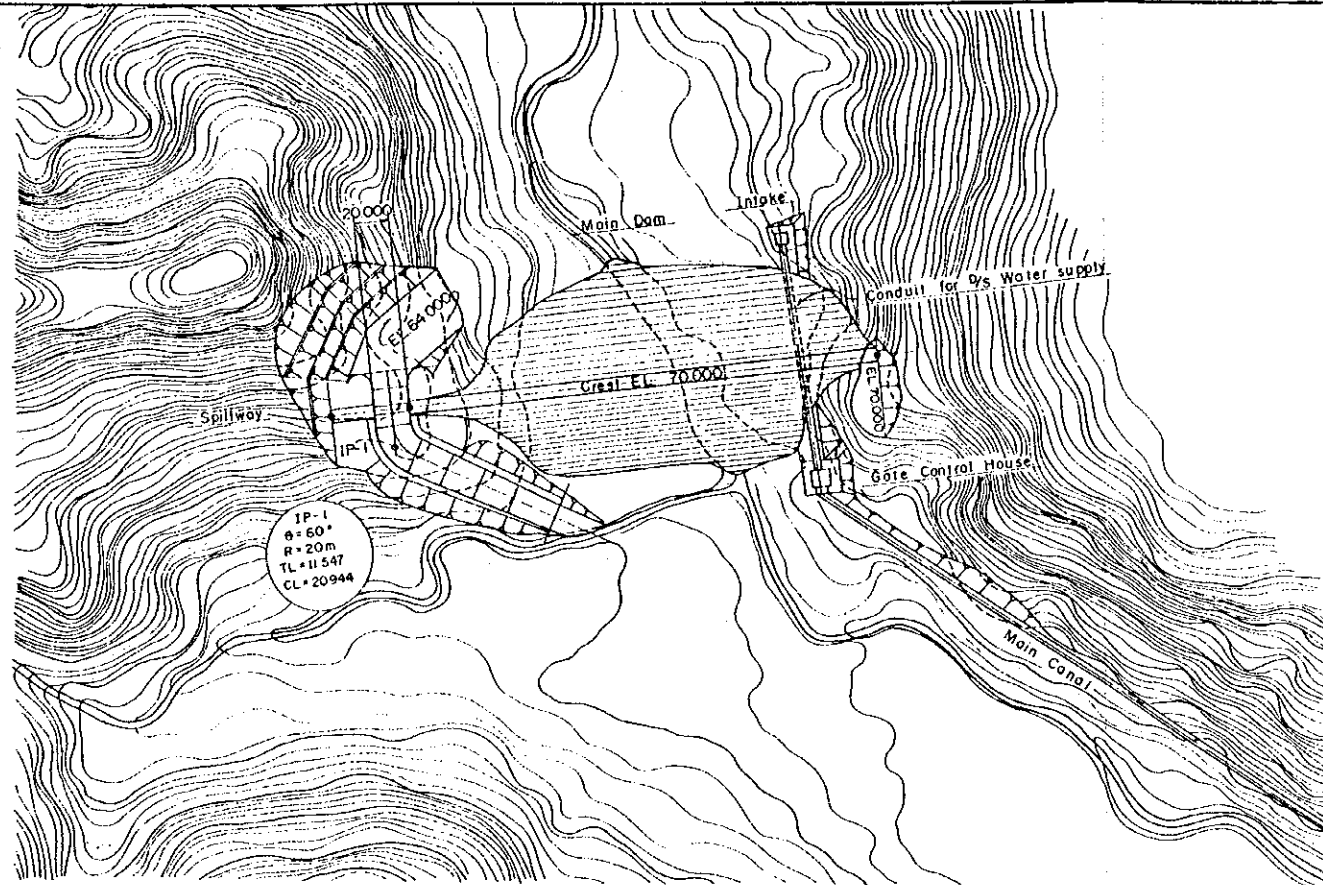
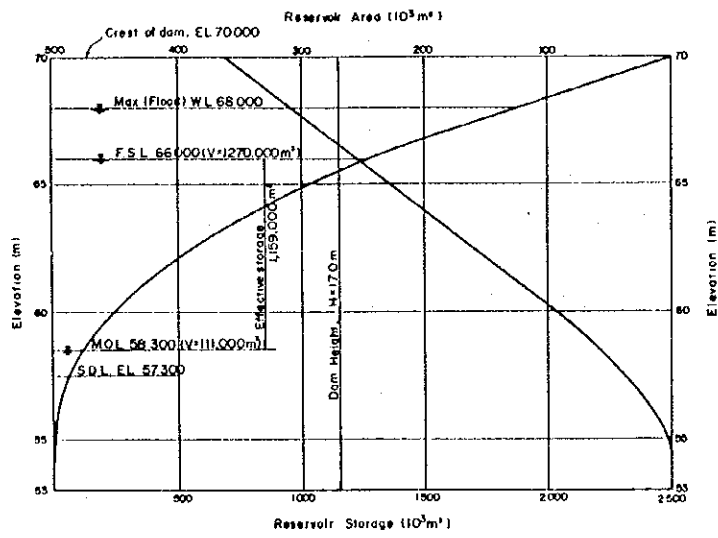
SECTION A-A

Scale C



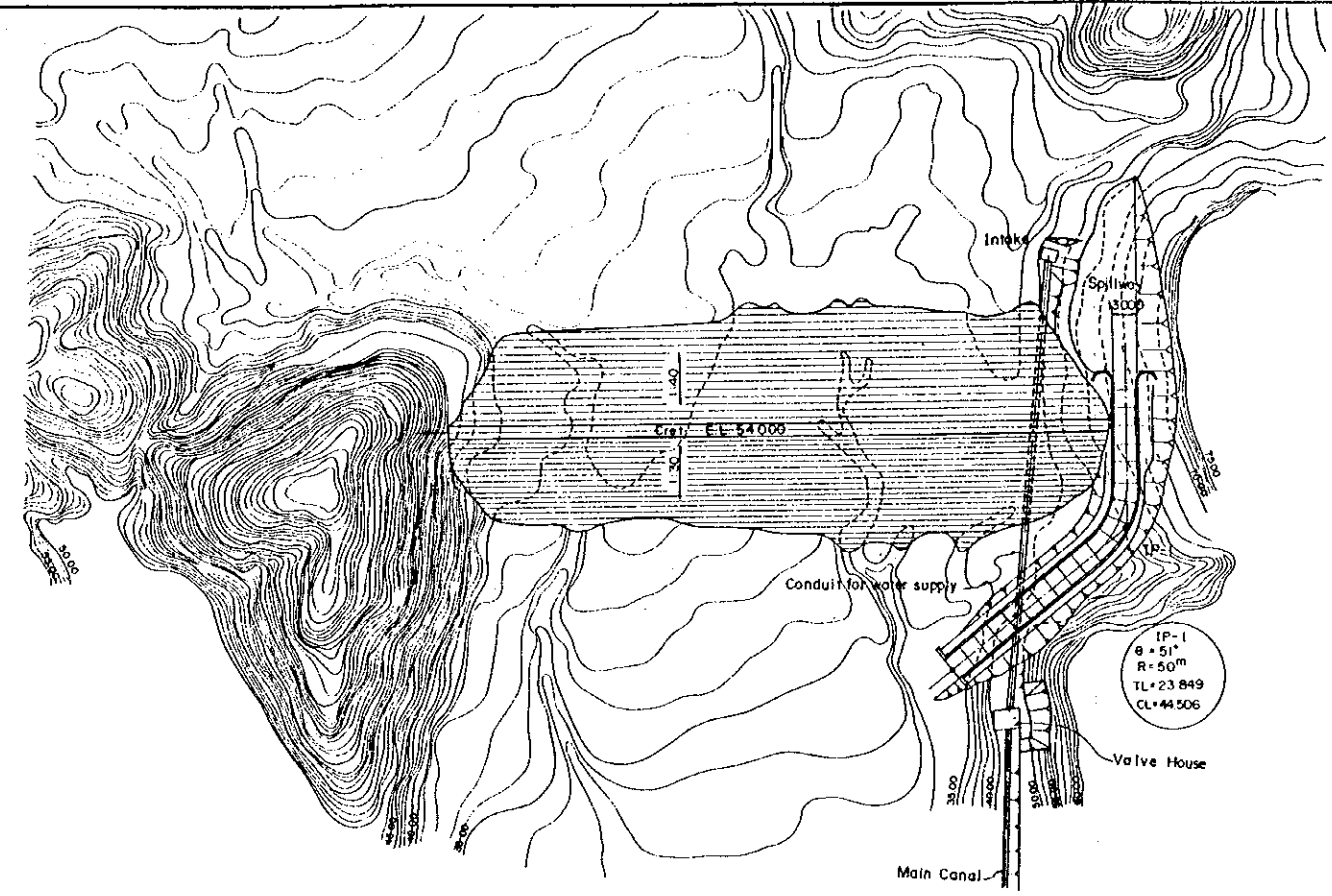
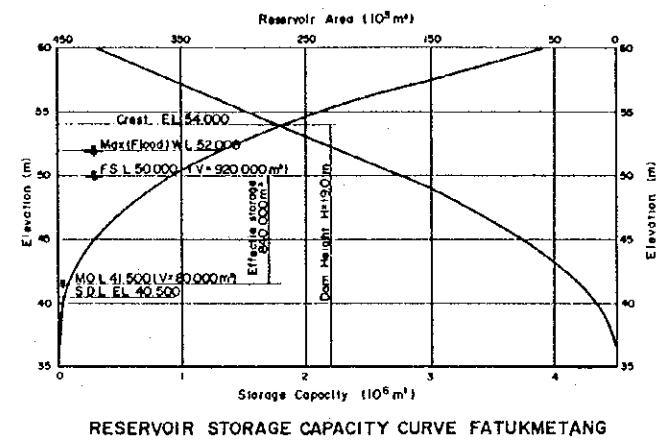
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS	
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara	
GENERAL PLAN OF NCOHA-II EMBUNG	
No.	Area
JAPAN INTERNATIONAL COOPERATION AGENCY	

Figure 6.17 General Plan of Ncoha II Embung

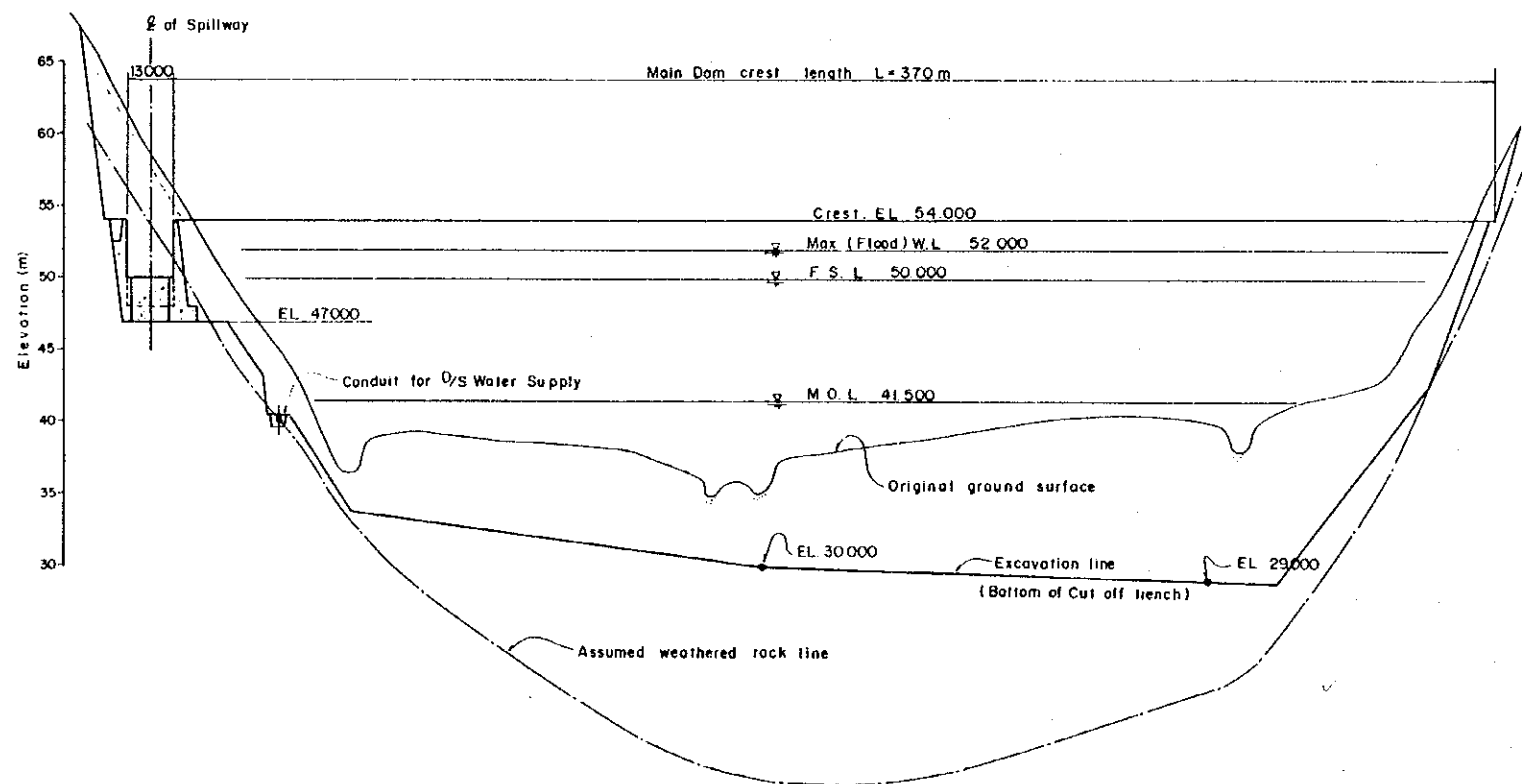


DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS	
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara	
GENERAL PLAN OF NTONGGU-II EMBUNG	
No.	Area
JAPAN INTERNATIONAL COOPERATION AGENCY	

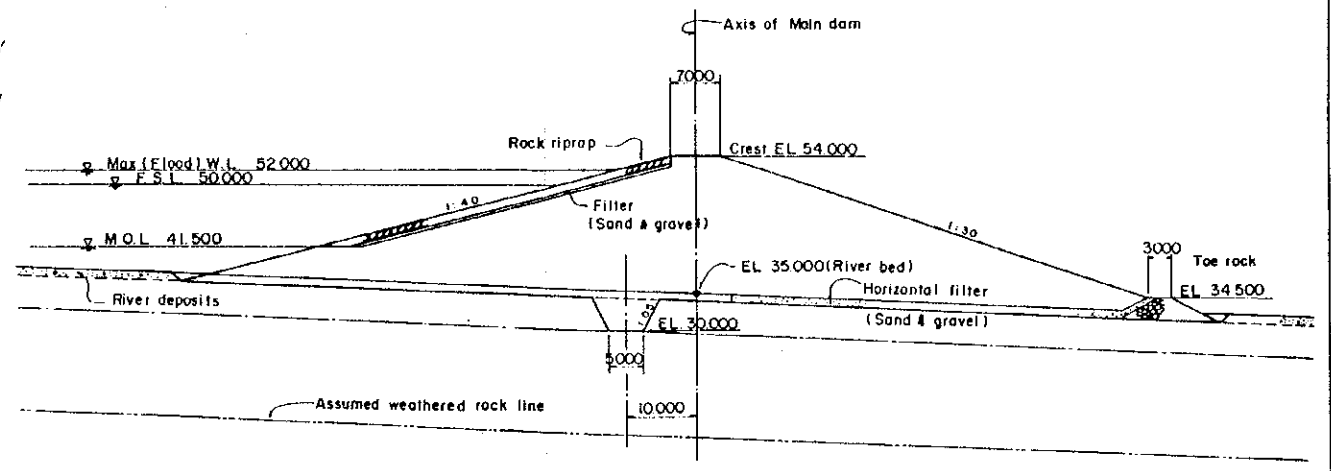
Figure 6.18 General Plan of Ntonggu II Embung



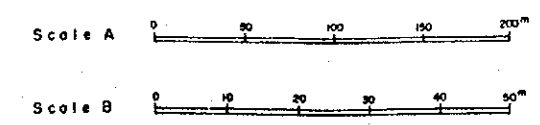
PLAN Scale A



PROFILE OF MAIN DAM
Scale H=1:1,000
V=1:250

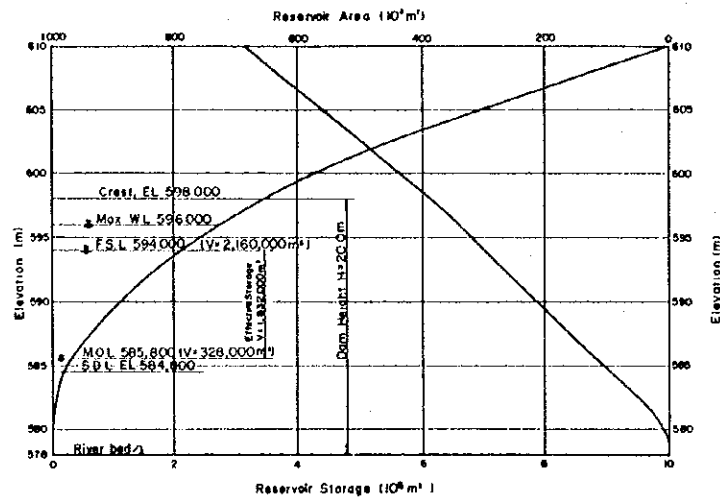


MAXIMUM CROSS SECTION OF MAIN DAM
Scale B

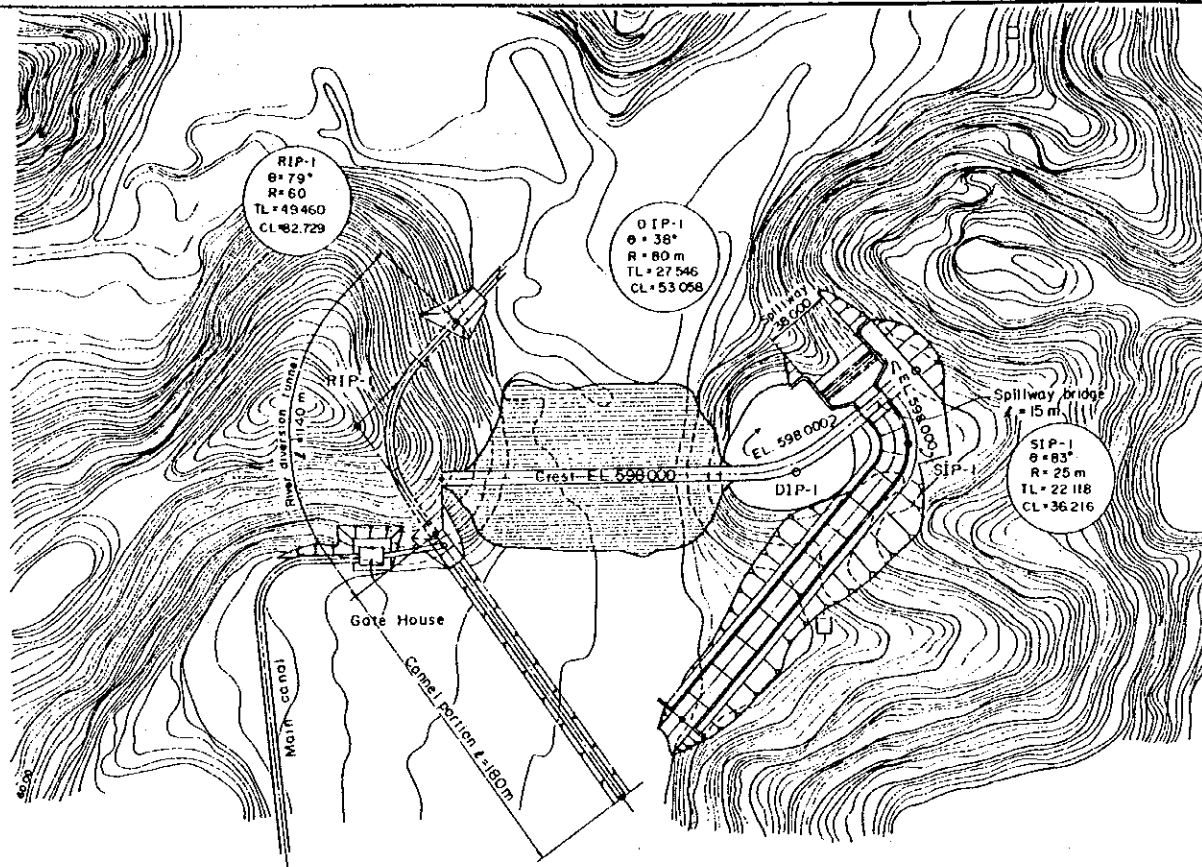


DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT, MINISTRY OF PUBLIC WORKS	
The Embung Development Project in East Nusa Tenggara and West Nusa Tenggara	
GENERAL PLAN OF FATUKMETANG EMBUNG	
No.	Area
JAPAN INTERNATIONAL COOPERATION AGENCY	

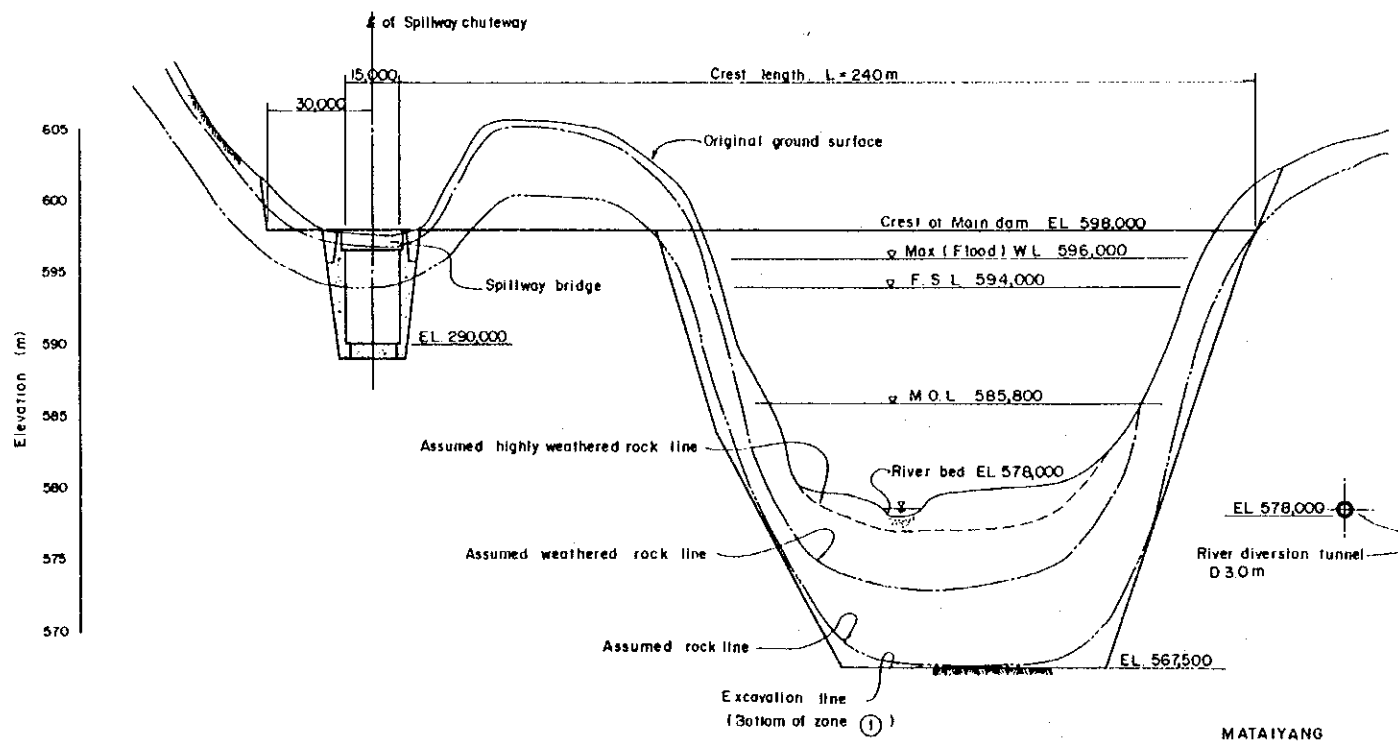
Figure 6.19 General Plan of Fatukmetang Embung



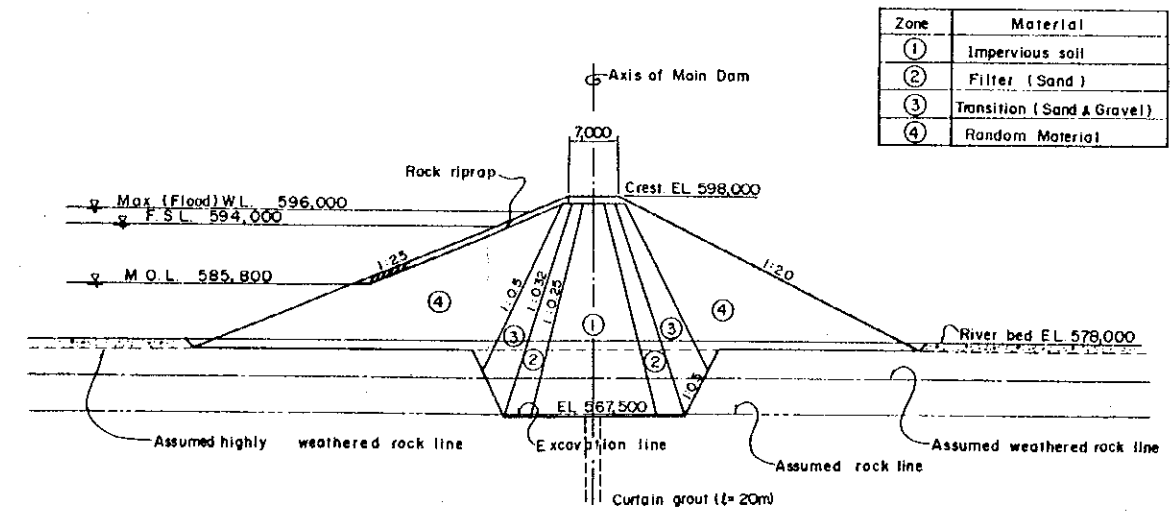
RESERVOIR STORAGE CURVE AT MATAIYANG



PLAN Scale A



PROFILE OF MAIN DAM
Scale: H=1:1,000
V=1:250



MAXIMUM CROSS SECTION OF MAIN DAM
Scale B

Zone	Material
①	Impervious soil
②	Filter (Sand)
③	Transition (Sand & Gravel)
④	Random Material



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

Figure 6.20 General Plan of Mataiyang Embung

STRUKTUR ORGANISASI
PROYEK PENGEMBANGAN DAN KONSERVASI
SUMBER AIR LOMBOK
(Tahun Anggaran 1994/1995)

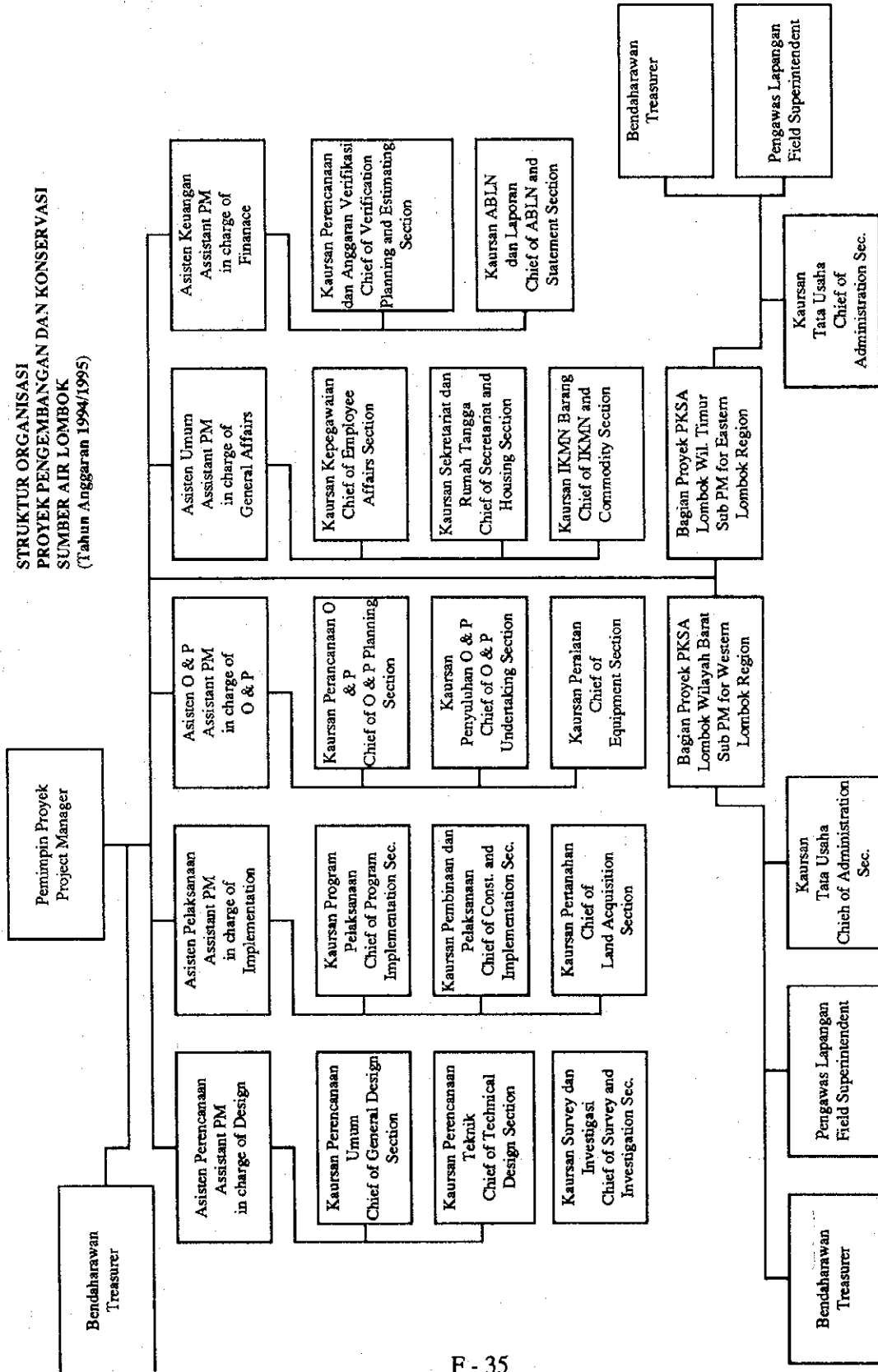


Figure 8.1 Organization Chart of PKSA Lombok, NTB

**STRUKTUR ORGANISASI
PROYEK PENGEMBANGAN DAN KONSERVASI
SUMBER AIR LOMBOK
(Tahun Anggaran 1994/1995)**

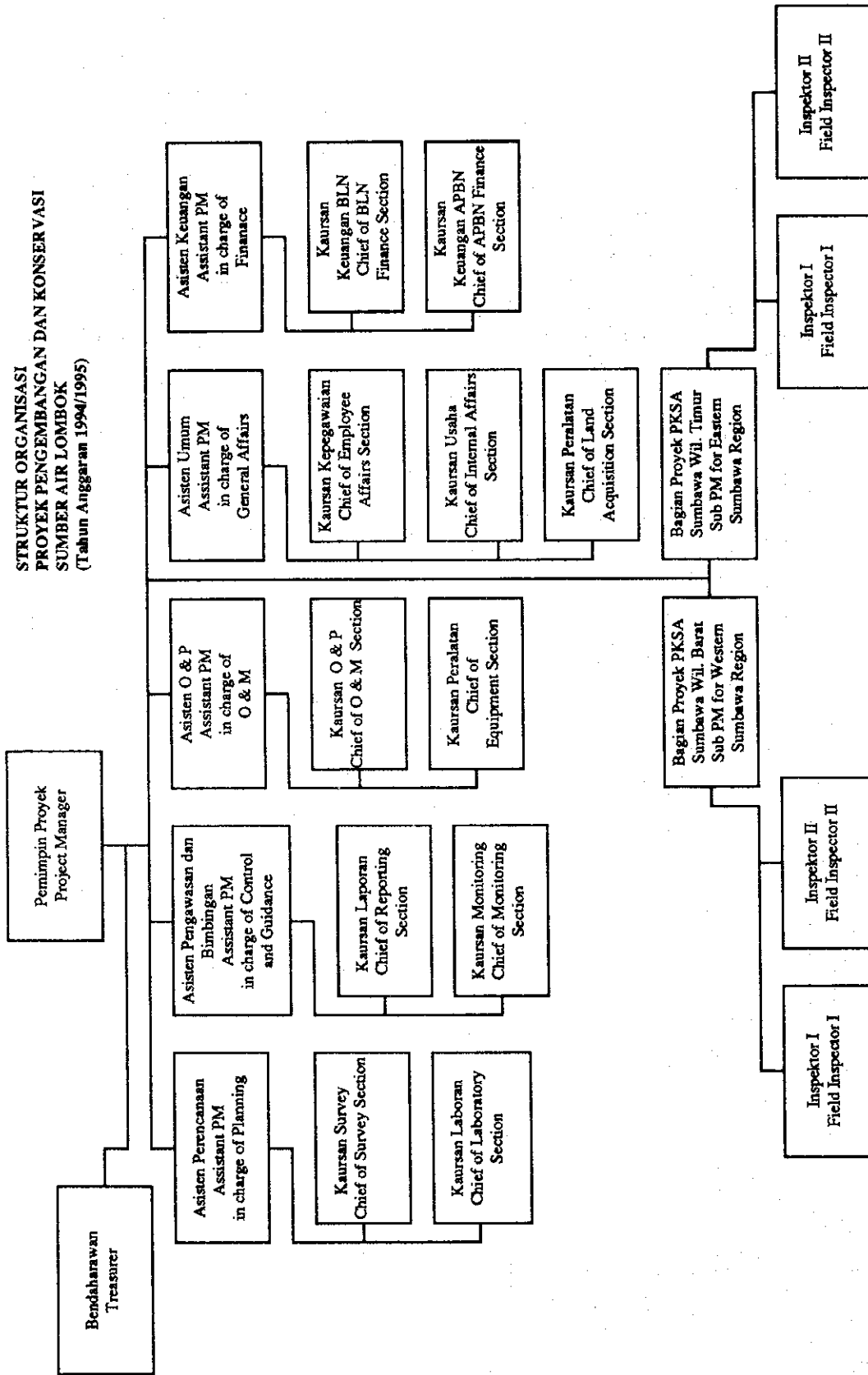


Figure 8.2 Organization Chart of PKSA Sumbawa, NTB

**STRUKTUR ORGANISASI
PROYEK PENGEMBANGAN DAN KONSERVASI
SUMBER AIR TIMOR
(Tahun Anggaran 1994/1995)**

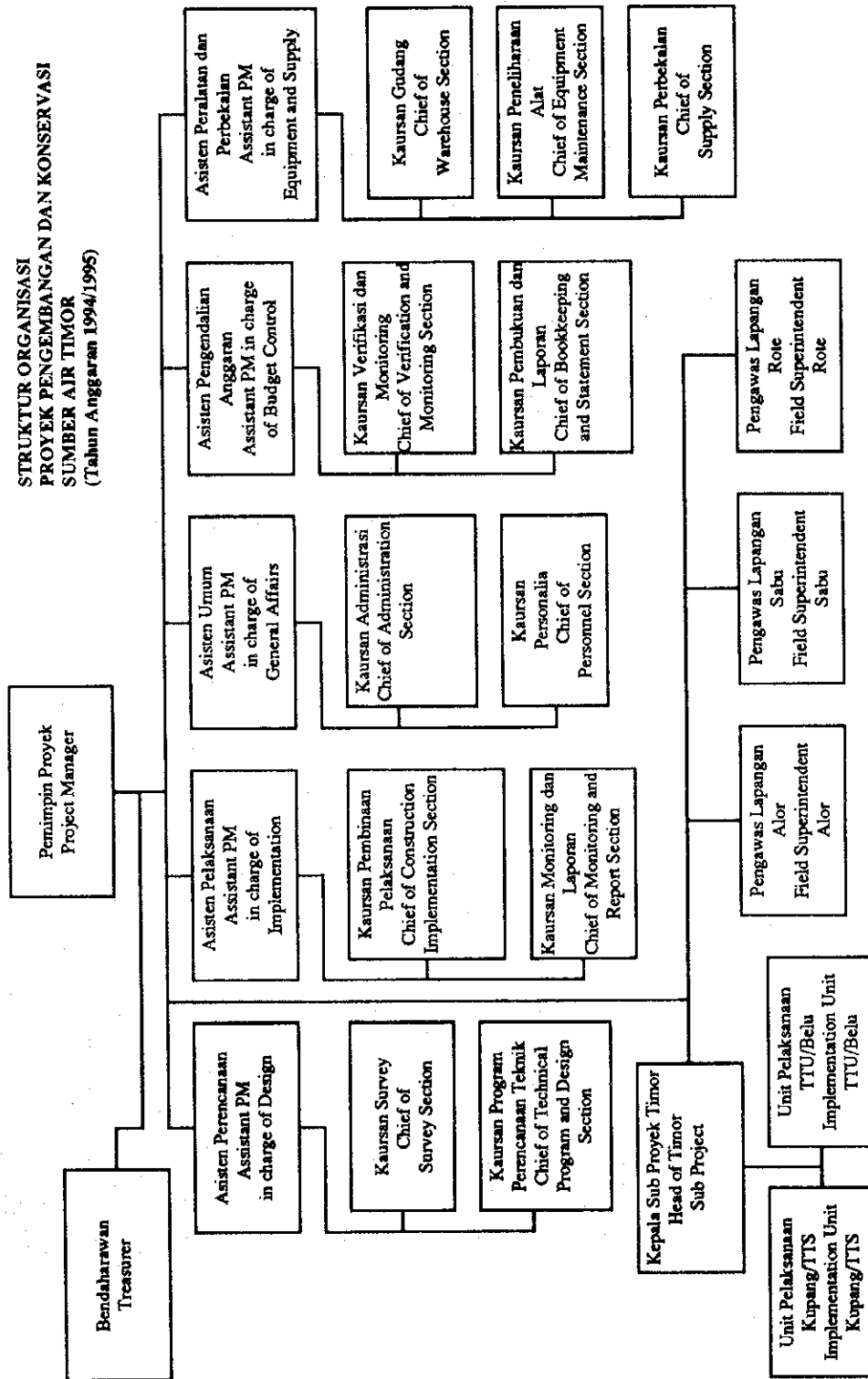


Figure 8.3 Organization Chart of PKSA Timor, NTT

**STRUKTUR ORGANISASI
PROYEK PENGEMBANGAN DAN KONSERVASI
SUMBER AIR FLORES-SUMBA
(Tahun Anggaran 1994/1995)**

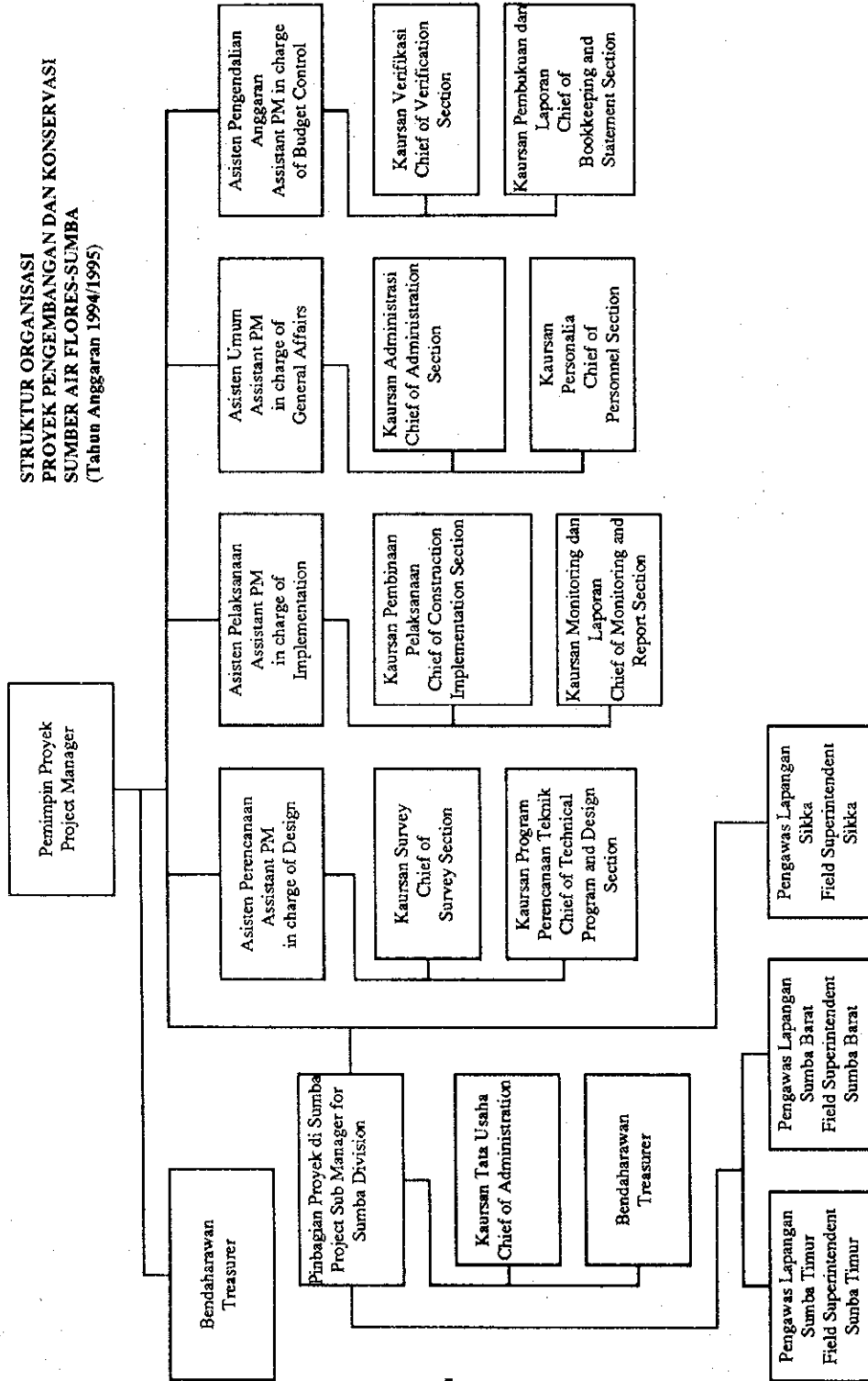
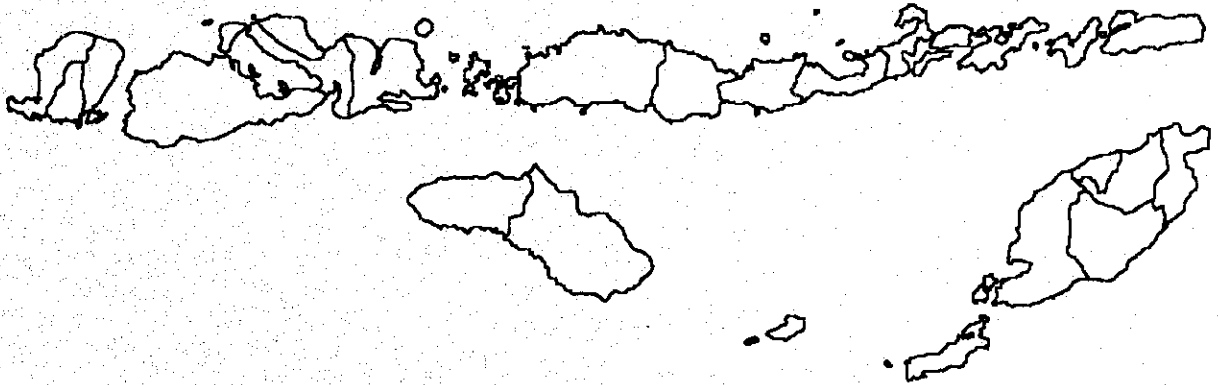


Figure 8.4 Organization Chart of PKSA Flores-Sumba, NTT

***The Study on The Embung Development Project
in East Nusa Tenggara and West Nusa Tenggara***

***Feasibility Study on
Ten Embung Development Projects***

Attachments



- Embung Site: 1: Lokok Meniris
 2: Pelergan
 3: Monong Krauk
 4: Aik Beta
 5: Tiu Tai
 6: Penyempeng
 7: Ncohad(I)
 8: Ntoongut(II)
 9: Fankumang
 10: Malatyang

- Place I : Catchment area
 Place II : Embung and reservoir area planned
 Place III : River and riverbed
 Place IV : Riverside
 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area

- Positive Impact with Project
 Negative Impact with Project

Environmental component	Environmental Issue	Actual or Places Environmental Evaluation is						Actual and Potential Impact of Aspect						Places Environmental Impact Occur						Embung Site						Mitigatory Measures				
		Potential	Issues Occur	available or	not available	Aspect	Aspect	Impact of Aspect	Impact of Aspect	I	II	III	IV	V	VI	1	2	3	4	5	6	7	8	9	10					
Flooding	Actual	IV	available	Erosion and collapse of river banks are not observed owing to vegetation of kinds of bamboo around the riverside.		Aspect	Aspect	There are no impacts.	III	III	III	IV	V	VI	1	2	3	4	5	6	7	8	9	10						
	Potential	IV	available	Erosion and collapse of river banks are not observed owing to vegetation of bushes around the riverside and geological condition of limestone.		Aspect	Aspect	There are no impacts.																	10					
	Actual	IV	available	Erosion and collapse of river banks are not observed owing to rich vegetation around the riverside.		Aspect	Aspect	There are no impacts.																	6					
	Potential	IV	available	Any changes of aspect are not anticipated.		Aspect	Aspect	There are no impacts.																	3	6	10			
	Actual	III	IV	available	Intensive flow induces floods occurrence during the wet season		Aspect	Aspect	There are no impacts.																3	5	8	9	10	
	Actual	III	IV	available	Intensive flow induces floods occurrence during the wet season		Aspect	Aspect	Erosion along the river banks is accelerated by floods.	III	III	III	IV	V	VI	1	2	3	4	5	6	7	8	9	10					7
	Actual	III	IV	available	Rapidly increasing flow during the wet season induces flood occurrence.		Aspect	Aspect	There are no impacts.																	2	6			
	Potential	III	IV	available	Flood discharge is not reduced because Embungs have no flood control purpose.		Aspect	Aspect	There are no impacts. There are no changes of actual impacts.	III	III	III	IV	V	VI	1	2	3	4	5	6	7	8	9	10					

- Embung Site: 1: Lokok Meniris
 2: Pelangan
 3: Monlong Kraak
 4: Ask Bela
 5: Tu Tui
 6: Penyampang
 7: Ncohad(I)
 8: Nionggau(II)
 9: Fatukembang
 10: Matiatyang

- Place I : Catchment area
 Place II : Embung and reservoir area planned
 Place III : River and riverbed
 Place IV : Riverside
 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area

- Positive Impact with Project
 Negative Impact with Project

Environmental Component	Actual or Potential	Actual or Potential Issue Occur	Actual and Potential Aspect	Actual and Potential Impact of Aspect	Places Environmental Impact Occur										Mitigatory Measures							
					I	II	III	IV	V	VI	I	2	3	4		5	6	7	8	9	10	
Surface water availability	Potential	Issues Occur	Surface water is utilized for irrigation and livestock in the wet season. In the some parts, surface water led from other water resource is utilized for irrigation.	To utilized well water as livestock supply in the dry season sometimes causes the shortage of domestic water supply.	V	I																
	Actual	available	Surface water is utilized for irrigation and livestock in the wet season. In the dry season, both supply is insufficient.	Ditto and it affects unstable activities of cultivation.	V	2																
	Actual	available	Surface water is utilized for irrigation and livestock in the wet season.	To utilized well water as livestock supply in the dry season often causes the shortage of domestic water supply.	V	3																
	Actual	available	Surface water is utilized for livestock in the wet season.	To utilized well water as livestock supply in the dry season sometimes causes the shortage of domestic water supply.	V	10																
	Potential	available	It is available to utilize surface water for irrigation and domestic.	Supply or stable water supply for irrigation bring the agricultural and related economic activities to positive. In addition, it mitigates the insufficiency of domestic water.	V	1	2	3														
	Actual	available	As surface water is utilized merely for livestock in the wet season, most of water runs to down.	It affects low level of agricultural productivity.	V	4																
	Actual	available	Although surface water is utilized for irrigation and livestock, irrigation water is insufficient in the some parts.	It affects unstable agricultural productivity in the dry season.	V	6																
	Actual	available	Although being utilized for livestock, surface water runs to down without being utilized as irrigation water due to unsuitable facilities.	It affects low level of agricultural productivity.	V	7																
	Potential	available	It is available to utilize surface water for irrigation	Supply or stable water supply for irrigation bring the agricultural and related economic activities to positive.	V	4	6	7														
	Actual	available	Surface water is utilized for livestock in the wet season.	To utilized well water as livestock supply in the dry season sometimes causes the shortage of domestic water supply.	V	5																
	Actual	available	Surface water is utilized for irrigation and livestock in the wet	Ditto	V	8																

- Place I : Catchment area
 Place II : Embung and reservoir area planned
 Place III : River and riverbed
 Place IV : Riverside
 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area
- Embung Site: 1: Lokok Memris
 2: Pelangan
 3: Momong Krarak
 4: Aik Beta
 5: Tiu Tui
 6: Penyempeng
 7: Nohai(II)
 8: Nonggu(II)
 9: Fakumezaag
 10: Matziyang

Positive Impact with Project

Negative Impact with Project

Environmental component	Environmental Issue	Actual or Potential		Actual and Potential Impact of Aspect	Places Environmental Impact Occur										Mitigatory Measures								
		Potential	Actual		I	II	III	IV	V	VI	1	2	3	4		5	6	7	8	9	10		
Surface water quality	Potential	V	available	It is available to utilize surface water for irrigation and livestock.																			
	Actual	V	available	As surface water is utilized merely for livestock in the wet season, almost of it runs down.																			
	Potential	V	available	It is available to utilize surface water for irrigation, domestic and livestock.																			
Groundwater levels	Actual	not available	not available																				
	Potential	III	available																				
	Actual	V	available																				
Groundwater quality	Potential	V	available																				
	Actual	V	available																				
	Potential	V	available																				
ATMOSPHERE: Dust, Odor, Noise	Actual	II	available	During construction stage, some changes of atmosphere aspect are more prominent though most of them are localized and temporary.																			
	Potential	II	available																				

These impacts can eliminate through the appropriate consideration for the activities such as safety control and transportation management by the contractor.

3. Human Environmental Impacts

- Place I : Catchment area
 Place II : Embung and reservoir area planned
 Place III : River and riverbed
 Place IV : Riverside
 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area
- Embung Site: 1: Lokak Meniris
 2: Pebangan
 3: Montong Kraak
 4: Aik Bea
 5: Tiu Tui
 6: Penyempang
 7: Ncoha(I)
 8: Nongge(II)
 9: Paokmetang
 10: Matayang
- Positive Impact with Project
 Negative Impact with Project

Environmental Component	Environmental Issue	Actual or Potential	Actual or Places Environmental Evaluation is available or not available	Actual and Potential Aspect	Actual and Potential Impact of Aspect	Places Environmental Impact Occur										Mitigatory Measures										
						I	II	III	IV	V	VI	I	2	3	4		5	6	7	8	9	10				
SOCIAL	Human carrying capacity	Actual	available	The capacity can be adapted to consistent population growth due to agricultural activities in the whole	There are no impacts.																					
		Potential	available	Further expansion of the capacity is expected by means of the provision of sufficient irrigation water supply all the year round.	As it enables to employ a seasonal labour who will contribute to the division of agricultural work in this area.	V																				
	Human carrying capacity	Actual	available	The capacity, which is attributed to low farm productivity due to irrigation during only wet season, can not afford.	Low employment opportunity in the dry season induces the outflow of labor force to town area.	V																				
		Potential	available	Increase of the capacity is expected by means of the provision of sufficient irrigation water supply all the year round.	It controls the labor force outflow, and contributes to their settling in order to work in this area.	V																				
	Human carrying capacity	Actual	available	The capacity, which is attributed to low farm productivity due to rainfed irrigation, can not afford.	Low employment opportunity induces the outflow of much labor force to town area.	V																				
		Potential	available	Improvement of the capacity is expected by means of the provision of irrigation water supply.	It controls labor force outflow, contributes to their settling in order to work in this area.	V																				
	Human carrying capacity	Actual	available	As there are not any notable economic activities, the capacity is too much limited.	Low employment opportunity causes outflow of much labor force to town area.	V																				
		Potential	available	Advance of the capacity is expected by means of the introduction of irrigated cultivation.	It controls the labor force outflow, and contributes to their settling in order to work in this area.	V																				
	Resettlement	Actual	available	Involuntary resettlement will not occur.	There are no impacts.																					
		Potential	available	Although in the proposed reservoir area there are used land, which will be expropriated by means of the provision the recommended land in the beneficial area, involuntary resettlement will not occur because of living in the beneficial area.	There are no impacts.																					

- Embung Site: 1: Lokok Meniris
 2: Pelangan
 3: Montong Kraak
 4: Air Beta
 5: Tlu Tui
 6: Panyempang
 7: Nohoh(II)
 8: Nongzat(II)
 9: Fakmeatang
 10: Matziyang

- Place I : Catchment area
 Place II : Embung and reservoir area planned
 Place III : River and riverbed
 Place IV : Riverside
 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area

- Positive Impact with Project
 Negative Impact with Project

Environmental component	Environmental Issue	Actual or Potential		Places Environmental										Embung Site										Mitigatory Measures				
		Potential	Actual and Potential Aspect	Actual and Potential Aspect	Impact Occur	I	II	III	IV	V	VI	I	II	III	IV	V	VI	1	2	3	4	5	6		7	8	9	10
Settlement	Potential	available	The land transfer shall force the land users/owners to resettle nearby their farmland.	It causes resistance or apprehension, and discord between resettled inhabitants and already living people in the beneficial area.	II	V																					An equivalent or better social basis should be provided in the beneficial area.	
	Potential	available	As the dwellings and lands are submerged, involuntary resettlement occurs.	Ditto and the changes of economic basis result in resistance against shifting from traditional style to new one.	II	V																					Ditto and it is necessary to train settlers in order to follow the activities.	
	Potential	available	As the dwellings and lands are submerged, involuntary resettlement occurs.	There are few impacts because resettled family is only one.	II	V																						10
Population growth	Actual	available	Settlement is not recommended among indigenous social communities.	There are no impacts.			1	2	3	4	5	6	7	8	9	10												
	Potential	available	Settlement is not composed of the project components.	There are no impacts.			1	3	4	5	6	7	9	10														
	Potential	available	Planned settlement is carried out from proposed reservoir area.	It causes occurrence of discord between resettled inhabitants and already living people in the beneficial area due to difference of own custom and religion.		V																					事業の実施に当たっては両者の相互理解を得るための事前協議、説明会等の関係を十分に行なう必要がある。	
Demographic structure	Actual	available	Constant population growth can be recognized.	Increase of water demand due to the population growth accelerates the shortage of domestic water supply.		V																						
	Potential	available	Constant population growth will be further maintained by the medical and sanitary improvement of living condition due to stable domestic water supply.	Sufficient domestic water supply in proportion to the population growth mitigates the shortage.		V																						
	Potential	available	Constant population growth can be recognized.	There are no impacts.		V																						
Demographic structure	Actual	available	Although some people including young generation is likely to outflow to town area, structure is as same rate as nation's average.	There are no impacts.		V																						
	Potential	available	There are few changes of aspect.	There are no impacts.		V																						
	Potential	available	There are few changes of aspect.	There are no impacts.		V																						

- Embung Site: 1: Lokok Mearis
 2: Pelangan
 3: Montong Kraak
 4: Aik Bea
 5: Tiu Tui
 6: Penyempeng
 7: Neohu(I)
 8: Nlonggu(II)
 9: Patakntang
 10: Matayang
- Positive Impact with Project
 Negative Impact with Project

- Place I : Catchment area
 Place II : Embung and reservoir area planned
 Place III : River and riverbed
 Place IV : Riverside
 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area

Environmental Component	Environmental Issue	Actual or Potential	Actual or Potential Evaluation is available or not available	Actual and Potential Aspect		Actual and Potential Impact of Aspect		Places Environmental Impact Occur		Embung Site		Mitigatory Measures
				Actual	Potential	Actual	Potential	I	II III IV V VI	1	2 3 4 5 6 7 8 9 10	
Social equity	Indigenous practices regarding domestic water usage, such as water right and distribution methods might incur inconvenience among them.	Potential	available	utilization is realized through unification of water distribution system	Achievement of effective water distribution system is acceptable for inhabitants.	V	1 2 3 4 5 6 7 8 9 10					
		Actual	available	Lack of knowledge about disease prevention, i.e. excretion in the field is social problem in the health and sanitary points of view. Especially in the dry season, the shortage of domestic water supply causes deterioration of health condition	It causes prevailing oral contagious and rising of waterborne intestinal disease, especially among infant.	V	1 2 3 4 5 6 7 8 9 10					
		Potential	available	Prevention of disease infection is expected by means of stable domestic water supply.	Decrease of contagious disease and infant mortality rate are expected.	V	1 2 3 5 8 9 10					
Health	Lack of knowledge about disease prevention, i.e. excretion in the field is social problem in the health and sanitary points of view.	Actual	available	Lacking of knowledge about disease prevention, i.e. excretion in the field is social problem in the health and sanitary points of view.	It causes prevailing oral contagious and rising of waterborne intestinal disease.	V	4 6 7					
		Potential	available	There are no changes of aspect.	There are no changes of actual impacts.	V	4 6 7					
		Potential	available	Although irrigated farming has been done by stable facilities throughout the year, it is possible to improve the cropping intensity and to expand the cultivable land.	There are no impacts.	V	4 6 7					
HUMAN USE Cultivation	Insufficient irrigation water, poor maintenance of irrigation facilities and water distribution management cause low productivity and limited cultivable land.	Actual	available	Insufficient irrigation water, poor maintenance of irrigation facilities and water distribution management cause low productivity and limited cultivable land.	Unstable farm management causes low farm income, investment and increase of unemployment rate	V	3 7					
		Potential	available	Rainfed irrigation cause low productivity and limited cultivable land.	Unstable farm management causes serious low income, investment and increase of unemployment rate.	V	4 5 9 10					
		Potential	available	Improvement of farm productivity and/or increase of cultivated area are attained by adequate irrigation water supply	Improvement of farm income, investment and employment opportunity are realized by improvement of irrigation system.	V	1 2 3 4 5 6 7 8 9 10					

- Embung Site: 1: Lokok Menaris
 2: Pelangan
 3: Montong Karak
 4: Aik Beta
 5: Tui Tui
 6: Penyempeng
 7: Ncoha(I)
 8: Niomggul(I)
 9: Faumetiang
 10: Matayang

- Place I : Catchment area
 Place II : Embung and reservoir area planned
 Place III : River and riverbed
 Place IV : Riverstade
 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area

- Place I : Catchment area
 Place II : Embung and reservoir area planned
 Place III : River and riverbed
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 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area

Environmental Component	Environmental Issue	Actual or Potential	Actual and Potential Aspect	Actual and Potential Impact of Aspect	Places Environmental Impact Occur										Mitigatory Measures					
					I	II	III	IV	V	VI	1	2	3	4		5	6	7	8	9
Livestock	Potential		As for water supply, Surface water is used during the wet season, ground water is used in the dry season.	Shortage of domestic water occurs in the dry season and women are compelled to heavy duties, such as water conveyance.																
	Actual	V	It is possible to supply stable water for livestock and effective water distribution system is planned.	Water supply quantity for livestock is ensured and heavy duties of women, e.g. water conveyance, is mitigated.																
	Potential	V	Fisheries activities are not conducted at downstream of reservoir and at century.	There are no impacts.																
Fisheries	Actual	III	There are no changes of aspect.	Deterioration of recharge of ground water is observed in the reservoir and catchment area and logging accelerate soil erosion																
	Potential	III	Reforestation or regreening campaign is not implemented. Logging is conducted to maintain inhabitants' daily life and economic activities.	Excess logging accelerate soil erosion and results in deterioration of ground water recharge capacity and increase of inflow of sediment into the reservoir.																
	Actual	II	Limitation of logging area contributes to excess logging in the reservoir catchment area.	Women are compelled to water conveyance. The shortage causes deterioration of health and sanitary situation.																
Domestic water supply	Potential	II	Ground water is utilized for the domestic water supply. It is shortage because well water are not useful during the dry season because of the decline of water level.	Ground and spring water is utilized for the domestic water supply. It is shortage because well water are not useful during the dry season because of the decline of water level.																
	Actual	V	Stable and sufficient domestic water supply shall be attained.	Heavy duties of women are mitigated and health situation is improved due to increasing of preventive measures with using water.																
	Potential	V																		

Embung Site: 1: Lokok Meniris
 2: Pelangan
 3: Montong Kraak
 4: Aik Beta
 5: Tia Tai
 6: Penyempeng
 7: Ncoha(II)
 8: Nonggu(II)
 9: Fakmetang
 10: Mataiyang

Place I : Catchment area
 Place II : Embung and reservoir area planned
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 Place IV : Riverside
 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area

Positive Impact with Project
 Negative Impact with Project

Environmental component	Actual or Potential	Actual or Potential Issues Occur	Actual and Potential Aspect	Actual and Potential Impact of Aspect	Embung Site										Mitigatory Measures					
					I	II	III	IV	V	VI	I	2	3	4		5	6	7	8	9
Environmental Issue	Actual	V available	The farmers are compelled to get very low income due to limited shift cultivation and simple fishery.	It causes outflow to the town, and affects living standard of very low level.	V														9	
	Potential	V available	Slight farm income with improvement of farm productivity is expected by irrigated cultivation due to stable supply of irrigation water.	It enable farmers to settle in this area, slight improvement of living standard are expected with farm income.	V															9
Employment	Actual	V available	Although employment opportunity is given by irrigated cultivation, positive employment can not be recognized.	It affects stagnation of farm income.	V															8
	Potential	V available	Stable employment opportunity is created by activation of farming practice on the strength of improvement of cropping intensity.	Stability of farm income is expected.	V															8
Environmental Issue	Actual	V available	As employment opportunity is limited by unstable rainfed cultivation, positive employment can not be recognized and unemployment occurs in the dry season.	It affects instability of farm income, and outflow to work as casual labour to the town area is recognized.	V															10
	Potential	V available	Stable employment opportunity is created by activation of farming practice on the strength of irrigated cultivation.	Stability of farm income is expected, and employment opportunity enables farmers to settle in this area.	V															10
Environmental Issue	Actual	V available	Employment opportunity is extremely limited by the bare shifting cultivation.	It affects limited farm income, and outflow to work as casual labour to the town area is recognized too much.	V															9
	Potential	V available	Employment opportunity is created by activation of farming practice on the strength of irrigated cultivation.	Slight farm income is expected, and employment opportunity enables farmers to settle in this area.	V															

- Embung Site: 1: Lokok, Memiris
 2: Pelangan
 3: Montong Karak
 4: Aik Beta
 5: Tui Tui
 6: Penyemping
 7: Neohat(II)
 8: Nonggud(II)
 9: Panakmeang
 10: Matayang

- Place I : Catchment area
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- Positive Impact with Project
 Negative Impact with Project

Environmental Component	Environmental Issue	Actual or Potential	Places Environmental Issues Occur	Actual and Potential Aspect	Actual and Potential Impact of Aspect	Embung Site										Mitigation Measures								
						I	II	III	IV	V	VI	I	II	III	IV		V	VI	I	II	III	IV	V	VI
Historic/archaeological sites	Potential	Historic/archaeological sites, remains and cultural assets do not exist.			There are no impacts.																			
	Actual	There exists the Hindu altar, which is erected due to praying safety and success of head work located at the proposed Embung, at the right bank of just upstream from the proposed Embung.			This altar has been revered by Hindu believers living in the beneficial area of head work as a protection of water and human.																			
	Potential	This altar is submerged by the construction Embung.			Hindu believer must have a fear against occurrence of calamities.																			
Lifestyle (quality of life)	Potential	Standard quality of life is maintained by farm income by means of irrigated cultivation throughout the year.			There are no impacts.																			
	Actual	Improvement and stability of life is ensured by further increasing of farm income.			Improvement of health situation is expected by repletion of food, clothing and dwelling environment, and inhabitants have an interest and positive view in education.																			
	Potential	Although lower quality of life is maintained by farm income by means of irrigated cultivation in the wet season, improvement of quality is not recognized.			Humble dwelling environment influences deterioration of health and sanitary situation. Inhabitants are not interested in education for family.																			
Potential	Improvement and stability of life is expected by increasing of farm income due to improvement of cropping intensity and expansion of irrigated cultivation.			Improvement of health situation is expected by repletion of especially dwelling environment, and inhabitants have an interest and positive view in education.																				

- Place I : Catchment area
 Place II : Embung and reservoir area planned
 Place III : River and riverbed
 Place IV : Riverside
 Place V : Beneficial area
 Place VI : Downstream area other than beneficial area
- Embung Site: 1: Lokok Meniris
 2: Pelangan
 3: Montong Krarak
 4: Aih Bala
 5: Tau Tui
 6: Penyempang
 7: Nohad(I)
 8: Nonggat(II)
 9: Fankmestang
 10: Malaiyang
- Positive Impact with Project
 Negative Impact with Project

Environmental Component	Environmental Issue	Actual or Places Environmental Evaluation is available or not available						Actual and Potential Aspect						Actual and Potential Impact of Aspect						Places Environmental Impact Occur						Embung Site						Mitigatory Measures																						
		I	II	III	IV	V	VI	I	II	III	IV	V	VI	I	II	III	IV	V	VI	I	II	III	IV	V	VI	1	2	3	4	5	6		7	8	9	10																		
Environmental Component	Potential																																																					
	Actual					V	available	Rainfed irrigation compels inhabitants to be limited lower quality of life.	Improvement and stability of life is expected by increasing of farm income throughout the year.	Bare shifting cultivation compels inhabitants to be limited the lowest quality of life.					Humble dwelling and unclean clothing environment influences deterioration of health and sanitary situation. Inhabitants are not interested in education for family.												V										4	5	7	10														
	Potential					V	available																			V																4	5	7	10									
Environmental Component	Actual					V	available																		V																													
	Potential					V	available																		V																													

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