

Figure D-42 ALIGNMENT AND PROFILE OF LABOY DAM WATER SUPPLY PROJECT FOR BAGUIO CITY

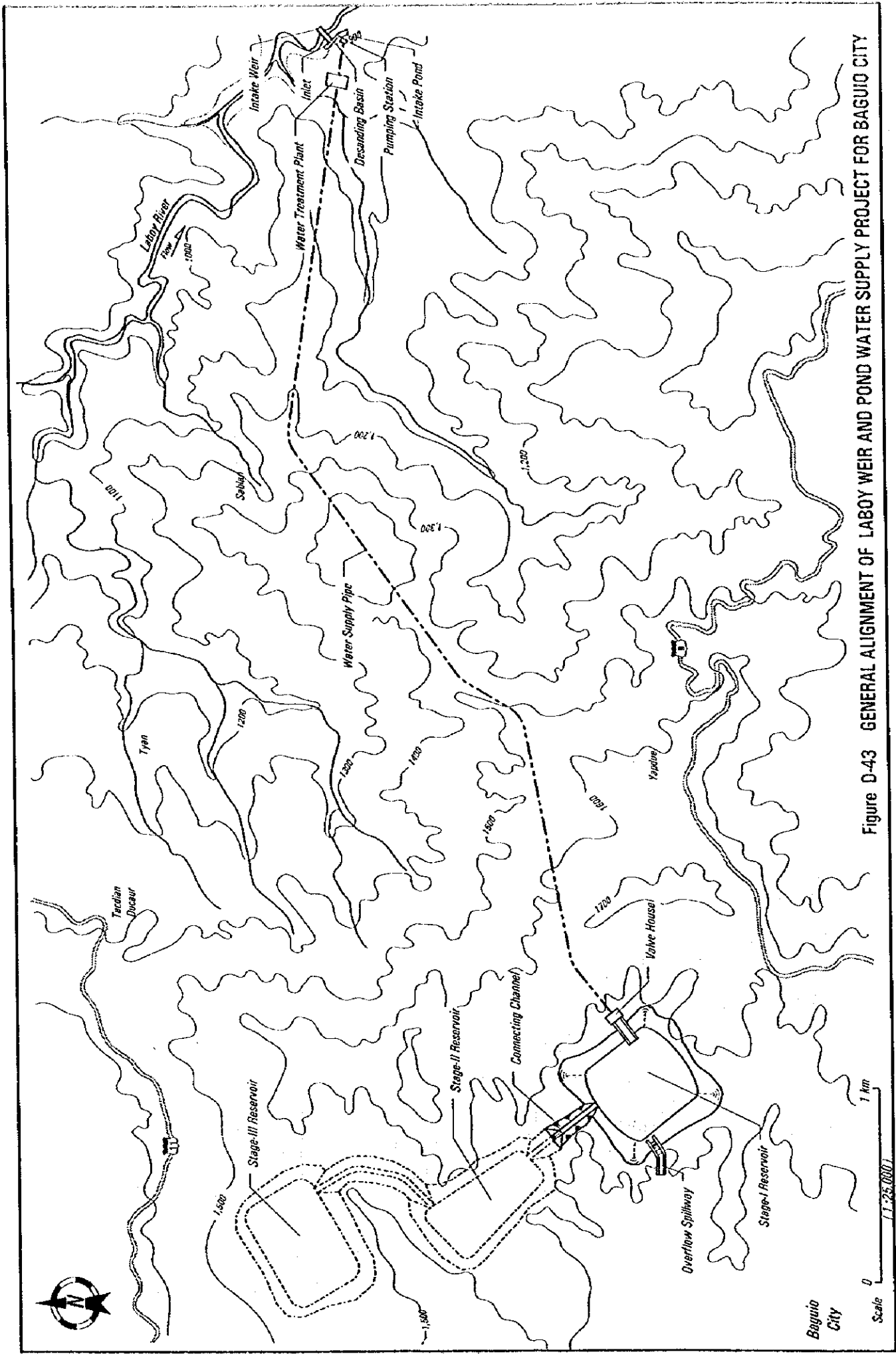
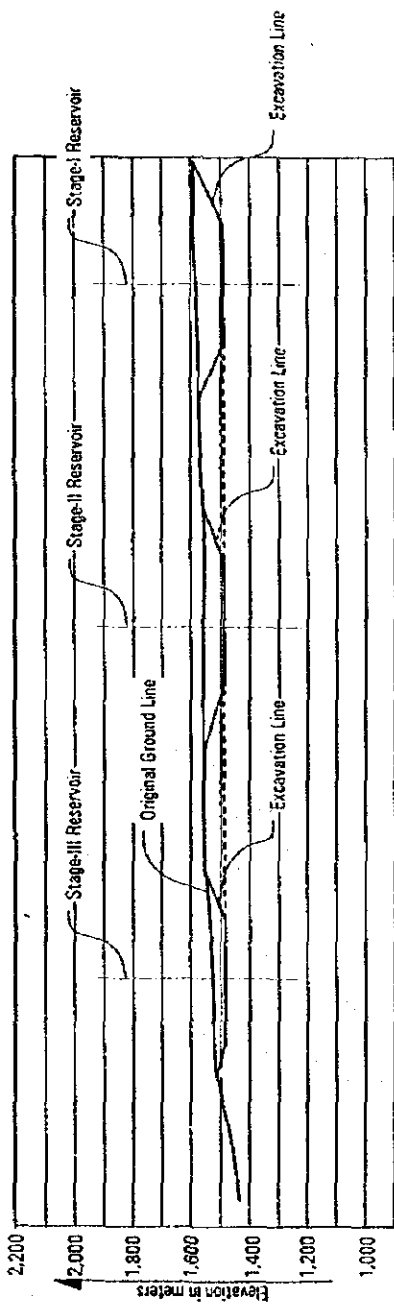
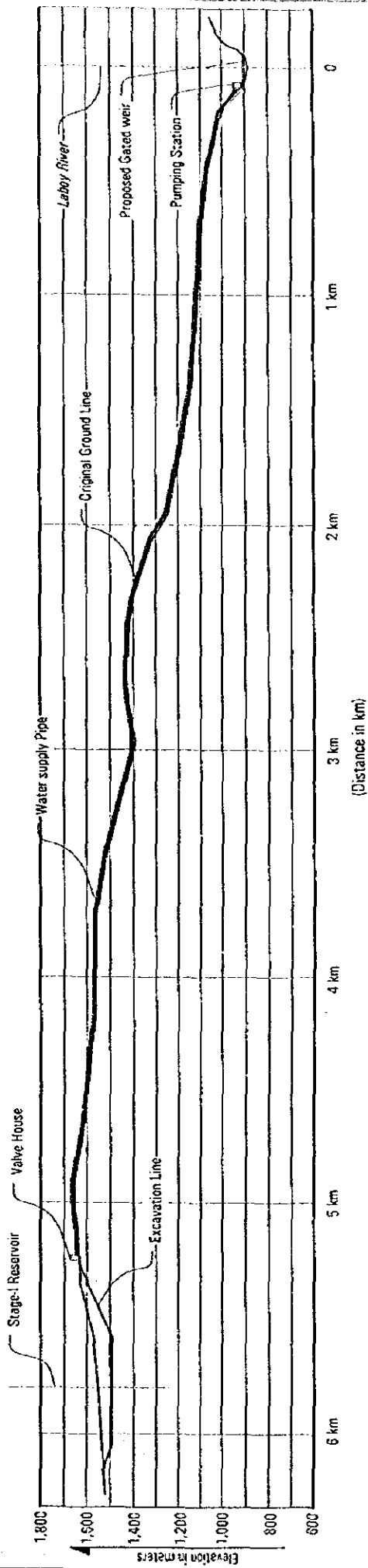


Figure D-43 GENERAL ALIGNMENT OF LABOY WEIR AND POND WATER SUPPLY PROJECT FOR BAGUIO CITY



Profile of along Reservoir



Profile of along Main Water Supply Pipe

Figure D-44 PROFILE OF POND AND PIPELINE OF LABOY WEIR AND POND WATER SUPPLY PROJECT FOR BAGUID CITY

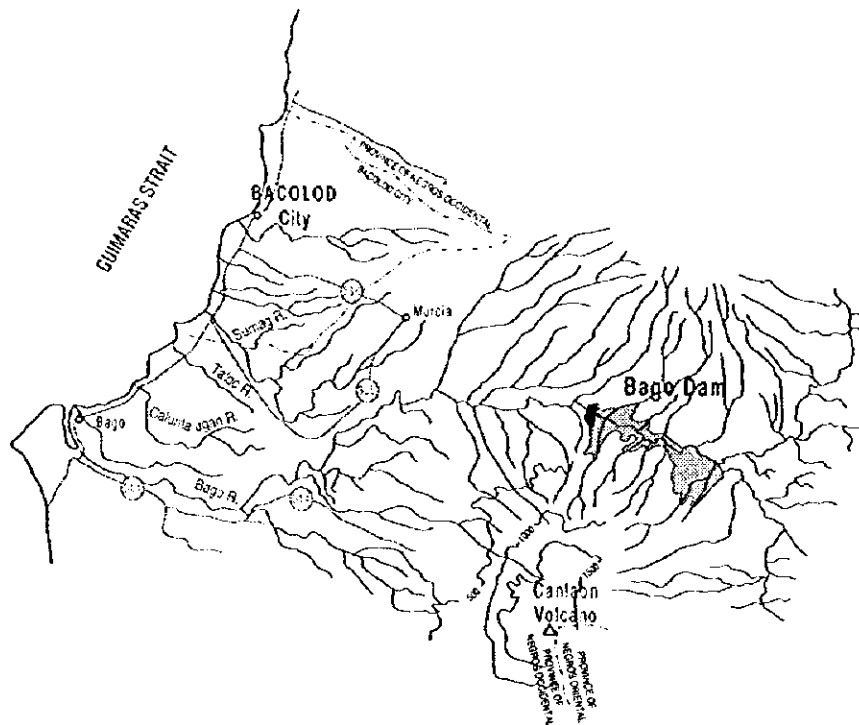
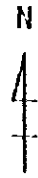
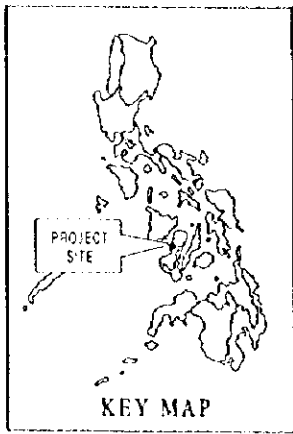


Figure D-45 BAGO DAM PROJECT FOR BACOLOD CITY WATER SUPPLY

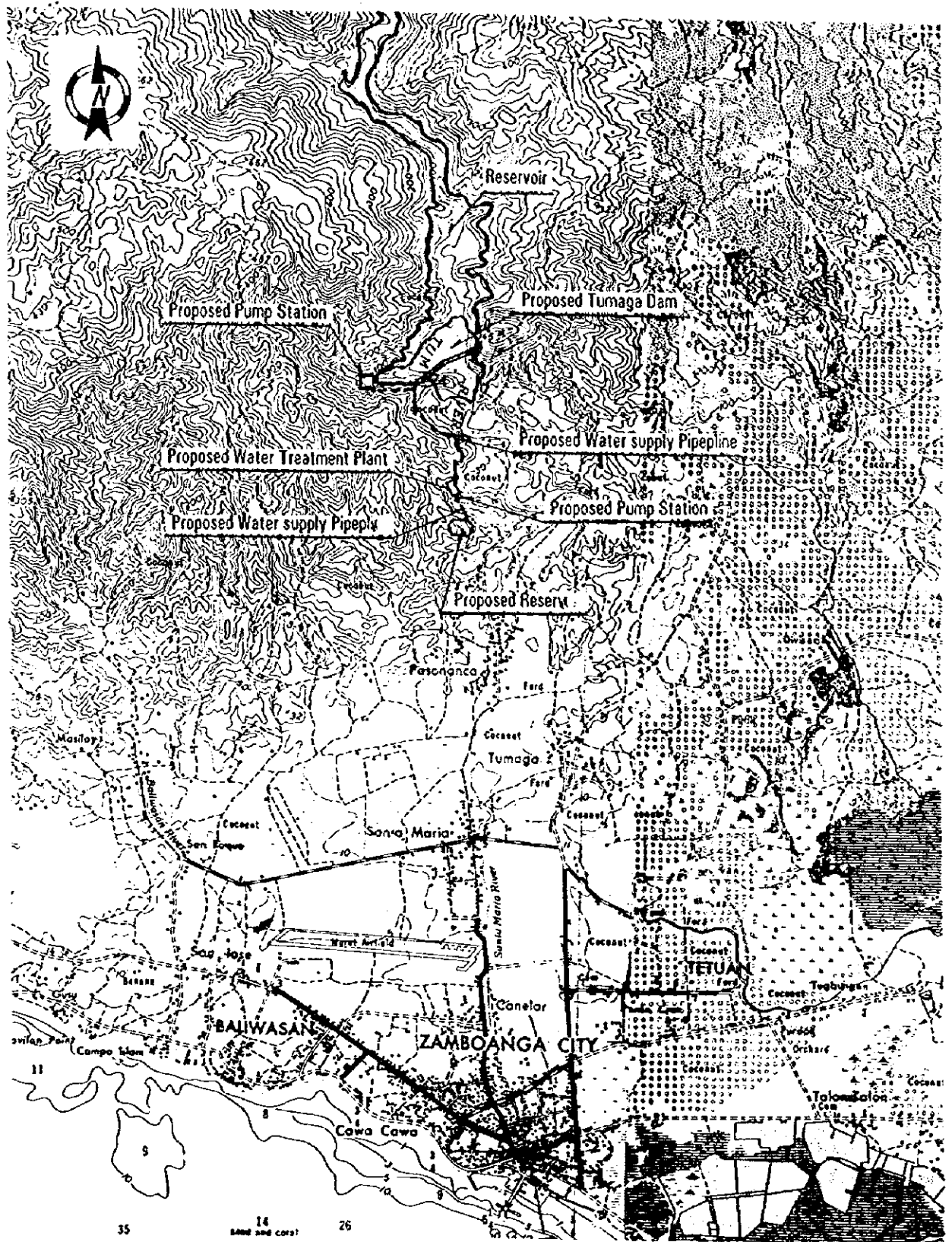


Figure D-46 TUMAGA DAM PROJECT FOR ZAMBOANGA CITY WATER SUPPLY

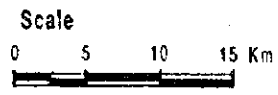
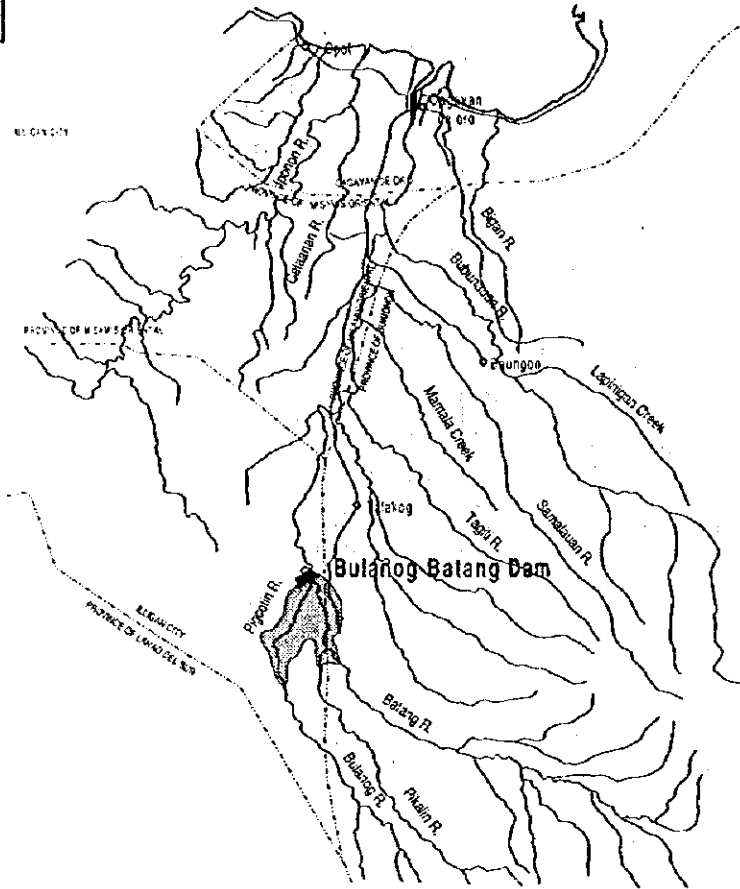
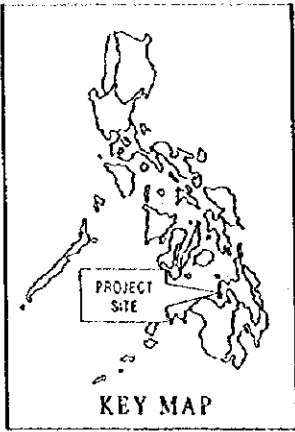
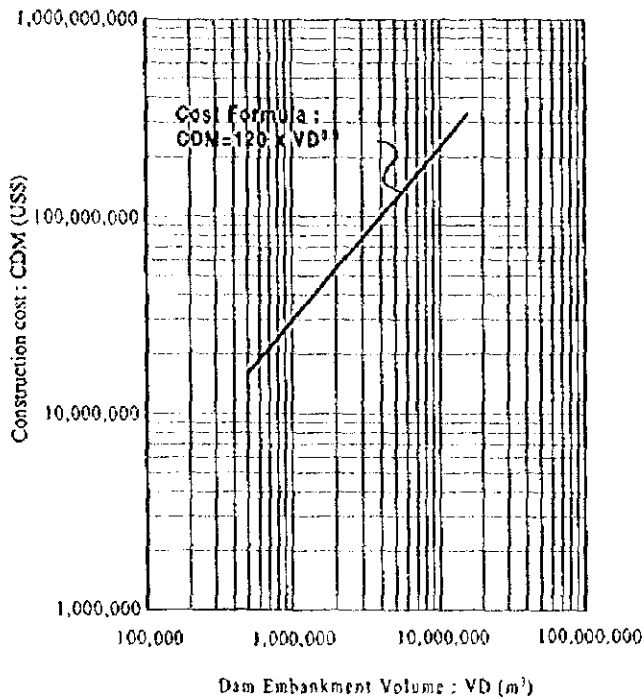
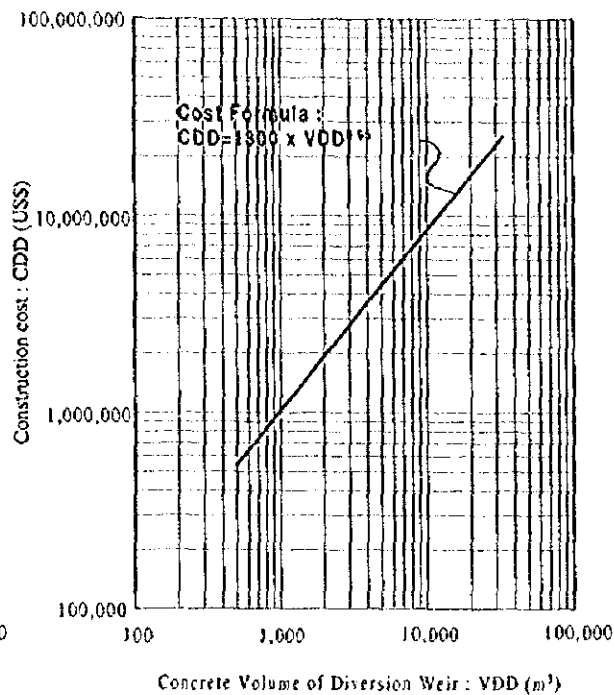


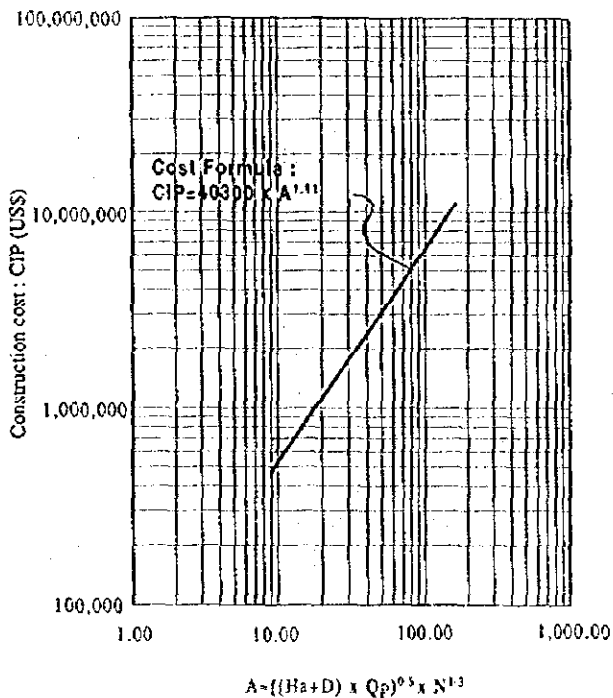
Figure D-47 BULANG-BATANG DAM PROJECT FOR CAGAYAN DE ORO CITY WATER SUPPLY



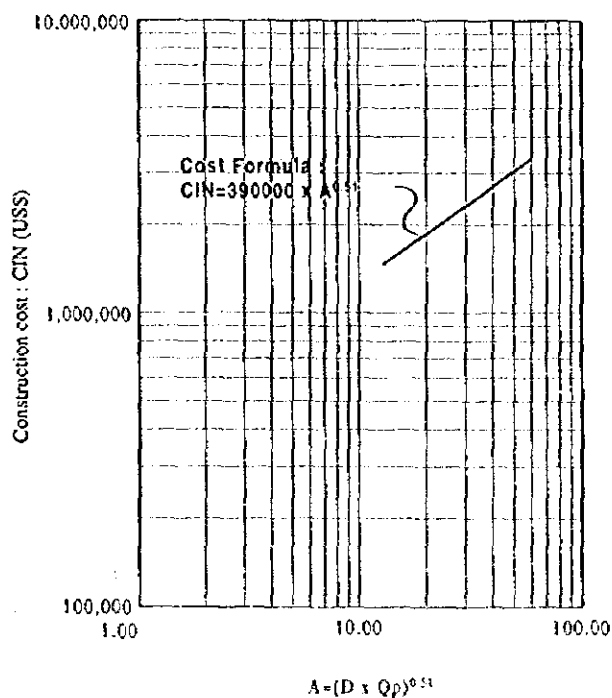
Cost Formula for Storage Dam and Rockfill Dam



Cost Formula for Diversion Weir and Concrete Gravity Dam

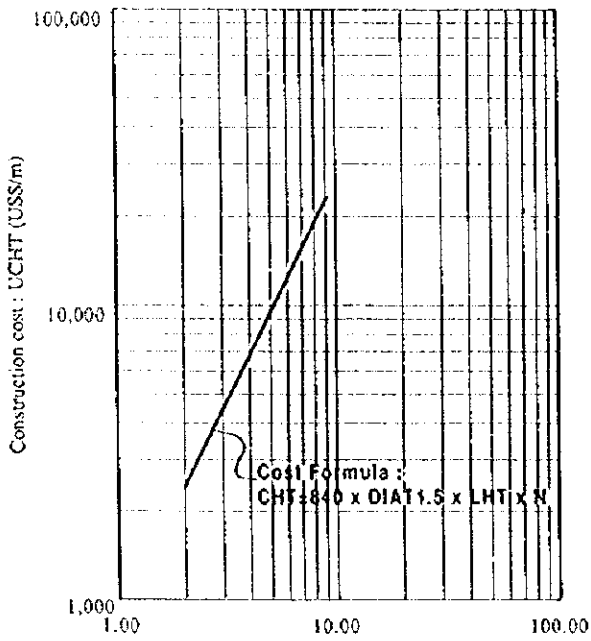


Cost Formula for Intake (Pressure Type)



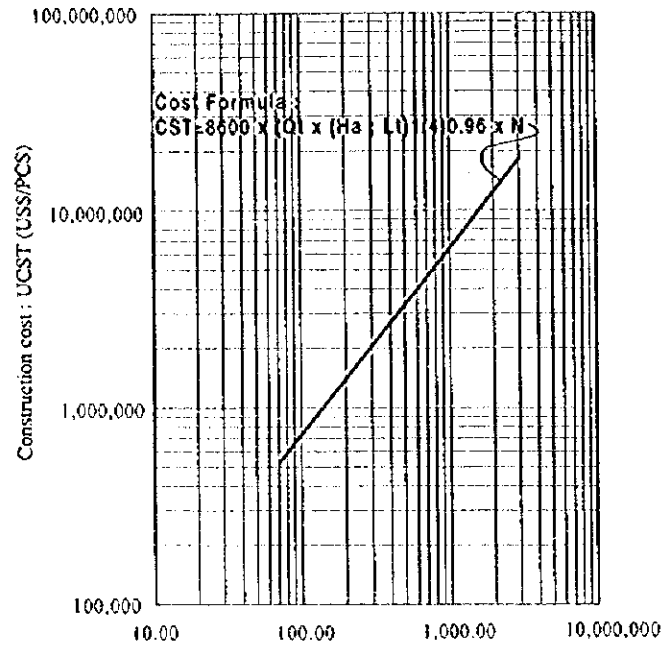
Cost Formula for Intake (Non-Pressure Type)

Fig. D-48 COST FORMULA FOR MAIN CIVIL STRUCTURES AND HYDROMECHANICAL EQUIPMENT (1/3)



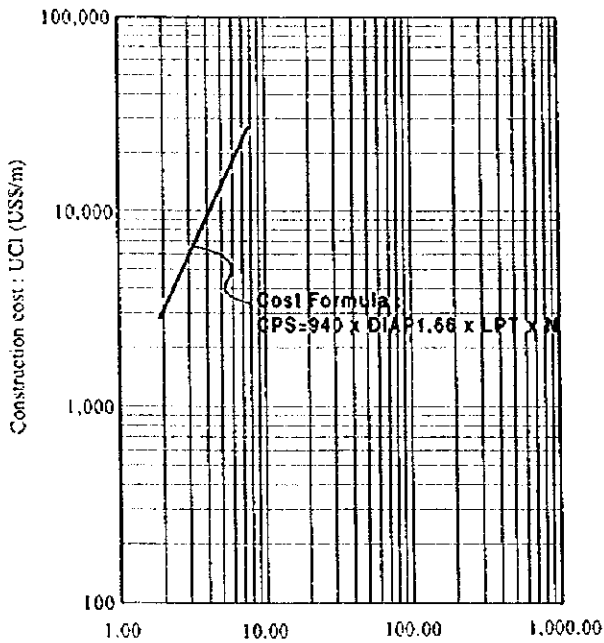
Diameter of Headrace Tunnel : DIAT (m)

Cost Formula for Headrace Tunnel



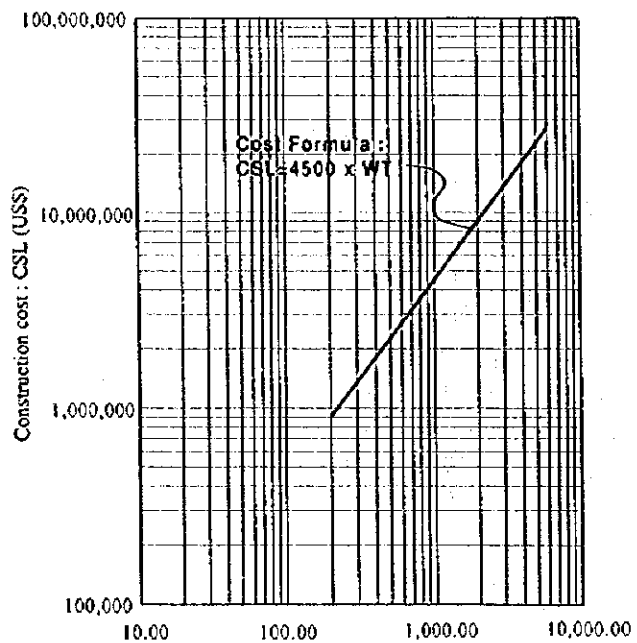
$Ft - Qt \times (Ha + Lt)^{1.4}$

Cost Formula for Surge Tank



Diameter of Shaft : (m)

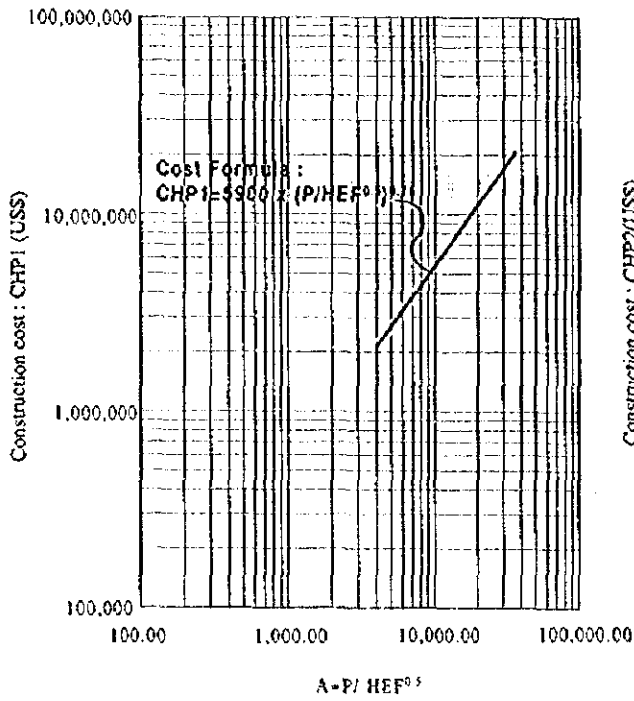
Cost Formula for Intake (Pressure Shaft)



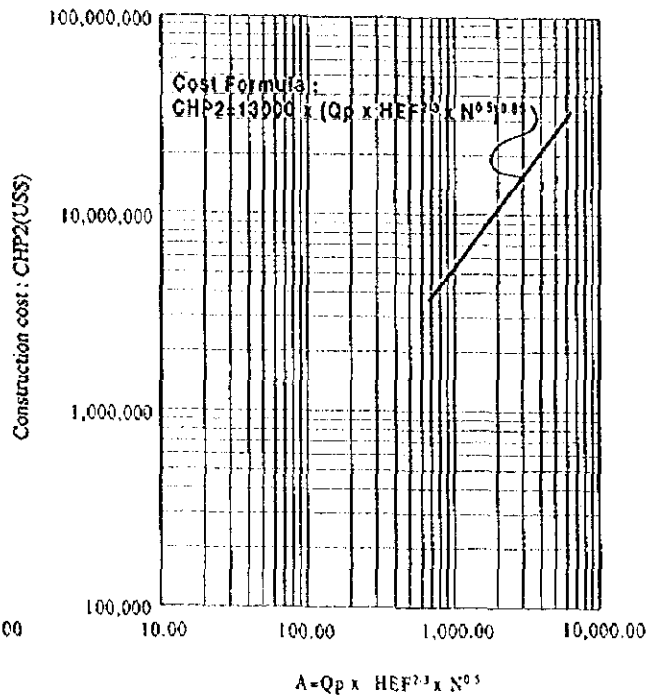
Weight of Steel Liner : (ton)

Cost Formula for Steel Liner

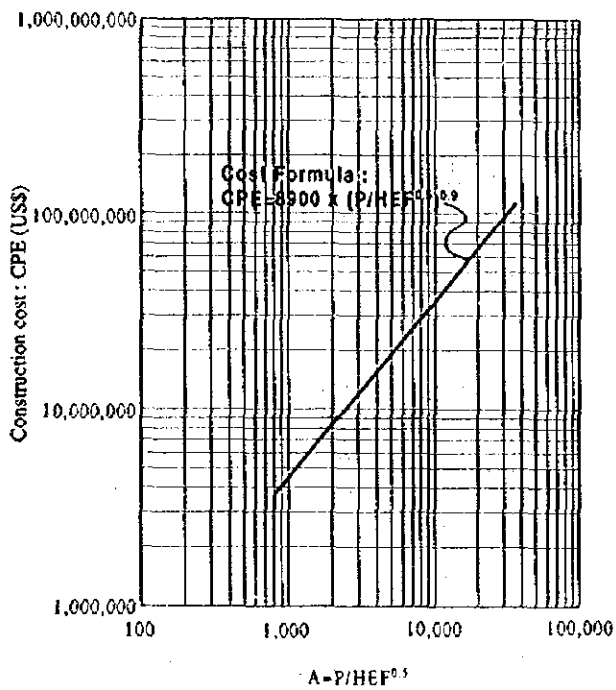
Fig. D-48 COST FORMULA FOR MAIN CIVIL STRUCTURES AND HYDROMECHANICAL EQUIPMENT (2/3)



Cost Formula for Powerhouse (Superstructure)



Cost Formula for Powerhouse (Substructure)



Cost Formula for Powerhouse (Power Equipment)

Fig. D-48 COST FORMULA FOR MAIN CIVIL STRUCTURES AND HYDROMECHANICAL EQUIPMENT (3/3)

Figure D-49 CONSTRUCTION SCHEDULE FOR KANAN-UMIRAY TRANSBASIN PROJECT

Description	1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year											
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
1. Detailed Design																																				
2. Land Acquisition and Compensation																																				
3. Mobilization/ Demobilization																																				
4. Preparatory Works																																				
- Access Road																																				
- Coffering																																				
5. Civil Works																																				
-Diversion Tunnel																																				
-Inlet of Water Conveyance Tunnel																																				
-Coveyance Tunnel																																				
-Outlet of Water conveyance Tunnel																																				
-Main Dam																																				
-Spillway																																				
-Intake																																				
-Hi-pressure Tunnel																																				
-Powerhouse																																				
6. Mechanical Works																																				
- Gate																																				
7. Electrical works																																				
- Generating Equipment																																				

Figure D-50 CONSTRUCTION SCHEDULE FOR MAASIM DAM PROJECT

Description	1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1. Detailed Design	D/D																											
2. Land Acquisition and Compensation	Land Acquisition																											
3. Mobilization/ Demobilization	Mobil																											
4. Preparatory Works																												
- Access Road	Access Road																											
- Base Camp	Base Camp																											
5. Civil Works																												
- Diversion Tunnel	Excavation																											
- Main Dam	Concrete																											
- Spillway	Excavation																											
- Water Supply Conduit	Concrete																											
6. Mechanical Works																												
- Gate	Installation																											
7. Electrical works																												
	Concrete																											

Figure D-51 CONSTRUCTION SCHEDULE FOR BAYABAS DAM PROJECT

Description	1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1. Detailed Design	DD																											
2. Land Acquisition and Compensation	Land acquisition																											
3. Mobilization/ Demobilization					Mobil																							
4. Preparatory Works																												
- Access Road									Access Road																			
- Coffering									Rave camp																			
5. Civil Works																												
-Diversion Tunnel									Excavation				Concrete															
-Main Dam									Excavation				Embankment															
-Spillway																												
-Water Supply Conduit																					Concrete							
6. Mechanical Works																												
- Gate																					Installation							
7. Electrical works																									Concrete			

Figure D-52 CONSTRUCTION SCHEDULE FOR KALIWA-COGE0 WATER SUPPLY PROJECT

Description	1st Year		2nd Year		3rd Year		4th Year		5th Year		6th Year		7th Year			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1. Detailed Design																
2. Land Acquisition and Compensation																
3. Mobilization/ Demobilization																
4. Preparatory Works																
- Access Road																
- Base camp																
5. Civil Works																
- River Diversion																
- Gated Weir																
- Inlet																
- Outlet																
- Gated Weir																
- Water Conveyance Tunnel																
- Desanding Basin																
- Main Pump Station																
- Booster Pump Station																
- Water Treatment Plant																
- Reservoir																
6. Mechanical Works																
- Gate																
- Water Supply Pipe Line																
7. Electrical works																

Figure D-53 CONSTRUCTION SCHEDULE FOR PAMPANGA WATER CONVEYANCE PROJECT

Description	1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1. Detailed Design	[Gantt bar: 1st Year I-IV]																											
2. Land Acquisition and Compensation	[Gantt bar: 1st Year I-IV]																											
3. Mobilization/ Demobilization	[Gantt bar: 2nd Year I-IV]																											
4. Preparatory Works	[Gantt bar: 2nd Year I-IV]																											
- Access Road	[Gantt bar: 2nd Year I-IV]																											
- Base Camp	[Gantt bar: 2nd Year I-IV]																											
5. Civil Works	[Gantt bar: 2nd Year I-IV]																											
- River Diversion	[Gantt bar: 2nd Year I-IV]																											
- Water Conveyance Tunnel	[Gantt bar: 2nd Year I-IV]																											
- Gated Weir	[Gantt bar: 2nd Year I-IV]																											
- Desanding Basin	[Gantt bar: 2nd Year I-IV]																											
- Main Pump Station	[Gantt bar: 2nd Year I-IV]																											
- Booster Pump Station	[Gantt bar: 2nd Year I-IV]																											
- Water Treatment Plant	[Gantt bar: 2nd Year I-IV]																											
- Reservoir	[Gantt bar: 2nd Year I-IV]																											
6. Mechanical Works	[Gantt bar: 2nd Year I-IV]																											
- Gate	[Gantt bar: 2nd Year I-IV]																											
- Water Supply Pipe Line	[Gantt bar: 2nd Year I-IV]																											
7. Electrical works	[Gantt bar: 2nd Year I-IV]																											

Figure D-54 CONSTRUCTION SCHEDULE FOR MALUBOG-MANANGA TRANSBASIN PROJECT

Description	1st Year		2nd Year		3rd Year		4th Year		5th Year		6th Year		7th Year			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1. Detailed Design																
2. Land Acquisition and Compensation																
3. Mobilization/ Demobilization																
4. Preparatory Works																
- Access Road																
- Coffering																
5. Civil Works																
-Diversion Tunnel (Malubog and Mananga)																
-Water Coveyance Tunnel (No.1)																
-Malubog Dam																
-Intake																
-Inspection Tunnel																
- Valve Chamber																
- Intake Weir																
- Mananga Dam																
-Water Coveyance Tunnel (No.2)																
- Main Pump Station																
- Water Treatment Plant																
- Water Supply Pipe Line																
- Reservoir																
- Powerhouse																
6. Mechanical Works																
- Gate																
- Water Supply Pipe Line																
7. Electrical Works																

Figure D-55 CONSTRUCTION SCHEDULE FOR LUSARAN-PULAMBATO TRANSBASIN PROJECT

Description	1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
1. Detailed Design	[Bar chart showing design progress across years]																											
2. Land Acquisition and Compensation	[Bar chart showing land acquisition progress]																											
3. Mobilization/ Demobilization	[Bar chart showing mobilization/demobilization progress]																											
4. Preparatory Works	[Bar chart showing preparatory works progress]																											
- Access Road	[Bar chart showing access road construction progress]																											
- Base Camp	[Bar chart showing base camp construction progress]																											
5. Civil Works	[Bar chart showing civil works progress]																											
-Diversion Tunnel	[Bar chart showing diversion tunnel construction progress]																											
-Lusaran Dam	[Bar chart showing Lusaran Dam construction progress]																											
-Spillway	[Bar chart showing spillway construction progress]																											
-Hi-pressure Tunnel	[Bar chart showing hi-pressure tunnel construction progress]																											
-Powerhouse	[Bar chart showing powerhouse construction progress]																											
-Diversion Tunnel	[Bar chart showing diversion tunnel construction progress]																											
-Pulampato Dam	[Bar chart showing Pulampato Dam construction progress]																											
-Spillway	[Bar chart showing spillway construction progress]																											
-Hi-pressure Tunnel	[Bar chart showing hi-pressure tunnel construction progress]																											
- Powerhouse	[Bar chart showing powerhouse construction progress]																											
-Concrete weir	[Bar chart showing concrete weir construction progress]																											
-Water Treatment Plant	[Bar chart showing water treatment plant construction progress]																											
-Pump Station	[Bar chart showing pump station construction progress]																											
-Reservoir	[Bar chart showing reservoir construction progress]																											
-Water Supply Pipe Line	[Bar chart showing water supply pipe line construction progress]																											
6. Mechanical Works	[Bar chart showing mechanical works progress]																											
- Gate	[Bar chart showing gate construction progress]																											
- Water Supply Pipe Line	[Bar chart showing water supply pipe line construction progress]																											
7. Electrical Works	[Bar chart showing electrical works progress]																											

Figure D-56 CONSTRUCTION SCHEDULE FOR BOHOL-CEBU WATER SUPPLY PROJECT: FIRST STAGE

Description	1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year											
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
1. Detailed Design																																				
2. Land Acquisition and Compensation																																				
3. Mobilization/ Demobilization																																				
4. Preparatory Works																																				
- Access Road																																				
- Base Camp																																				
5. Civil Works																																				
-Gated Weir																																				
-Desanding Basin																																				
-Water Treatment Plant																																				
-Main Pump Station																																				
-Water Supply Pipe Line (Open-air)																																				
-Reservoir																																				
6. Mechanical Works																																				
- Gate																																				
- Water Supply Pipe Line (Under sea)																																				
7. Electrical Works																																				

Figure D-57 CONSTRUCTION SCHEDULE FOR BOHOL-CEBU WATER SUPPLY PROJECT: SECOND STAGE

Description	1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year											
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
1. Detailed Design																																				
2. Land Acquisition and Compensation																																				
3. Mobilization/ Demobilization																																				
4. Preparatory Works																																				
- Access Road																																				
- Base Camp																																				
5. Civil Works																																				
- Diversion Tunnel																																				
- Tipolo Dam																																				
- Hi-pressure Tunnel																																				
- Powerhouse																																				
- Weir																																				
- Desanding Basin																																				
- Booster Station																																				
- Water Treatment Plant																																				
6. Mechanical Works																																				
- Gate																																				
- Water Supply Pipe Line																																				
7. Electrical Works																																				

Figure D-58 CONSTRUCTION SCHEDULE FOR LABOY DAM WATER SUPPLY PROJECT

Description	1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year						
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III
1. Detailed Design	D.D.																														
2. Land Acquisition and Compensation	Land Acquisition																														
3. Mobilization/ Demobilization	Mobil																														
4. Preparatory Works																															
- Access Road	Access Road																														
- Base Camp	Base camp																														
5. Civil Works																															
-Diversion Tunnel	Excavation																														
-Laboy Dam	Excavation Concrete																														
-Water Treatment Plant	Excavation Embankment Concrete																														
-Main Pump Station	Excavation Concrete																														
-Booster Pump Station	Excavation Concrete																														
-Reservoir	Excavation Concrete																														
6. Mechanical Works																															
- Gate	Excavation Concrete Gate installation																														
- Water Supply Pipe Line	Excavation Concrete Installation Electric																														
7. Electrical Works																															

Figure D-59 CONSTRUCTION SCHEDULE FOR LABOY WEIR AND POND WATER SUPPLY PROJECT

Description	1st Year				2nd Year				3rd Year				4th Year				5th Year				6th Year				7th Year							
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV				
1. Detailed Design																																
2. Land Acquisition and Compensation																																
3. Mobilization/ Demobilization																																
4. Preparatory Works																																
- Access Road																																
- Coffering																																
5. Civil Works																																
-Diversion Tunnel																																
-Laboy bdam																																
-Desanding Basin																																
-Water Treatment Plant																																
-Main Pump Station																																
-Booster Pump Station																																
-Reservoir																																
6. Mechanical Works																																
- Gate																																
- Water Supply Pipe Line																																
7. Electrical Works																																





