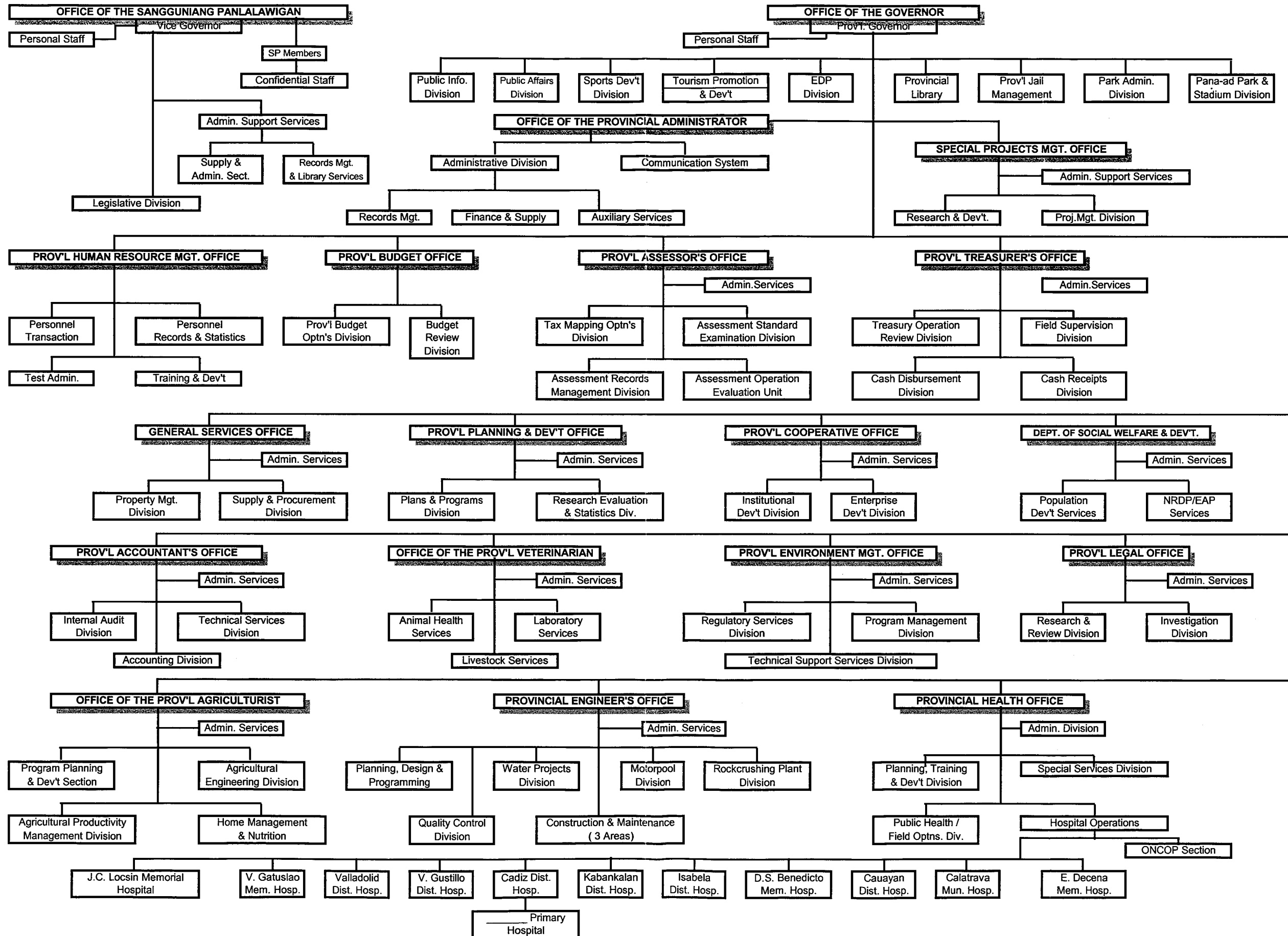


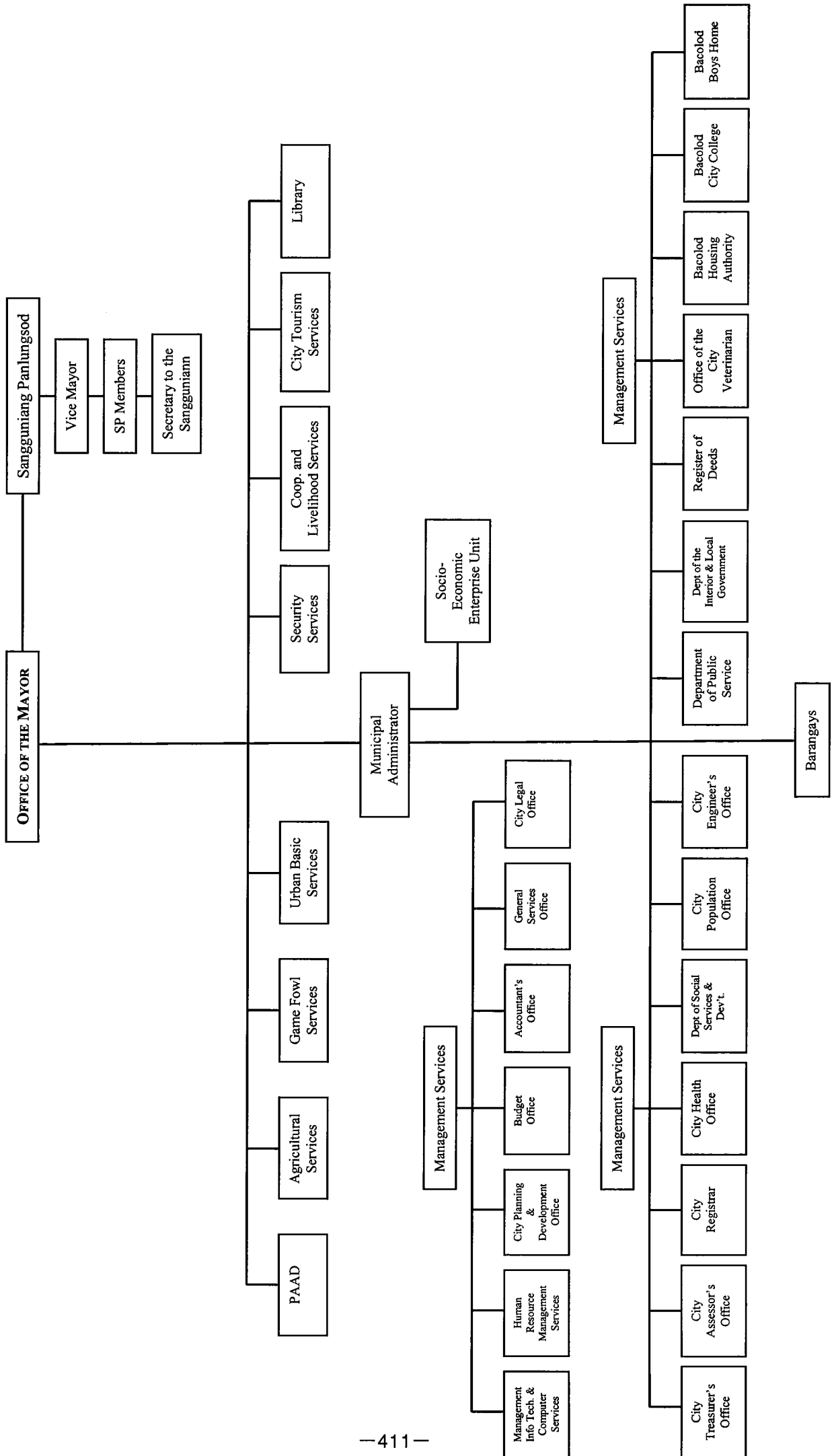
# **APPENDIX 7.1**

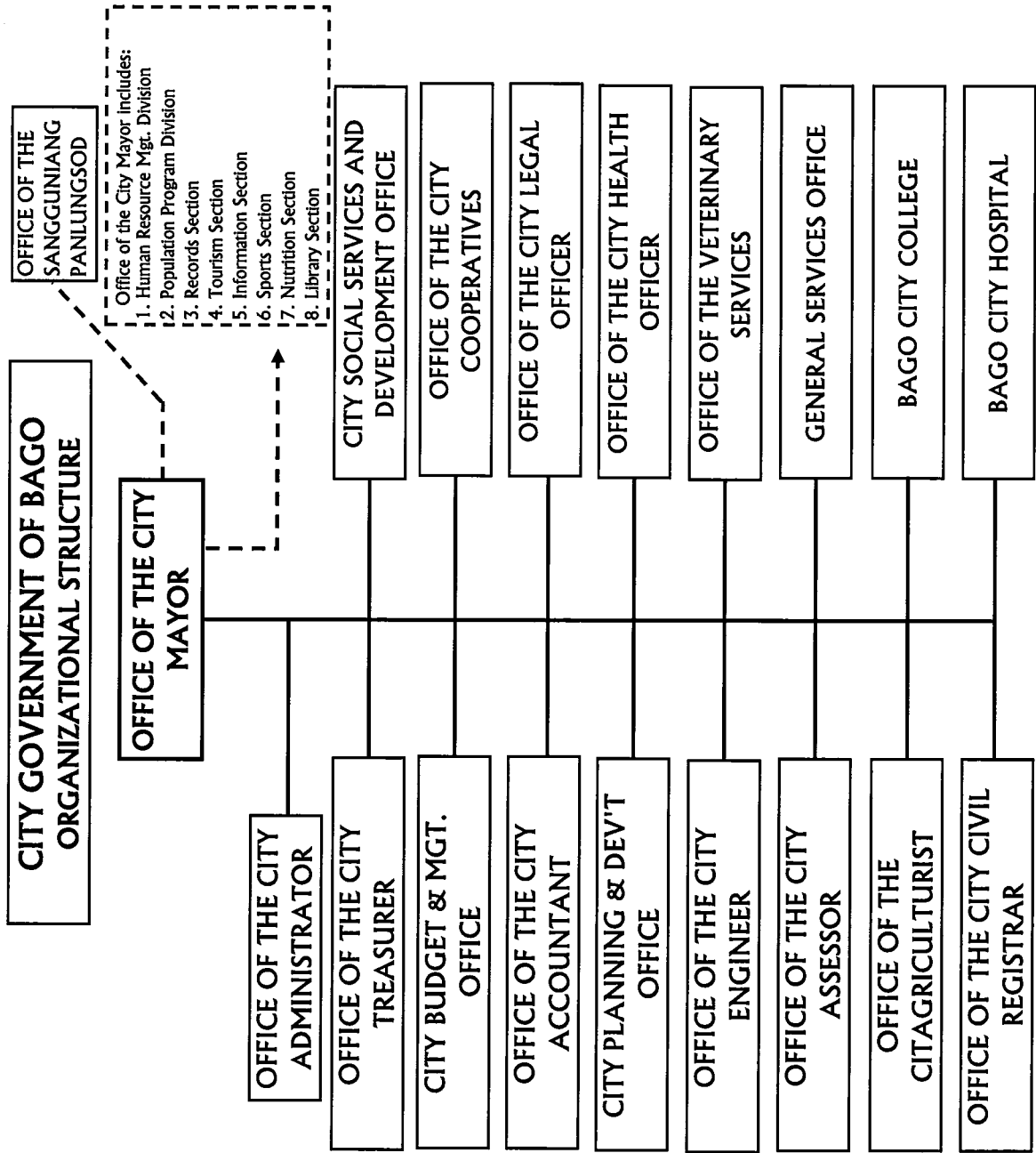
## **ORGANIZATIONAL CHARTS**

# ORGANIZATIONAL CHART OF THE PROVINCE OF NEGROS OCCIDENTAL - CY 2002

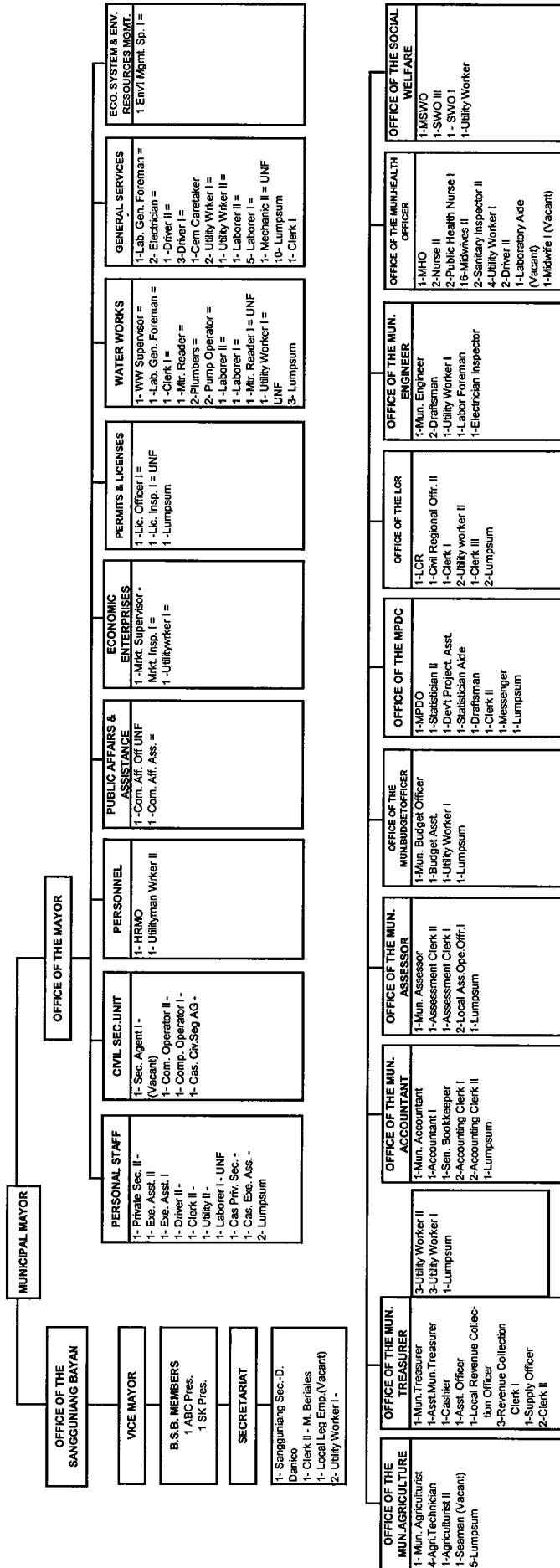


# Bacolod City Government Organizational Chart

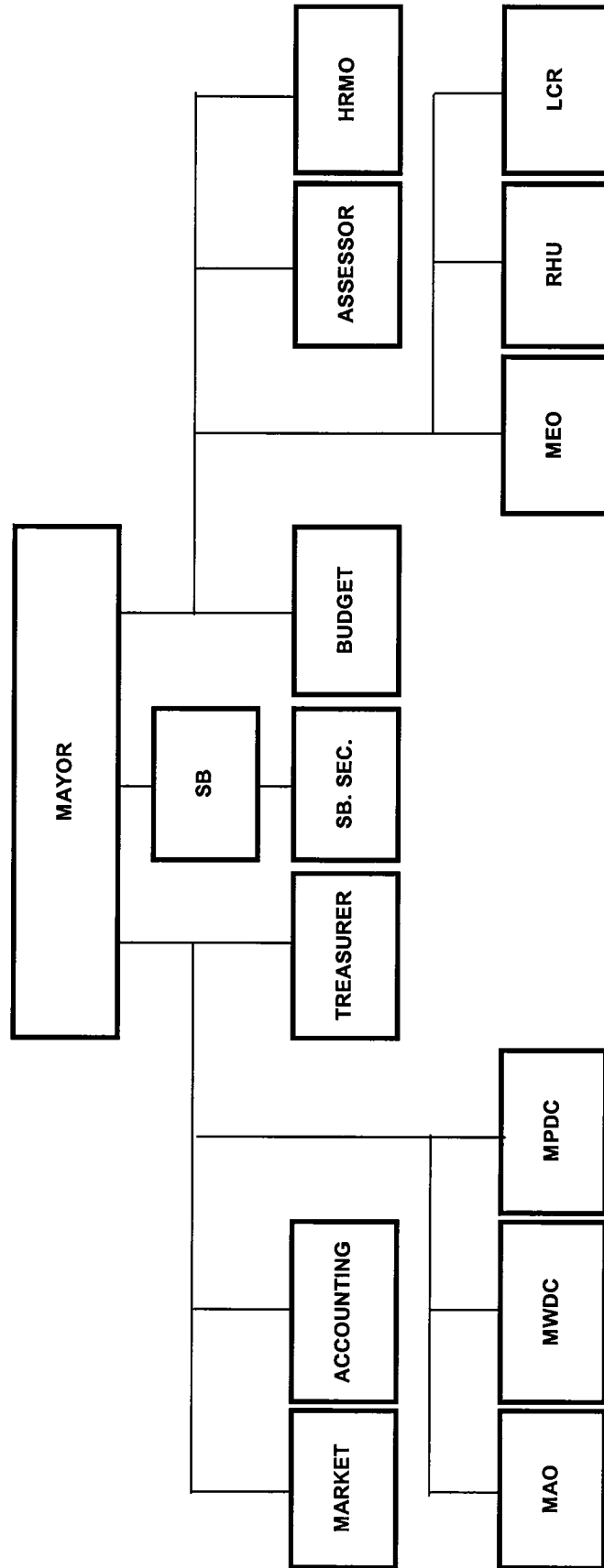




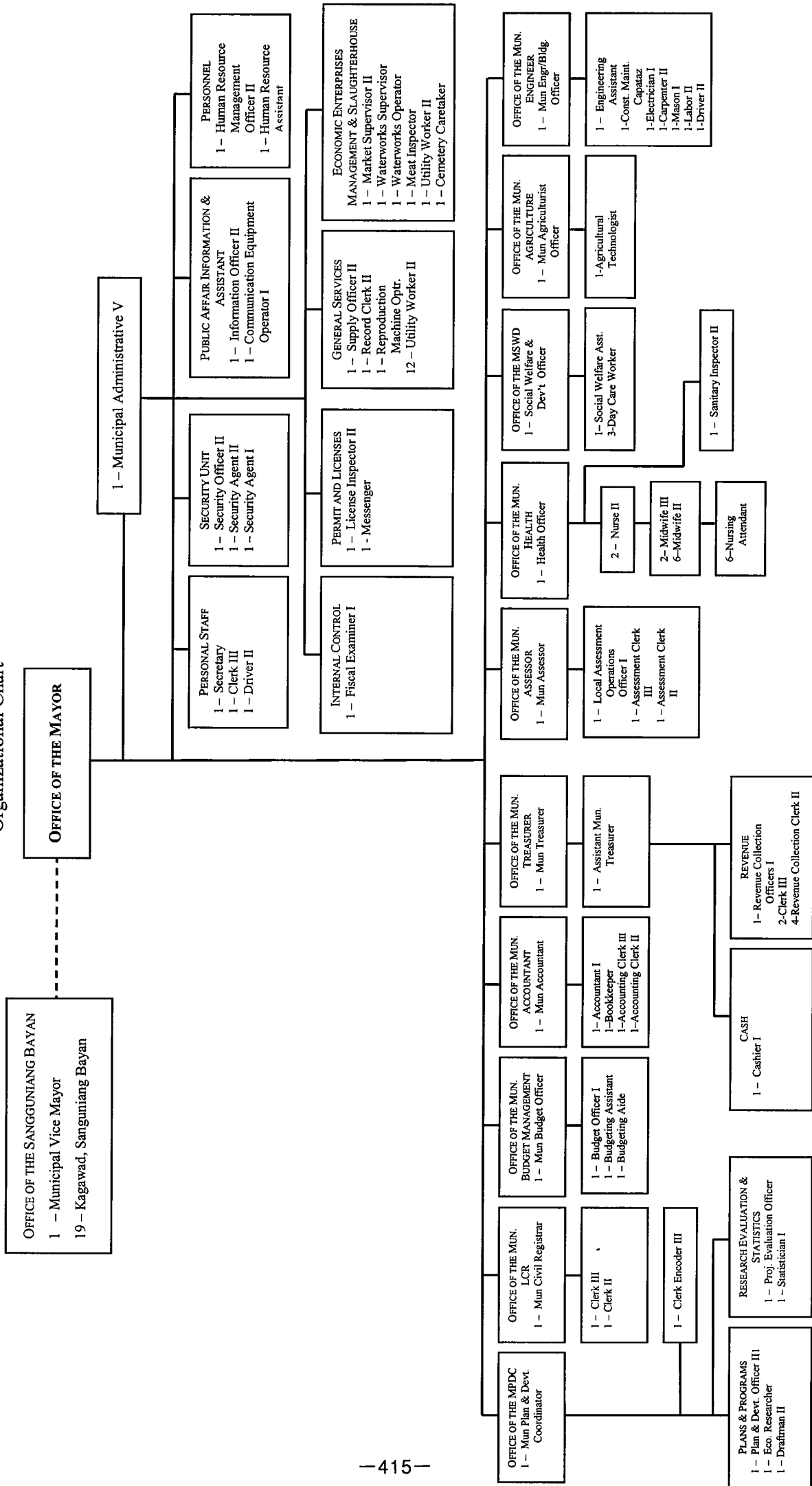
**ORGANIZATIONAL CHART  
MUNICIPALITY OF E.B. MAGALONA  
2003-2004**



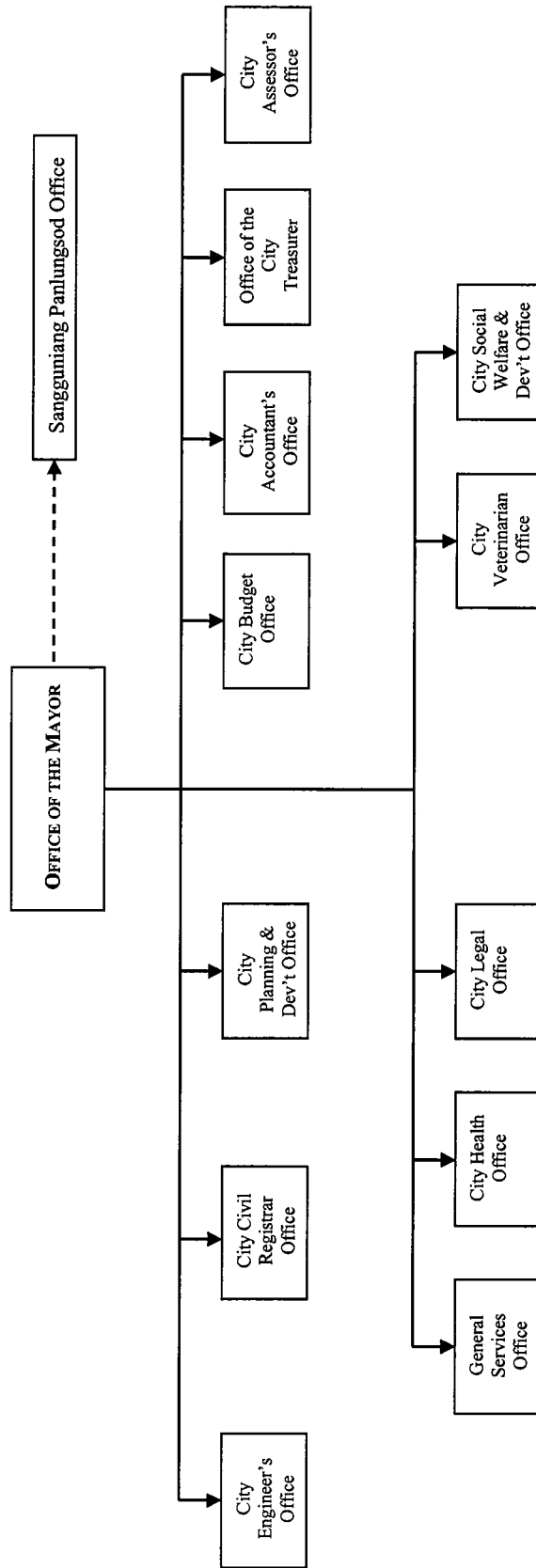
MUNICIPALITY OF MURCIA



**Municipality of Pulpandan  
Province of Negros Occidental  
Organizational Chart**

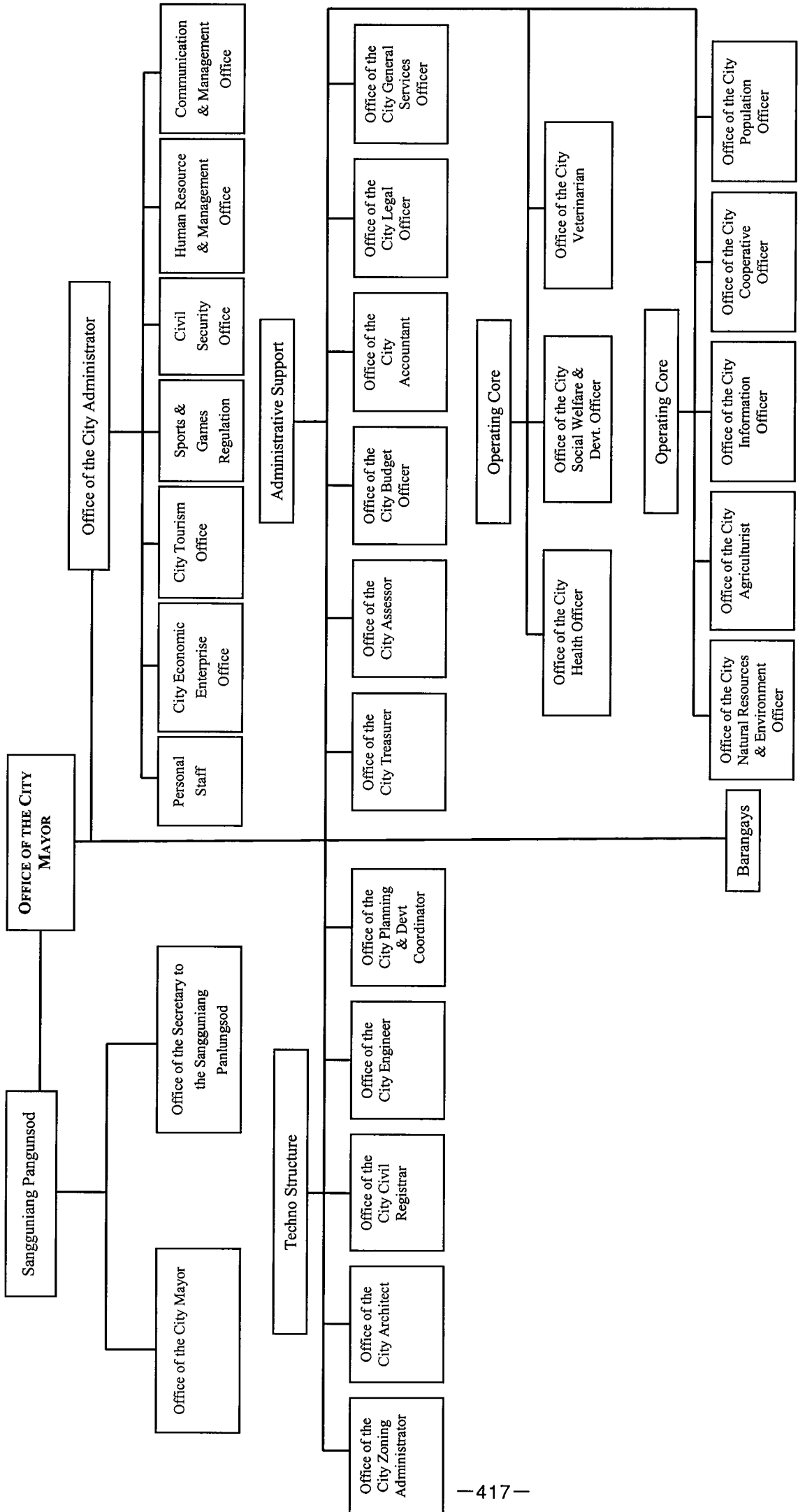


**City Of Silay  
 Procinve of Negros Occidentalt  
 Organizational Chart**

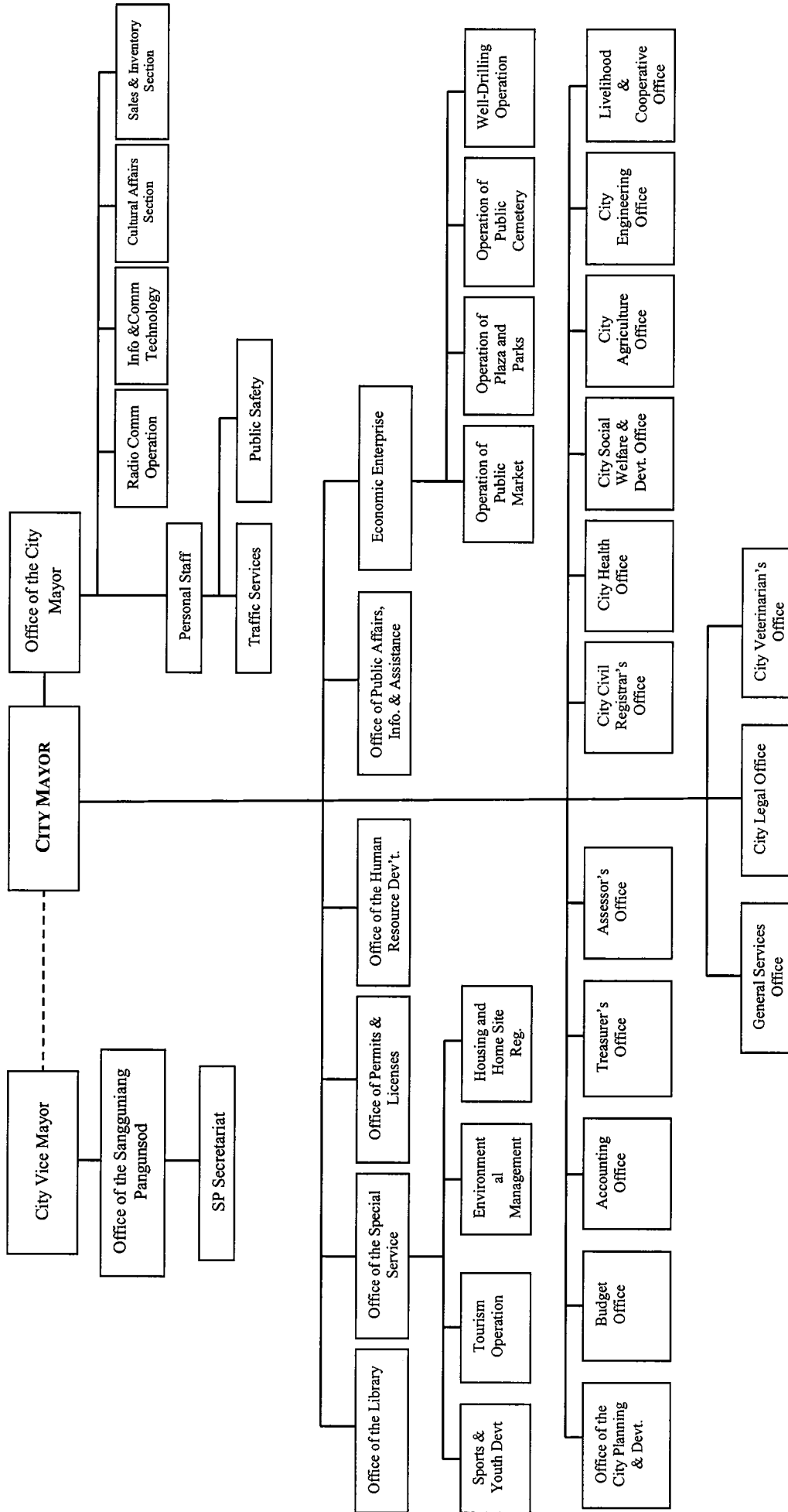




**City of Talisay**  
**Province of Negros Occidental**  
 Organizational Structure



**City of Victorias**  
Organizational Chart - 2003



# **APPENDIX 10.1**

## **SINGLE YEAR BENEFIT COST ANALYSIS OF ROAD NETWORK ALTERNATIVES**

# APPENDIX 10.1

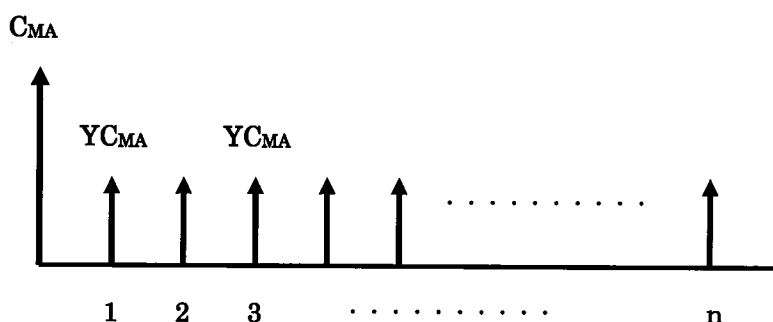
## SINGLE YEAR BENEFIT COST ANALYSIS OF ROAD NETWORK ALTERNATIVES

### 10.1.1 METHODOLOGY

In this study, the economic analysis of the road network alternatives is made using the single year benefit cost ratio (B/C ratio), which is usually used for yearly benefit cost analysis. This method is classified as one of rough benefit cost analysis method.

In this method, it is assumed that investment costs for master plan ( $C_{MA}$ ) are generated yearly during evaluation period (20 years in this study), which this cost is called as yearly cost ( $YC_{MA}$ ). If the yearly benefits derived from the master plan ( $B_{MA}$ ) exceed the yearly cost ( $YC_{MA}$ ) or  $B_{MA} / YC_{MA} > 1$ , then this project can be defined as feasible.

When the Investment costs for master plan ( $C_{MA}$ ) are converted to the yearly cost ( $YC_{MA}$ ), the following formula can be expressed:



$$C_{MA} = YC_{MA} + YC_{MA} / (1+i) + YC_{MA} / (1+i)^2 + \dots + YC_{MA} / (1+i)^{n-1}$$

$$= YC_{MA} \times \{ (1+i)^n - 1 \} / \{ i \times (1+i)^n \} \quad \text{Formula 10.1.1}$$

$$YC_{MA} = C_{MA} \times \{ i \times (1+i)^n \} / \{ (1+i)^n - 1 \} \quad \text{Formula 10.1.2}$$

Where,

$i$  = discount rate (15 %)

$n$  = evaluation period (20 years)

In these formulas,  $\{ i \times (1+i)^n \} / \{ (1+i)^n - 1 \}$  is so called as "Capital Recovery Factor (CRF)" CRF is also expressed as the following formula:

$$YC_{MA} = C_{MA} \times (i) / \{ 1 - (1+i)^{-n} \} \quad \text{Formula 10.1.3}$$

This means that when 'n' become very long period, then **CRF** becomes near 'i'.

The single year B/C ratio can be expressed as followings:

$$B_{MA} / YC_{MA} \geq 1 \quad \text{Feasible}$$

$$B_{MA} / YC_{MA} < 1 \quad \text{Not feasible}$$

### 10.1.2 RESULT OF B / C ANALYSIS

In Metro Bacolod, the rough economic analysis can be made as follows:

**TABLE 10.1- 1 ROUGH BENEFIT COST ANALYSIS BY ALTERNATIVES  
IN METRO BACOLOD IN 2022**

	Alternative 1	Alternative 2	Alternative 3
<b>Benefits in 2022</b>	5,443	7,009	6,943
<b>Economic Costs</b>	4,860	6,121	6,171
<b>Capital Recovery Cost Factor</b>	0.1598	0.1598	0.1598
<b>B/C Ratio</b>	7.01	7.17	7.04

Source: JICA Study Team

Rough benefit cost analysis shows that all alternatives are economically feasible. Among these alternatives, Alternative 2 is the most feasible.

This B/C analysis is only made for single year (this case is only the year 2022). In the final stage, it is necessary to analyze full benefit / cost analysis for the Road Development Master Plan taking into account the implementation plan.

# **APPENDIX 10.2-1**

## **COST ESTIMATES BY ALTERNATIVES**

ROAD AND BRIDGE CONSTRUCTION COST METRO BACOLOD FUTURE ROAD NETWORK PLAN (ALTERNATIVE-1)

Road No.	Road Name	Adm. Class.	Road		Bridge				Civil Work						Land				Total Cost							
			Road Length (km)	Target Road Length (km)	Target Bridge		Widening (m)	New Construction 2-Lane (m)	New Construction 4-Lane (m)	Widening	New Construction 2-Lane	New Construction 4-Lane	Road Length (km)			Cost (Million Peso)										
					No.	No.							Urban	Rural	Urban	Rural	Urban	Rural		Total						
NS-1	Baccolod Coastal Road	NR	38.8 15.8	6.7 1	1	20.3 136.1	21	14	624.7	218.7	218.7								494.8							
NS-2	North Road	NR	26.5 3.0	2	67.2 685.5	10	10	30.0	200.0		1,063.3					30.0	2.0	10.2	500.0	50.0	30.0	15.3	45.3			
NS-3	South Road	NR	1.8 24.2	2.5 3	26.0 98.9	3	3	90.0		40.5						30.0	0.0	2.0		50.0	0.0	18.0	18.0			
NS-4	Super Road	NR	8.0 6.1	4 7.1	58.1 217.7	38	1	760.0	200.0	207.0	1,967.3					30.0	3.0	25.5		35.0	0.0	5.7	5.7			
MS-1	Mircha-Concept Road	NR	0.0	5	20.1 189.2											30.0	0.0	0.1		35.0	0.0	0.1	0.1			
MS-2	Mircha-Miao Road	NR	18.5			6	1	5.0		2.1	2.1													2.1		
MS-3	Baccolod-Mircha-Concept Road	NR	8.9																							
MS-4	Mircha-Studio Area Bypass	NR	3.7						201.3																90.6	
MS-5	Mircha-Gravels	NR	14.5																							
MS-6	Mircha-Gravels	NR	0.8																							
MS-7	Mircha-Gravels	NR	6.1	6.1	38.1	237.7	3	1	25.7																11.6	
MS-8	Mircha-Gravels	NR	2.5	2.5	27.2	60.0																				373.3
MS-9	Mircha-Gravels	NR	12.7	2.4	25.0	60.0																				
MS-10	Mircha-Gravels	NR	2.7																							
MS-11	Mircha-Gravels	NR	11.7																							
MS-12	Mircha-Gravels	NR	15.8																							
MS-13	Mircha-Gravels	NR	7.7	1.2	14.4	17.3																				
MS-14	Mircha-Gravels	NR	16.6																							
MS-15	Mircha-Gravels	NR	3.0																							
MS-16	Mircha-Gravels	NR	0.0																							
MS-17	Mircha-Gravels	NR	12.3																							
MS-18	Mircha-Gravels	NR	5.5																							
MS-19	Mircha-Gravels	NR	16.2																							
MS-20	Mircha-Gravels	NR	3.2																							
MS-21	Mircha-Gravels	NR	12.3																							
MS-22	Mircha-Gravels	NR	5.5																							
MS-23	Mircha-Gravels	NR	12.2																							
MS-24	Mircha-Gravels	NR	7.5																							
MS-25	Mircha-Gravels	NR	3.8																							
MS-26	Mircha-Gravels	NR	13.4																							
MS-27	Mircha-Gravels	NR	26.0																							
MS-28	Mircha-Gravels	NR	3.9																							
MS-29	Mircha-Gravels	NR	2.6																							
MS-30	Mircha-Gravels	NR	390.6	136.8			98	1,449.9	1,451.8	400.9	641.5	367.0	1,429.4	5,956.0												
MS-31	Total																									

Note: Unit price of bridge construction  
 2-Lane new bridge = 450,000 / Km  
 4-Lane new bridge = 1,800,000 / Km  
 Widening of 2-Lane bridge = 350,000 / Km





ROAD AND BRIDGE CONSTRUCTION COST  
METRO BACOLOD FUTURE ROAD NETWORK PLAN (ALTERNATIVE-3)

Road No.	Road Name	Admin. distric.	Road				Bridges								Land											
			Road Length (km)	Target Road		Total Cost (Million Peco)	No.	Target Bridge		Widening (m)	New Construction 2-Lane (m)	New Construction 4-Lane (m)	Widening (m)	New Construction 2-Lane	New Construction 4-Lane	Total	Road Length (km)		Cost Per m2 (Peco)		Cost (Million Peco)		Total Cost			
				Type of section	Length (km)			Type of section	Cost per km (Million Peco)								No.	Widening (m)	New Construction 2-Lane (m)	New Construction 4-Lane (m)	Urban	Rural		Urban	Rural	Urban
NS-1	Baccolod Coastal Road	NR	28.51	1	1	28.51	136.1	21	14	64.7	218.7	218.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	494.8
NS-2	New Airport Access Road	NR	20.5	1	1	20.5	136.1	13	7	228.4	80.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	494.8
NS-3	North-South Road	NR	10.2	3	3	26.0	260.2	13	13	315.0	200.0	141.8	180.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1,205.3
NS-4	Single Road	NR	21.0	2	2	21.0	136.1	39	39	1,086.0	190.0	479.3	171.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2,717.8
NS-4	Murcia-Compostion Road	NR	21.0	5	5	29.1	136.1	10	10	175.0	70.0	70.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	358.3
NS-4	Murcia-Compostion Road	NR	9.9	6	6	25.0	247.5	6	1	6.0	2.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	358.3
NS-1	Baccolod-Murcia Road	NR	8.9	1	1	8.9	0.0	6	4	201.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90.6
NS-2	Baccolod-Compostion Road	NR	6.1	1	1	6.1	0.0	3	1	25.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	373.3
NS-3	Baccolod-Compostion Road	NR	2.7	1	1	2.7	0.0	8	8	205.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	552.3
NS-4	Baccolod-Compostion Road	NR	2.5	2	2	2.5	0.0	2	2	168.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	211.6
NS-5	Baccolod-Compostion Road	NR	11.7	1	1	11.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-6	Baccolod-Compostion Road	NR	15.9	1	1	15.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-7	Baccolod-Compostion Road	NR	7.2	1	1	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-8	Baccolod-Compostion Road	NR	14.6	1	1	14.6	0.0	2	1	60.8	21.3	21.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-9	Baccolod-Compostion Road	NR	3.0	2	2	3.0	0.0	2	2	139.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	113.1
NS-10	Baccolod-Compostion Road	NR	5.3	1	1	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-11	Baccolod-Compostion Road	NR	3.8	1	1	3.8	0.0	2	1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-12	Baccolod-Compostion Road	NR	13.3	1	1	13.3	0.0	4	4	95.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-13	Baccolod-Compostion Road	NR	5.0	3	3	5.0	0.0	4	4	31.1	31.1	31.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-14	Baccolod-Compostion Road	NR	7.5	1	1	7.5	0.0	1	1	20.0	7.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-15	Baccolod-Compostion Road	NR	13.4	1	1	13.4	0.0	1	1	18.3	18.3	18.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-16	Baccolod-Compostion Road	NR	26.0	1	1	26.0	0.0	1	1	40.5	40.5	40.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-17	Baccolod-Compostion Road	NR	3.8	1	1	3.8	0.0	2	2	30.0	30.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NS-18	Baccolod-Compostion Road	NR	18.8	1	1	18.8	0.0	111	111	1,144.9	400.9	400.9	378.0	1,715.6	6,811.9	128.2	128.2	128.2	128.2	128.2	128.2	128.2	128.2	128.2	128.2	6,984.6

Note: 1-Line price of bridge construction = 400,000 / km  
 2-Lane new bridge = 1,200,000 / km  
 3-Lane new bridge = 1,800,000 / km  
 Widening of 2-Lane bridge = 300,000 / km

# **APPENDIX 10.2-2**

## **TYPICAL CROSS-SECTIONS**

TYPE OF WORK	TYPICAL CROSS SECTION
<p><b>TYPE-1 :</b> Improvement from gravel to PCC pavement Widening from 2-lane to 4-lane</p>	
<p><b>TYPE-2 :</b> New construction 4-lane</p>	
<p><b>TYPE-3 :</b> New construction 2-lane</p>	
<p><b>TYPE-4 :</b> New construction 4-lane</p>	

FIGURE TYPICAL CROSS SECTIONS (1/4)

TYPE OF WORK	TYPICAL CROSS SECTION
<p><b>TYPE-5 :</b> New construction 2-lane</p>	
<p><b>TYPE-6 :</b> New construction 2-lane</p>	
<p><b>TYPE-7.1 :</b> Improvement from gravel to PCC pavement Widening from 2-lane to 4-lane</p>	
<p><b>TYPE-7.2 :</b> Improvement from gravel to PCC pavement Widening from 2-lane to 4-lane</p>	

FIGURE TYPICAL CROSS SECTIONS (2/4)

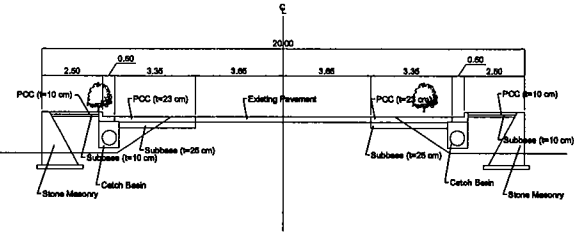
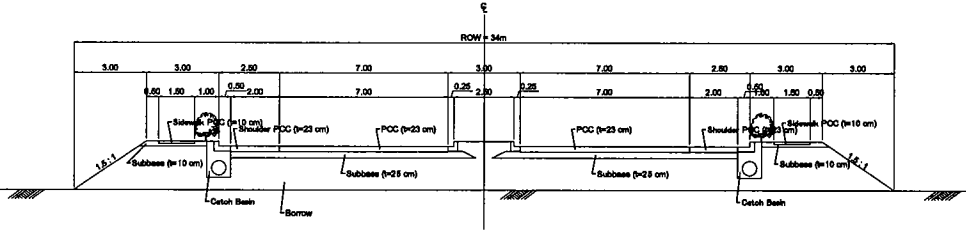
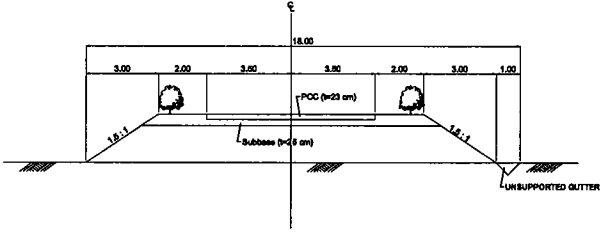
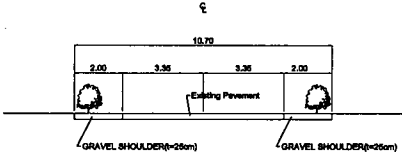
TYPE OF WORK	TYPICAL CROSS SECTION
<p><b>TYPE-8 :</b> Improvement from gravel to PCC pavement Widening from 2-lane to 4-lane</p>	
<p><b>TYPE-9 :</b> New construction 4-lane</p>	
<p><b>TYPE-10 :</b> New construction 2-lane</p>	
<p><b>TYPE-11.1 :</b> Shoulder construction</p>	

FIGURE TYPICAL CROSS SECTIONS (3/4)

TYPE OF WORK	TYPICAL CROSS SECTION
<p>TYPE-11.2 : New PCC pavement construction on existing AC pavement</p>	
<p>TYPE-11.3 : New PCC pavement construction on existing PCC pavement</p>	
<p>TYPE-11.4 : New PCC pavement construction on existing gravel</p>	
<p>TYPE-12 : New construction 2-lane</p>	

FIGURE TYPICAL CROSS SECTIONS (4/4)

# **APPENDIX 11.1**

## **ECONOMIC EVALUATION OF MASTER PLAN**

## **APPENDIX 11.1**

### **ECONOMIC EVALUATION OF MASTER PLAN**

#### **11.1 ECONOMIC EVALUATION OF MASTER PLAN**

##### **11.1.1 General**

The evaluation of the Plans and Projects is made by two stages in the planning process with different purposes; one is the stage of determination of priority among the projects (Section 11.2) and the other is to evaluate economic feasibility of the plan in accordance with the proposed implementation schedule which will be described in this section. In both cases, economic evaluation is made by comparison analysis between benefits and costs as illustrated in Figure 11.1-1. The process of economic evaluation of master plan is shown in **Figure 11.1-2**.

The evaluation period is assumed to be 20 years from the starting year of the improvement project.

The economic evaluation method will principally adopt the benefit cost analysis which evaluate investment efficiency through comparison between costs and benefits derived from the road network. It is expressed in the benefit cost stream during evaluation period and the economic indicators used in this study are as follows:

- a) Net Present Value (NPV),
- b) Benefit Cost (B/C) Ratio, and
- c) Economic Internal Rate of Return (EIRR).

The benefits derived from the road project can be defined principally as those with and without project. There are various benefits derived from the project. Among these benefits, the following tangible ones are taken into account in this study:

- a) Reduction of vehicle operating costs(VOC)
  - reduction of running cost
  - reduction of fixed cost
- b) Reduction of travel time costs (TTC)



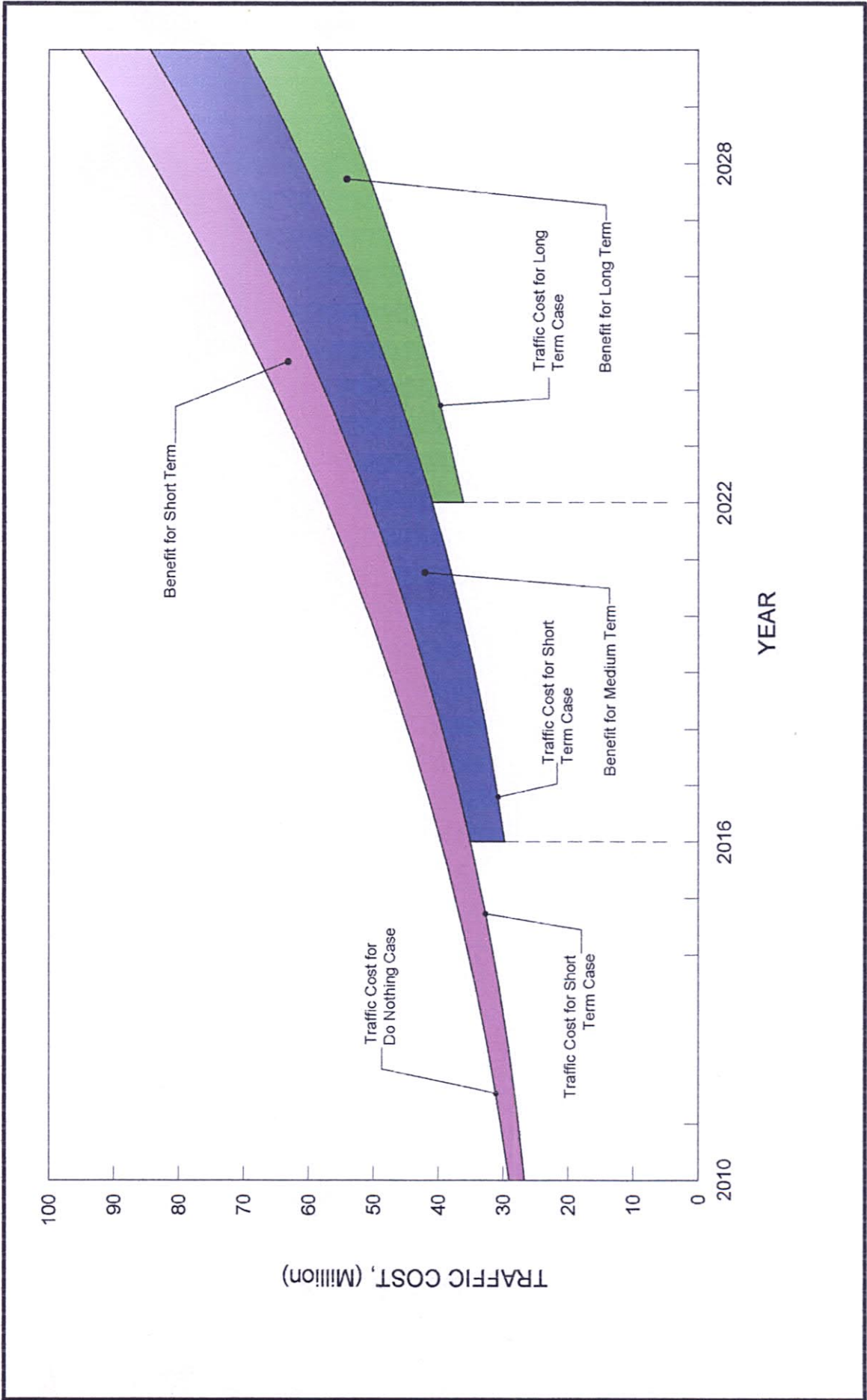
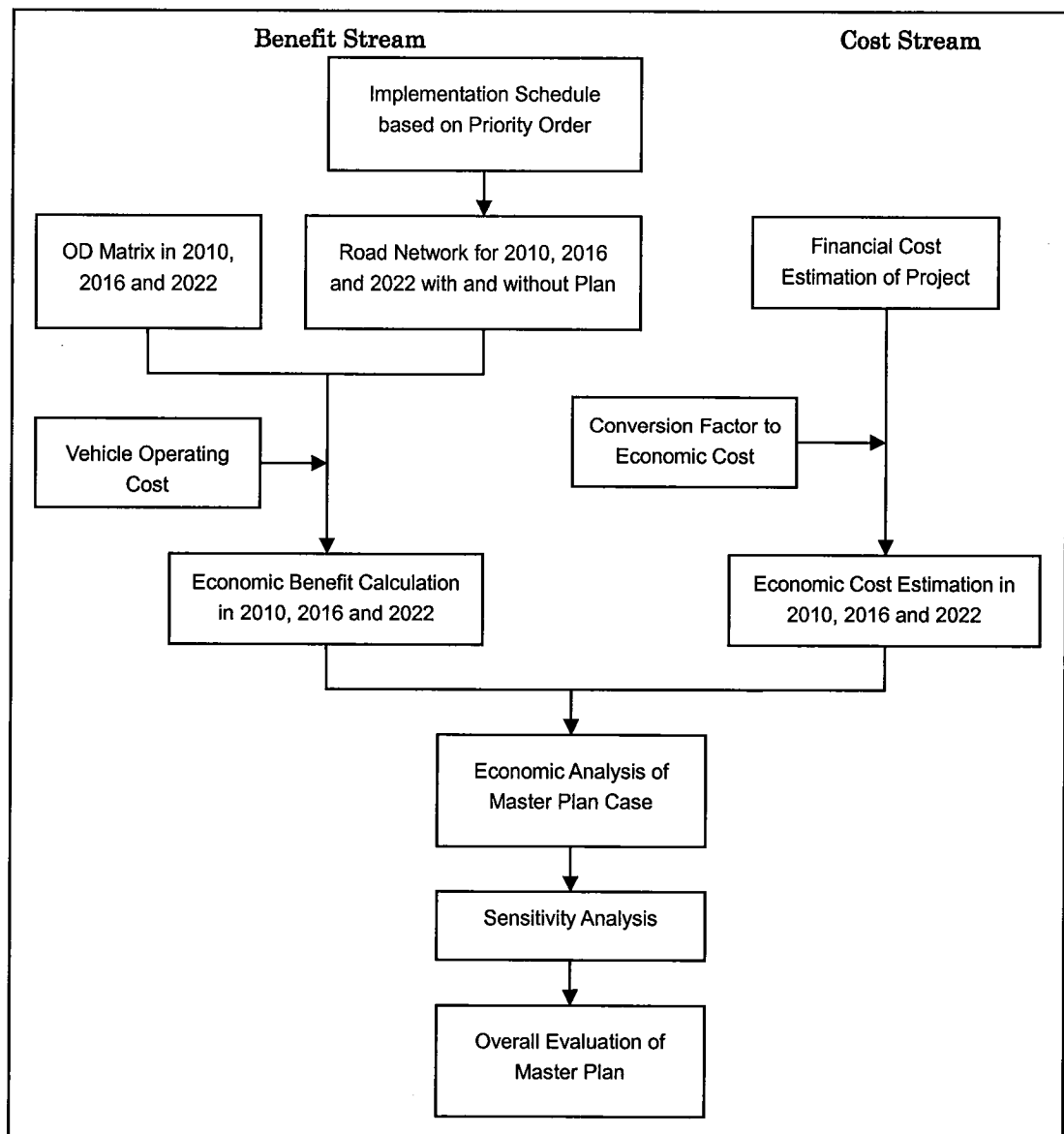


Figure 11.4-1 BENEFIT FOR MASTER PLAN CASE



**FIGURE 11.1.-2 PROCEDURE FOR EVALUATION OF MASTER PLAN**

### 11.1.2 Benefit of the Master Plan

#### (1) Vehicle Operating Cost (VOC) and Time Cost (TC)

The vehicle operating costs (VOC) and travel time cost (TC) are based on the estimated VOC (as of April 2002) by PMO-FS DPWH. The running cost (RC) in VOC is classified by pavement type and surface conditions. Based on the estimated VOC, the following VOC is adopted as follows:

- a) VOC is expressed as 2003 prices taken into account an inflation rate.
- b) RC by pavement type and surface condition is considered with further travel speed factor

The VOC as of 2003 prices is presented in **Table 11.1-1**.

**TABLE 11.1-1 BASIC VEHICLE OPERATING COSTS AS OF 2003**

	Running Cost (P/km)	Fixed Cost (P/min)	Time Cost (P/km)
Car	4,493	0.248	1.003
Jeepney	3,026	1.195	1.485
Bus	7,540	1.815	5.626
Truck	9,734	2.132	0.000
Motorcycle	832	0.083	0.593
Tricycle	998	0.978	0.223

*Note: Pavement type: paved, Surface condition: good*

*Source: Estimated VOC as of 2003 price based on VOC as of 2002 estimated by PMO-FS DPWH,*

Relationship between RC and travel speed is shown in **Table 11.1-2** and **Figures 11.1-3, 4 and 5**.

**TABLE 11.4-2 PARAMETERS FOR FORMULA OF RUNNING COST ESTIMATION**

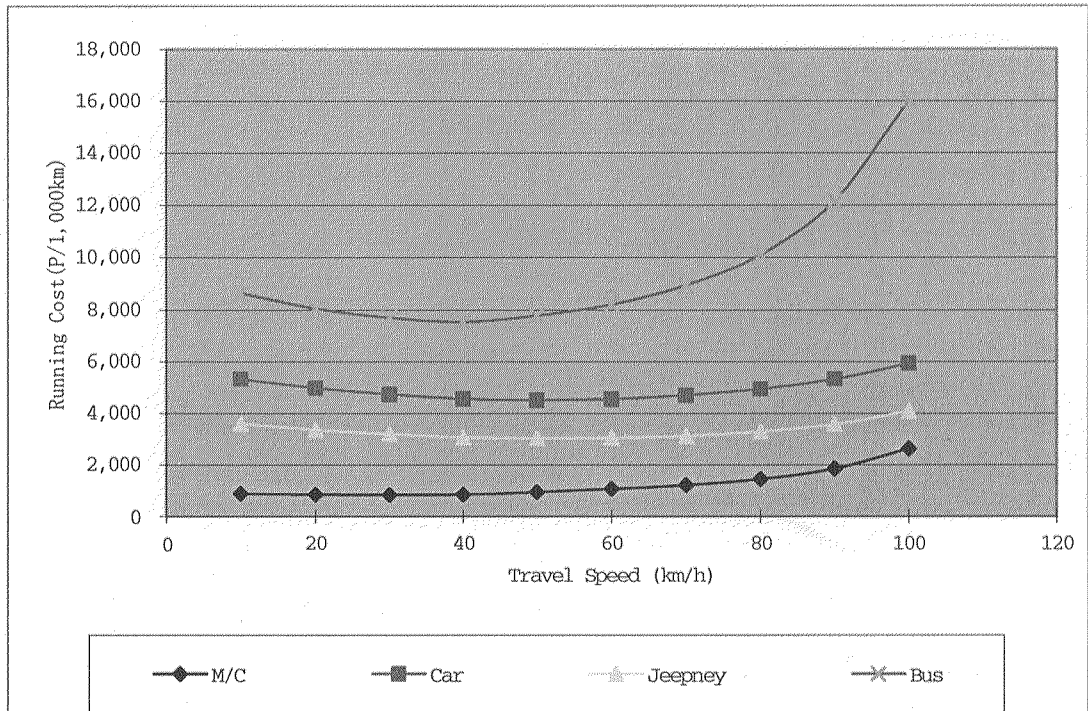
		A3	A2	A1	B
<b>Paved Good</b>	Car		0.5583	-55.677	5,854.6
	Jeepney		0.4075	-40.838	4,011.6
	Bus	0.0237	-1.7388	9.397	8,523.9
	Truck	0.0409	-2.0190	-122.380	15,489.0
	Motor cycle		0.3723	-24.529	1,172.3
<b>Paved Bad</b>	Car		0.7806	-57.734	7,342.4
	Jeepney		0.9206	-61.335	5,202.0
	Bus	0.0419	-2.0940	-14.086	13,360.0
	Truck	0.0719	-2.5191	-172.390	22,015.0
	Motor cycle		1.5585	-75.636	1,962.0
<b>Gravel Bad</b>	Car		0.8921	-65.982	8,391.3
	Jeepney		1.0521	-70.097	5,945.1
	Bus	0.0498	-2.4867	-16.727	15,865.0
	Truck	0.0854	-2.9914	-204.710	26,142.0
	Motor cycle		1.7811	-86.442	2,242.2

*Note : Running cost formula  $RC = A3 X^3 + A2 X^2 + A1 X + B$*

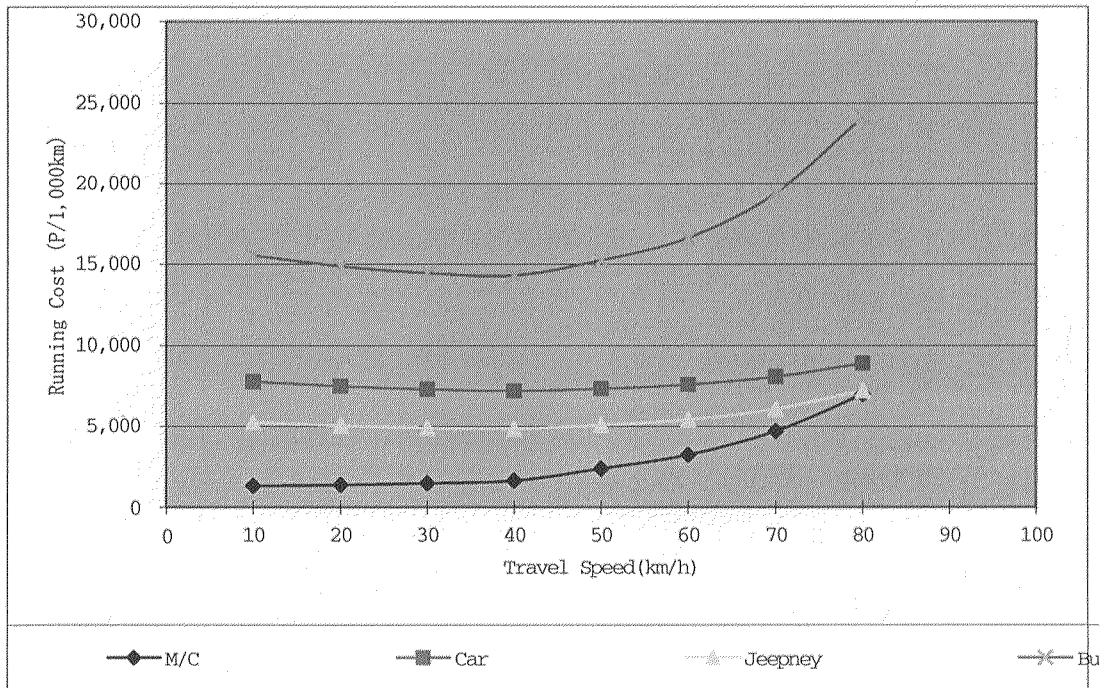
*Where RC = Running cost (Pesos/1,000km)*

*A3, A2, A1: Parameter*

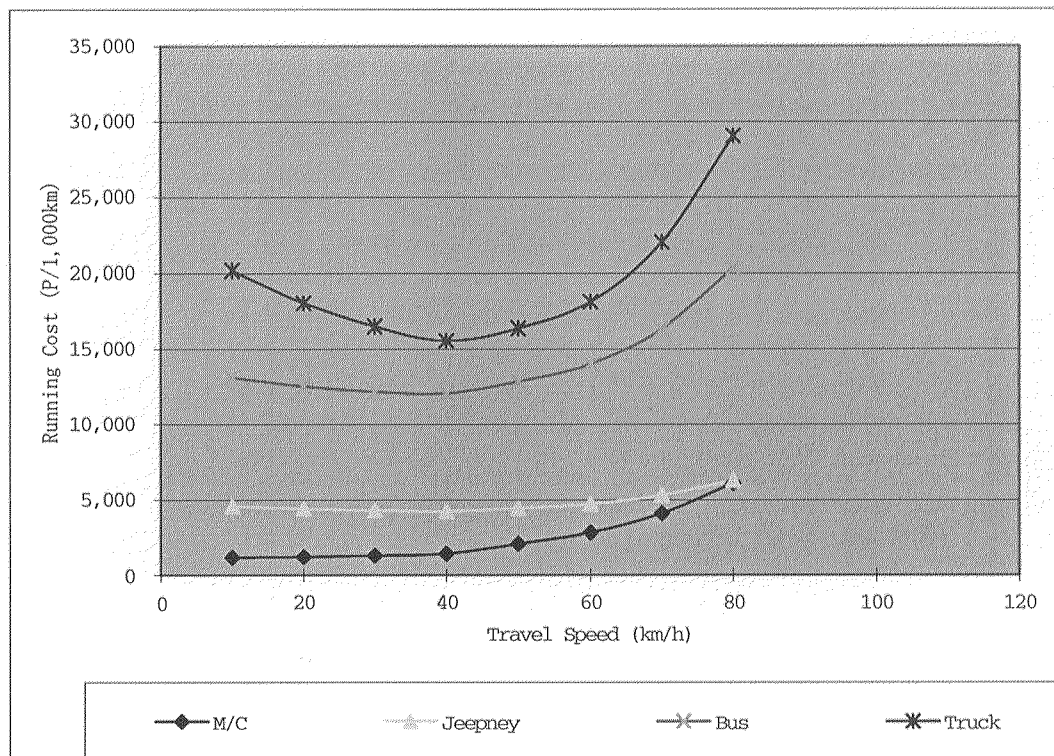
*X = Travel speed (km/h)*



**FIGURE 11.4 -3 RELATIONSHIP BETWEEN RUNNING COST AND TRAVEL SPEED IN CASE OF PAVED AND GOOD CONDITION ROAD**



**FIGURE 11.1-4 RELATIONSHIP BETWEEN RUNNING COST AND TRAVEL SPEED IN CASE OF PAVED AND BAD CONDITION ROAD**



**FIGURE 11.1-5 RELATIONSHIP BETWEEN RUNNING COST AND TRAVEL SPEED IN CASE OF GRAVEL AND BAD CONDITION ROAD**

## (2) Estimation of Vehicle Operating Costs

The saving in vehicle operating costs is quantified on the annual basis by means of the following formula:

$$SVOC = ((VK_S^{WO} - VK_S^W) \times VRC_S) + (VH^{WO} - VH^W) \times VFC) \times AF$$

Where:

- SVOC: Saving in vehicle operating costs
- $VK_S^{WO}$ : Vehicle traffic on the road network without Master Plan by travel speed
- $VK_S^W$ : Vehicle traffic on the road network with Master Plan by travel speed
- $VRC_S$ : Vehicle running cost by travel speed
- $VH^{WO}$ : Vehicle hours on the road network without Ayala Bridge
- $VH^W$ : Vehicle hours on the road network with Ayala Bridge
- VFC: Fixed cost
- AF: Annualized factor

Table 11.1-3 shows total VOC with and without the project.

**TABLE 11.1-3 VOC ESTIMATION**

Unit: '000 Pesos

Year	W/O Mater Plan	W/ Master Plan	Daily Benefit (W/O –W/ )	Annualized Benefit
2010	21,713	20,595	1,118	380,123
2016	28,062	24,329	3,733	1,269,256
2022	40,530	31,064	9,466	3,218,432

**(3) Estimation of Travel Time Cost**

The saving in travel time costs was quantified on the annual basis by means of the following formula:

$$STTC = (VH^{WO} - VH^W) \times TC \times AF$$

Where:

- STTC: Saving in travel time costs
- VH<sup>WO</sup>: Vehicle hours on the project road without master plan
- VH<sup>W</sup>: Vehicle hours on the project road with master plan
- TC Time Value
- AF: Annualized factor

Table 11.1-4 shows total travel time cost with and without the master plan.

**TABLE 11.1-4 TRAVEL TIME COST ESTIMATION**

Unit: '000 Pesos

Year	W/O Mater Plan	W/ Master Plan	Daily Benefit (W/O –W/ )	Annualized Benefit
2010	7,282	6,233	1,049	356,715
2016	10,675	7,437	3,238	1,101,071
2022	17,197	9,924	7,273	2,472,950

**(5) Summary of Benefit Calculation**

Saving in VOC and travel time cost are summarized in Table 11.1-5.

**TABLE 11.1-5 ESTIMATION OF BENEFITS**

Unit: '000 Pesos/Year

Year	Saving in VOC	Saving in TCC	Total Saving
2010	380,123	356,715	738,848
2016	1,269,256	1,101,071	2,372,343
2022	3,218,432	2,472,950	5,693,404

**11.1.3 Cost Estimation of Master Plan****(1) Project Cost**

The project cost, which was already calculated in the previous section, is expressed as the financial cost. It is therefore to convert from financial cost to economic cost using conversion factor.

Taking into account the master plan stage in this study the economic cost is only estimated to deduct government taxes from financial cost as shown in **Table 11.1-6**.

**TABLE 11.1-6 ECONOMIC COST ESTIMATION**

'000 Pesos

Description	Economic Cost
1. Construction Cost from 2006 to 2010	1,065,300
2. Construction Cost from 2011 to 2016	1,469,600
3. Construction Cost from 2017 to 2022	3,162,800
<b>Total</b>	<b>5,697,700</b>

**(2) Maintenance Cost**

In this study, the maintenance cost of the road project is assumed to be 1.0 % of the construction cost.

**11.1.4 Economic Evaluation****(1) Benefit Cost Analysis**

Based on the above mentioned benefits and cost estimations, the economic analysis of the Master Plan case is made. **Table 11.1-7** shows the benefit – cost analysis of the Master Plan implementation during project life period and **Table 11.1-8** shows the benefit cost stream. The results of the economic analysis show that a Net Present Value (NPV) of ₱6,913 million and BCR of 5.11 over 20 years service life using a discount rate of 15% which is designated by the NEDA. The Economic Internal Rate of Return (EIRR) is compiled at 61.7 %.

**TABLE 11.1-7 ECONOMIC INDICATIONS OF BENEFIT COST ANALYSIS IN METRO BACOLOD**

	Net Present Value (NPV) (Million Peso)	B / C Ratio	EIRR (%)
Short Term Plan	3,702	6.41	59.3
Medium Term Plan	2,275	5.43	44.4
Long Term Plan	363	1.75	30.6
Whole Plan	6,913	5.11	61.7

Notes: 1) Project life is assumed to be 20 years

2) Discount rate is 15%

### (2) Sensitivity Analysis

The sensitivity analysis is conducted under a worse case scenario incorporating increase and/or decrease of the estimation of costs and benefits. **Table 11.1-9** shows the results of the sensitivity analysis.

**TABLE 11.1-9 SENSITIVITY ANALYSIS REGARDING COSTS AND BENEFITS  
IMPROVEMENT PROJECT (EIRR)**

Unit: %

		Benefits				
		20% down	10% down	Base Case	10% up	20% up
Costs	20% down	61.7	66.8	71.5	76.0	80.2
	10% down	56.9	61.7	66.2	70.5	74.5
	Base Case	52.9	57.4	61.7	65.8	69.6
	10% up	49.4	53.7	57.8	61.7	65.4
	20% up	46.3	50.5	54.4	58.2	61.7

Note: Service life of the project is assumed to be 20 years

### (3) Summary of Economic Analysis

The implementation of the Master Plan following implementation schedule can be justified from view of national economic point since the economic indicators of all cases more than the over cut-off level which can be considered as 15% of EIRR in the Philippines.



**TABLE 11.1.1-8 BENEFIT - COST STREAM AND EVALUATION INDICATORS OF THE MASTER PLAN IN METRO BACOLOD**

Undiscounted Cost Benefit Stream Revenue										Discounted Cost Benefit Stream Revenue									
Sq.	Year	Construction	O & M Cost	Cost Total	Benefit	Benefit - Cost	Sq.	Year	Discounted	Construction	O & M Cost	Cost Total	Benefit	Benefit - Cost					
1	2004						1	2004											
2	2005						2	2005											
3	2006	77,900	-	77,900		-77,900	3	2006	1.150	67,739	-	67,739	-	-67,739					
4	2007	35,000	779	35,779		-35,779	4	2007	1.323	26,465	589	27,054	-	-27,054					
5	2008	300,800	1,129	301,929		-301,929	5	2008	1.521	197,781	742	198,523	-	-198,523					
6	2009	363,700	4,137	367,837		-367,837	6	2009	1.749	207,947	2,365	210,312	-	-210,312					
7	2010	287,900	7,774	295,674	736,837	441,163	7	2010	2.011	143,137	3,865	147,002	366,338	219,336					
8	2011	332,500	10,653	343,153	893,990	550,837	8	2011	2.313	143,749	4,606	148,355	386,497	238,142					
9	2012	199,800	13,978	213,778	1,085,255	871,477	9	2012	2.660	75,112	5,223	80,367	407,987	327,620					
10	2013	336,200	15,976	352,176	1,318,177	966,001	10	2013	3.059	109,904	5,223	115,127	430,914	315,787					
11	2014	312,100	19,338	331,438	1,602,005	1,270,567	11	2014	3.518	88,718	5,497	94,215	455,390	361,175					
12	2015	272,500	22,459	294,959	1,948,082	1,653,123	12	2015	4.046	67,358	5,552	72,909	481,536	408,627					
13	2016	157,800	25,184	182,984	2,370,327	2,187,343	13	2016	4.652	33,918	5,413	39,331	509,486	470,154					
14	2017	356,900	26,762	383,662	2,741,987	2,358,325	14	2017	5.350	66,707	5,002	71,709	512,497	440,788					
15	2018	638,400	30,331	668,731	3,172,342	2,503,611	15	2018	6.153	103,758	4,930	108,687	515,594	406,907					
16	2019	871,500	36,715	908,215	3,670,729	2,762,514	16	2019	7.076	123,168	5,189	128,357	518,779	390,422					
17	2020	699,600	45,430	745,030	4,247,980	3,502,950	17	2020	8.137	85,977	5,583	91,560	522,053	430,493					
18	2021	218,200	52,426	270,626	4,916,668	4,646,042	18	2021	9.358	23,318	5,602	28,920	525,419	496,498					
19	2022	236,900	54,608	291,508	5,691,382	5,399,874	19	2022	10.761	22,014	5,074	27,089	528,877	501,788					
20	2023	-	56,977	56,977	5,691,382	5,634,405	20	2023	12.375	-	4,604	4,604	459,893	455,289					
21	2024	-	56,977	56,977	5,691,382	5,634,405	21	2024	14.232	-	4,004	4,004	399,907	395,903					
22	2025	-	56,977	56,977	5,691,382	5,634,405	22	2025	16.367	-	3,481	3,481	347,745	344,264					
23	2026	-	56,977	56,977	5,691,382	5,634,405	23	2026	18.822	-	3,027	3,027	302,387	299,360					
24	2027	-	56,977	56,977	5,691,382	5,634,405	24	2027	21.645	-	2,632	2,632	262,945	260,313					
25	2028	-	56,977	56,977	5,691,382	5,634,405	25	2028	24.891	-	2,289	2,289	228,648	226,359					
26	2029	-	56,977	56,977	5,691,382	5,634,405	26	2029	28.625	-	1,990	1,990	198,824	196,834					
27	2030	-	56,977	56,977	5,691,382	5,634,405	27	2030	32.919	-	1,731	1,731	172,891	171,160					
Residual Value		1,967,470			1,967,470	1,967,470	Residual Value						59,767	59,767					
Total		5,697,700	823,495	6,521,195	284,885	284,885	Total		1,586,771	94,246	1,681,016	8,594,375	6,913,358	6,913,358					
Short-Term		1,065					Discount Rate		15.0%										
Mid-Term		1,611					Net Present Value (Million Peso)							6,913					
Long-Term		3,022					B/C Ratio							5.11					
Total Project Cost		5,698					EIRR							61.7%					

# **APPENDIX 12.8-1**

## **DETAILED CONSTRUCTION COST ESTIMATE** (Bacolod Airport Access Road)

**Appendix 12.8-1 Detailed Construction Cost Estimate of Bacolod Airport Access Road**

Item No.	Description	Unit	Unit Cost	Component(%)			Quantity	Cost			
				Foreign	Local	Tax		Foreign	Local	Tax	Total
<b>PART C - EARTHWORK</b>											
100(1)	Clearing and Grubbing	ha.	55,100.00	57	27	16	22.8	713,882.76	337,494.66	203,249.57	1,254,627.00
102(1)	Unsuitable Excavation	m3	179.00	59	17	24	0.0	0.00	0.00	0.00	0.00
102(2)a	Surplus Common Excavation	m3	179.00	60	24	15	2,495.5	269,361.10	108,995.21	68,345.35	446,701.66
103(2)a	Bridge Excavation, Common (AWL)	m3	202.00	53	31	16	5,551.2	592,065.59	352,099.61	177,171.14	1,121,336.34
103(2)b	Bridge Excavation, Common (BWL)	m3	763.00	51	34	15	1,452.0	565,016.76	372,246.34	170,612.90	1,107,876.00
104(1)a	Embankment from Excavation	m3	196.00	54	20	26	1,366.3	144,604.96	53,557.39	69,624.61	267,786.96
104(1)b	Embankment from Borrow	m3	390.00	56	30	15	253,380.1	55,338,222.58	28,151,385.11	14,328,646.92	98,818,254.60
104(1)c	Selected Borrow for Backfilling	m3	573.00	54	20	26	1,840.0	569,332.80	210,864.00	274,123.20	1,054,320.00
105(1)	Subgrade Preparation (Common Material)	m2	17.00	57	27	16	29,100.0	283,957.80	131,095.50	79,646.70	494,700.00
	Plastic-board drain method (@2.5m * 2.5m triangle, Depth 20.0m)	m2	151.00	65	20	15	0.0	0.00	0.00	0.00	0.00
	Sub Total							58,476,444.35	30,717,737.81	15,371,420.40	104,565,602.56
<b>PART D - SUBBASE AND BASE COURSE</b>											
200	Aggregate Subbase Course	m3	550.00	54	32	14	37,591.1	11,123,194.65	6,574,676.39	2,977,211.95	20,675,083.00
201	Aggregate Base Course	m3	650.00	53	33	14	0.0	0.00	0.00	0.00	0.00
202	Crushed Aggregate Base Course (AC)	m3	750.00	54	32	14	0.0	0.00	0.00	0.00	0.00
	Sub Total							11,123,194.65	6,574,676.39	2,977,211.95	20,675,083.00
<b>PART E - SURFACE COURSE</b>											
301(1)	Bituminous Prime Coat (MC-70 Cut-Back Asphalt)	t	24,500.00	65	17	18	0.0	0.00	0.00	0.00	0.00
302(2)	Bituminous Tack Coat (Emulsified Asphalt Grade SS-1)	t	24,500.00	65	18	18	0.0	0.00	0.00	0.00	0.00
310	Bituminous Concrete Surface Course, Hot Laid	t	3,430.00	64	18	18	0.0	0.00	0.00	0.00	0.00
311(1)a	PCC Pavement(Plain) (t=0.10m)	m2	420.00	62	23	15	0.0	0.00	0.00	0.00	0.00
311(1)c	PCC Pavement(Plain) (t=0.23m)	m2	720.00	62	23	15	75,281.4	33,822,427.39	12,249,789.41	8,130,391.20	54,202,608.00
311(1)d	PCC Pavement(Plain) (t=0.25m)	m2	763.00	62	23	15	0.0	0.00	0.00	0.00	0.00
311(2)	PCC Pavement(Reinforced) for Approach Slab, t=300mm	m2	4,440.00	62	23	15	540.0	1,488,512.00	551,448.00	359,640.00	2,397,600.00
	Sub Total							35,308,939.39	12,801,237.41	8,490,031.20	56,600,208.00
<b>PART F - BRIDGE CONSTRUCTION</b>											
400(4)	Precast Concrete Piles (0.45m×0.45m), Furnished and Driven	m	3,200.00	52	28	20	0.0	0.00	0.00	0.00	0.00
400(15)	Test Piles (0.45m×0.45m)	m	371.00	52	35	13	0.0	0.00	0.00	0.00	0.00
400(16)a	Cast-in-Place Concrete Bored Piles, φ1000mm	m	23,800.00	38	45	17	1,152.0	10,418,888.00	12,337,920.00	4,660,992.00	27,417,800.00
400(16)b	Cast-in-Place Concrete Bored Piles, φ1200mm	m	32,500.00	38	45	17	132.0	1,630,200.00	1,930,500.00	729,300.00	4,290,000.00
400(19)	Piles Shoes for 0.45m×0.45m Piles	ea	1,750.00	55	30	15	0.0	0.00	0.00	0.00	0.00
401	Concrete Railings	m	2,240.00	38	49	13	568.0	483,481.60	623,436.80	165,401.60	1,272,320.00
404(1)	Reinforcing Steel, Grade 40 (Fy=275Mpa)	kg	39.00	50	37	13	0.0	0.00	0.00	0.00	0.00
404(2)	Reinforcing Steel, Grade 60 (Fy=415Mpa)	kg	40.00	50	37	13	641,589.0	12,831,780.60	9,495,517.64	3,336,262.96	25,663,561.20
405(1)	Structural Concrete Class"A1" for Substructure (fc=24Mpa)	m3	3,200.00	34	50	16	2,162.3	2,352,571.52	3,459,664.00	1,107,092.48	6,919,328.00
405(2)	Structural Concrete Class"A2" for Superstructure (fc=24Mpa)	m3	5,040.00	34	50	16	1,836.3	3,146,752.22	4,627,576.80	1,480,824.58	9,255,153.60
405(3)	Structural Concrete Class"A3" for Others (fc=21Mpa)	m3	4,130.00	34	50	16	0.0	0.00	0.00	0.00	0.00
405(6)	Structural Concrete "Lean Concrete" (fc=17 Mpa)	m3	2,480.00	43	37	20	200.7	214,005.15	184,143.97	99,537.28	497,686.40
406(1)a	Prestressed Concrete Girder, AASHTO Type IV-B, L=20m	ea	308,910.00	22	62	16	10.0	679,602.00	1,915,242.00	494,266.00	3,089,100.00
406(1)b	Prestressed Concrete Girder, AASHTO Type □-B, L=22m	ea	331,400.00	22	62	16	10.0	729,080.00	2,054,680.00	530,240.00	3,314,000.00
406(1)c	Prestressed Concrete Girder, AASHTO Type □-B, L=25m	ea	391,250.00	25	59	16	10.0	978,125.00	2,308,375.00	628,000.00	3,912,500.00
406(1)d	Prestressed Concrete Girder, AASHTO Type IV-B, L=26m	ea	405,480.00	22	62	16	0.0	0.00	0.00	0.00	0.00
406(1)e	Prestressed Concrete Girder, AASHTO Type □-B, L=27m	ea	419,645.00	22	62	16	0.0	0.00	0.00	0.00	0.00
406(1)f	Prestressed Concrete Girder, AASHTO Type □-B, L=28m	ea	441,755.00	20	65	15	0.0	0.00	0.00	0.00	0.00
406(1)g	Prestressed Concrete Girder, AASHTO Type □, L=30m	ea	505,185.00	20	65	15	10.0	1,010,370.00	3,283,702.50	757,777.50	5,051,850.00
406(1)h	Prestressed Concrete Girder, AASHTO Type V, L=31m	ea	520,815.00	20	65	15	0.0	0.00	0.00	0.00	0.00
406(1)i	Prestressed Concrete Girder, AASHTO Type V, L=35m	ea	647,400.00	17	69	14	0.0	0.00	0.00	0.00	0.00
406(1)j	Prestressed Concrete Girder, AASHTO Type □, L=36m	ea	672,500.00	19	67	14	0.0	0.00	0.00	0.00	0.00
406(1)k	Prestressed Concrete Girder, AASHTO Type □, L=40m	ea	815,870.00	17	69	14	5.0	693,489.50	2,814,751.50	571,109.00	4,079,350.00
407(1)a	Elastomeric Bearing Pad, 400×350×60 (Duro 60)	ea	18,100.00	55	30	15	20.0	199,100.00	108,600.00	54,300.00	362,000.00
407(1)b	Elastomeric Bearing Pad, 500×350×60 (Duro 60)	ea	21,100.00	55	30	15	40.0	464,200.00	253,200.00	128,800.00	844,000.00
407(2)	Expansion Joint, 50mm Gap	m	46,300.00	55	30	15	90.0	2,291,850.00	1,250,100.00	625,050.00	4,167,000.00
407(4)	Metal Drain (φ150mm G.I. Drain Pipe)	m	985.00	55	30	15	96.0	52,008.00	28,368.00	14,184.00	94,560.00
	Sub Total							38,175,303.60	46,675,778.21	15,378,927.39	100,230,009.20
<b>PART G - DRAINAGE AND SLOPE PROTECTION STRUCTURES</b>											
500(1)b	Reinforced Concrete Pipe Culvert, 910mmφ (Extra. Str.)	m	6,600.00	57	28	15	291.0	1,087,059.60	535,847.40	288,090.00	1,920,600.00
500(1)c	Reinforced Concrete Pipe Culvert, 1070mmφ (Extra. Str.)	m	10,000.00	57	28	15	165.0	940,500.00	455,400.00	254,100.00	1,650,000.00
500(1)d	Reinforced Concrete Pipe Culvert, 1220mmφ (Extra. Str.)	m	10,600.00	57	28	15	137.0	827,754.00	406,616.00	217,830.00	1,452,200.00
500(1)e	Reinforced Concrete Pipe Culvert, 1520mmφ (Extra. Str.)	m	18,700.00	57	28	15	0.0	0.00	0.00	0.00	0.00
500(3)a1	Reinforced Concrete Box Culvert 1-1.5m x 1.5m	m	16,200.00	42	43	15	0.0	0.00	0.00	0.00	0.00
500(3)a2	Reinforced Concrete Box Culvert 2-1.5m x 1.5m	m	25,800.00	42	43	15	0.0	0.00	0.00	0.00	0.00
500(3)a3	Reinforced Concrete Box Culvert 3-1.5m x 1.5m	m	35,800.00	42	43	15	32.0	481,152.00	492,608.00	171,840.00	1,145,600.00
500(3)b1	Reinforced Concrete Box Culvert 1-2.4m x 2.4m	m	27,300.00	42	43	15	32.0	366,912.00	375,648.00	131,040.00	873,600.00
500(3)b2	Reinforced Concrete Box Culvert 2-2.4m x 2.4m	m	46,100.00	42	43	15	37.0	718,394.00	733,451.00	255,855.00	1,705,700.00
500(3)b3	Reinforced Concrete Box Culvert 3-2.4m x 2.4m	m	65,400.00	42	43	15	0.0	0.00	0.00	0.00	0.00
500(3)c1	Reinforced Concrete Box Culvert 1-3.0m x 3.0m	m	37,300.00	42	43	15	0.0	0.00	0.00	0.00	0.00
500(3)c2	Reinforced Concrete Box Culvert 2-3.0m x 3.0m	m	65,300.00	42	43	15	0.0	0.00	0.00	0.00	0.00
500(3)c3	Reinforced Concrete Box Culvert 3-3.0m x 3.0m	m	92,000.00	42	43	15	0.0	0.00	0.00	0.00	0.00
502(2)b1	Reinforced Concrete Headwall, 1-910mmφ RCPC	ea.	18,800.00	28	57	15	16.0	84,224.00	171,456.00	45,120.00	300,800.00
502(2)b2	Reinforced Concrete Headwall, 2-910mmφ RCPC	ea.	25,200.00	28	57	15	10.0	70,560.00	143,640.00	37,800.00	252,000.00
502(2)c1	Reinforced Concrete Headwall, 1-1070mmφ RCPC	ea.	21,500.00	30	55	15	14.0	90,300.00	165,550.00	45,150.00	301,000.00
502(2)c2	Reinforced Concrete Headwall, 2-1070mmφ RCPC	ea.	31,300.00	30	55	15	2.0	18,780.00	34,430.00	9,390.00	62,600.00
502(2)d1	Reinforced Concrete Headwall, 1-1220mmφ RCPC	ea.	26,700.00	31	54	15	2.0	16,554.00	28,836.00	8,010.00	53,400.00
502(2)d2	Reinforced Concrete Headwall, 2-1220mmφ RCPC	ea.	37,500.00	31	54	15	6.0	69,750.00	121,500.00	33,750.00	225,000.00
502(2)f1	Reinforced Concrete Headwall, 1-1520mmφ RCPC	ea.	36,200.00	33	52	15	0.0	0.00	0.00	0.00	0.00
502(2)f2	Reinforced Concrete Headwall, 2-1520mmφ RCPC	ea.	51,700.00	33	52	15	0.0	0.00	0.00	0.00	0.00
502(10)a1	Reinforced Concrete Headwall, Box Culvert 1-1.5m x 1.5m	ea.	49,900.00	44	41	15	0.0	0.00	0.00	0.00	0.00
502(10)a2	Reinforced Concrete Headwall, Box Culvert 2-1.5m x 1.5m	ea.	59,800.00	45	40	15	0.0	0.00	0.00	0.00	0.00
502(10)a3	Reinforced Concrete Headwall, Box Culvert 3-1.5m x 1.5m	ea.	70,700.00	45	40	15	4.0	127,260.00	113,120.00	42,420.00	282,800.00
502(10)b1	Reinforced Concrete Headwall, Box Culvert 1-2.4m x 2.4m	ea.	102,000.00	44	41	15	4.0	179,520.00	57,120.00	61,200.00	408,000.00
502(10)b2	Reinforced Concrete Headwall, Box Culvert 2-2.4m x 2.4m	ea.	122,000.00	45	40	15	4.0	219,600.00	195,200.00	73,200.00	488,000.00
502(10)b3	Reinforced Concrete Headwall, Box Culvert 3-2.4m x 2.4m	ea.	141,000.00	45	40	15	0.0	0.00	0.00	0.00	0.00
502(10)c1	Reinforced Concrete Headwall, Box Culvert 1-3.0m x 3.0m	ea.	148,000.00	44	41	15	0.0	0.00	0.00	0.00	0.00
502(3)b1	Catch Basin for RCPC 1-φ910	ea.	24,300.00	38	47	15	0.0	0.00	0.00	0.00	0.00
502(3)b2											

# **APPENDIX 12.8-2**

## **SUMMARY OF IMPACT AND COMPENSATION COST** (New Airport Access Road)

## Appendix 12.8-2 Summary of Impacts and Compensation Cost

New Airport Access Road

Description	No. of HHs	Unit	Rate/Unit	Quantity	Amount (Php)	Remarks
<b>Compensation for Land and Other Assets</b>						
<b>1. Land</b>						
1) Residential-1	-	m <sup>2</sup>	2,625.0	28,000	73,500,000	Name of land owners to be identified by parcellary survey.
2) Residential-2	-	m <sup>2</sup>	1,875.0	32,000	60,000,000	
3) Agricultural	-	m <sup>2</sup>	187.5	344,640	64,620,000	
<b>Subtotal</b>				<b>404,640</b>	<b>198,120,000</b>	
<b>2. Structures</b>						
1) Residential (Shanty)	6	m <sup>2</sup>	1,140	214.59	244,633	
2) Warehouse (Concrete)	1	m <sup>2</sup>	6,000	10.20	61,200	
3) Warehouse (Shanty)	1	m <sup>2</sup>	1,000	12.25	12,250	
<b>Subtotal</b>				<b>237.04</b>	<b>318,083</b>	
<b>3. Other Fixed Structures</b>						
1) Water pump	1	Nos	10,000	1	10,000	
<b>4. Repair Cost</b>						
	-	-	-	-	-	None
<b>5. Electric Post Relocation</b>						
	-	-	-	-	-	None
<b>6. Perennials</b>						
Various types	5	Nos.	various	139	32,650	
<b>Subtotal</b>					<b>198,480,733</b>	
<b>Other Compensations</b>						
<b>1. Disturbance Allowance</b>						
1) Severely affected land owners	-	-	-	-	-	None
2) Agricultural lessees	-	-	-	-	-	None
3) Temporary land users	-	-	-	-	-	None
4) Severely affected structural owners	6	-	10,000	6	60,000	
<b>2. Subsistence Allowance</b>						
1) Income loss for shop owners	-	-	-	-	-	None
<b>2. Financial Assistance</b>						
1) Land users w/o title	6	-	15,000	6	90,000	
<b>3. Rehabilitation Assistance</b>						
1) Severely affected land owners	-	-	-	-	-	None
2) Agricultural lessees	-	-	-	-	-	None
3) Severely affected structural owners.	1	-	15,000	1	15,000	
<b>4. Transportation Allowance</b>						
1) Relocating PAPs	8	-	3,000	8	24,000	
2) Shanty dwellers go back to province.	-	-	-	-	-	None
<b>5. Transitional allowance</b>						
1) Renters of affected structures	2	-	3,000	2	6,000	
<b>Subtotal</b>					<b>195,000</b>	
<b>TOTAL</b>					<b>198,675,733</b>	
<b>RAP Implementation</b>						
					<b>2,027,250</b>	
<b>GRAND TOTAL</b>						
					<b>280,707,983</b>	

**APPENDIX 12.10-1**  
**SCHEDULE OF LAND VALUES**  
(Agricultural)

**APPENDIX 12.10-1 SCHEDULE OF LAND VALUES (AGRICULTURAL)**

Kind of Land	Classification	Land Value 2002 (P/ha.)	Zonal Value 2002 (P/ha.)
Sugar Land	1 <sup>st</sup>	230,000	
	2 <sup>nd</sup>	200,000	300,000
	3 <sup>rd</sup>	160,000	
	4 <sup>th</sup>	130,000	
	5 <sup>th</sup>	100,000	
Prawn Ponds	1 <sup>st</sup>	180,000	
	2 <sup>nd</sup>	150,000	350,000
	3 <sup>rd</sup>	120,000	
	4 <sup>th</sup>	90,000	
Fish Ponds	1 <sup>st</sup>	200,000	
	2 <sup>nd</sup>	170,000	180,000
	3 <sup>rd</sup>	130,000	
	4 <sup>th</sup>	100,000	
	5 <sup>th</sup>	70,000	
Lowland Rice with Irrigation	1 <sup>st</sup>	230,000	
	2 <sup>nd</sup>	200,000	240,000
	3 <sup>rd</sup>	150,000	
	4 <sup>th</sup>	120,000	
Lowland Rice w/o Irrigation	1 <sup>st</sup>	180,000	
	2 <sup>nd</sup>	150,000	120,000
	3 <sup>rd</sup>	120,000	
	4 <sup>th</sup>	100,000	
Upland Rice	1 <sup>st</sup>	100,000	
	2 <sup>nd</sup>	80,000	50,000
	3 <sup>rd</sup>	60,000	
	4 <sup>th</sup>	40,000	
Corn Land	1 <sup>st</sup>	70,000	
	2 <sup>nd</sup>	50,000	70,000
	3 <sup>rd</sup>	30,000	
	4 <sup>th</sup>	20,000	
Coconut Land	1 <sup>st</sup>	100,000	
	2 <sup>nd</sup>	80,000	100,000
	3 <sup>rd</sup>	60,000	
	4 <sup>th</sup>	40,000	
Bamboo Land	1 <sup>st</sup>	50,000	
	2 <sup>nd</sup>	-	
	3 <sup>rd</sup>	-	
Floriculture	1 <sup>st</sup>	350,000	
	2 <sup>nd</sup>	250,000	
	3 <sup>rd</sup>	150,000	
Timber Land	1 <sup>st</sup>	30,000	
	2 <sup>nd</sup>	-	
	3 <sup>rd</sup>	-	
Coffee land	1 <sup>st</sup>	70,000	
	2 <sup>nd</sup>	-	75,000
	3 <sup>rd</sup>	-	
Salt Beds	1 <sup>st</sup>	200,000	
	2 <sup>nd</sup>	-	70,000
	3 <sup>rd</sup>	-	
Inland Fisheries	1 <sup>st</sup>	-150,000	
	2 <sup>nd</sup>	-	
	3 <sup>rd</sup>	-	
Gamefowl Breeding Farm	1 <sup>st</sup>	750,000	
	2 <sup>nd</sup>	500,000	
	3 <sup>rd</sup>	340,000	
	4 <sup>th</sup>	220,000	
	5 <sup>th</sup>	100,000	

**APPENDIX 12.10-1 SCHEDULE OF LAND VALUES (AGRICULTURAL)**

Type of Land	Classification	Land Value 2002 (P/ha.)	Zonal Value 2002 (P/ha.)
Ramie/Maguey Land	1 <sup>st</sup>	20,000	
	2 <sup>nd</sup>	-	
	3 <sup>rd</sup>	-	
Banana Land	1 <sup>st</sup>	70,000	
	2 <sup>nd</sup>	-	75,000
	3 <sup>rd</sup>	-	
Tobacco Land	1 <sup>st</sup>	50,000	
	2 <sup>nd</sup>	-	
	3 <sup>rd</sup>	-	
Nipa Land		50,000	60,000
Firewood		20,000	
Horticulture/Rootcrop		20,000	50,000
Ipil Ipi/Kakawate		30,000	30,000
Pasture Land		20,000	30,000
Waste Land		20,000	
Swine & Poultry Farms		250,000	
Hilly, Slopes & Stony		20,000	150,000
Mangrove		20,000	50,000
Livestock Breeding Farm		500,000	
Cotton land		30,000	30,000
Cassava Land		20,000	
Pineapple Land		20,000	
Orchard		-	300,000
Citrus Land	Non Productive	20,000	
	Productive	185,000	
Santol Land	Non productive	30,000	
	Productive	250,000	
Lanzones land	Non Productive	30,000	
	Productive	290,000	
Marang Land	Non productive	30,000	
	Productive	120,000	
Cacao Land	Non Productive	20,000	
	Productive	140,000	
Guava Land	Non productive	20,000	
	Productive	120,000	
Durian Land	Non productive	20,000	
	Productive	250,000	
Rambutan Land	Non Productive	30,000	
	Productive	200,000	
Mango Land	Non productive	50,000	
	Productive	250,000	
Others		50,000	



**APPENDIX 12.10-1 RESIDENTIAL/COMMERCIAL/INDUSTRIAL LAND**

Type of Land	Classification	Land Value 2002 (P/m <sup>2</sup> )	Zonal Value 2002 (P/m <sup>2</sup> )
Residential	1 <sup>st</sup>	1,000	200-750
	2 <sup>nd</sup>	800	
	3 <sup>rd</sup>	500	
Commercial	1 <sup>st</sup>	3,000	800-2,400
	2 <sup>nd</sup>	2,500	
	3 <sup>rd</sup>		
Industrial	1 <sup>st</sup>	3,000	1,200-4,200
	2 <sup>nd</sup>	2,500	
	3 <sup>rd</sup>	2,000	
	4 <sup>th</sup>	1,200	
	5 <sup>th</sup>	1,000	

# **APPENDIX 13.8-1**

## **DETAILED CONSTRUCTION COST ESTIMATE** (Bacolod Sugar Road)

**Appendix 13.8-1 Detailed Construction Cost Estimate of Bacolod Sugar Road (1/3)**

Item No.	Description	Unit	Unit Cost	Component(%)			Quantity	Cost			
				Foreign	Local	Tax		Foreign	Local	Tax	Total
<b>PART C - EARTHWORK</b>											
100(1)	Clearing and Grubbing	ha.	55,100.00	57	27	16	78.40	2,457,988.96	1,162,036.96	699,814.08	4,319,840.00
102(1)	Unsuitable Excavation	m3	179.00	59	17	24	0.00	0.00	0.00	0.00	0.00
102(2)a	Surplus Common Excavation	m3	179.00	60	24	15	215,862.50	23,299,550.66	9,428,010.55	5,911,826.29	38,639,387.50
103(2)a	Bridge Excavation, Common (AWL)	m3	202.00	53	31	16	18,178.00	1,938,792.77	1,152,994.18	580,169.05	3,671,956.00
103(2)b	Bridge Excavation, Common (BWL)	m3	763.00	51	34	15	11,852.00	4,611,968.76	3,038,473.54	1,392,633.70	9,043,076.00
104(1)a	Embankment from Excavation	m3	196.00	54	20	26	438,926.27	46,455,956.42	17,205,909.78	22,367,682.72	86,029,548.92
104(1)b	Embankment from Borrow	m3	390.00	56	30	15	224,359.63	49,000,143.19	25,812,575.43	12,687,537.08	87,500,255.70
104(1)c	Selected Borrow for Backfilling	m3	573.00	54	20	26	7,876.00	2,436,991.92	902,589.60	1,173,366.48	4,512,948.00
105(1)	Subgrade Preparation (Common Material)	m2	17.00	57	27	16	204,707.92	1,997,539.88	922,209.18	560,285.58	3,480,034.64
	Plastic-board drain method (@2.5m * 2.5m triangle, Depth 20.0m)	m2	151.00	65	20	15	0.00	0.00	0.00	0.00	0.00
	Sub Total							132,198,932.56	59,624,799.23	45,373,314.97	237,197,046.76
<b>PART D - SUBBASE AND BASE COURSE</b>											
200	Aggregate Subbase Course	m3	550.00	54	32	14	152,930.10	45,252,016.59	26,747,474.49	12,112,063.92	84,111,555.00
201	Aggregate Base Course	m3	650.00	53	33	14	0.00	0.00	0.00	0.00	0.00
202	Crushed Aggregate Base Course (AC)	m3	750.00	54	32	14	0.00	0.00	0.00	0.00	0.00
	Sub Total							45,252,016.59	26,747,474.49	12,112,063.92	84,111,555.00
<b>PART E - SURFACE COURSE</b>											
301(1)	Bituminous Prime Coat (MC-70 Cut-Back Asphalt)	t	24,500.00	65	17	18	0.00	0.00	0.00	0.00	0.00
302(2)	Bituminous Tack Coat (Emulsified Asphalt Grade SS-1)	t	24,500.00	65	18	18	0.00	0.00	0.00	0.00	0.00
310	Bituminous Concrete Surface Course, Hot Laid	t	3,430.00	64	18	18	0.00	0.00	0.00	0.00	0.00
311(1)a	PCC Pavement(Plain) (t=0.10m)	m2	420.00	62	23	15	0.00	0.00	0.00	0.00	0.00
311(1)d	PCC Pavement(Plain) (t=0.25m)	m2	763.00	62	23	15	52,074.50	24,793,294.34	8,979,622.63	5,959,926.53	39,732,843.50
311(1)e	PCC Pavement(Plain) (t=0.28m)	m2	763.00	62	23	15	171,945.20	81,865,173.06	29,649,886.40	19,679,128.14	131,194,187.60
311(2)	PCC Pavement(Reinforced) for Approach Slab, t=300mm	m2	4,440.00	62	23	15	1,710.00	4,707,288.00	1,746,252.00	1,138,860.00	7,592,400.00
	Sub Total							111,365,755.41	40,375,761.03	26,777,914.67	178,519,431.10
<b>PART F - BRIDGE CONSTRUCTION</b>											
400(4)	Precast Concrete Piles (0.45m*0.45m), Furnished and Driven	m	3,200.00	52	28	20	0.00	0.00	0.00	0.00	0.00
400(15)	Test Piles (0.45m*0.45m)	m	371.00	52	35	13	0.00	0.00	0.00	0.00	0.00
400(16)a	Cast-in-Place Concrete Bored Piles, φ1000mm	m	23,800.00	38	45	17	2,298.00	20,783,112.00	24,611,580.00	9,297,708.00	54,692,400.00
400(16)b	Cast-in-Place Concrete Bored Piles, φ1200mm	m	32,500.00	38	45	17	2,779.00	34,320,650.00	40,642,875.00	15,353,975.00	90,317,500.00
400(19)	Piles Shoes for 0.45m*0.45m Piles	ea	1,750.00	55	30	15	0.00	0.00	0.00	0.00	0.00
401	Concrete Railings	m	2,240.00	38	49	13	2,626.00	2,235,251.20	2,882,297.60	764,691.20	5,882,240.00
404(1)	Reinforcing Steel, Grade 40 (Fy=275Mpa)	kg	39.00	50	37	13	0.00	0.00	0.00	0.00	0.00
404(2)	Reinforcing Steel, Grade 60 (Fy=415Mpa)	kg	40.00	50	37	13	2,556,952.50	51,139,050.00	37,842,897.00	13,296,153.00	102,278,100.00
405(1)	Structural Concrete Class "A1" for Substructure (fc=24Mpa)	m3	3,200.00	34	50	16	7,636.20	8,308,185.60	12,217,920.00	3,909,734.40	24,435,840.00
405(2)	Structural Concrete Class "A2" for Superstructure (fc=24Mpa)	m3	5,040.00	34	50	16	8,805.00	15,088,248.00	22,188,600.00	7,100,352.00	44,377,200.00
405(3)	Structural Concrete Class "A3" for Others (fc=21Mpa)	m3	4,130.00	34	50	16	0.00	0.00	0.00	0.00	0.00
405(6)	Structural Concrete "Lean Concrete" (fc=17 Mpa)	m3	2,480.00	43	37	20	698.00	744,347.20	640,484.80	346,208.00	1,731,040.00
406(1)a	Prestressed Concrete Girder, AASHTO Type IV-B, L=20m	ea	308,910.00	22	62	16	35.00	2,378,607.00	6,703,347.00	1,729,896.00	10,811,850.00
406(1)b	Prestressed Concrete Girder, AASHTO Type □-B, L=22m	ea	331,400.00	22	62	16	10.00	729,080.00	2,054,680.00	530,240.00	3,314,000.00
406(1)c	Prestressed Concrete Girder, AASHTO Type □-B, L=25m	ea	391,250.00	25	59	16	20.00	1,956,250.00	4,616,750.00	1,252,000.00	7,825,000.00
406(1)d	Prestressed Concrete Girder, AASHTO Type IV-B, L=28m	ea	405,480.00	22	62	16	0.00	0.00	0.00	0.00	0.00
406(1)e	Prestressed Concrete Girder, AASHTO Type □-B, L=27m	ea	419,645.00	22	62	16	5.00	481,609.50	1,300,899.50	335,716.00	2,098,225.00
406(1)f	Prestressed Concrete Girder, AASHTO Type □-B, L=28m	ea	441,755.00	20	65	15	5.00	441,755.00	1,435,703.75	331,316.25	2,208,775.00
406(1)g	Prestressed Concrete Girder, AASHTO Type □, L=30m	ea	505,185.00	20	65	15	95.00	9,598,515.00	31,195,173.75	7,198,886.25	47,992,575.00
406(1)h	Prestressed Concrete Girder, AASHTO Type V, L=31m	ea	520,815.00	20	65	15	0.00	0.00	0.00	0.00	0.00
406(1)i	Prestressed Concrete Girder, AASHTO Type V, L=35m	ea	647,400.00	17	69	14	25.00	2,751,450.00	11,167,650.00	2,265,900.00	16,185,000.00
406(1)j	Prestressed Concrete Girder, AASHTO Type □, L=36m	ea	672,500.00	19	67	14	45.00	5,749,875.00	20,275,875.00	4,236,750.00	30,282,500.00
406(1)k	Prestressed Concrete Girder, AASHTO Type □, L=40m	ea	815,870.00	17	69	14	15.00	2,080,468.50	8,444,254.50	1,713,327.00	12,238,050.00
407(1)a	Elastomeric Bearing Pad, 400x350x60 (Duro 60)	ea	18,100.00	55	30	15	40.00	398,200.00	217,200.00	108,600.00	724,000.00
407(1)b	Elastomeric Bearing Pad, 500x350x60 (Duro 60)	ea	21,100.00	55	30	15	140.00	1,624,700.00	886,200.00	443,100.00	2,954,000.00
407(2)	Expansion Joint, 50mm Gap	m	46,300.00	55	30	15	360.00	9,167,400.00	5,000,400.00	2,500,200.00	16,668,000.00
407(4)	Metal Drain (φ150mm G.I. Drain Pipe)	m	985.00	55	30	15	358.00	193,946.50	105,789.00	52,894.50	352,630.00
	Sub Total							170,150,700.50	234,430,576.90	72,767,647.60	477,348,925.00
<b>PART G - DRAINAGE AND SLOPE PROTECTION STRUCTURES</b>											
500(1)b	Reinforced Concrete Pipe Culvert, 910mmφ (Extra. Str.)	m	6,600.00	57	28	15	496.00	1,865,952.00	916,808.00	491,040.00	3,273,800.00
500(1)c	Reinforced Concrete Pipe Culvert, 1070mmφ (Extra. Str.)	m	10,000.00	57	28	15	405.00	2,308,500.00	1,117,800.00	623,700.00	4,050,000.00
500(1)d	Reinforced Concrete Pipe Culvert, 1220mmφ (Extra. Str.)	m	10,800.00	57	28	15	793.00	4,791,306.00	2,353,624.00	1,260,870.00	8,405,800.00
500(1)e	Reinforced Concrete Pipe Culvert, 1520mmφ (Extra. Str.)	m	18,700.00	57	28	15	220.00	2,344,980.00	1,151,920.00	617,100.00	4,114,000.00
500(3)a1	Reinforced Concrete Box Culvert 1-1.5m x 1.5m	m	16,200.00	42	43	15	0.00	0.00	0.00	0.00	0.00
500(3)a2	Reinforced Concrete Box Culvert 2-1.5m x 1.5m	m	25,800.00	42	43	15	57.00	612,864.00	627,456.00	218,880.00	1,459,200.00
500(3)a3	Reinforced Concrete Box Culvert 3-1.5m x 1.5m	m	35,800.00	42	43	15	48.00	721,728.00	738,912.00	257,760.00	1,718,400.00
500(3)b1	Reinforced Concrete Box Culvert 1-2.4m x 2.4m	m	27,300.00	42	43	15	145.00	1,662,570.00	1,702,155.00	593,775.00	3,958,500.00
500(3)b2	Reinforced Concrete Box Culvert 2-2.4m x 2.4m	m	46,100.00	42	43	15	245.00	4,743,690.00	4,856,635.00	1,694,175.00	11,294,500.00
500(3)b3	Reinforced Concrete Box Culvert 3-2.4m x 2.4m	m	65,400.00	42	43	15	47.00	1,290,996.00	1,321,734.00	461,070.00	3,073,800.00
500(3)c1	Reinforced Concrete Box Culvert 1-3.0m x 3.0m	m	37,300.00	42	43	15	20.00	314,066.00	317,796.00	114,138.00	746,000.00
500(3)c2	Reinforced Concrete Box Culvert 2-3.0m x 3.0m	m	65,300.00	42	43	15	149.00	4,086,474.00	4,183,771.00	1,459,455.00	9,729,700.00
500(3)c3	Reinforced Concrete Box Culvert 3-3.0m x 3.0m	m	92,000.00	42	43	15	55.00	2,125,200.00	2,175,800.00	759,000.00	5,060,000.00
502(2)b1	Reinforced Concrete Headwall, 1-910mmφ RCPC	ea.	18,800.00	28	57	15	53.00	278,992.00	567,948.00	149,460.00	996,400.00
502(2)b2	Reinforced Concrete Headwall, 2-910mmφ RCPC	ea.	25,200.00	28	57	15	2.00	14,112.00	28,728.00	7,560.00	50,400.00
502(2)c1	Reinforced Concrete Headwall, 1-1070mmφ RCPC	ea.	21,500.00	30	55	15	29.00	187,050.00	342,925.00	93,525.00	623,500.00
502(2)c2	Reinforced Concrete Headwall, 2-1070mmφ RCPC	ea.	31,300.00	30	55	15	6.00	56,340.00	103,290.00	28,170.00	187,800.00
502(2)d1	Reinforced Concrete Headwall, 1-1220mmφ RCPC	ea.	26,700.00	31	54	15	6.00	49,662.00	86,508.00	24,030.00	160,200.00
502(2)d2	Reinforced Concrete Headwall, 2-1220mmφ RCPC	ea.	37,500.00	31	54	15	35.00	406,875.00	708,750.00	196,875.00	1,312,500.00
502(2)f1	Reinforced Concrete Headwall, 1-1520mmφ RCPC	ea.	36,200.00	33	52	15	0.00	0.00	0.00	0.00	0.00
502(2)f2	Reinforced Concrete Headwall, 2-1520mmφ RCPC	ea.	51,700.00	33	52	15	10.00	170,610.00	268,840.00	77,550.00	517,000.00
502(10)a1	Reinforced Concrete Headwall, Box Culvert 1-1.5m x 1.5m	ea.	49,900.00	44	41	15	0.00	0.00	0.00	0.00	0.00
502(10)a2	Reinforced Concrete Headwall, Box Culvert 2-1.5m x 1.5m	ea.	59,800.00	45	40	15	6.00	161,460.00	143,520.00	53,820.00	358,800.00
502(10)a3	Reinforced Concrete Headwall, Box Culvert 3-1.5m x 1.5m	ea.	70,700.00	45	40	15	6.00	190,890.00	169,680.00	63,630.00	424,200.00
502(10)b1	Reinforced Concrete Headwall, Box Culvert 1-2.4m x 2.4m	ea.	102,000.00	44	41	15	12.00	538,560.00	501,840.00	183	

**Appendix 13.8-1 Detailed Construction Cost Estimate of Bacolod Sugar Road PK-1(Sta.0+000~Sta.10+200) : Urban Section (2/3)**

Item No.	Description	Unit	Unit Cost	Component(%)			Quantity	Cost			
				Foreign	Local	Tax		Foreign	Local	Tax	Total
<b>PART C - EARTHWORK</b>											
100(1)	Clearing and Grubbing	ha.	55,100.00	57	27	16	31.36	983,195.58	464,814.78	279,925.63	1,727,936.00
102(1)	Unsuitable Excavation	m3	179.00	59	17	24	0.0	0.00	0.00	0.00	0.00
102(2)a	Surplus Common Excavation	m3	179.00	60	24	15	86,345.0	9,319,820.27	3,771,204.22	2,364,730.52	15,455,755.00
103(2)a	Bridge Excavation, Common (AWL)	m3	202.00	53	31	16	7,165.0	764,190.24	454,461.62	228,678.14	1,447,330.00
103(2)b	Bridge Excavation, Common (BWL)	m3	763.00	51	34	15	2,957.0	1,150,657.41	758,080.18	347,453.41	2,256,191.00
104(1)a	Embankment from Excavation	m3	196.00	54	20	26	175,570.5	18,582,382.57	6,882,363.91	8,947,073.09	34,411,819.57
104(1)b	Embankment from Borrow	m3	390.00	56	30	15	89,743.9	19,600,057.28	10,325,030.17	5,075,014.83	35,000,102.28
104(1)c	Selected Borrow for Backfilling	m3	573.00	54	20	26	3,981.0	1,231,801.02	456,222.60	593,089.38	2,281,113.00
105(1)	Subgrade Preparation (Common Material)	m2	17.00	57	27	16	81,883.2	799,015.95	368,883.67	224,114.23	1,392,013.86
	Plastic-board drain method (@2.5m * 2.5m triangle, Depth 20.0m)	m2	151.00	65	20	15	0.0	0.00	0.00	0.00	0.00
	Sub Total							52,431,120.32	23,481,061.16	18,060,079.23	93,972,260.70
<b>PART D - SUBBASE AND BASE COURSE</b>											
200	Aggregate Subbase Course	m3	550.00	54	32	14	45,879.0	13,575,604.98	8,024,242.35	3,633,619.18	25,233,466.50
201	Aggregate Base Course	m3	650.00	53	33	14	0.0	0.00	0.00	0.00	0.00
202	Crushed Aggregate Base Course (AC)	m3	750.00	54	32	14	0.0	0.00	0.00	0.00	0.00
	Sub Total							13,575,604.98	8,024,242.35	3,633,619.18	25,233,466.50
<b>PART E - SURFACE COURSE</b>											
301(1)	Bituminous Prime Coat (MC-70 Cut-Back Asphalt)	t	24,500.00	65	17	18	0.0	0.00	0.00	0.00	0.00
302(2)	Bituminous Tack Coat (Emulsified Asphalt Grade SS-1)	t	24,500.00	65	18	18	0.0	0.00	0.00	0.00	0.00
310	Bituminous Concrete Surface Course, Hot Laid	t	3,430.00	64	18	18	0.0	0.00	0.00	0.00	0.00
311(1)a	PCC Pavement(Plain) (t=0.10m)	m2	420.00	62	23	15	0.0	0.00	0.00	0.00	0.00
311(1)d	PCC Pavement(Plain) (t=0.25m)	m2	763.00	62	23	15	15,622.4	7,437,988.30	2,693,886.79	1,787,977.96	11,919,853.05
311(1)e	PCC Pavement(Plain) (t=0.28m)	m2	763.00	62	23	15	51,583.6	24,559,551.92	8,894,965.92	5,903,738.44	39,358,256.28
311(2)	PCC Pavement(Reinforced) for Approach Slab, t=300mm	m2	4,440.00	62	23	15	720.0	1,982,016.00	735,264.00	479,520.00	3,196,800.00
	Sub Total							33,979,556.22	12,324,116.71	8,171,236.40	54,474,909.33
<b>PART F - BRIDGE CONSTRUCTION</b>											
400(4)	Precast Concrete Piles (0.45m×0.45m), Furnished and Driven	m	3,200.00	52	28	20	0.0	0.00	0.00	0.00	0.00
400(15)	Test Piles (0.45m×0.45m)	m	371.00	52	35	13	0.0	0.00	0.00	0.00	0.00
400(16)a	Cast-in-Place Concrete Bored Piles, φ1000mm	m	23,800.00	38	45	17	976.0	8,826,944.00	10,452,960.00	3,948,896.00	23,228,800.00
400(16)b	Cast-in-Place Concrete Bored Piles, φ1200mm	m	32,500.00	38	45	17	594.0	7,335,900.00	8,687,250.00	3,281,850.00	19,305,000.00
400(19)	Piles Shoes for 0.45m×0.45m Piles	ea	1,750.00	55	30	15	0.0	0.00	0.00	0.00	0.00
401	Concrete Railings	m	2,240.00	38	49	13	714.0	607,756.80	783,686.40	207,916.80	1,599,360.00
404(1)	Reinforcing Steel, Grade 40 (Fy=275Mpa)	kg	39.00	50	37	13	0.0	0.00	0.00	0.00	0.00
404(2)	Reinforcing Steel, Grade 60 (Fy=415Mpa)	kg	40.00	50	37	13	688,585.5	13,771,710.00	10,191,065.40	3,580,644.60	27,543,420.00
405(1)	Structural Concrete Class"A1" for Substructure (fc=24Mpa)	m3	3,200.00	34	50	16	2,287.2	2,488,473.60	3,659,520.00	1,171,046.40	7,319,040.00
405(2)	Structural Concrete Class"A2" for Superstructure (fc=24Mpa)	m3	5,040.00	34	50	16	2,272.0	3,893,299.20	5,725,440.00	1,832,140.80	11,450,880.00
405(3)	Structural Concrete Class"A3" for Others (fc=21Mpa)	m3	4,130.00	34	50	16	0.0	0.00	0.00	0.00	0.00
405(6)	Structural Concrete "Lean Concrete" (fc=17 Mpa)	m3	2,480.00	43	37	20	230.0	245,272.00	211,048.00	114,080.00	570,400.00
406(1)a	Prestressed Concrete Girder, AASHTO Type IV-B, L=20m	ea	308,910.00	22	62	16	15.0	1,019,403.00	2,872,863.00	741,384.00	4,633,650.00
406(1)b	Prestressed Concrete Girder, AASHTO Type □-B, L=22m	ea	331,400.00	22	62	16	10.0	729,080.00	2,054,680.00	530,240.00	3,314,000.00
406(1)c	Prestressed Concrete Girder, AASHTO Type □-B, L=25m	ea	391,250.00	25	59	16	10.0	978,125.00	2,308,375.00	626,000.00	3,912,500.00
406(1)d	Prestressed Concrete Girder, AASHTO Type IV-B, L=26m	ea	405,480.00	22	62	16	0.0	0.00	0.00	0.00	0.00
406(1)e	Prestressed Concrete Girder, AASHTO Type □-B, L=27m	ea	419,645.00	22	62	16	0.0	0.00	0.00	0.00	0.00
406(1)f	Prestressed Concrete Girder, AASHTO Type □-B, L=28m	ea	441,755.00	20	65	15	5.0	441,755.00	1,435,703.75	331,316.25	2,208,775.00
406(1)g	Prestressed Concrete Girder, AASHTO Type □, L=30m	ea	505,185.00	20	65	15	50.0	5,051,850.00	16,418,512.50	3,788,887.50	25,259,250.00
406(1)h	Prestressed Concrete Girder, AASHTO Type V, L=31m	ea	520,815.00	20	65	15	0.0	0.00	0.00	0.00	0.00
406(1)i	Prestressed Concrete Girder, AASHTO Type V, L=35m	ea	647,400.00	17	69	14	15.0	1,650,870.00	6,700,590.00	1,359,540.00	9,711,000.00
406(1)j	Prestressed Concrete Girder, AASHTO Type □, L=36m	ea	672,500.00	19	67	14	0.0	0.00	0.00	0.00	0.00
406(1)k	Prestressed Concrete Girder, AASHTO Type □, L=40m	ea	815,870.00	17	69	14	5.0	693,489.50	2,814,751.50	571,109.00	4,079,350.00
407(1)a	Elastomeric Bearing Pad, 400×350×80 (Duro 60)	ea	18,100.00	55	30	15	10.0	99,550.00	54,300.00	27,150.00	181,000.00
407(1)b	Elastomeric Bearing Pad, 500×350×80 (Duro 60)	ea	21,100.00	55	30	15	40.0	464,200.00	253,200.00	126,600.00	844,000.00
407(2)	Expansion Joint, 50mm Gap	m	46,300.00	55	30	15	144.0	3,666,960.00	2,000,160.00	1,000,080.00	6,667,200.00
407(4)	Metal Drain (φ150mm G.I. Drain Pipe)	m	985.00	55	30	15	104.0	56,342.00	30,732.00	15,366.00	102,440.00
	Sub Total							52,020,980.10	76,654,837.55	23,254,247.35	151,930,065.00
<b>PART G - DRAINAGE AND SLOPE PROTECTION STRUCTURES</b>											
500(1)b	Reinforced Concrete Pipe Culvert, 910mmφ (Extra. Str.)	m	6,600.00	57	28	15	68.0	255,816.00	125,664.00	67,320.00	448,800.00
500(1)c	Reinforced Concrete Pipe Culvert, 1070mmφ (Extra. Str.)	m	10,000.00	57	28	15	184.0	1,048,800.00	507,840.00	283,360.00	1,840,000.00
500(1)d	Reinforced Concrete Pipe Culvert, 1220mmφ (Extra. Str.)	m	10,600.00	57	28	15	203.0	1,226,526.00	602,504.00	322,770.00	2,151,800.00
500(1)e	Reinforced Concrete Pipe Culvert, 1520mmφ (Extra. Str.)	m	18,700.00	57	28	15	22.0	234,498.00	115,192.00	61,710.00	411,400.00
500(3)a1	Reinforced Concrete Box Culvert 1-1.5m x 1.5m	m	16,200.00	42	43	15	0.0	0.00	0.00	0.00	0.00
500(3)a2	Reinforced Concrete Box Culvert 2-1.5m x 1.5m	m	25,600.00	42	43	15	0.0	0.00	0.00	0.00	0.00
500(3)a3	Reinforced Concrete Box Culvert 3-1.5m x 1.5m	m	35,800.00	42	43	15	16.0	240,576.00	246,304.00	85,920.00	572,800.00
500(3)b1	Reinforced Concrete Box Culvert 1-2.4m x 2.4m	m	27,300.00	42	43	15	48.0	550,368.00	563,472.00	196,560.00	1,310,400.00
500(3)b2	Reinforced Concrete Box Culvert 2-2.4m x 2.4m	m	46,100.00	42	43	15	44.0	851,928.00	872,212.00	304,260.00	2,028,400.00
500(3)b3	Reinforced Concrete Box Culvert 3-2.4m x 2.4m	m	65,400.00	42	43	15	23.0	631,764.00	646,806.00	225,630.00	1,504,200.00
500(3)c1	Reinforced Concrete Box Culvert 1-3.0m x 3.0m	m	37,300.00	42	43	15	0.0	0.00	0.00	0.00	0.00
500(3)c2	Reinforced Concrete Box Culvert 2-3.0m x 3.0m	m	65,300.00	42	43	15	50.0	1,371,300.00	1,403,950.00	489,750.00	3,265,000.00
500(3)c3	Reinforced Concrete Box Culvert 3-3.0m x 3.0m	m	92,000.00	42	43	15	0.0	0.00	0.00	0.00	0.00
502(2)b1	Reinforced Concrete Headwall, 1-910mmφ RCPC	ea	18,800.00	28	57	15	8.0	42,112.00	85,728.00	22,560.00	150,400.00
502(2)b2	Reinforced Concrete Headwall, 2-910mmφ RCPC	ea	25,200.00	28	57	15	0.0	0.00	0.00	0.00	0.00
502(2)c1	Reinforced Concrete Headwall, 1-1070mmφ RCPC	ea	21,500.00	30	55	15	12.0	77,400.00	141,900.00	38,700.00	258,000.00
502(2)c2	Reinforced Concrete Headwall, 2-1070mmφ RCPC	ea	31,300.00	30	55	15	4.0	37,580.00	68,860.00	18,780.00	125,200.00
502(2)d1	Reinforced Concrete Headwall, 1-1220mmφ RCPC	ea	26,700.00	31	54	15	0.0	0.00	0.00	0.00	0.00
502(2)d2	Reinforced Concrete Headwall, 2-1220mmφ RCPC	ea	37,500.00	31	54	15	10.0	116,250.00	202,500.00	56,250.00	375,000.00
502(2)f1	Reinforced Concrete Headwall, 1-1520mmφ RCPC	ea	36,200.00	33	52	15	0.0	0.00	0.00	0.00	0.00
502(2)f2	Reinforced Concrete Headwall, 2-1520mmφ RCPC	ea	51,700.00	33	52	15	2.0	34,122.00	53,768.00	15,510.00	103,400.00
502(10)a1	Reinforced Concrete Headwall, Box Culvert 1-1.5m x 1.5m	ea	49,900.00	44	41	15	0.0	0.00	0.00	0.00	0.00
502(10)a2	Reinforced Concrete Headwall, Box Culvert 2-1.5m x 1.5m	ea	59,800.00	45	40	15	0.0	0.00	0.00	0.00	0.00
502(10)a3	Reinforced Concrete Headwall, Box Culvert 3-1.5m x 1.5m	ea	70,700.00	45	40	15	2.0	63,630.00	56,560.00	21,210.00	141,400.00
502(10)b1	Reinforced Concrete Headwall, Box Culvert 1-2.4m x 2.4m	ea	102,000.00	44	41	15	4.0	179,520.00	167,280.00	61,200.00	408,000.00
502(10)b2	Reinforced Concrete Headwall, Box Culvert 2-2.4m x 2.4m	ea	122,000.00	45	40	15	4.0	219,600.00	195,200.00	73,200.00	488,000.00
502(10)b3	Reinforced Concrete Headwall, Box Culvert 3-2.4m x 2.4m	ea	141,000.00	45	40	15	2.0	126,900.00	112,800.00	42,300.00	282,000.00
502(10)c1	Reinforced Concrete Headwall, Box Culvert 1-3.0m x 3.0m										

**Appendix 13.8-1 Detailed Construction Cost Estimate of Bacolod Sugar Road PK-2 (Sta.10+200~Sta.34+003) : Rural Section ( 3/3 )**

Item No.	Description	Unit	Unit Cost	Component(%)			Quantity	Cost			
				Foreign	Local	Tax		Foreign	Local	Tax	Total
<b>PART C - EARTHWORK</b>											
100(1)	Clearing and Grubbing	ha.	55,100.00	57	27	16	47.04	1,474,793.38	697,222.18	419,888.45	2,591,904.00
102(1)	Unsuitable Excavation	m3	179.00	59	17	24	0.0	0.00	0.00	0.00	0.00
102(2)a	Surplus Common Excavation	m3	179.00	60	24	15	129,517.5	13,979,730.40	5,656,806.33	3,547,095.77	23,183,632.50
103(2)a	Bridge Excavation, Common (AWL)	m3	202.00	53	31	16	11,013.0	1,174,602.53	688,532.56	351,490.91	2,224,626.00
103(2)b	Bridge Excavation, Common (BWL)	m3	763.00	51	34	15	8,895.0	3,461,311.35	2,280,393.36	1,045,180.29	6,786,885.00
104(1)a	Embankment from Excavation	m3	196.00	54	20	26	263,355.8	27,873,573.85	10,323,545.87	13,420,609.63	51,617,729.35
104(1)b	Embankment from Borrow	m3	390.00	56	30	15	134,615.8	29,400,085.92	15,487,545.26	7,612,522.25	52,500,153.42
104(1)c	Selected Borrow for Backfilling	m3	573.00	54	20	26	3,895.0	1,205,190.90	446,367.00	580,277.10	2,231,835.00
105(1)	Subgrade Preparation (Common Material)	m2	17.00	57	27	16	122,824.8	1,198,523.93	553,325.51	336,171.35	2,088,020.78
	Plastic-board drain method (@2.5m * 2.5m triangle, Depth 20.0m)	m2	151.00	65	20	15	0.0	0.00	0.00	0.00	0.00
	Sub Total							79,767,812.25	36,143,738.07	27,313,235.74	143,224,786.06
<b>PART D - SUBBASE AND BASE COURSE</b>											
200	Aggregate Subbase Course	m3	550.00	54	33	14	107,051.1	31,676,411.61	18,723,232.14	8,478,444.74	58,878,088.50
201	Aggregate Base Course	m3	650.00	53	32	14	0.0	0.00	0.00	0.00	0.00
202	Crushed Aggregate Base Course (AC)	m3	750.00	54	32	14	0.0	0.00	0.00	0.00	0.00
	Sub Total							31,676,411.61	18,723,232.14	8,478,444.74	58,878,088.50
<b>PART E - SURFACE COURSE</b>											
301(1)	Bituminous Prime Coat (MC-70 Cut-Back Asphalt)	t	24,500.00	65	17	18	0.0	0.00	0.00	0.00	0.00
302(2)	Bituminous Tack Coat (Emulsified Asphalt Grade SS-1)	t	24,500.00	65	18	18	0.0	0.00	0.00	0.00	0.00
310	Bituminous Concrete Surface Course, Hot Laid	t	3,430.00	64	18	18	0.0	0.00	0.00	0.00	0.00
311(1)a	PCC Pavement(Plain) (t=0.10m)	m2	420.00	62	23	15	0.0	0.00	0.00	0.00	0.00
311(1)d	PCC Pavement(Plain) (t=0.25m)	m2	763.00	62	23	15	36,452.2	17,355,306.04	6,285,735.84	4,171,948.57	27,812,990.45
311(1)e	PCC Pavement(Plain) (t=0.28m)	m2	763.00	62	23	15	120,361.6	57,305,621.14	20,754,920.48	13,775,389.70	91,835,931.32
311(2)	PCC Pavement(Reinforced) for Approach Slab, t=300mm	m2	4,440.00	62	23	15	990.0	2,725,272.00	1,010,988.00	659,340.00	4,395,600.00
	Sub Total							77,386,199.18	28,051,644.32	18,606,678.27	124,044,521.77
<b>PART F - BRIDGE CONSTRUCTION</b>											
400(4)	Precast Concrete Piles (0.45m*0.45m), Furnished and Driven	m	3,200.00	52	28	20	0.0	0.00	0.00	0.00	0.00
400(15)	Test Piles (0.45m*0.45m)	m	371.00	52	35	13	0.0	0.00	0.00	0.00	0.00
400(16)a	Cast-in-Place Concrete Bored Piles, φ1000mm	m	23,800.00	38	45	17	1,322.0	11,958,168.00	14,158,620.00	5,348,812.00	31,463,800.00
400(16)b	Cast-in-Place Concrete Bored Piles, φ1200mm	m	32,500.00	38	45	17	2,185.0	26,984,750.00	31,955,625.00	12,072,125.00	71,012,500.00
400(19)	Piles Shoes for 0.45m*0.45m Piles	ea	1,750.00	55	30	15	0.0	0.00	0.00	0.00	0.00
401	Concrete Railings	m	2,240.00	38	49	13	1,912.0	1,627,494.40	2,098,611.20	556,774.40	4,282,880.00
404(1)	Reinforcing Steel, Grade 40 (Fy=275Mpa)	kg	39.00	50	37	13	0.0	0.00	0.00	0.00	0.00
404(2)	Reinforcing Steel, Grade 60 (Fy=415Mpa)	kg	40.00	50	37	13	1,868,367.0	37,367,340.00	27,651,831.60	9,715,508.40	74,734,680.00
405(1)	Structural Concrete Class "A1" for Substructure (fc=24Mpa)	m3	3,200.00	34	50	16	5,349.0	5,819,712.00	8,558,400.00	2,738,688.00	17,116,800.00
405(2)	Structural Concrete Class "A2" for Superstructure (fc=24Mpa)	m3	5,040.00	34	50	16	6,533.0	11,194,948.80	16,463,160.00	5,268,211.20	32,926,320.00
405(3)	Structural Concrete Class "A3" for Others (fc=21Mpa)	m3	4,130.00	34	50	16	0.0	0.00	0.00	0.00	0.00
405(6)	Structural Concrete "Lean Concrete" (fc=17 Mpa)	m3	2,480.00	43	37	20	468.0	499,075.20	429,436.80	232,128.00	1,160,640.00
406(1)a	Prestressed Concrete Girder, AASHTO Type IV-B, L=20m	ea	308,910.00	22	62	16	20.0	1,359,204.00	3,830,484.00	988,512.00	6,178,200.00
406(1)b	Prestressed Concrete Girder, AASHTO Type □-B, L=22m	ea	331,400.00	22	62	16	0.0	0.00	0.00	0.00	0.00
406(1)c	Prestressed Concrete Girder, AASHTO Type □-B, L=25m	ea	391,250.00	25	59	16	10.0	978,125.00	2,308,375.00	626,000.00	3,912,500.00
406(1)d	Prestressed Concrete Girder, AASHTO Type IV-B, L=26m	ea	405,480.00	22	62	16	0.0	0.00	0.00	0.00	0.00
406(1)e	Prestressed Concrete Girder, AASHTO Type □-B, L=27m	ea	419,645.00	22	62	16	5.0	461,609.50	1,300,899.50	335,716.00	2,098,225.00
406(1)f	Prestressed Concrete Girder, AASHTO Type □-B, L=28m	ea	441,755.00	20	65	15	0.0	0.00	0.00	0.00	0.00
406(1)g	Prestressed Concrete Girder, AASHTO Type □, L=30m	ea	505,185.00	20	65	15	45.0	4,546,665.00	14,776,661.25	3,409,998.75	22,733,325.00
406(1)h	Prestressed Concrete Girder, AASHTO Type V, L=31m	ea	520,815.00	20	65	15	0.0	0.00	0.00	0.00	0.00
406(1)i	Prestressed Concrete Girder, AASHTO Type V, L=35m	ea	647,400.00	17	69	14	10.0	1,100,580.00	4,467,060.00	906,360.00	6,474,000.00
406(1)j	Prestressed Concrete Girder, AASHTO Type □, L=36m	ea	672,500.00	19	67	14	45.0	5,749,875.00	20,275,875.00	4,236,750.00	30,262,500.00
406(1)k	Prestressed Concrete Girder, AASHTO Type □, L=40m	ea	815,870.00	17	69	14	10.0	1,386,979.00	5,629,503.00	1,142,218.00	8,158,700.00
407(1)a	Elastomeric Bearing Pad, 400x350x60 (Duro 60)	ea	18,100.00	55	30	15	30.0	298,650.00	162,900.00	81,450.00	543,000.00
407(1)b	Elastomeric Bearing Pad, 500x350x60 (Duro 60)	ea	21,100.00	55	30	15	100.0	1,160,500.00	633,000.00	316,500.00	2,110,000.00
407(2)	Expansion Joint, 50mm Gap	m	46,300.00	55	30	15	216.0	5,500,440.00	3,000,240.00	1,500,120.00	10,000,800.00
407(4)	Metal Drain (φ150mm G.I. Drain Pipe)	m	985.00	55	30	15	254.0	137,604.50	75,057.00	37,528.50	250,190.00
	Sub Total							118,129,720.40	157,775,739.35	49,513,400.25	325,418,860.00
<b>PART G - DRAINAGE AND SLOPE PROTECTION STRUCTURES</b>											
500(1)b	Reinforced Concrete Pipe Culvert, 910mmφ (Extra. Str.)	m	6,600.00	57	28	15	428.0	1,610,136.00	790,944.00	423,720.00	2,824,800.00
500(1)c	Reinforced Concrete Pipe Culvert, 1070mmφ (Extra. Str.)	m	10,000.00	57	28	15	221.0	1,259,700.00	609,960.00	340,340.00	2,210,000.00
500(1)d	Reinforced Concrete Pipe Culvert, 1220mmφ (Extra. Str.)	m	10,600.00	57	28	15	590.0	3,564,780.00	1,751,120.00	938,100.00	6,254,000.00
500(1)e	Reinforced Concrete Pipe Culvert, 1520mmφ (Extra. Str.)	m	18,700.00	57	28	15	198.0	2,110,482.00	1,036,728.00	555,390.00	3,702,600.00
500(3)a1	Reinforced Concrete Box Culvert 1-1.5m x 1.5m	m	16,200.00	42	43	15	0.0	0.00	0.00	0.00	0.00
500(3)a2	Reinforced Concrete Box Culvert 2-1.5m x 1.5m	m	25,600.00	42	43	15	57.0	612,864.00	627,456.00	218,880.00	1,459,200.00
500(3)a3	Reinforced Concrete Box Culvert 3-1.5m x 1.5m	m	35,800.00	42	43	15	32.0	481,152.00	492,608.00	171,840.00	1,145,600.00
500(3)b1	Reinforced Concrete Box Culvert 1-2.4m x 2.4m	m	27,300.00	42	43	15	97.0	1,112,202.00	1,138,683.00	397,215.00	2,648,100.00
500(3)b2	Reinforced Concrete Box Culvert 2-2.4m x 2.4m	m	46,100.00	42	43	15	201.0	3,891,762.00	3,984,423.00	1,389,915.00	9,266,100.00
500(3)b3	Reinforced Concrete Box Culvert 3-2.4m x 2.4m	m	65,400.00	42	43	15	24.0	659,232.00	674,928.00	235,440.00	1,569,600.00
500(3)c1	Reinforced Concrete Box Culvert 1-3.0m x 3.0m	m	37,300.00	42	43	15	20.0	314,066.00	317,796.00	114,138.00	746,000.00
500(3)c2	Reinforced Concrete Box Culvert 2-3.0m x 3.0m	m	65,300.00	42	43	15	99.0	2,715,174.00	2,779,821.00	969,705.00	6,464,700.00
500(3)c3	Reinforced Concrete Box Culvert 3-3.0m x 3.0m	m	92,000.00	42	43	15	55.0	2,125,200.00	2,175,800.00	759,000.00	5,060,000.00
502(2)b1	Reinforced Concrete Headwall, 1-910mmφ RCPC	ea.	18,800.00	28	57	15	45.0	236,880.00	482,220.00	126,900.00	846,000.00
502(2)b2	Reinforced Concrete Headwall, 2-910mmφ RCPC	ea.	25,200.00	28	57	15	2.0	14,112.00	28,728.00	7,560.00	50,400.00
502(2)c1	Reinforced Concrete Headwall, 1-1070mmφ RCPC	ea.	21,500.00	30	55	15	17.0	109,650.00	201,025.00	54,825.00	365,500.00
502(2)c2	Reinforced Concrete Headwall, 2-1070mmφ RCPC	ea.	31,300.00	30	55	15	2.0	18,780.00	34,430.00	9,390.00	62,600.00
502(2)d1	Reinforced Concrete Headwall, 1-1220mmφ RCPC	ea.	26,700.00	31	54	15	6.0	49,662.00	86,508.00	24,030.00	160,200.00
502(2)d2	Reinforced Concrete Headwall, 2-1220mmφ RCPC	ea.	37,500.00	31	54	15	25.0	290,625.00	506,250.00	140,625.00	937,500.00
502(2)f1	Reinforced Concrete Headwall, 1-1520mmφ RCPC	ea.	36,200.00	33	52	15	0.0	0.00	0.00	0.00	0.00
502(2)f2	Reinforced Concrete Headwall, 2-1520mmφ RCPC	ea.	51,700.00	33	52	15	8.0	136,488.00	215,072.00	62,040.00	413,600.00
502(10)a1	Reinforced Concrete Headwall, Box Culvert 1-1.5m x 1.5m	ea.	49,900.00	44	41	15	0.0	0.00	0.00	0.00	0.00
502(10)a2	Reinforced Concrete Headwall, Box Culvert 2-1.5m x 1.5m	ea.	59,800.00	45	40	15	6.0	161,460.00	143,520.00	53,820.00	358,800.00
502(10)a3	Reinforced Concrete Headwall, Box Culvert 3-1.5m x 1.5m	ea.	70,700.00	45	40	15	4.0	127,260.00	113,120.00	42,420.00	282,800.00
502(10)b1	Reinforced Concrete Headwall, Box Culvert 1-2.4m x 2.4m	ea.	102,000.00	44	41	15	8.0	359,040.00	334,560.00	122,400.00	816,000.00
502(10)b2	Reinforced Concrete Headwall, Box Culvert 2-2.4m x 2.4m	ea.	122,000.00	45	40	15	18.0	988,200.00	878		

# **APPENDIX 13.8-2**

## **SUMMARY OF IMPACT AND COMPENSATION COST** (North Section Sugar Road)

## Appendix 13.8-2 Summary of Impacts and Compensation Cost

North Section Sugar Road

Description	No. of HHs	Unit	Rate/Unit	Quantity	Amount (Php)	Remarks
<b>Compensation for Land and Other Assets</b>						
<b>1. Land</b>						
1) Residential-1	-	m <sup>2</sup>	3,500	34,980	122,290,000	Name of land owners to be identified by parcellary survey
2) Residential-2	-	m <sup>2</sup>	3,000	8,000	24,000,000	
3) Residential-3	-	m <sup>2</sup>	2,000	33,000	66,000,000	
4) Agricultural	-	m <sup>2</sup>	200	997,850	199,570,000	
<b>Subtotal</b>				<b>1,073,830</b>	<b>411,860,000</b>	
<b>2. Structures</b>						
1) Residential (Concrete)	1	m <sup>2</sup>	8,000	48.64	389,120	
2) Residential (Shanty)	9	m <sup>2</sup>	1,140	455.46	519,224	
3) Worker's Quarter (Shanty)	3	m <sup>2</sup>	1,140	87.96	100,274	
4) Pig Pen (Concrete Mix)	1	m <sup>2</sup>	6,000	18.40	110,400	
<b>Subtotal</b>	<b>14</b>			<b>610.46</b>	<b>1,119,018</b>	
<b>3. Other Fixed Structures</b>						
1) Concrete Fence	-	m	200	48.75	9,750	
<b>4. Repair Cost</b>						
	-		-	-	-	None
<b>5. Electric Post Relocation</b>						
	-		-	-	-	None
<b>6. Perennials</b>						
Various types	9	Nos.	various	182	62,390	
<b>Subtotal</b>					<b>413,051,158</b>	
<b>Other Compensations</b>						
<b>1. Disturbance Allowance</b>						
1) Severely affected land owners	-	-	-	-	-	None
2) Agricultural lessees	-	-	-	-	-	None
3) Temporary land users	-	-	-	-	-	None
4) Severely affected structural owners	14	-	10,000	14	140,000	
<b>2. Subsistence Allowance</b>						
1) Income loss for shop owners	-		-	-	-	None
<b>2. Financial Assistance</b>						
1) Land users w/o title	14		15,000	14	210,000	
<b>3. Rehabilitation Assistance</b>						
1) Severely affected land owners	-	-	-	-	-	None
2) Agricultural lessees	-	-	-	-	-	None
3) Severely affected structural owners.	-	-	-	-	-	None
<b>4. Transportation Allowance</b>						
1) Relocating PAPs	14		3,000	14	42,000	
2) Shanty dwellers go back to province.	-		-	-	-	None
<b>5. Transitional allowance</b>						
1) Renters of affected structures	-	-	-	-	-	None
<b>Subtotal</b>					<b>392,000</b>	
<b>TOTAL</b>					<b>413,443,158</b>	
<b>RAP Implementation</b>					<b>5,362,900</b>	
<b>GRAND TOTAL</b>					<b>413,806,058</b>	