



Republic of the Philippines  
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

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# **Initial Environmental Examination (IEE)**

## **Rehabilitation / Improvement of Mindoro East Coast Road Project**

**(Bongabong-Roxas-Mansalay-  
Bulalacao-Magsaysay-San Jose  
Section)**

August 2006

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**Environmental and Social Services Office (ESSO)  
Department of Public Works and Highways**

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# **Executive Summary**

# Executive Summary

## A. Introduction

The Environmental Impact Assessment (EIA) of the proposed Rehabilitation/Improvement of Mindoro East Coast Road Project (Bongabong – Roxas – Mansalay - Bulalacao – Magsaysay - San Jose Section) is presented in the form of an Initial Environmental Examination (IEE) to secure an Environmental Compliance Certificate (ECC) in accordance with the requirement of the revised rules and regulations of the Environmental Impact Statement System (EISS) embodied in the Department of Environment and Natural Resources – Department Administrative Order (DENR-DAO) 96-37

Thus, this report covers the result of the said EIA that aims to confirm the environmental viability of implementing the proposed project.

## B. Project Description

The 125.66 kilometer Mindoro East Coast Road Project traverses the two provinces in the Island of Mindoro. It passes thru the municipalities of Bongabong, Roxas, Mansalay and Bulalacao in Oriental Mindoro and Magsaysay and San Jose in Occidental Mindoro.

Based on the results of preliminary engineering analysis and design conducted in the Feasibility Studies for Road Upgrading Sub-Component for Implementation under NRIMP Phase II, the proposed improvement for the project road consist of pavement upgrading, bridges' replacement/rehabilitation and drainage improvement.

As to road and drainage improvement, no land acquisition will be acquired since the Road-Right-of Way (RROW) limits have been set at 20 m as per cadastral map of the Department of Environment and Natural Resources. However a number of structures and trees will be affected and the owners will be compensated. The final number of these affected structures will be known when the final design of the project is completed. As to the affected trees and other perennials, a permit shall be secured from the DENR prior to the cutting.

The project implementation is being pursued under the IBRD-assisted National Roads Improvement and Management Program (IBRD-NRIMP), Phase II and implementation or construction period will commence in year 2007 through 2010.

The implementation of the project would result to un-interrupted vehicular flow and safe pedestrian movements thereby improving vehicle and passenger mobility and accessibility.

### **C. Brief Description of Methodology**

The Project Management Office - International Bank for Reconstruction and Development (PMO-IBRD) requested the Environmental and Social Services Office (ESSO) to conduct an Environmental Impact Assessment of the said road project. The ESSO Staff proceeded to the project site:

- to assess the environmental condition of the area
- to coordinate with the Department of Environmental and Natural Resource (DENR)-Environmental Management Bureau (EMB), Region IV and other agencies concerned regarding the project.
- to gather data/information which may be deemed necessary in the preparation of the EIA

Occular inspection was carried out by staff from the ESSO in coordination with the Regional and District Offices of DPWH, Region IV-B.

Primary and Secondary data were obtained from various sources such as environmental reports undertaken by national and local agencies and feasibility studies. Site inspection and actual interviews were conducted within the community and local government units provided first hand information.

An endorsement from the Local Government Units (LGUs) was secured to establish the support needed for the proposed project.

The site inspection survey, data gathering and consultation meetings with stakeholders were conducted to determine the positive and negative impacts that may arise before, during and after implementation.

### **D. Description of Environmental Conditions**

Presently, the existing land use of the project road is predominantly agriculture with residential and commercial usage in urban centers.

With its vast resources and potentials, the Island of Mindoro is now at the crossroads of development and it primarily serves as the major resources' granary supporting the CALABARZON Region, a fast growing regional center in the country. The island devotes most of its land to agricultural activities making it the food basket of the Southern Tagalog Region.

### **E. Environmental and Social Impact Assessment**

Part of the project road forms part of the Strong Republic Nautical Highway and has had major impacts on the social, economic and political life not only in the

island but also in Southern Tagalog Region and the Visayas and Mindanao. It is now established as an essential component of the economy and a vital strategic link. However, due to fast development, the highway has resulted to deterioration affecting the accessibility of goods and services. To improve the situation, it proves among others that the Improvement/Rehabilitation of Mindoro East Coast Road plays a vital role to the economic growth of the country.

Environmental issues for these activities are those associated with normal concreting works, land clearing and grubbing including cutting of trees. Traffic congestion will not be much of a problem since present vehicular traffic is not heavy.

Therefore during implementation, the project's environmental condition will be relatively disturbed as far as the project is concerned. Hence, disturbance and negative impacts are only short term in nature.

#### **F. Environmental Management Plan**

Although, negative impacts have been identified, these can be contained and remedied during construction through proper mitigating measures as indicated in the attached Environmental Management Plan and proper construction method.

An Environmental Monitoring Plan is also presented in this report that included provisions of measures to minimize possible negative impacts.

#### **G. Proofs of Social Acceptability**

As to social acceptability, the process of consultation with the local government units has been pursued to get their endorsement.

#### **H. Conclusion**

In conclusion, the implementation of the project will be beneficial not only in Southern Tagalog, but for the whole country as well considering that this will improve the traffic flow and delivery of services on this part of the Strong Republic Nautical Highway, thus, contributing economic growth.

It is environmentally sound considering that the activities to be undertaken during the improvement will have negligible effects to the environment and socially acceptable to all stakeholders of the project including project affected persons.

# **Project Description**

# Project Description

## 1.0 PROJECT DESCRIPTION

### 1.1 Project Rationale

#### 1.1.1 PURPOSE

The project is envisioned to provide an efficient and service-oriented transport system in support to the development activities taking place within the road influence area and the islands connected by the Strong Republic Nautical Highway.

The project road, which forms part of the Strong Republic Nautical Highway is critical to the established inter-island linkages to Luzon through Mindoro Island, Panay and Negros Islands and Mindanao.

With the realization of its envisioned purpose where it will serve as part of the inter-island linkage, significant developments are expected in the influence area.

#### 1.1.2 NEED FOR THE PROJECT

At present, the existing road is experiencing substantial increase in volume of traffic and most sections are already deteriorated. A substantial portion of the project road from Mansalay to Magsaysay is mostly gravel and earth road.

The implementation of the project would improve the road efficiency and capacity in transporting of goods and services and would be a major step in support of the creation of a new province – Mindoro del Sur. Its completion will make the island, particularly the eastern part, a prospect for development into a conglomerate body through a strategy anchored in the enhancement of its comparative advantages that will allow growth centers to develop along specialized growth directions to enhance greater agricultural and industrial completion.

## 1.2 Basic Project Information

### 1.2.1 PROJECT PROPONENT

The Project Proponent is the Department of Public Works and Highways (DPWH), to be implemented by Project Management Office-International Bank for Reconstruction and Development (PMO-IBRD) headed by Project Director Mario E. Bandelaria. The head office is located at 2<sup>nd</sup> St. Port Area, Manila with telephone # 304-3778.

### 1.2.2 PROJECT BACKGROUND

In consonance with the national government's thrust to identify and set up priority sectoral programs and projects for the Southern Tagalog Region, particularly in Mindoro Island as embodied in the Medium Term Development Plan, the Rehabilitation/Improvement of Mindoro East Coast Road (Bongabong – Roxas – Mansalay – Bulalacao – Magsaysay - San Jose Section) has been considered for implementation thru foreign lending institution funds.

The project includes the provision of consultancy services to undertake feasibility studies, detailed engineering design and prepare necessary documents. Environmental assessment was conducted by staff from the Environmental and Social Services Office (ESSO). These project preparations had been funded from foreign loan under International Bank for Reconstruction and Development (IBRD)-National Road Improvement Management Program (NRIMP), Phase II.

The road project is the main national road for the Island of Mindoro and is designated to form part of circumferential road network, and at the same time part of the Strong Republic Nautical Highway. Also, it serves as a vital communication linkage and provides a lateral access to and from the east coast of the island.

## 1.3 Project Location

### 1.3.1 ADMINISTRATIVE UNITS

The project area is located within the Island of Mindoro-Southern Tagalog Region. In geographical distance, it is not far from Metro Manila and Luzon. The island lies 45 kilometers south of Batangas and 130 kilometers south of Manila. It is bounded on the north Verde Island Passage; Maestro del Campo Island and Tablas Strait on the east; Semirara Island on the south; and Busuanga Island and Mindoro Strait on the west.

The direct road influence area covers six municipalities, enumerated as follows: Bongabong, Roxas, Mansalay, Bulalacao, Mansalay and San Jose.

The indirect influence areas consist of the municipalities of Calapan, Victoria, Naujan, Pola, Socorro, Pinamalayan, Gloria and Bansud, which are all located in Oriental Mindoro and Rizal in Occidental Mindoro..

### 1.3.2 ACCESS TO PROJECT AREA

The project area is accessible by both sea and air transport. A number of airports and seaports are available within the island that provides easy access to the project.

Calapan City in Oriental Mindoro and Abra de Ilog in Occidental Mindoro is only 45 minutes away from the proposed international port at Sta. Clara, Batangas City by fast craft-ferry boat. There are 14 seaports in the island, wherein; Calapan and San Jose Ports are classified as a national port while the others are classified municipal ports.

Five existing airports serve the project area, namely: Mamburao and San Jose Airports in Occidental; Calapan Airport, the Wasig Airport in Mansalay; and the Pinamalayan Airport in Oriental.

Only San Jose Airport is servicing commercial flights within the island. The rest are used by private individuals/investor and government officials for their emergency trips. Presently, Pinamalayan Airport is being developed to be the major air transport terminal in Mindoro Island due to its strategic location and extent of development.

## 1.4 Description of Project Phases

### 1.4.1 PRE-OPERATIONAL/CONSTRUCTION PHASE

#### 1.4.1.1 Proposed Improvements

##### 1.4.1.1.1 Pavement Design

The AASHTO Guide for Design of Pavement Structure and DPWH's Design Guidelines, Criteria and Standards were used as reference for the flexible pavement and rigid pavement design procedures. Therefore, the typical section for flexible and rigid pavements developed for this project were based on available data gathered

during the Feasibility Study and on assumptions and judgments from past experiences. (Please refer to Annex 1.4.1)

#### 1.4.1.1.2 Bridge Design

Existing bridges for rehabilitation were evaluated on the basis of the design criteria discussed in the bridge rehabilitation section of Volume I, Feasibility Study, Mindoro East Coast Road. The methods of bridge rehabilitation design criteria for application is discussed below.

#### 1.4.1.1.3 Rehabilitation Design Criteria

The basic considerations in establishing the rehabilitation criteria are the problems occurring with the existing bridges, these are:

1. Structure Deterioration
2. Insufficient Carrying Capacity
3. Insufficient Bridge Width
4. Problems in Hydraulic Capacity

#### Structural Deterioration

When elements of the main structure, i. e. slab, girder, beam or substructure are deteriorated thus reducing the design capacity of the bridge then reconstructions will be required. Only those elements affected by such condition are subject to reconstruction or replacement. If possible, rehabilitation will be restricted to the elements that have deteriorated to the point where these members are compromised.

When the main structure are damaged to the extent not affecting its design integrity and the damage can still be remedied then repair works such as a partial re-construction of the damaged portion, epoxy sealing of cracks, partial replacement of steel members can be applied. This method will be applied instead of reconstruction.

For other comments considered as non-structural. The methods to repair the damage are as follows:

Screed or Slab Topping – reconstruct if the existing overlay is deteriorated, overlying to provide smooth riding surface and protect reinforcing steels of slabs.

Railing – partially or totally reconstruct depending on the degree of damage.

Expansion Joints and Drain Pipes – reconstruct if slab or portion of slab is replaced.

Approach Road Embankment – for embankment slope that are unprotected and eroded, protection works will be required. For protected embankment slopes that are eroded and seriously damaged, reconstruction will be required. For embankment settlement of approaches that is significant, link slab shall be provided.

#### Insufficient Carrying Capacity

If the loading capacity is not adequate enough for the present load required. Posting of the actual carrying should be placed or reconstructed. Retrofitting can be applied when situation and site conditions permits.

#### Insufficient Bridge Width

Carriageway width of the existing bridges varies from 6.70 to 7.10 m. This falls short of the DPWH standards width of 7.30 m. Almost all of the bridges are 6.70 m. wide, which is the standard width of the Philippines highway. Widening of these sub standards bridges is not considered urgent, except when the road on both approaches are (4) four lanes to maintain smooth flow of traffic and to avoid traffic congestion.

For sidewalk widths that are narrower than the DPWH standards of 0.76 m. and are located on populated areas then widening will be required to secure the safety of pedestrians and smooth passage of vehicles. While in low populated areas, widening of sidewalk is not considered as urgent.

#### Problems in Hydraulic Capacity

In this study, three particular hydraulic problems are considered:

Insufficient Freeboard – when the bridge elevation is low, particularly where the bridge does not satisfy the DPWH freeboard requirement of 1.50 m. then the bridge will need to be replaced or reconstructed. However, should it be impossible to rehabilitate, then works shall be done by lifting the superstructure to add height to the sub-structure, then works will be done by dredging the riverbed.

Insufficient Bridge Length – If and when part of the approach road embankment encroaches the streamline, the bridge will be lengthened by constructing additional spans.

Local Scour – In most bridges, abutments are protected by grouted ripraps. In cases where these protection works are damaged, then repair or total reconstruction depending on the degree of damage is recommended. For local scours found at abutments slope, firm protective measures are required to avoid damage.

#### Rehabilitation Method

The following are the recommended rehabilitation methods for all the bridges under study based on the problems encountered on the existing bridges.  
Structure deterioration:

1. (A) Repair of slab
2. (B) Repair of concrete girders
3. (C) Repainting of steel girder/members
4. (D) Repair of substructure
5. (E) Asphalt/concrete overlying of existing slab
6. (F) Partial or total reconstruction of railing
7. (G) Partial reconstruction of slabs
8. (H) Reconstruction of concrete girders/member
9. (J) Replacement of steel girder/member
10. (J) Replacement of bearing
11. (L) Total reconstruction of the bridge

Insufficient carrying capacity:

1. (N) Reconstruction of the entire slab
2. (O) Reconstruction of all girders of span
3. (P) Reconstruction of substructure
4. (L) Total reconstruction or replacement of the bridge

Insufficient Bridge Width:

1. (Q) Widening of carriageway
2. (M) Construction of additional (adjacent) bridge
3. (R) Widening of sidewalk

Problems in Hydraulics:

1. (V) Dredging of riverbed
2. (S) Repair of abutment slope protection
3. (T) Reconstruction of abutment protection
4. (U) Construction of extension or additional span
5. (L) Total reconstruction of bridge

Rehabilitation Methods and Criteria for Application

Type	Rehabilitation Method	Description Method	Criteria for Application
A	Repair of Slab	Seal cracks by injection of low viscosity epoxy	<ul style="list-style-type: none"> <li>Concrete slab is cracked or spalled but reinforcing steel is neither seriously deformed nor rusted</li> </ul>
B	Repair of Concrete Girder	Seal cracks by injection of low viscosity epoxy	<ul style="list-style-type: none"> <li>Concrete girder is cracked or spalled but reinforcing steel is neither seriously deformed nor rusted</li> </ul>
C	Repainting of Steel Girder/Member	Repaint all steel members	<ul style="list-style-type: none"> <li>Steel girder/member is rusty but not structurally deteriorated</li> </ul>
D	Repair of Substructure	Seal cracks by injection of low viscosity epoxy	<ul style="list-style-type: none"> <li>Substructure concrete is cracked or spalled but reinforcing steel is neither seriously deformed nor rusted</li> </ul>
E	Asphalt/concrete overlying of existing slab	Remove existing overlay with asphalt overlay	<ul style="list-style-type: none"> <li>Existing concrete overlay is considerably cracked or spalled.</li> <li>Existing asphalt overlay is considerably cracked, distorted and disintegrated</li> <li>No existing overlay but is required to provide smooth riding surface and to protect reinforcing steel of slab.</li> </ul>
F	Partial or Total Reconstruction of Railing	Demolish existing railing partially or totally depending on the degree of damage and reconstruct	<ul style="list-style-type: none"> <li>Railing is damaged and endangers traffic and pedestrians</li> </ul>
G	Partial Reconstruction of Slab	Demolish damaged portion of slab and reconstruct	<ul style="list-style-type: none"> <li>Part of slab, where wide cracks are found on both top and bottom surfaces, often, reinforcing steel being exposed and rusted and/or concrete block are falling off.</li> </ul>
H	Reconstruction of Concrete Girder	Demolish damaged girder(s) and reconstruct. Partial or total reconstruction of supported slab shall be accompanied, if required	<ul style="list-style-type: none"> <li>Concrete girder shearing or bending cracks for lack of structural capacity</li> </ul>
I	Replacement of Steel Girder/Member	Replacement damaged girders(s)/members(s)	<ul style="list-style-type: none"> <li>Steel girder/member is deformed or thickly rusted</li> </ul>

Type	Rehabilitation Method	Description Method	Criteria for Application
K	Replacement of Bearing	Provide temporary support in the vicinity of the bearing, jack up superstructure evenly, demolish and reinforce bridge seat, and install new bearing. If the width of bridges seat is insufficient point of view, then widening will be required	<ul style="list-style-type: none"> <li>Bearing (roller or rocker expansion bearing) seriously damaged induce stresses in superstructure and substructure.</li> </ul>
L	Total replacement or Reconstruction of Bridge	Totally reconstruct a bridge providing sufficient waterway opening and aseismicity. Protection measures against scour is required	<ul style="list-style-type: none"> <li>All substructure are inadequate in their structural capacities, have settled or tilted, concrete being seriously cracked and spalled and reinforcing steel being exposed and rusted.</li> <li>Girders of all spans damaged and substructure is not sound</li> <li>Load Limit below 15 tons.</li> <li>Low elevation girders where freeboard is sufficient and bridge is in danger of submergence during high-water.</li> </ul>
M	Construction of Additional Bridge	Reconstruct the bridge provide sufficient waterway opening and aseismicity. Protection measures should be applied against scour	<ul style="list-style-type: none"> <li>Number of lanes are less than that of approach road on each side and traffic volume is high</li> </ul>
N	Reconstruction of Entire Slab of Span	Reconstruct entire slab of span(s)	<ul style="list-style-type: none"> <li>Wide cracks are found on both top and bottom surfaces, reinforcing steel being exposed and rusted or concrete block falling off.</li> </ul>
O	Reconstruction of All Girders of Span	Reconstruct all girders of span(s). Reconstruction of slab will be required.	<ul style="list-style-type: none"> <li>Half or more concrete girders have shearing or bending cracks lessening the structural capacity.</li> </ul>

Type	Rehabilitation Method	Description Method	Criteria for Application
			<ul style="list-style-type: none"> <li>• Half or more steel girders are seriously deformed reducing the structural capacity and loss of cross-sectional area due to rust.</li> <li>•</li> </ul>
P	Reconstruct of Substructure	Reconstruction of substructure. Usually reconstruct of slab and girders of the related span(s) will also be required.	<ul style="list-style-type: none"> <li>• Substructure is inadequate in its structural capacity, have settled or tilted, concrete being seriously cracked and spalled, and reinforcing steel exposed and rusted.</li> <li>•</li> </ul>
Q	Widening of Carriageway	Demolish existing sidewalk and railing on one or both side(s), widen substructure if necessary and construct additional girders and slab, construct another bridge adjacent to and parallel with the existing bridge.	<ul style="list-style-type: none"> <li>• Number of lanes is less than that of approach road on each side and traffic volume is high.</li> </ul>
R	Widening of sidewalk	Demolish existing sidewalk and railing widen substructure if necessary. Construct additional girders if necessary, and construct new sidewalk and railing.	<ul style="list-style-type: none"> <li>• Bridge is located in residential areas and has less than 60 cm wide sidewalk.</li> </ul>
S	Repair of Abutment Slope Protection	Remove damaged portion of existing abutment slope and reconstruct	<ul style="list-style-type: none"> <li>• Abutment slope protection is damaged and/or its foundation is scoured. But the damage is still repairable.</li> </ul>
T	Reconstruct of Abutment Slope Protection	Remove abutment slope protection if existing, and (re) construct with grouted riprap, concrete pitching, gabion, and others.	<ul style="list-style-type: none"> <li>• Abutment slope is protected but the protection is seriously damaged and its foundation is scoured.</li> <li>• Abutment slope is not protected, and exposed to scouring.</li> </ul>

Type	Rehabilitation Method	Description Method	Criteria for Application
U	Construction of Additional Span	Take necessary measures to convert the existing abutment into pier or reconstruct, and construct substructure and superstructure of additional span(s)	<ul style="list-style-type: none"> <li>• Approach road embankment encroaches waterway line causing flooding upstream and erosion of approach road embankment.</li> </ul>
V	Dredging or Riverbed	Excavated riverbed sediment to recover freeboard.	<ul style="list-style-type: none"> <li>• Riverbed rises due to sedimentation and consequently freeboard is insufficient and superstructure is in danger of submergence during high-water.</li> </ul>

#### 1.4.1.1.4 Proposed Road and Bridge Improvements

Based on the result of preliminary engineering analysis and design, the proposed improvement for the project road consist of pavement upgrading, bridge construction and rehabilitation and drainage improvements.

The proposed pavement upgrading for the project road consist of a 6.10 – 6.35 m Portland Cement Concrete Pavement (PCCP) carriageway with 1.5 to 2.5 m wide asphalt or gravel shoulders on both sides. Two types of pavement alternatives are considered as follows:

Alternative 1: PCC pavement with thickness of 230mm on the existing gravel pavement

Alternative 2: 50mm AC Overlay on existing AC Pavement

In addition, the shoulder is proposed to be resurfaced with asphalt or gravel surface course.

All temporary bridges (Bailey) will be replaced with Reinforced Concrete Deck Girder (RCDG) structures.  
(Please refer to Annex 1.4.2)

# **Methodology**

# Methodology

## 2 METHODOLOGY

### 2.2 EIA Process Documentation

Pursuant to DENR Administrative Order 37, Series of 1996, prior to project implementation, an Environmental Impact Assessment shall be prepared by the Project Proponent prior to the issuance of an Environmental Compliance Certificate (ECC) through the DENR-EMB.

In the EIS System, an Environmental Impact Statement (EIS) shall be prepared for projects categorized as Environmentally Critical Project (ECP) and an Initial Environmental Examination shall be prepared for projects categorized as project located in an Environmentally Critical Area (ECA) However, the DENR-EMB Regional Office has the discretion to further require the proponent to prepare and submit an EIS Report if the IEE is not sufficient based on their evaluation.

With regard to the Rehabilitation/Improvement of Mindoro East Coast, an IEE was prepared considering that negative impacts are minimal and short term in nature. Also, as per DENR Guidelines on the Determination of EIA Coverage on some Infrastructure Projects (Roads, Bridges, Domestic Water Supply, Irrigation), an IEE must be prepared and submitted to DENR-EMB-Region IV-B for review prior to issuance to Environmental Compliance Certificate.

An ECC is a document issued by the DENR certifying that based on the representation of the proponent, the proposed project will not cause significant adverse environmental impact and the proponent has complied with the requirements of the Philippine Environmental Impact Statement System.

### 2.3 Study Team

The EIA Study Team who documented this report was headed by Mr. Edgar D. Fabregas of Environmental and Social Services Office (ESSO) DPWH Central Office in close coordination with staff from Southern Mindoro Engineering District in Roxas, Oriental Mindoro particularly Engr. Annie E. Padullo and Engr. Raymund Siscar and Engr. Ruperto A. Villola of Occidental Mindoro Engineering District in Mamborao.

### 2.4 EIA Methodology

The Study Team and staff from both Engineering Districts in the province of Mindoro Island carried out the EIA.

Interviews, site inspection, fieldworks, collection of information from different government agencies such as the DPWH Engineering District Offices, Provincial Environmental Resources Office (PENRO), Community Environmental and Natural Resources Office (CENRO)-Roxas, PAGASA, Offices of the different provincial government units, National Commission on Indigenous People (NCIP) and the Project Management Office for Feasibility Studies.

Photos were taken at strategic points along the project road that are attached hereto. (Annex 2)

Likewise, the EIA Team coordinated with the Municipal Mayors thru the Municipal Planning and Development Officer for their endorsement of the project.

## **2.5 Data Sources**

The common sources of data used in this study are:

1. Socio Economic Profile of Oriental Mindoro
2. The Profile and Development plan-Towards the Creation of Mindoro del Sur
3. Census of Agriculture-Oriental Mindoro
4. Low-Income Upland Communities Project, 1995 Report
5. Indigenous People Rights Act of 1997 (Republic Act No. 8371)
6. Comprehensive Land Use Plan of:
  - a. Municipality of Bongabong
  - b. Municipality of Roxas
  - c. Municipality of Mansalay
  - f. Municipality of Bulalacao
  - g. Municipality of Magsaysay
  - h. Municipality of San Jose
7. DAO 96-37
8. Final Report, Feasibility Studies for Road Upgrading Sub-Component for Implementation Under NRIMP Phase II (Mindoro East Coast Road)

# **Existing Environmental Condition**

# Existing Environmental Condition

## 3 EXISTING ENVIRONMENTAL CONDITION

### 3.1 Physical Environment

#### 3.1.1 LAND RESOURCES

Of the Island's total area of 436,472 hectares, more than half (50.99%) or 222,573 hectares are certified alienable and disposable. On the other hand, classified forestland comprises 46.41 percent of the total land area or 202, 587 hectares. The remaining 11,312 hectares (2.60%) are still unclassified.

There are three geographical zone surface in the province. These are the coastal areas covering a total length of 342.45 kilometers; the lake areas covering 81.28 square kilometers; and the riparian areas, rich fertile valleys and mountainous areas covering 89% of its total land mass.

Plains cover an estimated area of 131,682 hectares. Out of this, 5,172 hectares are marshlands and swamps. These plains stretch from Baco to Victoria in the north, Pinamalayan to Bongabong Coast in the central part and Roxas to Mansalay in the southern portion of Oriental Mindoro and parts of Mamburao to Sta. Cruz and Sablayan to San Jose in Occidental Mindoro.

#### 3.1.2 FOREST RESOURCES

On the basis of existing land classification system adopted by the government, some 202,587 hectares of land are classified forestland. The NAMRIA survey, however, indicated that of the province's total land area of 436,472 hectares, only 26,800 hectares or 6.13 percent are covered with forest. Therefore, of the 202,587 hectares of land that are reserved for the forest purposes, only about 26, 800 hectares are actually forested and 174, 767 hectares are either barren abandoned "kaingin" or may be currently slash-and-burn or hilly land farms. Official records shows that there are a total 12,367 families intruding into and occupying portion of the forestland of the province.

#### 3.1.3 MINERAL RESOURCESS AND RESERVES

The island of Mindoro yields abundant deposits of both metallic and non-metallic mineral. Metallic mineral substances include gold, silver, iron, copper and chromite while non-metallic constitute of silica, coal, barite and marble deposits. Barite ore reserves are known to be found in Mansalay and Roxas; Marble in Puerto Galera, San Teodoro and Baco; and silica and sand in Mansalay. Reserves of gold and silver are found in San Teodoro and Puerto Galera.

### 3.1.4 TOPOGRAPHY

The area has varied topographical features dominated by rugged mountain ranges, rich coastal and valley plains, which offer extensive, fertile irrigated lands. The plains stretching from Socorro to Bongabong and from Roxas to Mansalay in Oriental and from Mamburao to Sta. Cruz and Sablayan to San Jose in Occidental are already cultivated and productive.

Mountainous parts are also predominantly found in the Municipality of Paluan and in the southwestern part in the territory of Socorro, Pinamalayan, Bansud, Bongabong, Mansalay and Magsaysay.. In Mansalay, the hilly mountainous portions are found in Maliwanag, Cabalwa, Manual, Waygan, Panaytayan, Bonbon and Budburan while the maintain range are in northwestern part. Eplog Hill is in the southern portion while mount Namalayan is found at the eastern portion of Bulalacao fronting Buyayao island.

The area is generally well drained due to the abundance of creeks and streams that intersect the coast and flow out to the sea. Springs likewise abound at the foothills along the borders of the main rivers.

### 3.1.5 CLIMATOLOGY FEATURE

The project road influence area enjoys a climate favorable for vegetation growth throughout the year. Its location topography being on the southwestern side of the great ocean body contributes to the area's rainfall pattern.

The eastern part of Mindoro Island has a Type III climate with no distinct dry and wet season. The climate has a relatively long dry season from January to May with occasional rainfall in the middle of June to July.

The absence of dry season is mainly due to influence of the northeast flowing during months of November to March and to local atmosphere activities.

The maximum rainfall is 216.2 mm while the minimum is 45.9 mm and the mean is 1714.5 mm. Temperature is recorded at a maximum of 35<sup>0</sup>C, minimum of 22.6<sup>0</sup>C and mean of 27.59<sup>0</sup>C. Relative humidity is 83.4 percent.

From January to September, mean temperature was registered at 27.4<sup>0</sup>C with minimum temperature of 22.6<sup>0</sup>C. The coldest temperature was recorded during the month of July and January, with both mean temperature of 26.6<sup>0</sup>C. the average humidity is 83.3 percent.

Warm water from a branch of South Equatorial Current feeds China Sea which passes between Singapore and Borneo thus keeping the water surrounding Mindoro Island warm at all season of the year and consequently providing excellent sources

of moisture. However, the province is open to the southwest monsoon and cyclonic storms.

Mean sea level pressure is 1,009.4 millibars with prevailing wind directed to the east and a speed of 14 miles per second.

### 3.1.6 SOIL CHARACTERISTICS

Many types of soil varying from clay to beach sand are found in this province. The alluvium soil of the plains and valleys belong to San Manuel and Quingua clay series. This type of soil composed of clay, silt, sand and gravel, but generally deep fertile is a very good land suitable for rice, coconut, vegetables, banana and root crops.

The rolling to hilly or mountainous parts of southern Mindoro is generally of Luisiana and Maranlig soil type. These are upland areas that were developed from hard igneous bedrock materials, which may be andesite, or braltic rocks.

Other types of soil are San Miguel clay loam, Tagaytay sandy loam, Bolinao clay, hydrosol, baguey loamy sand, rough mountainous soil and beach sand.

### 3.1.7 HYDROLOGY

#### 3.1.7.1 Water Resources

Potential water sources in the island are surface water (rivers, streams, lakes) and groundwater springs. They can be described as follows:

#### 3.1.7.2 Surface Water

Abundant surface water is perennially available in the main rivers of Oriental Mindoro and in the vast Naujan Lake but these are mostly used as source for piped water system primarily because of cost considerations.

#### 3.1.7.3 Ground water

Groundwater is also abundant being easily obtainable and more economical. In terms of source development, it becomes the natural and logical choice as a source of water supply. However, the remoteness of many from proposed service areas oftentimes precludes them from being developed and utilized as sources for small water.

The most easily obtainable groundwater is found along the coastal areas and plains in recent deposits of unconfined to semi-confined aquifers consisting mainly of clay, silt, sand, and gravel within the zone from near ground surface to depth of about 30 meters.

The next easily obtainable groundwater and naturally sage and potable is that found ion the aquifers of sandstone, shale and gravel loosely consolidated at depths ranging from about 20 meters to 170 meters with an average thickness of 30 meters. These aquifers are the sources of spring and flowing wells.

#### 3.1.7.4 Watershed

Mindoro essentially comprises a series of outward flowing watersheds that are interlocked in their mountainous upper reaches and descend steeply, with the coast on each side of the island. Over much of the Northern and Eastern portions of Oriental Mindoro, the watersheds have formed a broad sedimentary plain extending from their middle reaches to the shoreline, occasionally intruded by sedimentary or volcanic hills.

The Low-Income upland Communities Project (LIUCP) is the governments Initial attempt to address the ecological needs of the country's watershed as well as the socio economic needs of the upland communities. It covers eight watersheds in Mindoro Island with an aggregate area of about 225,000 hectares or 25% of the total land area. These are Malaylay, Bucayao, Bongabong, Pola, and Kabilyan in Oriental Mindoro; and Abra de Ilog, Mamburao, and Caguray in Occidental Mindoro.

#### 3.1.8 AIR QUALITY

Air quality in the project area is relatively clean due to the absence of major industrial establishment. Aside from the quarrying activities (gravel and sand quarry), other industrial activities existing within the province include hollow block making, rice mills, poultries and piggeries. A slight increase in the dust generation is expected to occur within the immediate vicinity if these industries. The other sources of minimal air pollution comes from motor vehicle emission and the dust generation when passing through unpaved roads during dry season.

#### 3.1.9 WATER QUALITY

Meanwhile, groundwater quality is acceptable for domestic and irrigation use. However, the same could be not be said of the surface water considering that there is limited drainage facility and that wastewater as well as domestic waste sometimes find their way into annals, creeks and rivers.

## 3.2 Biological Environment

### 3.2.1 BIODIVERSITY ASSESSMENT

Fifteen biogeography zones have been identified in the Philippines, based on floristic, faunistic and geological composition. The island of Mindoro comprises one of the biogeography zones in the country, covering an area of approximately 1.02 million hectares. It is the ninth largest biogeography zone, in terms of area covered.

In terms of biodiversity, Mt. Halcon in Mindoro is one of the centers of plant diversity in the Philippines with its lowland evergreen and mundane forest and grasslands.

### 3.2.2 FLORA

The island is relatively rich in flora particularly at Naujan Lake. The present flora is composed of 46 fern species, 43 grasses, 147 herbs, 67 shrubs, 50 vines, 34 lianes, 91 medium-size trees and 31 large trees and special attention should be given to the following species:

- Dipterocarpaceae
- Anacardiceae
- Moraceae
- Sapindaceae
- Meliaceae

According to research these species constitute a relatively low percentage contribution on the index of Naujan Lake.

### 3.2.3 FAUNA/WILDLIFE

The survey of the Naujan Lake and its watershed revealed the presence of several types of microhabitats for wildlife species. Resources profiling in 1997 recorded a total 98 species of vertebrates; 5 amphibians; 12 reptiles; 68 avian fauna and 13 mammals.

The Naujan Lake is also home of at least 15 species of water birds. *Aythya merila* or tufted duck, locally known, as "pato china" is by far the most sought after water bird because of its meat value. Winter visitors such as *Egretta garzetta* and *Dedrocygna acruata* and some avian species use the swamp for breeding it not as permanent habitat.

Four Volant mammals were recorded including the Philippine endemic *Ptenochirus jagori* (the musky fruit bat)

The following species are under highly protected:

Herpetofauna

- Amphibians, Rama magna (woodland frog)
- Varanus salvator-monitor lizards
- Crocodiluz mindonnsis-fresh water crocodile

### 3.2.4 PROTECTED AREAS

The province has four areas that are considered protected lands under the National Integrated Protected Area System (NIPAS) category. Foremost among these is the Naujan Lake, which is declared as a national park by virtue of Proclamation No. 335 dated January 25, 1968 (restoring the lake proper as part of the Naujan Lake National Park). The municipalities of Naujan, Pola, Socorro and Victoria adjoin the scenic Naujan Lake.

Second is the Mt. Iglit-Baco National Park approximately occupying 8,000 hectares right at the Provincial Divide within the municipalities of Bongabong and Mansalay. It was established for the protection and conservation of the "Tamaraw" (*Anoa mindorensis*), an endemic but very much endangered species akin to the carabao or water buffalo. A portion of the national park covering 8,000 hectares is under the management of CENRO Roxas, Oriental Mindoro while much larger portion located in Occidental Mindoro is being managed by DENR-Occidental Mindoro.

Third is the Man and Biosphere in the Philippines (MAB) located in Puerto Galera. MAB is an area declared under Presidential Decree No. 354 issued on December 26, 1973 as a reserved area for educational, scientific and cultural research activities as the Philippine Government commitment to the United Nations Educational, Scientific & Cultural Organization (UNESCO).

The fourth and last portion of the protection lands, under the NIPAS category is the Marine Biological Site also located in Puerto Galera. This protection land is a site for marine biological scientific research. It is an archeological site covering various antiques found thereat.

## 3.3 Socio-Economic Environment

### 3.3.1 POPULATION

The main Island of Mindoro has 23 component municipalities and one city. Two other municipalities are found in the island of Lubang. In 1995, the island's population was 918,749. The island's population growth rate in 1995 was 2.16%. If this trend continues over time, its total population shall reach more than one million year 2002.

Calapan City, the capital town in Oriental Mindoro and the center of economic activities, has consequently retained the largest percentage share of the island's total population. On the other hand, the Municipality of San Jose is the most populous town in Occidental even though not the capital town but the center of economic activities on that side of the island. Roxas and Pinamalayan are also becoming trade centers and settlement areas as evidenced by rapidly increasing population from 1990 to 1995. The municipalities of Bansud and Gloria had the highest percentage increases in population, thus registering the highest annual rate of 4% and 3.51% respectively. The sudden increase of population count in Bansud could be accounted to the inclusion of Mangyan population in the 1990 and 1995 Censuses. Aside from this, lahar victims specially the aetas and the victims of floods and earthquake that occurred in the latter part of 1993 and 1994 were relocated to Bansud. The number of evacuees was enumerated in the 1995 Census of population. Moreover, migrants from the provinces of Romblon and Marinduque prefer to settle in Gloria and Bansud due to the lower cost of agricultural and residential lands in the said municipality aside from the fact that many of the town's present population originated from the aforementioned provinces.

Victoria and Roxas, on the other hand, registered the lowest annual growth rates and percentage share of provincial population growth. This is due to the successful population control program initiated by the Japan International Cooperation Agency (JICA) in these municipalities.

### 3.3.2 HUMAN AND ECONOMIC DEVELOPMENT

#### 3.3.2.1 Health

The island has a total of 37 hospitals; fourteen (14) of which are government owned and the rest are private hospitals. There are 690 beds in all the hospitals mentioned above.

#### 3.3.2.2 Education

The island has twelve institutions for tertiary education, all of them are found in Oriental Mindoro, seven of which are vocational schools, three formal tertiary schools, one polytechnic college, one agricultural school and one fishery school. These tertiary institutions are strategically located in Calapan, Victoria, Socorro, Pinamalayan, Bongabong and Roxas.

The extent of education in the island can be seen in the increasing number of school-going population and the extent of literacy of the population.

# **Impact Assessment**

# Impact Assessment

## 4 IMPACT ASSESSMENT

### 4.2 Future Environmental Condition of the Project Area

Taking into account the high development prospect of Oriental Mindoro and the plan for the creation of Mindoro del Sur, it is reasonable to develop the road network to meet the transport demand in the future and will play a strategic role in providing transport facilities to Southern Tagalog Region.

With the existing environment, the implementation of the project will not directly affect or loss its present features.

During construction, people will be hired locally. Construction entrepreneurs will gain from the sales of construction materials and hardware supplies. These will give economic benefits and extra income to the people in the influence area aside from their usual source of income, which is farming and fishing.

Temporarily, the residence and commuters will experience disturbance in terms of noise, air pollution and traffic flow. Mountains and forest will be affected but only minimal. However, these can be countered by proper measures discussed in this report. (see EMP)

It is to note that the smooth implementation of the proposed projects requires a participatory approach. This involvement is particularly necessary for the design mitigation measures in order to reduce, if not totally avert the possible negative impacts of the projects.

Upon completion of the project, the accessibility and transportation services will be faster and more convenient. Dusty and muddy road will be minimized or eliminated.

As a result of convenience, more investors will be attracted and encourage to infuse more capital, labor, and materials. Employment opportunities will increase and more idle lands will be cultivated. Delivery of goods, social services especially health and education, utility services and others will be enhanced. Markets to other provinces will improve, as the movement of goods from farm to market will be easier.

Commercial industries are seldom in the area. With economic prosperity in sight, this type of service may also venture in the rural setting. Other industries may follow as the need and progress of the area becomes evident.

In conclusion, the full implementation of the project would give a new momentum to the economic growth and development of the province specially the southern part.

### **4.3 Existing Condition**

The existing 125.50 kilometers Bongabong-Roxas-Mansalay-Bulalacao-Magsaysay-San Jose Road is a national road linking the provinces of Oriental and Occidental Mindoro. It starts at Km 102 in Bongabong Jct.- National Road using the provincial road and follows a southerly direction through the Municipalities of Roxas, Mansalay and Bulalacao in Oriental Mindoro and then turns northwest to the towns of Magsaysay and San Jose in Occidental Mindoro.

The existing road condition from Bongabong to Roxas is fair to good concrete pavement with sharp curves and classified as provincial road. The remaining section of the project road is a combination of gravel with carriageway width ranging from four (4) to eight (8) meters and a substantial length of concrete pavement mostly in highly populated areas around the traverse municipalities. In times of heavy rain, some sections in Bulalacao could be slippery and difficult to traverse.

This road section runs through flat to rolling terrain in most parts and hilly to mountainous particularly near the provincial boundary.

### **4.4 Impacts Relating to Project Location**

There are a number of key issues and concerns that have been identified and need to be addressed. These are discussed in detail below.

#### **4.4.1 FLOODING**

One of the problems within the road influence area is the occurrence of flooding, in particular, within Brgy. Formon and Matalom Bridge in Bongabong; Bongabong River and Baruk River in Roxas and Poblacion Proper of Mansalay.

This can be attributed partly to the limited drainage facilities along the road and to the clogging of canals and waterways during continuous and heavy rains resulting from the dumping of domestic waste.

#### **4.4.2 MINING**

The project area is rich in mineral resources. Presently, an international mining company conducted a feasibility study on Nickel and Cobalt Mining, targeting Brgy. Pili, Pinamalayan as the site of a

Processing Plant, which will use Submarine Tailing Disposal (STD) method.

As to date, endorsement from local populace has not been secured and as a consequence the people of the province rallied to show their objection.

A critical review of the proposed scheme should be given attention, since the environmental impacts of mining operation are considered irreversible and would cause alteration of the present land use and the potential degradation of marine water quality and marine ecosystem.

#### **4.4.3 ILLEGAL LOGGING AND/OR TIMBER POACHING WITHIN FORESTED AREAS**

Considering the existence of considerable forested areas within the road influence area, one of the problems identified is illegal logging and/or timber poaching, especially in the upland barangays. The perpetrators of timber poaching activities are believed to be members of subversive groups who frequently penetrate forested areas. Consequently, despite efforts exerted by DENR and the local police, illegal logging activities still exist. Moreover, based on interviews with the local populace, another reason for the perpetrator of illegal logging could be attribute to unemployment and lack of livelihood opportunities within the upland areas. As direct effect of illegal logging, mountains have now become denuded. And if this situation continues, it may eventually lead to soil erosion and cause further damage downstream such as siltation of river and sedimentation problems.

#### **4.4.4 SOLID WASTE MANAGEMENT**

At present, there is no existing sanitary sewerage system in the province. Majority of the liquid waste disposal facilities are open canals and drains. Thus, water from residential, commercial and industrial establishments flow to open canals, ditches and other water channels.

Within the urban barangays or the poblacion, a simplified collection system has been put in place. A dump truck has been available to collect garbage from the households as well as from the market place. There is no waste segregation done at the point source. Instead, all garbage including those collected from hospitals and clinics are brought to the existing open dumping site.

There is a tendency for the garbage to slide down from the open dumpsite into the intermittent creek and possibly further downstream, especially following a heavy downpour. The most serious part of it is

the leachate itself because garbage are literally dumped in the open area.

#### **4.4.5 PRESENCE OF A FAULT LINE**

Geologic studies of the island of Mindoro reveal presence of several gravity faults that were mapped, the most prominent of which is located in Oriental Mindoro. It extends from Puerto Galera to Bongabong and to Mansalay. In Bongabong, the fault line traverses barangay Hagan, Lisap, Batangan and Morente while Mansalay, the faultline cuts across Brgys. Bonbon, Maliwanag, Balugo, Sta. Maria, Villa Celestial, Wasig and B del Mundo.

The presence of high fault line is deemed as a natural hazard since such areas are highly prone to mass movement. Care should be properly exercised especially in locating settlements within these areas. According to Philippine Volcanology (PHILVOCS) future development should avoid establishment within five meters of the fault line.

#### **4.4.6 DEGRADATION OF SLOPING AND STEEP AREAS**

Increase in population and migration to the uplands continue to exert pressure on fragile areas such as sloping and steep areas. A considerable part of the sloping and steep areas of the road influence area, particularly in Bongabong, Bulalacao and Magsaysay are already being subject to agricultural cultivation.

### **4.5 Impacts Relating to Project Construction**

#### **4.5.1 PHYSICAL ENVIRONMENT**

##### **4.5.1.1 Land Use**

During construction, the existing land use of the project area will not drastically change. No land take/acquisition will be effected since the improvement/upgrading of the road will be confined within the Road-right-of-way limits of 20 m. A few structures within the construction limits will be demolished and they can relocate to the adjacent land. However, after completion of the project, it is expected that major changes will occur, especially those areas that are accessible through the existing system.

#### **4.5.1.2 Fisheries**

The construction activities will not significantly affect the fishery resources of the area.

#### **4.5.1.3 Climate**

The general climate condition within the project area will not likely change although localized micro-climatic and conditions vary in heavily built-up area along the road alignment especially in urban centers or poblacion.

#### **4.5.1.4 Soil Characteristics**

The soil characteristics will probably change due to the presence of erosion from cut slopes, fills, and quarries and spoil dumps.

#### **4.5.1.5 Hydrology**

It is quite different to assess whether there will be changes in the precipitation in the area, including the intensity duration frequency which may be brought about by the project. But, during construction the increased storm water runoffs during periods of heavy rainfall would make the rivers and drainage channels in some sections of the road inadequate to handle gravel, stones and other materials. Low-lying areas may continue to be flooded, and the project will have to be designed to handle high flood flows most especially in Barangay Formon and Matalom Bridgein Bongabong; Bongabong River and Baruk River in Roxas and Poblacion Proper in Mansalay;

#### **4.5.1.6 Water**

The construction activities of the project will affect the quality of the surface water, especially during rainy periods when loose soil materials find their way into the river.

Likewise, water requirements of the project will affect water supply of the locality. These requirement will include those that will be utilized in concrete mixing, domestic water requirements of the construction workers and staff and watering to control dust emission.

#### **4.5.1.7 Air Quality**

The air quality of the area will be directly affected. It will be a major concern most especially on urban centers or poblacions. This is the result of the frequent transport of construction materials from the source to the construction site. The volume of materials that will be disturbed and handled increases dust particulates during construction. During this period, there will be continuous suspension of dust. In addition, the increased equipment movement will also increase the emission of equipment-generated pollutants.

These concerns however is temporary in nature and will be co-terminus with the construction activities. Those that will be directly affected will include the settlers and pedestrian within the immediate vicinity of the project area and those commuters in non-air-conditioned vehicles.

#### **4.5.1.8 Noise Level**

The present level of noise and vibration within the project area from all types of vehicles is considered tolerable. The population within the vicinity of the project area can be assumed to have adapted to the present regular noise sources. However, noise and vibration will be expected to rise during construction but will slide down to normal after the construction period.

#### **4.5.1.9 Mineral Resources**

Metallic mineral resources like gold, silver and the like are not found within the confines of the project area. Non-metallic mineral resources such as gravel and sand are abundant in the project area and will be used as construction materials.

### **4.5.2 BIOLOGICAL ENVIRONMENT**

Only common species of trees would be affected due to widening of narrow portions, modification of dangerous curves, installation of line canals and construction of new bridge/replacement of existing bridges. The project will not affect any endangered species in the area.

### **4.5.3 SOCIO-ECONOMIC**

#### **4.5.3.1 Population**

With or without the project, the immediate influence area will continue to experience increasing population pressures.

#### **4.5.3.2 Manpower**

The project will cause generation of local employment particularly for both skilled and unskilled labor, and qualified administrative support from the local population. These employment opportunities will be peak during the construction period but may taper off after construction. The salaries and wages of these local hires will circulate in the area and contribute to the consumption of local goods and services.

#### **4.5.3.3 Health**

All common forms of illness like coughs & colds, influenza and diarrhea will have a probability of occurring among the workers and staff of the project. These will contribute to the increase in the morbidity of the barangay as well as the local government units concerned. However, these will not significantly affect the health services of the area because the project contractor will provide its own primary health care services.

#### **4.5.3.4 Displacement and Relocation**

Only a few families with structures within the construction limits will be affected. Final number of these will be known when the final detailed design stage is completed.

Proper compensation for the affected families will be provided.

## **4.6 Impacts Relating to Project Operation and Maintenance**

### **4.6.1 TRANSPORTATION**

Vehicular traffic is expected to return to normal after construction. With increased traffic capacity, inter and intra provincial commerce will further perk up due to accessibility to previously distant municipalities.

The project and associated projects will somehow contribute to generate traffic, as accessibility within the island will be much cheaper, easier and comfortable.

### **4.6.2 LAND USE AND SETTLEMENT**

Changes in land use follow development as an offshoot of better transportation and communication facilities. Increased agricultural activities and improved marketing are expected within the project area.

Urbanization associated with the increase of economic activities such as the development of commerce and industry and the proliferation of more settlement areas is also expected.

### **4.6.3 DISPLACEMENT AND RELOCATION**

All affected families/persons associated with the road improvement will be properly compensated before construction activities commence.

# **Environmental Management Plan**

## 5 ENVIRONMENTAL MANAGEMENT PLAN

As the project focuses on improvement and rehabilitation of the existing road, no serious adverse environmental impacts will be expected. Although, negative impacts are temporary in nature, an Environmental Management Plan is presented in this report. The following are the planned actions or countermeasures.

### 5.1 Environmental Management Plan Matrix

ENVIRONMENTAL MANAGEMENT PLAN					
Project Activities	Impact	Area Affected	Mitigation/ Enhancement	Monitoring Requirements	Responsibility
<b>I. Pre-Construction</b>					
A. Surveying	A.1 Local Labor Employment	Project Area	1.Hire skilled residents as survey aides and other unskilled jobs, etc.	Payroll, Employment records (in accordance with R.A. 6685 and DPWH D.O. # 51, Series of 1990)	Contractor (DPWH)
B. Land Acquisition (if necessary) due to Widening and/ or Re-alignment	B.1.Displacement of Families/persons (if any)  2.Disagreement in compensation scheme		1. Provision of Resettlement site  2.Just compensation for the affected structures, improvements and land  3. Compensation must be based on replacement cost at current market price	Records and reports from the DPWH Office (Regional and District Office) undertaking the RROW.  Satisfaction of the Project Affected Families.	DPWH, LGUs
<b>II. Construction</b>					
A. Mobilization of Equipment and Transport of Construction materials	A.1 Air & Noise Pollution	Throughout the stretch of the road construction	1 All heavy equipment machineries shall be fitted with air pollution control and noise dampening devices that are operating in good condition.  2.Vehicles transporting sand and soil shall be covered with tarpaulin.	Air pollution  Dust Concentration	Contractor  Contractor

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ENVIRONMENTAL MANAGEMENT PLAN					
Project Activities	Impact	Area Affected	Mitigation/ Enhancement	Monitoring Requirements	Responsibility
			3. Stockpiled sand and soil shall be slightly wetted before loading, particularly in windy conditions.	Dust Concentration	Contractor
B. Hiring of Local Residents for employment	1 Increase sources of income for local residents and taxes for the municipal governments	Project Area	1.Hiring of at least 70% of unskilled labor & 30% of skilled labor from local residents (RA 6685 and DPWH D.O. 51 Series of 1990).  2. Adopt a just compensation scheme to avoid labor and management conflicts.	Payroll employment records	Contractor, DPWH
C. Procurement of Construction Materials	1. Increase in the sale of construction materials	Project Area	1 Submit a list of legitimate local dealers of construction materials to the contractor. 2. Adopt a competitive fair pricing mechanism among the hardware store owners in the locality	Permits issued to local dealers of const. materials	LGUs, DTI, Commercial Establishments
D. Land Clearing/ Soil Excavation/ Cutting of Slopes	1 Accelerated erosion resulting to siltation of surface waters and water pollution	Sections needing re-alignment and/ or widening	1 Earth movement will be avoided during rainy seasons if possible	Contractor's compliance with design and construction requirements	Contractor, consultant
	2 Cutting of trees	Detour roads for bridges' Construction/ replacement	2.Appropriate vegetation will be planted/ Replanting of affected species.		Contractor
		Commonly grown trees along the highway.	3.Young trees will be balled and replanted. Additional trees will be planted along the roadway. Permits will be secured from the DENR.	Periodic count of trees planted, replacement of dead trees.	Contractor, DPWH
	Excavation and embankment areas/ section	4. Strict implementation of DPWH D.O. # 131, series of 1995.Planting of trees along national Roads	Periodic count of trees planted, replacement of dead trees.		DPWH

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ENVIRONMENTAL MANAGEMENT PLAN					
Project Activities	Impact	Area Affected	Mitigation/ Enhancement	Monitoring Requirements	Responsibility
	3 Surplus and waste materials (surplus and unsuitable soils; demolition debris; waste concrete and asphalt materials; scrap metals; sludge; waste oil and grease; human waste; oil, etc.	Work Camps and within the construction site	5. Surplus materials should be used as filling materials when applicable.  6. Surplus and waste materials will be dumped at pre-determined spoil banks or sites  7. Contractor will be adequately educated on applicable methods for a) restrain of generation; b) classified collection; c) storage; d) transportation; e) proper maintenance of disposal areas.	Contractor's compliance on the environmental management plan that would be required from him to be submitted to and approved by the concerned DPWH and Consultants' officials. Standard for collection and disposal of surplus and waste materials should include: a) self-disposal by whom produced relevant waste; b) Assigned disposal by waste collection/ disposal vendor c) Maintenance of cleanliness during transportation; d) Prohibition of mixed disposal with different nature of waste materials; e) Mandatory disposal and treatment at the designated location; f) whenever carrying out waste disposal of hazardous/ non-hazardous wastes, comply with the relevant laws and regulations.	Contractor, DPWH LGU

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ENVIRONMENTAL MANAGEMENT PLAN					
Project Activities	Impact	Area Affected	Mitigation/ Enhancement	Monitoring Requirements	Responsibility
E. Rock Blasting (if any)	1 Noise and physical injuries due to related accident	Solid rock excavation areas and sites of old bridge to be replaced.	1 Undertake blasting activities during daytime only. 2.Utilize small blasting explosives and carry out advance notice for blasting	Contractor's compliance to the approved blasting methods and procedure.	Contractor, DPWH LGU
F. Preparation/ Construction of base, sub-base, and concrete pavement	1 noise and dust generation	Whole stretch of the project alignment	1.Instill to the contractor's labor force the proper work ethics specially at settlements along or near the working area. 2.Install proper device on equipments for noise minimization 3.Spraying of bare areas with water 4.Contractor should provide adequate safety and warning measures during construction activities.	Contractor's compliance with design and construction requirements  Dust Concentration	Contractor, DPWH LGU  Contractor DPWH
	2. Flooding	All low-lying areas.	1.Design culverts well and take flood discharge values into design and construction consideration.	Contractor's compliance with design requirements	Consultant, DPWH
G. Operation of Quarry Sites on River Banks and near other water bodies, barrow pits.	1. Sedimentation and siltation downstream and riverbank destruction.	Quarry site not identified yet, however most of the rivers have aggravated due to sedimentation and siltation and these may be good sites for quarrying	1.No work will be permitted to sites with fine sediment  2 The depth of extraction from river bed will be limited.  3. Identify the river which has excessive sediment, and limit the excavation to ideal section and depth of the river.  4 Locate quarry site away from populated centers, drinking water intakes and tributaries used by the community for domestic purposes.	Compliance to ECC Conditions by the Contractor and quarry operators.	Contractor, DPWH, Consultant, LGU

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ENVIRONMENTAL MANAGEMENT PLAN					
Project Activities	Impact	Area Affected	Mitigation/ Enhancement	Monitoring Requirements	Responsibility
	2 Changing the river pattern will have a beneficial impact to the flow regime of the rivers.		1.Depth and area of extraction limitation should be imposed to prevent loose materials disturbance that may trigger siltation. However, since one of the major problems in the area is flooding, excavation should be done in such way that the flow of rivers would be improved.	Flow discharge of River Turbidity	
H. Replacement/ Reconstruction of Bridges	1 Obstruction	Within the stretch of road construction	<p>1.Construct detour road and bridge for bridges that needs to be demolished and replaced at the same location prior to construction of a new one. For the other case, the old bridges will serve as detour.</p> <p>2.Temporary bridges will also be installed for some bridge replacement/ constructions.</p> <p>3.Personnel will be assigned at every detour road's point of entry and exit to regulate traffic flow.</p> <p>4.Installation of proper road signs, reflectorised signboards, and/or early warning devices especially at night</p> <p>5.To prevent the road signs from being stolen sturdier materials should be installed.</p>	Contractors compliance ad construction requirements	Contractor, DPWH, Consultant
	2 Temporary minimal alteration of river flow during bridge construction		1. Reconstruction/ Replacement of bridges shall be undertaken during non-flooding season or during no rainfall.	Evaluation of Water quality	Contractor

Initial Environmental Examination (IEE)  
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ENVIRONMENTAL MANAGEMENT PLAN					
Project Activities	Impact	Area Affected	Mitigation/ Enhancement	Monitoring Requirements	Responsibility
	3. Possible temporary siltation		1. For construction of bridges' abutment and piers, cofferdams shall be installed to prevent water into the section during the excavation	Turbidity	Contractor
I. Drainage Construction	1. Excavated materials from drainage construction works along the roadside could affect aesthetic negatively. This could also result to erosion, sedimentation, and slope instability if dumped along the steep hillsides.	Project Area	1. Proper disposal of excavated materials on pre-determined disposal sites/areas.		Contractor, DPWH
J. Work Camps	1 Possible pollution as a result of waste disposal from the workers' camps.  2.Noise pollution and other disturbance	Site to be determined by the Contractor.  However, it should be located on a flat area.	1. Coordinate with the LGU for the location of the workers' campsite.  2. Install and maintain a system for the collection and treatment of solid wastes during construction.  3. Location of the work camp should be far from the residential areas.	TSS, BOD, DO  Complaint from the residents	Contractor, DPWH LGU  Contractor, DPWH
	3 Use of wood as fuel.	Trees near and around the construction camps	1. Provide adequate fuel of LPG gas for both cooking and other needs	Periodic count of trees in the area.	Contractor

Initial Environmental Examination (IEE)  
Mindoro East Coast Road Project

ENVIRONMENTAL MANAGEMENT PLAN					
Project Activities	Impact	Area Affected	Mitigation/ Enhancement	Monitoring Requirements	Responsibility
K. Equipment Stockyards	1 Air & water pollution in settlements, dust generation.  2.Potential decrease in crop production due to air and water pollution		1.Locate plants and stockyard away from residential and environmentally sensitive areas.  2.Provide adequate pollution control devices, air filters, etc.  3.The equipment shall be operated during daytime only.	Dust concentration, Turbidity complaints, TSS, BOD, DO	Contractor, Consultant, DPWH
L. De-commissioning and abandonment of Auxiliary Facilities	1.Development of temporary camp to permanent resettlement site		1.All temporary structures, including sleeping quarters, cooking and food storage structures and latrines shall be removed to prevent encroachers within the road right-of-way  2. The site shall be restored to near original or stable conditions.	Absence of structures	Contractor, DPWH
	2.Exposed areas will impair the aesthetic and could cause soil erosion		1. Exposed areas shall be planted with suitable vegetation.  2. Site restoration work shall be ensured before the equipment is allowed to leave	Assessment of the planted area.  Clearance from DPWH	Contractor, DPWH  Contractor, DPWH
<b>III. Operation</b>					
A. Increased Access	1.Exploitation of natural resources in the area.  2.Unplanned urbanization		1. Ensure that existing environmental management programs/policies are effectively implemented and proper coordination involves all concerned agencies.  2. Responsible institutional order and existing regional development policies prevail.  3. Adherence to land use and zoning regulations.		DENR, LGU  DPWH, NHA, LGU  HLURB LGU, NHA,

Initial Environmental Examination (IEE)  
Mindoro East Coast Road Project

ENVIRONMENTAL MANAGEMENT PLAN					
Project Activities	Impact	Area Affected	Mitigation/ Enhancement	Monitoring Requirements	Responsibility
	3. Increase business potential		1. Encourage business in designated centers.		DTI, LGU
	4. Faster delivery of agricultural and marine products  5. Increase tourism industry potential		1. Encourage farmers to open up new lands/areas for agricultural cultivation/production.  1. Promote tourism in the area through advertisement in the local and national media.  2 Improve the tourist facilities in the area, beaches, etc.	Influx of tourist, improvement of Tourist spots.	LGU, DA  DOT, LGU
B. Faster and convenient travel	1. Increase risks of vehicular accidents  2. Promotes business with neighboring towns and faster delivery of social services.		1. Regulate speed in urbanized and accident-prone areas by posting sign boards, pedestrian lanes, barriers in school zones, hospitals, market and other thickly populated areas.  2 Police or traffic enforcer must be assigned to regulate traffic in thickly populated areas.		Police Department, LGU

# **Environmental Monitoring Plan**

# Environmental Monitoring Plan

## 5.2 Environmental Monitoring Plan

In accordance with DAO 96-37 and MOA between the DPWH and the DENR, environmental monitoring will be undertaken by the MMT. Its main objective is to determine compliance with the conditions stipulated in the Environmental Compliance Certificate issued to the Proponent, and by the PEMT to ensure that adverse impacts of activities will not go beyond standards set by DENR. An Environmental Monitoring Plan (EMP) is required and is a very important tool of management to ensure environmental protection. It is needed to guide the monitoring teams to undertake effectively the all-encompassing monitoring work. The EMP defines the scope of monitoring (i.e. types of monitoring and environmental parameters to monitor), the specific location and description of monitoring stations, frequency of monitoring and general monitoring activities and schedules.

### 5.2.1 AMBIENT AIR QUALITY

The monitoring of ambient air quality for the activities proposed should focus on sampling and measurement of Total Suspended Particulate Matter (TSP) and Noise Levels at work sites.

**Suspended Particulate Matter** means any material other than uncombined water, which exist in finely divided solid form as liquid or solid.

**Noise Levels** refer to noise generated by the heavy equipment in the work sites, such as bulldozers, backhoes, pay loaders, crawler crane, vibratory hammer, etc.

### 5.2.2 WATER RESOURCES QUALITY

The water resources in the project areas include freshwater (river discharged), coastal/marine water and groundwater (deep well water). The quality parameters of these water resources will be measured/analyzed at the monitoring station.

#### 5.2.2.1 Freshwater Monitoring Stations (FMS)

The monitoring stations for freshwater are shown in the table under the section for Monitoring Stations. In situ analysis will be done on pH (unit), temperature ( $^{\circ}$ C rise), salinity (%), conductivity (mS/cm), dissolved oxygen (DO) (Mg/L), turbidity (NTU) and settle-able solids.

### 5.2.3 FREQUENCY MONITORING

The compliance and environmental monitoring will be done quarterly or bi-annually (to be agreed upon by the MMT) during the entire construction period and quarterly during the initial operation phase of the project

### 5.3 General Monitoring Plan

The monitoring will cover the construction and initial operation phases of the project. It shall be conducted quarterly or bi-annually (to be agreed upon by the MMT) during the entire construction phase and for a period of one or two years (to be agreed upon by MMT) during the operation phase. The following table shows the general monitoring plan and schedule to be followed by the MMT. The schedule may be amended from time to time, depending upon the actual condition in the project site.

<b>General Monitoring plan and Schedule</b>			
1. Compliance Monitoring	All construction and operation sites.	Quarterly or twice a year during construction phase and quarterly during initial operation phase.	All specified mitigating measures and conditionalities stipulated in the ECC
2. Environmental Monitoring			
2.1 Ambient Air Quality	a) Critical Bridge Sites to be determined by the MMT.  b) Critical Roadway Sections particularly existing gravel portions.	Quarterly or bi-annually (to be agreed upon by the MMT) during construction phase and quarterly during initial operation phase.	Total Suspended Particulate Matter (TSP)
2.2 Noise Levels	-Ditto-	-Ditto-	Occupational Noise Levels
2.3 Water Quality	-Ditto-	-Ditto-	Temperature, pH, Dissolved Oxygen (DO), Sanity, Conductivity, Turbidity, Settle-able Solids and Oil/Grease
a) Fresh Surface Waters/Rivers			
b) Ground H <sub>2</sub> O & Drinking H <sub>2</sub> O			PH Turbidity (Nephelometric Turbidity Unit) Conductivity (mho/cm) Hardness (mg/L)
2.4 Socio-economic			
a) Compensation of the affected families		Quarterly or bi-annually (to be agreed upon by the MMT) during construction phase and quarterly during initial operation phase	All Provision Under Republic Act No. 9874-An Act to Facilitate the Acquisition of Right-of-way, site or location for National Government Infrastructure Projects And For Other Purposes.
• Those who will be given monetary compensation			
• Those who will			

General Monitoring plan and Schedule			
be relocated			
b) Employment	Contractor's Administrative Records		At least 30% of the skilled and 50% of the unskilled workers must be local residents (dislocated families should be given priority)
• Hiring of workers of the labor force			
• Salary rates	-Ditto-		Standards salary rates in accordance with governing laws
c) Health and Safety			Standard Operating Procedures on Construction Works
• Workers	Construction areas/camps		
• Non-workers	Construction areas		

#### 5.4 Environmental Monitoring Methodology

Environmental monitoring is a highly technical task. It must be done only by trained/experienced technical personnel of the offices represented by the members of the MMT, following standard procedures.

Monitoring forms should be prepared and filled out to report the onsite data collected and reflect the condition found in the monitoring sites. The forms should contain the following information: *data, time, sampling site/location, type of water body, name of sampler/recorder, weather condition (clear and sunny, cloudy, rainy, windy, etc.),* and general observations on the surrounding area. General observations on surrounding area will indicate any unusual activity or critical development such as noise levels, gas emission from equipment and dust due to earthwork activities, among others.

##### 5.4.1 SAMPLING AND MEASUREMENT/ANALYSIS METHODS

###### 5.4.1.1 Ambient Air Quality

The applicable methods for sampling and measurement of the various air pollutants earlier mentioned, as prescribed by DENR (DAO No. 14, March 18, 1993) are the following:

Pollutants	Sampling and Measurement Methods
Total Suspended Particulates (TSP)	TSP Collectors and high Volume Sampler with 10 micron particle-size inlet, needed

Measurement of ambient air quality will be done at designated monitoring stations to be determined depending upon the extent and/or area of coverage of the source of pollutants (i.e. dust). The distance and direction from the source, project phase (e.g., construction/operation) and sampling date and time must be noted. Two consecutive trials will be taken per station. Sampling Period will be one hour. TSP samples will be transported to the designated laboratory for gravimetric analysis.

#### 5.4.1.2 Noise Levels

Ambient and occupational noise levels will be measured at designated monitoring stations using brand of noise level meter prescribed by the DENR such as the direct reading Bruel and Kjaer Model 2230. Measurement will be done during the operation of heavy equipment and traffic on adjacent roads for about 7-10 seconds that is equivalent to 7-10 instantaneous readings per monitoring station. Measurements will be taken at two different periods of the day as follows:

Morning	5 AM – 9 AM
Daytime	9 AM – 6 PM

The distance and direction from the source and the project phase (e.g. construction/operation) must be noted.

#### 5.4.1.3 Water Resources Quality

##### 1. Freshwater (River Discharges) Quality

Composite freshwater samples for quality analysis at the laboratory will be done at the designated monitoring stations in the river channel, one sampling site at 100m on the upstream and another one at 100m on the downstream of the project activity. Samples will be collected from three relative depths (i.e. near surface, mid-depth and near bottom). Two galloons of composite water samples will be collected from each station. Water samples will be placed in icebox and brought to the designated testing laboratory.

Note: this will be undertaken only when required by the MMT or DENR-EMB.

#### 5.4.1.4 Socio-Economic Monitoring

This instrument provides instructions on the critical points to look for in project implementation through the highlighted activity outputs and performance results. Guide questions are likewise provided to assist the MMT in interviewing respondents in the project areas. The specific data gathering guides are attached and are labeled as follows:

- Form 1A      Record of Local hiring During the Pre-Construction phase
- Form 1B      Record of Local Hiring During the Construction Phase
- Form 1C      Summary Sheet for Monitoring and Evaluation of Local Hiring in Project Sites

**FORM 1A. QUARTERLY REOCORD OF LOCAL HIRING DURING THE PRE-CONSTRUCTION PHASE**

Fourth Quarter (October-December 2000)      Total Number of Workers: \_\_\_\_\_ Local: \_\_\_\_\_ Non-Local: \_\_\_\_\_

Name of Hired Local Workers	Address of Local Workers	Location/ Venue Work	Nature of Work	Salary	Date of Employment		Remarks
					Start	End	
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
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16.							
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18.							
19.							
20.							
21.							
22.							
23.							
24.							

**FORM 1B. QUARTERLY REOCORD OF LOCAL HIRING DURING CONSTRUCTION PHASE**

Fourth Quarter (October-December 2000)      Total Number of Workers: \_\_\_\_\_ Local: \_\_\_\_\_ Non-Local: \_\_\_\_\_

Name of Hired Local Workers	Address of Local Workers	Location/ Venue Work	Nature of Work	Salary	Date of Employment		Remarks
					Start	End	
1.							
2.							
3.							
4.							
5.							
6.							
7.							
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15.							
16.							
17.							
18.							
19.							
20.							
21.							
22.							
23.							
24.							

**Form 1C Summary Sheet for monitoring and Evaluation of Local Hiring in Project Sites**

Location: \_\_\_\_\_ Prepared By: \_\_\_\_\_  
M & E Period Covered: \_\_\_\_\_ Date: \_\_\_\_\_

<b>Project's Concerns on hiring of Locals</b>	<b>Measures of Efforts<sup>1</sup></b>	<b>Measures of Progress<sup>2</sup></b>	<b>Project's Strength or Opportunities</b>	<b>Project's Problems/Weakness</b>	<b>Response of Hired Local Workers &amp; Communities</b>	<b>Remarks</b>

<sup>1</sup> Measures of Efforts-quantity and quality of project inputs (manpower, money, materials, etc.) introduced by the proponent  
<sup>2</sup> Measures of progress-extent of changes in the community as a consequence of inputs from both proponent and the community

### 5.5 Compensation of the Multipartite Monitoring Team (MMT)

The primary purpose for the organizing a multi-partite-monitoring team is to achieve broader participatory, greater vigilance and appropriate check and balance in the monitoring of project implementation. In other words, to monitor compliance with the conditionalities of the ECC and the Environmental Management Plan

The composition of the Multipartite Monitoring Team (MMT) will be decided and determined during the Evaluation and Review of the EIA by the EIARC. It shall be organized within two months from the date the ECC is issued. The proponent shall initiate the preparation of a Memorandum of Agreement (MOA) that will be approved and signed based on negotiations and agreements made by the parties concerned.

Based on the Memorandum of Agreement (MOA) between DPWH and DENR for DPWH projects will be organized thru the Bayanihan System.

The Core Team and/or Core members of the MMT, with their corresponding responsibilities, shall generally include representatives for the following:

a) DENR –EMB-Region IV-Island Provinces

The Environmental Management Bureau (EMB) shall be mainly responsible for policy formulation, evaluation of monitoring results and resolution of issues where consensus or decisions cannot be made at the field level and the provision of needed support for the operation of the Monitoring Team.

b) DENR-Regional Office

The DENR Regional Office shall act as the lead agency in the monitoring work. It shall coordinate monitoring activities in the various municipalities, evaluate monitoring result and make recommendations/appropriate action to resolve issues that cannot be handle by the PENRO and/or CENRO, and concurs with monitoring reports.

c) DENR-PENROs

DENR PENROs shall be responsible for assisting the DENR-Regional office carry out actual monitoring activities at the provincial level. It shall evaluate monitoring results submitted by the CENROs and resolve issues/problems at the field level. When issues/problems are beyond its capacity to respond, the PENRO shall forward the same to the regional office for resolution.

d) DENR-CENROs

The CENRO shall chair the sectoral monitoring team for the projects under his jurisdiction. It shall be responsible for undertaking actual monitoring activities in

coordination with the PENRO. It shall submit and sign regular monitoring reports to the PENRO and shall act with dispatch on issues/problems that arise relative to the projects being monitored in its area.

e) Project Proponent

The project proponent shall be responsible for the following:

- Provision of necessary budget/funds for the operationalization of the monitoring activities such as manpower support services, training needs, equipment, communications, transportation and accommodation of the Multipartite Monitoring Team Members;
- Make available to the MMT all information relevant to the project to determine compliance with the ECC;
- Grant permission to MMT members to inspect and observe construction and operation activities of the project including the testing, calibration and operation of pollution control and in-house monitoring equipment;
- Participate in actual monitoring activity; and
- Concur with monitoring reports

f) Local Government Units

The LGU should be represented by their chief executives or duly authorized representatives of the:

- Barangay
- Municipality
- Province

Their responsibilities would include the following:

- Mobilization of sectoral teams;
- Preparation and mailing of invitation;
- Participation in actual monitoring work; and
- Concurrence with monitoring reports.

g) Affected Residents/Local Environmental NGOs/Pos

The proponent, in coordination with the DENR, shall initiate a meeting with the affected community residents, interest groups and local environmental organization to designate representative to their permanent representative to the MMT. In exceptional cases and upon concurrence of the DENR, more than one

(1) representative of the affected community residents may be represented in the MMT. The permanent representative(s) will participate in the actual monitoring activity and concur with sectoral monitoring reports.

Only one (1) representative from each of the above groups and offices shall comprise the Monitoring Team at any given time. The regular member shall officially designate alternates in writing before the monitoring activity starts.

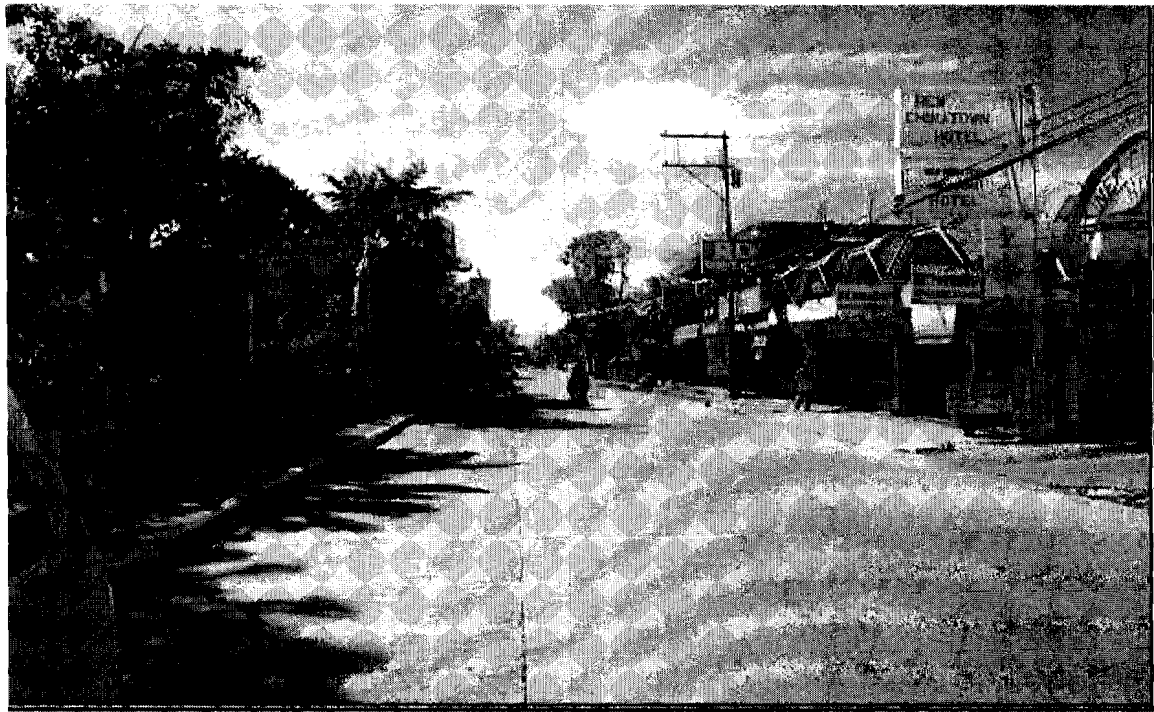
# **Annexes**

# MINDORO EAST COAST ROAD PROJECT

## BONGABONG POBLACION



CONGESTED AREA

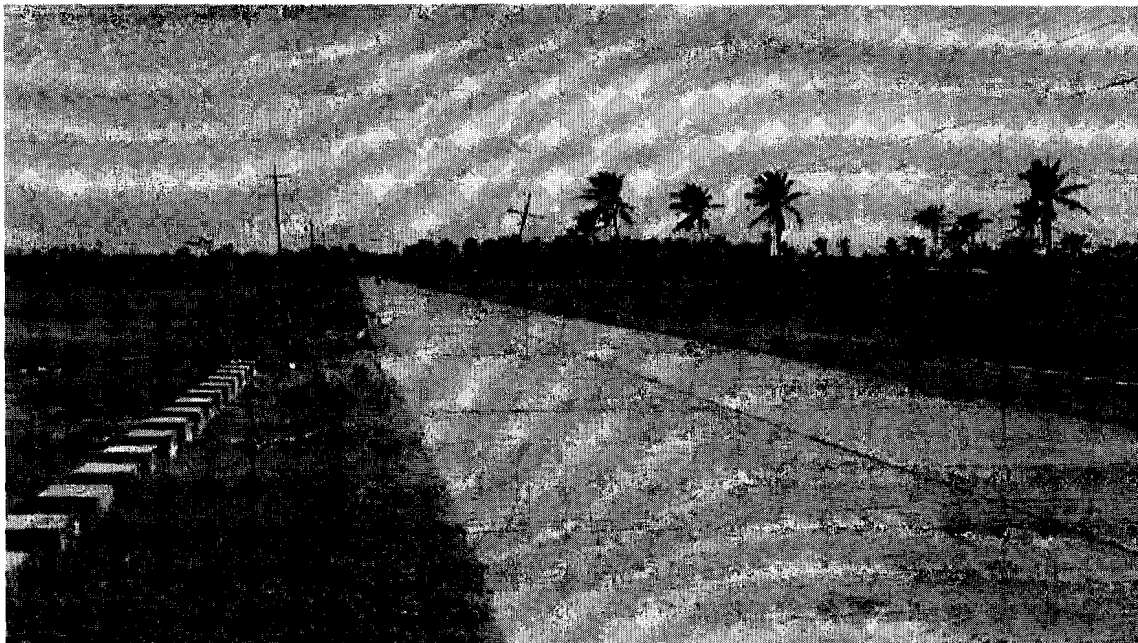


# MINDORO EAST COAST ROAD PROJECT

## BONGABONG SECTION



Present Environmental Setting @ Km. 105 + 500  
Brgy. Sagana, Bongabong



Present Environmental Setting @ Km. 109 + 400  
Brgy. San Isidro, Bongabong

# MINDORO EAST COAST ROAD PROJECT

## BONGABONG – MALITBOG JUNCTION



START OF PROJECT  
Km. 102 + 321



# MINDORO EAST COAST ROAD PROJECT

## BONGABONG POBLACION



Existing Vegetation along the Project Road  
Km. 115 +000  
Brgy. Orconuma, Bongbong



Present Road Condition and Existing Vegetation @  
Km. 119 + 000, Brgy. Brgy Kaligtasan

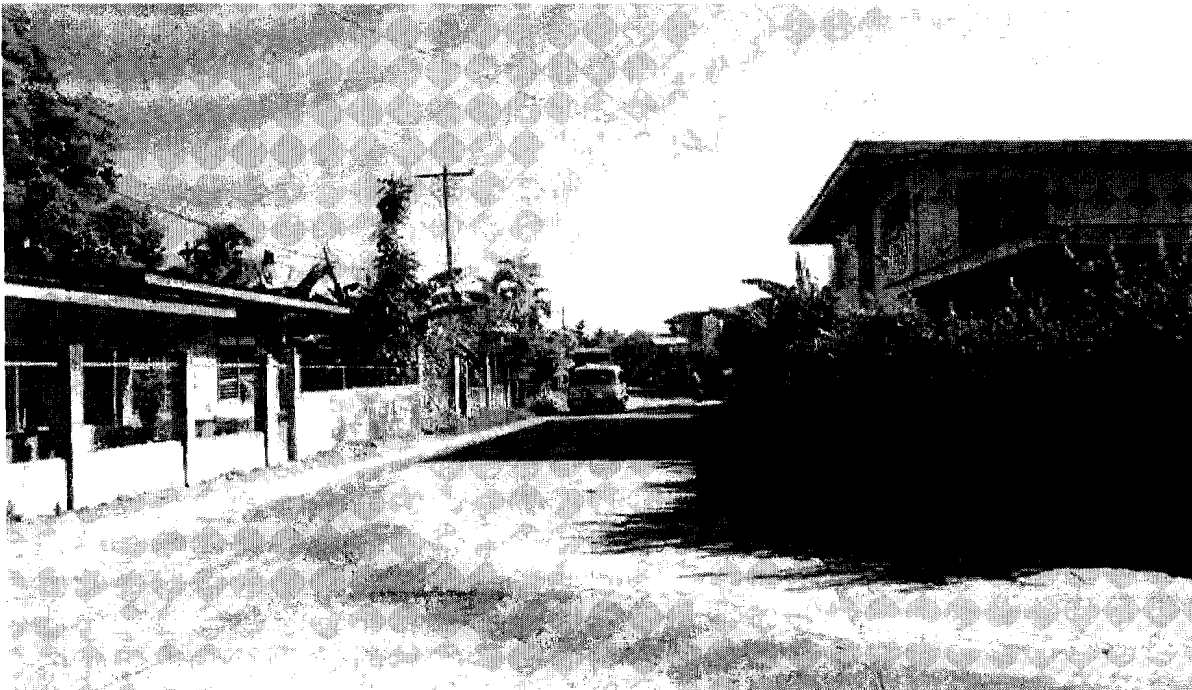
# MINDORO EAST COAST ROAD PROJECT

## BONGABONG POBLACION



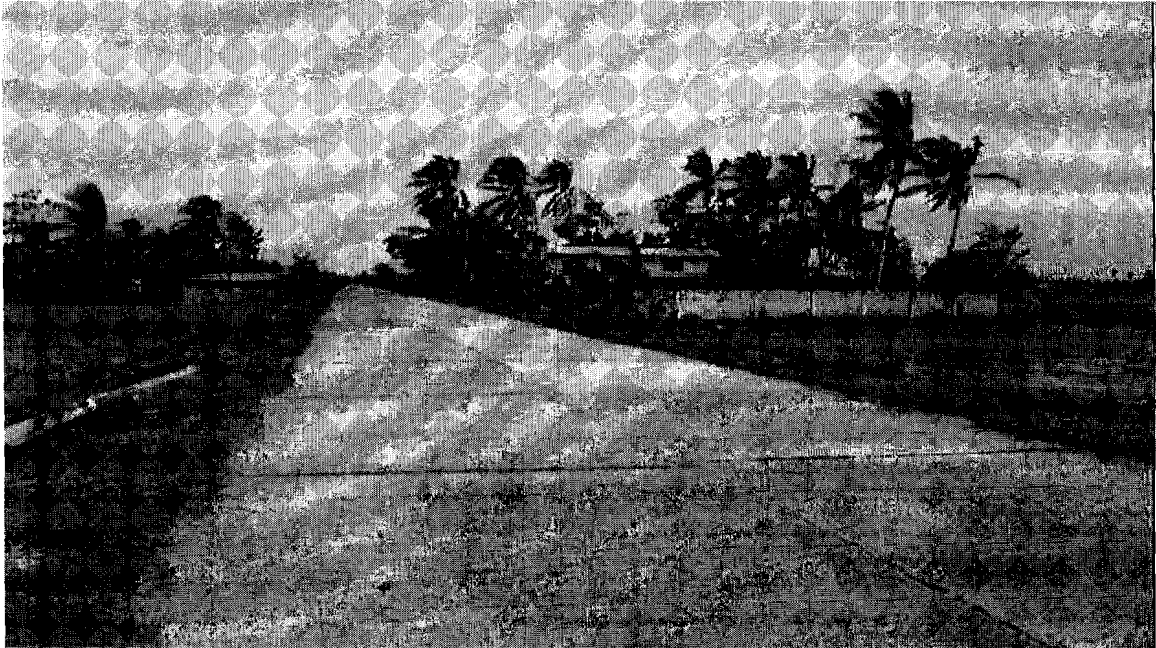
### CONGESTED AREA and SHARP CURVE

Some structures will be acquired to give way  
To the construction of line canal

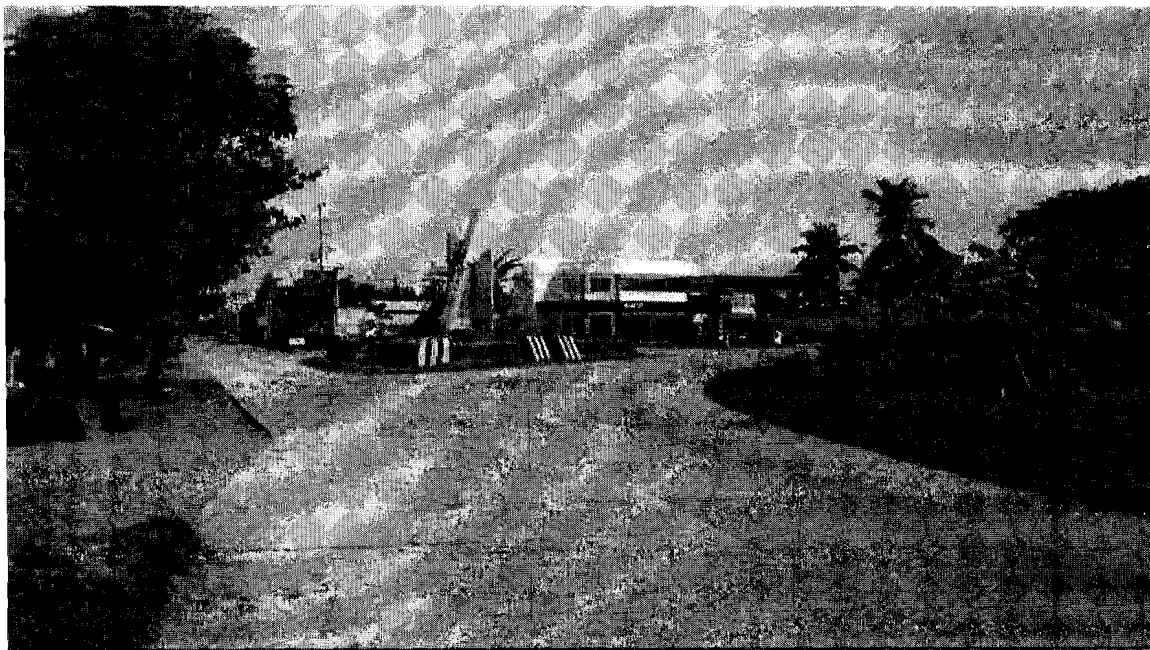


# MINDORO EAST COAST ROAD PROJECT

## ROXAS SECTION



Existing Concrete Paved Section @ Km. 121 + 600  
Brgy. Cantil, Roxas



Jct. to Dangay Port – Gateway to the Visayas and Mindanao  
@ Km. 125 + 700

# MINDORO EAST COAST ROAD PROJECT

## BONGABONG – MALITBOG JUNCTION

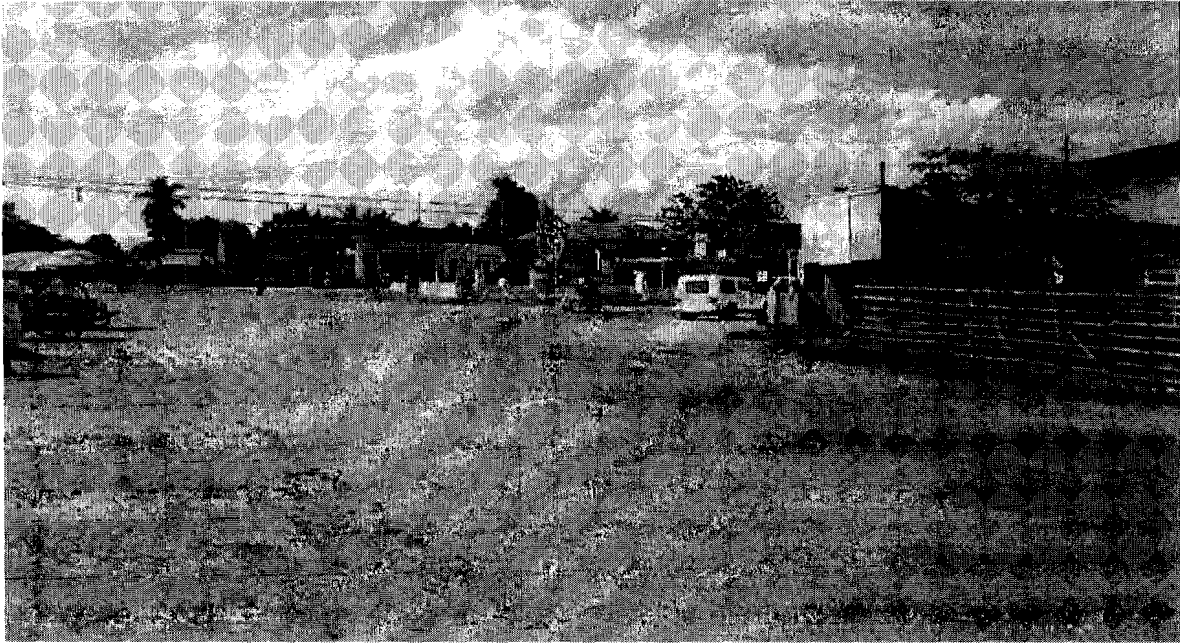


EXISTING VEGETATION  
KM. 102 + 400



# MINDORO EAST COAST ROAD PROJECT

## ROXAS SECTION



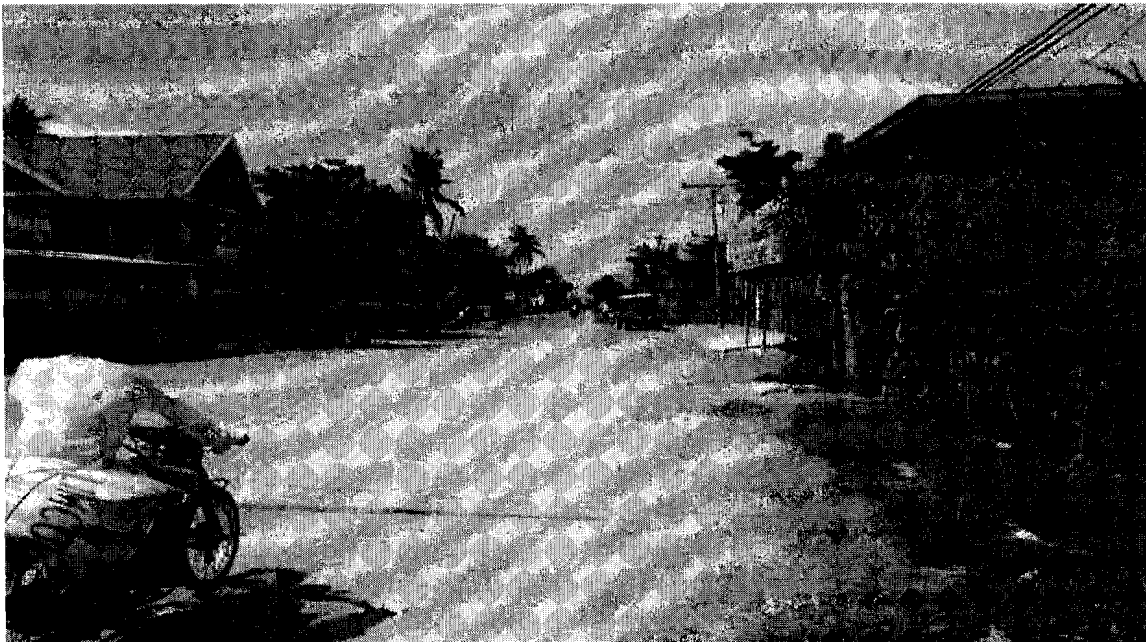
Jct. San Aquilino - Roxas  
Km. 139 + 900



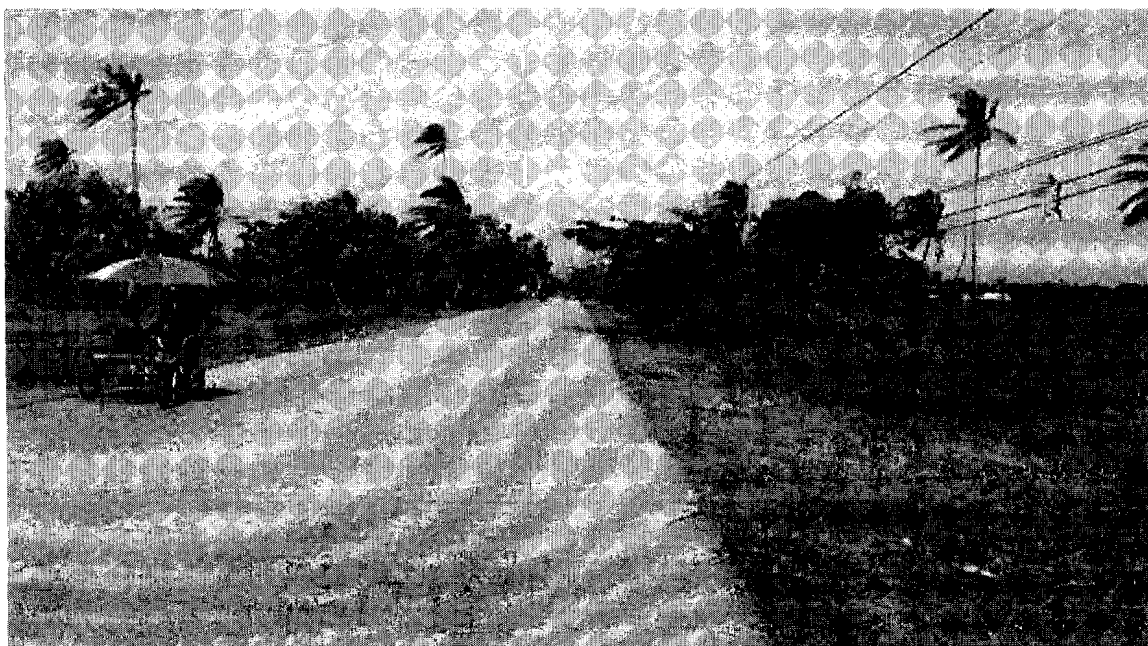
Existing Asphalt Paved Section @ Km. 142 + 000  
Brgy. Sta. Brigida

# MINDORO EAST COAST ROAD PROJECT

## ROXAS SECTION



Brgy. Bagumbayan, Roxas. Part of the Poblacion  
Km. 126 + 300



Existing Concrete Road @ Km. 129 + 600  
Brgy. Odiong

# MINDORO EAST COAST ROAD PROJECT

## MANSALAY SECTION



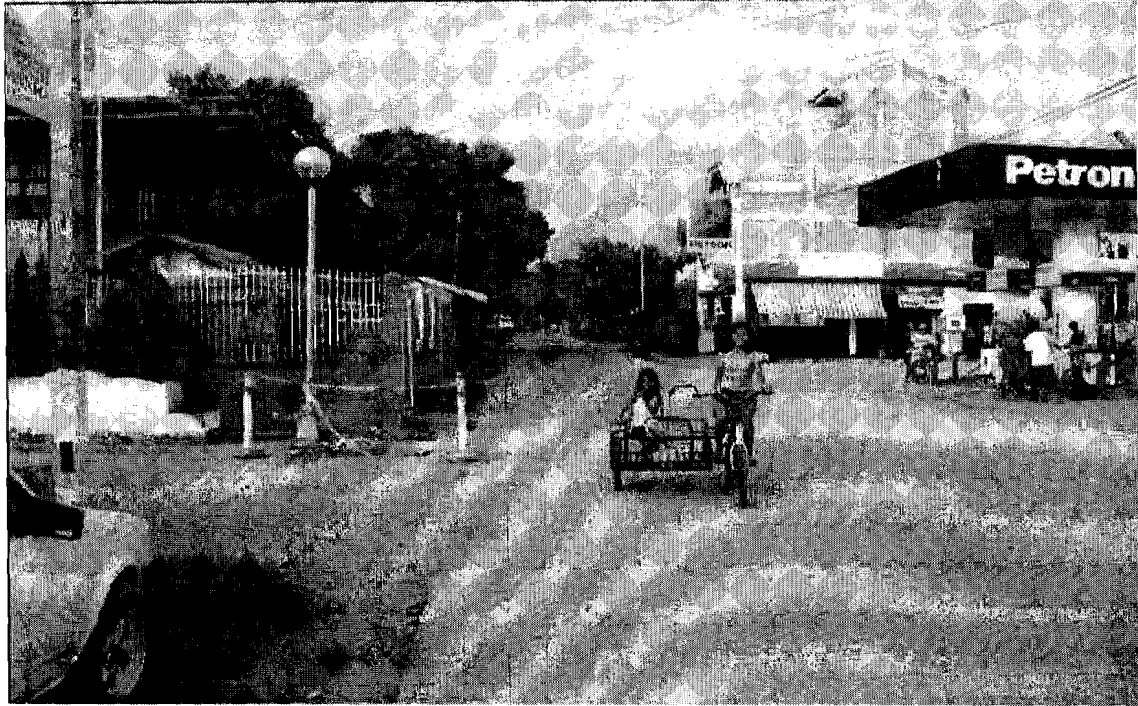
Flood Prone Section to be Upgrade  
Km. 147 + 050



Existing Road Condition and Vegetation @ Km. 151 + 000

# MINDORO EAST COAST ROAD PROJECT

## MANSALAY SECTION



### CONGESTED AREA

Some Structure will be Removed to give Way  
to Drainage Facilities.

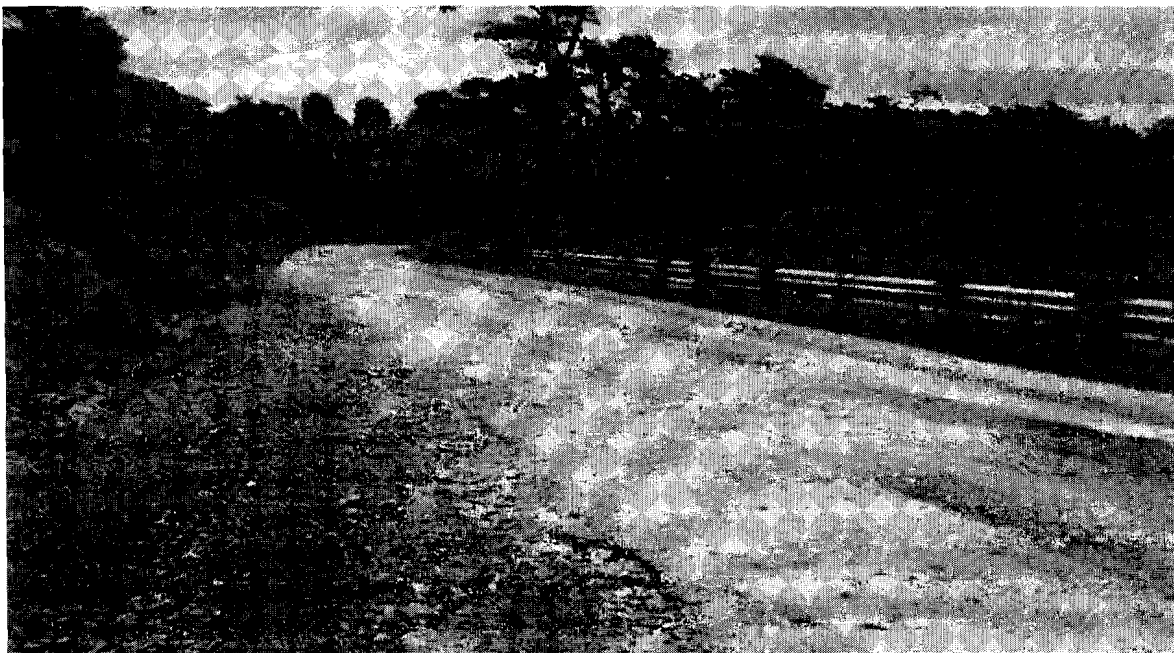


# MINDORO EAST COAST ROAD PROJECT

## MANSALAY SECTION



Existing Road Condition (Gravel Section) @ Km. 154 + 900  
Brgy. Teresita



Hilly Section of the Project Road @ Km. 161 + 600.  
Brgy. Cabalwa

# MINDORO EAST COAST ROAD PROJECT

## BULALACAO & MANSALAY SECTION



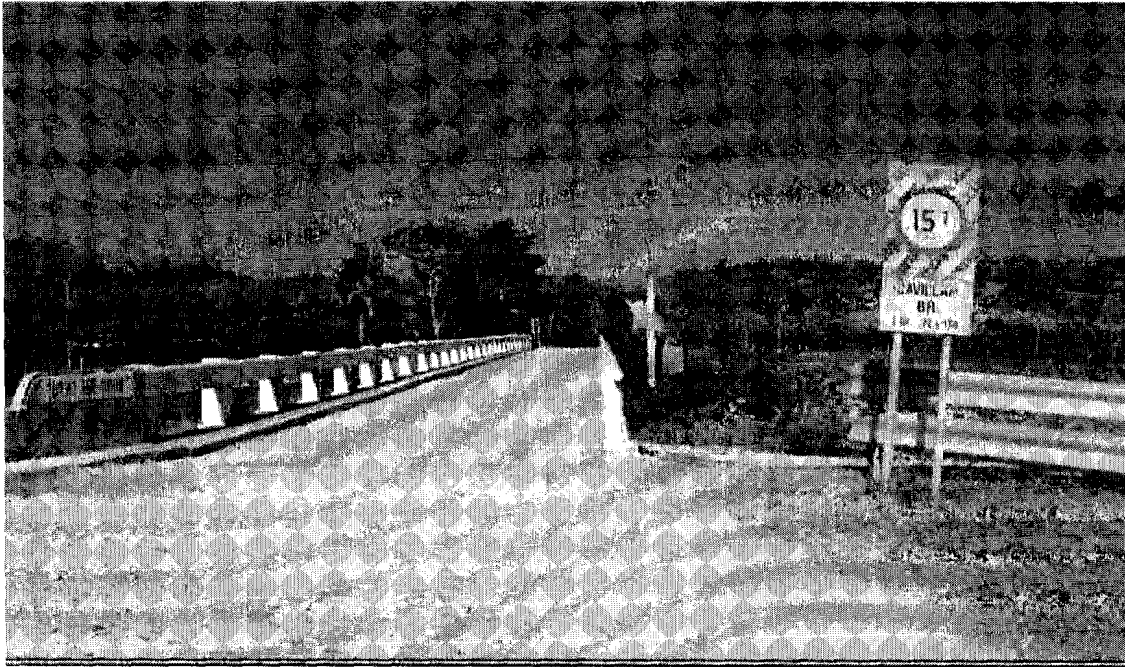
Present Road Condition (Gravel Section) @ Km. 167 + 000  
Brgy. Budburan, Mansalay



Existing Road and Vegetation @ Km. 169 + 750.  
Brgy. Cabalwa

# MINDORO EAST COAST ROAD PROJECT

## BULALACAO SECTION



Existing Half Lane Bridge (60.64 Lm.) for Reconstruction.  
Km. 178 + 171



Existing Gravel Road @ Km. 180 + 800  
Brgy. Nasucob

# MINDORO EAST COAST ROAD PROJECT

## BULALACAO SECTION



Existing Vegetation Along the Project Road @ Km. 175 + 500  
Brgy. Tambangan



Present Road Condition @ Km. 178 + 000.  
Brgy. Cabalwa

# MINDORO EAST COAST ROAD PROJECT

## BULALACAO SECTION



Existing Gravel Road and Vegetation  
Km. 190 + 300



Existing Bailey Bridge (30.35 Lm.) for Replacement  
Km. 193 + 859

# MINDORO EAST COAST ROAD PROJECT

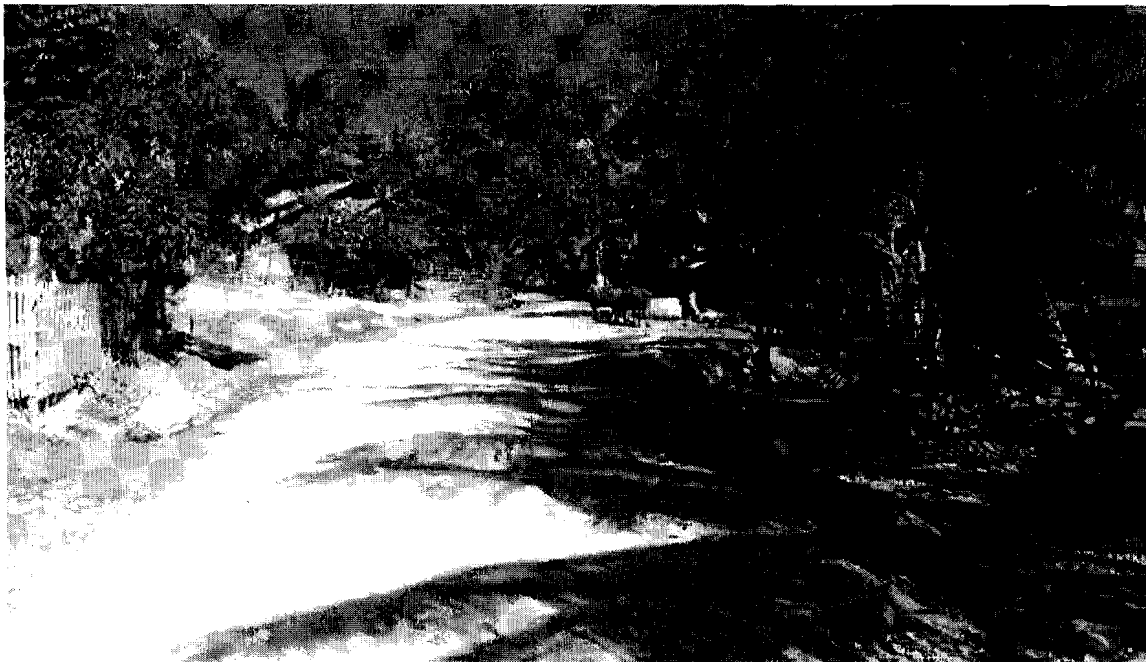
## BULALACAO SECTION



### CONGESTED AREA

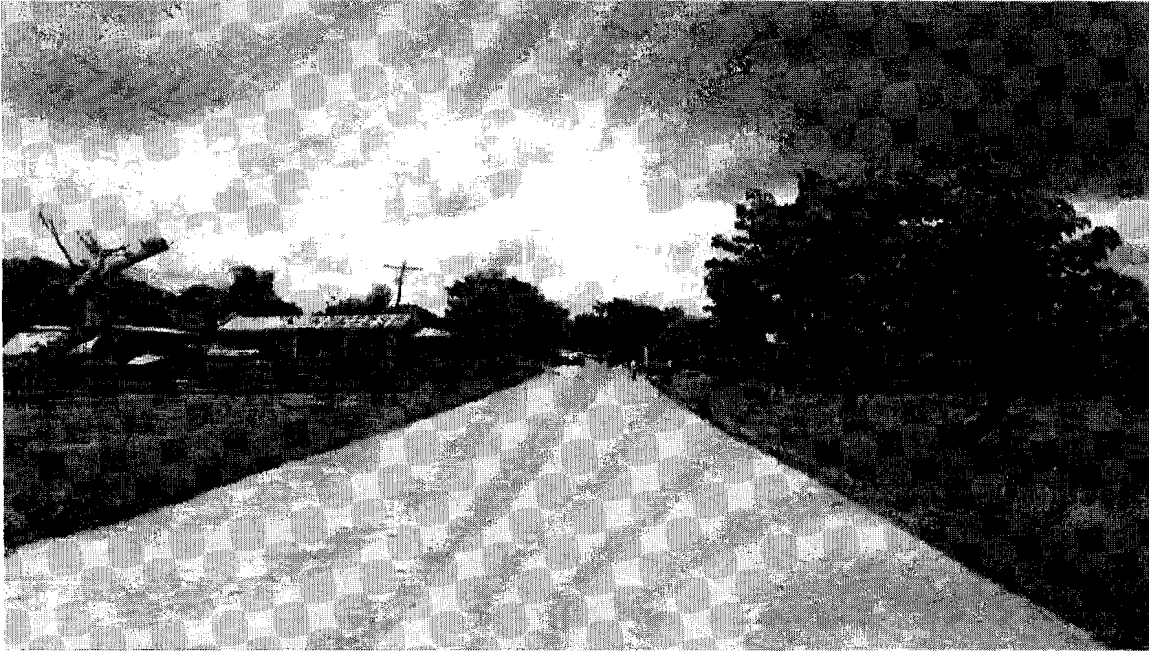
Km. 185 + 100

Some Structures will be Demolished and Compensated to  
Widen the Carriageway



# MINDORO EAST COAST ROAD PROJECT

## BULALACAO SECTION

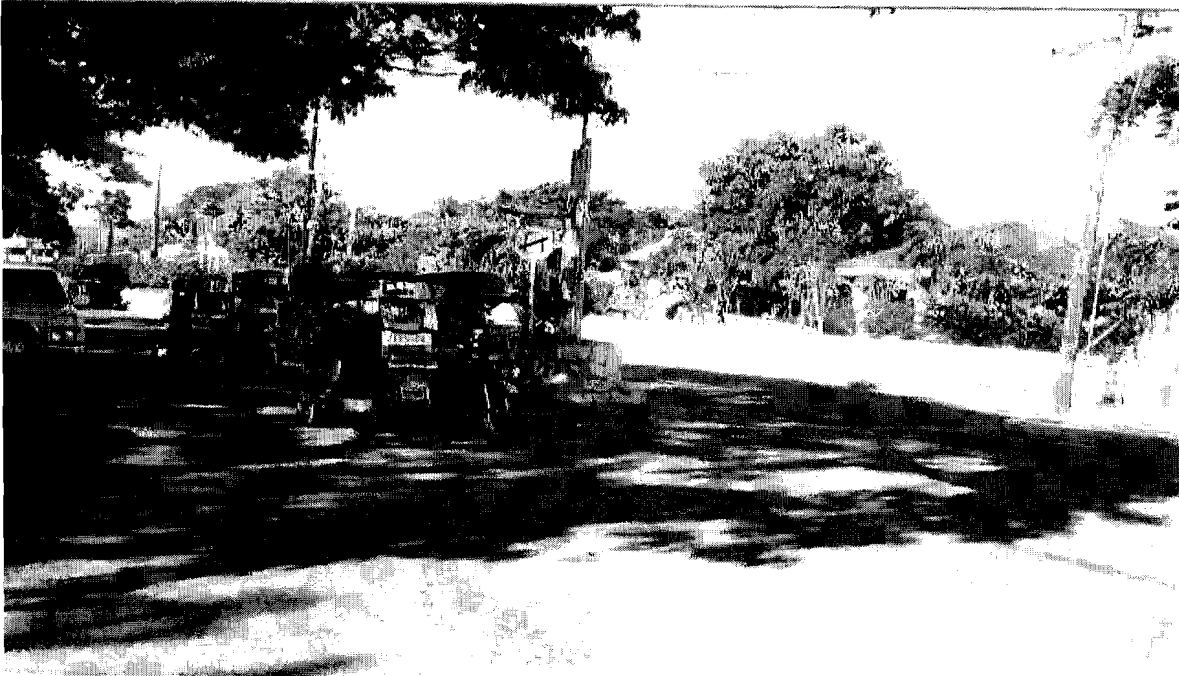


Existing Concrete Pave Road,  
Two Kilometers before the Town of Bulalacao  
Km. 183 + 800

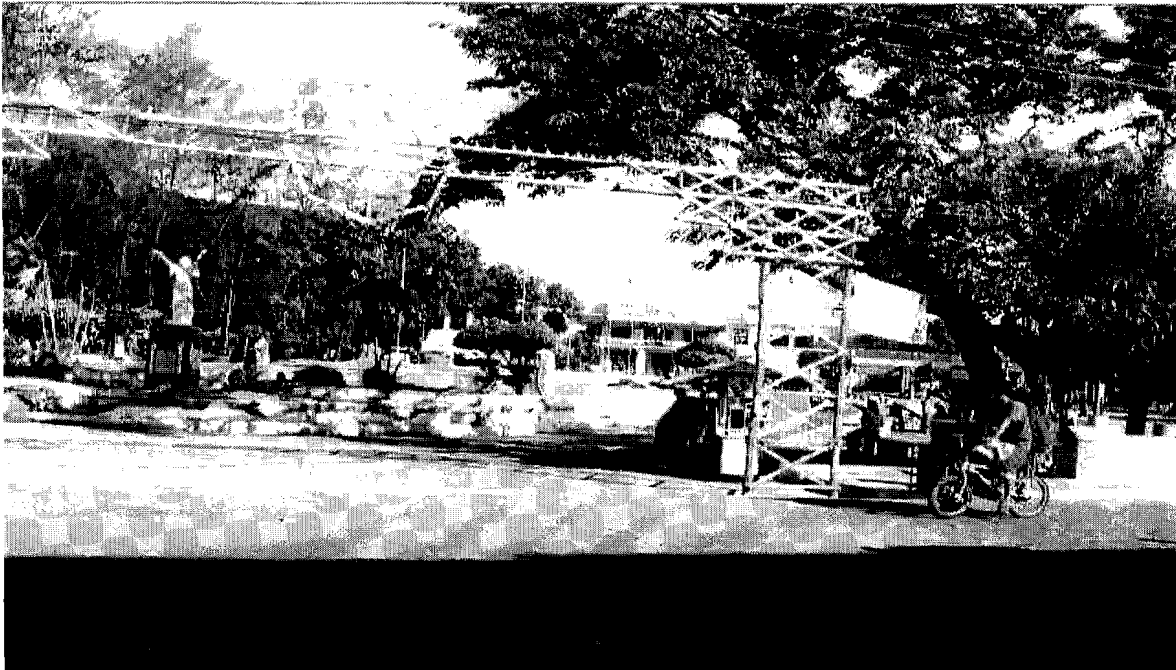


# MINDORO EAST COAST ROAD PROJECT

## SAN JOSE SECTION



END OF PROJECT ROAD IN FRONT OF SAN JOSE  
MUNICIPAL HALL @ Km. 237 + 000



# MINDORO EAST COAST ROAD PROJECT

## SAN JOSE SECTION



Existing Concrete Paved Road @ Km. 225 + 200  
Brgy. Mapaya, San Jose



Existing Gravel Road and Vegetation along the Section  
Brgy. Mapaya, San Jose  
Km. 230 + 700

# MINDORO EAST COAST ROAD PROJECT

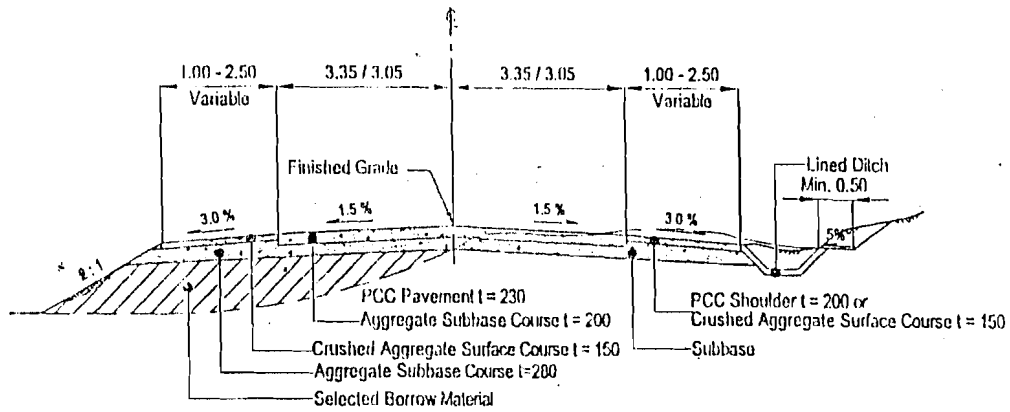
## MAGSAYSAY SECTION



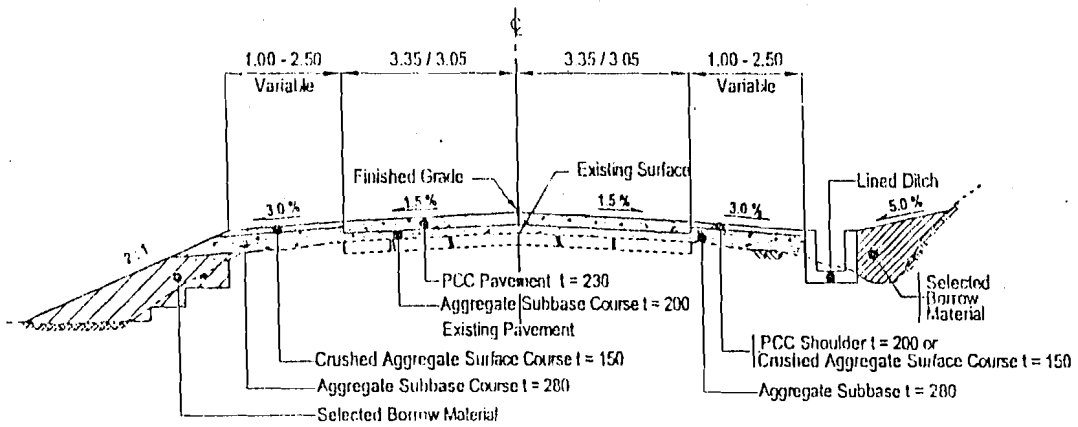
Existing Road Condition @ Km. 215 + 000,  
Brgy. Nicolos, Magsaysay



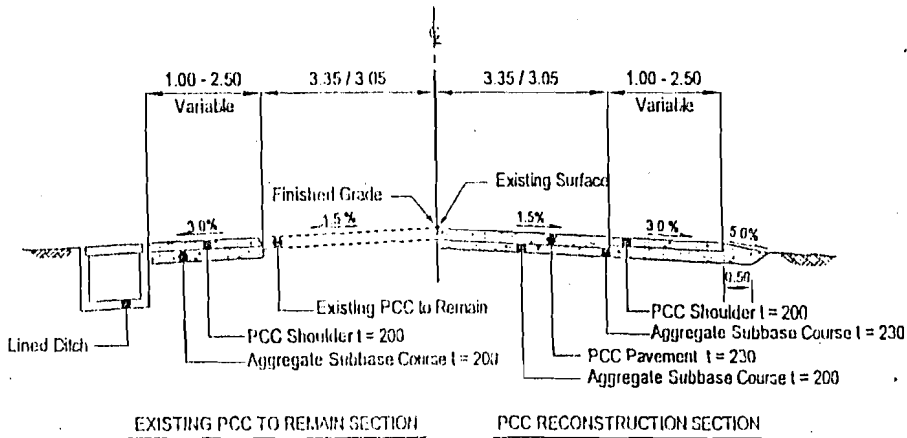
ANNEX 1.4.1 - a



Type - 1 NEW PCC PAVEMENT SECTION  
NOT TO SCALE



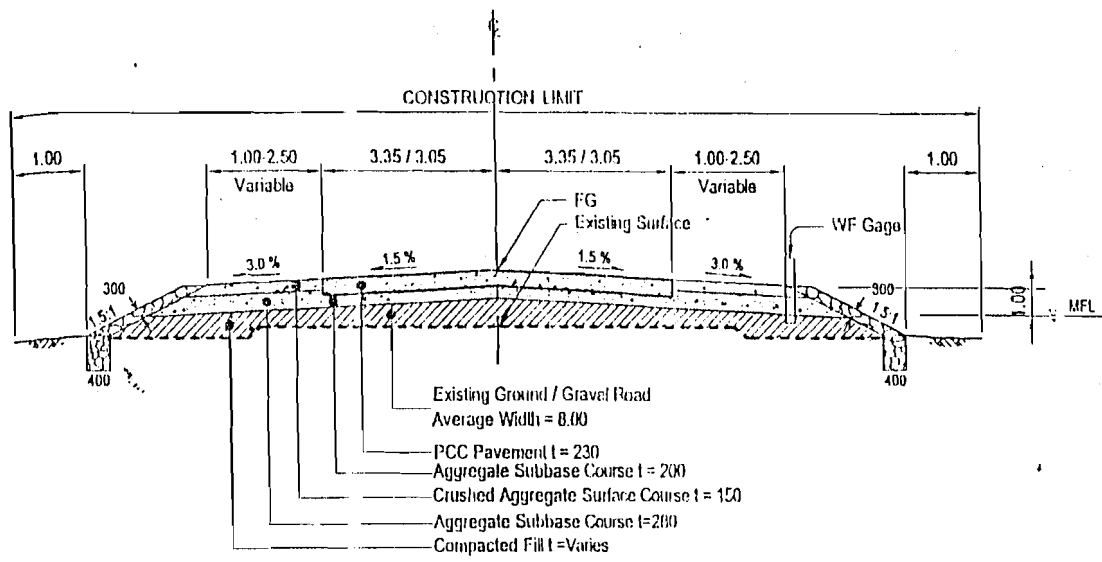
Type - 2 NEW PCC PAVEMENT ON THE EXISTING PAVEMENT  
(SECTIONS WHERE ROAD ELEVATION CAN BE RAISED)  
NOT TO SCALE



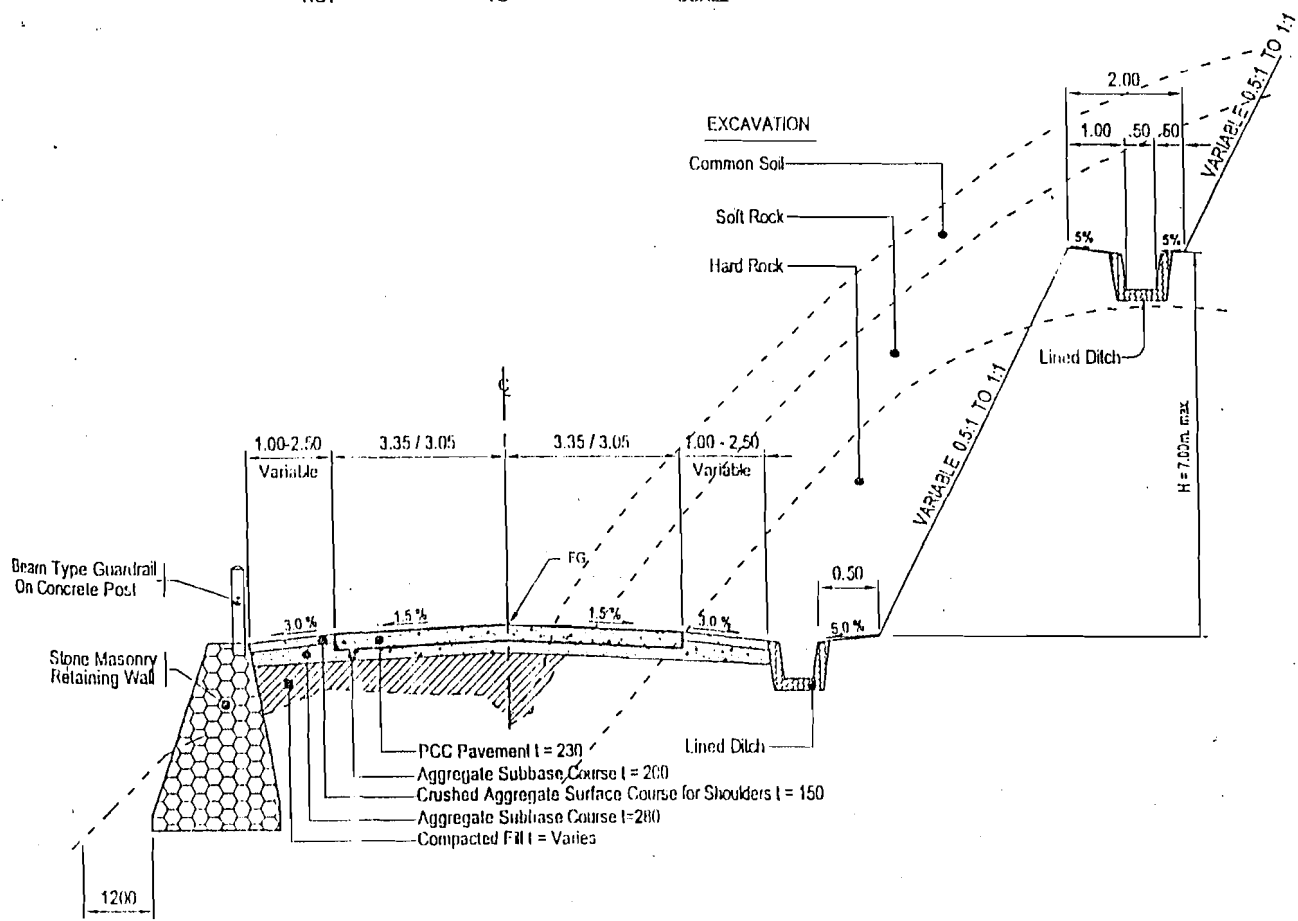
Type - 3 URBAN SECTION WITH PCC PAVED SHOULDER  
NOT TO SCALE

FIGURE 4.1a

ANNEX 1.4.1 - b



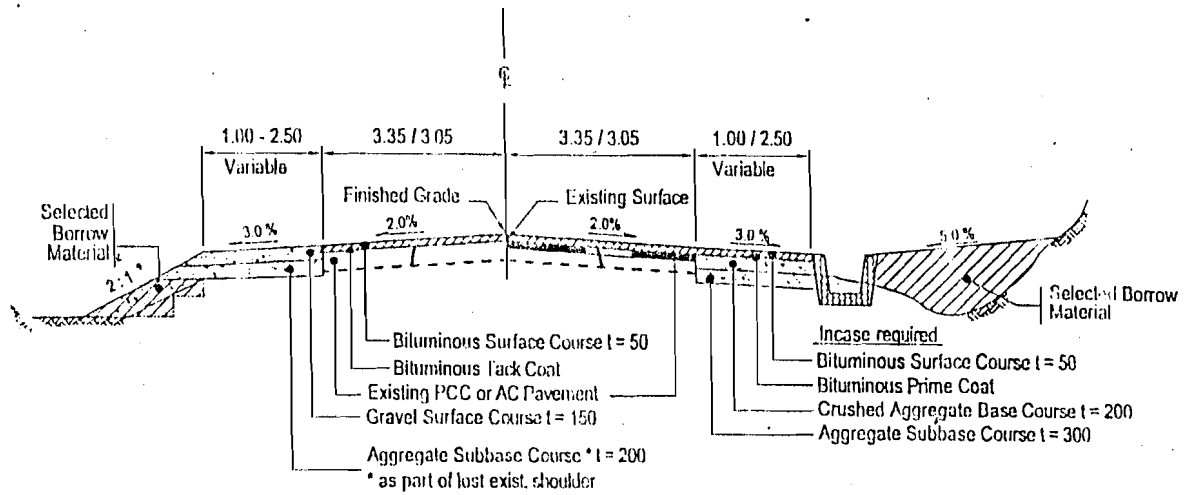
Type - 4 FLAT SECTION (FLOODED AREAS)  
NOT TO SCALE



Type - 5 MOUNTAINOUS IMPROVEMENT SECTION  
NOT TO SCALE

FIGURE 4.1b

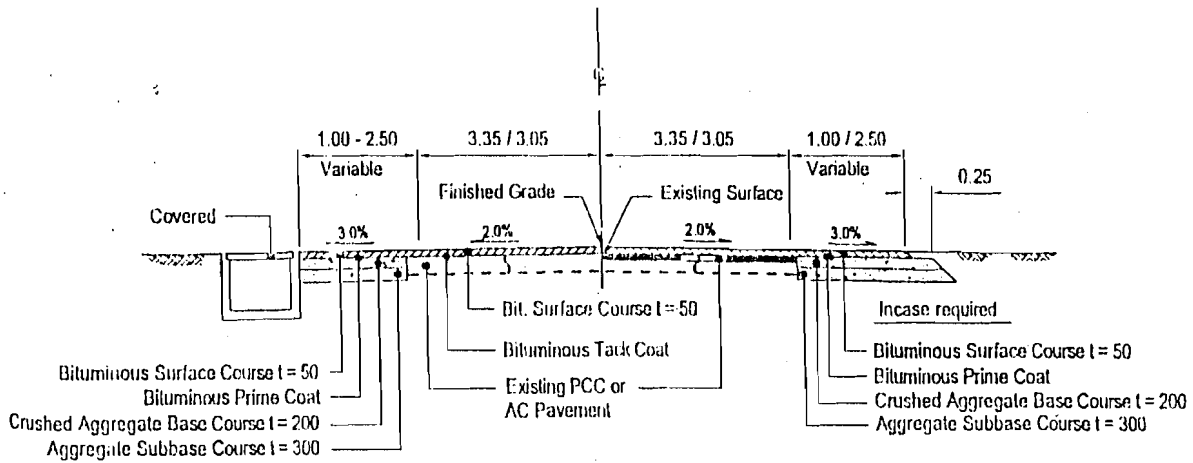
ANNEX 1.4.1 - c



Type - 6a AC OVERLAY OF PCCP

Type - 6b AC OVERLAY OF AC PAVEMENT

Type - 6 AC OVERLAY OF PCC OR AC PAVEMENT ( REGULAR SECTION )  
 NOT TO SCALE



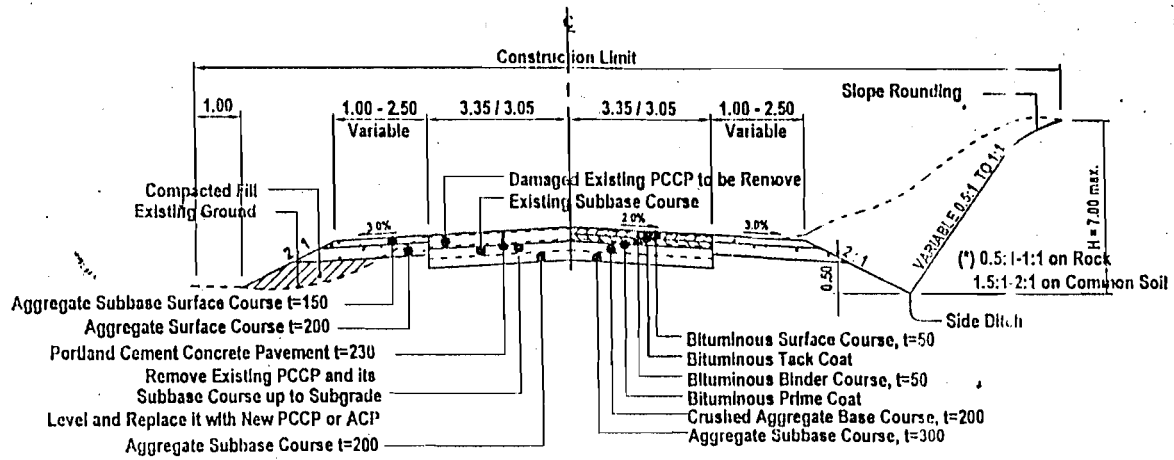
Type - 7a AC OVERLAY OF PCCP

Type - 7b AC OVERLAY OF AC PAVEMENT

Type - 7 AC OVERLAY OF PCC PAVEMENT ( URBAN SECTION )  
 NOT TO SCALE

FIGURE 4.1c

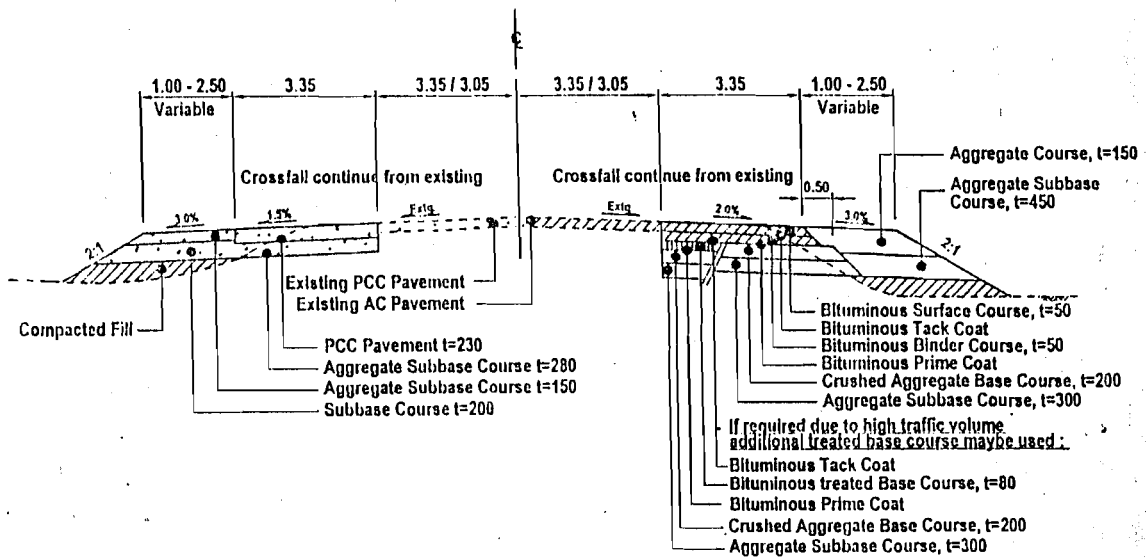
ANNEX 1.4.1 - d



Type - 8a REPLACEMENT OF EXISTING PCC PAVEMENT

Type - 8b REPLACEMENT OF EXISTING AC PAVEMENT

Type - 8 REPLACEMENT OF EXISTING PAVEMENT  
NOT TO SCALE



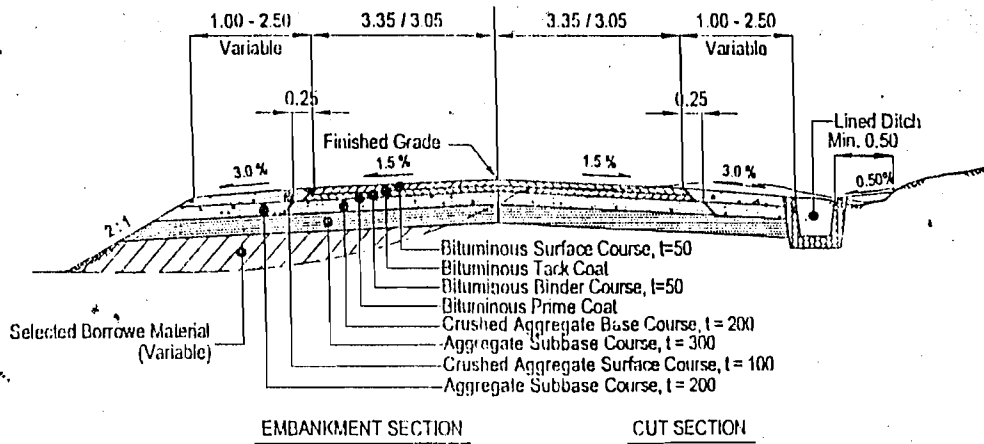
Type - 9a WIDENING OF PCCP

Type - 9b WIDENING OF AC PAVEMENT

WIDENING SECTION  
NOT TO SCALE

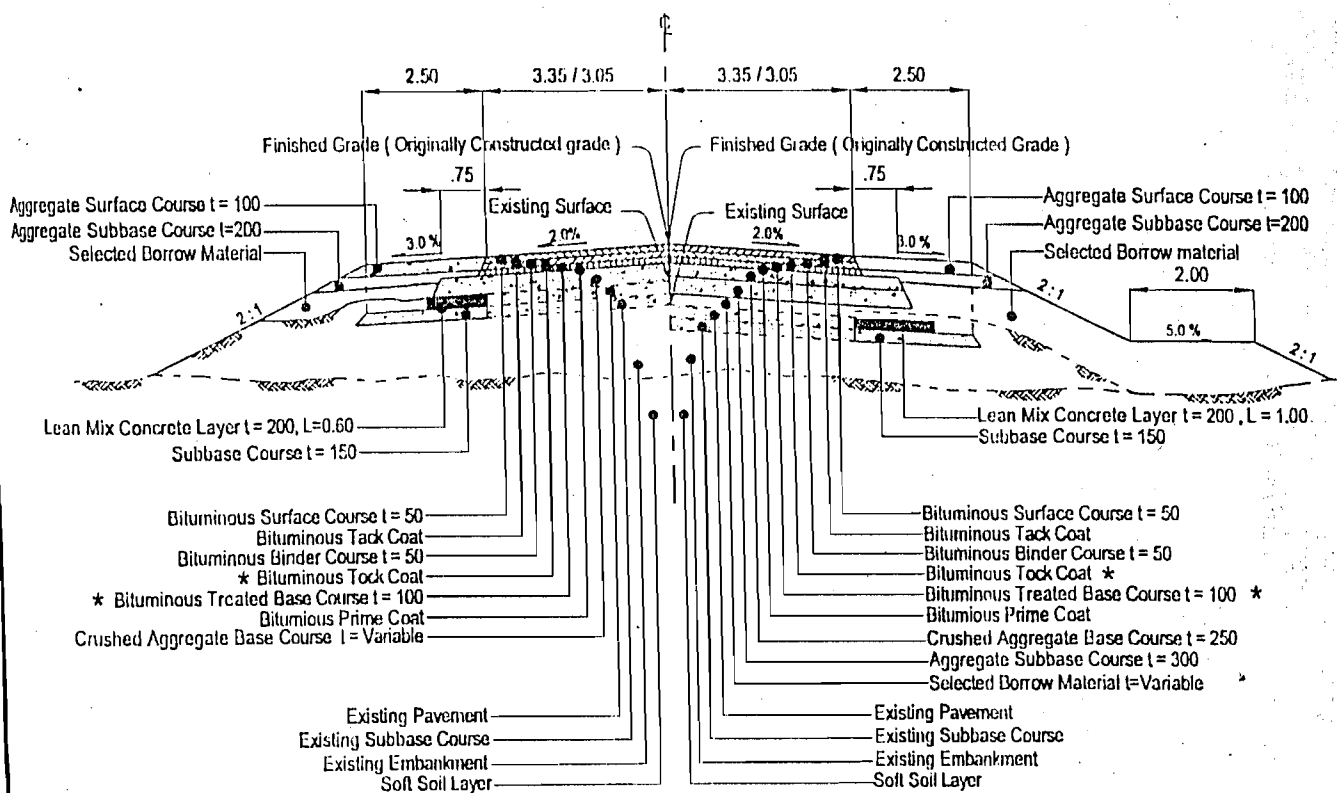
FIGURE 4.1d

ANNEX 1.4.1 - c



Type - 10 NEW AC PAVEMENT SECTION

NOT TO SCALE



Type 11a SHALLOW SETTLEMENT SECTION

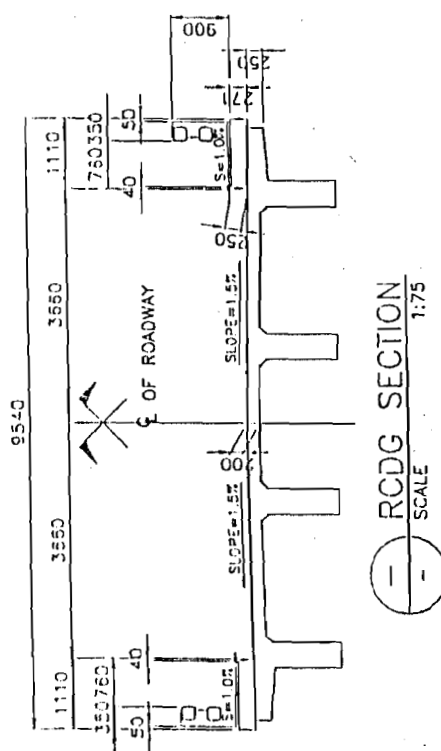
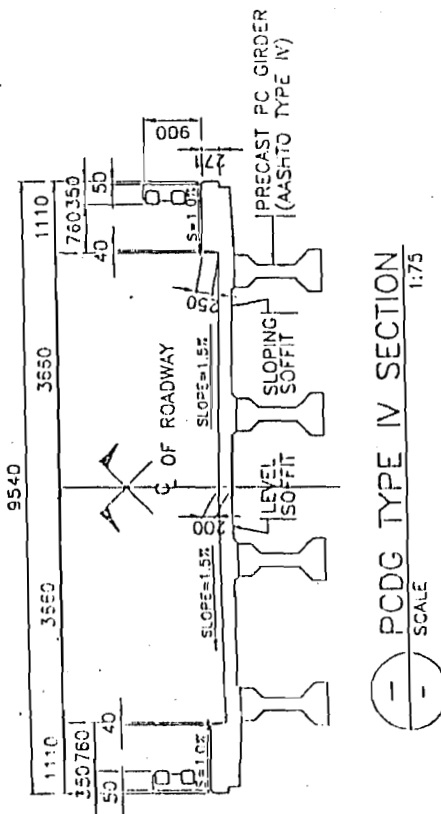
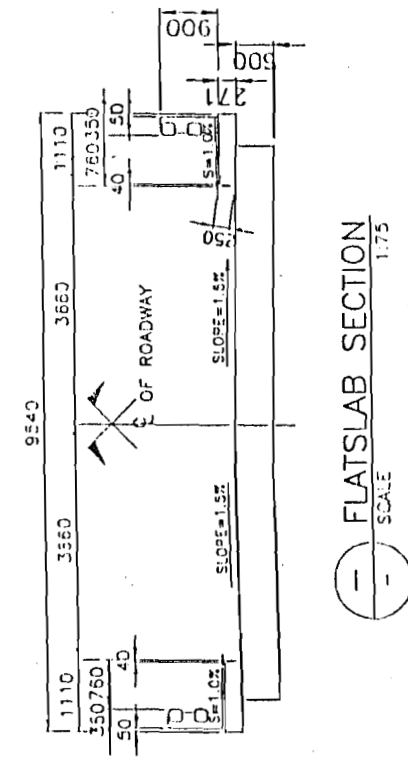
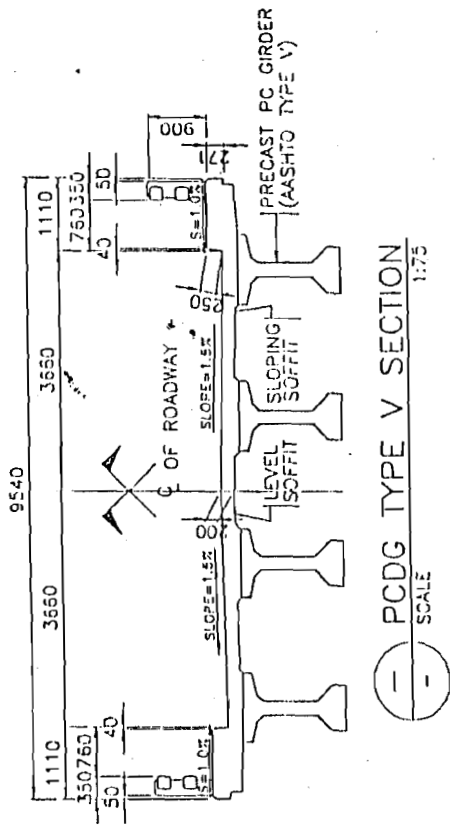
Type 11b DEEP SETTLEMENT SECTION

Type - 11 SETTLEMENT SECTION

NOT TO SCALE

NOTE: \*  
Additional treated Base shall be  
provided if trafficAADT > \_\_\_\_\_  
and CBR < \_\_\_\_\_

FIGURE 4.1e



TYPICAL SECTION OF BRIDGE TWO LANES SUPERSTRUCTURE

Figure 4.3 (1/2)





Republic of the Philippines  
PROVINCE OF ORIENTAL MINDORO  
CALAPAN CITY

**SANGGUNIANG PANLALAWIGAN**

EXCERPT FROM THE JOURNAL OF THE REGULAR SESSION OF THE SANGGUNIANG PANLALAWIGAN OF ORIENTAL MINDORO HELD AT THE SANGGUNIANG BAYAN SESSION HALL, MUNICIPALITY OF PUERTO GALERA, ORIENTAL MINDORO, ON MONDAY, MAY 22, 2006

PRESENT:

Hon. Maria Estela Felipa M. Aceron	Vice Governor, Presiding Officer
Hon. Ramil O. Dimapilis	Member
Hon. Ireneo A. Apasan	Member
Hon. Claro R. Recla	Member
Hon. Luis S. Castillel	Member
Hon. Susan F. Cobrado	Member
Hon. Romeo G. Infante	Member
Hon. Abraham R. Abas	Member
Hon. Corazon F. Agarap	Member
Hon. Peter Ronald G. Panaligan	Member
Hon. Juan Paolo G. Luna	Member, PCL President

ON OFFICIAL BUSINESS:

Hon. Ernesto E. Liwanag	Member
Hon. Rogelo G. Comela	Member, ABC President
Hon. Kalthleen Cyrele M. Cuyas	Member, SKPF President

X-----X

RESOLUTION NO. 166-2006

**RESOLUTION ENDORSING AND SUPPORTING THE UPGRADING/IMPROVEMENT/CONCRETING OF THE MINDORO EAST COAST ROAD FROM BONGABONG TO SAN JOSE, OCCIDENTAL MINDORO UNDER THE INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT - NATIONAL ROAD IMPROVEMENT & MANAGEMENT PROJECT (IBRD-NRIMP II PROJECT), WHICH IS TO BE FUNDED BY THE WORLD BANK**

On motion of all Members of the Sangguniang Panlalawigan present, be it:

RESOLVED, to endorse and support, as it is hereby endorsing and supporting the Upgrading/Improvement/Concreting of the Mindoro East Coast Road from Bongabong to San Jose, Occidental Mindoro under the International Bank for Reconstruction and Development - National Road Improvement & Management Project (IBRD-NRIMP II Project), which is to be funded by the World Bank.

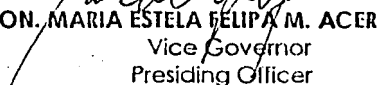
RESOLVED FURTHER, that a copy of this resolution be furnished the Provincial Governor and the World Bank, for their information and guidance.

UNANIMOUSLY APPROVED.

CERTIFIED CORRECT:

  
DIWATA IN FETIZHAN  
Secretary to the  
Sangguniang Panlalawigan

ATTESTED:

  
HON. MARIA ESTELA FELIPA M. ACERON  
Vice Governor  
Presiding Officer

Republic of the Philippines  
MUNICIPALITY OF BONGABONG  
Province of Oriental Mindoro

OFFICE OF THE SANGGUNIANG BAYAN

EXCERPTS FROM THE MINUTES OF THE REGULAR SESSION OF THE SANGGUNIANG BAYAN OF BONGABONG, ORIENTAL MINDORO, HELD ON MAY 08, 2006 AT THE MUNICIPAL SESSION HALL.

Present:

Hon. HERCULES A. UMALI	VICE MAYOR Presiding Officer
Hon. ALFONSO A. MONTALBO	MEMBER
Hon. ALVIN M. MELENDREZ	MEMBER
Hon. NELSON B. GABUTERO, SR.	MEMBER
Hon. EVELYN B. ALEA	MEMBER
Hon. ROGELIO C. MAULION	MEMBER
Hon. OCTAVIO D. ABANES	MEMBER
Hon. ROLANDO M. MANSANADIS	ABC Fed. President
Hon. MARLON L. PUNZALAN	S.K. Fed. President

On Official Business:

Hon. ELISA G. SALVACION	MEMBER
Hon. PACIFICO L. FRADEJAS	MEMBER

x-----x

RESOLUTION No. 26  
Series of 2006

A RESOLUTION RESPECTFULLY ENDORSING FOR FAVORABLE ACTION TO HER EXCELLENCY, MADAM GLORIA MACAPAGAL-ARROYO, PRESIDENT OF THE REPUBLIC OF THE PHILIPPINES, THROUGH SECRETARY HERMOGENES E. EDDANE, JR. OF THE DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS, THE PROPOSED CONSTRUCTION OF A MINDORO EAST COASTAL ROAD (BONGABONG-BULALACAO-SAN JOSE SECTION)

WHEREAS, paragraph [a] of Section 25 of R.A. No. 7160, otherwise known as the Local Government Code of 1991, says that "consistent with the basic policy on local autonomy, the President shall exercise general supervision over local government units to ensure that their acts are within the scope of their prescribed powers and functions"

WHEREAS, paragraph [c] of the same provision of the law states that "the President may, upon request of the local government units concerned, direct the appropriate national agency to provide financial, technical or other forms of assistance to the local government unit. Such assistance shall be extended at no extra cost to the LGU concerned";

WHEREAS, it has come to the knowledge of this Body that the World Bank, upon request of the national government, has extended or will be extending financial assistance to the national government for the construction, rehabilitation and maintenance of roads in the country under IBRD-NRIMP II Project;

WHEREAS, there is a unified plea from among the coastal Municipalities of Bongabong, Roxas, Marisalay, Bulalacao, all of the Province of Oriental Mindoro and of San Jose, Occidental Mindoro, for the construction of a coastal road that will connect them;

WHEREAS, the above-mentioned Municipalities play a very significant role not only in MIMAROPA but also in the country's arterial road networks;

WHEREAS, the existing road network connecting these Municipalities is insufficient because it does not provide access road for coastal areas, thus, making it difficult for marine products to be transported to the market areas and also to be properly and efficiently protected by the local government authorities against marauders and illegal fishers;

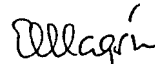
WHEREAS, the construction of the proposed road network shall will redound to the benefit of the people because it will promote growth and development and minimize reasons for poverty and insurgency not only in their respective territorial jurisdictions but also in the entire country as well;

WHEREAS, a portion of the loan secured or to be secured by the national government from the World Bank may be utilized to finance this noble project;

NOW THEREFORE, upon motion of Hon. NELSON B. GABUTERO, SR., seconded by all members present, be it RESOLVED AS IT IS HEREBY RESOLVED, to: respectfully endorse for favorable action to Her Excellency, Madam Gloria Macapagal-Arroyo, through Honorable Hermogenes E. Ebdane, Jr., Secretary, Department of Public Works and Highways, the proposed construction of a Mindoro East Coastal Road (Bongabong-Bulalacao-San Jose Section) under IBRD-NPIMP II project funded by the World Bank;

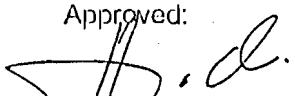
UNANIMOUSLY APPROVED.

Certified true:




Atty. EDUARDO M. MAGSINO  
Secretary to the Sanggunian

Approved:



HERCULES A. UMALI  
Vice-mayor  
Presiding Officer

Certified by:



ALEX I. ENRIQUEZ  
Municipal Mayor



Republic of the Philippines  
Province of Oriental Mindoro  
**MUNICIPALITY OF ROXAS**

**OFFICE OF THE SANGGUNIANG BAYAN**

EXCERPTS FROM THE MINUTES OF THE 16<sup>TH</sup> REGULAR SESSION OF THE SANGGUNIANG BAYAN OF ROXAS, ORIENTAL MINDORO HELD ON 03 MAY 2006, 9:20 A.M. AT THE SANGGUNIANG SESSION HALL.

Present:

Vice Mayor Cesar T. Baticos	- Presiding Officer
Councilor Agustin L. Cusi	- Member
Councilor Eduardo K. Soriano	- Member
Councilor Mae Arlene M. Talens	- Member
Councilor Juanito A. Bacay, Jr.	- Member
Councilor Juan S. Advincula	- Member
Councilor Gemar C. Montesa	- Member
Councilor Jovito D. Estrada	- Member
Councilor Larry V. Salazar	- Member, ABC President

Absent: Councilor Hernan C. Torrita - Member  
Councilor King Philip B. Dimapilis - Member, MSKF President

RESOLUTION NO. 022  
Series of 2006

RESOLUTION RESPECTFULLY REQUESTING HON. HERMOGENES E. EBDANE JR., SECRETARY, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS TO PRIORITIZE THE INCLUSION FOR FUNDING OF THE UPGRADING/IMPROVEMENT/CONCRETING OF MINDORO EAST COAST ROAD INCLUDING BRIDGES AND DRAINAGE SYSTEM FROM BONGABONG, ORIENTAL MINDORO TO SAN JOSE, OCCIDENTAL MINDORO.

WHEREAS, the Municipality of Roxas, Oriental Mindoro recognized the importance of a circumferential road that will connect Oriental Mindoro and Occidental Mindoro;

WHEREAS, such project if fully implemented would further accelerate the socio-economic development and improve public and social services;

WHEREAS, the southern portion of Mindoro Island has, for the past decades, rapidly advanced in business and agricultural pursuits contributing to marked degree in improvement in the economy and consequently in the standard of living of its constituents;

WHEREAS, the route from mainland Luzon to Visayan Island called Nautical Highway passes to this southern portion of Mindoro Island and will be a busy route that

will need further improvement, upgrading/improvement/concreting of the road is seen as one very basic and urgent priority measure the local governance and the national government shall consider:

WHEREAS, taking into account this road improvement will provide for the promotion of the socio economic progress of the entire Mindoro province and a major support to the Strong Republic Nautical Highway Project, the local governance of this municipality have decided to address the request to Hon. Hermogenes E. Ebdane, Jr., Secretary, DPWH for the prioritization of this project.

NOW THEREFORE, on motion of Councilor Jovito D. Estrada and unanimously seconded by all members present -

BE IT RESOLVED to respectfully request as it hereby requests Hon. Hermogenes E. Ebdane, Jr., Secretary, DPWH to prioritize the inclusion for funding of the upgrading/improvement/concreting of Mindoro East Coast Road including bridges and drainage system from Bongabong, Oriental Mindoro to San Jose, Occidental Mindoro.

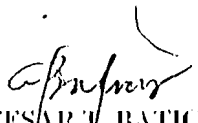
RESOLVED FURTHER to send copies of this resolution Hon. Hermogenes E. Ebdane, Jr., Secretary, DPWH, Port Area, Manila for his perusal and priority concern to this request.

ADOPTED: 03 May 2006

I HEREBY CERTIFY to the correctness of the foregoing resolution.

  
FERDINAND V. TALENS, MPA  
Secretary to the Sangguniang Bayan

ATTESTED:

  
CESAR V. BATICOS  
Municipal Vice Mayor /  
Presiding Officer

APPROVED:

  
JESUS M. DIMAPILIS  
Municipal Mayor

OFFICE OF THE VICE MAYOR  
MUNICIPALITY OF SAN JOSE  
MINDORO

OFFICE OF THE MUNICIPAL BAYAN

Resolves from the Minutes of the 10<sup>th</sup> Regular Session of the Sangguniang Bayan of Mausalay,  
Held at the Municipal Council Hall on April 24, 2006.

*Members:*

Hon. Emanoel T. E. Lora	Mun. Vice Mayor
Hon. Jim M. Trajico	LB Member
Hon. Florian J. Dimatulae	SB Member
Hon. Alvin G. Co	SB Member
Hon. Ric D. delo Lora	SB Member
Hon. Milo P. Pagliarawan	SB Member
Hon. Roycario M. Guacido	SB Member
Hon. Ramon M. Gallery	Ex-Officio SB Member (Liga)
Hon. Evelyn B. Servan	Ex-Officio SB Member (SK)

*Members:*

Hon. Cesar T. Baccang	SB Member
Hon. Macduane C. Mallopo	SB Member

*Resolution No. 1006-2006-AB*

*Re: Motion Requesting Hon. Heronogenes E. Ebdana, Jr., Secretary DPWH to Include in your Priority List of Project: the Provision of funds for the Upgrading/Improvement/Consolidating of Mindoro East Coast Road including Bridges/Drainage Facilities from Bongabong, Oriental Mindoro, to San Jose Occidental Mindoro.*

Whereas, this August Body believes that circumferential road will greatly promote the general welfare of the populace of the Provinces of Oriental Mindoro and Occidental Mindoro;

Whereas, the upgrading/improvement/consolidating of Mindoro East Coast Road from Bongabong, Oriental Mindoro to San Jose Occidental Mindoro is one of the development concerns of the Municipalities of Oriental Mindoro wherein the people are the primary beneficiary and force development;

Whereas, if this project will be realized it will empower the populace with the capability to organize and manage their own socio-economic project, strengthen the establishment of strong, self-reliant community economies, and maximize the use of local know-how to use both indigenous and modern resources in the development efforts;


Wherefore in view of the foregoing considerations on motion of Hon. Jim M. Trajico, Chairman, Committee on Infrastructure Projects and duly seconded by Hon. Milo P. Pagliarawan, Chairman, Committee on Appropriation, be it

Resolved: *As It is Hereshy Resolved* to request Hon. Heronogenes E. Ebdana, Jr., Secretary DPWH to include in your priority list of projects the provisions of funds for the upgrading/improvement/consolidating of Mindoro East Coast Road including bridges/drainage facilities from Bongabong, Oriental Mindoro to San Jose Occidental Mindoro;

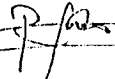
Resolved: Finally, to furnish copy of the resolution to Hon. Hermogenes F. Ubalde, Jr., Secretary DPWH for consideration and approval.

*Unanimously Approved.*

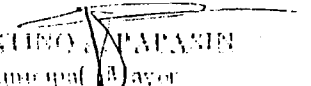
*Resolved: That the above quoted resolution was duly approved by the Sangguniang Barangay, Municipality of Marikina during its regular session on April 21, 2006.*

  
GREGORIO B. DE CHAVEZ  
SB Secretary

*Witnessed:*

  
FERRADO U. DE LARA  
Municipal Vice Mayor  
Christian Church

*Approved:*

  
CELESTINO PAPASIE  
Municipal Mayor



Republic of the Philippines  
Province of Oriental Mindoro  
**MUNICIPALITY OF BULALACAO**

**OFFICE OF THE SANGGUNIANG BAYAN**

Municipal Building, Bulalacao, Oriental Mindoro 5707

April 27, 2006

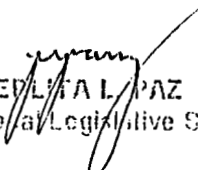
HONORABLE HERMOGENES E. FORDANE, JR.  
Secretary  
Department of Public Works and Highways  
Room 202, DPWH Bldg.  
Bonifacio Drive, Port Area  
Metro Manila

SIR:

Attached herewith please find copy of Resolution No. 06-04-045  
of the Sangguniang Bayan of Bulalacao, Province of Oriental  
Mindoro, for your information and kindest consideration.

Thank you and my warmest personal regards.

Very truly yours,

  
PERLYTA L. PAZ  
Legal/ Legislative Staff Officer

Enc. 1/s  
Enc. 1/s  
bms/



Republic of the Philippines  
Province of Oriental Mindoro  
**MUNICIPALITY OF BULALACAO**

**OFFICE OF THE SANGGUNIANG BAYAN**

*Municipal Building, Bulalacao, Oriental Mindoro, 5211*

EXCERPTS FROM THE MINUTES OF THE REGULAR SESSION OF THE SANGGUNIANG BAYAN OF BULALACAO, ORIENTAL MINDORO HELD ON APRIL 24, 2006 AT THE SANGGUNIANG BAYAN SESSION HALL

**PRESENT:**

Hon. Salvador A. Magalay	-	Presiding Officer
Hon. Guillermo G. Salas, Jr.	-	Sang. Bayan Member
Hon. Gabriel C. Hermilao	-	-do-
Hon. Efran S. Acosta	-	-do-
Hon. Rosalinda M. Cabagay	-	-do-
Hon. Leonardo A. Andafien	-	-do-
Hon. Sanny O. Madra	-	-do-
Hon. Roberto A. Ilario	-	-do-
Hon. Eric Michael R. Pajetal	-	-do-
Hon. Juan L. Salas, Sr.	-	Pres. Liga ng mga Ergo.

**ABSENT:**

Hon. Joseph Rey S. Aniparo	-	SK Fed. President
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**RESOLUTION NO. 06-04-045**

RESPECTFULLY ENDORSING TO THE HONORABLE HERMOGENES E. EDDANE, JR., SECRETARY, DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS THE PROPOSED UPGRADING, REHABILITATION AND CONSTRUCTION OF MINDORO EAST COAST ROAD (BONGABONG-BULALACAO-SAN JOSE SECTION) UNDER IRRD-NRIMP II PROJECT FUNDED BY THE WORLD BANK

"WHEREAS, under Section 25 of R.A. 7160, otherwise known as the Local Government Code of 1991 pertaining to the national supervision over LGU, par. a of which says that "consistent with the basic policy on local autonomy the President shall exercise general supervision over LGU to ensure that their acts are within the scope of their prescribed powers and functions", furthermore par. c provides "that the President may, upon request of the LGU concerned direct the appropriate national agency to provide financial, technical or other forms of assistance to the LGU such an instance shall be extended at no extra cost to the LGU concerned";

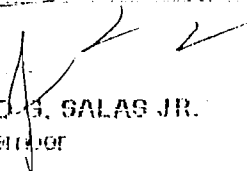
"WHEREAS, citing the rationale by the Local Chief Executive of this Municipality that Bulalacao place a very significant role not only in MIMAROPA but also in the country's arterial road networks and that the construction of the requested road shall promote growth and likewise minimize reasons for poverty and insurgency;

"WHEREAS, knowing that there is valid reason in the context of the letter of the Municipal Mayor dated August 14, 2005, this Body hereby agreed to endorse the upgrading, rehabilitation and construction of Bongabon-Bulalacao-San Jose Road which would definitely redound to the socio-economic condition of Oriental and Occidental Mindoro. Now, therefore, be it

RESOLVED AS IT IS HEREBY RESOLVED, To: Respectfully endorse to the Honorable Hermogenes E. Eldane, Jr., Secretary, Department of Public Works and Highways the proposed upgrading, rehabilitation and construction of Mindoro East Coast Road (Bongabon-Bulalacao-San Jose Section) under IBRD-NRIMP II project funded by the World Bank;


ON MOTION of Councilor Sunny O. Madra duly seconded by all members present, foregoing was . . .

APPROVED: April 24, 2006, Bulalacao, Oriental Mindoro.


  
GUILLERMO S. SALAS JR.  
SB Member

GABRIEL C. HERMILAO  
SB Member


EFREN S. ACOSTA  
SB Member

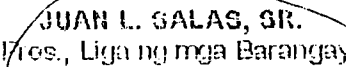
  
ROSALINDA L. CABAGAY  
SB Member

  
LEONARDO A. ANDALOU  
SB Member

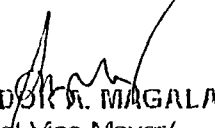
  
SUNNY O. MADRA  
SB Member

  
ROBERTO A. HILARIO  
SB Member

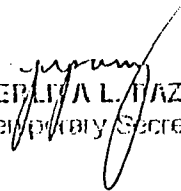
  
ERIC MICHAEL R. PAJOTAL  
SB Member

  
JUAN L. SALAS, SR.  
Pres., Liga ng mga Barangay

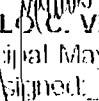
CERTIFIED TRUE AND CORRECT:

  
SALVADOR A. MAGALAY  
Municipal Vice Mayor/  
Presiding Officer

ATTESTED:

  
PEPITA L. TAZ  
Temporary Secretary

APPROVED:

  
ERNILO C. VILLAS  
Municipal Mayor  
Date signed: APRIL 27, 2006

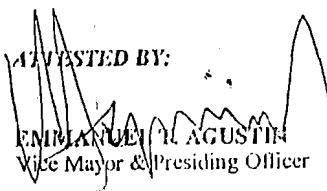


Republic of the Philippines  
Province of Occidental Mindoro  
**MUNICIPALITY OF SAN JOSE**

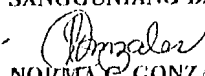
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**OFFICE OF THE SANGGUNIANG BAYAN**

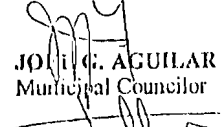
ATTESTED BY:

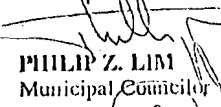
  
EMMANUEL U. AGUSTIN  
Vice Mayor & Presiding Officer

SANGGUNIANG BAYAN MEMBERS:


  
NORMA C. GONZALES  
Municipal Councilor

  
VICTORIA A. VILLAROSA  
Municipal Councilor

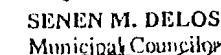
  
JON U. AGUILAR  
Municipal Councilor

  
PHILIP Z. LIM  
Municipal Councilor

  
FERDINAND B. MERCENE  
Municipal Councilor

  
RENATO C. MAN  
Municipal Councilor


(OFFICIAL TIME)

  
SENE M. DE LOS REYES  
Municipal Councilor

  
CESARINO C. ASILO  
Municipal Councilor

  
AQUINO A. VELA, JR.  
Ex-Officio Member (ABC)

(On Official Travel)

  
GRETCHEN R. NACIONALES  
Ex-Officio Member (SKF)

RESOLUTION NO. 1510  
Series of 2006

REQUESTING THE HONORABLE HERMOGENES EBDANE, JR. SECRETARY, DPWH, TO INCLUDE IN HIS PRIORITY LIST OF PROJECTS THE PROVISION OF FUNDS FOR THE UPGRADING, IMPROVEMENT, CONCRETING OF MINDORO EAST COAST ROAD INCLUDING BRIDGES, DRAINAGE FACILITIES FROM BONGABONG, ORIENTAL MINDORO TO SAN JOSE, OCCIDENTAL MINDORO

WHEREAS, the road network interconnecting the two provinces of Mindoro island has opened the gate of economic mobility, enabling both provinces to hasten the movement of goods and services to a wider economic horizon;

WHEREAS, there is however, a persistent clamor from the riding public and businessmen for a need to upgrade said road network due to its worsening condition, not to mention the onset of the rainy season;

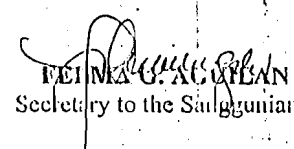
WHEREAS, this Body beseeches the generosity of the Honorable Secretary to set aside funds for this project for the benefit of the island provinces.

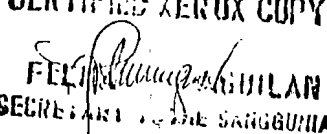
NOW THEREFORE, *resolved to* REQUEST the Honorable Hermogenes Ebdane, Jr. Secretary, DPWH, to include in his priority list of projects the provision of funds for the upgrading, improvement, concreting of Mindoro east coast road including bridges, drainage facilities from Bongabong, Oriental Mindoro to San Jose, Occidental Mindoro

LET COPIES of this resolution be sent promptly to all concerned for their information, guidance and appropriate action.

ADOPTED in the 20<sup>th</sup> Regular Session, this 6<sup>th</sup> day of June, 2006 on motion of Honorable Councilor *Ferdinand B. Mercene*, duly seconded by Honorable Councilor *Philip Z. Lim*.

CERTIFIED CORRECT:

  
FELINA U. AGUILAR  
Secretary to the Sanggunian

CERTIFIED XEROX COPY  
  
FELINA U. AGUILAR  
SECRETARY TO THE SANGGUNIANG BAYAN



LEAGUE OF MUNICIPALITIES OF THE PHILIPPINES

EXCERPTS FROM THE PROCEEDINGS OF THE JOINT MEETING OF THE OCCIDENTAL MINDORO AND ORIENTAL MINDORO CHAPTERS OF THE LEAGUE OF MUNICIPALITIES OF THE PHILIPPINES HELD AT THE DIAMOND HOTEL, MANILA ON MAY 6, 2005

PRESIDENT:

OCCIDENTAL MINDORO

- Hon. Godofredo B. Mintu, President
- Hon. Abelardo S. Pangilinan, Vice President
- Hon. Romulo M. Festin, Secretary
- Hon. Sonia C. Pablo, Treasurer
- Hon. Marleo R. Barrera, Auditor
- Hon. Joel C. Panaligan, PRO
- Hon. Renato A. Paulino, Member BOD
- Hon. Ma. Glória M. Constantino, Member BOD

ABSENT:

- Hon. Ariel A. Telebrico, Member BOD
- Hon. Policarpo C. Tesorio, Member BOD
- Hon. Leonardo R. Abeleda, Member BOD

OCCIDENTAL MINDORO

- Hon. Norberto M. Mendoza, President
- Hon. Alex M. Aranas, Esq., Vice President
- Hon. Aristeo V. Baldos, 1<sup>st</sup> Vice President
- Hon. Romeo D. Alvarez, Secretary
- Hon. Aristeo E. Atienza, Treasurer
- Hon. Ma. Fe V. Brondial, Member BOD
- Hon. Alex I. Enriquez, Member BOD
- Hon. Alfredo O. Ortega, Sr., Member BOD
- Hon. Ferdinand Thomas M. Soller, Member BOD

- Hon. Jesus M. Dimapilis, Auditor
- Hon. Apollo E. Ferraren, PRO
- Hon. Graciano P. de LaLena, Member BOD
- Hon. Celestino A. Papanin, Member BOD
- Hon. Ernesto C. Villas, Member BOD

**JOINT RESOLUTION NO. 2**

May 6, 2005

REQUESTING HER EXCELLENCY PRESIDENT GLORIA MACAPAGAL-ARROYO TO ALLOCATE FUNDS FOR THE UPGRADING (BY CEMENTING OR CONCRETING) OF THE EXISTING ROAD CONNECTING THE MUNICIPALITY OF MAGSAYSAY IN THE PROVINCE OF OCCIDENTAL MINDORO TO THE MUNICIPALITY OF BULALACAO IN THE PROVINCE OF ORIENTAL MINDORO SITUATED IN THE SOUTHERN PART OF MINDORO ISLAND

WHEREAS, there are plans to establish a circumferential road around the island of Mindoro to connect a road network for the eastern and western provinces of this island;

WHEREAS, there is an existing rough road in the southern portion of this island with approximate length of 50 kilometers more or less which has not yet been fully accessible because it is not yet developed and has been impeded by steep courses, narrow mountain passes, and temporary bridges;

WHEREAS, if completely developed or concreted and with permanent bridges, progress could be spawned by regular commercial trading and fully accessible infrastructure facilities.

NOW THEREFORE, BE IT RESOLVED to request HER EXCELLENCY, PRESIDENT GLORIA MACAPAGAL-ARROYO to allocate funds for the upgrading (by cementing or concreting) of the existing road connecting the Municipality of Magsaysay in the Province of Occidental Mindoro to the Municipality of Bulalacao in the Province of Oriental Mindoro situated in the southern part of Mindoro Island.

RESOLVED FURTHER to furnish copy of this Joint Resolution, HER EXCELLENCY, PRESIDENT GLORIA MACAPAGAL-ARROYO, for her information, guidance and kind consideration.

RESOLVED FURTHERMORE, to furnish copy of this Joint Resolution to the Honorable Vice President Noli de Castro, the Secretary of DPWH, Honorable Hermogenes E. Ebdane, Jr., the Honorable Representatives of the 1<sup>st</sup> and 2<sup>nd</sup> Districts of Oriental Mindoro, Hon. Rodolfo G. Valencia and Hon. Alfonso V. Umali, Jr, respectively and the Honorable Representative of Occidental Mindoro, Hon. Girlie Villarosa and the Honorable Governors, Hon. Arnan C. Panaligan of Oriental Mindoro and Hon. Josephine Y. Ramirez-Sato of Occidental Mindoro.

UNANIMOUSLY APPROVED on Joint Motion of Honorable Marleo R. Barrera, Municipal Mayor, Municipality of Magsaysay, Occidental Mindoro and Honorable Alex I. Enriquez, Municipal Mayor, Municipality of Bongabon, Oriental Mindoro this 6<sup>th</sup> day of May 2005 at the Manila Diamond Hotel, Roxas Boulevard, Manila.

CERTIFIED CORRECT:

HON. ROMULO M. FESTIN  
Secretary to the Occidental League

ATTESTED:

HON. GODOFREDO B. MINTU  
President, Occidental League

HON. ROMEO D. ALVAREZ  
Secretary to the Oriental League

HON. NORBERTO M. MENDOZA  
President, Oriental League

Certified xerox copy:

Marie-Joy C. Domingo  
Sec. to the Mayor



LEAGUE OF MUNICIPALITIES OF THE PHILIPPINES

EXCERPTS FROM THE PROCEEDINGS OF THE JOINT MEETING OF THE OCCIDENTAL MINDORO AND ORIENTAL MINDORO CHAPTERS OF THE LEAGUE OF MUNICIPALITIES OF THE PHILIPPINES HELD AT THE DIAMOND HOTEL, MANILA ON MAY 6, 2005

PRESENT:

OCCIDENTAL MINDORO

- Hon. Godofredo B. Mintu, President
- Hon. Abelardo S. Pangilinan, Vice President
- Hon. Romulo M. Festin, Secretary
- Hon. Sonia C. Pablo, Treasurer
- Hon. Marcelo R. Barrera, Auditor
- Hon. Joel C. Panaligan, PRO
- Hon. Renato A. Paulino, Member BOD
- Hon. Ma. Gloria M. Constantino, Member BOD

ABSENT:

- Hon. Ariel A. Telebrico, Member BOD
- Hon. Policarpio C. Tesorio, Member BOD
- Hon. Leonardo R. Abeleda, Member BOD

OCCIDENTAL MINDORO

- Hon. Norberto M. Mendoza, President
- Hon. Alex M. Aranas, Exec. Vice President
- Hon. Aristeo V. Baldos, 1<sup>st</sup> Vice President
- Hon. Romeo D. Alvarez, Secretary
- Hon. Aristeo E. Atienza, Treasurer
- Hon. Ma. Fe Y. Brondial, Member BOD
- Hon. Alex I. Enriquez, Member BOD
- Hon. Alfredo O. Ortega, Sr., Member BOD
- Hon. Ferdinand Thomas M. Solfer, Member BOD

- Hon. Jesus M. Dimapilis, Auditor
- Hon. Apollo F. Ferraren, PRO
- Hon. Graciano P. de Lachica, Member BOD
- Hon. Celestino A. Papasin, Member BOD
- Hon. Ernesto C. Villas, Member BOD

**JOINT RESOLUTION NO. 3**

May 6, 2005

REQUESTING HER EXCELLENCY PRESIDENT GLORIA MACAPAGAL-ARROYO TO ALLOCATE FUNDS FOR THE CONSTRUCTION AND OPENING OF A ROAD THAT WILL CONNECT THE MUNICIPALITY OF PUERTO GALERA IN THE PROVINCE OF ORIENTAL MINDORO TO THE MUNICIPALITY OF ABRA DE HOG IN THE PROVINCE OF OCCIDENTAL MINDORO SITUATED IN THE NORTHERN PART OF MINDORO ISLAND

WHEREAS, there is a need to breach the land barriers in the northern part of Mindoro Island to complete the plan of establishing a circumferential road around the two island provinces of Mindoro;

WHEREAS, the opening of such connecting road starting from the scenic municipality of Puerto Galera in Oriental Mindoro to the exotic town of Abra de Hog in Occidental Mindoro shall link the two provinces perennially separated by mountainous chasms and ubiquitous rivers which have for a long time obstructed the social development and economic progress of its peoples;

WHEREAS, both municipalities have beautiful piers which shall be helpful jump-off commercial points if the connecting road shall become accessible.

NOW THEREFORE, BE IT RESOLVED to request HER EXCELLENCY, PRESIDENT GLORIA MACAPAGAL-ARROYO to allocate funds for the construction and opening of a road that will connect the Municipality of Puerto Galera in the Province of Oriental Mindoro to the Municipality of Abra de Hog in the Province of Occidental Mindoro situated in the northern portion of Mindoro Island.

RESOLVED FURTHER to furnish copy of this Joint Resolution, HER EXCELLENCY, PRESIDENT GLORIA MACAPAGAL-ARROYO, for her information, guidance and kind consideration.

RESOLVED FURTHERMORE, to furnish copy of this Joint Resolution to the Honorable Vice President Noli de Castro, the Secretary of DPWH, Honorable Hermogenes E. Ebutane, Jr., the Honorable Representatives of the 1<sup>st</sup> and 2<sup>nd</sup> Districts of Oriental Mindoro, Hon. Rodolfo G. Valencia and Hon. Alfonso Y. Umali, Jr, respectively and the Honorable Representative of Occidental Mindoro, Hon. Gilie Villarosa and the Honorable Governors, Hon. Arnan C. Panaligan of Oriental Mindoro and Hon. Josephine Y. Ramirez-Sato of Occidental Mindoro.

UNANIMOUSLY APPROVED on joint motion of Honorable Aristeo E. Atienza, Municipal Mayor, Municipality of Puerto Galera, Oriental Mindoro and Honorable Ma. Gloria M. Constantino, Municipal Mayor, Municipality of Abra de Hog, Occidental Mindoro this 6<sup>th</sup> day of May, 2005 at the Manila Diamond Hotel, Roxas Boulevard, Manila.

CERTIFIED CORRECT:

HON. ROMULO M. FESTIN  
Secretary to the Occidental League

HON. GODOFREDO B. MINTU  
President, Occidental League

HON. ROMEO D. ALVAREZ  
Secretary to the Oriental League

HON. NORBERTO M. MENDOZA  
President, Oriental League

Certified xerox copy:

Marie-Joy C. Domingo  
Sec. to the Mayor

Accountability of the Proponent

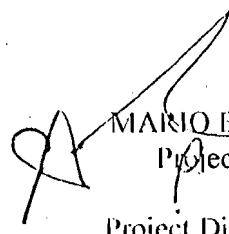
Mindoro East Coast Road ( Bongabong-Roxas-  
Mansalay- Bulalacao-Magsaysay-San Jose Section)

**ACCOUNTABILITY STATEMENT OF THE PROJECT PROPONENT**

This is to certify that all the information in the enclosed Initial Environmental Examination (IEE) is true, accurate, and complete. Should we learn of any information that would make the enclosed IEE inaccurate, we shall bring said information to the attention of the Environmental Management Bureau (EMB) or the Environmental Management & Protected Areas Sector (EMPAS) of the appropriate DENR Regional Office.

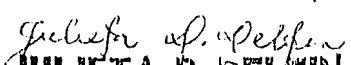
We hereby bind ourselves jointly and solidarily with the preparer for any penalties that may be imposed arising from any misrepresentations or failure to state material information in the enclosed IEE/EIS.

In witness whereof, I hereby set my hand this 11<sup>th</sup> day of August 2006 at Manila.

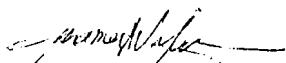
  
**MARIO E. BANDELARIA**  
Project Proponent  
Project Director, NMO-IBRD

Title/Designation

SUBSCRIBED AND SWORN to before me this 11<sup>th</sup> day of August 2006, affiant exhibiting to me his Tax Identification Number (TIN) 143-116-961 and Community Tax Certificate No. 16858629 issued on FEBRUARY 7, 2006 at MANILA.

  
**JULIETA D. DELFIN**  
NOTARY PUBLIC  
UNTIL DEC. 31, 2007  
TIN 132-094-775  
PTR NO. M.L.A. 4573003/1/11/06  
IBP O.R. NO. 6679427/1/10/06  
ROLL NO. 31673 (1962)

Doc. No. 227  
Page No. 47  
Book No. XXX  
Series of 2006

  
**Certified True Copy**  
8-11-2006

Accountability Statements

Accountability of the Preparers


ACCOUNTABILITY STATEMENT OF EIA PREPARERS

This is to certify that all the data or information contained in the enclosed Initial Environment Examination (IEE) are true to the best of my knowledge and information, and that an objective and thorough assessment of the project was undertaken in accordance with the dictates of reasonable and sound judgment. Should we learn of any information that would make the enclosed IEE inaccurate, I shall bring said information to the attention of the Environmental Management Bureau (EMB) or the Environmental Management & Protected Areas Sector (EMPAS) of the appropriate DENR Regional Office.

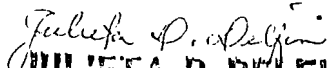
I hereby bind myself to answer any penalties that may be imposed for any misrepresentations or failure to state material information in the enclosed IEE/EIS.

In witness whereof, I hereby set my hand this 3rd day of August 2006 at ESSD, DPWH, Manila.

Name:  
EDGAR D. FABREGAS

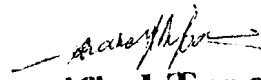
Signature & EIA Certificate No.  
 02EDF0035

SUBSCRIBED AND SWORN to before me this 11th day of August, 2006 affiant exhibiting to me his Tax Identification Number (TIN) 120-716-431 and Community Tax Certificate No. 1331289 issued on Jan. 2, 2006 at Manila.

  
**JULIETA D. DELFIN**  
NOTARY PUBLIC  
UNTIL DEC 31, 2007  
TIN 122-094-775  
PTR NO. MIA 2573080/1/11/06  
IBP O.R. NO. 447942/1/10/06  
ROLL NO. 51673 (1982)

Doc. No. 228  
Page No. 47  
Book No. XXV  
Series of 2026

( Attach xerox copy of EIA Preparer's Certificate)

  
**Certified True Copy**  
8-11-2006