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REPUBLIC OF THE PHILIPPINES
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
MANILA

BICOL RIVER BASIN DEVELOPMENT PROJECTS SECONDARY & FEEDER ROADS

CAMARINES SUR

PACKAGE I

PROJECT COMPLETION REPORT

TECHNIKS GROUP CORPORATION
CONSULTING ENGINEERS
PHILIPPINES

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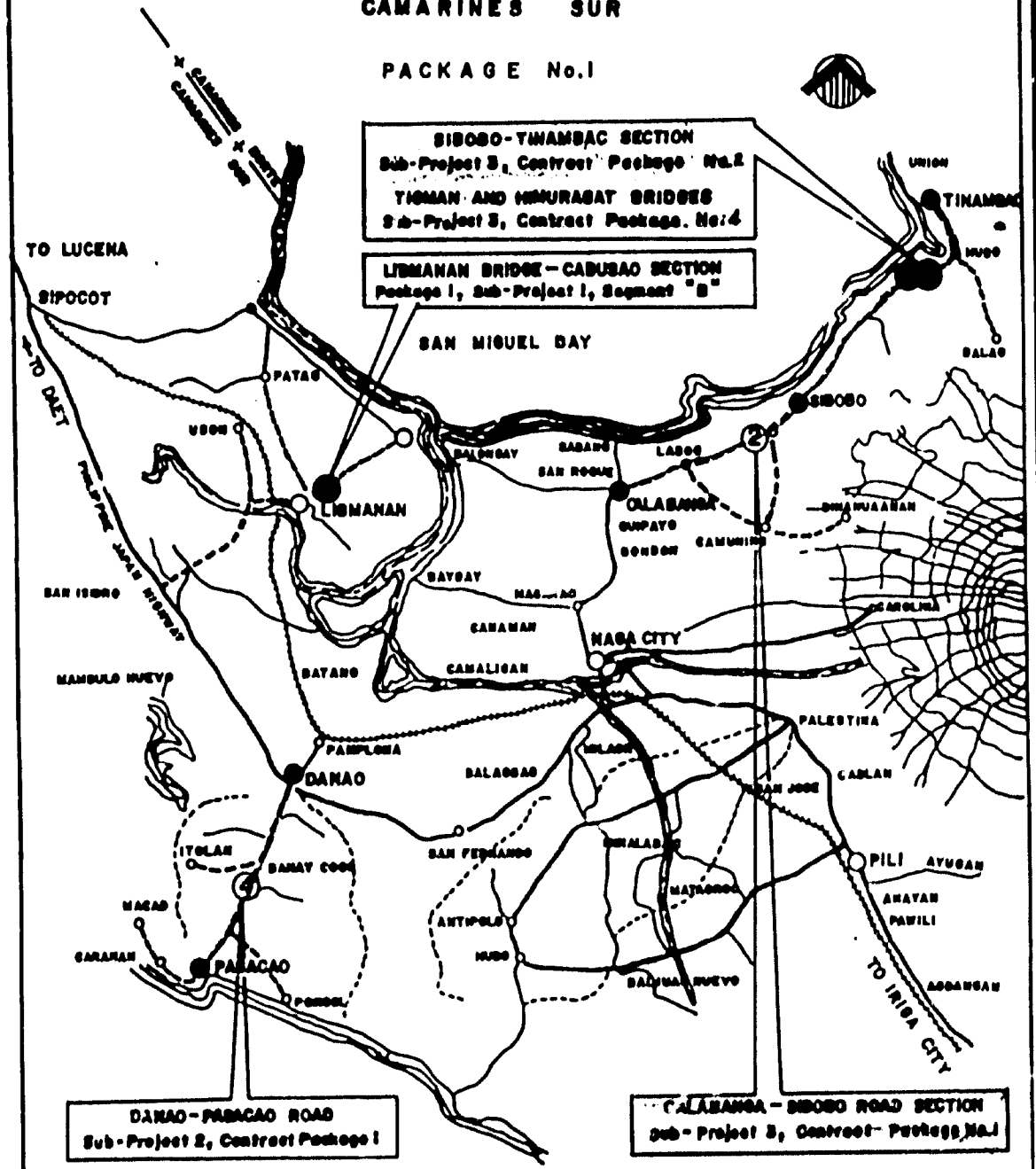
BICOL RIVER BASIN DEVELOPMENT PROJECT

SECONDARY AND FEEDER ROADS

CAMARINES SUR

PACKAGE No.I



LOCATION PLAN

1. INTRODUCTION AND SUMMARY

1.1 AUTHORIZATION

This Report is prepared in accordance with Article III, Clause 3.02 of the Supplementary Agreement for Construction Supervision Services entered into by and between the Ministry of Public Works and Highways and the consulting firm of Technika Group Corporation dated 9th of August 1977.

1.2 PROJECT BACKGROUND

In 1977 the Government of the Philippines with funds provided by the U.S. Agency for International Development (USAID) and through its implementing agency, the then DPH entered into Contract with qualified consulting firms to perform engineering services for the construction/improvement of 200.6 kms secondary roads and 254 kms feeder roads, including 1,078 lineal meters bridge structures in the provinces of Camarines Sur and Albay. The roads, grouped into 4 contract packages and divided into 14 sub-projects were identified as major components in the Bicol Region development program.

Packages I and II (composed of 7 sub-projects) which cover, approximately 88.18 kms of secondary roads, 106.4 kms of feeder roads, 16 (630 lineal meters) bridges and ancillary structures in the province of Camarines Sur were awarded to Technika Group Corporation, acting as principal consultant.

Under the terms of agreement with the agency, the services to be rendered consist of: data collection and review of regional development programme; traffic and economic studies; surveys; soils, materials and foundation investigations; design; quantity calculations and price analyses; contract documentation; and assistance in tendering and award.

1.3 SCOPE OF THE PROJECT

The extent, composition and construction cost of contract works supervised by the Consultant for Package I are the following:

a)	San Isidro-Libmanan-Cabusao Section Sub-project 1, Segments A & B	₱30,038,659.77
b)	Calabanga-Sibobo Road Section Sub-project 3, Contract Package No. 1	₱21,572,335.08
c)	Sibobo-Tinambac Section Sub-project 3, Contract Package No. 3	₱16,527,378.14
d)	Tigman & Himuragat Bridges Sub-project 3, Contract Package No. 4	₱ 6,899,561.80
e)	Danao-Pasacao Road Sub-project 2, Contract Package No. 1	₱17,571,366.01
	Total Construction Cost	₱92,609,300.80

1.4 PROJECT ASSIGNMENT

Under the terms of the agreement the Consultant shall act as the "Engineer" for the Project and shall perform the following:

A. Pre-Construction Services

a) Survey which includes geometric survey, parcellary mapping and soil survey for pavement design.

b) Design of road, bridges, and other drainage structures.

c) Survey construction materials, quantity source and test materials acceptability.

d) Prepares specifications, cost estimates, contract proposal and other documents necessary for bidding.

e) Perform further studies for possible change in the level of improvements for the originally proposed asphalt to portland cement concrete if necessary and the type and width of structures needed.

B. Construction and Monitoring Services

a) Quality Control

b) Geometric Control

c) Inspects project construction

d) Certifies that project construction are in accordance with plans and specifications.

e) Measurement and computation of quantities, approved and accepted, checking and certifying the contractor's periodic and final payments.

f) Prepares as-built plans for final acceptance of completed sub-projects.

1.5 ORGANIZATION OF THE PROJECT

This Report is presented to cover the following subjects for the individual project.

a) Description of the project location;

b) Extent and cost of construction improvement works;

c) Implementation schedule of construction works;

d) Causes and conditions which interrupted progress of work;

e) Effects of construction/improvement work in the project area of influence; and

f) Identities of participating contractors.

PHOTOGRAPHS: INAUGURATION CEREMONIES

NOVEMBER 16, 1982

Col. Ballecer, Program Director, Bicol River Basin Development Project (BRBDP)

Hon. Gov. Felix Fuentebella
Welcomes Ambassador M. Armacost

The Hon. Governor presenting to the Ambassador the Preliminary Completion Report of the BRBDP - Package I

U.S. Ambassador M. Armacost
Holding the Preliminary
Completion Report

The U.S. Ambassador Accepting the Project in behalf of USAID from the Hon. Governor

Republic of the Philippines
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Manila

PROJECT COMPLETION REPORT

for

SUB-PROJECT 1
Segment "B"

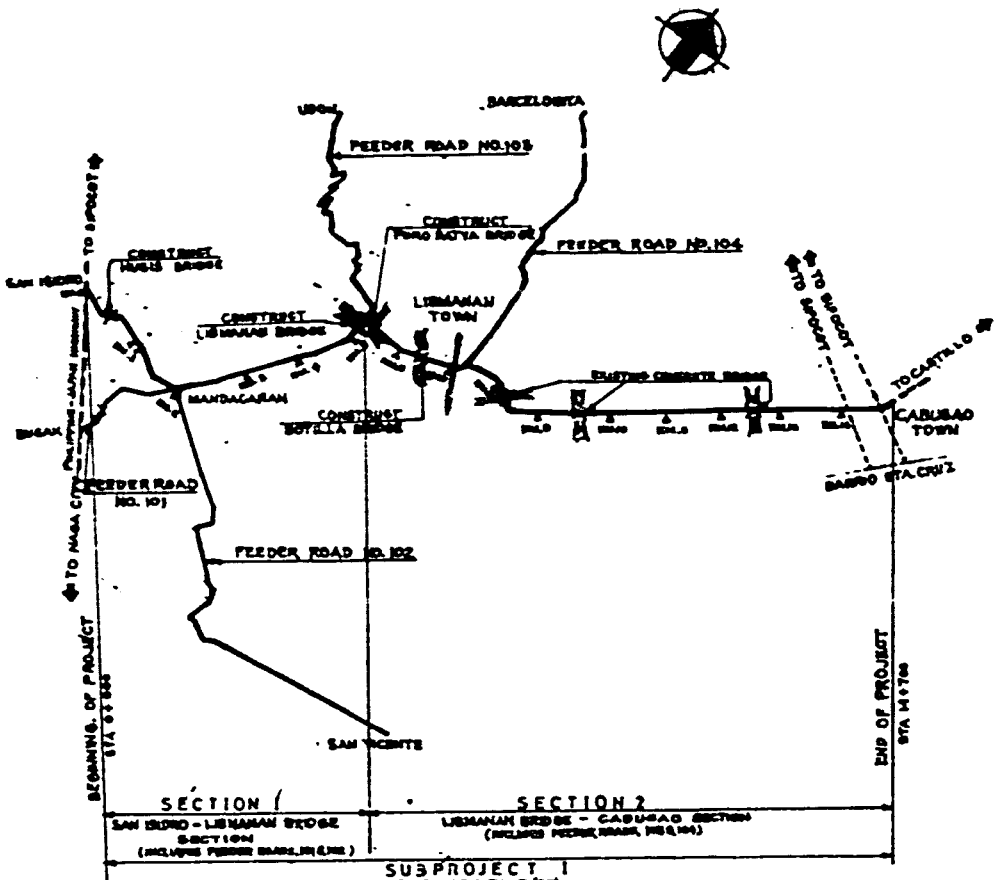
LIBMANAN BRIDGE - CABUSAO SECTION
Secondary Road

PUROBATYA-USON No. 103
LIBMANAN-PATAG BARCELONITA No. 104
Feeder Roads

TECHNIKS GROUP CORPORATION

SAN ISIDRO-LIBMANAN-CABUSAO ROAD

SECONDARY & FEEDER ROADS



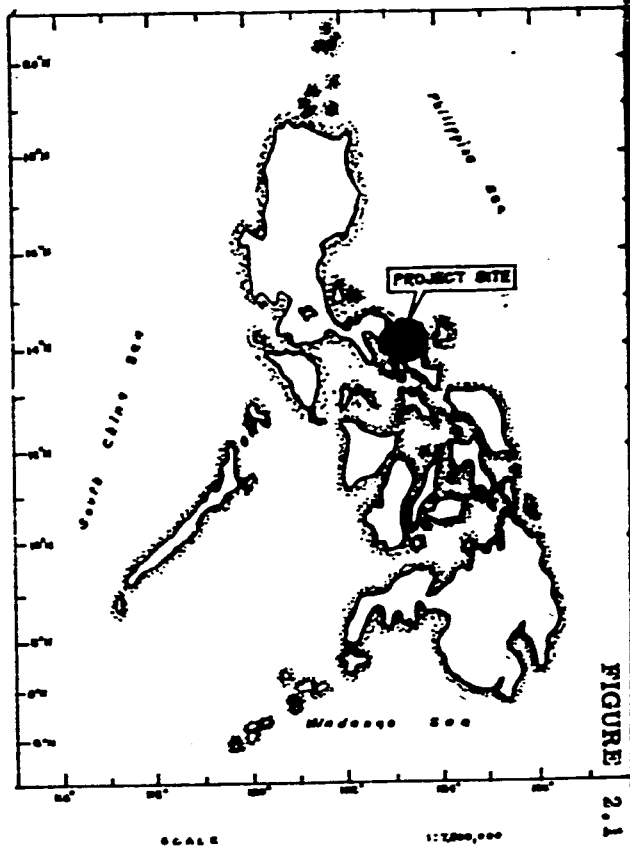


FIGURE 2.1

KEY MAP

2. SAN ISIDRO-LIBMANAN-CABUSAO SECTION

2.1 ORIENTATION

The San Isidro-Libmanan-Cabusao Road is designated as Sub-Project I and divided into two (2) segments:

a) Segment A - San Isidro-Libmanan Bridge Section consisting of 5.15 Kms. secondary road; 2 feeder roads, 2 spans RCDG and 5 spans of Prestressed Girder, Type IV

b) Segment B - Libmanan Bridge-Cabusao Section consisting of secondary road, 2 feeder roads, 2 RCDG bridges and 1 timber trestle structure.

The municipality of Libmanan is beautifully located along the western branch of the Bicol River (locally named Libmanan River), in a broad expanse of rich agricultural land approximately 33,620 hectares in area. It is the third largest municipality in point of population and the largest rice producing area in the entire province of Camarines Sur. It is composed of seventy five (75) barangays with a total population of 68,413 based on the 1980 Census. Next to rice, its other chief products are coconuts and sugarcane which are transported to the Bicol Sugar Development Company (BISUDECO) during the milling season.

The municipality of Cabusao, although ranked 5th among municipalities with the smallest land areas, is strategically located in the western side of the mouth of the

Bicol River, bounded in the north by San Miguel Bay which is one of the richest fishing grounds in the entire Philippines. It is composed of only nine (9) barangays with a total population of 10,825 based on the 1980 Census. The total land area is only 2,720 hectares - thirty nine percent (39%) of which are devoted to agriculture, mostly ricelands, and the rest are swamp lands which are rich sources of fresh water fishes such as hito and dalag. Forty four percent (44%) of the total labor force are engaged in fishing.

Both municipalities are integrated into a special development area under the auspices of the Bicol River Basin Development Program, otherwise known as the Libmanan-Cabusao Integrated Development Program.

Refer to Figure 2.1.

2.2 SCOPE OF THE CONTRACT WORKS

2.2.1 Segment A - San Isidro-Libmanan Bridge Section

Improvements include P.C. concrete pavement for the 5.15 kms. Secondary Road and gravel surfacing for the 10.03 kms two (2) feeder roads and construction of 2 spans RCDG Bridge (20.00 L.M.) and 5 spans Prestressed Girder Type IV bridge (145.830 L.M.).

2.2.2 Segment B - Libmanan Bridge-Cabusao Section

Improvements include Portland Cement Concrete pavement for the 9.35 kms. secondary roads, gravel surfacing for 9.270 kms. two (2) feeder roads and construction of 2 RCDG bridges (22.20 L.M.) and 1 timber trestle bridge (24.00 L.M.).

2.3 EXECUTION OF CONTRACT WORKS

Contracts for the two (2) segments were awarded to R.L. Jmali Construction Corporation. Details of each contract are as follows:

Particulars	Segment A	Segment B
Date of Bidding	28 September 1977	09 December 1977
Date Started	09 January 1978	18 September 1978
Date Completed	18 October 1979	-
Date Terminated	-	24 November 1980
Contract Amount	₱14,062,106.60	₱12,354,412.60
Amount Accomplished	₱13,959.191.62	₱ 7,607,972.87

Segment "B" was re-bidded on May 7, 1981, awarded to the same Contractor, resumed work on September 1981 and completed his contract on September 21, 1982 at the cost of ₱8,471,495.28.

Conditions which retarded the scheduled work for the new contract include:

a) Inadequate equipment available at the project site. This deficiency was corrected through the engagement of local subcontractors and rental from other source of additional concrete transit mixers.

b) Weather. Ten (10) typhoons occurred, two (2) of which caused the declaration of a "state of calamity" in the Region ("Anding" on November 24, 1981 and "Ruping" on September 6, 1982).

2.4 PROJECT SUMMARY

a) Total cost of Segment "B" is ₱16,079,468.15.

b) Effects of the project include:

- Land travel between Libmanan/Cabusao and Naga City is shortened from 2 hours to less than 1 hour at the speed of 45-50 kms./hr.
- Increase in the number of vehicles adequately meeting the transport demand of the area, e.g. there are regular daily trips of passenger buses between Metro Manila and Libmanan.
- Increased trading activities with the establishment of two (2) new rice mills and a feed mill.
- Generated transport of farm produce.

2.5 PROJECT DOCUMENTS

Included as attachments to this section are:

Appendix	2.1	Summary of Quantities for Segment "A"
	2.	Summary of Quantities for Segment "B" (Terminated Contract)
	2.3	Summary of Quantities for Segment "B" (New Contract)
	2,4	Accomplishment for Segment "B"
	2.5	Report on Concrete Drilling Test
	2.6	Final Inspection Report
	2.7	Letter of Acceptance
	2.8	Project Photographs

SUMMARY OF QUANTITIES - SEGMENT "A"
R.L. UMALI CONST. CORP.

Levels of Improvement:

Secondary Road	:	P.C. Concrete Pavement - - - - - - - - -	5.15 Kms.
Feeder Road 101	:	Gravel Surfacing - - - - - - - - -	1.69 Kms.
Feeder Road 102	:	Gravel Surfacing - - - - - - - - -	8.34 Kms.
Bridges	:	Two RCDG Spans @ 10.00 mm. - - - - - -	20.00.L.M.
	:	Five Spans @ 29.166 m., Prestressed Girder Type IV - - - - - - - - - - - - -	145.830 L.M.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY/VOLUME
100	Clearing and Grubbing	Ha.	4.10
103	Removal of Bridge	Ea.	1
105	Roadway and Drainage Excavation	Cu. M.	48,620.00
106	Excavation for Structures	Cu. M.	1,688.394
107	Borrow	Cu. M.	78,058.26
108-1	Aggregate Subbase	Cu. M.	35,722.99
110	Foundation Fill	Cu. M.	289.53
111	Overhaul (300 m. Free Haul)	Sta. M.	8,570.00
316-1	Portland Cement Concrete Pavement (0.20 m. 8" thick)	Sq. M.	32,667.82
401	Timber (Detour) Trestle Span (Superstructures)	Spans	23
402-2.5	Precast Concrete Piles	L.M.	2,454.29
402-2.5A	Concrete Test Pile	Ea.	10
403	Concrete Railing	L.M.	332.00
405	Concrete Class "A" Headwalls and Miscellaneous Structures	Cu. M.	259.48

ITEM NO.	DESCRIPTION	UNIT	QUANTITY/VOLUME
405 - 1	Concrete Class "A" (Bridges and Culverts)	Cu. M.	586.199
405 - A	Pre-stressed Concrete Structures	Ea.	20
406	Reinforcing Steel	Kg.	63,680.00
407	Structural Steel	Kg.	1,380.00
413 - 2	0.60 M. R.C. Pipe	L.M.	181
413- 3	0.90 M. R.C. Pipe	L.M.	246
413 - 4	1.20 M. R.C. Pipe	L.M.	54
500	Grouted Riprap	Cu. M.	204.74
502	Combination Concrete Curb and Gutter (Curb only)	L.M.	40
510	Right-of-Way Markers	Ea.	240

SUMMARY OF QUANTITIES - SEGMENT "B"
R.L. UMALI CONST.CORP.
(Terminated)

Levels of Improvement:

Secondary Road	-	Portland Cement Concrete Pavement 0.20 m Thick, 6.10 m Width - - - - - - -	0.610 Kms.
	-	Two RCDG Bridges - - - - - - -	22.20 Kms.
Feeder Road 103	-	Gravel Surfacing (Item 108) - - -	4.245 Kms.
Feeder Road 104	-	Gravel Surfacing (Item 108) - - -	5.025 Kms.
		1 - Timber Trestle Bridge - - -	24.00 L.M.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY/VOLUME
100	Clearing and Grubbing	Ha.	4.4
103-1	Removal of Bridge	Ea.	2
103-2	Removal of Culvert	Ea.	15
105-1	Roadway & Drainage Excavation	Cu. M.	48,814
106	Excavation for Structures	Cu. M.	2,552
107	Borrow	Cu. M.	115,522.85
107-1	Borrow	Cu. M.	10,808.41
108	Aggregate Subbase	Cu. M.	39,429.66
108-1	Aggregate Subbase	Cu. M.	4,978.97
110	Foundation Fill	Cu. M.	381
111	Overhaul (300 M. Free Haul	Sta. M.	2,782.00
200	Aggregate Base Course (Grading 'B)	Cu. M.	0
316-2	Portland Cement Concrete Pavement (0.20 m. 8" thick)	Sq. M.	4,149.979
401	Timber (Detour Structure)	Spans	4
402-2.5	Precast Concrete Piles	L. M.	334
402-2.5A	Concrete Test Piles	Ea.	5

ITEM NO.	DESCRIPTION	UNIT	QUANTITY/VOLUME
403	Concrete Railings	L.M.	42
405	Concrete Class "A" (For Head-Walls and Misc. Structures)	Cu.M.	100
406	Reinforcing Steel (For Bridges and Misc. Structures)	Kg.	21,285
407	Structural Steel	Kg.	240
413-1	0.46 M. ø R.C. Pipe	L. M.	61
413-2	0.60 M. ø R.C. Pipe	L. M.	144
413-3	0.90 M. ø R.C. Pipe	L. M.	264
413-4	1.20 M ø R.C. Pipe	L. M.	143
500	Grouted Riprap	Cu.M.	108
502	Combination Concrete Curb and Gutter (Curb only)	L. M.	0
SPL	Concrete Barriers	Ea.	0
510	Right-of-Way Markers	Ea.	328

SUMMARY OF QUANTITIES - SEGMENT "B"
R. L. UMALI CONST. CORP.
(New Contract)

Levels of Improvement:

Secondary Road - Portland Cement Concrete Pavement 0.20 m Thick, 6.10 m Width - - - - 8.740 Kms.

Feeder Road 103 - Gravel Surfacing (correction of deficiencies only) - - - - - - - - - 4.305 Kms.

Feeder Road 104 - Gravel Surfacing (correction of deficiencies only) - - - - - - - - - 5.020 Kms.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY/VOLUME
106	Excavation for Structures	Cu. M.	99.12
108	Aggregate Subbase	Cu. M.	14,234.17
118	Repreparation of Previously Constructed Road (SR)	Km.	8.74
316	Portland Cement Concrete Pavement	Sq. M.	53,592.00
413	0.46 M. Ø R. C. Pipe	L.M.	19.00
500	Grouted Riprap	Cu. M.	185.41
SPL	Concrete Barrier	Ea.	145.00
	(FEEDER ROAD 103)		
106	Excavation for Structures	Cu. M.	26.33
107	Borrow	Cu. M.	186.00
108	Aggregate Subbase	Cu. M.	1,653.48
118-1	Repreparation of Previously Constructed Road (FR)	Km.	4.30
413-2	0.60 M. Ø R. C. Pipe	L.M.	13.00
	(FEEDER ROAD 104)		
107	Borrow	Cu. M.	206.00
108	Aggregate Subbase	Cu. M.	1,464.06
118-1	Repreparation of Previously Constructed Road (FR)	Km.	5.02

ACCOMPLISHMENT
LIBMANAN BRIDGE-CABUSAO SECTION
Sub-Project No. 1, Segment "B"

A. SECONDARY ROAD

1) ROAD

Portland Cement Concrete Pavement - - - - - - - - 8.74 Kms.

2) STRUCTURES

Sta. 5 + 525	1 - 6.00 m. (2 - 0.46 m. sidewalk)	RCDG, Puro Batya Bridge
Sta. 6 + 115	1 - 0.90 m. dia. x 15 m.	RCPC
Sta. 6 + 405	1 - 15.0 m. (2 - 0.46 m. sidewalk)	RCDG, Botilla Bridge
Sta. 6 + 625	1 - 0.90 m. dia. x 13 m.	RCPC
Sta. 6 + 999	2 - 1.20 m. dia. x 17 m.	RCPC
Sta. 7 + 150	1 - 0.90 m. dia. x 13 m.	RCPC
Sta. 7 + 496	1 - 0.46 m. dia. x 14 m.	RCPC
Sta. 7 + 570	1 - 0.46 m. dia. x 8 m.	RCPC
Sta. 8 + 250	1 - 0.60 m. dia x 12 m.	RCPC
Sta. 8 + 440	1 - 0.60 m. dia. x 12 m.	RCPC
Sta. 9 + 075	1 - 0.60 m. dia. x 12 m.	RCPC
Sta. 9 + 825	1 - 0.90 m. dia. x 14 m.	RCPC
Sta. 10 + 291	1 - 0.90 m. dia. x 13 m.	RCPC
Sta. 10 + 475	1 - 0.60 m. dia. x 14 m.	RCPC
Sta. 10 + 700	1 - 0.60 m. dia. x 14 m.	RCPC
Sta. 11 + 150	1 - 0.60 m. dia. x 13 m.	RCPC
Sta. 11 + 525	1 - 0.60 m. dia x 13 m.	RCPC
Sta. 12 + 175	1 - 0.90 m. dia. x 13 m.	RCPC
Sta. 12 + 650	1 - 0.90 m. dia. x 14 m.	RCPC
Sta. 13 + 021	1 - 0.90 m. dia. x 14 m.	RCPC

Sta. 13 + 335	1 - 1.20 m. dia. x 13 m.	RCPC
Sta. 13 + 775	1 - 0.90 m. dia. x 14 m.	RCPC
Sta. 13 + 989	1 - 1.20 m. dia. x 14 m.	RCPC
Sta. 14 + 211	1 - 0.90 m. dia. x 13 m.	RCPC
Sta. 14 + 525	1 - 0.90 m. dia. x 13 m.	RCPC

B. FEEDER ROAD 103 (Puro Batya-Uson Road)

1) ROAD

Aggregate Subbase - - - - - - - - - - - - - - - 4.305 Kms.

2) STRUCTURES

Sta. 0 + 128	1 - 1.20 m. dia. x 14 m.	RCPC
Sta. 0 + 500	1 - 0.60 m. dia. x 8 m.	RCPC
Sta. 0 + 649	2 - 2.15 m. dia. x 8 m.	RCPC
Sta. 2 + 025	1 - 0.90 m. dia. x 9 m.	RCPC
Sta. 3 + 075	1 - 0.60 m. dia. x 7 m.	RCPC
Sta. 3 + 225	1 - 0.90 m. dia. x 12 m.	RCPC
Sta. 3 + 335	2 - 1.20 m. dia. x 16 m.	RCPC
Sta. 3 + 475	1 - 0.90 m. dia. x 10 m.	RCPC
Sta. 3 + 600	1 - 0.60 m. dia. x 6 m.	RCPC
Sta. 3 + 725	1 - 0.90 m. dia. x 9 m.	RCPC
Sta. 3 + 906	1 - 1.80 m. dia. x 16 m.	RCPC

C. FEEDER ROAD 104 (Libmanan-Patag-Barcelonita)

1) ROAD

Aggregate Subbase - - - - - - - - - - - - - - - 5.02 Kms.

2) STRUCTURES

Sta. 0 + 675	1 - 0.90 m. dia. x 8 m.	RCPC
Sta. 0 + 931	1 - 0.90 m. dia. x 11 m.	RCPC
Sta. 1 + 024	4 - (24 m.) Bridge No. 1	Timber Trestle on R.C. Piles
Sta. 1 + 500	1 - 0.90 m. dia x 9 m.	RCPC
Sta. 2 + 002	1 - 0.90 m. dia. x 7 m.	RCPC
Sta. 2 + 161	1 - 0.80 m. x 0.80 m. x 6 m.	RCBC
Sta. 2 + 764	2 - 1.75 m. x 1.96 m. x 8 m.	RCBC
Sta. 3 + 123	3 - 0.90 m. dia. x 9 m.	RCPC
Sta. 3 + 400	1 - 1.20 m. dia. x 10 m.	RCPC
Sta. 4 + 025	1 - 0.60 m. dia. x 7 m.	RCPC
Sta. 4 + 450	1 - 0.90 m. dia. x 8 m.	RCPC
Sta. 4 + 700	1 - 0.60 m. dia. x 8 m.	RCPC

Republic of the Philippines
MINISTRY OF PUBLIC HIGHWAYS
Project Management Office
Soils & Materials Division
Naga City

APPENDIX 2.5
Sheet 1 of 2

Reports on Concrete Drilling Tests, Sub-Project No. 1
Package I, Libmanan Bridge-Cabusao Section.

Beginning of Project	Sta. 5+316.07
End of Project	Sta. 14+700.00
Net Length of Pavement	8.694 Km.
Governing Specification	BPH Standard Specifications for Highways & Bridges (Revised 1972)
Specified Thickness	0.20 M.
Width of Pavement	6.10 M.

Sample Identification	Station (Km)	Reference Point Going to Cabusao Section	Initial Measure of Thickness (cm)
July 23, 1982			
H1L	Sta. 5+326.07	Left lane (1 m. from C.L.)	22.00 cm.
H2R	5+496.07	Right " (2 m. from C.L.)	21.00 cm.
H3L	(a) 5+666	Left " (2 m. from C.L.)	18.80 cm.
	(b) 5+656	Left " (1 m. from C.L.)	21.00 cm.
	(c) 5+664	Left " (2 m. from C.L.)	19.50 cm.
	(d) 5+648.50	Left " (2 m. from C.L.)	19.70 cm.
H4R	5+836	Right " (1 m. from C.L.)	21.00 cm.
H5L	6+006	Left " (2 m. from C.L.)	21.10 cm.
H6R	6+176	Right " (1 m. from C.L.)	19.80 cm.
July 24, 1982			
H7L	Sta. 6+346	Left lane (1 m. from C.L.)	21.70 cm.
H8R	6+516	Right " (2 m. from C.L.)	22.30 cm.
H9L	6+686	Left " (1 m. from C.L.)	28.10 cm.
H10R	6+856	Right " (2 m. from C.L.)	21.40 cm.
H11L	7+026	Left " (1 m. from C.L.)	23.40 cm.
H12R	7+196	Right " (2 m. from C.L.)	22.10 cm.
July 26, 1982			
H13L	Sta. 8+021	Left lane (1 m. from C.L.)	24.[illegible] cm.
H14R	8+186	Right " (2 m. from C.L.)	24.[illegible]0 cm.
H15L	8+351	Left " (1 m. from C.L.)	24.30 cm.
H16R	8+516	Right " (2 m. from C.L.)	24.10 cm.
H17L	8+681	Left " (1 m. from C.L.)	23.70 cm.
H18R	8+846	Right " (2 m. from C.L.)	22.90 cm.
H19L	9+011	Left " (1 m. from C.L.)	22.10 cm.
H20R	9+176	Right " (2 m. from C.L.)	[illegible].10 cm.
H21L	9+341	Left " (1 m. from C.L.)	23.20 cm.
H22R	9+506	Right " (2 m. from C.L.)	22.90 cm.

Sample Identification	Station (Km)	Reference Point Going to Calauan Section	Initial Measure of Thickness (cm)
July 27, 1982			
H23L	Sta. 9+671	Left lane (1 m. from C.L.)	22.30 cm.
H24R	9+836	Right " (2 m. from C.L.)	22.20 cm.
H25L	10+001	Left " (1 m. from C.L.)	22.10 cm.
H26R	10+166	Right " (2 m. from C.L.)	22.20 cm.
H27L	10+331	Left " (1 m. from C.L.)	23.40 cm.
H28R	10+496	Right " (2 m. from C.L.)	23.10 cm.
H29L	10+661	Left " (1 m. from C.L.)	23.20 cm.
H30R	10+826	Right " (2 m. from C.L.)	22.20 cm.
H31L	10+991	Left " (1 m. from C.L.)	22.30 cm.
July 28, 1982			
H32R	Sta.11+156	Right lane(2 m. from C.L.)	22.20 cm.
H33L	11+321	Left " (1 m. from C.L.)	24.10 cm.
H34R	11+486	Right " (2 m. from C.L.)	22.10 cm.
H35L	11+651	Left " (1 m. from C.L.)	22.40 cm.
H36R	11+816	Right " (2 m. from C.L.)	24.40 cm.
H37L	11+981	Left " (1 m. from C.L.)	22.10 cm.
H38R	12+146	Right " (2 m. from C.L.)	20.40 cm.
H39L	12+311	Left " (1 m. from C.L.)	22.10 cm.
July 30, 1982			
H40R	Sta.12+500	Right lane(2 m. from C.L.)	24.10 cm.
H41L	12+665	Left " (1 m. from C.L.)	23.40 cm.
H42R	12+830	Right " (2 m. from C.L.)	22.10 cm.
H43L	12+995	Left " (1 m. from C.L.)	23.20 cm.
H44R	13+160	Right " (2 m. from C.L.)	24.10 cm.
H45L	13+325	Left " (1 m. from C.L.)	23.10 cm.
H46R	13+490	Right " (2 m. from C.L.)	21.50 cm.
H47L	13+655	Left " (1 m. from C.L.)	21.10 cm.
H48R	13+820	Right " (2 m. from C.L.)	23.40 cm.
H49L	13+985	Left " (1 m. from C.L.)	22.10 cm.
H50R	14+150	Right " (2 m. from C.L.)	21.90 cm.
H51L	14+315	Left " (1 m. from C.L.)	21.20 cm.
H52R	14+480	Right " (2 m. from C.L.)	23.10 cm.
H53L	14+645	Left " (1 m. from C.L.)	23.20 cm.

Contractor's Rep.

JAIME M. CACHERO
Project Engineer, RLUCC

Consultant (TGC) Rep.

JESUS T. HERNANDEZ
Materials Engineer

PHO Rep.

VIRGINIA H. [illegible]
Sr. Mat'ls. Lab. Tech

APPENDIX 2.6

BICOL RIVER BASIN SECONDARY ROADS PROJECT
PACKAGE I

TECHNIK'S GROUP CORPORATION

FINAL INSPECTION REPORT

Project Road : Sub-project No. I, Segment "B" - Libmanan Bridge-Cabusao Road Section
Location : Province of Camarines Sur
Contractor : R. L. Umali Construction Corporation

Description of Project

Libmanan Bridge-Cabusao Road Section

Secondary Road	Portland Cement Concrete Pavement (0.20 m. Thick)	8.74 Kms.
Feeder Road 103	0.20 m. Thick Gravel Surfacing	4.305 Kms.
Feeder Road 104	0.20 m. Thick Gravel Surfacing	5.02 Kms.

Secondary and Feeder Road 103 & 104 of the above project were satisfactorily completed on September 21, 1982 in accordance with the approved plans and specifications and is therefore recommended for acceptance. Inspected on September 28, 1982 by the representative of TGC Consultants, PMO, BRBDP/USAID and COA.

ISAURO B. DE JESUS
Resident Engineer/TGC

SILVINO B. CASILLAN
Resident Engineer (PMO)

ALEJANDRO DESEO
Project Manager/TGC

ANGEL N. SALVADOR
Project Manager/PMO

JULIO UMALI
COA Representative

FRANCISCO SANTOS
Auditor PMO

JUANITO O. DE LA TORRE
BRDBP - USAID Representative

Concurred:
R. L. UMALI CONSTRUCTION CORPORATION
By:

BENJAMIN R. CACERES
Project Engineer

SILVINO B. CASILLAN
Representative
Provincial Engineers Office
Camarines Sur

Approved:

VICENTE B. LOPEZ, CESO II
Project Director

Republic of the Philippines
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Bicol River Basin Development Project
Road Component
PROJECT MANAGEMENT OFFICE
Concepcion Grande, Naga City

APPENDIX 2.7

September 21, 1982

LETTER OF ACCEPTANCE

The General Manager
R. L. UNALI CONSTRUCTION CORPORATION
6th floor, Strata 100, Emerald Avenue
Pasig, Metro Manila

SUBJECT: CONSTRUCTION OF LIBMANAN-BRIDGE-CABUSAO ROAD SECTION, FEEDER ROAD 103 AND FEEDER ROAD 104

Gentlemen:

This is to inform you that upon final inspection of the above-named project by an inspection team from this Office (PMO), the Consultant (TGC) and other representatives from different agencies concerned, same was found to be satisfactorily completed in accordance with the plans and specifications of the contract.

The project is accepted as of September 21, 1982, the date of its completion as reported by the Resident Engineer of the Consultants (Technika Group Corporation).

It is understood that acceptance of this project does not relieve you of your obligation and responsibility of undertaking repair works on any failures that may occur in any section of the project within on (1) year from date of acceptance, as provided for in the contract. Neither does it relieve you of your obligation and responsibility pursuant to the provisions of Presidential Decree No. 1759.

Very truly yours,

ANGEL E. SALVADOR
Project Manager

APPROVED:

VICENTE B. LOPEZ, CESO II
Project Director
Project Director for BRBDP Road Component

PICTORIALS OF COMPLETED PROJECTS

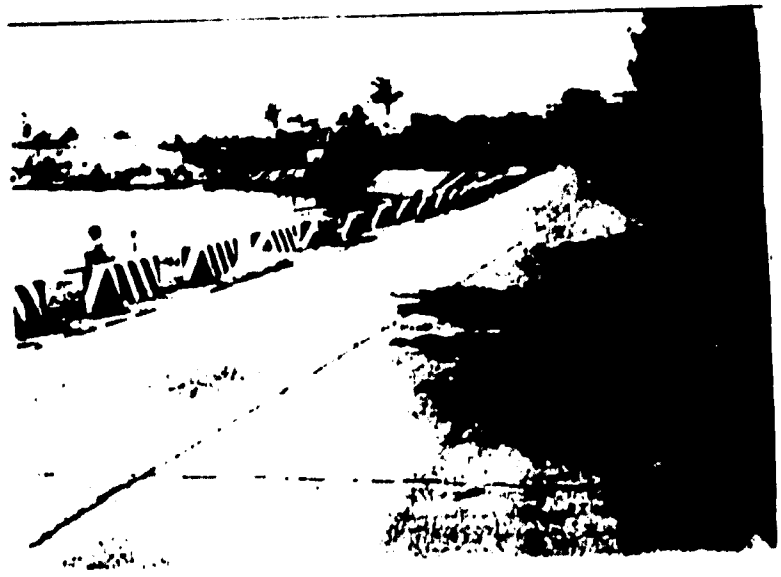
ted Libmanan Bridge that spans across the Libmanan River links the Municipality of Libmanan to the Daang Maharlika (National Highway) which is only 5.15 Kms. from this bridge. This is a 5 - Span Pre-Stressed Girder Type IV Bridge with a total length of 145.830 L.M.

Beginning of Sub-Project I, Segment "B" at Station 5 + 316.07 (Secondary Road).

Section at halfway of Libmanan Bridge-Cabusao Section traversing vast ricefields.

End of the Secondary Road Project at Sta. 14 + 700 at Cabusao Poblacion.

Portion of Concrete Paved Secondary Road at Libmanan Poblacion.



Another Section of the concrete paved road along Libmanan River (Libmanan Bridge-Cabusao Section).

Typical Section of Feeder Road 103, Puro Batya-Uson Feeder Road.

End of Feeder Road 103 at Sta. 4 + 305.

Beginning of Feeder Road 104, Libmanan-Patag-Barcelonita Road, Sta. 0 + 000.

Typical Section of completed Feeder Road 104.

Republic of the Philippines
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Manila

PROJECT COMPLETION REPORT

for

SUB-PROJECT 3
Contract Package No. 1

CALABANGA - SIBOBO SECTION
Secondary Road

LABOG BINANUANAN No. 301
MANGUIRING - CAMUNING No. 302
Feeder Roads

TECHNIKS GROUP CORPORATION

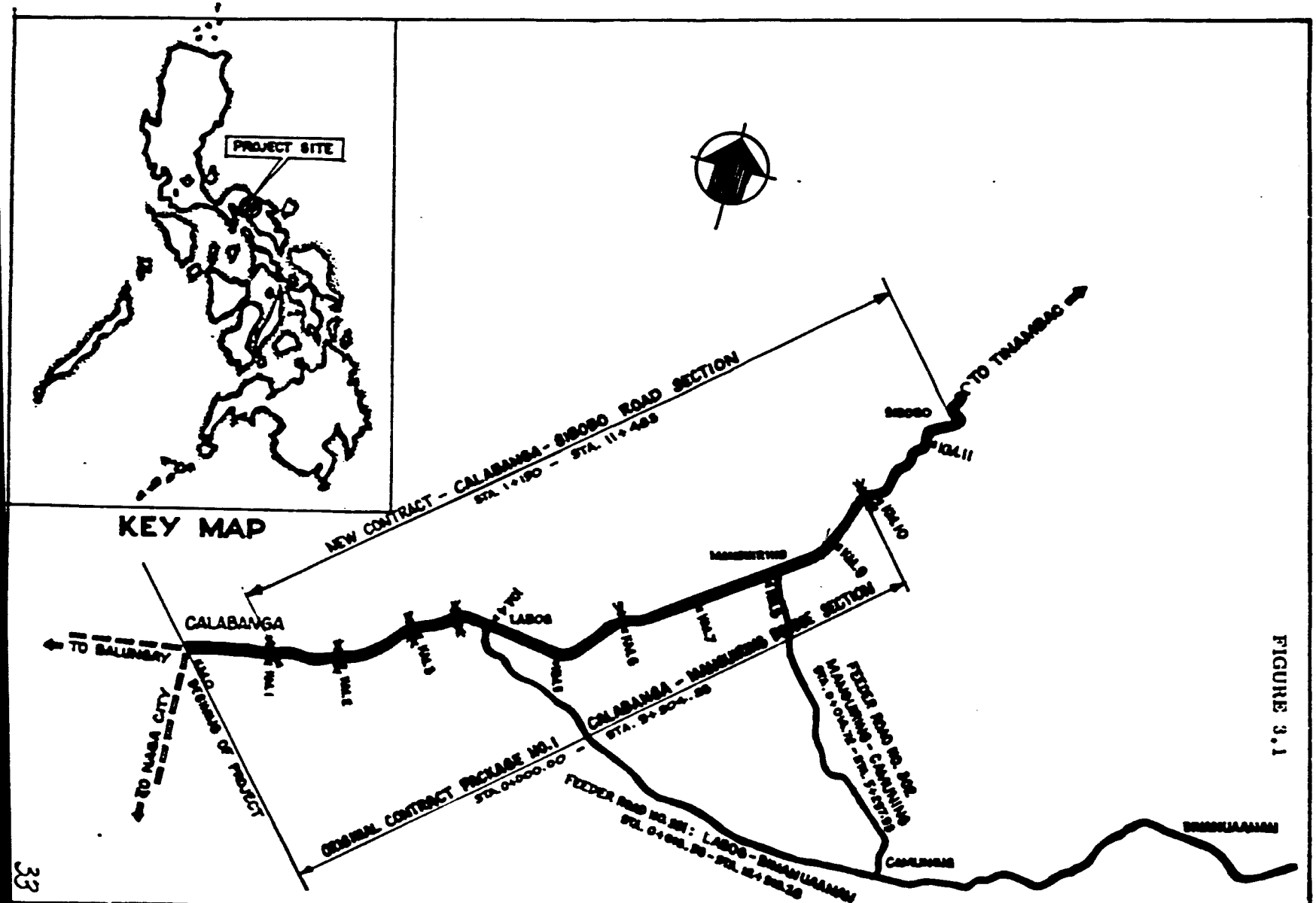

PROJECT SITE
KEY MAP
NEW CONTRACT - CALABANGA - SIBOBO ROAD SECTION
STA. 1+150 - STA. 11+465
TO TINAMBAC
SIBOBO
KM.11
KM.10
KM.9
MANGUIRING
CALABANGA - MANGUIRING ROAD SECTION
STA. 94+504.88
FEEDER ROAD NO. 302
MANGUIRING - CAMUNING
STA. 0+041.74 - STA. 7+537.93
CAMUNING
LABOG
KM.8
KM.7
KM.6
KM.5
KM.4
KM.3
KM.2
KM.1
CALABANGA
TO BALUMBAY
TO NAGA CITY
LIMIT OF PROJECT
ORIGINAL CONTRACT PACKAGE NO.1
STA. 0+000.00 -
FEEDER ROAD NO. 301: LABOG - BINANUAAHAN
STA. 0+000.00 - STA. 10+555.26
BINANUAAHAN

FIGURE 3.1

3. CALABANGA-SIBOBO SECTION

3.1 ORIENTATION

This project is the first segment of the Calabanga-Tinambac Road identified as Sub-project 3, Package No. 2.

The road starts from the poblacion proper of Calabanga, at the road intersection leading to Balongay, and runs generally in a northeasterly direction, following the existing provincial road almost parallel to the San Miguel Bay shoreline, and ends at Barangay Sibobo. Topography of the road is characterized as composing of a majority of flat terrain and the remaining as rolling and mountainous area.

The Project is composed of the construction and improvement of:

a) Calabanga-Sibobo Secondary Road - 10.339 Kms
b) Labog-Binanuaanan Feeder Road (FR 301) - 12.900 Kms
c) Manguiring-Camuning Feeder Road (FR 302) - 5.283 Kms

having a total length of 28.512 Kms. Refer to Figure 3.1

3.2 SCOPE OF THE WORK

3.2.1 Original Contract

Under the terms of the Contract works bidded on the 26th of April 1978, the level of improvements are as follows:

a) Secondary Road - Bituminous Surface Treatment (Item 314) Project Limits are from the Calabanga town proper to the beginning of Manguiring Bridge, Sta. 9+904.28.

b) FR 301 - Gravel Surfacing (0.20 m Aggregate Subbase) and Soil-Asphalt Base Course with Bituminous Seal Coat - 1 Km.

c) FR 302 - Gravel Surfacing

3.2.2 New Contract

As re-bidded on May 7th 1981, the improvement levels are:

a) Secondary Road - Portland Cement Concrete Pavement (0.20 m); (Sta. 1+150 - Sta. 11+483).

b) FR 301 - Gravel Surfacing of 11.90 Kms. and Bituminous Surface Treatment of 1 Km.

c) FR 302 - Gravel Surfacing of 5.283 Kms.

3.3 EXECUTION OF CONSTRUCTION WORKS

3.3.1 Original Contract

Calendar of events for the Kamagong Builders and Developers Corporation are as follows:

a) 22 August 1978 - Request by the Contractor to Commence Work at his risk.

b) 16 September 1978 - Mobilization of the Contractor.

c) 02 November 1978 - Approval by the Ministry of the Contractor's Request of 22nd August.

d) 26 January 1979 - Issuance of the Project Manager, PMO of the "Notice to Proceed."

e) 05 February 1979 - Effectivity of Contract.

f) February 1979 - major increase in fuel costs which prompted the Supervising Consult. to: (i) recommend contractor's request for 111 days suspension which was approved by the Ministry under Change Order No. 1, and (ii) recommend 96 days extension time. The Supervising Consultant prepared and submitted price adjustment to the contract amount of ₱8,788,660.90 based on price calculation as of March 5, 1979 in accordance with PD 454 as amended by PD 459 and PD 906.

During the same period slow progress of construction activities resulting in poor accomplishments were noted and this was attributed to bad weather conditions, occurrence of typhoons, frequent breakdown and slow repair of breakdown equipment, withdrawal of working equipment from the project to the adjoining project which was also under contract with the same contractor, lack of competent technical personnel and poor organization and management of field personnel.

Based on the approved work schedule project accomplishments lagged behind during the subsequent months of the contract period.

g) 24 November 1980 - Termination of Contract, with a contract time elapsed of 87.98% and a negative slippage of 31.64%.

3.3.2 Work by Administration

At the termination of the Kamagong Contract, works on the secondary road consisted of scarified existing asphalt pavement and gravel surfacing in preparation to asphalt paving which created an unhealthy condition and dust pollution and caused the immediate concrete paving of the section from Sta. 0+000 to Sta. 1+150 (Calabanga Poblacion) based on the program of work approved by the MPWH Region V Director at the cost of ₱1 Million. Work was undertaken by the Region V Construction Team from June to August 1981.

3.3.3 Interim Activities

After the termination of the project, inventory survey was conducted jointly by representatives from the Project Management Office, Commission on Audit (PMO), Kamagong Builders and Developers Corporation (Contractor), and Supervising Consultant (Technika Group Corporation), and the total work accomplished and balance of work needed for the completion of the project were determined.

The Supervising Consultant prepared and submitted an updated price analysis on the remaining items of work and estimated cost needed for the completion of the project plus the Secondary Road Section from Mangutring Bridge (Sta. 9+904.28) to the beginning of the existing concrete pavement (Sta. 11+453). The new limits of the proposed completion work for the Secondary Road was from Sta. 1+150 to Sta. 11+453.

3.3.4 New Contract

The 32.29% balance of work was re-bidded on May 7, 1981 and awarded to Pragmatic Development & Construction Corporation, with August 1, 1981 as the effectivity date of the Contract.

Bad weather and inadequate supply of cement were the conditions experienced by the Contractor which adversely affected completion of Item 316, Portland Cement Concrete Pavement (74.83% of the total contract work pay item). The Contractor had to obtain his cement supply from Manila and prompting him to increase his equipment for concreting works, particularly transit mixers. An extension of 8 calendar days and an addition of ₱181,758.30 under Change Order No. 1 were granted to the Contractor.

The Contract was completed on the 10th of August 1982 at the cost of ₱14,994,530.70 and final inspection was conducted on August 20th.

3.4 PROJECT SUMMARY

a) Total cost of the Project is ₱21,572,335.08.

b) Effects of the project include:

- Deduction of travel time
- Savings in transport cost and vehicle maintenance cost

c) Promotion of land-use development, e.g., agricultural lands

3.5 PROJECT DOCUMENTS

Included in the Report are the following Appendices:

Appendix	3.1	Summary of Accomplishment
	3.2	Summary of Quantities - Calabanga-Sibobo Road Section
	3.3	Report on Concrete Drilling Test
	3.4	Final Inspection Report
	3.5	Letter of Acceptance
	3.6	Project Turn-Over Record
	3.7	Project Photographs

SUMMARY OF ACCOMPLISHMENT

CALABANGA-SIBOBO ROAD SECTION
Sub-Project 3, Contract Package No. 1

A. SECONDARY ROAD:

1. Road

Portland Cement Concrete Pavement . . . . . 10.329 Kms.

2. Structures

Sta. 0 + 150	1-0.80 M. x 0.80 M. x 8.10 M.	RCBC
Sta. 0 + 350	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 0 + 725	1-0.80 M. x 0.80 M. x 8.10 M.	RCBC
Sta. 1 + 425	1-0.80 M. x 0.80 M. x 8.10 M.	RCBC
Sta. 2 + 350	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 2 + 550	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 2 + 890	2-0.90 M. Dia. x 15.40 M.	RCPC
Sta. 3 + 850	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 4 + 028	2-1.80 M. x 2.10 M. x 23.00 M.	RCBC
Sta. 4 + 975	1-0.60 M. Dia. x 14.00 M.	RCPC
Sta. 5 + 375	1-0.60 M. Dia. x 13.00 M.	RCPC
Sta. 5 + 780	2-1.80 M. x 1.80 M. x 20.00 M.	RCBC
Sta. 6 + 305	1-1.20 M. Dia. x 17.00 M.	RCPC
Sta. 6 + 502	1-1.20 M. Dia. x 15.00 M.	RCPC
Sta. 6 + 546	1-0.90 M. Dia. x 14.00 M.	RCPC
Sta. 6 + 623	1-0.60 M. Dia. x 13.00 M.	RCPC
Sta. 6 + 822	1-0.90 M. Dia. x 12.00 M.	RCPC
Sta. 6 + 886	1-1.20 M. Dia. x 14.00 M.	RCPC
Sta. 7 + 000	1-0.90 M. Dia. x 10.00 M.	RCPC
Sta. 7 + 100	1-0.60 M. Dia. x 8.00 M.	RCPC
Sta. 7 + 175	1-1.80 M. x 1.80 x 20.00 M.	RCBC
Sta. 7 + 335	1-1.20 M. Dia. x 16.00 M.	RCPC

Sta. 8 + 025	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 8 + 380	1-0.60 M. Dia. x 10.00 M.	RCPC
Sta. 10 + 189	2-2.40 M. x 1.80 M. x 8.00 M.	RCBC
Sta. 10 + 350	1-0.60 M. Dia. x 14.00 M.	RCPC
Sta. 10 + 629	2-0.90 M. Dia. x 17.00 M.	RCPC
Sta. 10 + 877	1-1.20 M. Dia. x 18.00 M.	RCPC
Sta. 11 + 454	1-1.20 M. Dia. x 8.50 M.	RCPC
Sta. 11 + 481	1-3.90 M. x 2.25 M. x 9.75 M.	RCBC

B. FEEDER ROAD 301:

1. Road

Aggregate Subbase . . . . . 12.913 Kms.

2. Structures

Sta. 0 + 006.50	1-0.60 M. Dia. x 10.00 M.	RCPC
Sta. 0 + 275	1-0.60 M. Dia. x 10.00 M.	RCPC
Sta. 0 + 850	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 2 + 700	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 3 + 425	1-0.60 M. Dia. x 10.00 M.	RCPC
Sta. 5 + 150	1-0.60 M. Dia. x 13.00 M.	RCPC
Sta. 7 + 970	3-2.40 M. x 2.75 M. x 22.00 M.	RCBC
Sta. 8 + 425	1-0.60 M. Dia. x 18.00 M.	RCPC
Sta. 8 + 975	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 9 + 551	1-0.60 M. Dia. x 15.00 M.	RCPC
Sta. 9 + 775	3-2.40 M. x 2.75 M. x 20.00 M.	RCBC
Sta. 10 + 312	1-2.40 M. x 1.80 M. x 24.00 M.	RCBC
Sta. 11 + 465	1-2.40 M.x 1.80 M. x 22.00 M.	RCBC
Sta. 11 + 526	1-0.60 M. Dia. x 20.00 M.	RCPC
Sta. 12 + 345	2-1.20 M. Dia. x 25.00 M.	RCPC

Sta. 12 + 485	1-1.20 M. Dia. x 15.00 M.	RCPC
Sta. 12 + 603	1-1.20 M. Dia. x 25.00 M.	RCPC
Sta. 12 + 678	1-1.20 M. Dia. x 20.00 M.	RCPC

C. FEEDER ROAD 302:

1. Road

Aggregate Subbase . . . . . 5.297 Kms.

2. Structures

Sta. 2 + 680	1-1.20 M. Dia. x 14.00 M.	RCPC
Sta. 3 + 171	1-0.60 M. Dia. x 16.00 M.	RCPC
Sta. 3 + 254	1-1.20 M. Dia. x 16.00 M.	RCPC
Sta. 4 + 975	1-1.20 M. Dia. x 10.00 M.	RCPC
Sta. 5 + 295.23	1-0.60 M. Dia. x 10.00 M.	RCPC

Summary of Quantities
Calabanga-Sibobo Road Section
Sub-project 3, Contract Package No. 1

ITEM NO.	DESCRIPTION	UNIT	QUANTITIES ACCOMPLISHED			
			KBDC	MPH	PDCC	TOTAL
100	Clearing and Grubbing	Ha.	0.50	-	-	0.50
103-2	Removal of Culverts	Ea.	16	-	2	18
105-1	Roadway & Drainage Excavation (Waste)	Cu. M.	22,988	-	2,690	25,678
105-2	Roadway & Drainage Excavation (Solid Rock)	Cu. M.	-	-	730	730
105-3	Roadway & Drainage Excavation (Cut & Fill)	Cu. M.	83,246	-	11,720	94,966
106	Excavation for Structures	Cu. M.	1,126	-	572	1,698
107	Borrow	Cu. M.	11,650	-	3,057	14,707
108	Aggregate Subbase	Cu M.	31,143	-	18,305	49,448
110	Foundation Fill	Cu. M.	203	-	47	250
111	Overhaul	Sta.M.	3,200	-	-	3,200
118	Reproparation of Previously Constructed Road	Km.	-	1.15	9.9	11.05
118-1	Repreparation of Previously Constructed Road (Feeder Road)	Km.	-	-	12.80	12.80
200	Aggregate Base Course	Cu. M.	2,000	789	-	2,789
302-1	Bituminous Prime Coat	M. T.	-	-	8	8
306-1	Aggregate Bituminous Macadam Pavement	Cu. M.	-	10	-	10
306-3	Asphalt Cement for Bituminous Macadam Pavement	M. T.	-	1.23	-	1.23
314-1	Aggregate for Bituminous Surface Treatment	Cu. M.	-	-	55	55
314-3	Asphalt Cement for Bituminous Surface Treatment	M. T.	-	-	13	13

ITEM NO.	DESCRIPTION	UNIT	QUANTITIES ACCOMPLISHED			
			KBDC	MPH	PDCC	TOTAL
316	Portland Cement Concrete Pavement	Sq.M.	-	7,184	68,420	75,604
405-1	Concrete Class "A" (For Drainage & Misc. Structures)	Cu.M.	822	-	397	1,219
406	Reinforcing Steel (For Drainage & Misc. Structures)	Kgs.	61,153	-	26,440	87,593
413-2	0.60 M. Dia. R.C. Pipe Culvert	L. M.	189	-	56	245
413-3	0.90 M. Dia. R.C. Pipe Culvert	L. M.	53	-	-	53
413-4	1.20 M. Dia. R.C. Pipe Culvert	L. M.	180	-	9	189
500	Riprap and Grouted Riprap	Cu.M.	-	-	820	820
501	Handlaid Road Embankment	Cu.M.	-	-	1,550	1,550
509	Underdrain 0.45 Dia. Perforated Concrete Pipe	L.M.	-	-	10	10
509-5	Aggregate for Underdrain	Cu. M.	-	-	30	30
510	Right-of-Way Markers	Ea.	-	-	764	764
SPL	Concrete Barriers	Ea.	-	-	132	132

KBDC - Kamagong Builders and Developers Corporation (Contractor)

MPH - Ministry of Public Highways Region V Construction Team

PDCC - Pragmatic Development & Construction Corporation (Contractor)

Republic of the Philippines
MINISTRY OF PUBLIC HIGHWAYS
Project Management Office
Soils & Materials Division
Naga City

Report on Concrete Drilling Tests, Sub-Project No. 3
Package 1, Calabanga-Sibobo Road Section

Beginning of Project: Sta. 10154.04
End of Project: Sta. 11+483.00
Net Length of Pavement: 10.[illegible] Kms.
Governing Specification: DPWH Standard Specifications for Highways & Bridges (Revised 1972)
Specified Thickness: 0.20 M.
Width of Pavement: 6.10 M.

Sample Identification	Station (Km)	Reference Point Going to Sibobo Section	Actual Measure of Thickness (cm)
August 5, 1982			
N1L	Sta. 1+208.92	Left Lane (1 m. from CL)	21.1 cm.
N2R	1+372.67	Right " (2 m. from CL)	22.6 "
N3L	1+537.10	Left " (1 m. from CL)	21.2 "
N4R	1+705.45	Right " (2 m. from CL)	21.5 "
N5L	1+872.00	Left " (1 m. from CL)	20.0 "
N6R	2+042.05	Right " (2 m. from CL)	20.6 "
N7L	2+207.90	Left " (1 m. from CL)	20.45 "
August 6, 1982			
N8R	Sta. 2+375.10	Right " (2 m. from CL)	19.05 "
N9L	2+543.70	Left " (1 m. from CL)	20.7 "
N10R	2+809.40	Right " (2 m. from CL)	20.0 "
August 10,1982			
N11L	Sta. 2+975.30	Left " (1 m. from CL)	20.8 "
N12R	3+142.59	Right " (2 m. from CL)	21.95 "
N13L	3+308.13	Left " (1 m. from CL)	21.7 "
August 11,1982			
N14R	Sta. 3+473.65	Right " (2 m. from CL)	20.5 "
N15L	3+640.15	Left " (1 m. from CL)	20.5 "
N16R	3+805.93	Right " (2 m. from CL)	22.6 "
N17L	3+970.96	Left " (1 m. from CL)	21.0 "
N18R	4+137.45	Right " (2 m. from CL)	20.2 "
N19L	4+304.03	Left " (1 m. from CL)	20.6 "
N20R	4+470.09	Right " (2 m. from CL)	22.5 "
N21L	4+635.07	Left " (1 m. from CL)	21.7 "
August 12,1982			

Sample Identification	Station (Km)	Reference Point Color to Which Section	Initial Depth of Sticker [illegible]
August 14,1982			
N26R	Sta. 5+464.20	Right Lane (2 m. from CL)	22.0 Cm.
N27L	5+530.20	Left " (1 m. from CL)	21.9 "
N28R	5+626.15	Right " (2 m. from CL)	22.0 "
N29L	5+851.97	Left " (1 m. from CL)	22.55 "
N30R	6+027.18	Right " (2 m. from CL)	21.55 "
N31L	6+192.58	Left " (1 m. from CL)	20.77 "
N32R	6+357.33	Right " (2 m. from CL)	21.55 "
N33L	6+523.56	Left " (1 m. from CL)	22.6 "
N34R	6+689.20	Right " (2 m. from CL)	21.25 "
N35L	6+854.65	Left " (1 m. from CL)	21.[illegible] "
N36R	7+020.68	Right " (2 m. from CL)	23.92 "
N37L	7+185.33	Left " (1 m. from CL)	22.12 "
N38R	7+355.18	Right " (2 m. from CL)	20.37 "
N39L	7+523.94	Left " (1 m. from CL)	20.0 "
N40R	7+685.63	Right " (2 m. from CL)	23.07 "
August 16,1982			
N41L	7+852.03	Left " (1 m. from CL)	22.15 "
N42R	8+018.35	Right " (2 m. from CL)	22.42 "
N43L	8+185.63	Left " (1 m. from CL)	20.32 "
N44R	8+350.58	Right " (2 m. from CL)	17.[illegible] "
N45L	8+516.36	Left " (1 m. from CL)	21.15 "
N46R	8+683.11	Right " (2 m. from CL)	22.57 "
N47L	8+849.91	Left " (1 m. from CL)	[illegible] "
N48R	9+016.91	Right " (2 m. from CL)	23.75 "
N49L	9+183.16	Left " (1 m. from CL)	21.42 "
N50R	9+348.51	Right " (2 m. from CL)	22.0 "
N51L	9+514.86	Left " (1 m. from CL)	23.17 "
N52R	9+6[illegible]1.40	Right " (2 m. from CL)	23.4[illegible] "
N53L	9+847.15	Left " (1 m. from CL)	21.0 "
N54R	10+012.47	Right " (2 m. from CL)	21.47 "
N55L	10+17[illegible].54	Left " (1 m. from CL)	[illegible] "
N56R	10+357.09	Right " (2 m. from CL)	22.02 "
N57L	10+[illegible]3.34	Left " (1 m. from CL)	21.12 "
N58R	10+590.75	Right " (2 m. from CL)	20.37 "
N59L	10+856.39	Left " (1 m. from CL)	[illegible] "
August 17,1982			
N60R	11+0[illegible].44	Right " (2 m. from CL)	[illegible] "
N61L	11+169.08	Left " (1 m. from CL)	24.4[illegible] "
N62R	11+3[illegible].61	Right " (2 m. from CL)	23.07 "

WITNESSED BY:

APPENDIX 3.4

BICOL RIVER BASIN DEVELOPMENT PROJECT
PACKAGE I

TECHNIKS GROUP CORPORATION

FINAL INSPECTION REPORT

Project Road : Sub-Project No. 3 Calabanga-Sibobo Road Section
Location : Province of Camarines Sur
Contractor : Pragmatic Development and Construction Corporation

Description of Project
Calabanga - Sibobo Road Section

Secondary Road	Portland Cement Concrete Pavement (0.20 m. Thick)	10.329 Kms.
Feeder Road 301	0.20 m. Thick Gravel Surfacing	12.000 Kms.
	Bituminous Surface Treatment	1.00 Km.
Feeder Road 302	0.20 m. Thick Gravel Surfacing	5.283 Kms.

Secondary and Feeder Road 301 & 302 of the above project were satisfactorily completed on August 10, 1982 in accordance with the approved plans and specifications and is therefore recommended for acceptance. Inspected on August 20, 1982 by the representative of T G C Consultant, P M O, B R B D P/ U S A I D and C O A.

FILA G. [illegible]
Resident Engineer (TGC)

SIDONIO B. CASILLAN
Resident Engineer (PMO)

[illegible]
Project Manager (TGC)

ANGEL E. SALVADOR
Project Manager (PMO)

[illegible]
COA Representative

FRANCISCO RAMOS
Auditor (PMO)

JUANITO O. DE LA TORRE
BRBDP - USAID Representative

Concurred: PRAGMATIC DEVELOPMENT AND CONSTRUCTION CORP.
By: TEOFILO T. TANJUATCO III

Approved:

VICENTE B. LOPEZ, CESO II
Project Director

APPENDIX 3.5

MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Bicol River Basin Development Project
Road Component
PROJECT MANAGEMENT OFFICE
Quezon Blvd. Ext., Manila City

September 1, 1982

LETTER OF ACCEPTANCE

The General Manager
Prudential Construction & Development Corporation
#7 Alta Vista Drive
Loyola Heights, Quezon City
Metro Manila

SUBJECT: CONSTRUCTION OF CALABANGA-GIBON SECONDARY ROAD, FEEDER ROAD 501 (Lalap-Binanuanan) Feeder Road 502 (Manguirig-Camoning)

Gentlemen:

This is to inform you that upon final inspection of the above-named project by an inspection team from this Office (PMO), the Consultant (TSC) and other representatives from different agencies concerned, it was found to be satisfactorily completed in accordance with the plans and specifications of the contract.

The project is accepted as of August 10, 1982, the date of its completion as reported by the Resident Engineer of the Consultants (Technika Group Corporation).

It is understood that acceptance of this project does not relieve you of your obligation and responsibility of undertaking repair works on any failures that may occur in any section of the project within one (1) year from date of acceptance, as provided for in the contract. Neither does it relieve you of your obligation and responsibility pursuant to the provisions of Presidential Decree No. 1746.

Very truly yours,

ANGEL E. GALVAIRE
Project Manager

APPROVED:

VICENTE N. LAZAR, CESO II
Project Director
Project Director for BRBDP Road Component

ACCEPTED:

JOHN D. [illegible]
Acting Minister

Best Available Document

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APPENDIX 3.6

Republic of the Philippines
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Bicol River Basin Development Project
Road Component
PROJECT MANAGEMENT OFFICE
Concepcion Grande, Naga City

PROJECT TURN-OVER

Name of Project : Sub-project No. 3 Calabanga-Siboto Road Section

Contractor : PRAGMATIC DEVELOPMENT AND CONSTRUCTION CORP.

Particulars : Attached are the As-built plans showing the Secondary and Feeder Road 301 & 302, as completed.

It is hereby certified that final inspection has been conducted on the above mentioned project by the authorized Committee of this Office and same was found to be constructed and completed in accordance with the approved plans and specification per attached xerox/certified true copies of said inspection report and therefore accepted by this Office and is hereby recommended for turn-over for maintenance to the Provincial Government of Camarines Sur.

ALBERTO A. SALVADOR
Project Manager

Approved for turn-over to the Provincial Government of Camarines Sur.

VICENTE B. LOPEZ, CESO II
Project Director

Accepted for maintenance by the Provincial Government of Camarines Sur:

MARCO R. SILVERIO
Provincial Engineer

Best Available Document

PICTORIALS PRIOR TO PROJECT CONSTRUCTION

Typical existing asphalt pavement which has detoriated along the Secondary Road, Calabanga-Sibobo Road Section. Beginning of Feeder Road No. 302, Manguiring-Camuning, intersecting at Sta. 8 + 061.33 of the Secondary Road can be seen at right.

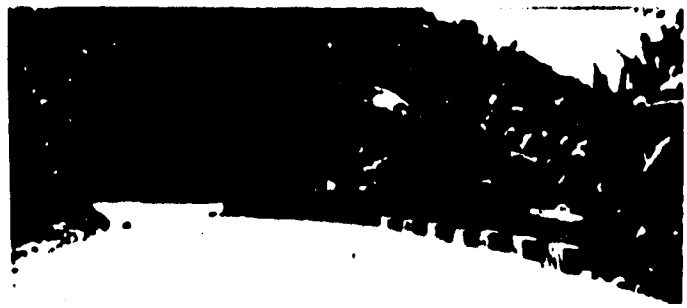
Typical existing asphalt pavement in Calabanga-Manguiring Bridge Road Section (Secondary).

Typical Feeder Road intersecting a Secondary Road.

PICTORIALS OF COMPLETED PROJECT
Calabanga - Sibobo Road Section
Sta. 0 + 000 - Sta. 11 + 483

Beginning of Secondary Road (original contract), Sta. 0 + 000, Calabanga-Manguiring Bridge Section. Concrete paving of this 1.150 kilometers road section was undertaken in June, 1981 and completed in August 1981 by the MPH Region V Construction Team.

End of 1.15 kilometers paved by MPH Region V Construction Team and beginning of Secondary Road under new contract Sta. 1 + 150, Calabanga-Sibobo Road Section. Contractor - P D C C.



Typical completed Portland Cement Concrete Pavement (Item 316) showing concrete barriers on the outer curve.

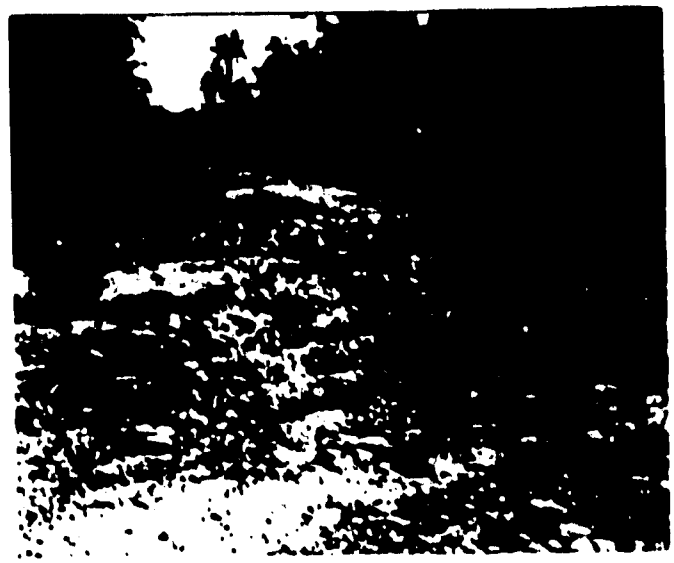
Completed Portland Cement Concrete Pavement on Curve Section.

Finished Portland Cement Concrete Pavement on straight section.

End of Secondary Road (new contract), Sta. 11 + 483.

Portion of 1 kilometer asphalt pavement (Item 314) in Feeder Road 301.

Another section of 1 kilometer asphalt pavement in Feeder Road No. 301.



Intersection of Feeder Roads Nos. 301 and 302.

Road Section of Feeder Road No. 301.

Portion of Feeder Road No. 301, with gravel surfacing above R.C. Box Culvert. Note the grouted riprap on the sides.

End of Feeder Road No. 301, Labog - Binanuasanan.

Feeder Road No. 302, Manguiring-Camuning, intersecting the Secondary Road, Calabanga-Sibobo road section.

Completed Feeder Road No. 302 showing gravel surfacing (aggregate subbase).

Republic of the Philippines
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Manila

PROJECT COMPLETION REPORT

for

SUB-PROJECT 3
Contrat Package No. 2

SIBOBO - TINAMBAC SECTION
(TIGMAN, HIMURAGAT,
AND SEVEN BRIDGES INCLUDED)
Secondary Road

MUBO - BALAO No. 383
Feeder Roads

TECHNIKB GROUP CORPORATION

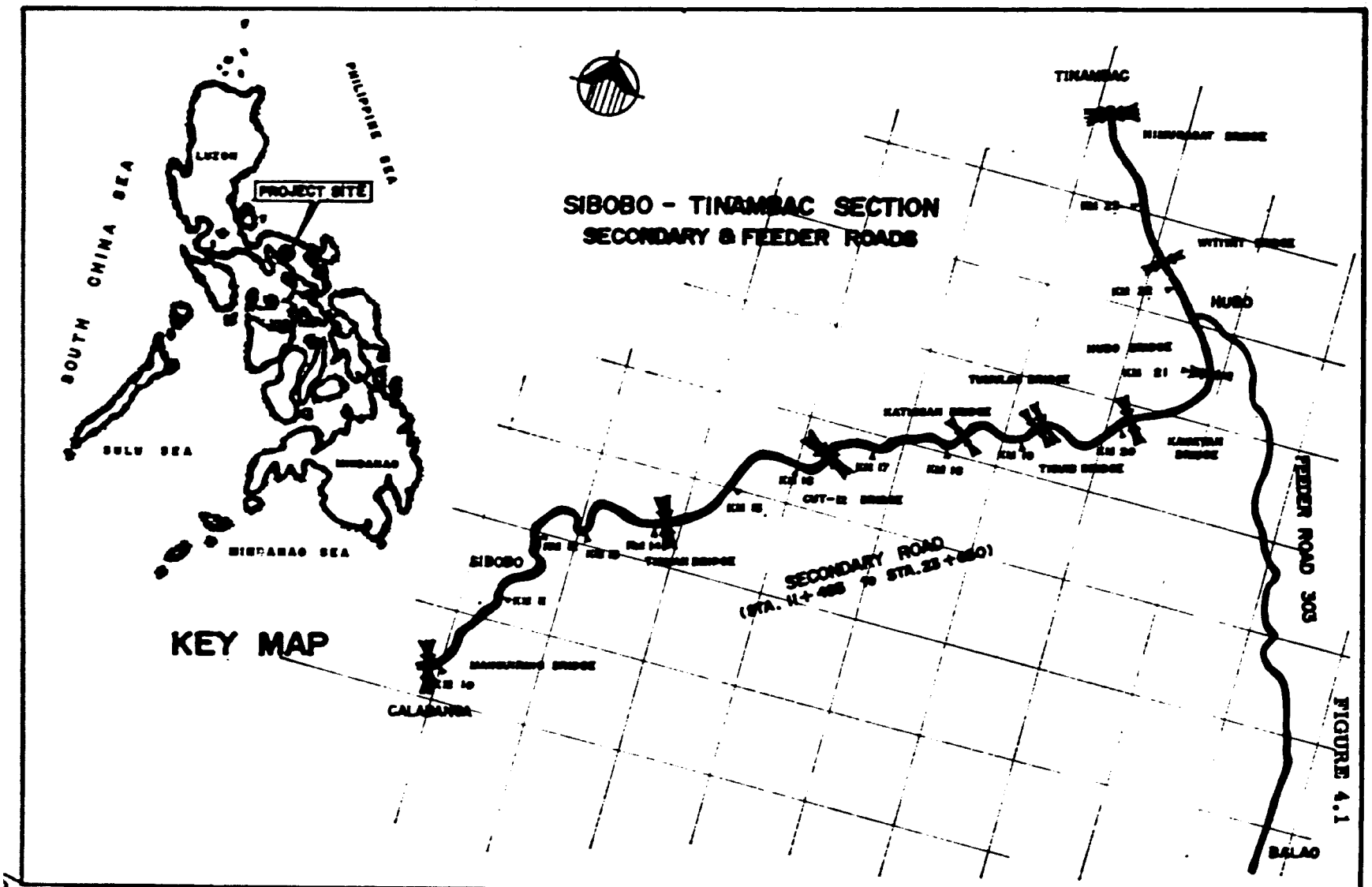

SIBOBO - TINAMBAC SECTION
SECONDARY & FEEDER ROADS
KEY MAP
PHILIPPINE SEA
SOUTH CHINA SEA
SULU SEA
MINDANAO SEA
LUZON
PROJECT SITE
MINDANAO
TINAMBAC
HUBO
SIBOBO
CALABANGA
BALAO
SECONDARY ROAD
(STA. 11+ 485 to STA. 23+ 880)
FEEDER ROAD 303

FIGURE 4.1

4. SIBOBO-TINAMBAC SECTION

4.1 ORIENTATION

This Project is the second segment of the Calabanga-Tinambac Road identified as Sub-project 3, Package No. 2.

The 11.842 Kms road starts from Bo. Sibobo of Calabanga and extends generally to the town proper of Tinambac in a northeasterly direction, along which are located seven (7) river crossings and two (2) concrete spillways at Tigman and Himuragat Rivers. The alignment traverses rolling and mountainous terrain populated with vast areas of coconut plantations, croplands, population centers and fishponds.

The Project is divided into the following components:

a) Manguiring Bridge-Tinambac Section

i)	Secondary Road	- 11.842 Kms
ii)	Hubo-Balao Feeder Road (FR 303)	- 6.775 Kms

b) Seven (7) Bridges along Calabanga-Tinambac Road

i)	Manguiring	-	Sta. 9+919
ii)	Cut-12	-	Sta. 16+403
iii)	Tumulos	-	Sta. 19+250
iv)	Tiguib	-	Sta. 19+341
v)	Kawayan	-	Sta. 20+124
vi)	Hubo	-	Sta. 21+003
vii)	Witiwit	-	Sta. 22+297

c) Construction of Pre-stressed Concrete I - Beam on H-pile structures with 2 - 0.76 m sidewalk and 0.20 m PCCP approaches at the following locations:

i) Tigman River - Sta. 14+143
ii) Himuragat River - Sta. 23+892

Refer to Figure 4.1.

4.2 SCOPE OF THE CONTRACT WORKS

4.2.1 Secondary & Feeder Roads

Bidding was held on July 25, 1978 and effectivity of contract with Kamagong Builders & Developers Corporation was on March 29, 1979. The contract covers the improvement of existing road section; involving earthworks, construction of drainage facilities, concrete paving and ancillary works.

4.2.2 Bridges

Replacement of six (6) timber trestle spans and one (1) bailey panels structure by permanent structures of concrete spans: (RCDG on R.C. piles with two (2) 0.46 meter sidewalk).

Bidded on July 25, 1978 contract was awarded to A.L. Sarmiento Construction in the amount of ₱2,145,095.20.

4.2.3 Tigman & Himuragat Bridges

Level of improvements are as follows:

a)	Tigman Bridge	-	2 Spans Pre-Stressed Concrete I Beam on Steel H-Piles with 2 - 0.76 meter sidewalk.
b)	Himuragat Bridge	-	3 Spans Pre-Stressed Concrete I Beam on Steel H-Piles with 2 - 0.76 meter sidewalk.
c)	Approaches	-	0.20 M thick P.C. Concrete Pavement

Bidded on the 23rd of April 1980, Contract was awarded to A.B. Aguinaldo Construction in the amount of ₱6,899,561.80.

4.3 EXECUTION OF CONSTRUCTION WORKS

4.3.1 Manguiring Bridge-Tinambac Section

Anticipated to be completed in 549 days from March 12, 1980 Contract to Kamagong was terminated on November 24, 1980.

The Contractor accummulated a high negative slippage in his work schedule brought about by:

a) Substantial increase in the cost of fuel, oil and construction materials forced the contractor on a limited rate of operations; and

b) Poor weather conditions which slowed down his earthwork activities.

A time extension of 275 days was granted. Kamagong's contract amount is ₱15,965,239.90.

4.3.2 Bridges:

A. L. Sarmiento Construction (Original Contractor): Construction works commenced in February 1979 and ceased in December of the same year. Two (2) additional increases in the fuel costs was experienced by the Contractor with the result that equipment rental rates and operations, and costs of labor and materials were beyond the tolerable limit of the contractor's bid prices. The lack of assurance of contract price adjustment prompted the Contractor to request for termination of his contract which was approved on May 29, 1980.

Individual accomplishment, as inventoried, are as follows:

a)	Manguiring Bridge	-	98.23%
b)	Cut - 12 Bridge	-	94.89%
c)	Tumulos Bridge	-	24.23%
d)	Tiguib Bridge	-	35.22%
e)	Kawayan Bridge	-	65.40%
f)	Hubo Bridge	-	0%
g)	Witiwit Bridge	-	0%

4.3.3 Interim Activities

Remaining works at Manguiring, Cut-12 and Kawayan bridges were undertaken by the MPWH Region V Construction Team from June 16 to October 1980 under the force account work item.

A bidding to undertake the remaining work was held on the 25th of November 1980 and Contract for the Tumulos, Tiguib, Hubo and Witiwit bridges was awarded to William Uy Construction Corporation in the amount of ₱1,368,896.20.

4.3.4 William Uy Contract Works

Scheduled for completion in 120 calendar days the Contractor commenced work on March 12, 1981 and completed the structures on the following dates:

Tumulos Bridge	-	June 30, 1981
Tiguib Bridge	-	May 22, 1981
Hubo Bridge	-	July 7, 1981
Witiwit Bridge	-	August 24, 1981

4.3.5 Tigman & Himuragat River Bridges

Aguinaldo Construction works commenced on March 30, 1981 and completed on the 30th of September 1982.

During the contract period, progress of the works was interrupted by:

a) Late delivery of PSC I-Beams by Constress Phil.,Inc. to the project sites due to rough road and unconfirmed stability of detour bridges on the route which were on the stage of construction.

b) Road right-of-way at the Himuragat bridge approaches (which was only recently resolved). The request for a time suspension of 120 calendar days was approved,

moving the completion period from November 24, 1981 to the last of September 1982.

4.3.6 Sibobo-Tinambac Road Section

Goldrock Construction & Development Corporation was awarded the Contract to complete the remaining 71.76% work during the bidding held on the 7th of May 1981. The Contractor commenced work on August of 1981 and completed his Contract on August 23, 1982.

Progress of his work was adversely affected mainly by unfavorable weather condition from early commencement delaying earthworks which is the major item of the contract. Frequent breakdown of essential equipment contributed to the delay.

Modifications to the road level of improvement for the secondary road was effected: gravel base course (Item 200) instead of DBST for the following considerations:

a) Rainy season occurs for 9 months in the mountainous section;

b) Work involved extensive cut & fill works; and

c) Because of the weather condition, stabilization of subgrade and base would require more time prior to asphalt paving.

The contract amount was amended from ₱10,534,295.46 to ₱9,187,971.15.

Final project inspection was made on August 25, 1982.

4.4 PROJECT SUMMARY

a) Total cost of the Project is ₱23,426,939.94 representing expenditures and payments to:

i)	Kamagong Builders & Developers Corp.	₱4,508.045.12
ii)	A.L. Sarmiento Const.	₱1,504,782.40
iii)	William Uy Const. Corp.	₱1,356,572.48
iv)	A.B. Aguinaldo Const.	₱6,899,561.80
v)	Goldrock Const. & Development Corp.	₱9,157,978.14

b) Effects of the improvement include:

- increase in the number of transport facilities;
- urbanization and promotion of regional growth, e.g., improvement and expansion of aquatic products; and
- route shortening between Calabanga and Tinambac with the construction of Himuragat bridge.

c) Proposal has been made to further improve the Sibobo-Tinambac secondary road to P.C. concrete pavement.

4.5 PROJECT DOCUMENTS

Included as part of this Report are the following Appendices:

APPENDIX	4.1	Summary of Quantities: Sibobo-Tinambac Section
	4.2	Accomplishment for Sibobo-Tinambac Section
	4.3	Summary of Quantities: Tigman and Himuragat River Bridges
	4.4	Report on Concrete Drilling Test
	4.5	Final Inspection Report
	4.6	Project Turn-over Record
	4.7	Project Photographs

Summary of Quantities
SIBOBO-TINAMBAC SECTION
Sub-Project 3, Contract Package No. 2

Item No.	DESCRIPTION	UNIT	QUANTITIES ACCOMPLISHED		
			KBDC	GCDC	TOTAL
103-2	Removal of Culverts	Ea.	-	14	14
105-1	Roadway & Drainage Excavation (Waste)	Cu.M.	28,153	20,838	48,991
105-2	Roadway & Drainage Excavation (Solid Rocks)	Cu.M.	-	1,993	1,993
105-3	Roadway and Drainage Excavation	Cu.M.	106,286	47,435	153,721
106	Excavation for Structure	Cu.M.	304	3,100	3,404
107	Borrow	Cu.M.	9,542	11,700	21,242
108	Aggregate Subbase	Cu.M.	3,450	34,350	37,800
110	Foundation Fill	Cu.M.	20	160	180
111	Overhaul (300M. Free Hau)	Cu.M.	28,125	13,443	41,568
118	Rapreparation of Previously Constructed Road	Km.	-	6	6
200	Gravel Base Course	Cu.M.	-	12,500	12,580

ITEM NO.	DESCRIPTION	UNIT	QUANTITIES ACCOMPLISHED		
			KBDC	GCDC	TOTAL
302	MC- Cut Back Asphalt Grade MC - 1 For Bituminous Prime Coat	M.T.	-	Deleted	-
314-1	Aggregate for Bituminous Surface Treatment Hot Asphalt	Cu.M.	-	-do-	-
314-3	Asphalt Penetration Grade 85-100 For Bituminous Surface Treatment	M.T.	-	-do-	-
405-1	Concrete Class "A"	Cu.M.	-	305	305
406	Reinforcing Steel	Kg.	-	8,510	8,510
412	Stone Masonry	Cu.M.	-	1,460	1,460
413-2	0.60 M. Dia. RCP	L.M.	43	288	331
413-3	0.90 M. Dia. RCP	L.M.	78	132	210
413-4	1.20 M. dia. RCP	L.M.	58	161	219
500-1	Riprap (Grouted)	Cu.M.	-	250	250
500-2	Riprap (Loose Dump)	Cu.M.	-	140	140
510	Right-of-way Markers	Ea.	-	390	390
SPL	Concrete Barriers	Ea.	-	428	428

KBDC - Kamagong Builders & Developers Corporation

GCDC - Goldrock Construction & Development Corporation

Note:

The following were the additions and reduction in quantities in the original contract of GCDC as per Change Order No. 1.

Item 105 (1)	- 800 Cu.M. (+)	Item 302	- Deleted
Item 105 (3)	- 2,502 Cu.M. (+)	Item 314 (1)	- Deleted
Item 106	- 450 Cu.M. (+)	Item 314 (3)	- Deleted
Item 107	- 1,259 Cu.M. (+)	Item 413 (2)	- 32 L.M. (+)
Item 108	- 1,205 Cu.M. (+)		

ACCOMPLISHMENT
SIBOBO-TINAMBAC SECTION
Sub-Project 3, Contract Package No. 2

A. SECONDARY ROAD

1. ROAD

Shouldering (Asphalt) - - - - - - - - - - - 2.517 Kms.

Gravel Surfacing (Item 200) - - - - - - - - 9.325 Kms.

2. STRUCTURES

Sta. 9 + 919	2-15.00 M. Span RCDG with 2-0.46 M. sidewalk	MANGUIRING BRIDGE
Sta. 11 + 649	1-0.60 M. Dia. x 11.00 M.	RCPC
Sta. 11 + 521	1-0.60 M. Dia. x 11.00 M.	RCPC
Sta. 12 + 672	1-1.20 M. Dia. x 25.00 M.	RCPC
Sta. 12 + 733	1-0.60 M. Dia. x 22.00 M.	RCPC
Sta. 12 + 846	1-0.60 M. Dia. x 9.00 M.	RCPC
Sta. 13 + 025	1-0.60 M. Dia. x 12 .00 M.	RCPC
Sta. 13 + 325	1-0.60 M. Dia. x 14.00 M.	RCPC
Sta. 13 + 614	2-1.20 M. Dia. x 17.00 M.	RCPC
Sta. 13 + 775	1-0.60 M. Dia. x 10.00 M.	RCPC
Sta. 14 + 143	2-Span Pre-Stressed Concrete I - Beam on Steel H - Piles with 2-0.76 M. sidewalk	TIGMAN BRIDGE
Sta. 14 + 425	1-0.60 M. Dia. x 11.00 M.	RCPC
Sta. 14 + 750	1-0.60 M. Dia. x 17.00 M.	RCPC
Sta. 14 + 950	1-0.60 M. Dia. x 16.00 M.	RCPC
Sta. 15 + 100	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 15 + 262	1-0.60 M. Dia. x 13.00 M.	RCPC

Sta. 15 + 552	2-1.80 x 2.10 x 14.00 M.	RCBC
Sta. 15 + 867	1-0.90 M. Dia. x 15.00 M.	RCPC
Sta. 16 + 007	1-0.60 M. Dia. x 15.00 M.	RCPC
Sta. 16 + 403	2-12.00 M. Span RCDG with 2-0.46 M. sidewalk	CUT-12 BRIDGE
Sta. 16 + 624	1-0.90 M. Dia. x 17.00 M.	RCPC
Sta. 17 + 127	1-1.20 M. Dia. x 23.00 M.	RCPC
Sta. 17 + 419	1-1.20 M. Dia. x 18.00 M.	RCPC
Sta. 17 + 575	1-0.60 M. Dia. x 13.00 M.	RCPC
Sta. 17 + 050	1-0.60 M. Dia. x 16.00 M.	RCPC
Sta. 18 + 514	1-0.90 M. Dia. x 18.00 M.	RCPC
Sta. 18 + 708	1-0.90 M. Dia. x 18.00 M.	RCPC
Sta. 18 + 940	1-0.90 M. Dia. x 18.00 M.	RCPC
Sta. 18 + 969	1-0.60 M. Dia. x 15.00 M.	RCPC
Sta. 19 + 250	1-15.00 M. Span RCDG with 2-0.46 M. sidewalk	TUMULOS BRIDGE
Sta. 19 + 341	1-12.00 M. Span RCDG with 2-0.46 M. sidewalk	TIGUIB BRIDGE
Sta. 19 + 538	1-0.60 M. Dia. x 19.00 M.	RCPC
Sta. 20 + 124	3-12.00 M. Span RCDG with 2-0.46 M. sidewalk	KAWAYAN BRIDGE
Sta. 20 + 475	2-0.90 M. Dia. x 14.00 M.	RCPC
Sta. 20 + 705	1-0.90 M. Dia. x 22.00 M.	RCPC
Sta. 20 + 775	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 20 + 903	1-0.60 M. Dia. x 16.00 M.	RCPC
Sta. 21 + 003	1-15.00 M. Span RCDG with 2-0.46 M. sidewalk	HUBO BRIDGE
Sta. 21 + 280	1-0.60 M. Dia. x 14.00 M.	RCPC
Sta. 21 + 491	2-1.20 M. Dia. x 23.00 M.	RCPC
Sta. 21 + 949	2-1.20 M. Dia. x 26.00 M.	RCPC

Sta. 22 + 297	1-15.00 M. Span RCDG with2-0.46 M. sidewalk	WITIWIT BRIDGE
Sta. 22 + 558	2-0.90 M. Dia. x 13.00 M.	RCPC
Sta. 22 + 759	1-1.20 M. Dia. x 15.00 M.	RCPC
Sta. 22 + 900	1-0.60 M. Dia. x 12.00 M.	RCPC
Sta. 23 + 244	1-.090 M. Dia. x 13.00 M.	RCPC
Sta. 23 + 375	1-0.60 M. Dia. x 15.00 M.	RCPC
Sta. 23 + 480	1-1.20 M. Dia. x 16.00 M.	RCPC
Sta. 23 + 600	2-1.20 M. Dia. x 16.00 M.	RCPC
Sta. 23 + 892	3 Span Pre-Stressed Concrete I - Beam on Steel H - Piles with 2-0.76 M. sidewalk	HIMURAGAT BRIDGE

B. FEEDER ROAD 303

1. ROAD

Gravel Surfacing (Item 108) - - - - - 6.775 Kms.

2. STRUCTURES

Sta. 0 + 525	1-0.60 M. Dia. x 10.00 M.	RCPC
Sta. 0 + 775	1-0.60 M. Dia. x 11.00 M.	RCPC
Sta. 1 + 150	1-0.90 M. Dia. x 11.00 M.	RCPC
Sta. 1 + 412	2-1.20 M. Dia. x 10.00 M.	RCPC
Sta. 1 + 975	1-0.60 M. Dia. x 9.00 M.	RCPC
Sta. 2 + 350	1-0.60 M. Dia. x 10.00 M.	RCPC
Sta. 3 + 150	1-0.90 M. Dia. x 10.00 M.	RCPC
Sta. 3 + 875	1-0.60 M. Dia. x 10.00 M.	RCPC
Sta. 4 + 120	1-0.60 M. Dia. x 11.00 M.	RCPC
Sta. 5 + 325	1-0.60 M. Dia. x 10.00 M.	RCPC

Summary of Quantities
Tigman & Himuragat River Bridges
Sub-Project 3, Contract Package No. 4

ITEM NO.	DESCRIPTION	UNIT	QUANTITY ACCOMPLISHED	
			Tigman Bridge	Himuragat Bridge
100	Clearing and Grubbing	Ha.	0.20	0.20
105	Roadway & Drainage Excavation	Cu.M.	6,725	150
107	Borrow	Cu.M.	538	14,780
108	Aggregate Subbase	Cu.M.	680	650
316	Portland Cement Concrete Pavement (0.20M. 8" thick)	Sq.M.	2,000	2,850
402-2a	Steel H-Test Pile	Ea.	2	2
402-2	Steel H-Piles	L.M.	234	396
403	Concrete Railing	L.M.	88	138
405	Concrete Class "A"	Cu.M.	169	338
405-A1	Pre-Stressed Concrete ASHTO I-Beam Type IV, 22 M.	Ea.	8	-
405-A2	Pre-Stressed Concrete Standard AASHTO I-Beam Type IV, 23 M.	Ea.	-	12
406	Reinforcing Steel	Kg.	21,435	37,100
500	Grouted Riprap	Cu.M.	86	148
510	Right-of-way Markers	Ea.	8	8

REPORT ON CONCRETE DRILLING TEST

TIGMAN AND HIMURAGAT RIVER BRIDGES
Sub-Project 3, Contract Package No. 4

September 16, 1982

A. TIGMAN RE-ALIGNMENT :

Beginning of Project . . . . . Station 14 + 000

End of Project . . . . . Station 14 + 325

TEST HOLE	STATION	LOCATION	THICKNESS
H_1 R	14 + 010	1.00 M. from center line	23.50 Cm.
H_2 L	14 + 118	2.00 M. from center line	22.00 Cm.
H_3 R	14 + 197	1.00 M. from center line	20.10 Cm.
H_4 L	14 + 305	2.00 M. from center line	22.00 Cm.

B. HIMURAGAT RE-ALIGNMENT :

Beginning of Project . . . . . Station 23 + 650

End of Project . . . . . Station 24 + 048

TEST HOLE	STATION	LOCATION	THICKNESS
H_5 R	23 + 675	1.00 M. from center line	22.20 Cm.
H_6 L	23 + 819	2.00 M. from center line	20.70 Cm.
H_7 R	23 + 950	1.00 M. from center line	22.00 Cm.
H_8 R	24 + 015	2.00 M. from center line	23.40 Cm.

WITNESSES :

AMOR R. PAGUYO
Project Engineer
(ABAC)

VIRGINIA MORAN
Sr. Materials Lab. Technician
(TMO)

ISAGANI PROTACIO JR.
Engineer Inspector
(TOC)

Republic of the Philippines
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Bicol River Basin Development Project
Road Component
PROJECT MANAGEMENT OFFICE
Concepcion Grande, Naga City

TECHNIKS GROUP CORPORATION

FINAL INSPECTION REPORT

Project Road : Sub-Project 3, Contract Package No. 2

Location : Province of Camarines Sur

Contractor : GOLDROCK CONSTRUCTION AND DEV. CORP.

Description of Project

Sibobo - Tinambac Road Section

Secondary Road :	Aggregate Base course(Item 200) (0.20 m. Thick)	12.167	Kms.
Feeder Road 303:	Aggregate Subbase (Item 108) (0.20 m. Thick)	6.974.94	Kms.

Secondary and Feeder Roads of the above project were satisfactorily completed on August 23, 1982 in accordance with the approved plans and specifications and is therefore recommended for acceptance. Inspected on August 25, 1982 by the representative of T G C Consultant, P M O, B R B D P / D and C O

(SGD.) DANILO A. COSINAS
Actg. Resident Engineer (TGC)

(SGD.) SILVINO B. CASILLAN
Resident Engineer (PMO)

(SGD.) ALEJANDRO DESEO
Project Manager (TGC)

(SGD.) ANGEL E. SALVADOR
Project Manager (PMO)

(SGD.)JUANITO O. DE LA TORRE
BRBDP - USAID Representative

(SGD.) FRANCISCO SANTOS
COA Representative

Concurred:
GOLDROCK CONSTRUCTION AND DEV. CORP.
BY: (SGD.) ROMERTO M. MADLA
President

APPROVED:

(SGD.) VICENTE B. LOPEZ CESO II
Project Director

REPUBLIC OF THE PHILIPPINES
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Bicol River Basin Development Project
Road Component
PROJECT MANAGEMENT OFFICE
Concepcion Grande, Naga City

PROJECT TURN-OVER

Name of Project : Sub-Project 3, Contract Package No. 2

Sibobo - Tinambac Section

Contractor : GOLDROCK CONSTRUCTION AND DEVELOPMENT CORP.

Particulars : Attached are the As-Built Plans showing the Secondary and Feeder Roads, as completed.

It is hereby certified that Final Inspection has been conducted on the above mentioned project by the authorized Committee of this Office and same was found to be constructed and completed in accordance with the approved plans and specifications per attached zerox/certified true copies of said inspection report and therefore accepted by this Office and is hereby recommended for turn-over for maintenance to the Provincial Government of Camarines Sur.

(SGD.) ANGEL E. SALVADOR
Project Manager

Approved for turn-over to the Provincial Government of Camarines Sur:

(SGD) VICENTE B. LOPEZ, CESO II
Project Director

Accepted for maintenance by the Provincial Government of Camarines Sur:

MARCOS R. SEVERO
Provincial Engineer

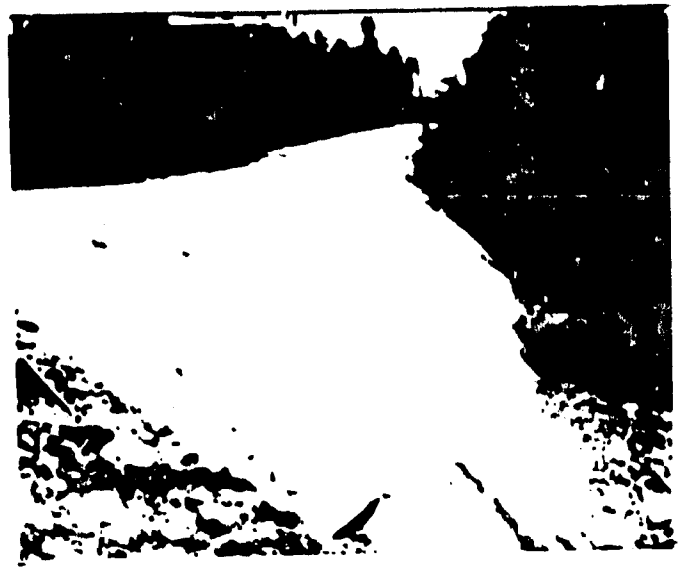
A. SIBOBO - TINAMBAC SECTION
Sub-Project 3, Contract Package No. 2

Portion of the 2.517 kilometers existing concrete pavement showing the completed asphalt shoulder and concrete barriers at the left side.

Another section of the 2.517 kilometers existing concrete pavement.

Beginning of the gravel surfacing (Item 200) of Secondary Road at Station 14 + 325 (end of Tigman Re-Alignment).

Section of the Secondary Road showing the completed gravel surfacing (Item 200).

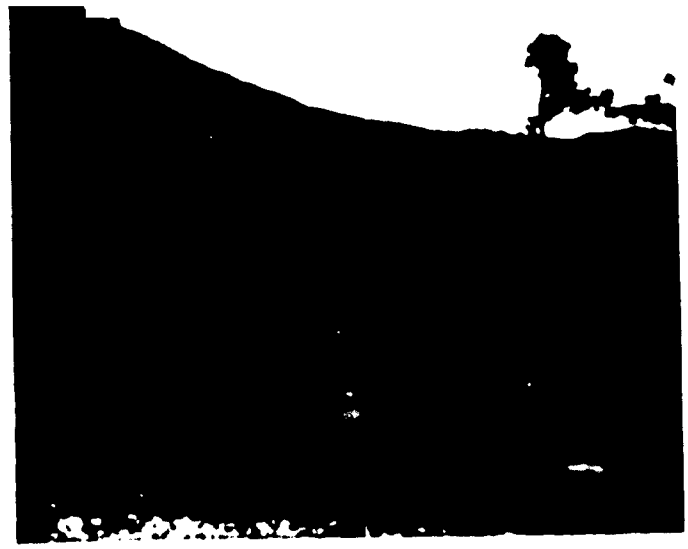


Typical embankment protection (riprap) at Station 21 + 940 to Station 21 + 993 of the Secondary Road.

End of the Secondary Road, Station 23 + 050 and the beginning of Himuragat Re-Alignment.

Beginning of Feeder Road 303 branching the Secondary Road at Station 21 + 650.

Typical section of the Feeder Road showing the completed gravel surfacing (Item 108).



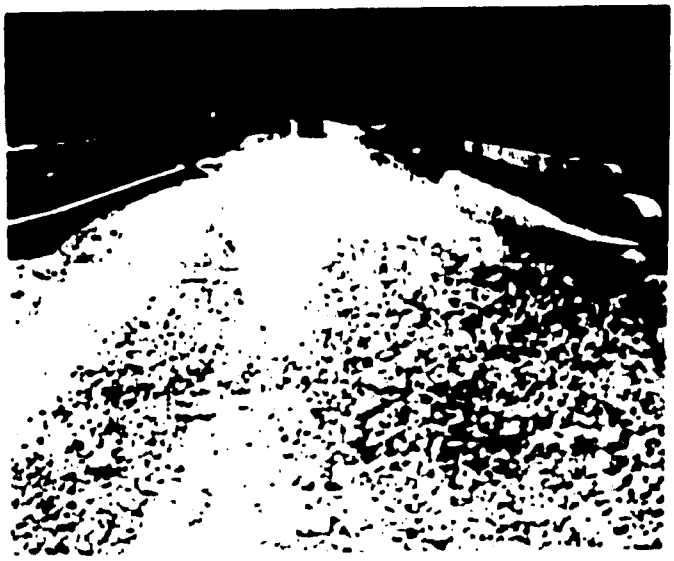
End of Feeder Road 303, Station 6 + 774.96.

B. SEVEN (7) BRIDGES, CALABANGA-TINAMBAC ROAD
Sub-Project 3, Contract Package No. 3

MANGUIRING BRIDGE, 2 - 15 meter Span RCDG, completed on May 20, 1980 by A.L. Sarmiento Construction.

CUT - 12 BRIDGE, 2 - 12 meter Span RCDG, completed on May 29, 1980 by A.L. Sarmiento Construction.

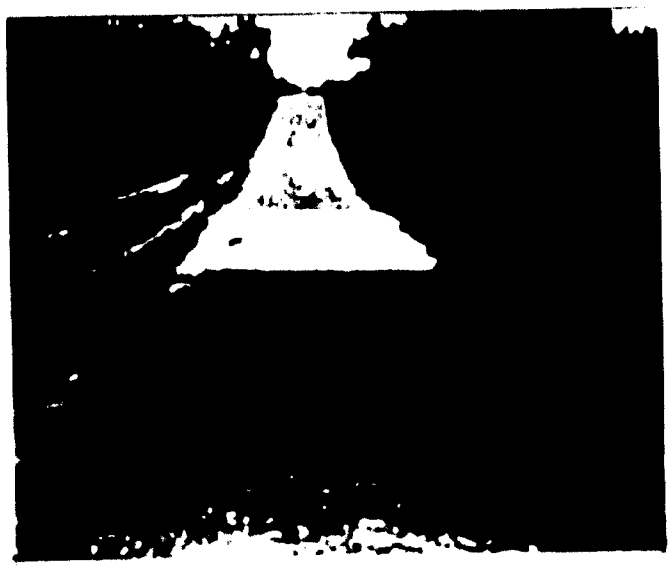
TUMULOS BRIDGE, 1 - 15 meter Span RCDG, completed on June 30, 1981 by William Uy Construction Corporation.



TIGUIB BRIDGE, 1 - 12 meter Span RCDG, completed on May 20, 1981 by William Uy Construction Corporation.

KAMAYAN BRIDGE, 3 - 12 meter Span RCDG, completed on June 16, 1980 by MPW Region V Construction Team.

HUBO BRIDGE, 1 - 15 meter Span RCDG, completed
on July 7, 1981 by William Uy Construction Corporation.



WITIWIT BRIDGE, 1 - 15 meter Span RCDG, completed
on August 24, 1981 by William Uy Construction Corporat

TIGMAN BRIDGE, 2 - 22.0 meter Span of Pre-Stressed Concrete I - Beam, Type IV. Also showing the typical section of the completed concrete pavement on the approaches. Constructed by A.B. Aguinaldo Construction.

Elevation of the completed Tigman Bridge showing the re-alignment from the existing concrete spillway.

KIDAPAWAN BRIDGE, 3 - 23.0 meter Span of Pre-Stressed Concrete I - Beam Type IV, Also showing the completed concrete pavement on the approaches. Constructed by A.B. Aguinaldo Construction.

Republic of the Philippines
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Manila

PROJECT COMPLETION REPORT

for

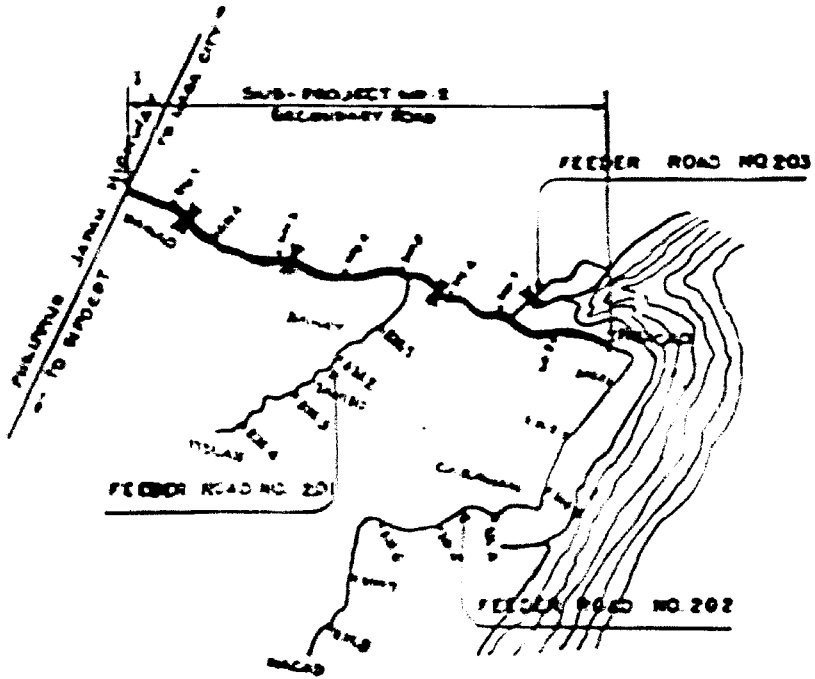
SUB-PROJECT 2

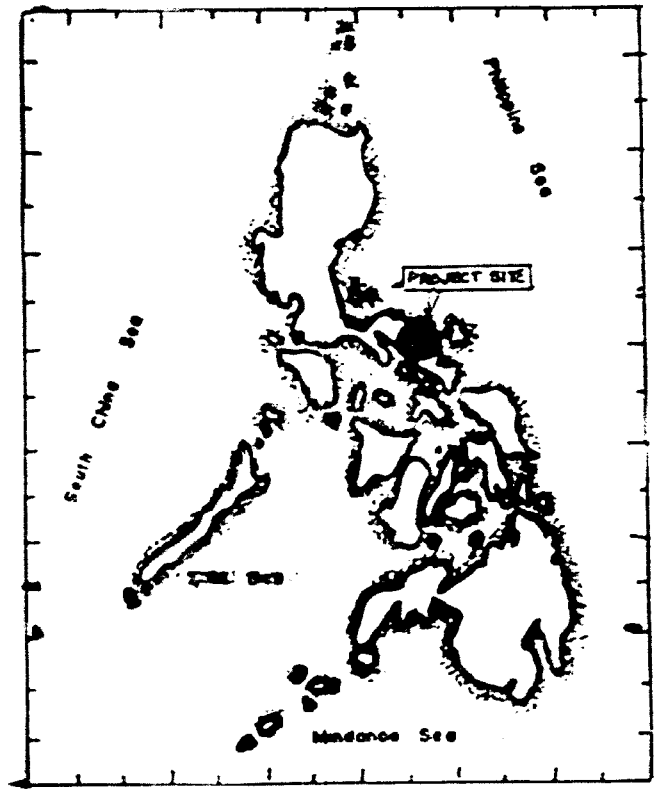
DANAO - PASACAO ROAD
Secondary Road

ITOLAN - BAHAY - COCO No. 201
PASACAO CARANAN - MACAD No. 202
PASACAO PORT No. 203

TECHNIKS GROUP CORPORATION

DANAO-PASACAO ROAD SECTION
SECONDARY & FEEDER ROADS





KEY MAP

FIGURE 5.1

5. DANAO-PASACAO ROAD

5.1 ORIENTATION

This project identified as Sub-project 2, starts from Sitio Danao, Bo. Tambo, Municipality of Pamplona where it branches out from the Daang Maharlika, following the existing secondary road, passing thru three (3) barrios and the town proper of Pasacao and ends at the junction with the road leading to the Port of Pasacao at Bo. Balatan.

The project is composed of the construction and improvement of the following:

a)	Danao-Pasacao Secondary Road	-	8.883 kms
b)	Itolan-Bahay-Coco Road (FR 201)	-	4.523 kms
c)	Pasacao-Caranan-Macad Road (FR 202)	-	8.670 kms
d)	Pasacao Port Feeder Road (FR 203)	-	1.851 kms

having a total length of 23.927 Kms. Refer to Figure 5.1.

5.2 SCOPE OF CONTRACT WORKS

The extent of project implementation are as follows:

a) Improvement of alignment and widening of the roadway.

b) Raising of existing grades on sections traversing the ricefields or on low portions of the existing road.

c) Construction of adequate drainage facilities.

d) Roadbed stabilization with selected aggregate subbase materials (Item 108).

e) Replacement of one Bailey Bridge structure with permanent

concrete bridge for the Secondary Road, and construction of four (4) timber trestle bridges along the Feeder Roads.

f) Portland Cement Concrete Pavement (Item 316), 0.20 m thick and 6.10 m width, for the Secondary Road.

g) Gravel Surfacing for the Feeder Roads.

5.3 EXECUTION OF CONSTRUCTION WORKS

Bidded on 26th of April, 1978 the Contract was awarded to the CBT Construction & Equipment Corporation to complete the project in 518 calendar days or 16th October 1980. Started on the 18th of May 1979 the Contractor was not able to continue because of unsuccessful negotiation on price escalation brought about by the increase in the price of imported oils. The contract was terminated on the 2nd of March 1981 and the amount of accomplishment is ₱7,039,563.30 or about 58.14% of the total contract price. The remaining works of 41.86% were resumed by the Marosa Enterprises on the 2nd of September, after the project was re-bidded on the 7th of May 1981, with a contract time of 351 calendar days.

The project was completed on the 6th of September 1982 as a consequence of the following which retarded the progress of the works:

a) Failure of the Contractor to provide the essential minimum equipment during the first half of the contract time causing a negative slippage of more

than 20% (work was accelerated during the second half after the acquisition of additional transit mixers).

b) Social Conditions - peace and order situation in the project site.

c) Weather Conditions - the occurrence of ten (10) typhoons from 1981 to September 1982, two (2) of which were responsible for declaring the Bicol Region "a state of calamity," ("Anding" and "Yeyeng", 19th & 24th of November 1981).

d) Suspension of operations brought about by the untimely death of the Owner which created logistic and management complications, followed by accidental death and injuries sustained by some project field personnel.

Amount paid to the Contractor is ₱10,531,802.71.

Final inspection of the project was conducted on the 30th of September 1982.

5.4 SUMMARY

a) Total cost of the project is ₱17,571,366.01.

b) Completion of the project brought about the following tangible socio-economic benefits:

- Increased economic activities, e.g. in copra trading with the establishment of an oil mill at the terminal of Pasacao Port road;
- Generated traffic between Pasacao, Pamplona and Naga;
- An all-weather physical links to transport farm produce, particularly between barrios along

Itolan-Bahay-Coco and Pasacao-Caranan-Macad feeder roads and commercial centers; and

- Provide a basic infrastructure requirement in the Government's KKK development programme.

5.5 PROJECT DOCUMENTS

Included as appendices to the report are the following:

Appendix	5.1	Summary of Quantities: CBT Construction & Equipment Corporation
	5.2	Summary of Quantities: Marosa Enterprises
	5.3	Summary of Quantities Between CBT Const. & Equipment Corporation and Marosa Enterprises
	5.4	Project Accomplishment
	5.5	Reports on Concrete Drilling Test
	5.6	Final Inspection Report
	5.7	Project Turn-Over Record
	5.8	Project Photographs

Summary of Quantities
CBT Construction and Equipment Corporation
Danao-Pasacao Road Section
Sub-Project No. 2

Levels of Improvement:

Secondary Road - PCCP (Item 316), 0.20 m thick - 8.883 Kms.

Feeder Roads:

201 (Itolan-Bahay-Coco) - Gravel Surfacing - 4.523 Kms.

202 (Pasacao-Caranan-Macad) -do- - 8.670 Kms.

203 (Pasacao Port Road) -do- - 1.851 Kms.

ITEM NO.	DESCRIPTION	UNIT	QUANTITY/ VOLUME
100	Clearing and Grubbing	Ha.	4.62
103-1	Removal of Bridges	Ea.	2
103-2	Removal of Culverts	Ea.	55
105	Roadway and Drainage Excavation	Cu.M.	61,778
106-1	Excavation for Structures	Cu.M.	5,740
106-2	Excavation for Structures (Below OWL)	Cu.M.	45
107	Borrow	Cu.M.	85,070
108	Aggregate Subbase	Cu.M.	40,645
110	Foundation Fill	Cu.M.	983
111	Overhaul (300 m. Free Haul)	Sta.M.	7,450
402-2.5	Precast Concrete Piles	L.M.	854
402-2.5a	Concrete Test Piles	L.M.	11
401	Timber Trestle	Span	14
403	Concrete Railings	Ea.	56
405-1	Concrete Class "A" (Headwalls & Miscellaneous Structures)	Cu.M.	822
405-2	Concrete Class "A" (Bridges)	Cu.M.	210

ITEM NO.	DESCRIPTION	UNIT	QUANTITY/ VOLUME
406	Reinforcing Steel	Kg.	77,485
407	Structural Steel	Kg.	640
412	Stone Masonry	Cu.M.	56
413-2	0.60 m. Dia. RCP	L.M.	456
413-3	0.90 m. Dia. RCP	L.M.	459
413-4	1.20 m. Dia. RCP	L.M.	317
500-1	Riprap and Grouted (Canal Protection)	Cu.M.	831
500-2	Riprap and Grouted (Riverbank Protection)	Cu.M.	225
510	Right-of-Way Markers	Ea.	646

APPENDIX 5.2

Summary of Quantities
Marosa Enterprises
Danao-Pasacao Road Section
Sub-Project No. 2

Levels of Improvement:

Secondary Road. : Portland Cement Concrete Pavement (Item 316), 0.20 m thick and 6.10 m width - - - - - - - - - - - - 8.311 Kms

Feeder Road 202 : Gravel Surfacing (Item 108), (Correction of deficiencies on previous Contract) - - - - - - - - - 8.670 Kms

ITEM NO.	DESCRIPTION	UNIT	QUANTITY/ VOLUME
106	Excavation for Structure	Cu.M.	554
107	Borrow	Cu.M.	5,545
108	Aggregate Subbase	Cu.M.	8,652
118	Repreparation of Previously Constructed Road	Kms.	9.265
316	Portland Cement Concrete Pavement (0.20 m., 8" thick)	Sq.M.	56,268
405	Concrete Class "A" (Headwalls & Miscellaneous Structures)	Cu.M.	25
405-1	Concrete Class "A" (Wingwalls)	Cu.M.	5
500-1	Riprap and Grouted Riprap	Cu.M.	850

Summary of Quantities Between CBT Const. & Equipt. Corp. and Marosa Enterprises
Dariao-Pasacao Road Section
Sub-Project No. 2

ITEM NO.	DESCRIPTION	UNIT	QUANTITY ACCOMPLISHED		
			CBT	M E	TOTAL
100	Clearing and Grubbing	Ha.	4.62	-	4.62
103-1	Removal of Bridges	Ea.	2	-	2
103-2	Removal of Culverts	Ea.	55	-	55
105	Roadway and Drainage Excavation	Cu. M.	61,778	-	61,778
106-1	Excavation for Structures	Cu. M.	5,740	554	6,294.0
106-2	Excavation for Structures (below owl)	Cu. M.	45	-	45
107	Borrow	Cu. M.	85,070	5,545	90,615
108	Aggregate Subbase	Cu. M.	40,645	8,610	49,255
110	Foundation Fill	Cu. M.	983	-	983
111	Overhaul (300 M. Free Haul)	Sta. M	7,450	-	7,450
118	Repreparation of Previously Constructed Road	Km.	-	9.265	9.265
316	Portland Cement Concrete Pavement	Sq. M.	-	56,268	56,268
402-2.5	Precast Concrete Piles	L.M.	854	-	854
402-2.5a	Concrete Test Piles	L.M.	11	-	11
401	Timber Trestle	Span	14	-	14
403	Concrete Railings	Ea.	56	-	56
405-1	Concrete Class "A" (Headwalls & Misc. Structures)	Cu. M.	822	25	847
405-2	Concrete Class "A" (Bridges)	Cu. M.	210	5	215
406	Reinforcing Steel	Kg.	77,485	-	77,485

ITEM NO.	DESCRIPTION	UNIT	QUANTITY ACCOMPLISHED		
			CBT	ME	TOTAL
407	Structural Steel	Kg.	640	-	640
412	Stone Masonry	Cu.M.	56	-	56
413-2	0.60 M. Dia. RCP	L.M.	456	-	456
413-3	0.90 M. Dia. RCP	L.M.	459	-	459
413-4	1.20 M. Dia. RCP	L.M.	317	-	317
500-1	Riprap and Grouted (Canal Protection)	Cu.M.	831	-	831
500-2	Riprap and Grouted (River Bank Protection)	Cu.M.	225	850	1,075
510	Right-of-Way Markers	Ea.	646	-	646

Note: Additional quantities for the following items on S.R. & F.R. 202 under Change Order No. 1 & 2, are not included.

Item 108 (Aggregate Subbase . . . . . 2,981 Cu.M.

Item 107 (Borrow) . . . . . 1,140 Cu.M.

Item 500 (Grouted Riprap) . . . . . 516 Cu.M.

PROJECT ACCOMPLISHMENT
DANAO-PASACAO ROAD SECTION
Sub-Project No. 2

A - SECONDARY ROAD

1) ROAD

Portland Cement Concrete Pavement - - - - - - - 8.811 Kms.

2) STRUCTURES

Sta. 0 + 178	1 - 0.90 m. dia. x 13.00 m.	RCPC
Sta. 0 + 253	1 - 0.90 m. dia. x 14.00 m.	RCPC
Sta. 0 + 286	1 - 0.60 m. dia. x 16.00 m.	RCPC
Sta. 0 + 325	1 - 0.60 m. dia. x 13.00 m.	RCPC
Sta. 0 + 429	1 - 0.60 m. dia. x 14.00 m.	RCPC
Sta. 0 + 493	1 - 0.60 m. dia. x 14.00 m.	RCPC
Sta. 0 + 592	2 - 1.20 m. dia. x 15.00 m.	RCPC
Sta. 0 + 697	1 - 1.20 m. dia. x 15.00 m.	RCPC
Sta. 0 + 902	1 - 0.60 m. dia. x 19.00 m.	RCPC
Sta. 1 + 020	1 - 0.90 m. dia. x 19.00 m.	RCPC
Sta. 1 + 434	2 - 1.20 m. dia. x 22.00 m.	RCPC
Sta. 1 + 675	1 - 0.60 m. dia. x 14.00 m.	RCPC
Sta. 1 + 878	1 - 1.20 m. dia. x 18.00 m.	RCPC
Sta. 2 + 073	1 - 0.60 m. dia. x 12.00 m.	RCPC
Sta. 2 + 120	1 - 0.60 m. dia. x 13.00 m.	RCPC
Sta. 2 + 475	1 - 0.60 m. dia. x 14.00 m.	RCPC
Sta. 2 + 700	1 - 0.60 m. dia. x 13.00 m.	RCPC
Sta. 2 + 888	2 - 2.40 m. x 2.10 m. x 17.00 m.	RCBC
Sta. 3 + 400	1 - 0.60 m. dia. x 13.00 m.	RCPC
Sta. 3 + 615	1 - 0.90 m. dia. x 15.00 m.	RCPC
Sta. 3 + 900	1 - 0.90 m. dia. x 15.00 m.	RCPC
Sta. 4 + 175	1 - 0.60 m. dia. x 13.00 m.	RCPC

Sta. 4 + 537	2 - 1.80 m. x 1.80 m. x 21.00 m.	RCBC
Sta. 4 + 714	2 - 1.20 m. dia. x 17.00 m.	RCPC
Sta. 4 + 884	2 - 1.20 m. dia. x 18.70 m.	RCPC
Sta. 5 + 499	1 - 1.20 m. dia. x 14.00 m.	RCPC
Sta. 5 + 675	1 - 0.90 m. dia. x 17.00 m.	RCPC
Sta. 5 + 828	2 - 14.00 m. (2 - 0.76 m. sidewalks)	RCDG, Odicon Bridge
Sta. 6 + 275	2 - 0.90 m. dia. x 12.00 m.	RCPC
Sta. 6 + 624	1 - 0.60 m. dia. x 16.00 m.	RCPC
Sta. 6 + 750	2 - 1.20 m. dia. x 22.70 m.	RCPC
Sta. 6 + 970	1 - 0.60 m. dia. x 14.25 m.	RCPC
Sta. 7 + 150	1 - 0.90 m. dia. x 12.00 m.	RCPC
Sta. 7 + 427	1 - 0.60 m. dia. x 13.00 m.	RCPC
Sta. 7 + 725	2 - 1.80 m. x 2.10 m. x 14.00 m.	RCBC
Sta. 8 + 069	1 - 0.90 m. dia. x 13.00 m.	RCPC
Sta. 8 + 188	1 - 1.10 m. x 0.70 m. x 12.00 m.	RCBC
Sta. 8 + 354	1 - 1.05 m. x 0.60 m. x 14.70 m.	RCBC
Sta. 8 + 553	1 - 0.60 m. dia. x 12.00 m.	RCPC
Sta. 8 + 827	1 - 0.60 m. dia. x 21.60 m.	RCPC
Sta. 8 + 875	1 - 1.20 m. dia. x 18.00 m.	RCPC

B - FEEDER ROAD 201 (Itolan-Bahay Coco Road)

1) ROAD

Aggregate Subbase - - - - - - - - - - - - - - - - - - 4.523 Kms.

2) STRUCTURES

Sta. 0 + 110	1 - 0.60 m. dia. x 12.60 m.	RCPC
Sta. 0 + 239	1 - 0.90 m. dia. x 15.00 m.	RCPC
Sta. 0 + 745	1 - 0.60 m. dia. x 10.20 m.	RCPC
Sta. 1 + 050	1 - 0.90 m. dia. x 10.30 m.	RCPC

Sta. 1 + 825	1 - 0.60 m. dia. x 12.00 m.	RCPC
Sta. 2 + 000	1 - 0.90 m. dia. x 13.00 m.	RCPC
Sta. 2 + 276	1 - 1.20 m. dia. x 20.00 m.	RCPC
Sta. 2 + 475	1 - 0.60 m. dia. x 11.00 m.	RCPC
Sta. 2 + 700	1 - 0.90 m. dia. x 11.00 m.	RCPC
Sta. 2 + 887	1 - 0.90 m. dia. x 15.00 m.	RCPC
Sta. 2 + 985	1 - 0.90 m. dia. x 15.00 m.	RCPC
Sta. 3 + 403	3 - 1.20 m. dia. x 14.00 m.	RCPC
Sta. 3 + 825	1 - 0.60 m. dia. x 11.00 m.	RCPC
Sta. 4 + 127	3 -2.40 m. x 1.80 m. x 11.00 m.	RCBC
Sta. 4 + 334	1 - 1.50 m. x 1.25 m. x 12.00 m.	RCBC

C - FEEDER ROAD 202 (Pasacao-Caranan-Hacad)

1) ROAD

Aggregate Subbase - - - - - - - - - - - - - - - - - - 8.670 Kms.

2) STRUCTURES

Sta. 0 + 371	1 - 0.60 m. dia. x 11.00 m.	RCPC
Sta. 0 + 525	1 - 0.60 m. dia. x 11.00 m.	RCPC
Sta. 0 + 680	1 - 0.60 m. dia. x 11.00 m.	RCPC
Sta. 0 + 819	1 - 0.90 m. dia. x 11.00 m.	RCPC
Sta. 0 + 925	1 - 0.60 m. dia. x 10.00 m.	RCPC
Sta. 1 + 032	1 - 0.60 m. dia. x 12.00 m.	RCPC
Sta. 1 + 139	1 - 0.60 m. dia. x 13.00 m.	RCPC
Sta. 1 + 195	1 - 0.60 m. dia. x 12.00 m.	RCPC
Sta. [illegible] + 222	1 - 0.60 m. dia. x 11.00 m.	RCPC
Sta. 1 + 313	1 - 0.60 m. dia. x 11.00 m.	RCPC
Sta. 1 + 502	2 - 1.20 m. dia. x 11.00 m.	RCPC

Sta. 1 + 747	2 - 0.90 m. dia. x 11.00 m.	RCPC
Sta. 2 + 270	2 - 0.90 m. dia. x 12.00 m.	RCPC
Sta. 2 + 508	2 - 1.80 m. x 1.80 m. x 12.00 m.	RCBC
Sta. 2 + 919	1 - 0.60 m. dia. x 10.00 m.	RCPC
Sta. 3 + 025	1 - 0.60 m. dia. x 11.00 m.	RCPC
Sta. 3 + 375	1 - 0.60 m. dia. x 10.00 m.	RCPC
Sta. 3 + 866.60	3 - 6.00 m. (Bridge No. 1)	Timber Bridge on R.C. Piles
Sta. 4 + 309	1 - 1.20 m. dia. x 13.00 m.	RCPC
Sta. 4 + 675	1 - 0.60 m. dia. x 12.00 m.	RCPC
Sta. 4 + 857.40	3 - 6.00 m. (Bridge No. 2)	Timber Bridge on R.C. Piles
Sta. 5 + 375	1 - 0.60 m. dia. x 10.00 m.	RCPC
Sta. 5 + 580	1 - 0.90 m. dia. x 12.00 m.	RCPC
Sta. 5 + 972.00	2 - 6.00 m. (Bridge No. 3)	Timber Bridge on R.C. Piles
Sta. 6 + 250	1 - 0.60 m. dia. x 12.00 m.	RCPC
Sta. 6 + 411.3	6 - 6.00 m. (Bridge No. 4)	Timber Bridge on R.C. Piles
Sta. 6 + 650	2 - 1.20 m. dia. x 13.00 m.	RCPC
Sta. 6 + 921	1 - 1.20 m. dia. x 12.00 m.	RCPC
Sta. 7 + 050	1 - 0.60 m. dia. x 12.00 m.	RCPC
Sta. 7 + 400	1 - 0.90 m. dia. x 12.00 m.	RCPC
Sta. 7 + 585	3 - 2.40 m. x 2.40 m. x 14.00 m.	RCBC
Sta. 7 + 750	1 - 0.90 m. dia. x 11.00 m.	RCPC
Sta. 7 + 950	1 - 0.60 m. dia. x 10.00 m.	RCPC
Sta. 8 + 025	1 - 0.60 m. dia. x 10.00 m.	RCPC
Sta. 8 + 250	1 - 0.60 m. dia. x 11.00 m.	RCPC
Sta. 8 + 550	2 - 0.90 m. dia. x 11.00 m.	RCPC

D - FEEDER ROAD 203 (Pasacao Port)

1) ROAD

Aggregate Subbase - - - - - - - - - - - - - - - - - - - 1.851 Kms.

2) STRUCTURES

Sta. 0 + 345	3 - 0.90 m. dia. x 13.00 m.	RCPC
Sta. 0 + 774	1 - 0.90 m. dia. x 12.00 m.	RCPC
Sta. 0 + 874	1 - 0.90 m. dia. x 11.00 m.	RCPC
Sta. 0 + 940	1 - 0.90 m. dia. x 12.00 m.	RCPC
Sta. 1 + 578	1 - 0.90 m. dia. x 14.00 m.	RCPC
Sta. 1 + 695	1 - 0.90 m. dia. x 16.00 m.	RCPC

Republic of the Philippines
MINISTRY OF PUBLIC HIGHWAYS
Project Management Office
Soils & Materials Division
Naga City

Reports of Concrete Drilling Tests, Sub-Project II
Package I, Danao-Pasacao Section

Beginning of Project	Sta. 0 + 003.35
End of Project	Sta. 8 + 883.64
Net Length of Pavement	8.811 Kms.
Governing Specification	Spec's for Highways and Bridges, Rev. '72
Specified Thickness	0.20 m. 8" thick
Width of Pavement	6.10 m.

Sample Identification	Station (Km.)	Reference Point Going to Pasacao Section	Initial Measure of Thickness (Cm.
September 3, 1982			
H1R	0 + 024	Right lane (1.0 m. from CL)	21.0
H2L	0 + 191	Left lane (2.0 from CL)	22.25
H3R	0 + 357.3	Right lane (1.0 m. from CL)	20.0
H4L	0 + 523.9	Left lane (2.0 m from CL)	24.0
H5R	0 + 693	Right lane (1.0 m. from CL)	22.0
H6L	0 + 859	Left lane (2.0 m. from CL)	21.5
H7R	1 + 026	Right lane (1.0 m. from CL)	22.9
H8L	1 + 194.35	Left lane (2.0 m. from CL)	19.5
H9R	1 + 362	Right lane (1.0 m. from CL)	22.0
H10L	1 + 528.5	Left lane (2.0 m. from CL)	24.1
H11R	1 + 695	Right lane (1.0 m. from CL)	21.2
H12L	1 + 862.5	Left lane (2.0 m. from CL)	19.9
September 4, 1982			
H13R	2 + 029	Right lane (1.0 m. from CL)	22.3
H14L	2 + 195	Left lane (2.0 m. from CL)	19.1
Backward 14a	2 + 187.5	Left lane (2.0 m. from CL)	22.0
Forward 14b	2 + 202.5	Left lane (2.0 m. from CL)	21.0
Otherside 14c	2 + 195	Right lane (2.0 m. from CL)	19.0
H15R	2 + 363	Right lane (1.0 m. from CL)	21.0
H16L	2 + 531	Left lane (2.0 m. from CL)	23.10
H17	2 + 697	Right lane (1.0 m. from CL)	22.20
H18L	2 + 864	Left lane (2.0 m. from CL)	23.30
H19R	3 + 030	Right lane (1.0 m. from CL)	22.60

Sample Identification	Station (km.)	Reference Point (Lane) to Longitudinal Section	Initial R[illegible] for Thickness (cm.)
H20 L	3 + 213	Left lane (2.0 m. from CL)	20.2
H21R	3 + 364.5	Right lane (1.0 m. from CL)	20.1
H22L	3 + 529.5	Left lane (2.0 m. from CL)	21.8
H23R	3 + 697.6	Right lane (1.0 m. from CL)	22.7
H24L	3 + 864.5	Left lane (2.0 m. from CL)	21.1
H25R	4 + 031	Right lane (1.0 m. from CL)	23.5
September 10, 1982			
H26L	4 + 199	Left lane (2.0 m. from CL)	21.5
H27 R	4 +336.5	Right lane (1.0 m. from CL)	22.0
H28L	4 + 533.5	Left lane (2.0 m. from CL)	20.0
H29R	4 + 700	Right lane (1.0 m. from CL)	21.0
H30L	4 + 867.5	Left lane (2.0 m. from CL)	21.5
H31R	5 + 033.5	Right lane (1.0 m. from CL)	21.0
H32L	5 + 199.5	Left lane (2.0 m. from CL)	20.2
H33R	5 + 365	Right lane (1.0 m. from CL)	20.0
H34L	5 + 532	Left lane (2.0 m. from CL)	21.0
September 11, 1982			
H35R	5 + 600	Right lane (1.0 m. from CL)	21.0
H36L	5 + 767.5	Left lane (2.0 m. from CL)	20.0
H37R	5 + 934.5	Right lane (1.0 m. from CL)	20.0
H38L	6 + 099.50	Left lane (2.0 m. from CL)	20.0
H39R	6 + 266.50	Right lane (1.0 m. from CL)	22.2
H40L	6 + 433	Left lane (2.0 m. from CL)	19.8
H41R	6 + 600	Right lane (1.0 m. from CL)	21.0
H42L	6 + 768	Left lane (2.0 m. from CL)	21.8
H43R	6 + 933.5	Right lane (1.0 m. from CL)	21.0
September 13, 1982			
H44L	7 + 103	Left lane (2.0 m. from CL)	21.0
H45R	7 + 270.50	Right lane (1.0 m. from CL)	20.0
H46L	7 + 437.50	Left lane (2.0 m. from CL)	20.5
H47R	7 + 604	Right lane (1.0 m. from CL)	20.5
Spetember 14, 1982			
H48L	7 + 771	Left lane (2.0 m. from CL)	20.1
H49R	7 + 937.50	Right lane (1.0 m. from CL)	21.0
H50L	8 + 104	Left lane (2.0 m. from CL)	19.0
H51R	8 + 272	Right lane (1.0 m. from CL)	21.7
H52L	8 + 439	Left lane (2.0 m. from CL)	20.0
H53R	8 + 606	Right lane (1.0 m. from CL)	20.2
H54L	8 + 773	Left lane (2.0 m. from CL)	22.5

BICOL RIVER BASIN SECONDARY AND FEEDER ROADS PROJECT
PACKAGE 1

TECHNIKS GROUP CORPORATION

FINAL INSPECTION REPORT

Project : Sub-Project No. 2, DANAO-PASACAO ROAD

Location : Province of Camarines Sur

Contractor : MAROSA ENTERPRISES

Description of Project

Secondary Road	-	Portland Cement Concrete Pavement (0.20 m. 8" thick)	-	8.883 Kms.
Feeder Road 201	-	0.20 m. thick Gravel Surfacing	-	4.523 Kms.
Feeder Road 202	-	0.20 m. thick Gravel Surfacing	-	8.670 Kms.
Feeder Road 203	-	0.20 m. thick Gravel Surfacing	-	1.851 Kms.

Secondary and Feeder Roads of the above project were satisfactorily completed on September 6, 1982 in accordance with the approved plans and specifications and is therefore recommended for acceptance. Inspected on September 30, 1982 by the representatives of TGC Consultant, PMO, BRRDP/USAID, and COA.

HERMINIO B. DE JESUS
Resident Engineer, TGC

ADELPHORO DEGUZMAN
Project Manager, TGC

SIXTO H. CASILAN
Resident Engineer, PMO

ANDRE B. BALAGTAS
Project Manager, PMO

FRANCISCO SANTOS
COA Representative

JUANITO O. DE LA TORRE
BRRDP/USAID Representative

CONCURRED:

MAROSA ENTERPRISES
BY:

TRIX LIM
General Manager

APPROVED:

VICENTE B. LOPEZ, CESO II
Project Director

REPUBLIC OF THE PHILIPPINES
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Bicol River Basin Development Project
Road Component
PROJECT MANAGEMENT OFFICE
Concepcion Grande, Naga City

PROJECT TURN-OVER

Name of Project : Sub-Project No. 2, DANAO-PASACAO ROAD

Contractor : MAROSA ENTERPRISES

Particulars : Attached are the As-Built Plans showing the Secondary Road, as completed.

It is hereby certified that Final Inspection has been conducted on the above mentioned project by the authorized Committee of this Office and same was found to be constructed and completed in accordance with the approved plans and specifications per attached xerox/certified true copies of said inspection report and therefore accepted by this Office and is hereby recommended for turn-over for maintenance to the Provincial Government of Camarines Sur.

ANDRE B. SALVADOR
Project Manager

Approved for turn-over to the National Government:

VICENTE B. LOPEZ, CESO II
Project Director

Accepted for maintenance by the District Engineer's Office, Camarines Sur:

FONCIANO AUBAN
Chief Civil Engineer,
(District Engineer)

REPUBLIC OF THE PHILIPPINES
MINISTRY OF PUBLIC WORKS AND HIGHWAYS
Bicol River Basin Development Project
Road Component
PROJECT MANAGEMENT OFFICE
Concepcion Grande, Naga City

PROJECT TURN-OVER

Name of Project : Sub-Project No. 2, DANAO-PASACAO ROAD

Contractor : MAROSA ENTERPRISES

Particulars : Attached are the As-Built Plans showing the Feedar Road Nos. 201, 202 and 203, as completed.

It is hereby certified that Final Inspection has been conducted on the above mentioned project by the authorized Committee of this Office and same was found to be constructed and completed in accordance with the approved plans and specifications per attached xerox/certified true copies of said inspection report and therefore accepted by this Office and is hereby recommended for turn-over for maintenance to the Provincial Government of Camarines Sur.

ANGEL E. SALVADOR
Project Manager

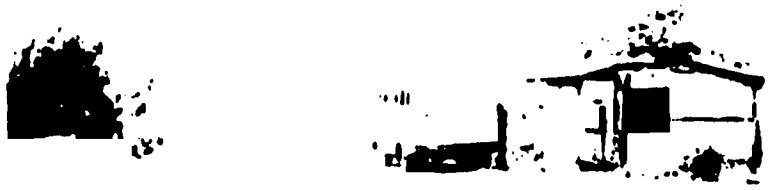
Approved for turn-over to the Provincial Government of Camarines Sur:

VICENTE B. LOPEZ, CESO II
Project Director

Accepted for maintenance by the Provincial Government of Camarines Sur:

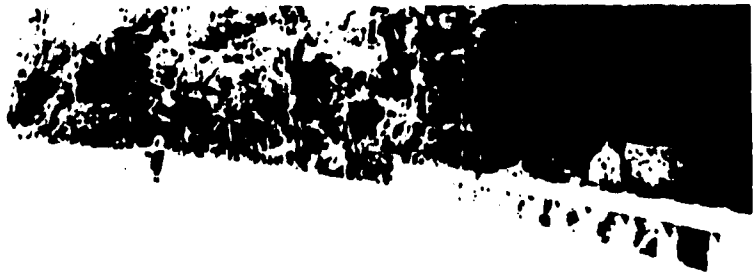
MARCOS R. SEVERO
Provincial Engineer

PICTORIALS OF COMPLETED PROJECT



Beginning of Secondary Road, Sta. 0 + 003.35
Danao-Pasacao Road. Foreground shows the road
leading to the town of Pamplona.

Typical roadway section of the Secondary Road. This
is at Bo. Quitang, Sta. 3 + 625. At left shows the
concrete fence of Quitang Elementary School.



This is the Odicon Bridge a 2-span RCDG bridge on concrete piles spanning the Pasacao River along the Secondary Road from Sta. 5 + 828.05 to Sta. 5 + 856.67 or a total of 28.62 M. This was constructed by the CBT Construction and Equipment Corporation.

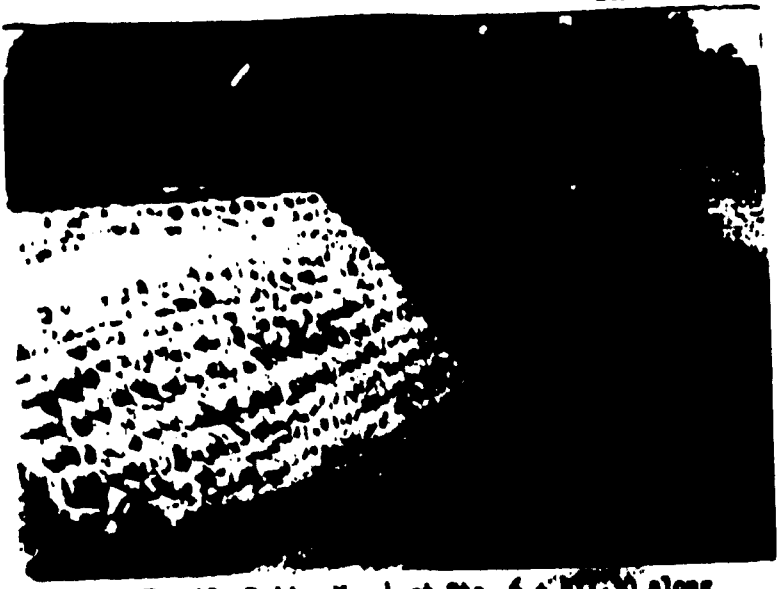
End of project of the Secondary Road and the beginning of Feeder Road #202 (Pasacao-Caranan-Masad Road) at Sta. 8 + 883.64. Road connection at left leads to Pasacao Port. Infront of this intersection is the Contractor's quarry for Item 107.

Typical roadway section of Feeder Road # 202. This section is at Km. 8 + 150, Bo. Macad. Note the gravel surface.

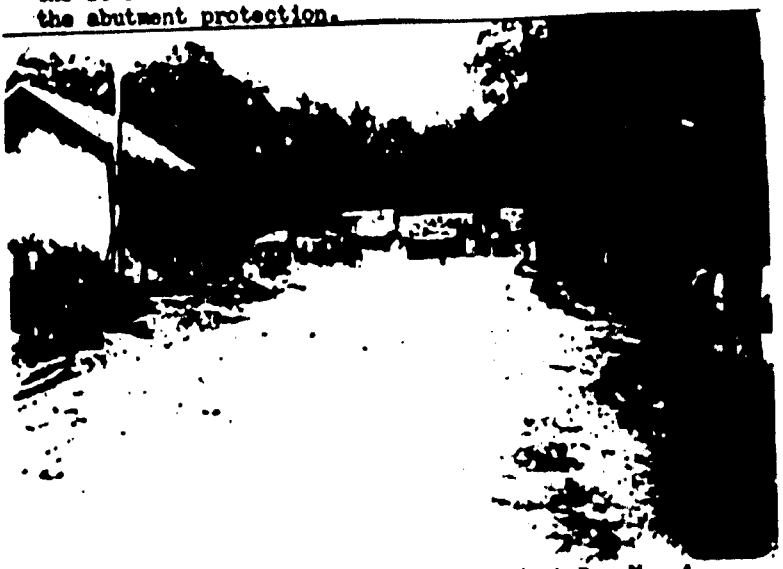
Timber Trestle Bridge No. 1 at Sta. 3 + 866.60 along Feeder Road #202. Constructed by CBT Construction and Equipment Corporation. Length 18.00M.

Timber Trestle Bridge No. 2 at Sta. 4 + 857.40 along Feeder Road #202. Constructed by CBT Construction and Equipment Corporation. Length 18.00 M.

Timber Trestle Bridge No. 3 at Sta. 5 + 972 along along Feeder Road #202. Constructed by CBT Construction and Equipment Corporation. Length 12.00 M.



Timber Trestle Bridge No. 4 at Sta. 6 + [illegible].30 along Feeder Road #202. Constructed by CBT Construction and Equipment Corporation. The longest of the four at 36.00 M. Foreground shows the detour road leading to the source of Item 108 about 50.00M. upstream. Note the abutment protection.



This is the end of the project located at Bo. Macad, Pasacao Feeder Road #202 at Sta. 8 + 687.37.

6. EXECUTIVE DETAILS

6.1 ORGANIZATION

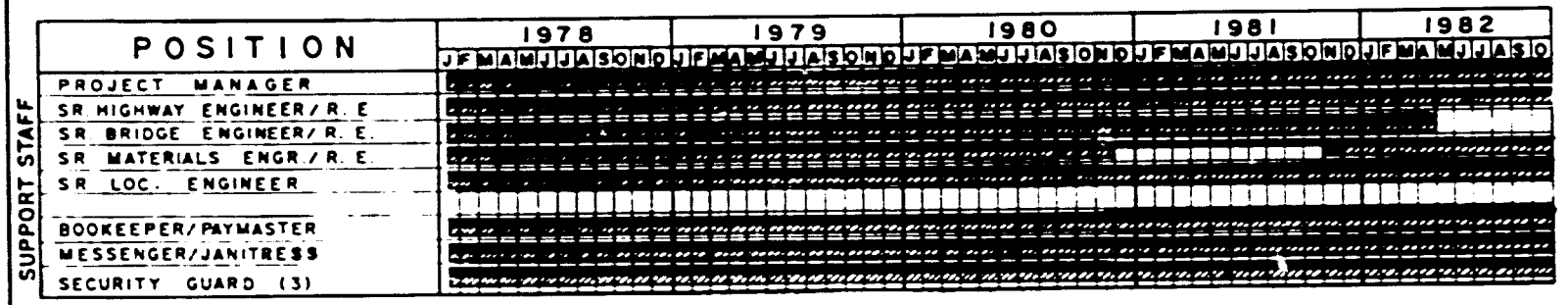
The composition of the project team and the individual staff's period of participation are shown in Appendix 6.1, Manpower Schedule of Consultant's Staff for Construction Supervision.

6.2 CONSTRUCTION MANAGEMENT DOCUMENTS

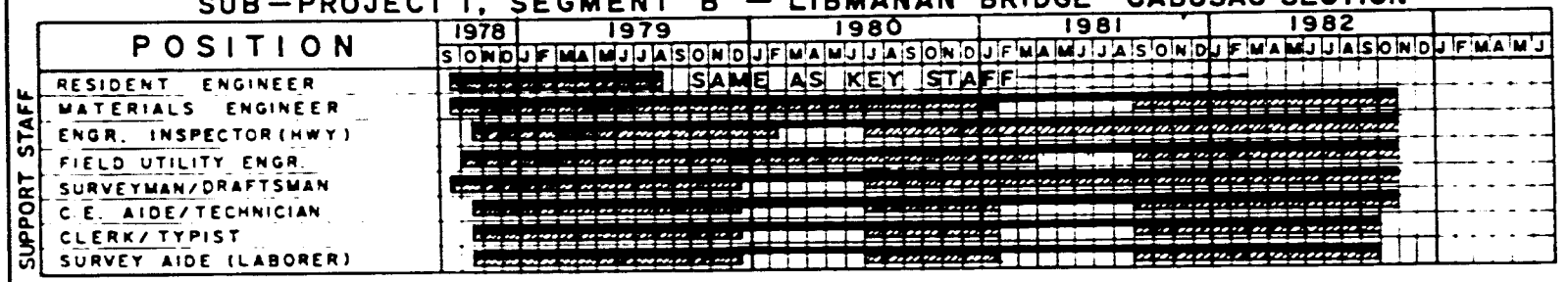
The following governed the execution of construction works:

a) Proposal Book
b) MPWH's Specifications for Highways & Bridges, Revised 1972
c) Special Provisions
d) Construction Drawings
e) Addenda
f) Presidential Decree No. 1594
g) Presidential Decree Nos. 459 & 906 amending P.D. 454 for price adjustment
h) MPWH Memorandum Circular No. 38 dated 12 November 1981 for quality control

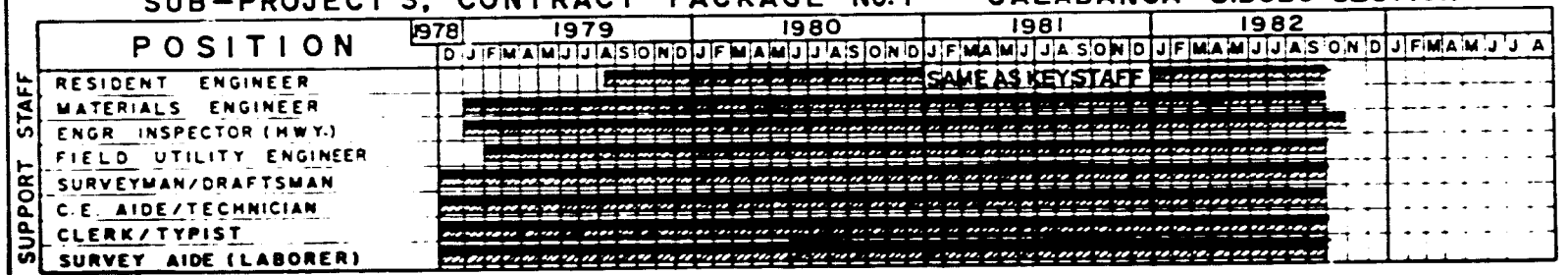
MANPOWER SCHEDULE OF CONSULTANT'S STAFF FOR CONSTRUCTION SUPERVISION



SUB-PROJECT 1, SEGMENT "B" — LIBMANAN BRIDGE-CABUSAO SECTION

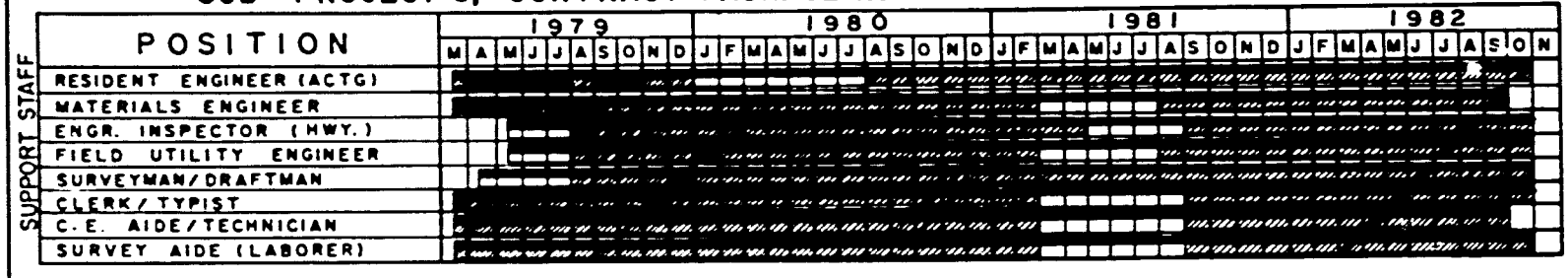


SUB-PROJECT 3, CONTRACT PACKAGE No. 1 — CALABANGA-SIBOBO SECTION

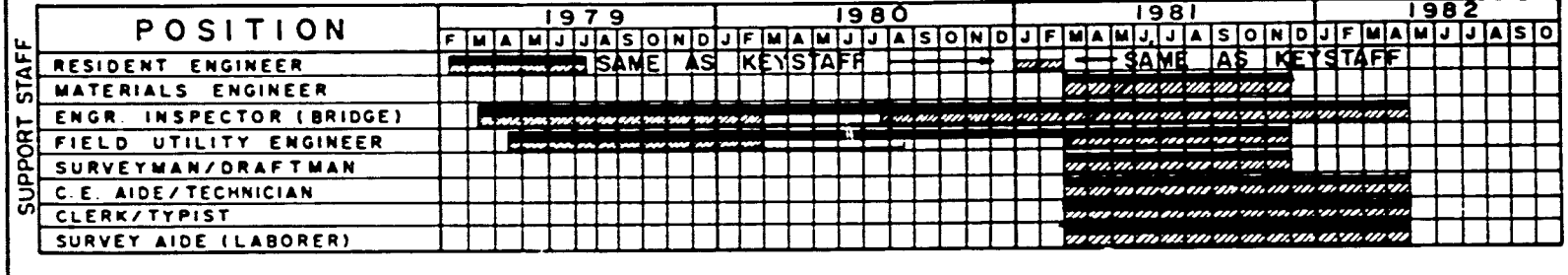
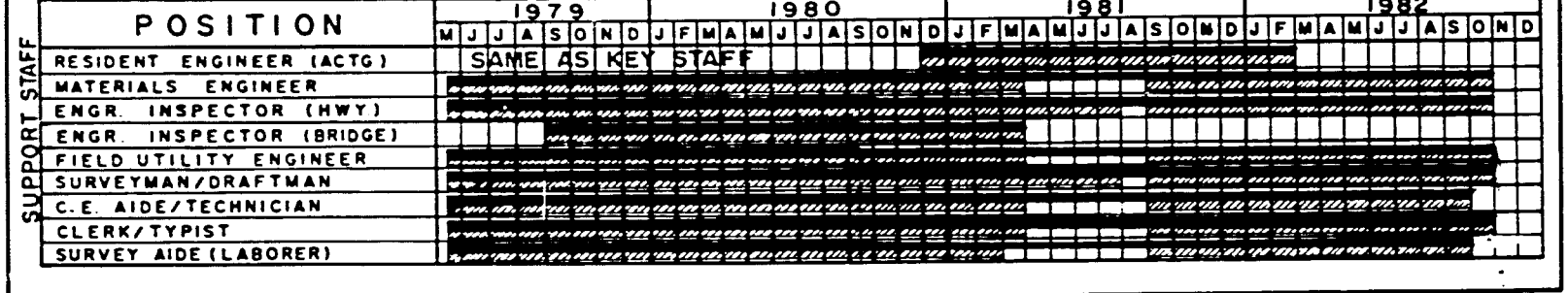


MANPOWER SCHEDULE OF CONSULTANT'S STAFF FOR CONSTRUCTION SUPERVISION

SUB-PROJECT 3, CONTRACT PACKAGE No. 2 — SIBOBO-TINAMBAC SECTION



SUB-PROJECT 3, CONTRACT PACKAGE No. 3 - BR., CALABANGA-TINAMBAC RD. INCL. TIGMAN & HIMURAGAT BR.



SUB-PROJECT 2, — DANAO-PASACAO ROAD