

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS & HIGHWAYS

Feasibility Study
on
The Rural Road Network Development Project

FINAL REPORT (Volume 24)

DRAWINGS FOR ROAD PROJECTS
IN
THE PROVINCE OF MISAMIS ORIENTAL

OCTOBER, 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

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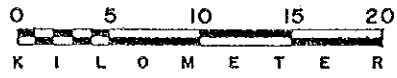
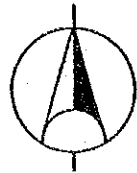
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Drawing No.	Title
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2 to 9	TYPICAL ROAD SECTIONS
10 to 59	PRESENT CONDITION AND PROPOSED IMPROVEMENT

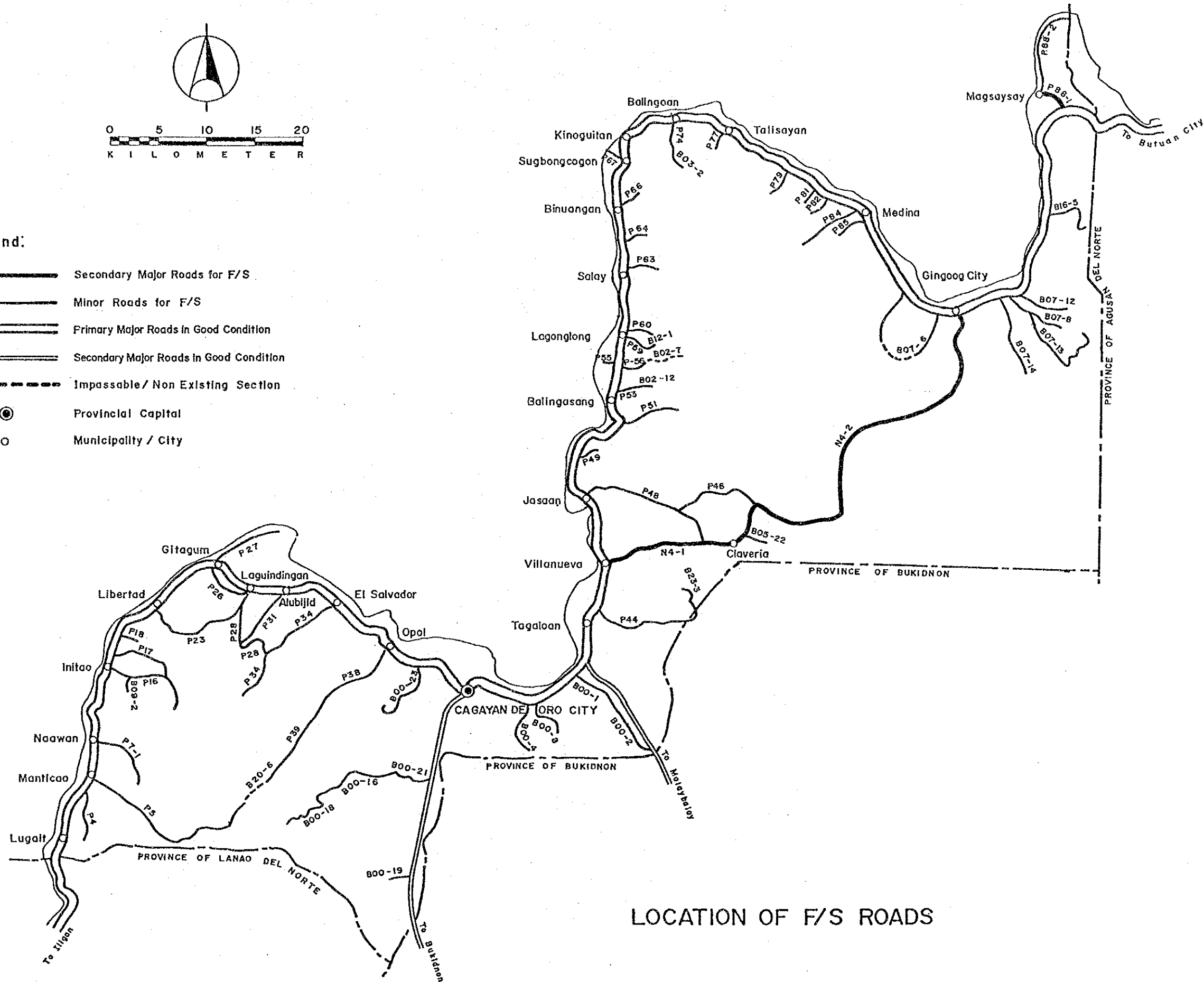
LIST OF ROADS

Road Class	Road No.	Drawing No.	Road Class	Road No.	Drawing No.	Road Class	Road No.	Drawing No.
Secondary Major Road	N4 - 1	10		P51	32		B00 - 8	45
	N4 - 2	11, 12 & 13		P53	33		B00 - 16	46
	P88 - 1	14		P55	33		B00 - 18	47
Minor Road	P4	14	Minor Road	P56	34	Minor Road	B00 - 19	48
	P5	15 & 16		P59	34		B00 - 21	48
	P7 - 1	17		P60	35		B00 - 23	49
	P16	18		P63	35		B02 - 7	50
	P17	19		P64	36		B02 - 12	51
	P18	20		P66	36		B03 - 2	51
	P23	21		P67	37		B05 - 22	52
	P26	22		P74	37		B07 - 6	53
	P27	22		P77	38		B07 - 8	54
	P28	23		P79	39		B07 - 12	54
	P31	24		R81	40		B07 - 13	55
	P34	25		P82	40		B07 - 14	56
	P38	26		P84	41		B09 - 2	57
	P39	27		P85	42		B12 - 1	57
	P44	28		P88 - 2	43		B16 - 5	58
	P46	29		B00 - 1	44		B20 - 6	58
P48	30	B00 - 2	44	B23 - 3	59			
P49	31	B00 - 4	45					

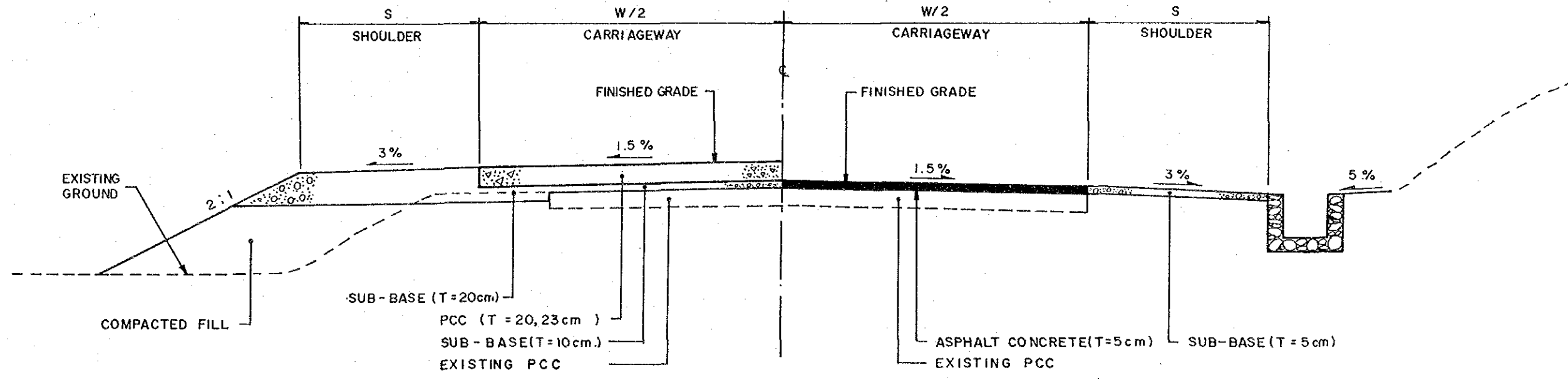


Legend:

- Secondary Major Roads for F/S
- Minor Roads for F/S
- Primary Major Roads in Good Condition
- Secondary Major Roads in Good Condition
- Impassable/ Non Existing Section
- Provincial Capital
- Municipality / City

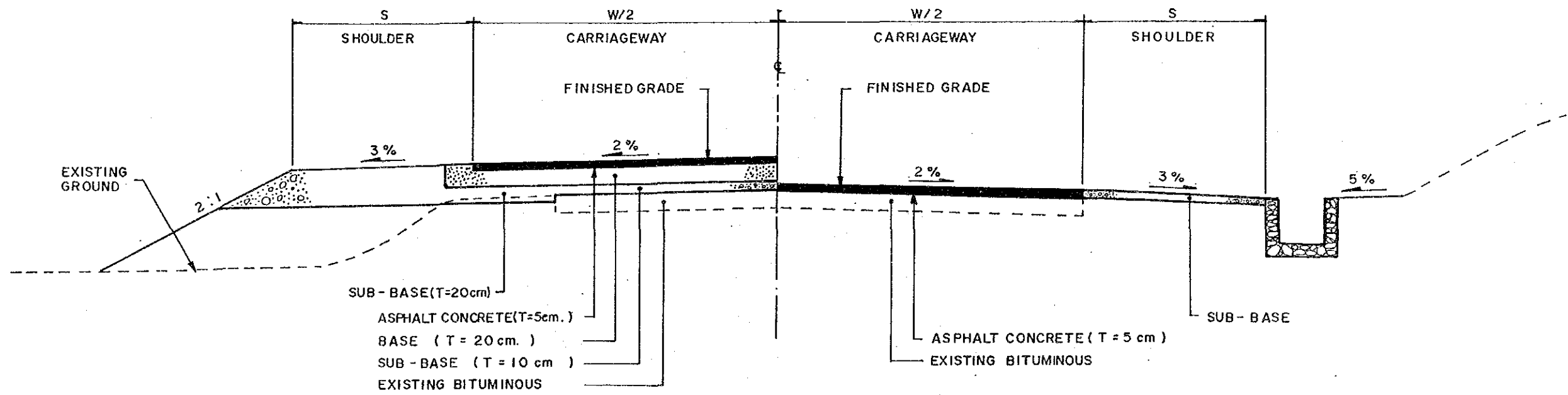


LOCATION OF F/S ROADS



TYPE 1-1
PROPOSED PAVEMENT : PCC
EXISTING PAVEMENT : PCC (BAD / VERY BAD)

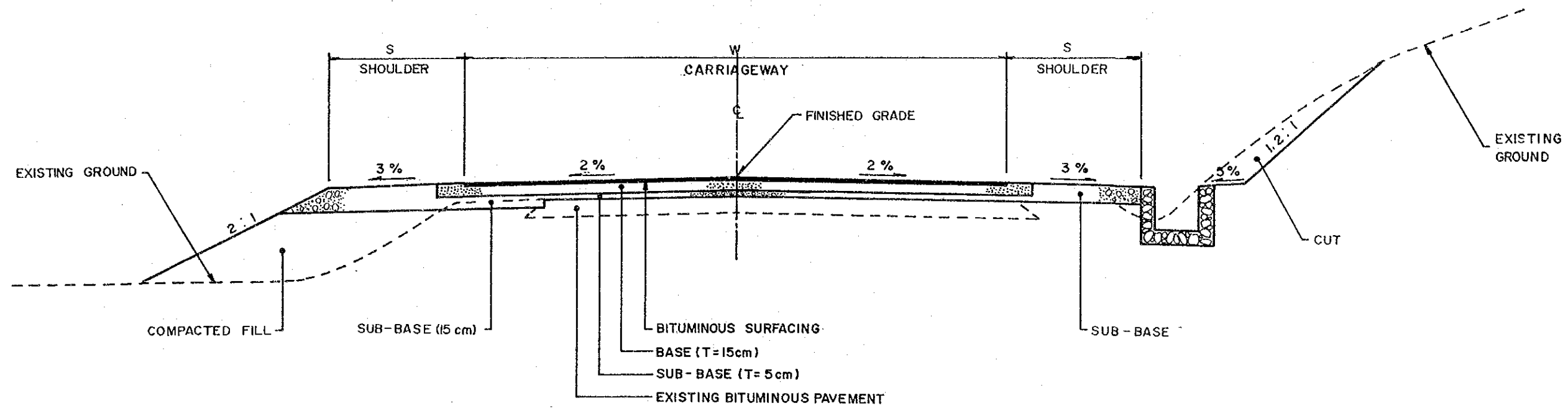
TYPE 1-2
PROPOSED PAVEMENT : ASPHALT CONCRETE OVERLAY
EXISTING PAVEMENT : PCC (BAD / VERY BAD)



TYPE 1-3
PROPOSED PAVEMENT : ASPHALT CONCRETE
EXISTING PAVEMENT : BITUMINOUS (BAD / VERY BAD)

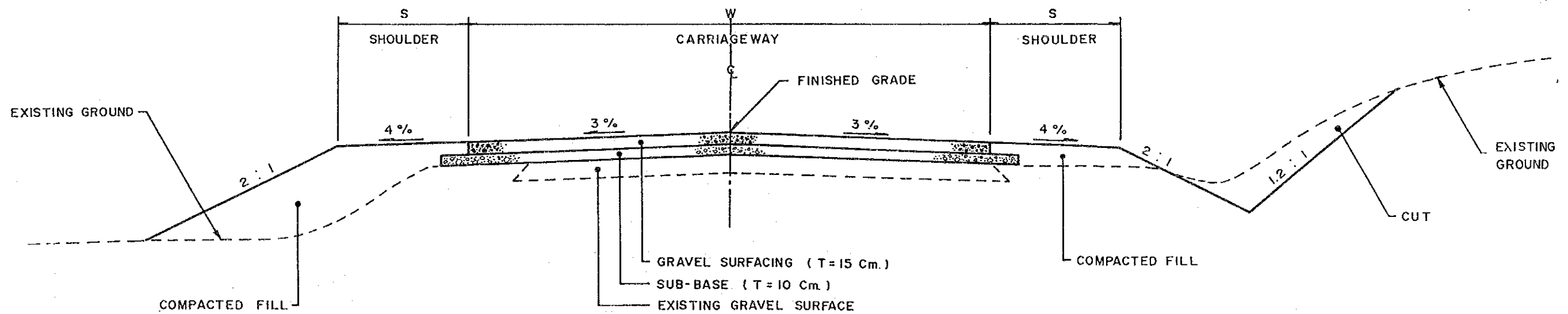
TYPE 1-4
PROPOSED PAVEMENT : ASPHALT CONCRETE OVERLAY
EXISTING PAVEMENT : BITUMINOUS (BAD / VERY BAD)

REHABILITATION (1)



TYPE I-5

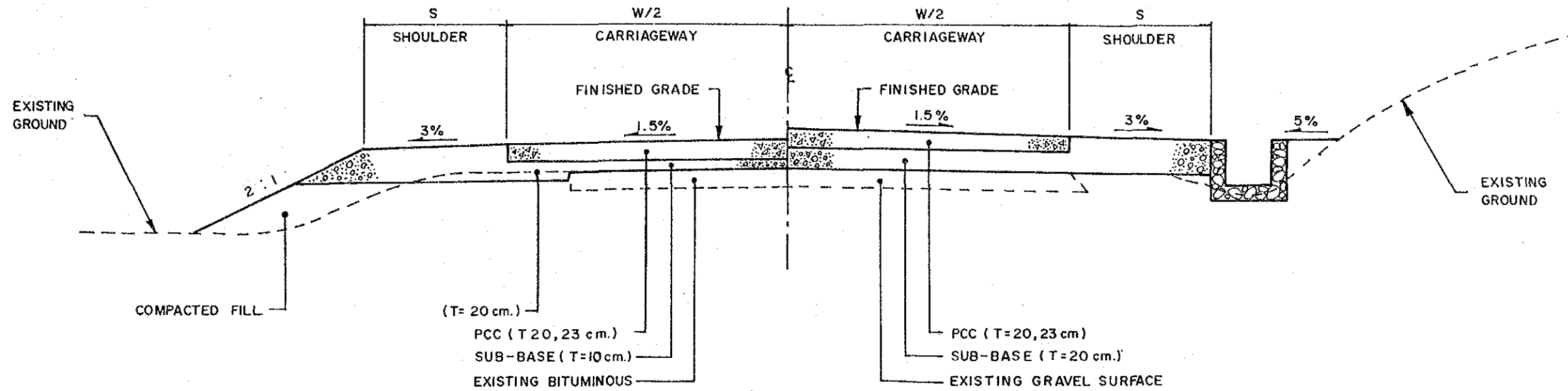
PROPOSED PAVEMENT : BITUMINOUS MACADAM/DOUBLE BITUMINOUS SURFACE TREATMENT
EXISTING PAVEMENT : BITUMINOUS (BAD / VERY BAD)



TYPE I-6

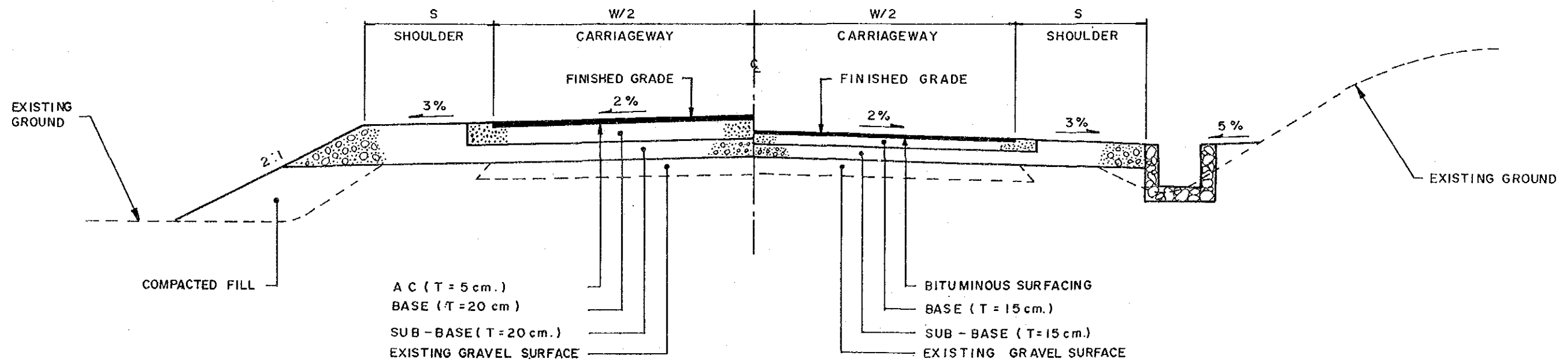
PROPOSED PAVEMENT : GRAVEL SURFACING
EXISTING PAVEMENT : GRAVEL SURFACING (BAD / VERY BAD)

REHABILITATION (2)



TYPE 2-1
PROPOSED PAVEMENT : PCC
EXISTING PAVEMENT : BITUMINOUS (BAD/VERY BAD)

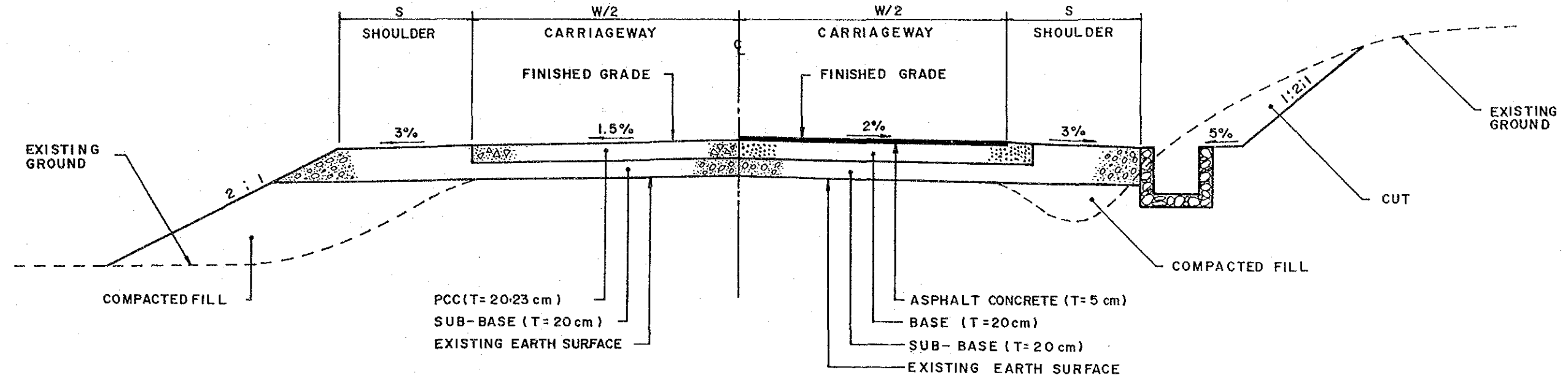
TYPE 2-2
PROPOSED PAVEMENT : PCC
EXISTING PAVEMENT : GRAVEL SURFACING (BAD/VERY BAD)



TYPE 2-3
PROPOSED PAVEMENT : ASPHALT CONCRETE
EXISTING PAVEMENT : GRAVEL SURFACING
(BAD/VERY BAD)

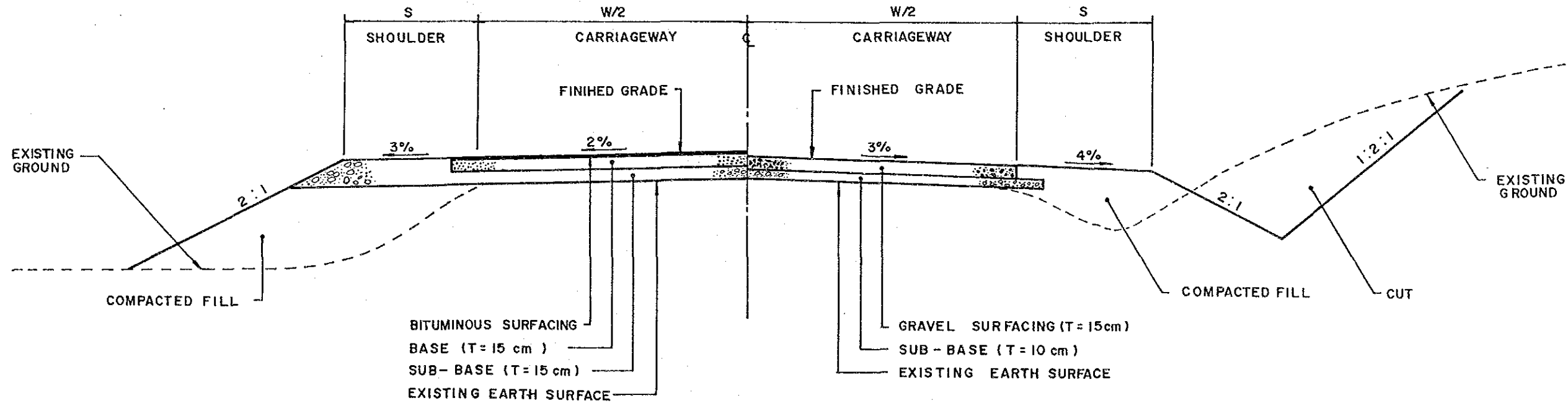
TYPE 2-4
PROPOSED PAVEMENT : BITUMINOUS MACADAM / DOUBLE BITUMINOUS
SURFACE TREATMENT
EXISTING PAVEMENT : GRAVEL SURFACING (BAD/VERY BAD)

IMPROVEMENT - I (I)



TYPE 2-5
PROPOSED PAVEMENT : PCC
EXISTING PAVEMENT : EARTH SURFACE

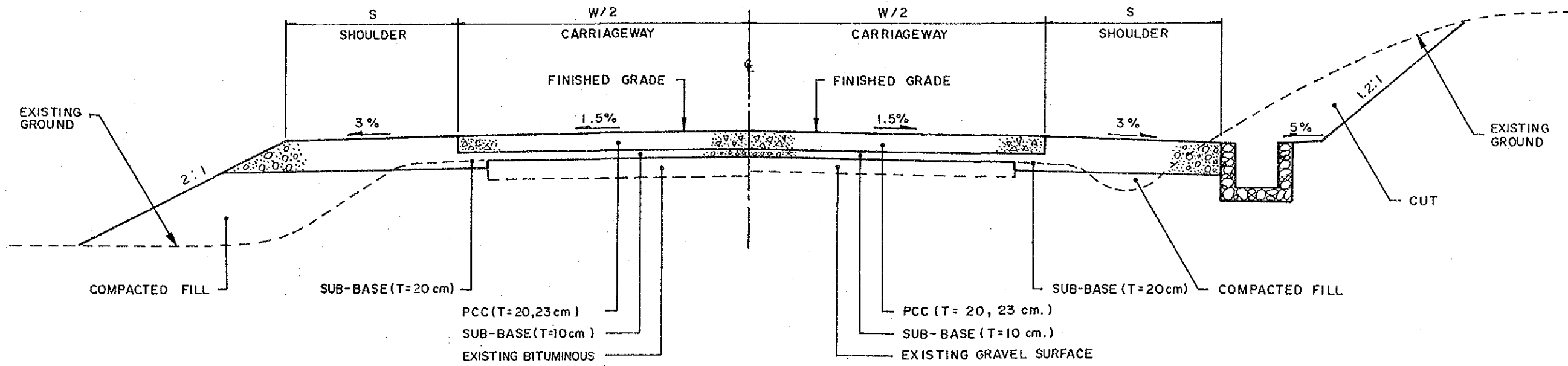
TYPE 2-6
PROPOSED PAVEMENT : ASPHALT CONCRETE
EXISTING PAVEMENT : EARTH SURFACE



TYPE 2-7
PROPOSED PAVEMENT : BITUMINOUS MACADAM/
DOUBLE BITUMINOUS
SURFACE TREATMENT
EXISTING PAVEMENT : EARTH SURFACE

TYPE 2-8
PROPOSED PAVEMENT : GRAVEL SURFACING
EXISTING PAVEMENT : EARTH SURFACING

IMPROVEMENT - I (2)

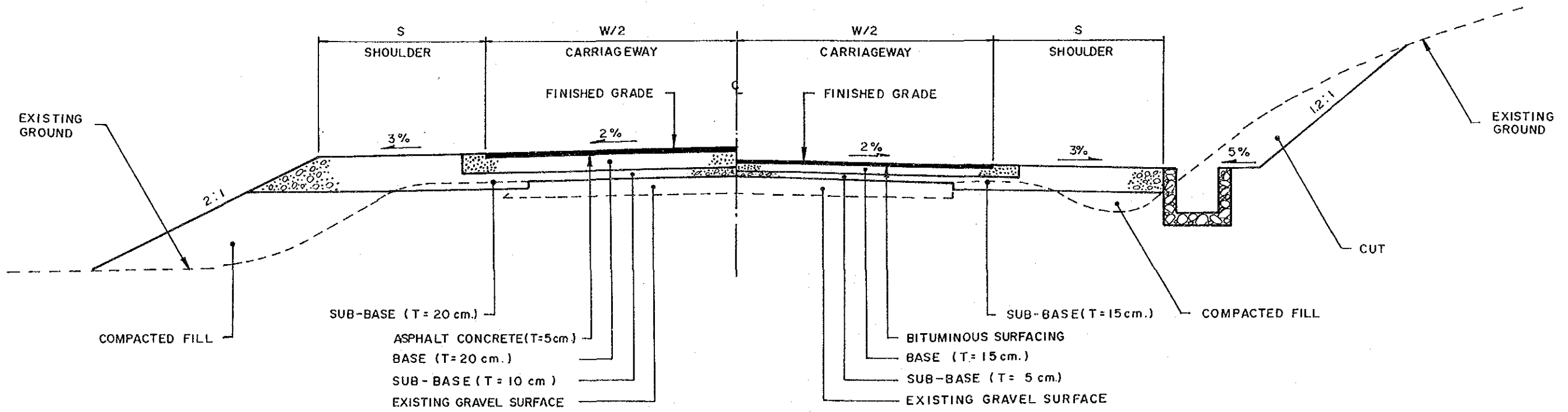


TYPE 3-1

PROPOSED PAVEMENT : PCC
EXISTING PAVEMENT : BITUMINOUS (Good/Fair)

TYPE 3-2

PROPOSED PAVEMENT : PCC
EXISTING PAVEMENT : GRAVEL SURFACING (Good/Fair)



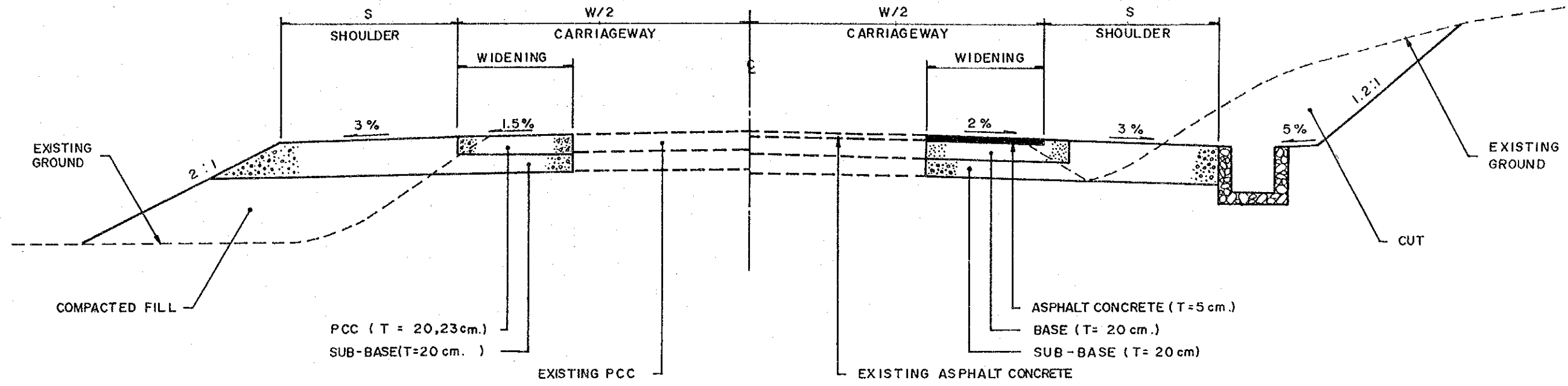
TYPE 3-3

PROPOSED PAVEMENT : ASPHALT CONCRETE
EXISTING PAVEMENT : GRAVEL SURFACING (Good/Fair)

TYPE 3-4

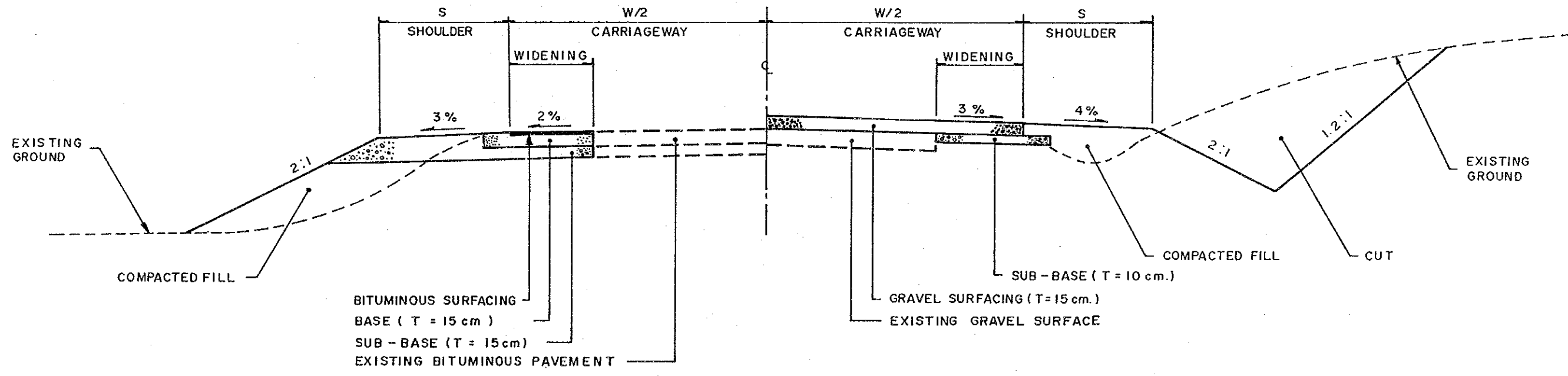
PROPOSED PAVEMENT : BITUMINOUS MACADAM / DOUBLE BITUMINOUS SURFACE TREATMENT
EXISTING PAVEMENT : GRAVEL SURFACING (Good/Fair)

IMPROVEMENT-2



TYPE 4-1
PROPOSED PAVEMENT : PCC
EXISTING PAVEMENT : PCC

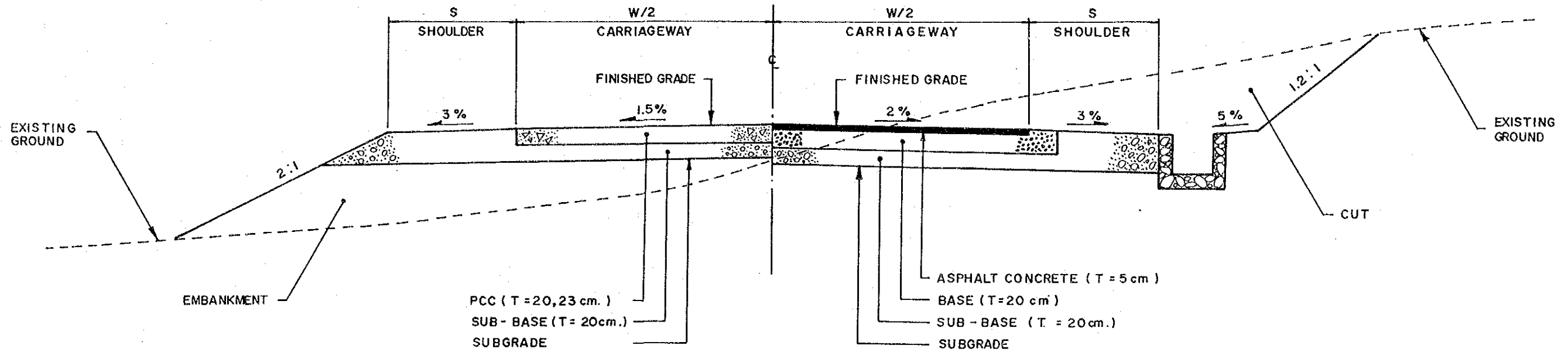
TYPE 4-2
PROPOSED PAVEMENT : ASPHALT CONCRETE
EXISTING PAVEMENT : ASPHALT CONCRETE



TYPE 4-3
PROPOSED PAVEMENT : BITUMINOUS MACADAM/
DOUBLE BITUMINOUS
SURFACE TREATMENT
EXISTING PAVEMENT : BITUMINOUS

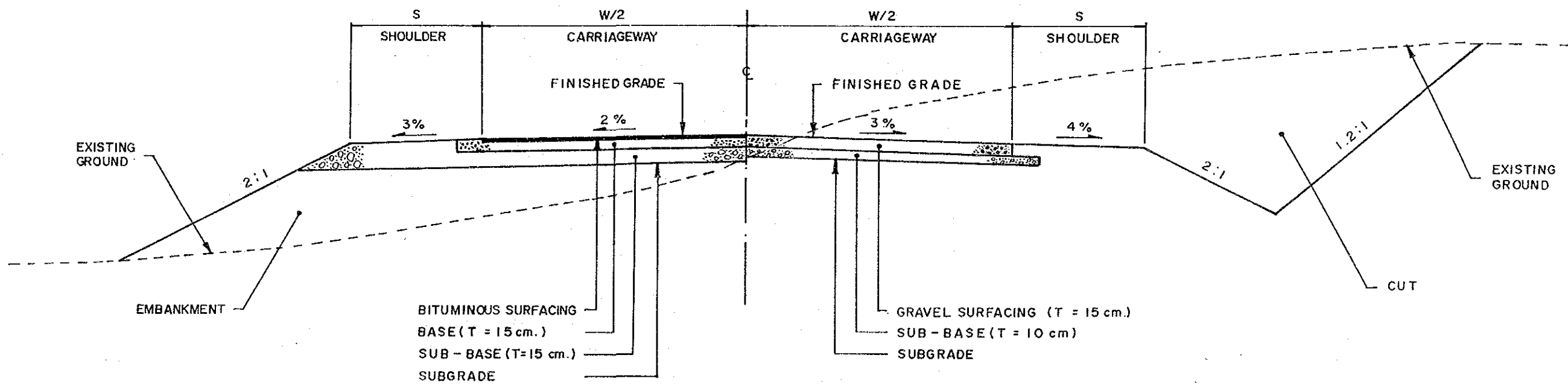
TYPE 4-4
PROPOSED PAVEMENT : GRAVEL SURFACING
EXISTING PAVEMENT : GRAVEL SURFACING

WIDENING



TYPE 5-1
PROPOSED PAVEMENT : PCC

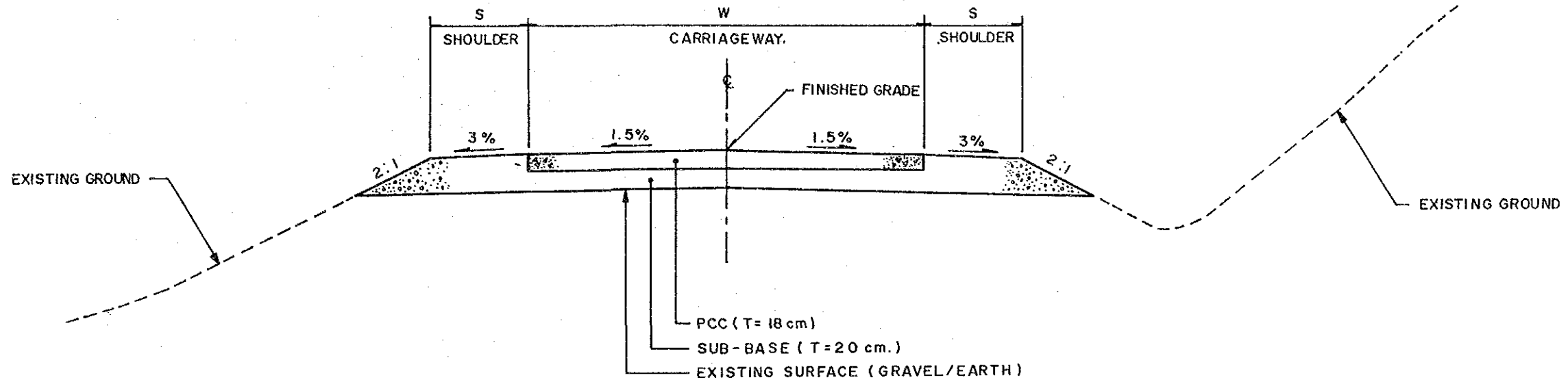
TYPE 5-2
PROPOSED PAVEMENT : ASPHALT CONCRETE



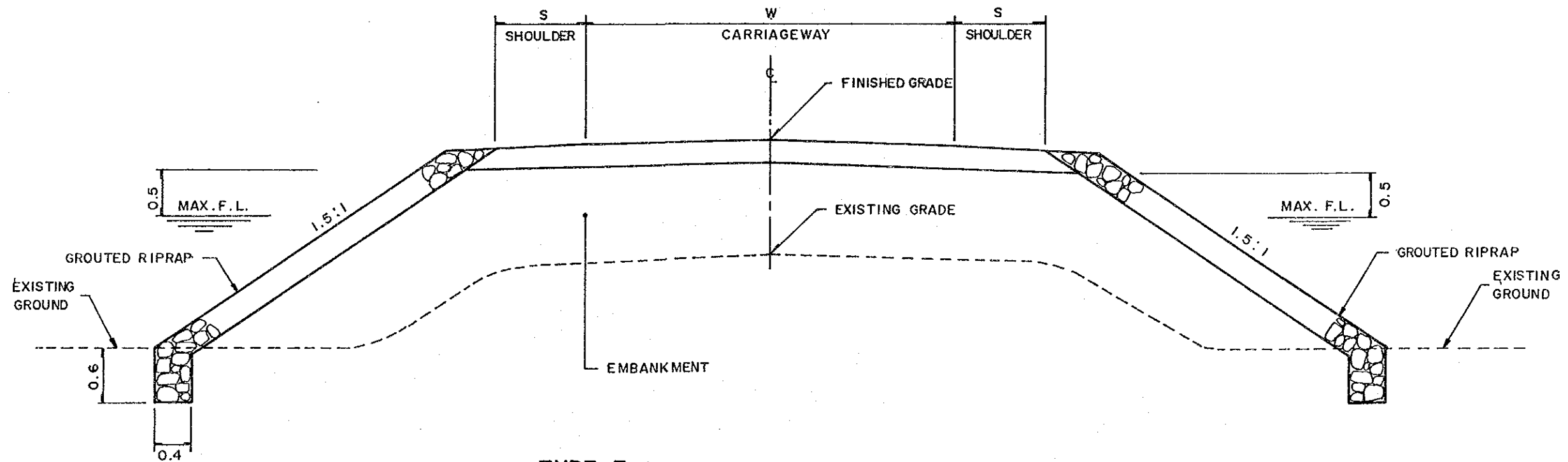
TYPE 5-3
PROPOSED PAVEMENT : BITUMINOUS MACADAM/
DOUBLE BITUMINOUS
SURFACE TREATMENT

TYPE 5-4
PROPOSED PAVEMENT : GRAVEL SURFACING

NEW CONSTRUCTION



TYPE 6
PCC PAVEMENT FOR STEEP GRADIENT SECTIONS



TYPE 7
GRADE RAISING SECTIONS IN FLOOD AREA

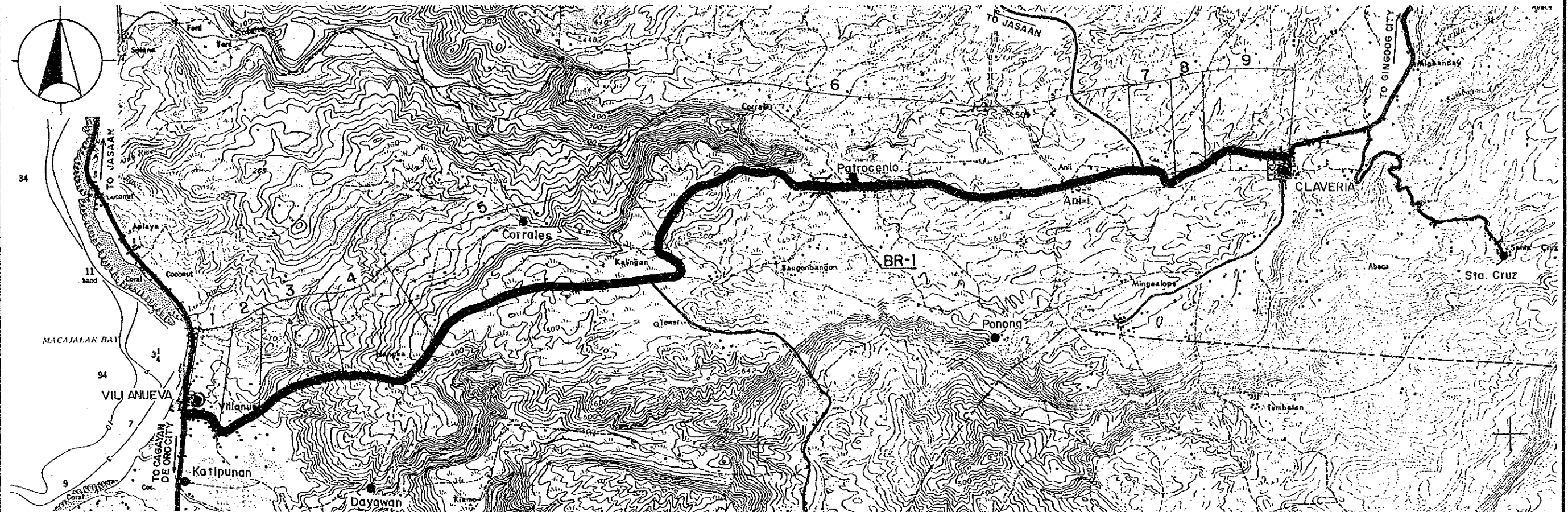
**THE FEASIBILITY STUDY ON THE RURAL ROAD NETWORK DEVELOPMENT PROJECT
IN THE REPUBLIC OF THE PHILIPPINES**

PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
10

Road No: N4-1 Road Name: VILLANUEVA-CLAVERIA ROAD
Location : CLAVERIA, MISAMIS ORIENTAL



Road Classification	Secondary Major (National Road)									
Total Length	17.0 km									
Sub-section No.	1	2	3	4	5	6	7	8	9	
Length (km)	.5	.7	1.2	1.6	3.7	7.3	.7	.4	.9	
Terrain	Flat	Mt'nous	Mt'nous	Mt'nous	Mt'nous	Rolling	Flat	Rolling	Rolling	
Existing Road Surface	6.0-BTM (Bad)	6.0-BTM (Bad)	6.0-BTM (Fair)	6.0-BTM (Fair)	6.0-BTM (Good)	6.0-BTM (Good)	6.0-BTM (Bad)	6.0-BTM (V.Bad)	4.9-GRV (Fair)	
Proposed Improvement										
Improvement Type	Impr.-1	Impr.-1	-	-	-	-	Impr.-1	Impr.-1	Impr.-2	
Surface Type	PCC	PCC	-	-	-	-	PCC	PCC	PCC	
Carriageway Width(m)	6.0	6.0	-	-	-	-	6.0	6.0	6.0	
Shoulder Width (m)	2.5	1.0	-	-	-	-	2.5	1.5	1.5	
Ref. Typical Section	TYPE 2-1	TYPE 2-1	-	-	-	-	TYPE 2-1	TYPE 2-1	TYPE 3-2	
Bridge No.	BR-1									
Existing Type	Concrete									
Length (m)	20									
Proposed Type	-									
Length (m)	-									
No. of Spans	-									

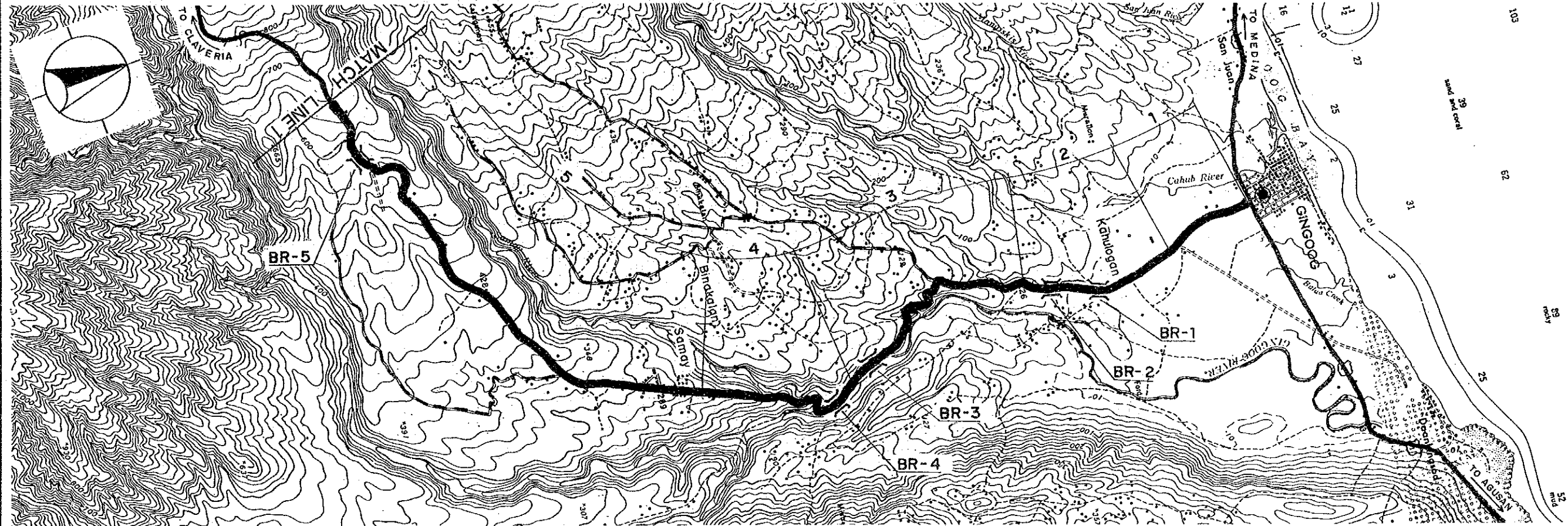
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
11

Road No: N4-2 Road Name: VILLANUEVA-CLAVERIA-GINGOOG CITY ROAD
Location : GINGOOG CITY, MISAMIS ORIENTAL



Road Classification	Secondary Major (National Road)				
Total Length	53.0 km				
Sub-section No.	1	2	3	4	5
Length (km)	1.2	2.0	3.5	2.5	6.8
Terrain	Flat	Flat	Mt'nous	Mt'nous	Rolling
Existing Road Surface	8.0-PCC (Good)	4.0-GRV (Fair)	3.7-GRV (Bad)	2.5-GRV (V.Bad)	3.0-EAR (V.Bad)
Proposed Improvement	-	Impr.-2	Impr.-1	Impr.-1	Impr.-1
Improvement Type	-	Impr.-2	Impr.-1	Impr.-1	Impr.-1
Surface Type	-	PCC	PCC	PCC	PCC
Carriageway Width(m)	-	6.0	6.0	6.0	6.0
Shoulder Width (m)	-	2.5	1.0	1.0	1.5
Ref. Typical Section	-	TYPE 3-2	TYPE 2-2	TYPE 2-2	TYPE 2-5
Special Treatment	-	-	100	200	-
Steep Section Length	-	-	100	200	-
Slope Protection (Cut Slope)	-	-	-	100	-
Bridge No.	BR-1	BR-2	BR-3	BR-4	BR-5
Existing Type	RCBC	Bailey	Timber	Spillway	Bailey
Length (m)	4	12	15	8	12
Proposed Type	1cell-BC	2Lane-Br	2Lane-Br	2Lane-Br	2Lane-Br
Length (m)	4	12	16	80	14
No. of Spans	1	1	1	4	1

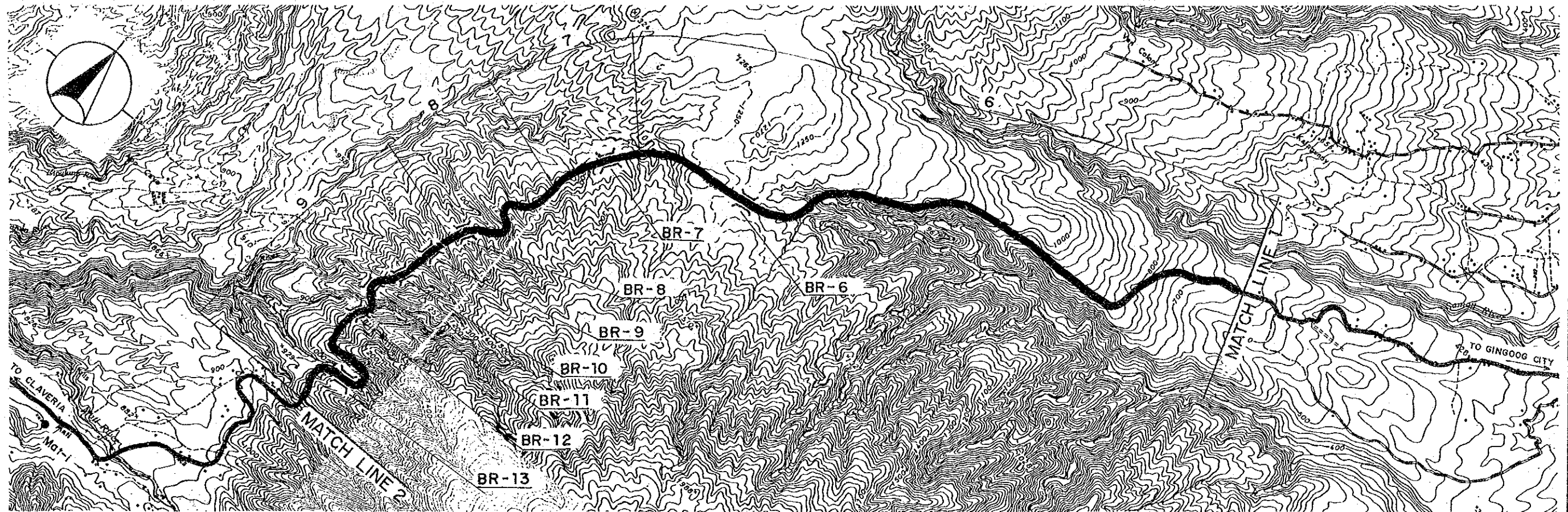
**THE FEASIBILITY STUDY ON THE RURAL ROAD NETWORK DEVELOPMENT PROJECT
IN THE REPUBLIC OF THE PHILIPPINES**

PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
12

Road No: N4-2 Road Name: VILLANUEVA-CLAVERIA-GINGOOG CITY ROAD
Location: GINGOOG CITY, MISAMIS ORIENTAL



Road Classification	Secondary Major (National Road)								
Total Length	53.0 km								
Sub-section No.	6	7	8	9					
Length (km)	8.3	1.6	1.8	4.7					
Terrain	Mt'nous	Rolling	Rolling	Mt'nous					
Existing Road Surface	3.8-GRV (V.Bad)	4.5-EAR (V.Bad)	3.2-EAR (Impass)	3.2-GRV (V.Bad)					
Proposed Improvement									
Improvement Type	Impr.-1	Impr.-1	Impr.-1	Impr.-1					
Surface Type	PCC	PCC	PCC	PCC					
Carriageway Width(m)	6.0	6.0	6.0	6.0					
Shoulder Width (m)	1.0	1.5	1.5	1.0					
Ref. Typical Section	TYPE 2-2	TYPE 2-5	TYPE 2-5	TYPE 2-2					
Special Treatment									
Steep Section Length	-	-	-	1000					
Slope Protection (Cut Slope)	-	-	-	-					
Bridge No.	BR-6	BR-7	BR-8	BR-9	BR-10	BR-11	BR-12	BR-13	
Existing Type	Bailey	Bailey	Ford-Cr.	Bailey	Bailey	Bailey	Bailey	Bailey	
Length (m)	9	12	-	26	34	14	41	22	
Proposed Type	2Lane-Br	2Lane-Br	2Lane-Br	2Lane-Br	2Lane-Br	2Lane-Br	2Lane-Br	2Lane-Br	
Length (m)	10	14	30	30	36	14	41	23	
No. of Spans	1	1	2	2	2	1	2	1	

**THE FEASIBILITY STUDY ON THE RURAL ROAD NETWORK DEVELOPMENT PROJECT
IN THE REPUBLIC OF THE PHILIPPINES**

PRESENT CONDITION AND PROPOSED IMPROVEMENT

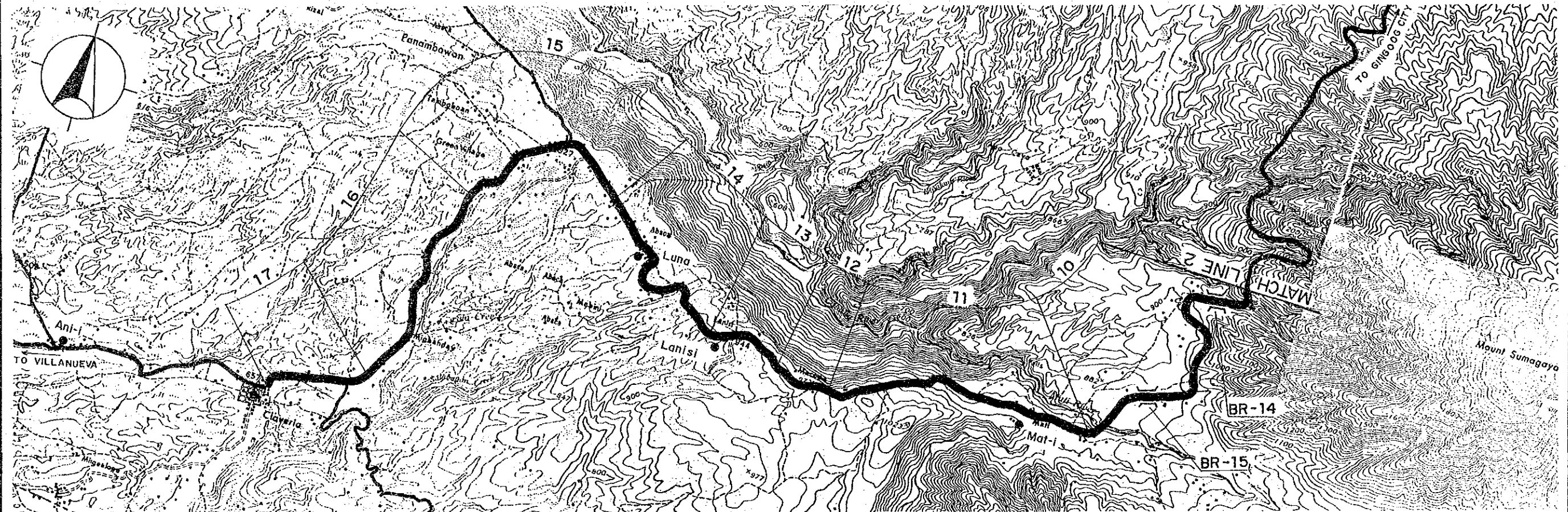
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Drawing No.

13

Road No: N4-2 Road Name: VILLANUEVA-CLAVERIA-GINGOOG CITY ROAD
Location : GINGOOG CITY, MISAMIS ORIENTAL



Road Classification	Secondary Major (National Road)							
Total Length	53.0 km							
Sub-section No.	10	11	12	13	14	15	16	17
Length (km)	5.3	3.5	.8	1.0	2.8	2.5	3.0	1.7
Terrain	Rolling	Mt'nous	Rolling	Rolling	Flat	Rolling	Flat	Rolling
Existing Road Surface	3.8-GRV (V.Bad)	4.0-GRV (V.Bad)	4.0-GRV (V.Bad)	4.0-GRV (Bad)	4.3-GRV (Bad)	4.0-GRV (Bad)	5.0-GRV (Bad)	4.7-GRV (V.Bad)
Proposed Improvement	Impr.-1							
Improvement Type	Impr.-1							
Surface Type	PCC	PCC	PCC	PCC	PCC	PCC	PCC	PCC
Carriageway Width(m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Shoulder Width (m)	1.8	1.0	1.5	1.5	2.5	1.5	2.5	1.5
Ref. Typical Section	TYPE 2-2	TYPE 2-2	TYPE 2-2	TYPE 2-2	TYPE 2-2	TYPE 2-2	TYPE 2-2	TYPE 2-2
Special Treatment								
Steep Section Length	200	200	-	-	-	-	-	-
Slope Protection (Cut Slope)	-	-	-	-	-	-	-	-
Bridge No.	BR-14	BR-15						
Existing Type	Concrete Spillway							
Length (m)	47	30						
Proposed Type	2Lane-Br 2Lane-Br							
Length (m)	47	30						
No. of Spans	2	2						

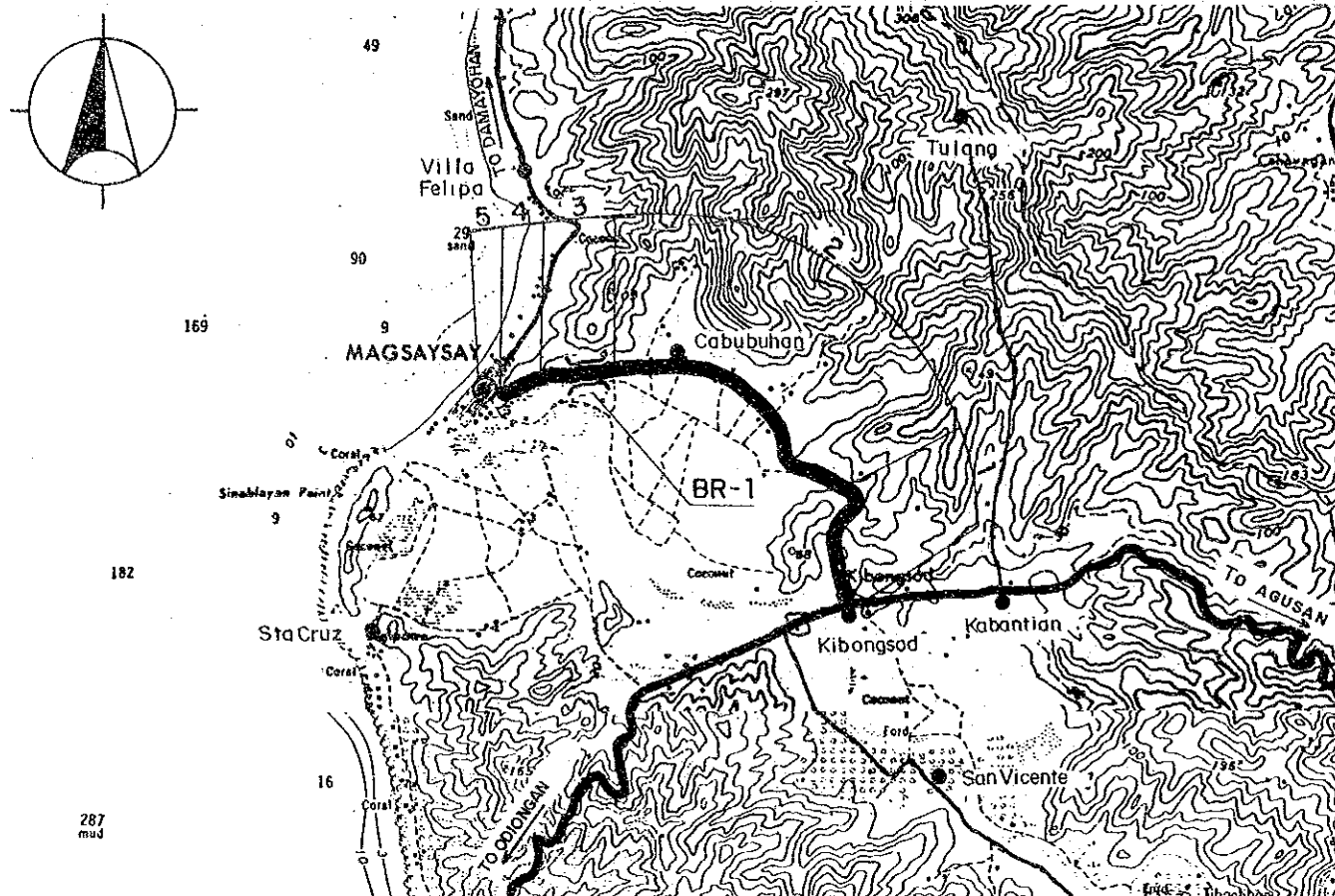
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

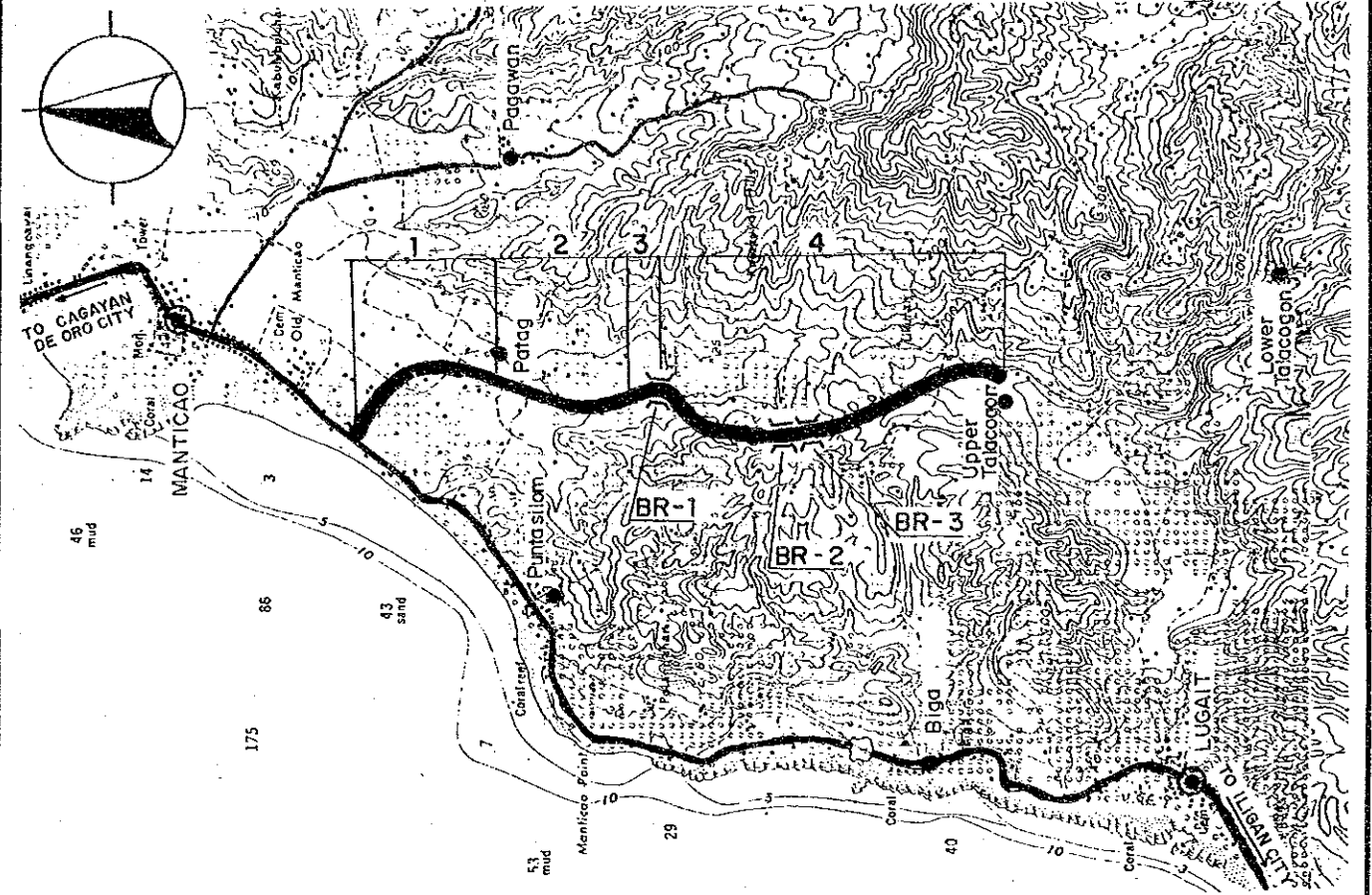
Scale
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Drawing No.
14

Road No: P88-1 Road Name: JUNCTION-MAGSAYSAY ROAD
Location: MAGSAYSAY, MISAMIS ORIENTAL



Road No: P4 Road Name: MANTICAO-TALACOGON ROAD
Location: MANTICAO, MISAMIS ORIENTAL



Road Classification	Secondary Major (Provincial Road)				
Total Length	4.2 km				
Sub-section No.	1	2	3	4	5
Length (km)	1.0	2.1	.6	.3	.2
Terrain	Flat	Flat	Flat	Flat	Rolling
Existing Road Surface	5.0-PCC (Good)	6.0-GRV (Bad)	4.7-GRV (Fair)	4.7-GRV (Fair)	5.0-PCC (Good)
Proposed Improvement	Widening	Impr.-1	Impr.-2	Impr.-2	Widening
Improvement Type	PCC	* BMP	* BMP	* BMP	PCC
Surface Type	6.0	6.0	6.0	6.0	6.0
Carriageway Width(m)	2.5	1.5	1.5	1.5	1.5
Shoulder Width (m)	TYPE 4-1 TYPE 2-4 TYPE 3-4 TYPE 3-4 TYPE 4-1				
Ref. Typical Section					
Bridge No.	BR-1				
Existing Type	Concrete				
Length (m)	11				
Proposed Type	-				
Length (m)	-				
No. of Spans	-				

* DBST can be applied instead depending on conditions of subgrade, axle load, drainage, etc.

Road Classification	Minor Road (Provincial Road)			
Total Length	4.7 km			
Sub-section No.	1	2	3	4
Length (km)	1.3	1.0	.2	2.2
Terrain	Flat	Flat	Flat	Mt'nous
Existing Road Surface	3.0-GRV (Bad)	3.0-GRV (V.Bad)	3.0-GRV (Bad)	2.8-EAR (Impass)
Proposed Improvement	Rehabil.	Rehabil.	Rehabil.	Impr.-1
Improvement Type	Gravel	Gravel	Gravel	Gravel
Surface Type	6.0	6.0	6.0	6.0
Carriageway Width(m)	1.0	1.0	1.0	.5
Shoulder Width (m)	TYPE 1-6 TYPE 1-6 TYPE 1-6 TYPE 2-8			
Ref. Typical Section				
Special Treatment				
Flood Section Length	200	-	-	-
Height	.5	-	-	-
Bridge No.	BR-1	BR-2	BR-3	
Existing Type	Bailey	RCBC	Bailey	
Length (m)	18	5	12	
Proposed Type	-	2cell-BC	-	
Length (m)	-	5	-	
No. of Spans	-	2	-	

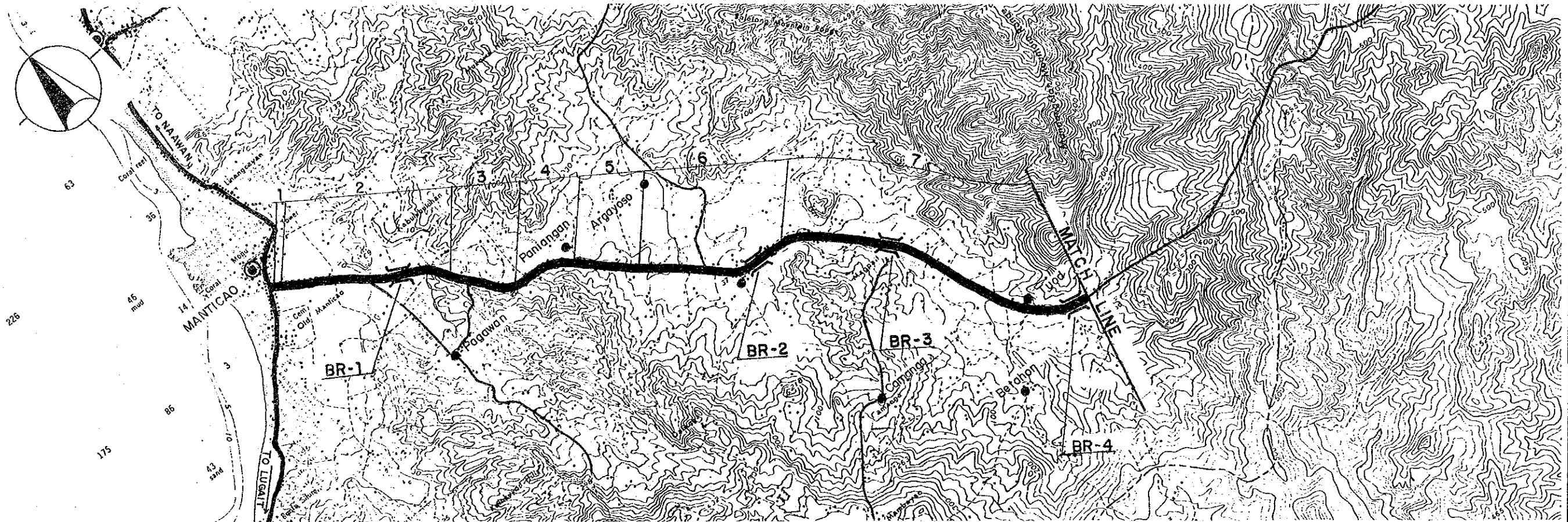
THE FEASIBILITY STUDY ON THE RURAL ROAD NETWORK DEVELOPMENT PROJECT
IN THE REPUBLIC OF THE PHILIPPINES

PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
15

Road No: P5 Road Name: MANTICAO-CABALANTIAN-LIM ROAD
Location : MANTICAO, MISAMIS ORIENTAL



Road Classification	Minor Road (Provincial Road)						
Total Length	23.0 km						
Sub-section No.	1	2	3	4	5	6	7
Length (km)	.1	2.1	.8	.8	.8	1.8	3.9
Terrain	Flat	Flat	Rolling	Mt'nous	Rolling	Flat	Rolling
Existing Road Surface	5.5-BTM (Good)	4.0-GRV (Bad)	4.9-GRV (Bad)	4.9-GRV (Bad)	3.8-GRV (Bad)	3.8-GRV (Fair)	3.8-GRV (Bad)
Proposed Improvement	Widening	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-2	Impr.-1
Improvement Type							
Surface Type	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP
Carriageway Width(m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Shoulder Width (m)	1.5	1.5	1.0	1.0	1.0	1.5	1.0
Ref. Typical Section	TYPE 4-3	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 3-4	TYPE 2-4
Special Treatment							
Steep Section Length	-	-	-	-	-	-	-
Bridge No.	BR-1	BR-2	BR-3	BR-4			
Existing Type	Concrete	Concrete	Spillway	Concrete			
Length (m)	20	22	22	45			
Proposed Type	-	-	-	-			
Length (m)	-	-	-	-			
No. of Spans	-	-	-	-			

* DBST can be applied instead depending on conditions of subgrade, axle load, drainage, etc.

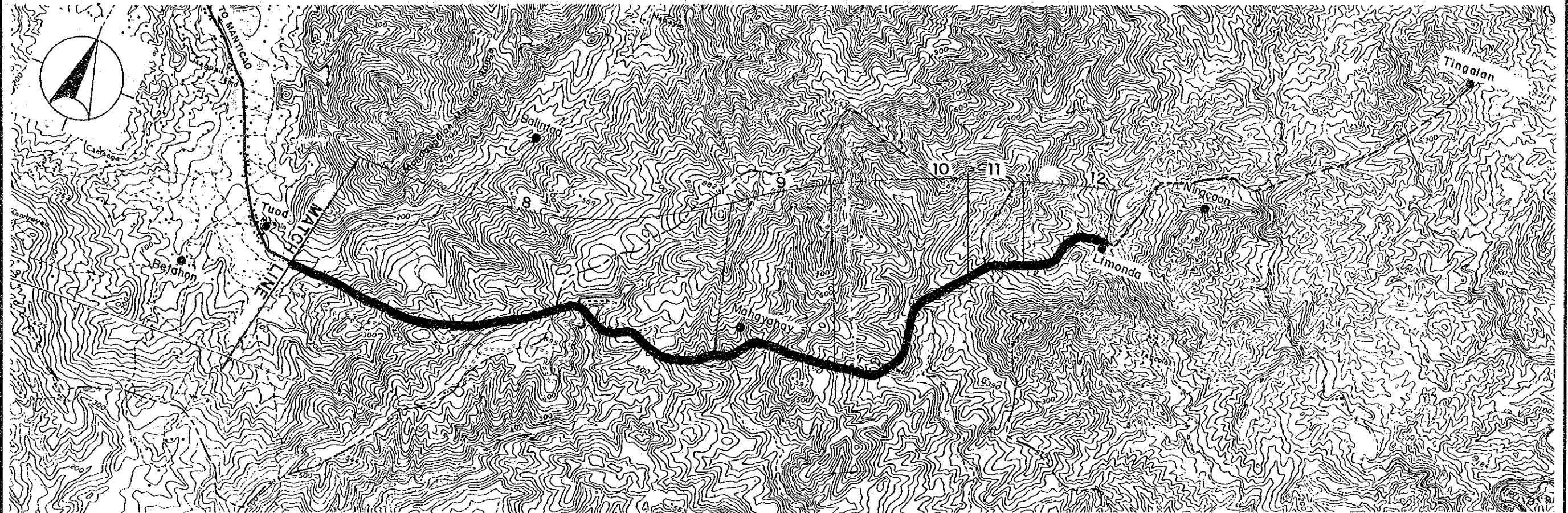
THE FEASIBILITY STUDY ON THE RURAL ROAD NETWORK DEVELOPMENT PROJECT
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
16

Road No: P5 Road Name: MANTICAO-CABALANTIAN-LIM ROAD
Location: MANTICAO, MISAMIS ORIENTAL



Road Classification	Minor Road (Provincial Road)				
Total Length	23.0 km				
Sub-section No.	8	9	10	11	12
Length (km)	6.1	1.8	2.8	.6	1.4
Terrain	Mt'nous	Mt'nous	Mt'nous	Mt'nous	Mt'nous
Existing Road Surface	3.2-GRV (V.Bad)	2.8-GRV (V.Bad)	2.4-GRV (V.Bad)	1.6-EAR (V.Bad)	.4-EAR (Impass)
Proposed Improvement	Impr.-1				
Improvement Type	Impr.-1				
Surface Type	* BMP	* BMP	* BMP	* BMP	* BMP
Carriageway Width (m)	6.0	6.0	6.0	6.0	6.0
Shoulder Width (m)	1.0	1.0	1.0	1.0	1.0
Ref. Typical Section	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-7	TYPE 2-7
Special Treatment	Steep Section Length				
Steep Section Length	1100	-	-	180	300
Bridge No.					
Existing Type					
Length (m)					
Proposed Type					
Length (m)					
No. of Spans					

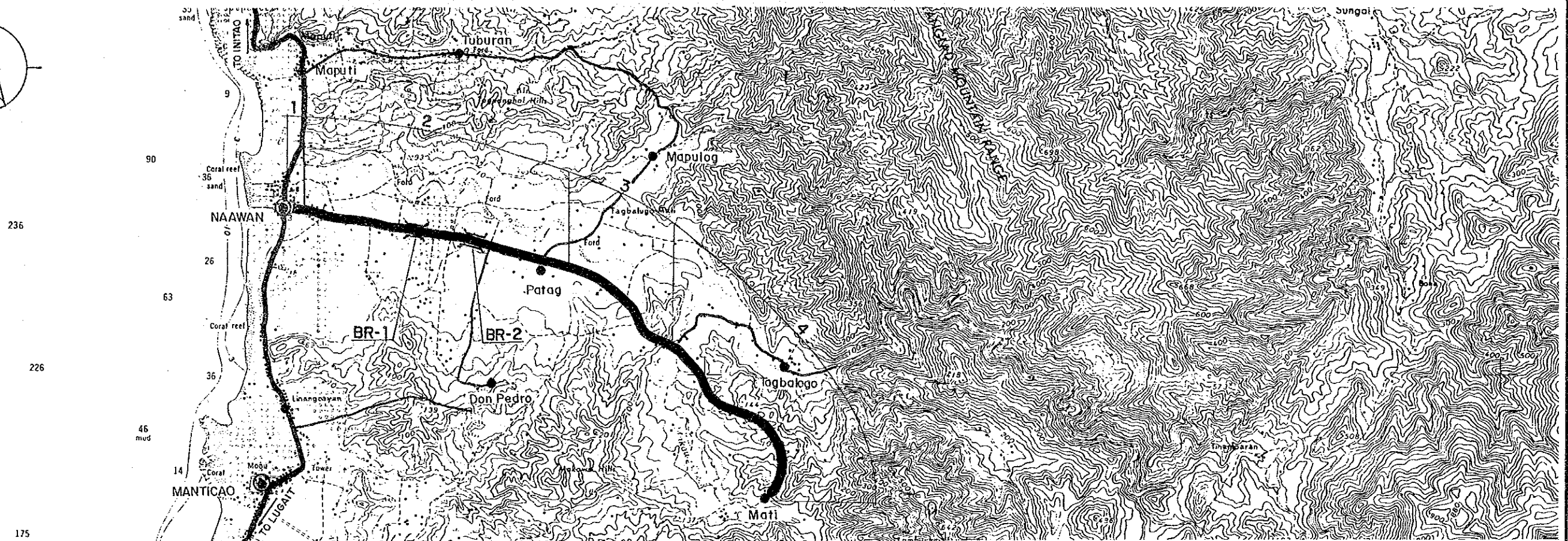
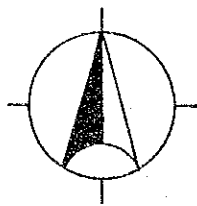
**THE FEASIBILITY STUDY ON THE RURAL ROAD NETWORK DEVELOPMENT PROJECT
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
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Drawing No.
17

Road No: P7-1 Road Name: NAAWAN-MATI ROAD
Location : NAAWAN, MISAMIS ORIENTAL



Road Classification	Minor Road (Provincial Road)			
Total Length	9.8 km			
Sub-section No.	1	2	3	4
Length (km)	.2	3.2	1.5	4.9
Terrain	Flat	Flat	Flat	Rolling
Existing Road Surface	5.3-PCC (Good)	4.0-GRV (Fair)	4.0-GRV (V.Bad)	4.0-GRV (Bad)
Proposed Improvement	Widening Widening Rehabil. Rehabil.			
Improvement Type	PCC Gravel Gravel Gravel			
Surface Type	PCC Gravel Gravel Gravel			
Carriageway Width(m)	6.0	6.0	6.0	6.0
Shoulder Width (m)	1.5	1.0	1.0	.5
Ref. Typical Section	TYPE 4-1	TYPE 4-4	TYPE 1-6	TYPE 1-6
Bridge No.	BR-1	BR-2		
Existing Type	Concrete Concrete			
Length (m)	23	31		
Proposed Type	-			
Length (m)	-			
No. of Spans	-			

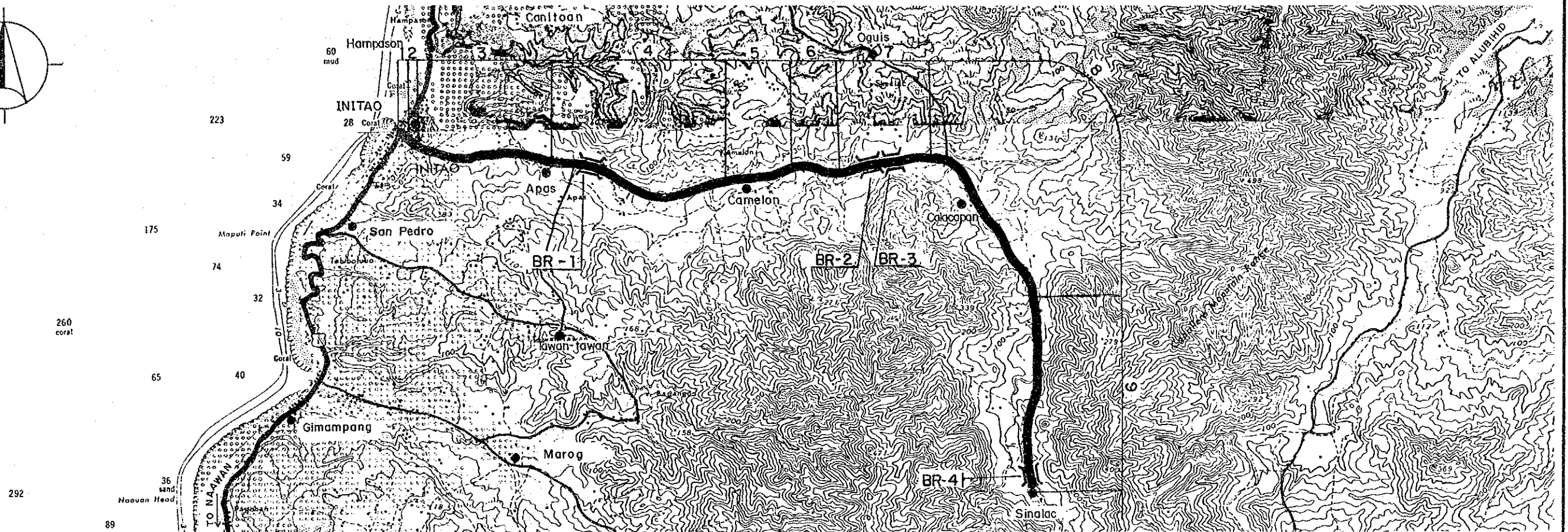
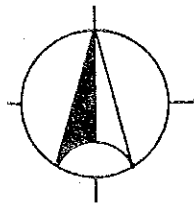
**THE FEASIBILITY STUDY ON THE RURAL ROAD NETWORK DEVELOPMENT PROJECT
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
18

Road No: P16 Road Name: INITAO-SINALAC ROAD
Location: INITAO, MISAMIS ORIENTAL



Road Classification	Minor Road (Provincial Road)								
Total Length	11.4 km								
Sub-section No.	1	2	3	4	5	6	7	8	9
Length (km)	.1	.1	1.5	2.0	.9	.6	1.1	2.1	3.0
Terrain	Flat	Flat	Rolling	Flat	Flat	Flat	Rolling	Rolling	Mt'nous
Existing Road Surface	3.2-GRV (Fair)	5.0-PCC (Good)	3.2-GRV (Bad)	3.2-GRV (Bad)	3.6-GRV (Bad)	4.0-BTM (V.Bad)	3.2-GRV (V.Bad)	3.2-GRV (V.Bad)	2.8-GRV (V.Bad)
Proposed Improvement	Widening								
Improvement Type	Widening	Widening	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Rehabil.
Surface Type	Gravel	PCC	Gravel	Gravel	Gravel	* BMP	Gravel	Gravel	Gravel
Carriageway Width(m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Shoulder Width (m)	1.0	1.5	.5	1.0	1.0	1.5	.5	.5	.5
Ref. Typical Section	TYPE 4-4	TYPE 4-1	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 1-5	TYPE 1-6	TYPE 1-6	TYPE 1-6
Bridge No.	BR-1	BR-2	BR-3	BR-4					
Existing Type	Concrete	Ford-Cr.	Ford-Cr.	Ford-Cr.					
Length (m)	21	-	-	-					
Proposed Type	-	2Lane-Sp	2Lane-Sp	2Lane-Sp					
Length (m)	-	50	30	15					
No. of Spans	-	-	-	-					

* DBST can be applied instead depending on conditions of subgrade, axle load, drainage, etc.

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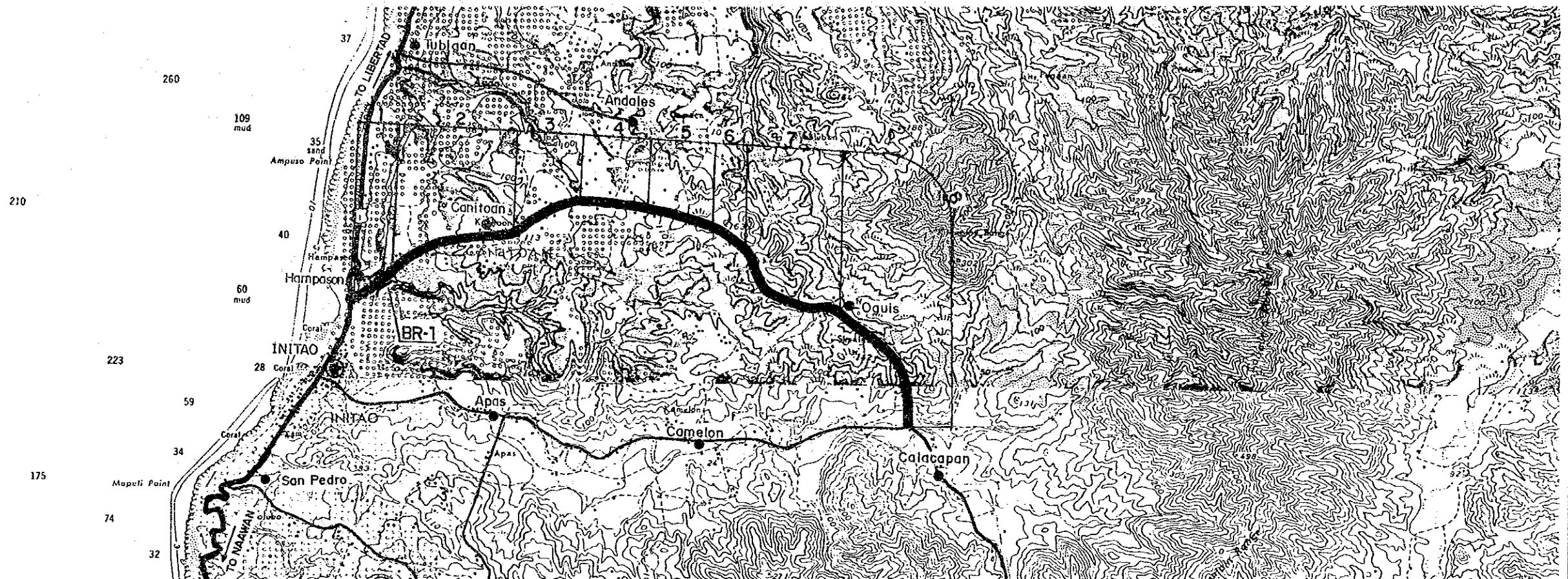
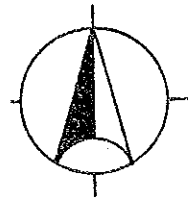
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Drawing No.

19

Road No: P17 Road Name: CAMARIN-MALAPOYON ROAD
Location: INITAO, MISAMIS ORIENTAL



Road Classification	Minor Road (Provincial Road)							
Total Length	8.6 km							
Sub-section No.	1	2	3	4	5	6	7	8
Length (km)	.6	1.5	.9	.7	.7	.4	1.4	2.4
Terrain	Rolling	Rolling	Flat	Flat	Flat	Flat	Rolling	Flat
Existing Road Surface	3.6-GRV (V.Bad)	3.2-GRV (V.Bad)	4.5-GRV (V.Bad)	2.8-EAR (V.Bad)	2.8-GRV (V.Bad)	3.2-EAR (V.Bad)	2.8-GRV (V.Bad)	3.2-GRV (V.Bad)
Proposed Improvement	Rehabil.	Rehabil.	Rehabil.	Impr.-1	Rehabil.	Impr.-1	Rehabil.	Rehabil.
Improvement Type	Rehabil.	Rehabil.	Rehabil.	Impr.-1	Rehabil.	Impr.-1	Rehabil.	Rehabil.
Surface Type	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel
Carriageway Width(m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Shoulder Width (m)	.5	.5	1.0	1.0	1.0	1.0	.5	1.0
Ref. Typical Section	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 2-8	TYPE 1-6	TYPE 2-8	TYPE 1-6	TYPE 1-6
Bridge No.	BR-1							
Existing Type	Ford-Cr.							
Length (m)	-							
Proposed Type	2Lane-Sp							
Length (m)	10							
No. of Spans	-							

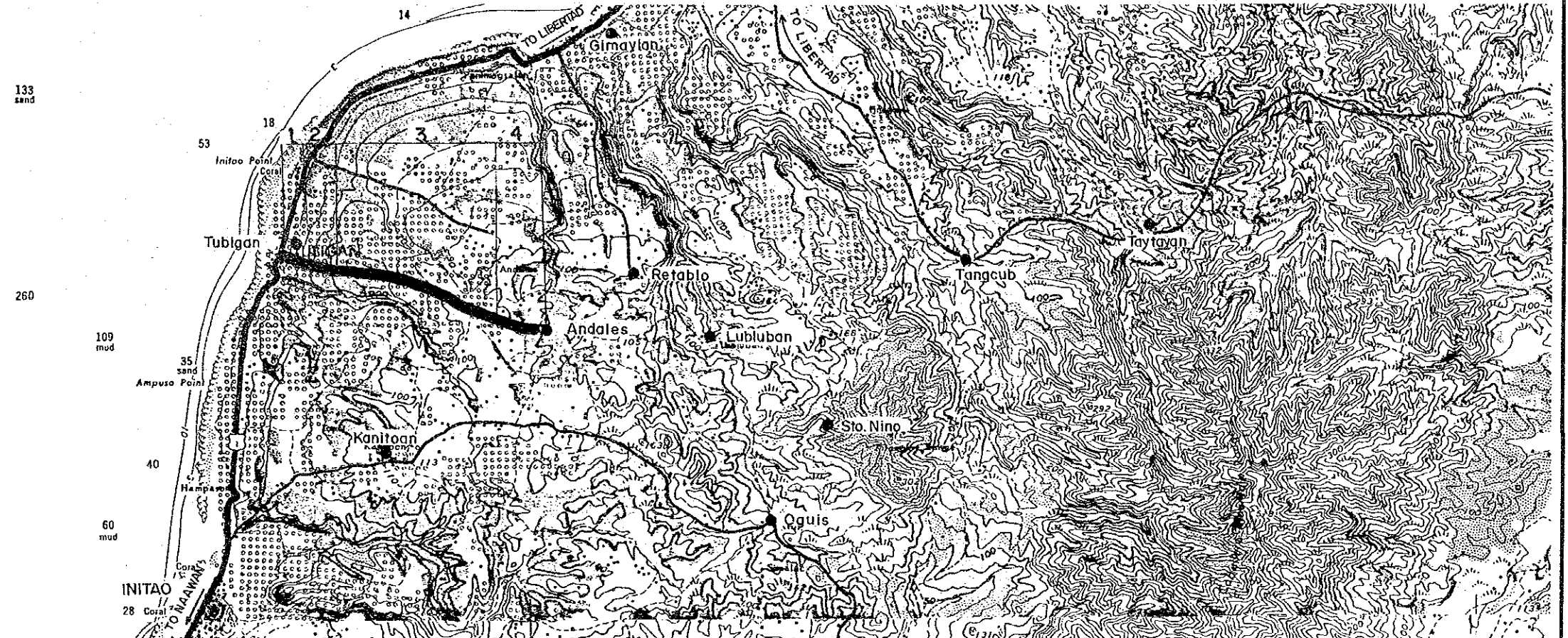
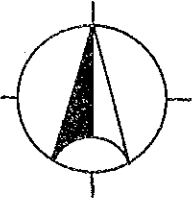
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
20

Road No: P18 Road Name: TUBIGON-ANDALES ROAD
Location : LIBERTAD, MISAMIS ORIENTAL



Road Classification	Minor Road (Provincial Road)			
Total Length	2.7 km			
Sub-section No.	1	2	3	4
Length (km)	.3	.3	1.7	.4
Terrain	Rolling	Mt'nous	Rolling	Flat
Existing Road Surface	2.8-GRV (V.Bad)	2.8-GRV (V.Bad)	2.8-EAR (V.Bad)	3.2-EAR (Bad)
Proposed Improvement				
Improvement Type	Rehabil.	Rehabil.	Impr.-1	Impr.-1
Surface Type	Gravel	Gravel	Gravel	Gravel
Carriageway Width(m)	4.0	4.0	4.0	4.0
Shoulder Width (m)	.5	.5	.5	1.0
Ref. Typical Section	TYPE 1-6	TYPE 1-6	TYPE 2-8	TYPE 2-8
Special Treatment				
Steep Section Length	-	90	-	-

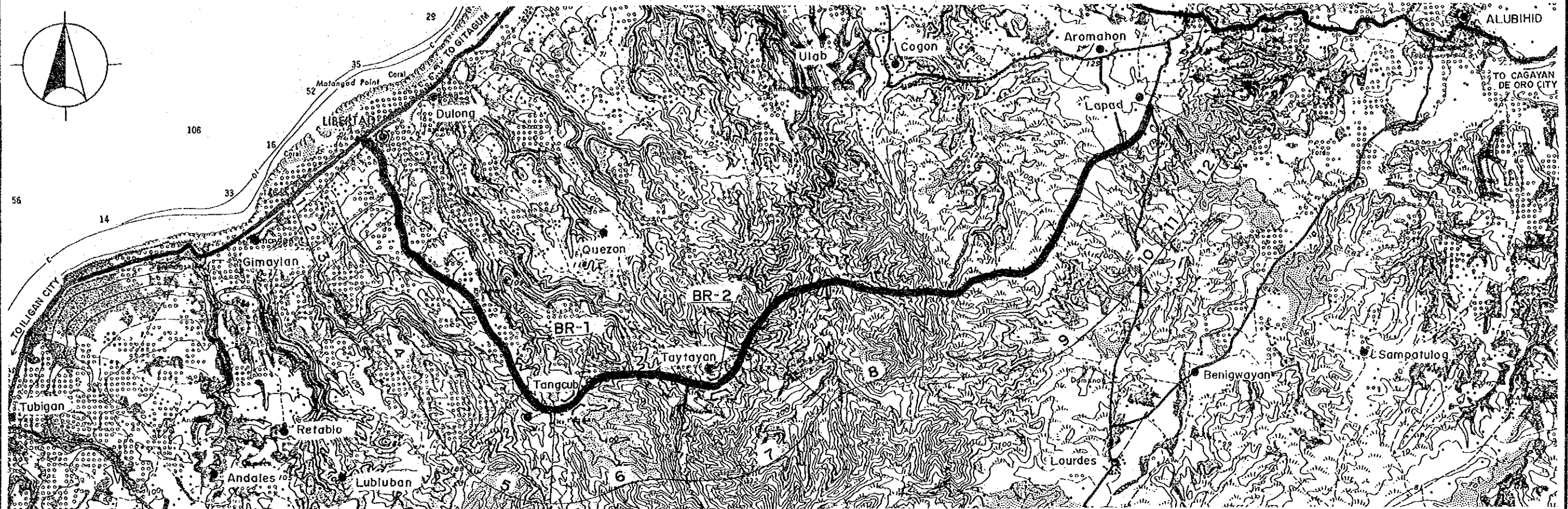
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
21

Road No: P23 Road Name: LIBERTAD-TANGCUB-LAPAD ROAD
Location: LIBERTAD, MISAMIS ORIENTAL



Road Classification	Minor Road (Provincial Road)											
Total Length	13.8 km											
Sub-section No.	1	2	3	4	5	6	7	8	9	10	11	12
Length (km)	.1	.7	.3	2.8	.4	1.7	1.2	2.5	2.3	.4	.7	.7
Terrain	Rolling	Flat	Mt'nous	Flat	Rolling	Rolling	Mt'nous	Mt'nous	Mt'nous	Rolling	Flat	Flat
Existing Road Surface	4.0-BTM (Fair)	4.2-PCC (Good)	4.5-GRV (Bad)	3.2-GRV (Bad)	3.2-EAR (Bad)	3.2-EAR (Bad)	3.2-EAR (Impass)	2.8-EAR (Impass)	2.8-EAR (Impass)	4.0-EAR (Bad)	4.5-EAR (Bad)	4.5-EAR (Bad)
Proposed Improvement	Widening Widening Rehabil. Rehabil. Impr.-1 Impr.-1 Impr.-1 Impr.-1 Impr.-1 Impr.-1 Impr.-1 Impr.-1											
Improvement Type	* BMP PCC Gravel Gravel Gravel Gravel Gravel Gravel Gravel Gravel Gravel Gravel											
Surface Type	6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0 6.0											
Carriageway Width(m)	1.0 1.5 .5 1.0 .5 .5 .5 .5 .5 .5 1.0 1.0											
Shoulder Width (m)	TYPE 4-3 TYPE 4-1 TYPE 1-6 TYPE 1-6 TYPE 2-8 TYPE 2-8 TYPE 2-8 TYPE 2-8 TYPE 2-8 TYPE 2-8 TYPE 2-8 TYPE 2-8											
Ref. Typical Section	-											
Special Treatment	-											
Steep Section Length	200 - - - - - 500 - - - - -											
Bridge No.	BR-1	BR-2										
Existing Type	Spillway Spillway											
Length (m)	22	25										
Proposed Type	-											
Length (m)	-											
No. of Spans	-											

* DBST can be applied instead depending on conditions of subgrade, axle load, drainage, etc.

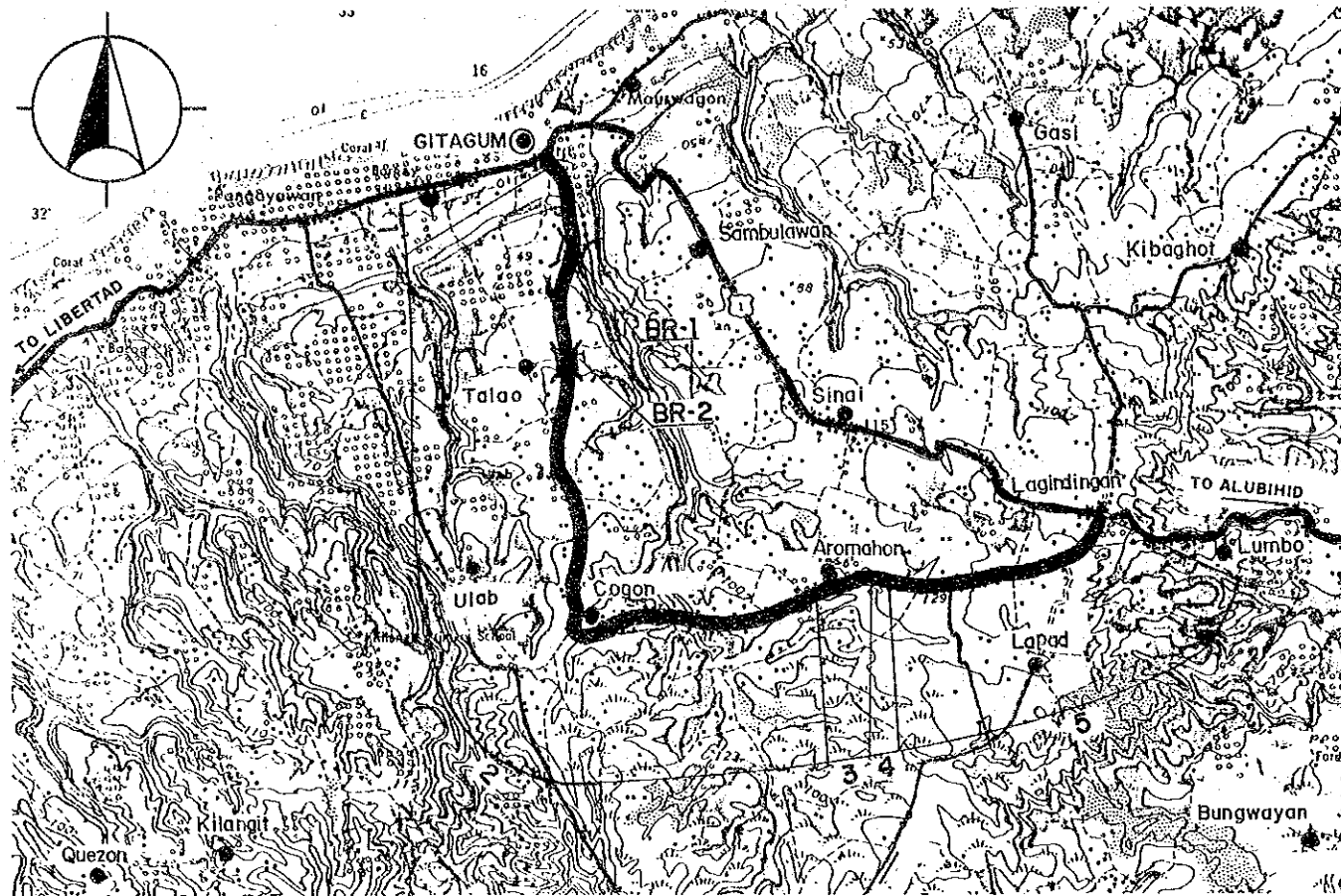
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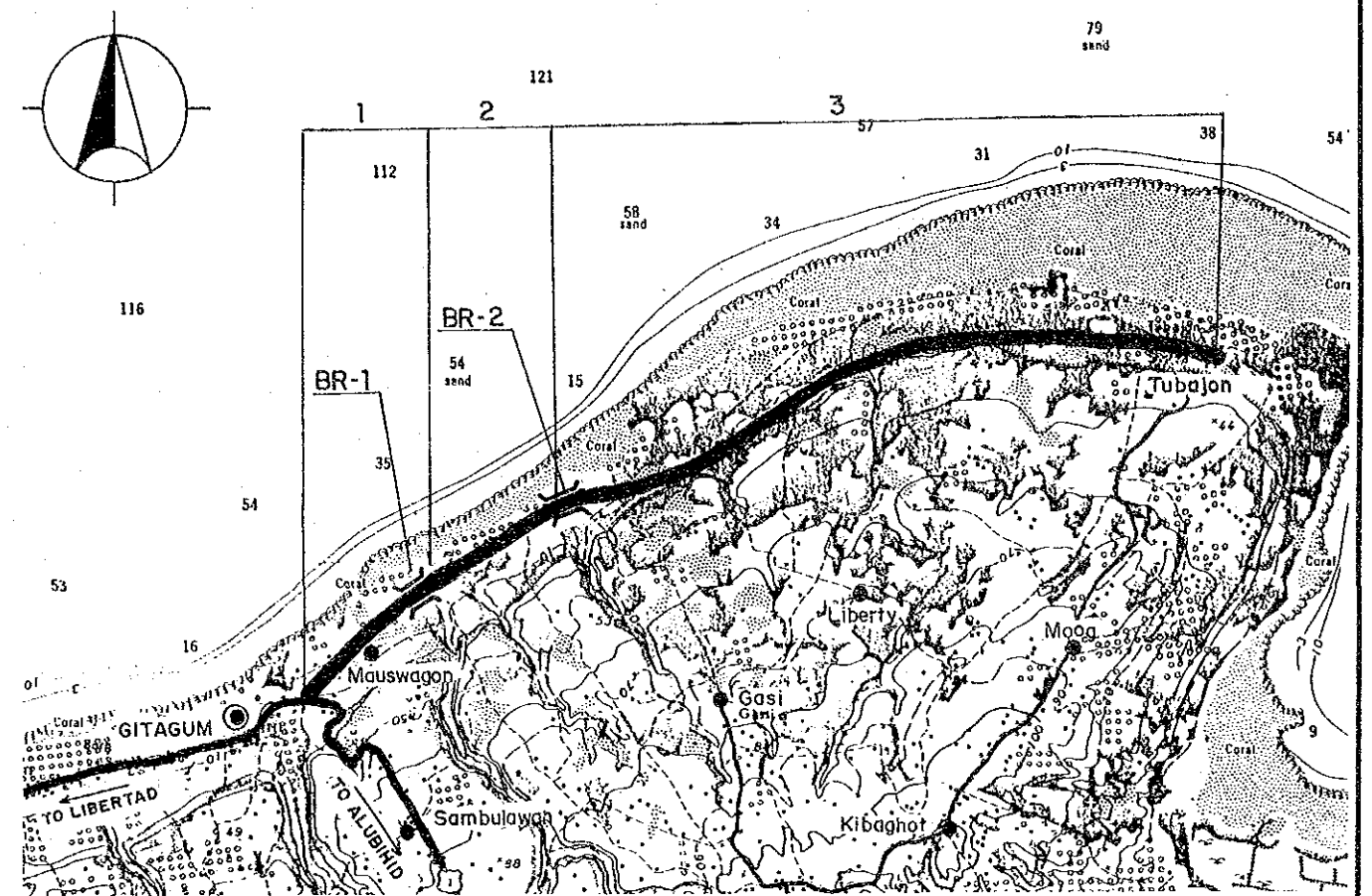
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Drawing No.
22

Road No: P26 Road Name: GITAGUM-COGON-LAGUINDINGAN ROAD
Location: GITAGUM, MISAMIS ORIENTAL



Road No: P27 Road Name: MAUSWAGON-TUBAJON ROAD
Location: LAGUINDINGAN, MISAMIS ORIENTAL



Road Classification	Minor Road (Provincial Road)				
Total Length	8.2 km				
Sub-section No.	1	2	3	4	5
Length (km)	.1	5.8	.4	.1	1.8
Terrain	Flat	Rolling	Flat	Flat	Flat
Existing Road Surface	4.0-PCC (Good)	3.6-GRV (V.Bad)	3.2-GRV (V.Bad)	4.0-PCC (Good)	3.2-GRV (V.Bad)
Proposed Improvement	Widening	Rehabil.	Rehabil.	Widening	Rehabil.
Improvement Type	PCC	Gravel	Gravel	PCC	Gravel
Surface Type	6.0	6.0	6.0	6.0	6.0
Carriageway Width(m)	1.5	.5	1.0	1.5	1.0
Shoulder Width (m)	TYPE 4-1 TYPE 1-6 TYPE 1-6 TYPE 4-1 TYPE 1-6				
Ref. Typical Section					
Bridge No.	BR-1	BR-2			
Existing Type	Timber	Timber			
Length (m)	5	15			
Proposed Type	2cell-BC	2Lane-Br			
Length (m)	6	18			
No. of Spans	2	1			

Road Classification	Minor Road (Provincial Road)		
Total Length	6.7 km		
Sub-section No.	1	2	3
Length (km)	1.2	.9	4.6
Terrain	Flat	Flat	Flat
Existing Road Surface	4.0-GRV (Bad)	4.0-EAR (V.Bad)	2.4-EAR (V.Bad)
Proposed Improvement	Rehabil.	Impr.-1	Impr.-1
Improvement Type	Gravel	Gravel	Gravel
Surface Type	6.0	6.0	6.0
Carriageway Width(m)	1.0	1.0	1.0
Shoulder Width (m)	TYPE 1-6 TYPE 2-8 TYPE 2-8		
Ref. Typical Section			
Bridge No.	BR-1	BR-2	
Existing Type	Timber	Timber	
Length (m)	7	6	
Proposed Type	2Lane-Br	2cell-BC	
Length (m)	10	7	
No. of Spans	1	2	

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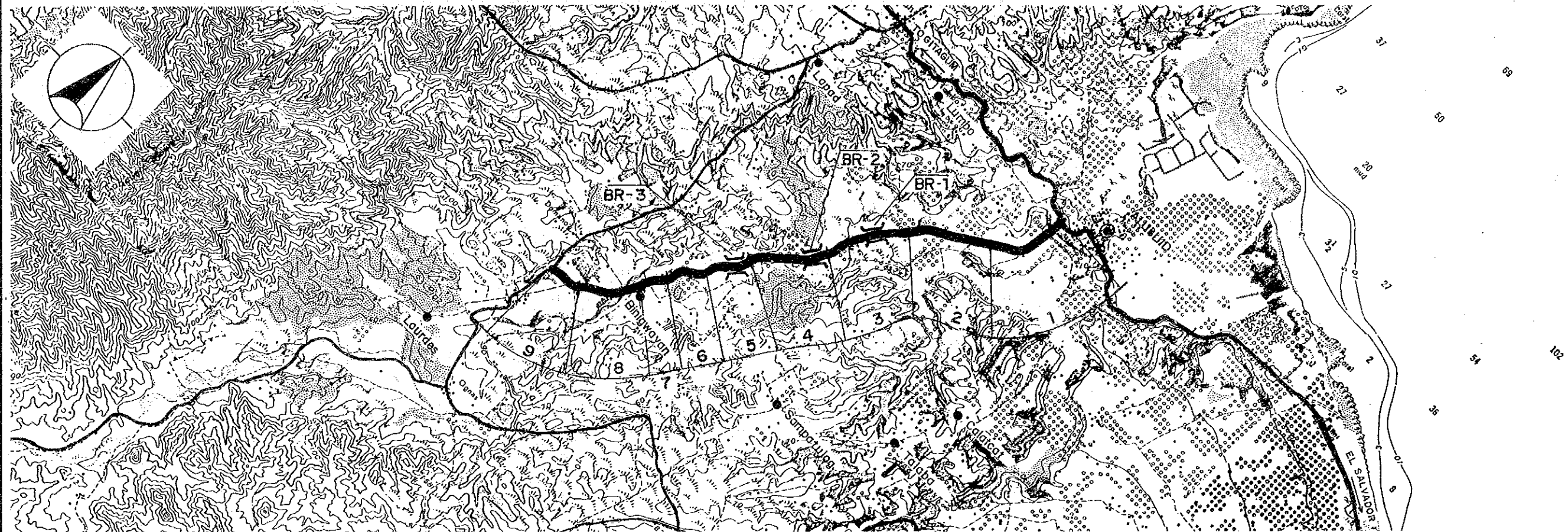
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Drawing No.

24

Road No: P31 Road Name: ALUBIJID-LOURDES ROAD
Location: ALUBIJID, MISAMIS ORIENTAL



Road Classification	Minor Road (Provincial Road)									
Total Length	7.3 km									
Sub-section No.	1	2	3	4	5	6	7	8	9	
Length (km)	1.0	1.0	1.1	.9	.8	.6	.5	.8	.6	
Terrain	Flat	Mt'nous	Flat	Mt'nous	Rolling	Rolling	Mt'nous	Rolling	Rolling	
Existing Road Surface	3.4-GRV (Bad)	2.6-GRV (Bad)	2.4-EAR (Bad)	2.8-GRV (V.Bad)	2.4-GRV (Bad)	2.6-GRV (Bad)	2.8-GRV (Fair)	2.8-GRV (Bad)	2.8-GRV (Bad)	
Proposed Improvement	Rehabil.	Rehabil.	Impr.-1	Rehabil.	Rehabil.	Rehabil.	Widening	Rehabil.	Rehabil.	
Improvement Type	Rehabil.	Rehabil.	Impr.-1	Rehabil.	Rehabil.	Rehabil.	Widening	Rehabil.	Rehabil.	
Surface Type	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	
Carriageway Width(m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	
Shoulder Width (m)	1.0	.5	1.0	.5	.5	.5	.5	.5	.5	
Ref. Typical Section	TYPE 1-6	TYPE 1-6	TYPE 2-8	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 4-4	TYPE 1-6	TYPE 1-6	
Bridge No.	BR-1	BR-2	BR-3							
Existing Type	Balley	Spillway	Spillway							
Length (m)	9	10	10							
Proposed Type	-	-	-							
Length (m)	-	-	-							
No. of Spans	-	-	-							