

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS & HIGHWAYS

Feasibility Study
on
The Rural Road Network Development Project

FINAL REPORT (Volume 25)
DRAWINGS FOR ROAD PROJECTS
IN
THE PROVINCE OF DAVAO DEL NORTE

OCTOBER, 1990

JAPAN INTERNATIONAL COOPERATION AGENCY

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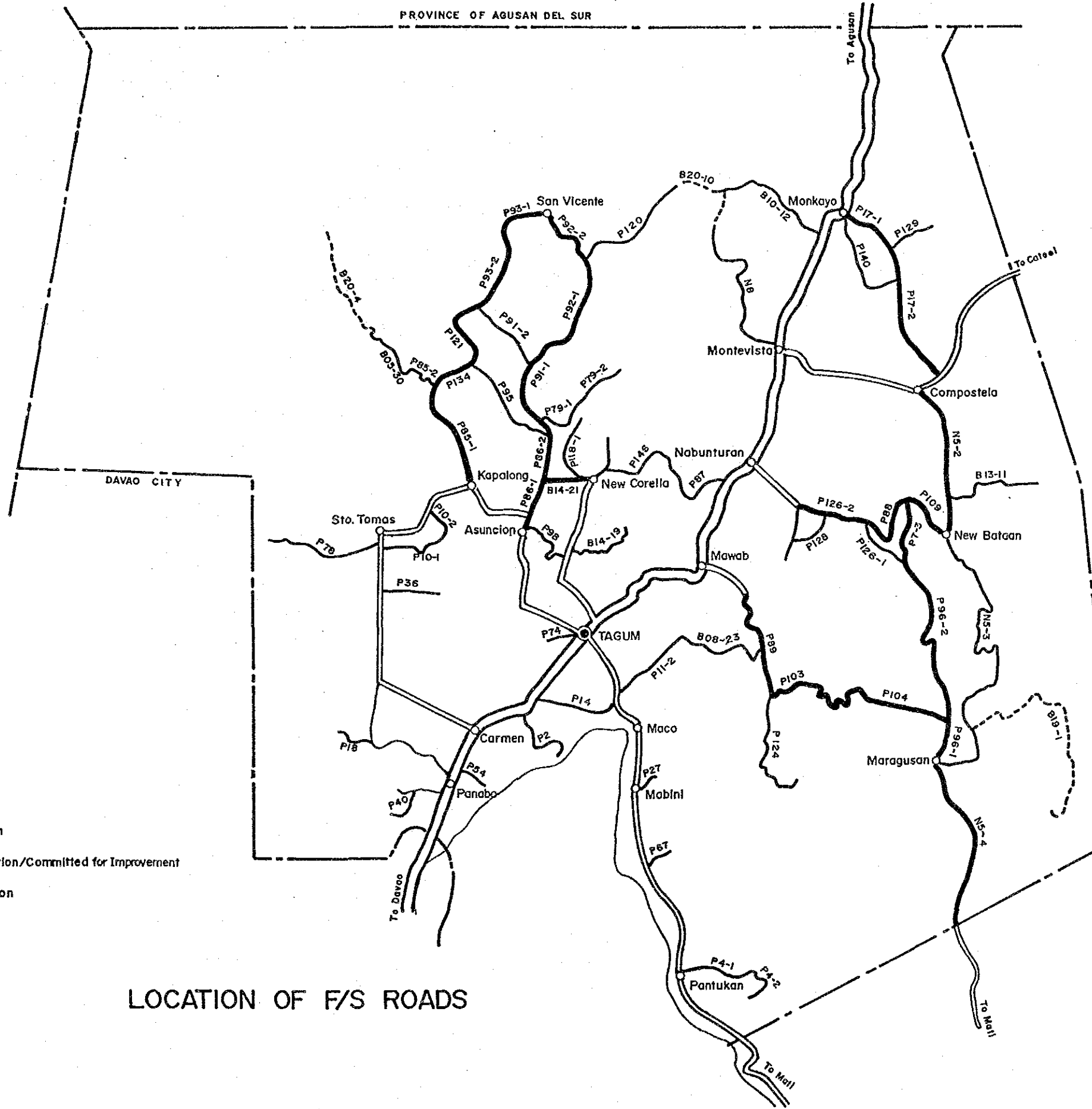
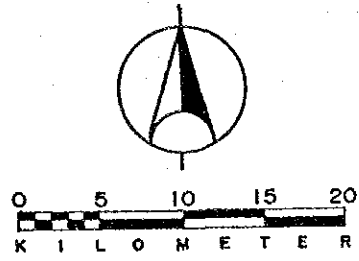


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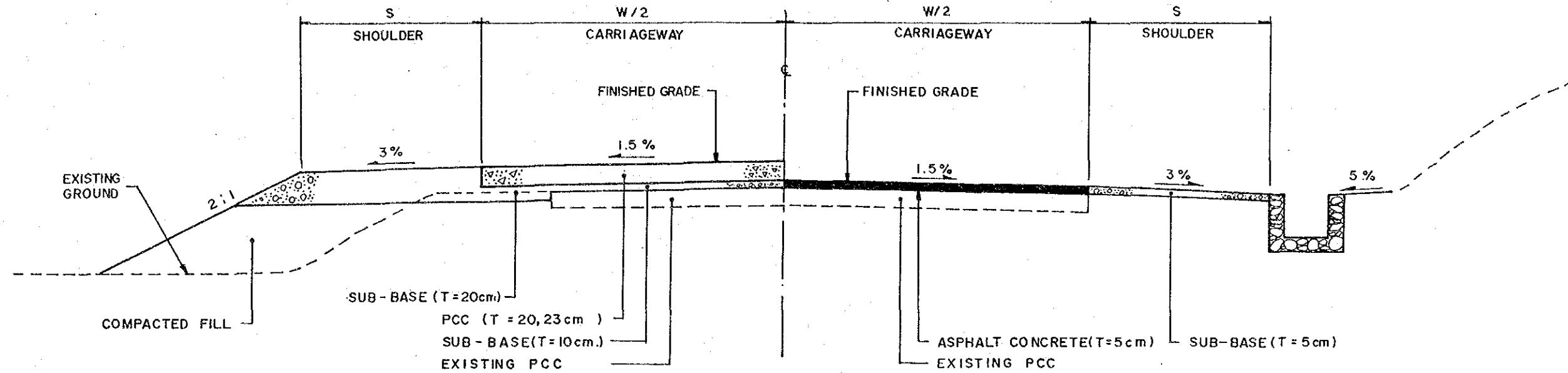
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Legend:

- Secondary Major Roads for F/S
- Minor Roads for F/S
- Primary Major Roads In Good Condition
- Secondary Major Roads In Good Condition/Committed for Improvement
- Impassable/ Non Existing Section
- Provincial Capital
- Municipality

LOCATION OF F/S ROADS

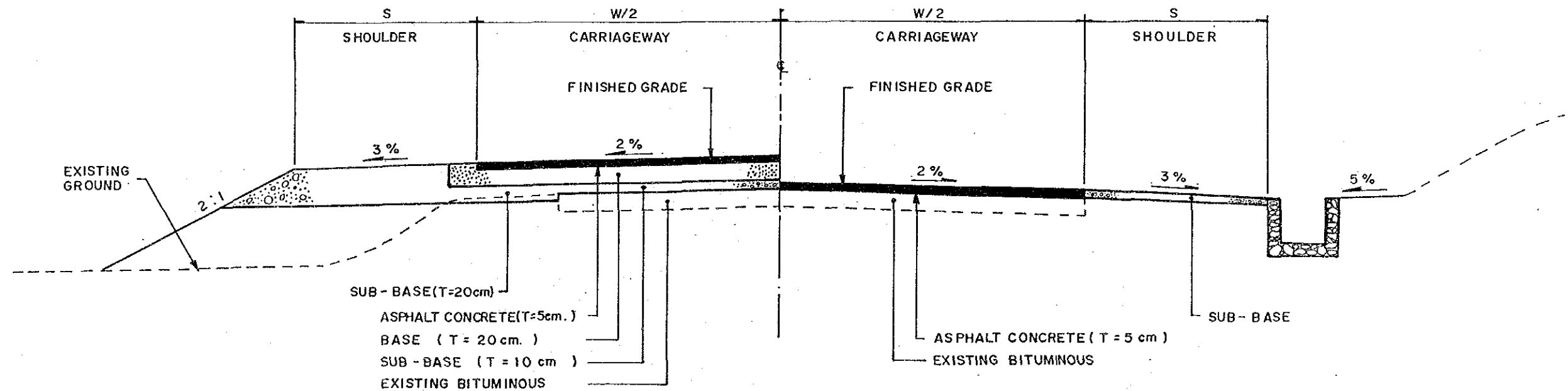


TYPE 1-1

PROPOSED PAVEMENT : PCC
EXISTING PAVEMENT : PCC (BAD / VERY BAD)

TYPE 1-2

PROPOSED PAVEMENT : ASPHALT CONCRETE OVERLAY
EXISTING PAVEMENT : PCC (BAD / VERY BAD)



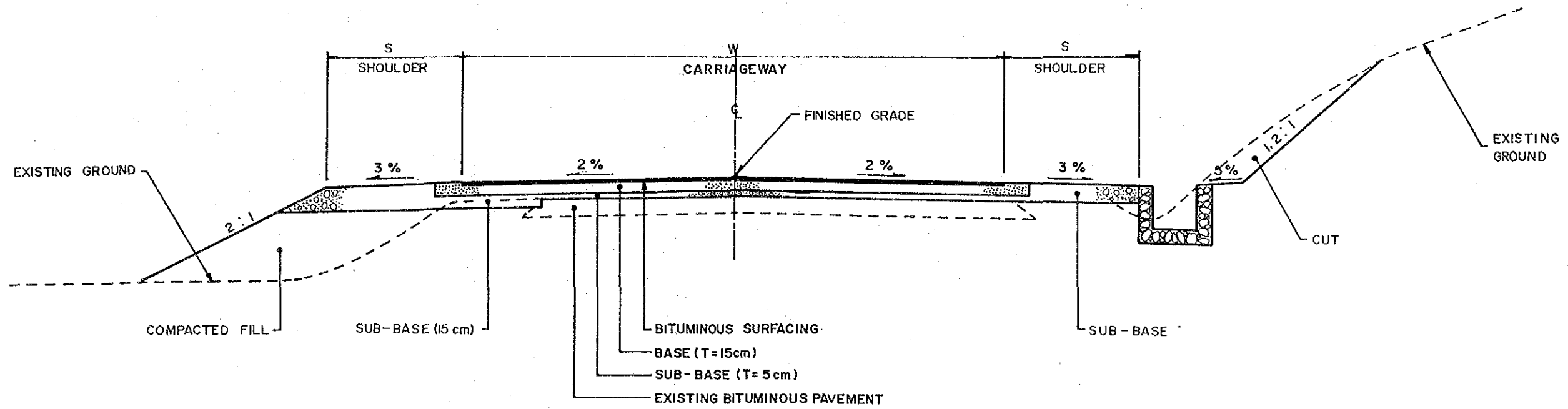
TYPE 1-3

PROPOSED PAVEMENT : ASPHALT CONCRETE
EXISTING PAVEMENT : BITUMINOUS (BAD / VERY BAD)

TYPE 1-4

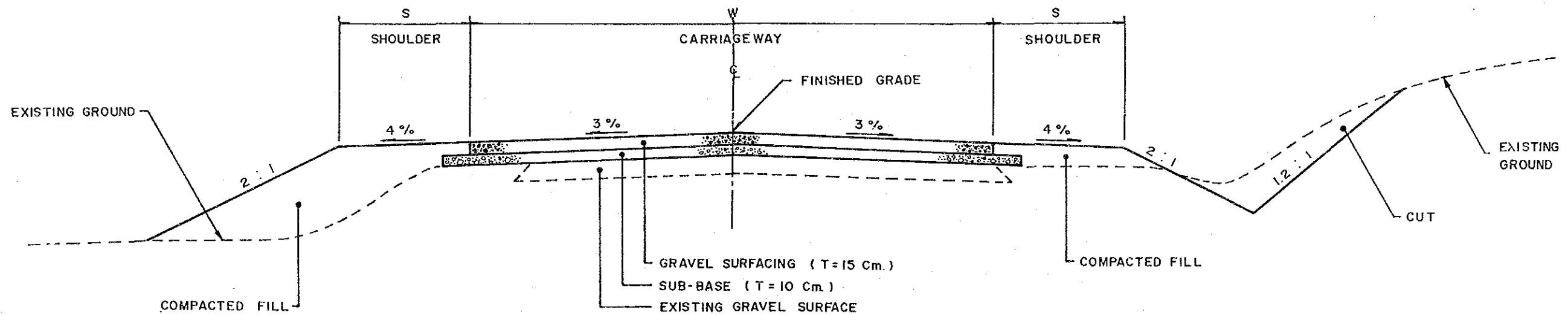
PROPOSED PAVEMENT : ASPHALT CONCRETE OVERLAY
EXISTING PAVEMENT : BITUMINOUS (BAD / VERY BAD)

REHABILITATION (1)



TYPE I-5

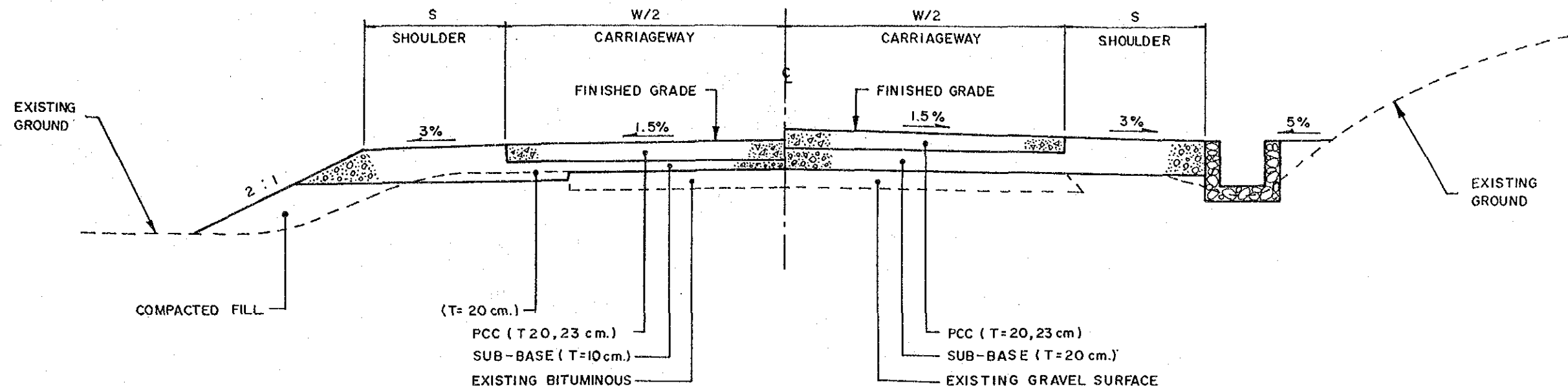
PROPOSED PAVEMENT : BITUMINOUS MACADAM/DOUBLE BITUMINOUS SURFACE TREATMENT
EXISTING PAVEMENT : BITUMINOUS (BAD / VERY BAD)



TYPE I-6

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

REHABILITATION (2)

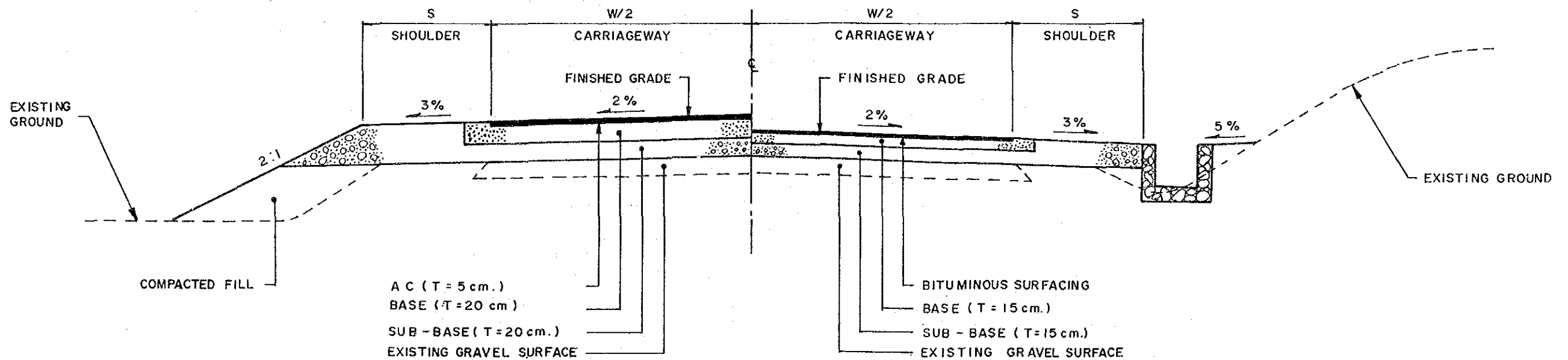


TYPE 2-1

PROPOSED PAVEMENT : PCC
EXISTING PAVEMENT : BITUMINOUS (BAD/VERY BAD)

TYPE 2-2

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



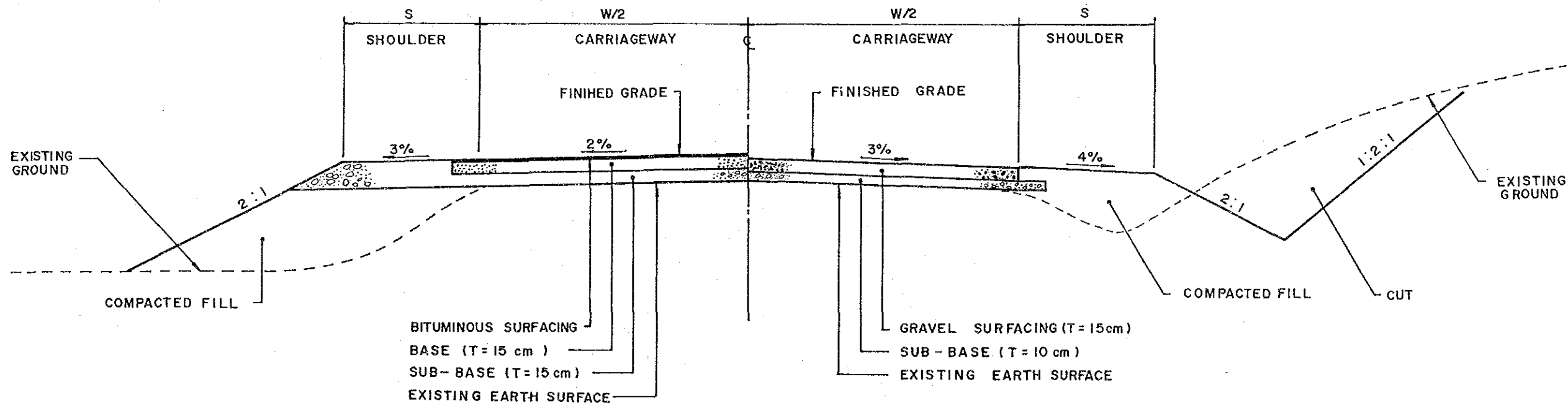
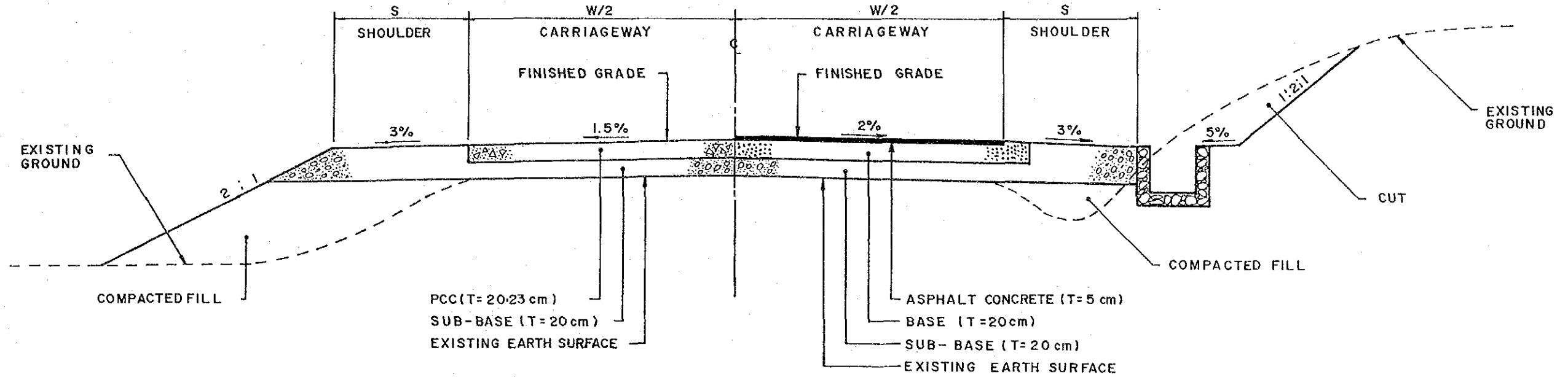
TYPE 2-3

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)

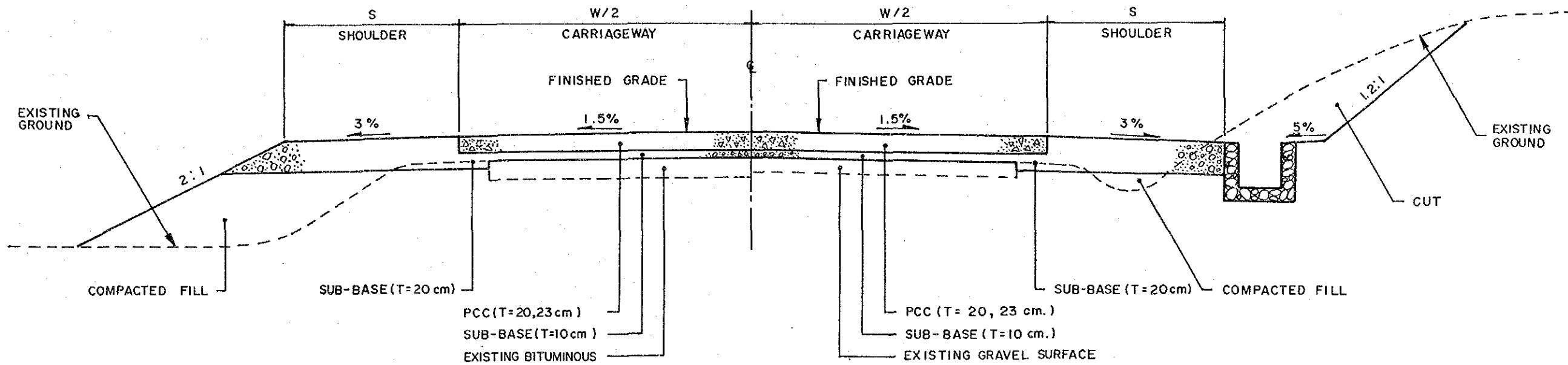
IMPROVEMENT - I (I)



TYPE 2-7
 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)

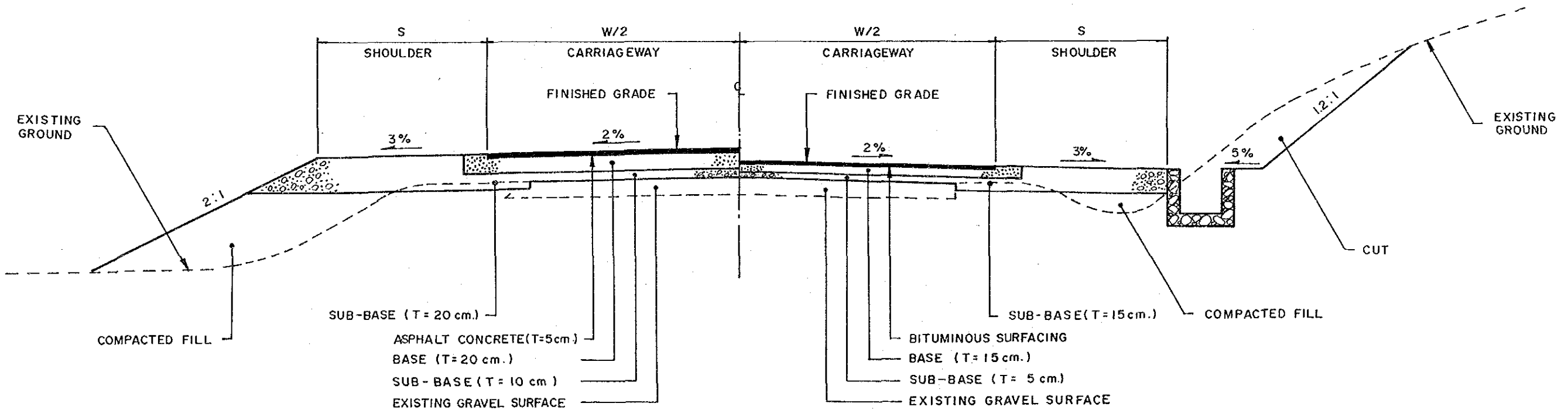


TYPE 3-1

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

TYPE 3-2

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



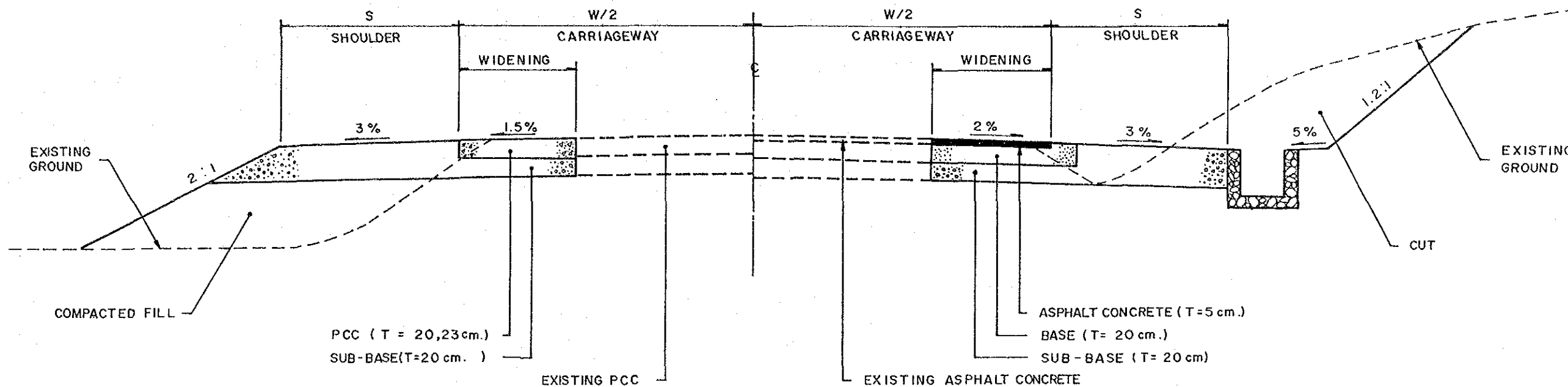
TYPE 3-3

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

TYPE 3-4

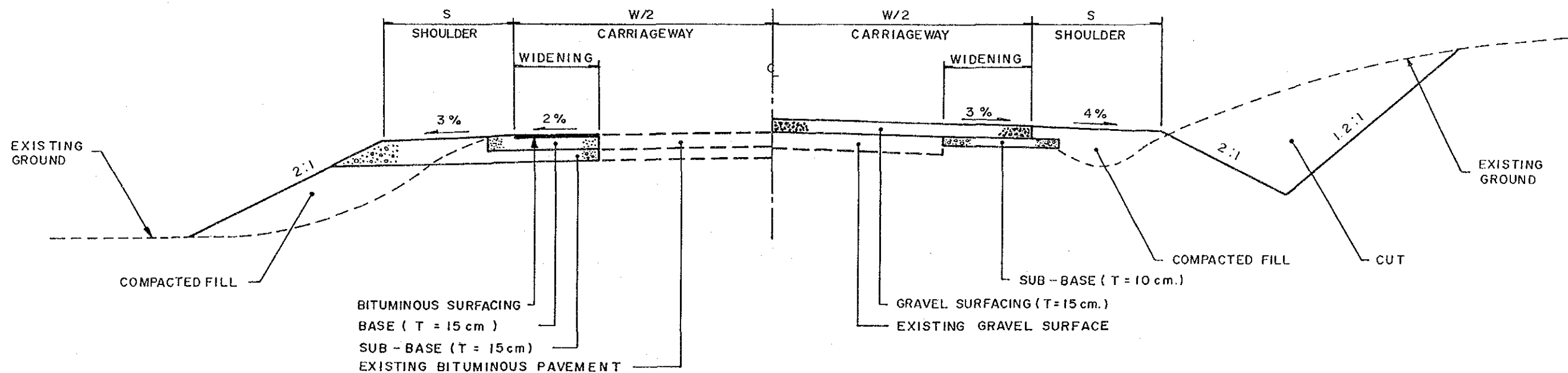
PROPOSED PAVEMENT : BITUMINOUS MACADAM/DOUBLE BITUMINOUS SURFACE TREATMENT
EXISTING PAVEMENT : GRAVEL SURFACING (Good/Fair)

IMPROVEMENT-2



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

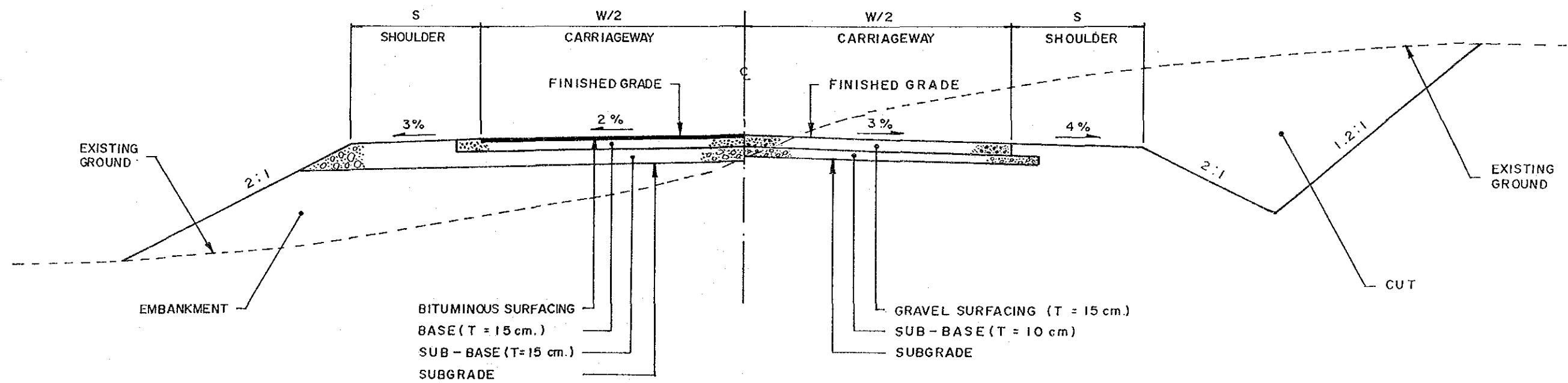
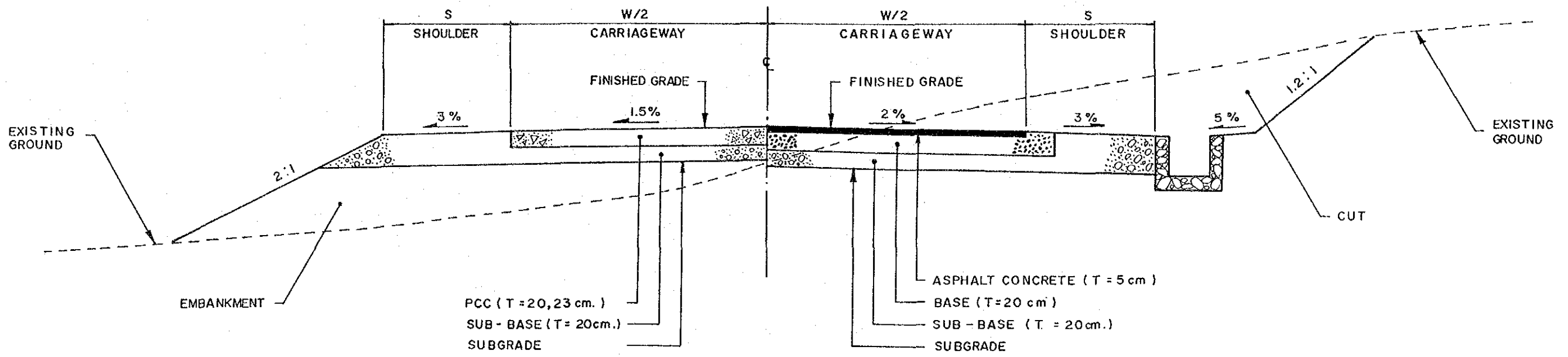
TYPE 4-2
PROPOSED PAVEMENT : ASPHALT CONCRETE
EXISTING PAVEMENT : ASPHALT CONCRETE



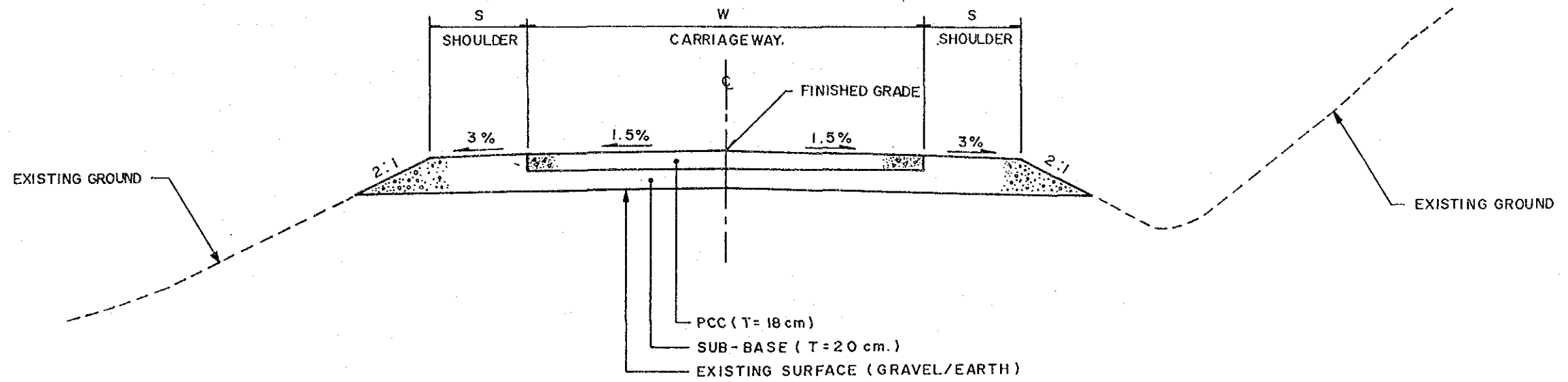
TYPE 4-3
PROPOSED PAVEMENT : BITUMINOUS MACADAM/
DOUBLE BITUMINOUS
SURFACE TREATMENT
EXISTING PAVEMENT : BITUMINOUS

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

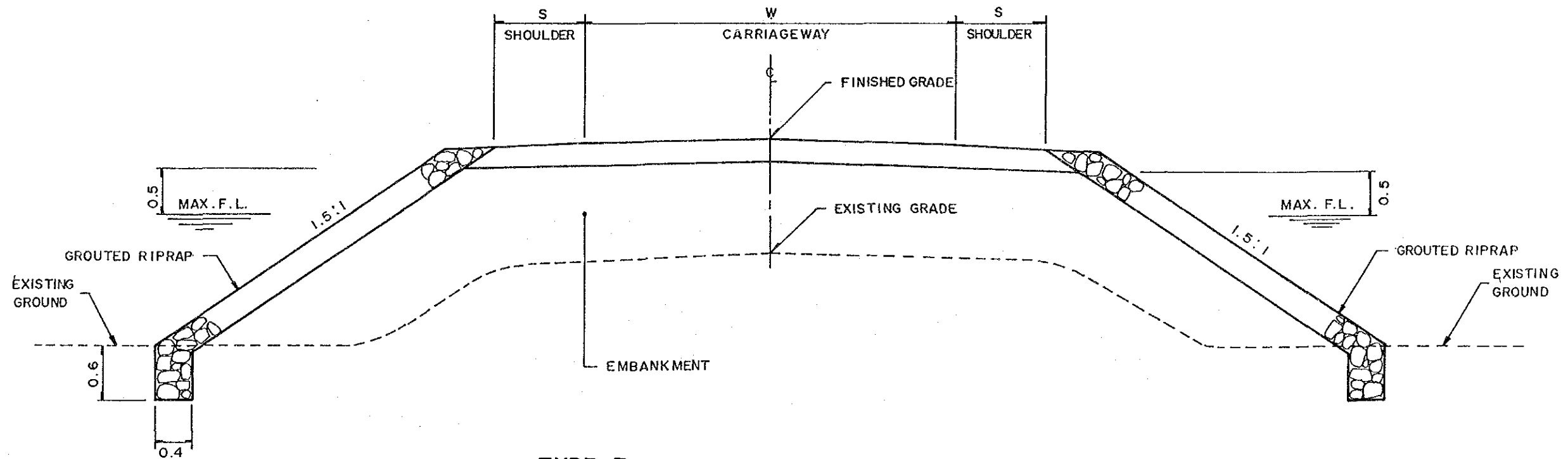
WIDENING



NEW CONSTRUCTION



TYPE 6
PCC PAVEMENT FOR STEEP GRADIENT SECTIONS



TYPE 7
GRADE RAISING SECTIONS IN FLOOD AREA

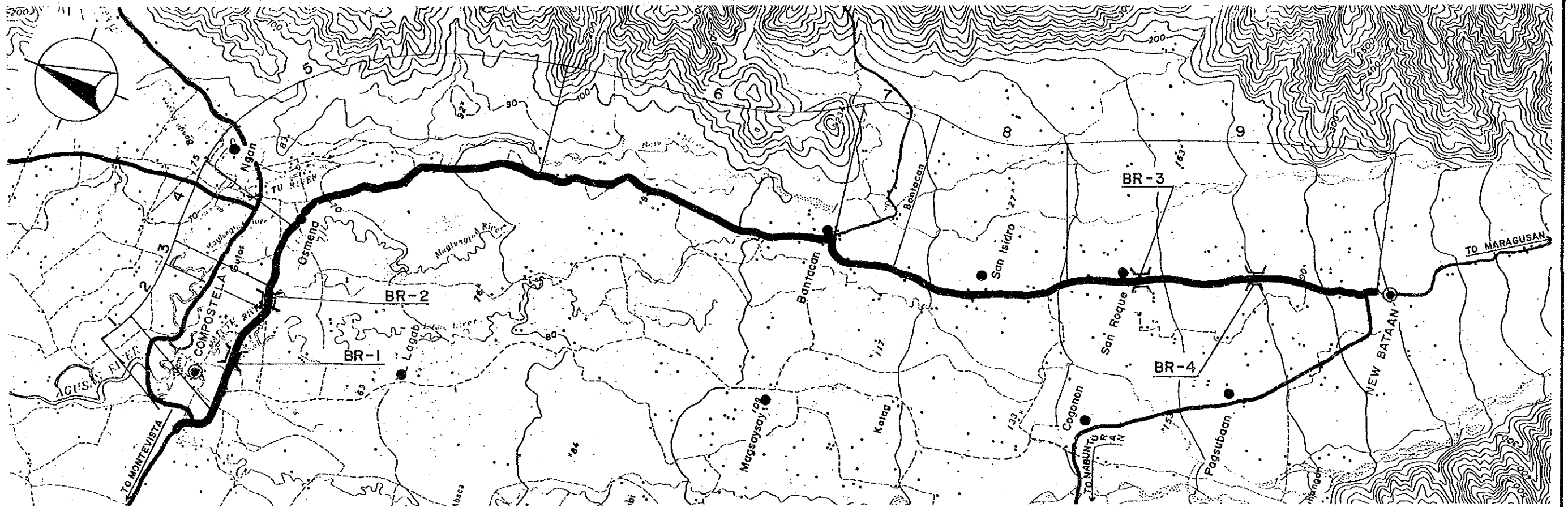
**THE FEASIBILITY STUDY ON THE RURAL ROAD NETWORK DEVELOPMENT PROJECT
IN THE REPUBLIC OF THE PHILIPPINES**

PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
10

Road No: N5-2 Road Name: COMPOSTELA-NEW BATAAN ROAD
Location : COMPOSTELA & NEW BATAAN, DAVAO DEL NORTE



Road Classification	Secondary Major (National Road)								
Total Length	16.3 km								
Sub-section No.	1	2	3	4	5	6	7	8	9
Length (km)	.4	1.4	.3	.5	3.1	3.7	.8	2.0	4.1
Terrain	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Flat
Existing Road Surface	6.0-GRV (Bad)	5.5-GRV (Bad)	4.5-GRV (Bad)	4.0-GRV (Bad)	5.2-GRV (Fair)	5.6-GRV (Fair)	5.6-GRV (Bad)	5.2-GRV (Fair)	5.9-GRV (Fair)
Proposed Improvement	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-2	Impr.-2	Impr.-1	Impr.-2	Impr.-2
Improvement Type	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP
Surface Type									
Carriageway Width(m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Shoulder Width (m)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Ref. Typical Section	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 3-4	TYPE 3-4	TYPE 2-4	TYPE 3-4	TYPE 3-4
Special Treatment									
Flood Section Length	-	-	-	-	1000	1000	-	-	-
Height	-	-	-	-	1.0	1.0	-	-	-
Bridge No.	BR-1	BR-2	BR-3	BR-4					
Existing Type	Concrete	Ford-Cr.	Concrete	Bailey					
Length (m)	27	-	213	16					
Proposed Type	-	2Lane-Br	-	2Lane-Br					
Length (m)	-	100	-	18					
No. of Spans	-	4	-	1					

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

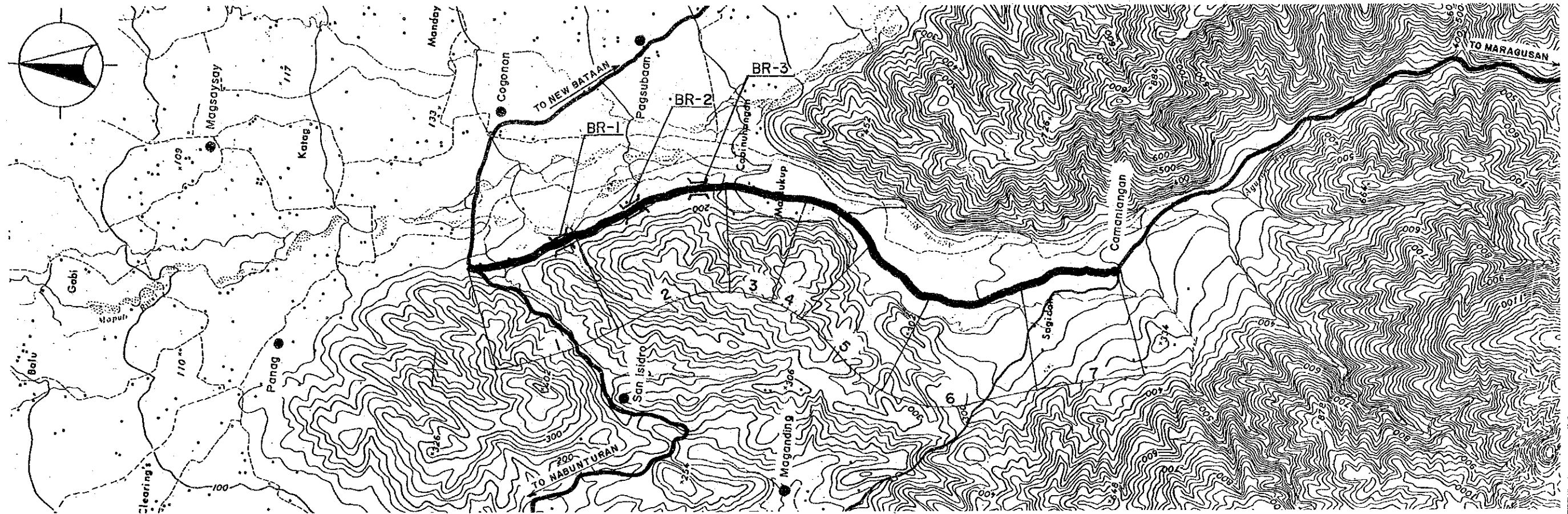
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
12

Road No: P7-3 Road Name: **MAGANGIT-CAMANLANGAN ROAD**
Location: **NEW BATAAN, DAVAO DEL NORTE**



Road Classification	Secondary Major (Provincial Road)						
Total Length	8.2 km						
Sub-section No.	1	2	3	4	5	6	7
Length (km)	1.1	1.9	1.0	1.1	.9	1.0	1.2
Terrain	Flat	Rolling	Flat	Flat	Flat	Flat	Flat
Existing Road Surface	4.0-GRV (Bad)	3.6-GRV (Bad)	4.0-GRV (Bad)	3.2-GRV (Bad)	4.0-GRV (Bad)	4.0-GRV (Bad)	4.3-GRV (Bad)
Proposed Improvement Type	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-1
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	1.0	1.5	1.5	1.5	1.5	1.5
Ref. Typical Section	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4
Bridge No.	BR-1	BR-2	BR-3				
Existing Type	RCBC	RCBC	Bailey				
Length (m)	5	5	14				
Proposed Type	-	-	2Lane-Br				
Length (m)	-	-	16				
No. of Spans	-	-	1				

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

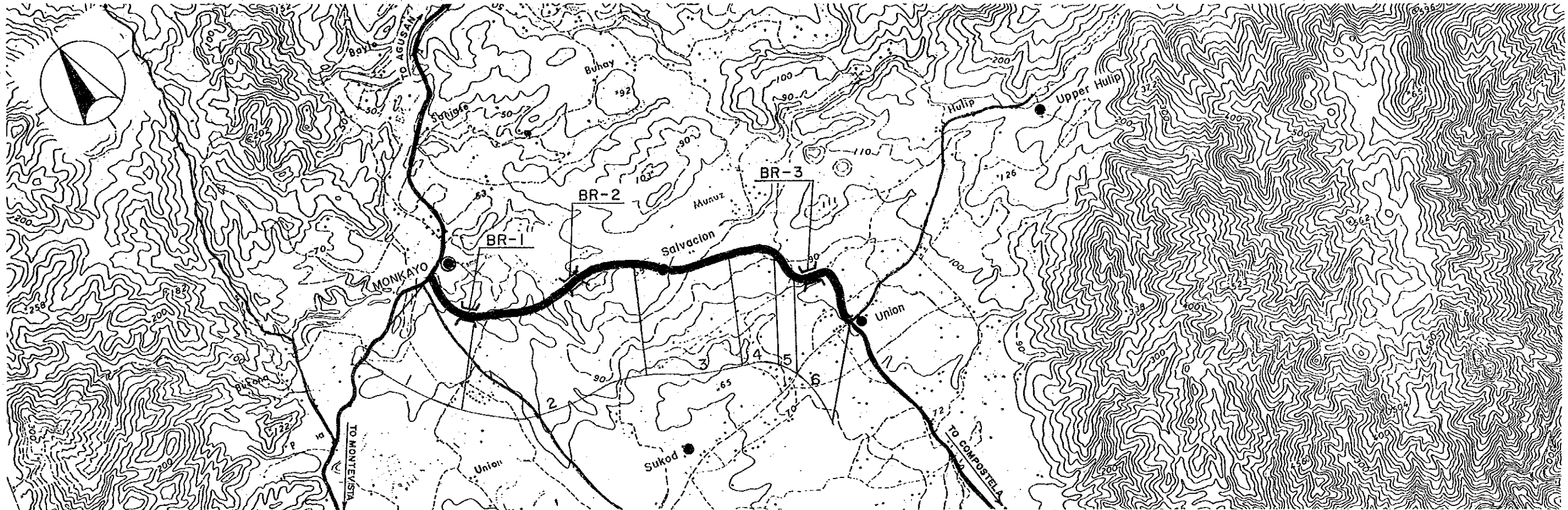
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
13

Road No: P17-1 Road Name: MONKAYO-COMPOSTELA ROAD
Location : MONKAYO & COMPOSTELA, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)					
Total Length	6.3 km					
Sub-section No.	1	2	3	4	5	6
Length (km)	.9	2.0	1.2	.8	.4	1.0
Terrain	Flat	Flat	Flat	Flat	Flat	Flat
Existing Road Surface	5.2-GRV (Bad)	6.0-GRV (Bad)	5.2-GRV (Bad)	6.0-GRV (Bad)	6.0-GRV (Bad)	5.0-GRV (Bad)
Proposed Improvement	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Rehabil.
Improvement Type	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel
Surface Type	6.0	6.0	6.0	6.0	6.0	6.0
Carriageway Width(m)	1.0	1.0	1.0	1.0	1.0	1.0
Shoulder Width (m)	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 1-6
Ref. Typical Section						
Bridge No.	BR-1	BR-2	BR-3			
Existing Type	Concrete	Concrete	Spillway			
Length (m)	14	16	21			
Proposed Type	-	-	2Lane-Br			
Length (m)	-	-	22			
No. of Spans	-	-	1			

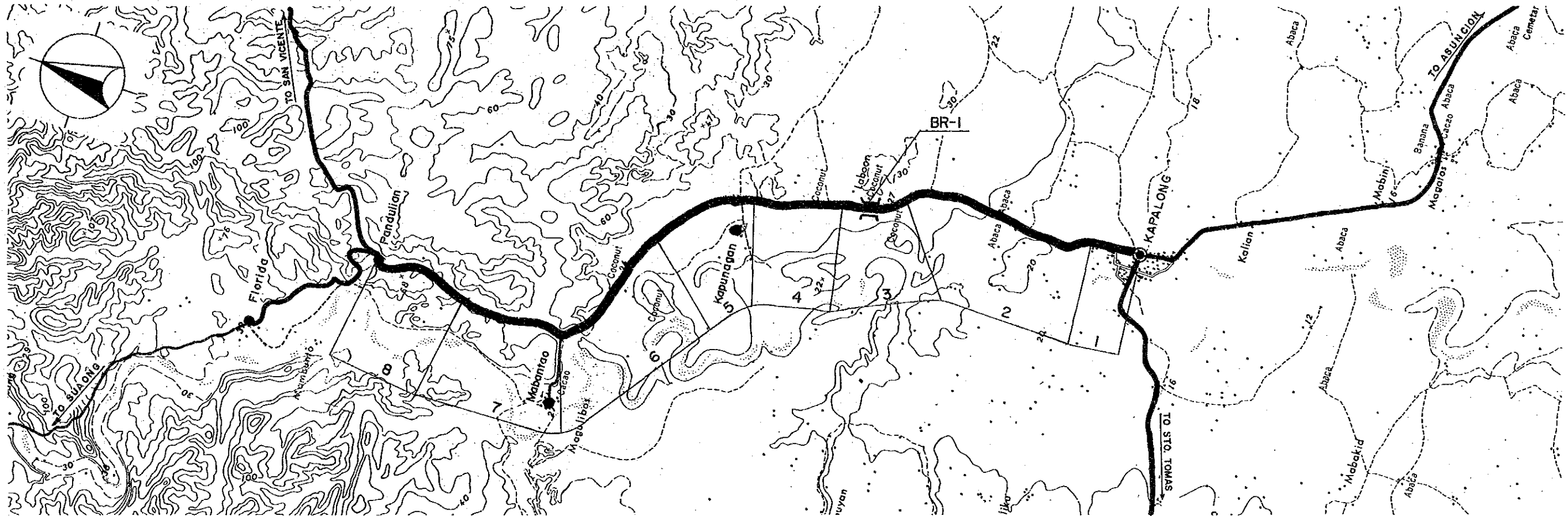
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
15

Road No: P85-1 Road Name: KAPALONG-PANDULIAN ROAD
Location: KAPALONG, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)							
Total Length	10.5 km							
Sub-section No.	1	2	3	4	5	6	7	8
Length (km)	.4	2.3	.8	1.2	1.6	1.8	1.3	1.1
Terrain	Flat	Flat	Flat	Flat	Flat	Flat	Flat	Rolling
Existing Road Surface	6.7-PCC (Good)	4.5-GRV (Fair)	4.5-GRV (Fair)	4.5-EAR (Fair)	5.5-GRV (Fair)	4.5-GRV (Fair)	5.0-GRV (Fair)	3.4-GRV (Fair)
Proposed Improvement	-							
Improvement Type	-	Widening	Widening	Impr.-1	Widening	Widening	Widening	Widening
Surface Type	-	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel
Carriageway Width(m)	-	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Shoulder Width (m)	-	1.0	1.0	1.0	1.0	1.0	1.0	.5
Ref. Typical Section	-	TYPE 4-4	TYPE 4-4	TYPE 2-8	TYPE 4-4	TYPE 4-4	TYPE 4-4	TYPE 4-4
Special Treatment	-							
Flood Section Length	-	500	-	-	-	-	-	-
Height	-	.5	-	-	-	-	-	-
Bridge No.	BR-1							
Existing Type	Bailey							
Length (m)	9							
Proposed Type	2Lane-Br							
Length (m)	10							
No. of Spans	1							

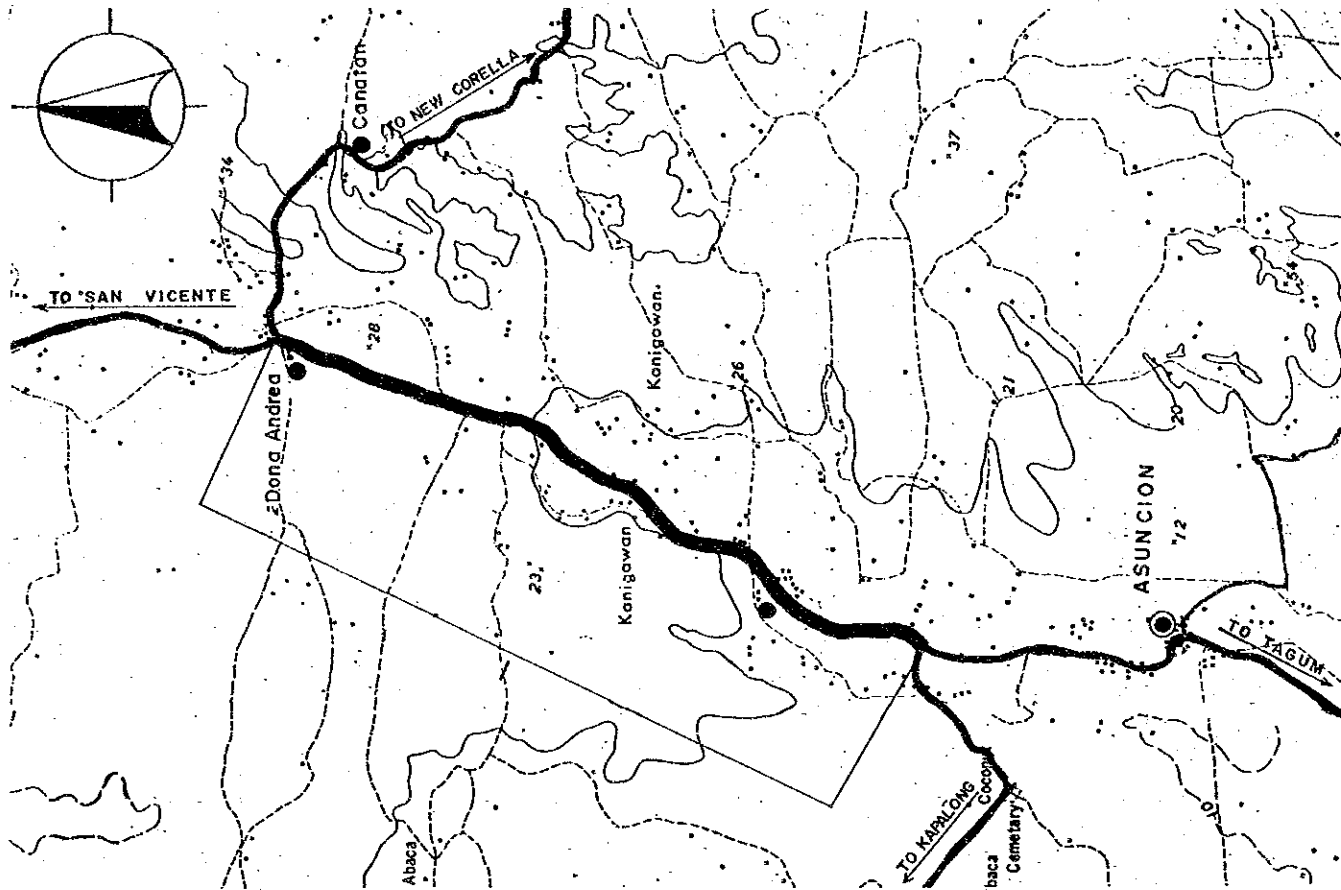
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
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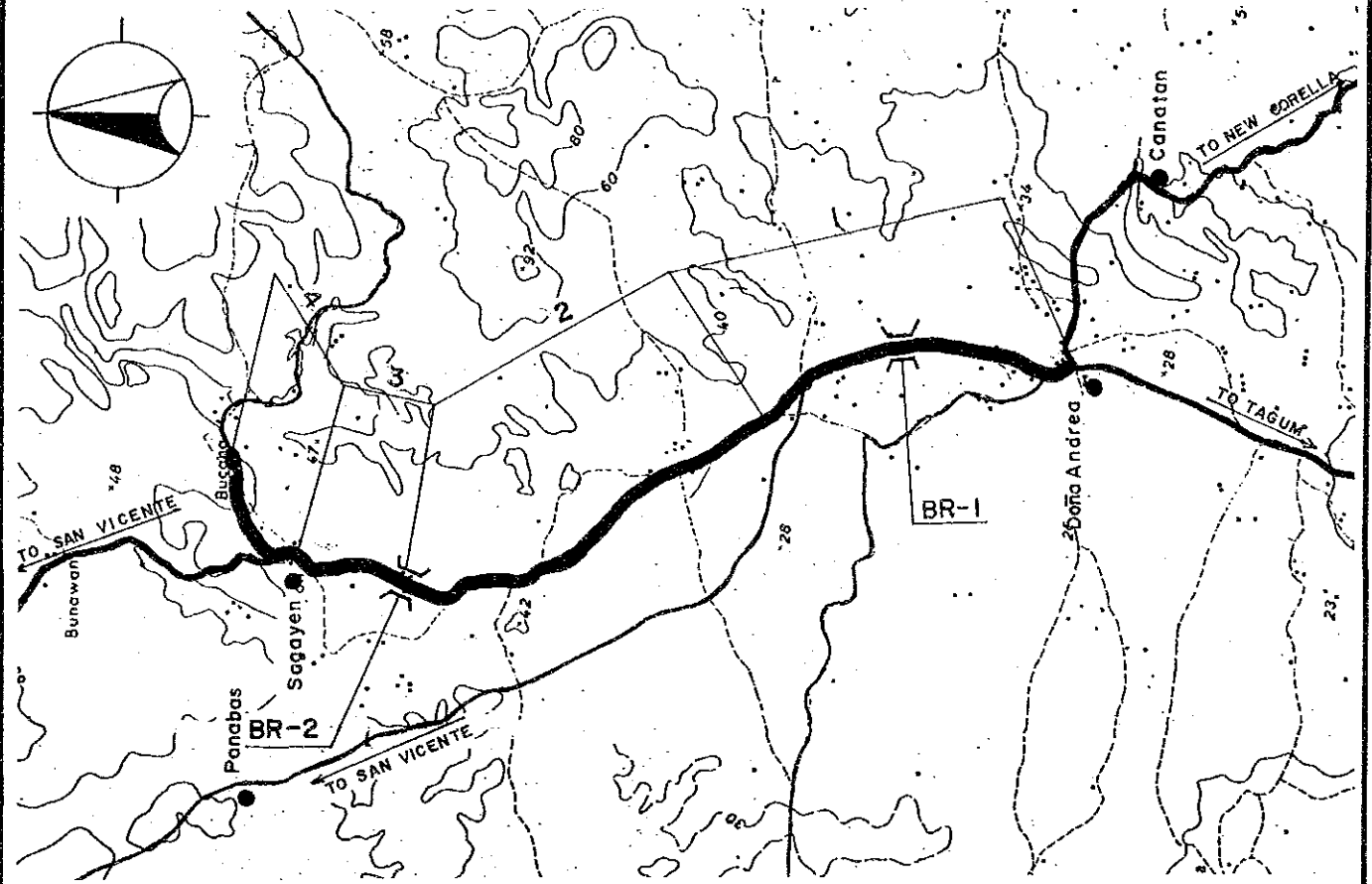
Drawing No.
16

Road No: P86-1 Road Name: ASUNCION-KANATAN ROAD
Location: ASUNCION, DAVAO DEL NORTE



Road Classification	Second'y Major Rd (Provincial Road)
Total Length	4.7 km
Sub-section No.	1
Length (km)	4.7
Terrain	Flat
Existing Road Surface	4.5-GRV (Fair)
Proposed Improvement	
Improvement Type	Impr.-2
Surface Type	AC
Carriageway Width(m)	6.0
Shoulder Width (m)	2.0
Ref. Typical Section	TYPE 3-3

Road No: P86-2 Road Name: KANATAN-SAGAYEN ROAD
Location: ASUNCION, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)			
Total Length	7.3 km			
Sub-section No.	1	2	3	4
Length (km)	2.5	2.9	.9	1.0
Terrain	Flat	Flat	Flat	Rolling
Existing Road Surface	4.5-GRV (Fair)	4.5-GRV (Bad)	4.0-GRV (Fair)	4.5-GRV (Fair)
Proposed Improvement				
Improvement Type	Impr.-2	Impr.-1	Impr.-2	Impr.-2
Surface Type	AC	AC	AC	AC
Carriageway Width(m)	6.0	6.0	6.0	6.0
Shoulder Width (m)	2.0	2.0	2.0	1.5
Ref. Typical Section	TYPE 3-3	TYPE 2-3	TYPE 3-3	TYPE 3-3
Bridge No.	BR-1	BR-2		
Existing Type	Timber	Bailey		
Length (m)	10	38		
Proposed Type	2Lane-Br	2Lane-Br		
Length (m)	12	38		
No. of Spans	1	2		

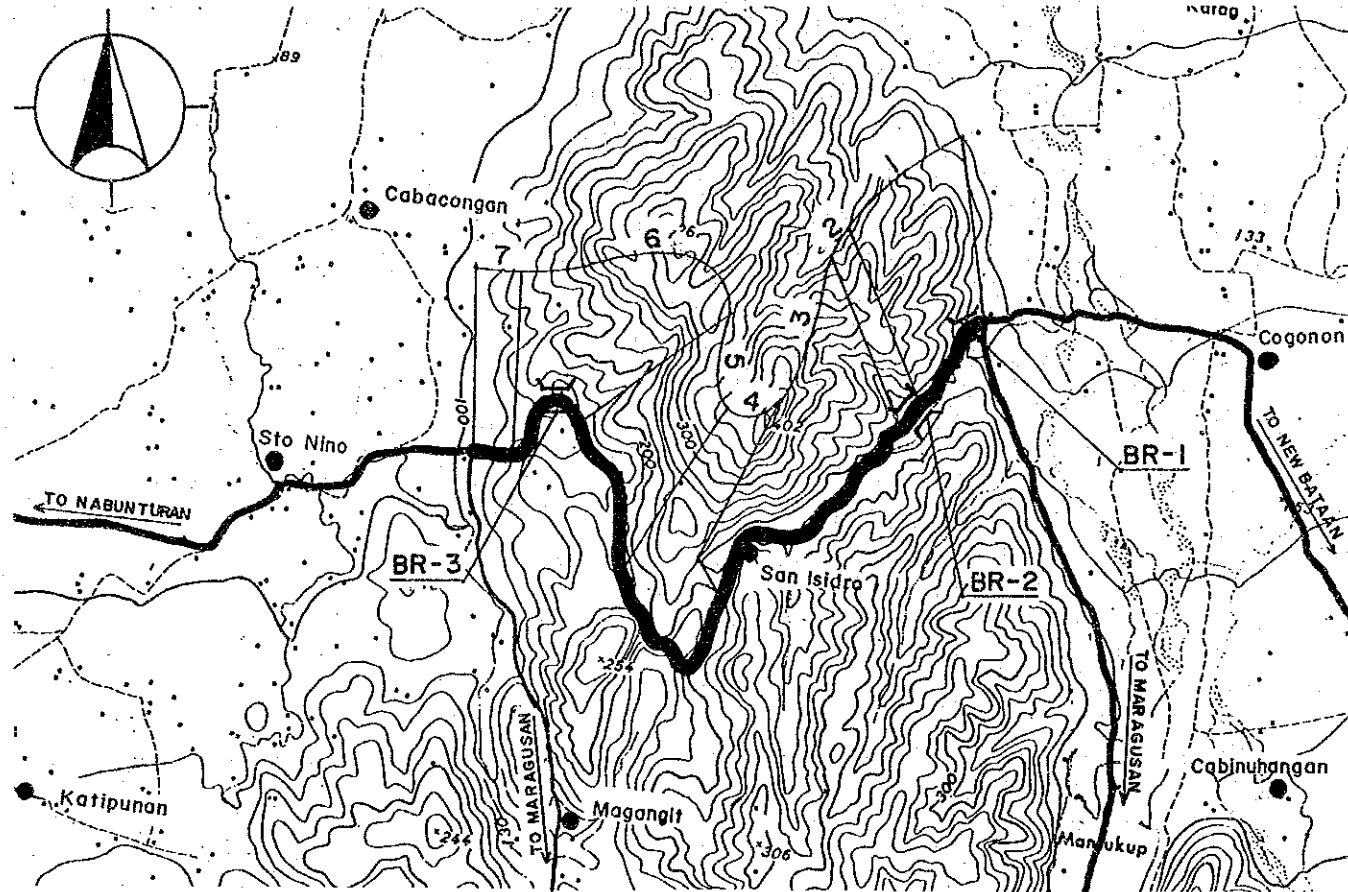
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

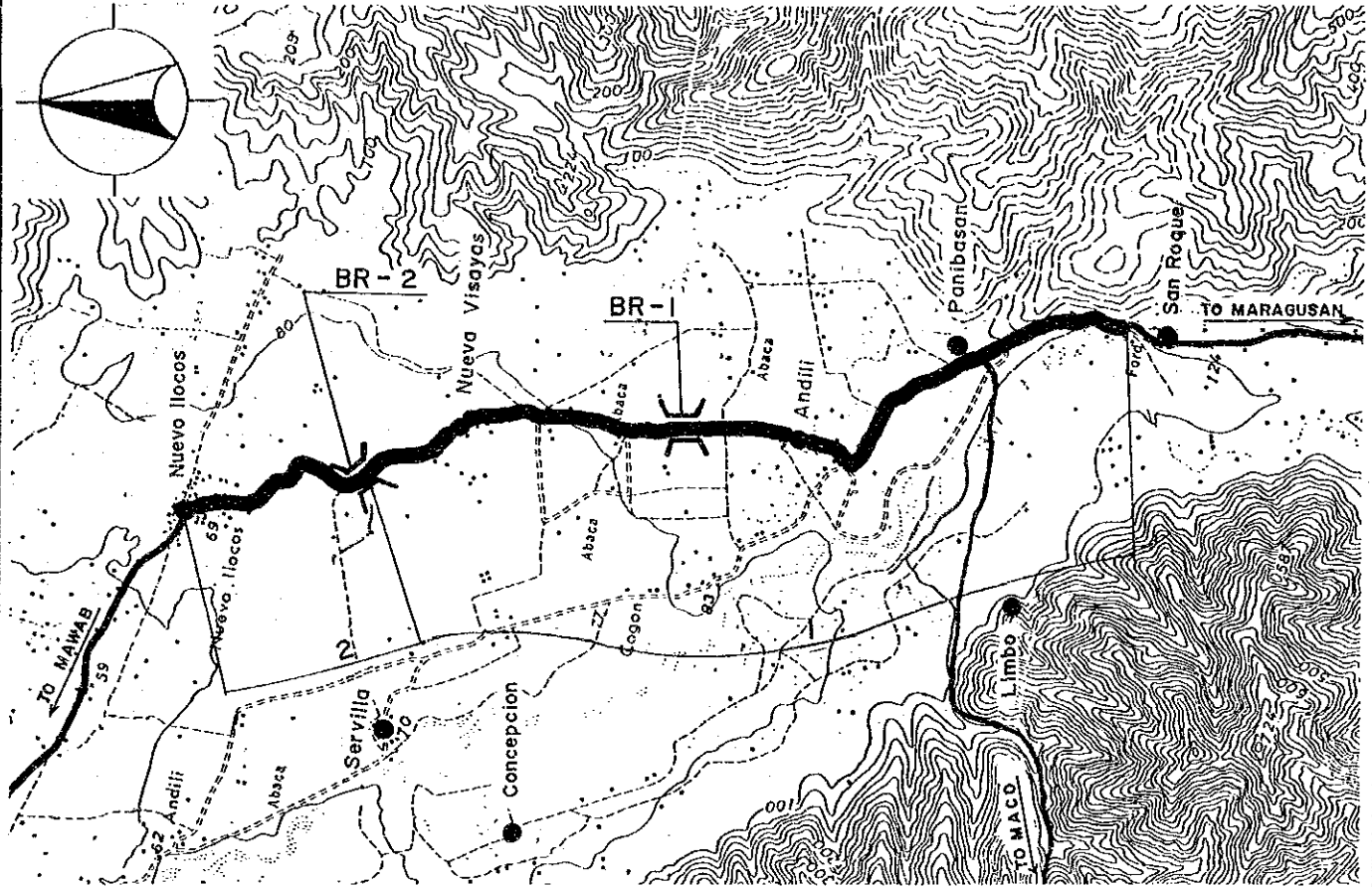
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Drawing No.
17

Road No: P88 Road Name: MAGANGIT-STO. NINO ROAD
Location : NEW BATAAN, DAVAO DEL NORTE



Road No: P89 Road Name: SAN ROQUE-NUEVA ILOCO
Location : MAWAB, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)						
Total Length	6.0 km						
Sub-section No.	1	2	3	4	5	6	7
Length (km)	.8	.1	1.7	1.3	1.0	.9	.2
Terrain	Mt'nous	Rolling	Rolling	Mt'nous	Mt'nous	Rolling	Rolling
Existing Road Surface	4.0-GRV (Fair)	4.0-GRV (Fair)	4.0-GRV (Bad)	3.6-GRV (Fair)	4.0-GRV (V.Bad)	3.4-GRV (Fair)	4.0-GRV (Bad)
Proposed Improvement	Impr.-2	Impr.-2	Impr.-1	Impr.-2	Impr.-1	Impr.-2	Impr.-1
Improvement Type	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP
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)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ref. Typical Section	TYPE 3-4	TYPE 3-4	TYPE 2-4	TYPE 3-4	TYPE 2-4	TYPE 3-4	TYPE 2-4
Special Treatment							
Steep Section Length	100	-	-	100	200	-	-
Bridge No.	BR-1	BR-2	BR-3				
Existing Type	RCBC	RCBC	Concrete				
Length (m)	5	5	14				
Proposed Type	-	-	-				
Length (m)	-	-	-				
No. of Spans	-	-	-				

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

Road Classification	Second'y Major Rd (Provincial Road)	
Total Length	7.5 km	
Sub-section No.	1	2
Length (km)	5.9	1.6
Terrain	Flat	Flat
Existing Road Surface	4.5-GRV (Bad)	4.0-GRV (Fair)
Proposed Improvement	Impr.-1	Impr.-2
Improvement Type	* BMP	* BMP
Surface Type	* BMP	* BMP
Carriageway Width(m)	6.0	6.0
Shoulder Width (m)	1.5	1.5
Ref. Typical Section	TYPE 2-4	TYPE 3-4
Bridge No.	BR-1	BR-2
Existing Type	Concrete	Timber
Length (m)	6	26
Proposed Type	2Lane-Br	2Lane-Br
Length (m)	6	26
No. of Spans	1	1

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

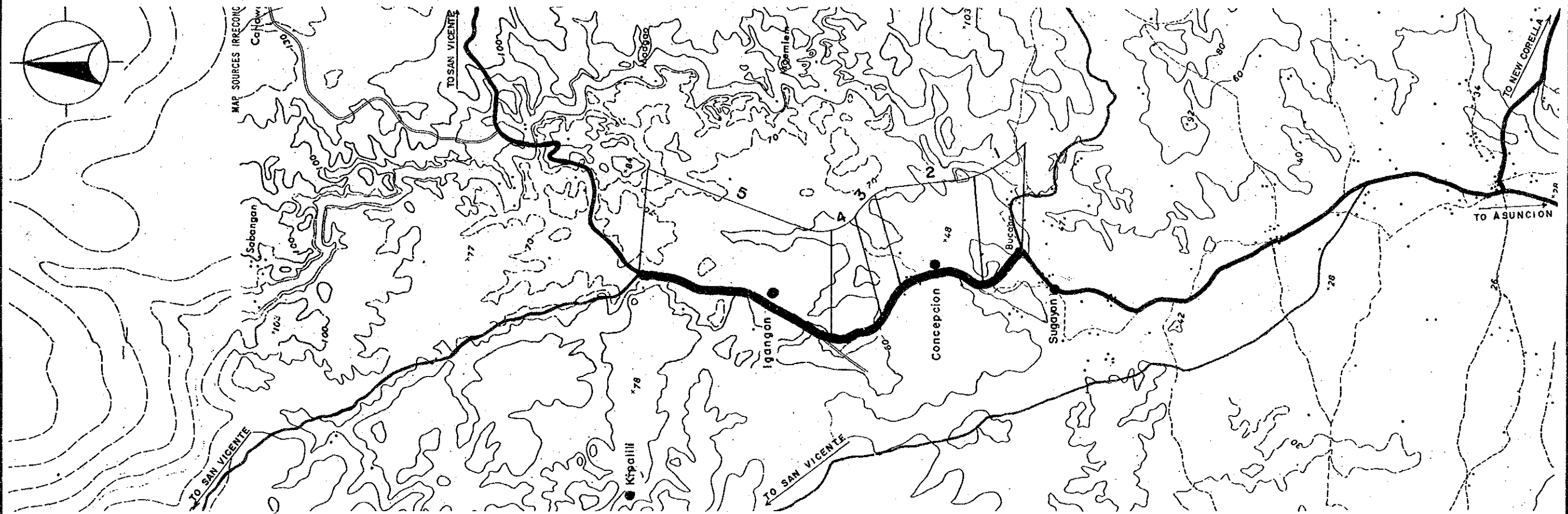
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IN THE REPUBLIC OF THE PHILIPPINES**

PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
18

Road No: P91-1 Road Name: SAGAYEN-IGANGON ROAD
Location : SAN VICENTE, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)				
Total Length	5.0 km				
Sub-section No.	1	2	3	4	5
Length (km)	.5	1.0	.4	.7	2.4
Terrain	Flat	Flat	Flat	Flat	Rolling
Existing Road Surface	4.5-GRV (Bad)	4.5-GRV (Fair)	4.5-GRV (V.Bad)	4.0-GRV (Fair)	4.5-GRV (Fair)
Proposed Improvement	Impr.-1	Impr.-2	Impr.-1	Impr.-2	Impr.-2
Improvement Type	AC	AC	AC	AC	AC
Surface Type	6.0	6.0	6.0	6.0	6.0
Carriageway Width(m)	2.0	2.0	2.0	2.0	1.5
Shoulder Width (m)	TYPE 2-3 TYPE 3-3 TYPE 2-3 TYPE 3-3 TYPE 3-3				
Ref. Typical Section					

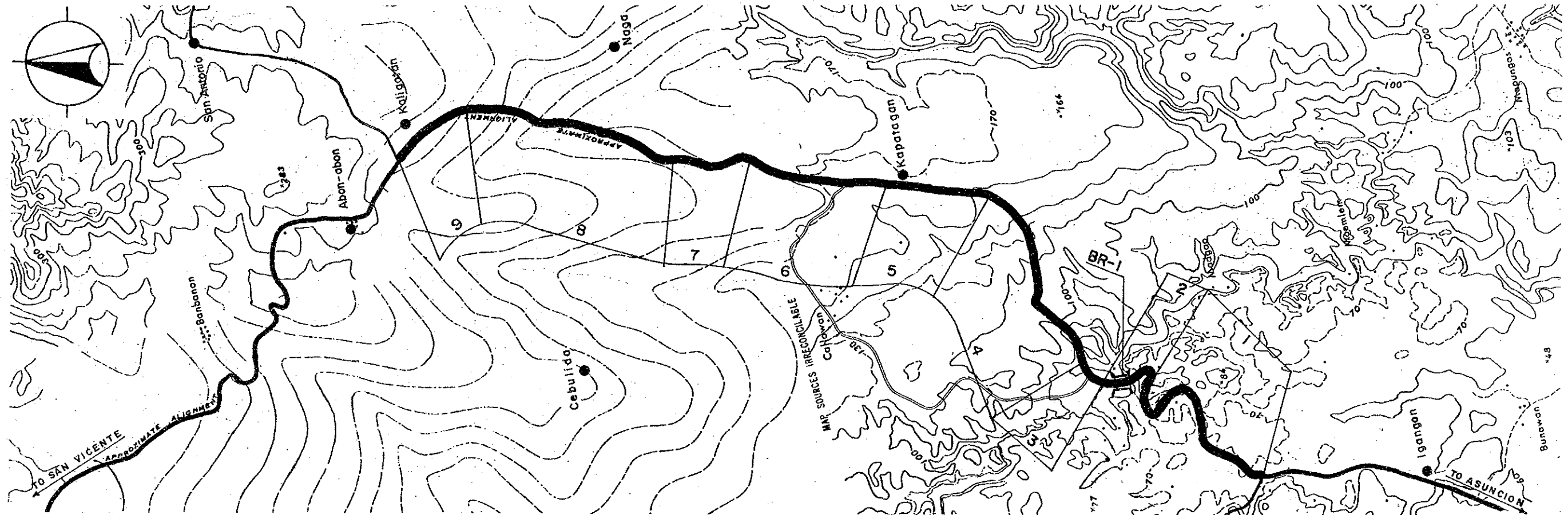
**THE FEASIBILITY STUDY ON THE RURAL ROAD NETWORK DEVELOPMENT PROJECT
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
19

Road No: P92-1 Road Name: IGANGON-SOOP-KALIGUTAN ROAD
Location: SAN VICENTE, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)								
Total Length	14.5 km								
Sub-section No.	1	2	3	4	5	6	7	8	9
Length (km)	2.6	.9	.3	2.7	1.4	1.7	.9	3.1	.9
Terrain	Rolling	Rolling	Rolling	Rolling	Flat	Flat	Rolling	Rolling	Flat
Existing Road Surface	4.5-GRV (Fair)	4.5-GRV (Bad)	4.5-GRV (Bad)	4.0-GRV (Bad)	3.6-GRV (Fair)	4.5-GRV (Bad)	4.5-GRV (Bad)	4.0-GRV (Bad)	4.5-GRV (Bad)
Proposed Improvement	Impr.-2	Impr.-1	Impr.-1	Impr.-1	Impr.-2	Impr.-1	Impr.-1	Impr.-1	Impr.-1
Improvement Type	AC	AC	AC	AC	AC	AC	AC	AC	AC
Surface Type	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Carriageway Width(m)	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.5	2.0
Shoulder Width (m)	TYPE 3-3	TYPE 2-3	TYPE 2-3	TYPE 2-3	TYPE 3-3	TYPE 2-3	TYPE 2-3	TYPE 2-3	TYPE 2-3
Ref. Typical Section	-	200	-	100	-	-	100	-	-
Special Treatment									
Steep Section Length									
Bridge No.	BR-1								
Existing Type	Concrete								
Length (m)	60								
Proposed Type	-								
Length (m)	-								
No. of Spans	-								

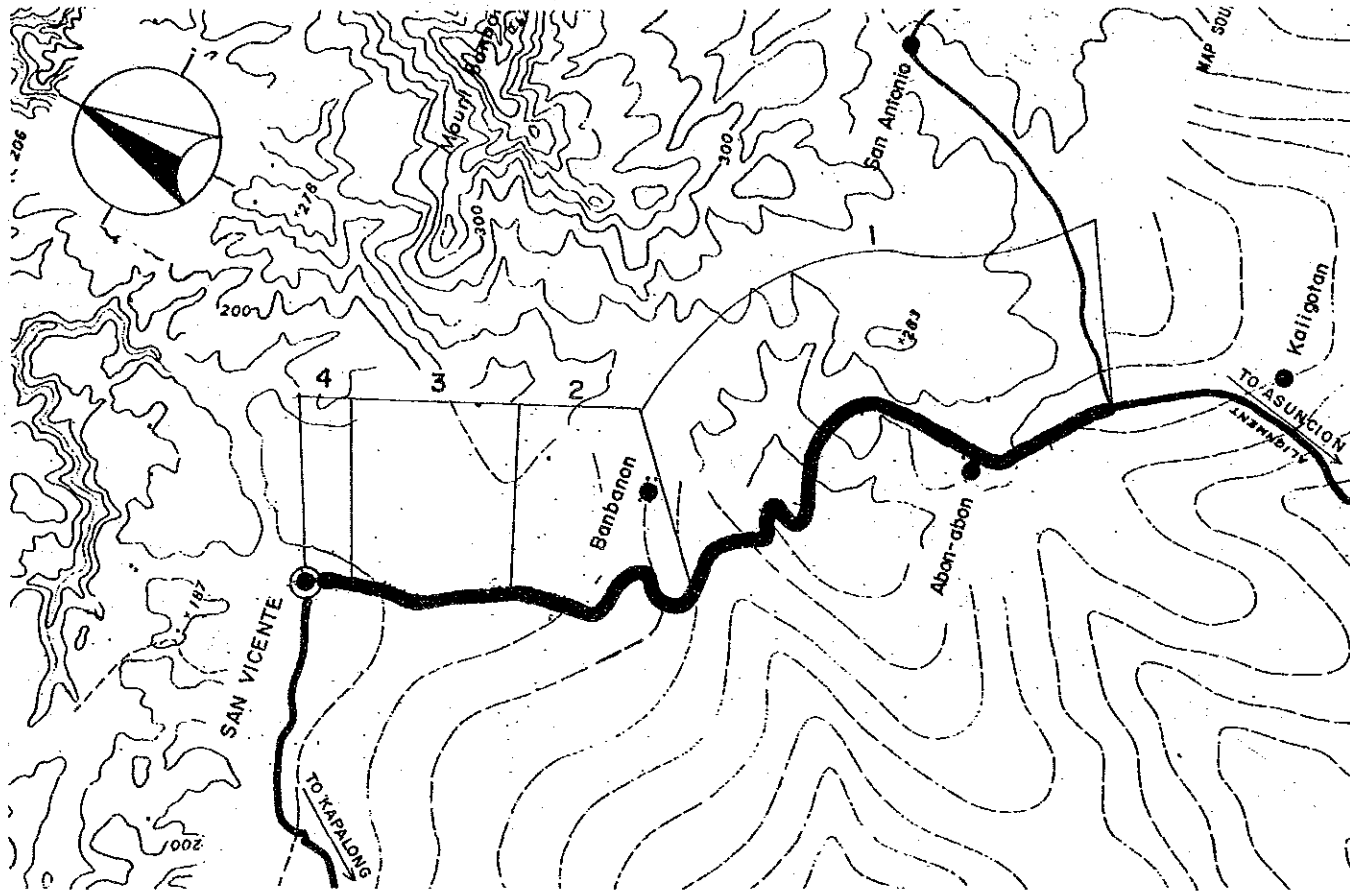
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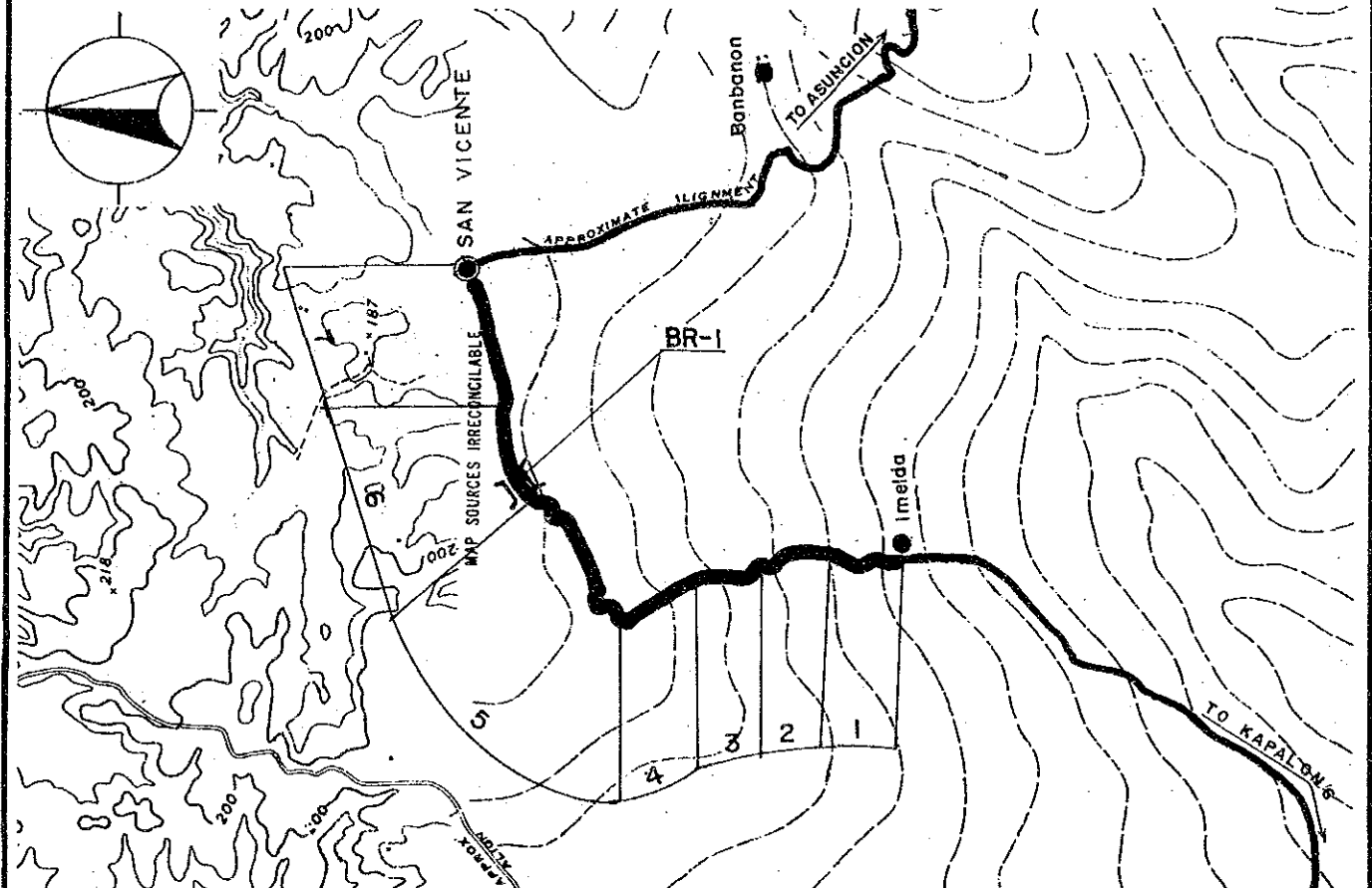
Drawing No.
20

Road No: P92-2 Road Name: KALIGUTAN-SAN VICENTE ROAD
Location : SAN VICENTE, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)			
Total Length	7.4 km			
Sub-section No.	1	2	3	4
Length (km)	4.0	1.7	1.4	.3
Terrain	Rolling	Rolling	Rolling	Rolling
Existing Road Surface	4.5-GRV (Fair)	4.0-GRV (Bad)	3.2-GRV (Bad)	4.5-GRV (Good)
Proposed Improvement	Impr.-2	Impr.-1	Impr.-1	Impr.-2
Improvement Type	AC	AC	AC	AC
Surface Type	6.0	6.0	6.0	6.0
Carriageway Width(m)	1.5	1.5	1.5	1.5
Shoulder Width (m)	TYPE 3-3	TYPE 2-3	TYPE 2-3	TYPE 3-3
Ref. Typical Section				
Special Treatment				
Steep Section Length	200	510	-	-

Road No: P93-1 Road Name: SAN VICENTE-IMELDA ROAD
Location : SAN VICENTE, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)						
Total Length	5.0 km						
Sub-section No.	1	2	3	4	5	6	7
Length (km)	.4	.5	.5	.6	1.2	.7	1.1
Terrain	Rolling	Rolling	Rolling	Rolling	Rolling	Mt'nous	Rolling
Existing Road Surface	4.0-GRV (Bad)	4.0-GRV (Bad)	3.6-GRV (V.Bad)	3.2-GRV (V.Bad)	3.8-GRV (Fair)	4.0-EAR (Bad)	4.8-GRV (Fair)
Proposed Improvement	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Widening	Impr.-1	Widening
Improvement Type	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel	Gravel
Surface Type	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Carriageway Width(m)	.5	.5	.5	.5	.5	.5	.5
Shoulder Width (m)	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 4-4	TYPE 2-8	TYPE 4-4
Ref. Typical Section							
Special Treatment							
Steep Section Length	-	-	-	-	-	210	-
Bridge No.	BR-1						
Existing Type	Bailey						
Length (m)	19						
Proposed Type	2Lane-Br						
Length (m)	20						
No. of Spans	1						

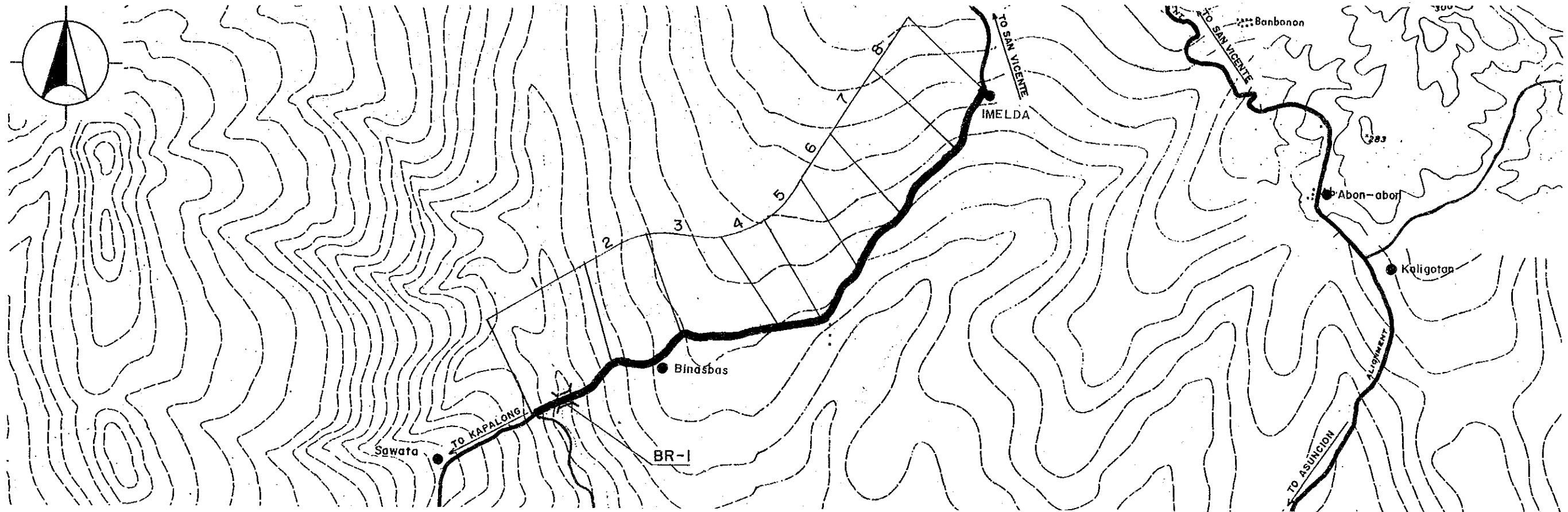
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
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Drawing No.
21

Road No: P93-2 Road Name: JCT. IMELDA-SAWATA ROAD
Location : SAN VICENTE & KAPALONG, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)							
Total Length	7.9 km							
Sub-section No.	1	2	3	4	5	6	7	8
Length (km)	1.0	1.1	1.6	.5	.8	.8	1.2	.9
Terrain	Rolling	Rolling	Rolling	Rolling	Rolling	Rolling	Rolling	Rolling
Existing Road Surface	3.7-GRV (V.Bad)	4.0-GRV (Bad)	4.5-GRV (V.Bad)	3.4-GRV (V.Bad)	4.0-GRV (V.Bad)	4.3-GRV (Bad)	3.7-EAR (Bad)	4.0-EAR (Bad)
Proposed Improvement	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Impr.-1	Impr.-1
Improvement Type	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Rehabil.	Impr.-1	Impr.-1
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	.5	.5	.5	.5	.5	.5
Ref. Typical Section	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 1-6	TYPE 2-8	TYPE 2-8
Special Treatment								
Steep Section Length	200	-	-	150	-	-	100	-
Bridge No.	BR-1							
Existing Type	Timber							
Length (m)	42							
Proposed Type	2Lane-Br							
Length (m)	40							
No. of Spans	2							

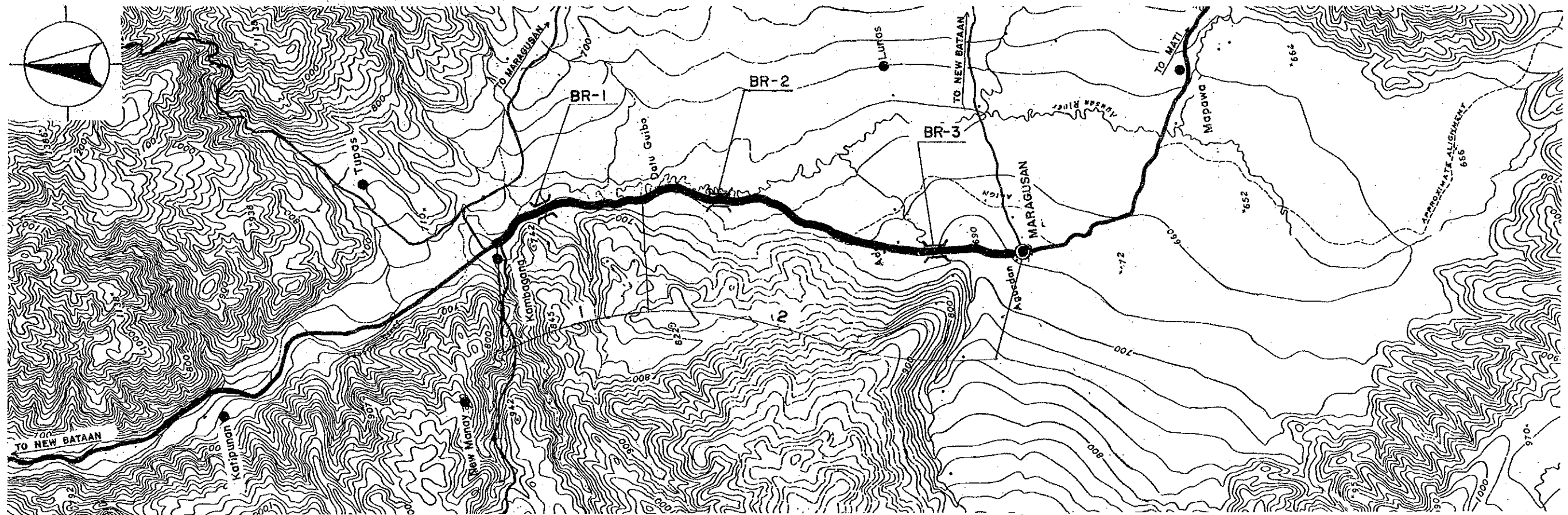
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
22

Road No: P96-1 Road Name: KAMBASANG-MARAGUSAN ROAD
Location : MARAGUSAN, DAVAO DEL NORTE



Road Classification	Second'y Major(Prov'l Road)		
Total Length	7.2 km		
Sub-section No.	1	2	
Length (km)	2.2	5.0	
Terrain	Rolling	Rolling	
Existing Road Surface	4.5-GRV (Bad)	4.0-GRV (Bad)	
Proposed Improvement	Impr.-1 Impr.-1		
Improvement Type	Impr.-1 Impr.-1		
Surface Type	AC	AC	
Carriageway Width(m)	6.0	6.0	
Shoulder Width (m)	1.5	1.5	
Ref. Typical Section	TYPE 2-3	TYPE 2-3	
Special Treatment	-		
Steep Section Length	-	100	
Bridge No.	BR-1	BR-2	BR-3
Existing Type	Bailey	Bailey	Bailey
Length (m)	15	15	12
Proposed Type	2Lane-Br	2Lane-Br	2Lane-Br
Length (m)	15	16	12
No. of Spans	1	1	1

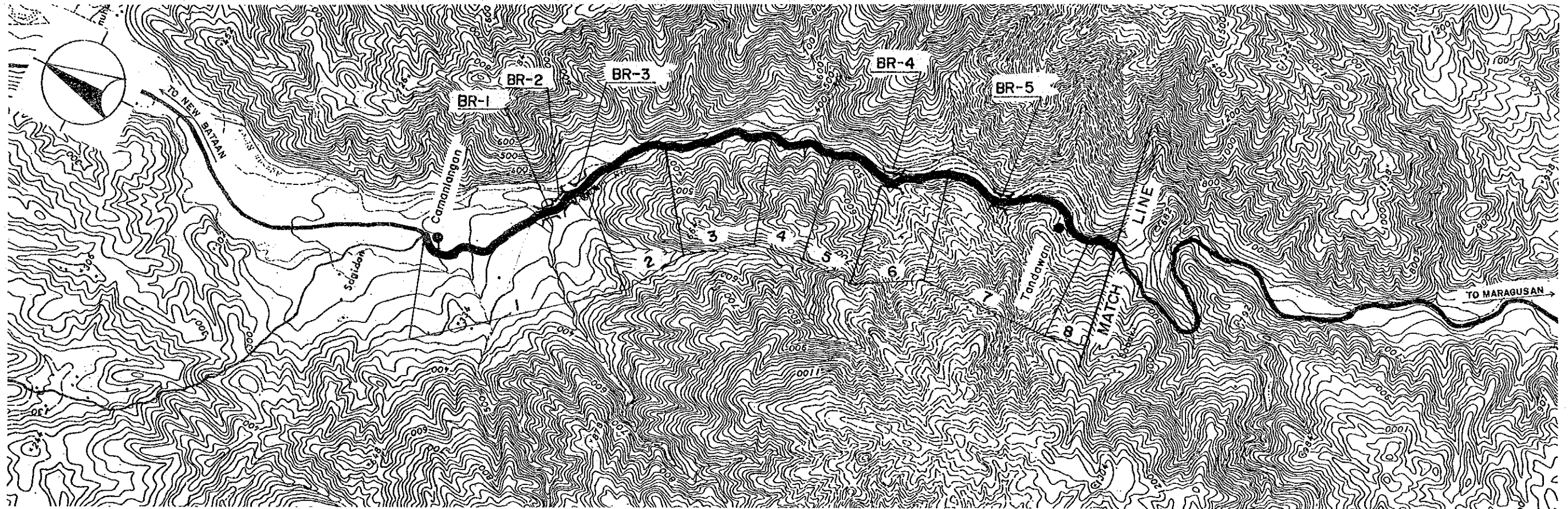
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

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1:50,000

Drawing No.
23

Road No: P96-2 Road Name: CAMANLANGAN-MARAGUSAN ROAD
Location: NEW BATAAN & MARAGUSAN, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)							
Total Length	20.1 km							
Sub-section No.	1	2	3	4	5	6	7	8
Length (km)	2.2	1.0	1.6	.9	.7	.9	2.4	.5
Terrain	Rolling	Mt'nous	Mt'nous	Mt'nous	Mt'nous	Mt'nous	Mt'nous	Mt'nous
Existing Road Surface	4.6-GRV (V.Bad)	5.0-GRV (Bad)	4.5-GRV (V.Bad)	4.0-GRV (Bad)	4.5-GRV (V.Bad)	4.0-GRV (Bad)	4.0-GRV (V.Bad)	4.5-GRV (V.Bad)
Proposed Improvement Type	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-1
Surface Type	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP	* BMP
Carriageway Width(m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Shoulder Width (m)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ref. Typical Section	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4
Special Treatment								
Steep Section Length	-	-	-	-	-	-	-	-
Bridge No.	BR-1	BR-2	BR-3	BR-4	BR-5			
Existing Type	RCBC	RCBC	RCBC	Ford-Cr.	Ford-Cr.			
Length (m)	8	5	5	-	-			
Proposed Type	-	-	-	2Lane-Br	2cell-BC			
Length (m)	-	-	-	15	10			
No. of Spans	-	-	-	1	2			

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

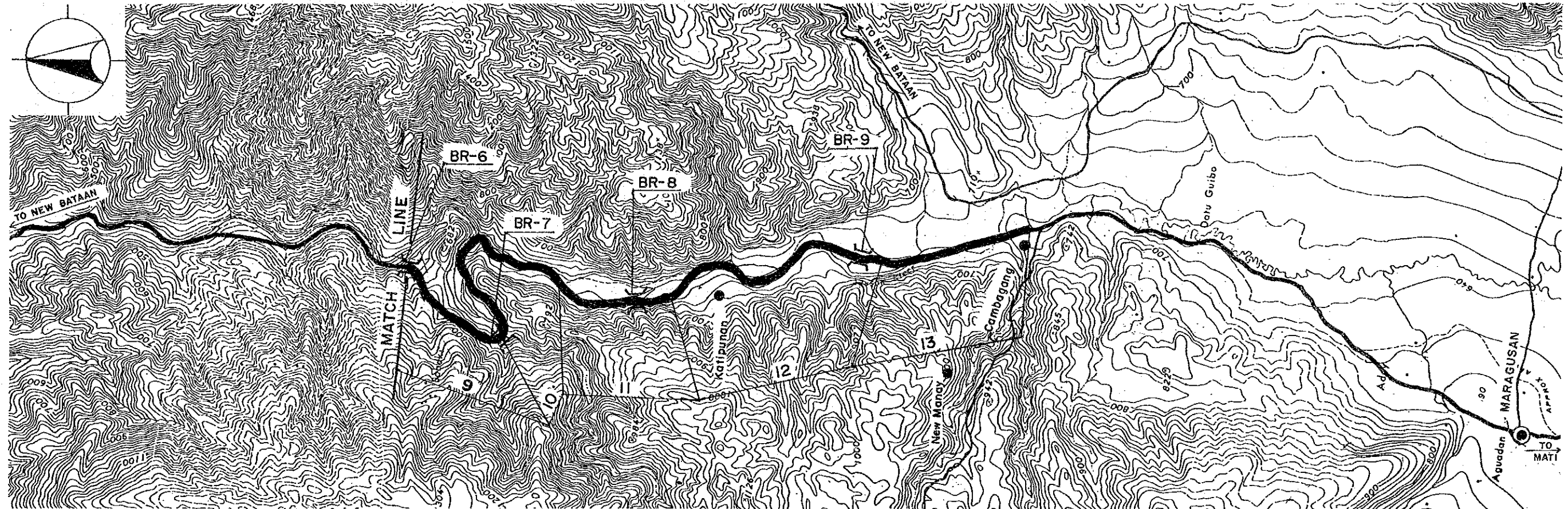
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
24

Road No: P96-2 Road Name: CAMANLANGAN-MARAGUSAN ROAD
Location: NEW BATAAN & MARAGUSAN, DAVAO DEL NORTE



Road Classification					
Total Length					
Sub-section No.	9	10	11	12	13
Length (km)	1.6	2.0	1.6	2.8	1.9
Terrain	Mt'nous	Mt'nous	Rolling	Mt'nous	Rolling
Existing Road Surface	4.0-GRV (Bad)	3.2-GRV (V.Bad)	4.0-GRV (V.Bad)	4.0-GRV (Bad)	3.2-GRV (Bad)
Proposed Improvement	Impr.-1	Impr.-1	Impr.-1	Impr.-1	Impr.-1
Improvement Type					
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 2-4	TYPE 2-4
Special Treatment					
Steep Section Length	-	-	300	-	400
Bridge No.	BR-6	BR-7	BR-8	BR-9	
Existing Type	Ford-Cr.	Timber	Ford-Cr.	RCBC	
Length (m)	-	15	-	7	
Proposed Type	2cell-BC	2Lane-Br	2cell-BC	2Lane-Br	
Length (m)	10	20	10	10	
No. of Spans	2	1	2	1	

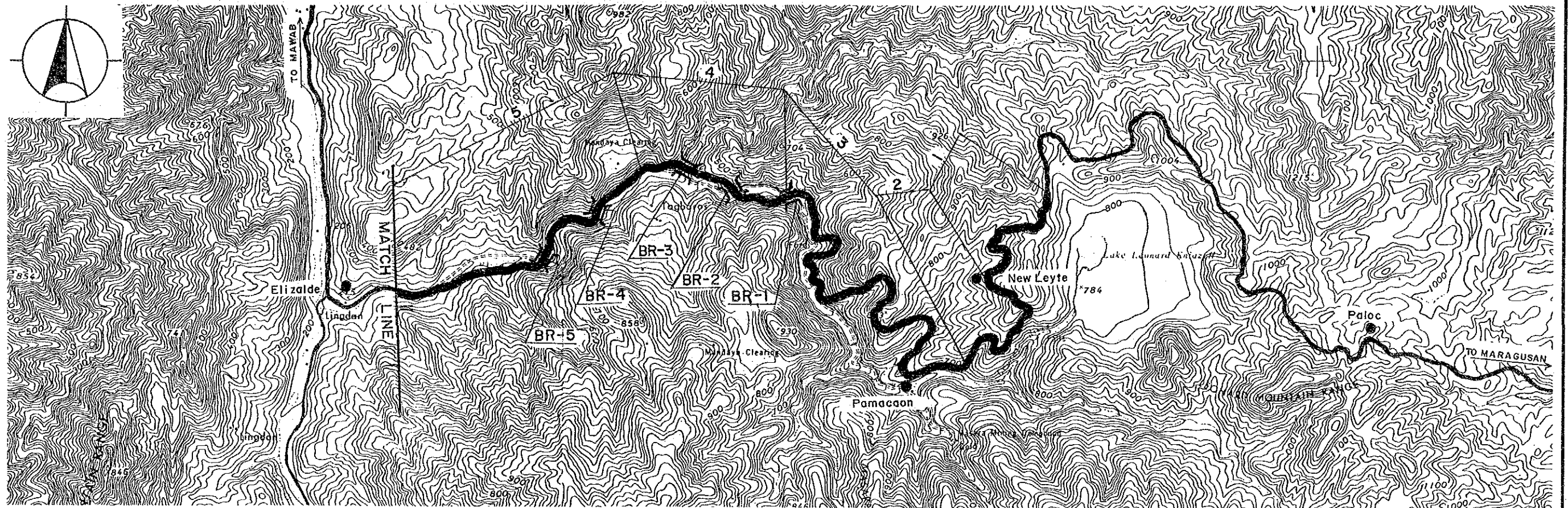
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

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Drawing No.
25

Road No: P103 Road Name: SAN ROQUE-NEW LEYTE ROAD
Location: MAWAB & MACO, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)				
Total Length	24.0 km				
Sub-section No.	1	2	3	4	5
Length (km)	2.0	3.0	6.3	2.5	3.5
Terrain	Mt'nous	Rolling	Mt'nous	Mt'nous	Rolling
Existing Road Surface	5.5-GRV (Fair)	5.0-GRV (Fair)	4.5-GRV (Fair)	4.0-GRV (Bad)	4.5-GRV (Fair)
Proposed Improvement	Impr.-2	Impr.-2	Impr.-2	Impr.-1	Impr.-2
Improvement Type	* BMP	* BMP	* BMP	* BMP	* BMP
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 3-4	TYPE 3-4	TYPE 3-4	TYPE 2-4	TYPE 3-4
Special Treatment					
Steep Section Length	100	300	-	-	-
Bridge No:	BR-1	BR-2	BR-3	BR-4	BR-5
Existing Type	Timber	Concrete	Concrete	Timber	Timber
Length (m)	19	16	14	19	12
Proposed Type	2Lane-Br	2Lane-Br	-	2Lane-Br	2Lane-Br
Length (m)	20	18	-	20	10
No. of Spans	1	1	-	1	1

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

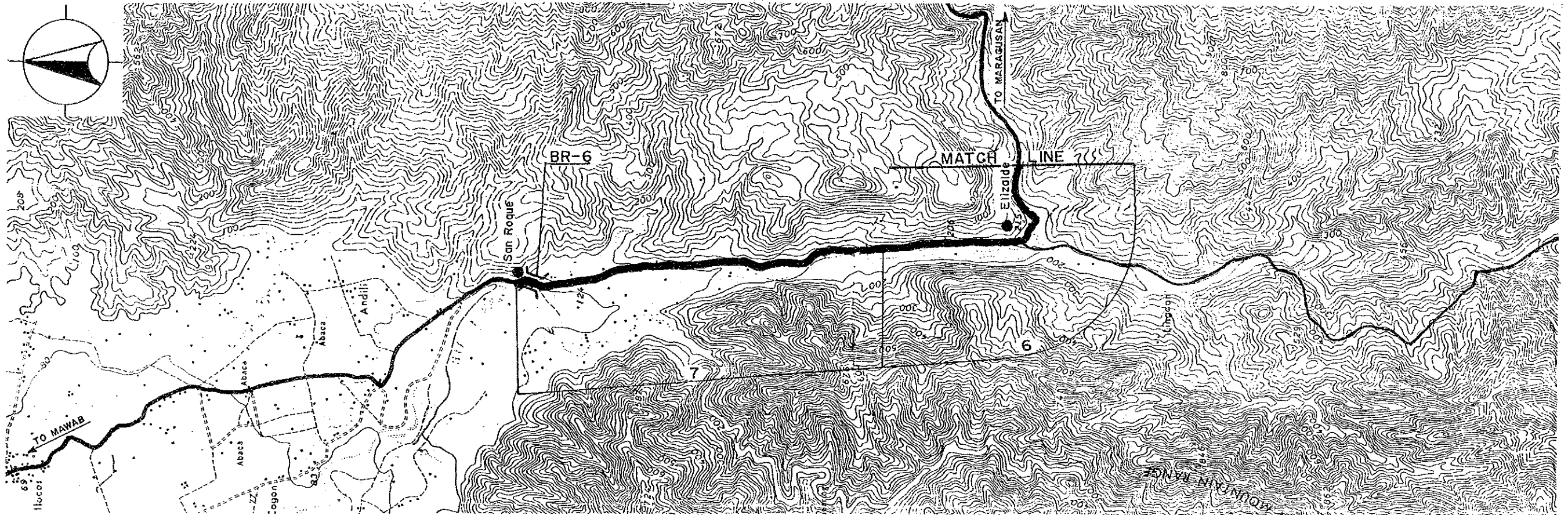
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
26

Road No: P103 Road Name: SAN ROQUE-NEW LEYTE ROAD
Location : MAWAB & MACO, DAVAO DEL NORTE



Road Classification		
Total Length		
Sub-section No.	6	7
Length (km)	2.5	4.2
Terrain	Rolling	Flat
Existing Road Surface	4.0-GRV (Bad)	4.5-GRV (Fair)
Proposed Improvement		
Improvement Type	Impr.-1	Impr.-2
Surface Type	* BMP	* BMP
Carriageway Width(m)	6.0	6.0
Shoulder Width (m)	1.0	1.5
Ref. Typical Section	TYPE 2-4	TYPE 3-4
Special Treatment		
Steep Section Length	-	-
Bridge No.	BR-6	
Existing Type	Concrete	
Length (m)	13	
Proposed Type	-	
Length (m)	-	
No. of Spans	-	

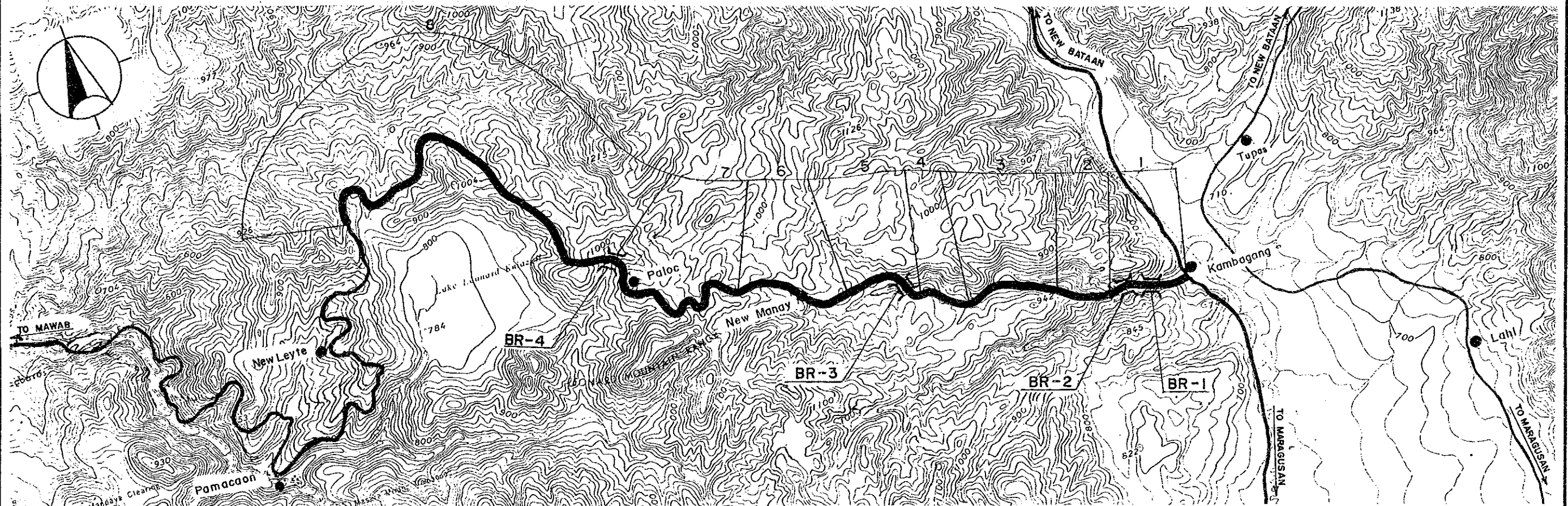
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PRESENT CONDITION AND PROPOSED IMPROVEMENT

Scale
1:50,000

Drawing No.
27

Road No: P104 Road Name: MARAGUSAN-NEW LEYTE ROAD
Location: MARAGUSAN, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)							
Total Length	13.5 km							
Sub-section No.	1	2	3	4	5	6	7	8
Length (km)	.9	.8	1.1	.7	1.1	1.4	1.8	5.7
Terrain	Rolling	Mt'nous	Mt'nous	Rolling	Mt'nous	Mt'nous	Mt'nous	Mt'nous
Existing Road Surface	2.4-GRV (V.Bad)	2.8-GRV (V.Bad)	2.4-GRV (Bad)	1.6-GRV (V.Bad)	2.8-GRV (V.Bad)	3.2-GRV (Bad)	3.5-GRV (V.Bad)	4.0-GRV (Bad)
Proposed Improvement	Impr.-1							
Improvement Type	* BMP							
Surface Type	* BMP							
Carriageway Width(m)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Shoulder Width (m)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Ref. Typical Section	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 2-4
Special Treatment								
Steep Section Length	-	100	-	210	200	-	500	-
Slope Protection (Cut Slope)	-	-	-	100	-	-	-	-
Bridge No.	BR-1	BR-2	BR-3	BR-4				
Existing Type	Bailey	Ford-Cr.	Bailey	Bailey				
Length (m)	12	-	30	12				
Proposed Type	2Lane-Br	2Lane-Br	2Lane-Br	2Lane-Br				
Length (m)	13	10	30	13				
No. of Spans	1	1	2	1				

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

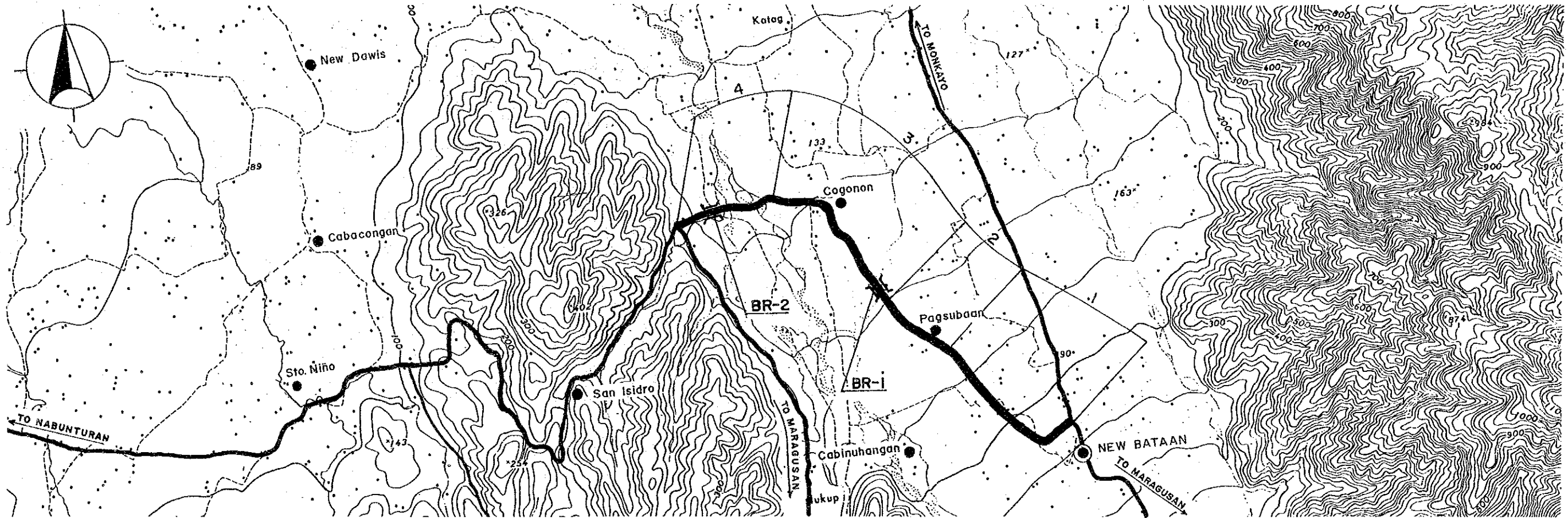
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Drawing No.
28

Road No: P109 Road Name: NEW BATAAN-MAGANGIT ROAD
Location: NEW BATAAN, DAVAO DEL NORTE



Road Classification	Secondary Major (Provincial Road)			
Total Length	5.6 km			
Sub-section No.	1	2	3	4
Length (km)	2.3	.6	1.8	.9
Terrain	Flat	Flat	Flat	Rolling
Existing Road Surface	4.9-GRV (Bad)	4.1-GRV (Bad)	4.0-GRV (Bad)	4.0-GRV (Fair)
Proposed Improvement	Impr.-1	Impr.-1	Impr.-1	Impr.-2
Improvement Type				
Surface Type	* BMP	* BMP	* BMP	* BMP
Carriageway Width (m)	6.0	6.0	6.0	6.0
Shoulder Width (m)	1.5	1.5	1.5	1.0
Ref. Typical Section	TYPE 2-4	TYPE 2-4	TYPE 2-4	TYPE 3-4
Special Treatment				
Flood Section Length	-	-	1500	-
Height	-	-	1.0	-
Bridge No.	BR-1	BR-2		
Existing Type	Concrete	Concrete		
Length (m)	22	165		
Proposed Type	-	-		
Length (m)	-	-		
No. of Spans	-	-		

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