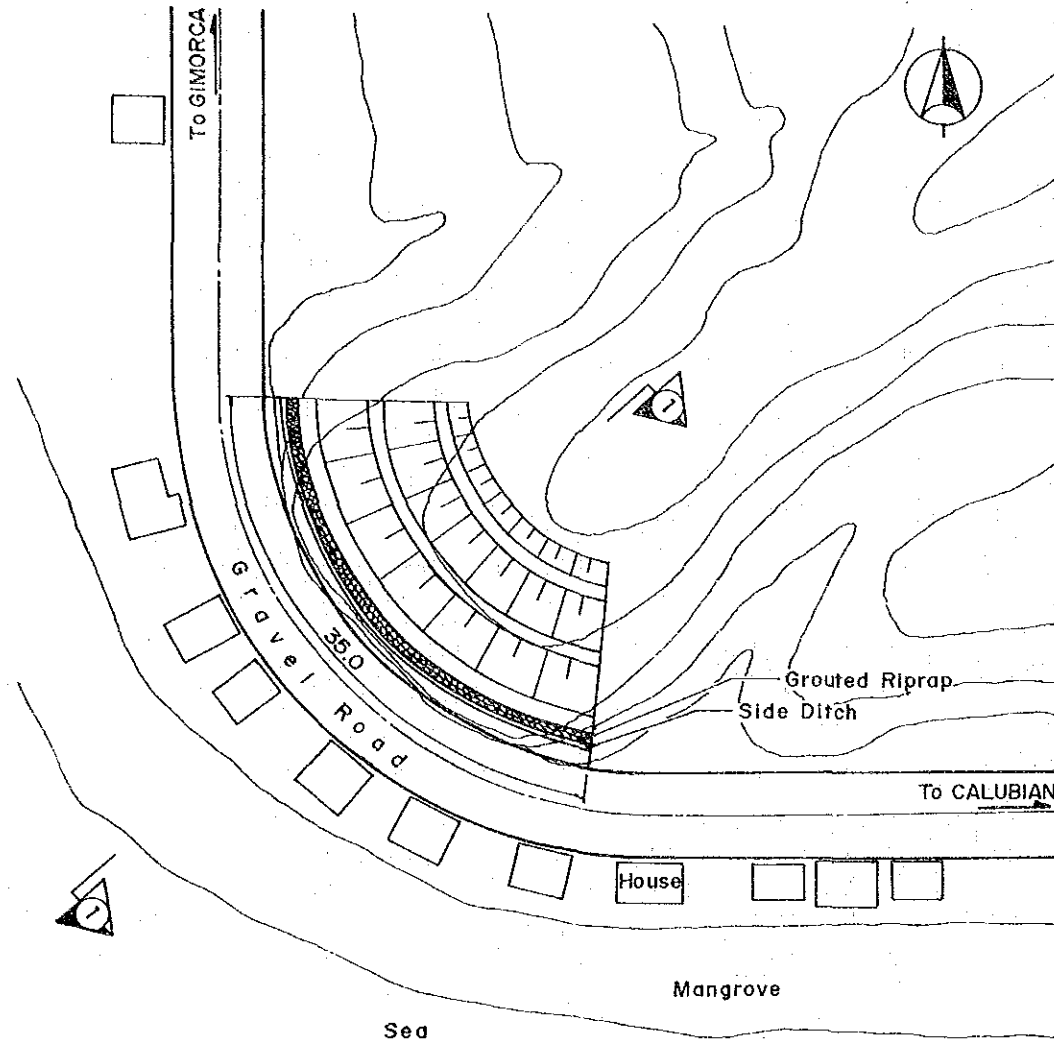


PROVINCE : LEYTE
 SPOT No. : L-21(2/2)

NAME OF ROAD : GIMORCA - CALUBIAN ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : ROCK FALL / DEBRIS FALL

DRAWING NO.
 136



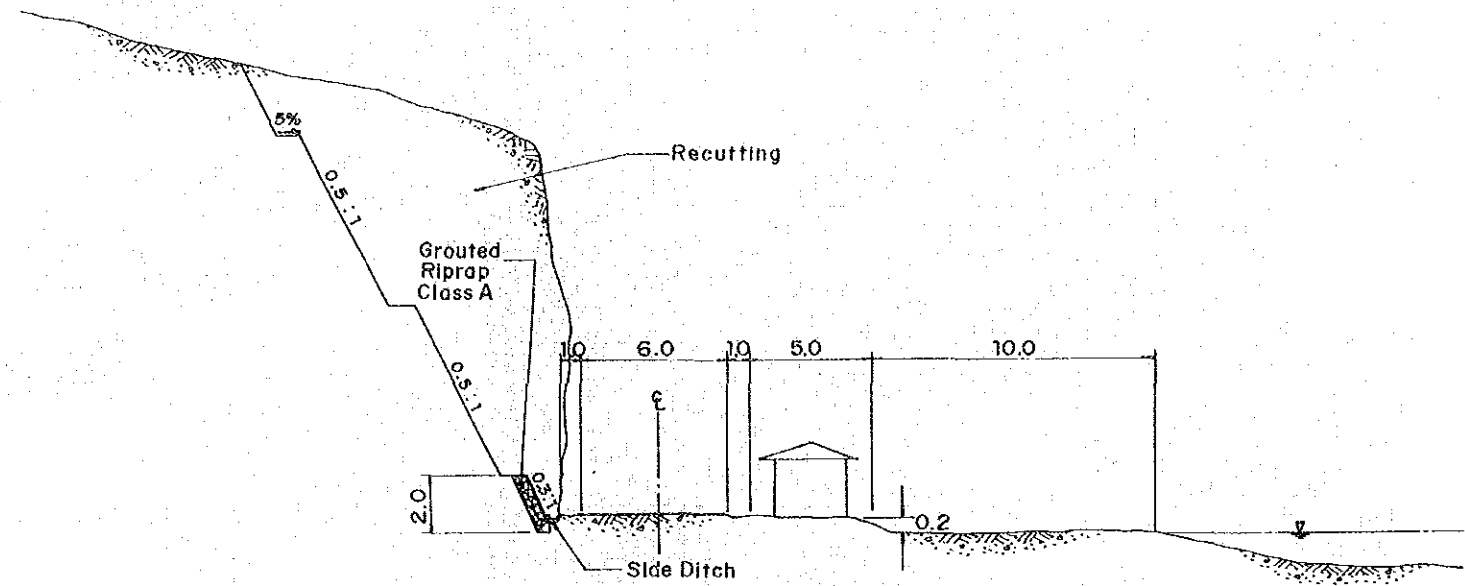
SCALE: 1:500

SUMMARY OF QUANTITY

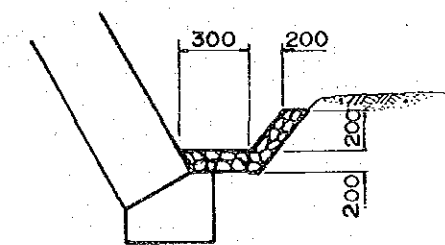
TYPE OF WORK		UNIT	TOTAL
PERMANENT RESTORATION			
PI-1	RECUITING	CU.M.	2000
P2-2	SIDE DITCH	L.M.	35
P6-2	GROUTED RIPRAP	CU.M.	24
URGENT RESTORATION			
UI-1	REMOVAL OF DEPOSIT MATERIALS	CU.M.	10
UI-2	REMOVAL OF UNSTABLE MATERIALS	CU.M.	4

URGENT RESTORATION:

- Removal of deposit materials
- Removal of unstable materials



CROSS SECTION ①-①
 SCALE: 1:300



DETAIL OF SIDE DITCH
 SCALE: 1:50

PROVINCE : **LEYTE**
SPOT No. : **L-23 (1/2)**

NAME OF ROAD : **TABANGO - SAN ISIDRO ROAD**
ROAD CLASSIFICATION : **NATIONAL SECONDARY ROAD**

TYPE OF DISASTER : **FLOODED/MUDDY ROAD SURFACE**

DRAWING NO.

137

Leyte Spot No. 23 (L-23)

1) General Situation

- Disaster Classification: FM-Rd.
- Road Name: Tabango - San Isidro Road
- Location : 5+400 km. from Tabango Proper

- Road Class/Office Concerned: National Secondary Road/Leyte 2nd Engineering District

- Municipalities/Barangays connected: Tabango & San Isidro

- Road Width: 9.0m
- Pavement Type: Gravel
- Surface Condition: Good
- Availability of Detour: None

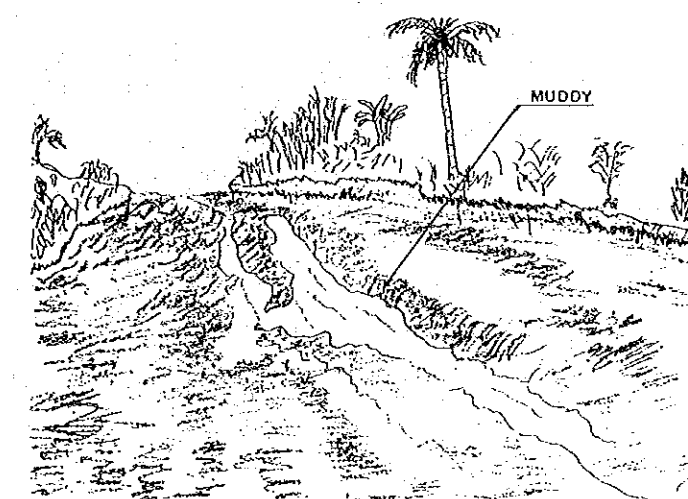
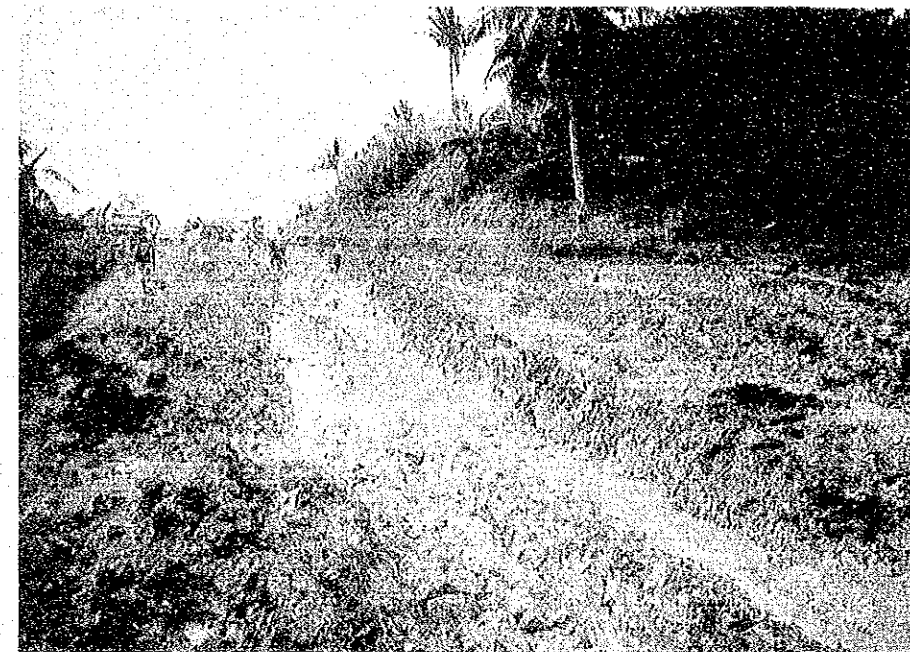
2) Damage Identified

- Type of Disaster: Flooding and Muddy Road
- Magnitude of Damage: 100m flooded section
- Date Noticed: Every heavy rain
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

Total length of the flooded section is about 100m. Once flooded, the section remains muddy for 2-3 days and not advisable for vehicles to pass.

3) Causes of Damage

During heavy rain this section is flooding and muddy due to absence of cross drainage & side ditches that caused water to concentrate on embankment/surface materials.



PROVINCE : LEYTE
SPOT No. : L-26 (1/2)

NAME OF ROAD : CABUGCAYAN - BILIRAN ROAD
ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : FLOODED/MUDDY ROAD SURFACE

DRAWING NO.
139

Leyte Spot No. 26 (L-26)

1) General Situation

- Disaster Classification: FM-Rd.
- Road Name: Cabugcayan - Biliran Road
- Location : 1+000 km. from Cabugcayan Proper
- Road Class/Office Concerned: National Secondary Road/Biliran Engineering District
- Municipalities/Barangays connected: Cabugcayan and Biliran
- Road Width: 9.0m
- Pavement Type: Gravel
- Surface Condition: Fair
- Availability of Detour: None

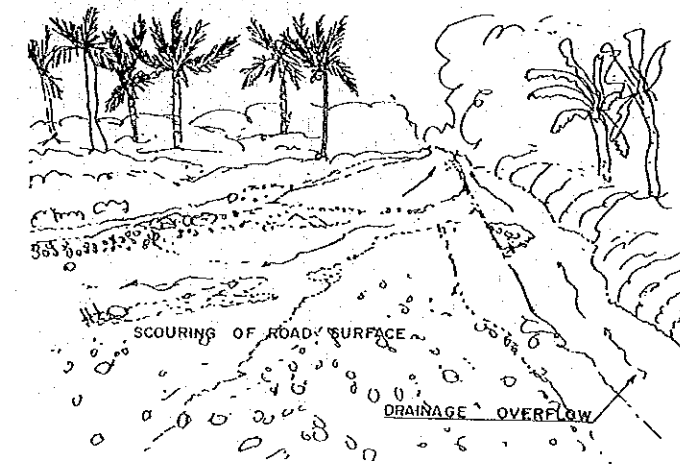
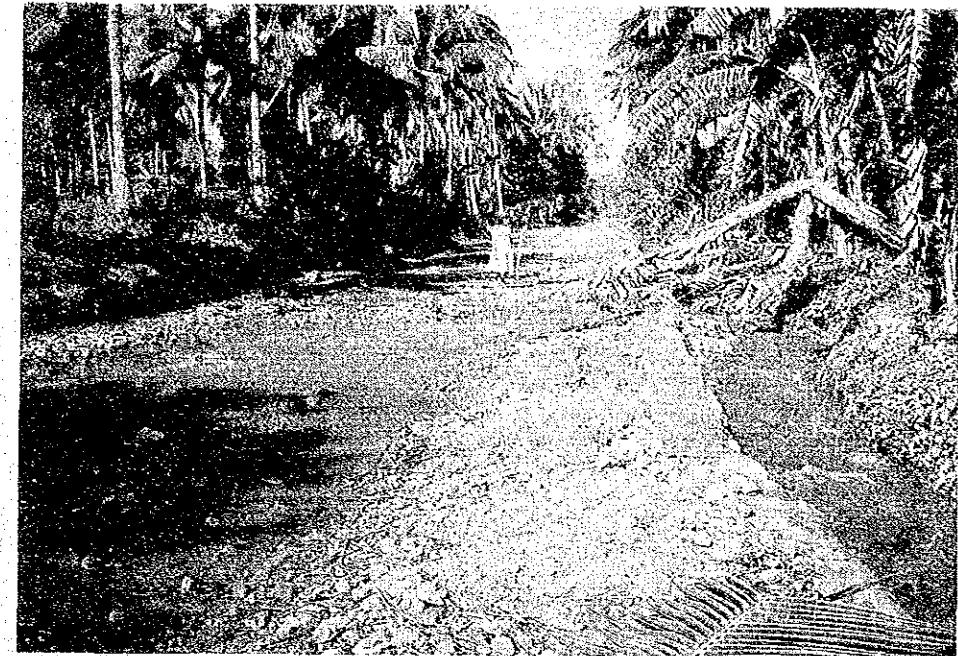
2) Damage Identified

- Type of Disaster: Flooding and Muddy Road
- Magnitude of Damage: 120.0m length of flooded section
- Date Noticed: Every heavy rain
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

The section is located at a lower elevation than abutting land. Every heavy rain the road is flooded at about 120.0m length and 0.50m depth from the road surface. Existing RCP of .910m² and 0.610m² were not sufficient to accomodate the water that comes from the mountain side.

3) Causes of Damage

- Lower elevation of the road than abutting land and insufficient drainage facilities that causes the road to be flooded and muddy during heavy rain.

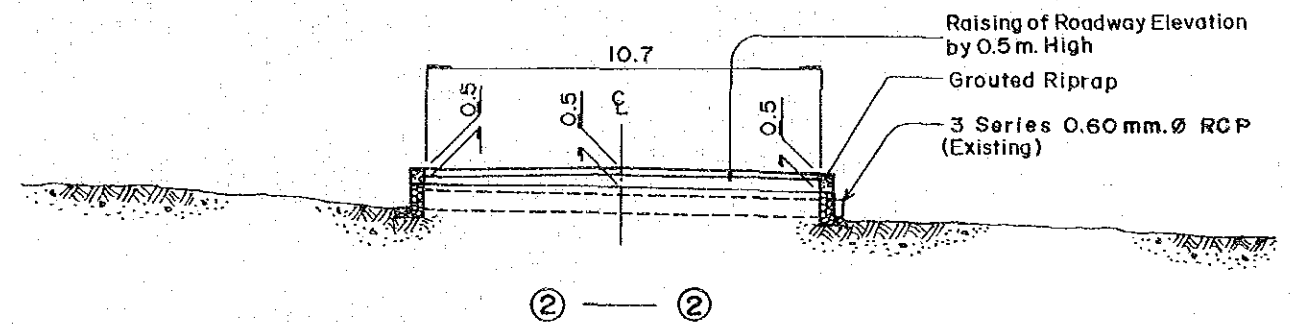
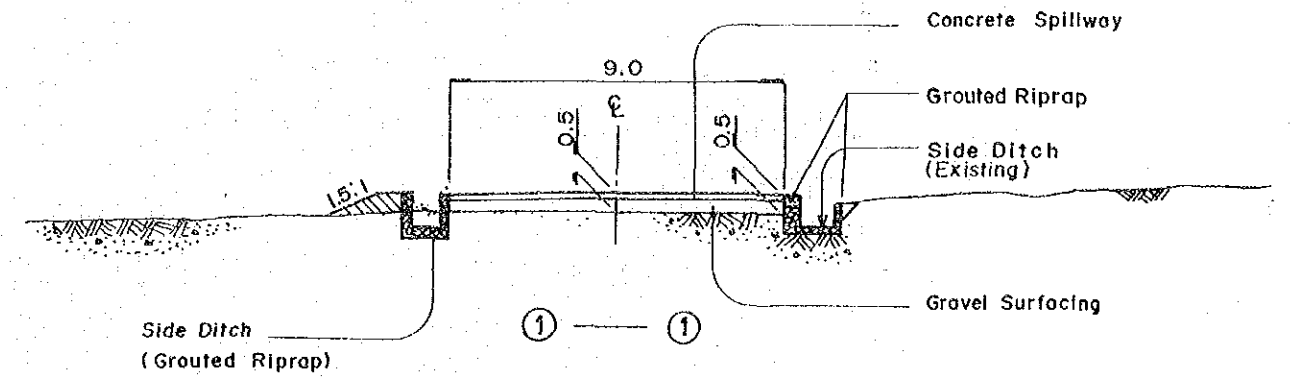
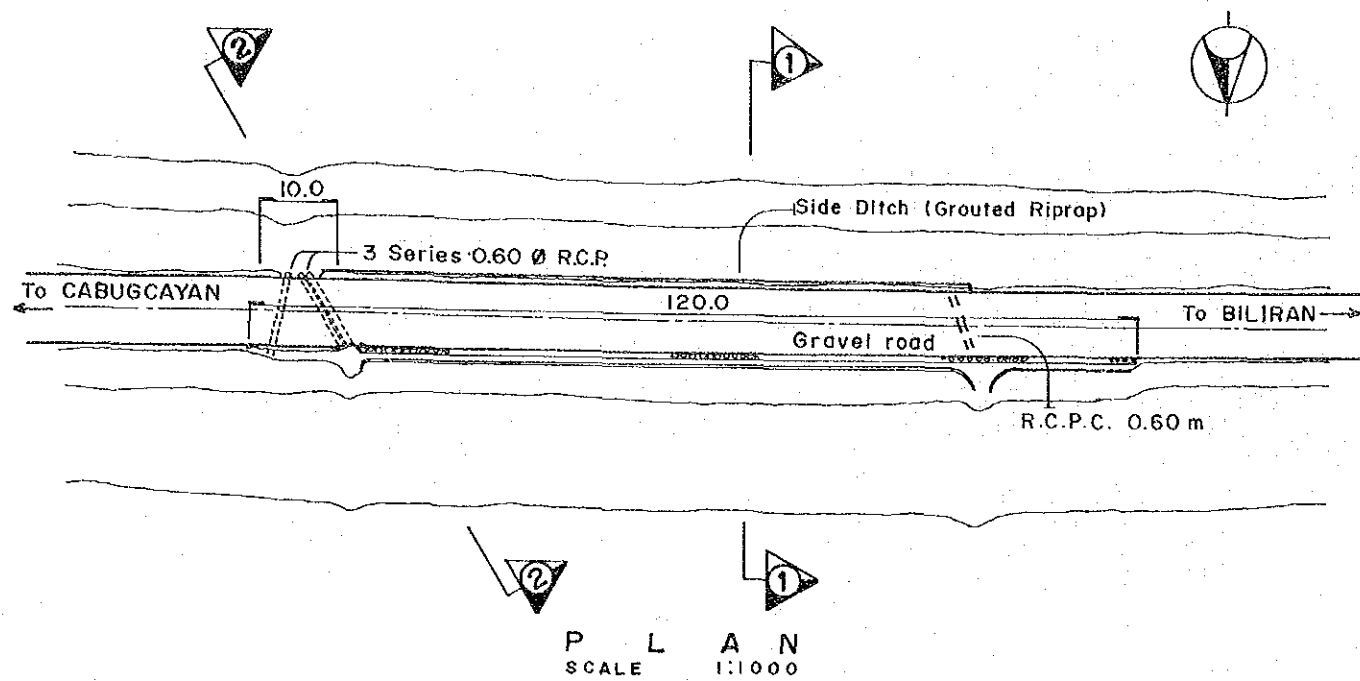


PROVINCE : LEYTE
 SPOT No. : L-26(2/2)

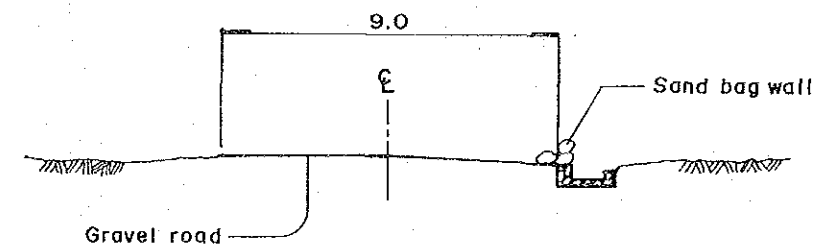
NAME OF ROAD : CABUGCAYAN-BILIRAN ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : FLOODED/MUDDY ROAD SURFACE

DRAWING NO.
 140



CROSS SECTION
 SCALE 1:200



CROSS SECTION FOR URGENT RESTORATION
 SCALE 1:200

SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
PERMANENT RESTORATION			
P1-3	REFILLING / EMBANKMENT	CU.M	378
P2-2	SIDE DITCH	L.M	80
P2-4	R.C.P.C 0.60M	L.M	10
P6-2	GROUTED RIPRAP	CU.M	32
P18-1	CONCRETE SPILLWAY	CU.M	216
URGENT RESTORATION			
U4-1	SAND BAGS WALL	SQ.M	60

PROVINCE : LEYTE
SPOT No. : L-38(1/2)

NAME OF ROAD : KAWAYAN - CULABA ROAD
ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER TEMPORARY BRIDGE APPROACH WASHOUT

DRAWING NO.
141

Leyte Spot No. 38 (L-38)

1) General Situation

- Disaster Classification: TBr-Aw
- Road Name: Kawayan - Culaba Road
- Location : 14+000 from Kawayan Proper
- Road Class/Office Concerned: National Secondary Road/Biliran Engineering District

- Municipalities/Barangays connected: Kawayan & Culaba

- Road Width: 7.0m
- Pavement Type: Gravel
- Surface Condition: Fair to Bad
- Availability of Detour: None

2) Damage Identified

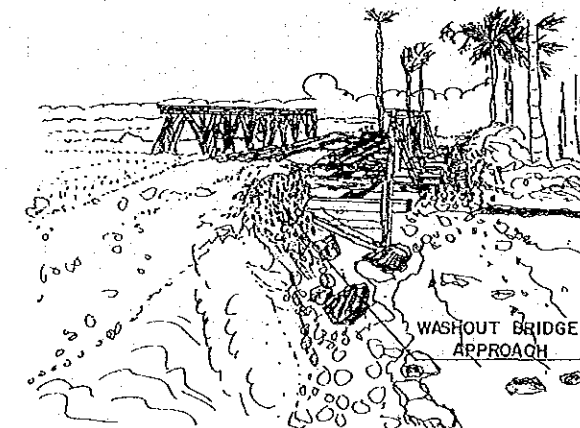
- Type of Disaster: Deep scouring of approach (restored)
- Magnitude of Damage: 2.0 meters length and 1.5 meters depth
- Date Noticed: December 1988
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

The Ungali bailey bridge has a total length of 12.0 m., one span, one lane with 4.0 m. width.

There were two (2) flows of water in the river. One (1) flow which runs parallel to the approach of the bridge site that washed out the bridge approach in 1988 for 2.0m in length and 1.5m in depth.

3) Causes of Damage

- Two direction of flow caused by debris from upstream, resulting in deep local scouring of the approach.

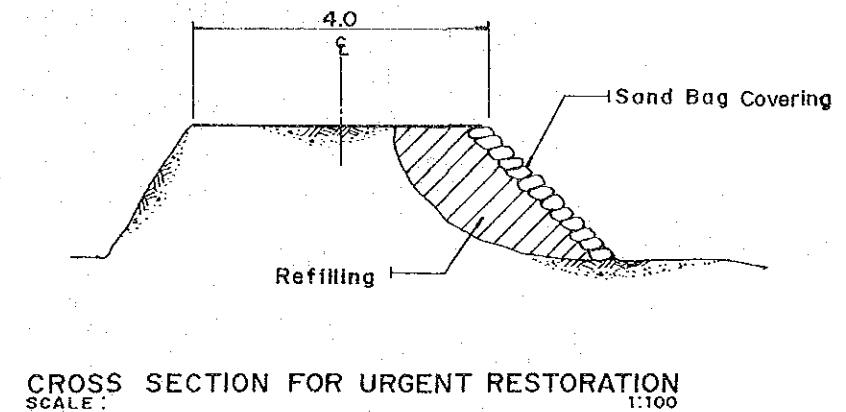
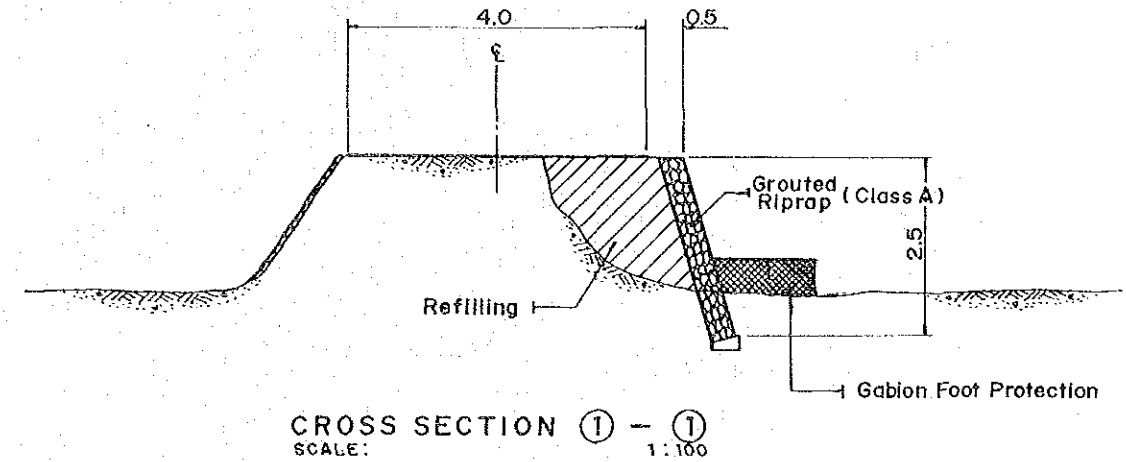
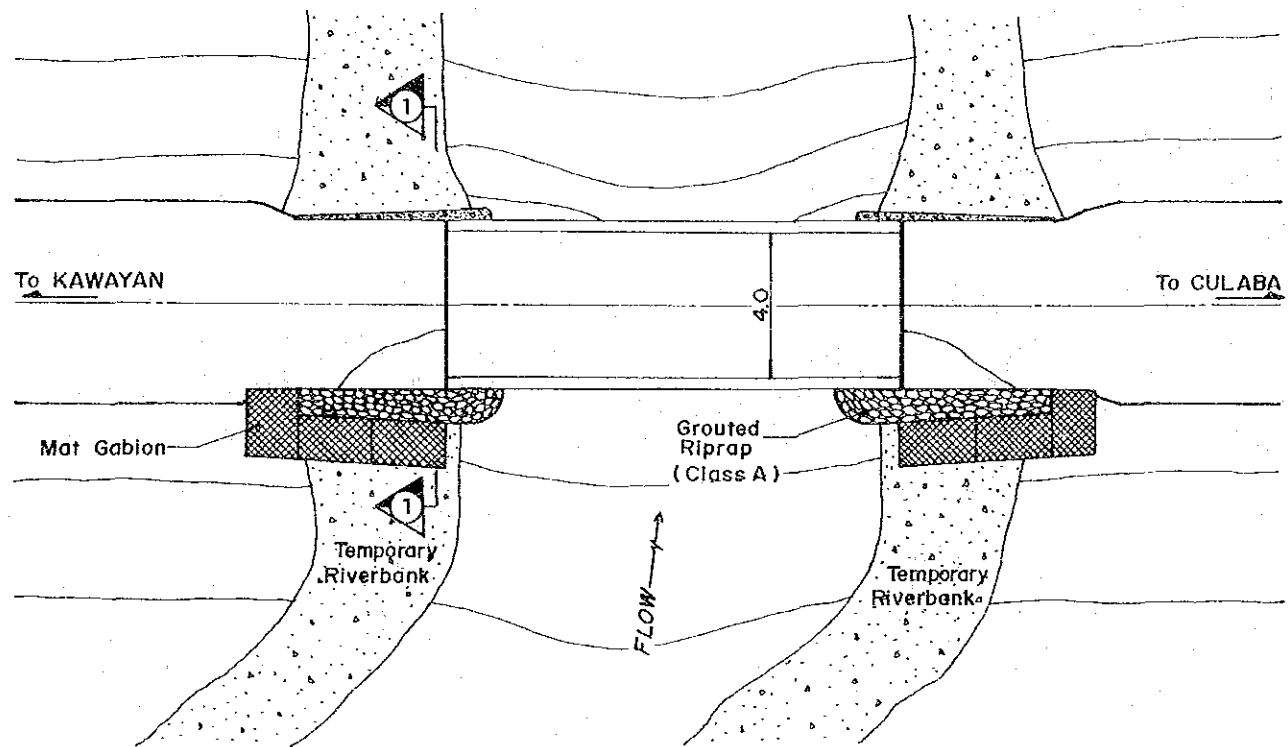
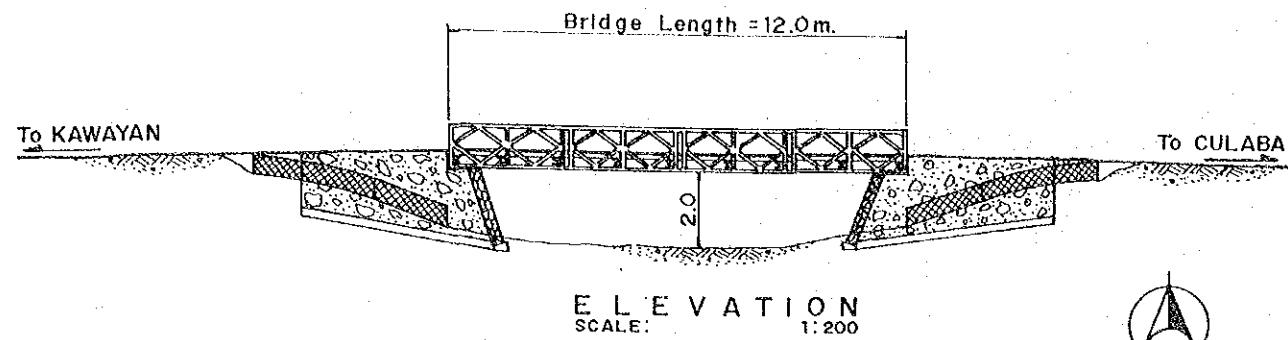


PROVINCE : LEYTE
 SPOT No. : L-38 (2/2)

NAME OF ROAD : KAWAYAN - CULABA ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : TEMPORARY BRIDGE APPROACH
 WASH OUT

DRAWING NO.
 142



SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
PERMANENT RESTORATION			
P6-2	GROUTED RIPRAP	CU. M.	9
P16-2	GABION FOOT PROTECTION	CU. M.	11
URGENT RESTORATION			
U1-4	REFILLING / EMBANKMENT	CU. M.	15
U3-2	SAND BAG COVERING	SQ. M.	15

PROVINCE : LEYTE
SPOT No. : L-39(1/2)

NAME OF ROAD : KAWAYAN - CULABA ROAD
ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : DEBRIS FLOW

DRAWING NO.
143

Leyte Spot No. 39 (L-39)

1) General Situation

- Disaster Classification: SPW-D
- Road Name: Kawayan - Culaba Road
- Location : 15+100 km. from Kawayan Proper
- Road Class/Office Concerned: National Secondary Road/Biliran Engineering District

- Municipalities/Barangays connected: Kawayan & Culaba

- Road Width: 7.0m
- Pavement Type: Gravel
- Surface Condition: Fair
- Availability of Detour: None

2) Damage Identified

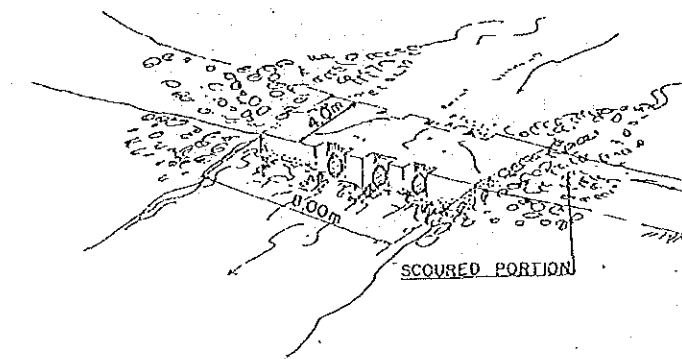
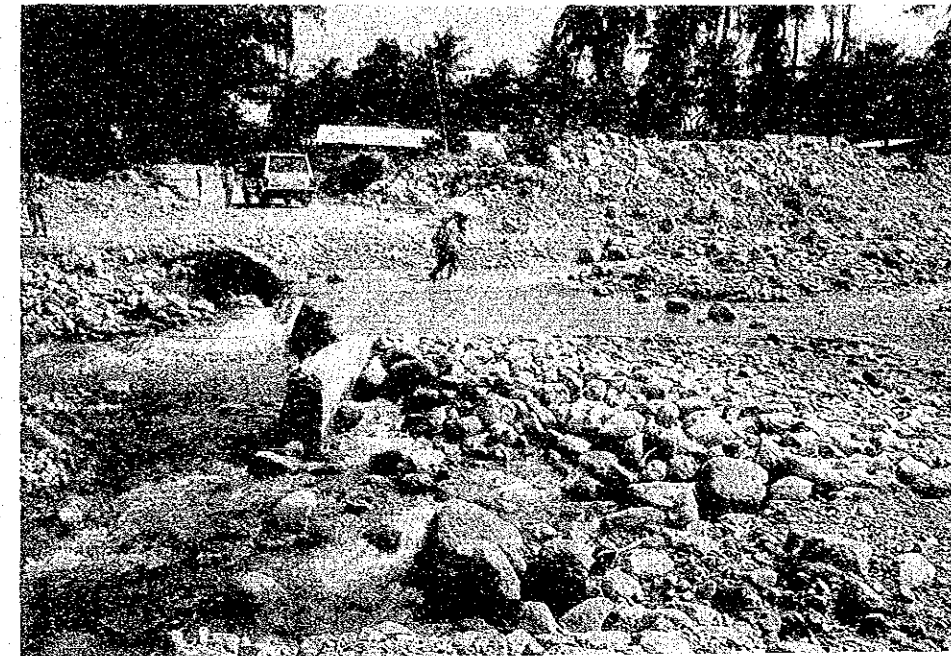
- Type of Disaster: Spillway damaged
- Magnitued of Damage: Both approaches about 8.0m each damaged
- Date Noticed: 1988
- Degree/Period of Traffic Interruption: High
- Description of Disaster:

The Tuccdao spillway is 8.5m. in length and 6.0m in width. Both approaches at about 8.0m. each were damaged last 1988. Too short spillway, thus damaged of approach usually occurred everytime there is flood. Shallow river bed caused debris to overflow along the river bank.

During site inspection, the river bed was dry.

3) Causes of Damage

- Debris coming from upstream every heavy rain.

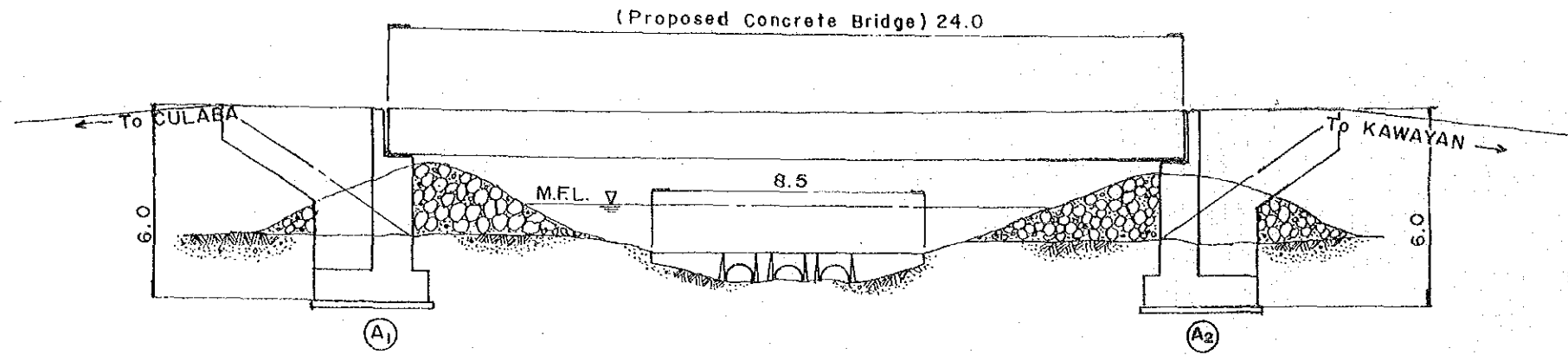


PROVINCE : LEYTE
 SPOT No. : L-39(2/2)

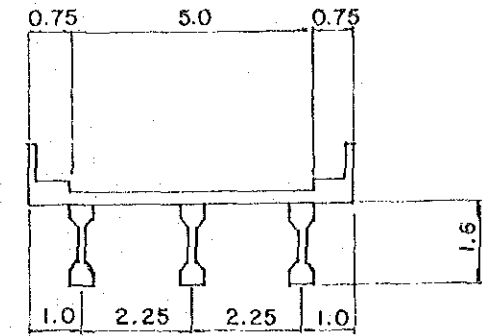
NAME OF ROAD : KAWAYAN - CULABA ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : DEBRIS FLOW

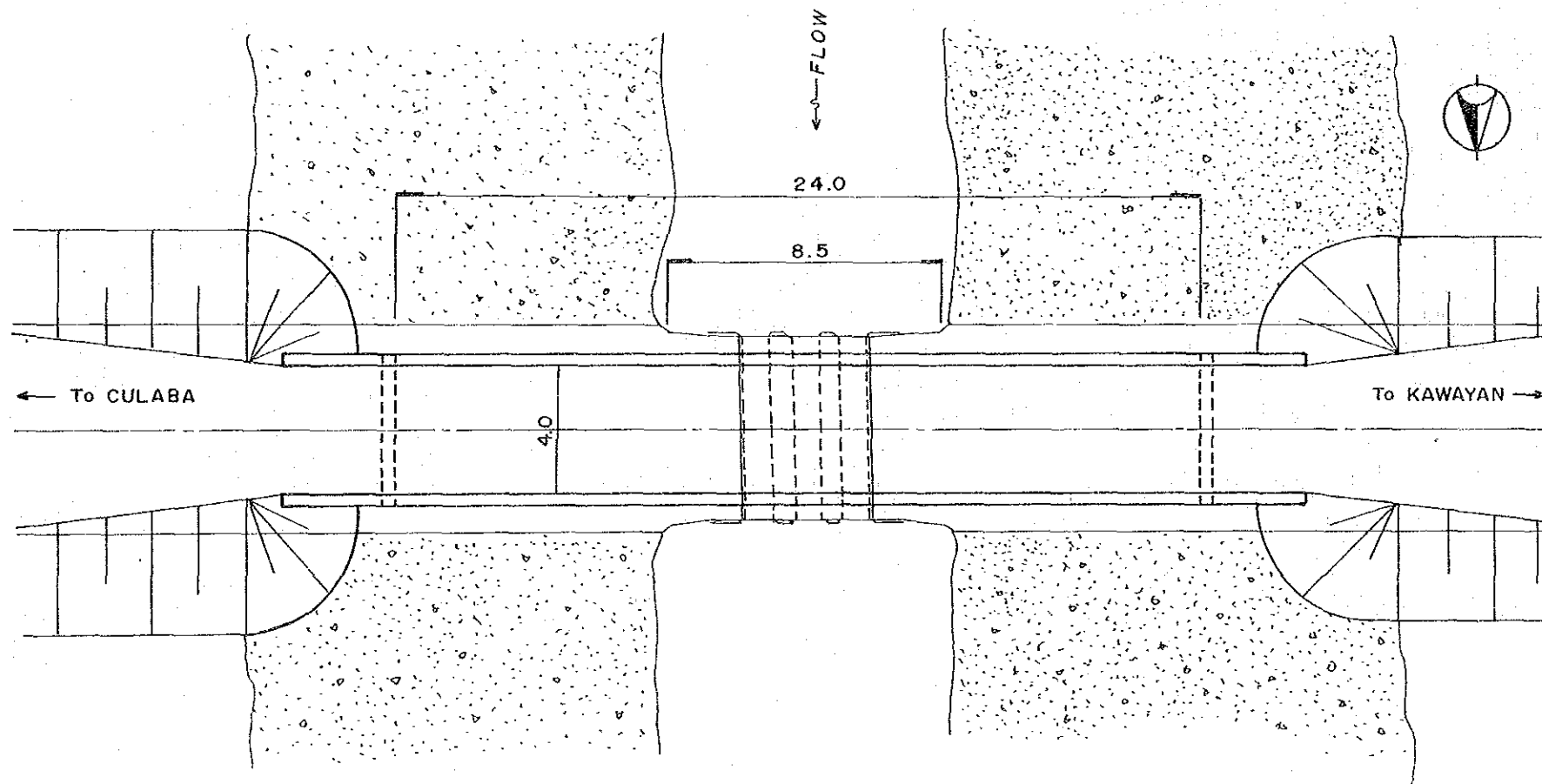
DRAWING NO.
 144



ELEVATION
 SCALE 1:200



CROSS SECTION
 SCALE 1:150



P L A N
 SCALE 1:200

URGENT RESTORATION
 ● Removal of deposit materials

SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
PERMANENT RESTORATION			
PI5-1	CONCRETE BRIDGE	L. M.	24
PI9-1	GRAVEL SURFACING	SQ. M.	360
PI-3	REFILLING / EMBANKMENT	CU. M.	430
URGENT RESTORATION			
UI-1	REMOVAL OF DEPOSIT MATERIALS	CU. M.	170

PROVINCE : LEYTE
SPOT No. : L-45(1/2)

NAME OF ROAD : BAYBAY - Jct. MAHAPLAG ROAD
ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : EMBANKMENT SLOPE FAILURE

DRAWING NO.

145

Leyte Spot No. 45 (L-45)

1) General Situation

- Disaster Classification: Embankment Failure
- Road Name: Baybay - Jct. Mahaplag Road
- Location : 0+900 from km post 996
- Road Class/Office Concerned: National Secondary Road/Leyte 3rd Engineering District

- Municipalities/Barangays connected:

Baybay Proper, Bgy. Gaas, Bgy. Buenavista, Bgy. Higoluan, Bgy. Monteverde, Bgy. Mailhi, Bgy. Liberation (Baybay).

- Road Width/Pavement Width: 9.0m/6.1m.
- Pavement Type: PCC
- Surface Condition: Good
- Availability of Detour: None

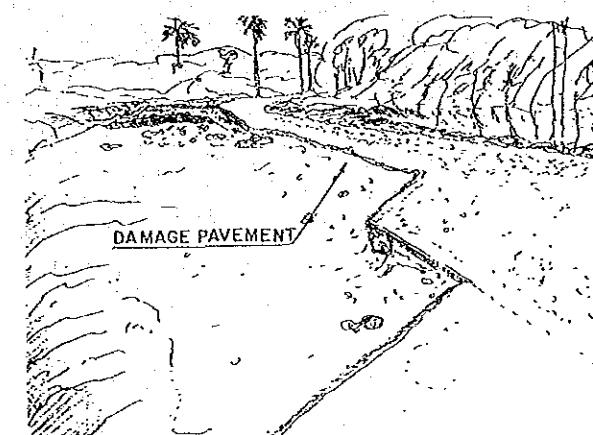
2) Damage Identified

- Type of Disaster: Embankment Failure
- Magnitude of Damage: 45m. length
- Date Noticed: Dec. 1988
- Degree/Period of Traffic Interruption: High
- Description of Disaster:

Cracks on concrete pavement occurred last 1988. It was about 45.0m in length.

3) Causes of Damage

Saved water on mountain side was permeated to embankment side and embankment soil was loosened.

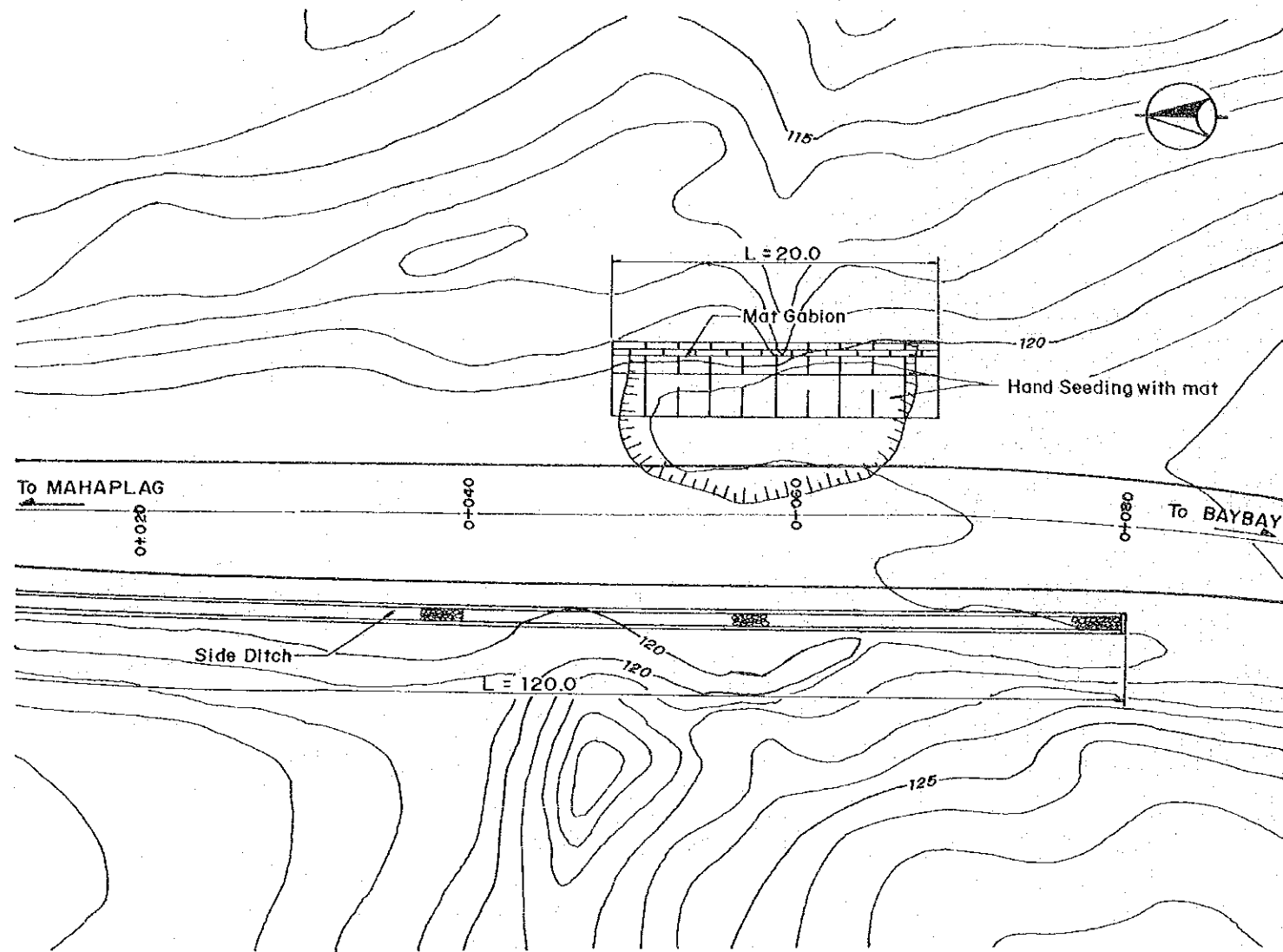


PROVINCE : LEYTE
 SPOT No. : L-45 (2/2)

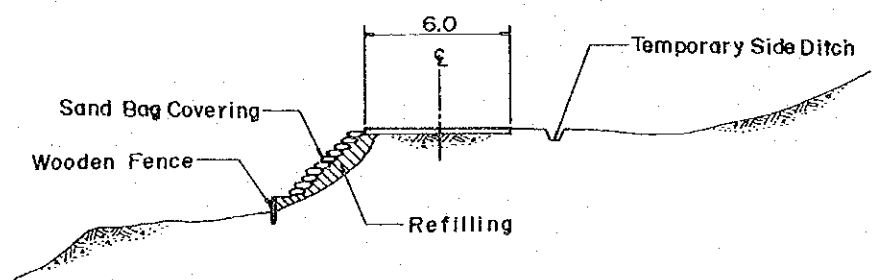
NAME OF ROAD : BAYBAY - Jct. MAHAPLAG ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : EMBANKMENT SLOPE FAILURE

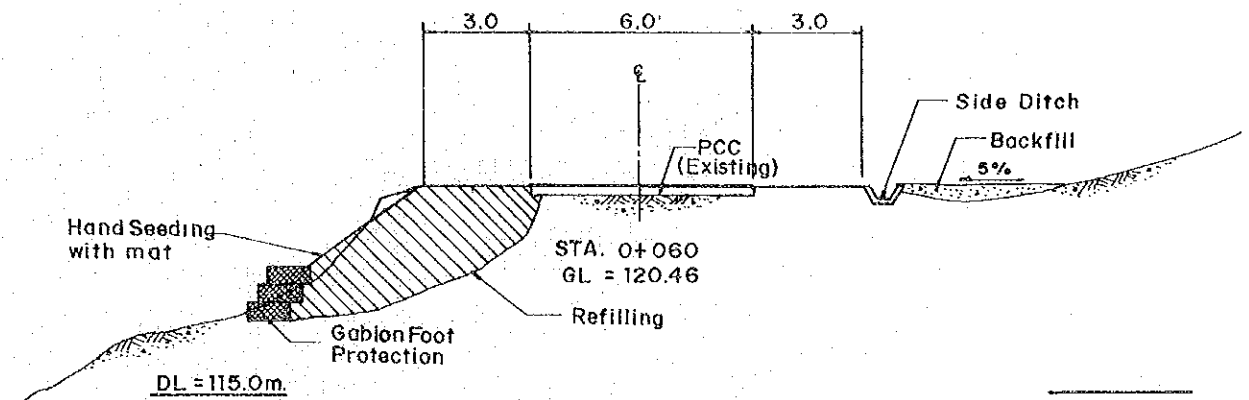
DRAWING NO.
 146



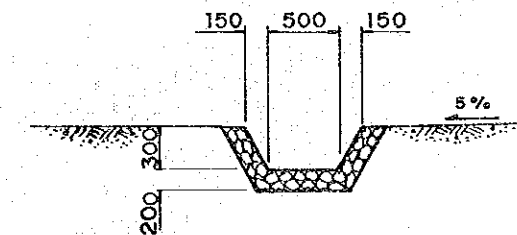
P L A N
 SCALE: 1 : 400



CROSS SECTION OF URGENT RESTORATION
 SCALE: 1 : 300



CROSS SECTION
 SCALE: 1 : 200



DETAIL OF SIDE DITCH
 SCALE: 1 : 50

SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
PERMANENT RESTORATION			
P1-3	REFILLING / EMBANKMENT	CU. M.	242
P2-2	SIDE DITCH	L.M.	120
P4-2	HAND SEEDING WITH MAT	SQ. M.	70
P16-2	GABION FOOT PROTECTION	CU. M.	36
URGENT RESTORATION			
U1-4	REFILLING / EMBANKMENT	CU. M.	48
U2-2	TEMPORARY SIDE DITCH	L. M.	120
U3-2	SAND BAG COVERING	SQ. M.	80
U4-3	WOODEN FENCE	L. M.	20

PROVINCE : LEYTE
SPOT No. : L-47(1/2)

NAME OF ROAD : BAYBAY-Jct. MAHAPLAG ROAD
ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : LANDSLIDE (DRAINAGE DAMAGE)

DRAWING NO.
147

Leyte Spot No. 47 (L-47)

1) General Situation

- Disaster Classification: Landslide (Drainage Damage)
- Road Name: Baybay - Jct. Mahaplag
- Location : 0+900 from km. post 993
- Road Class/Office Concerned: National Secondary Road/Leyte 3rd Engineering District

- Municipalities/Barangays connected:

Baybay Proper, Bgy. Gaas, Bgy. Buenavista, Bgy. Higoluan, Bgy. Monteverde, Bgy. Mailhi, Bgy. Liberation (Baybay).

- Road Width/Pavement Width: 9.0m/6.1m
- Pavement Type: PCC
- Surface Condition: Good
- Availability of Detour: None

2) Damage Identified

- Type of Disaster: Scouring around the inlet, side ditch and embankment failure at outlet.
- Magnitude of Damage: (Inlet) 6.0m in length; 1.50m in width; 2.0m depth (Outlet) 5.0m in length; 5.0m in width; 15.0m depth
- Date Noticed: 1988
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

The culvert damaged is located on a curved at a radius of about 132.0m. Vertical alignment is around 6%.

Scouring around the inlet is about 6.0m length; 1.50m width; 2.0m depth.

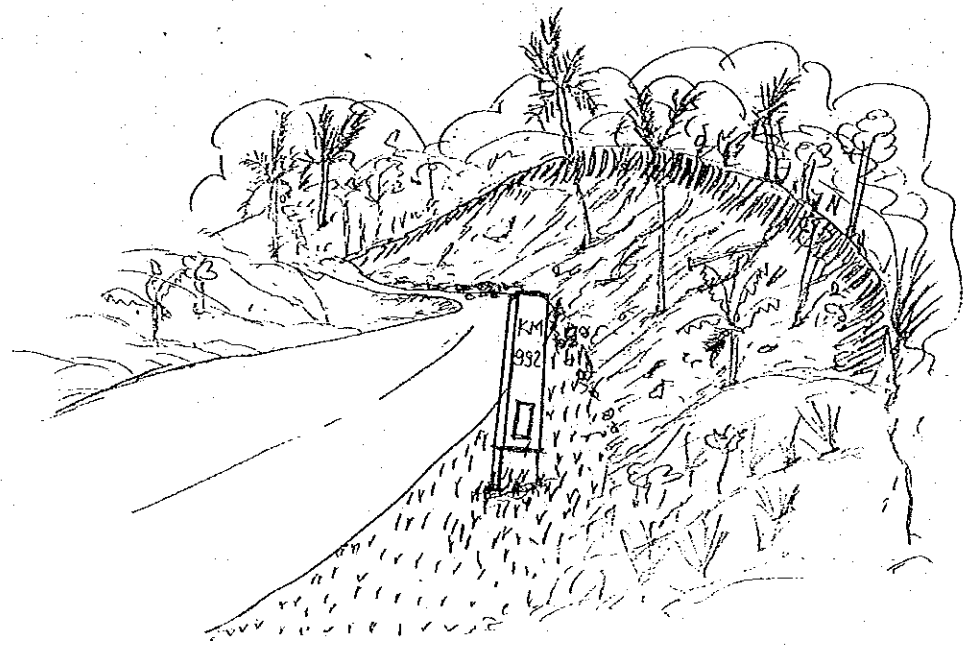
Embankment failure at outlet is about 5.0m length; 5.0m width; 15.0m depth.

During heavy rain, water from the mountain cannot be accommodated from the existing RCP (0.910m Ø) and flows on the surface of the concrete pavement and runs directly on embankment slope.

Inlet & outlet facilities of the culvert as well as side ditches were damaged.

4) Causes of Damage

Landslide cause damage to the drainage and insufficient drainage facilities caused water to overflow on the surface of the concrete pavement thus causing water to run directly on the embankment slope that caused scouring.

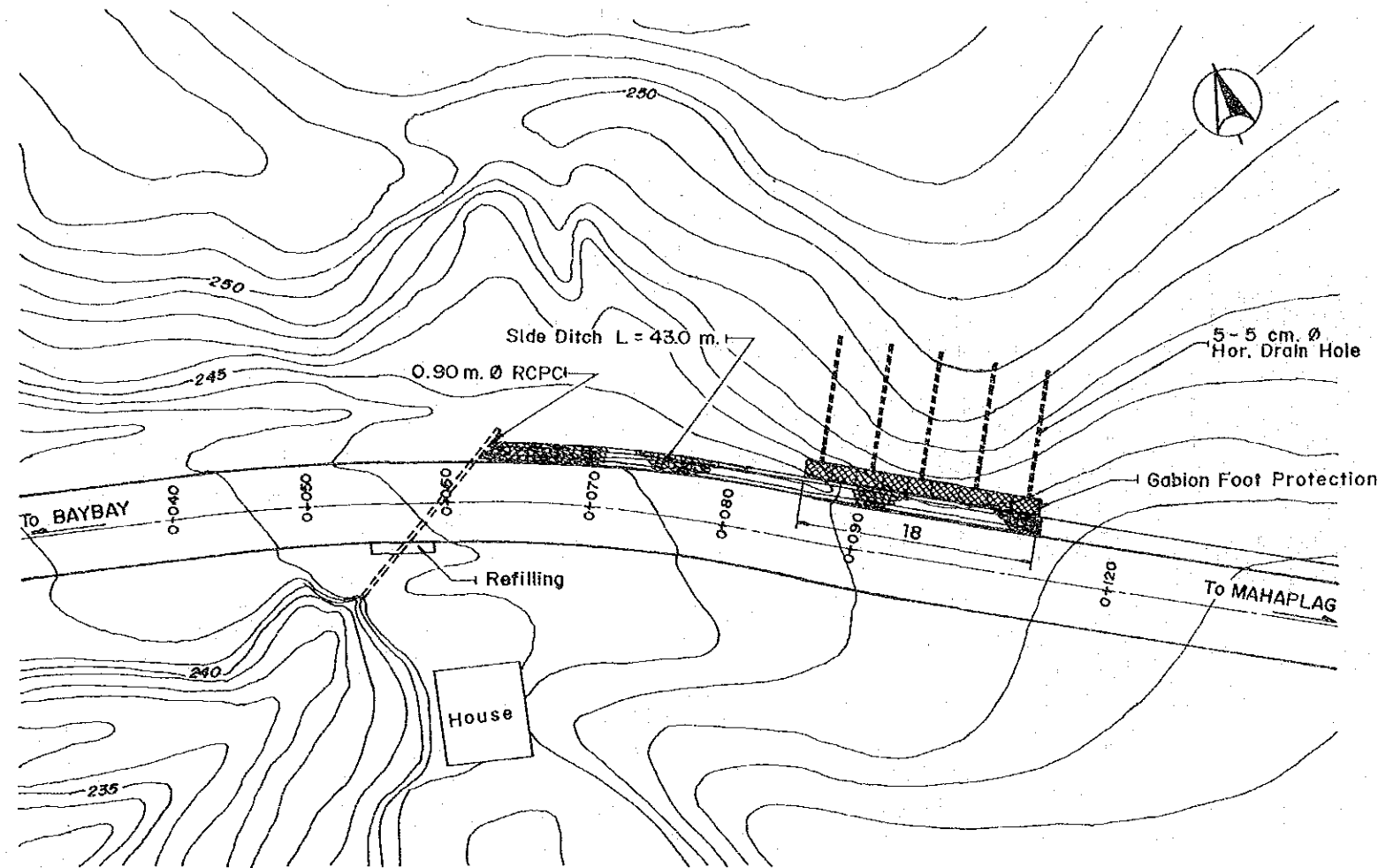


PROVINCE : LEYTE
 SPOT No. : L-47 (2/2)

NAME OF ROAD : BAYBAY - Jct. MAHAPLAG ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : LANDSLIDE (DRAINAGE DAMAGE)

DRAWING NO.
 148



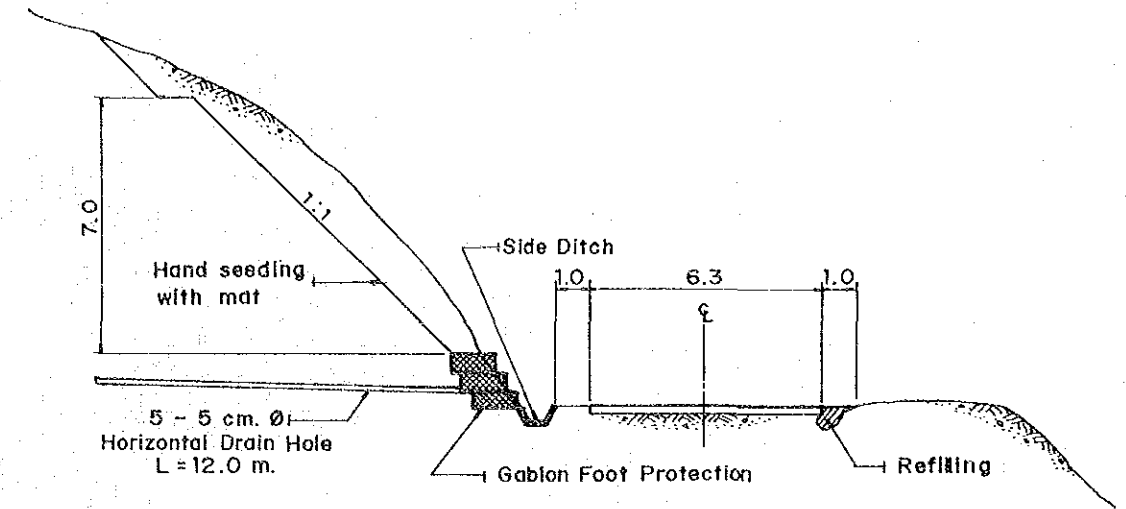
P L A N
 SCALE: 1:500

SUMMARY OF QUANTITY

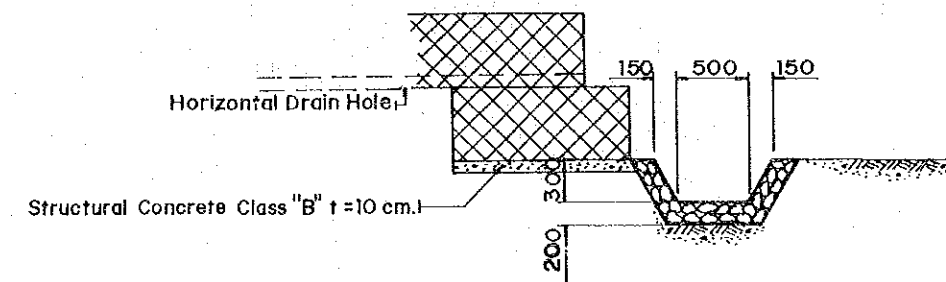
TYPE OF WORK	UNIT	TOTAL
PERMANENT RESTORATION		
P1-1	RE-CUTTING	CU. M. 160
P1-3	REFILLING / EMBANKMENT	CU. M. 2
P2-2	SIDE DITCH	L. M. 43
P3-2	HORIZONTAL DRAINHOLE	L. M. 60
P4-2	HAND SEEDING WITH MAT	SQ. M. 180
P16-2	GABION FOOT PROTECTION	CU. M. 32
URGENT RESTORATION		
U1-1	REMOVAL OF DEPOSIT MATERIALS	CU. M. 16
U2-2	TEMPORARY SIDE DITCH	L. M. 30

URGENT RESTORATION:

- Provide temporary side ditch .
- Removal of deposit materials .



CROSS SECTION
 SCALE: 1:200



DETAIL OF SIDE DITCH
 SCALE: 1:50

PROVINCE: LEYTE
SPOT No. : L-50(1/2)

NAME OF ROAD : BAYBAY - Jct. MAHAPLAG ROAD
ROAD CLASSIFICATION: NATIONAL SECONDARY ROAD

TYPE OF DISASTER : LANDSLIDE

DRAWING NO.
149

Leyte Spot No. 50 (L-50)

1) General Situation

- Disaster Classification: L-SL
- Road Name: Baybay - Jct. Mahaplag Road
- Location : 0+700 km km post 987
- Road Class/Office Concerned: National Secondary Road/Leyte 3rd Engineering District

- Municipalities/Barangays connected:
Baybay Proper, Bgy. Gaas, Bgy. Higoluan, Bgy. Monteverde, Bgy. Mailhi, Bgy. Liberatin (Baybay)

- Road Width:/Pavement Width 9.0m./6.1m
- Pavement Type: PCC
- Surface Condition: Good
- Availability of Detour: None

2) Damage Identified

- Type of Disaster: Landslide
- Magnitude of Damage: L=50.0m; H=15.0m
- Date Noticed: 1988
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

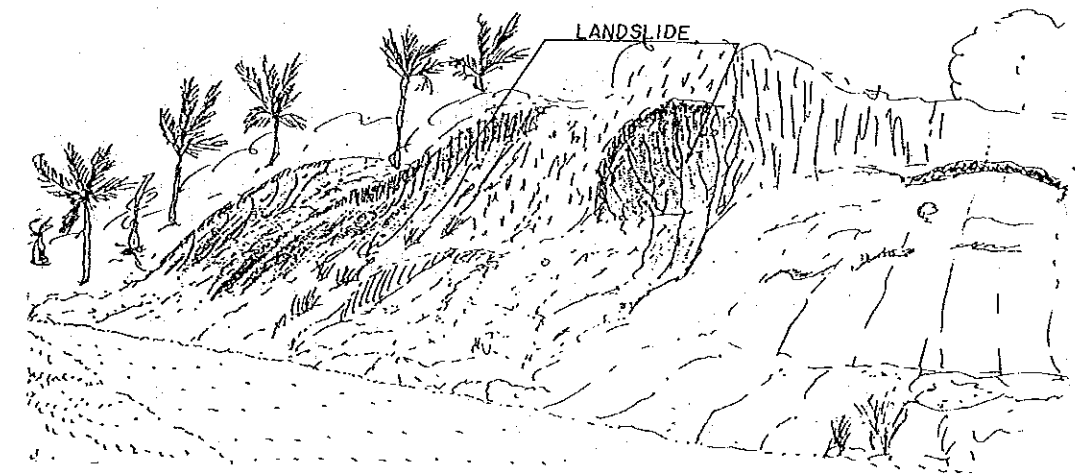
The spot is located at a sharp curve with radius of 37.0m. Landslide portion is about 50.0m in length and 15.0m in height. Mountains slope is about 21° angle.

This landslide occurred last 1988. Mass of soils on irregular mountain slope slid due to heavy rain. Slide plain did not reach to roadway, therefore, the roadway was not affected. Slided materials formed traffic obstruction along the roadway.

At present, the section is passable to traffic.

3) Causes of Damage

Mass of soils slid along the slide plain when saturated water caused loss of shear resistance between soils. At present, the slope seems to be stable.

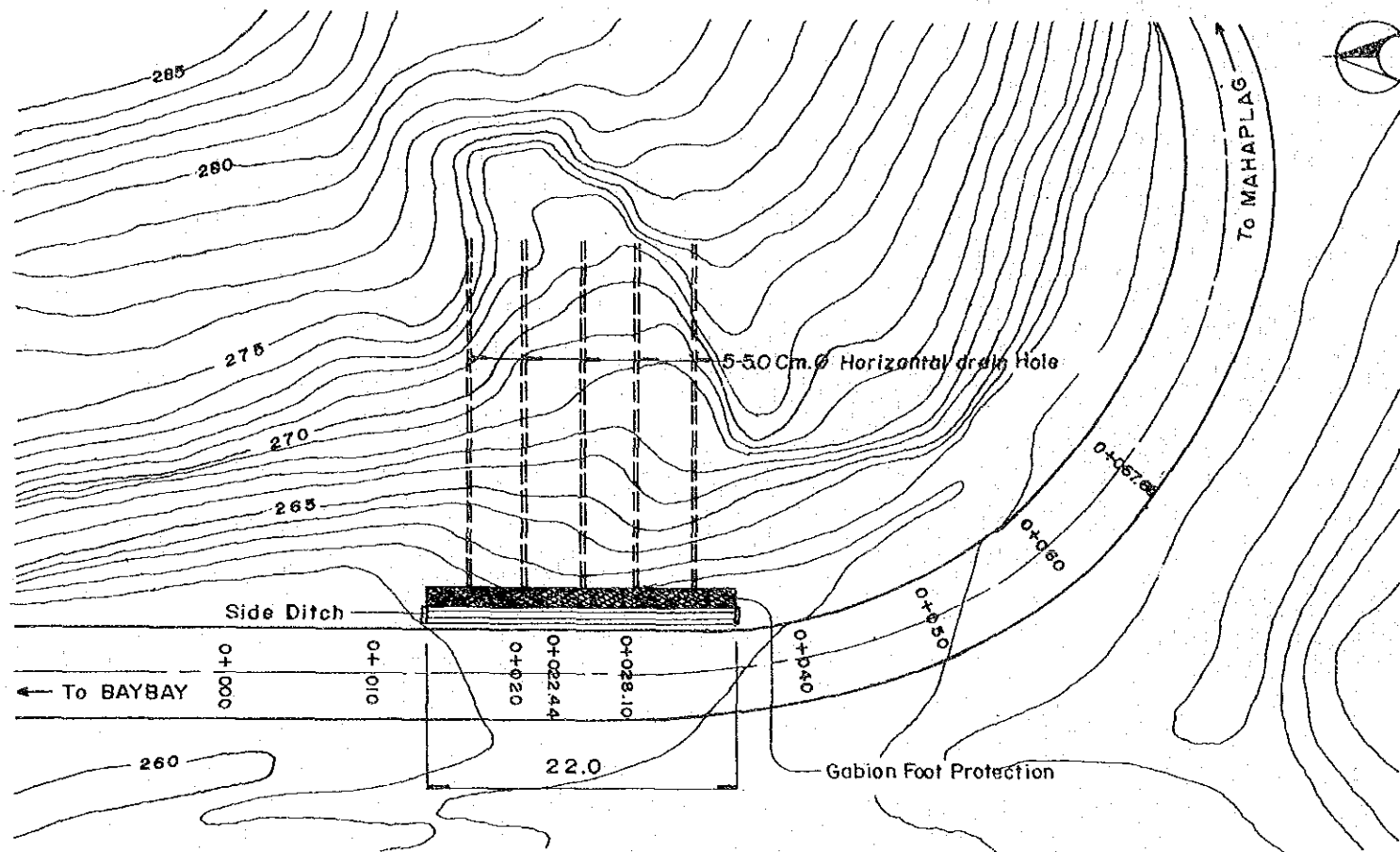


PROVINCE : LEYTE
 SPOT No. : L-50 (2/2)

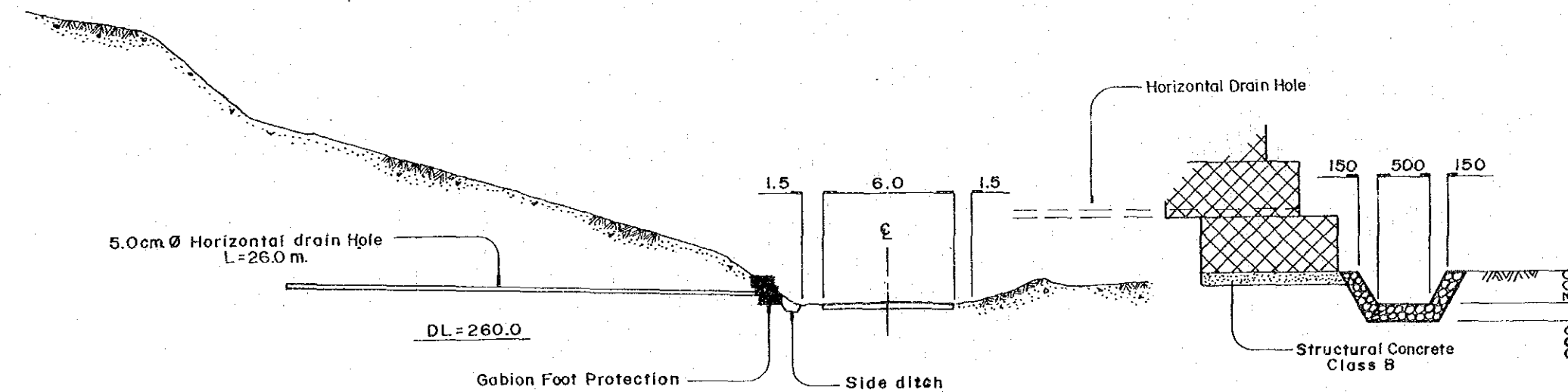
NAME OF ROAD : BAYBAY-Jct. MAHAPLAG ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : LAND SLIDE

DRAWING NO.
 150



P L A N
 SCALE 1:500



CROSS SECTION
 SCALE 1:300

SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
PERMANENT RESTORATION			
P2-2	SIDE DITCH	L. M.	22
P3-2	HORIZONTAL DRAIN HOLE	L. M.	130
P16-2	GABION FOOT PROTECTION	CU. M.	40
URGENT RESTORATION			
U1-1	REMOVAL OF DEPOSIT MATERIALS	CU. M.	110

URGENT RESTORATION

- Removal of deposit materials

PROVINCE : LEYTE
SPOT No. : L-65 (1/2)

NAME OF ROAD : ALBUERA-BURAUEN ROAD
ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : ROCK FALL/DEBRIS FALL

DRAWING NO.
151

Leyte Spot No. 65 (L-65)

1) General Situation

- Disaster Classification: Fall
- Road Name: Albuera - Bureauen Road
- Location : 3+300 from Jct. Albuera - Baybay Road
- Road Class/Office Concerned: National Secondary Road/Leyte 2nd Engineering District

- Municipalities/Barangays connected: Bgy. Kalingatan, Albuera

- Road Width: 5.0m
- Pavement Type: Gravel
- Surface Condition: Bad
- Availability of Detour: None

2) Damage Identified

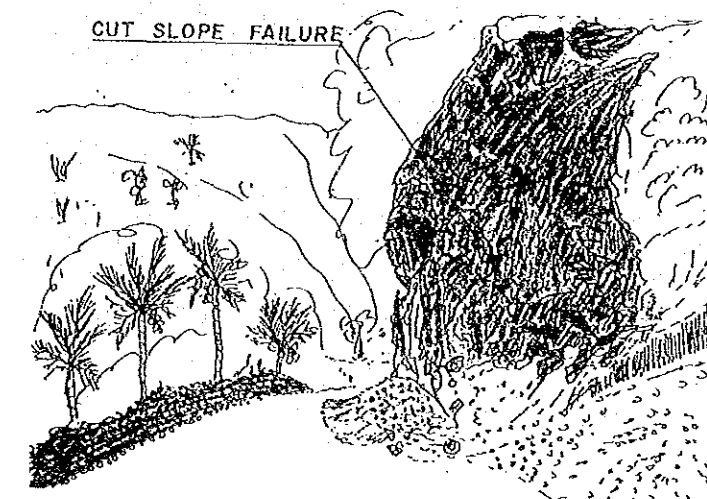
- Type of Disaster: Fall
- Magnitude of Damage: L=34.0m, H=25.0m
- Date Noticed: 1990
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

This spot was damaged last Nov. 12, 1990 during typhoon "Rufing". Damaged section is about 34.0m in length and 25.0m in height. Mountain slope is almost 90° with vegetation. Fallen materials were still on the roadside.

Rock fall is expected due to it's overhang situation and highly weathered condition.

3) Causes of Damage

- Unstable slope gradient with overhang causes weathered rocks to fall during heavy rain.

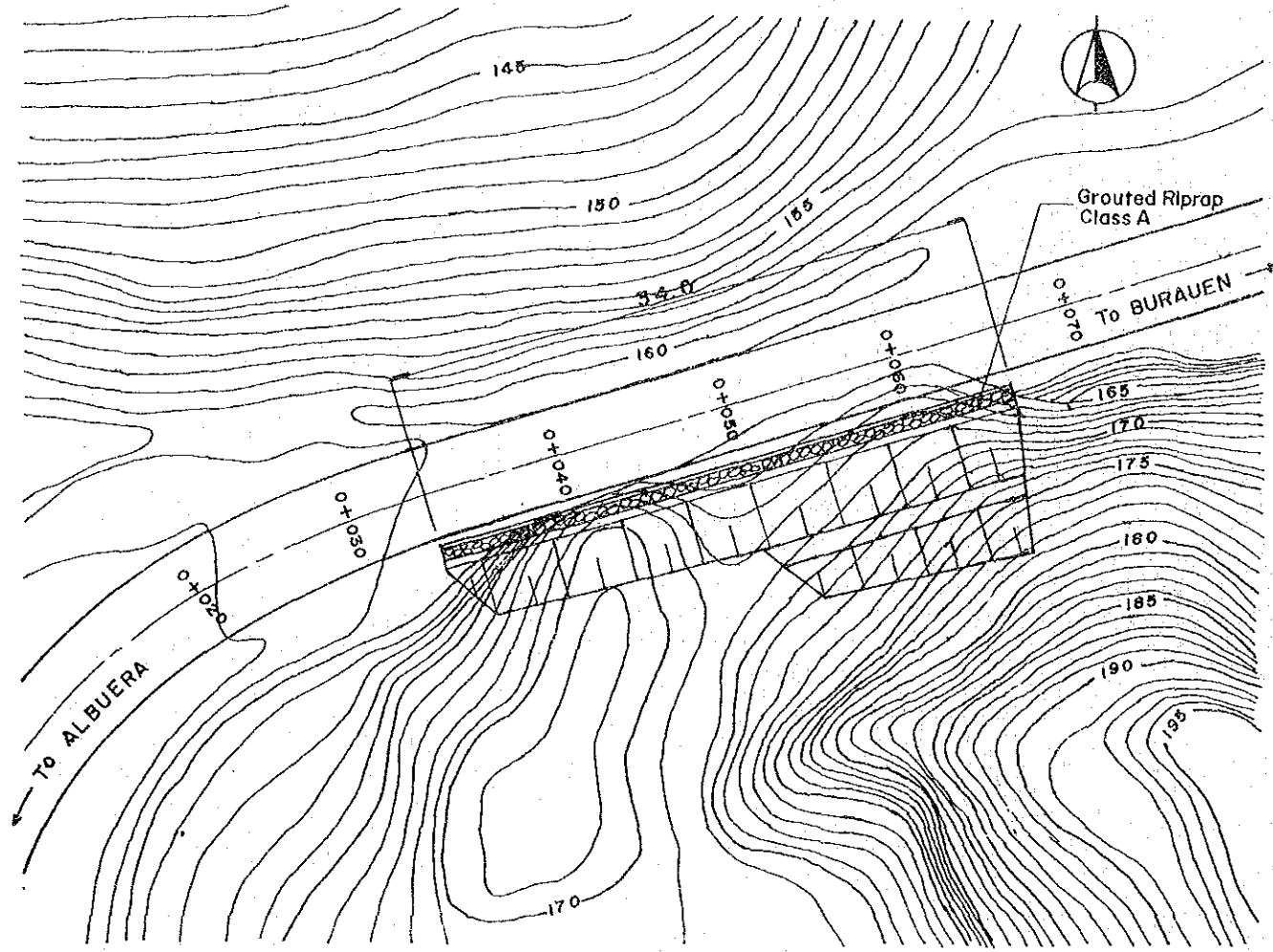


PROVINCE : LEYTE
 SPOT No. : L-65(2/2)

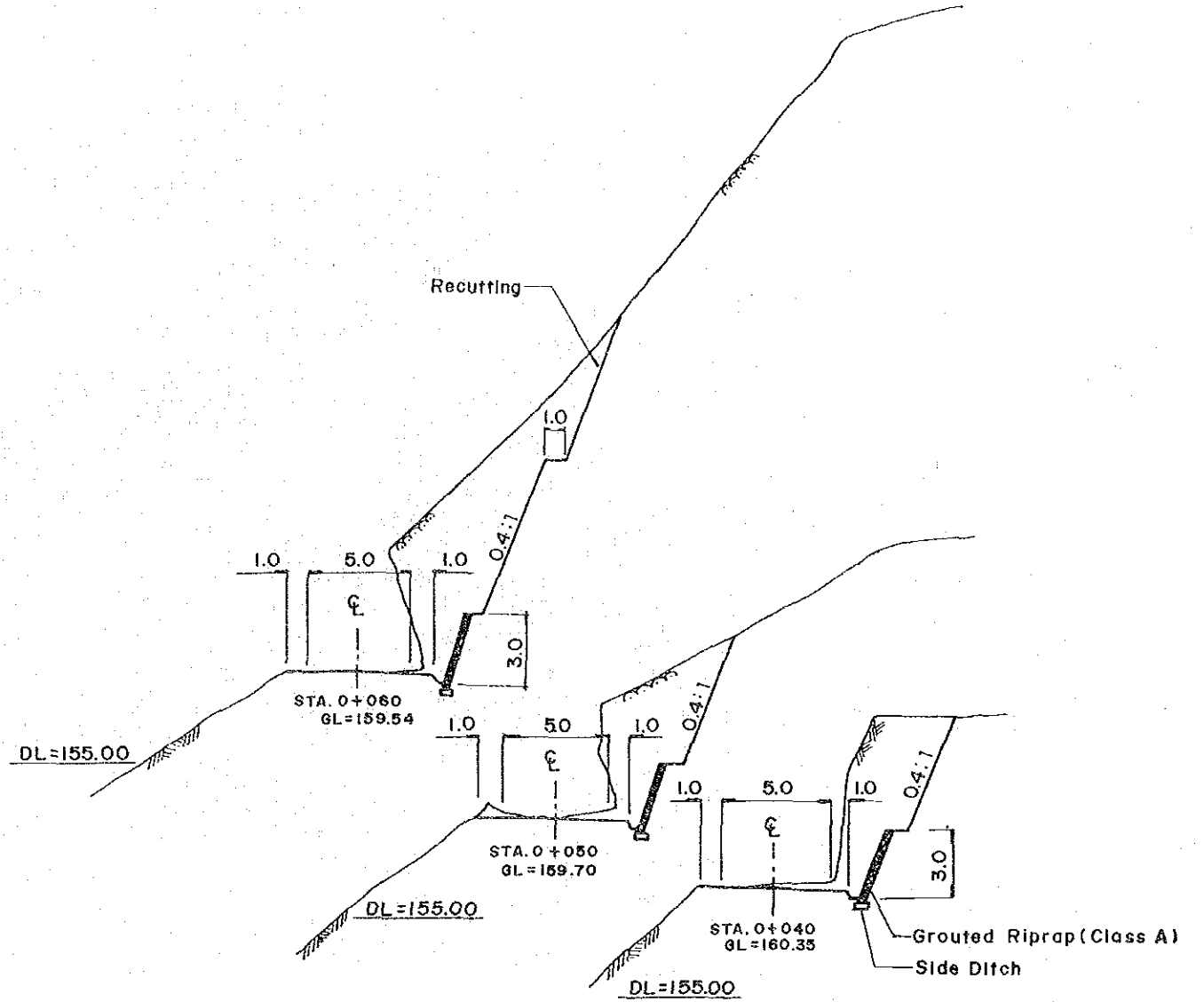
NAME OF ROAD : ALBUERA - BURAUEN ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : ROCK FALL / DEBRIS FALL

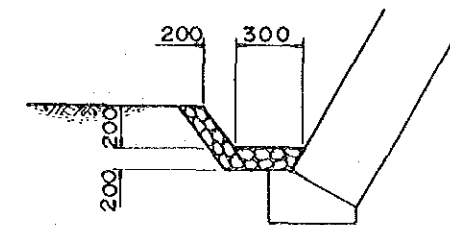
DRAWING NO.
 152



P L A N
 SCALE 1:400



CROSS SECTION
 SCALE 1:300



DETAIL OF SIDE DITCH
 SCALE 1:50

SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
PERMANENT RESTORATION			
PI-1	RECURTING	CU. M.	1140
P2-2	SIDE DITCH	L.M.	34
P6-2	GROUTED RIPRAP	CU. M.	34
URGENT RESTORATION			
UI-1	REMOVAL OF DEPOSIT MATERIALS	CU. M.	31
UI-2	REMOVAL OF UNSTABLE MATERIALS	CU. M.	10

URGENT RESTORATION

- Removal of deposit materials
- Removal of unstable materials

PROVINCE : LEYTE
SPOT No. : L-68 (1/2)

NAME OF ROAD : ALBUERA - BURAUEN ROAD
ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : CUT SLOPE FAILURE

DRAWING NO.
153

Leyte Spot No. 68 (L-68)

1) General Situation

- Disaster Classification: C-F
- Road Name: Albuera - Burauen Road
- Location : 4+800 km. from Jct. Albuera - Baybay Road
- Road Class/Office Concerned: National Secondary Road/Leyte 2nd Engineering District

- Municipalities/Barangays connected: Bgy. Kalingatan, Albuera

- Road Width: 5.0m
- Pavement Type: Gravel
- Surface Condition: Bad
- Availability of Detour: None

2) Damage Identified

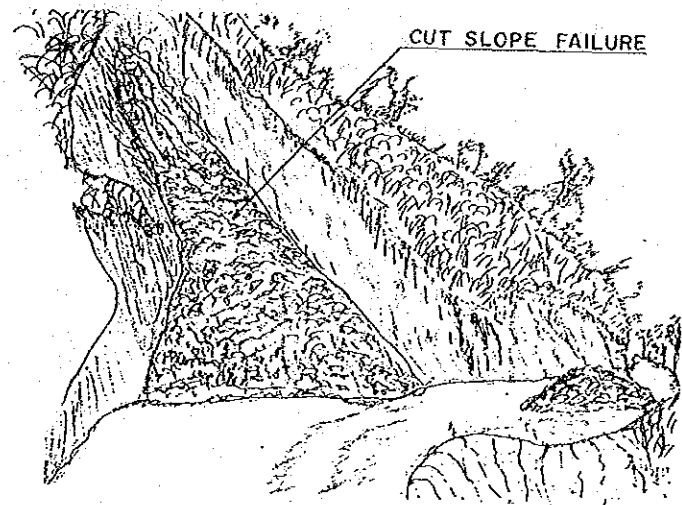
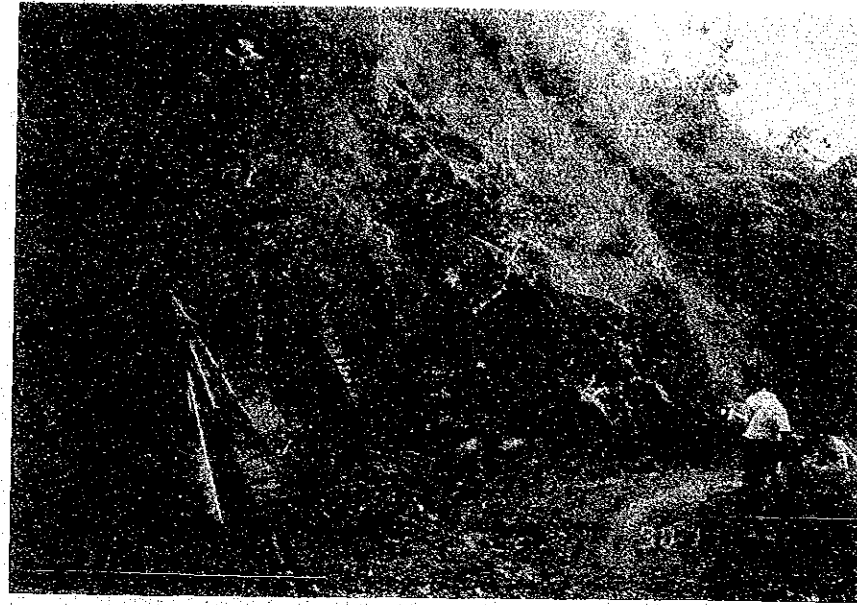
- Type of Disaster: Cut slope failure
- Magnitude of Damage: 30.0m length & 26.0m height of the slope failure
- Date Noticed: Nov. 12, 1990
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

The slope failure occurred last Nov. 12, 1990 during typhoon "Rufing". Damaged portion is about 30.0m in length, 26.0m in height. The mountain has a slope of 45° . The slope failure is located on a narrow road of a curve with a radius of 56.0m.

Gulley was formed on the slope. Debris materials were still on the roadside.

3) Causes of Damage

- * Surface water concentrates on the slope surface and water runs directly to gullies with high velocity thus materials slides.
- * Unstable slope gradient.

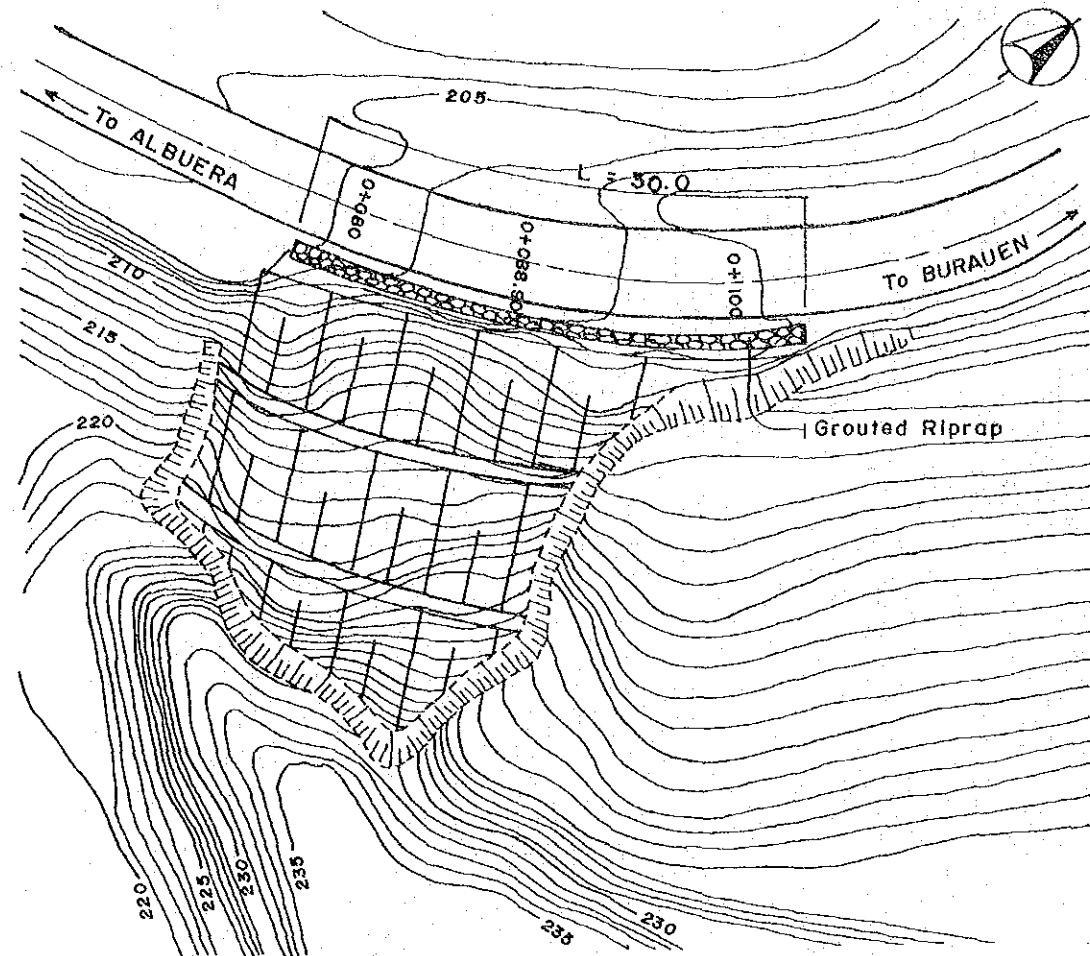


PROVINCE : LEYTE
 SPOT No. : L-68(2/2)

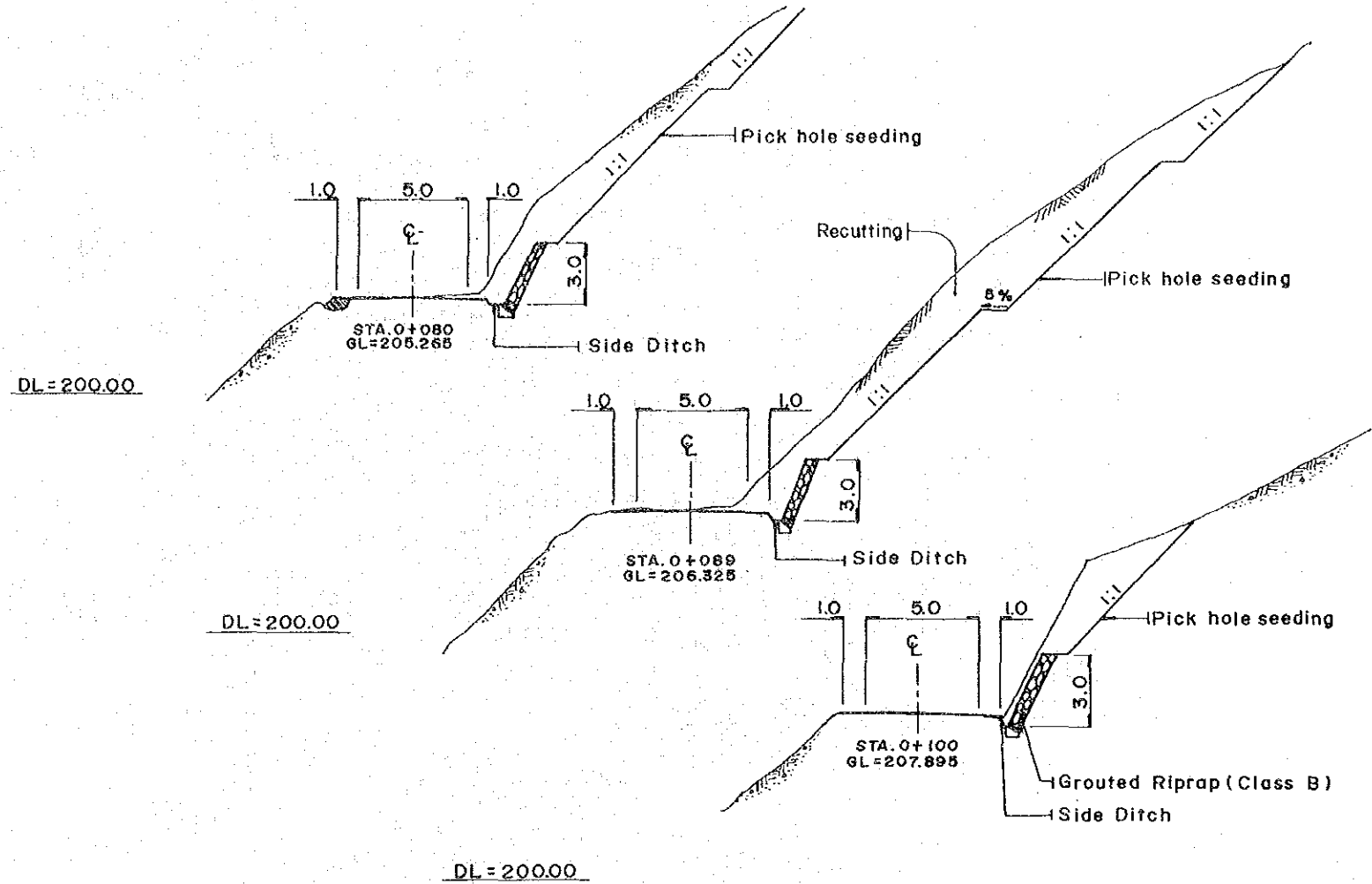
NAME OF ROAD : ALBUERA-BURAUEN ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : CUT SLOPE FAILURE

DRAWING NO.
 154



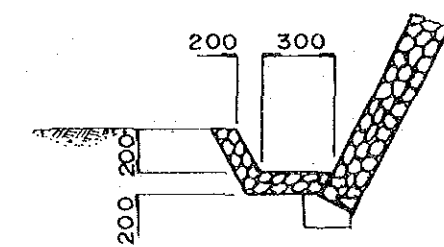
PLAN
 SCALE 1:400



CROSS SECTION
 SCALE 1:300

SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
PERMANENT RESTORATION			
PI-1	RECURTING	CU. M.	750
P2-2	SIDE DITCH	L. M.	30
P4-6	PICK HOLE SEEDING	SQ. M.	490
P6-2	GROUTED RIPRAP	CU. M.	50
URGENT RESTORATION			
UI-1	REMOVAL OF DEPOSIT MATERIALS	CU. M.	18
UI-2	REMOVAL OF UNSTABLE MATERIALS	CU. M.	8



DETAIL OF SIDE DITCH
 SCALE 1:50

URGENT RESTORATION

- Removal of deposit materials
- Removal of unstable materials

PROVINCE : LEYTE
SPOT No. : L-76(1/2)

NAME OF ROAD : BURAUEN - LA PAZ ROAD
ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : PERMANENT BRIDGE - APPROACH
WASHED OUT

DRAWING NO.
155

Leyte Spot No. 76 (L-76)

1) General Situation

- Disaster Classification: PBr-Aw
- Road Name: Burauen - La Paz Road
- Location : 2+000 from Burauen Proper
- Road Class/Office Concerned: National Secondary Road/Leyte 1st Engineering District

- Municipalities/Barangays connected: Burauen, Bgy. Sn. Esteban, La Paz

- Road Width: 6.0m
- Pavement Type: Gravel
- Surface Condition: Fair
- Availability of Detour: Available

2) Damage Identified

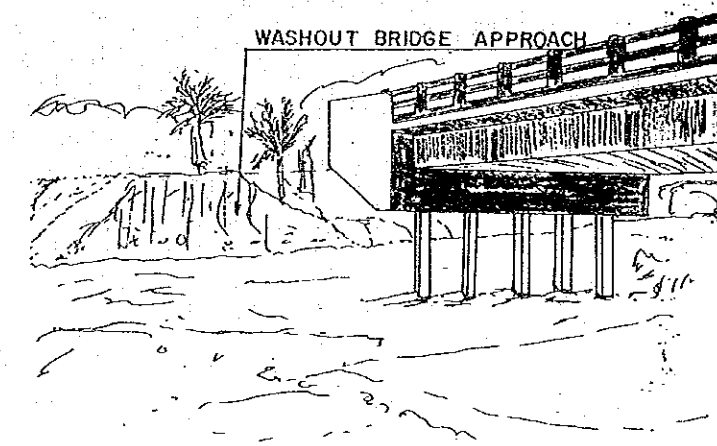
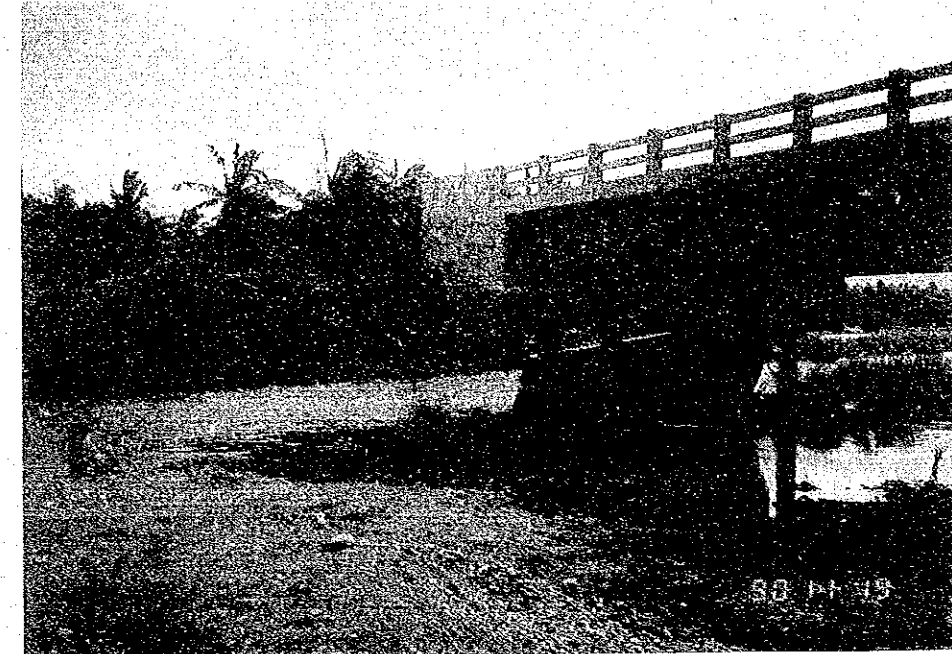
- Type of Disaster: Permanent bridge approach washout
- Magnitude of Damage: 32 meters approach length
- Date Noticed: 1988
- Degree/Period of Traffic Interruption: High
- Description of Disaster:

The Marabong River has a width of about 90.0m with no defined river banks. The Marabong bridge (RCDG) has an aggregate length of 60 meters composing of 3-spans, 2-lane with 7.6 width. This was damaged last 1988. Approach 32.0m in length was washed out & rip-rap on the other approach was damaged due to logs and debris flowed from upstream by flood water. Since then, the bridge was not passable. Temporary detour bridge was constructed.

Several days after the site investigation, the detour bridge was washed out due to a continuous rain, that flows heavily causing the ordinary water level to be higher as much as 1.0m.

3) Causes of Damage

Too short bridge length and insufficient opening at bridge site and flood discharge cannot be accommodated.

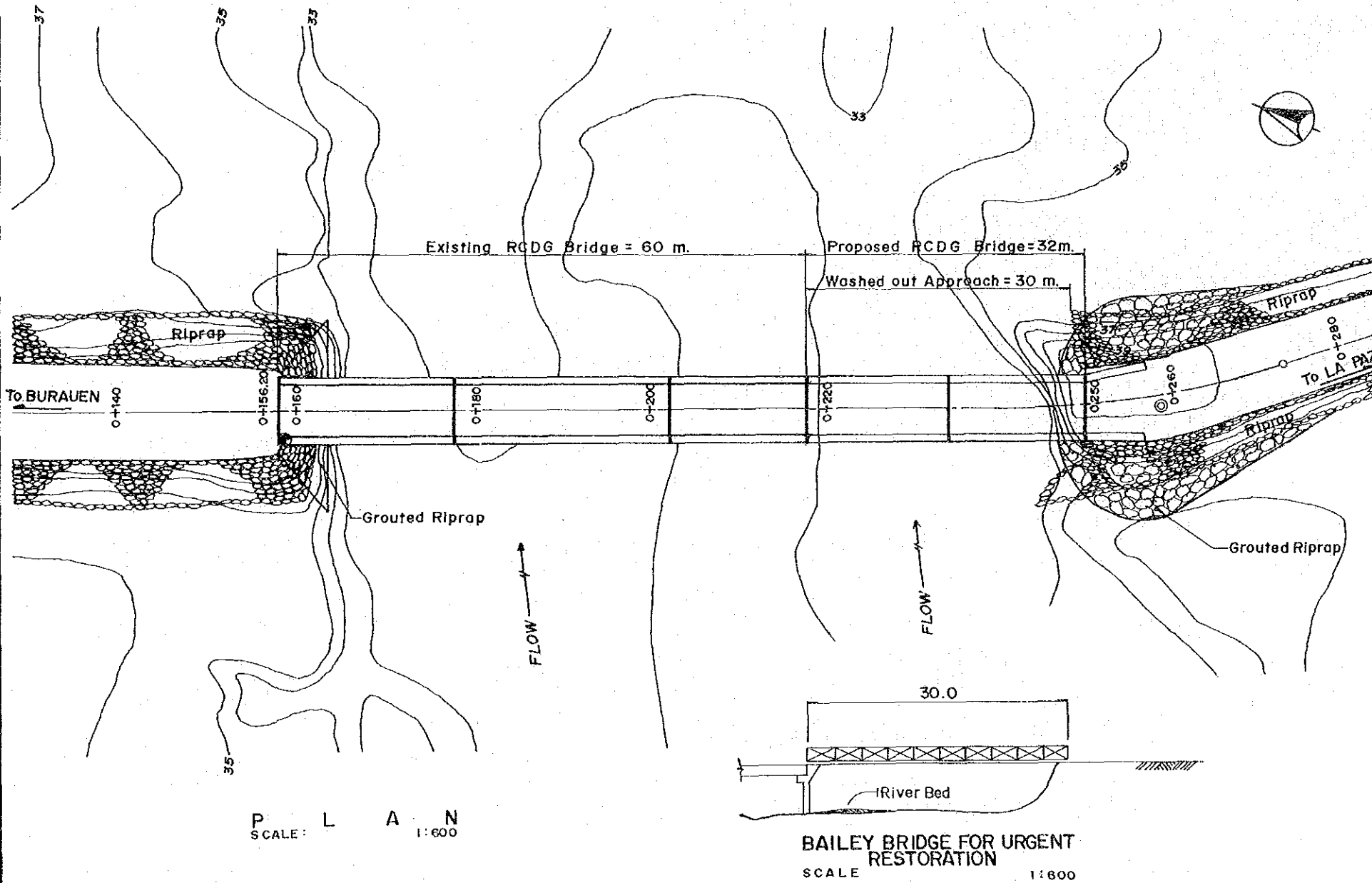
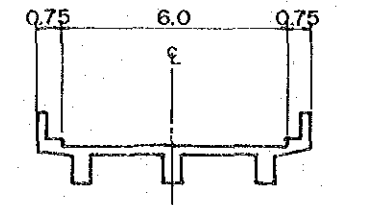
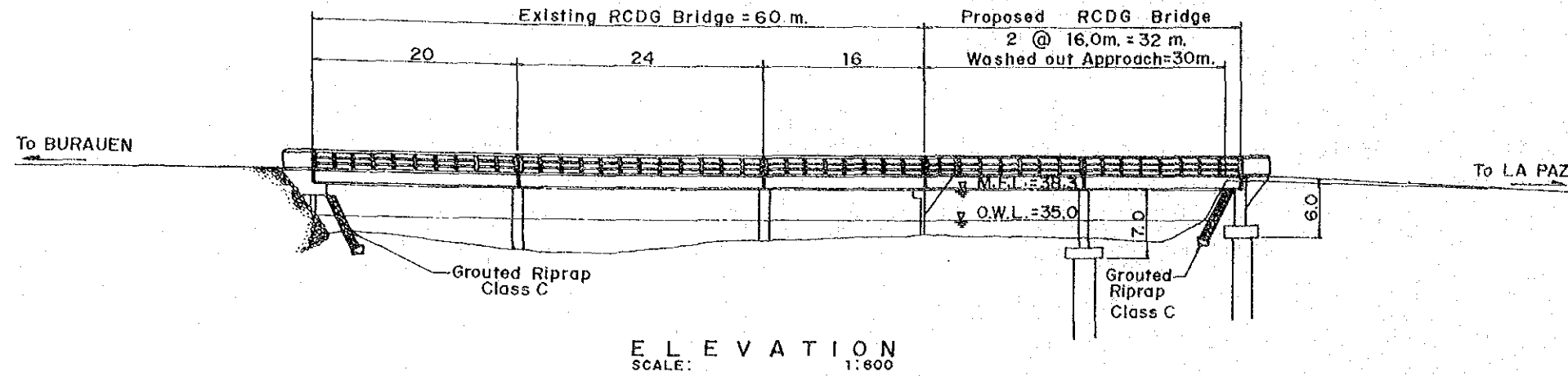


PROVINCE : LEYTE
 SPOT No. : L-76 (2/2)

NAME OF ROAD : BURAUEN - LA PAZ ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : PERMANENT BRIDGE - APPROACH
 WASHED OUT

DRAWING NO.
 156



SUMMARY OF QUANTITY

TYPE OF WORK	UNIT	TOTAL
PERMANENT RESTORATION		
P6-2 GROUDED RIPRAP	CU. M.	380
PI5-1 CONCRETE BRIDGE (WITH RC PILE)	L.M.	32
URGENT RESTORATION		
U6-3 BAILEY BRIDGE	L. M.	30

URGENT RESTORATION:

- Construction of temporary Bailey Bridge.

PROVINCE : LEYTE
SPOT No. : L-78(1/2)

NAME OF ROAD : SAN ESTEBAN - MAHAGNAO ROAD
ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : CUT SLOPE FAILURE

DRAWING NO.
157

Leyte Spot No. 78 (L-78)

1) General Situation

- Disaster Classification: D-FL
- Road Name: San Esteban - Mahagnao Road
- Location : 13+000 from Jct. San Esteban
- Road Class/Office Concerned: National Secondary Road/Leyte 1st Engineering District

- Municipalities/Barangays connected: San Esteban, Mahagnao (Burauen)
- Road Width: 7.0m
- Pavement Type: Gravel
- Surface Condition: Fair
- Availability of Detour: None

2) Damage Identified

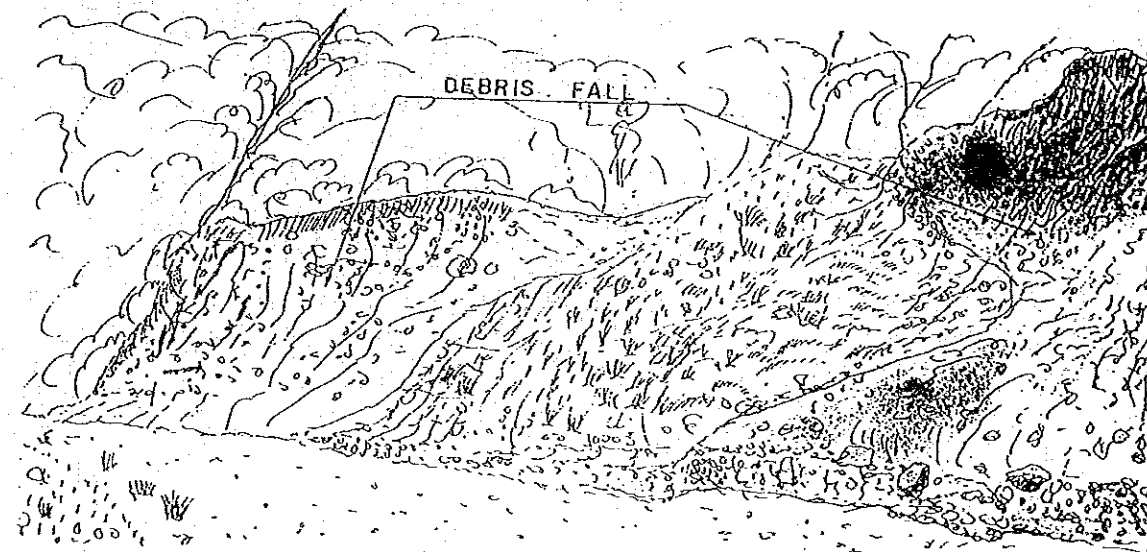
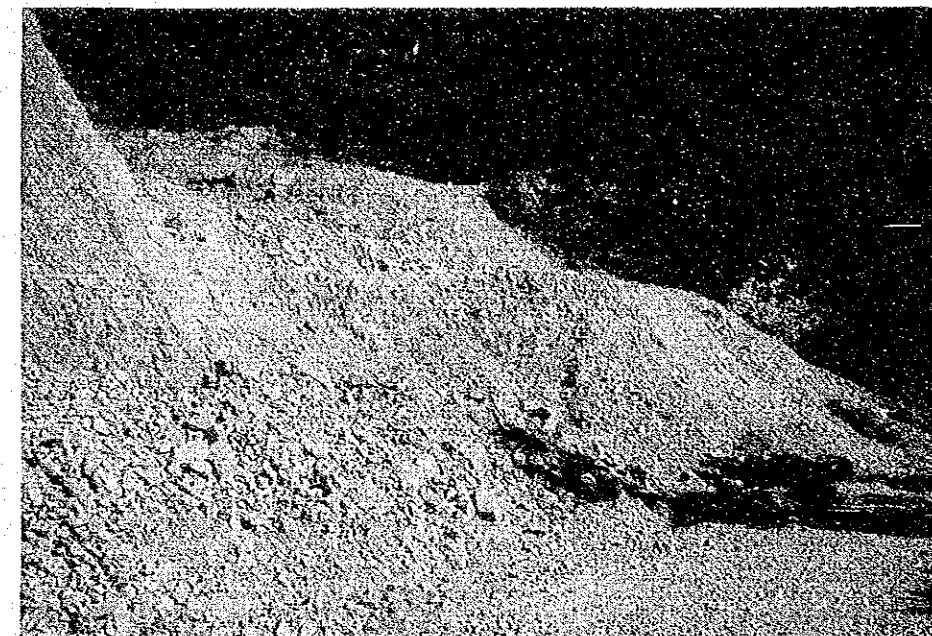
- Type of Disaster: Debris Flow
- Magnitude of Damage: L=156.0m; H=40.0m (1st slope); H=50.0m (2nd slope)
- Date Noticed: 1989
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

This disaster spot is located between two mountain at about 1560m in length. Height of the 1st slope failure is about 40.0m measured from 54° angle and the other failure is about 50.0m in height at 45° angle. Debris materials from this cut slope failures deposited on the bed of valley and flowed onto the road during heavy rain.

To date, debris materials were still on the roadside but with less effect on traffic.

3) Causes of Damage

Unstable slope gradient causes debris to fall along valley. Deposited materials along the valley caused debris flow during heavy rain.

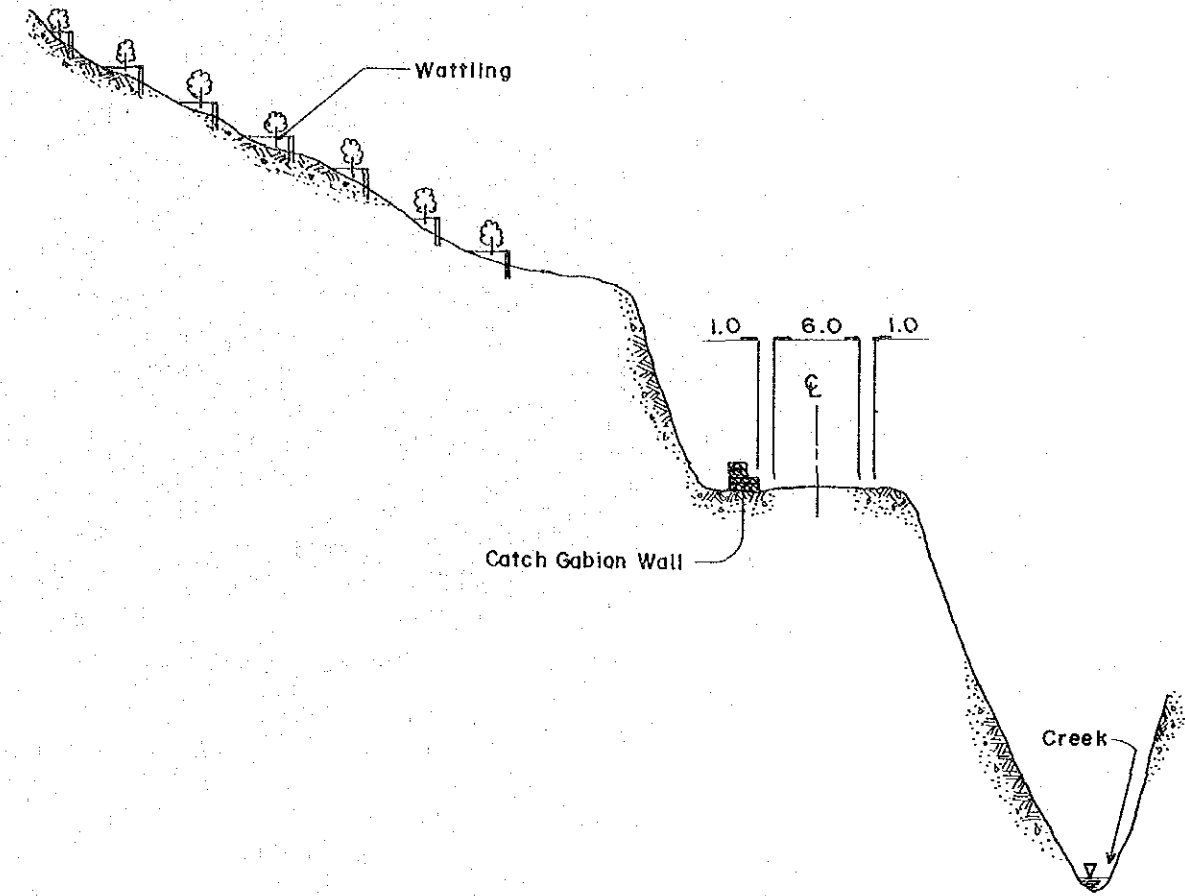
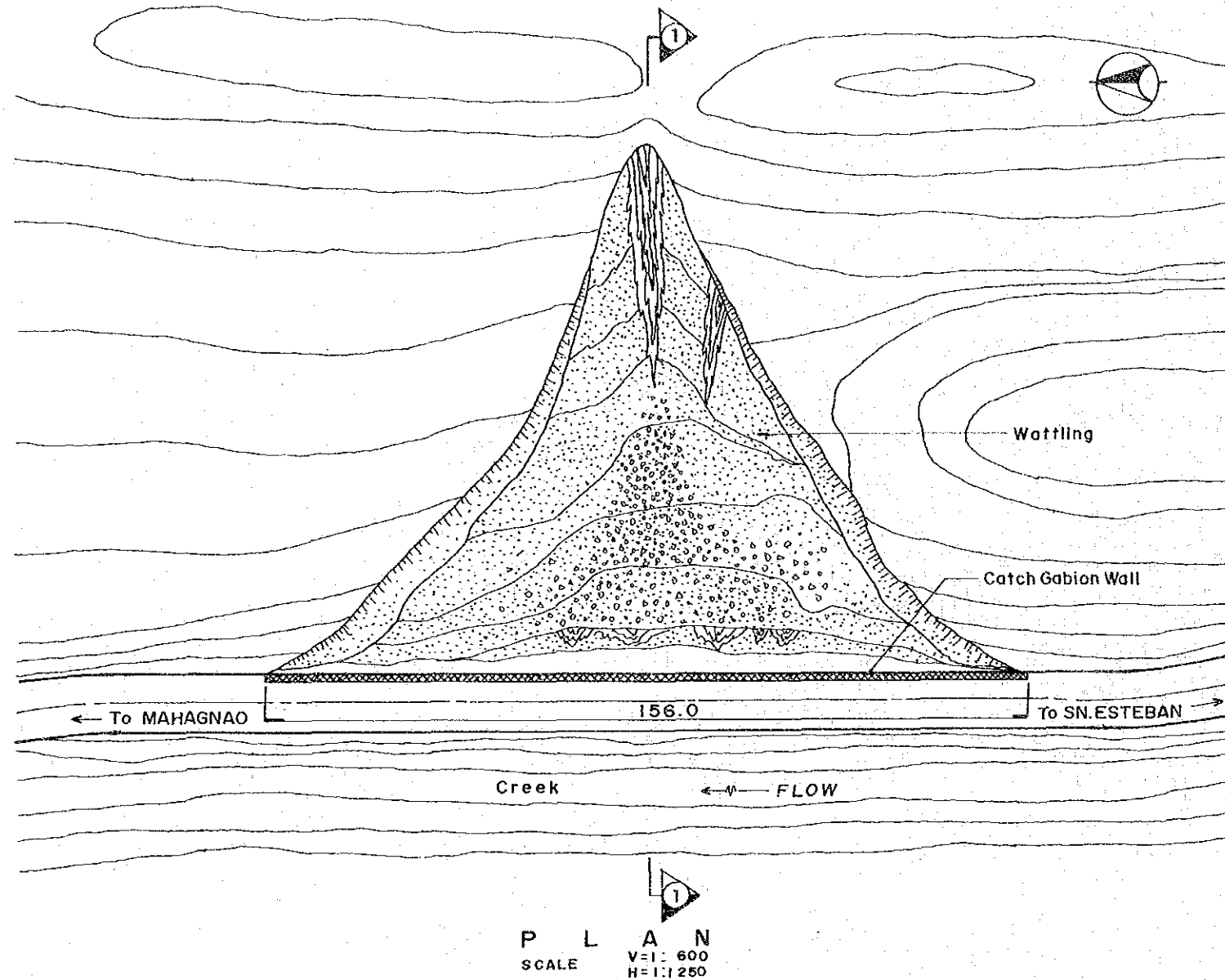


PROVINCE : LEYTE
 SPOT No. : L-78(2/2)

NAME OF ROAD : SAN ESTEBAN-MAHAGNAO ROAD
 ROAD CLASSIFICATION : NATIONAL SECONDARY ROAD

TYPE OF DISASTER : CUT SLOPE FAILURE

DRAWING NO.
 158

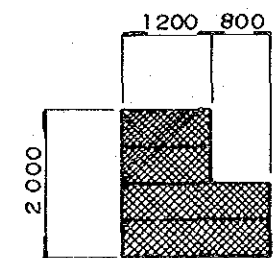


CROSS SECTION ① - ①
 SCALE 1:500

SUMMARY OF QUANTITY			
TYPE OF WORK		UNIT	TOTAL
PERMANENT RESTORATION			
P4-8	WATTLING	M.	380
P8-2	CATCH GABION WALL	M.	500
URGENT RESTORATION			
U1-1	REMOVAL OF DEPOSIT MATERIALS	CU. M.	90

URGENT RESTORATION:

Removal of deposit materials



DETAIL OF MAT GABION
 SCALE 1:10

PROVINCE : LEYTE
SPOT No. : L-80(1/2)

NAME OF ROAD : ABUYOG-TADOC ROAD
ROAD CLASSIFICATION : BARANGAY ROAD

TYPE OF DISASTER : CUT SLOPE FAILURE

DRAWING NO.
159

Leyte Spot No. 80 (L-80)

1) General Situation

- Disaster Classification: C-F
- Road Name: Abuyog - Tadoc Road
- Location : 5+400 from Jct. Abuyog - Mahaplag
- Road Class/Office Concerned: Barangay Road/Leyte 3rd Engineering District

- Barangays connected: Brgy. Tadoc and Salvacion

- Road Width: 7.0m
- Pavement Type: Gravel
- Surface Condition: Bad
- Availability of Detour: None

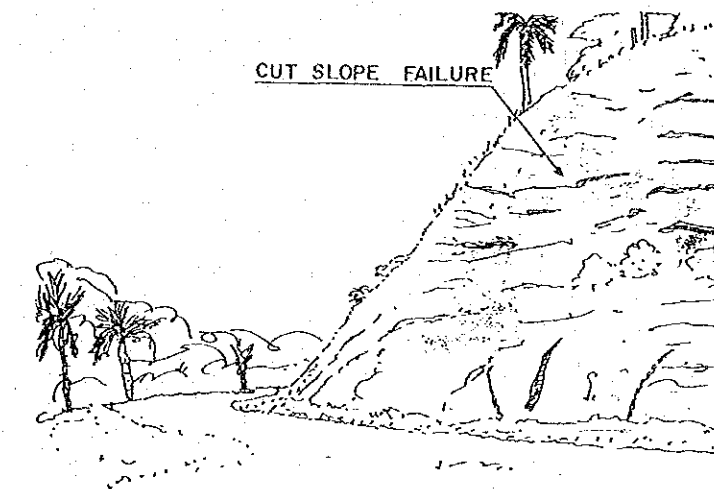
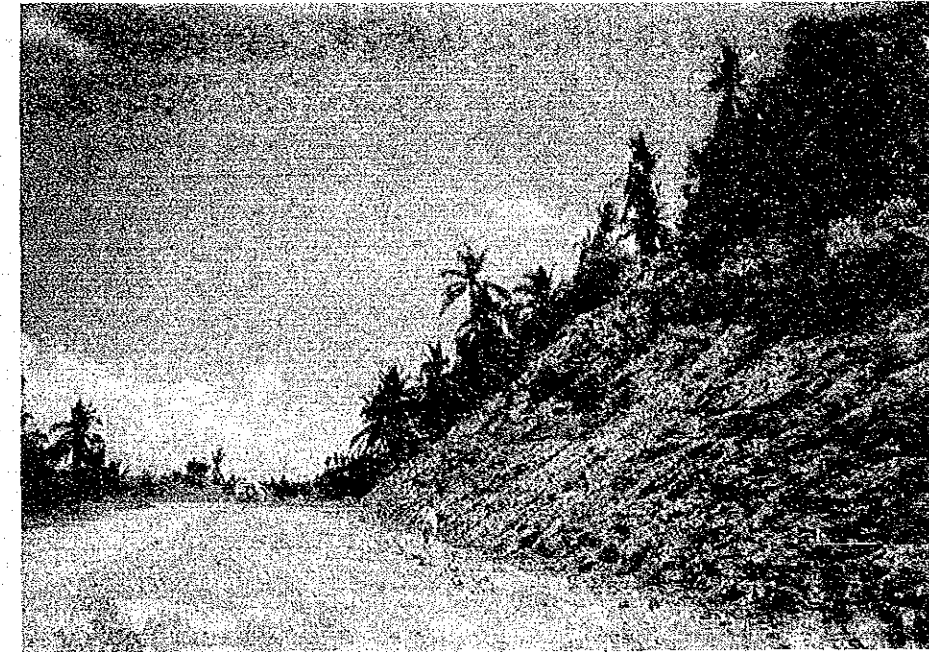
2) Damage Identified

- Type of Disaster: Cut slope failure
- Magnitude of Damage: 50 meters in length, 20 meters in height
- Date Noticed: 1990
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

The spot is located along the sharp curve and mountain slope with an angle of 55° . Damaged section is 50 meters in length and 20 meters in height. At present, this slope failure does not affect the roadway. Sliding of soft soil along the bare slope is expected.

3) Causes of Damage

The slope gradient is unstable and soft soil slides along bare slope during heavy rain. It has a very weak shear strength.

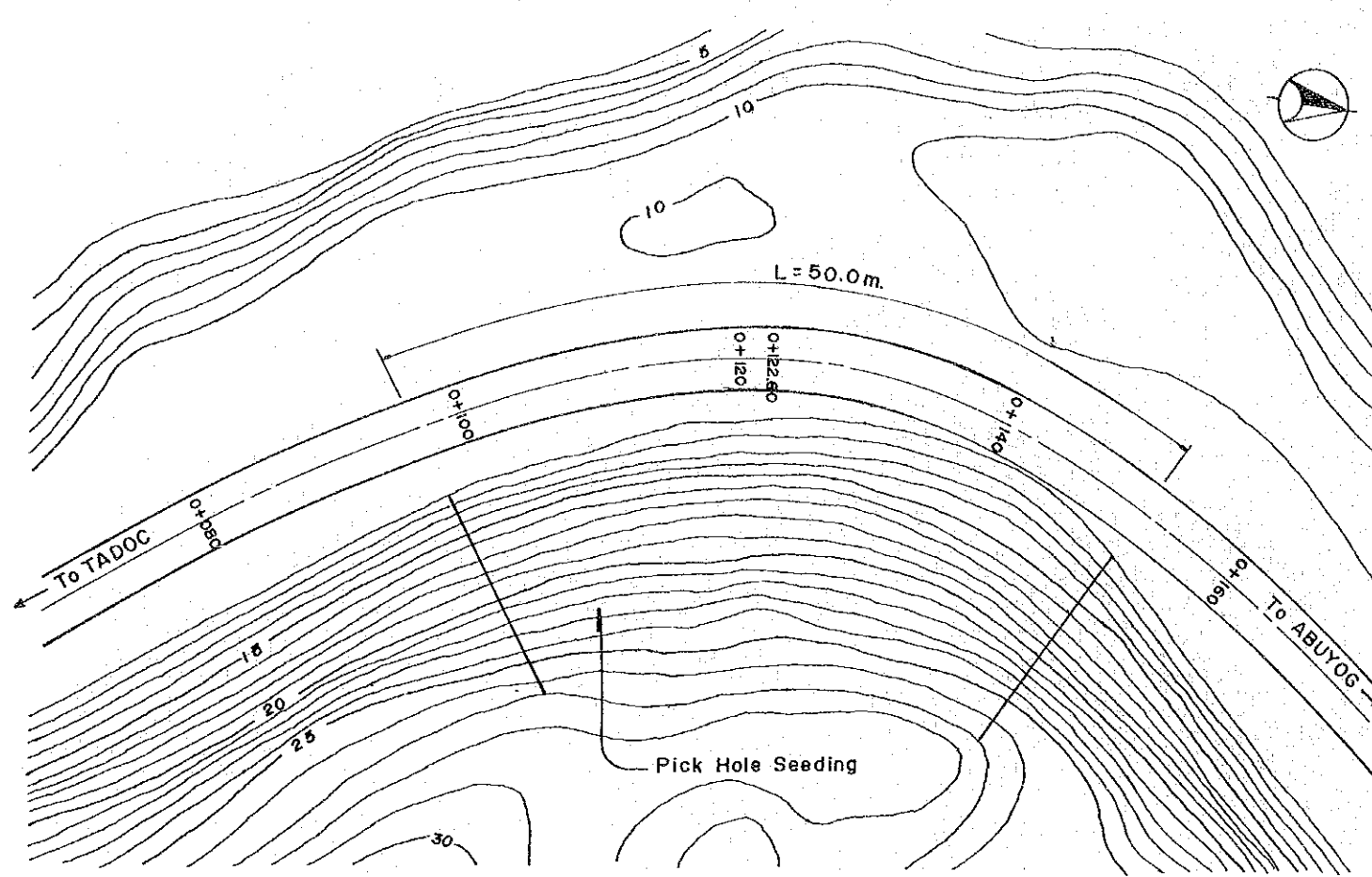


PROVINCE : LEYTE
 SPOT No. : L-80(2/2)

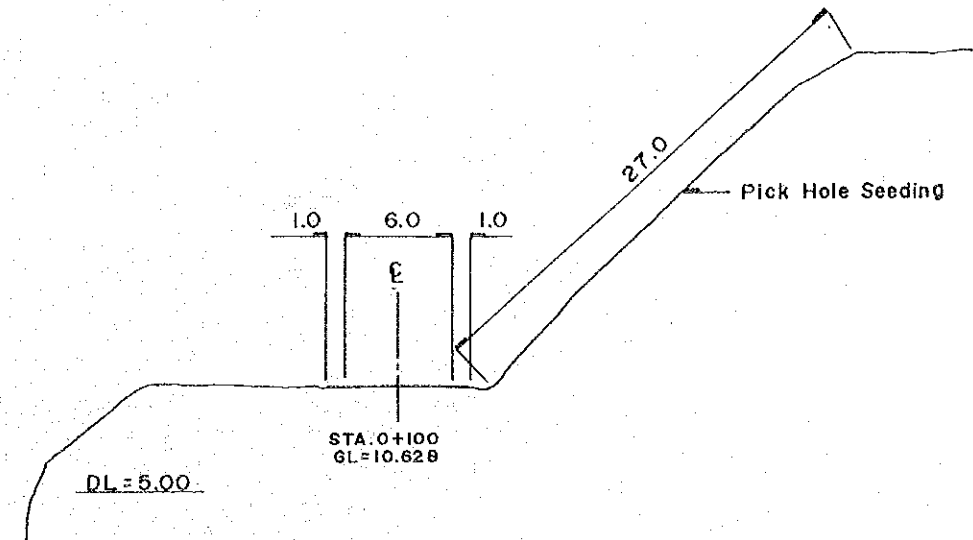
NAME OF ROAD : ABUYOG—TADOC ROAD
 ROAD CLASSIFICATION : BARANGAY ROAD

TYPE OF DISASTER : CUT SLOPE FAILURE

DRAWING NO.
 160



P L A N
 SCALE 1 : 500



CROSS SECTION
 SCALE 1 : 400

SUMMARY OF QUANTITY

TYPE OF WORK	UNIT	TOTAL
PERMANENT RESTORATION		
P4-6 PICK HOLE SEEDING	SQ. M.	1100
URGENT RESTORATION		
U1-1 REMOVAL OF DEPOSIT MATERIALS	CU. M.	20

URGENT RESTORATION:

- Removal of deposit materials

PROVINCE : LEYTE
SPOT No. : L-81(1/2)

NAME OF ROAD : ABUYOG - TADOC ROAD
ROAD CLASSIFICATION : BARANGAY ROAD

TYPE OF DISASTER : CULVERT DAMAGE

DRAWING NO.
161

Leyte Spot No. 81 (L-81)

1) General Situation

- Disaster Classification: CLV-D
- Road Name: Abuyog - Tadoc
- Location : 5+500 from Jct. Abuyog - Mahaplag Road
- Road Class/Office Concerned: Barangay Road/Leyte 3rd Engineering District

- Barangays connected: Brgy. Tadoc and Brgy. Salvacion

- Road Width/Pavement Width: 9.0m
- Pavement Type: Earth
- Surface Condition: Bad
- Availability of Detour: None

2) Damage Identified

- Type of Disaster: Culvert related damaged/scouring of outlet section
- Magnitude of Damage: 2.5 meters wide and 1.0 meter depth
- Date Noticed: 1990
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

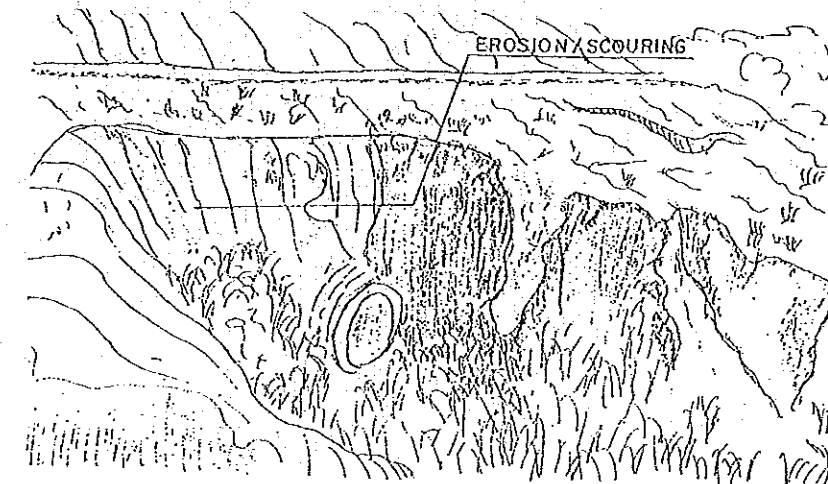
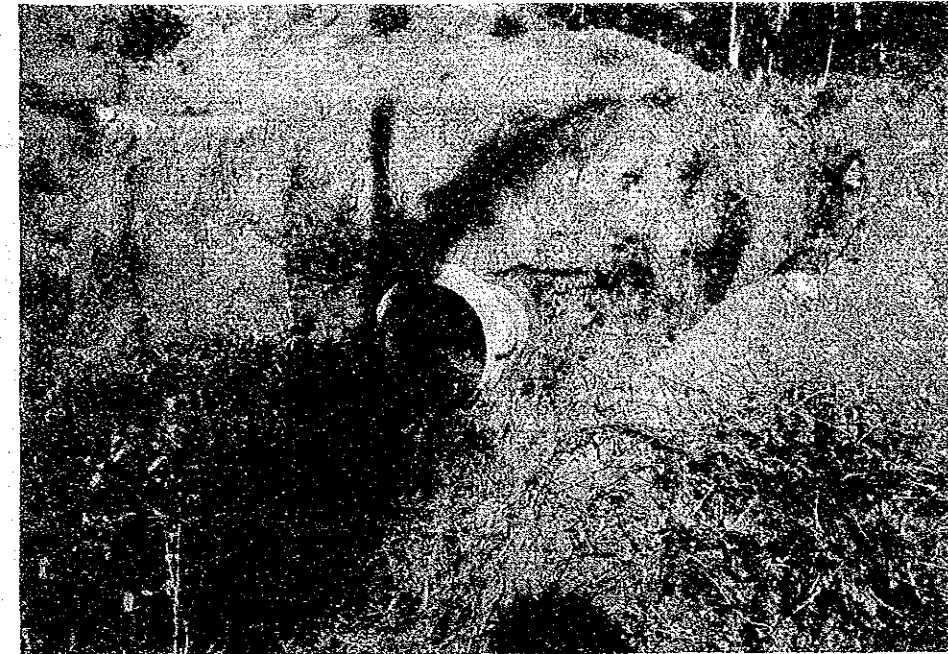
This spot has a straight horizontal alignment and vertical alignment of 3%. Side ditches were provided but only 15 meters in length from the inlet where it is no longer functioning due to a thick grasses covering the ditch.

Reinforced concrete pipe is 1.00m ϕ provided with headwall at the inlet but only of small opening, thus water coming from the mountain side cannot be accommodated at the inlet facility.

No outlet facilities of the culvert.

3) Causes of Damage

Insufficient capacity of culvert causes over flow of concentrated surface water over road surface and damaging embankment slopes; and no outlet drainage facilities thus water runs directly on slope causing deep scouring.

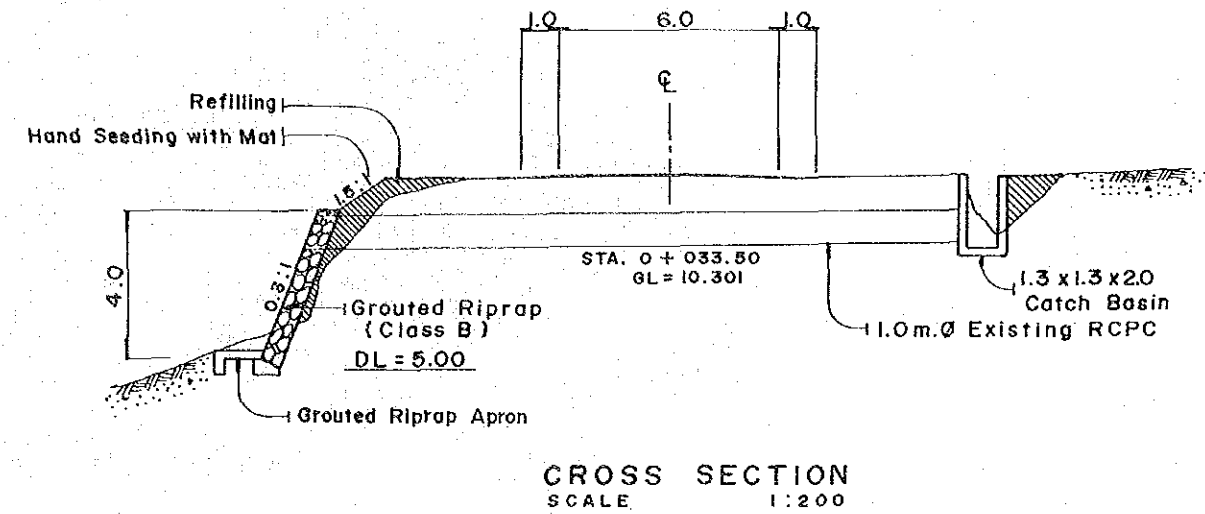
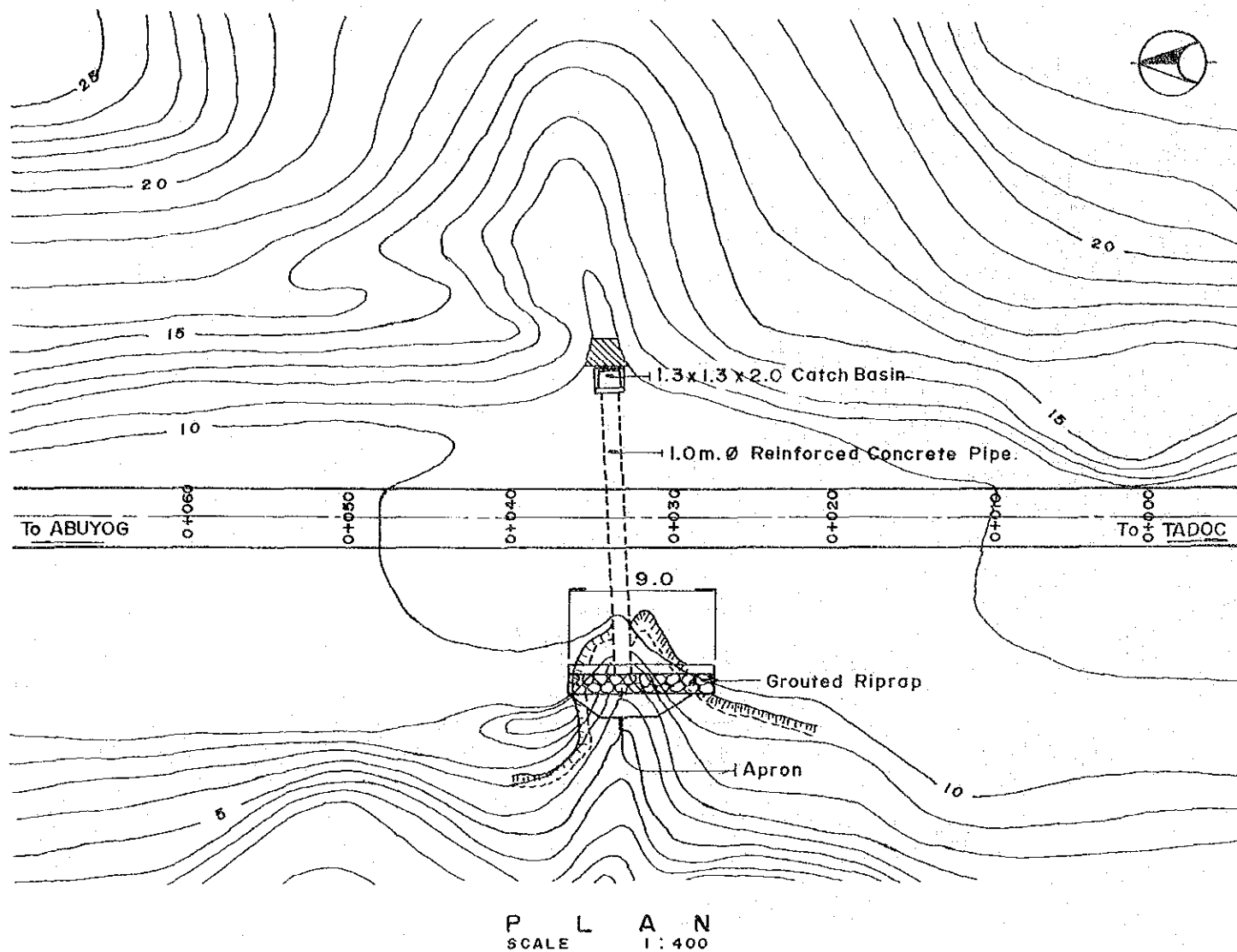


PROVINCE : LEYTE
 SPOT No. : L-81 (2/2)

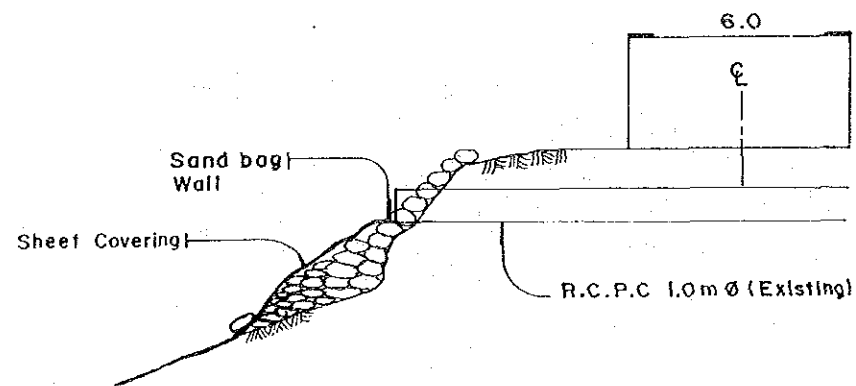
NAME OF ROAD : ABUYOG-TADOC ROAD
 ROAD CLASSIFICATION : BARANGAY ROAD

TYPE OF DISASTER : CULVERT DAMAGE

DRAWING NO.
 162



CROSS SECTION
 SCALE 1:200



CROSS SECTION FOR URGENT RESTORATION
 SCALE 1:200

SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
PERMANENT RESTORATION			
P1-3	REFILLING/ EMBANKMENT	CU. M.	13
P2-5	CATCH BASIN	EQ.	1
P4-2	HAND SEEDING WITH MAT	SQ. M.	14
P6-2	GROUTED RIPRAP	CU. M.	19
P16-3	GROUTED RIPRAP APRON	CU. M.	6
URGENT RESTORATION			
U3-1	SHEET COVERING	SQ. M.	48
U4-1	SAND BAG WALL	SQ. M.	60

PROVINCE : LEYTE
SPOT No. : L-82 (1/2)

NAME OF ROAD : TADOC-SOUTHERN LEYTE ROAD
ROAD CLASSIFICATION : BARANGAY ROAD

TYPE OF DISASTER : EMBANKMENT SLOPE FAILURE

DRAWING NO.
163

Leyte Spot No. 82 (L-82)

1) General Situation

- Disaster Classification: Embankment Failure
- Road Name: Tadoc - Southern Leyte Road
- Location : 5+600 km. from Jct. Abuyog - Mahaplag
- Road Class/Office Concerned: Barangay Road/Leyte 3rd Engineering District

- Barangays connected:
Brgy. Tadoc and Brgy. Salvacion

- Road Width: 9.0m
- Pavement Type: Earth
- Surface Condition: Bad
- Availability of Detour: None

2) Damage Identified

- Type of Disaster: Deep scouring of shoulder
- Magnitude of Damage: 2.5 meters in length, 2.0 meters in depth
- Date Noticed: Nov. 12, 1990
- Degree/Period of Traffic Interruption: Low
- Description of Disaster:

The slope of the mountain is 65° angle and 18.0 meters in height. The vertical alignment of the road is approximately 3% and the horizontal alignment is straight. There is no side ditches all throughout the section. The damage portion is 2.5 meters in length and 2.0 meters in depth. Deep scouring of this section will always occur every heavy rain due to the flow of water that comes from mountain side slope and road surface.

3) Causes of Damage

- No drainage facilities were provided that causes water to run directly on the road surface and on embankment slope that causes deep scouring and erosion.

