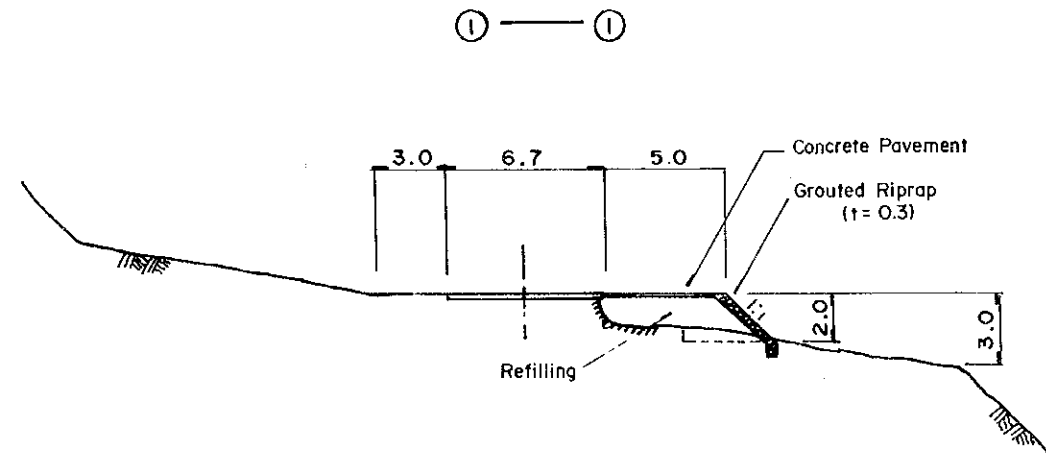


P L A N



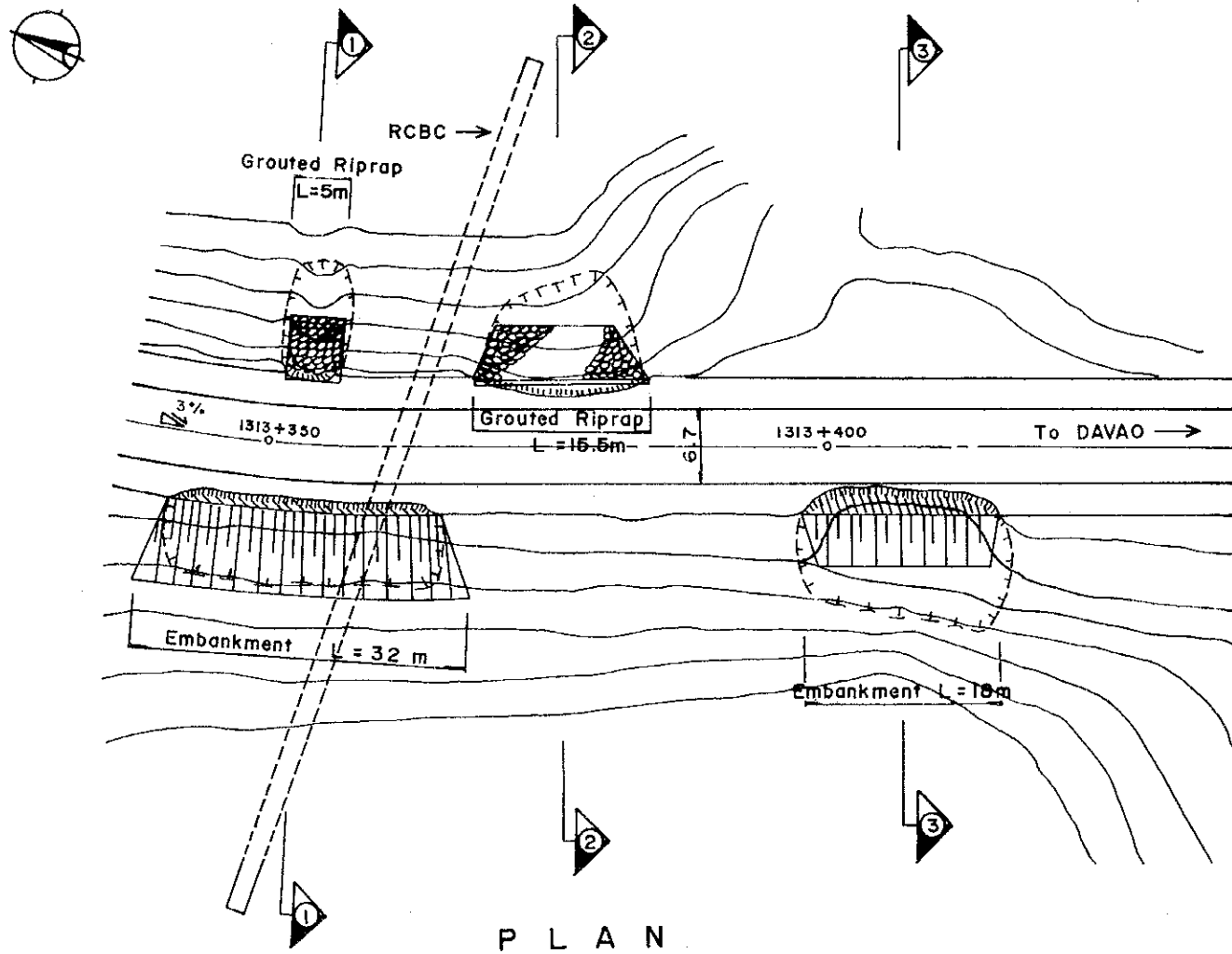
CROSS SECTION
SCALE 1:300

SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5 - 5	REFILLING/ EMBANKMENT	CU.M	127
5 - 19	GROUTED RIPRAP	CU.M	40
5 - 13	CONCRETE PAVEMENT (SHOULDER)	SQ.M	135

Cause of Disaster:

- 1) Insufficient compaction of embankment.
- 2) Scouring by water which was drained from feeder earth road and concentrated on the slope due to the geometric formation of road.



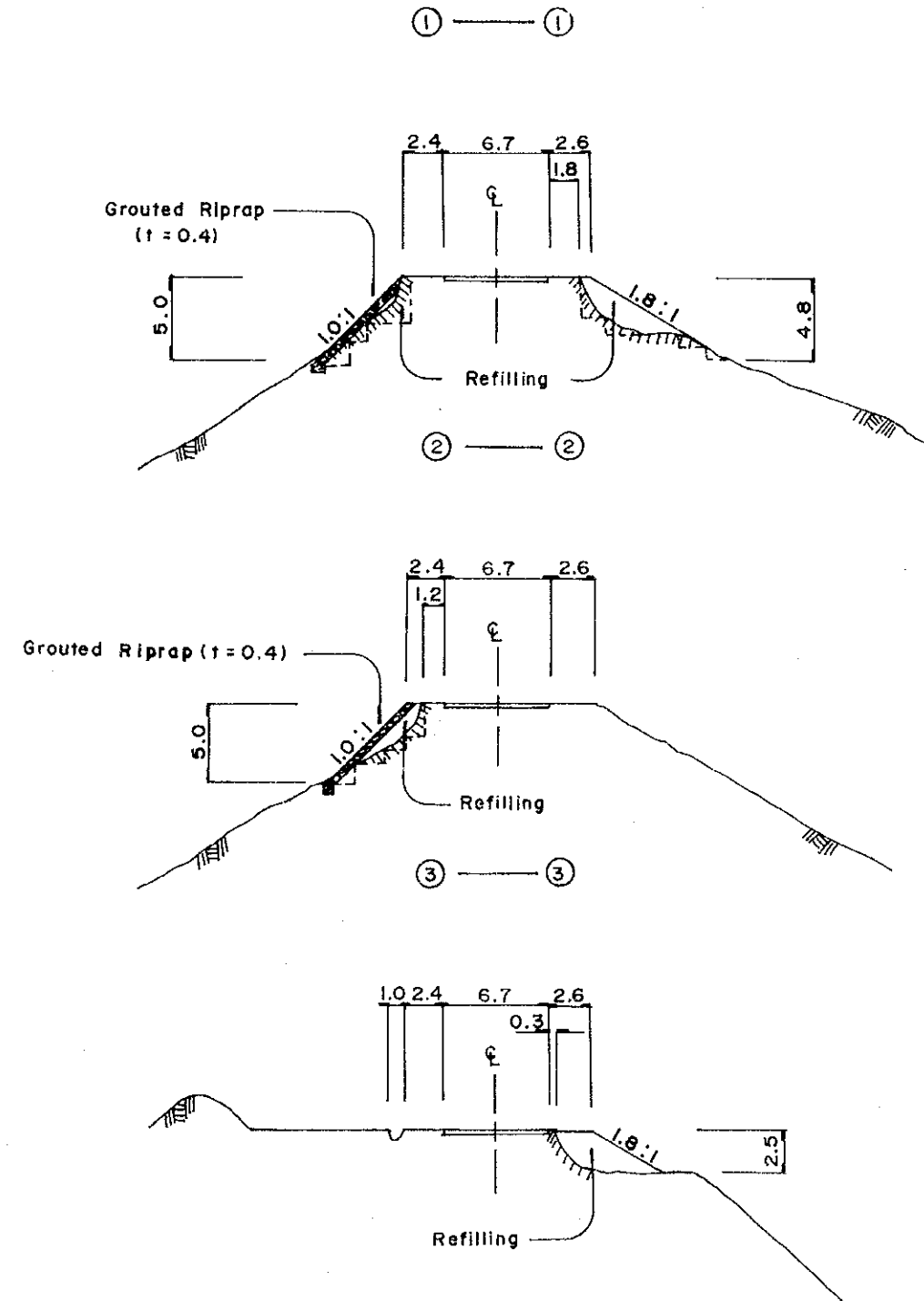
P L A N

SUMMARY OF QUANTITY

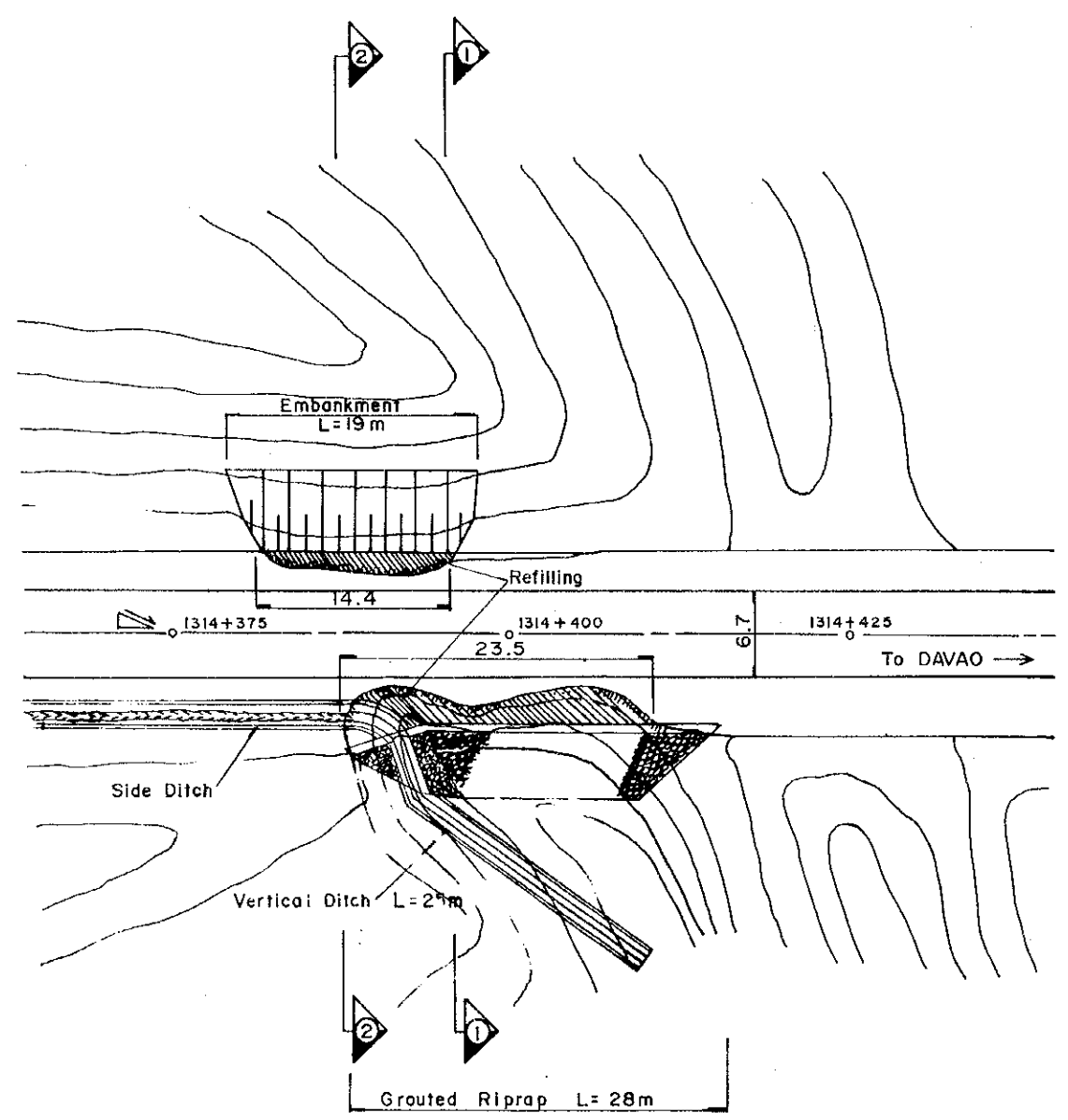
TYPE OF WORK	UNIT	TOTAL
4-34 (1313+350)		
5-5 REFILLING / EMBANKMENT	CU. M	359
5-19 GROUTED RIPRAP	CU. M	16
4-35 (1313+380)		
5-5 REFILLING / EMBANKMENT	CU. M	87
5-19 GROUTED RIPRAP	CU. M	36
4-36 (1313+400)		
5-5 REFILLING / EMBANKMENT	CU. M	171

Cause of Disaster:

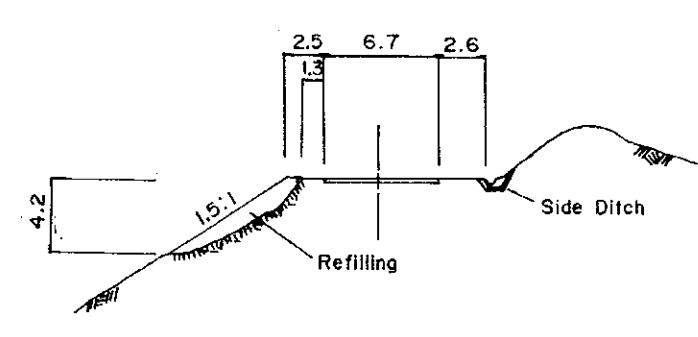
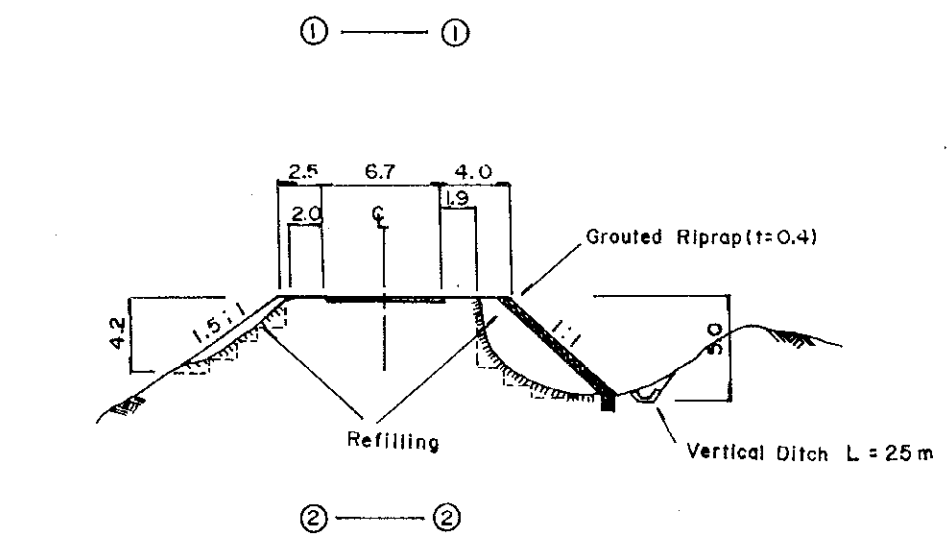
- 1) Insufficient compaction of embankment.
- 2) Embankment slope with an unstable grade.



CROSS SECTION
SCALE 1:300



P L A N



CROSS SECTION
SCALE 1:400

SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING / EMBANKMENT	CU. M	644
5-19	GROUTED RIPRAP	CU. M	68
5-27	VERTICAL DITCH	L. M	25

Cause of Disaster:

- 1) Insufficient compaction of embankment.
- 2) Embankment slope with an unstable grade.
- 3) Scouring by water which was drained from hill side and concentrated on the slope due to the geometric formation of road.

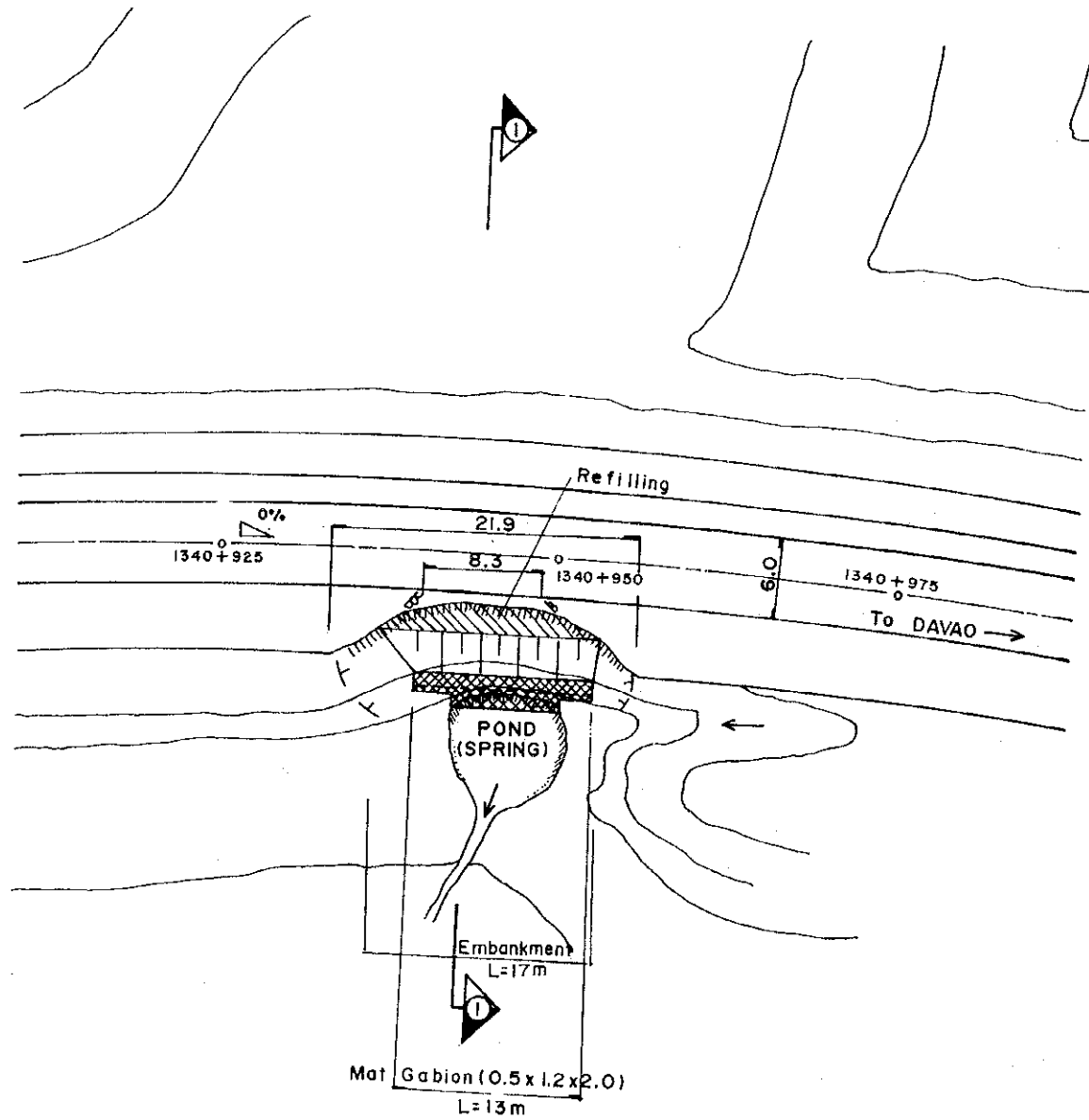
FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

SLOPE NO.: 4-38
TYPE OF DISASTER:

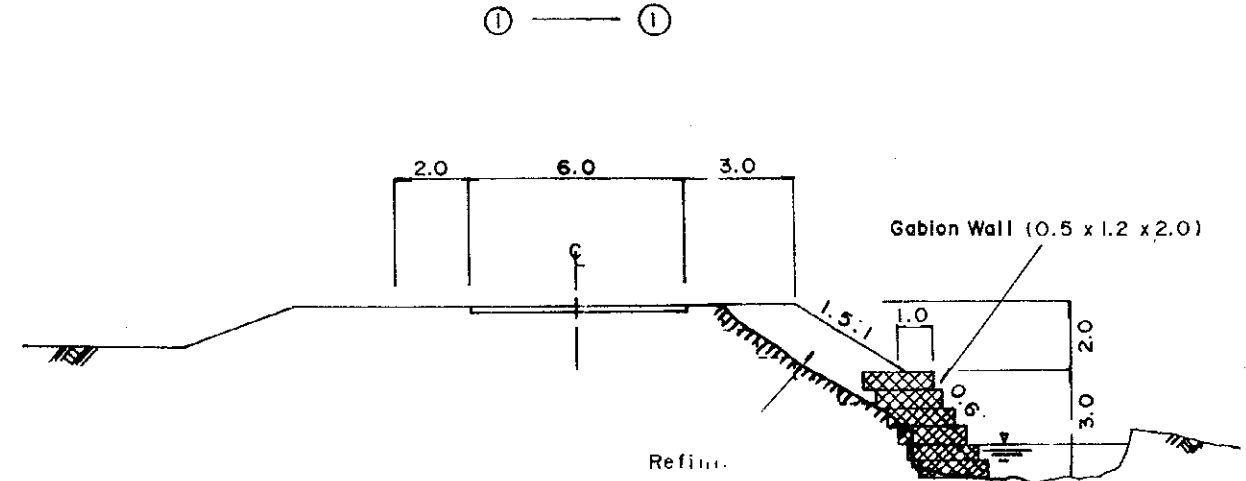
STATION: 1340+950
EMBANKMENT SLOPE FAILURE

SCALE
NOT TO SCALE

DRAWING NO.
S-53



P L A N



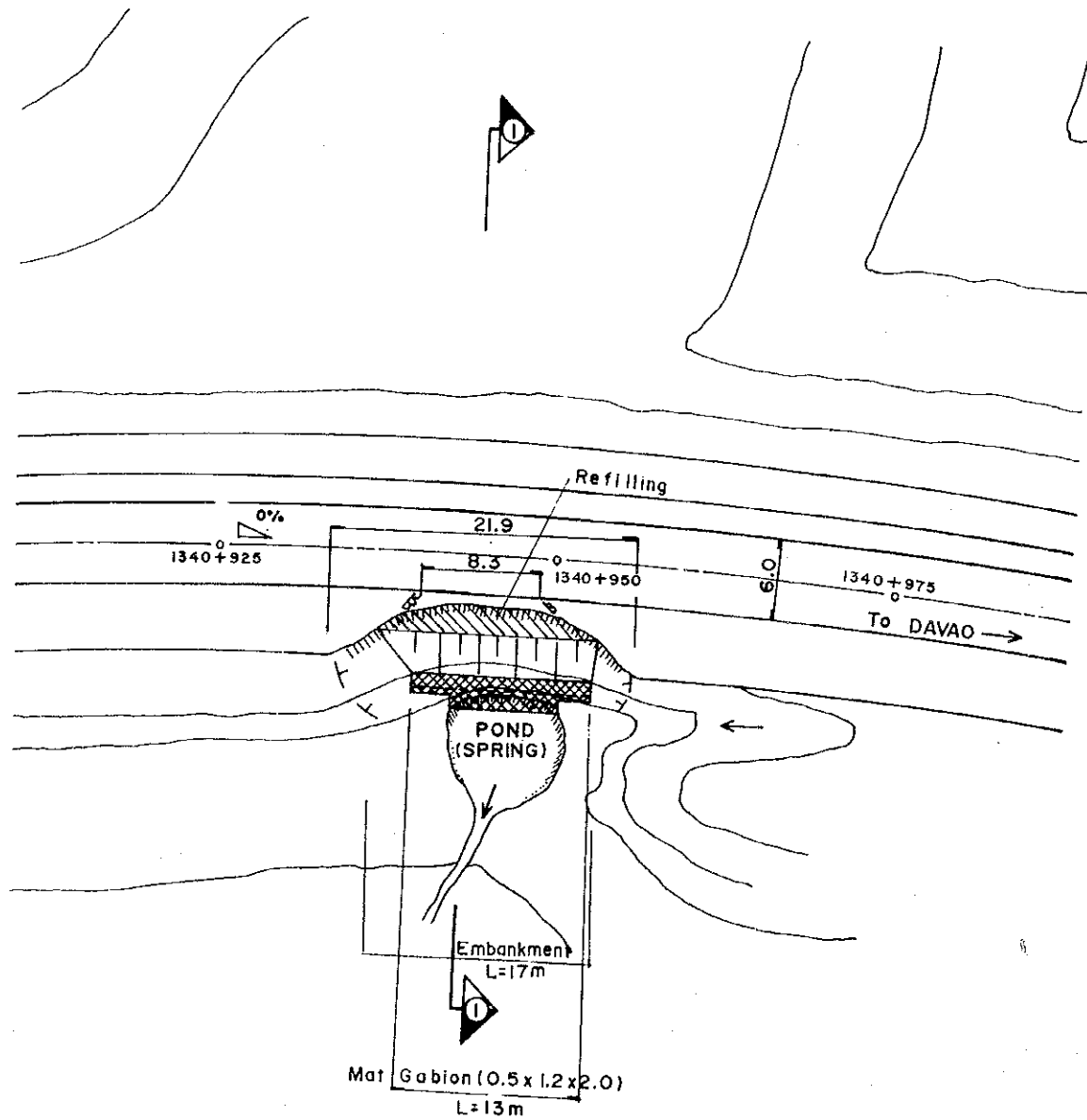
CROSS SECTION
SCALE 1:200

SUMMARY OF QUANTITY

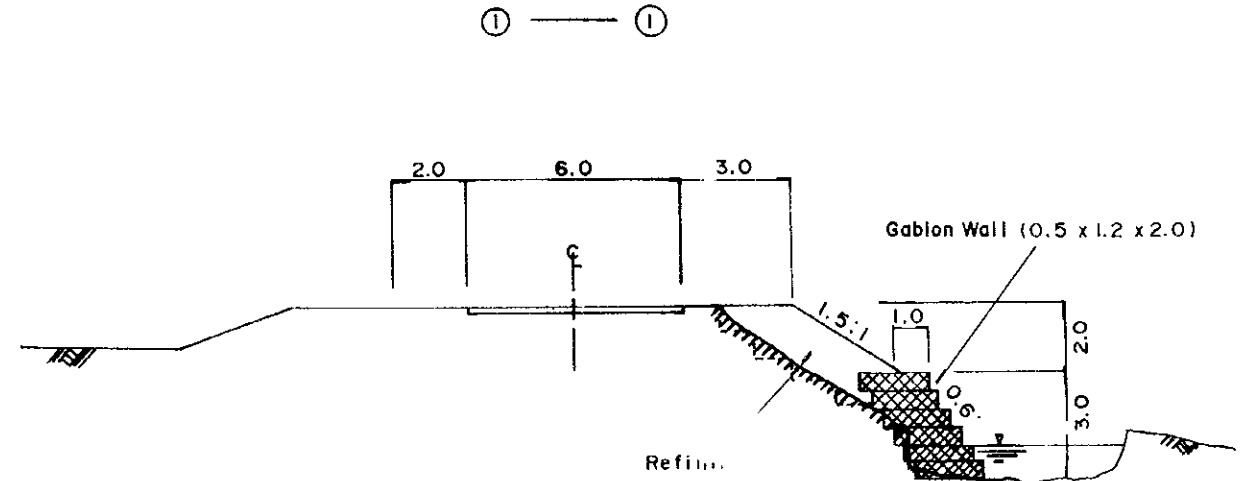
	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING / EMBANKMENT	CU. M	54
5-17	GABION WALL	CU. M	65

Cause of Disaster:

- 1) Erosion at the foot of slope by pond water.



P L A N



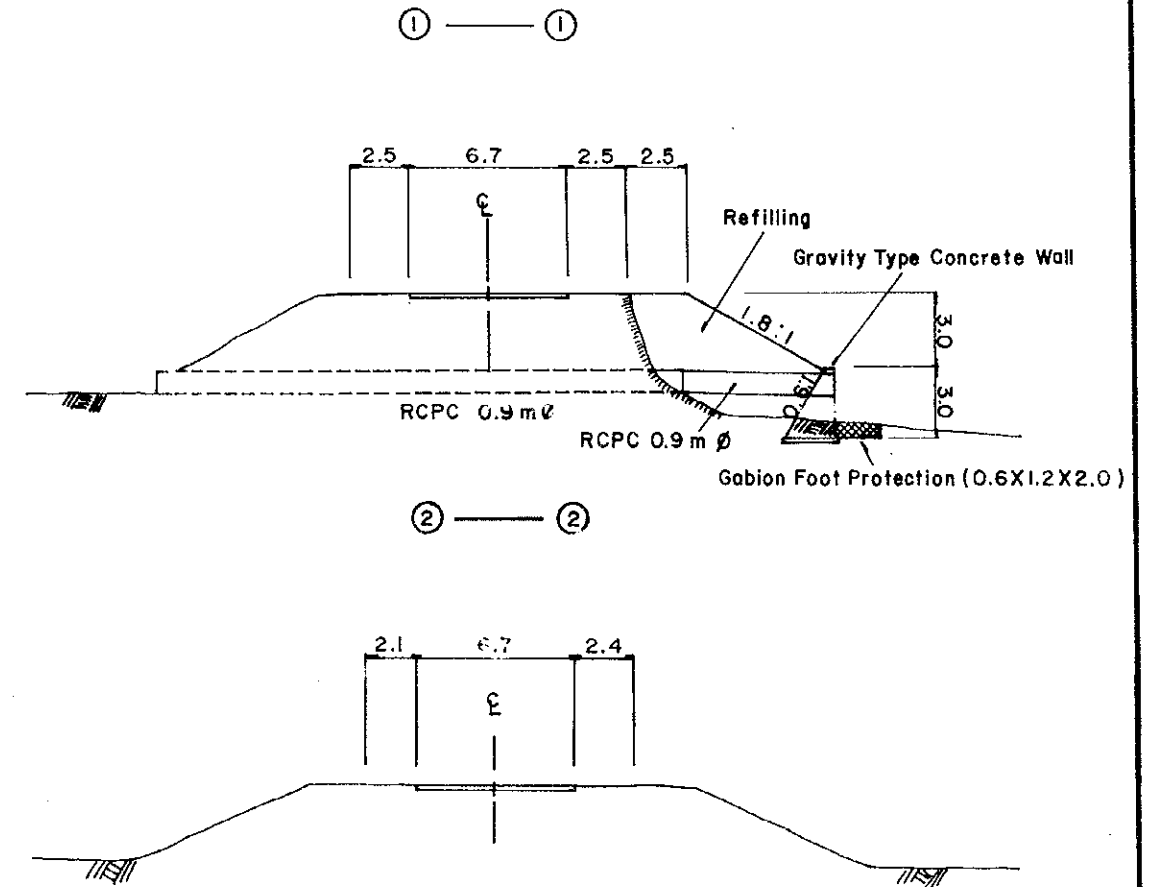
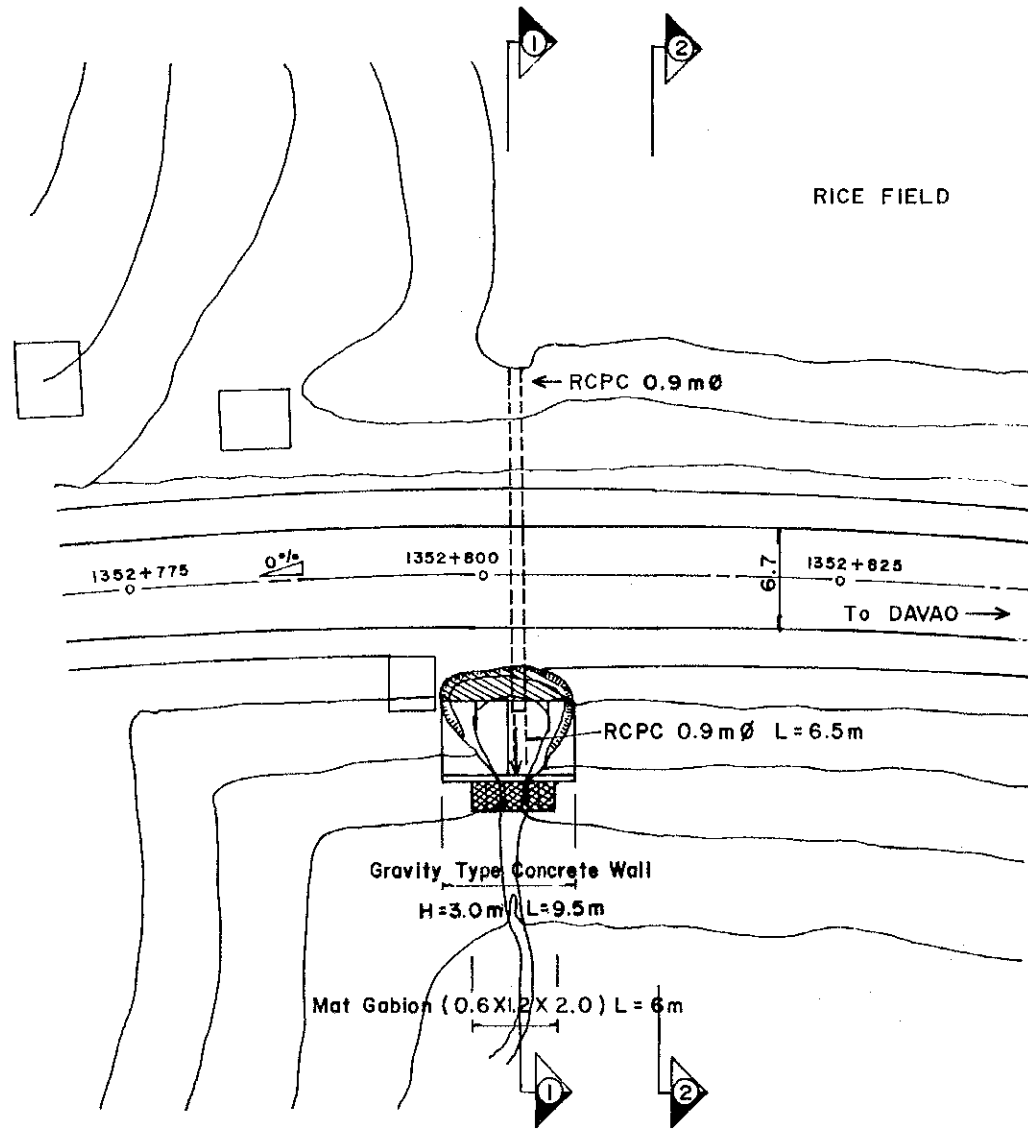
CROSS SECTION
SCALE 1:200

SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING / EMBANKMENT	CU. M	54
5-17	GABION WALL	CU. M	65

Cause of Disaster:

- 1) Erosion at the foot of slope by pond water.

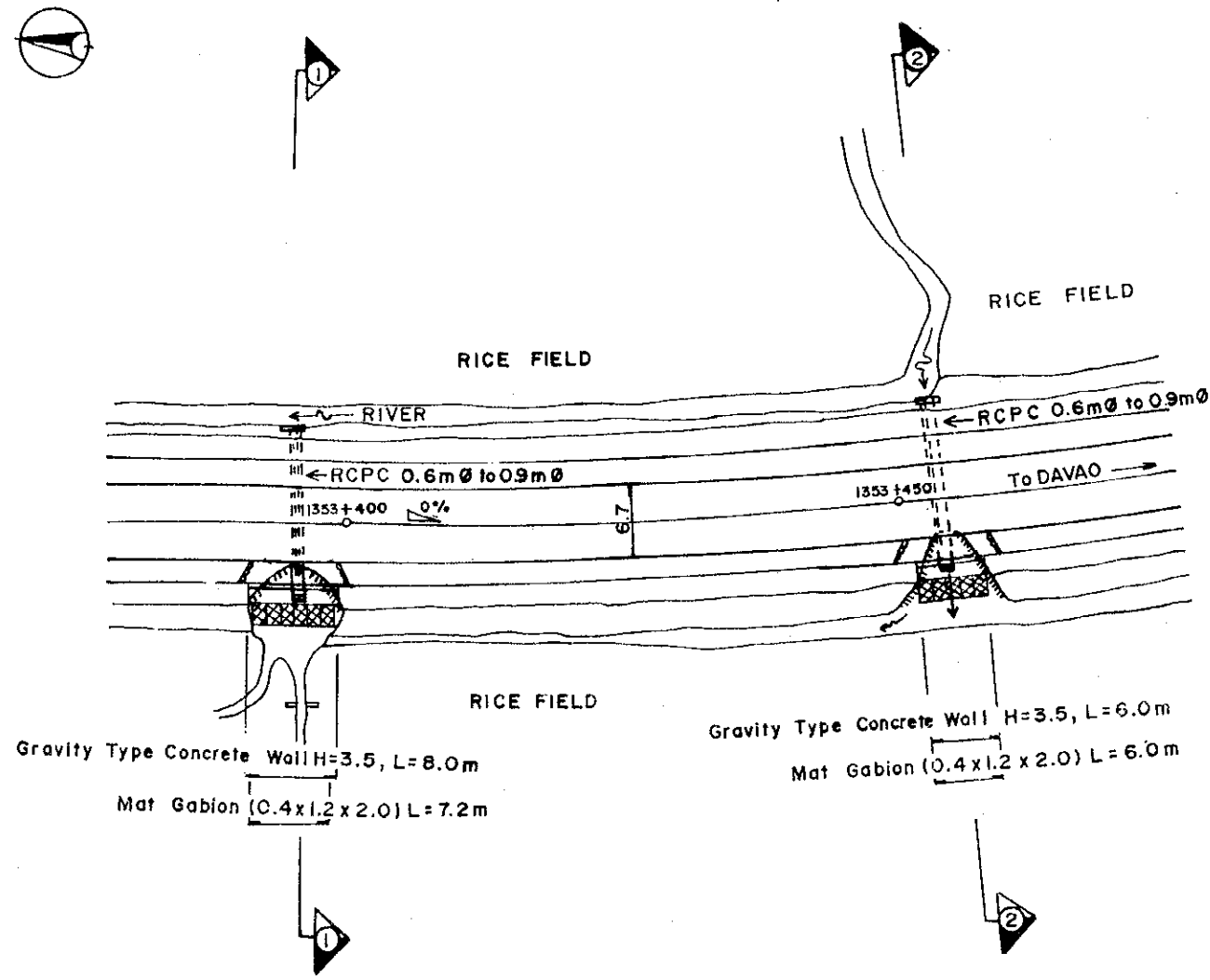


SUMMARY OF QUANTITY

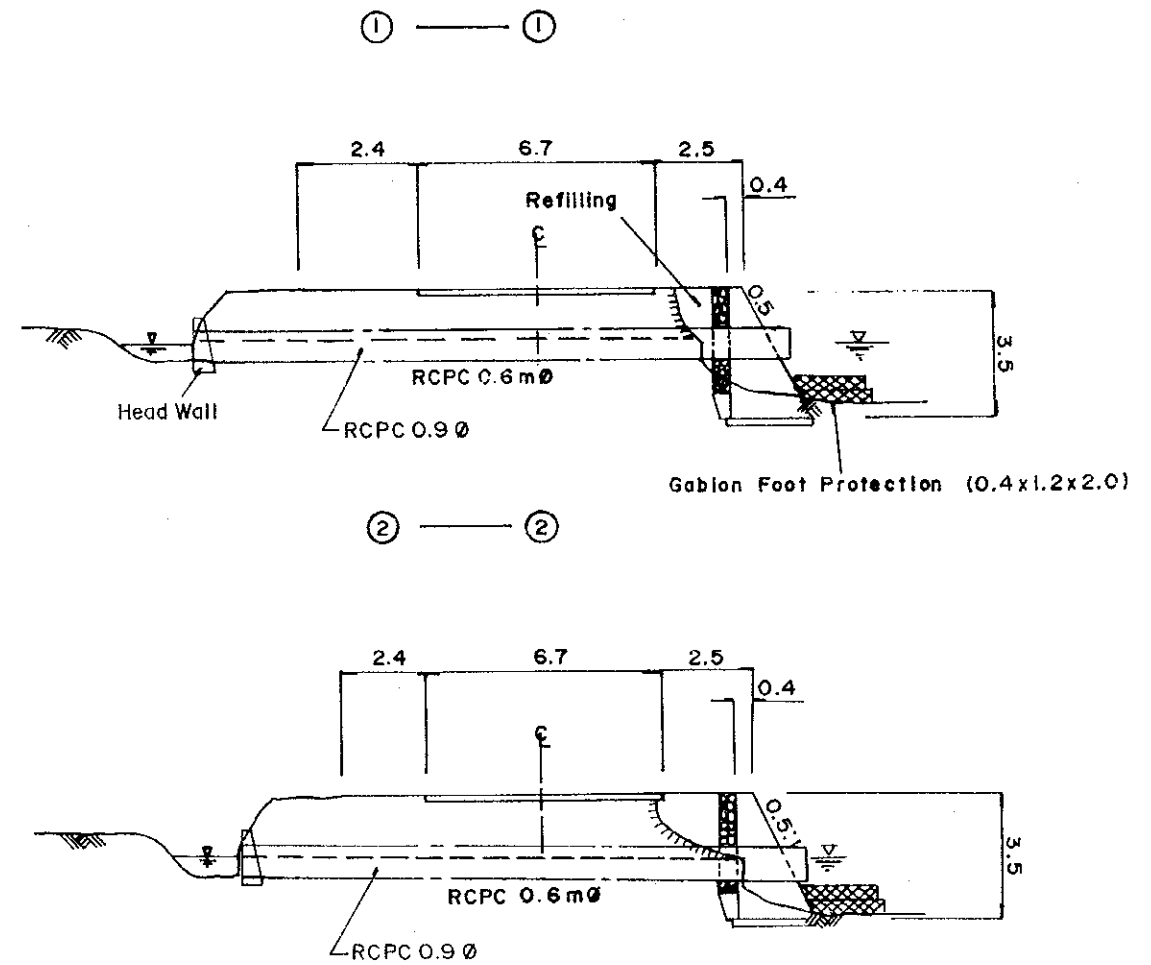
TYPE OF WORK		UNIT	TOTAL
5-5	REFILLING/EMBANKMENT	CU.M.	161
5-14	GRAVITY TYPE CONCRETE WALL	CU.M.	37
5-26	GABION FOOT PROTECTION	CU.M.	7
5-31	RCPC (0.9m Ø)	L.M.	7
5-4	STRUCTURAL EXCAVATION	CU.M.	30
5-8	FOUNDATION FILL	CU.M.	5

Cause of Disaster:

- 1) Inadequate outlet facility of pipe culvert.



P L A N



CROSS SECTION
SCALE 1:200

SUMMARY OF QUANTITY

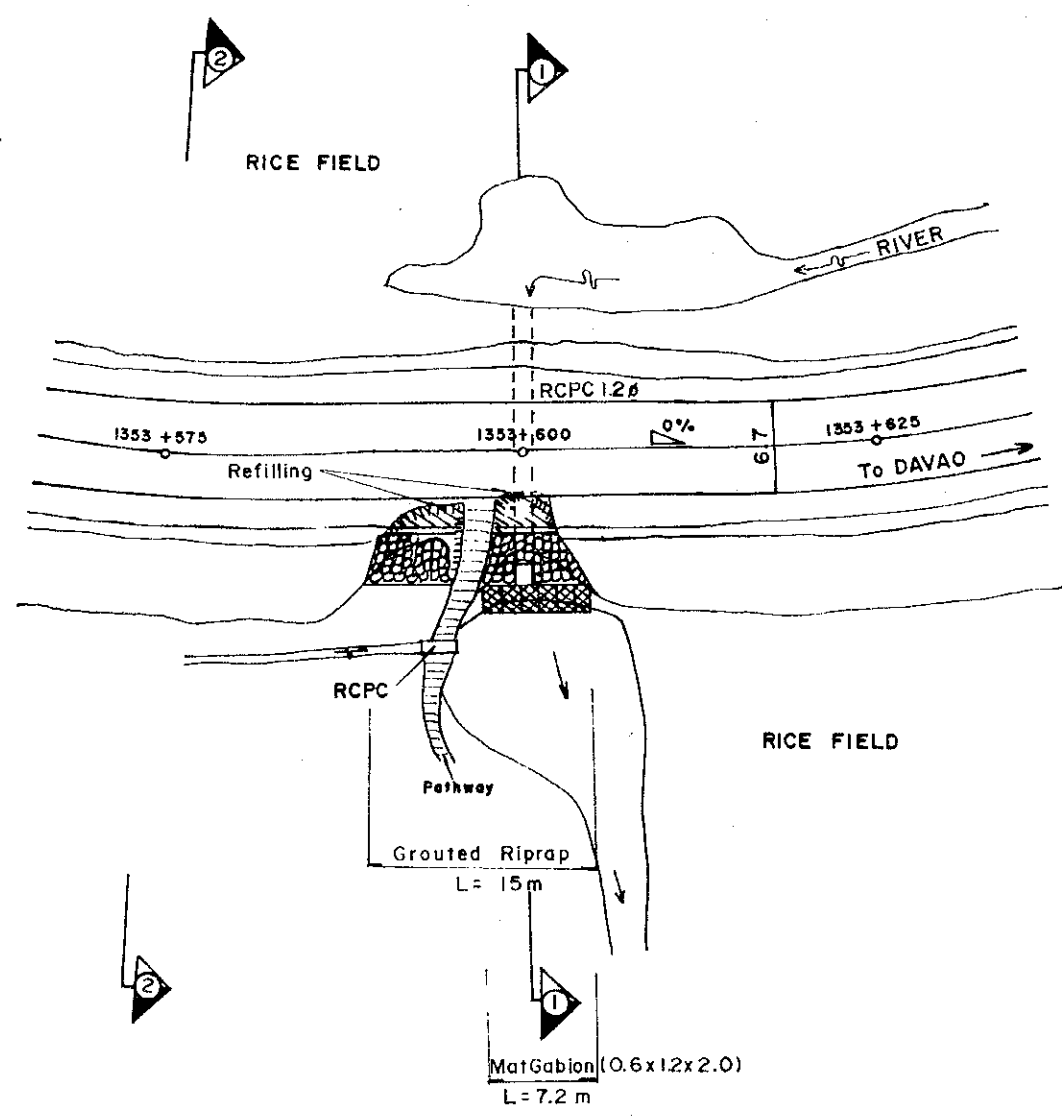
TYPE OF WORK	UNIT	TOTAL
4 - 40 (1353+400)		
5-5 REFILLING / EMBANKMENT	CU.M	4
5-14 GRAVITY TYPE CONCRETE WALL	CU.M	36
5-26 GABION FOOT PROTECTION	CU.M	12
5-31 RCPC (0.9m.Ø)	L.M	17
5-40 HEAD WALL FOR RCPC 0.9m.Ø	E.A	1
5-4 STRUCTURAL EXCAVATION	CU.M	22
5-6 FILLING OF BACKFILL MATERIALS	CU.M	11

SUMMARY OF QUANTITY

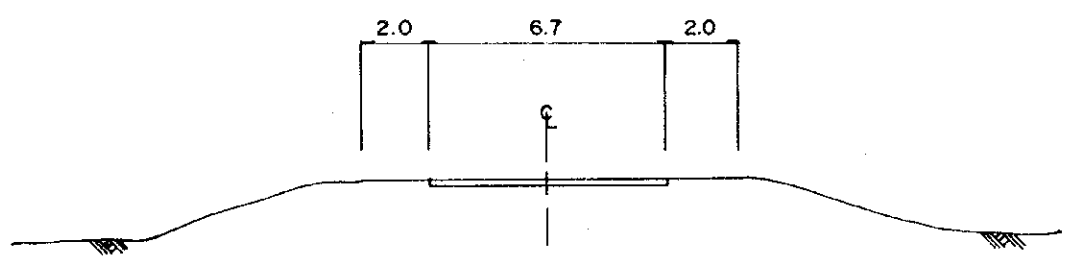
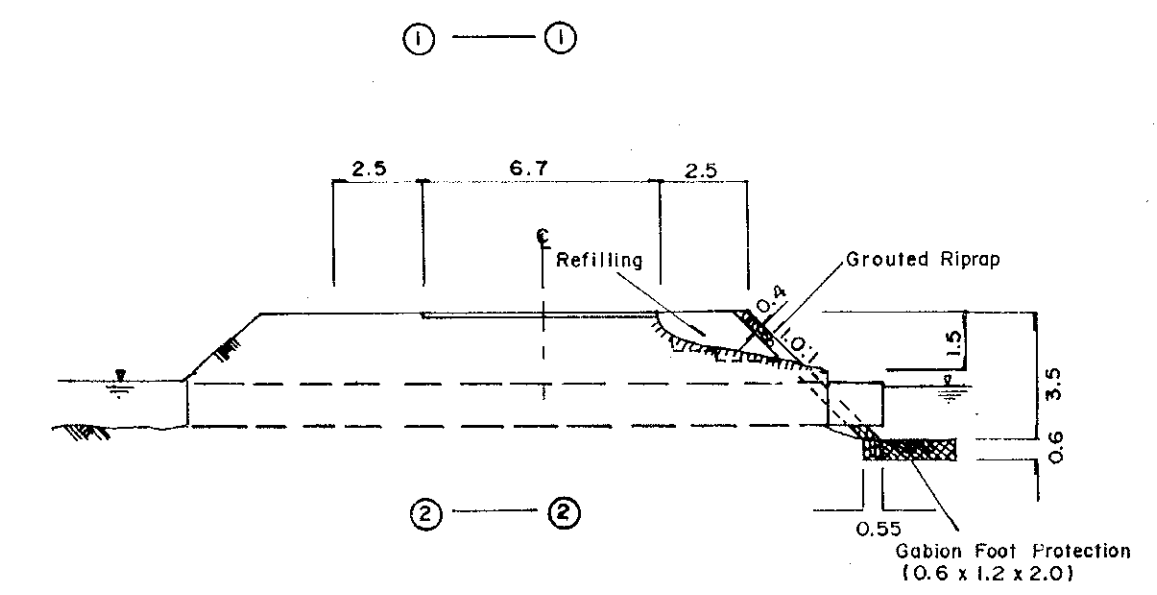
TYPE OF WORK	UNIT	TOTAL
4 - 41 (1353+450)		
5-5 REFILLING / EMBANKMENT	CU.M	5
5-14 GRAVITY TYPE CONCRETE WALL	CU.M	27
5-26 GABION FOOT PROTECTION	CU.M	10
5-31 RCPC (0.9m.Ø)	L.M	16
5-40 HEAD WALL FOR RCPC 0.9m.Ø	E.A	1
5-4 STRUCTURAL EXCAVATION	CU.M	17
5-6 FILLING OF BACKFILL MATERIAL	CU.M	8

Cause of Disaster:

- 1) Scouring at the foot of slope by flow of river.
- 2) Insufficient drainage capacity of pipe culvert.



P L A N

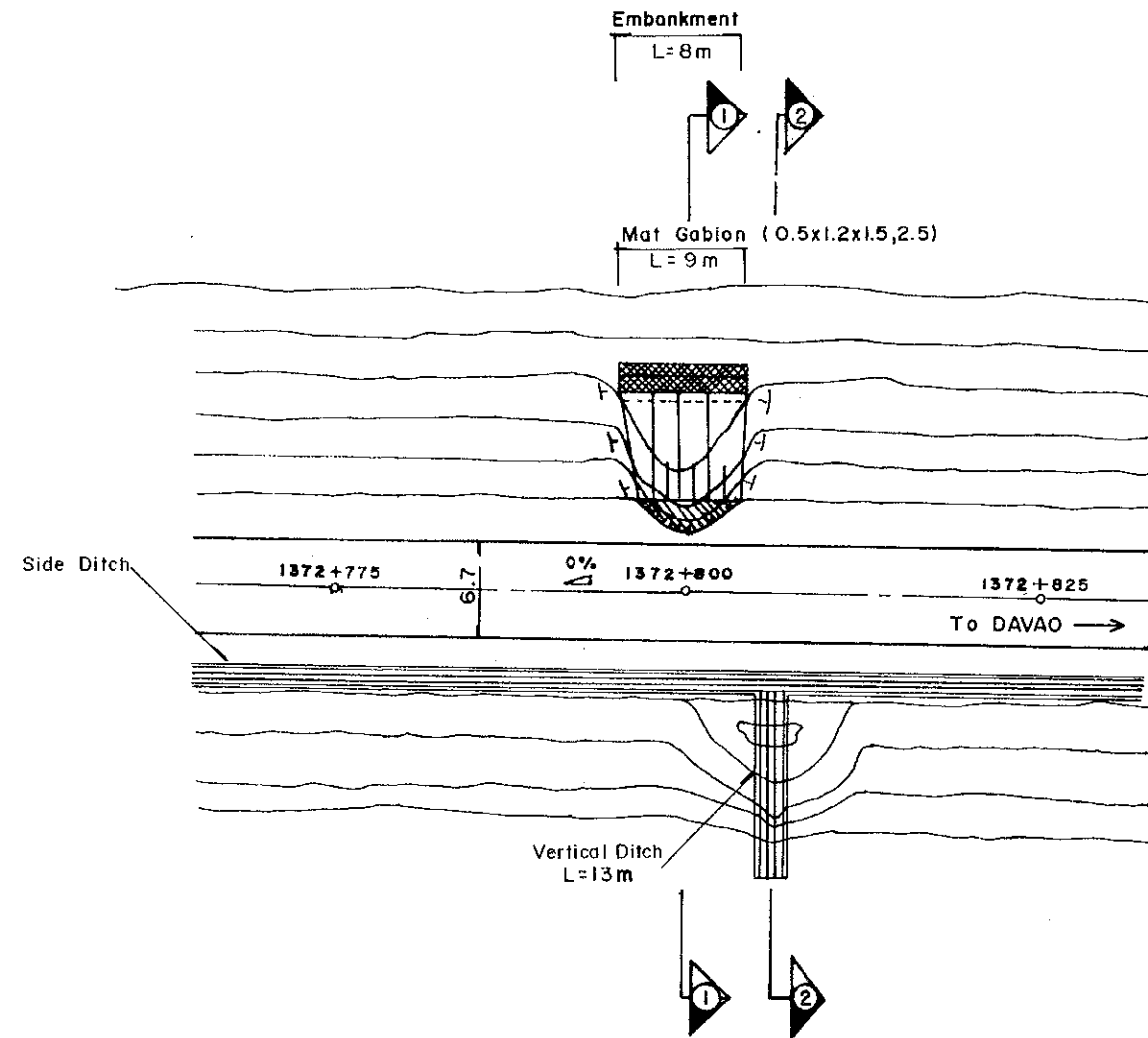


CROSS SECTION
SCALE 1:200

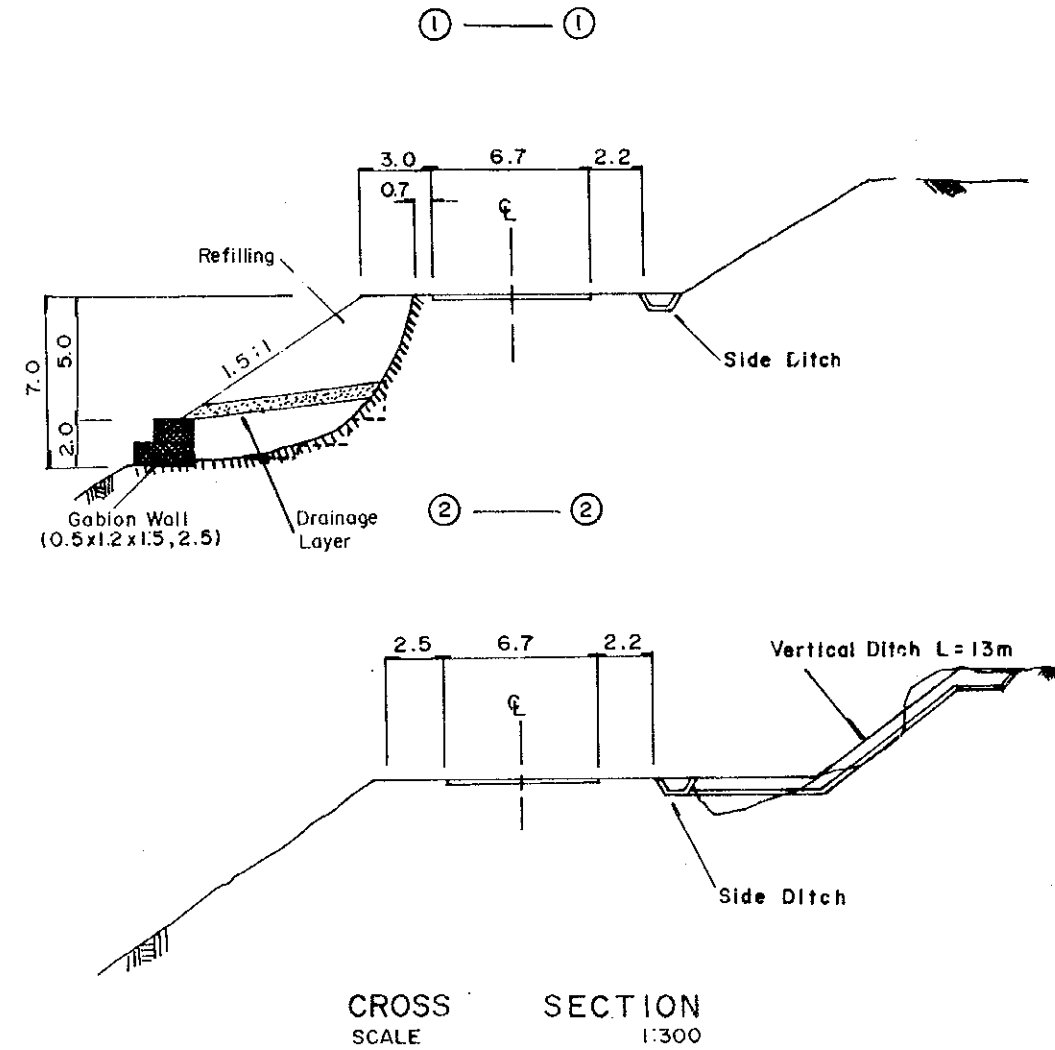
SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING/ EMBANKMENT	CU. M	23
5-19	GROUTED RIPRAP	CU. M	28
5-26	GABION FOOT PROTECTION	CU. M	9

Cause of Disaster:
1) Erosion at the foot of slope by pond water.
2) Insufficient compaction of embankment.



P L A N



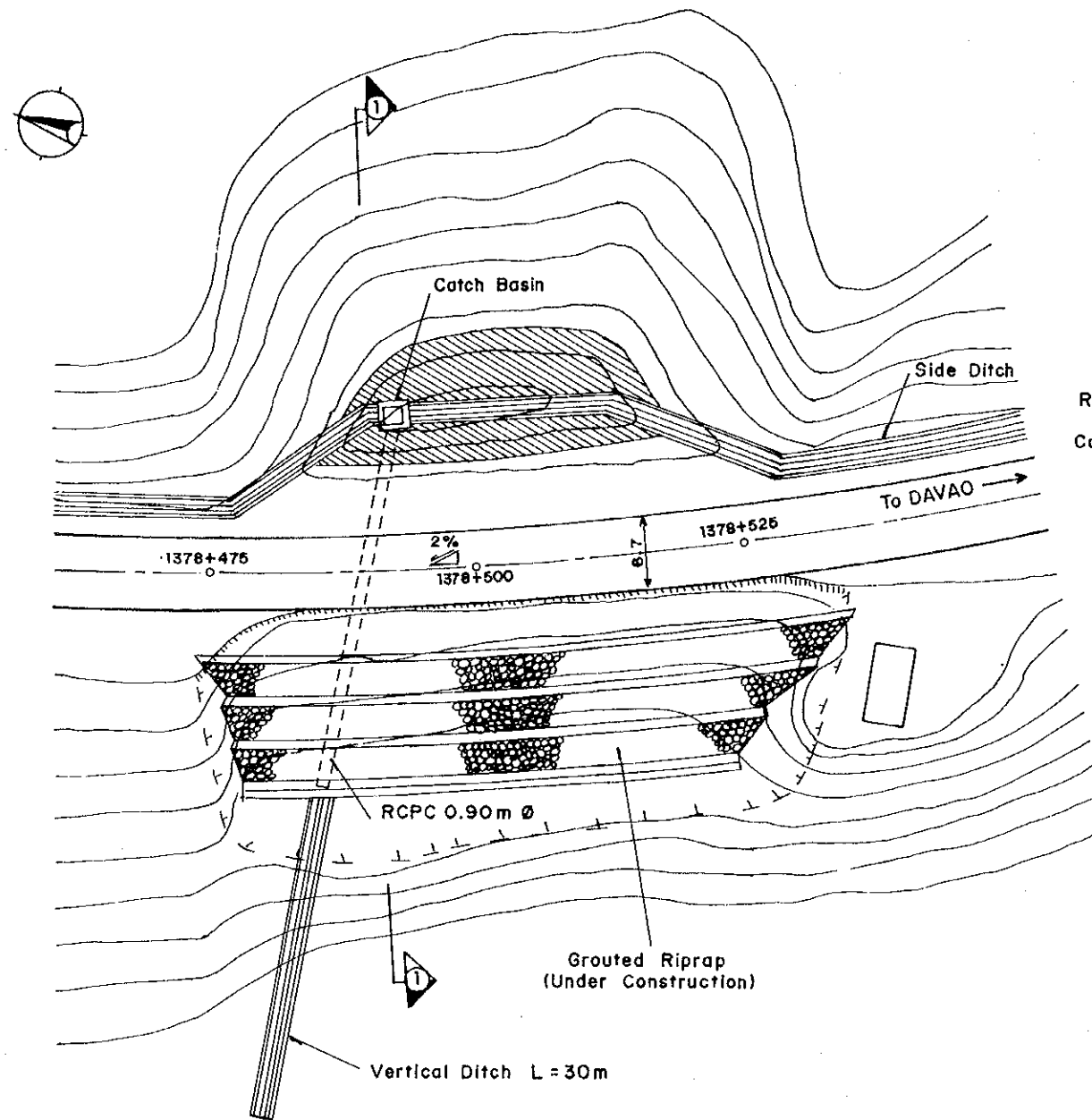
CROSS SECTION
SCALE 1:300

SUMMARY OF QUANTITY

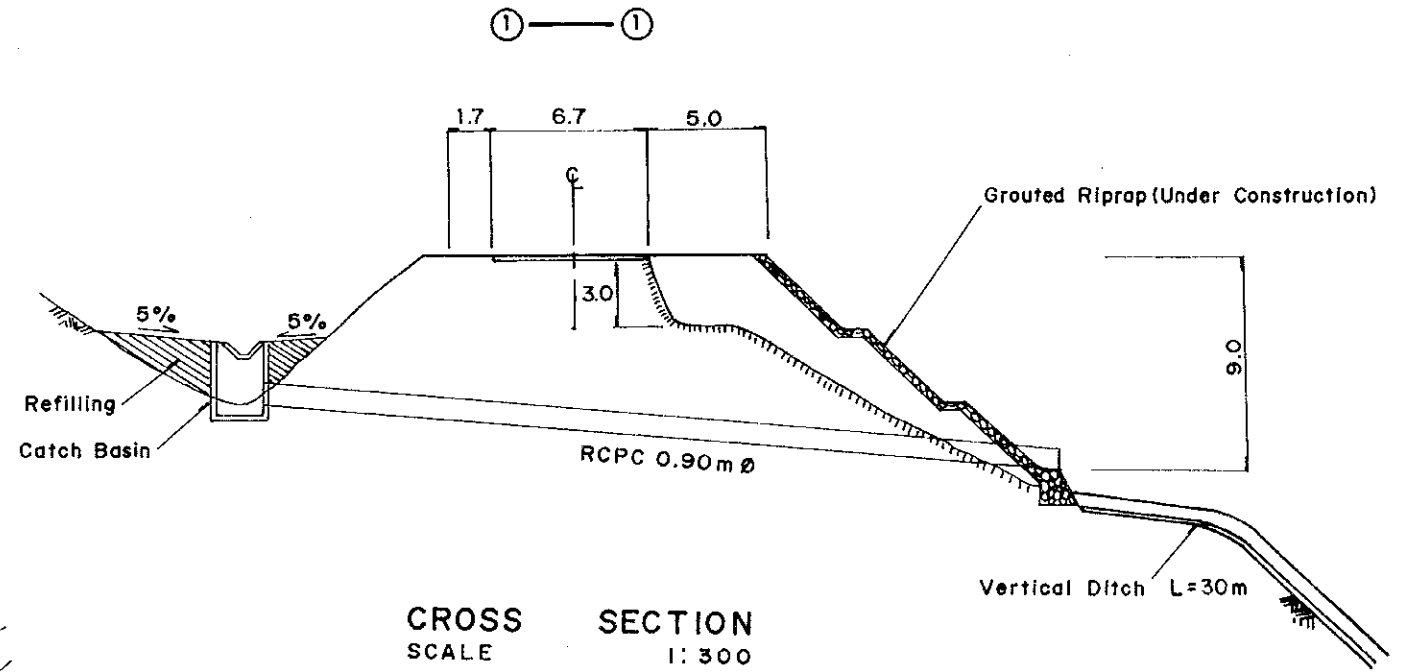
TYPE OF WORK		UNIT	TOTAL
5-5	REFILLING/EMBANKMENT	CU.M	264
5-17	GABION WALL	CU.M	36
5-27	VERTICAL DITCH	L.M	13

Cause of Disaster:

- 1) Infiltration of water into boundary surface between the ground and embankment.
- 2) Effect of ground water.
- 3) Embankment slope with an unstable grade.



P L A N

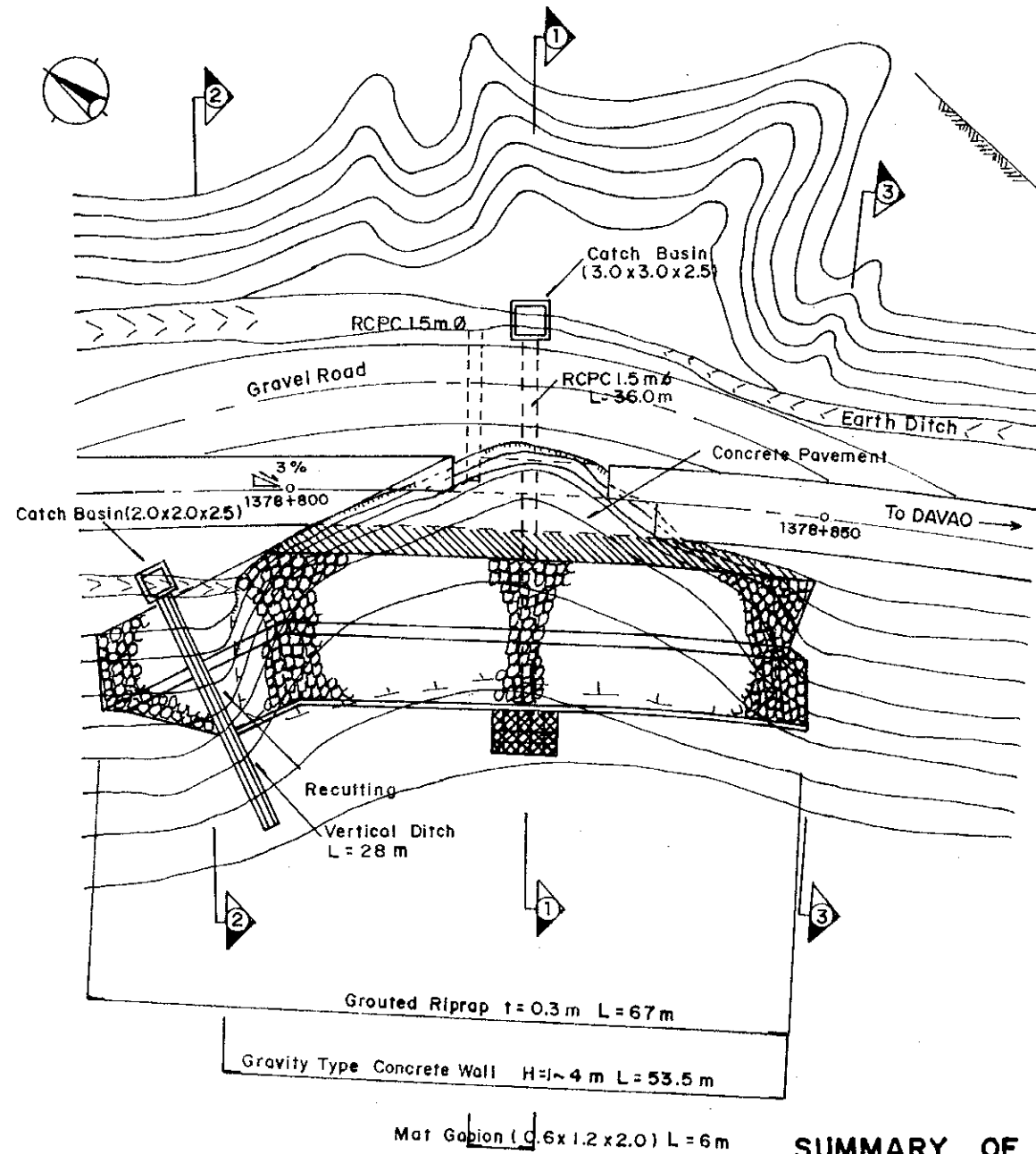


CROSS SECTION
SCALE 1:300

	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING / EMBANKMENT	CU. M.	15
5-37	CATCH BASIN FOR RCPC 0.90m Ø	E. A.	1
5-27	VERTICAL DITCH	L. M.	30

Cause of Disaster:

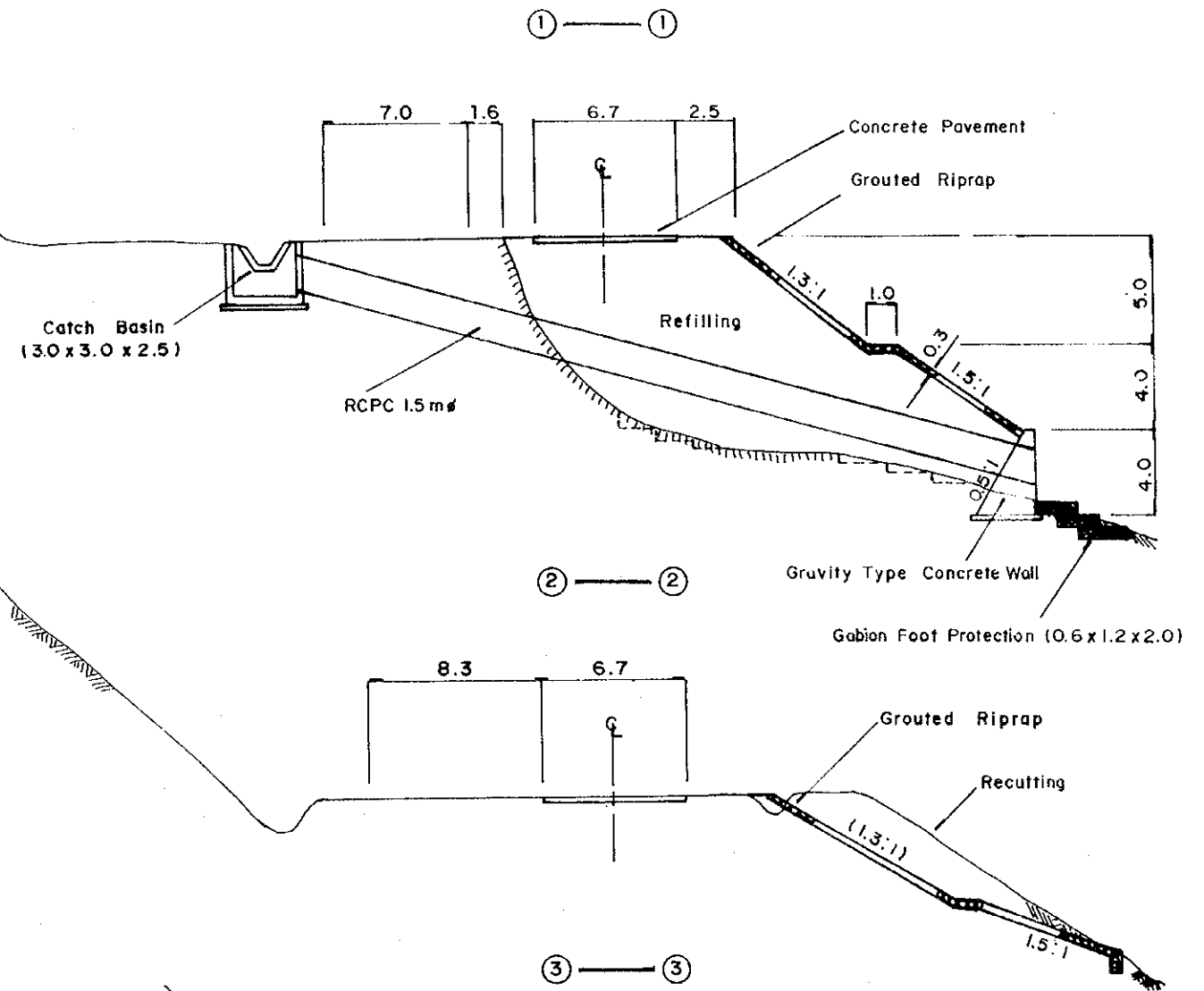
- 1) Inadequate inlet facility of pipe culvert.
- 2) Infiltration of water into boundary surface between the ground and embankment.



PLAN

SUMMARY OF QUANTITY

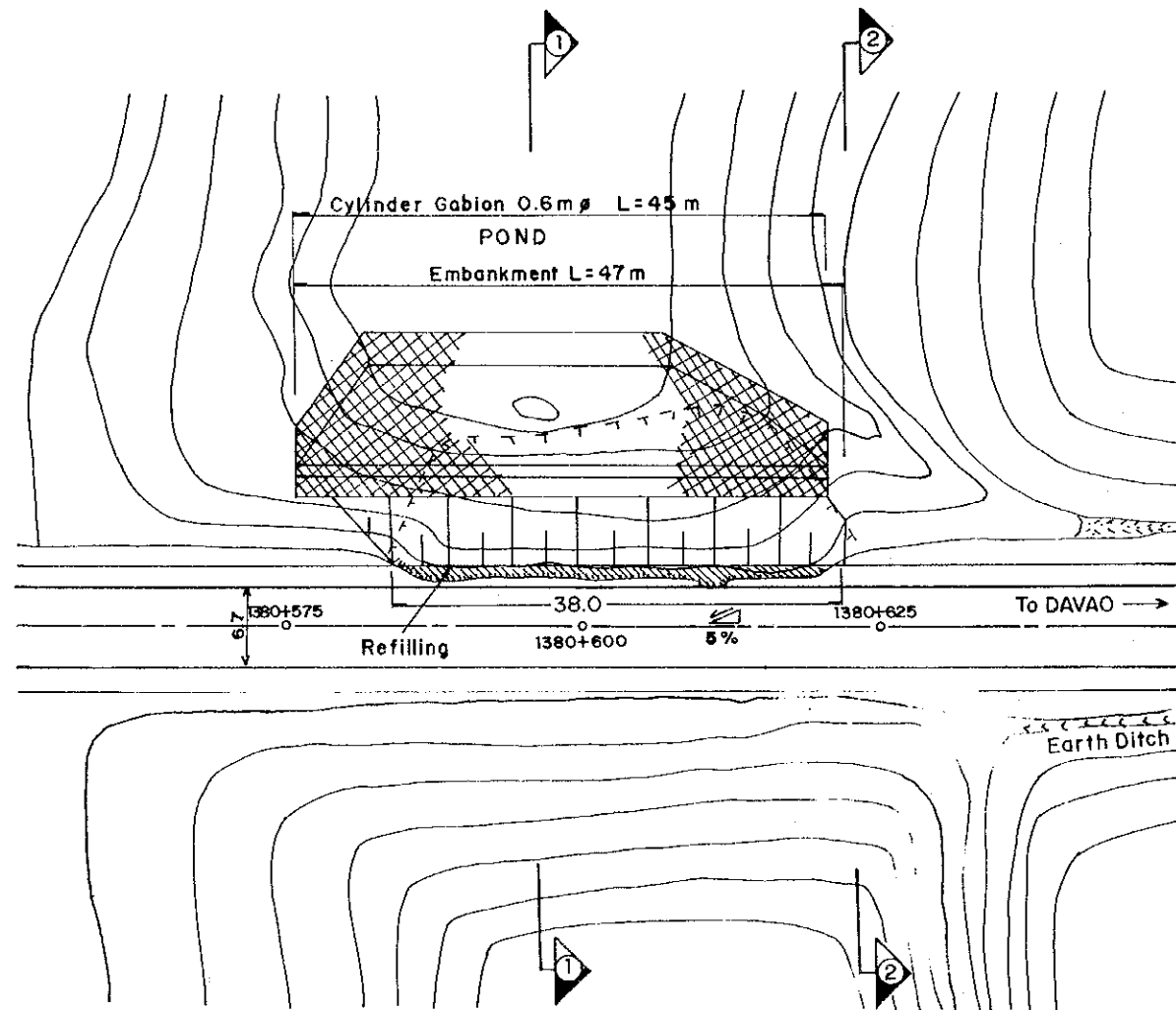
	TYPE OF WORK	UNIT	TOTAL
5-8	REFILLING/EMBANKMENT	CU.M	4,175
5-1	RECUITING OF SOIL	CU.M	137
5-14	GRAVITY TYPE CONCRETE WALL	CU.M	154
5-26	GABION FOOT PROTECTION	CU.M	22
5-19	GROUTED RIPRAP	CU.M	312
5-33	RCPC (1.5 m Ø)	L.M	36
5-27	VERTICAL DITCH	L.M	28
5-38	CATCH BASIN FOR RCPC 1.5 m Ø	E.A	1
5-39	CATCH BASIN (3.0 x 3.0 x 2.5)	E.A	1
5-4	STRUCTURAL EXCAVATION	CU.M	485
5-8	FOUNDATION FILL	CU.M	180



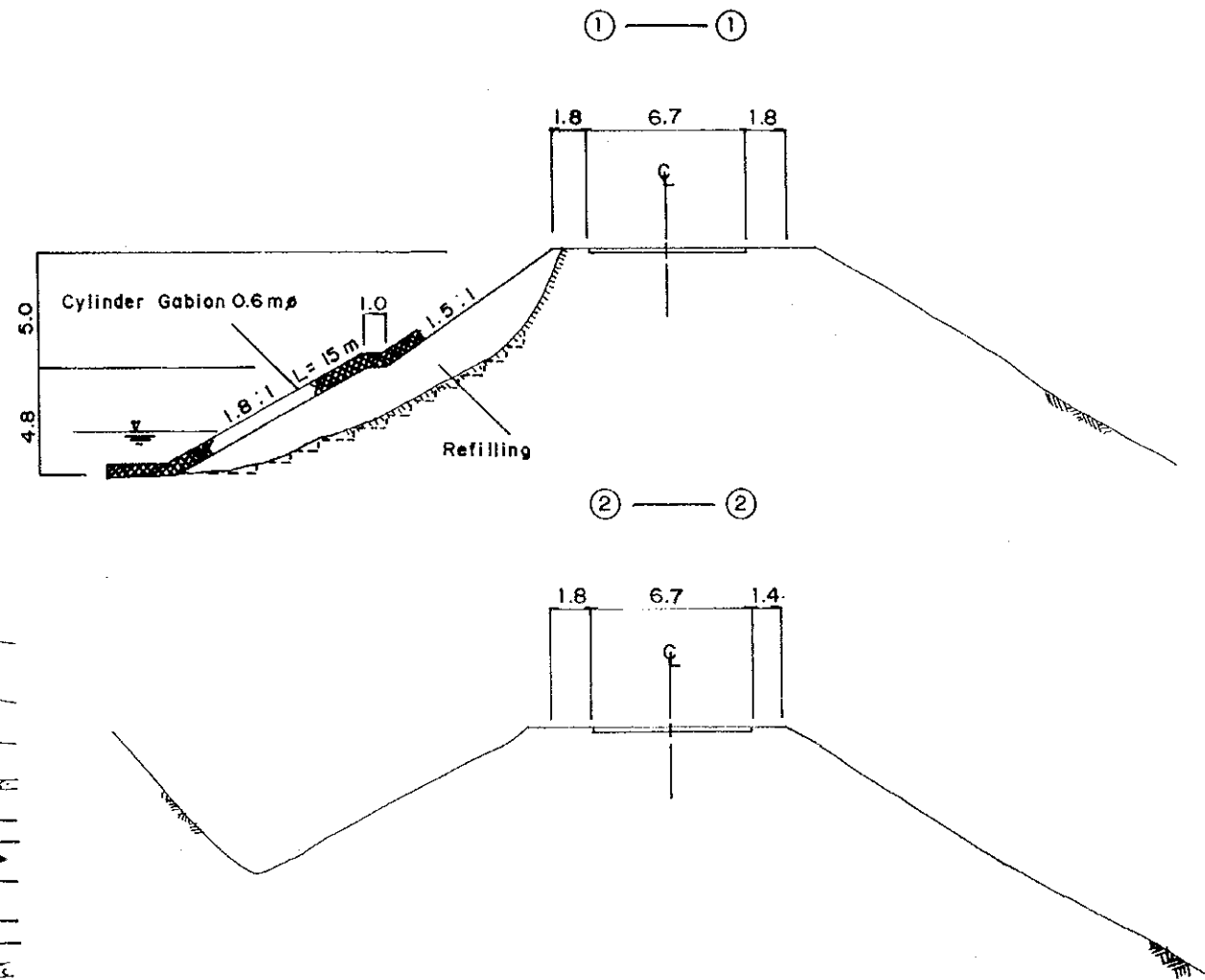
CROSS SECTION
SCALE 1:300

Cause of Disaster:

- 1) Creek overflowing and scoring the embankment.
- 2) Inadequate inlet facility of pipe culvert.
- 3) Infiltration of water into boundary surface between the ground and embankment.



P L A N

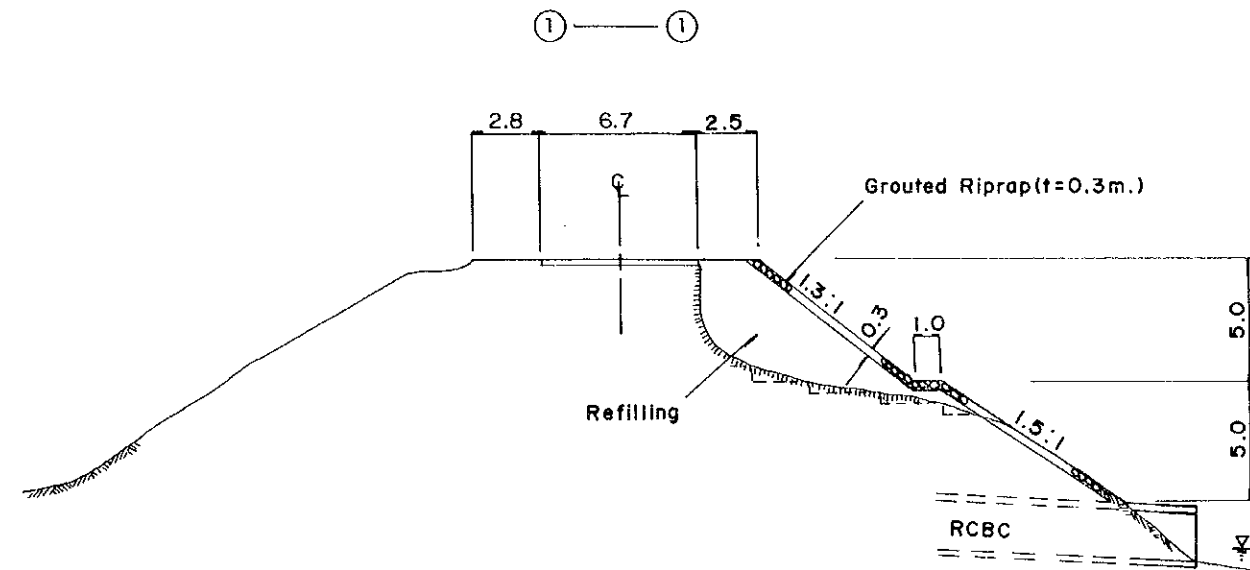
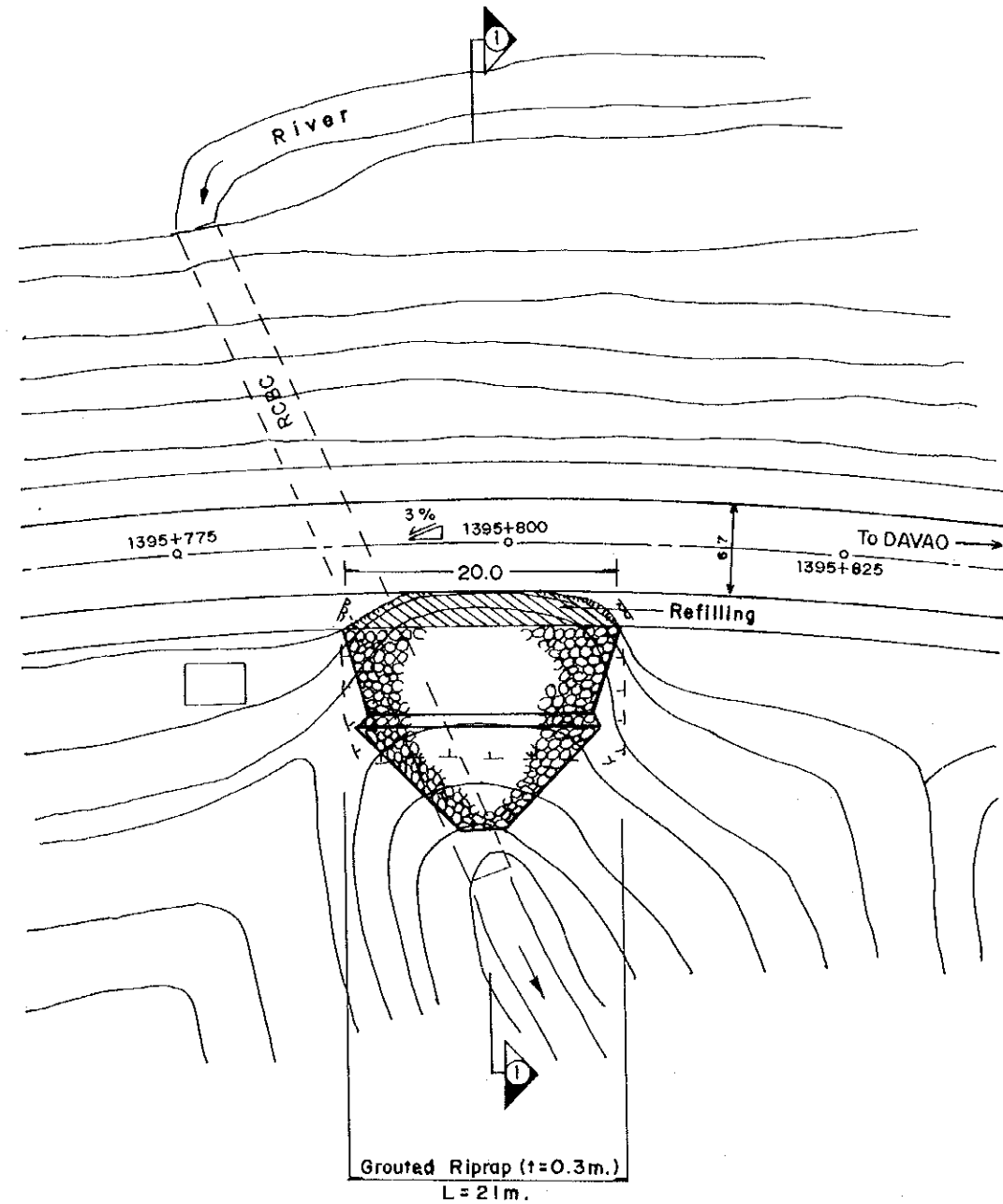


CROSS SECTION
SCALE 1:300

SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING/EMBANKMENT	CU.M	1,044
5-22	CYLINDER GABION	CU.M	285

Cause of Disaster:
1) Erosion by water of pond with flood stage.
2) Embankment slope with an unstable grade.



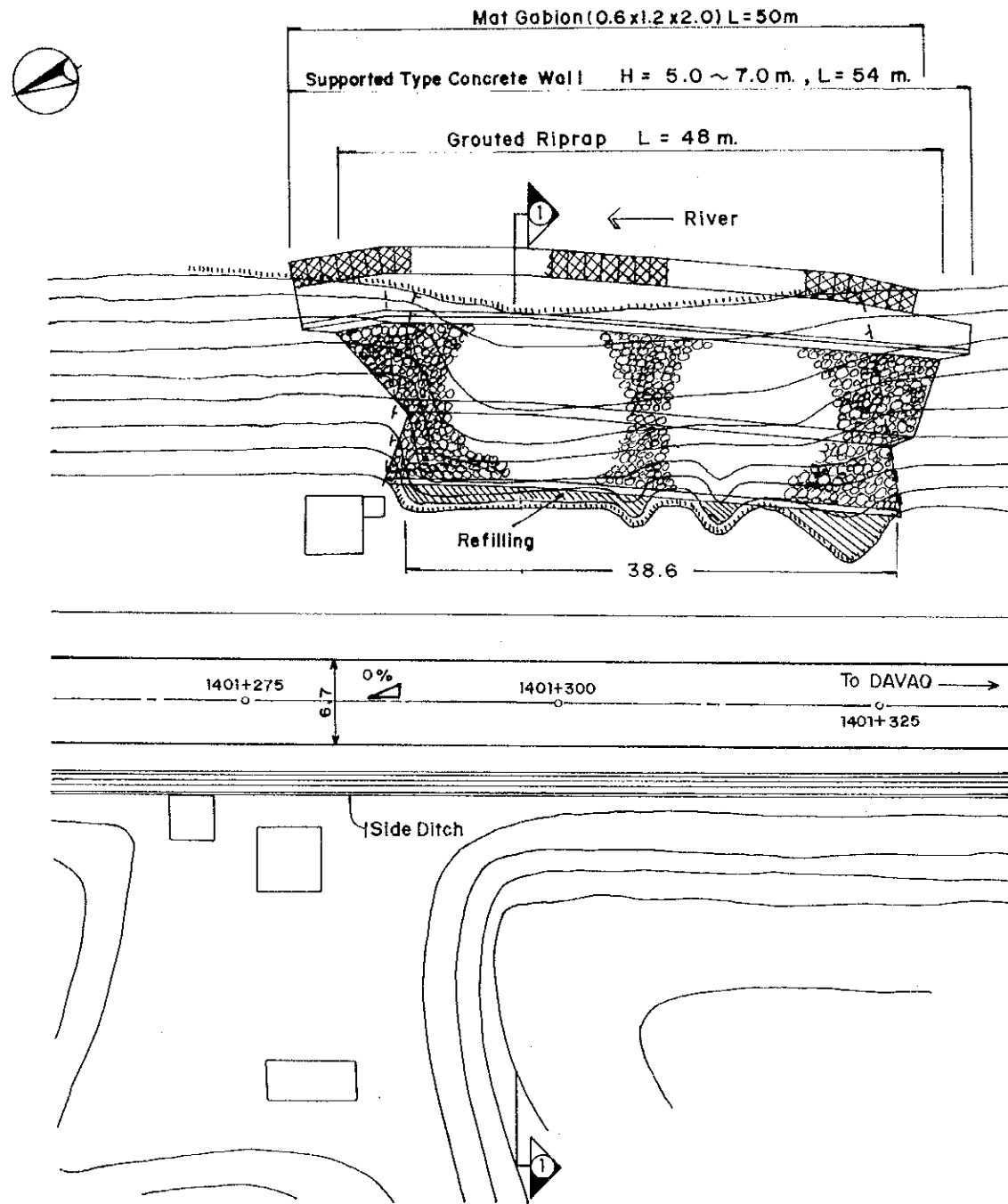
CROSS SECTION
SCALE 1:300

SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
5-5	REFILLING / EMBANKMENT	CU. M.	384
5-19	GROUTED RIPRAP	CU. M.	81

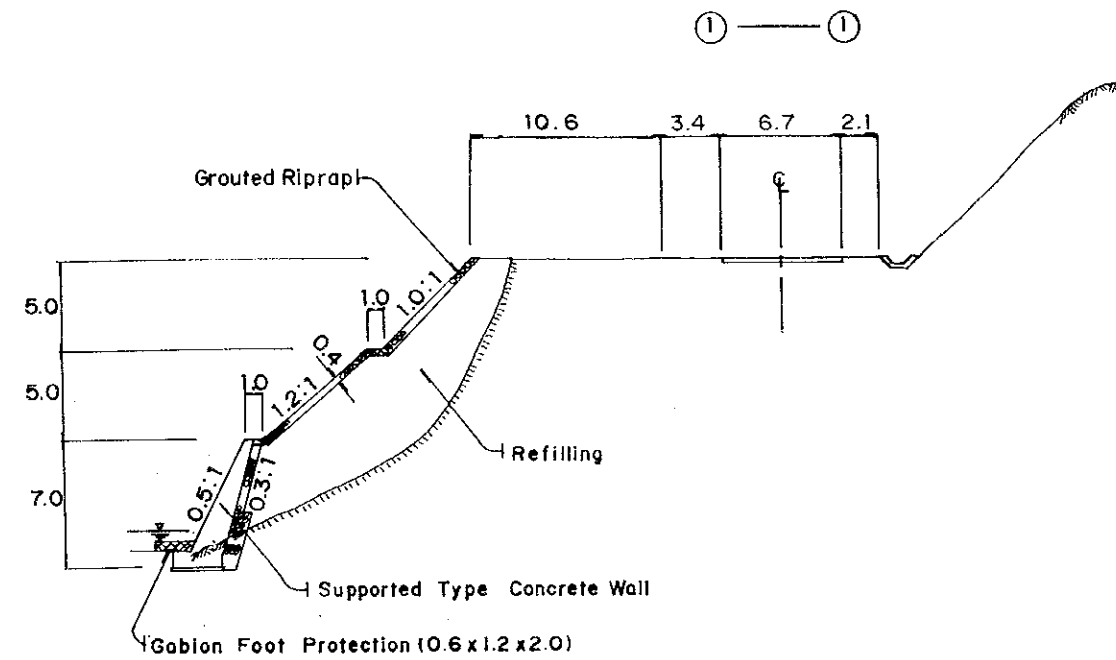
Cause of Disaster:

- 1) Insufficient compaction of embankment.
- 2) Embankment slope with an unstable grade.



PLAN

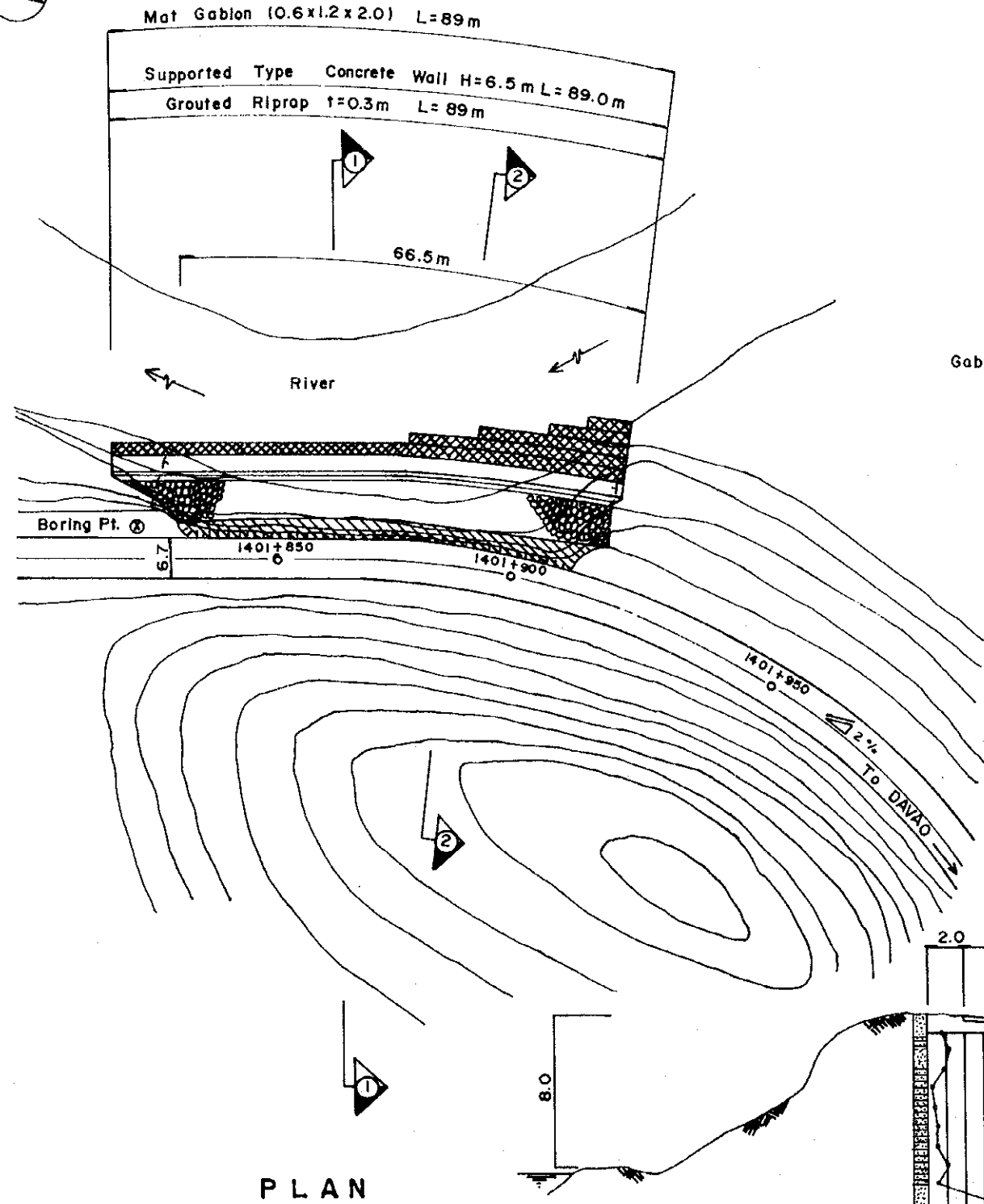
Cause of Disaster:
1) Scouring by flow of river with flood stage.



CROSS SECTION
SCALE 1:400

SUMMARY OF QUANTITY

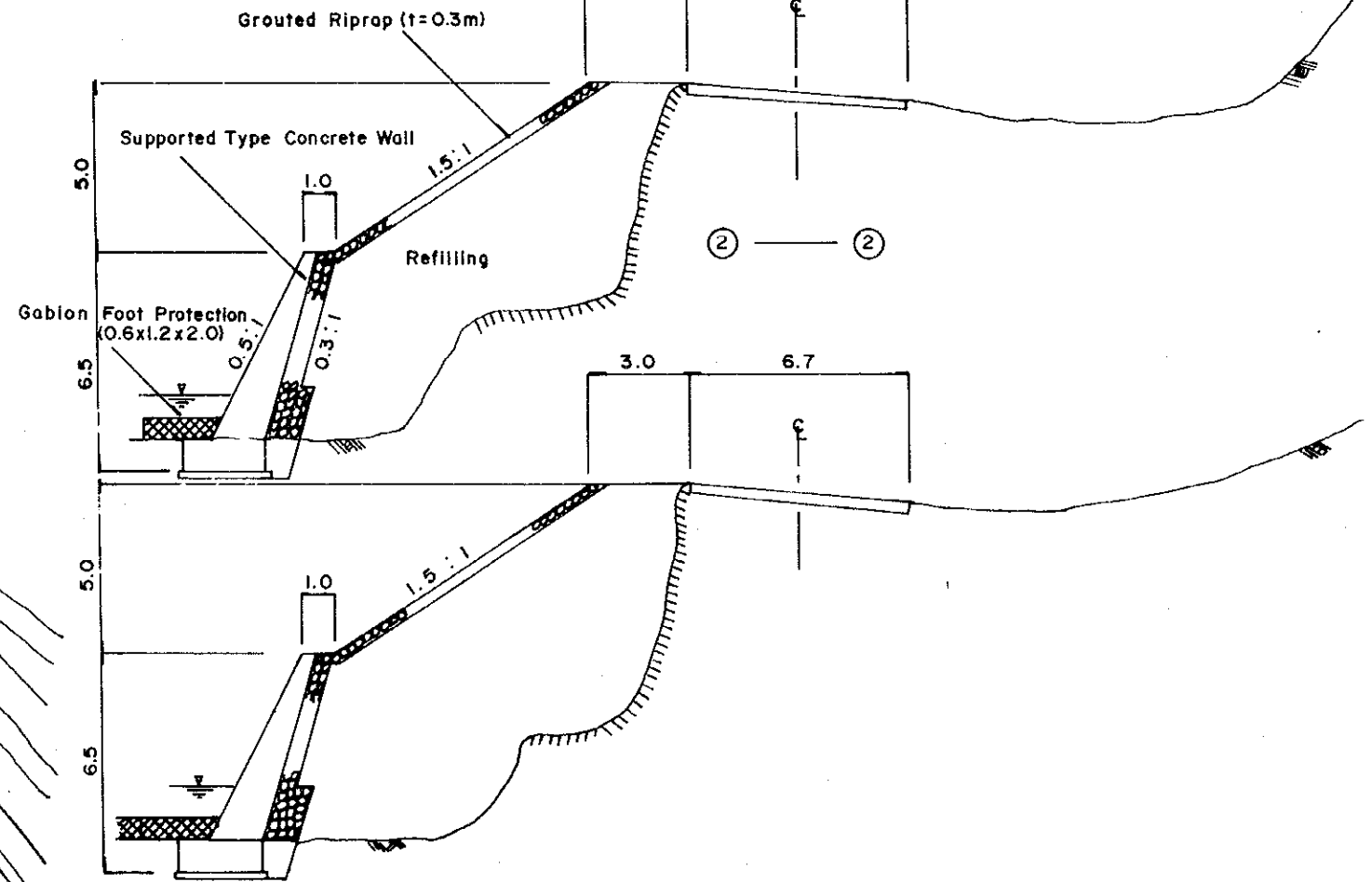
TYPE OF WORK		UNIT	TOTAL
5-5	REFILLING / EMBANKMENT	CU.M	2,441
5-19	GROUTED RIPRAP	CU.M	277
5-15	SUPPORTED TYPE CONCRETE WALL	CU.M	483
5-26	GABION FOOT PROTECTION	CU.M	59
5-4	STRUCTURAL EXCAVATION	CU.M	346
5-6	REFILLING OF BACKFILL MATERIAL	CU.M	193



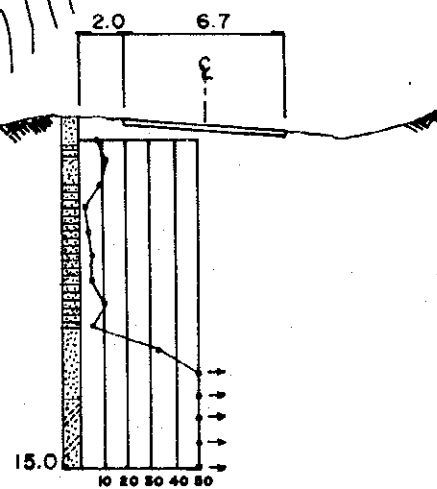
PLAN

Cause of Disaster:

- 1) Scouring by flow of river with flood stage.
- 2) Embankment slope with an unstable grade.



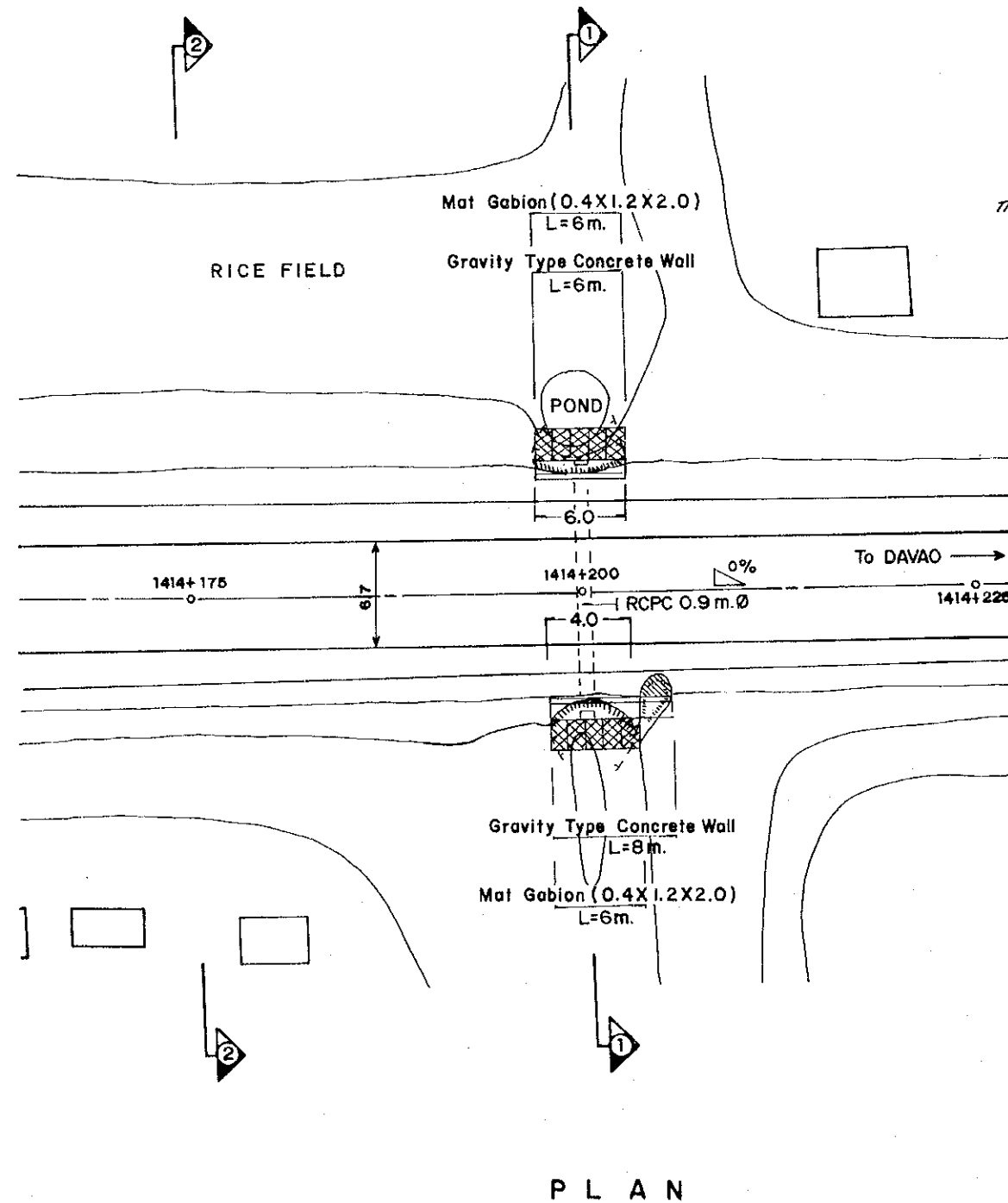
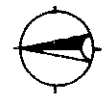
CROSS SECTION
SCALE 1:200



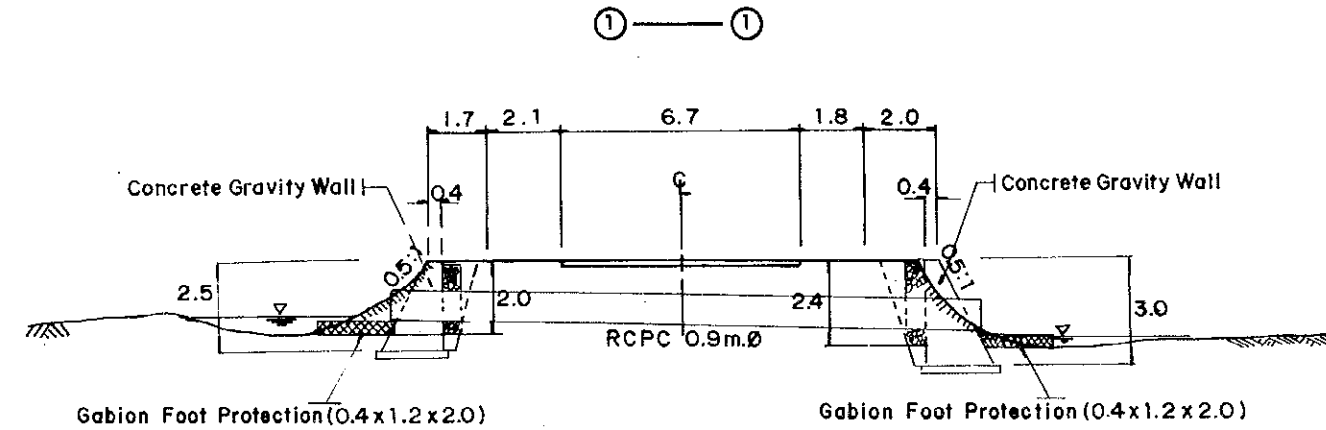
CROSS SECTION (BORING POINT)
SCALE 1:300

SUMMARY OF QUANTITY

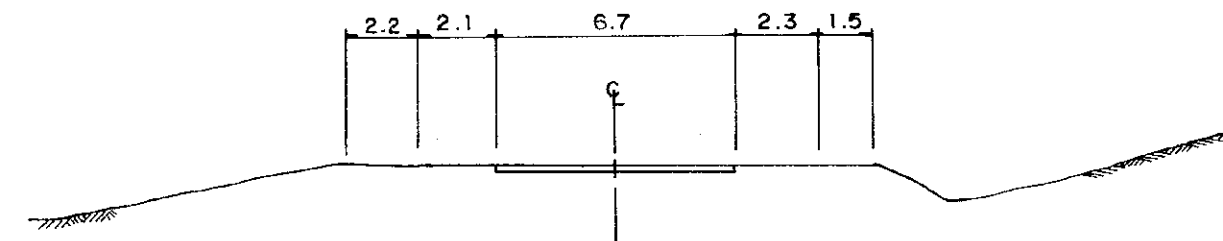
	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING/EMBANKMENT	CU.M	4,329
5-19	GROUTED RIPRAP	CU.M	224
5-15	SUPPORTED TYPE CONCRETE WALL	CU.M	659
5-26	GABION FOOT PROTECTION	CU.M	209
5-4	STRUCTURAL EXCAVATION	CU.M	530
5-6	FILLING OF BACKFILL MATERIAL	CU.M	280



P L A N



① — ①



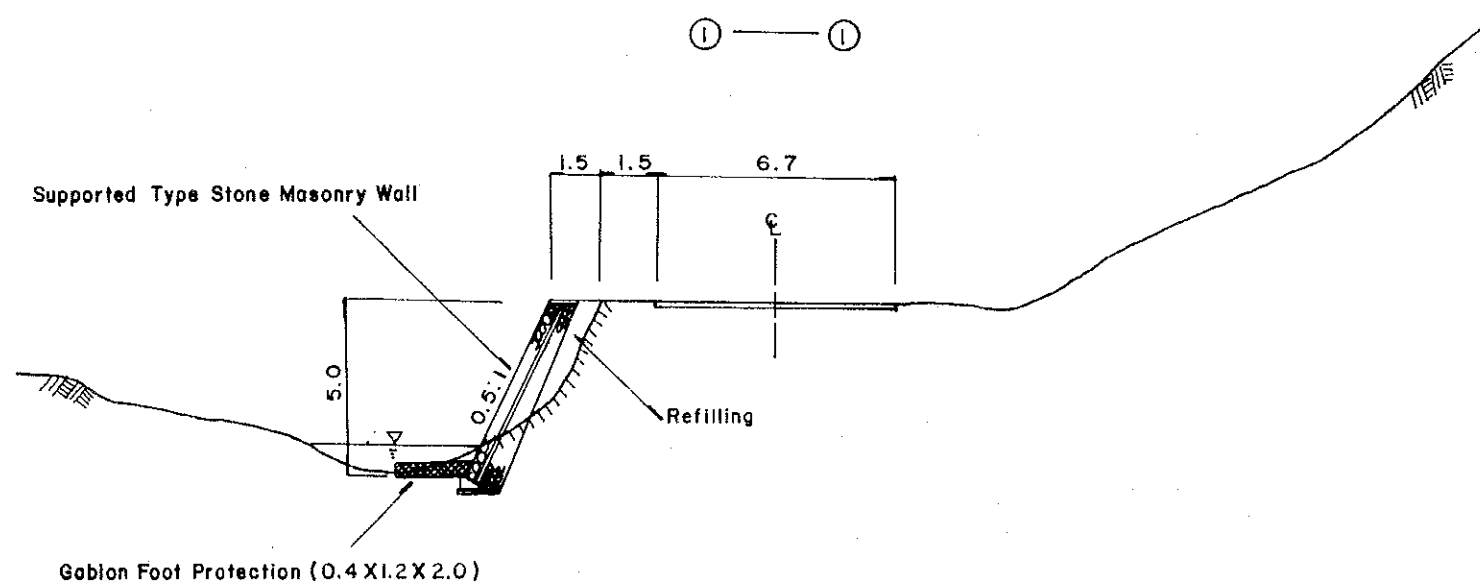
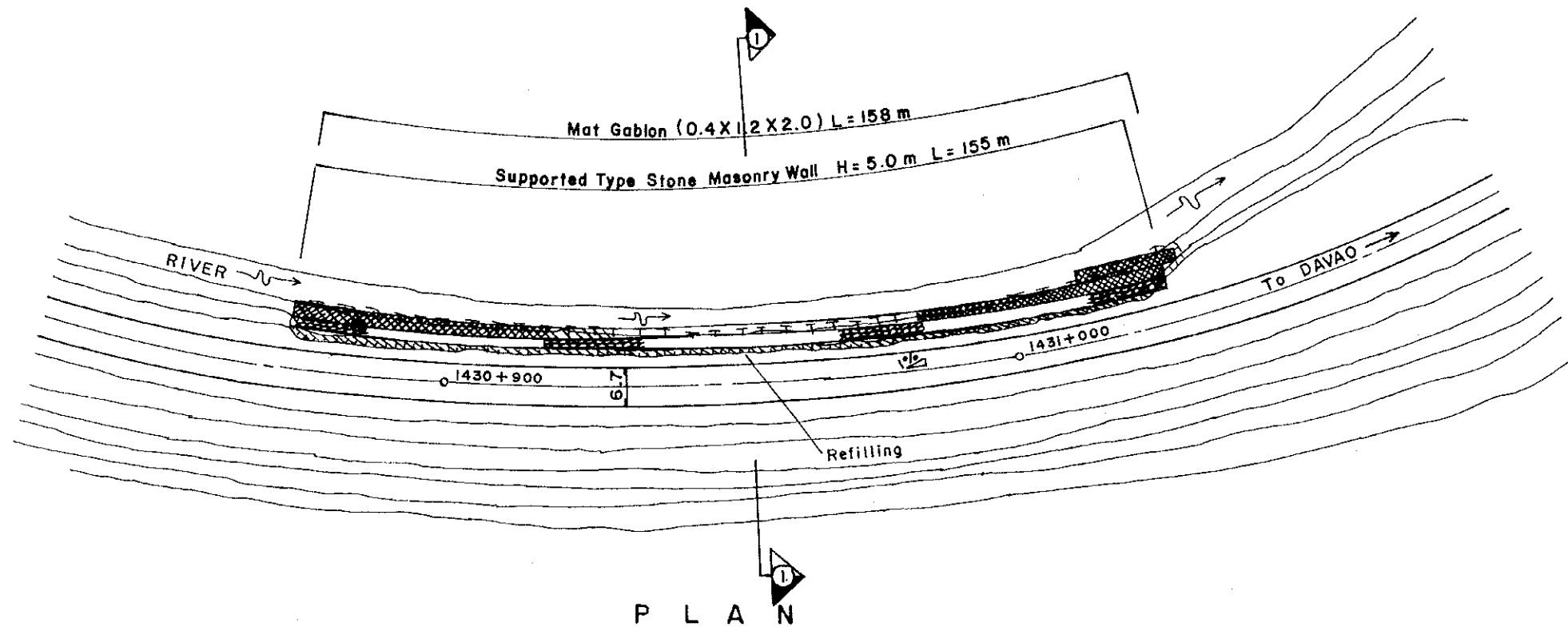
CROSS SECTION
SCALE 1:200

SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5-14	GRAVITY TYPE CONCRETE WALL	CU.M	43
5-26	GABION FOOT PROTECTION	CU.M	10
5-4	STRUCTURAL EXCAVATION	CU.M	83
5-6	REFILLING OF BACKFILL MATERIAL	CU.M	16

Cause of Disaster:

- 1) Erosion at the foot of slope by pond water.
- 2) Inadequate inlet facility of pipe culvert.



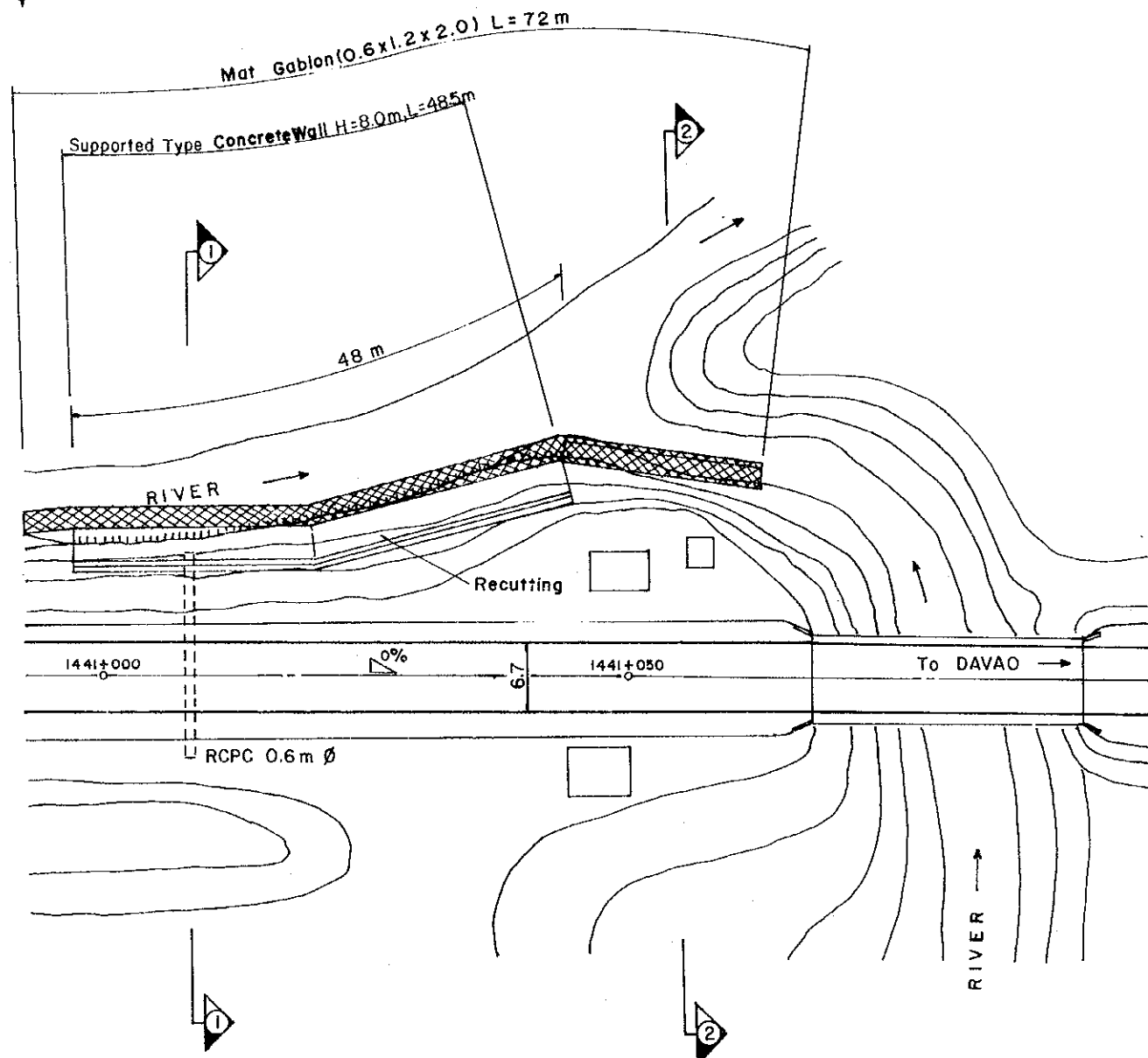
CROSS SECTION
SCALE 1:200

SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING/ EMBANKMENT	CU.M	297
5-16	SUPPORTED TYPE STONE MASONRY WALL	CU.M	455
5-26	GABION FOOT PROTECTION	CU.M	138
5-4	STRUCTURAL EXCAVATION	CU.M	310
5-6	FILLING OF BACKFILL MATERIAL	CU.M	350

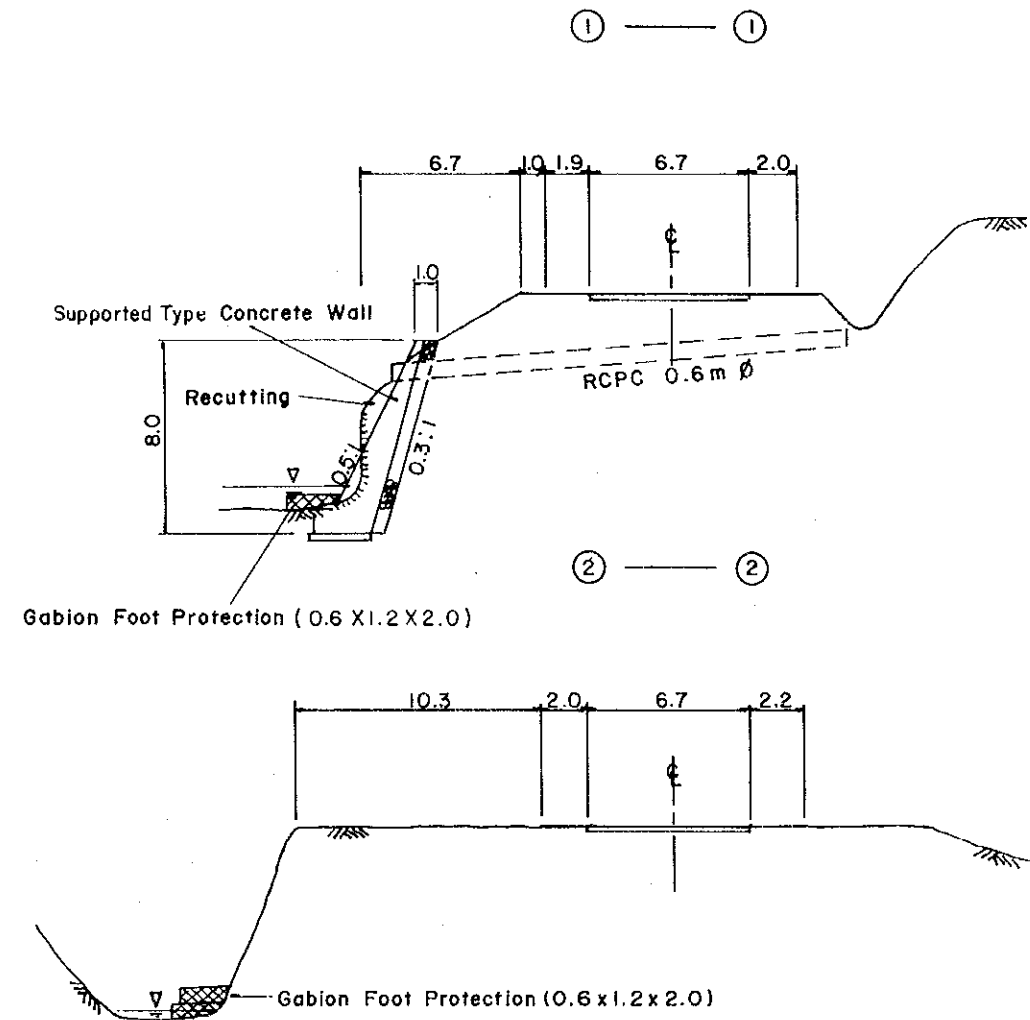
Cause of Disaster:

- 1) Scouring by flow of river with flood stage.



P L A N

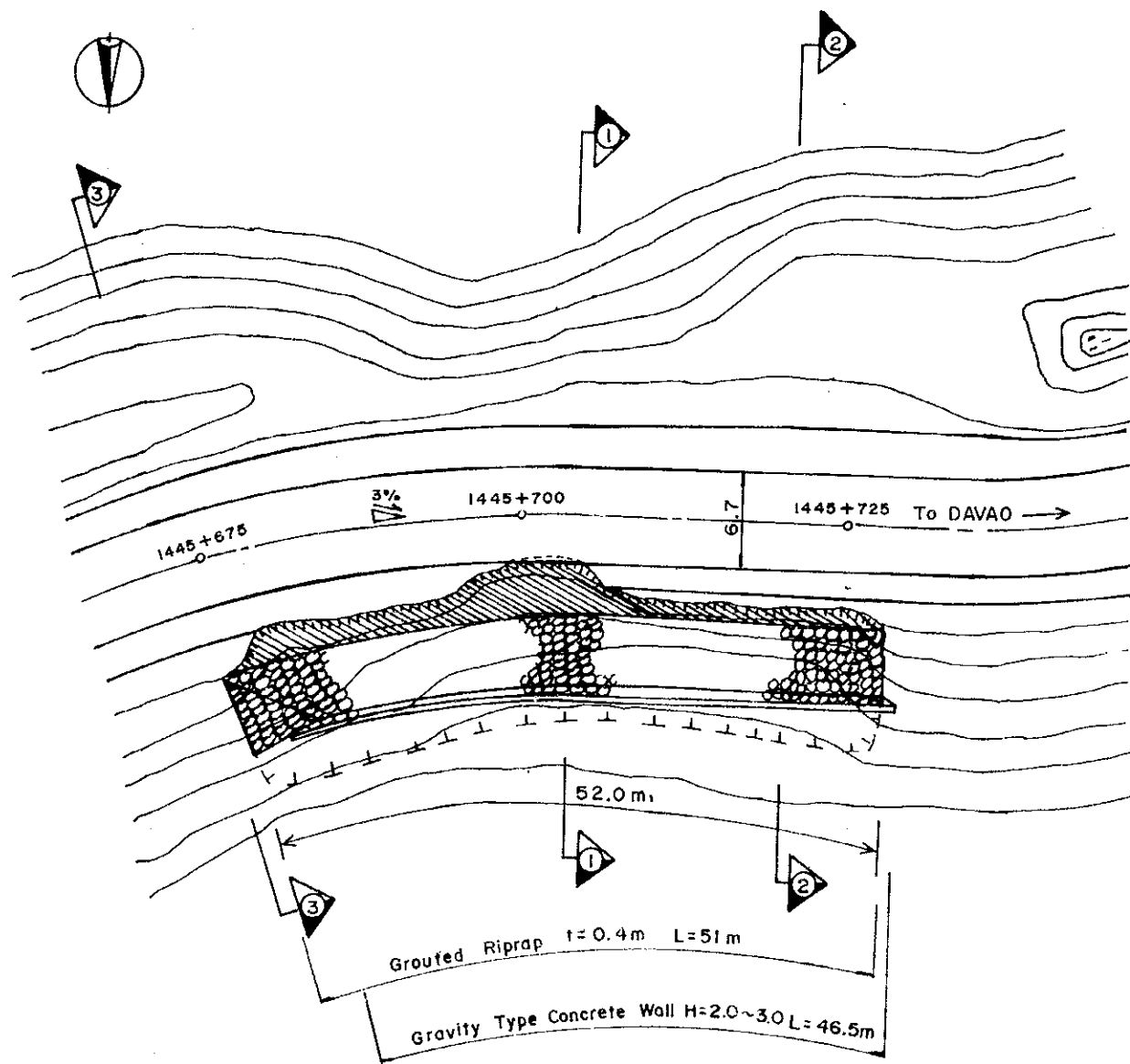
Cause of Disaster:
1) Scouring by flow of river with flood stage.



CROSS SECTION
SCALE 1:300

SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
5-1	RECUTTING OF SOIL	CU.M.	754
5-15	SUPPORTED TYPE CONCRETE WALL	CU.M.	517
5-26	GABION FOOT PROTECTION	CU.M.	109
5-6	REFILLING OF BACKFILL MATERIAL	CU.M.	140



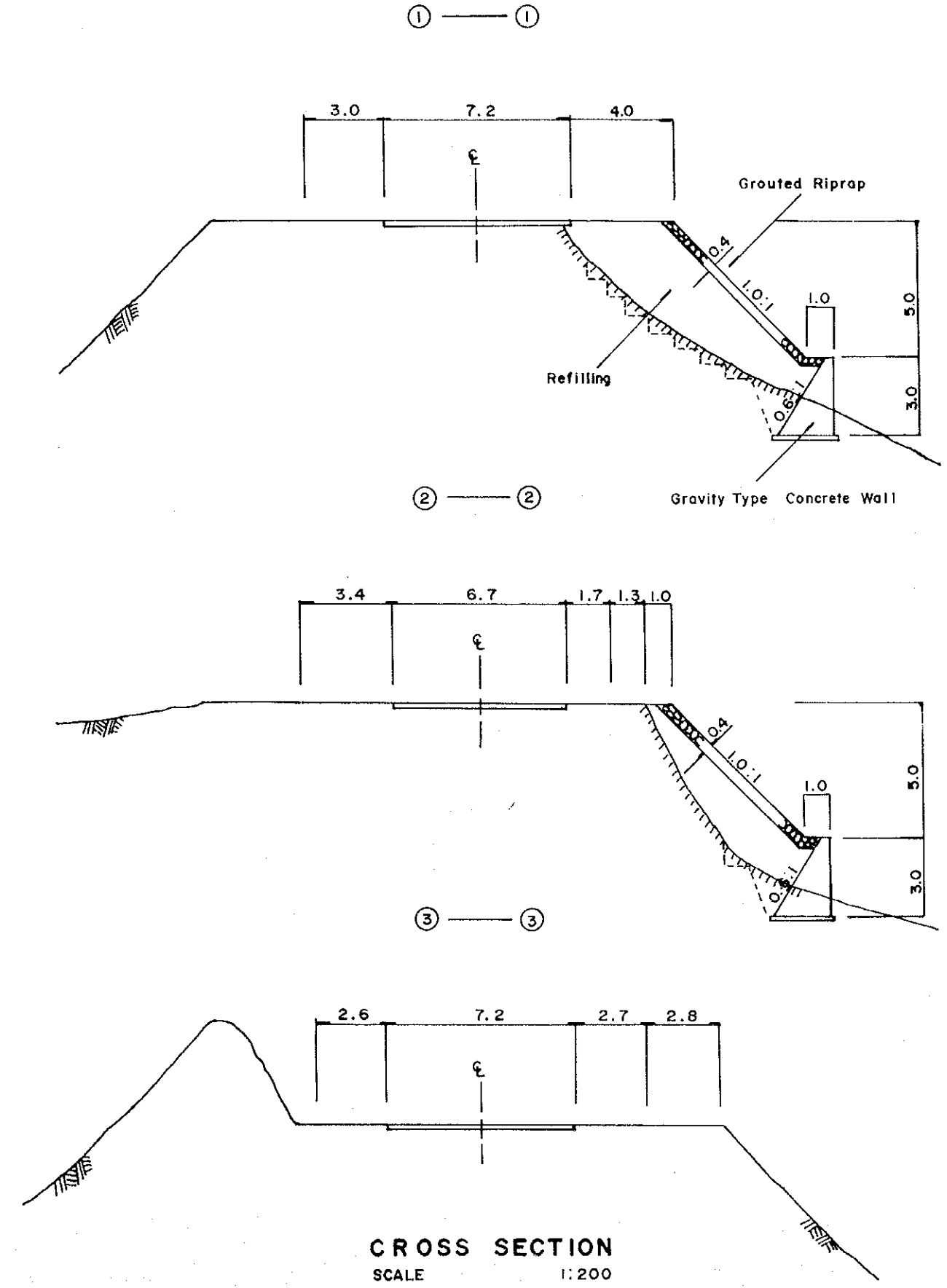
PLAN

Cause of Disaster:

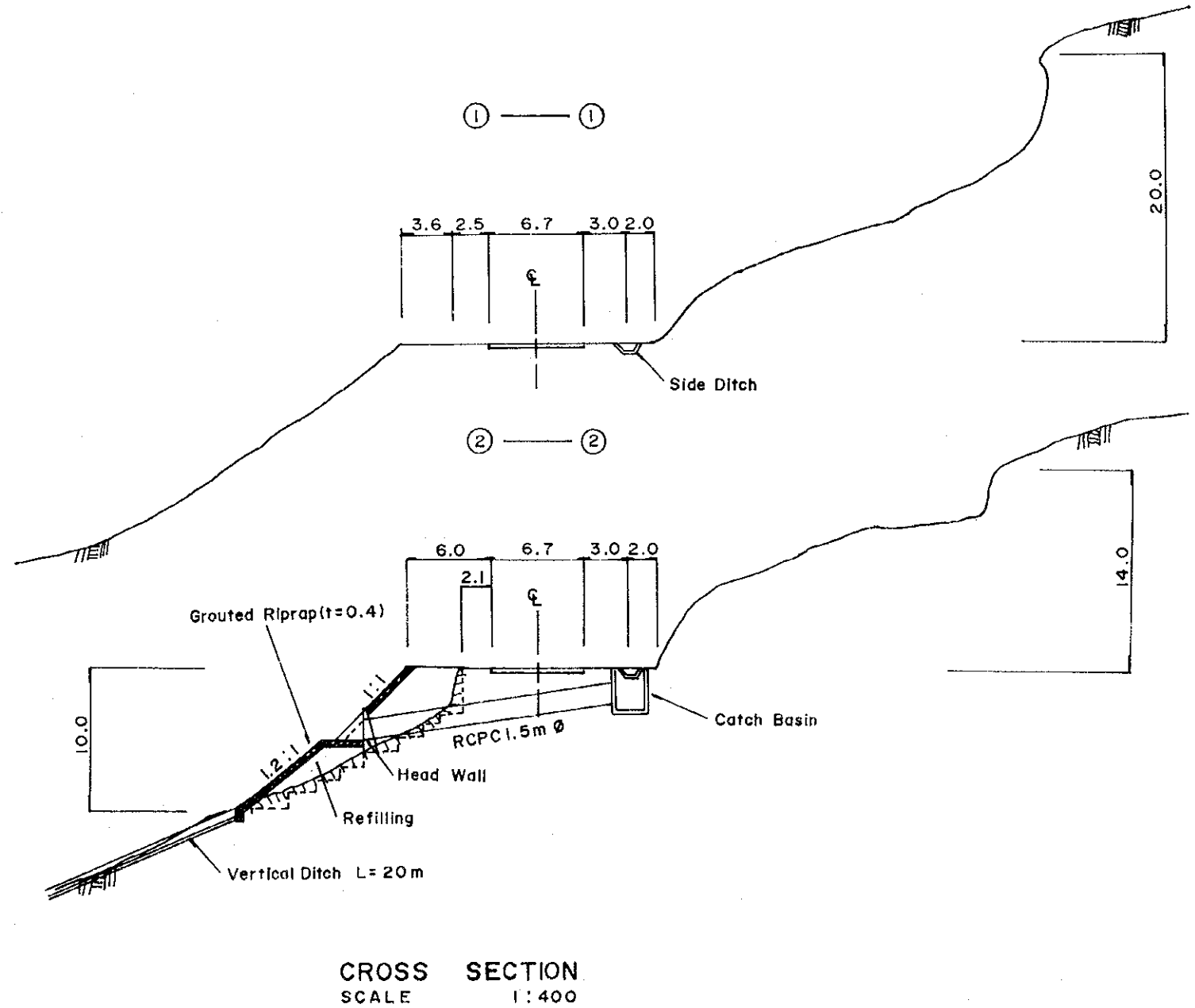
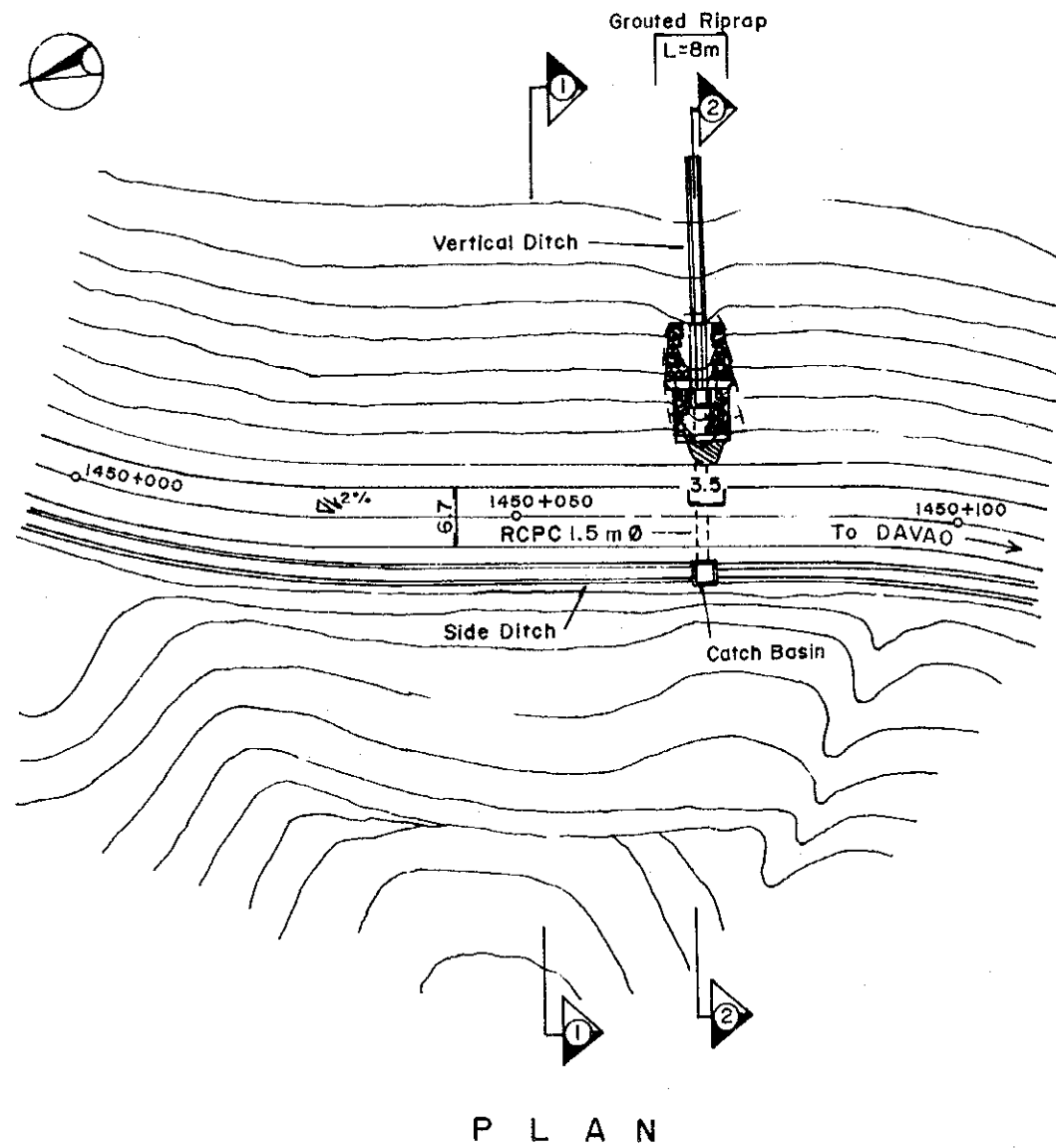
- 1) Erosion due to concentrated surface water on the curved portion of road.

SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING/EMBANKMENT	CU.M	770
5-19	GROUTED RIPRAP	CU.M	153
5-14	GRAVITY TYPE CONCRETE WALL	CU.M	160
5-4	STRUCTURAL EXCAVATION	CU.M	260
5-8	FOUNDATION FILL	CU.M	105



CROSS SECTION
SCALE 1:200

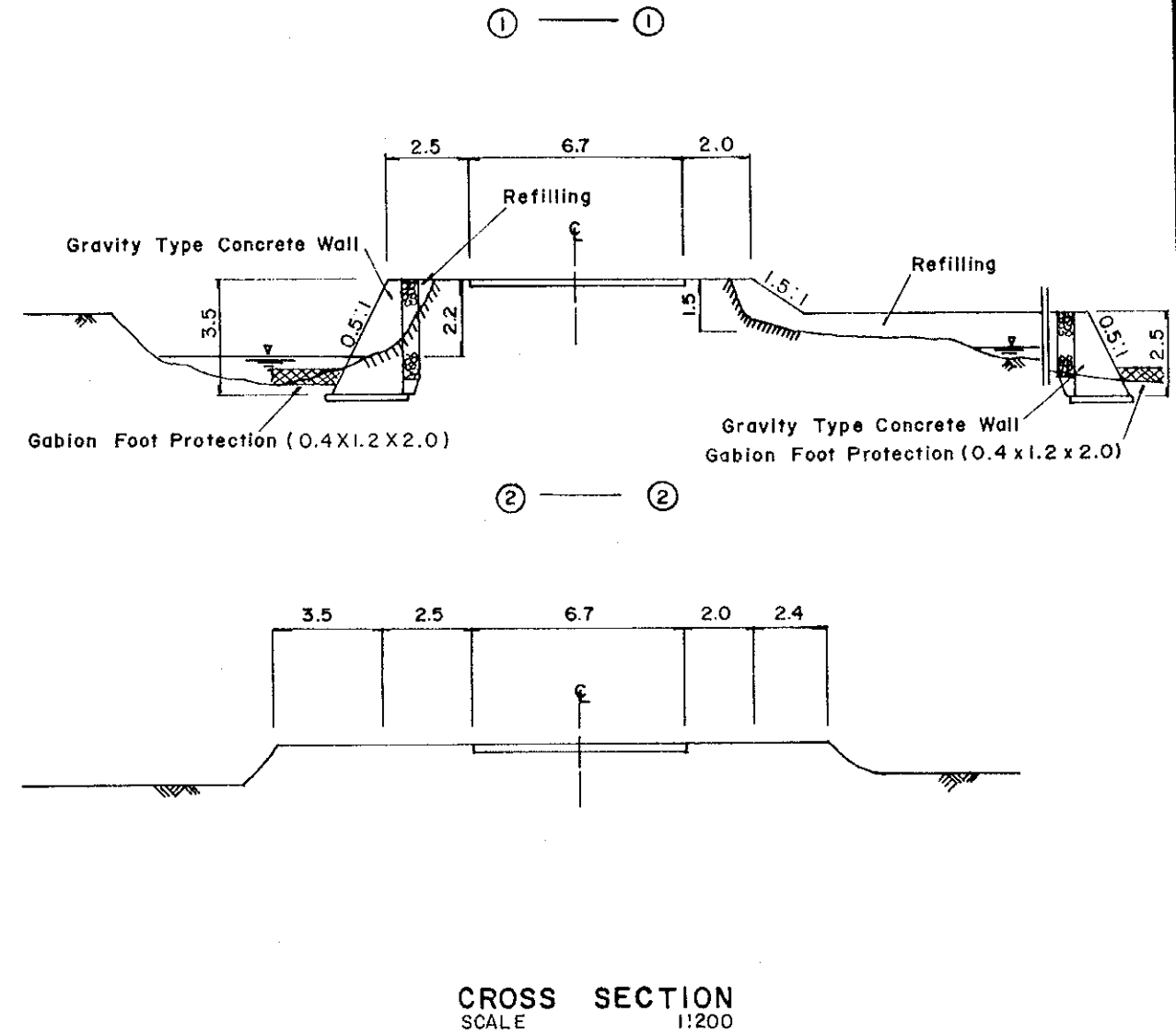
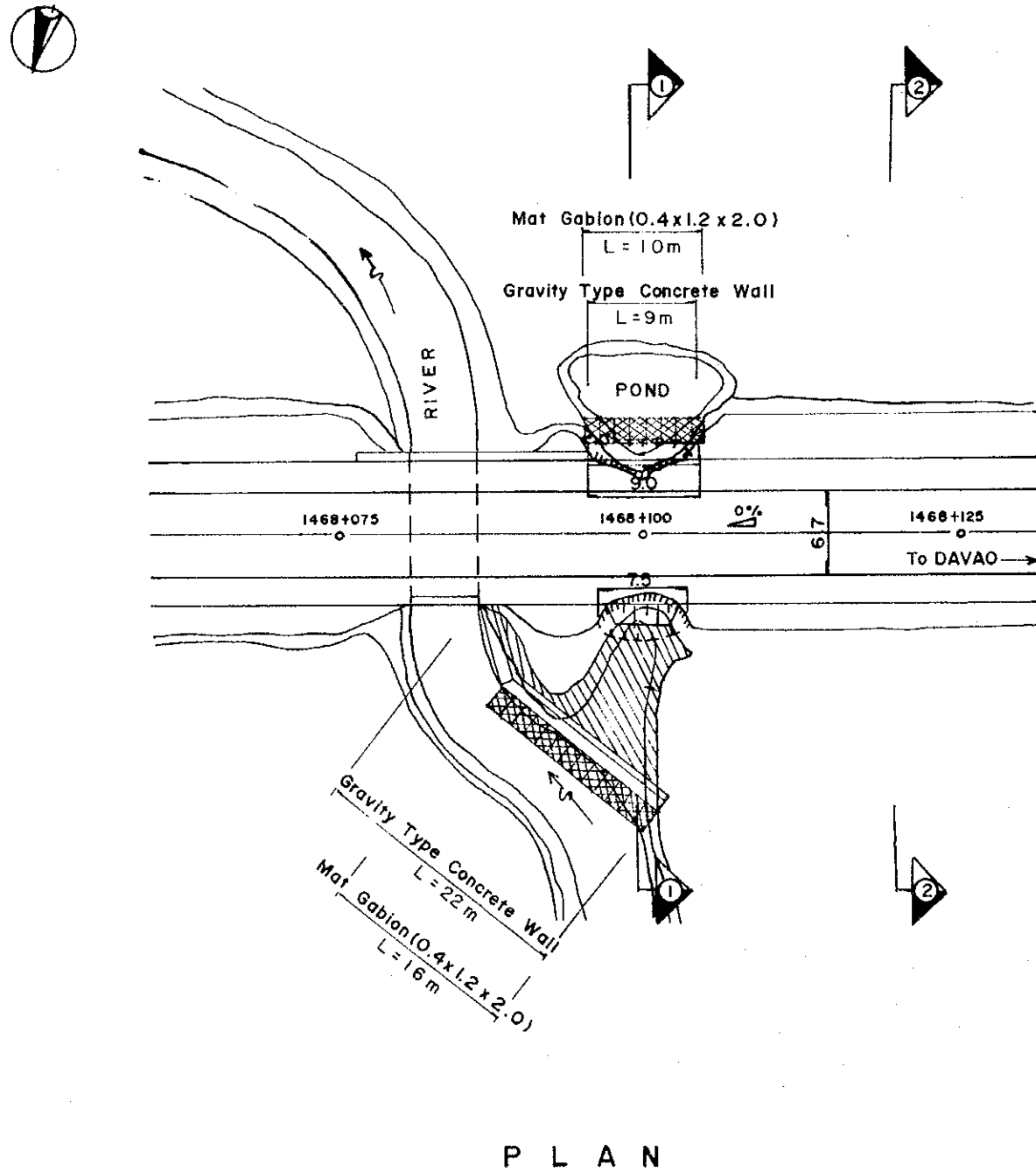


SUMMARY OF QUANTITY

TYPE OF WORK		UNIT	TOTAL
5-5	REFILLING/EMBANKMENT	CU.M	254
5-19	GRouted RIPRAP	CU.M	44
5-38	CATCH BASIN FOR RCPC 1.5 m Ø	E. A.	1
5-33	RCPC (1.5 m Ø)	L. M	18
5-27	VERTICAL DITCH	L. M	20
5-41	HEAD WALL FOR RCPC 1.5 m Ø	E. A.	1
5-4	STRUCTURAL EXCAVATION	CU. M	115
5-8	FOUNDATION FILL	CU. M	87

Cause of Disaster:

- 1) Infiltration of water into boundary surface between the ground and embankment.
- 2) Effect of ground water.
- 3) Embankment slope with an unstable grade.

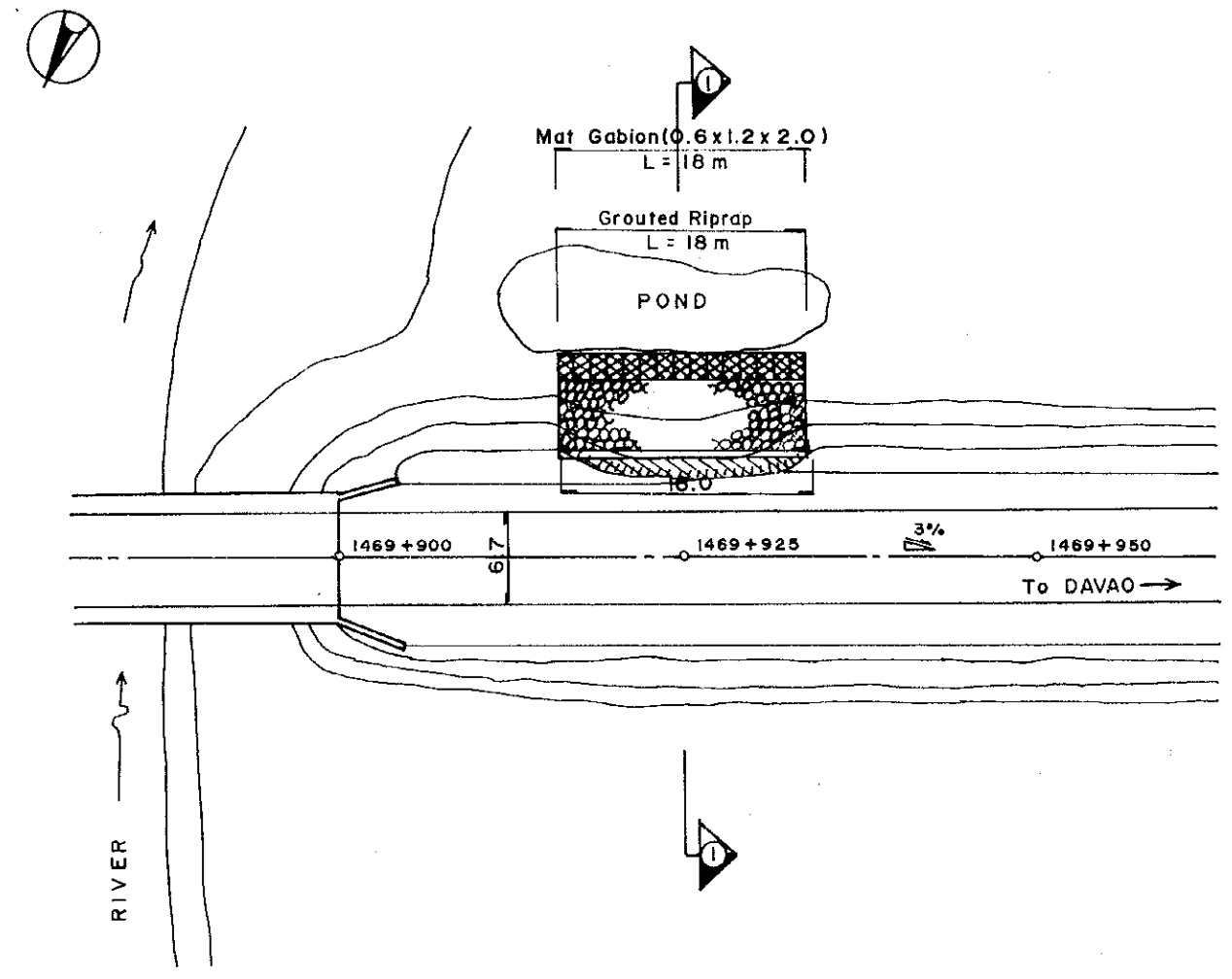


CROSS SECTION
SCALE 1:200

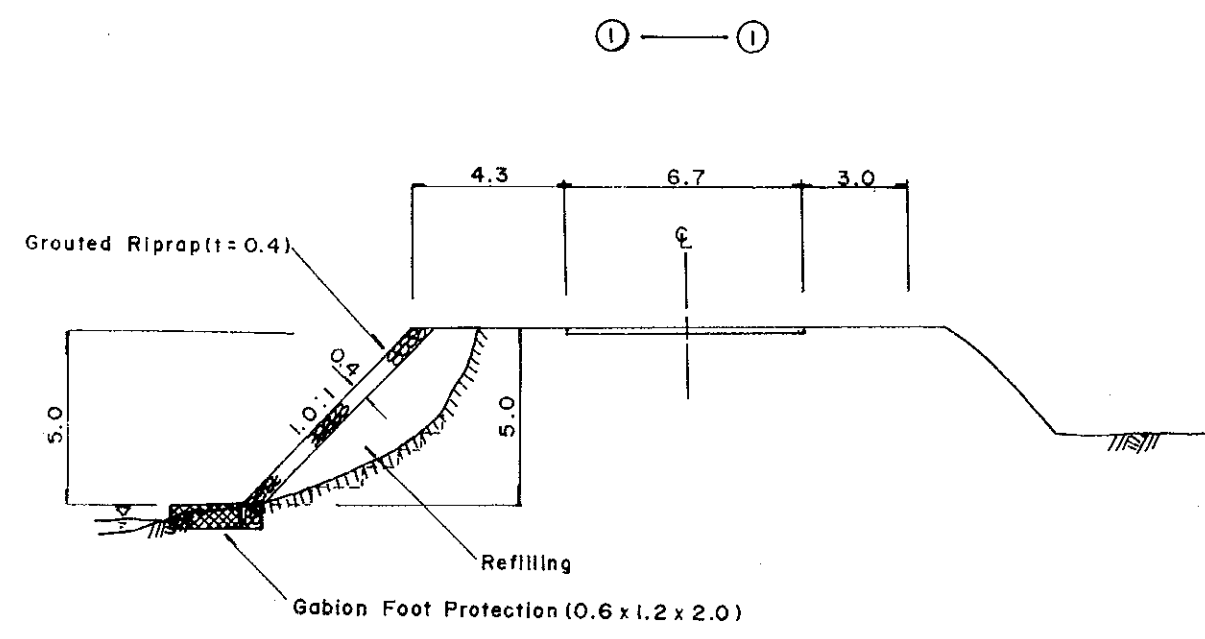
SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING/EMBANKMENT	CU.M.	88
5-14	GRAVITY TYPE CONCRETE WALL	CU.M.	97
5-26	GABION FOOT PROTECTION	CU.M.	20
5-4	STRUCTURAL EXCAVATION	CU.M.	80
5-6	REFILLING OF BACKFILL MATERIAL	CU.M.	35

Cause of Disaster:
1) Erosion at the foot of slope by pond water.
2) Scouring by stream from river into the pond.



P L A N



CROSS SECTION
SCALE 1:200

SUMMARY OF QUANTITY

	TYPE OF WORK	UNIT	TOTAL
5-5	REFILLING / EMBANKMENT	CU.M	117
5-19	GROUTED RIPRAP	CU.M	57
5-26	GABION FOOT PROTECTION	CU.M	22

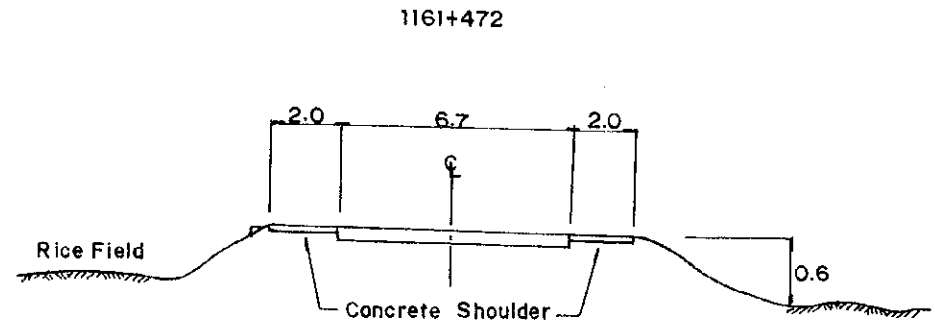
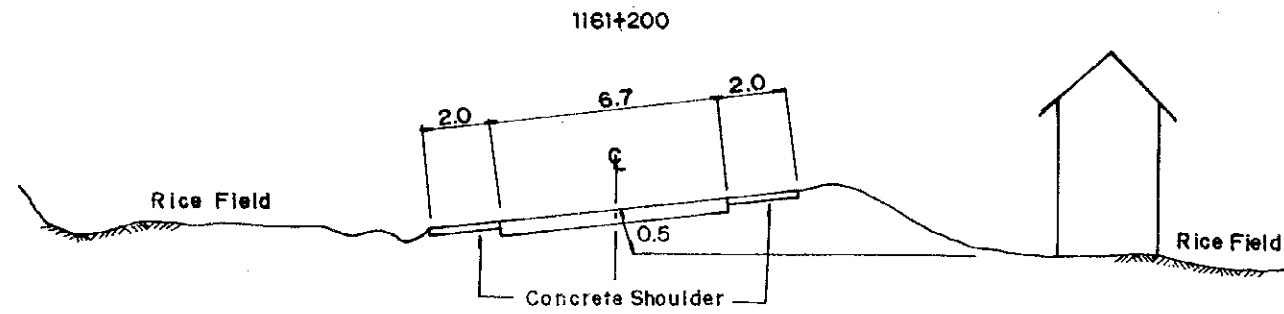
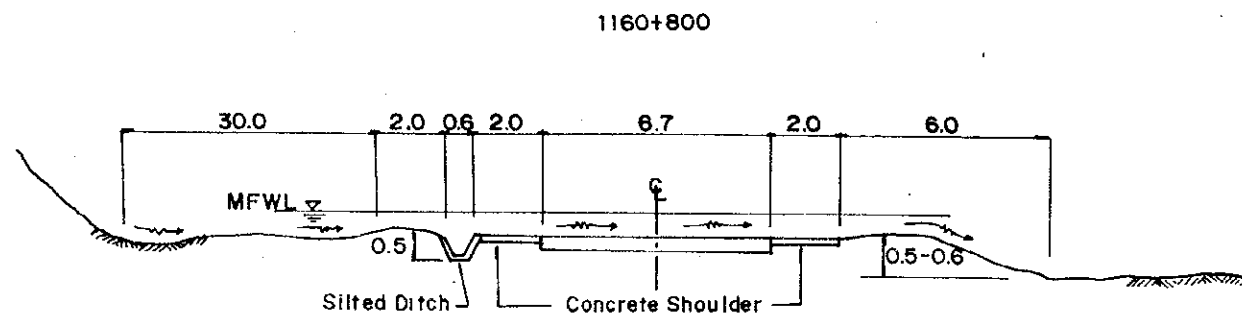
- Cause of Disaster:
- 1) Erosion at the foot of slope by pond water.
 - 2) Scouring by stream from river into the pond.
 - 3) Embankment slope with an unstable grade.

FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

FLOOD SECTION NO. : 1 STATION : 1160+700-1161+700
FLOOD TYPE : I EXISTING CONDITION

SCALE
NOT TO SCALE

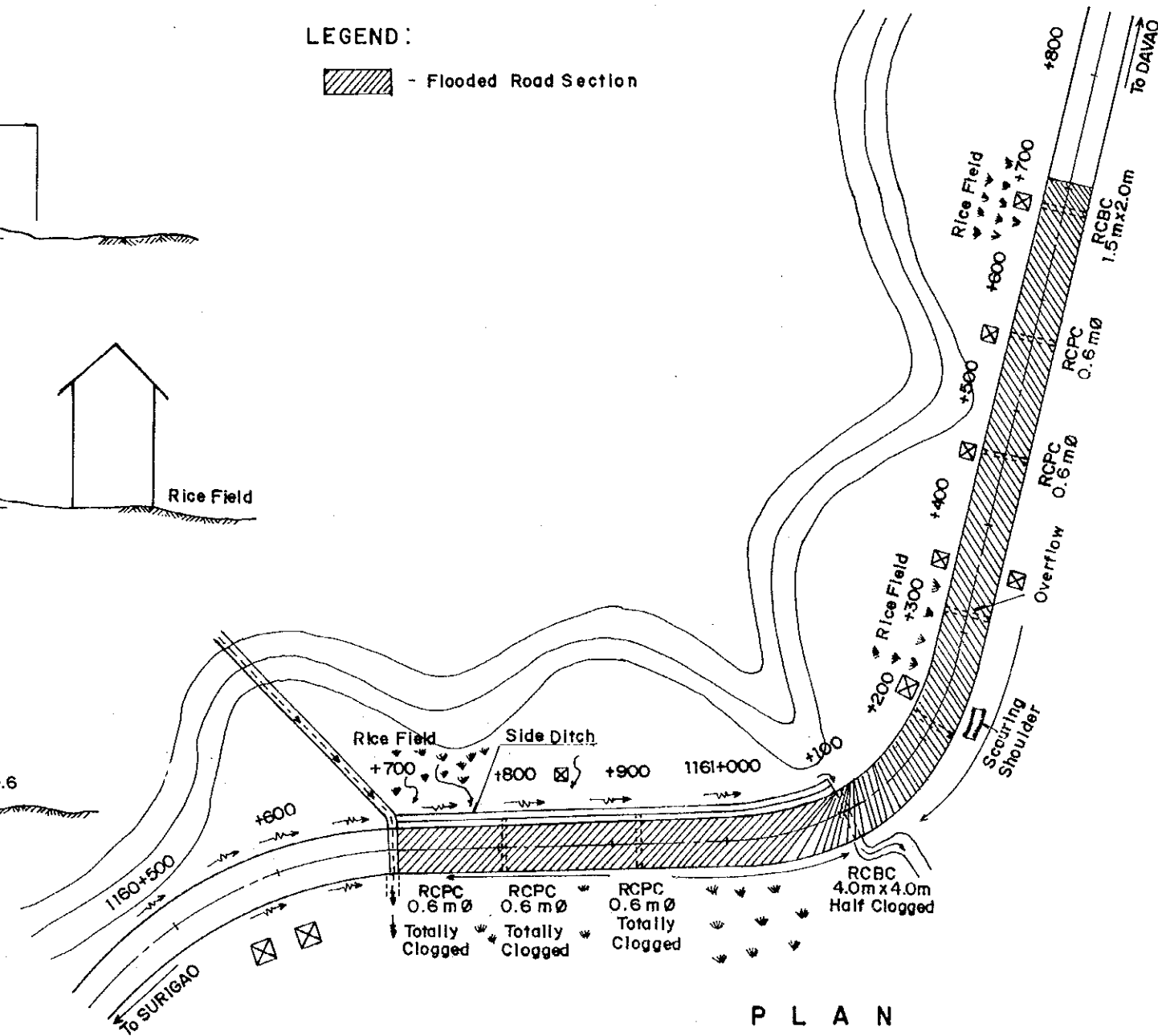
DRAWING NO.
F-1 (1/2)



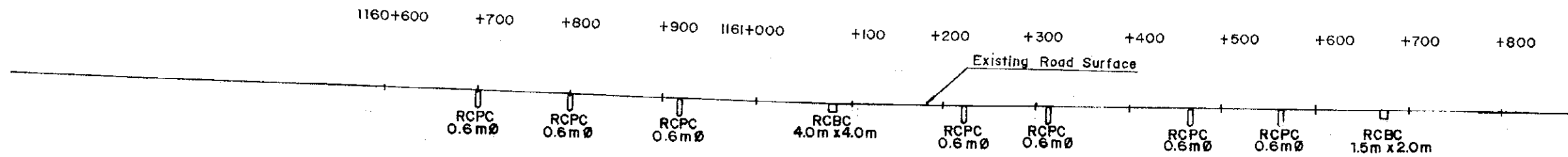
CROSS SECTION

LEGEND :

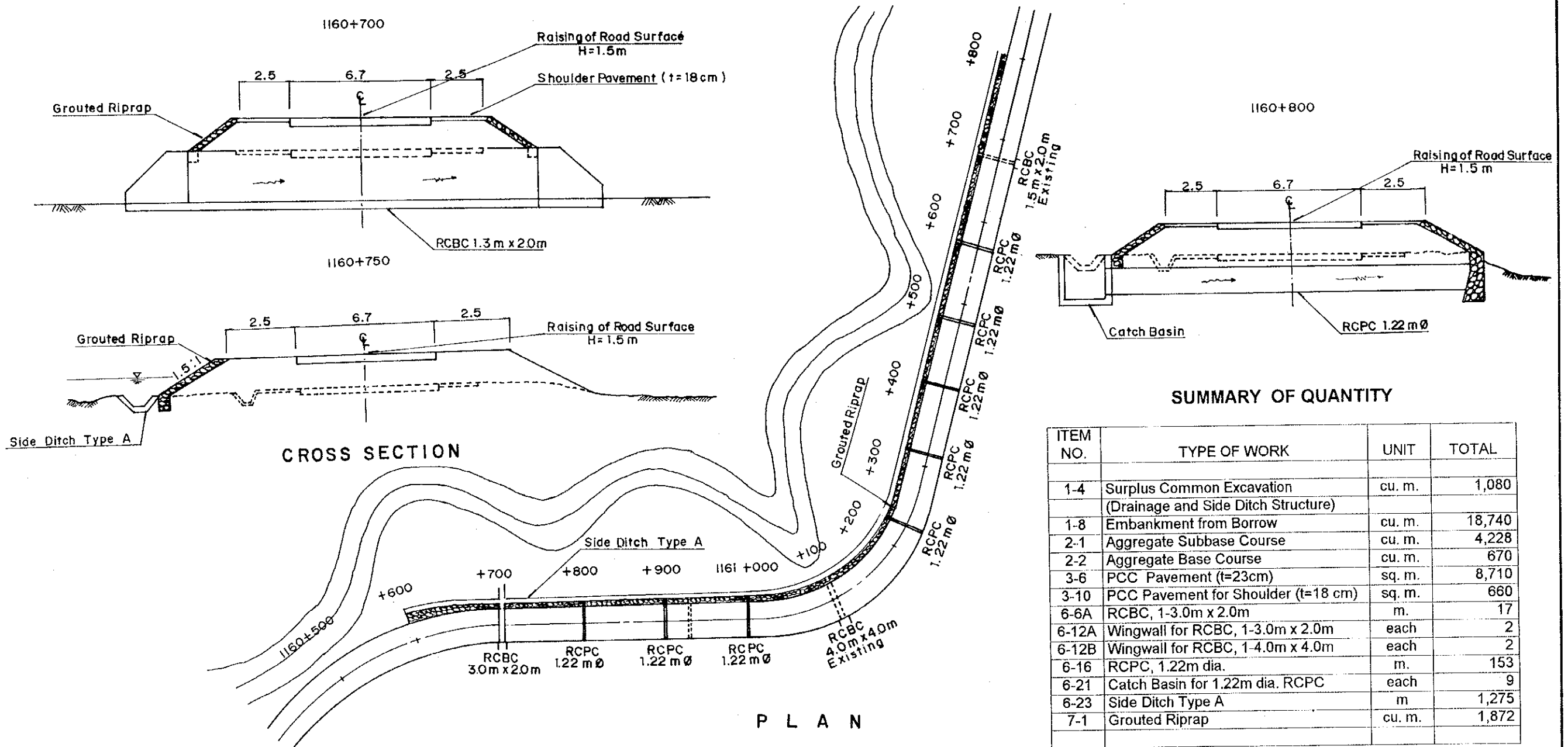
- Flooded Road Section



P L A N

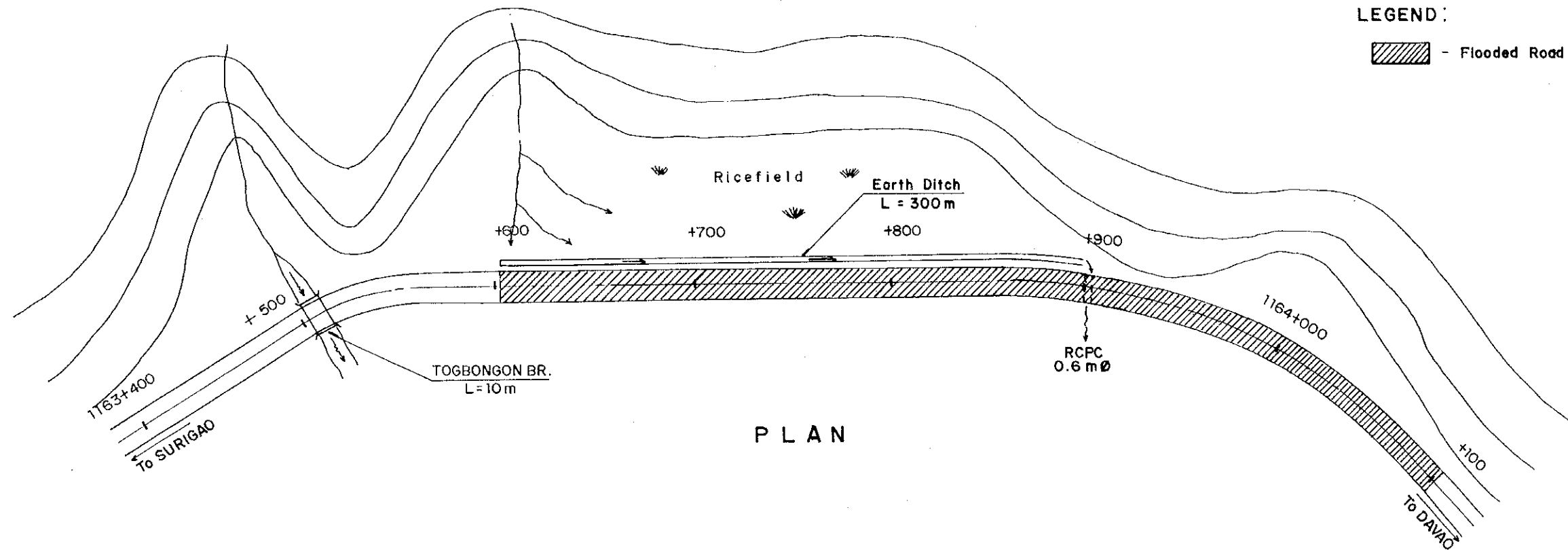


P R O F I L E

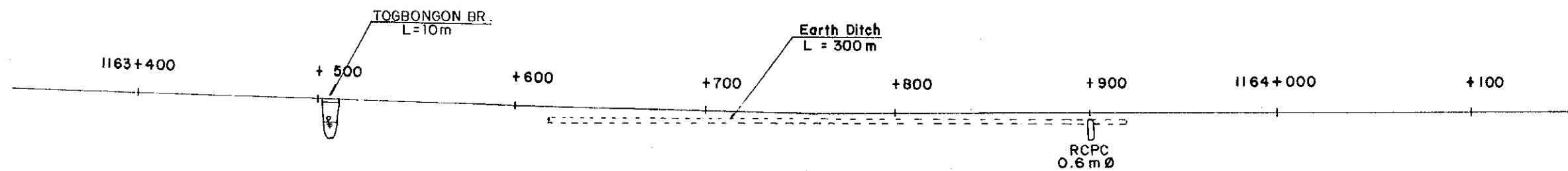


LEGEND :

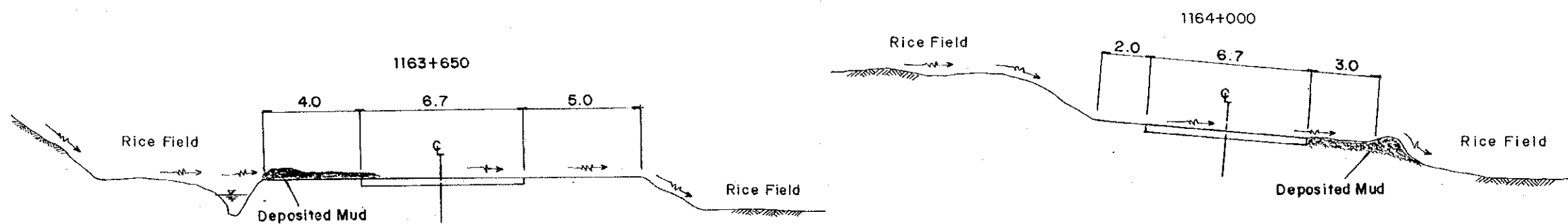
 - Flooded Road Section



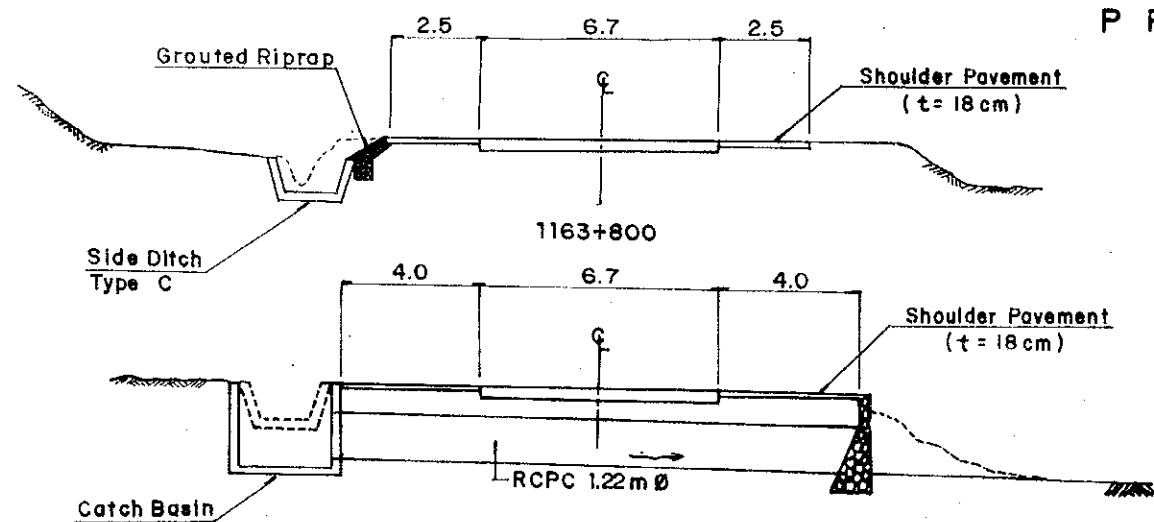
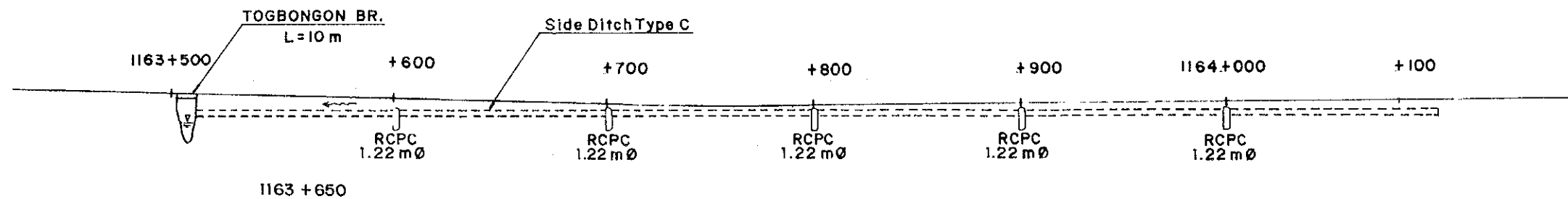
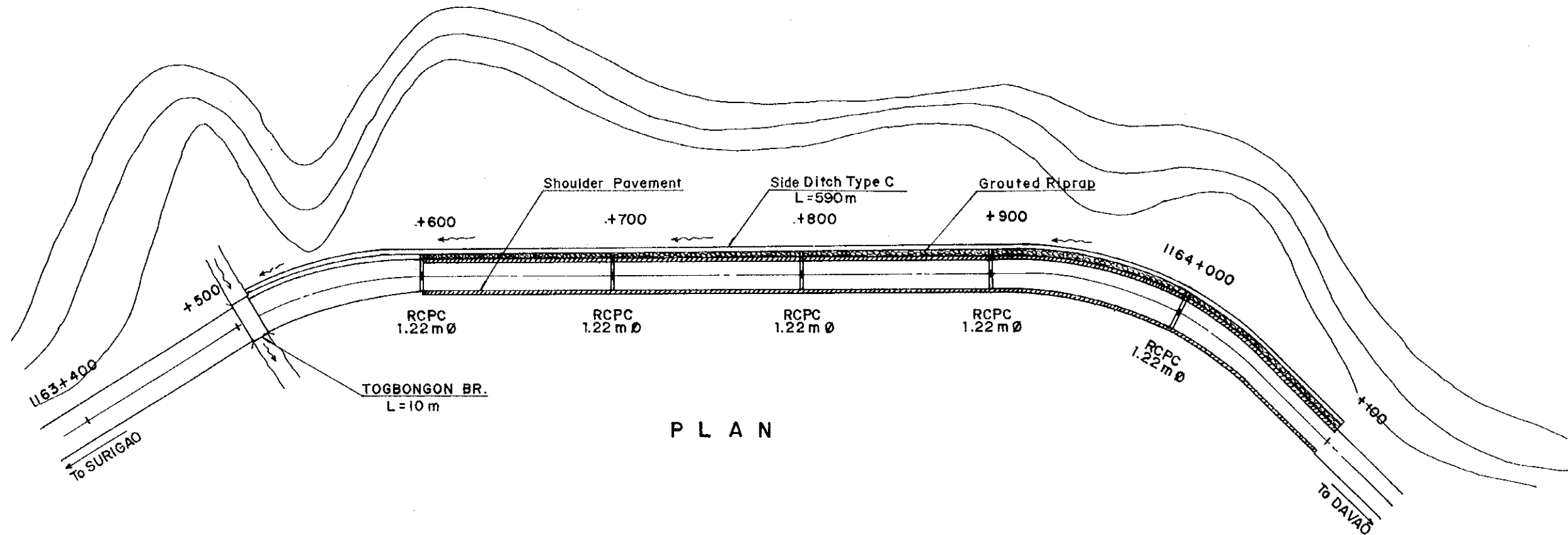
PLAN



PROFILE



CROSS SECTION



SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-11	Subgrade Preparation for Shoulder	sq. m.	3,000
3-10	PCC Pavement for Shoulder (t=18cm)	sq. m.	3,000
6-14	RCPC, 0.91m dia.	m	17
6-16	RCPC, 1.22m dia.	m	85
6-19	Catch Basin for 0.91m dia. RCPC	each	1
6-21	Catch Basin for 1.22m dia. RCPC	each	5
6-25	Side Ditch Type C	m	590
7-1	Grouted Riprap	cu. m.	864

FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

FLOOD SECTION NO. : 3
FLOOD TYPE : III

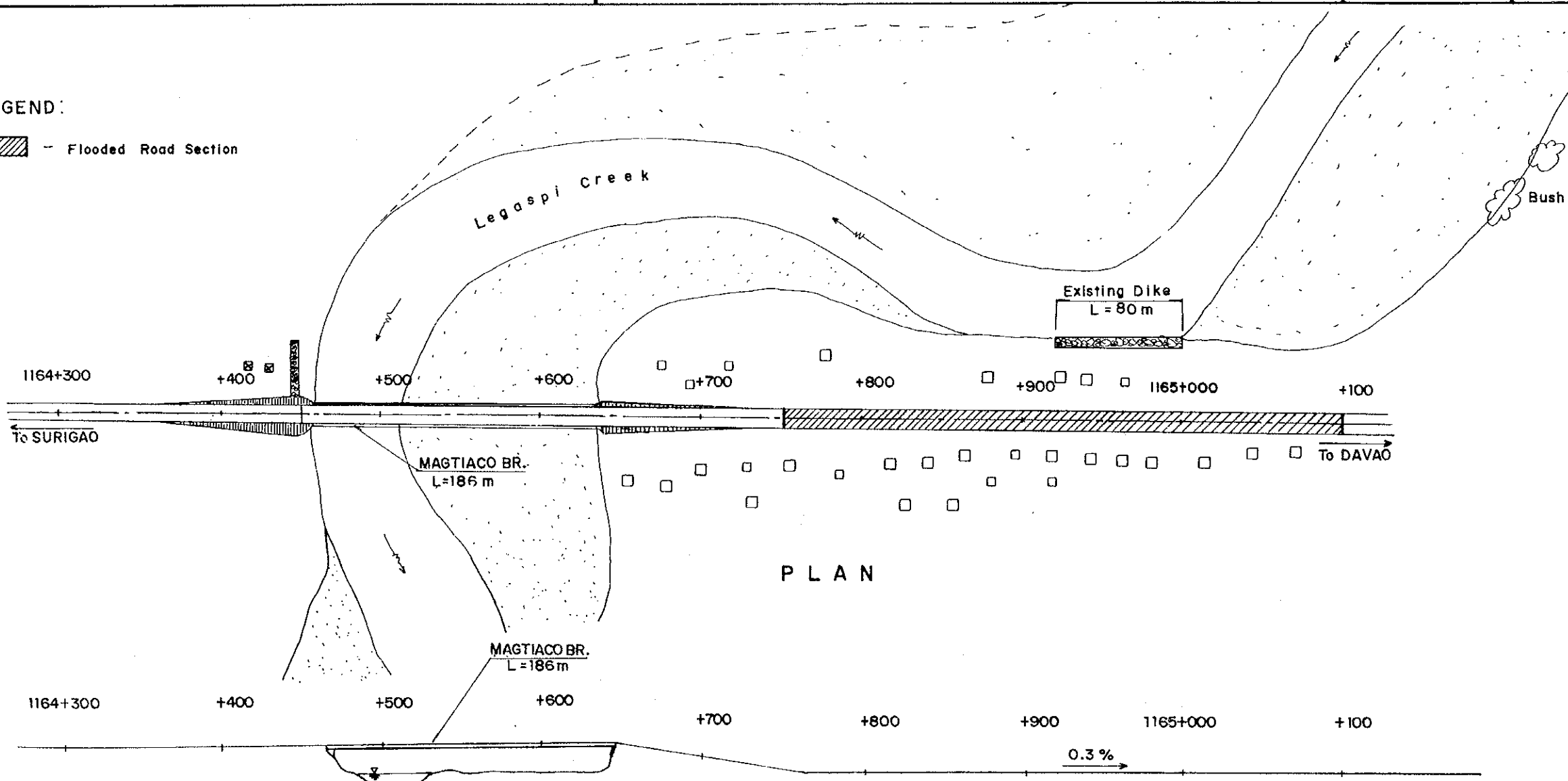
STATION : 1164+750-1165+100
EXISTING CONDITION

SCALE
NOT TO SCALE

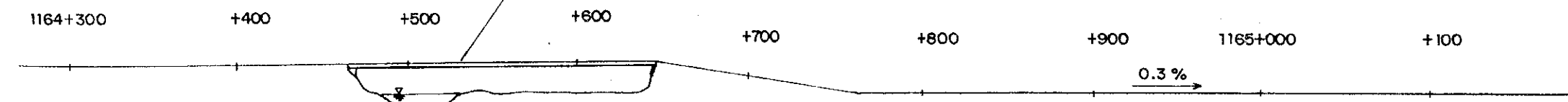
DRAWING NO.
F-3(1/2)

LEGEND:

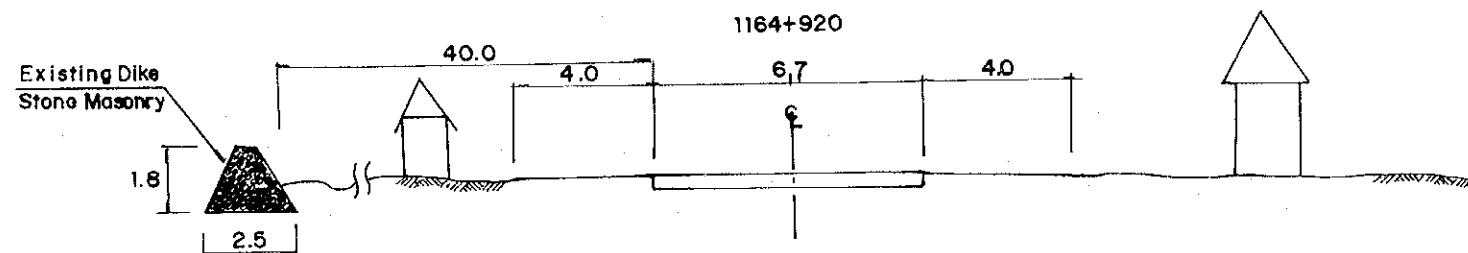
 - Flooded Road Section



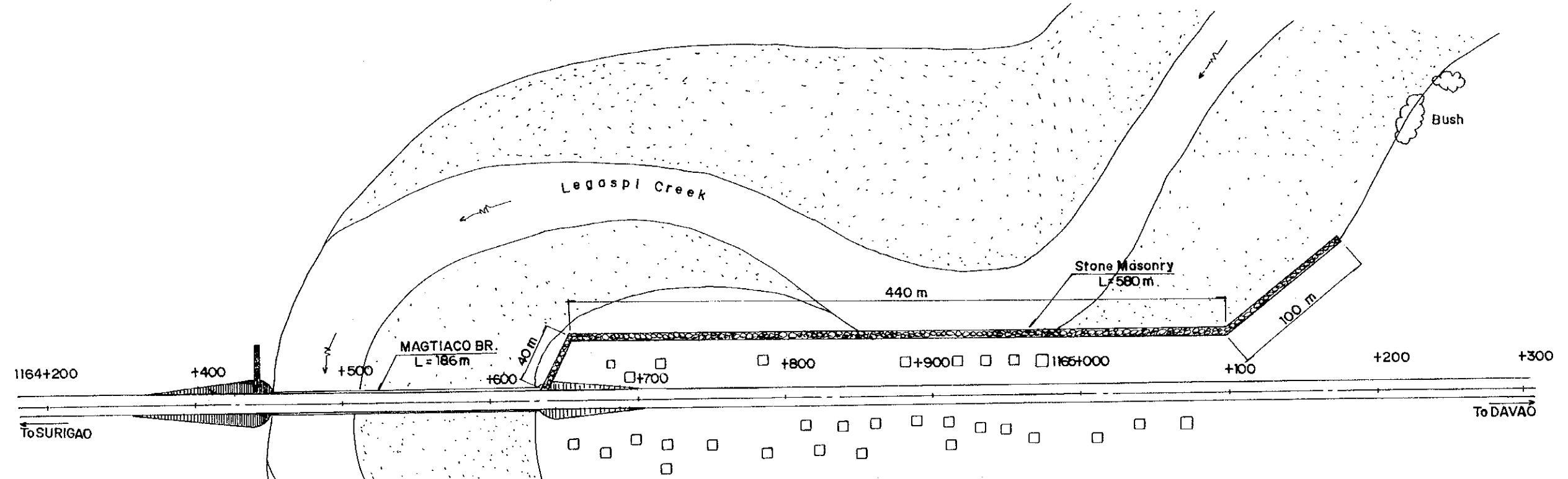
P L A N



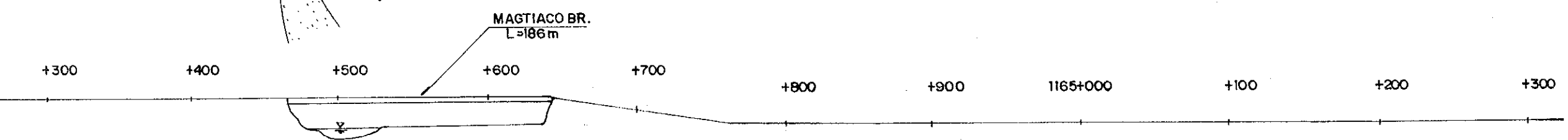
P R O F I L E



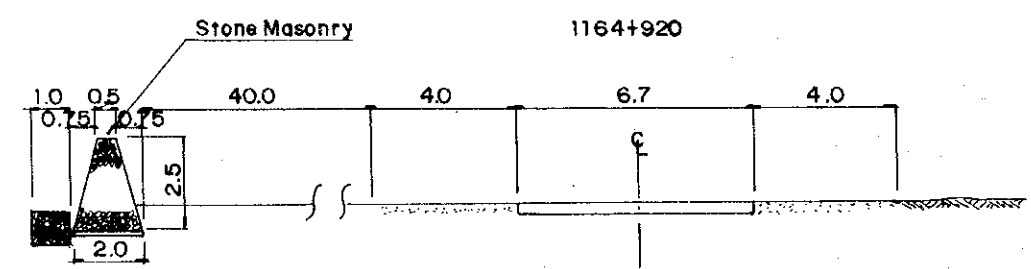
C R O S S S E C T I O N



P L A N



P R O F I L E



C R O S S S E C T I O N

S U M M A R Y O F Q U A N T I T Y

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
7-2	Stone Masonry	cu. m.	3,263

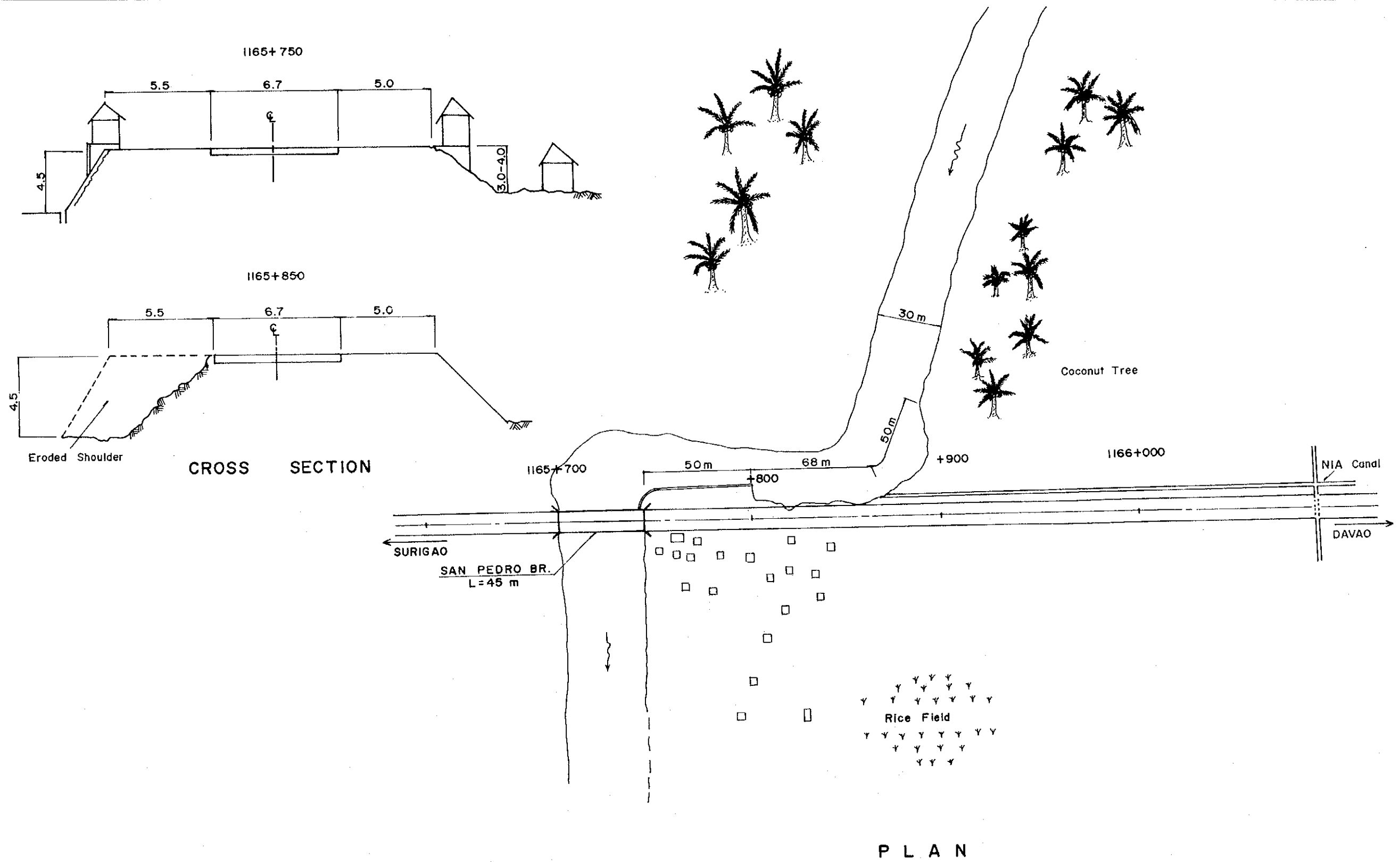
FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

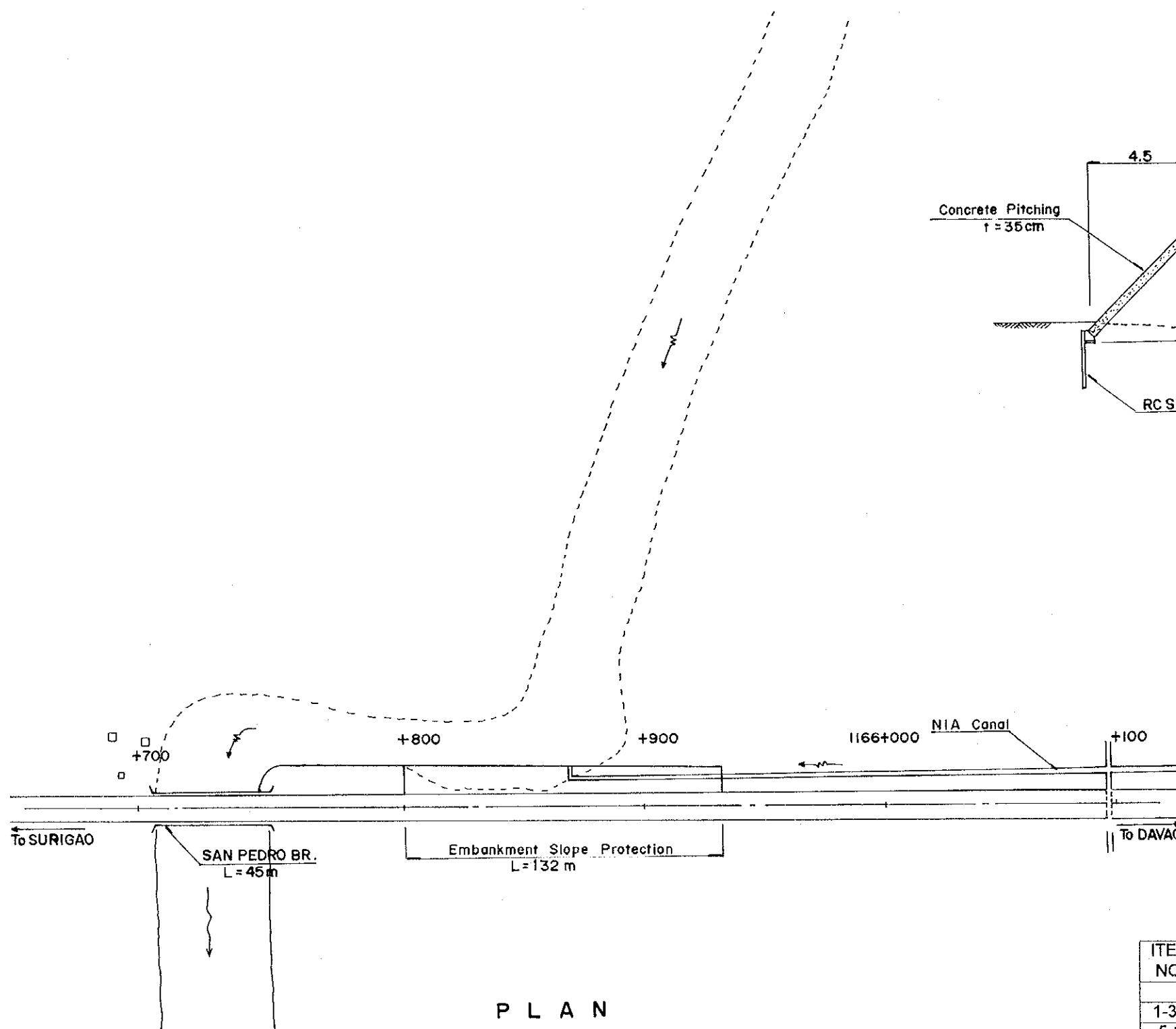
FLOOD SECTION NO. : 4
FLOOD TYPE : III

STATION : 1165+800 -1165+880
EXISTING CONDITION

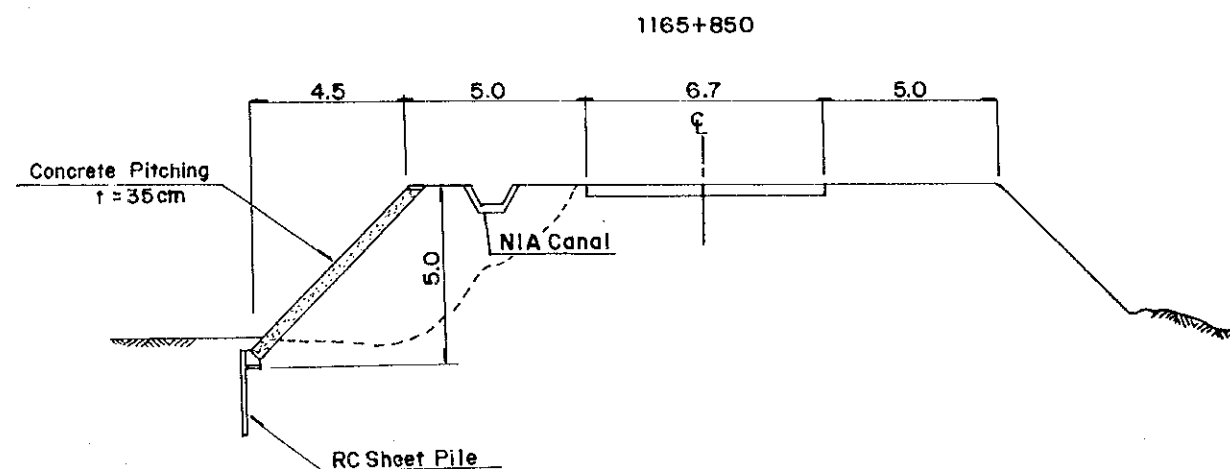
SCALE
NOT TO SCALE

DRAWING NO.
F-4(1/2)





P L A N



CROSS SECTION

SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-3A	River Dredging	cu. m.	27600
5-6	Stone Pitching (t=35 cm)	sq. m.	127
5-7	Concrete Pitching (t=35 cm)	sq. m.	312
5-9	Gabion	cu. m.	2,700
7-3	Concrete Sheet Pile	sq. m.	264
7-4	Concrete Dike	cu. m.	723

FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

FLOOD SECTION NO. : 5
FLOOD TYPE :

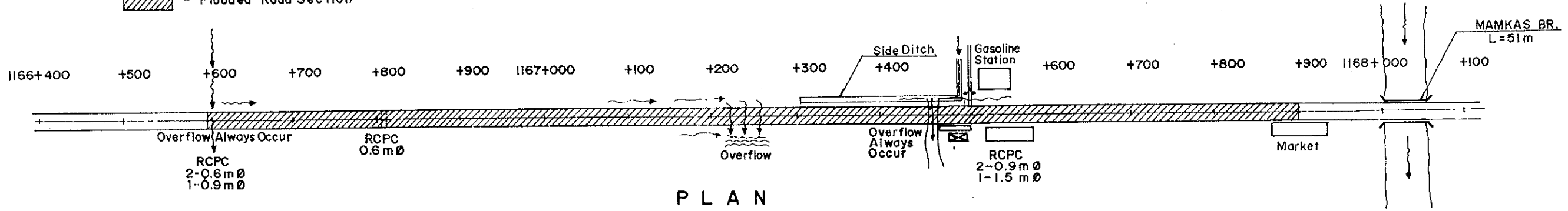
STATION : 1166+600-1167+900
EXISTING CONDITION

SCALE
NOT TO SCALE

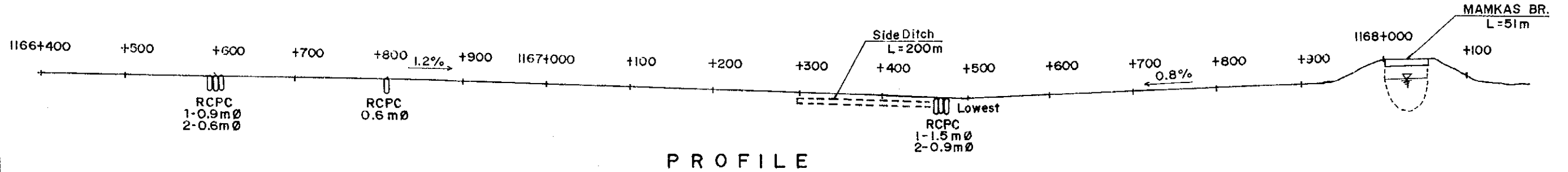
DRAWING NO.
F-5(1/2)

LEGEND :

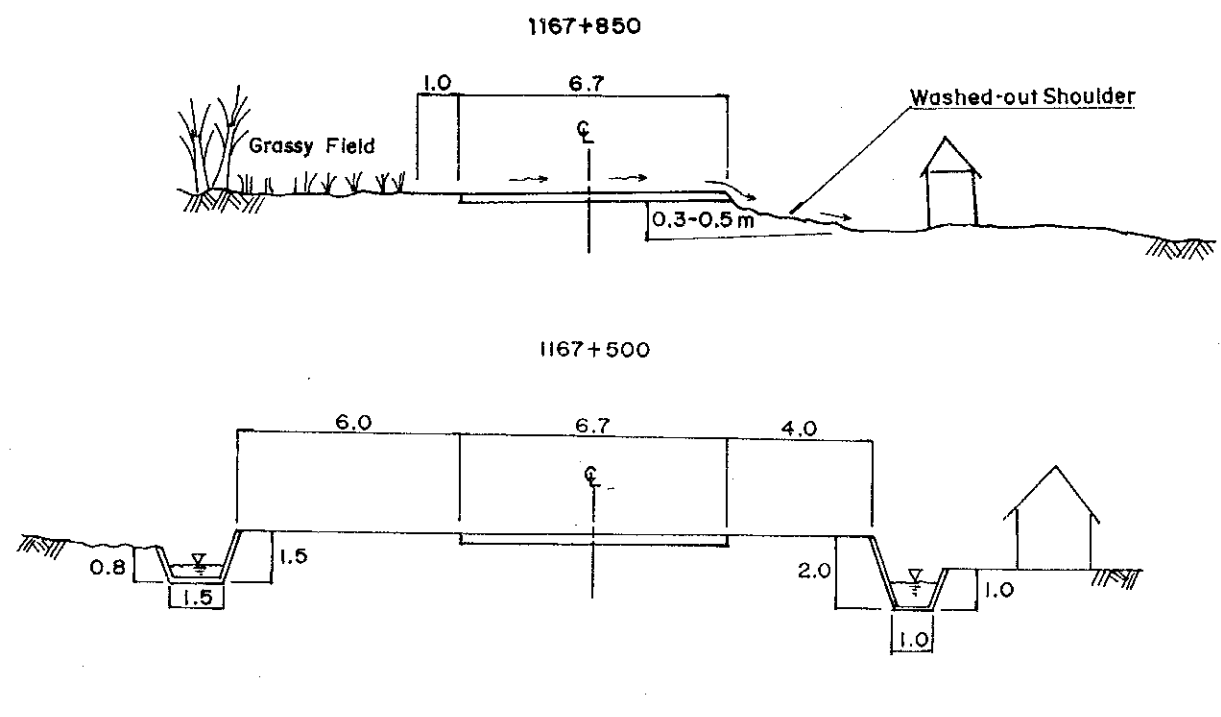
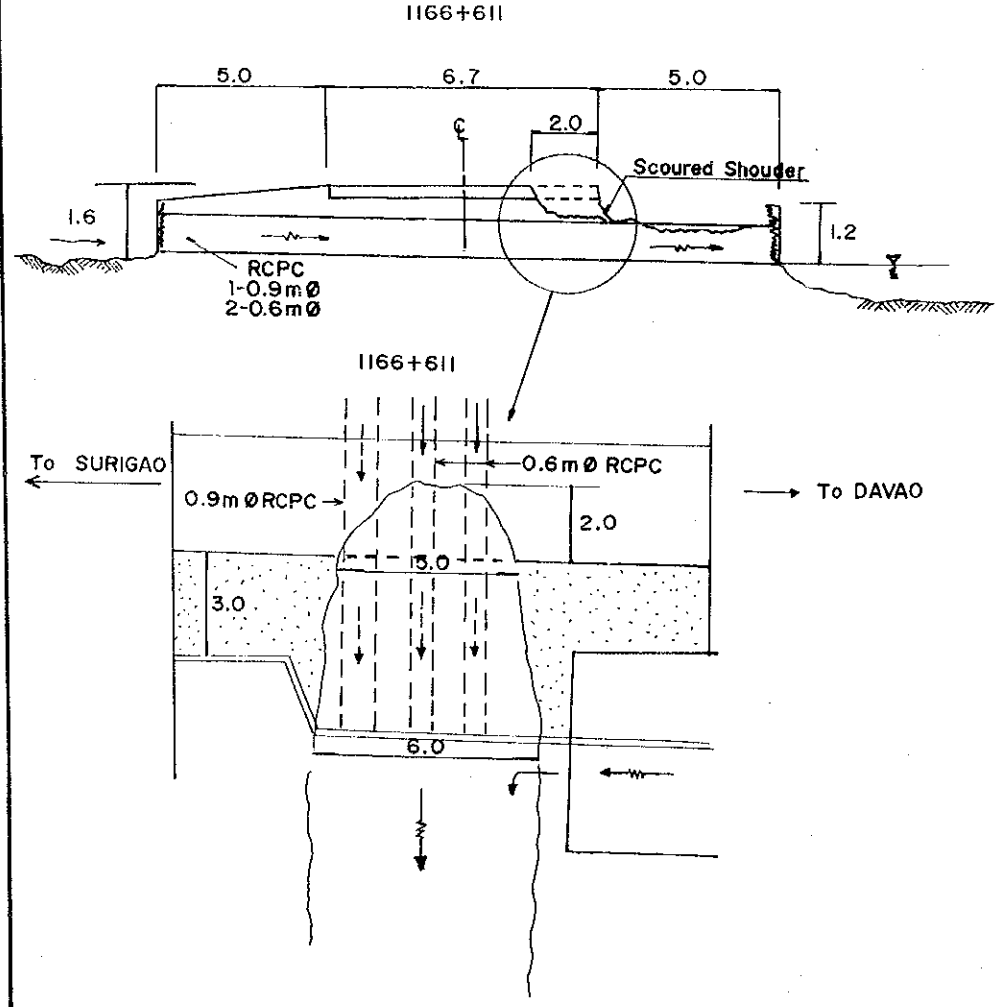
 - Flooded Road Section



P L A N



P R O F I L E



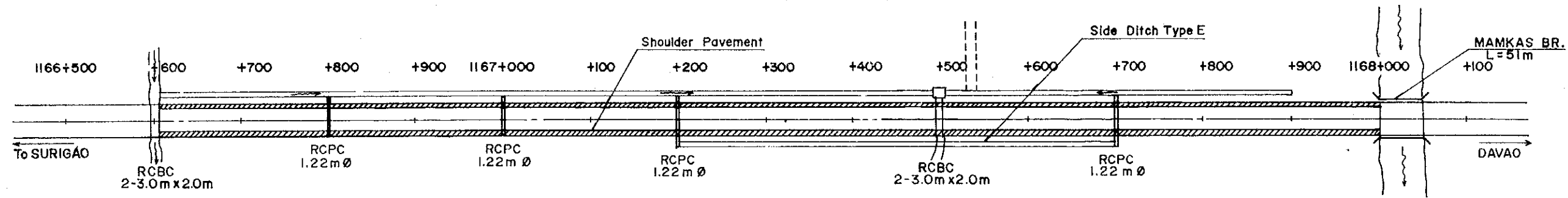
C R O S S S E C T I O N

**FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)**

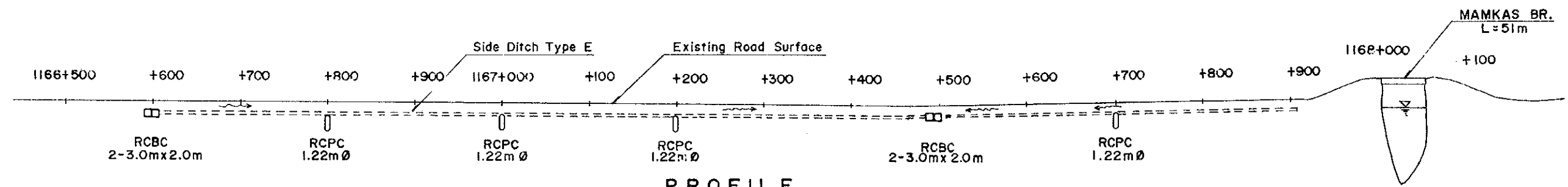
**FLOOD SECTION NO. : 5 STATION : 1166+600-1167+900
FLOOD TYPE : III PROPOSED COUNTERMEASURE**

**SCALE
NOT TO SCALE**

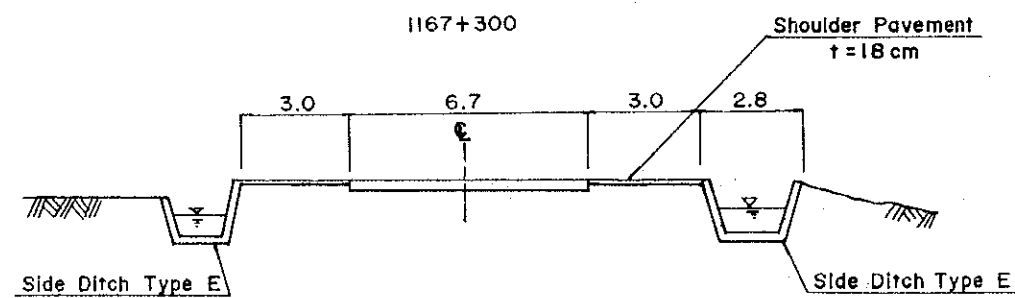
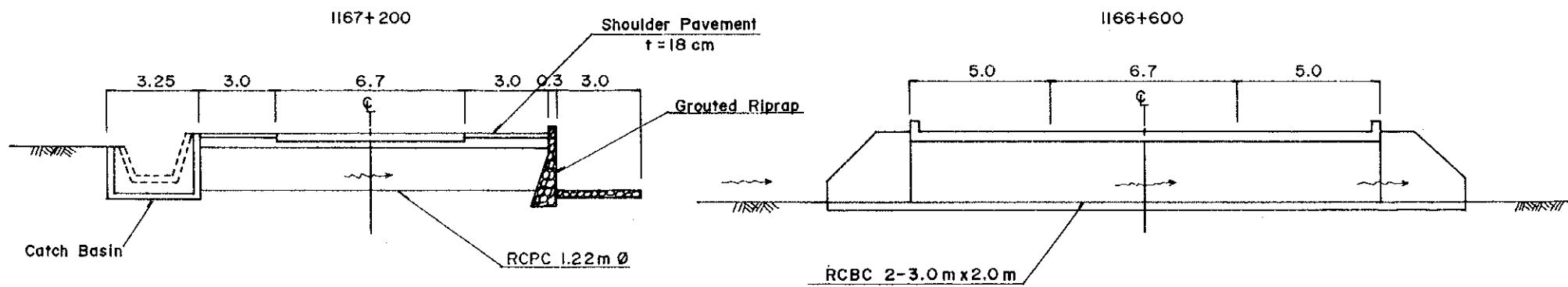
**DRAWING NO.
F-5 (2/2)**



P L A N



P R O F I L E



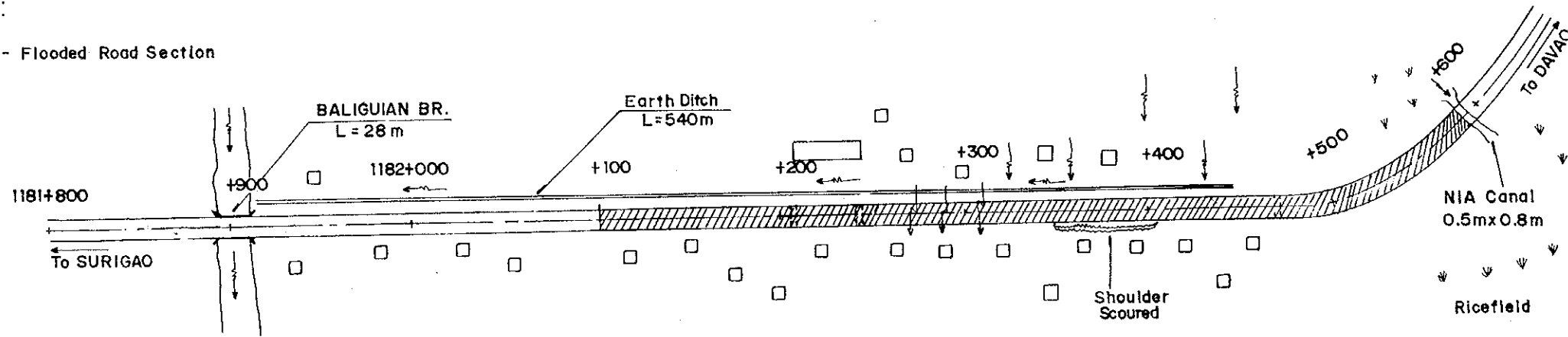
C R O S S S E C T I O N

SUMMARY OF QUANTITY

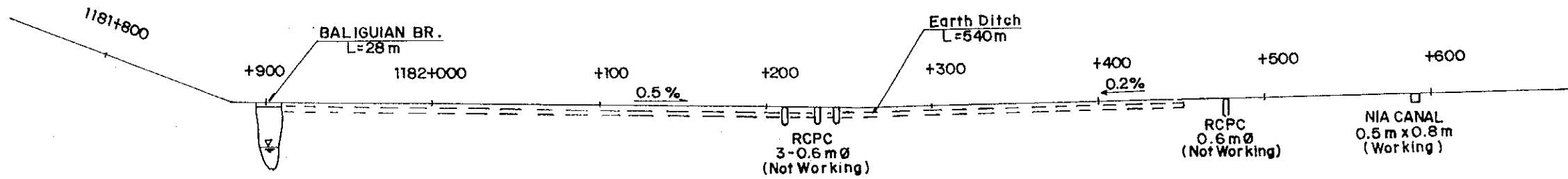
ITEM NO.	TYPE OF WORK	UNIT	TOTAL
3-10	PCC Pavement for Shoulder (t=18 cm)	sq. m.	8,400
6-6A	RCBC, 1-3.0m x 2.0m	m	34
6-12A	Wingwall for RCBC, 1-3.0m x 2.0m	each	4
6-16	RCPC, 1.22m dia.	m	68
6-21	Catch Basin for 1.22m dia. RCPC	each	6
6-26A	Side Ditch Type E	m	1,800
7-1	Grouted Riprap	cu. m.	83

LEGEND:

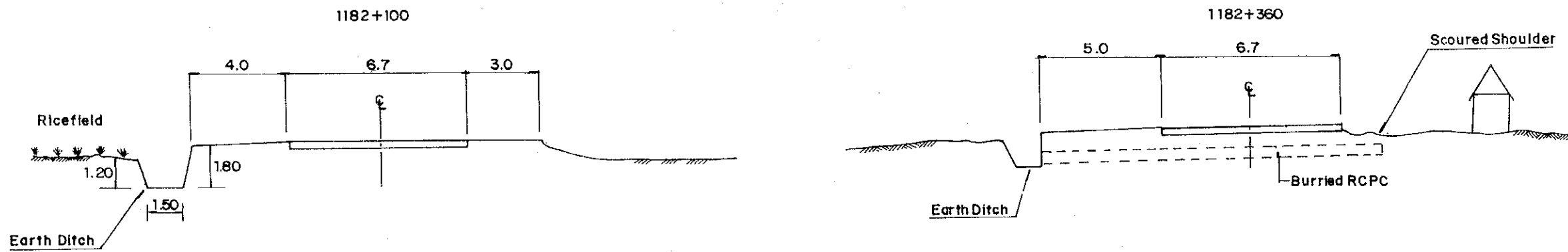
 - Flooded Road Section



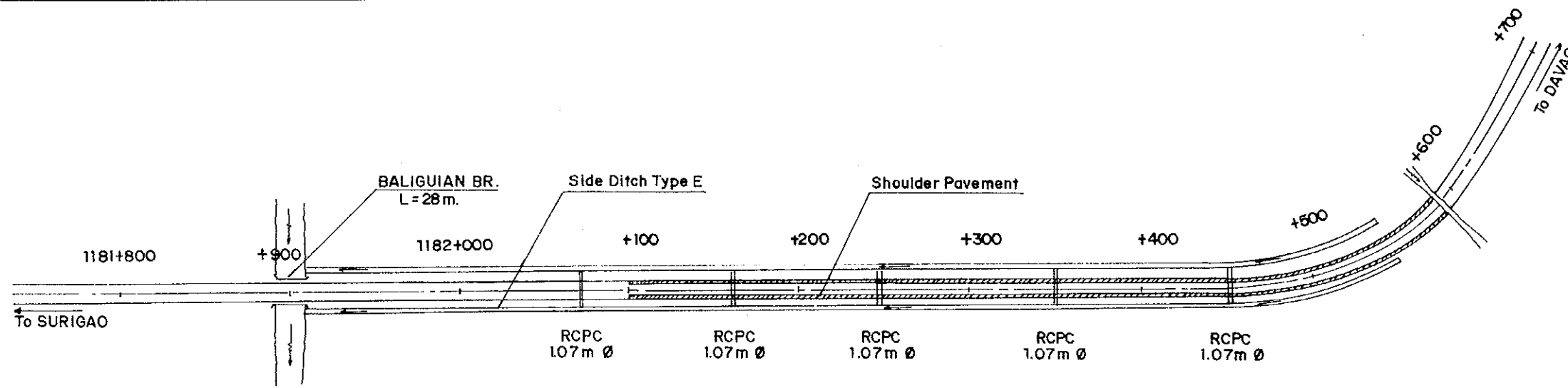
P L A N



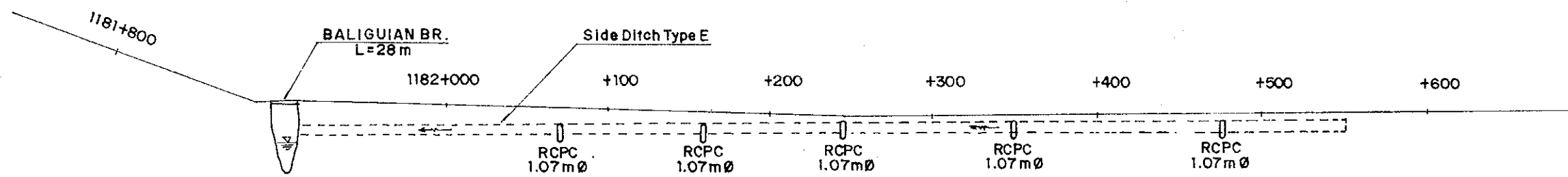
P R O F I L E



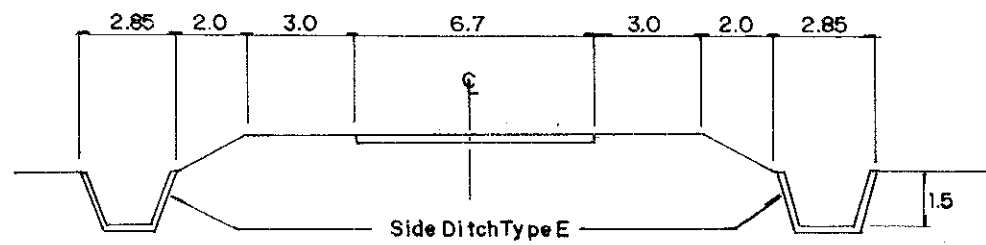
C R O S S S E C T I O N



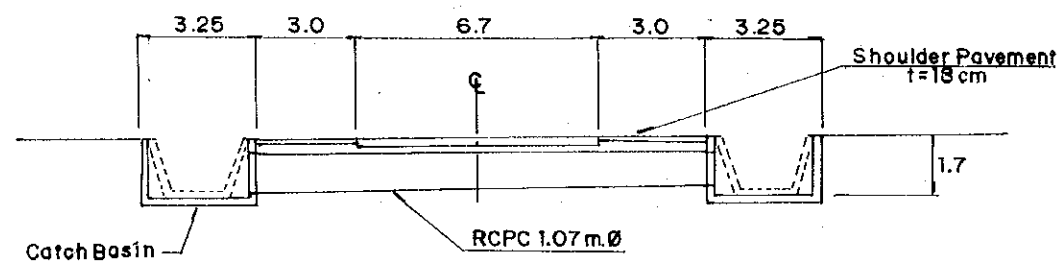
PLAN



PROFILE



1182+247



CROSS SECTION

SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-11	Subgrade Preparation for Shoulder	sq. m.	2,940
3-10	PCC Pavement for Shoulder (t=18 cm)	sq. m.	2,940
6-15	RCPC, 1.07m dia.	m	64
6-20	Catch Basin for 1.07m dia. RCPC	each	10
6-26A	Side Ditch Type E	m	1,240

FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

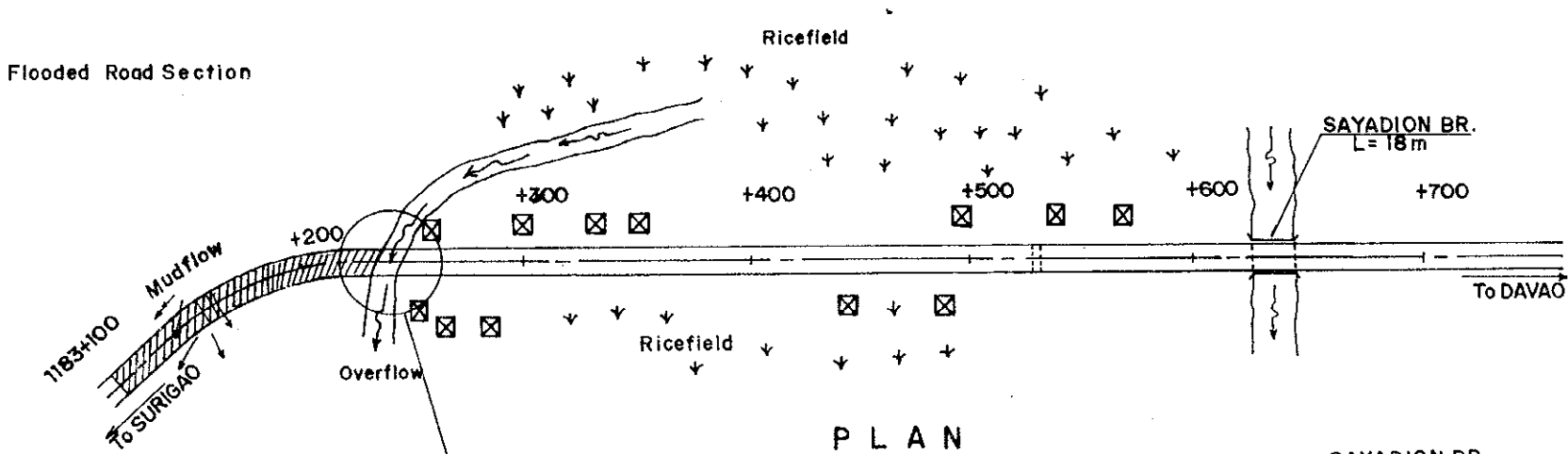
FLOOD SECTION NO. : 7 STATION : 1183+100 - 1183+200
FLOOD TYPE : III EXISTING CONDITION

SCALE
NOT TO SCALE

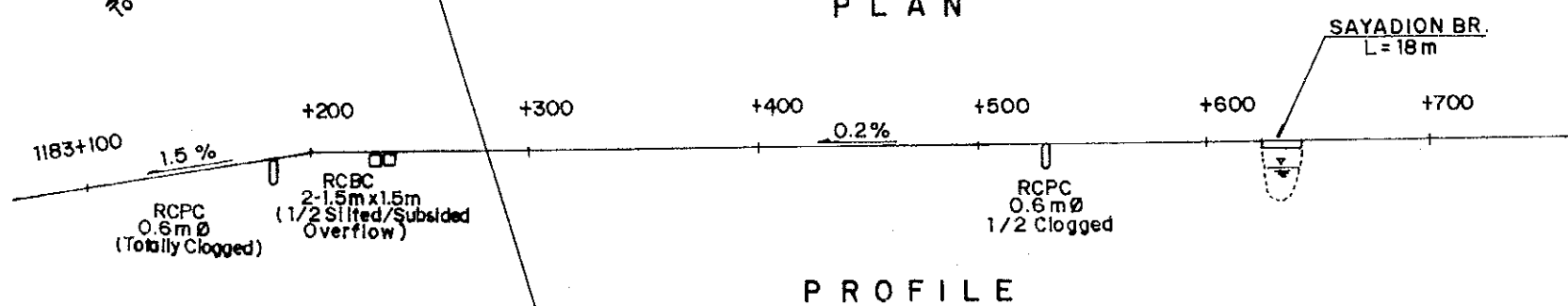
DRAWING NO.
F-7(1/2)

LEGEND:

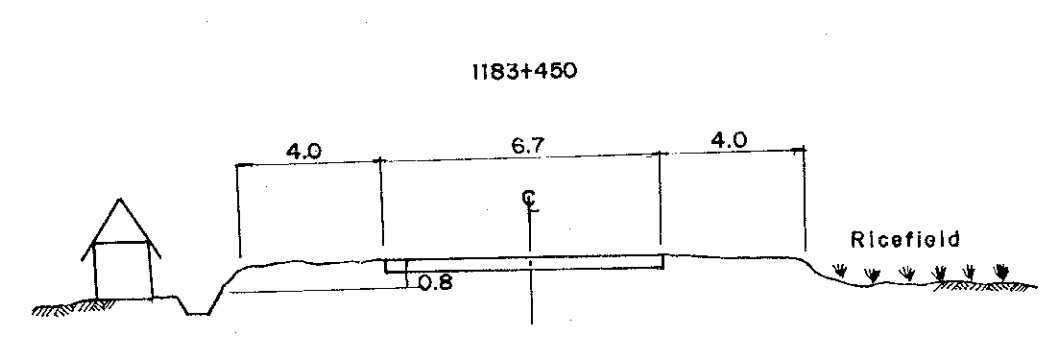
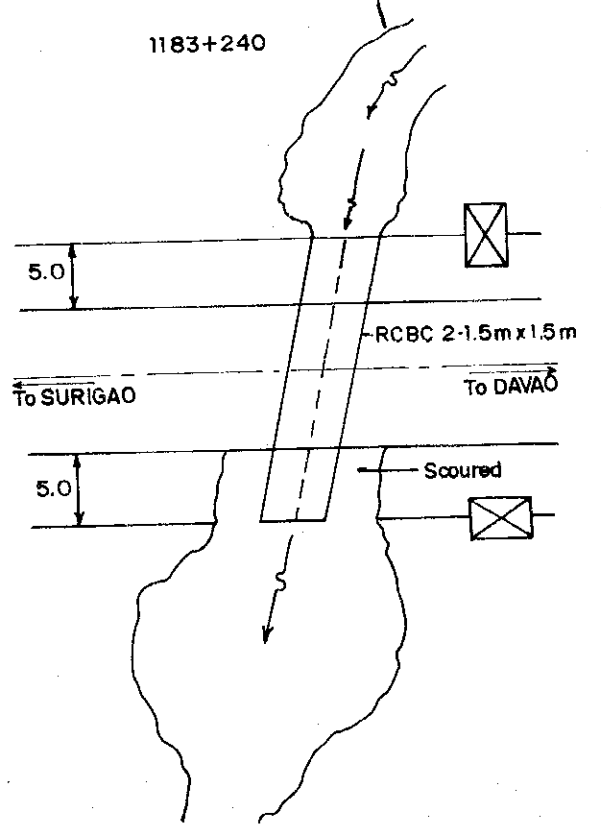
 - Flooded Road Section



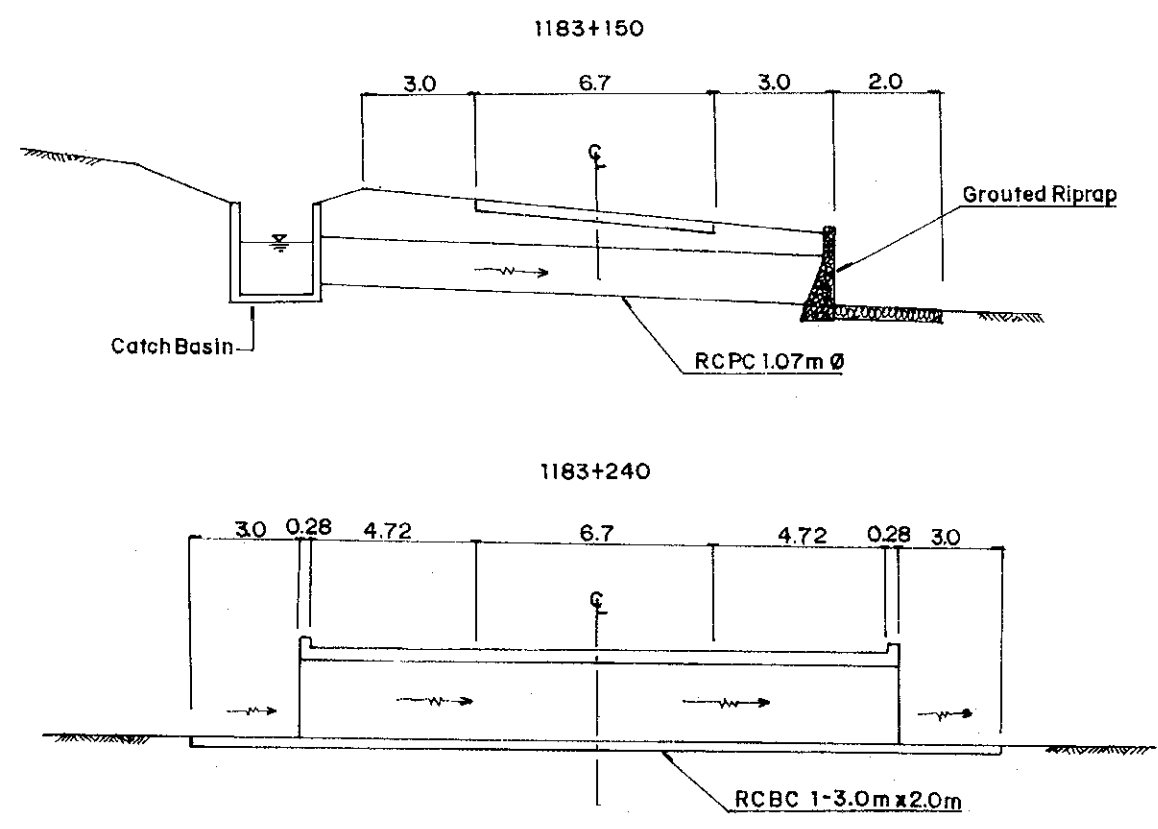
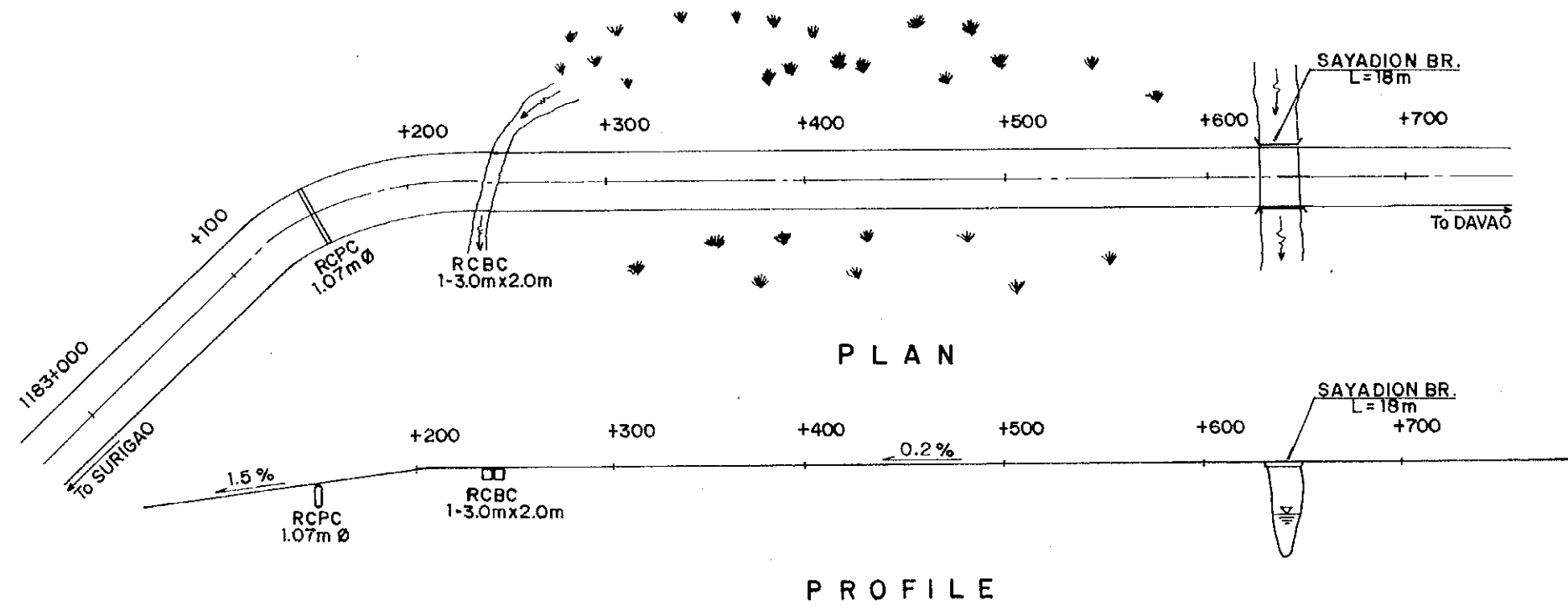
PLAN



PROFILE



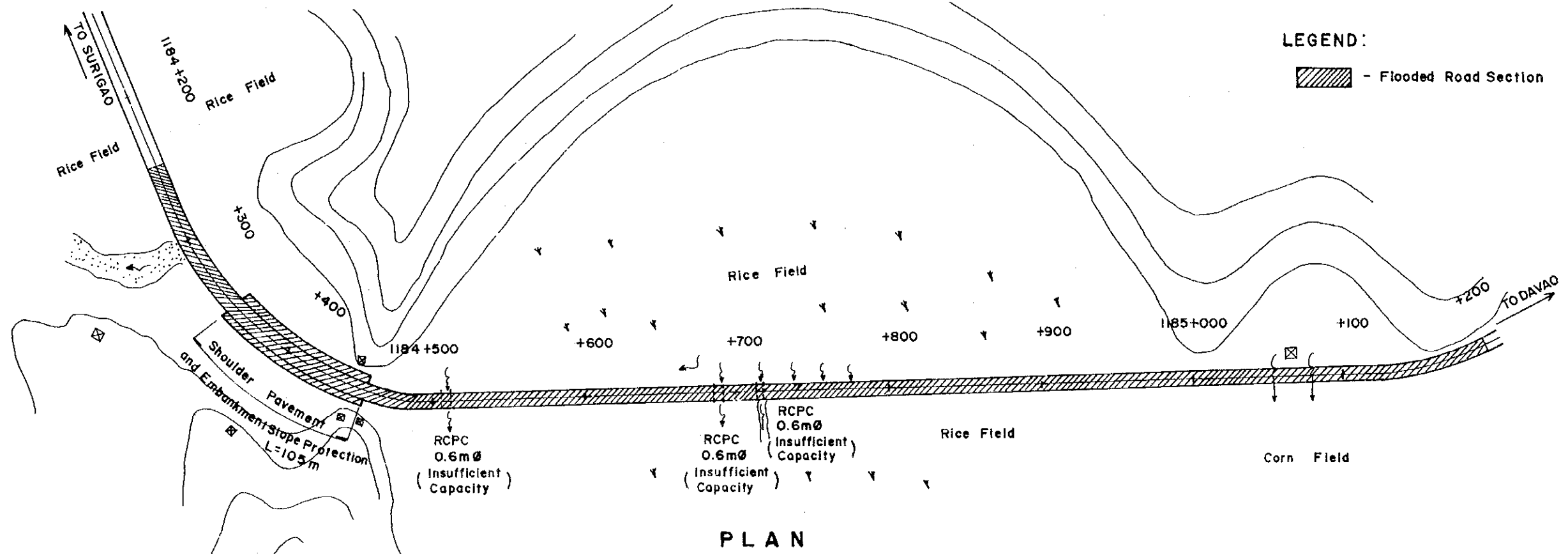
CROSS SECTION



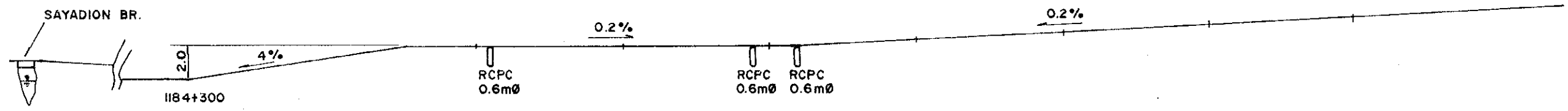
SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
6-6A	RCBC, 1-3.0m x 2.0m	m	17
6-12A	Wingwall for RCBC 1-3.0m x 2.0m	each	2
6-15	RCPC, 1.07m dia.	m	17
6-20	Catch Basin for 1.07m dia. RCPC	each	2
7-1	Grouted Riprap	cu. m.	1.75

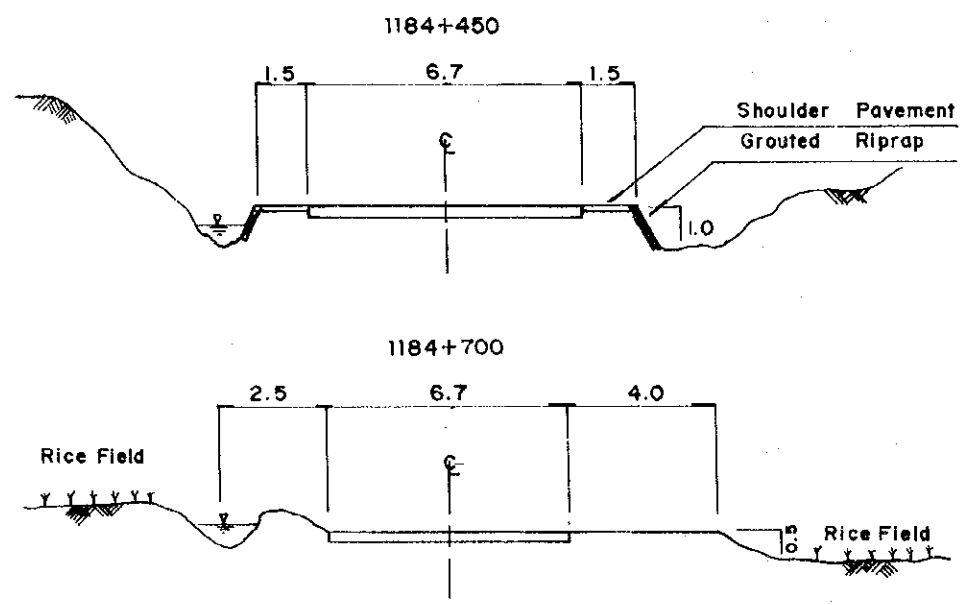
CROSS SECTION



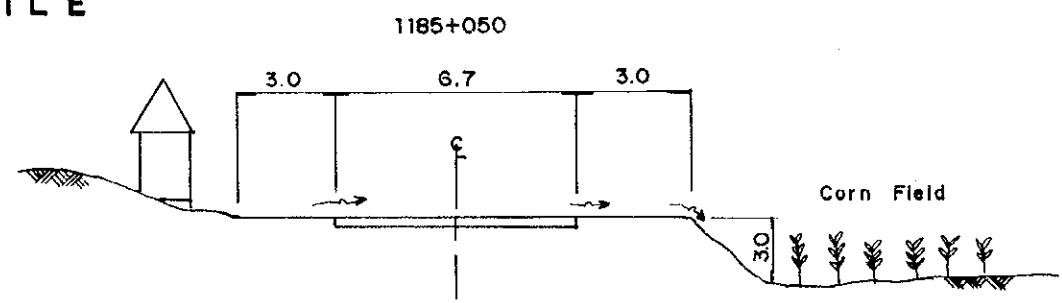
PLAN



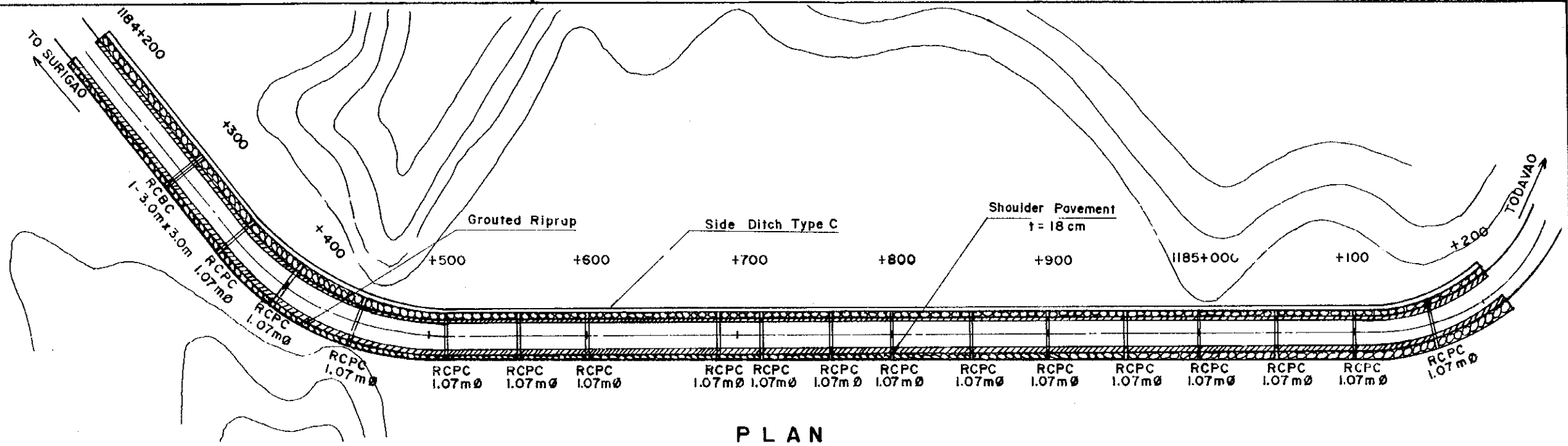
PROFILE



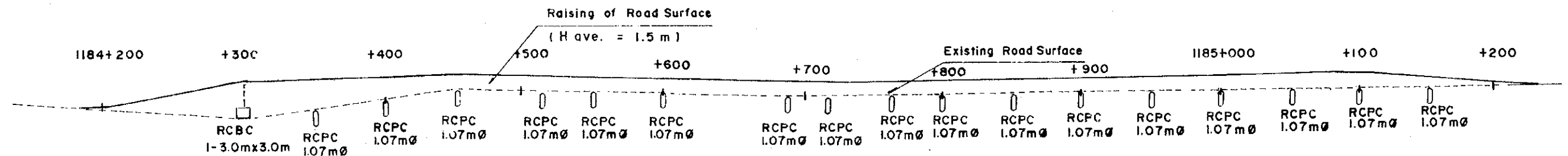
CROSS SECTION



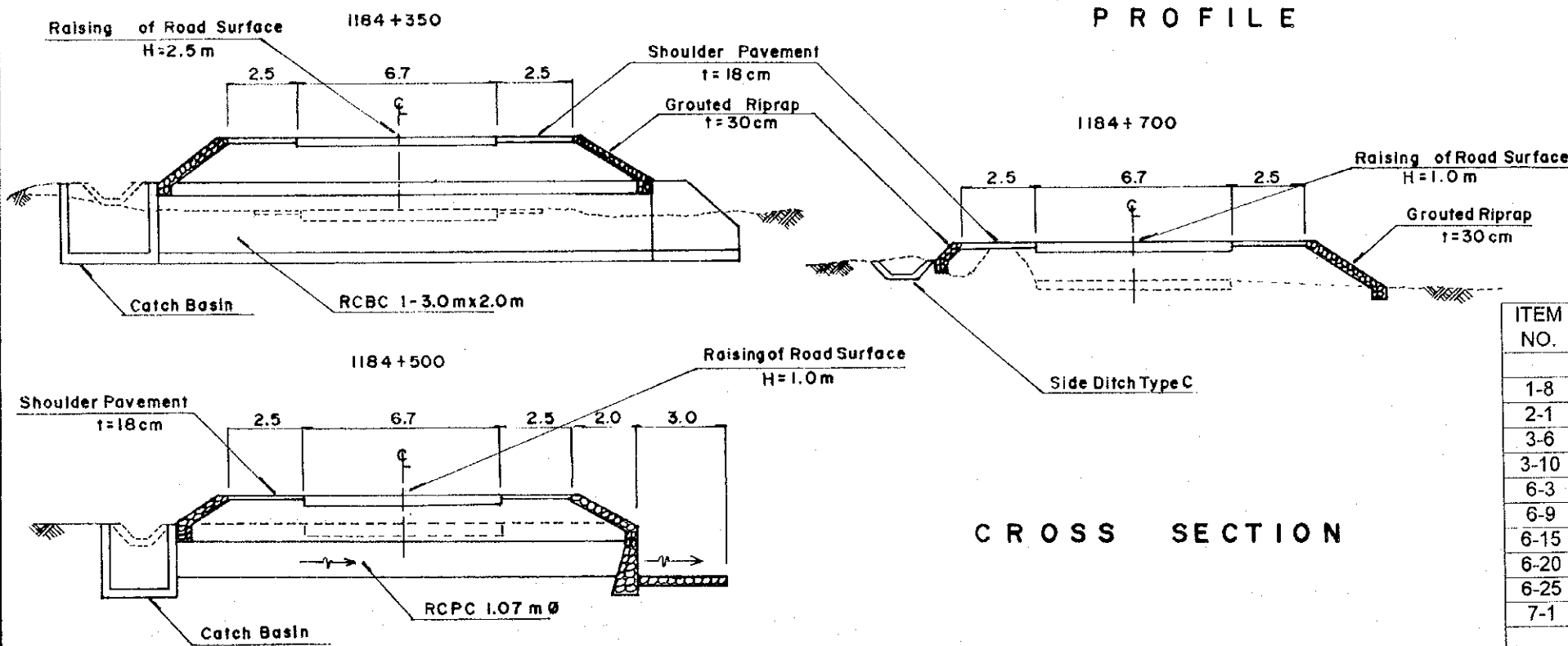
CROSS SECTION



PLAN



PROFILE



CROSS SECTION

SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-8	Embankment from Borrow	cu. m.	17,515
2-1	Aggregate Subbase	cu. m.	2,079
3-6	PCC Pavement (t=23cm)	sq. m.	6,700
3-10	PCC Pavement for Shoulder (t=18 cm)	sq. m.	5,000
6-3	RCBC, 1-3.0m x 3.0m	m	17
6-9	Wingwall for RCBC, 1-3.0m x 3.0m	each	2
6-15	RCPC, 1.07m dia.	m	272
6-20	Catch Basin for 1.07m dia. RCPC	each	16
6-25	Side Ditch Type C	m	962
7-1	Grouted Riprap	cu. m.	2,182

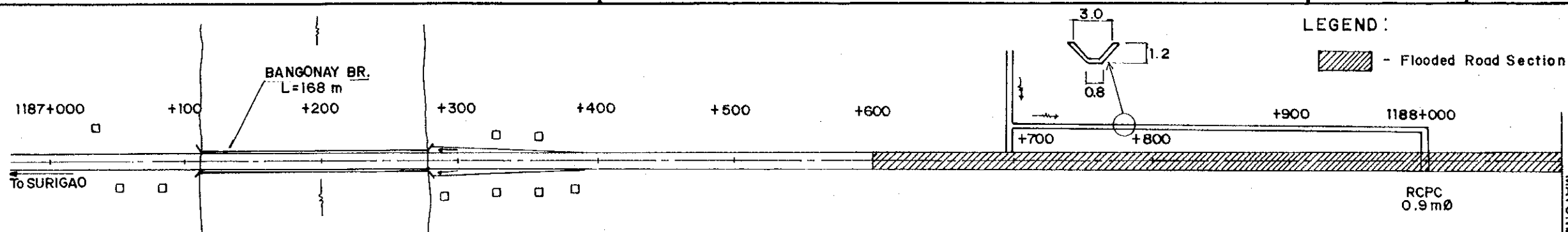
FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

FLOOD SECTION NO. : 9
FLOOD TYPE : III

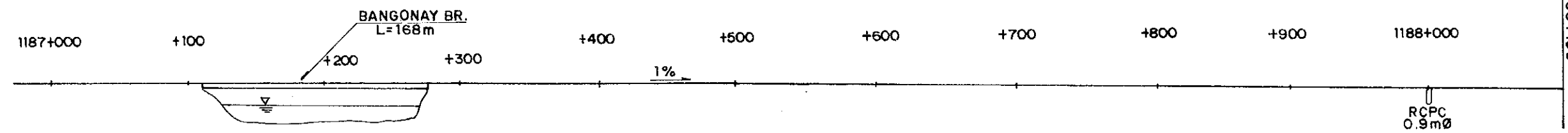
STATION : 1187+600 - 1189+200
EXISTING CONDITION

SCALE
NOT TO SCALE

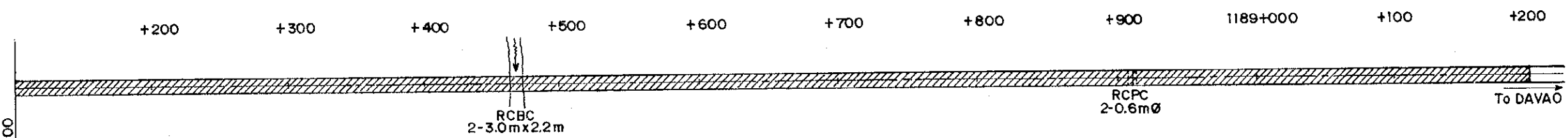
DRAWING NO.
F-9(1/2)



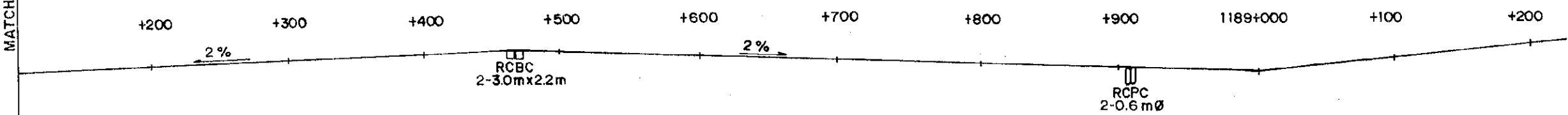
PLAN



PROFILE



PLAN



PROFILE



CROSS SECTION

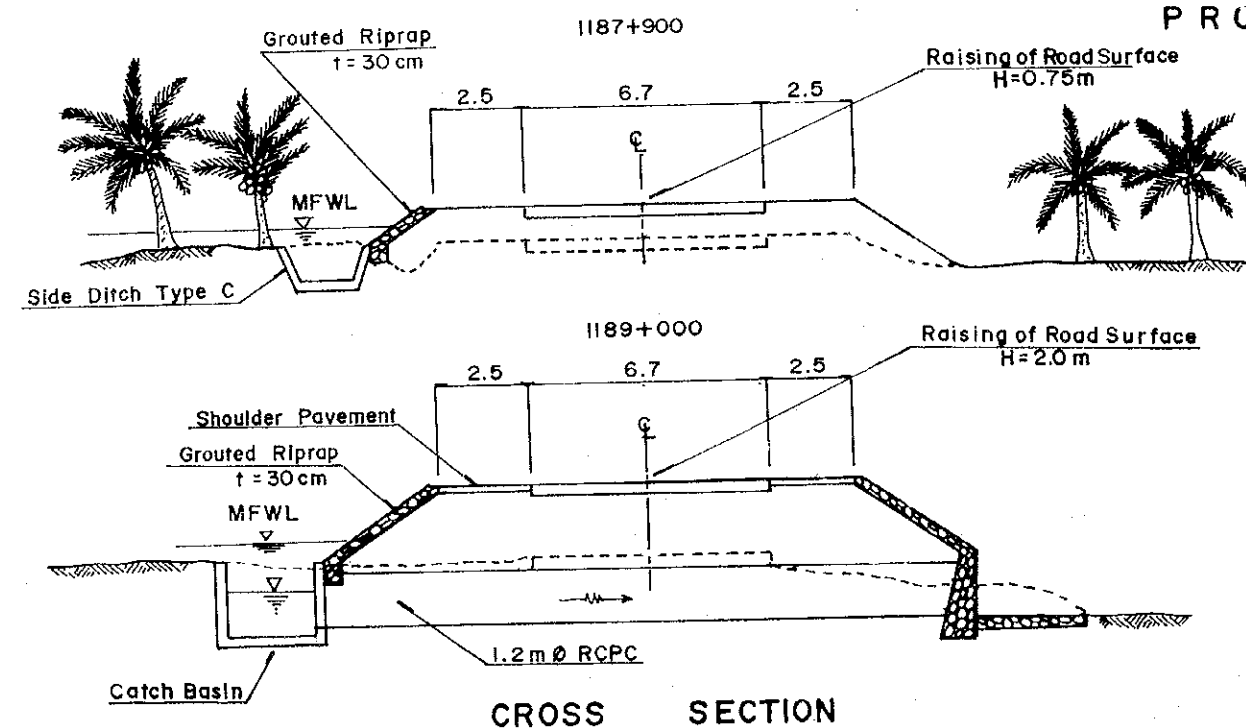
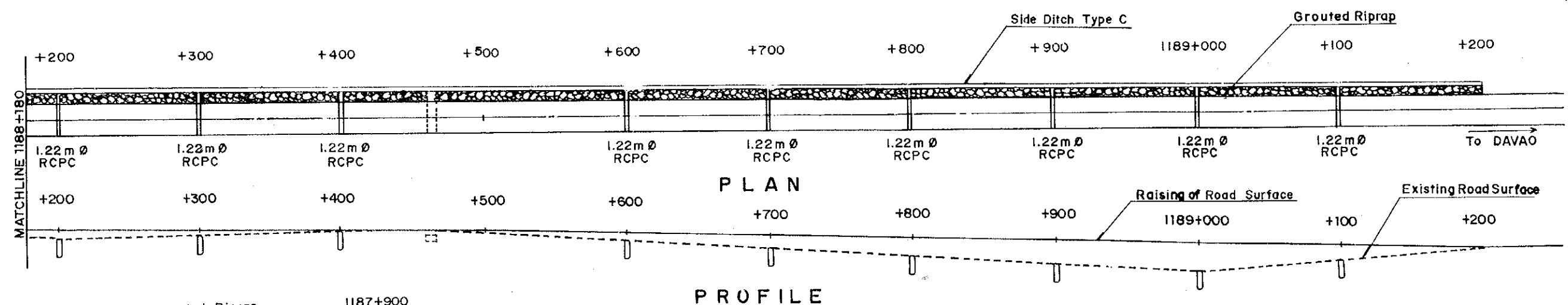
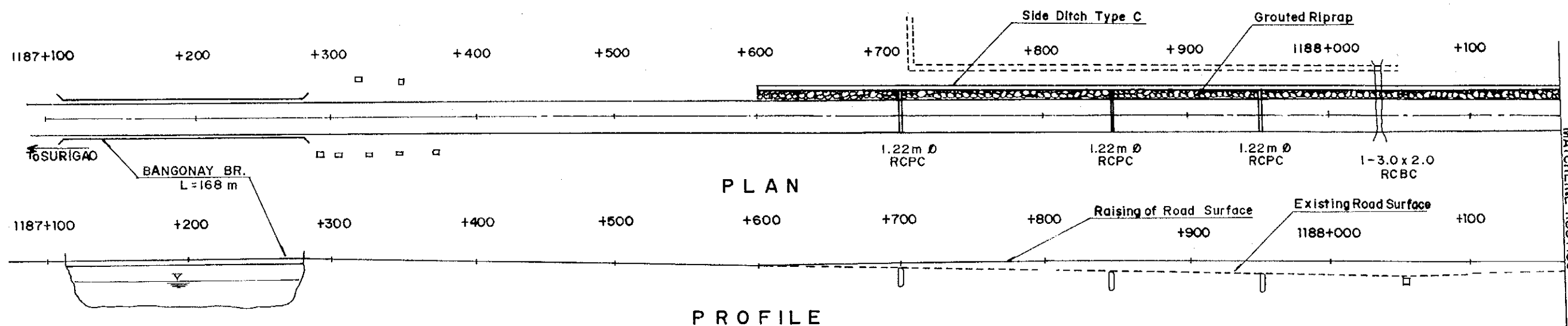
FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

FLOOD SECTION NO. : 9
FLOOD TYPE : III

STATION : 1187+500 - 1189+200
PROPOSED COUNTERMEASURE

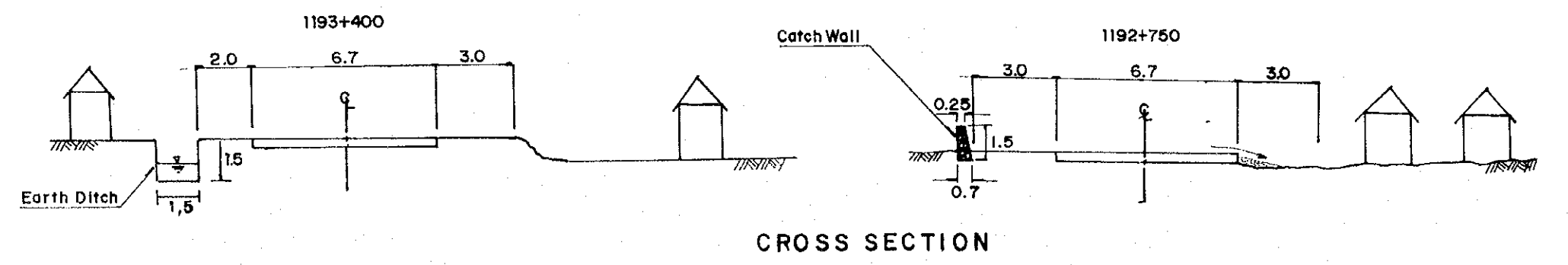
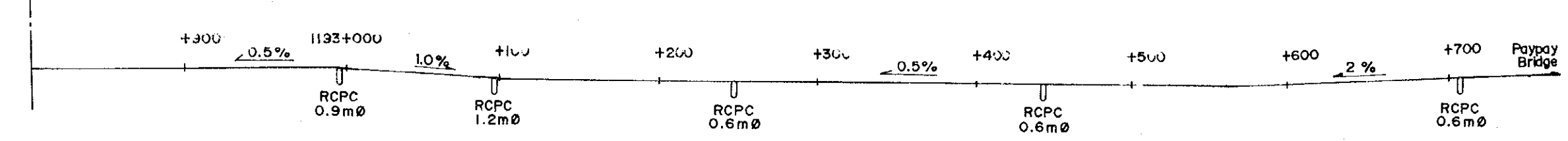
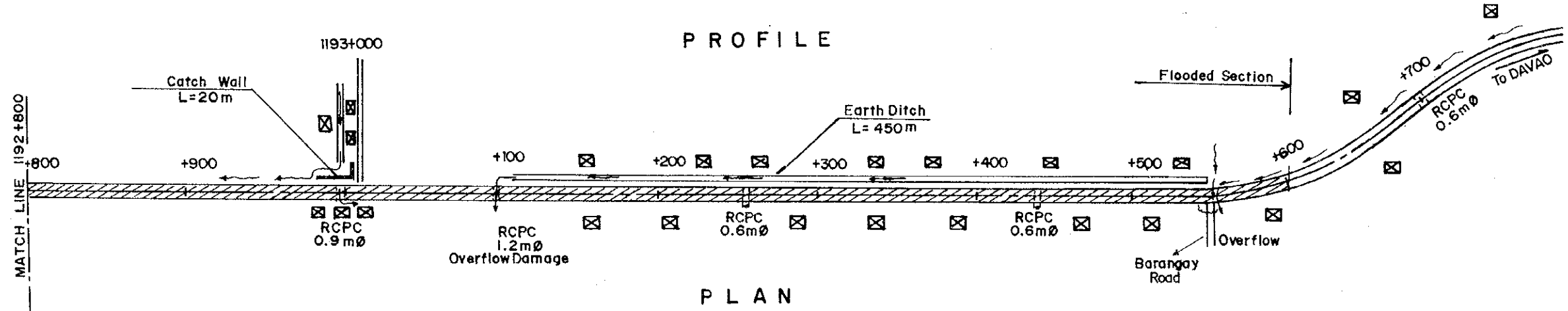
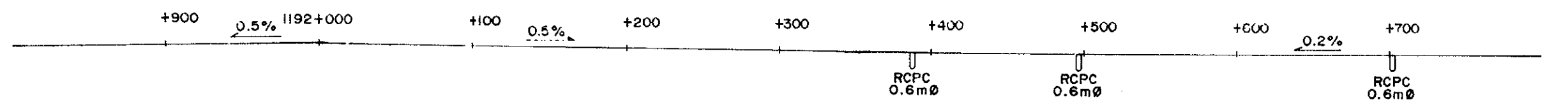
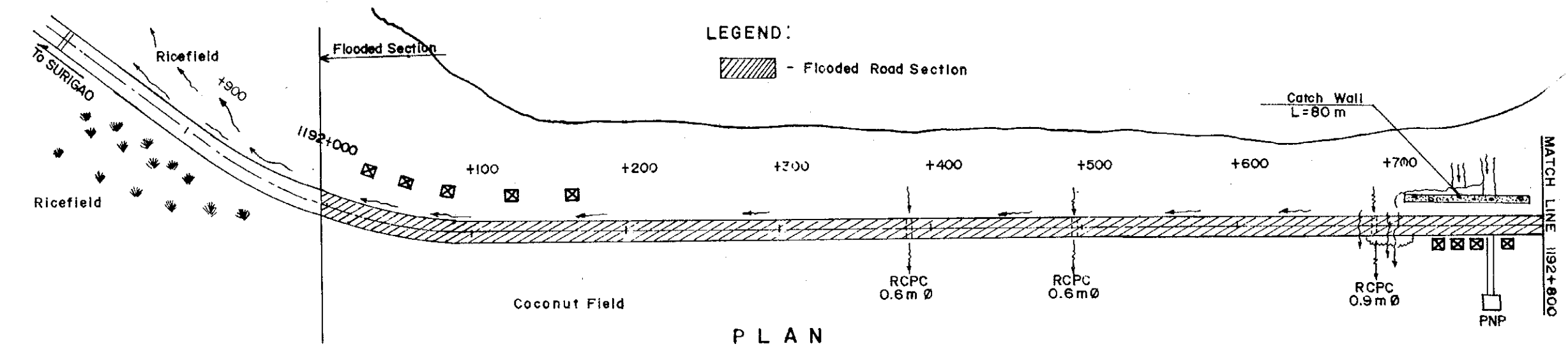
SCALE
NOT TO SCALE

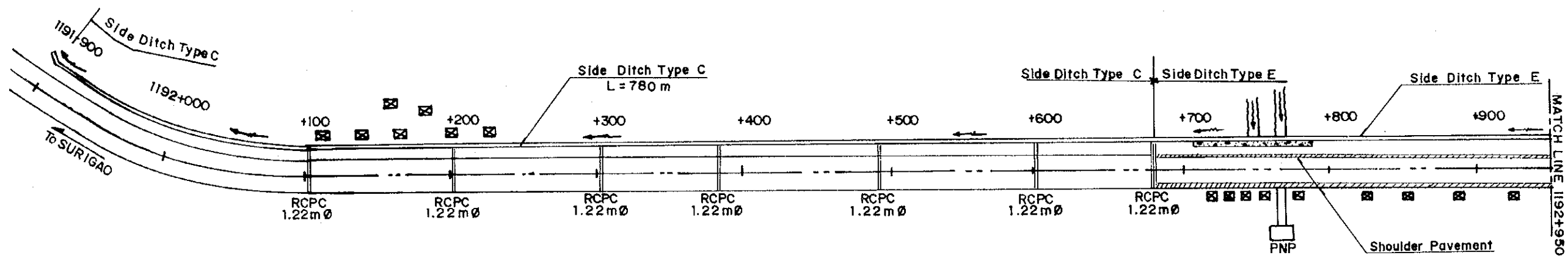
DRAWING NO.
F-9(2/2)



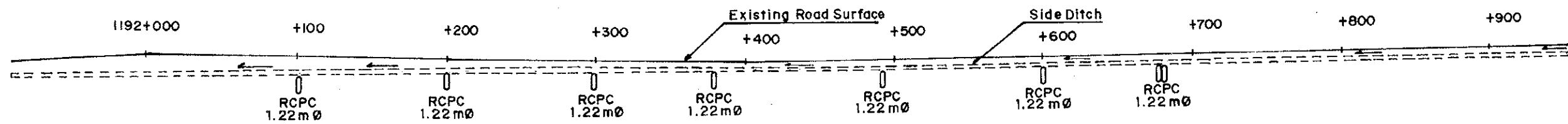
SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-8	Embankment from Borrow	cu. m.	12,307
2-1	Aggregate Subbase	cu. m.	5,204
2-2	Aggregate Base	cu. m.	824
3-6	PCC Pavement (t=23cm)	sq. m.	10,720
3-10	PCC Pavement for Shoulder (t=18 cm)	sq. m.	295
6-6A	RCBC, 1-3.0m x 2.0m	m	17
6-12A	Wingwall for RCBC, 1-3.0m x 2.0m	each	2
6-16	RCPC, 1.22m dia.	m	204
6-21	Catch Basin for 1.22m dia. RCPC	each	12
6-25	Side Ditch Type C	m	1,567
7-1	Grouted Riprap	cu. m.	1,150

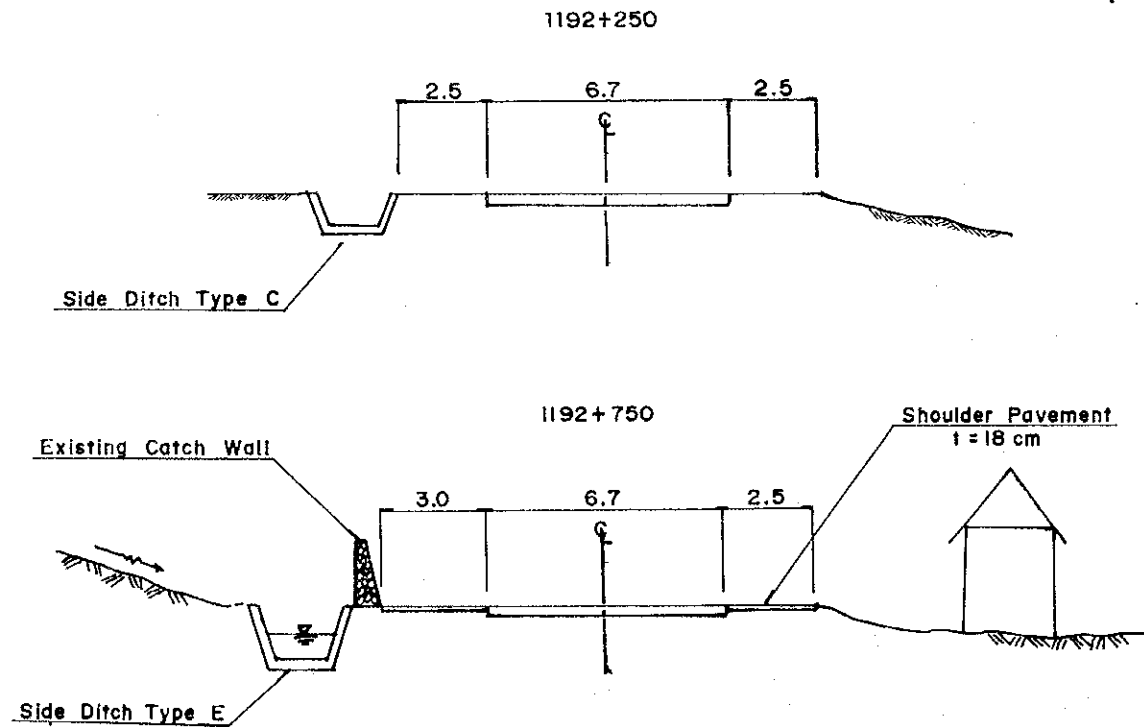




PLAN



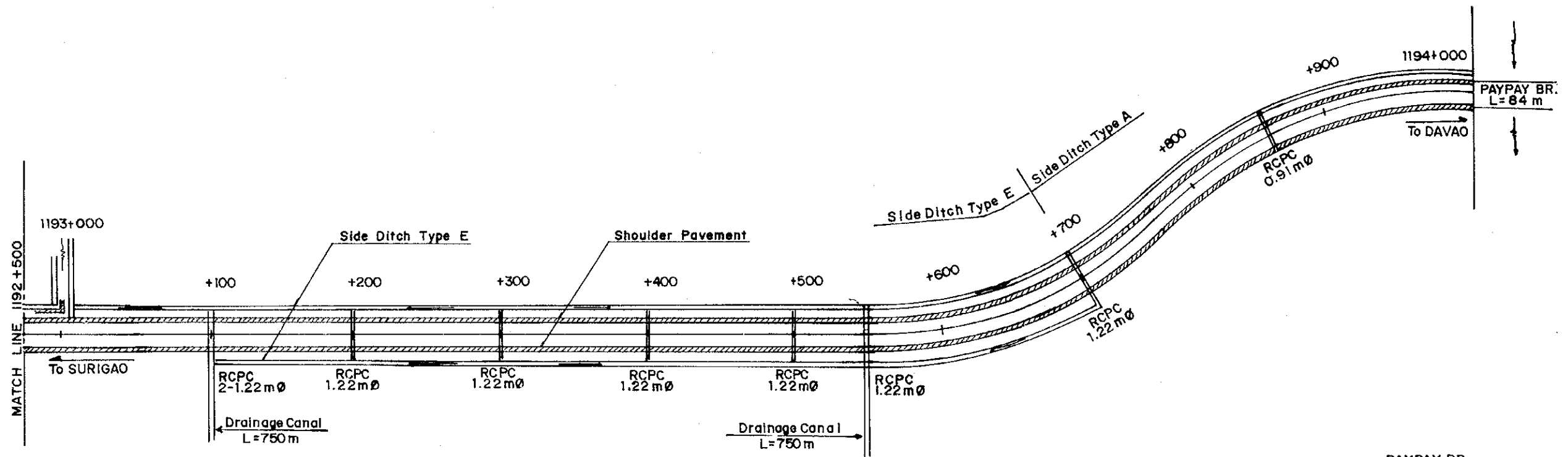
PROFILE



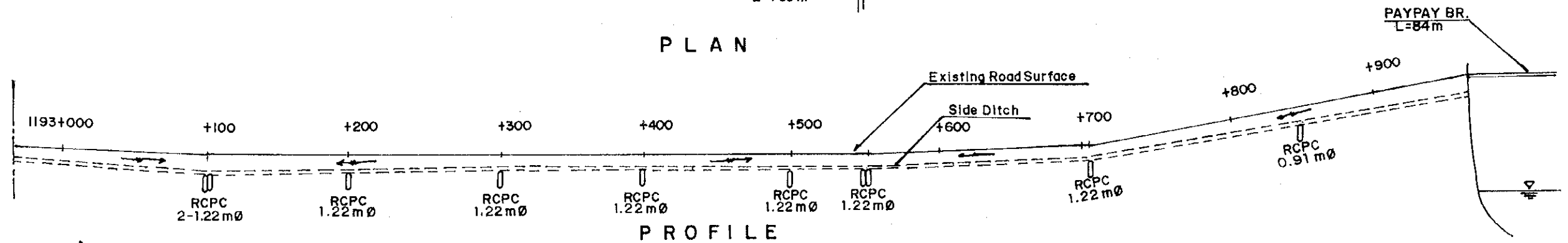
CROSS SECTION

SUMMARY OF QUANTITY

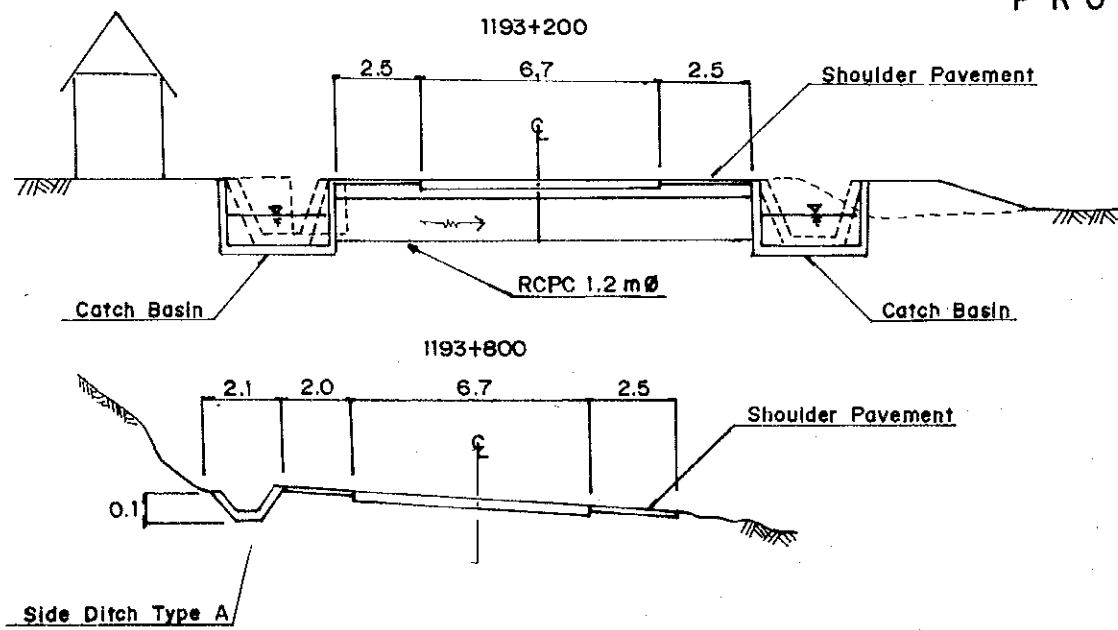
ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-11	Subgrade Preparation for Shoulder	cu. m.	6,600
3-10	PCC Pavement for Shoulder (t=18 cm)	sq. m.	6,600
6-14	RCPC, 0.91m dia.	m	17
6-16	RCPC, 1.22m dia.	m	253
6-19	Catch Basin for 0.91m dia. RCPC	each	1
6-21	Catch Basin for 1.22m dia. RCPC	each	11
6-22	Catch Basin for 2 x 1.22m dia. RCPC	each	3
6-23	Side Ditch Type A	m	300
6-25	Side Ditch Type C	m	780
6-26A	Side Ditch Type E	m	1,620
6-26B	Drainage Canal (3.0mx1.5m)	m	1,500
7-1	Grouted Riprap	cu. m.	101



PLAN



PROFILE



CROSS SECTION

FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

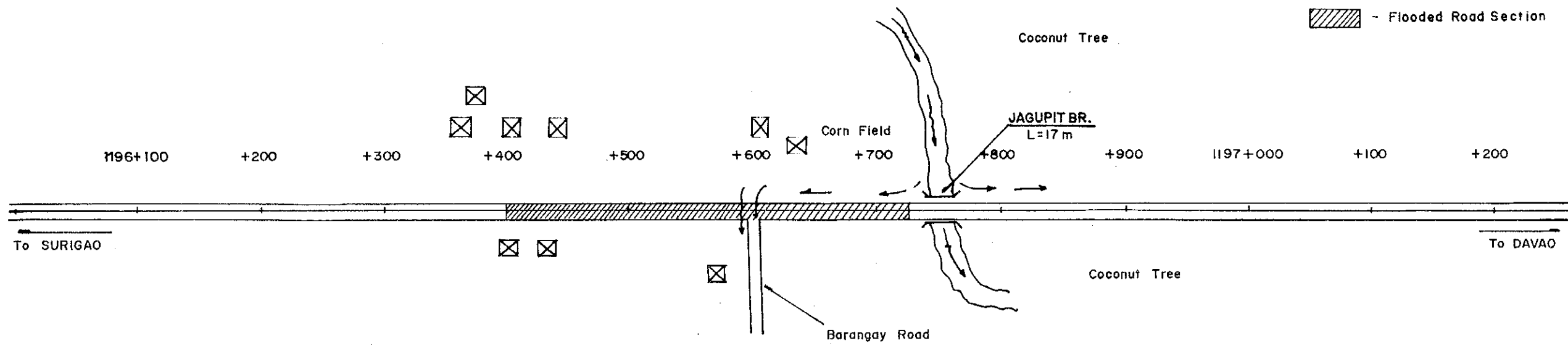
FLOOD SECTION NO. : II STATION : 1196+400-1196+720
FLOOD TYPE : III EXISTING CONDITION

SCALE
NOT TO SCALE

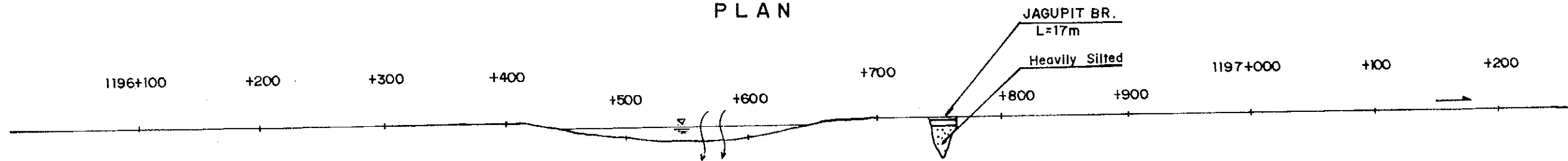
DRAWING NO.
F-11(1/2)

LEGEND :

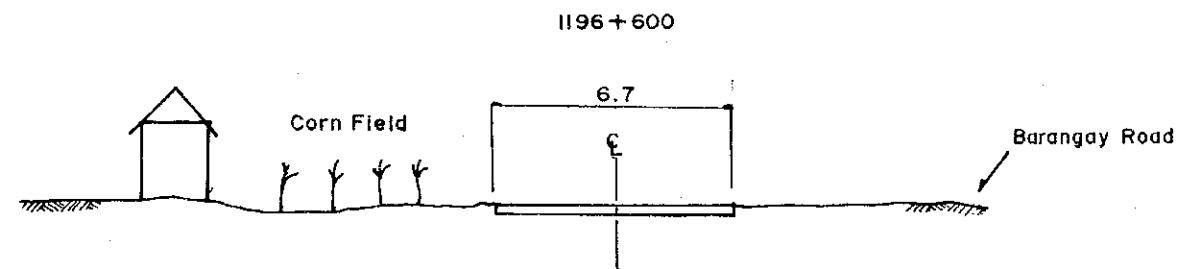
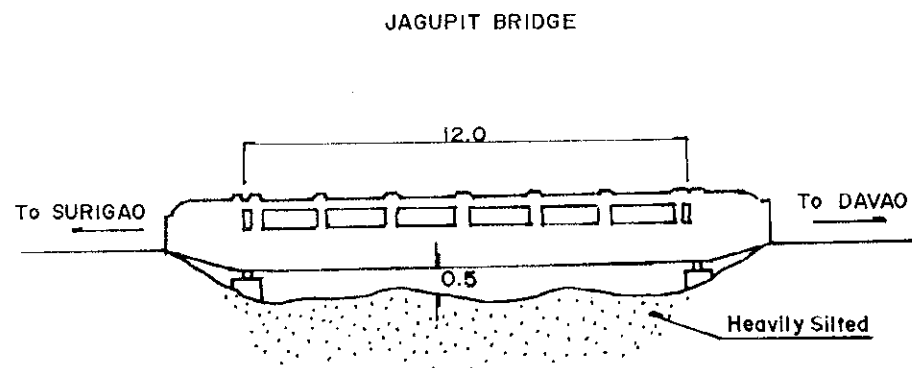
 - Flooded Road Section



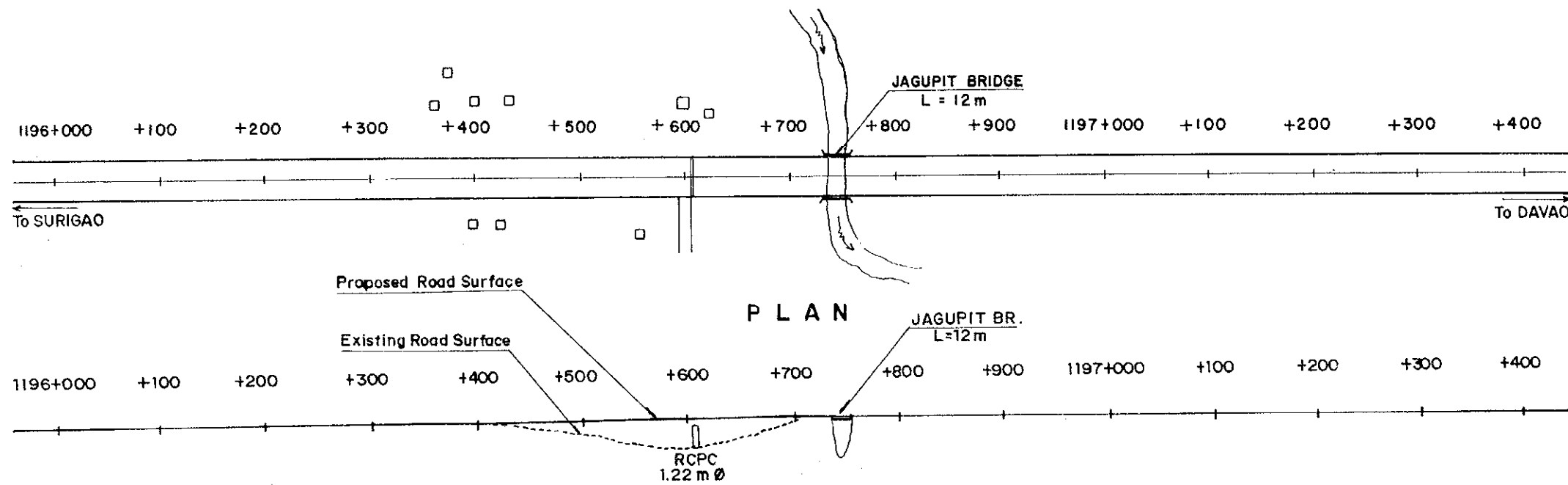
PLAN



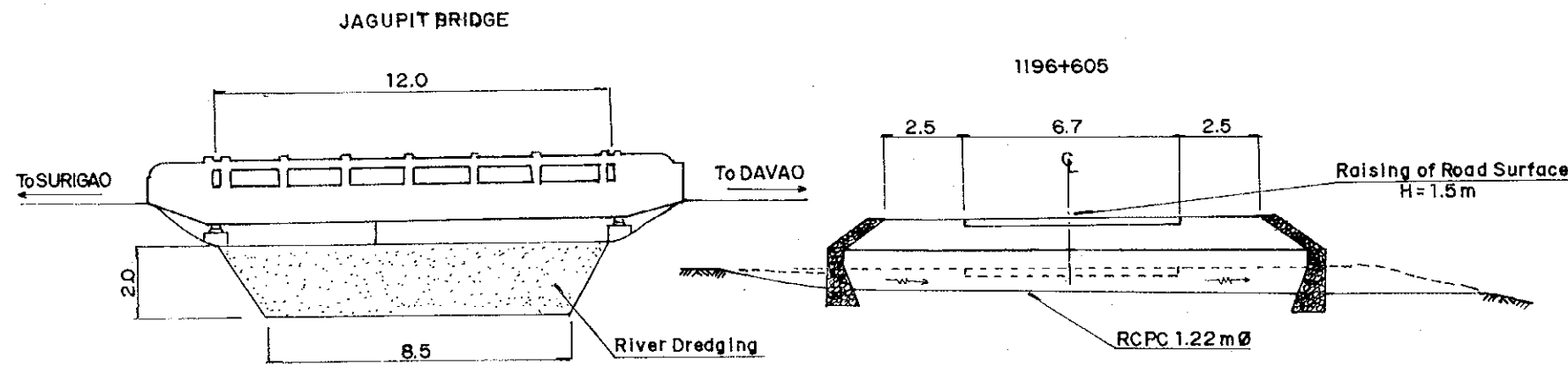
PROFILE



CROSS SECTION

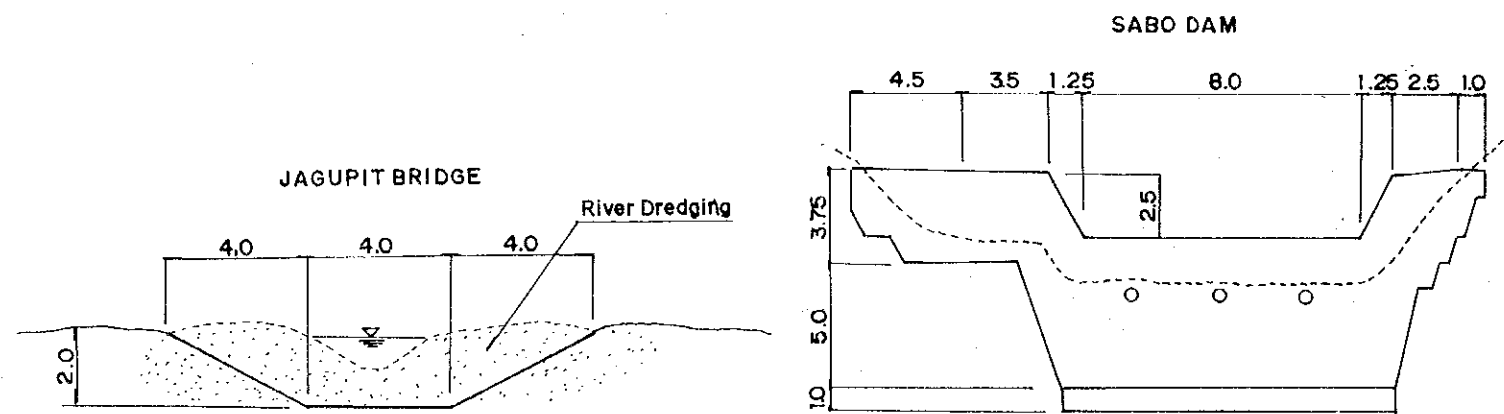


PROFILE



SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-8	Embankment from Borrow	cu. m.	2,499
1-11A	River Dredging	cu. m.	36,160
2-1	Aggregate Subbase Course	cu. m.	1,041
2-2	Aggregate Base Course	cu. m.	165
3-6	PCC Pavement (t=23cm)	sq. m.	2,144
6-15	RCPC, 1.07m dia.	m	19
7-1	Grouted Riprap	cu. m.	5
7-4	Sabo Dam B	each	1



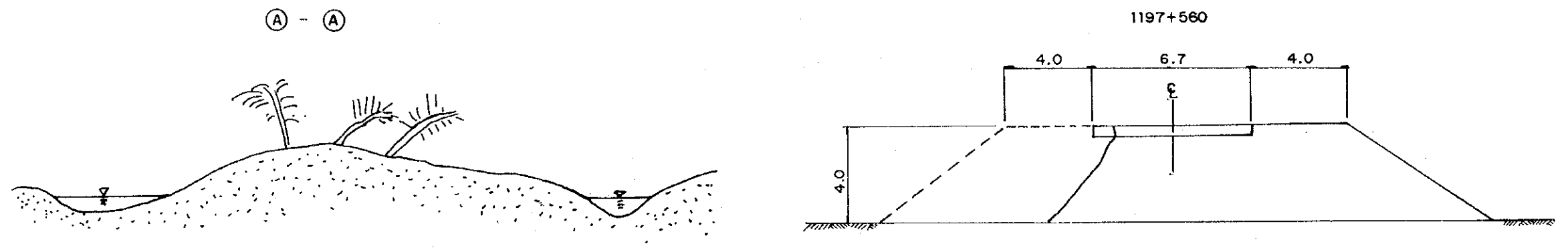
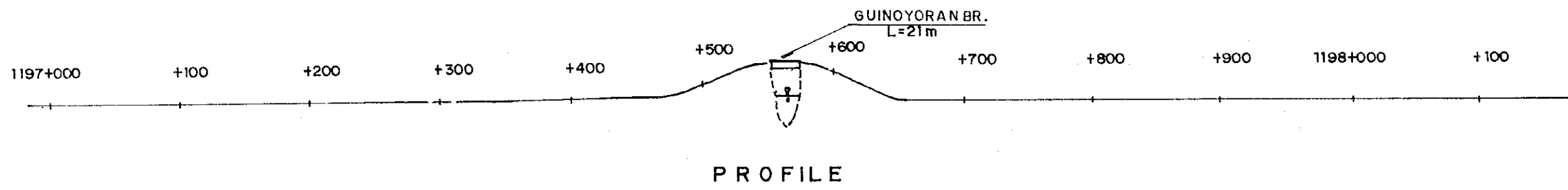
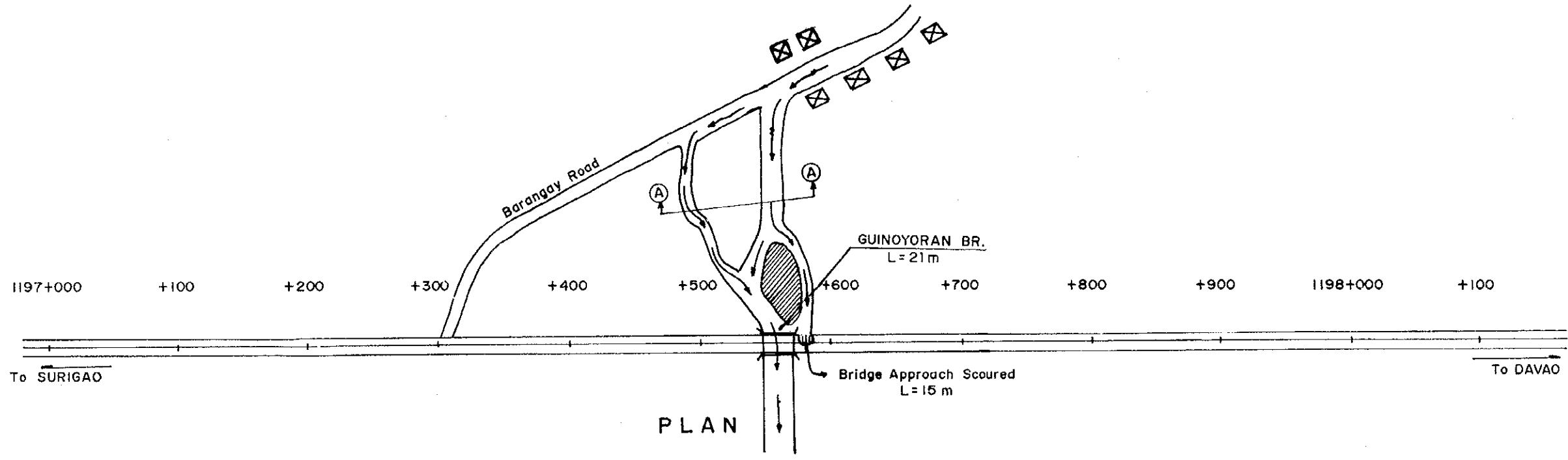
CROSS SECTION

FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

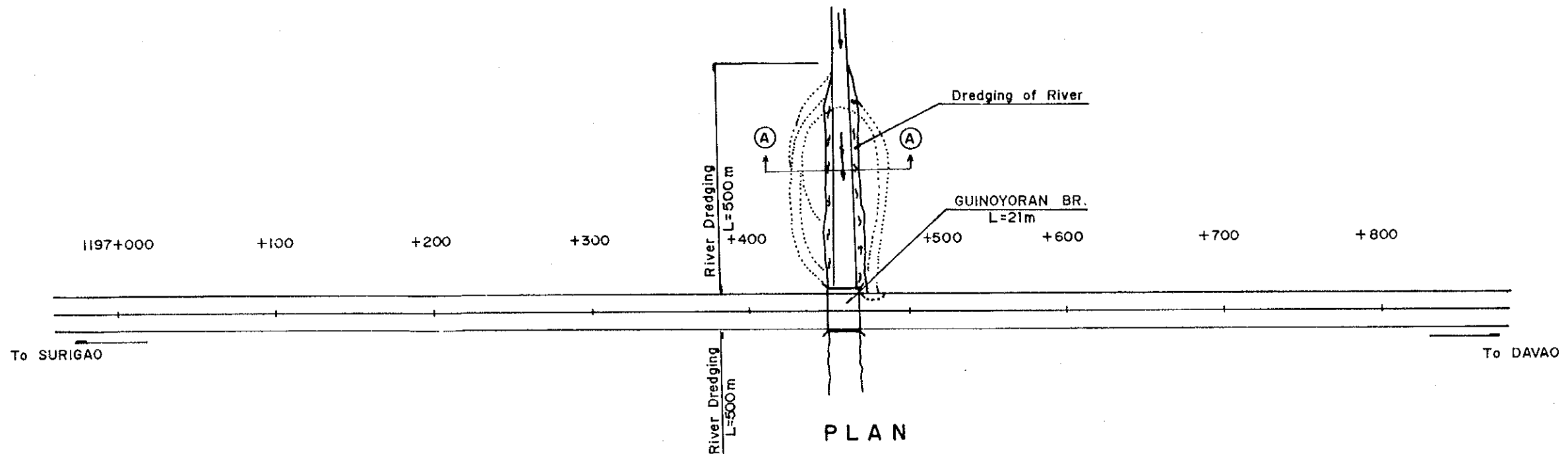
FLOOD SECTION NO. : 12 STATION : 1197+556 - 1197+571
FLOOD TYPE : III EXISTING CONDITION

SCALE
NOT TO SCALE

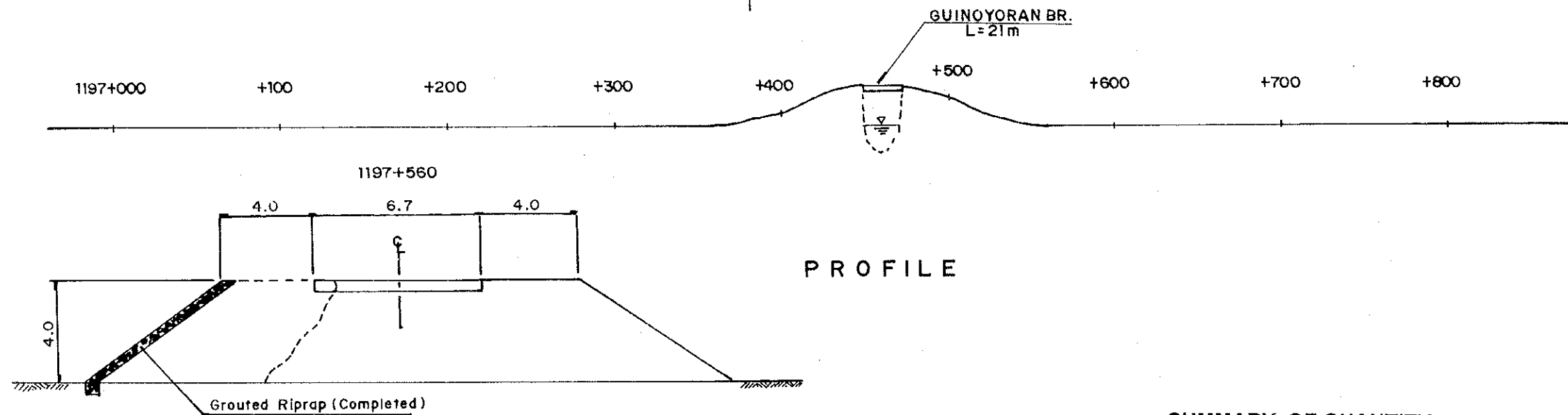
DRAWING NO.
F-12(1/2)



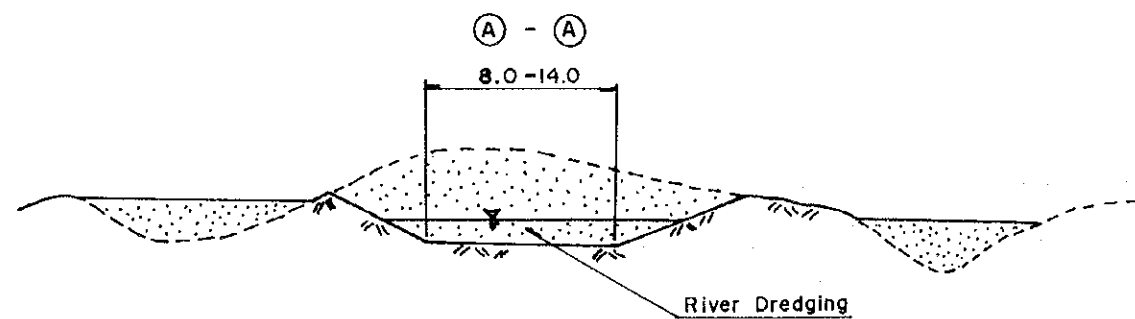
CROSS SECTION



PLAN




PROFILE

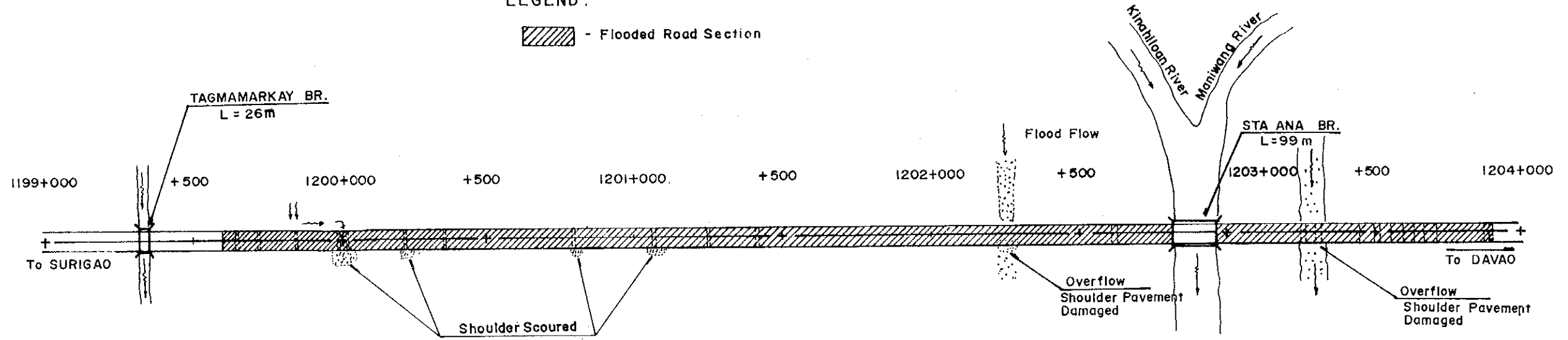


CROSS SECTION

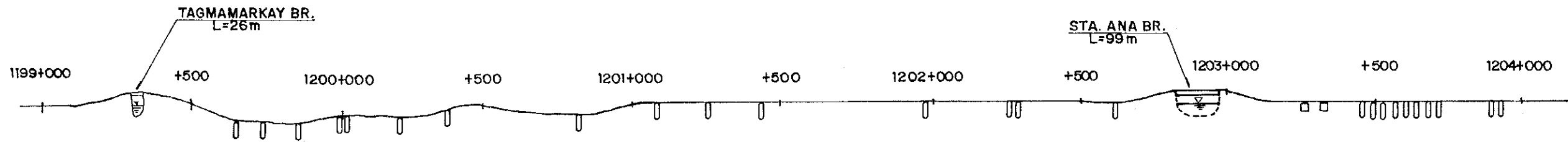
SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-11A	River Dredging	cu. m.	10,500

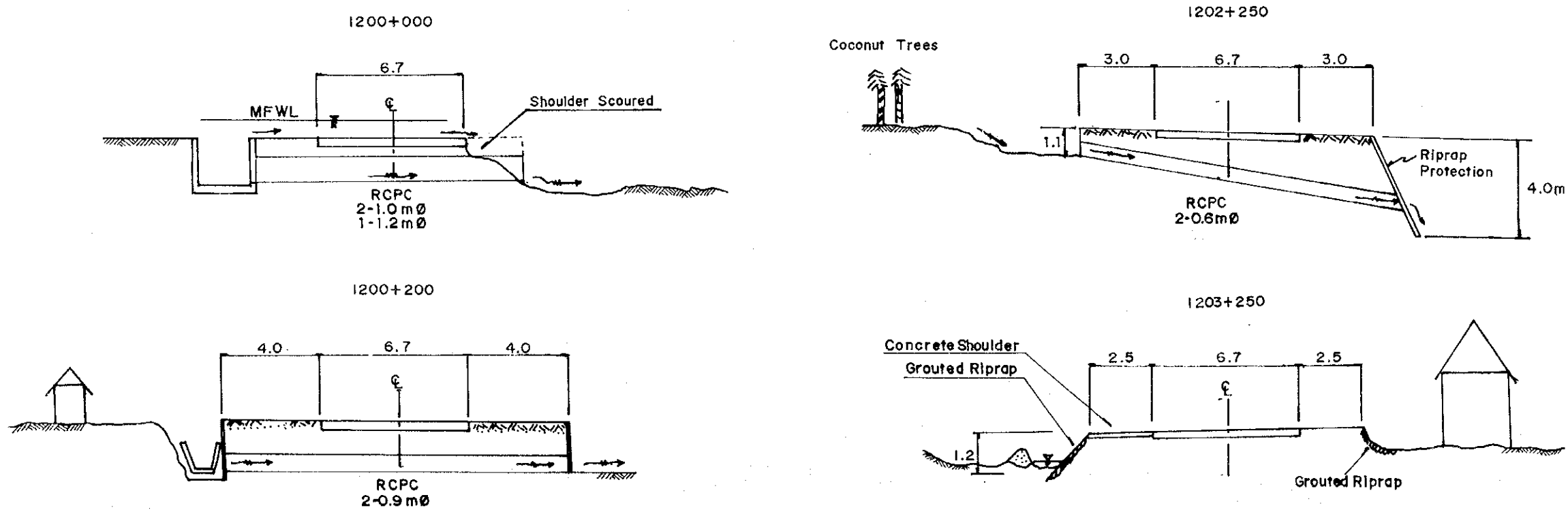
LEGEND :
 - Flooded Road Section



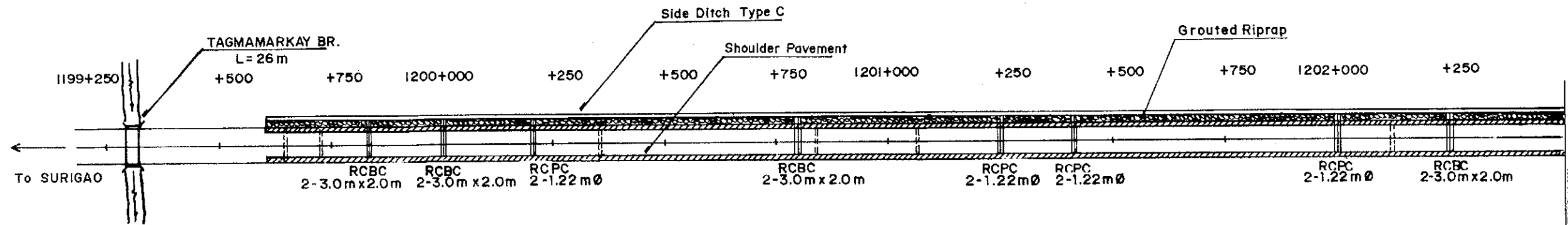
PLAN



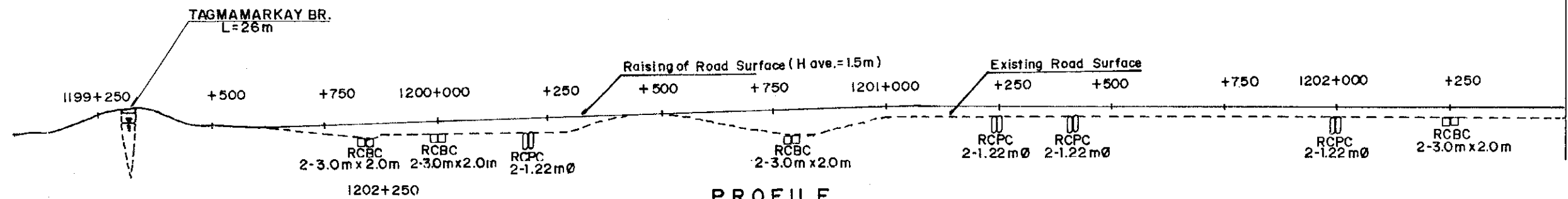
PROFILE



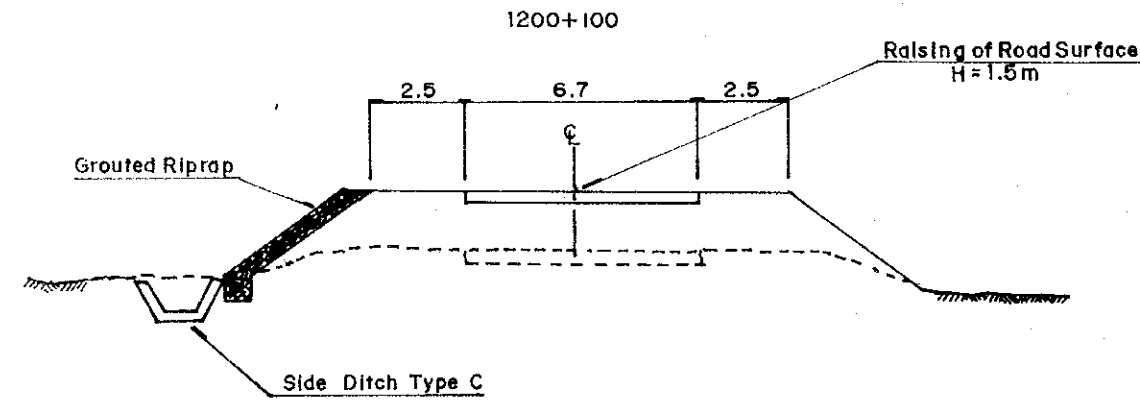
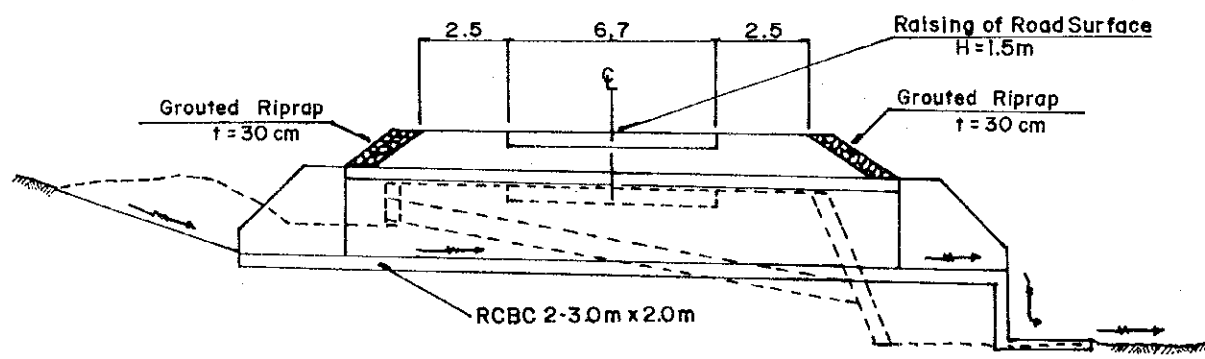
CROSS SECTION



PLAN



PROFILE



CROSS SECTION

SUMMARY OF QUANTITY

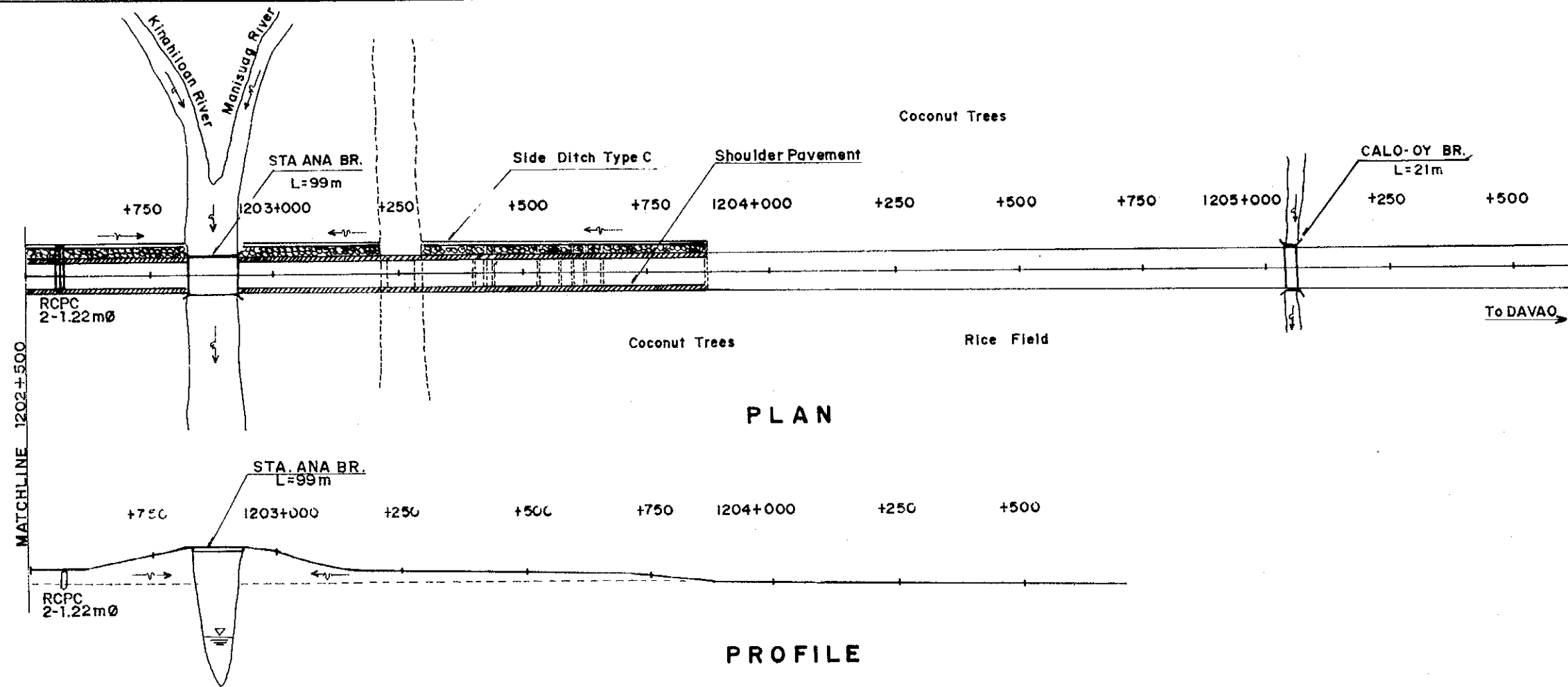
ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-8	Embankment from Borrow	cu. m.	66,524
2-1	Aggregate Subbase Course	cu. m.	13,985
2-2	Aggregate Base Course	cu. m.	2,215
3-6	PCC Pavement (t=23cm)	sq. m.	28,810
6-6A	RCBC, 2-3.0m x 2.0m	m	64
6-12A	Wingwall for RCBC, 2-3.0m x 2.0m	each	8
6-16	RCPC, 1.22m dia.	m	160
6-21	Catch basin for 1.22m dia. RCPC	each	5
6-25	Side Ditch Type C	m	4,271
7-1	Grouted Riprap	cu. m.	4,876

FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

FLOOD SECTION NO. : 13 STATION : 1199+600 - 1203+870
FLOOD TYPE : III PROPOSED COUNTERMEASURE

SCALE
NOT TO SCALE

DRAWING NO.
F-13(3/3)

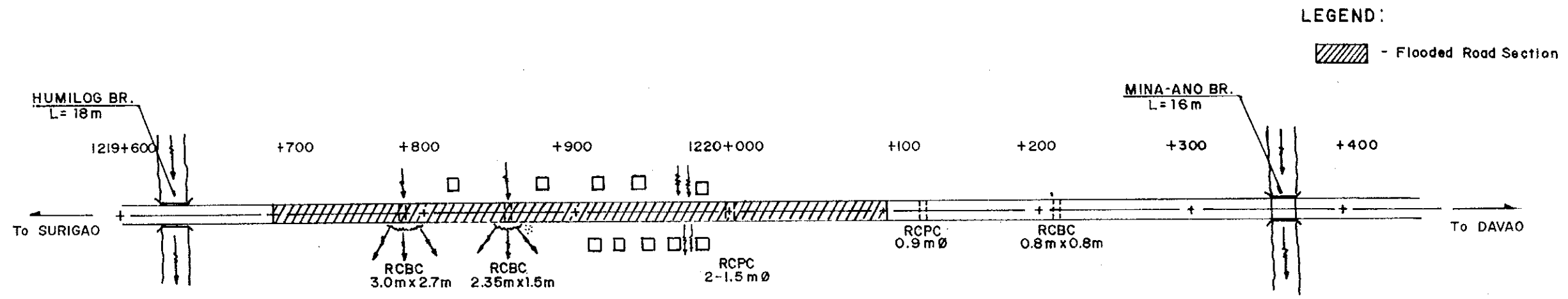


FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

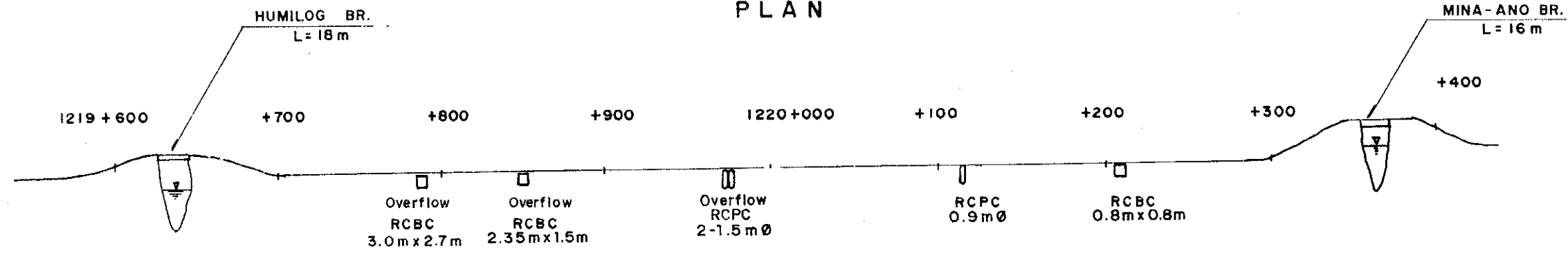
FLOOD SECTION NO. : 14
STATION : 1219+700 - 1220+100
FLOOD TYPE : II
EXISTING CONDITION

SCALE
NOT TO SCALE

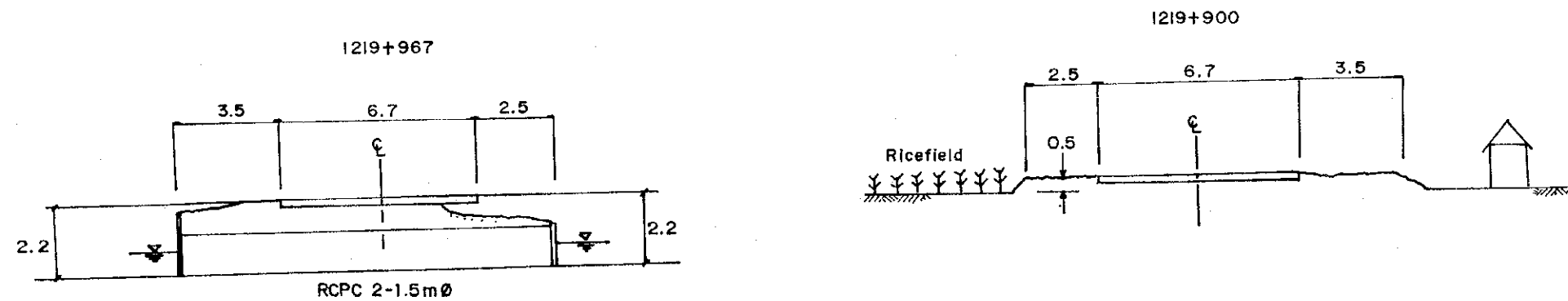
DRAWING NO.
F-14(1/2)



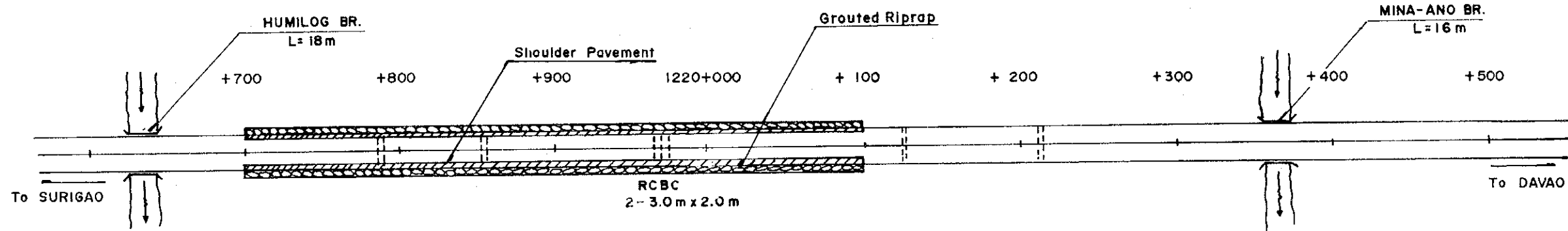
PLAN



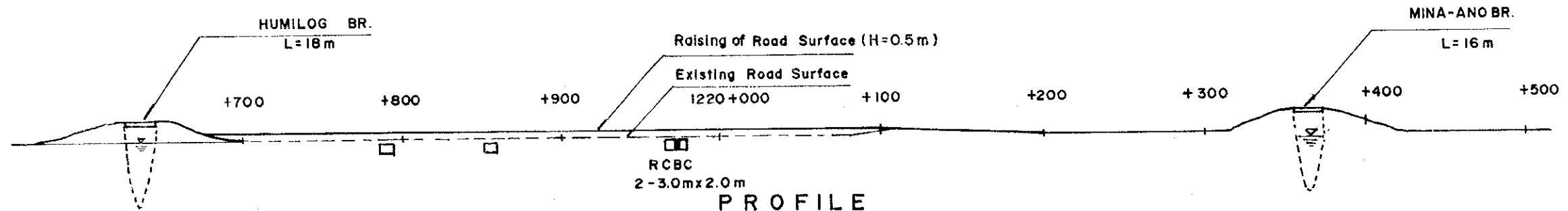
PROFILE



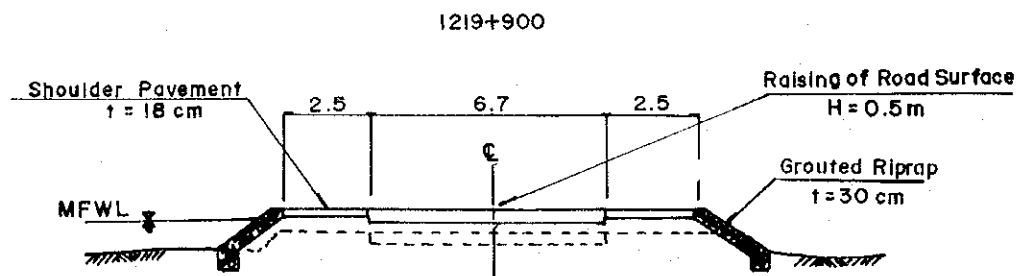
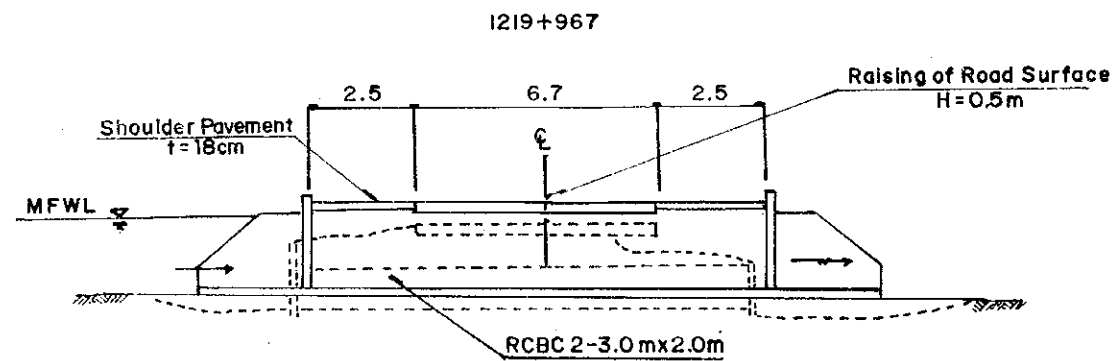
CROSS SECTION



PLAN



PROFILE



CROSS SECTION

SUMMARY OF QUANTITY

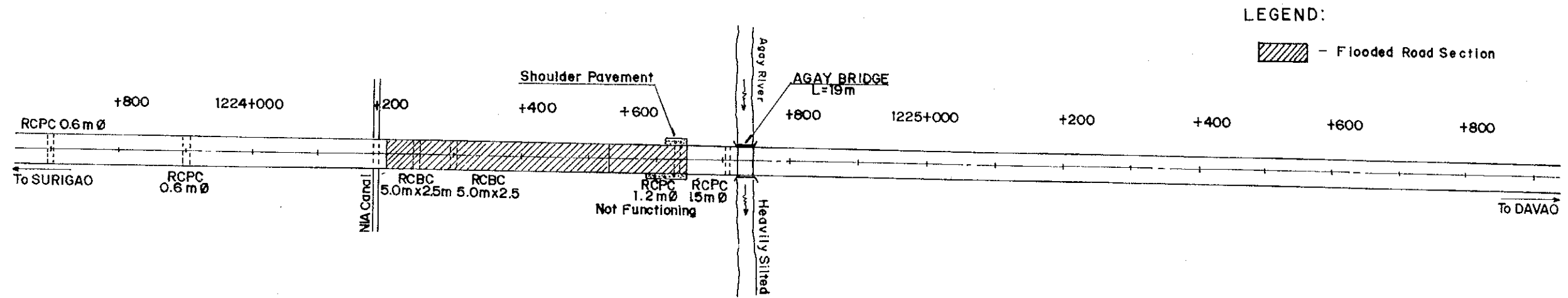
ITEM NO.	TYPE OF WORK	UNIT	TOTAL
2-1	Aggregate Subbase Course	cu. m.	1,660
3-7	PCC Pavement (t=25cm)	sq. m.	2,680
3-10	PCC Pavement for Shoulder (t=18 cm)	sq. m.	2,000
6-6A	RCBC, 2-3.0mx2.0m	m	15
6-12A	Wingwall for RCBC, 2-3.0mx2.0m	each	2
7-1	Grouted Riprap	cu. m.	907

FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

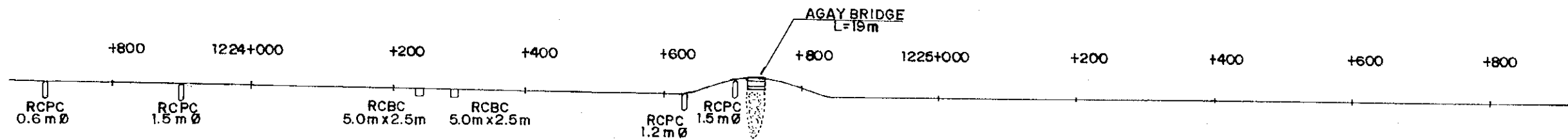
FLOOD SECTION NO. : 15 STATION : 1224+200 - 1224+640
FLOOD TYPE : II EXISTING CONDITION

SCALE
NOT TO SCALE

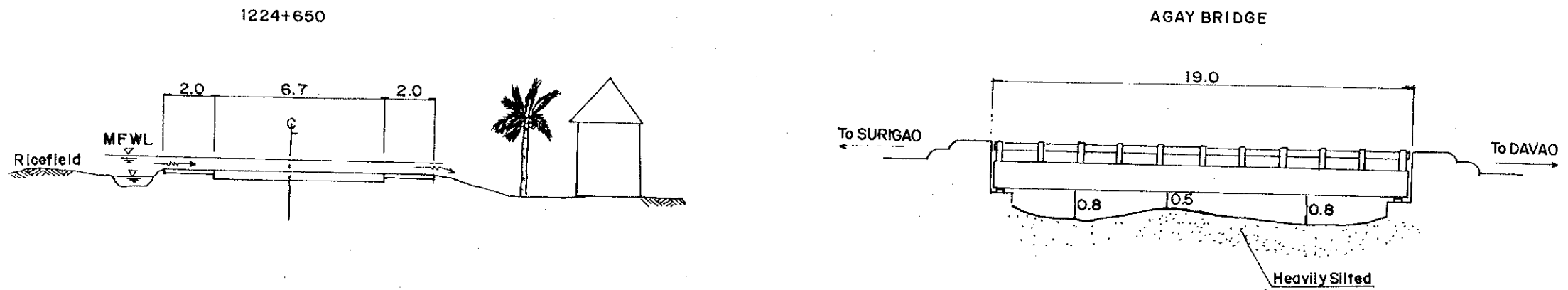
DRAWING NO.
F-15(1/2)



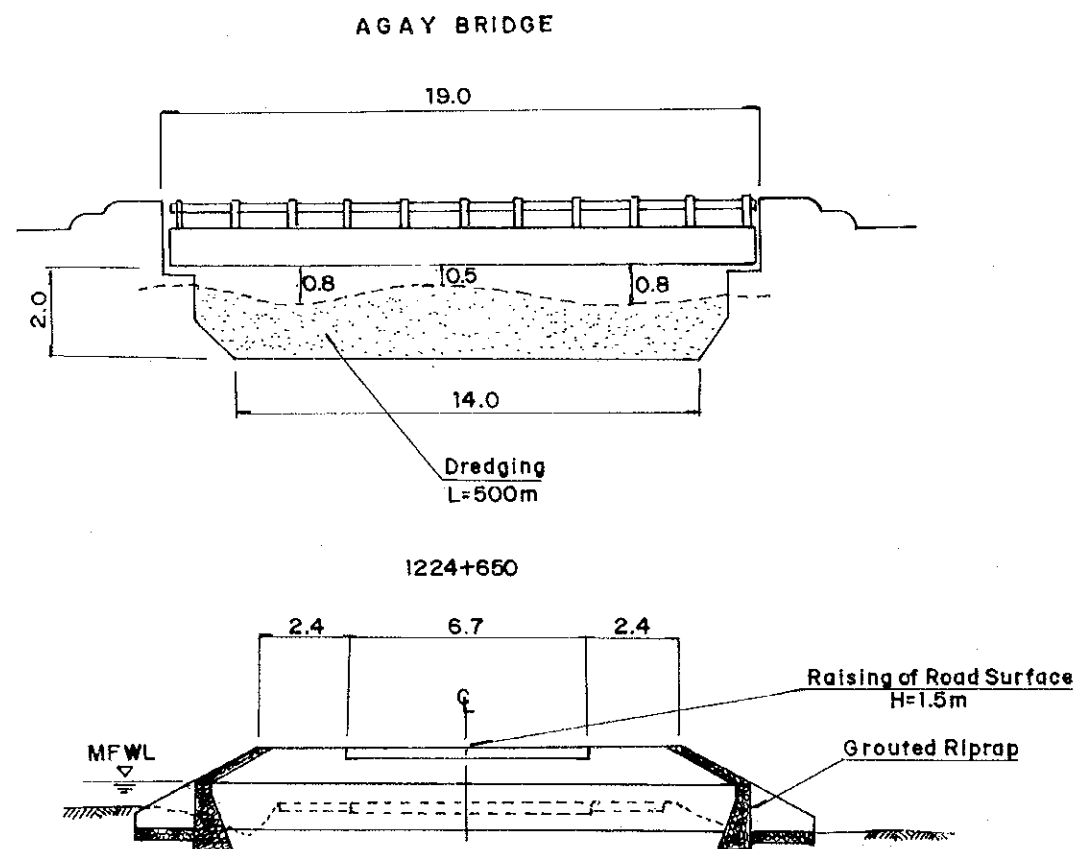
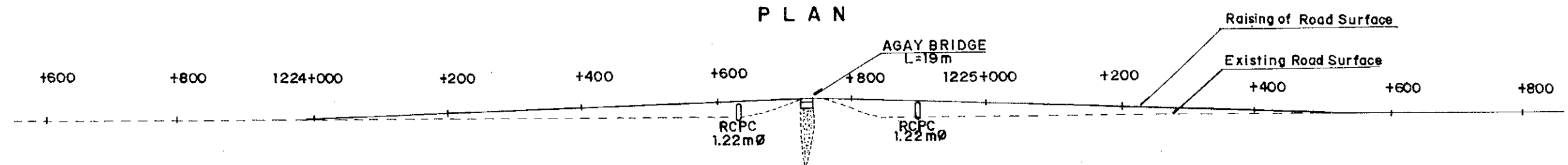
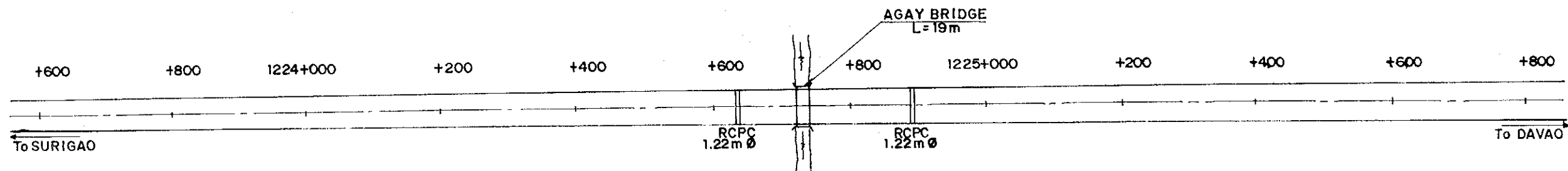
P L A N



P R O F I L E



C R O S S S E C T I O N



CROSS SECTION

SUMMARY OF QUANTITY

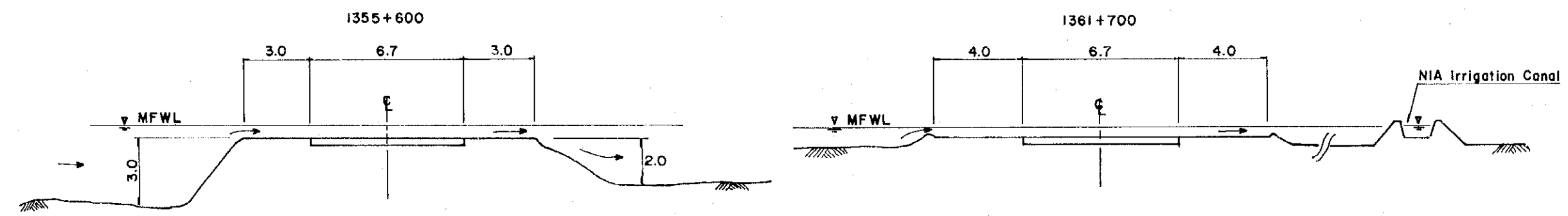
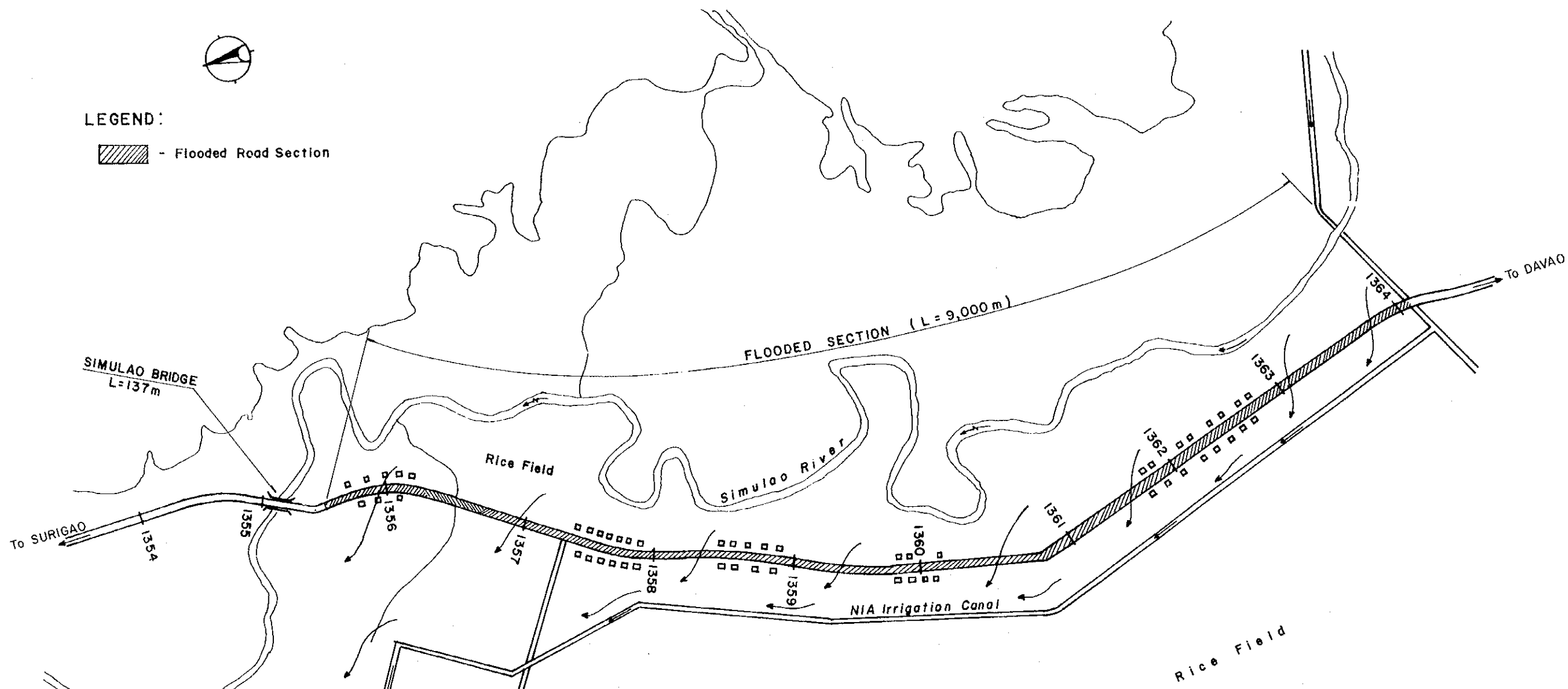
ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-8	Embankment from Borrow	cu. m.	11,110
1-11A	River Dredging	cu. m.	8,750
2-1	Aggregate Subbase Course	cu. m.	4,716
2-2	Aggregate Base Course	cu. m.	747
3-7	PCC Pavement (t=25cm)	sq. m.	9,715
6-16	RCPC, 1.22m dia.	m	37
7-1	Grouted Riprap	cu. m.	10

FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

FLOOD SECTION NO. : 16 STATION : 1355+200 - 1364+200
FLOOD TYPE : I EXISTING CONDITION

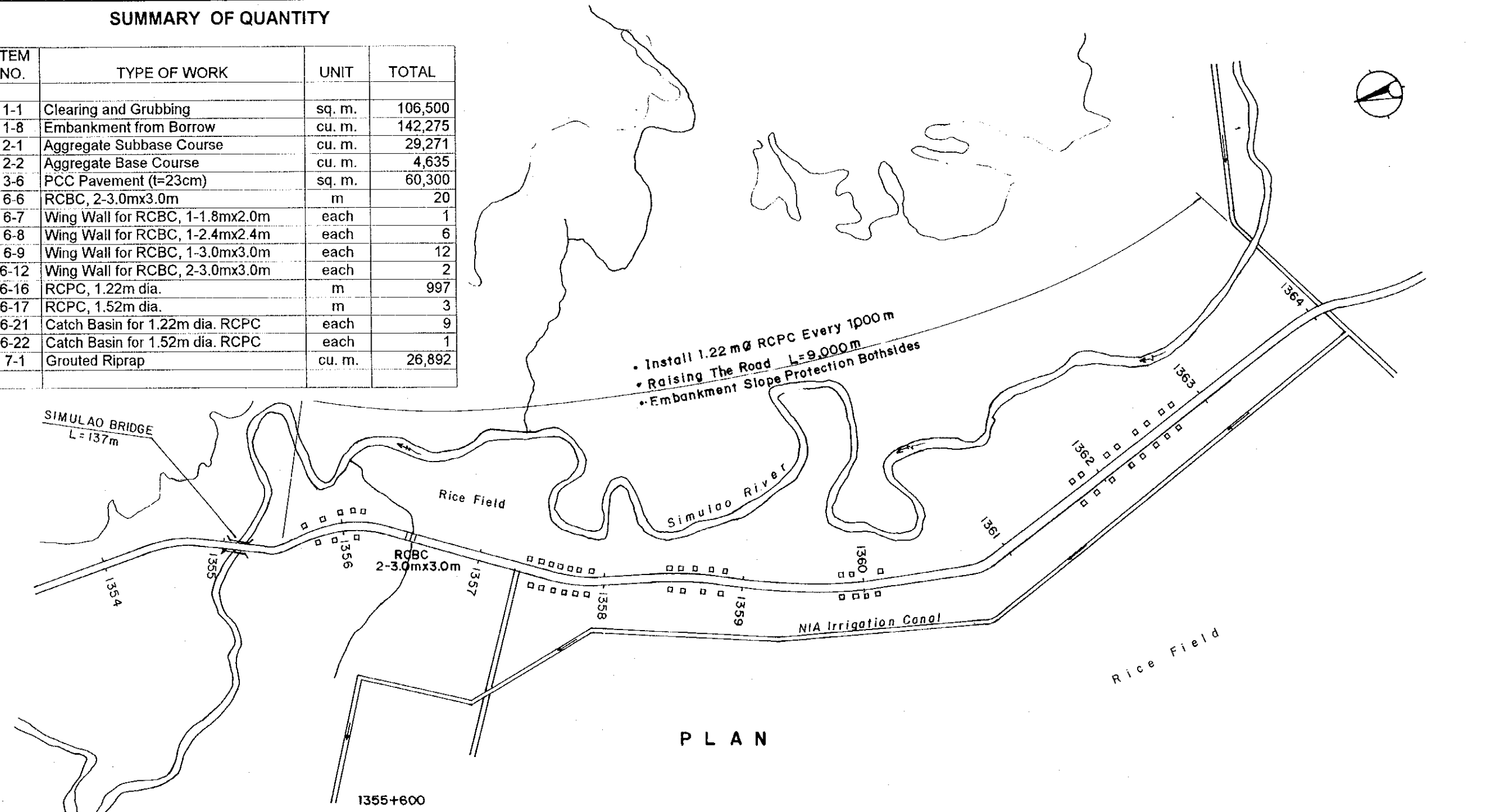
SCALE
NOT TO SCALE

DRAWING NO.
F-16 (1/2)

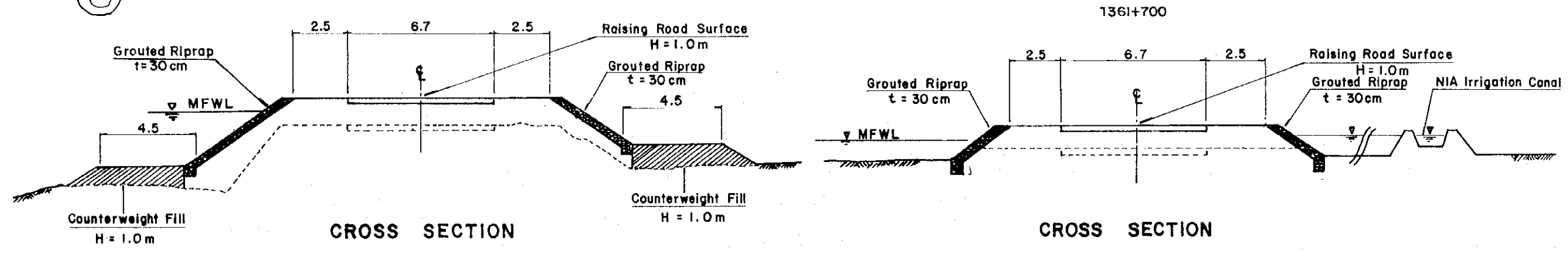


SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
1-1	Clearing and Grubbing	sq. m.	106,500
1-8	Embankment from Borrow	cu. m.	142,275
2-1	Aggregate Subbase Course	cu. m.	29,271
2-2	Aggregate Base Course	cu. m.	4,635
3-6	PCC Pavement (t=23cm)	sq. m.	60,300
6-6	RCBC, 2-3.0mx3.0m	m	20
6-7	Wing Wall for RCBC, 1-1.8mx2.0m	each	1
6-8	Wing Wall for RCBC, 1-2.4mx2.4m	each	6
6-9	Wing Wall for RCBC, 1-3.0mx3.0m	each	12
6-12	Wing Wall for RCBC, 2-3.0mx3.0m	each	2
6-16	RCPC, 1.22m dia.	m	997
6-17	RCPC, 1.52m dia.	m	3
6-21	Catch Basin for 1.22m dia. RCPC	each	9
6-22	Catch Basin for 1.52m dia. RCPC	each	1
7-1	Grouted Riprap	cu. m.	26,892



PLAN



CROSS SECTION

CROSS SECTION


FEASIBILITY STUDY ON PAN-PHILIPPINE HIGHWAY
REHABILITATION PROJECT (MINDANAO SECTION)

FLOOD SECTION NO. : 17 STATION : 1393+400 - 1398+300
FLOOD TYPE IV EXISTING CONDITION

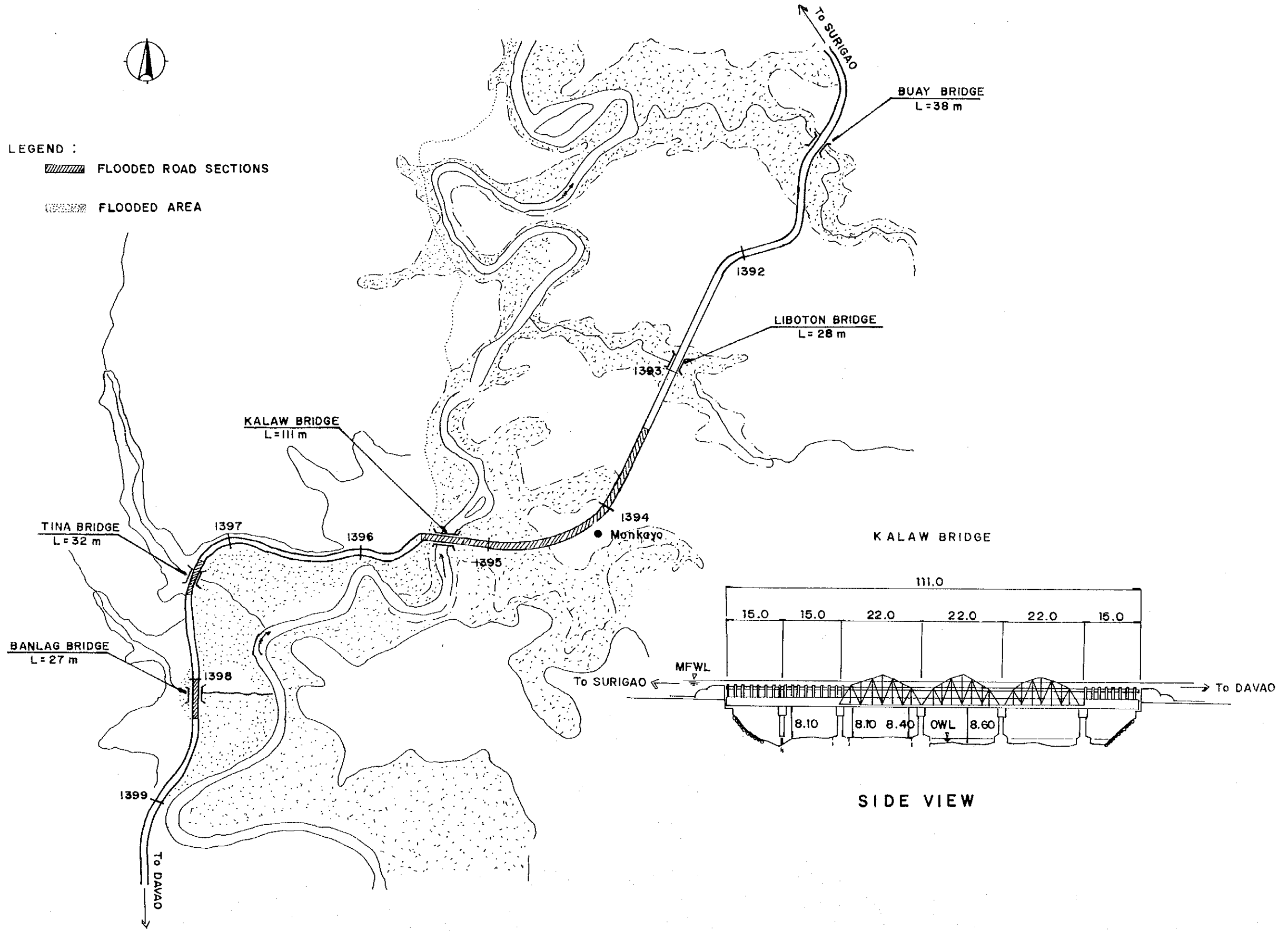
SCALE
NOT TO SCALE

DRAWING NO.
F-17(1/2)





LEGEND :

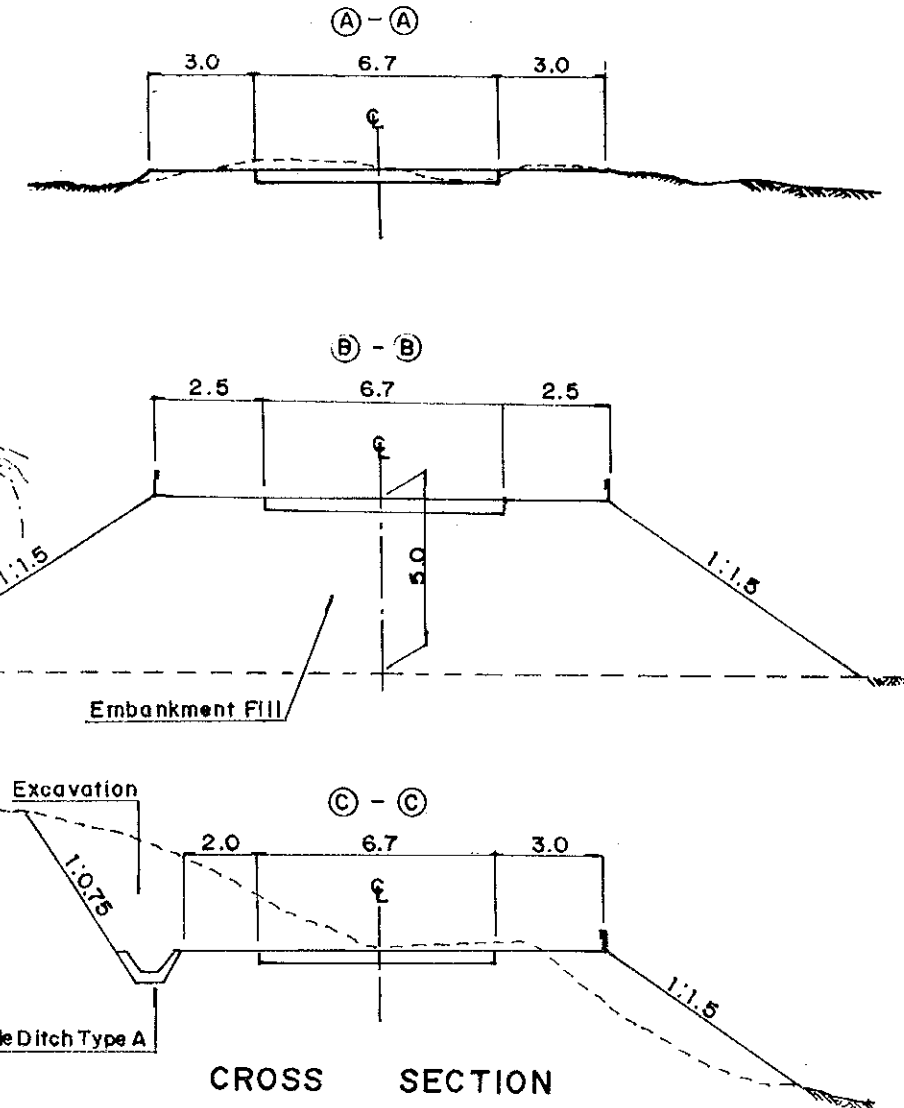
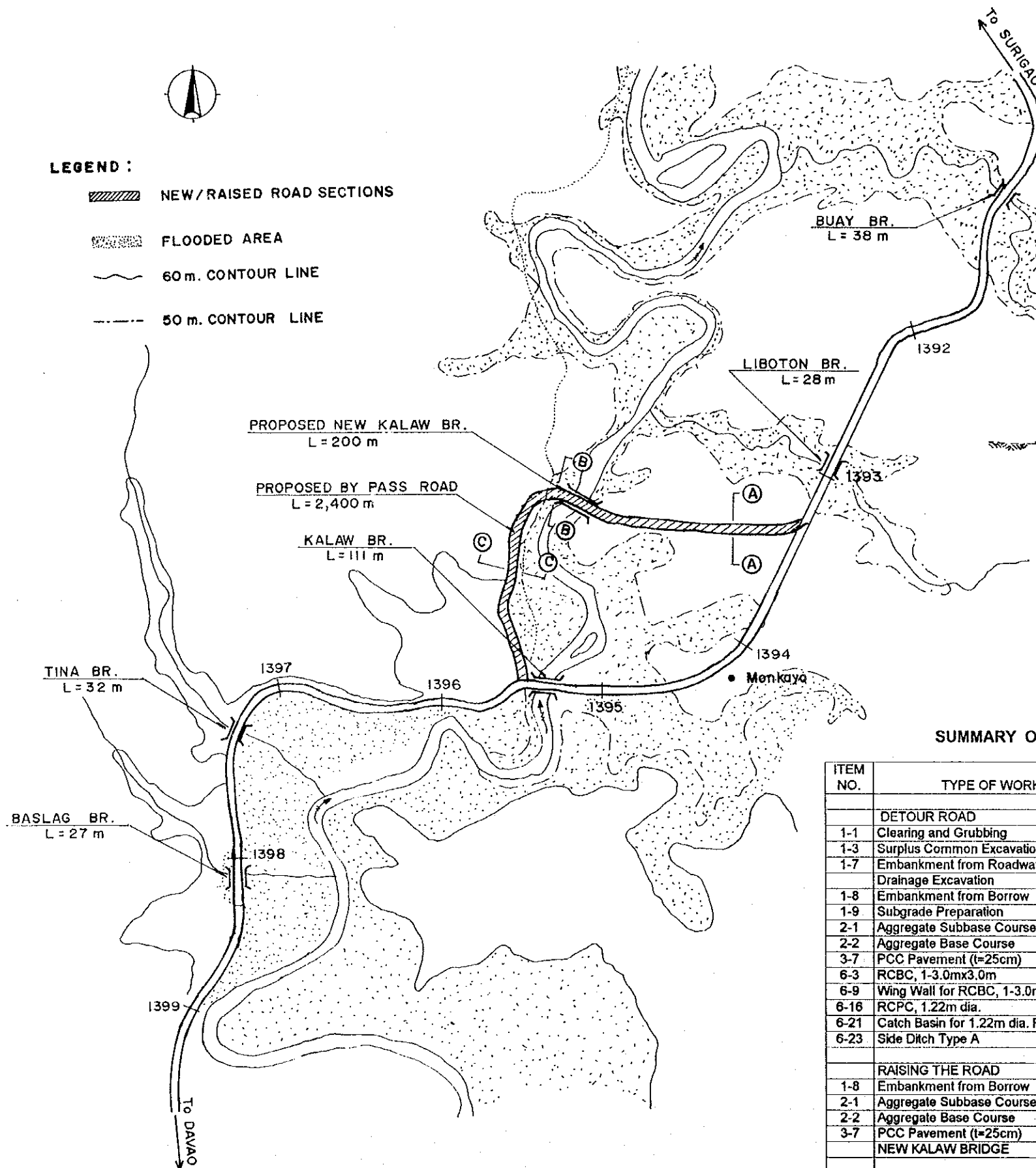
 FLOODED ROAD SECTIONS

 FLOODED AREA



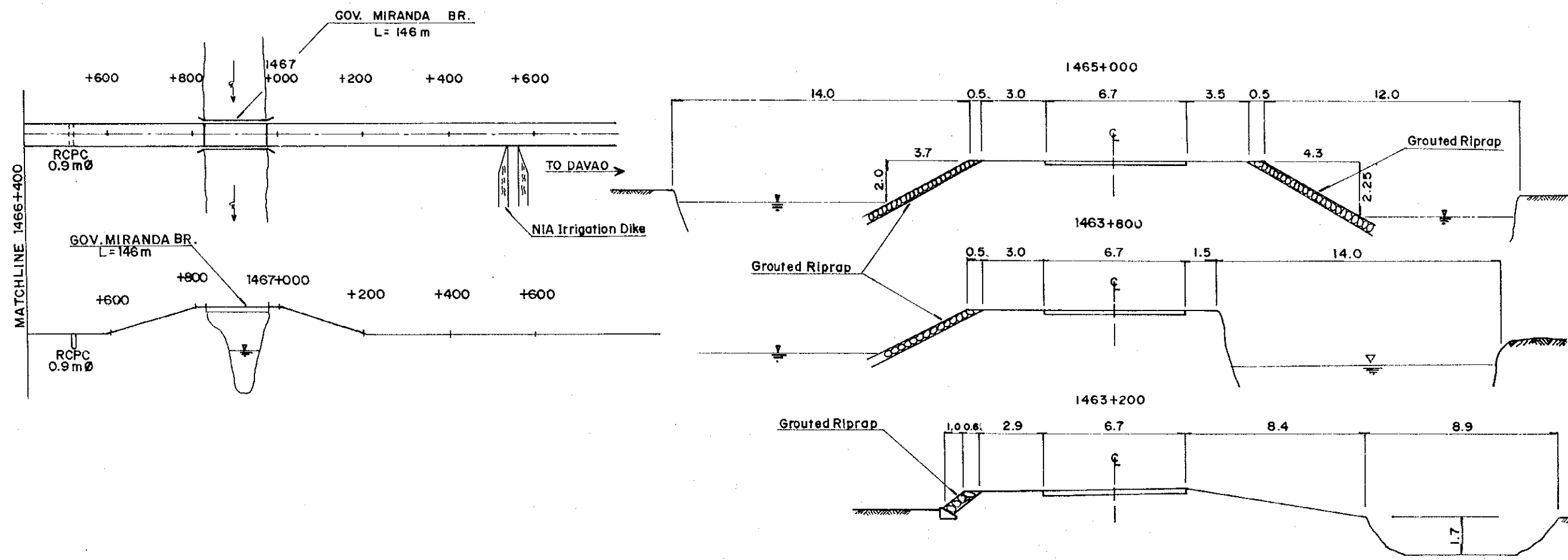
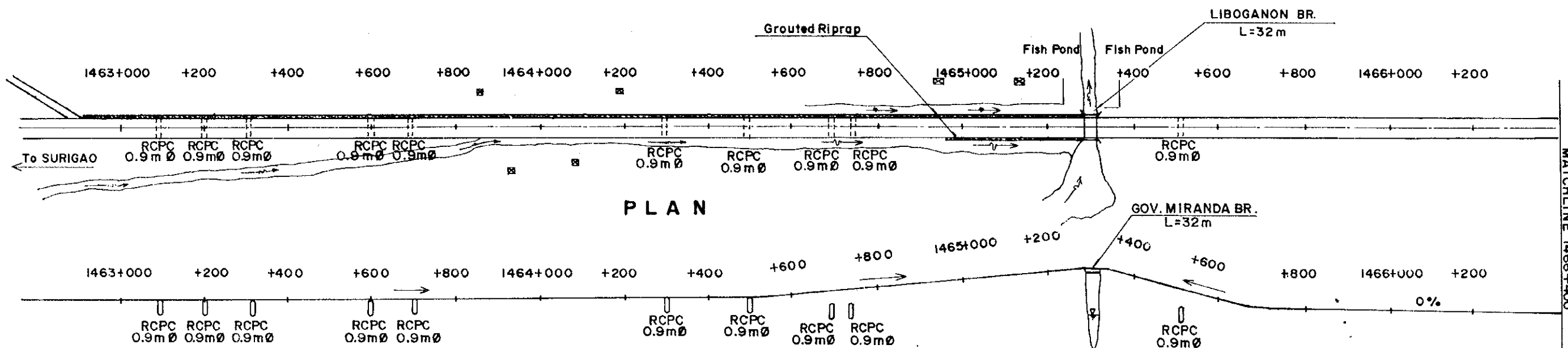
LEGEND :

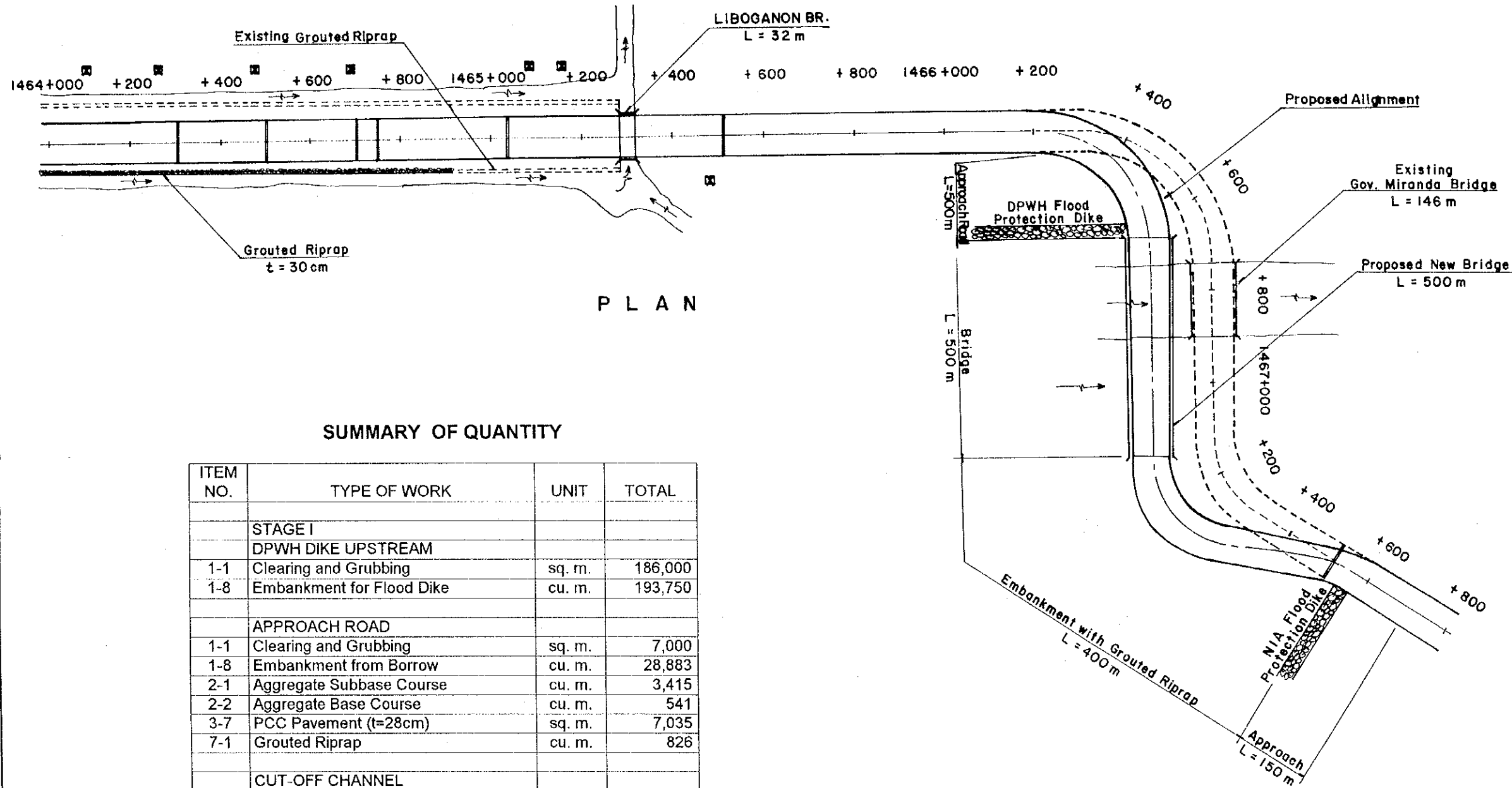
-  NEW/RAISED ROAD SECTIONS
-  FLOODED AREA
-  60 m. CONTOUR LINE
-  50 m. CONTOUR LINE



SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
DETOUR ROAD			
1-1	Clearing and Grubbing	sq. m.	44,190
1-3	Surplus Common Excavation	cu. m.	16,800
1-7	Embankment from Roadway/ Drainage Excavation	cu. m.	5,600
1-8	Embankment from Borrow	cu. m.	18,138
1-9	Subgrade Preparation	sq. m.	11,691
2-1	Aggregate Subbase Course	cu. m.	8,058
2-2	Aggregate Base Course	cu. m.	1,326
3-7	PCC Pavement (t=25cm)	sq. m.	16,080
6-3	RCBC, 1-3.0mx3.0m	m.	17
6-9	Wing Wall for RCBC, 1-3.0mx3.0m	each	2
6-16	RCPC, 1.22m dia.	m	192
6-21	Catch Basin for 1.22m dia. RCPC	each	12
6-23	Side Ditch Type A	m.	1,000
RAISING THE ROAD			
1-8	Embankment from Borrow	cu. m.	12,736
2-1	Aggregate Subbase Course	cu. m.	2,573
2-2	Aggregate Base Course	cu. m.	407
3-7	PCC Pavement (t=25cm)	sq. m.	5,300
NEW KALAW BRIDGE			
		m	200





P L A N

SUMMARY OF QUANTITY

ITEM NO.	TYPE OF WORK	UNIT	TOTAL
STAGE I			
DPWH DIKE UPSTREAM			
1-1	Clearing and Grubbing	sq. m.	186,000
1-8	Embankment for Flood Dike	cu. m.	193,750
APPROACH ROAD			
1-1	Clearing and Grubbing	sq. m.	7,000
1-8	Embankment from Borrow	cu. m.	28,883
2-1	Aggregate Subbase Course	cu. m.	3,415
2-2	Aggregate Base Course	cu. m.	541
3-7	PCC Pavement (t=28cm)	sq. m.	7,035
7-1	Grouted Riprap	cu. m.	826
CUT-OFF CHANNEL			
1-11B	River Excavation	cu.m.	352,300
NEW BRIDGE			
			m
STAGE II			
DPWH DIKE DOWNSTREAM			
1-1	Clearing and Grubbing	sq. m.	197,100
1-8	Embankment for Flood Dike	cu. m.	160,800
NIA DIKE DOWNSTREAM			
1-1	Clearing and Grubbing	sq. m.	194,400
1-8	Embankment for Flood Dike	cu. m.	158,400

JICA