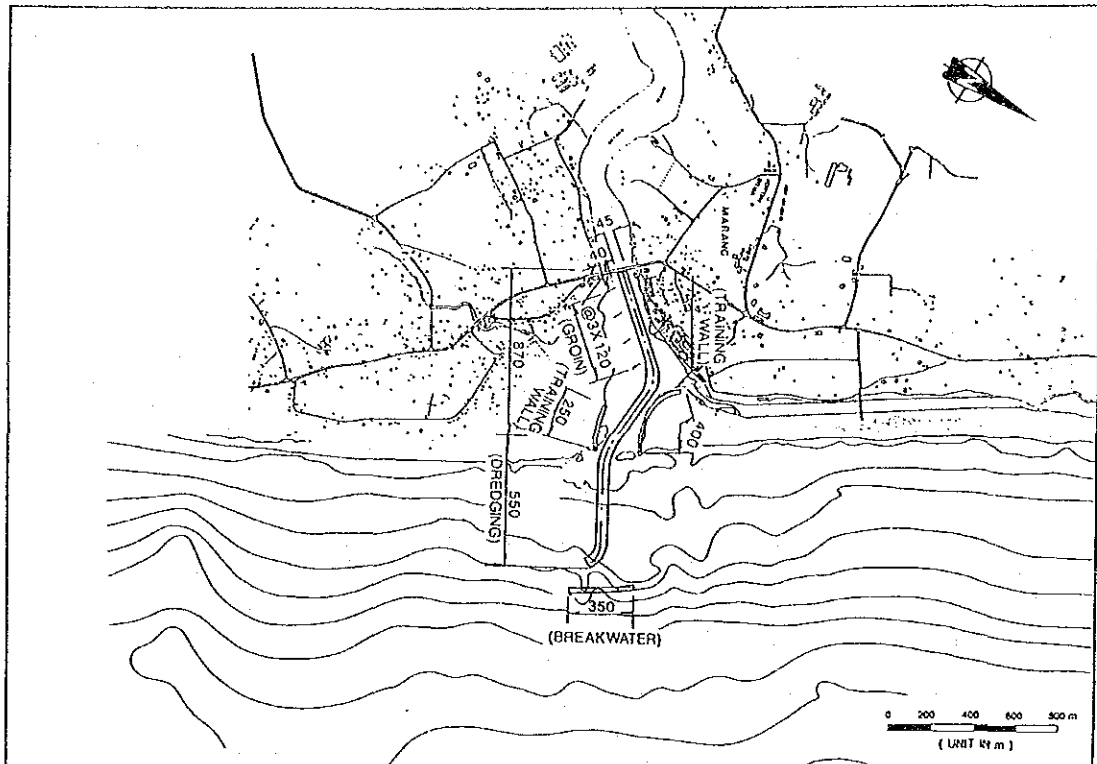
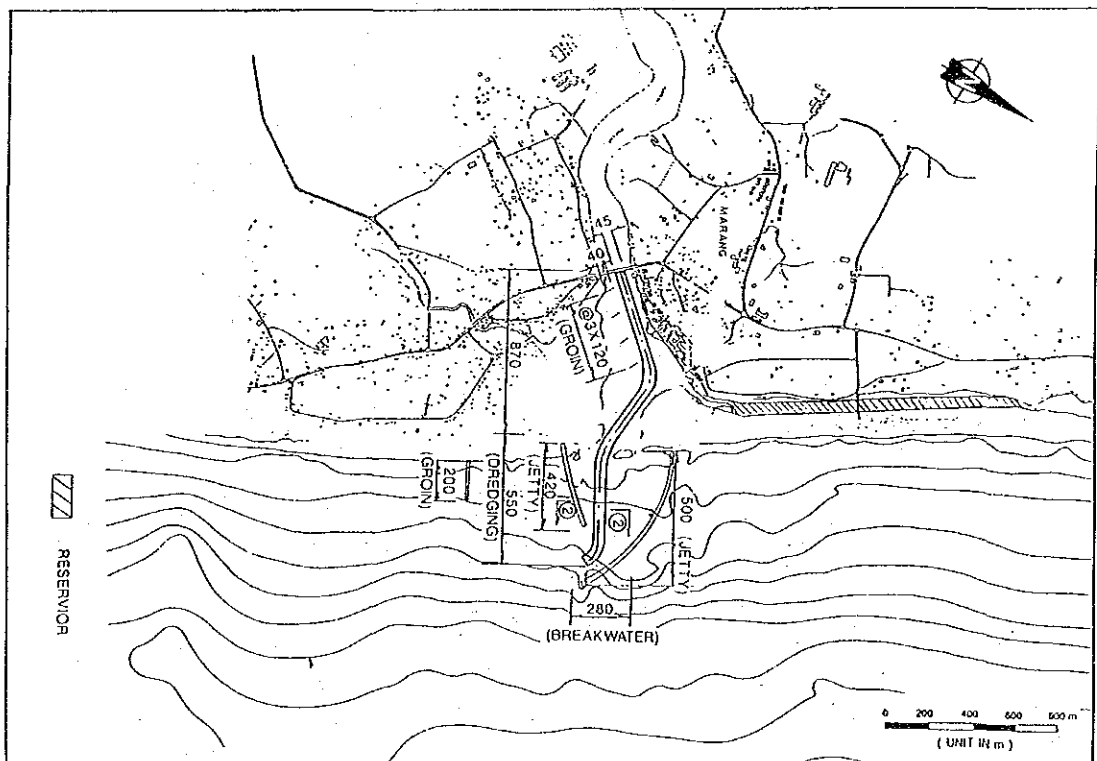


CASE - 1



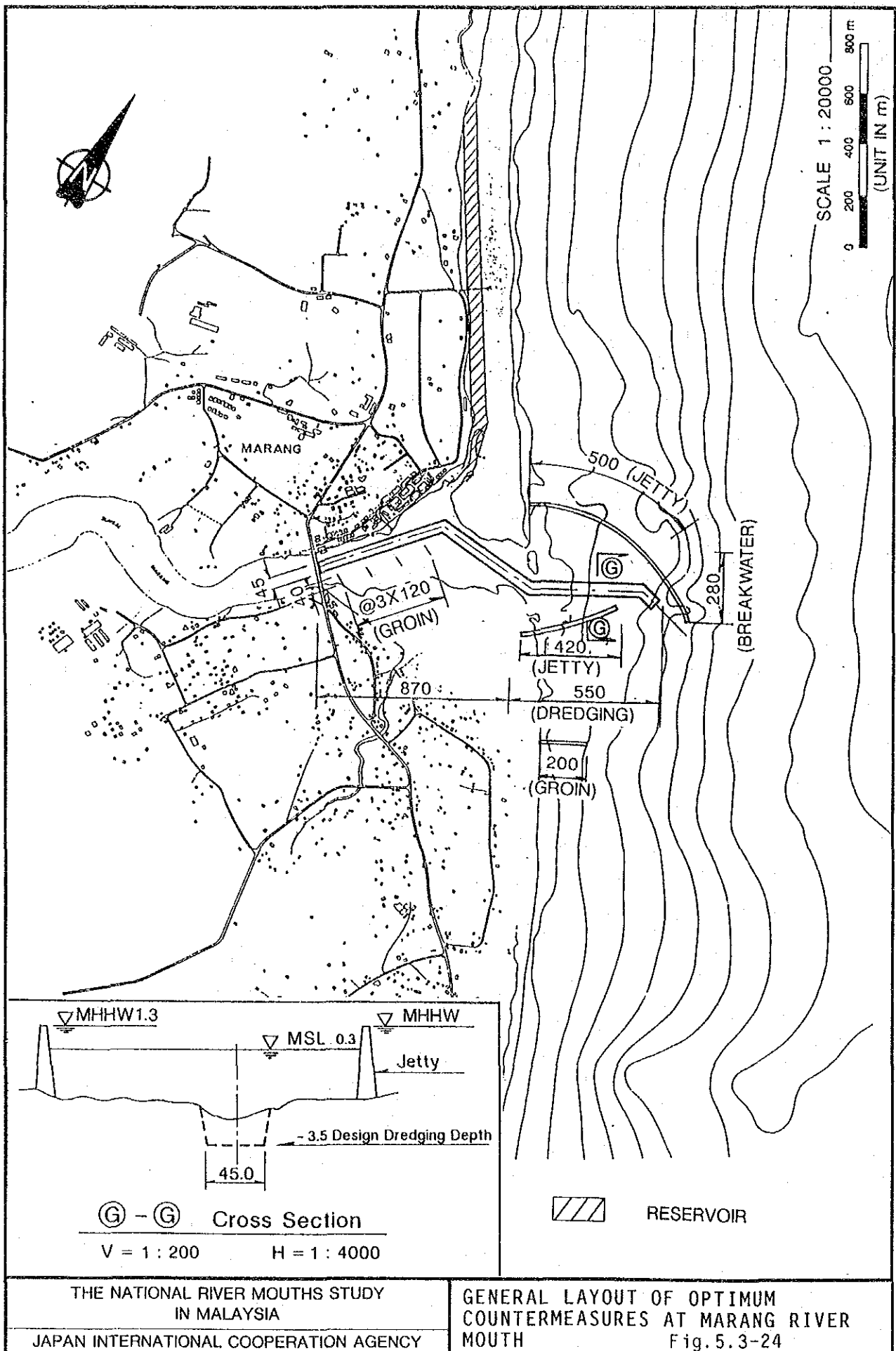
CASE - 2

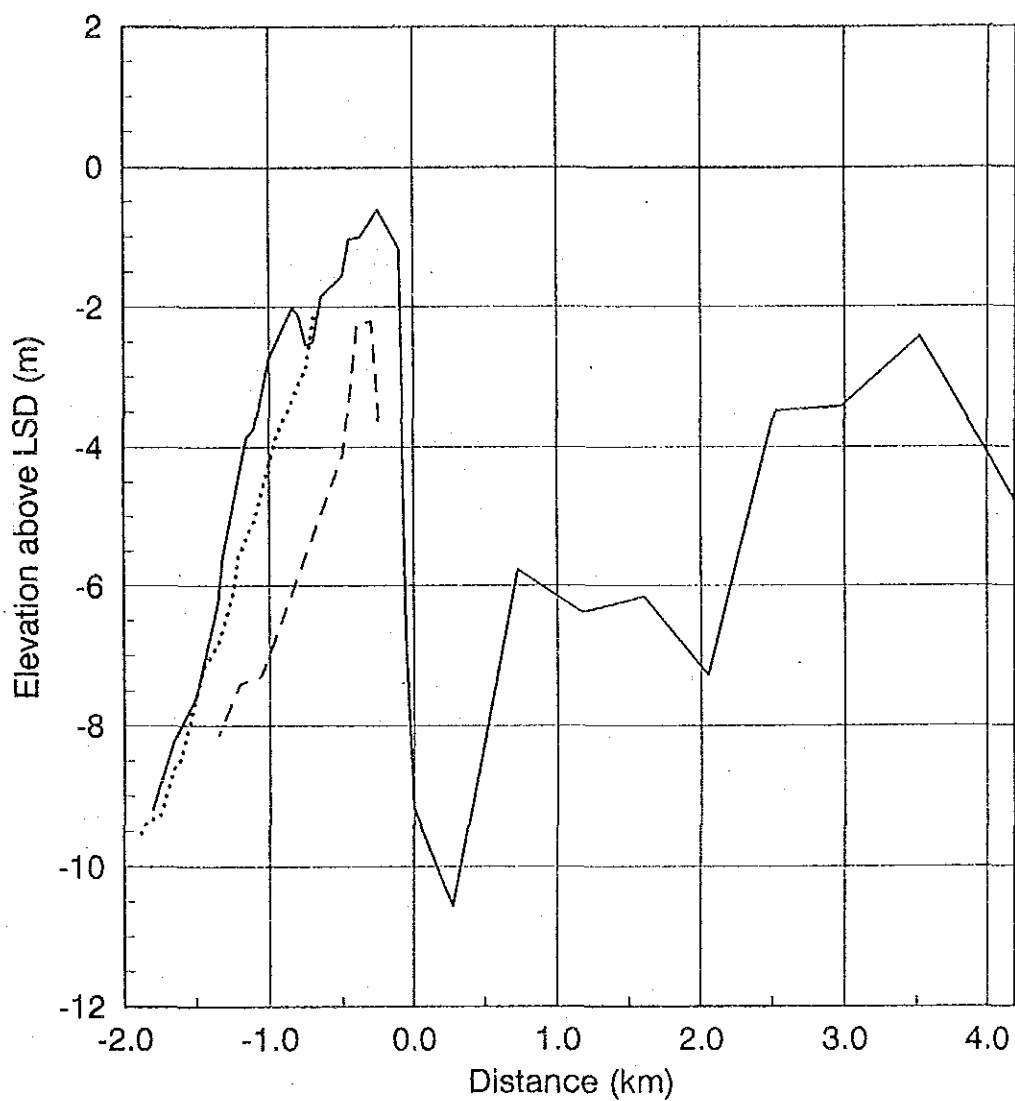


THE NATIONAL RIVER MOUTHS STUDY
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JAPAN INTERNATIONAL COOPERATION AGENCY

ALTERNATIVE STUDY CASES FOR MARANG RIVER MOUTH
Fig. 5.3-23





No. 0	No. 1000R	No. 1000L
November, '92	November, '92	November, '92
—	- - -

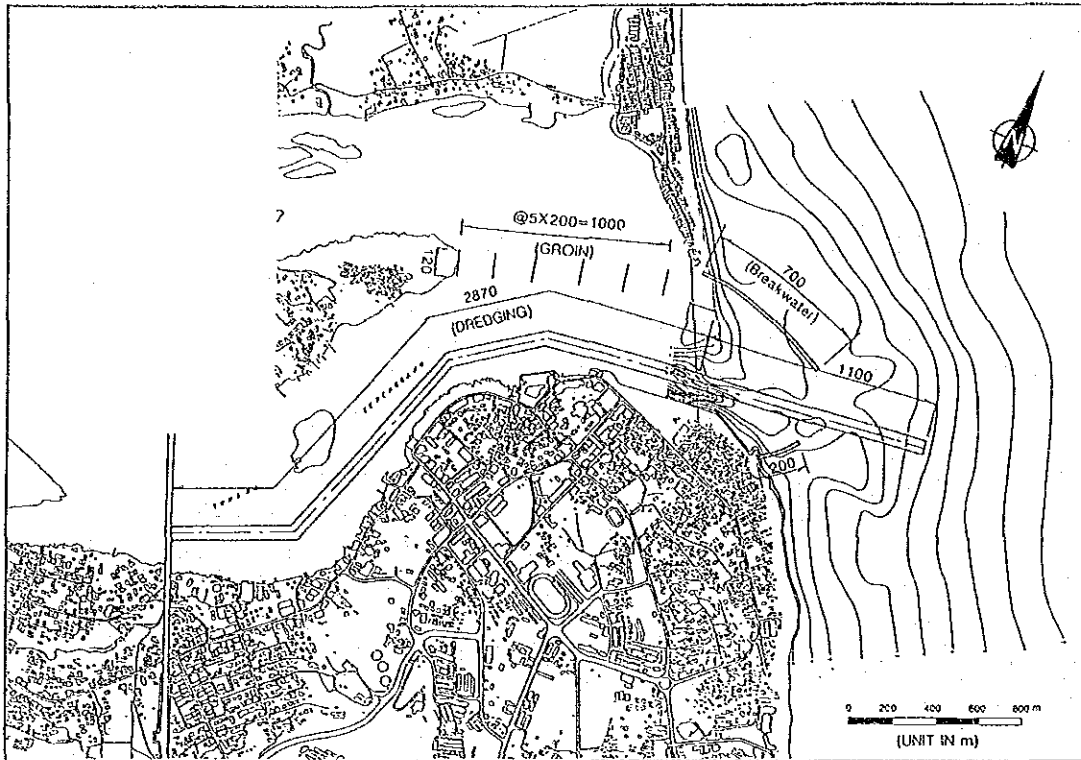
THE NATIONAL RIVER MOUTHS STUDY
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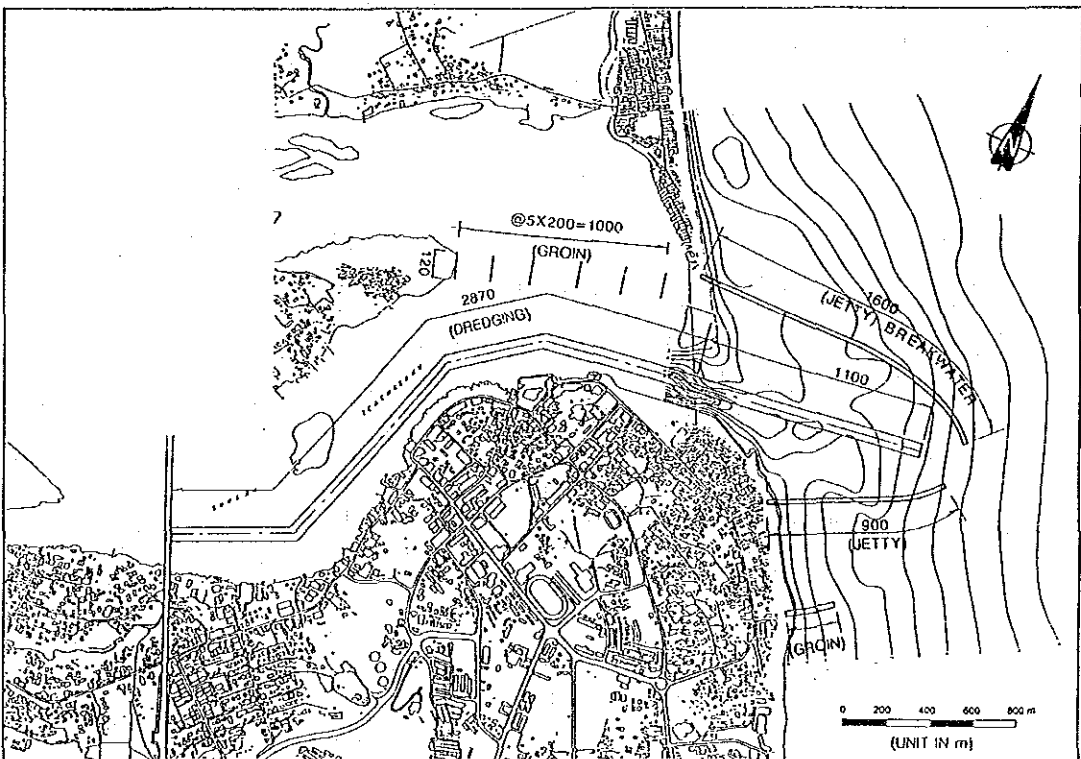
INNER AND OUTER CHANNEL PROFILE
OF TERENGGANU RIVER MOUTH

Fig. 5.3-25

CASE - 1



CASE - 2

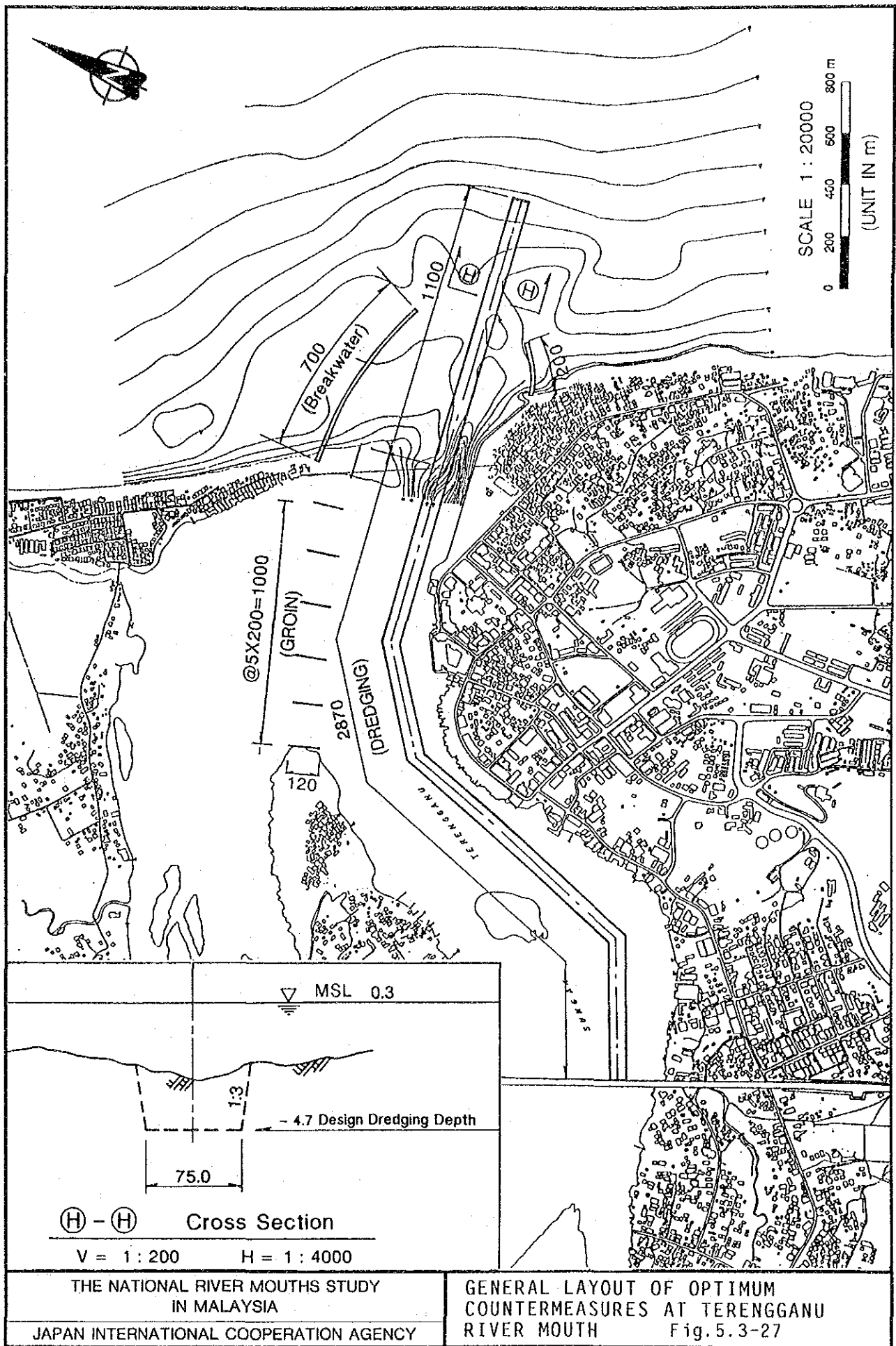


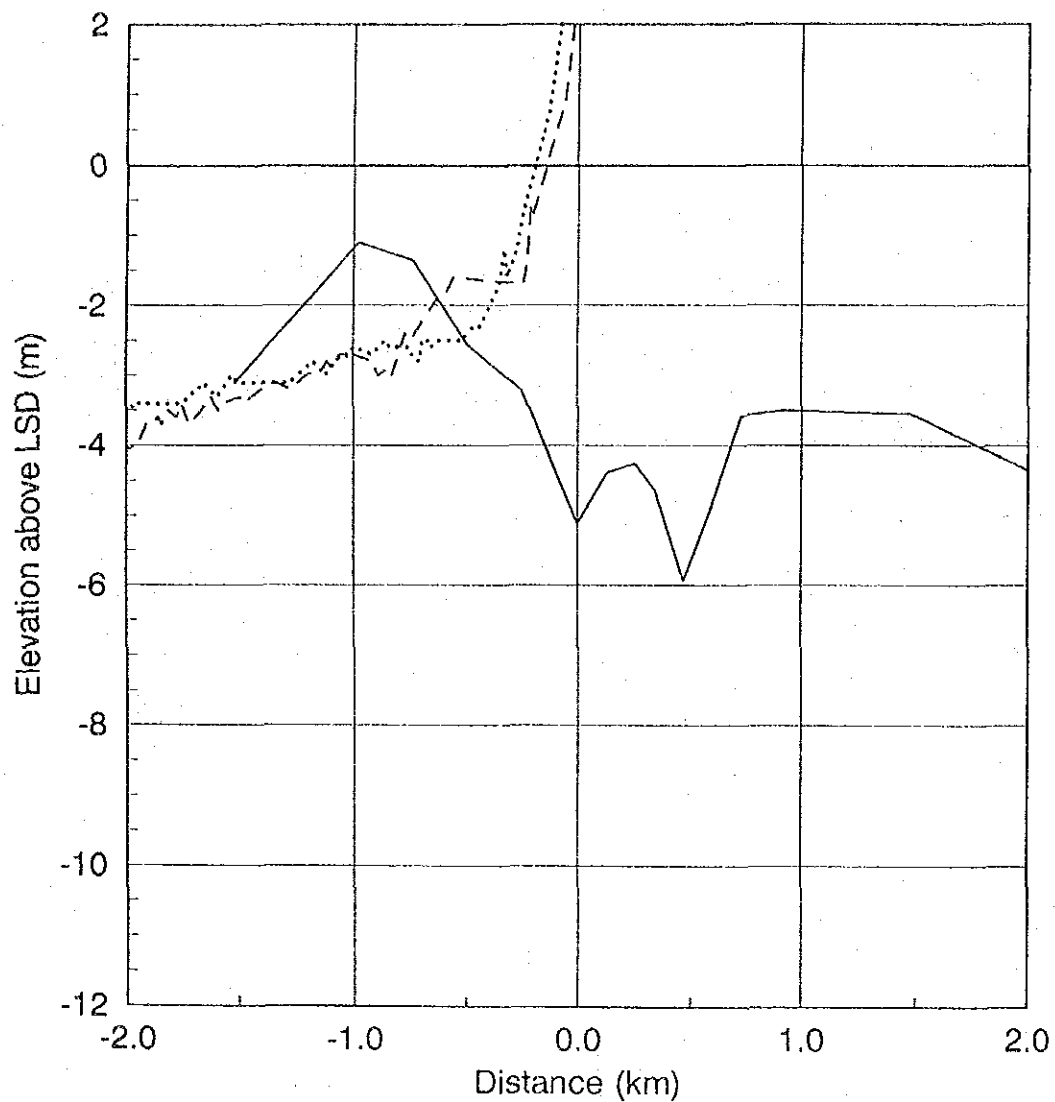
THE NATIONAL RIVER MOUTHS STUDY
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ALTERNATIVE STUDY CASES FOR TERENGGANU RIVER
MOUTH

Fig. 5.3-26





No. 0	No. 1000R	No. 1000L
October, '92	October, '92	October, '92
—	- - -

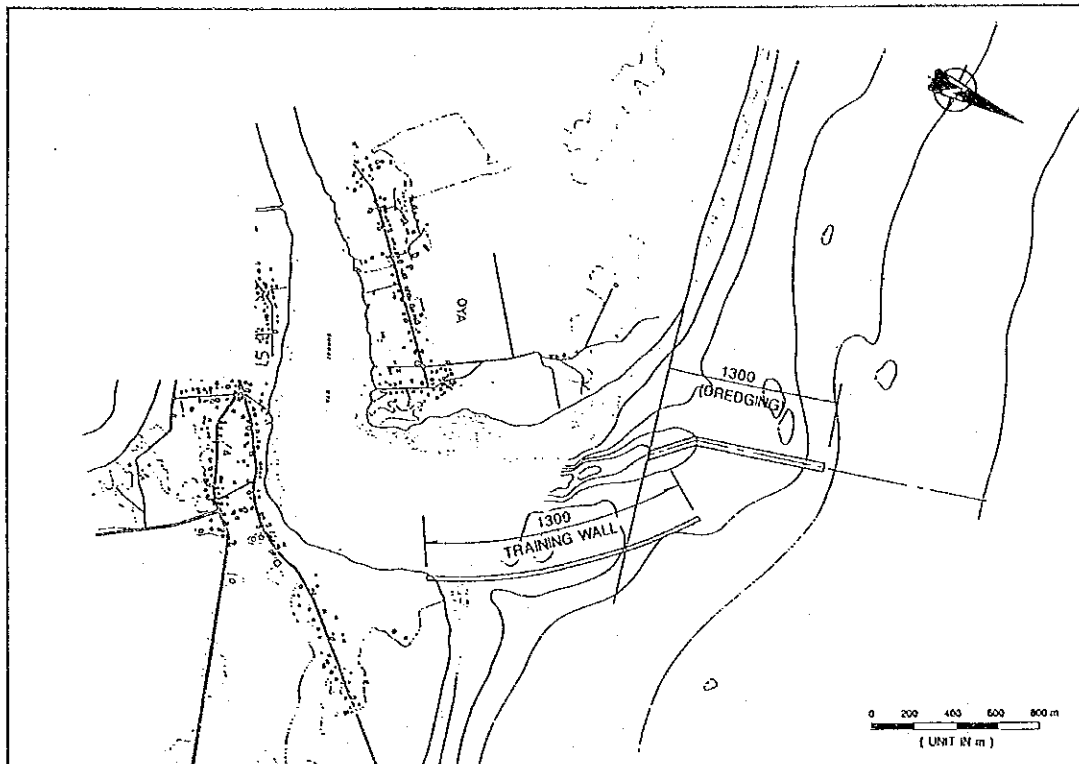
THE NATIONAL RIVER MOUTHS STUDY
IN MALAYSIA

JAPAN INTERNATIONAL COOPERATION AGENCY

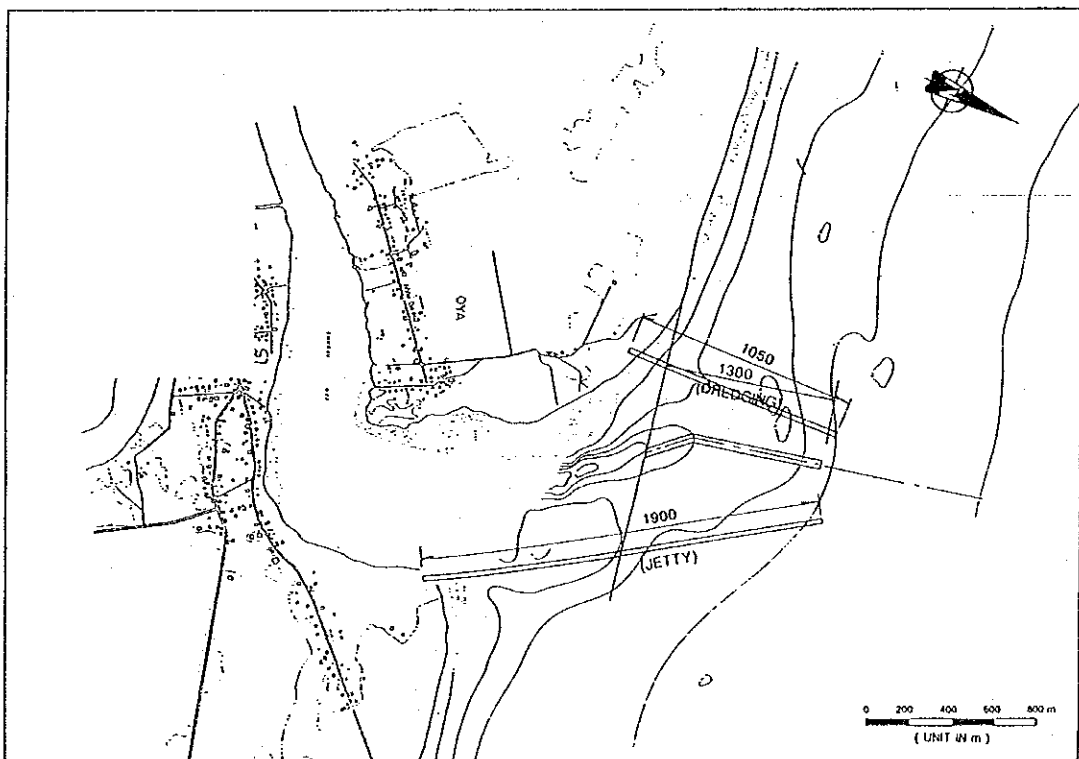
INNER AND OUTER CHANNEL PROFILE
OF OYA RIVER MOUTH

Fig. 5.3-28

CASE - 1



CASE - 2

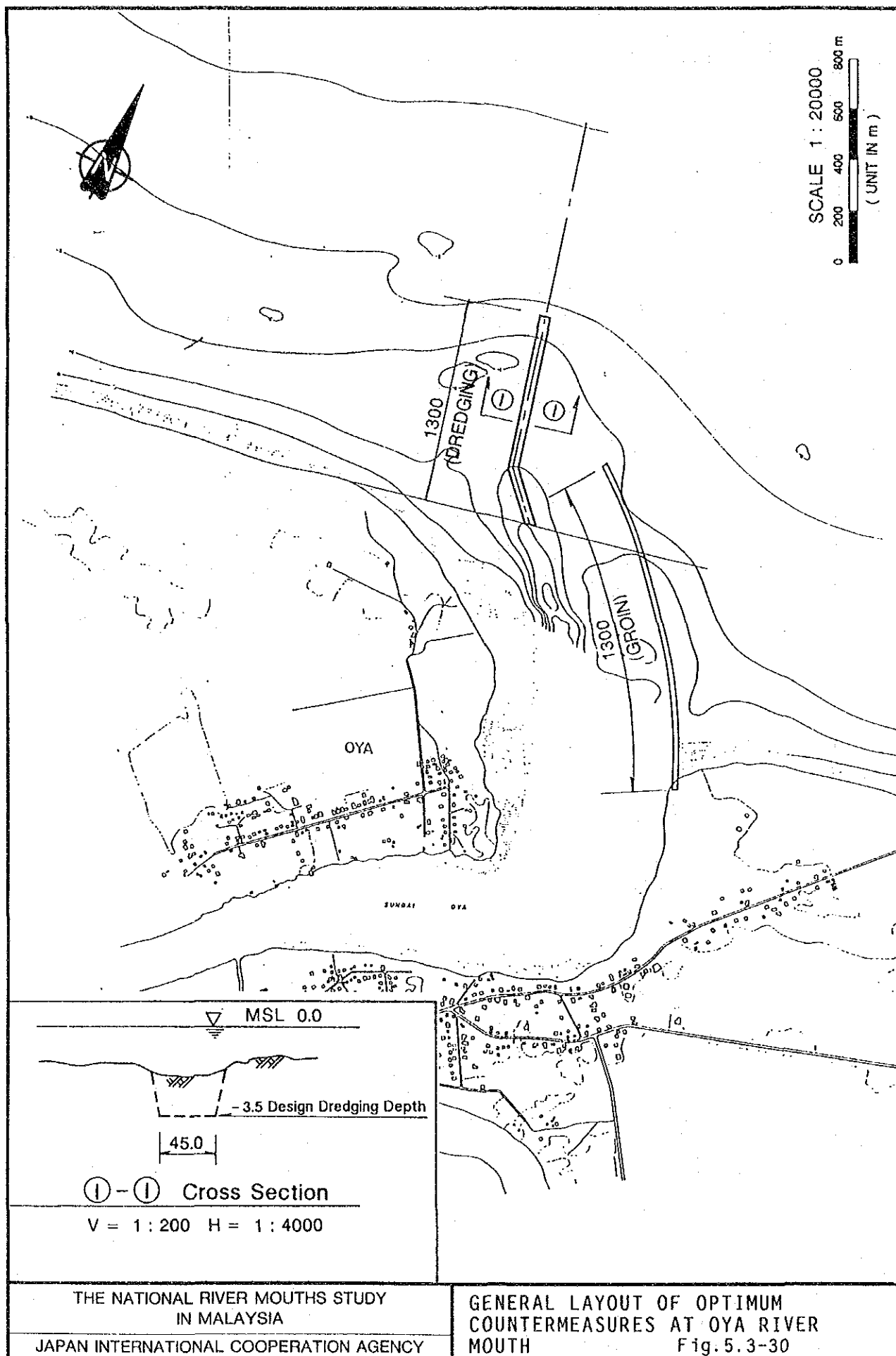


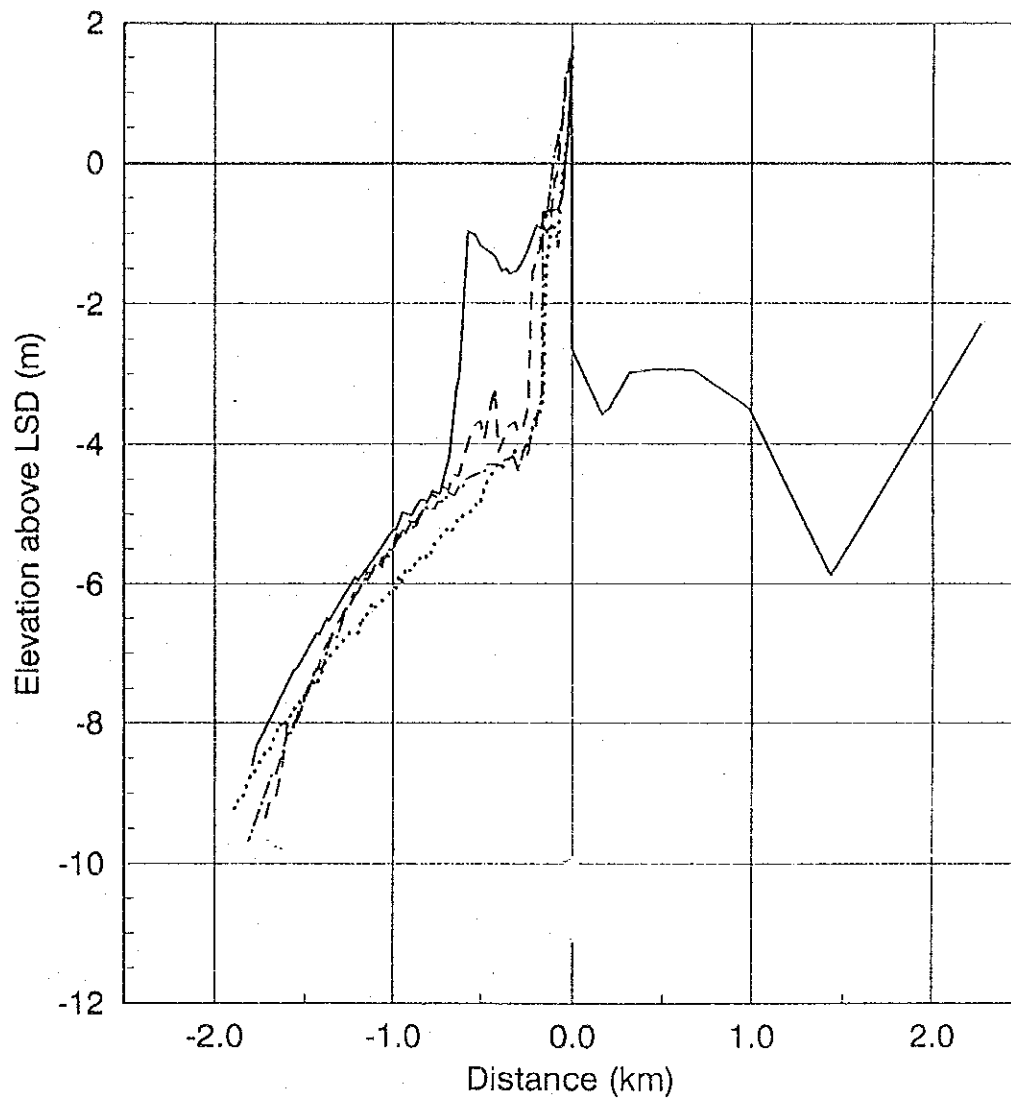
THE NATIONAL RIVER MOUTHS STUDY
IN MALAYSIA

JAPAN INTERNATIONAL COOPERATION AGENCY

ALTERNATIVE STUDY CASES FOR OYA RIVER MOUTH

Fig. 5.3-29





No. 0	No. 500R	No. 500L	No. 980L
November, '92	November, '92	November, '92	November, '92
————	----	-.-.-.-

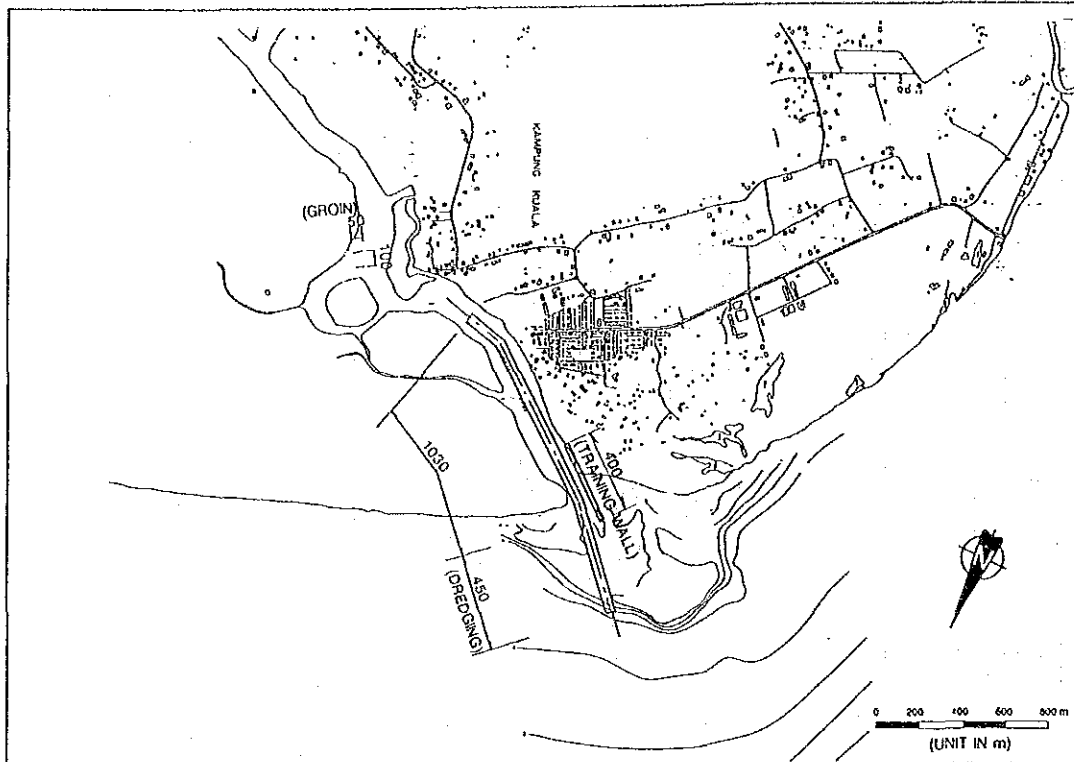
THE NATIONAL RIVER MOUTHS STUDY
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JAPAN INTERNATIONAL COOPERATION AGENCY

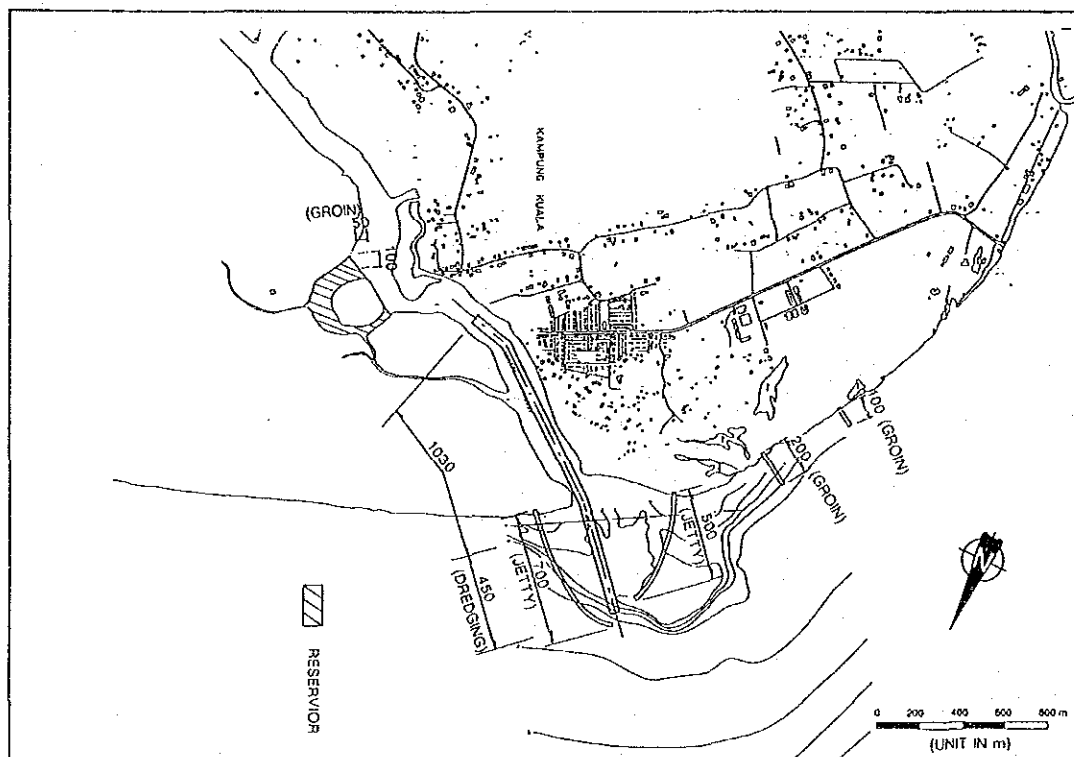
INNER AND OUTER CHANNEL PROFILE
OF PAPAR RIVER MOUTH

Fig. 5.3-31

CASE - 1



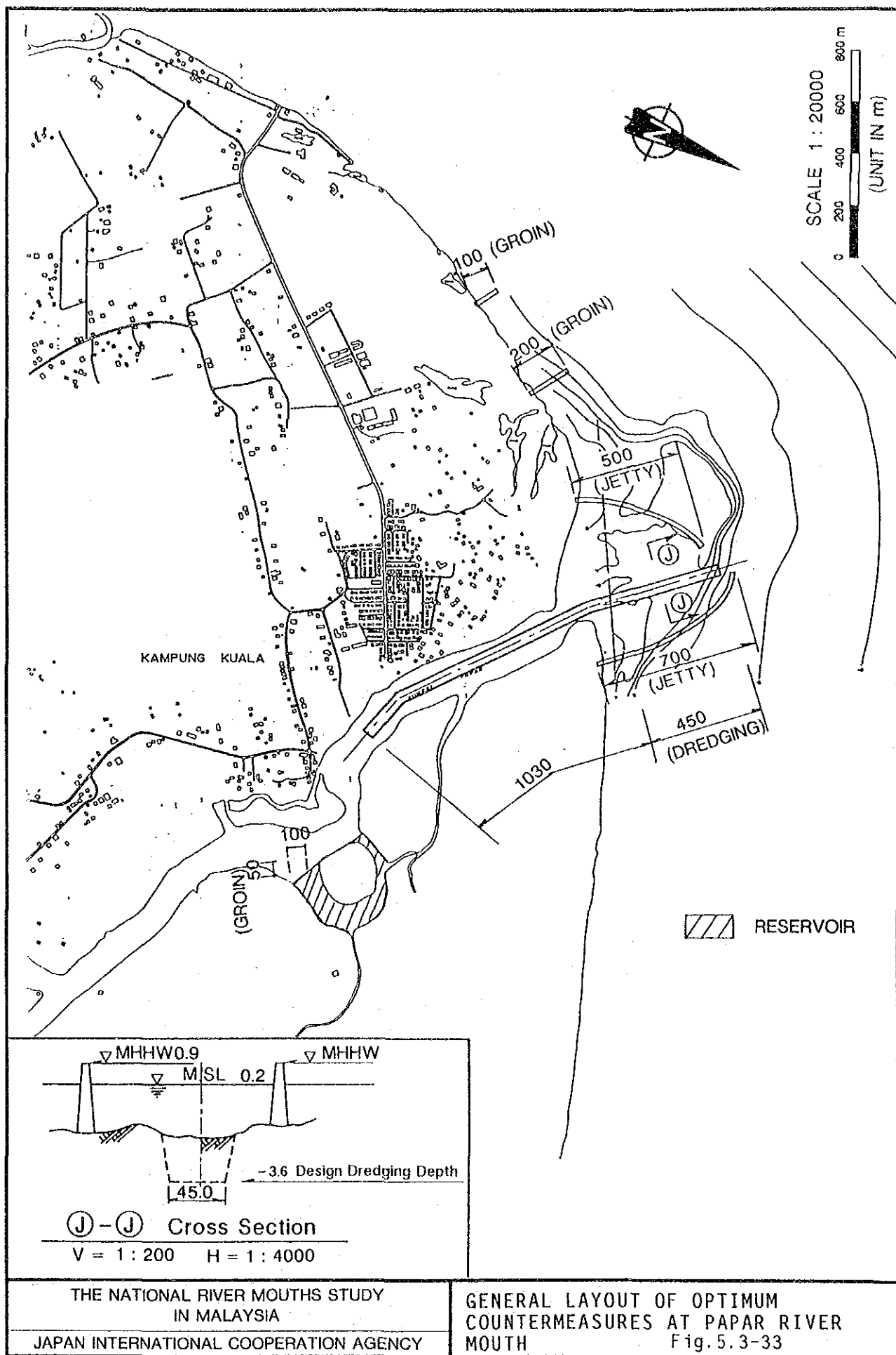
CASE - 2



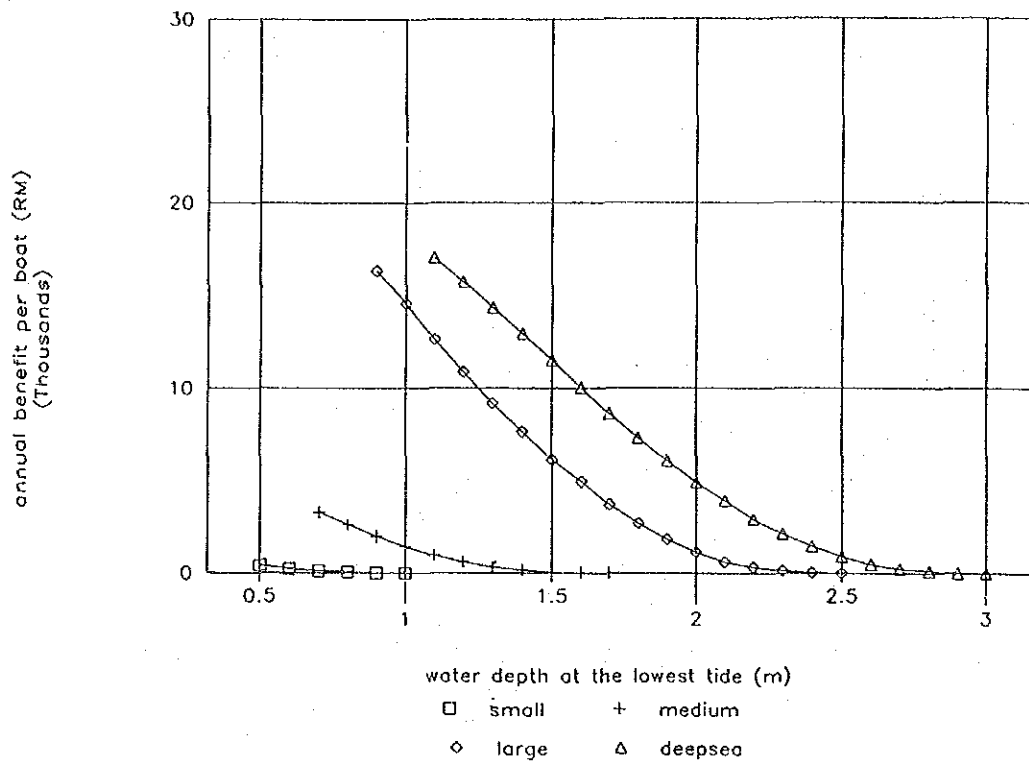
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IN MALAYSIA

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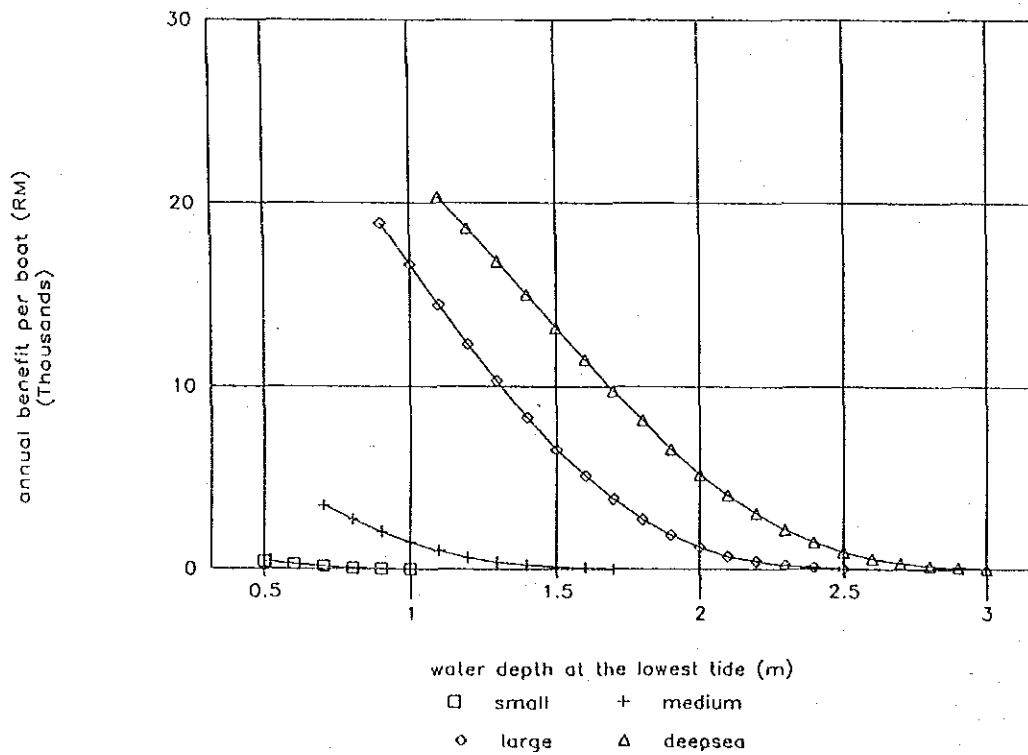
ALTERNATIVE STUDY CASES FOR PAPAR RIVER MOUTH
Fig. 5.3-32



Perlis & Kedah (Sta. P. Langkawi)



Tg. Piandang (Sta. P. Pinang)

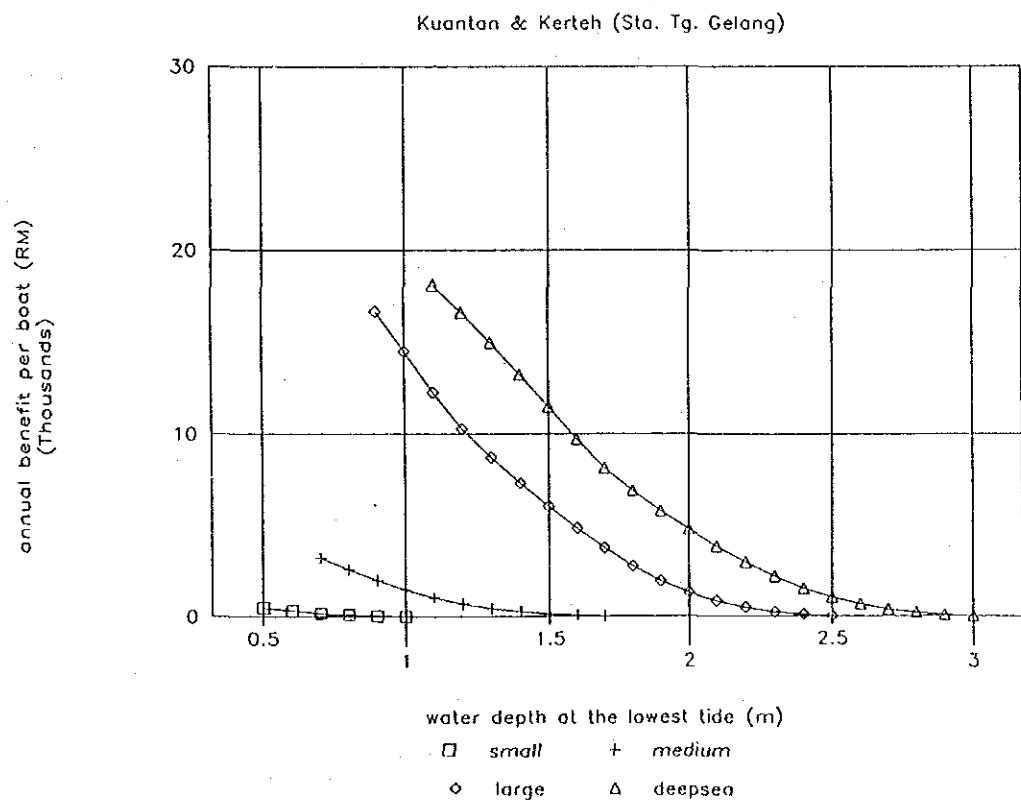
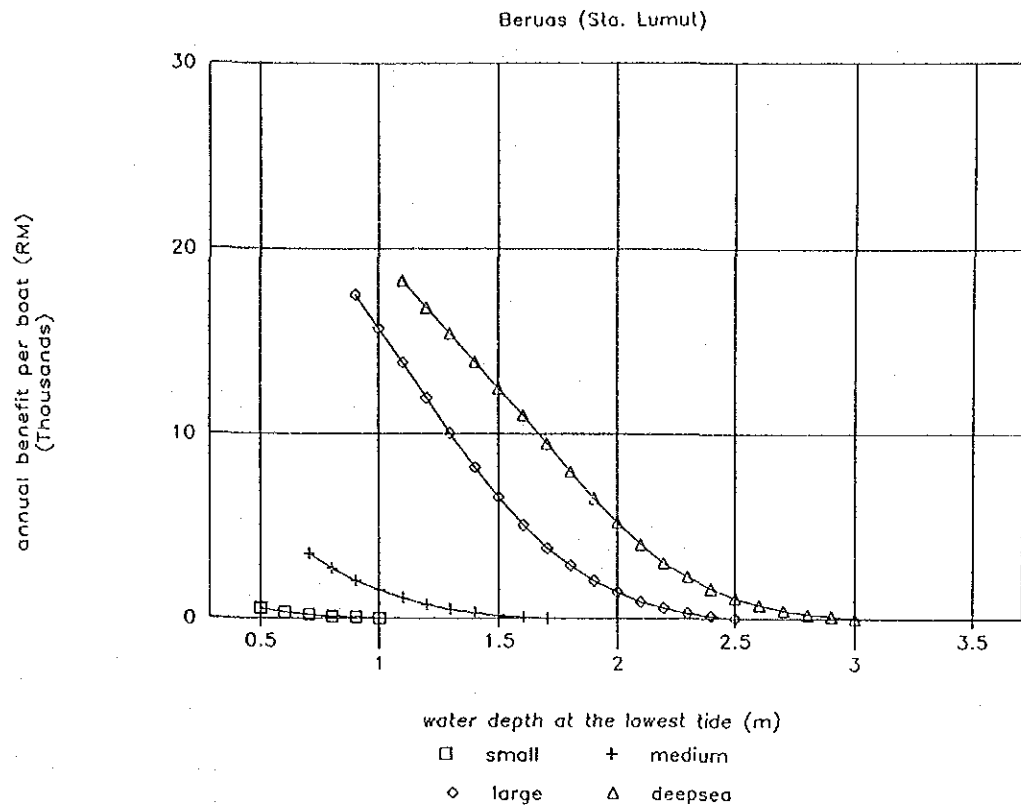


THE NATIONAL RIVER MOUTHS STUDY
IN MALAYSIA

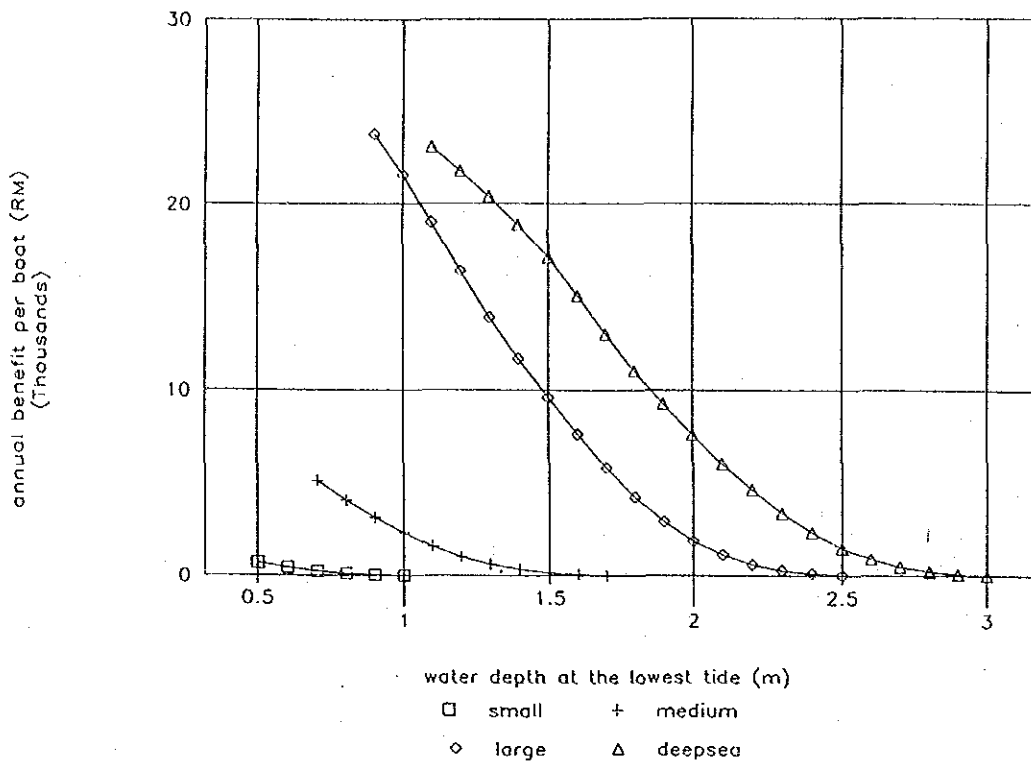
JAPAN INTERNATIONAL COOPERATION AGENCY

RELATION BETWEEN MINIMUM WATER DEPTH
AND ANNUAL BENEFIT PER BOAT

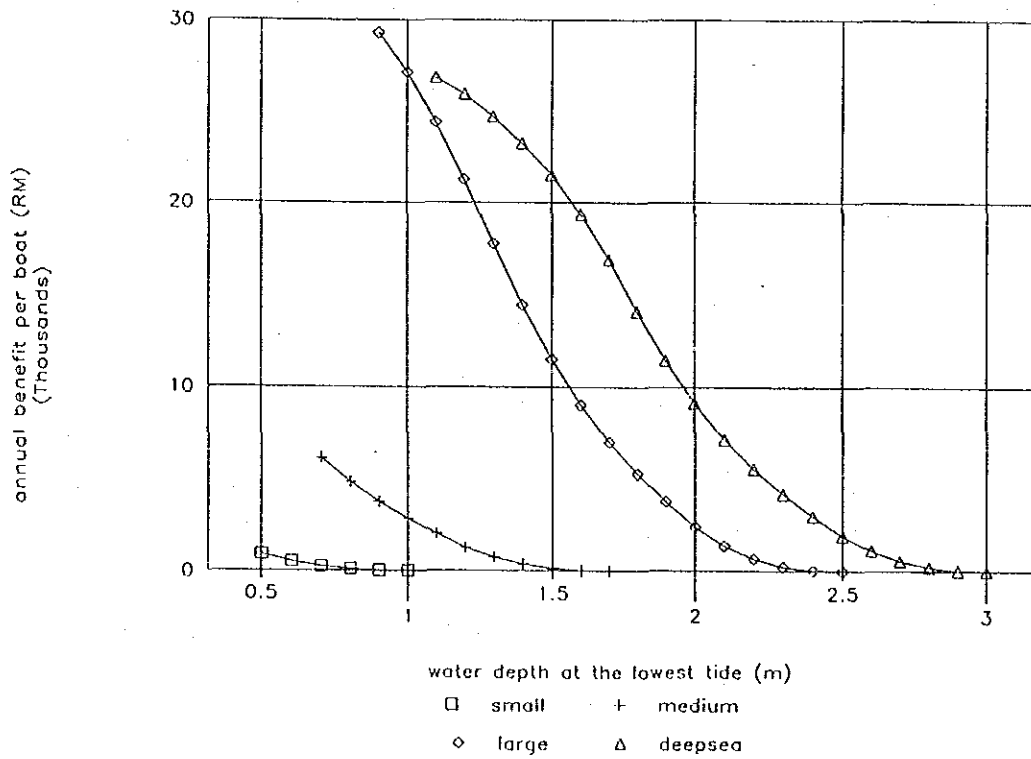
Fig. 5.4-1 (1/3)



Marang & Terengganu (Sta. Cendering)



Oya & Papar (Sta. Kota Kinabalu)



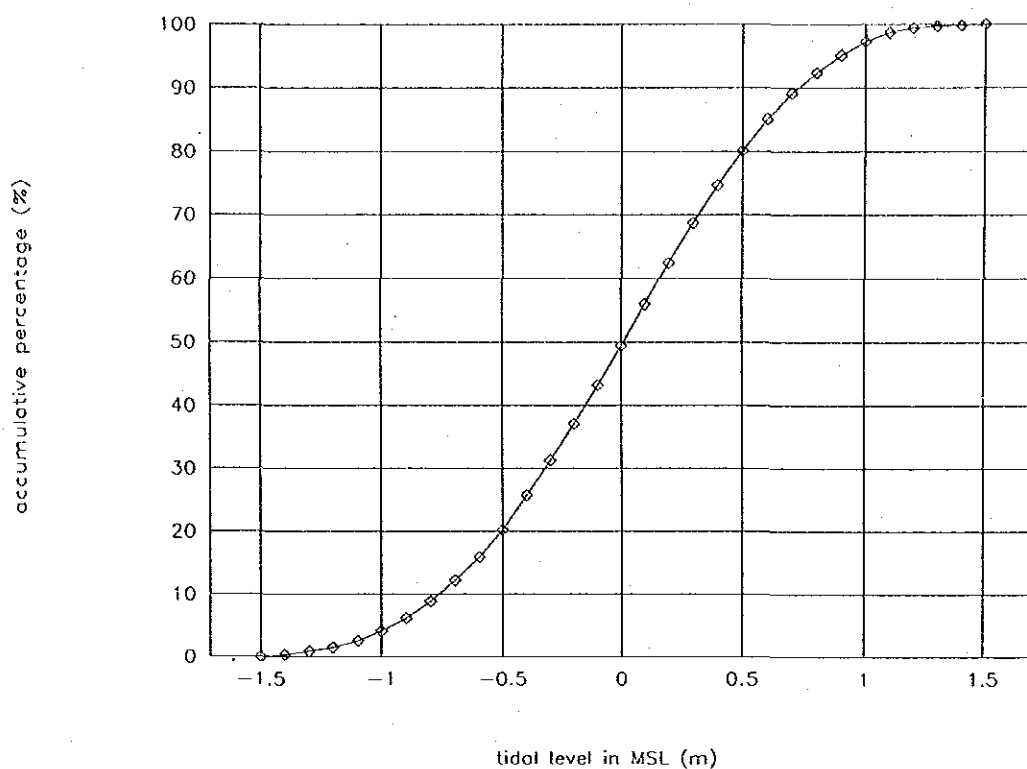
THE NATIONAL RIVER MOUTHS STUDY
IN MALAYSIA

JAPAN INTERNATIONAL COOPERATION AGENCY

RELATION BETWEEN MINIMUM WATER DEPTH
AND ANNUAL BENEFIT PER BOAT

Fig. 5.4-1(3/3)

FREQUENCY DISTRIBUTION OF TIDAL LEVELS



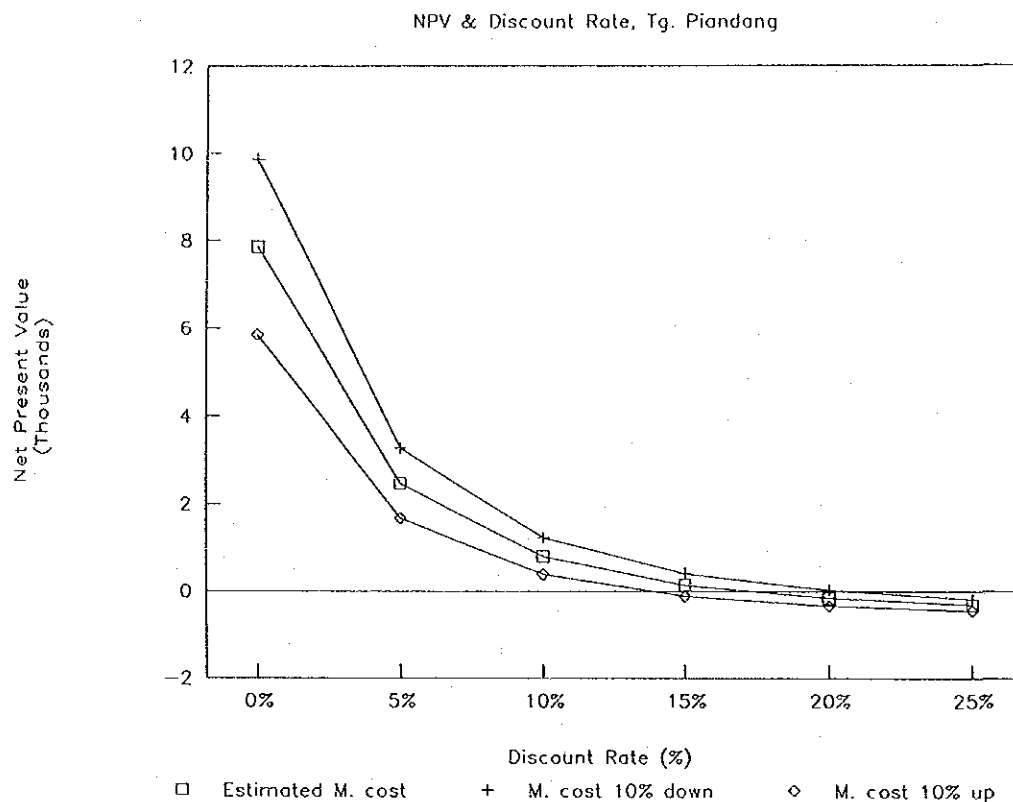
MSL (m)	Distribution (%)	Accumulation (%)
-1.5	0.00	0.00
-1.4	0.30	0.30
-1.3	0.50	0.80
-1.2	0.60	1.40
-1.1	1.10	2.50
-1.0	1.50	4.00
-0.9	2.10	6.10
-0.8	2.70	8.80
-0.7	3.40	12.20
-0.6	3.70	15.90
-0.5	4.30	20.20
-0.4	5.50	25.70
-0.3	5.60	31.30
-0.2	5.80	37.10
-0.1	6.10	43.20
0.0	6.20	49.40
0.1	6.60	56.00
0.2	6.40	62.40
0.3	6.30	68.70
0.4	6.00	74.70
0.5	5.40	80.10
0.6	5.00	85.10
0.7	4.00	89.10
0.8	3.20	92.30
0.9	2.80	95.10
1.0	2.20	97.30
1.1	1.40	98.70
1.2	0.70	99.40
1.3	0.30	99.70
1.4	0.10	99.80
1.5	0.20	100.00

THE NATIONAL RIVER MOUTHS STUDY
IN MALAYSIA

JAPAN INTERNATIONAL COOPERATION AGENCY

FREQUENCY DISTRIBUTION OF HOURLY
TIDAL LEVELS AT KEDAH PIER STATION
IN 1990

Fig. 5.5-1



IRR is a value (i) which can satisfy the following formula:

$$\sum_{n=1}^N \frac{B_n - C_n}{(1 + i)^n} = 0$$

where;

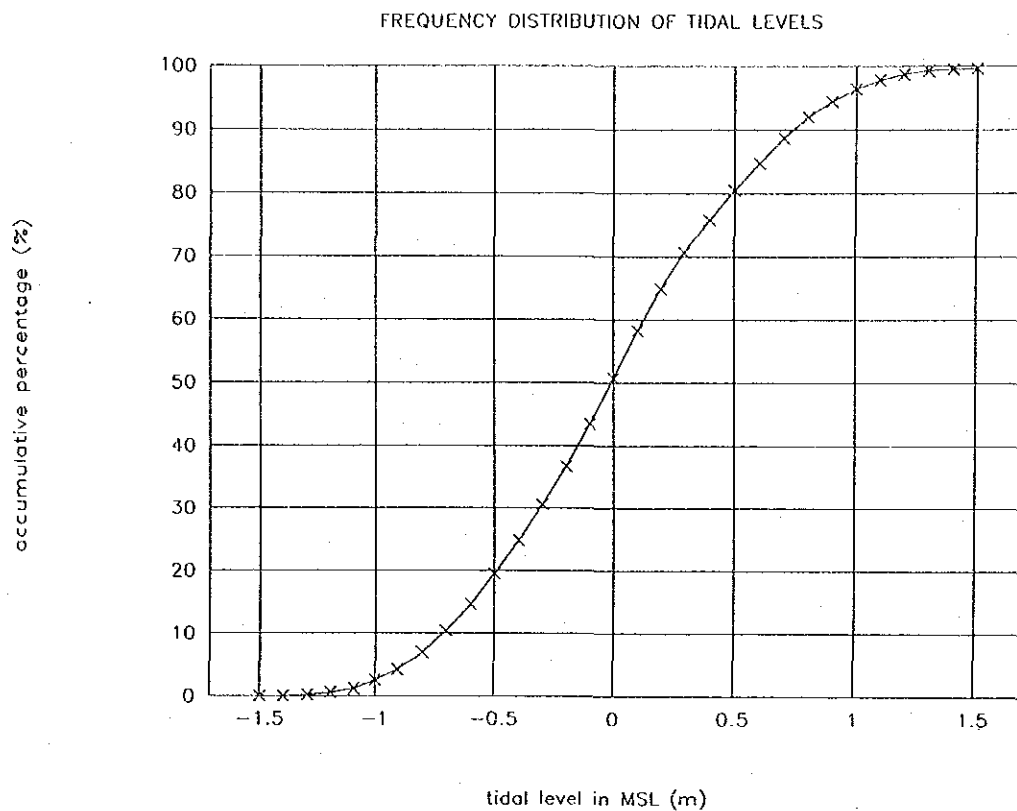
B_n : Benefit in the n -th year
 C_n : Cost in the n -th year
 i : Annual discount rate (%)
 N : Number of years (project life)

THE NATIONAL RIVER MOUTHS STUDY
IN MALAYSIA

JAPAN INTERNATIONAL COOPERATION AGENCY

SENSITIVITY OF ECONOMIC VIABILITY BY
CHANGES OF MAINTENANCE COST

Fig. 5.5-2



MSL (m)	Distribution (%)	Accumulation (%)
-1.4	0.0	0.0
-1.3	0.2	0.2
-1.2	0.4	0.6
-1.1	0.6	1.2
-1.0	1.3	2.5
-0.9	1.7	4.2
-0.8	2.7	6.9
-0.7	3.5	10.4
-0.6	4.2	14.6
-0.5	4.9	19.5
-0.4	5.3	24.8
-0.3	5.8	30.6
-0.2	6.1	36.7
-0.1	6.8	43.5
0.0	7.2	50.7
0.1	7.6	58.3
0.2	6.6	64.9
0.3	5.8	70.7
0.4	5.1	75.8
0.5	4.7	80.5
0.6	4.3	84.8
0.7	3.9	88.7
0.8	3.3	92.0
0.9	2.5	94.5
1.0	1.9	96.4
1.1	1.4	97.8
1.2	0.9	98.7
1.3	0.6	99.3
1.4	0.2	99.5
1.5	0.1	99.6
1.6	0.4	100.0

