F I G U R E

Fig. 3-3 PROFILE OF THE KINABATANGAN RIVER AND TRIBUTARIES

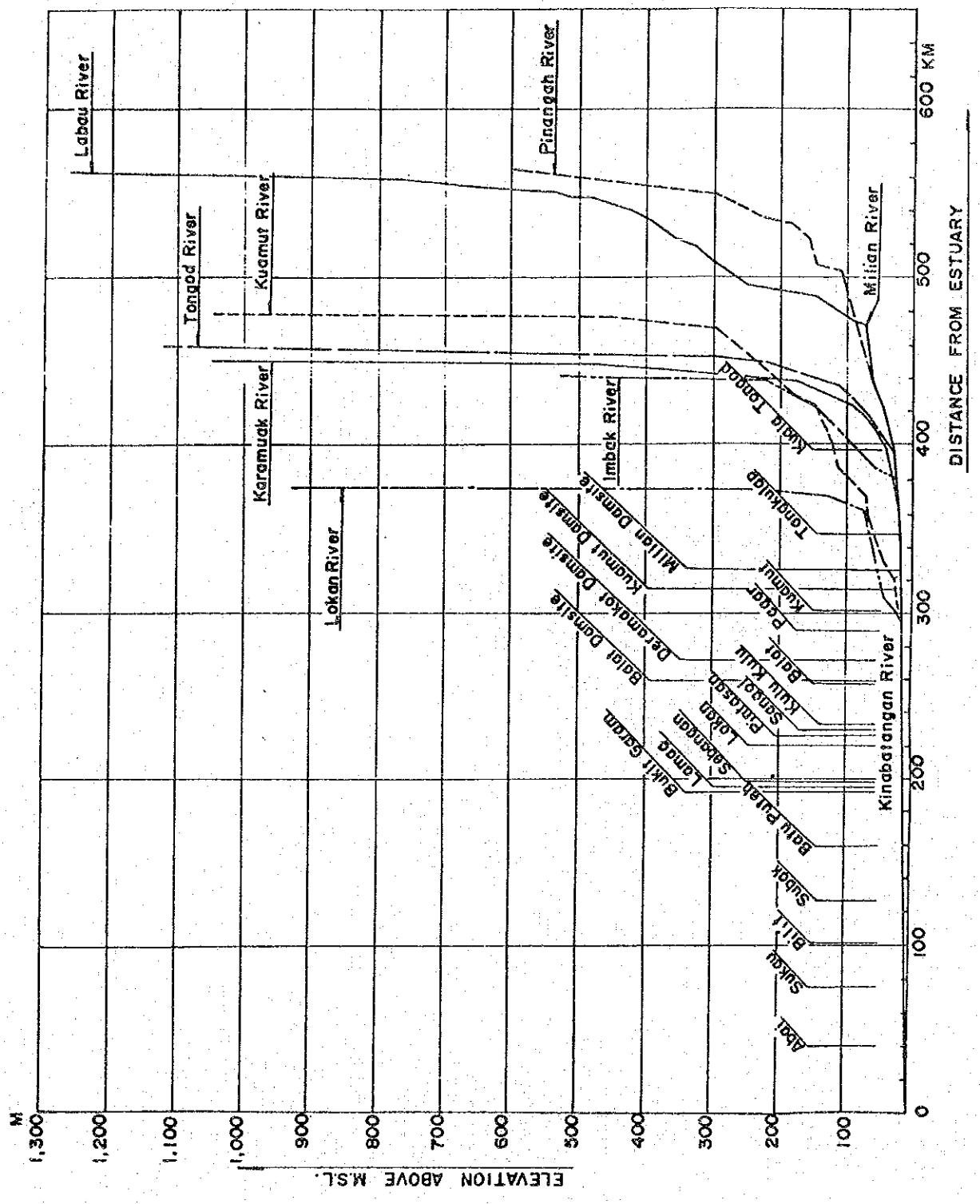


Fig. 3-4 CHANNEL WIDTH DISTRIBUTION

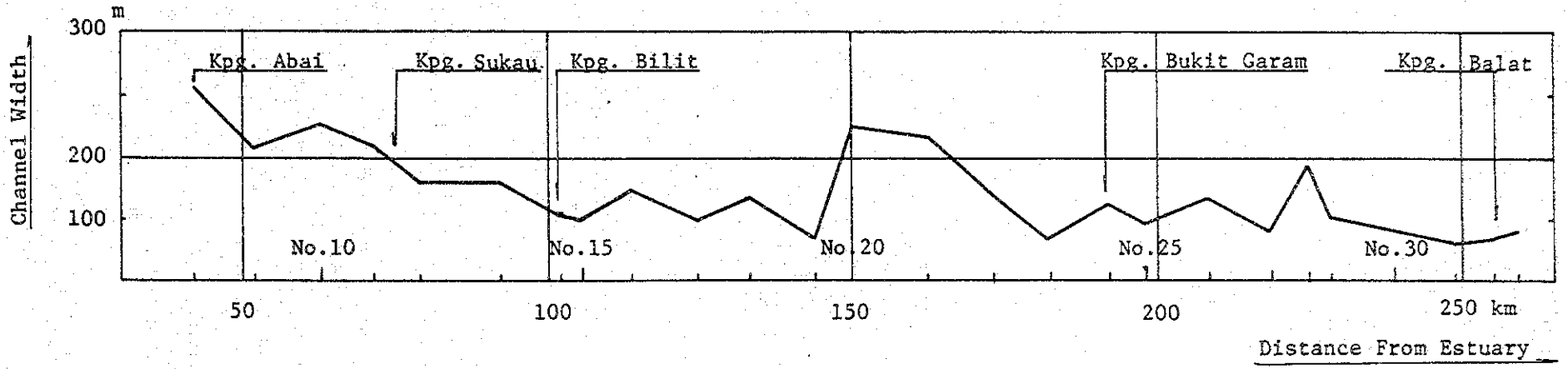
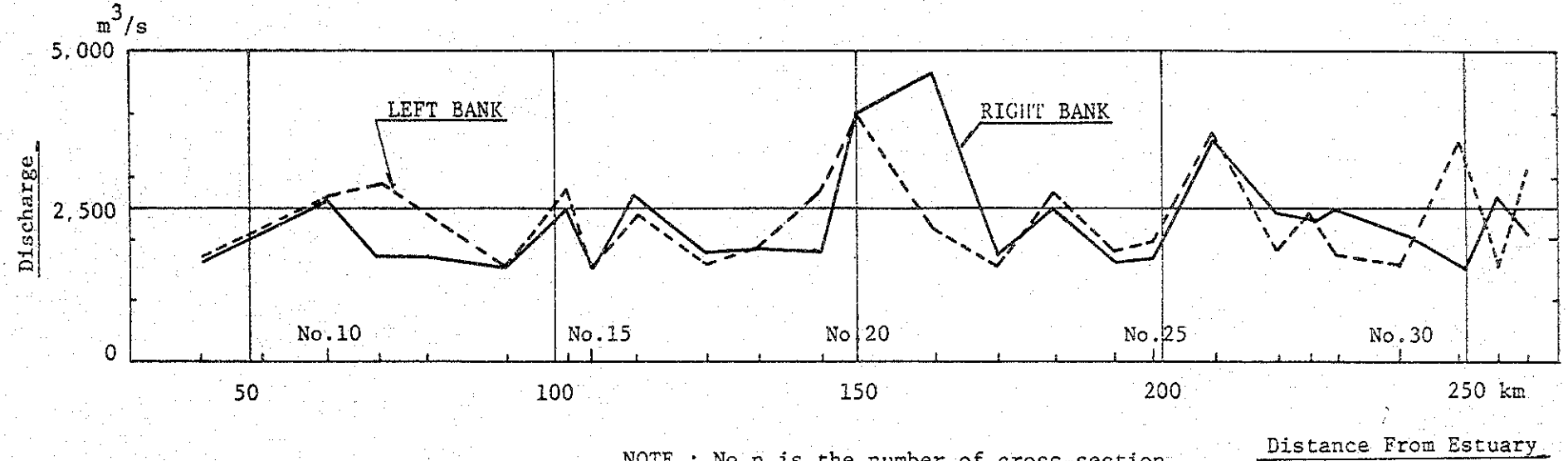


Fig. 3-5 PRESENT FLOW CAPACITY



NOTE : No.n is the number of cross-section.

Fig. 3-6 INUNDATION AREA IN THE LOWER BASIN

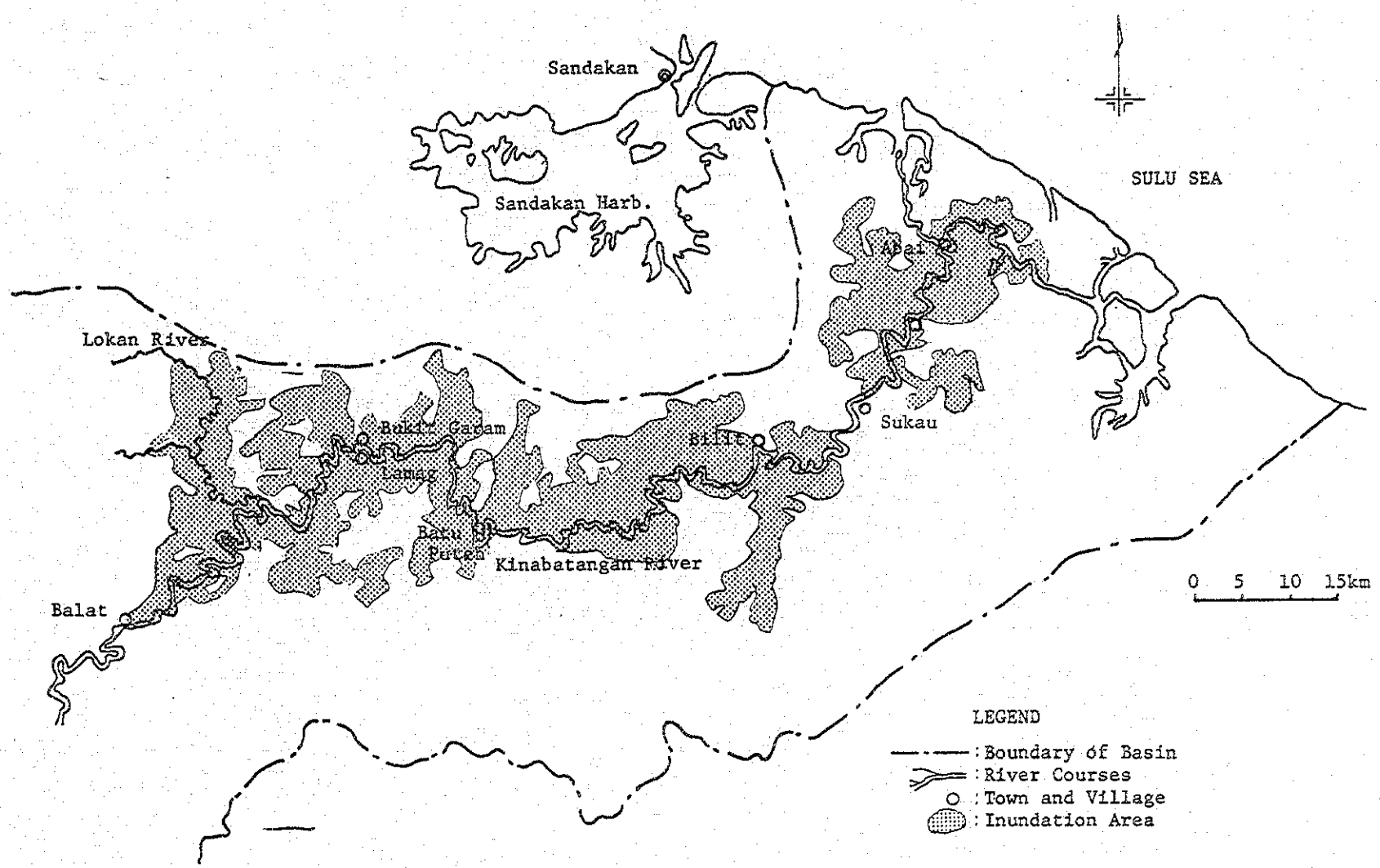


Fig. 3-7 PRESENT CROPPING PATTERN

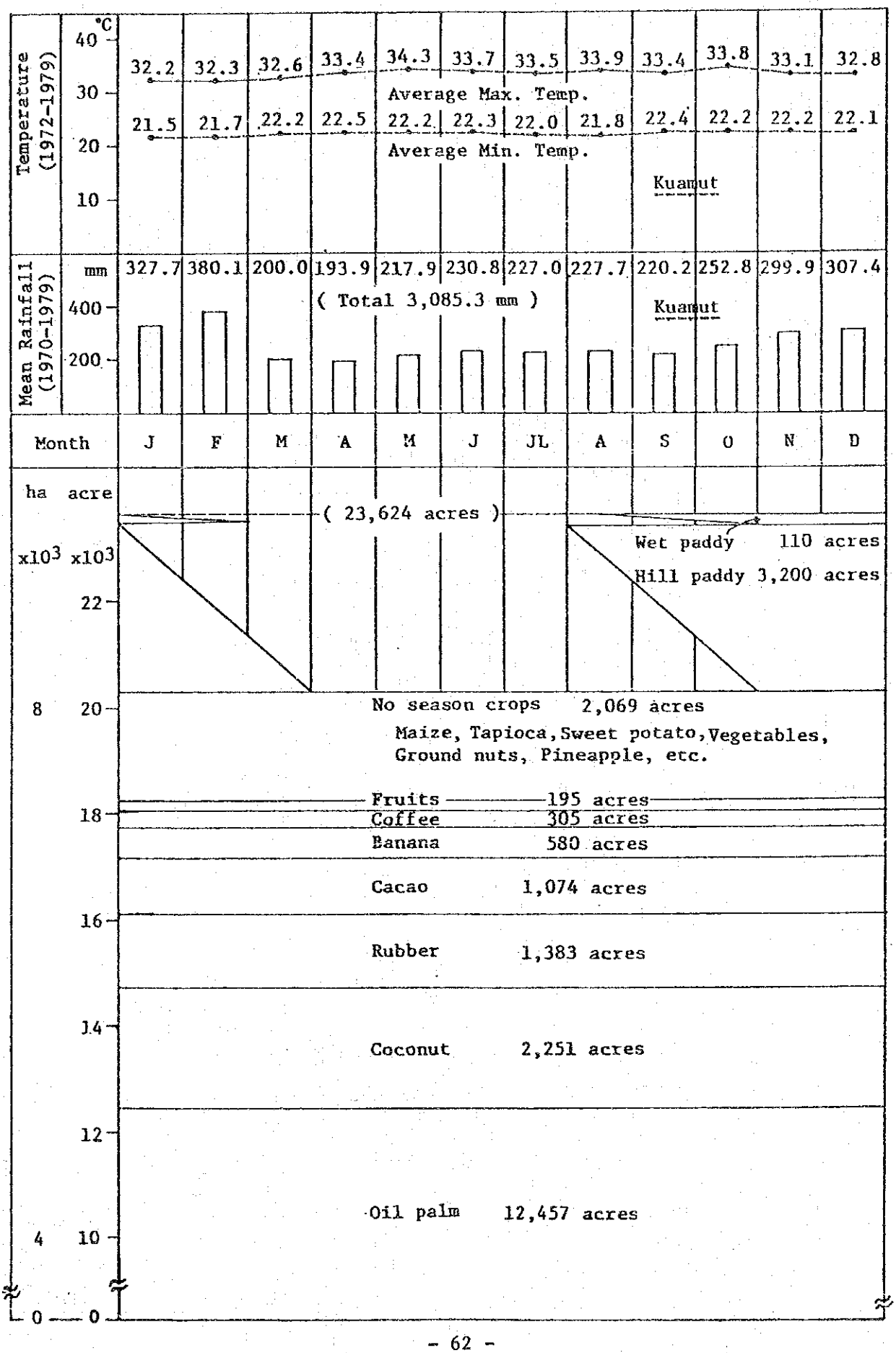


Fig. 3-8 ADMINISTRATIVE DIVISION

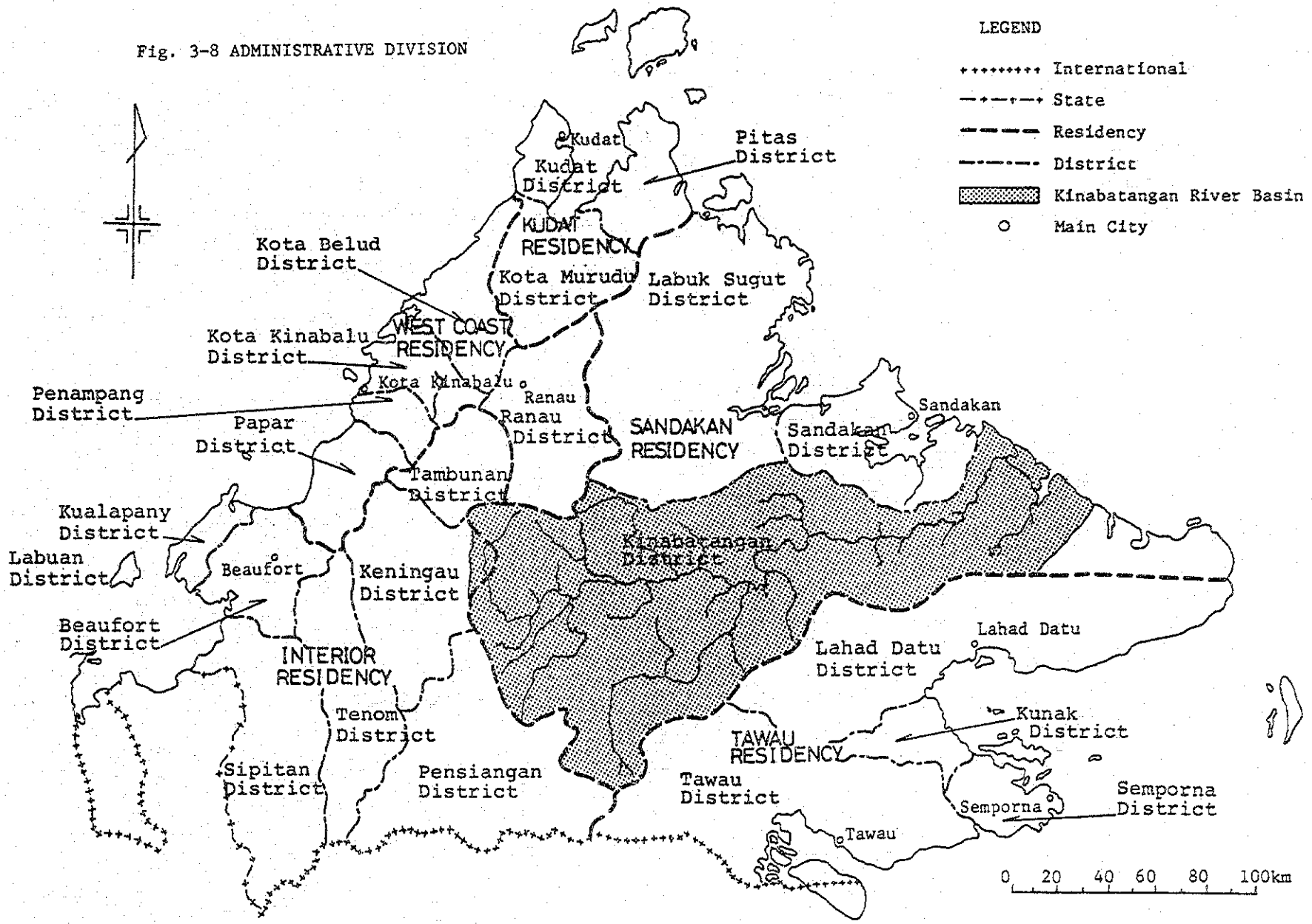


Fig. 3-9 SABAH GENERATING STATIONS,1978

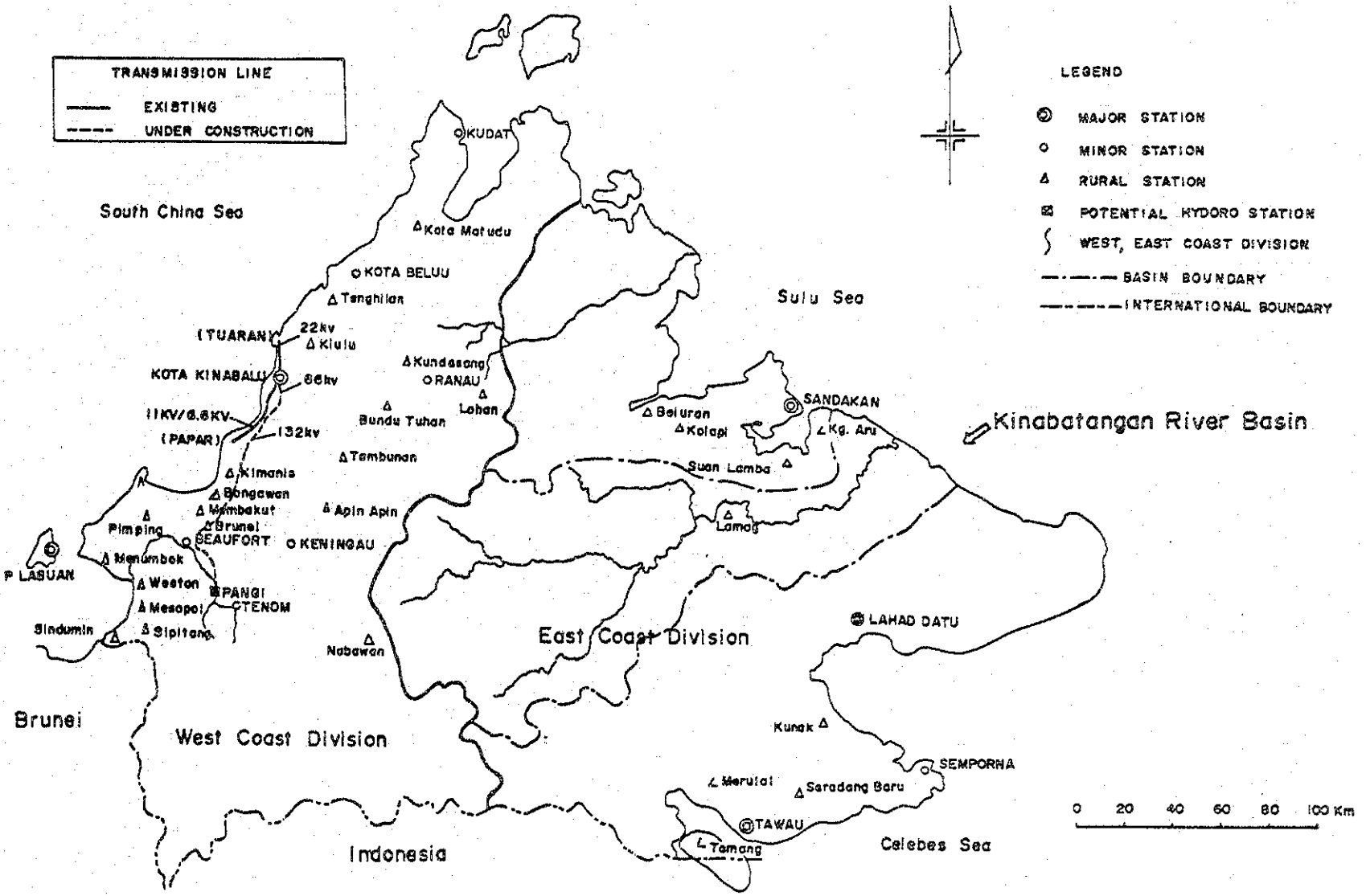


Fig. 3-10 DAIRY LOAD CURVE OF SANDAKAN

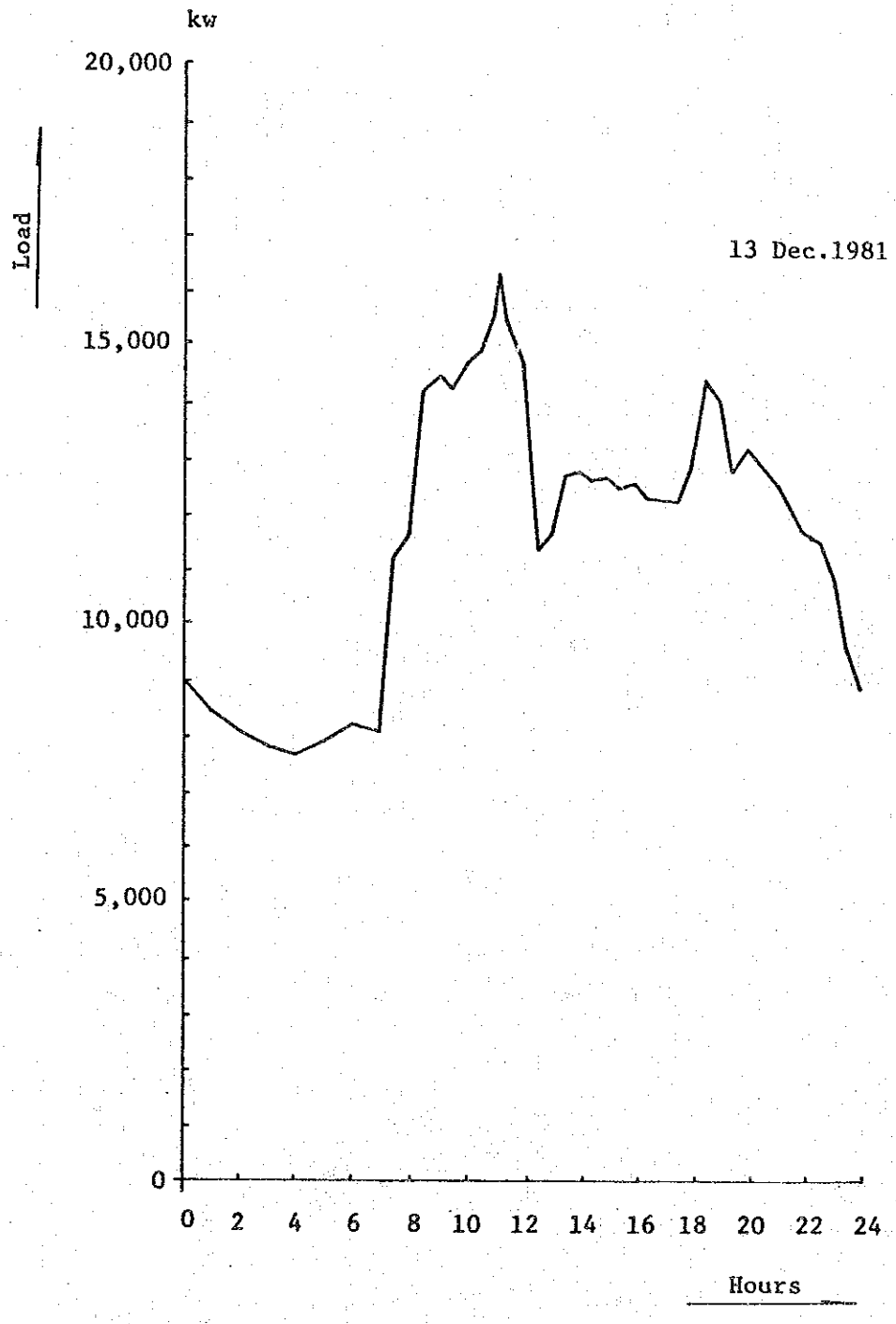


Fig. 4-1 LOCATION OF POSSIBLE DAMSITES

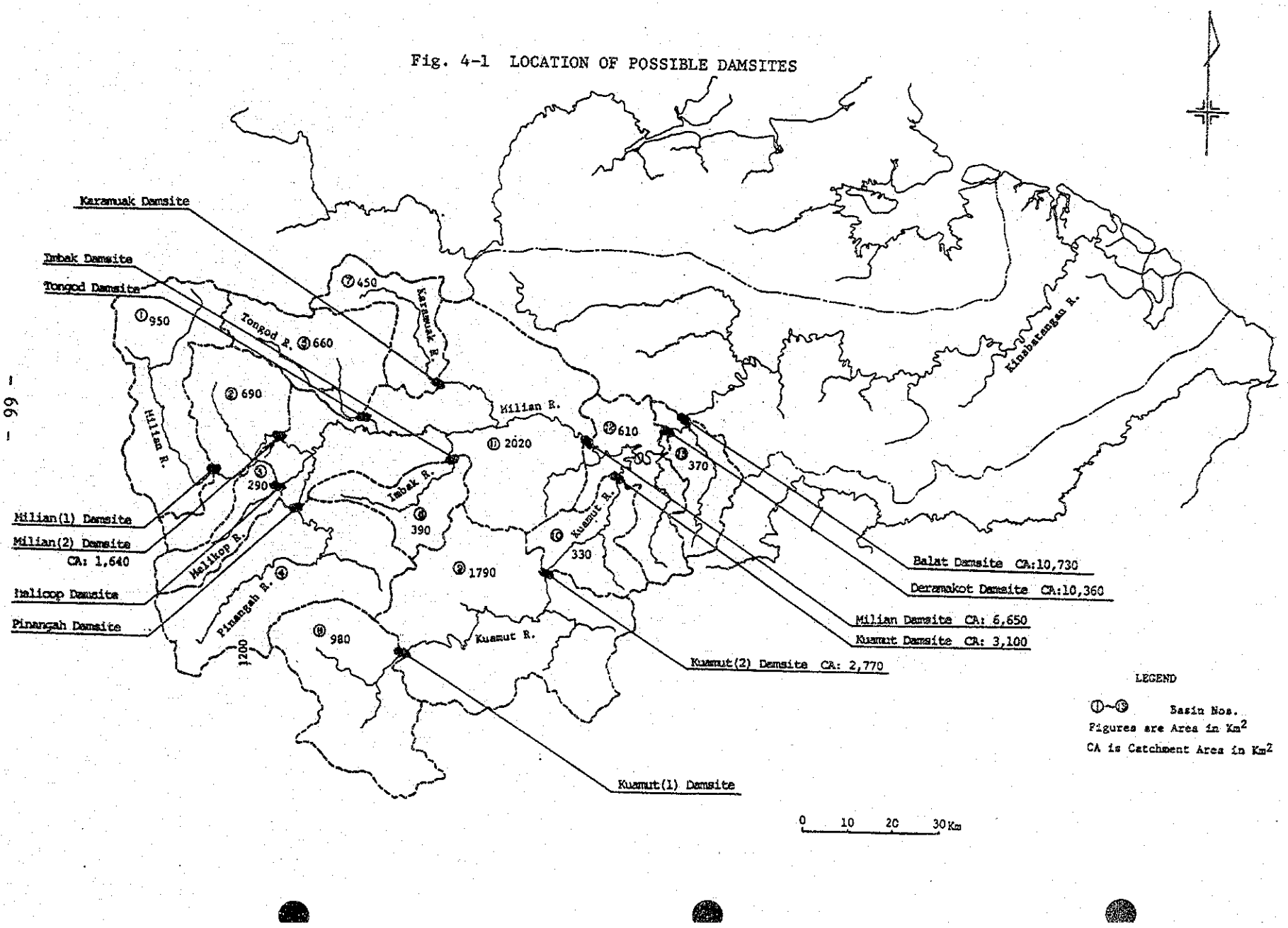


Fig. 4-2 DISTRIBUTION OF KAMPUNG BY GROUND HEIGHT

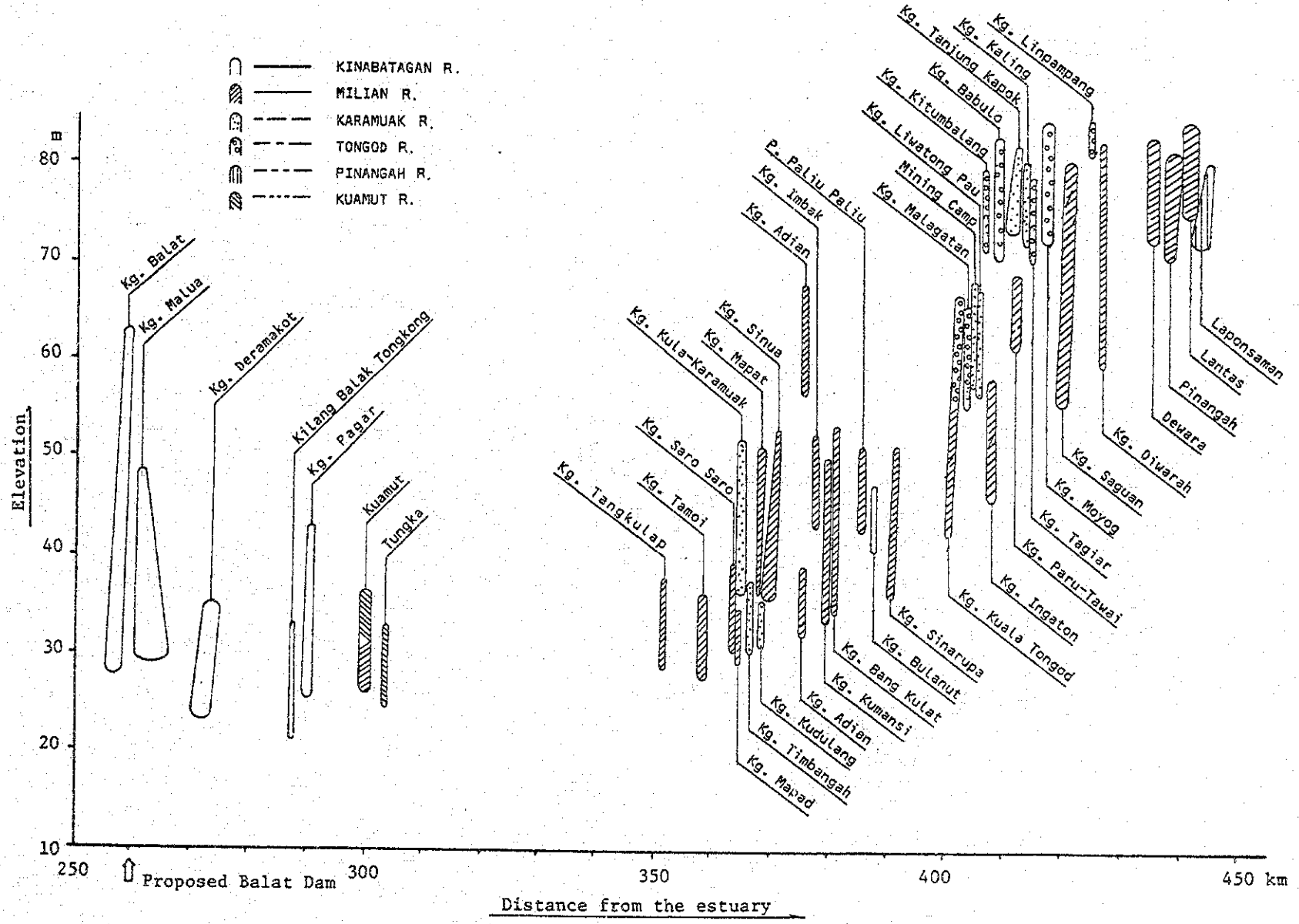


Fig. 4-3 SUBMERGED AREA BY BALAT DAM

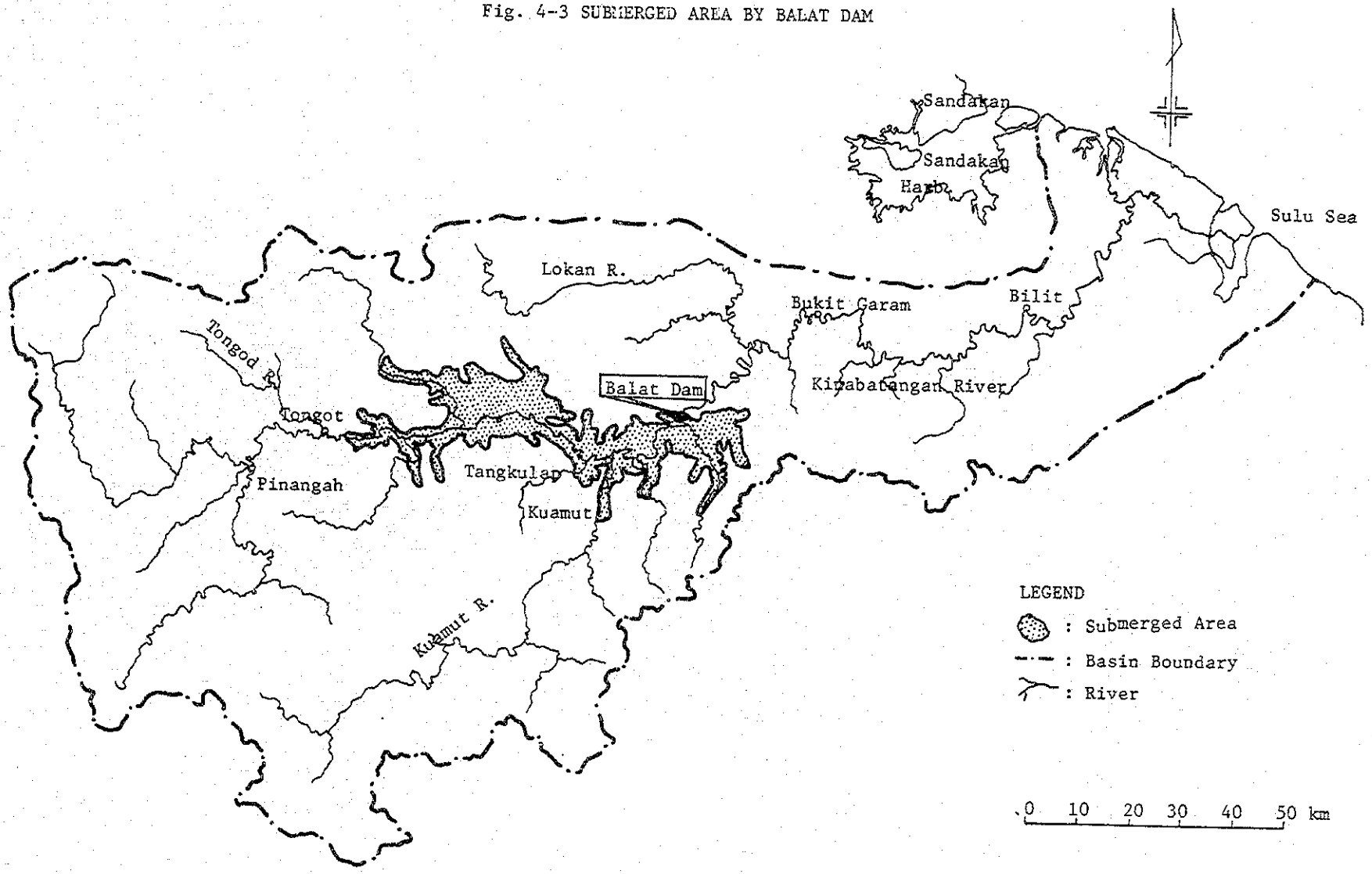
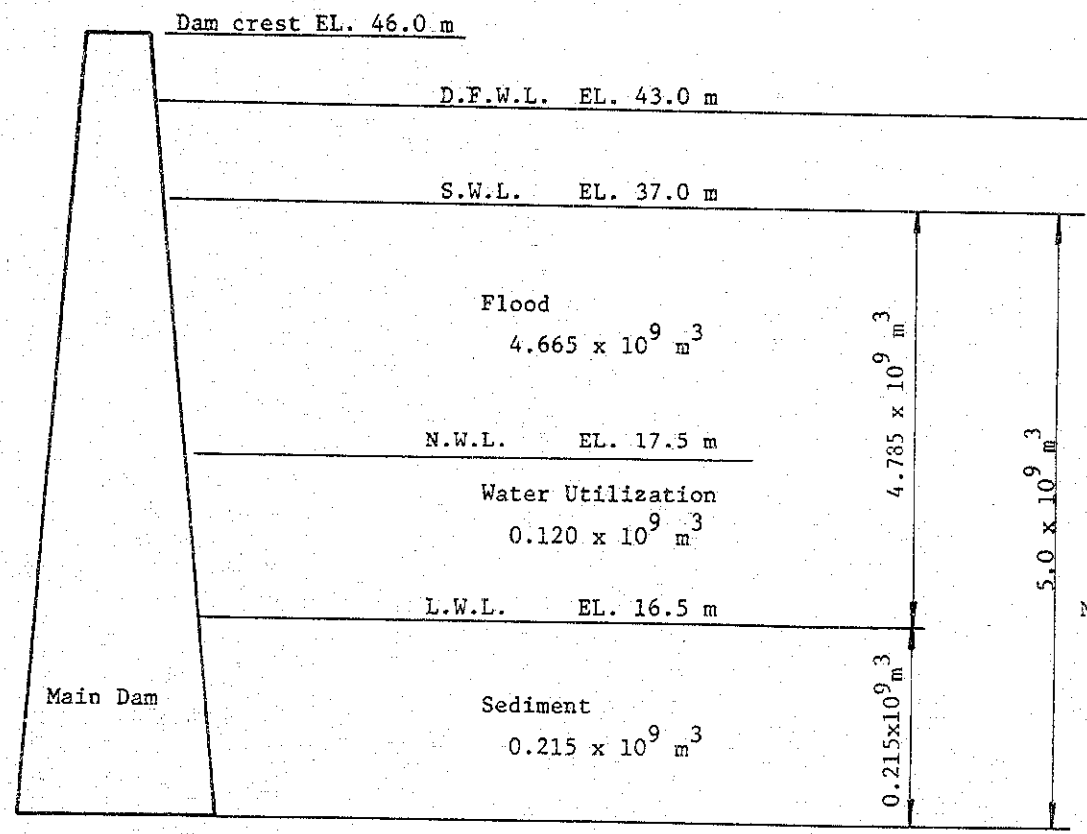


Fig. 4-4 ALLOCATION OF RESERVOIR STORAGE CAPACITY



Note :

D.F.W.L.: Design Flood Water Level
S.W.L. : Surcharge Water Level
N.W.L. : Normal Water Level
L.W.L. : Low Water Level

Fig. 4-5 DISTRIBUTION OF STANDARD PROJECT AND DESIGN FLOOD DISCHARGE

Unit : m^3/s

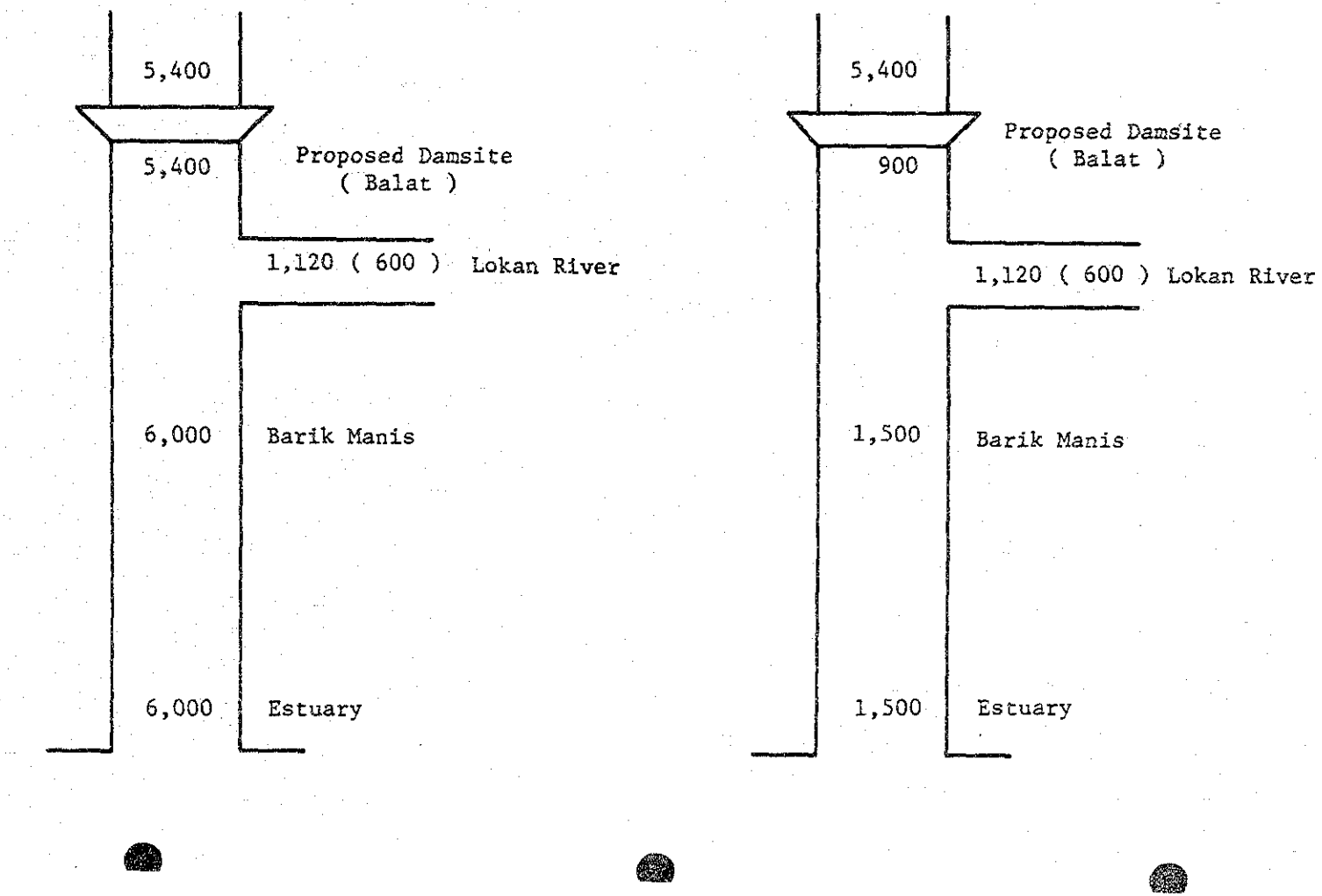
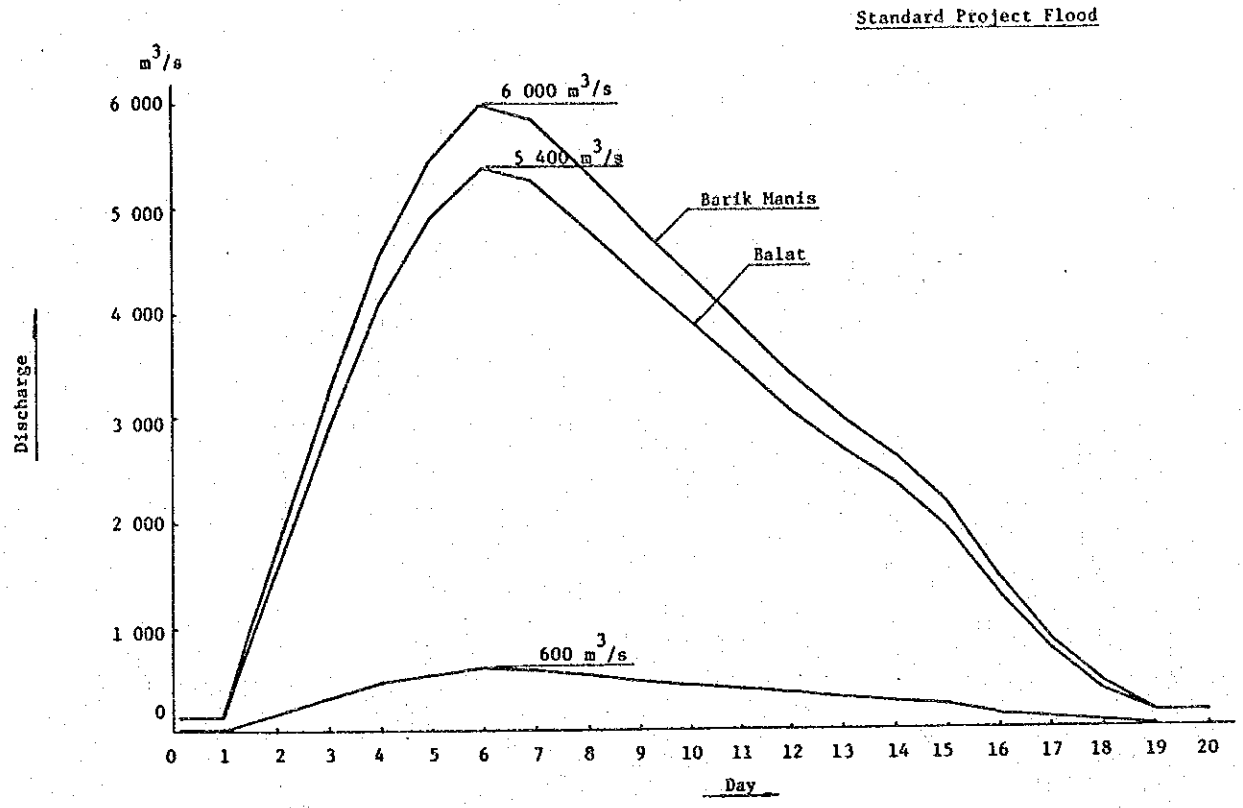


Fig. 4-6 HYDROGRAPHS OF STANDARD PROJECT AND DESIGN FLOOD



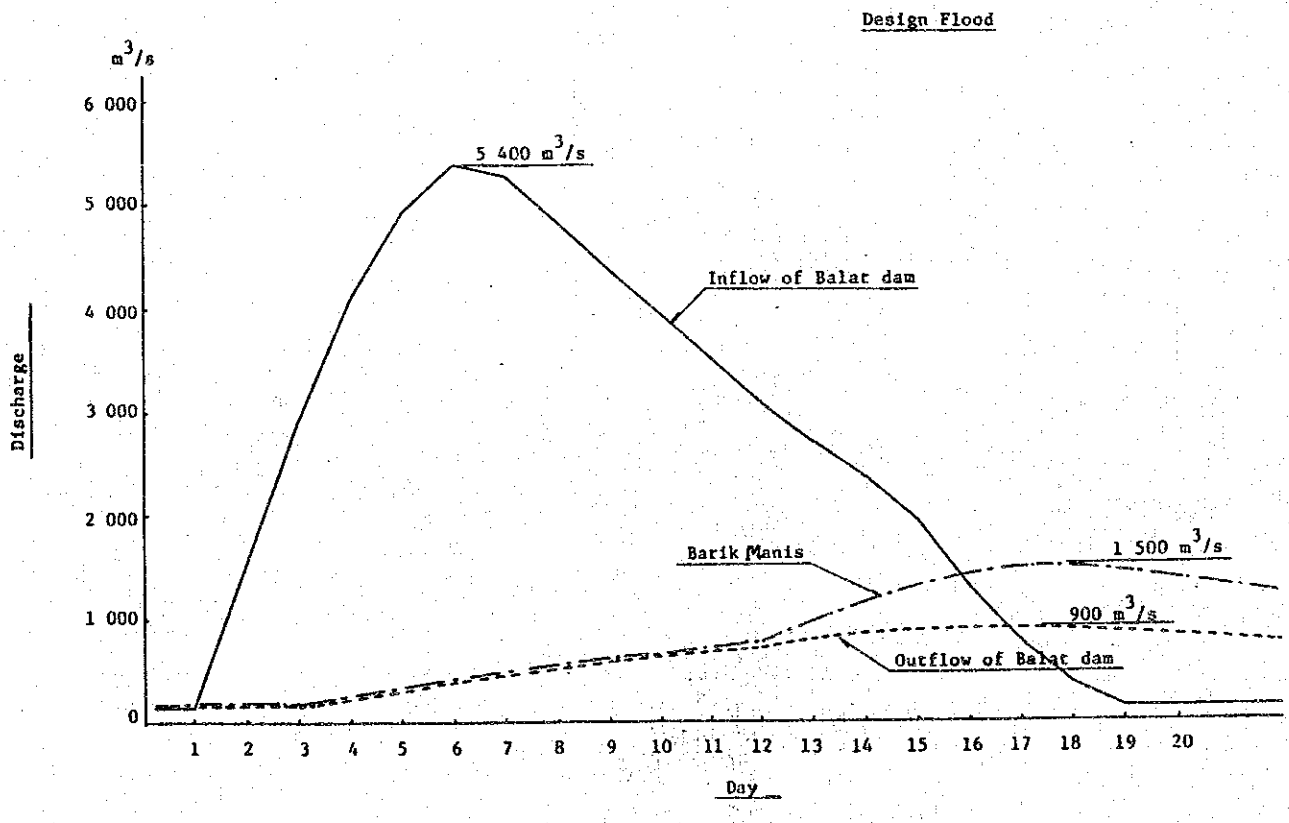


Fig. 4-7 LEAST CONSTRUCTION COST OF DAM AND RIVER IMPROVEMENT

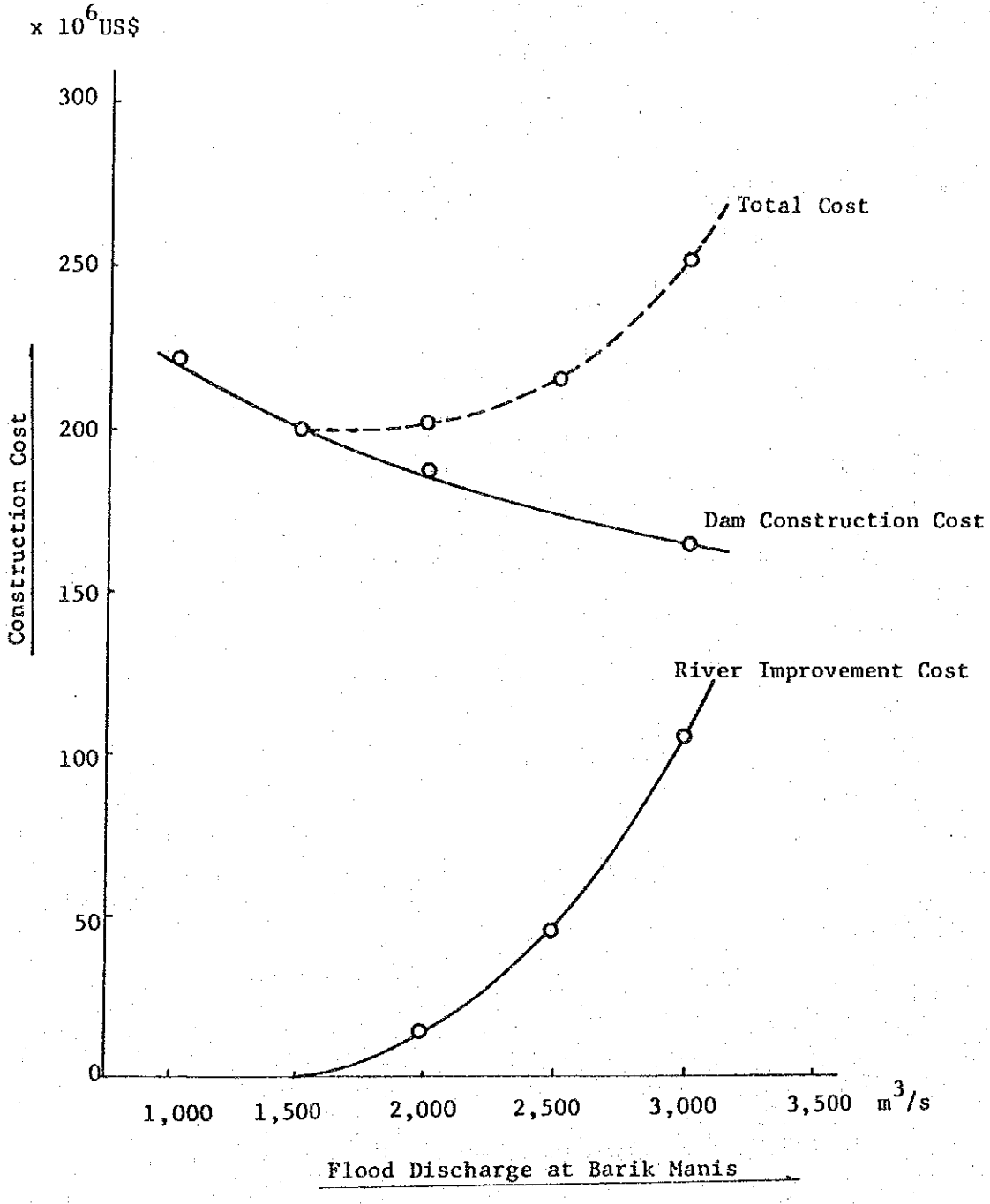


Fig. 4-8 POTENTIAL AGRICULTURAL DEVELOPMENT AREA

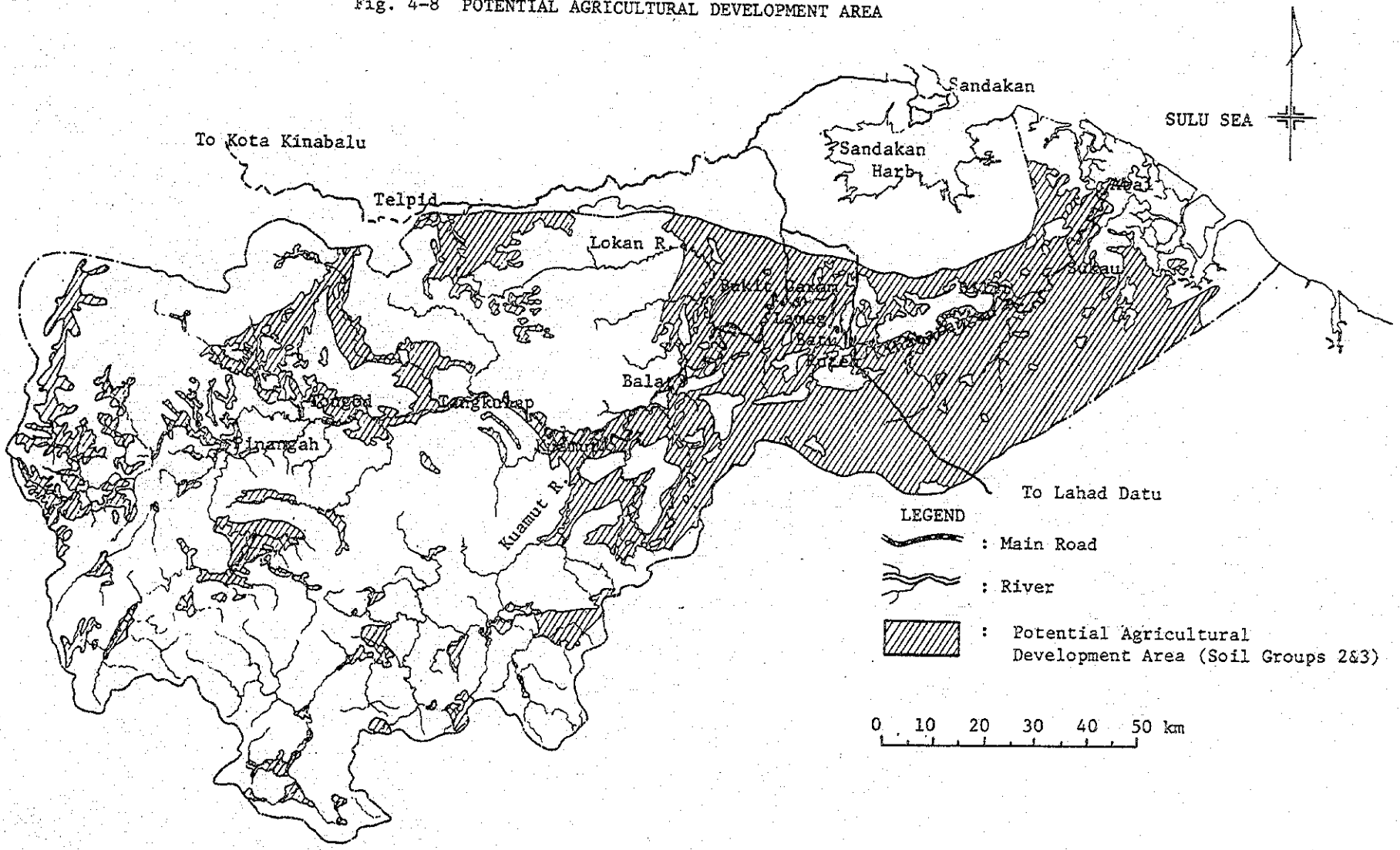


Fig. 4-9 PROPOSED AGRICULTURAL DEVELOPMENT AREA

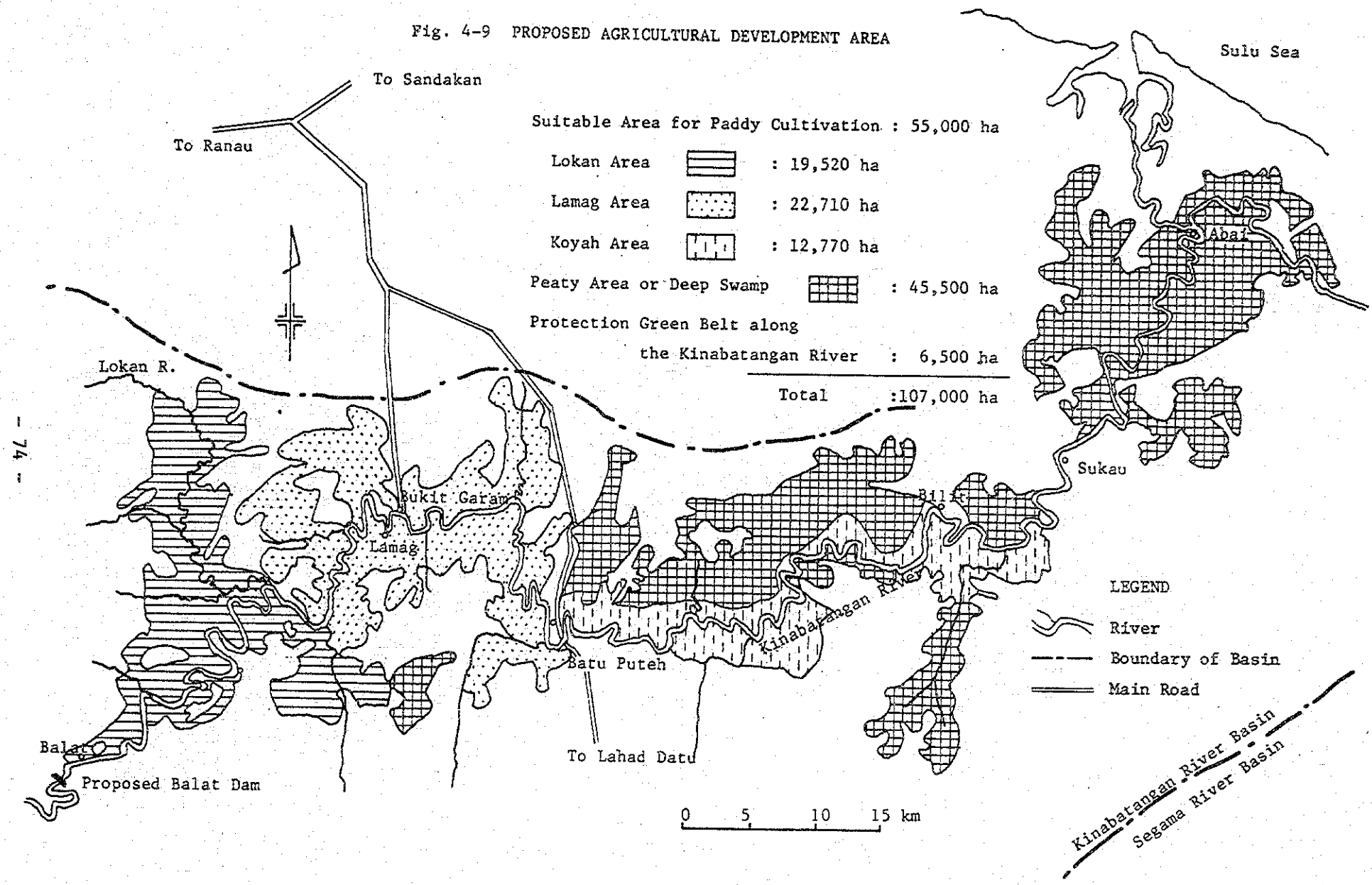
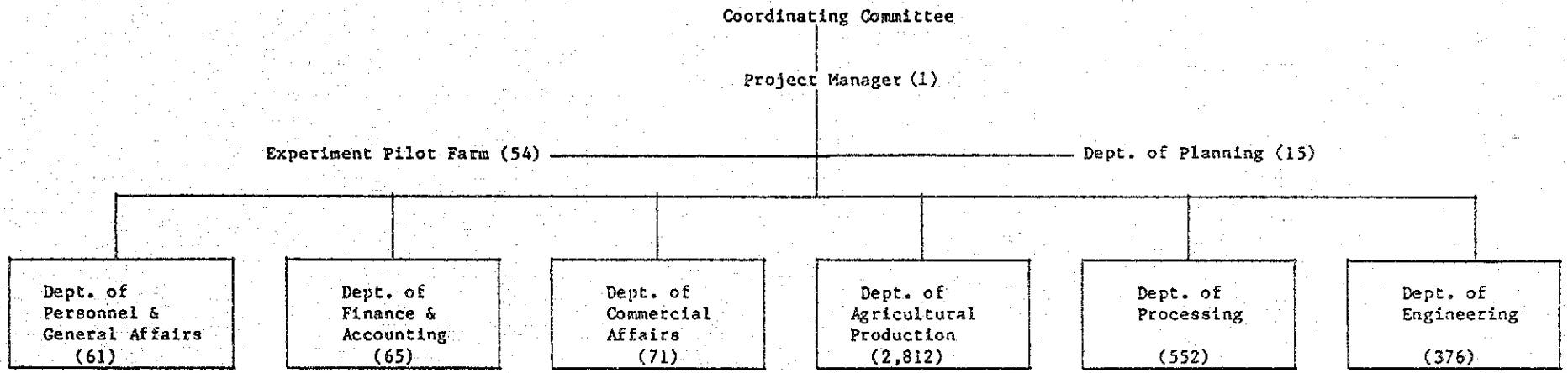


Fig. 4-10 FARMING ORGANIZATION



Note : Total required manpower would be 4007.

( ) ; Number of required stuff.

Fig. 4-11 PROPOSED CROPPING PATERN AND METEOROLOGICAL CONDITION

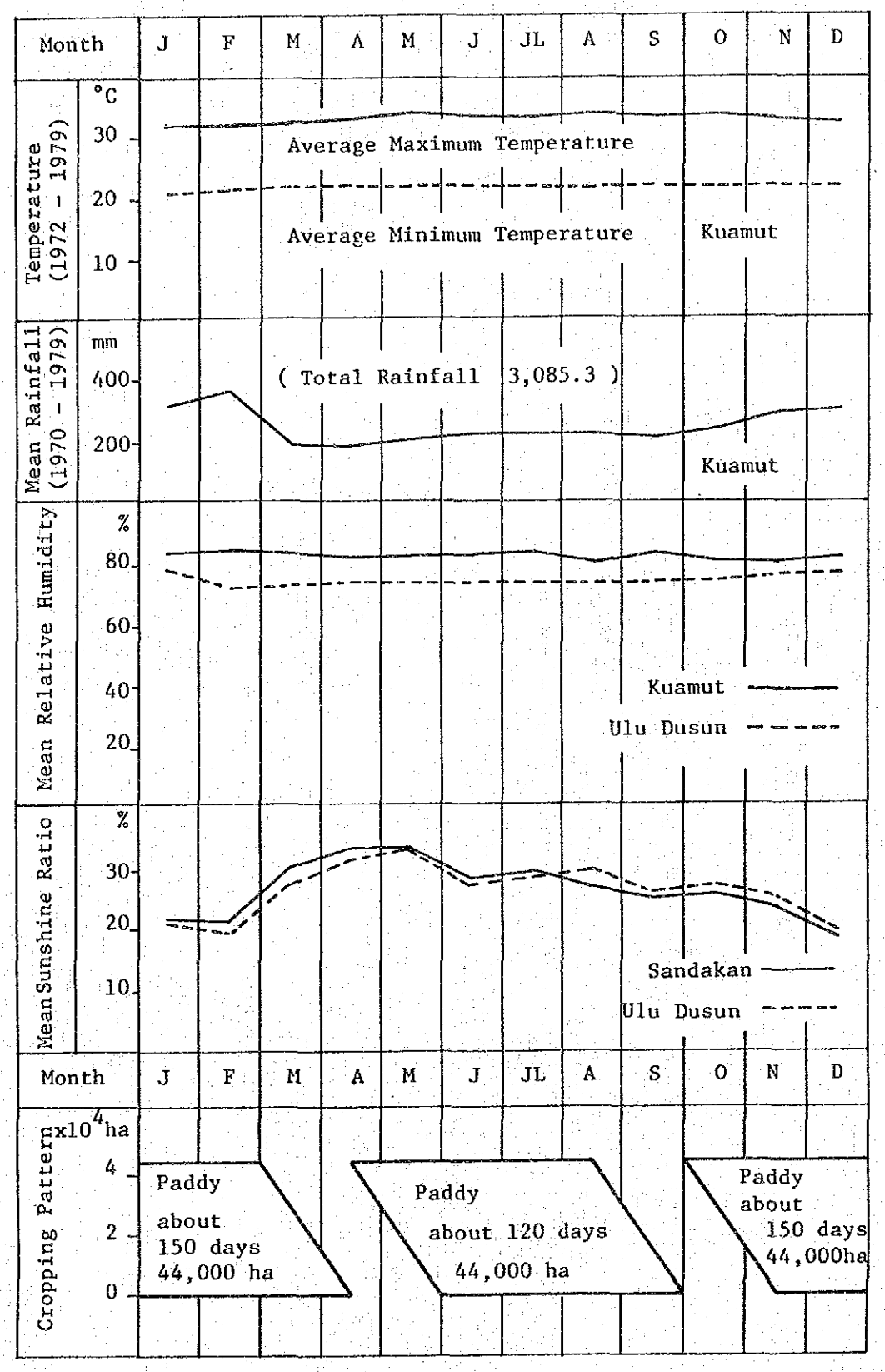


Fig. 4-12 PROPOSED AREA FOR PADDY DEVELOPMENT

Lokan Area : ▤ Lamag Area : ▦ Koyah Area : ▥

Block No.	Area (ha)
1	860
2	960
3	2,750
4	3,780
5	1,130
6	2,220
7	1,880
8	1,240
9	810
Total	15,630

Block No.	Area (ha)
10	1,860
11	2,960
12	4,240
13	2,780
14	2,120
15	2,960
16	1,240
Total	18,160

Block No.	Area (ha)
17	2,160
18	1,010
19	1,000
20	1,860
21	1,180
22	1,610
23	1,390
Total	10,210

LEGEND
○ : Block Number (23 blocks)
● : Proposed Rice Mill (11 places)
★ : Proposed Pumping Station (23 stations)

Proposed area for paddy development : 44,000 ha.

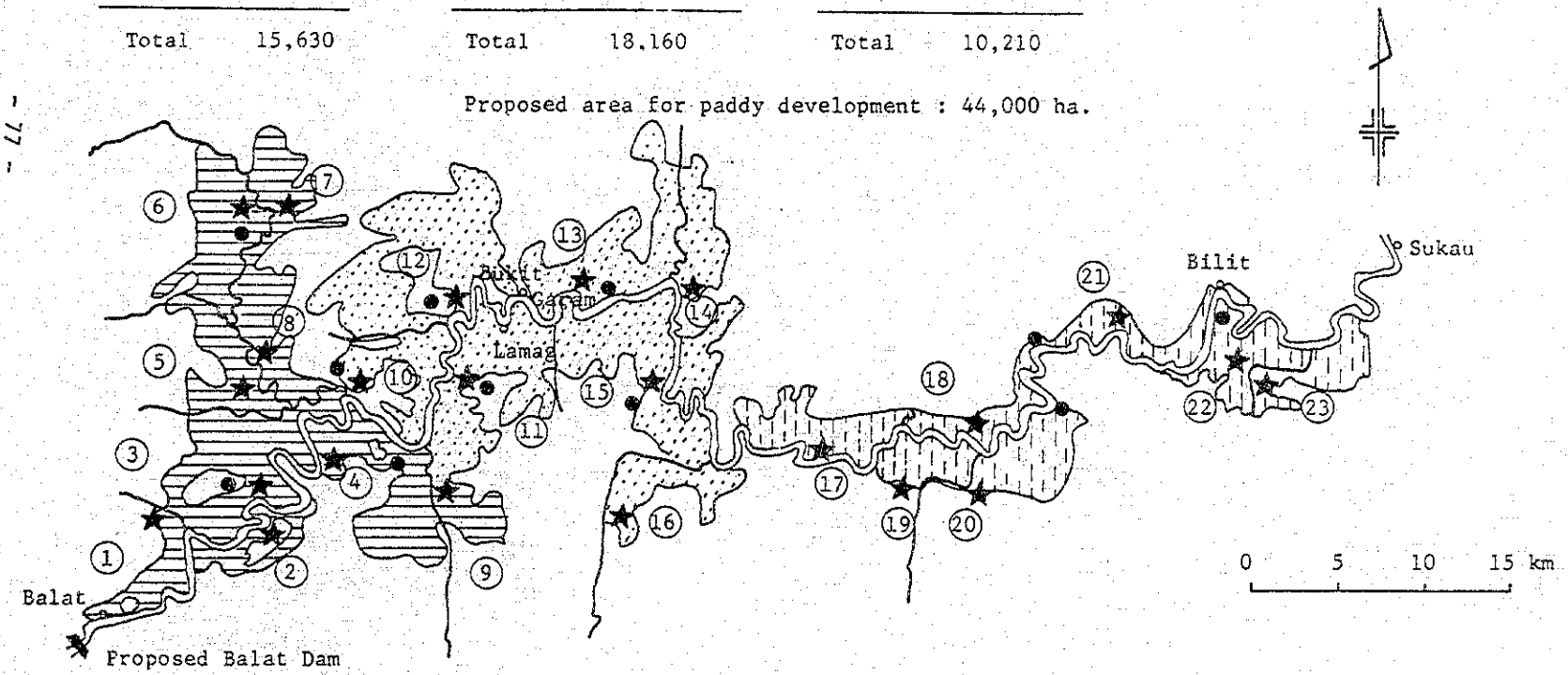


Fig. 4-13 REQUIRED RESERVOIR CAPACITY FOR WATER REQUIREMENT

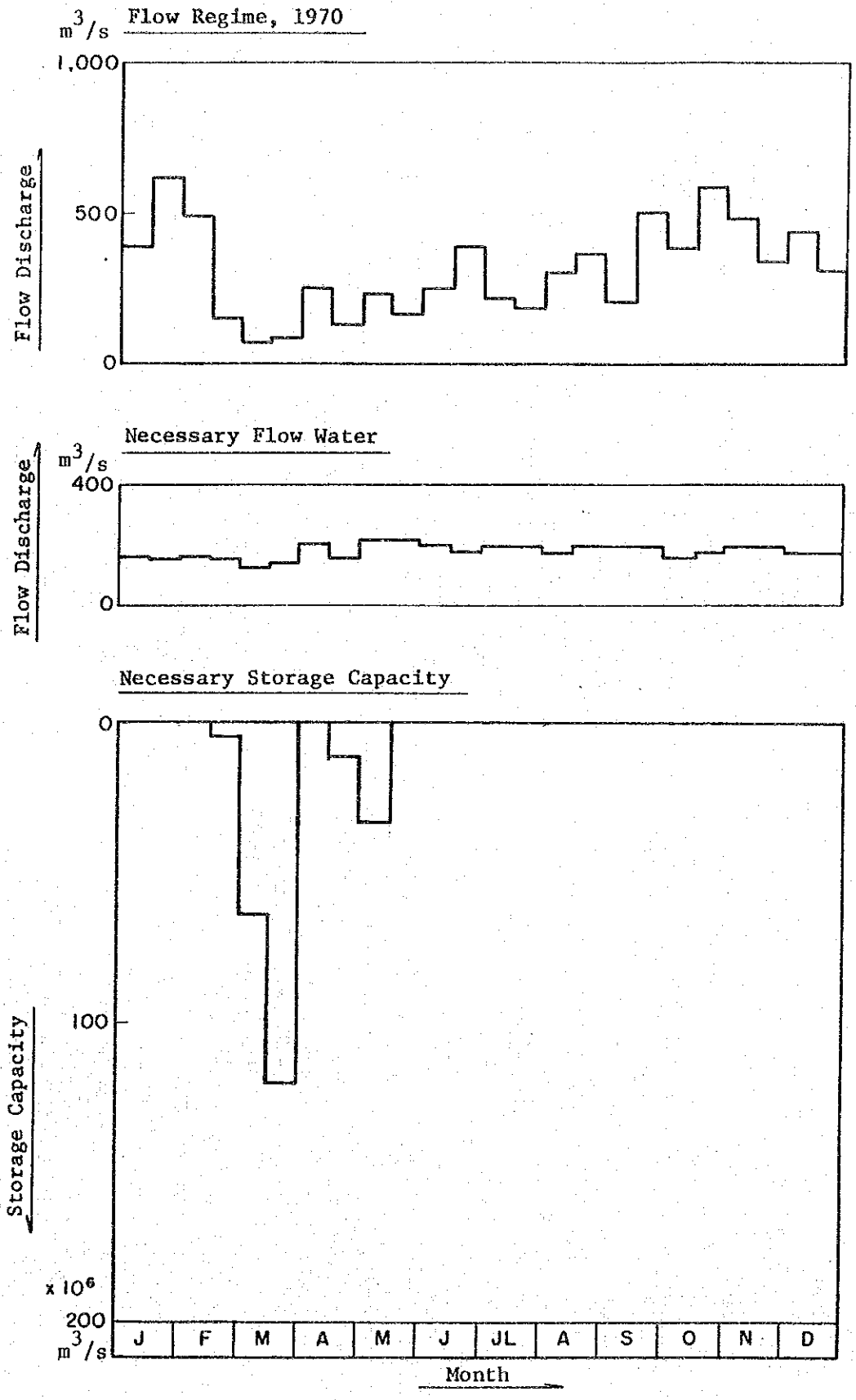


Fig. 4-14 FLOW DIAGRAM OF MAXIMUM DIVERSION REQUIREMENT

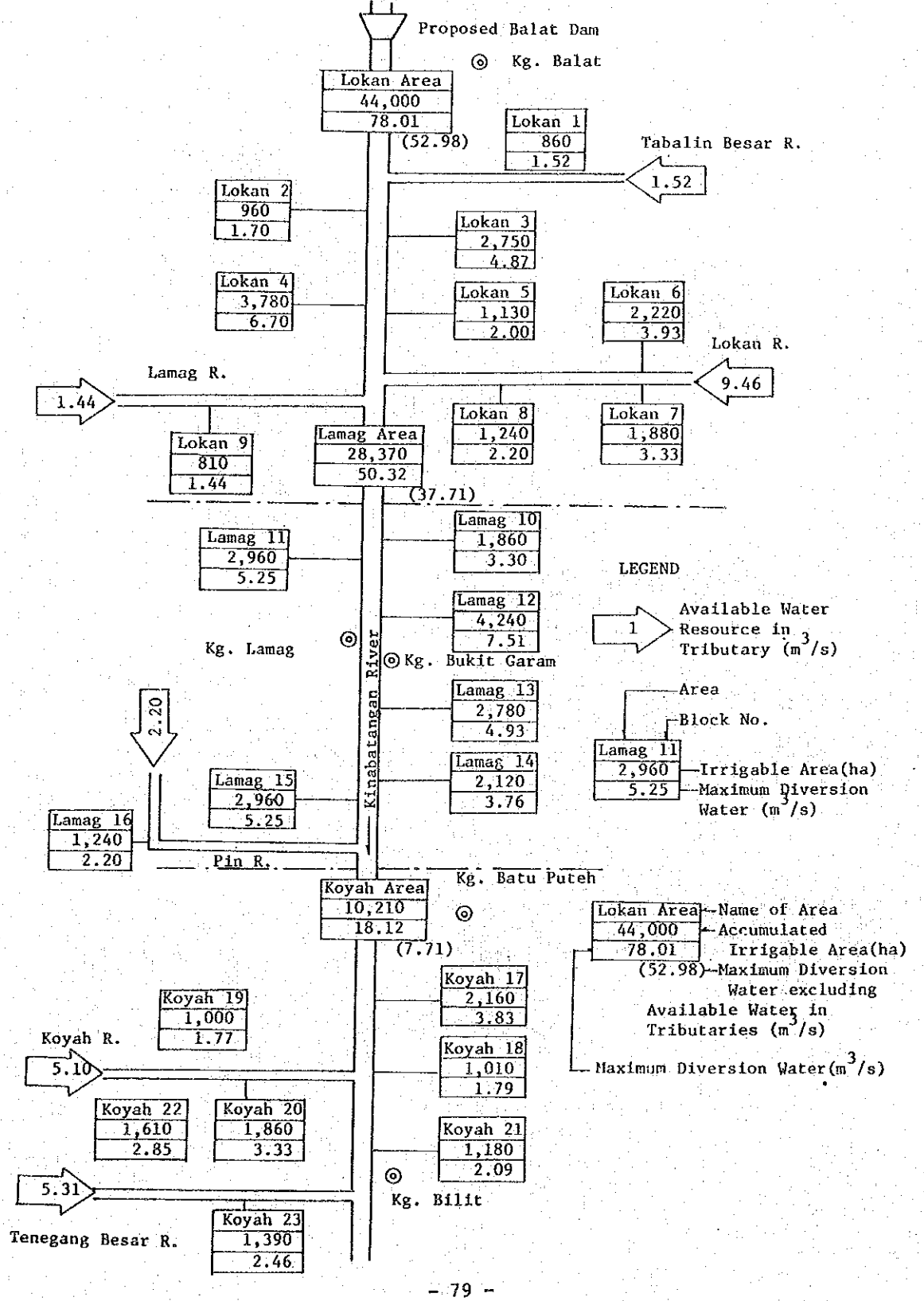


Fig. 4-15 COMPARISON OF GENERATING TYPE

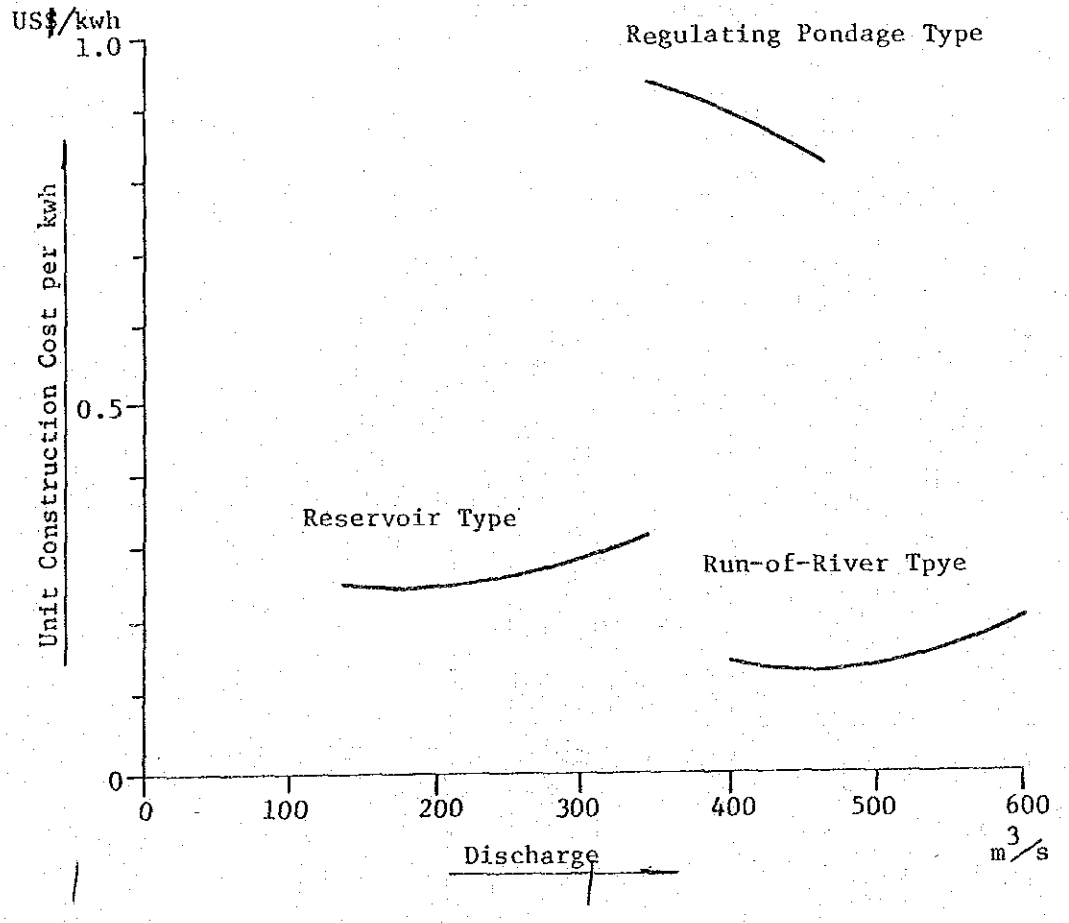


Fig. 4-16 ROUTE MAP OF TRANSMISSION LINE

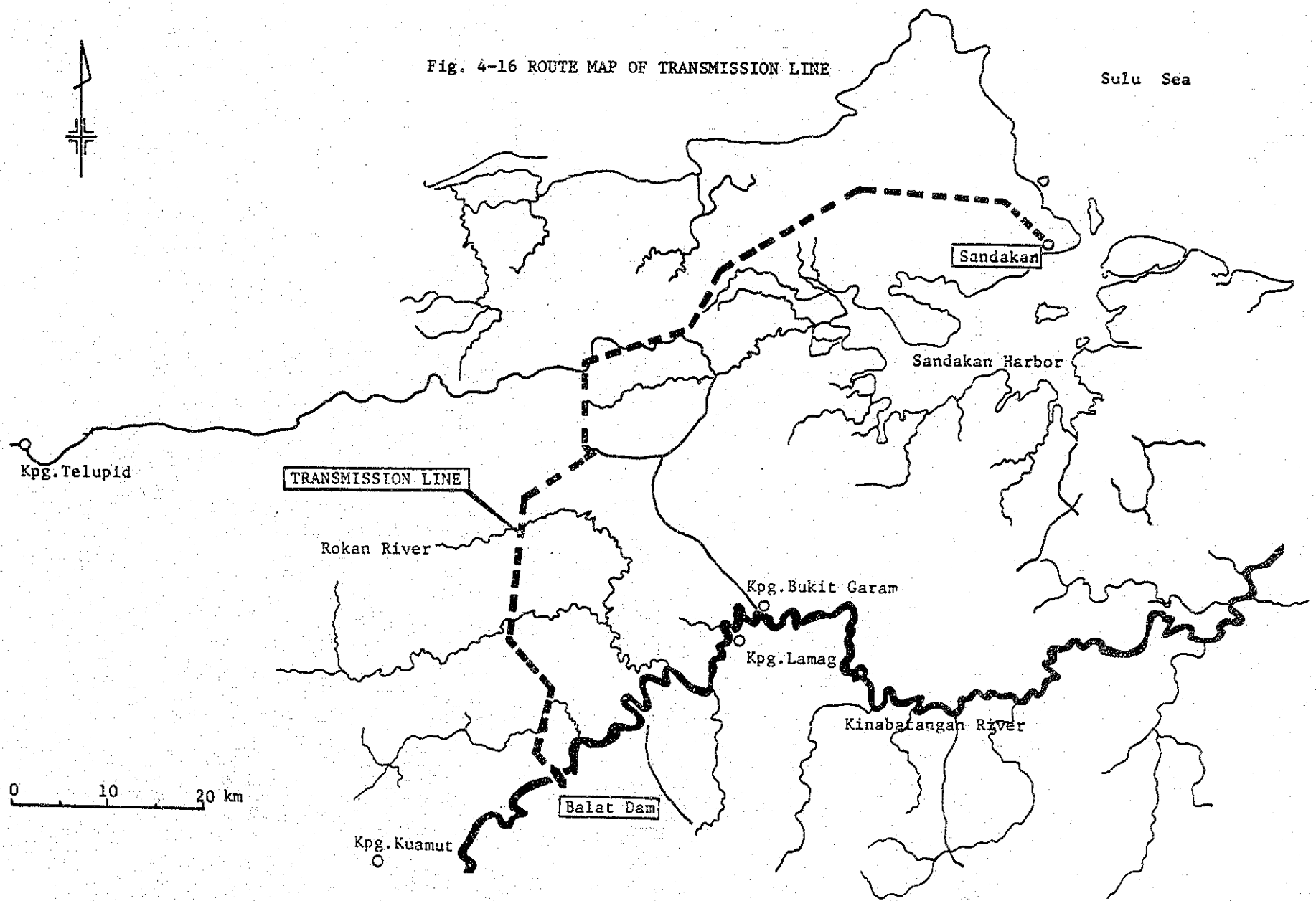


Fig. 5-1 PLAN OF BALAT DAM

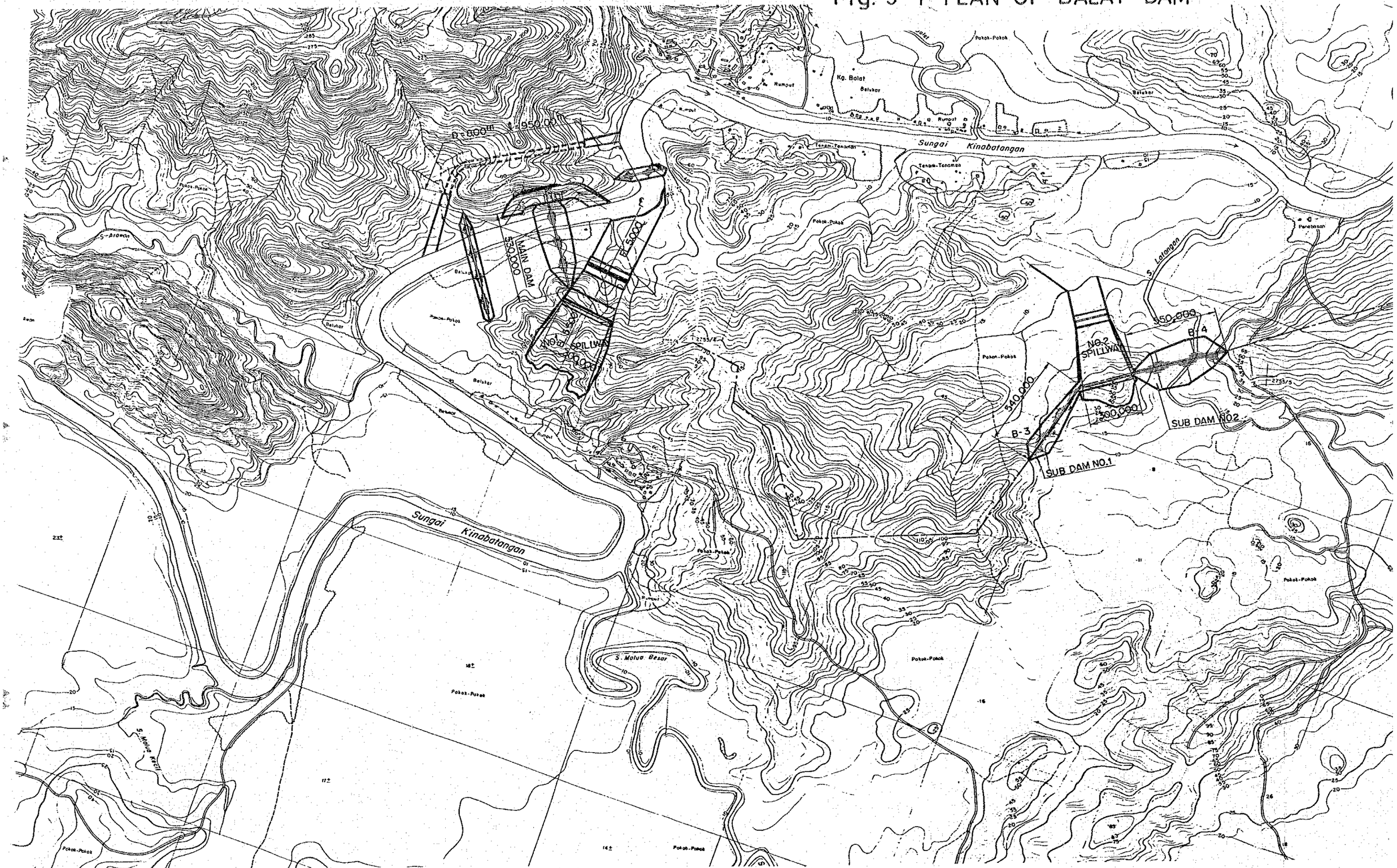
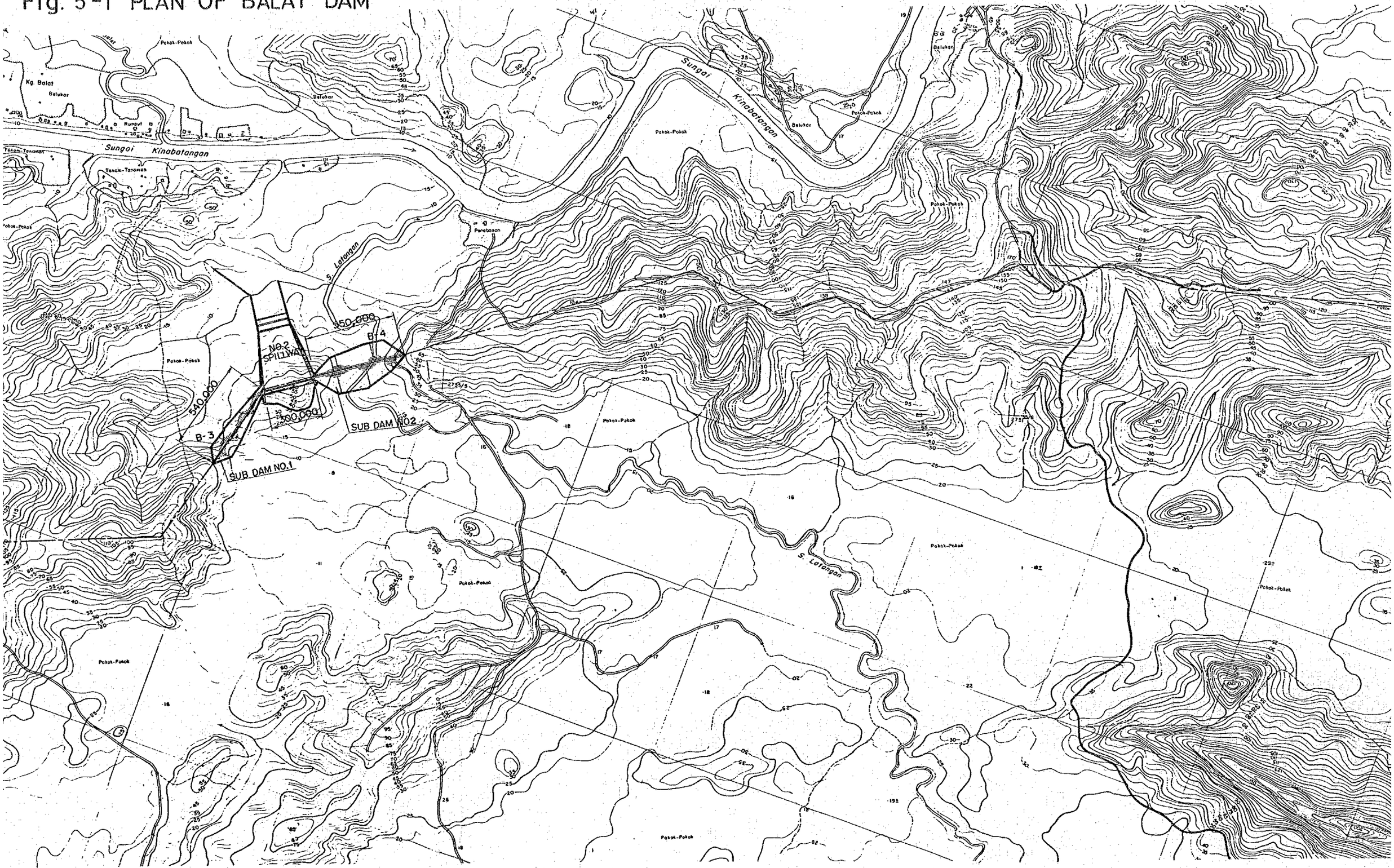


Fig. 5-1 PLAN OF BALAT DAM



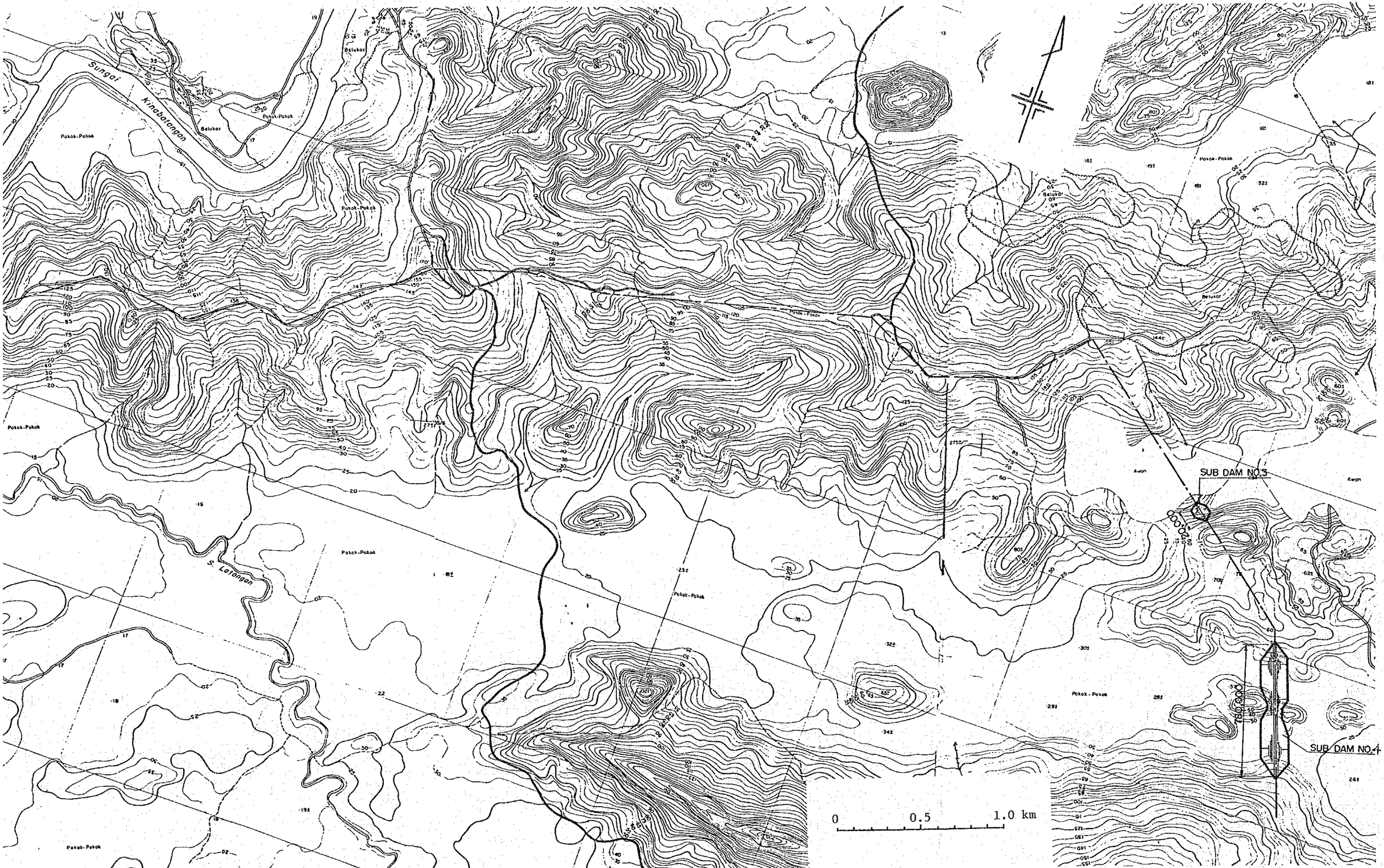

Sungai Kinabalangan
S. Latungan
SUB DAM NO.3
SUB DAM NO.4
0
0.5
1.0 km

Fig. 5-2 PROFILE ALONG AXIS OF DAM

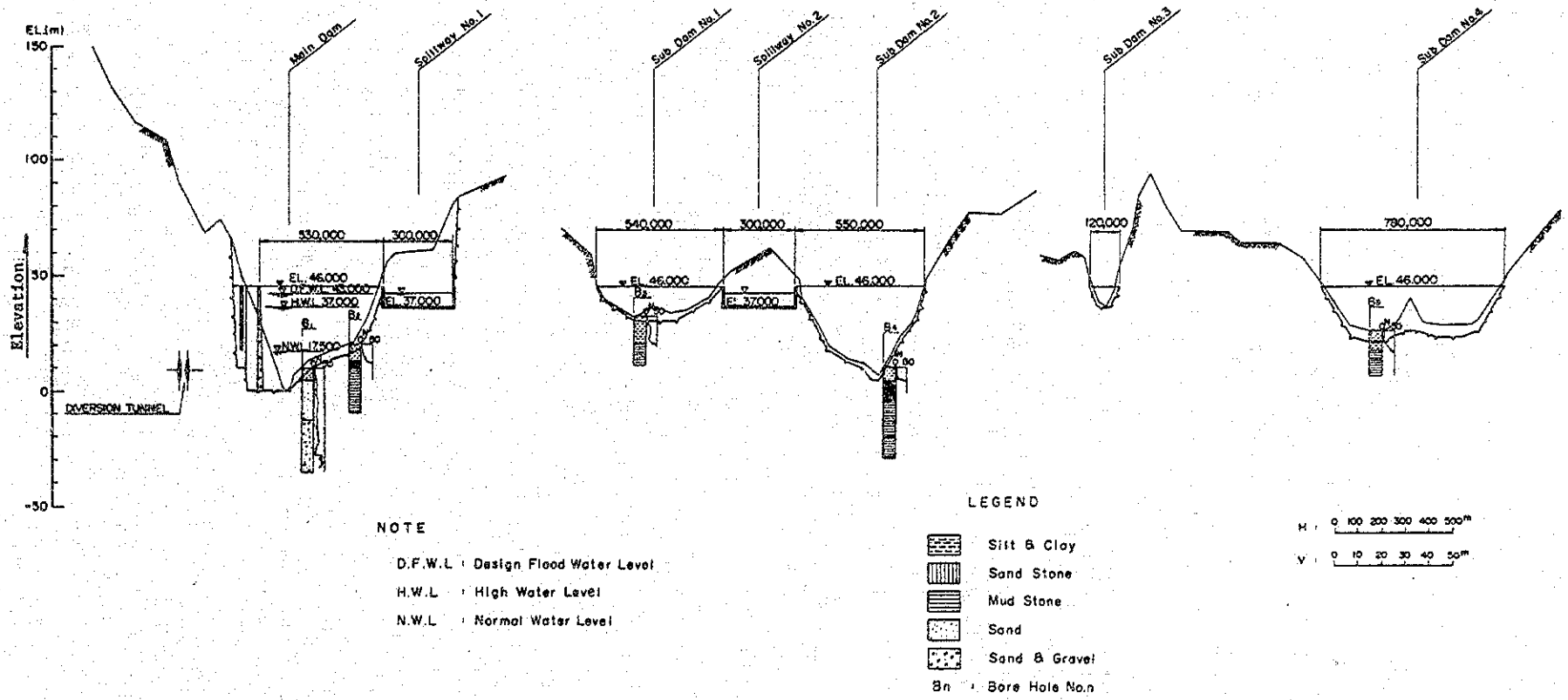
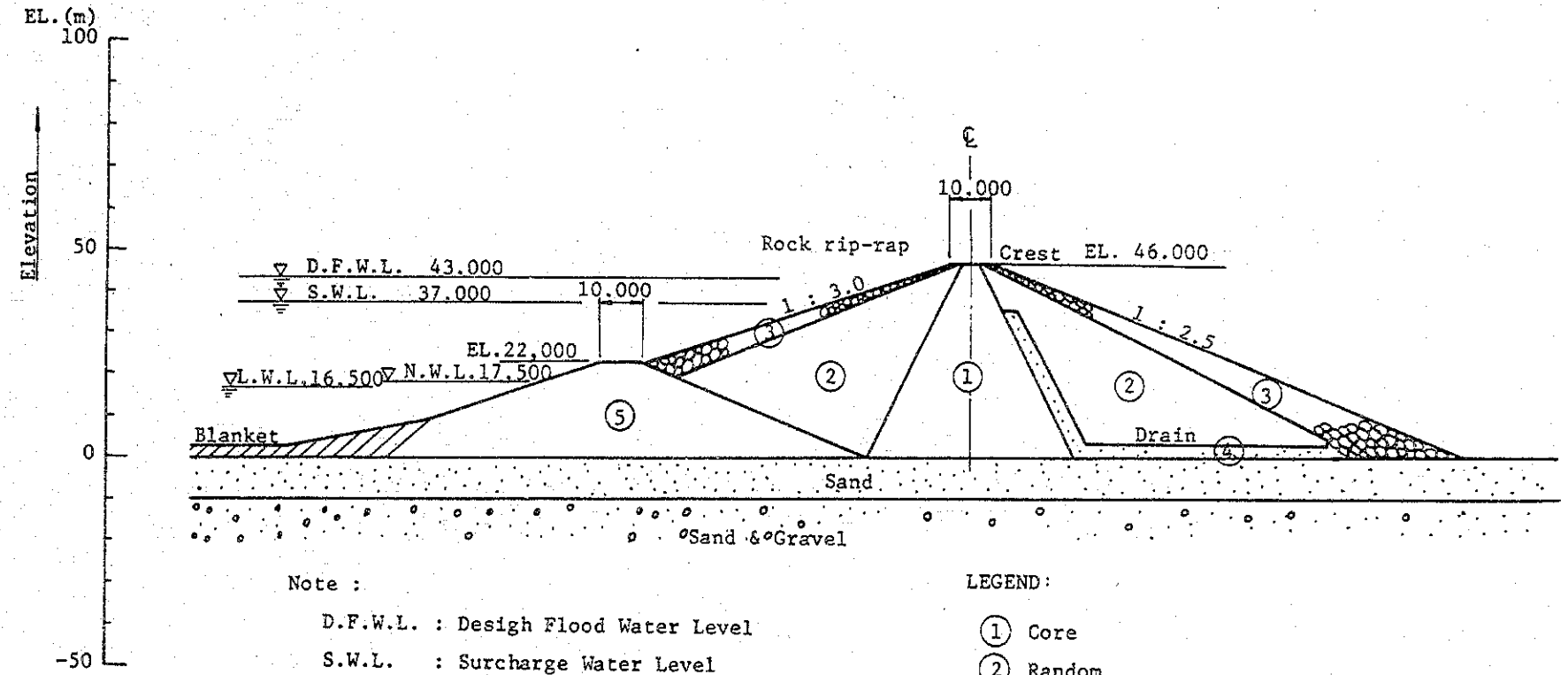


Fig. 5-3 TYPICAL CROSS-SECTION OF DAM



Note :

D.F.W.L. : Desigh Flood Water Level
S.W.L. : Surcharge Water Level
N.W.L. : Normal Water Level
L.W.L. : Low Water Level

LEGEND:

(1) Core
(2) Random
(3) Rock
(4) Drain
(5) Coffer Dam

0 10 20 30 40 50m

Fig. 5-4 PLAN OF OUTLET FACILITY

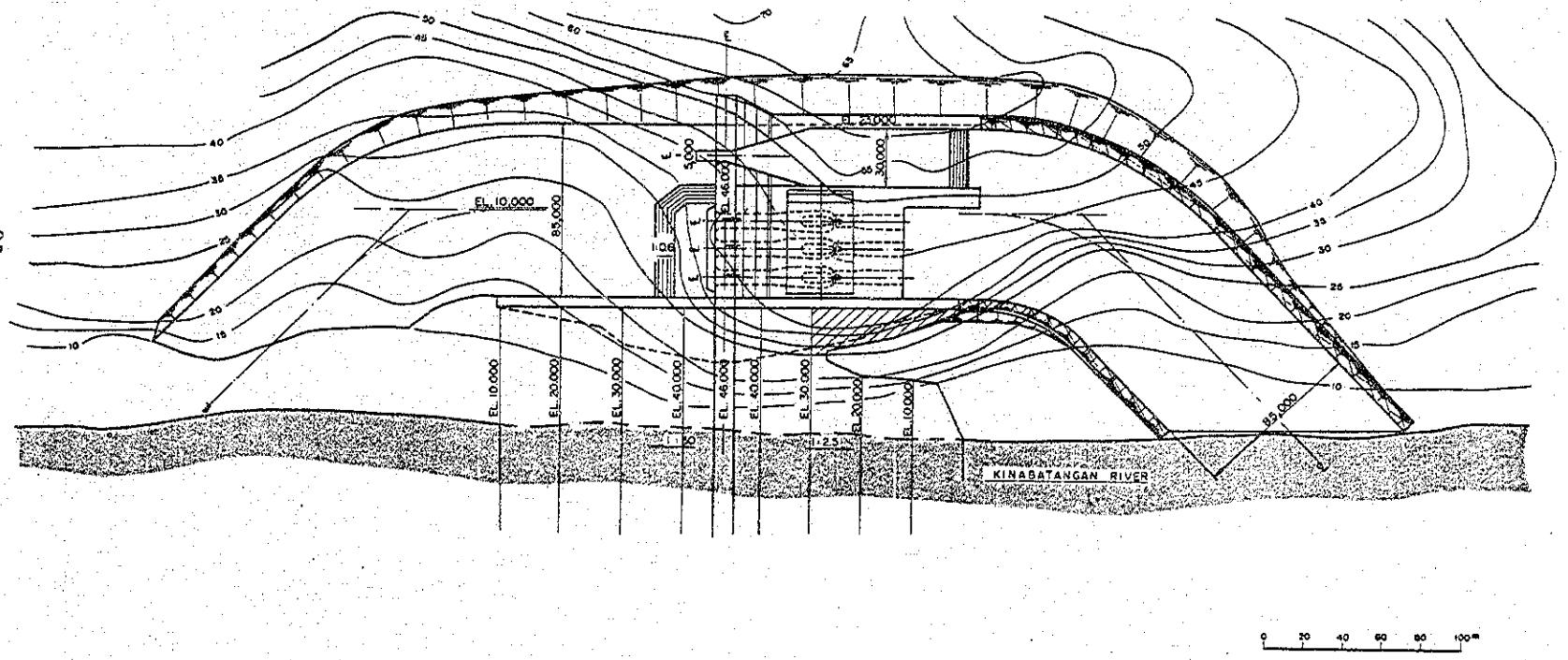


Fig. 5-5 TYPICAL LAYOUT OF FIELD STRUCTURE

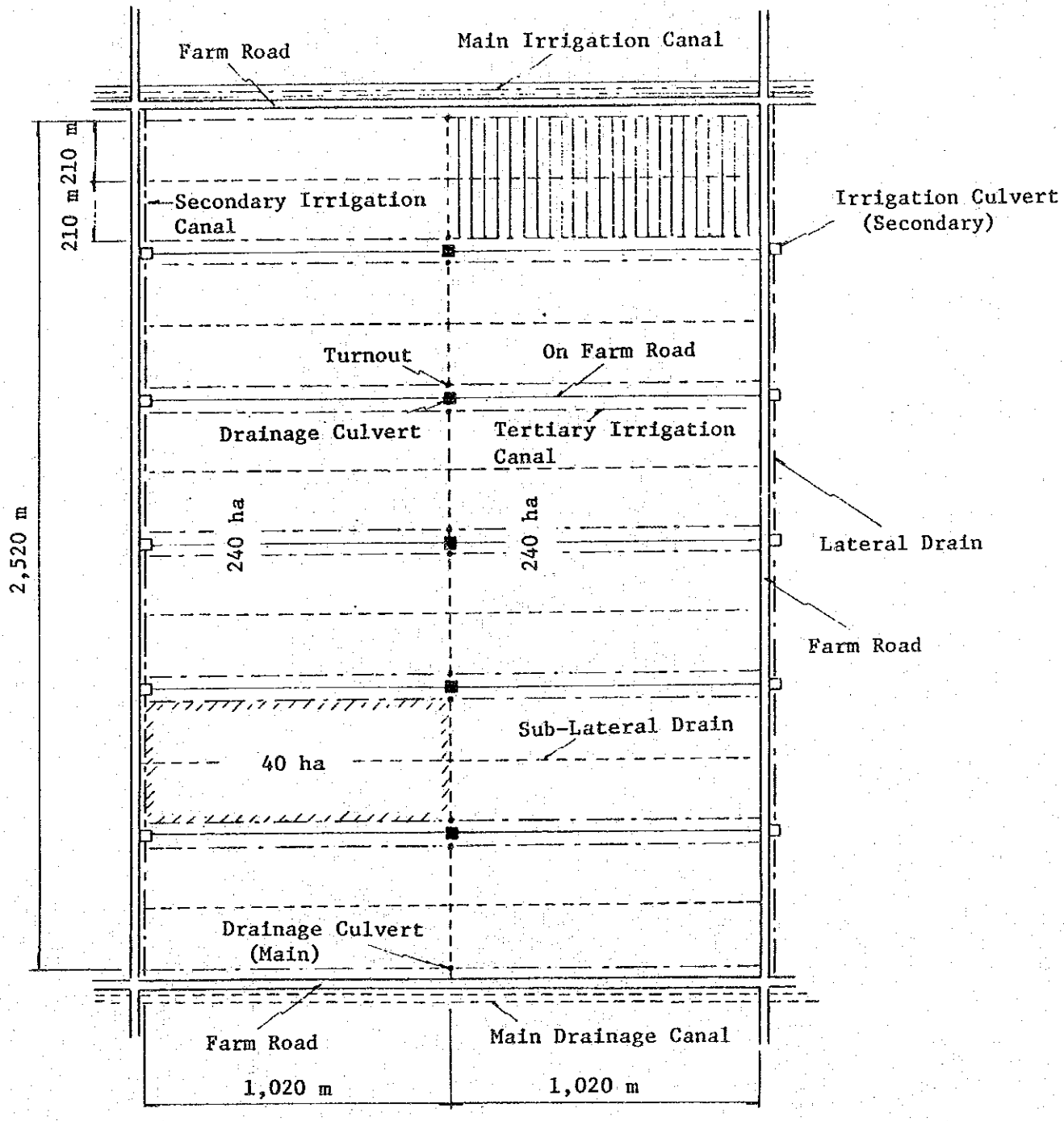


Fig. 5-6 PLAN AND CROSS-SECTION OF HYDRO POWER STATION

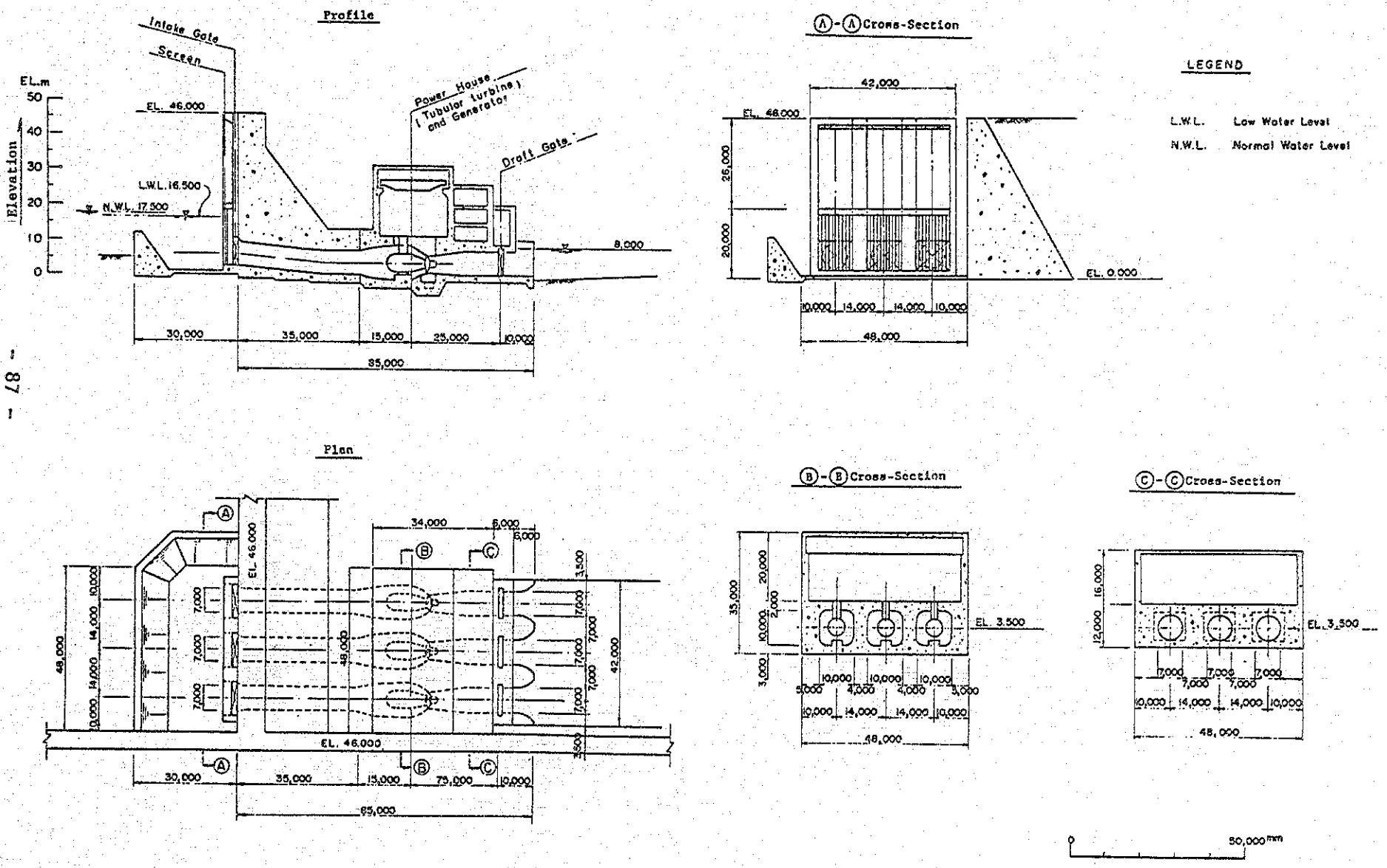
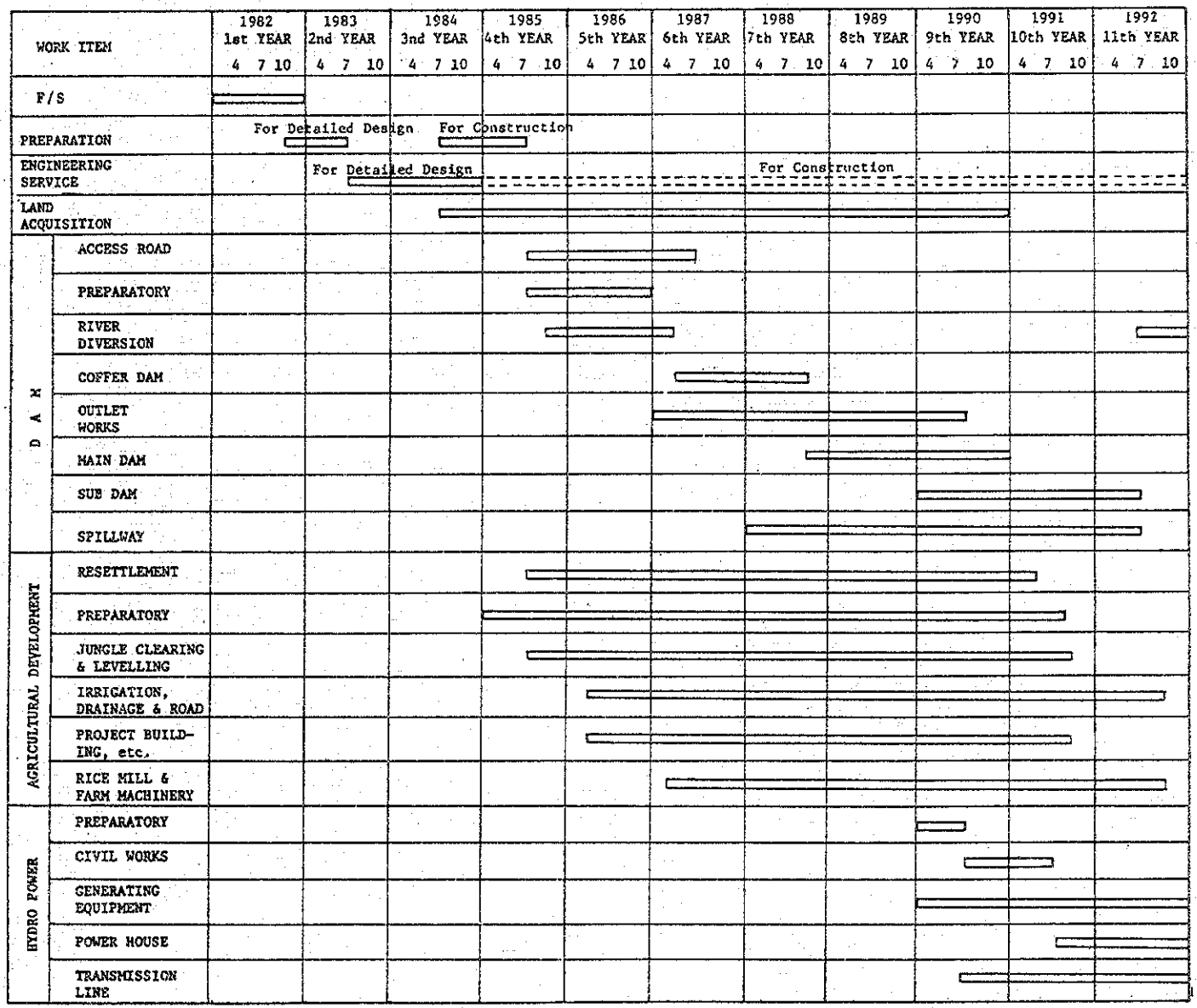


Fig. 6-1 CONSTRUCTION SCHEDULE



付　　録

付録　管理委員会および調査団名簿

Advisory Committe

Head	Mr. Eiichi Yoshitake
Flood Control	Mr. Mitsuaki Mizuno
Regional Plan	Mr. Keiichi Inoue
Agricultural Development Plan	Mr. Masataka Kurosawa
Hydro Power	Mr. Masatoshi Furuichi (1st Stage)
- do -	Mr. Isao Yamamoto (2nd Stage)
Power Development Plan	Mr. Masao Makino
Coordinator	Mr. Hitonori Ono

Survey Team

Team Leader	Mr. Katsuhisa Abe
Hydrologist	Mr. Makoto Migita (1st Stage)
- do -	Mr. Kazumi Nobe (2nd Stage)
Geologist	Mr. Takuji Murakami
Flood Control Engineer	Mr. Akio Shichijugari
Dam and Hydro Power Engineer	Mr. Tadashi Kudo
Irrigation Engineer	Mr. Takafumi Suzuki
Agronomy	Mr. Keisaku Kobayashi
Regional Planner	Mr. Eiji Nishita
Socio-Economist	Mr. Yoshiharu Matsumoto

JICA