

FIGURES

FIG.-1.3.1 CLIMATE MAP OF THE PHILIPPINES

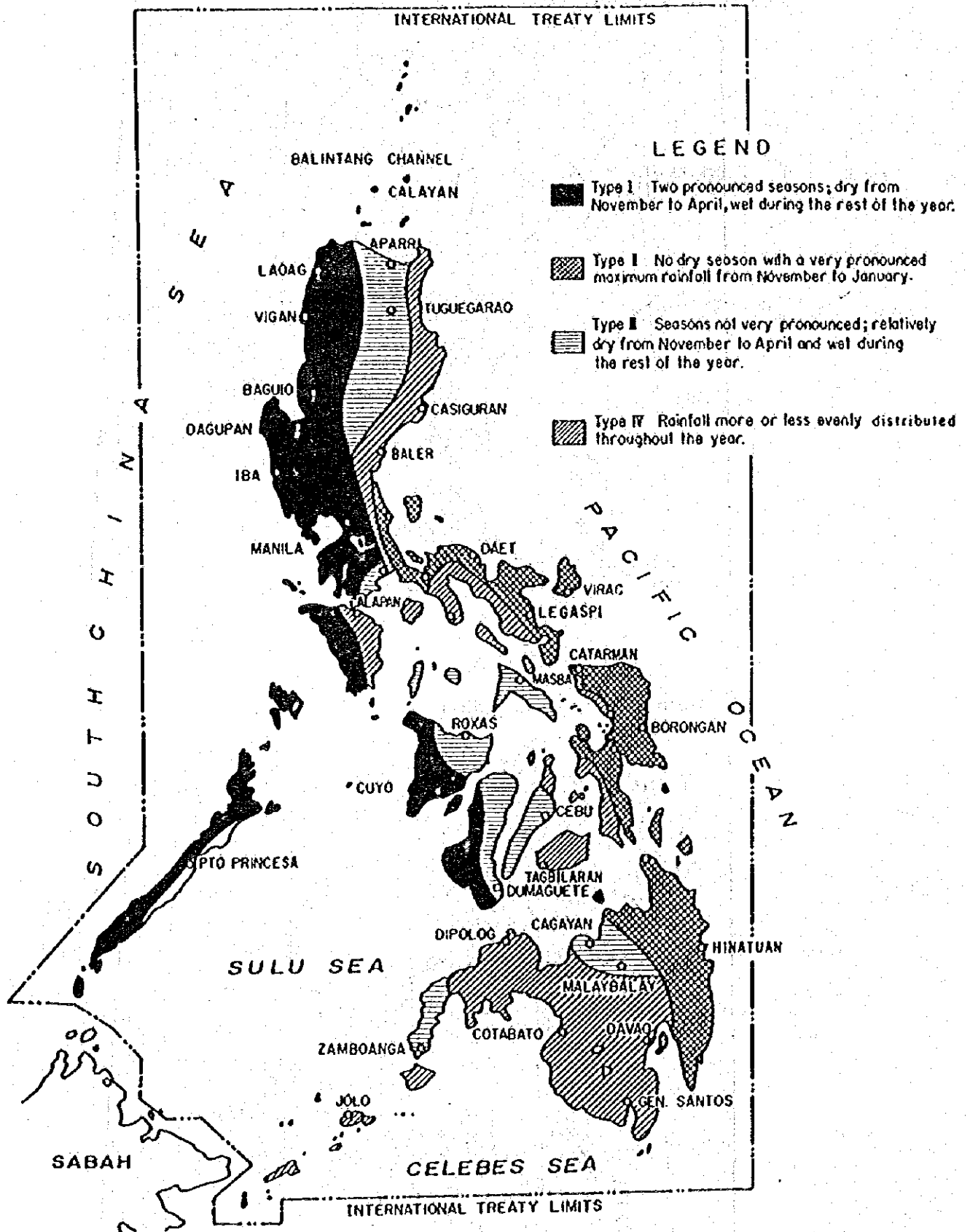
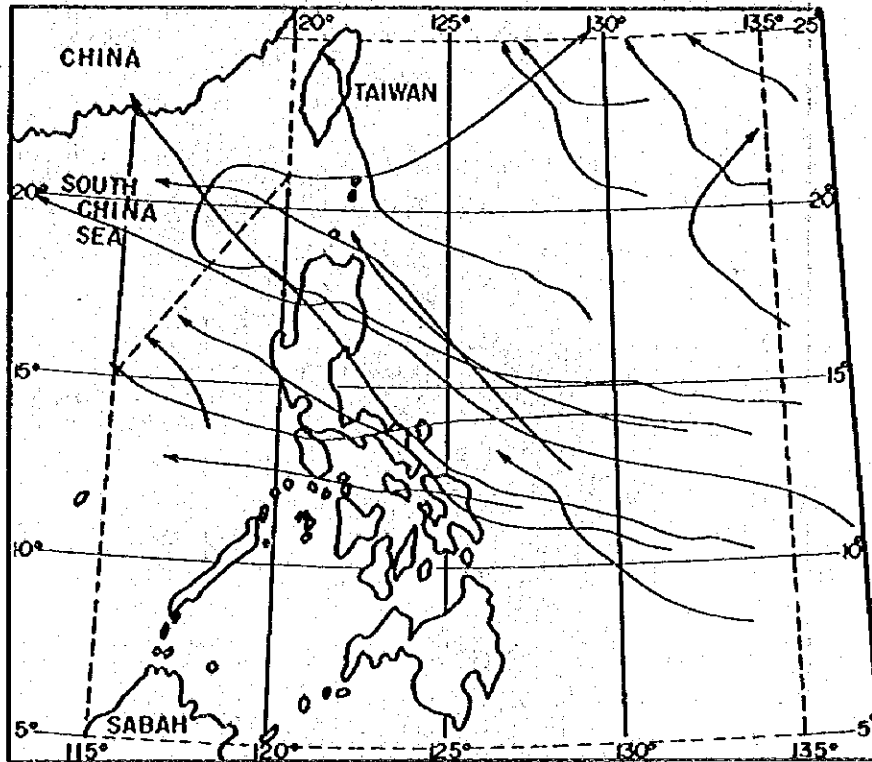


FIG.- 1.3.2 TROPICAL CYCLONE TRACKS

a) June and July



b) October and November

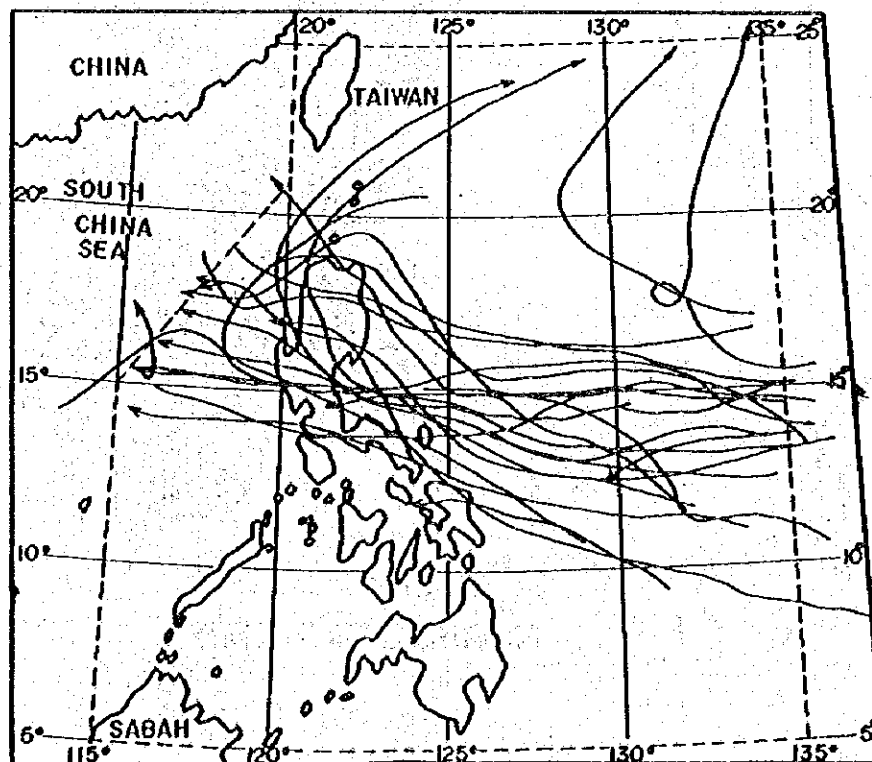


FIG-1.3.3 TRACKS OF TYPHOONS AFFECTING THE PROJECT AREA SINCE 1971

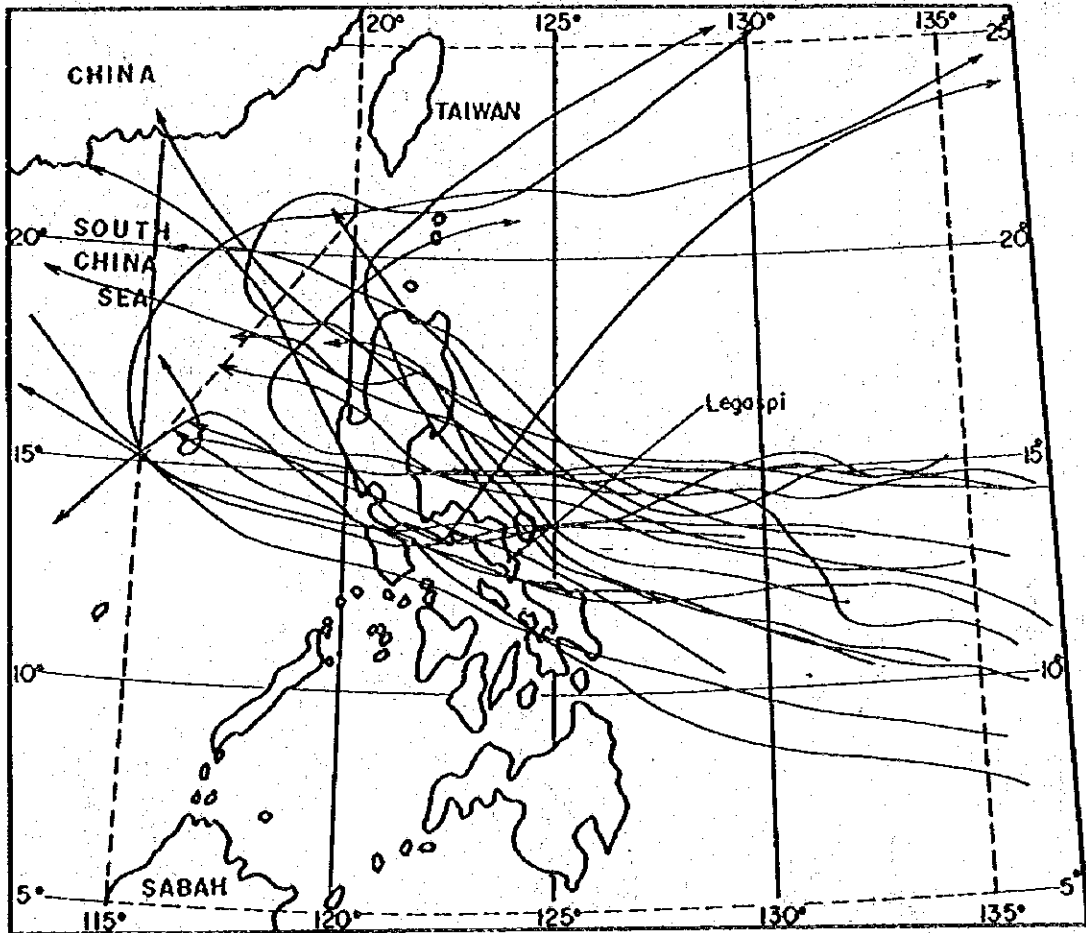
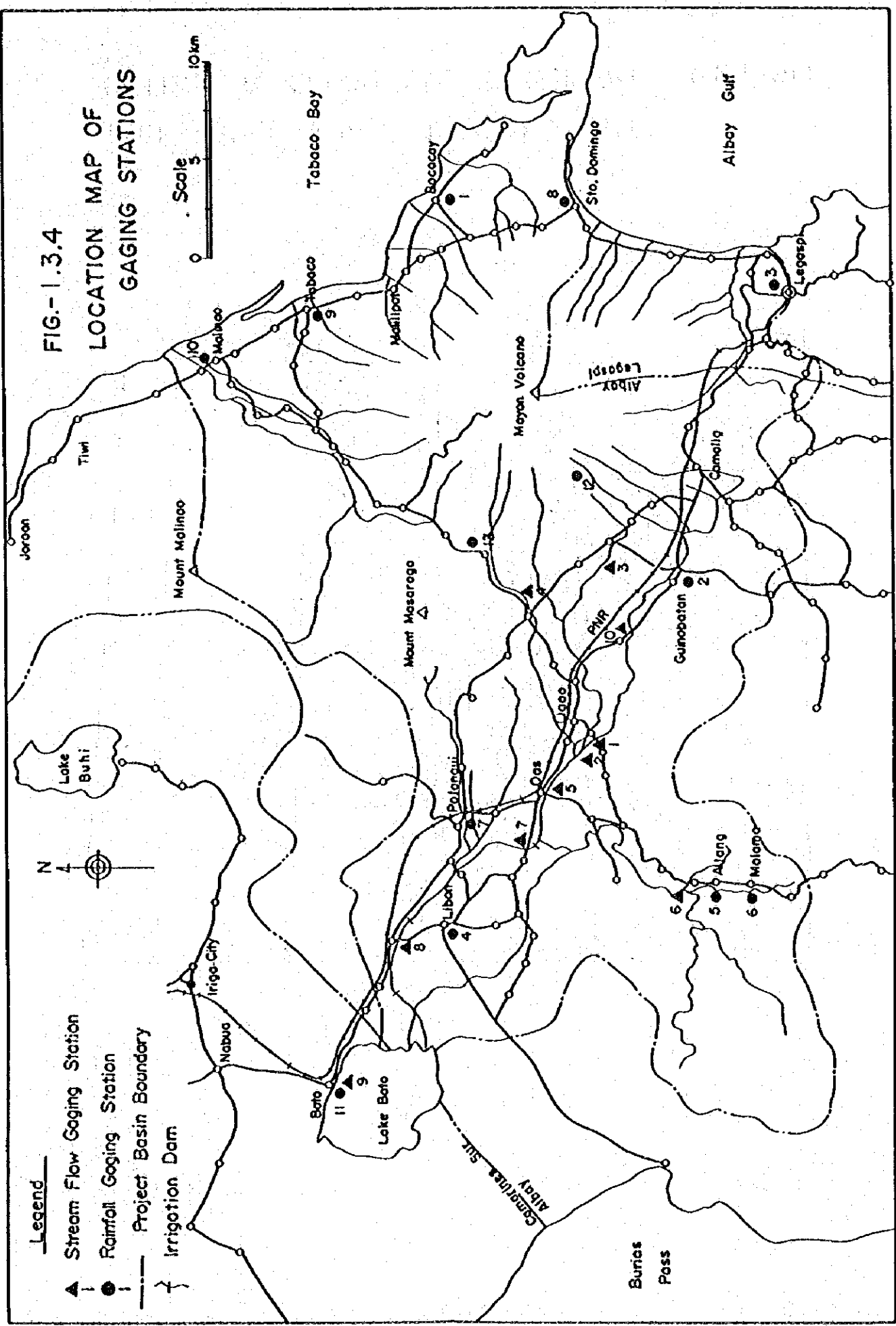


FIG. - 1.3.4
LOCATION MAP OF
GAGING STATIONS



- Legend
- ▲ Stream Flow Gaging Station
 - Rainfall Gaging Station
 - - - Project Basin Boundary
 - ⌋ Irrigation Dam

REPUBLIC OF THE PHILIPPINES
 DEPARTMENT OF NATURAL RESOURCES
 PHILIPPINE ATMOSPHERIC, GEOPHYSICAL AND
 ASTRONOMICAL SERVICES ADMINISTRATION
 TYPHOON DATA
 PHILIPPINE REPORT No. 7904 (REV. JANUARY 1973)

TIME	LONGITUDE	LATITUDE	WIND	SEA	VISIBILITY	WEATHER
0600	115.0	13.5	20	3	10	CU
0900	115.5	14.0	20	3	10	CU
1200	116.0	14.5	20	3	10	CU
1500	116.5	15.0	20	3	10	CU
1800	117.0	15.5	20	3	10	CU
2100	117.5	16.0	20	3	10	CU

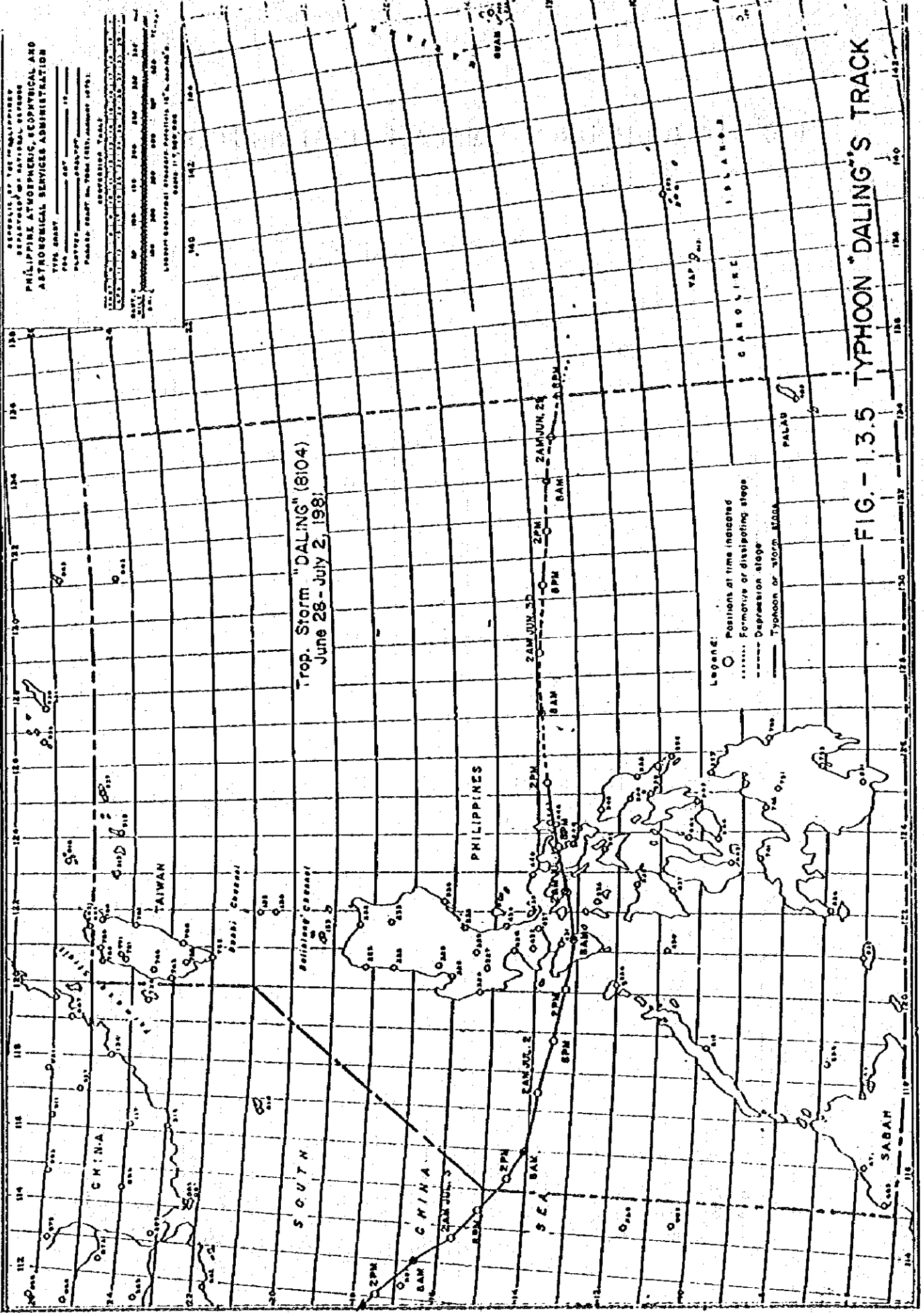


FIG. - 1.3.5 TYPHOON "DALING'S TRACK

FIG. - 1.3.6 HOURLY RAINFALL DISTRIBUTION

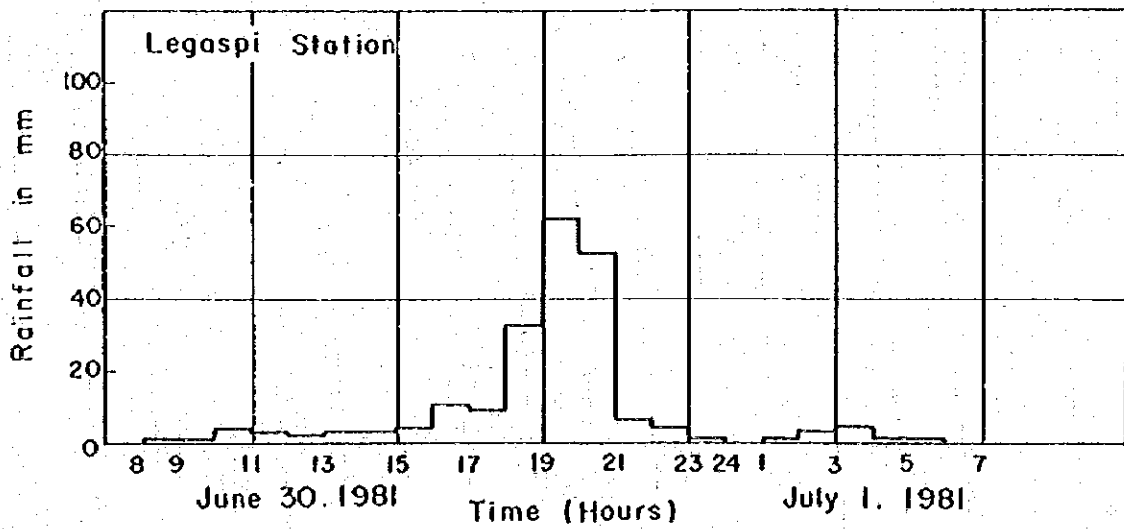
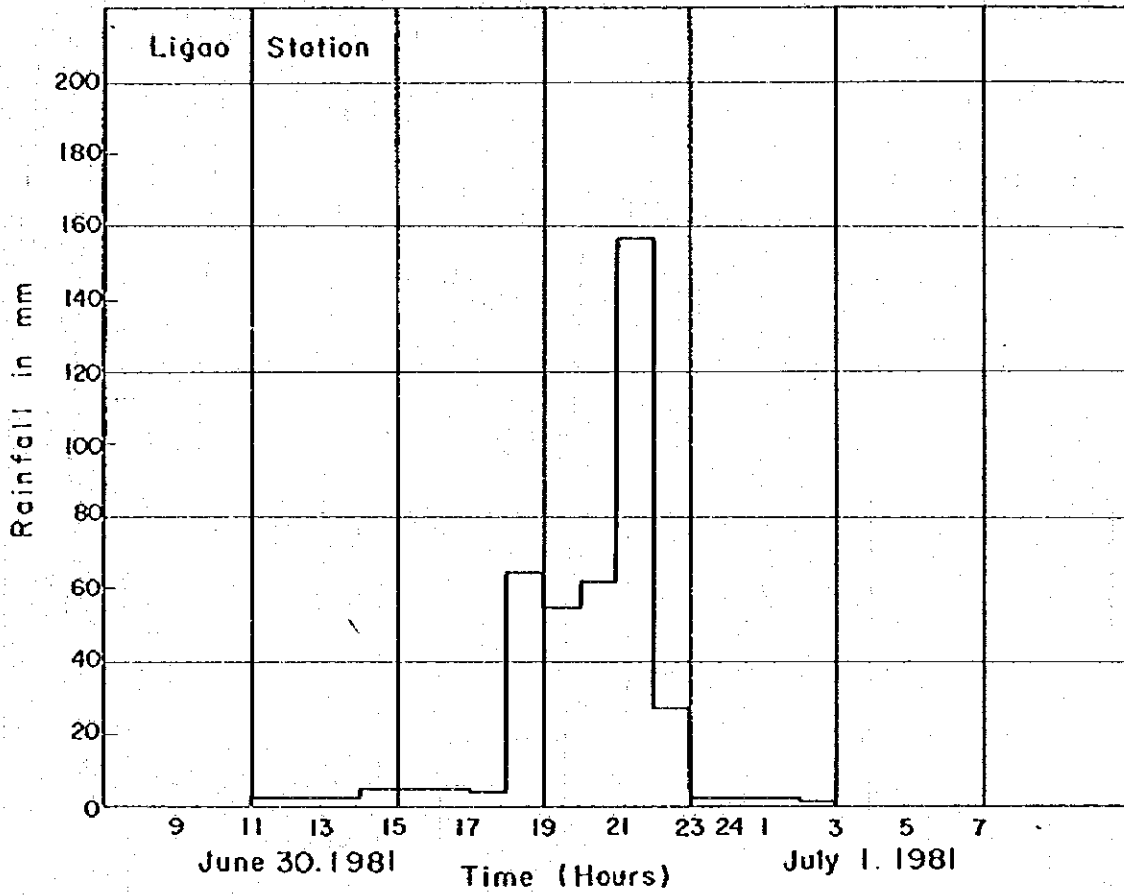
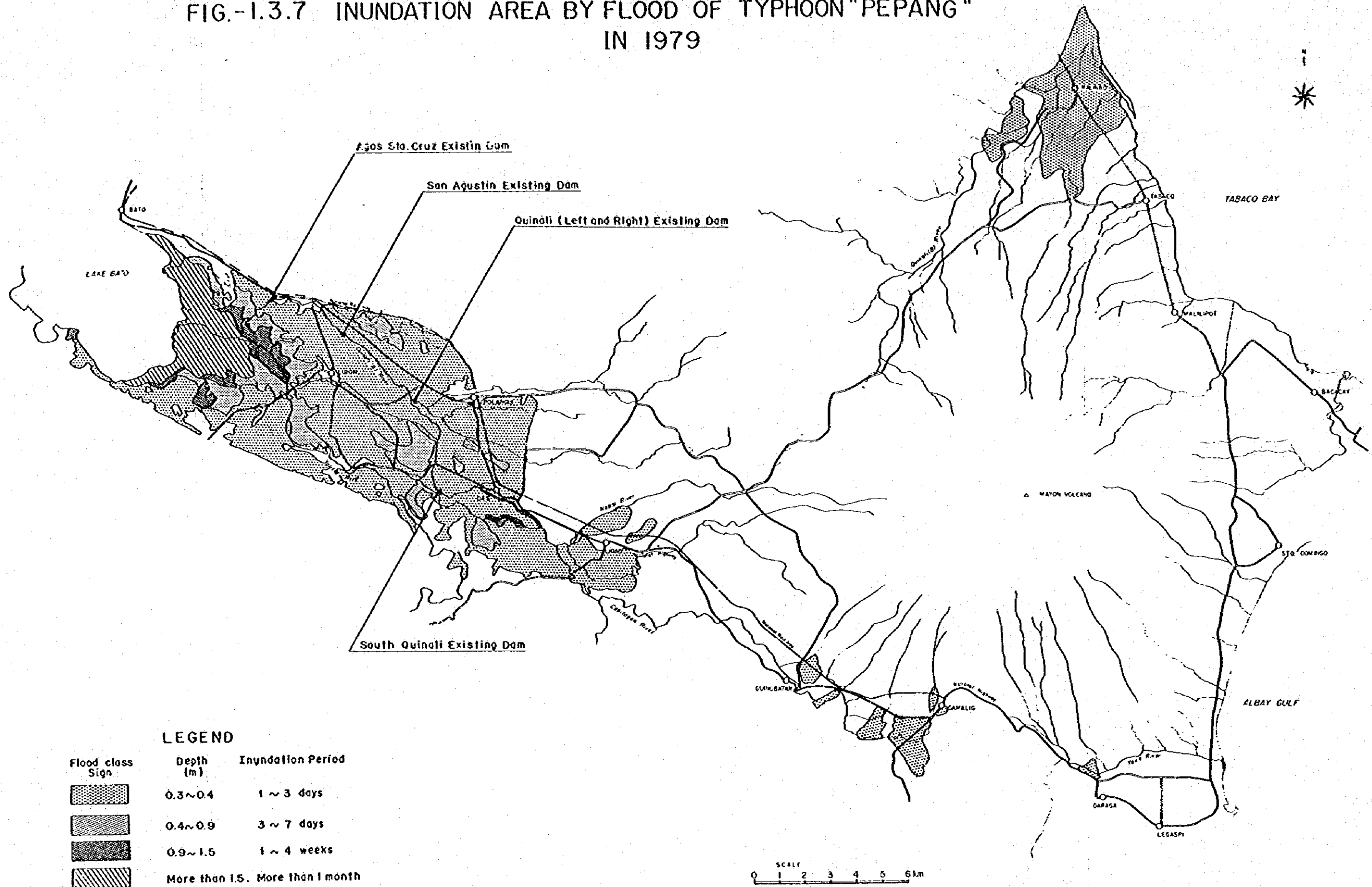


FIG.-1.3.7 INUNDATION AREA BY FLOOD OF TYPHOON "PEPANG" IN 1979



LEGEND

Flood class Sign	Depth (m)	Inundation Period
	0.3~0.4	1 ~ 3 days
	0.4~0.9	3 ~ 7 days
	0.9~1.5	1 ~ 4 weeks
	More than 1.5	More than 1 month

SCALE
0 1 2 3 4 5 6 km

FIG-1.3.8 INUNDATION AREA BY FLOOD OF TYPHOON "DALING" IN 1981

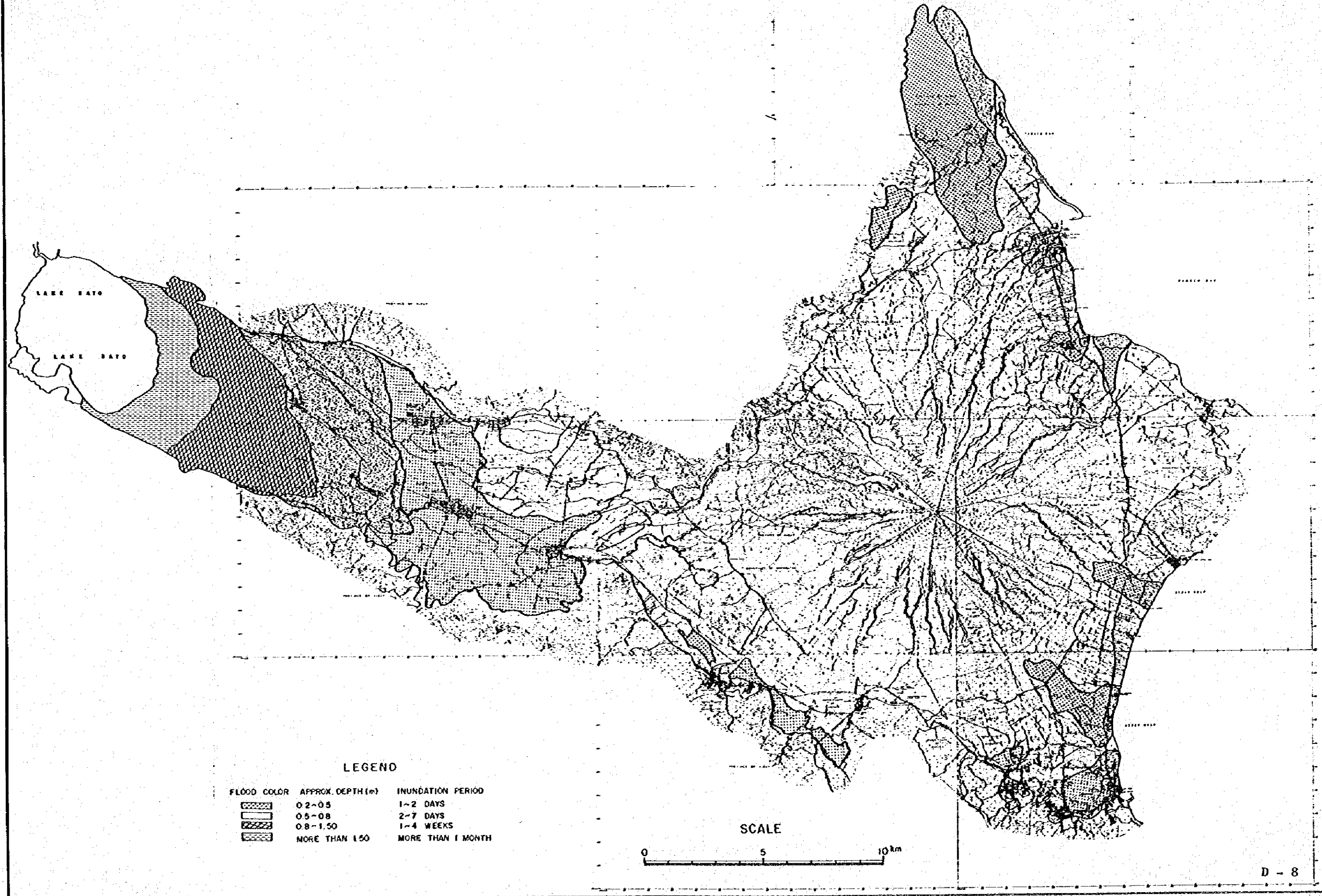
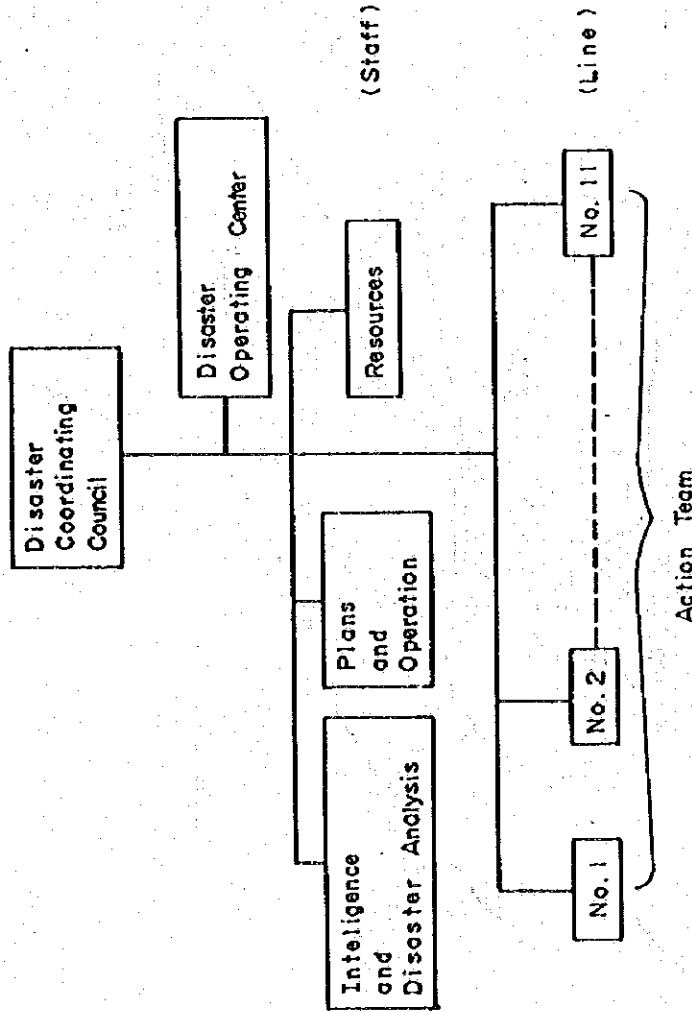


FIG.-1.3.9 ORGANIZATION AND FUNCTION OF DCC



FUNCTIONS

No.	Activities
1	Communication and warning
2	Evacuation
3	Transportation
4	Damage control
5	Relief and rehabilitation
6	Rescue and recovery
7	Health
8	Welfare and rehabilitation
9	Fire
10	Police or security
11	Public information

The Regional, provincial and municipal DCC do not hold the functions specified as No.2 and 4 among 11 functions. The barangay DCC holds the whole of 11 functions.

FIG-1.3.10 EXISTING BICOL RIVER BASIN FLOOD FORECASTING SYSTEM

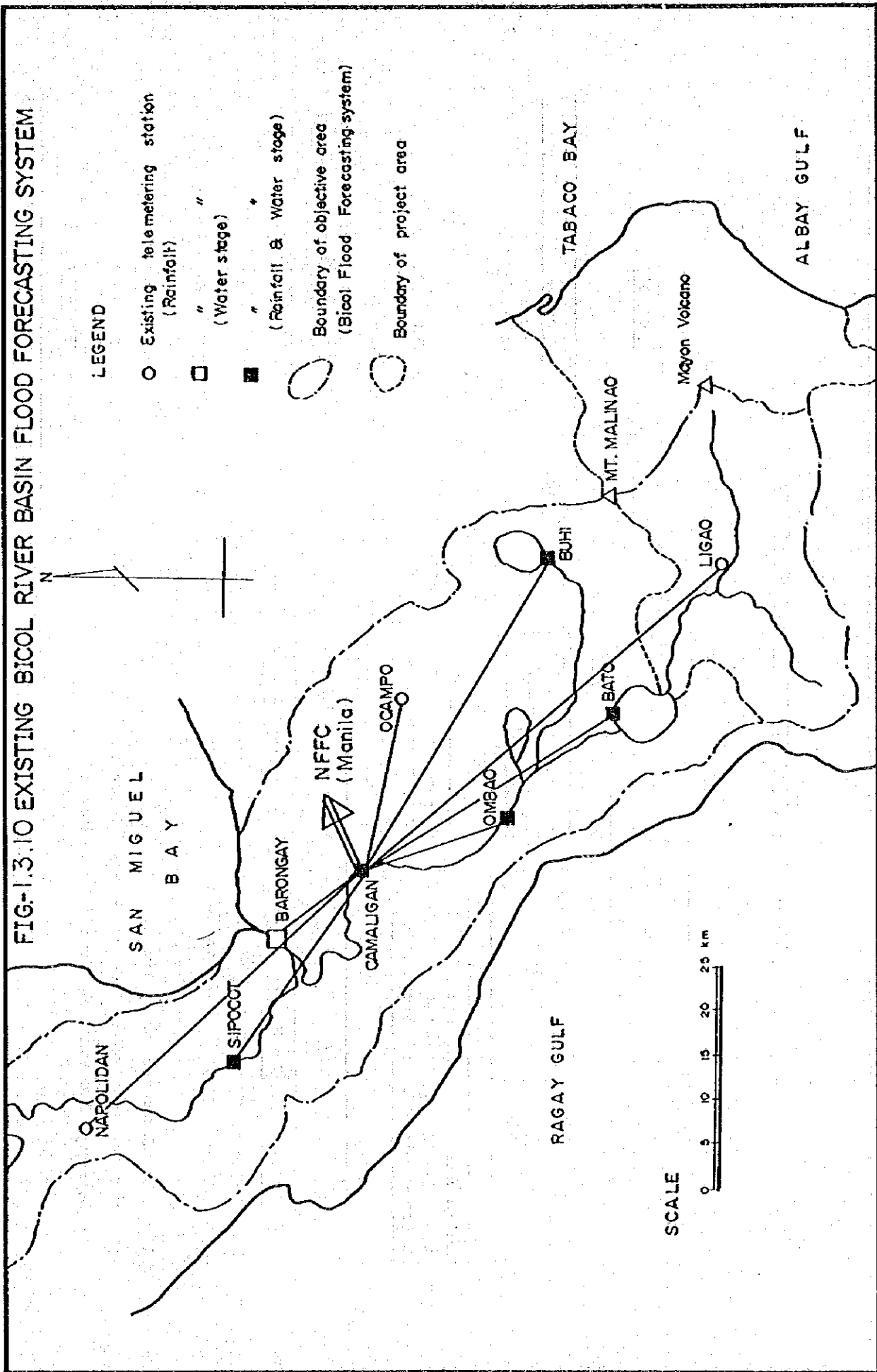


FIG-2.1.1 TYPICAL DESIGN OF SABO DAM (SLIT TYPE)

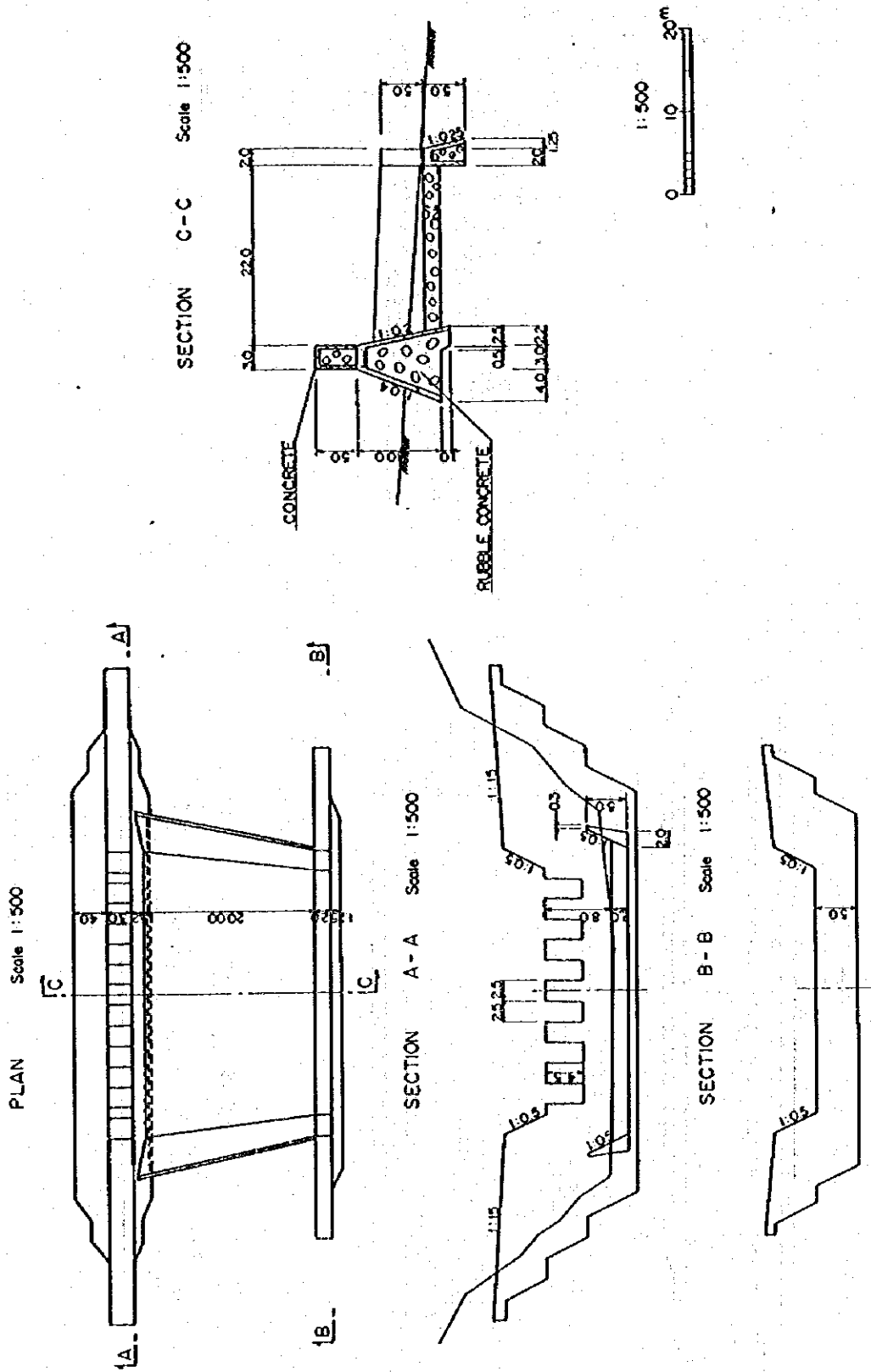
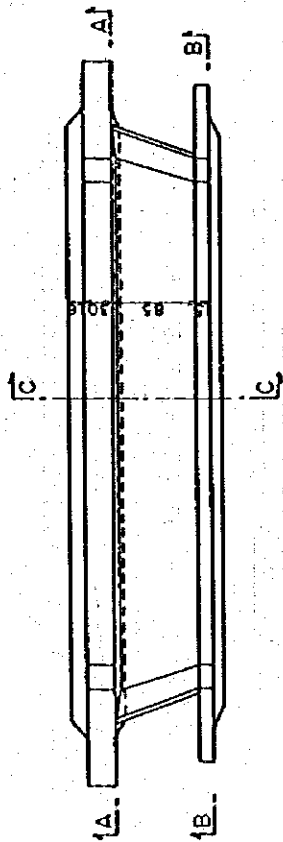


FIG-2.1.2 TYPICAL DESIGN OF CONSOLIDATION DAM

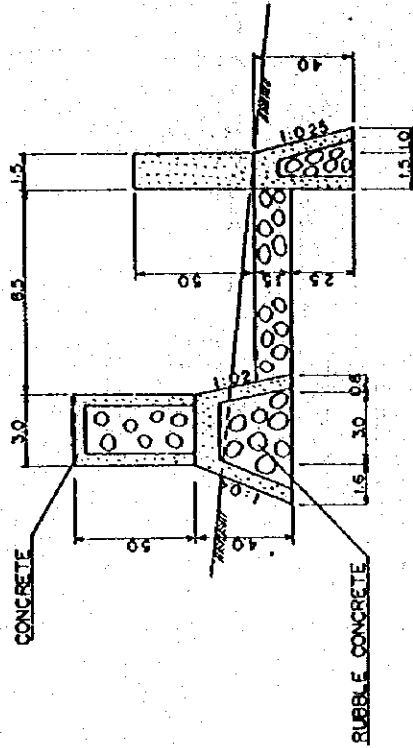
PLAN

Scale 1:500



SECTION C - C

Scale 1:200

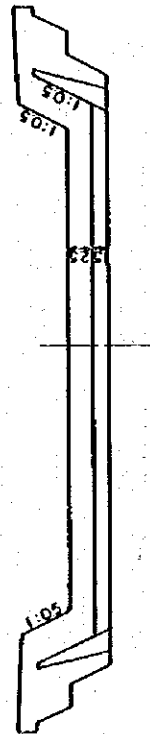


CONCRETE

RUBBLE CONCRETE

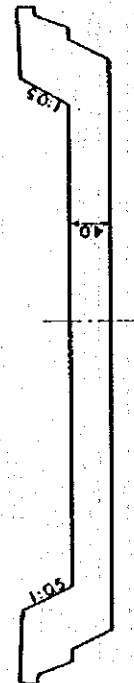
SECTION A - A

Scale 1:500



SECTION B - B

Scale 1:500



1:200



1:500

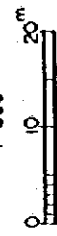


FIG.-2.1.3 TYPICAL DESIGN OF TRAINING LEVELLE

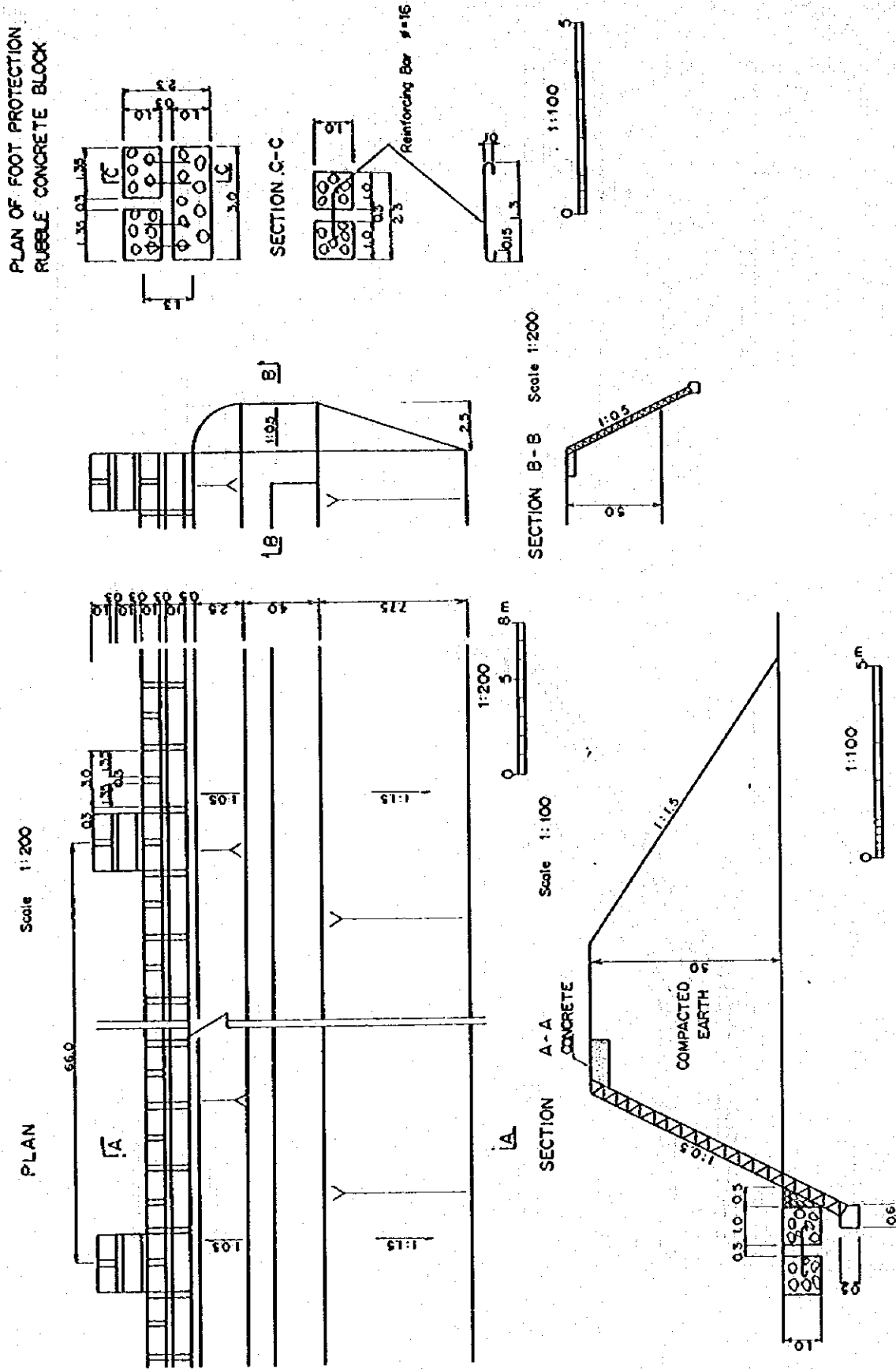
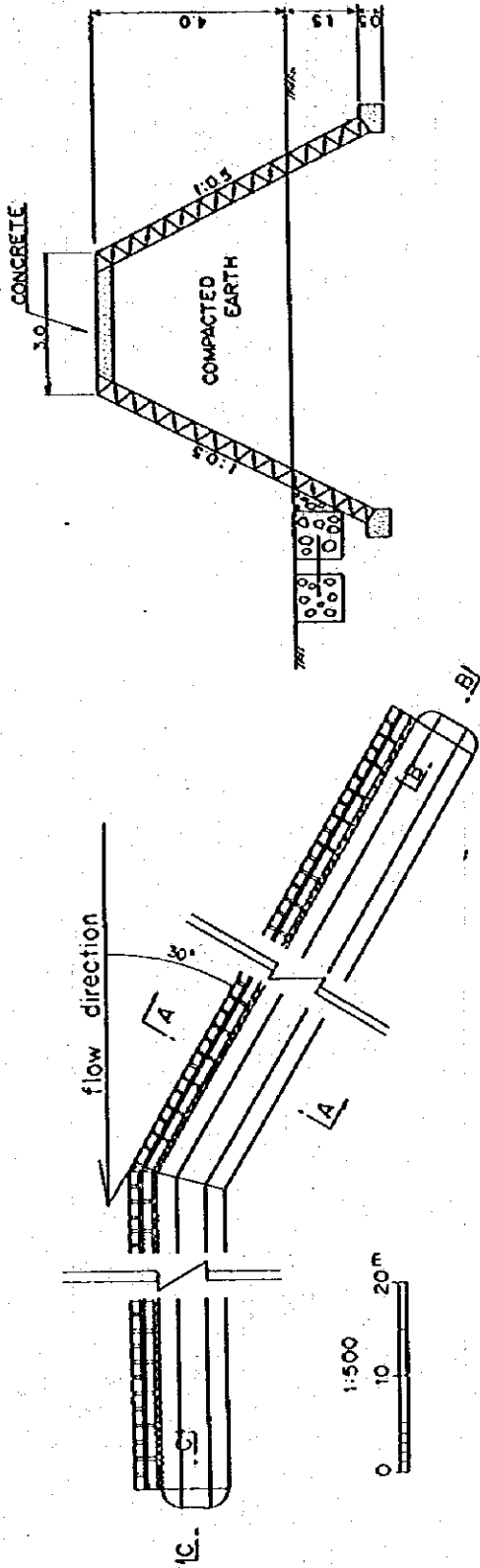


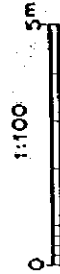
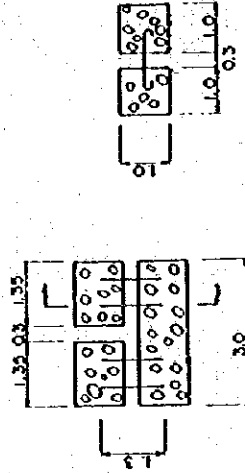
FIG.-2.1.4 TYPICAL DESIGN OF SPUR DIKE (TYPE A)

PLAN

Scale 1:500

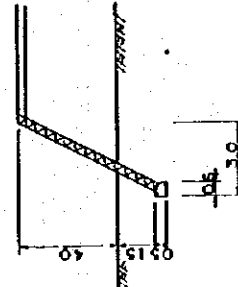


PLAN OF FOOT PROTECTION
RUBBLE CONCRETE BLOCK
Scale 1:100



SECTION C-C

1:200



SECTION B-B

Scale 1:200

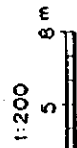
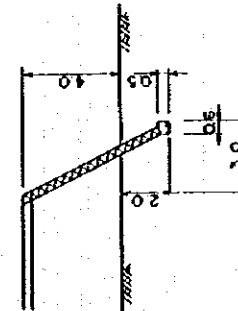


FIG-2.1.5 TYPICAL DESIGN OF SPUR DIKE (TYPE B)

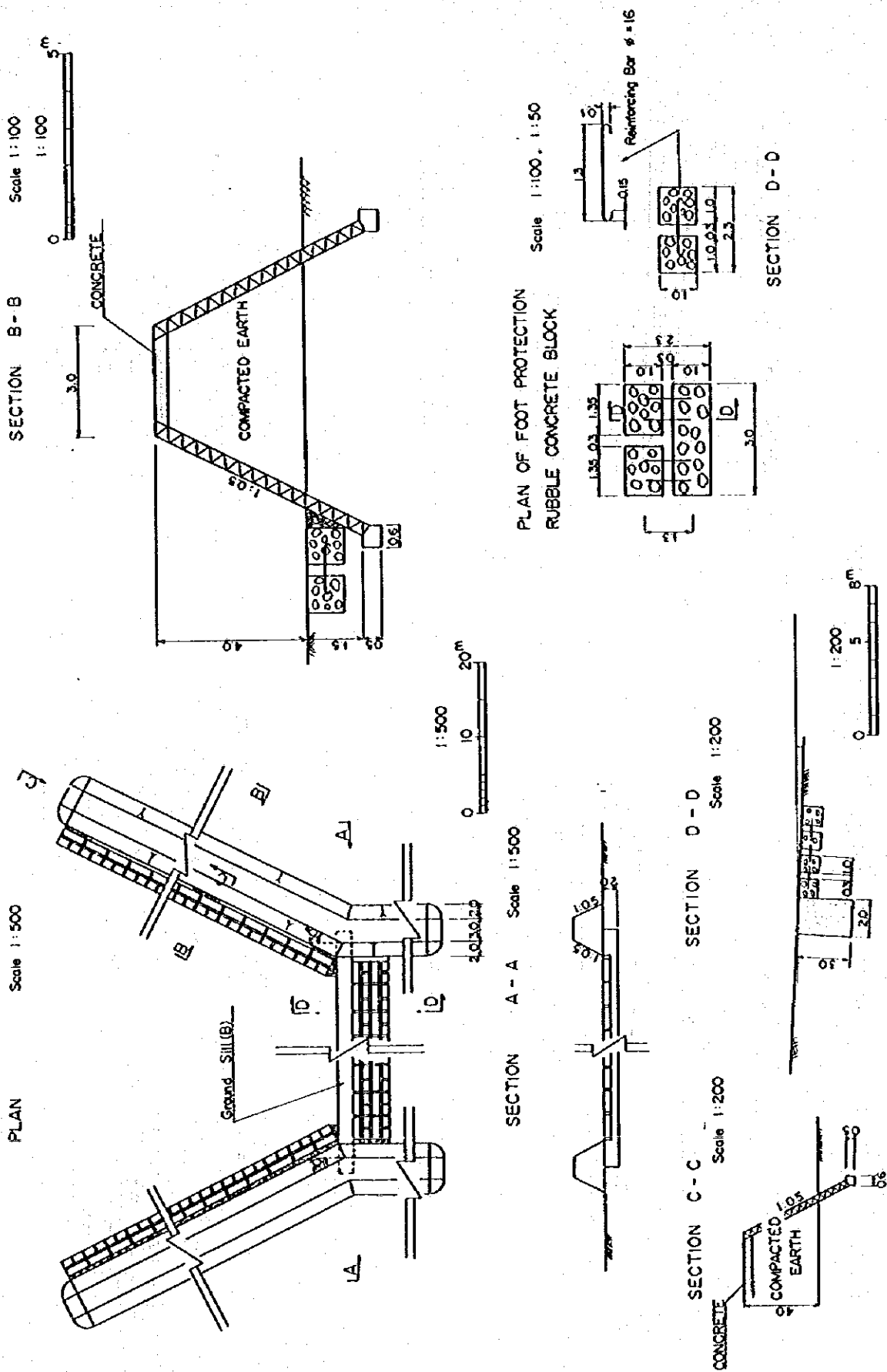


FIG-2.1.6 TYPICAL DESIGN OF JETTY

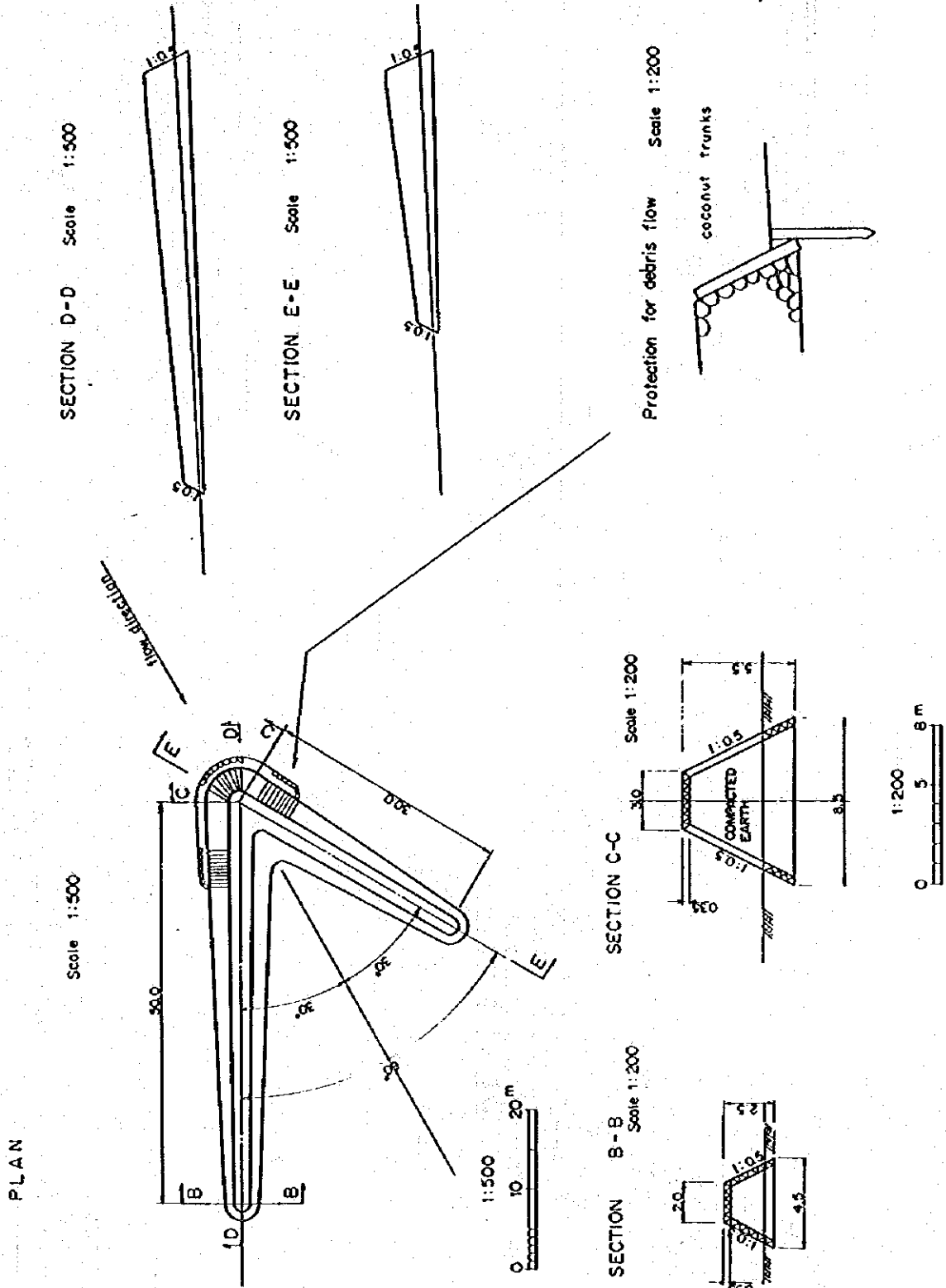


FIG-2.1.7 TYPICAL DESIGN OF GROUND SILL (TYPE A)

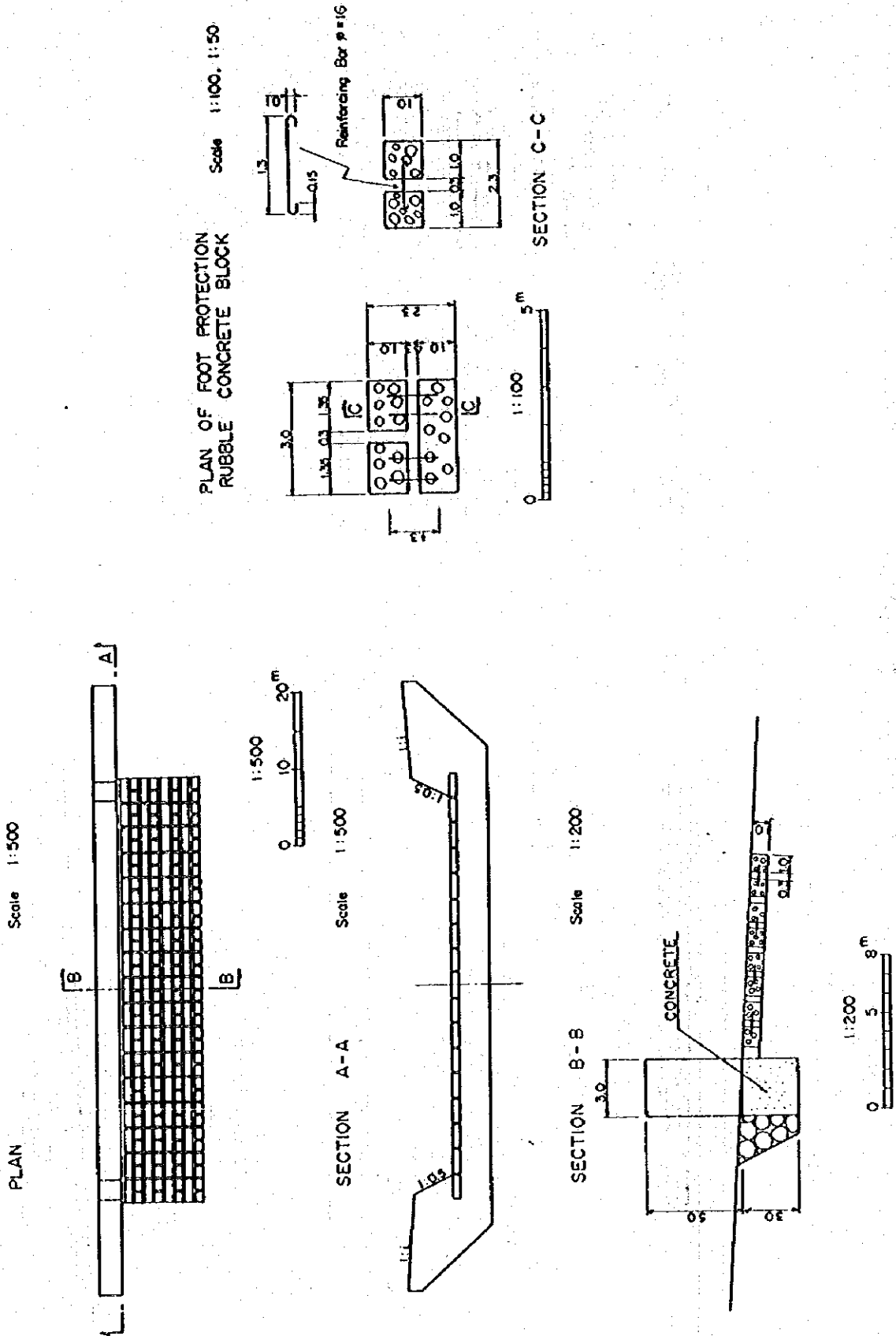


FIG. 2.1.8 TYPICAL DESIGN OF GROUND SILL (TYPE B)

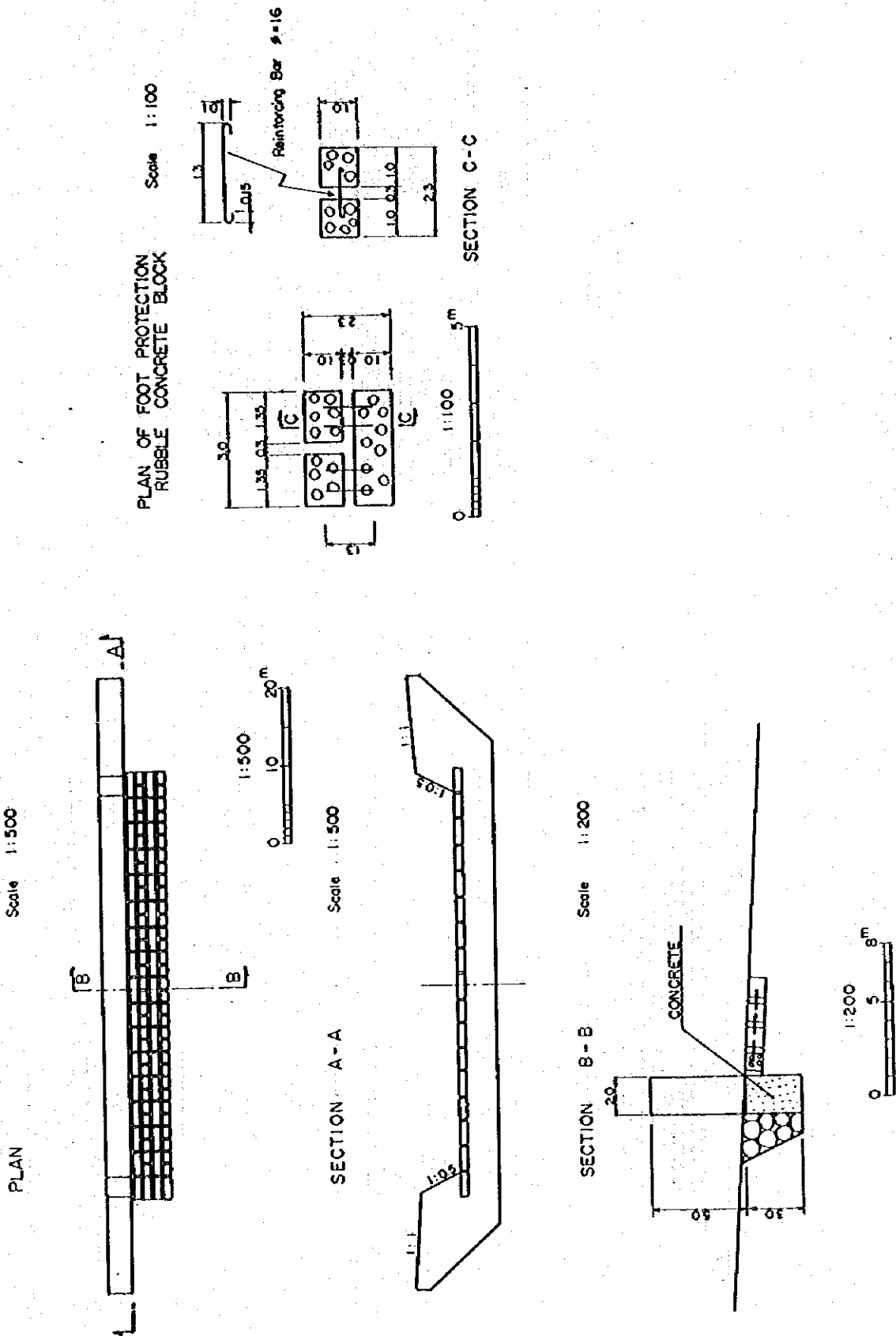
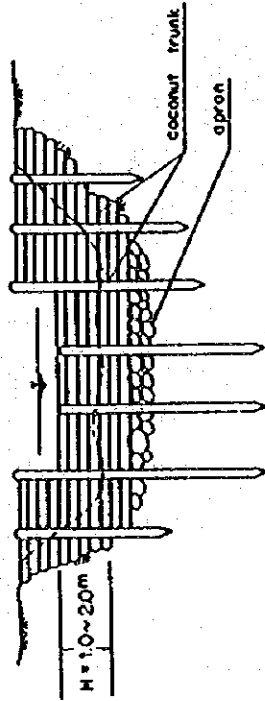
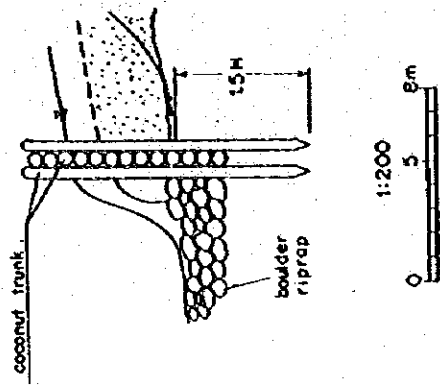


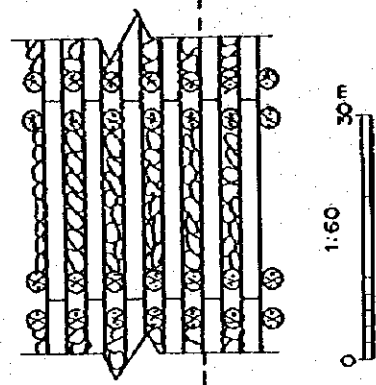
FIG-2.1.9 TYPICAL DESIGN OF GROUND SILL WITH COCONUT TRUNK CRIB AND FENCE



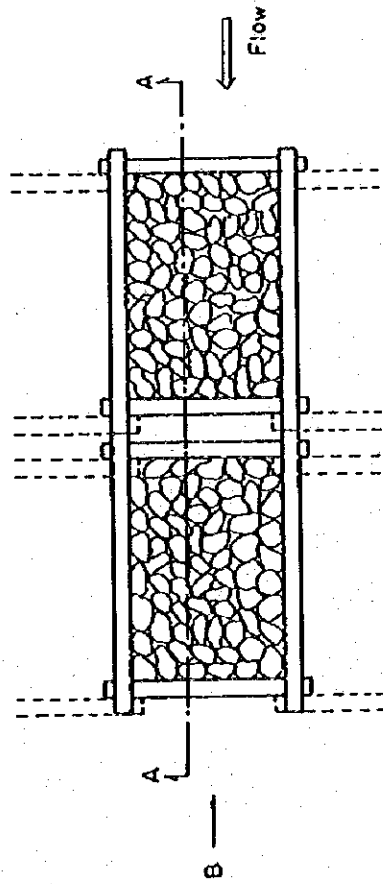
GROUND SILL WITH COCONUT TRUNK FENCE



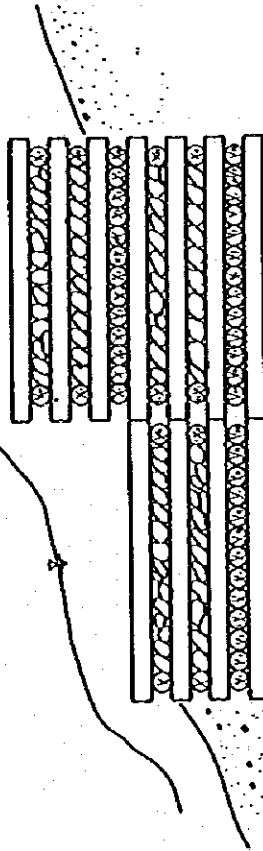
FRONT VIEW B



PLAN

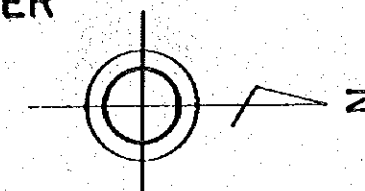


SECTION A - A



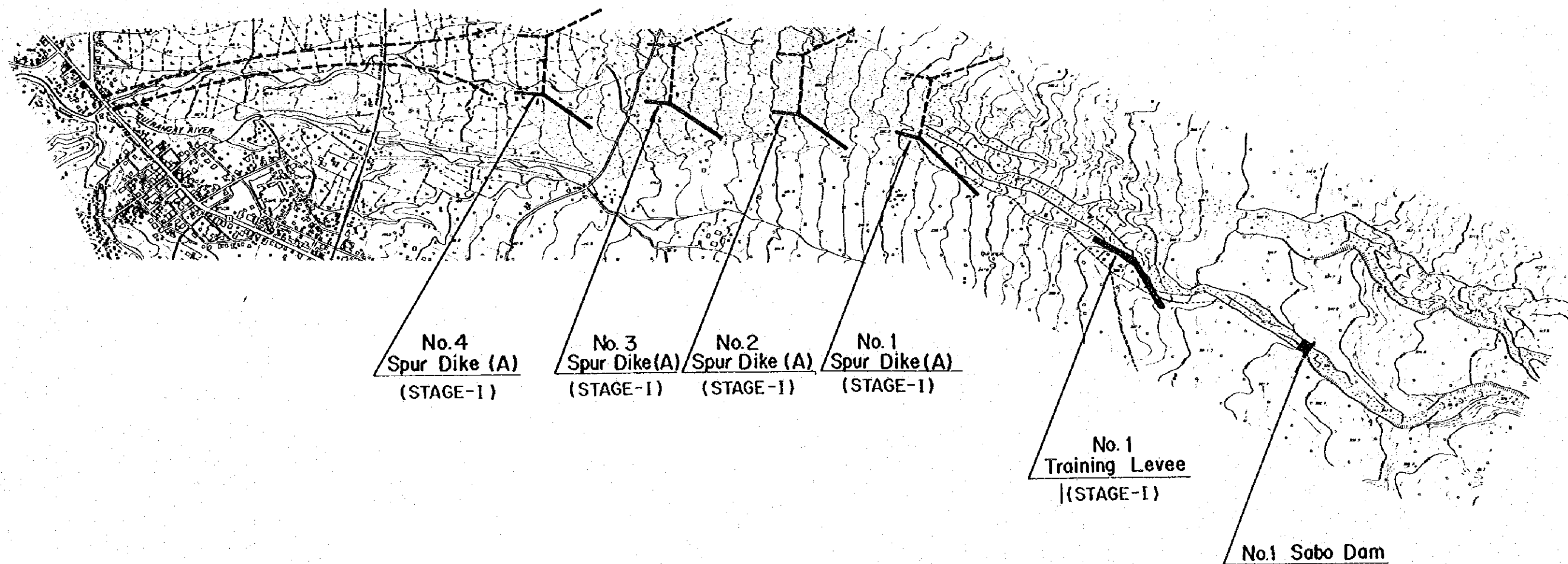
GROUND SILL WITH COCONUT TRUNK CRIB.

FIG.-2.1.10 LOCATION MAP OF SABO WORKS IN THE QUIRANGAY RIVER



ALBAY

ORIENTAL



No. 4
Spur Dike (A)
(STAGE-1)

No. 3
Spur Dike(A)
(STAGE-1)

No. 2
Spur Dike (A)
(STAGE-1)

No. 1
Spur Dike(A)
(STAGE-1)

No. 1
Training Levee
(STAGE-1)

No. 1 Sabo Dam

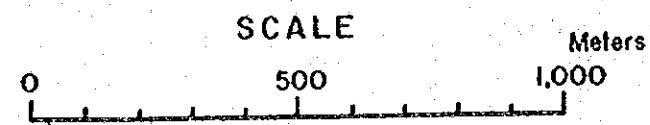
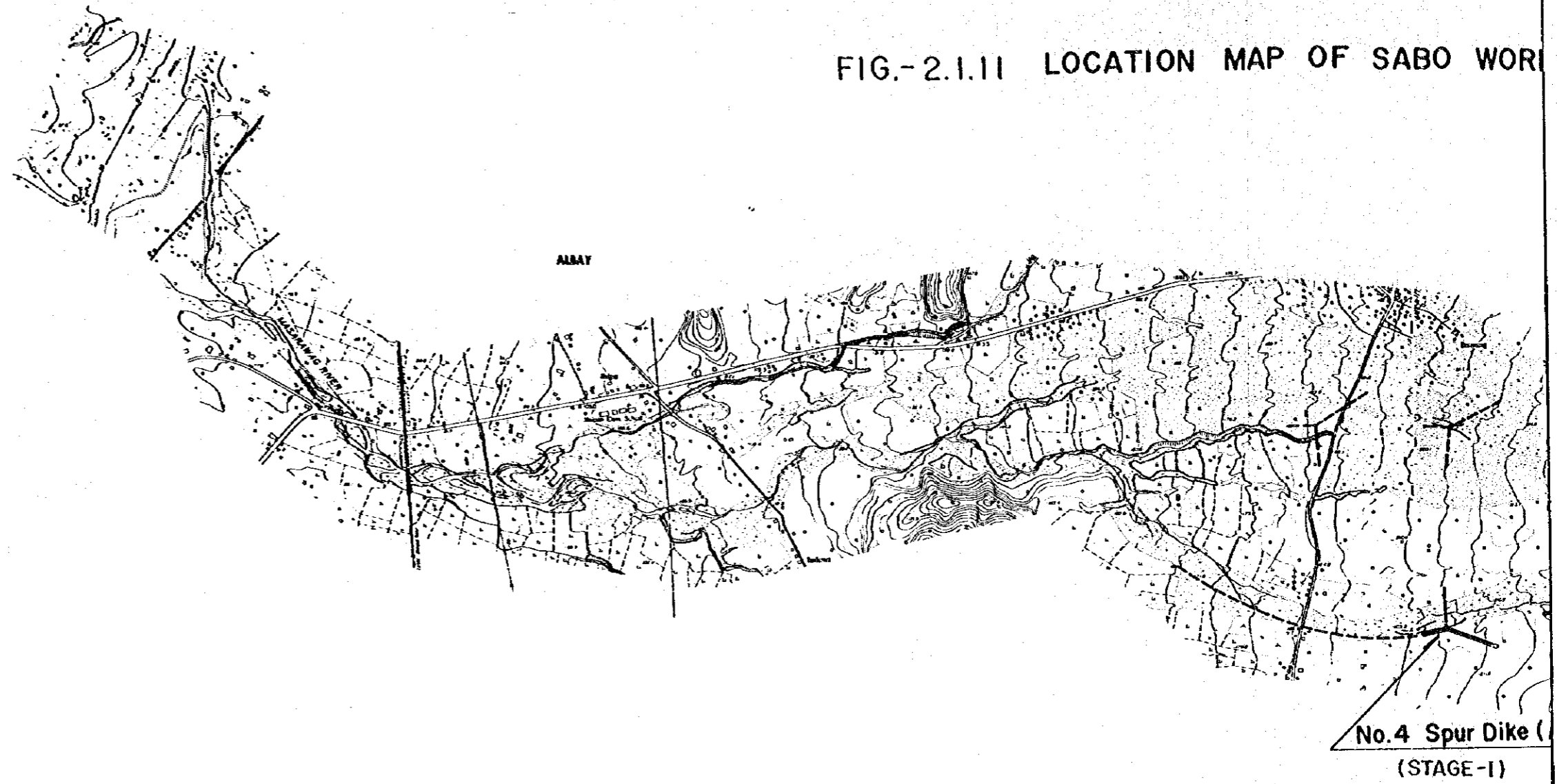


FIG.-2.1.11 LOCATION MAP OF SABO WORK



MAP OF SABO WORKS IN THE MASARAWAG RIVER

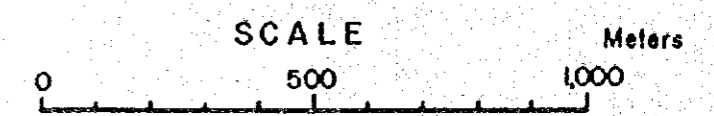
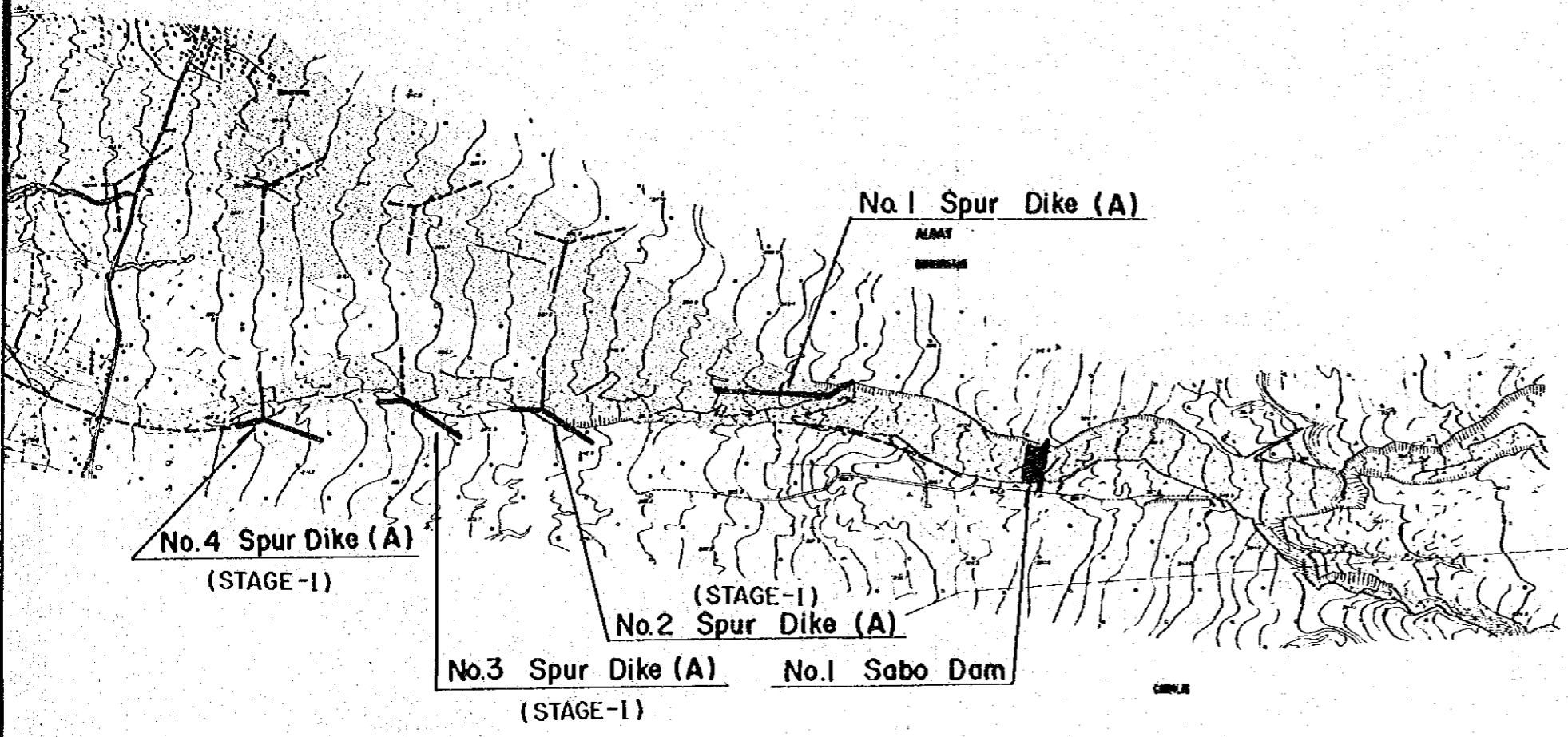
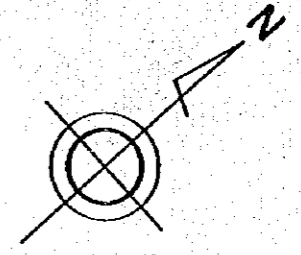


FIG.-2.1.12 LOCATION MAP OF SABO WORKS IN THE NASISI RIVER

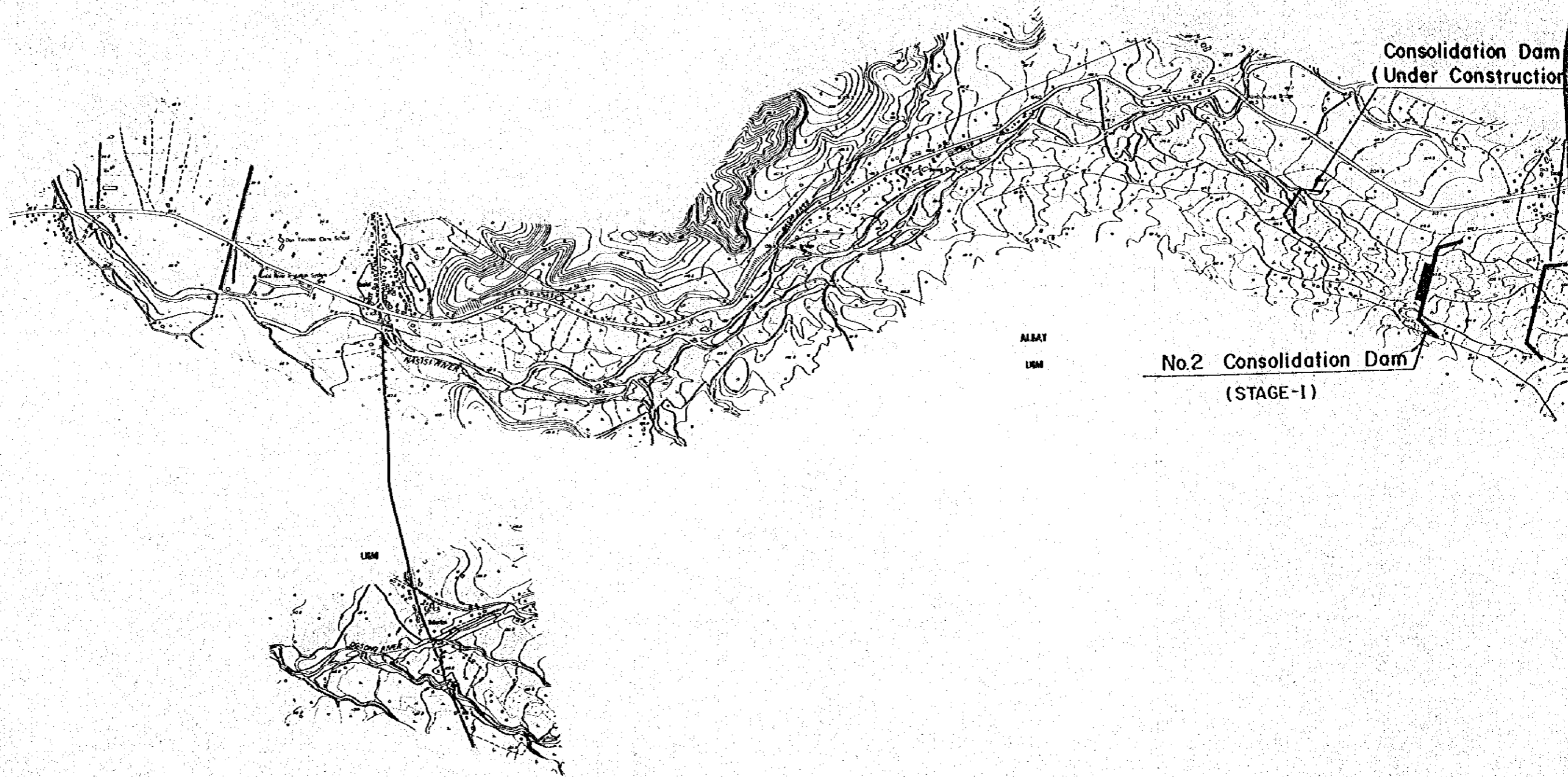


FIG.-2.1.12 LOCATION MAP OF SABO WORKS IN THE NASISI RIVER

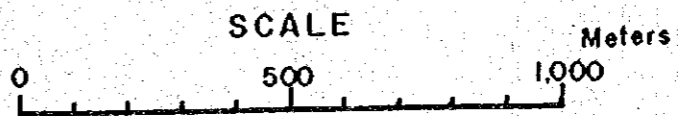
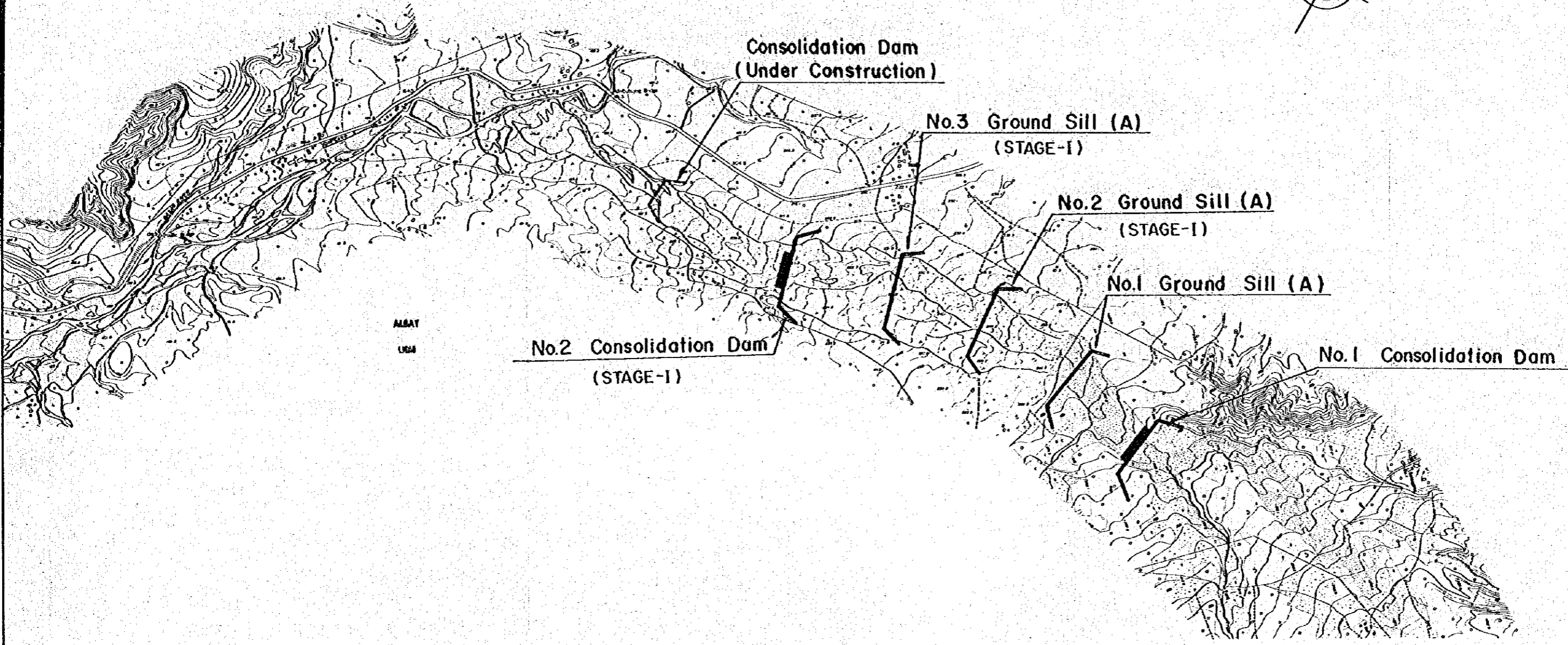
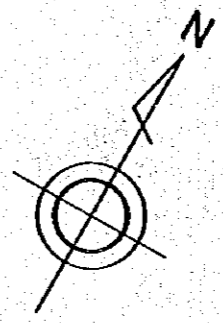
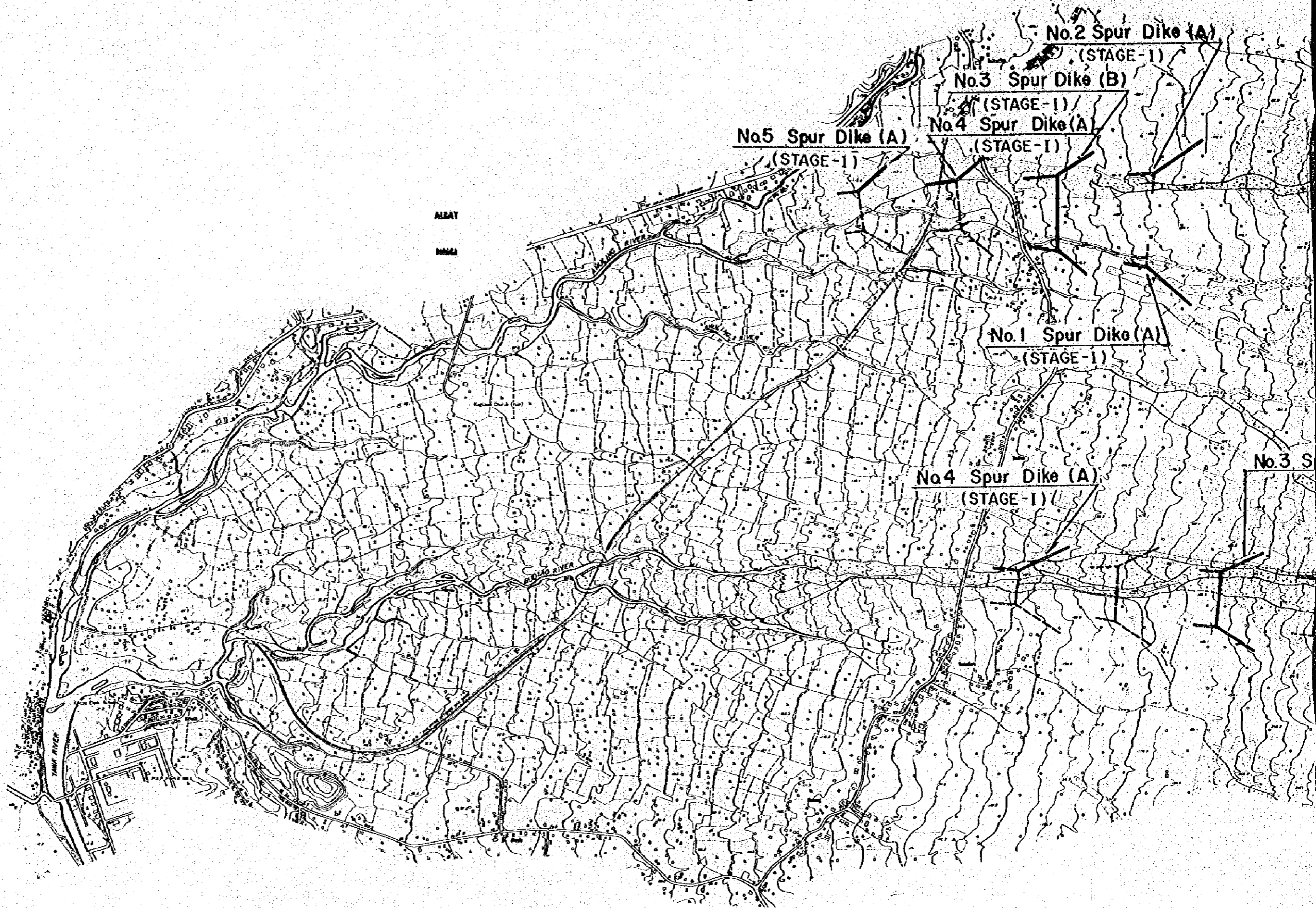


FIG.-2.1.13 LOCATION MAP OF SABO WORKS IN THE



SO WORKS IN THE ANULING AND THE BUDIAO RIVERS

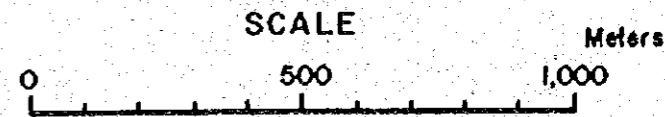
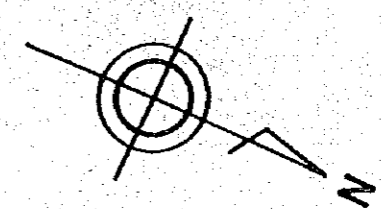
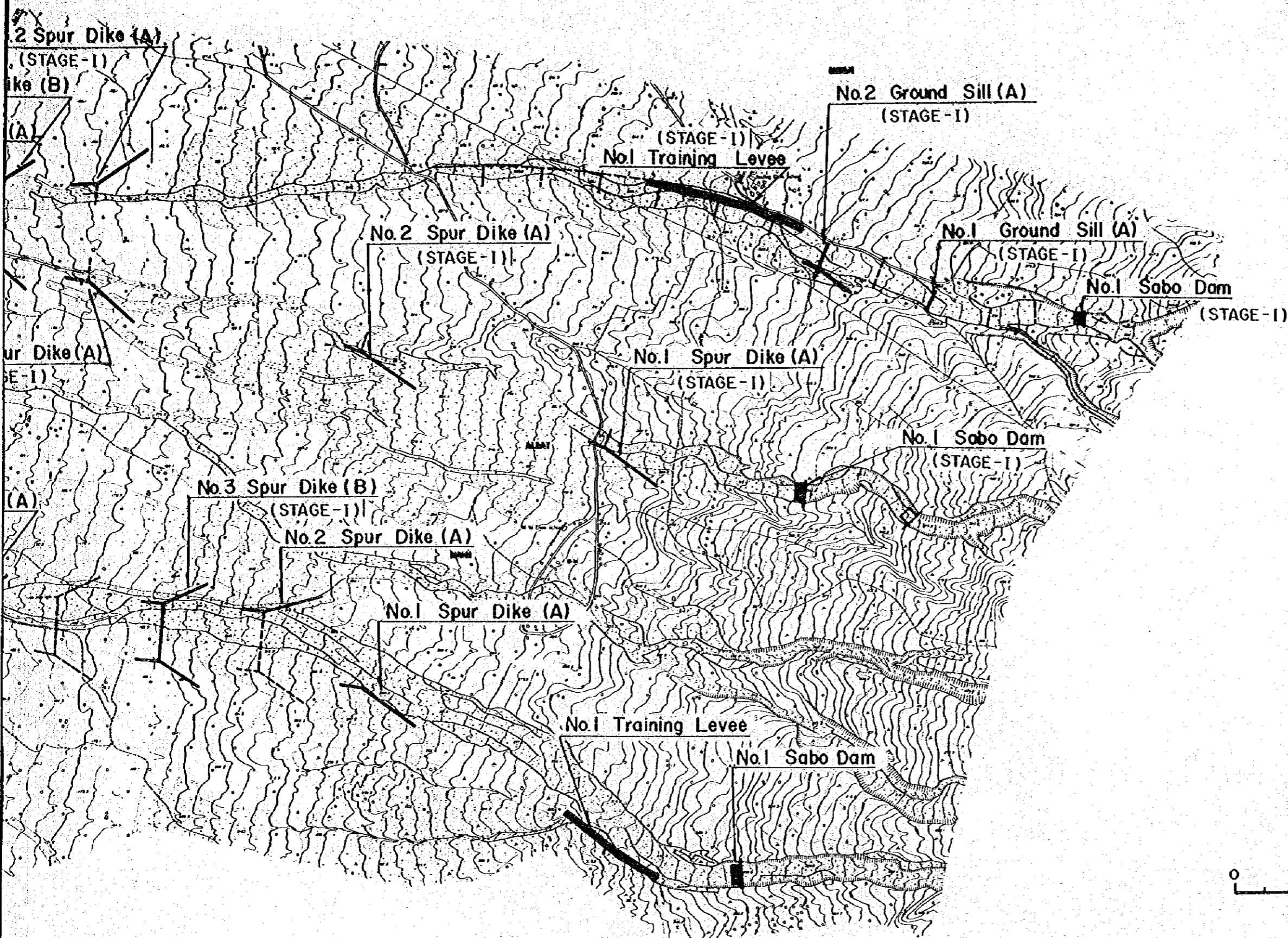
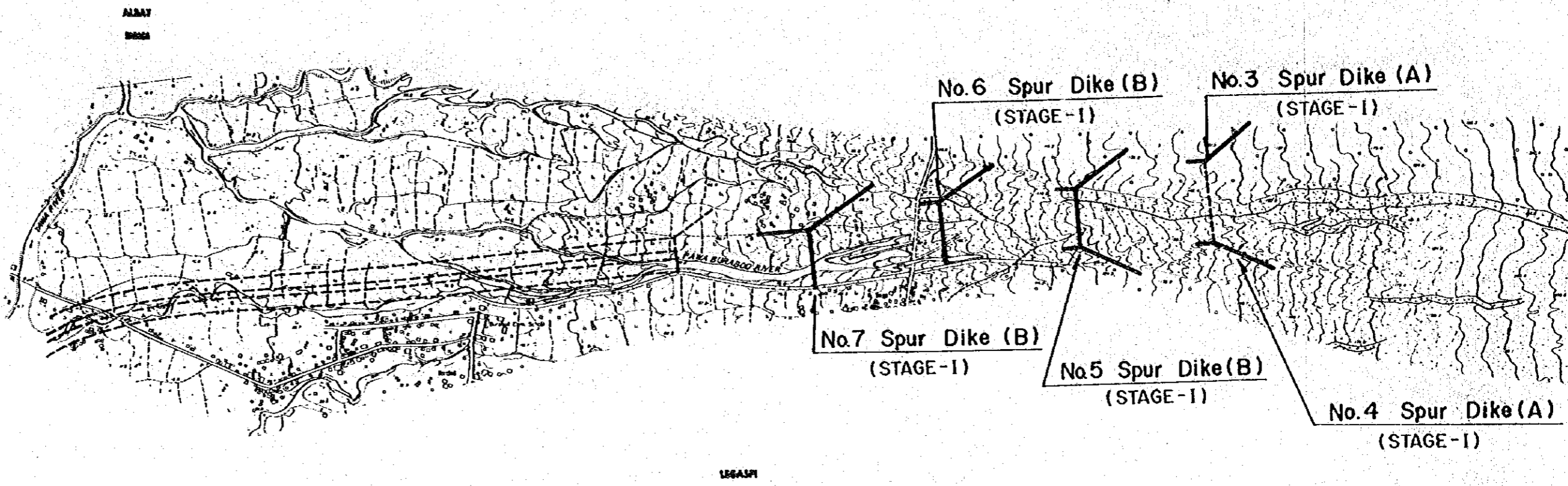
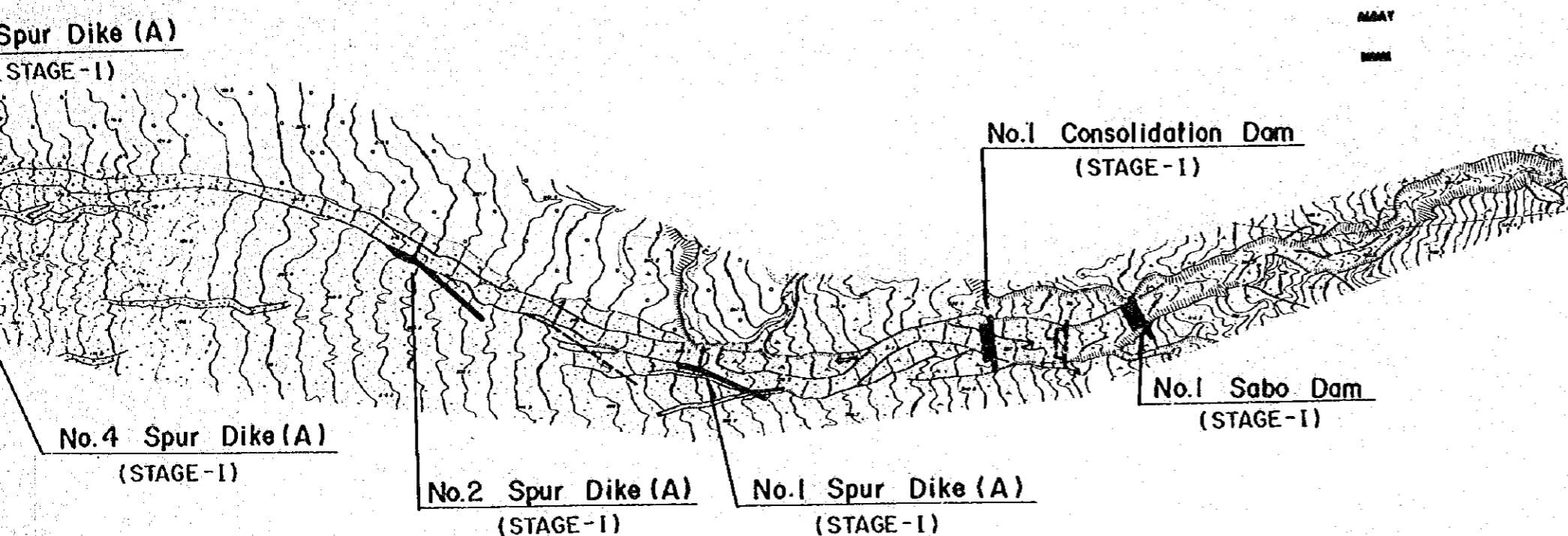
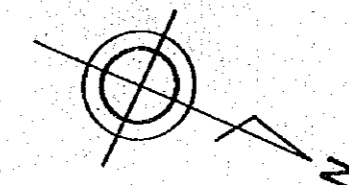


FIG.-2.1.14 LOCATION MAP OF SABO WORK



MAP OF SABO WORKS IN THE PAWA-BURABOD RIVER



1364594

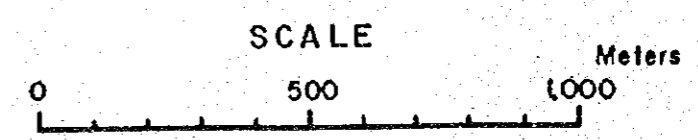


FIG.- 2.1.15 NETWORK OF TELEMETRY SYSTEM

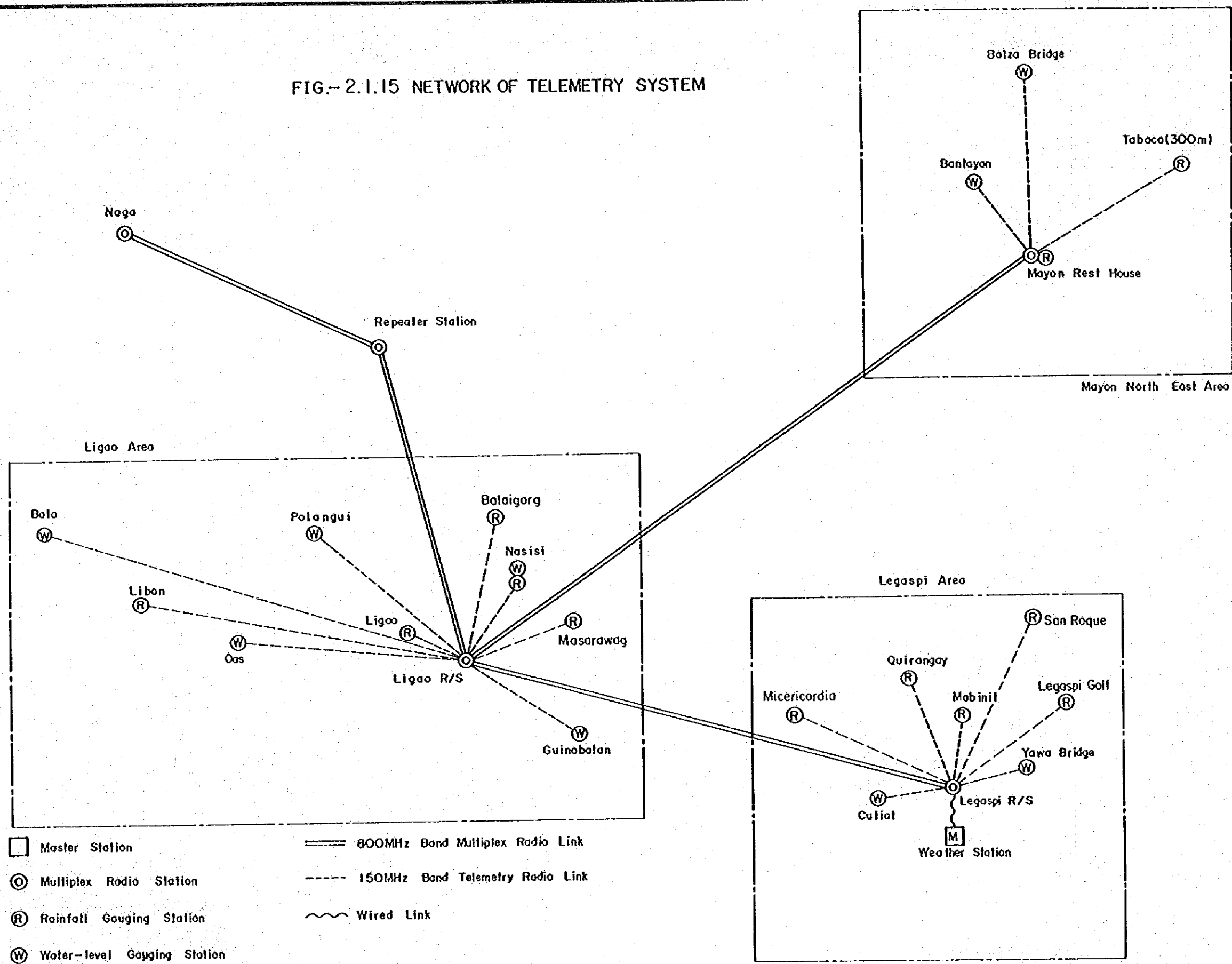


FIG- 2.1.16 NETWORK OF MUNICIPAL MULTI-DISASTER COMMUNICATION SYSTEM (Multi Channel Access System)

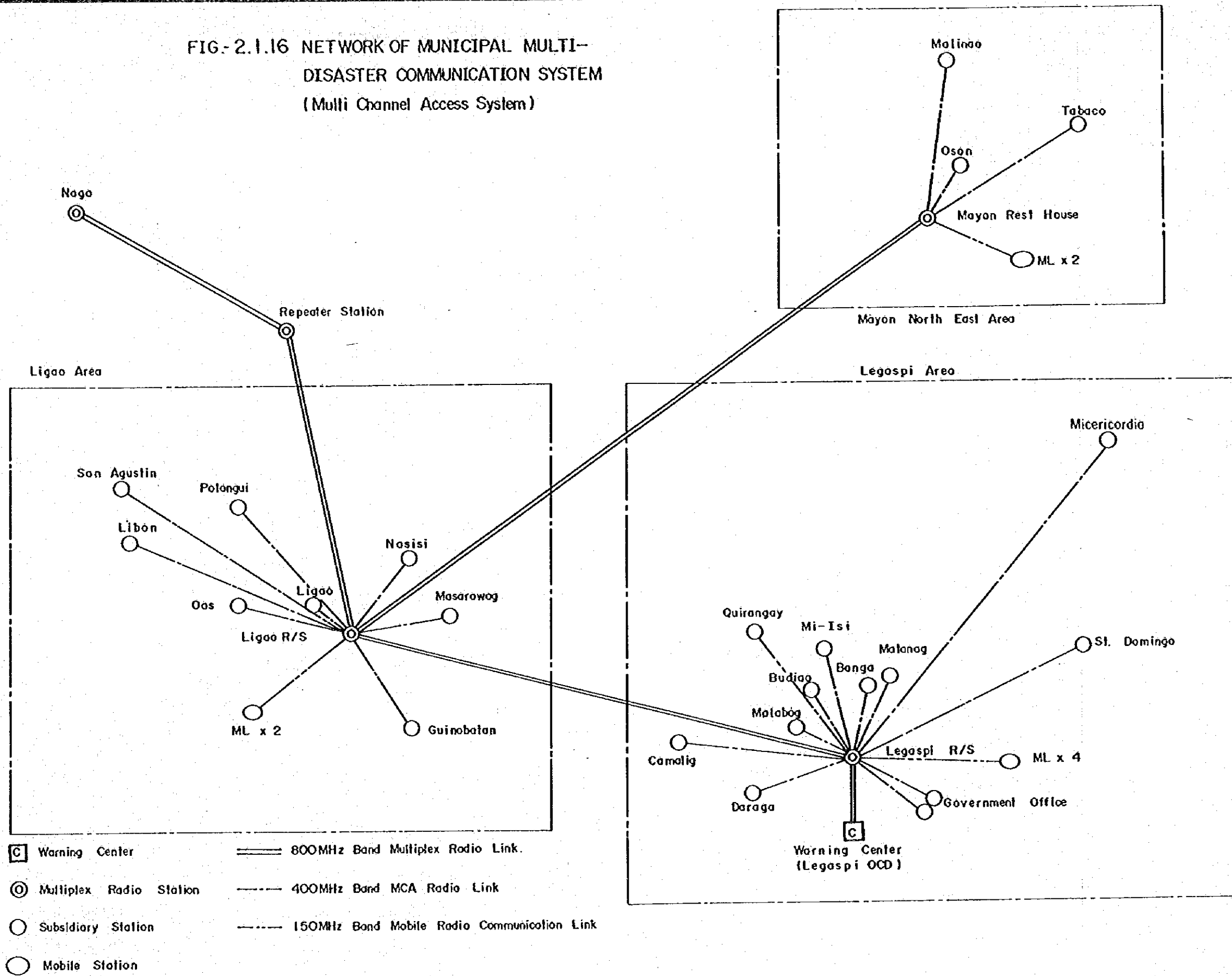
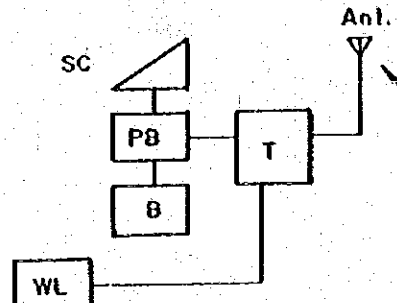
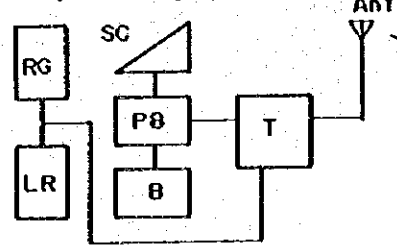


FIG- 2.1.17 SYSTEM DIAGRAM OF TELEMETRY SYSTEM

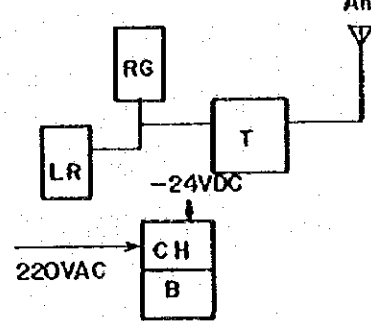
Water-level Gauging Stations
(Bolo, Oas, Polangui, Guinobatan)



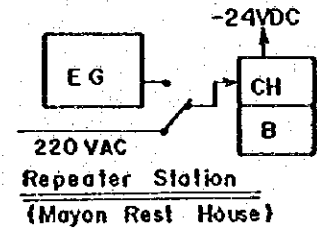
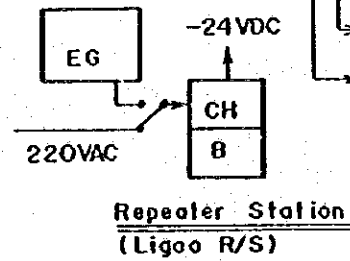
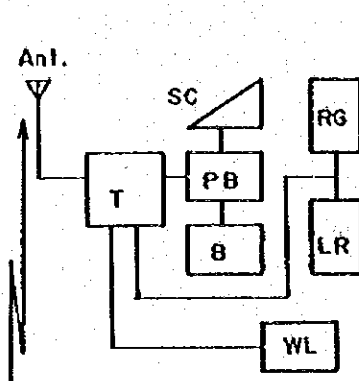
Rainfall Gauging Station
(Ligao, Baligang, Masarawag)



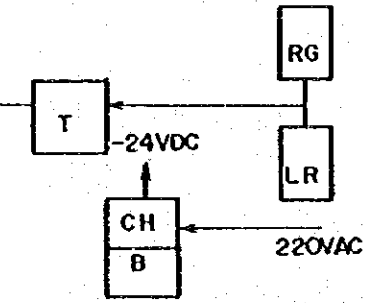
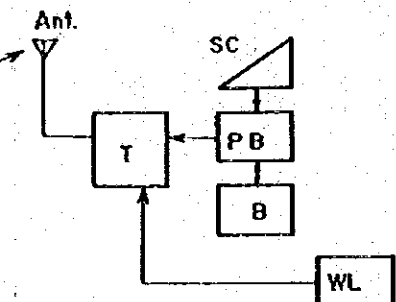
Rainfall Gauging Station
(Libon)



Water-level and Rainfall Gauging Station (Nasisi)



Water-level Gauging Stations
(Balza Bridge, Bantayan)

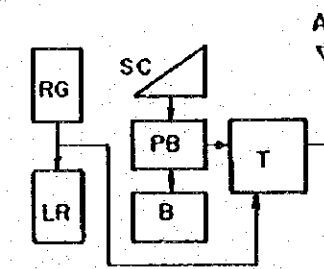


Rainfall Gauging Station
(Tabaco)

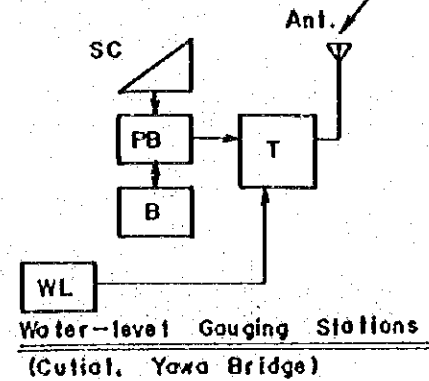


— LEGEND —

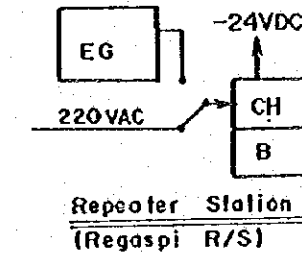
- Ant.: Antenna Equipment
- SE: Telemetering Supervisory Equipment
- T: Telemetering Equipment
- R: Repeater Equipment
- DE: Display Equipment
- OC: Operating Console
- TW: Typewriter
- EG: Engine Generator
- CH: Charger
- B: Battery
- DTC: Desk Top Computer
- SC: Solar Battery
- PB: Power Board
- WL: Water-level Gauging Equipment
- RG: Tipping Bucket Rain-Gauge
- LR: Long-Term Recorder
- M: Multiplex Radio Telephone Equipment



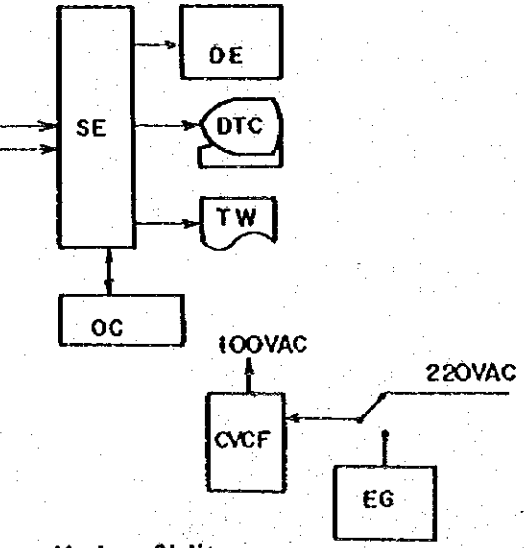
Rainfall Gauging Station
(Quirangay Legaspi Golf, San Roque, Micercordia, Mabini)



Water-level Gauging Stations
(Cutial, Yawa Bridge)

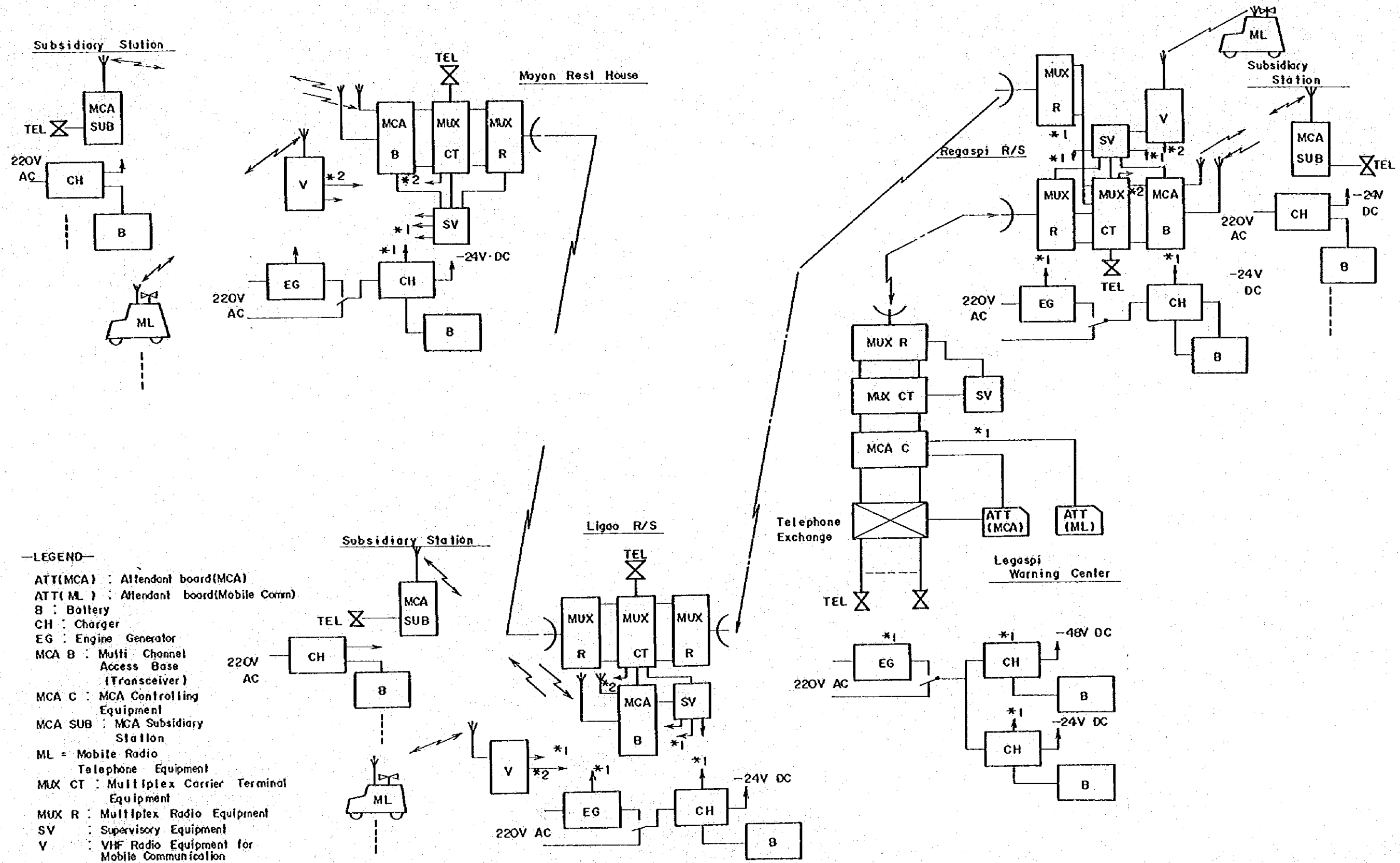


Repeater Station
(Regaspi R/S)



Master Station
(Legaspi Weather Station)

FIG-2.1.18 SYSTEM DIAGRAM OF COMMUNICATION SYSTEM
(MULTI-CHANNEL ACCESS)



—LEGEND—

- ATT(MCA) : Attendant board(MCA)
- ATT(ML) : Attendant board(Mobile Comm)
- B : Battery
- CH : Charger
- EG : Engine Generator
- MCA B : Multi Channel Access Base (Transceiver)
- MCA C : MCA Controlling Equipment
- MCA SUB : MCA Subsidiary Station
- ML : Mobile Radio Telephone Equipment
- MUX CT : Multiplex Carrier Terminal Equipment
- MUX R : Multiplex Radio Equipment
- SV : Supervisory Equipment
- V : VHF Radio Equipment for Mobile Communication

FIG-2.1.19 CHANNEL ACCOMMODATION PLAN OF UHF TELECOMMUNICATION SYSTEM

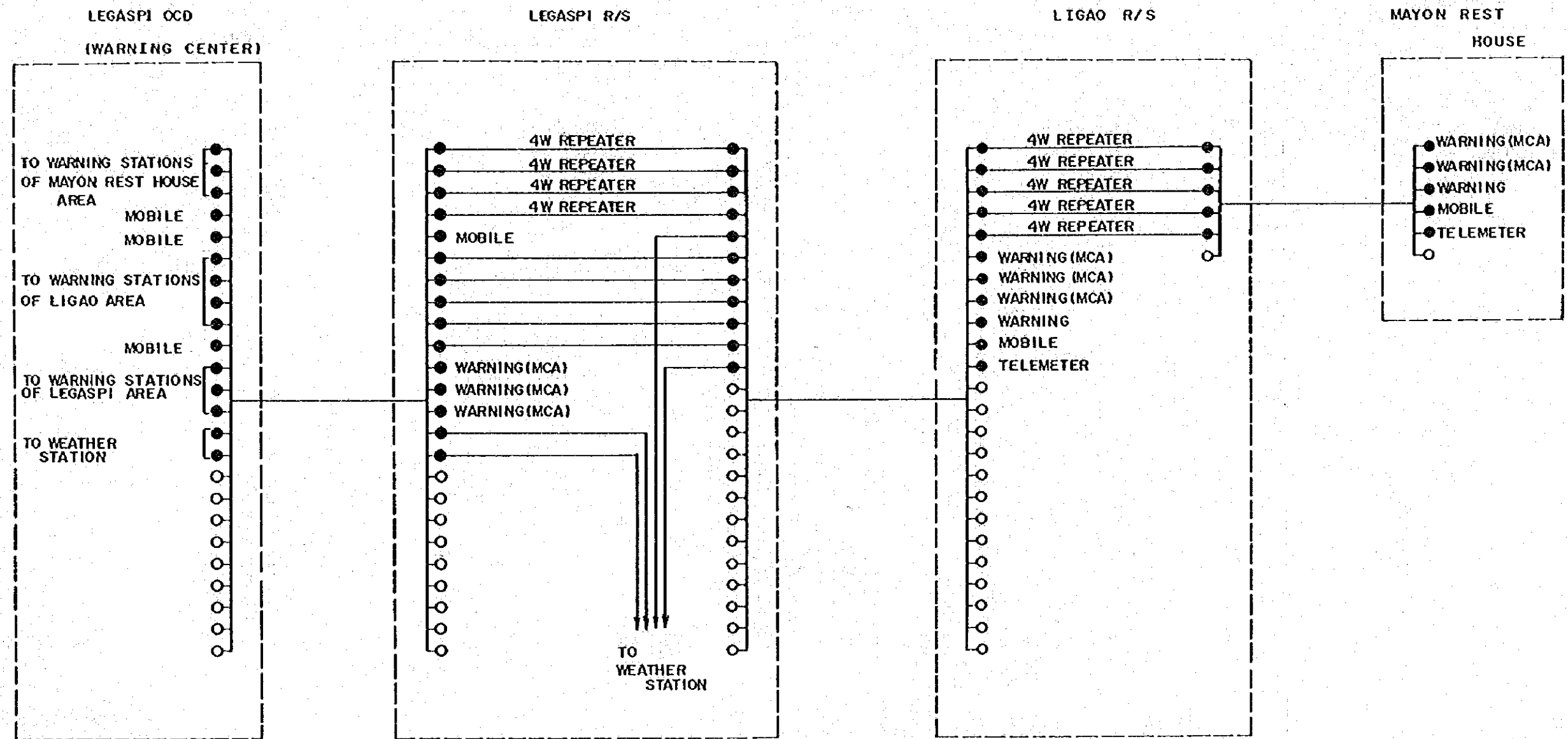
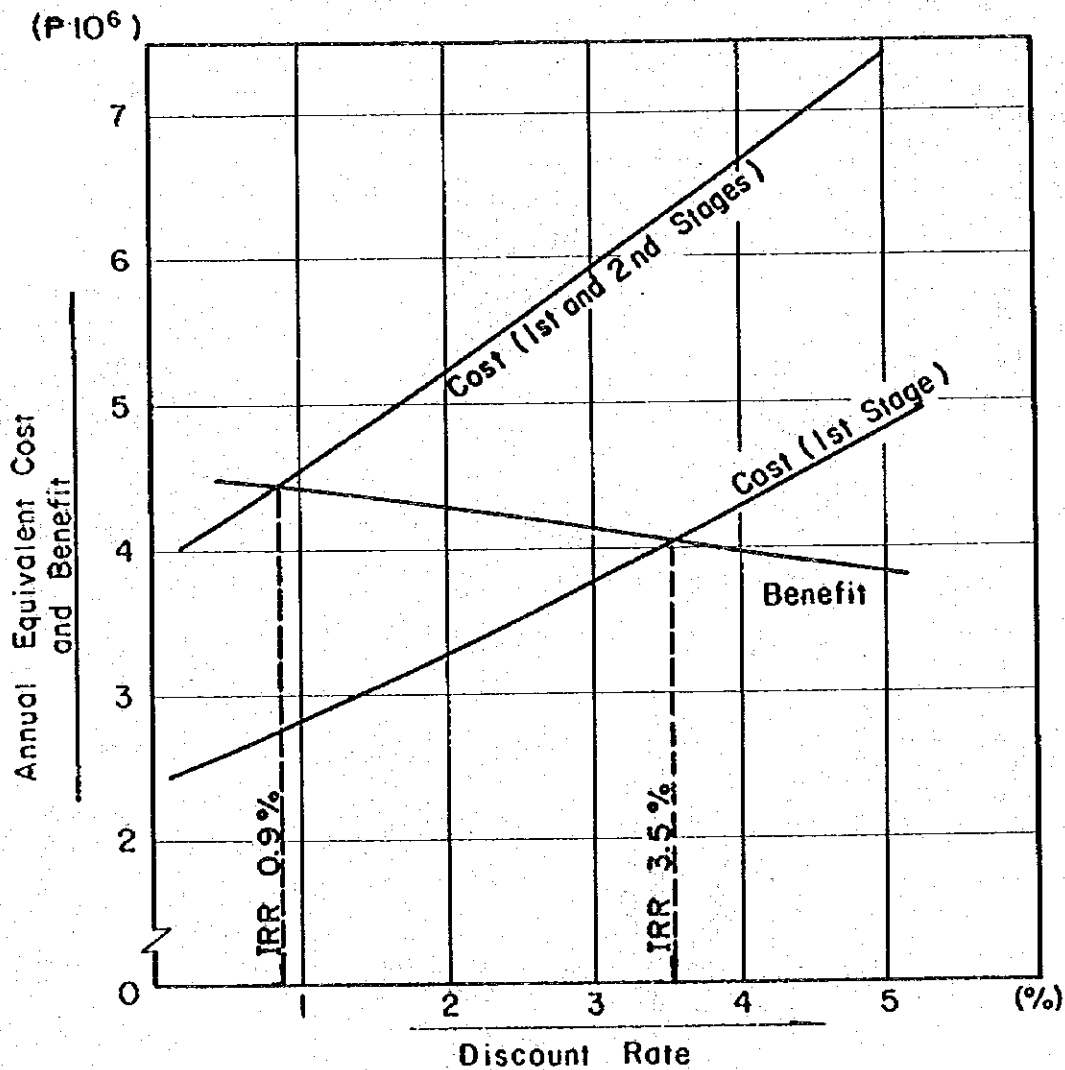


FIG. - 22.1 INTERNAL RATE OF RETURN FOR THE SABO PROJECT



Note: Most benefit of the Sabo project is expected just after completion of the Stage-I construction works. The Stage-II construction works are planned mainly ensuring and maintaining function of the Stage-I construction works and the benefit from the Stage-II construction works is not significant. Therefore, the benefit curve is commonly used for both stage works.

FIG.-3.2.1 CONSTRUCTION TIME SCHEDULE OF THE SABO PROJECT, STAGE - I

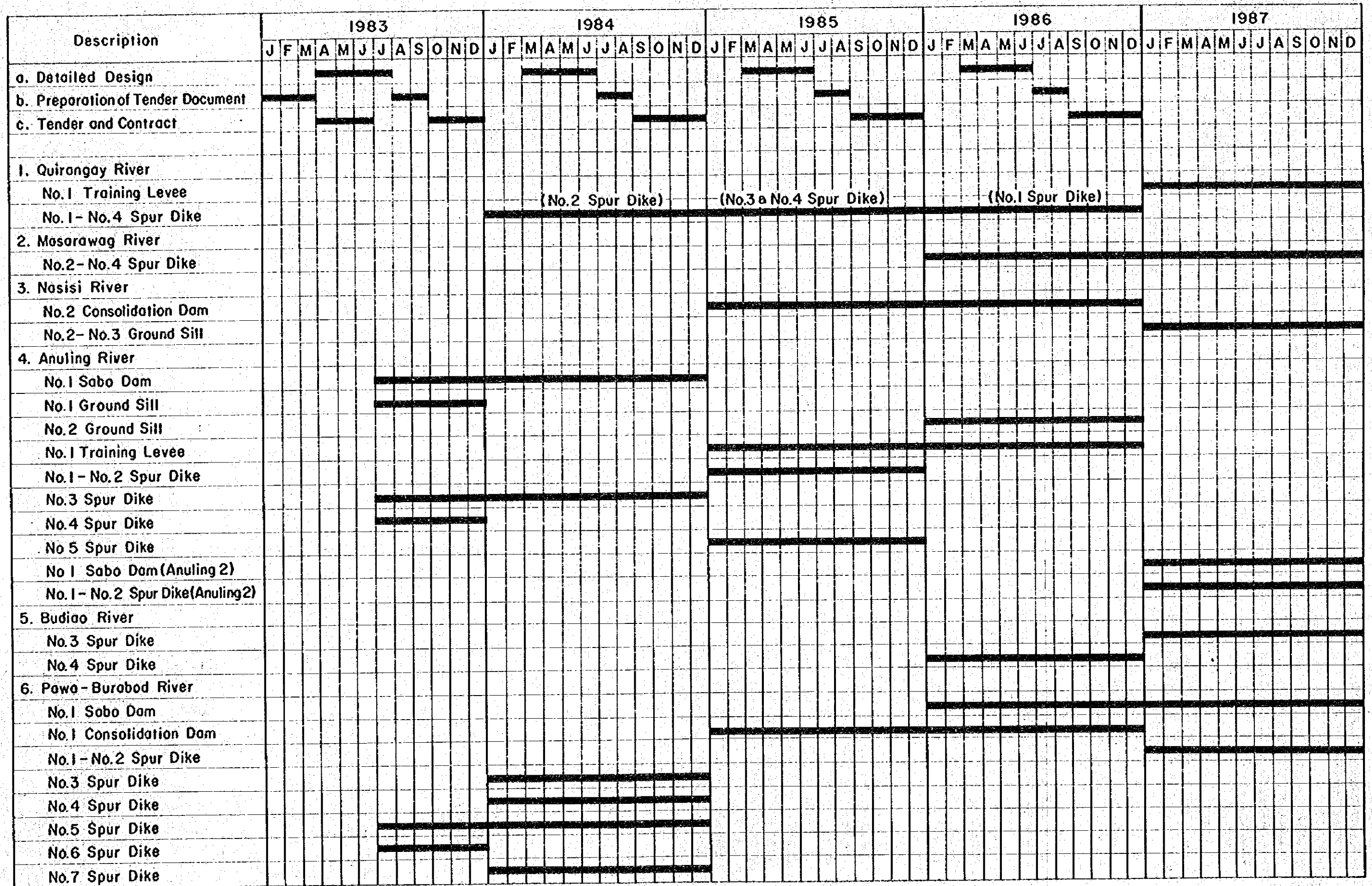


FIG. - 3.2.2 PROJECT ORGANIZATION CHART

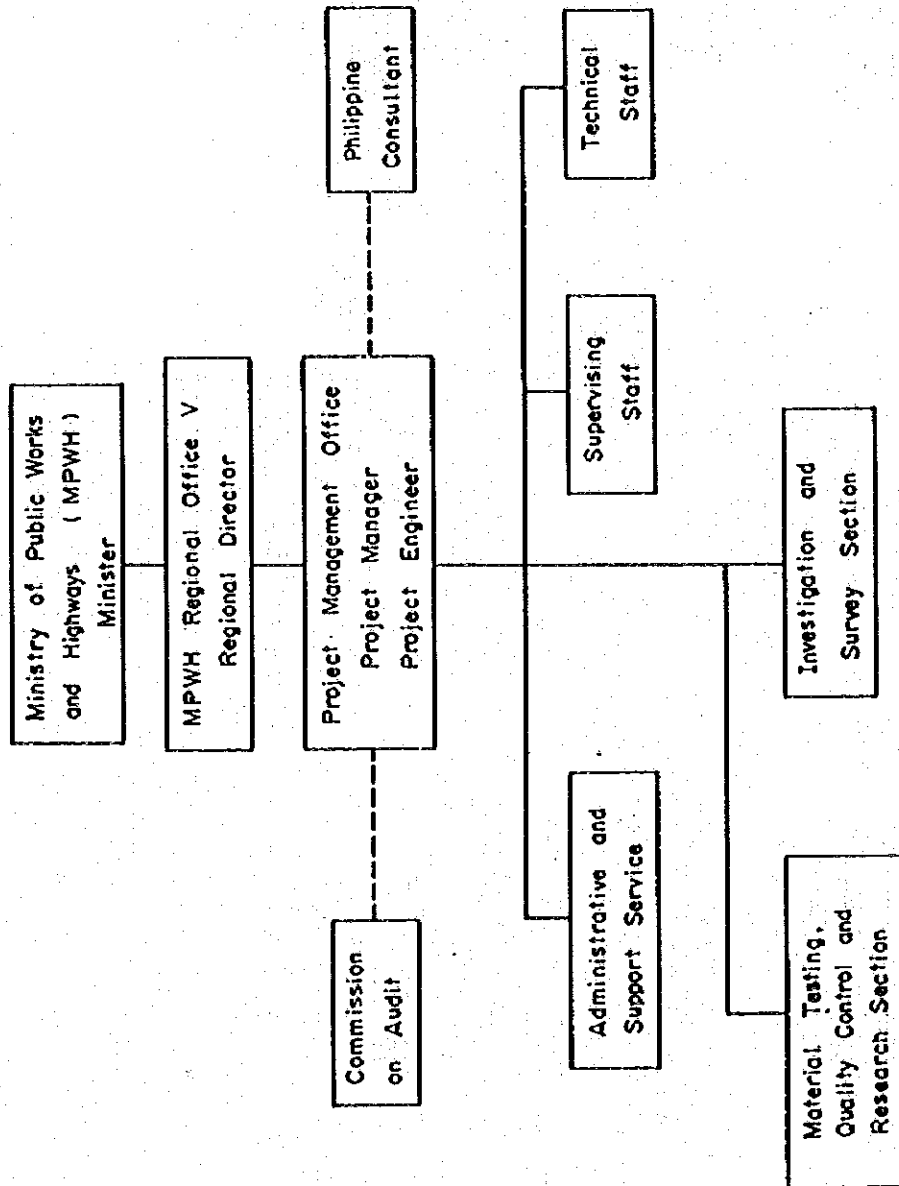
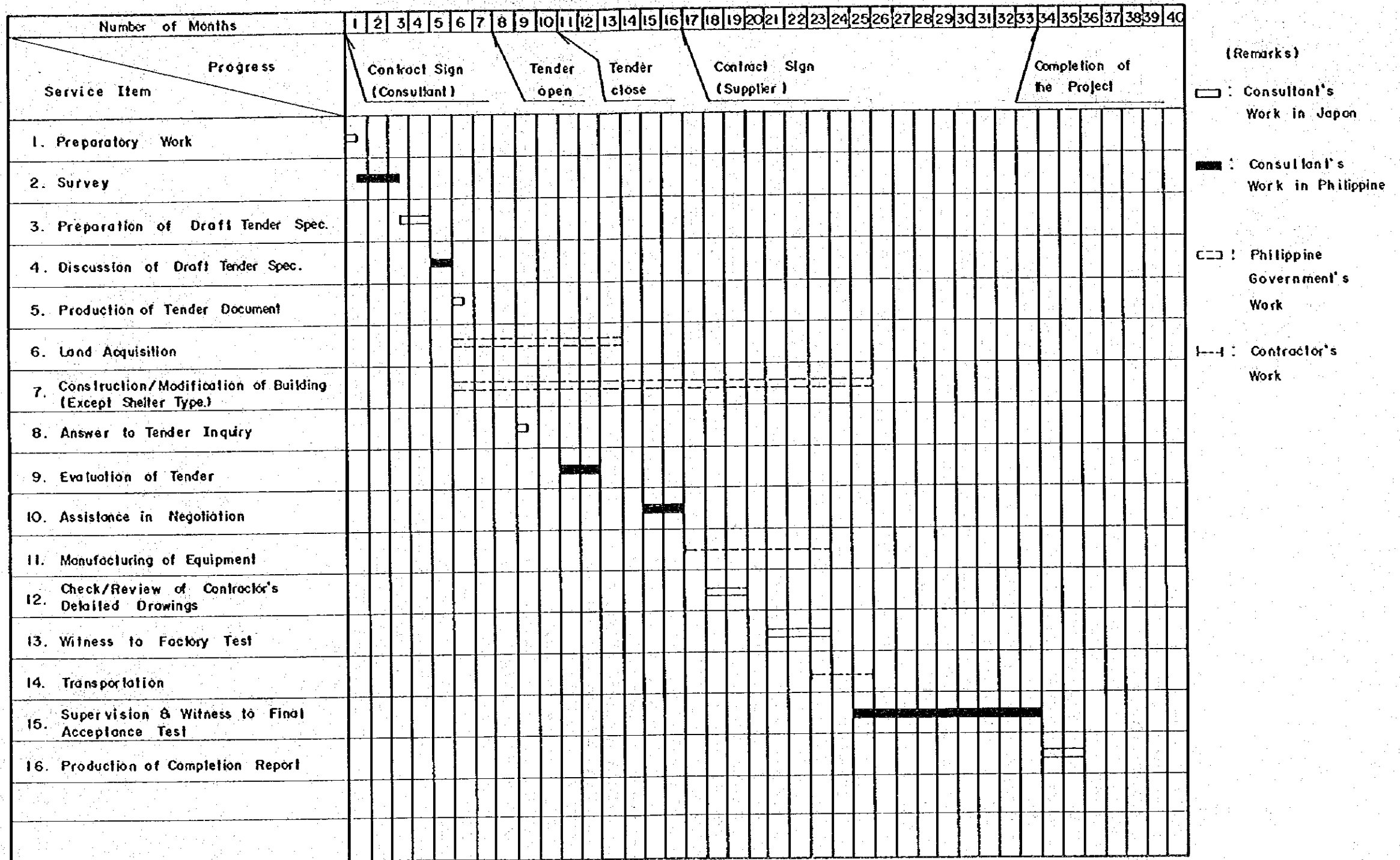


FIG.-3.3.1 CONSTRUCTION TIME SCHEDULE OF DISASTER PREDICTION AND WARNING SYSTEM PROJECT, STAGE -1



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