

BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR THE DEVELOPMENT
OF
DOMESTIC TELECOMMUNICATION NETWORK
IN
KINGDOM OF BHUTAN

VOLUME II

SEPTEMBER, 1991

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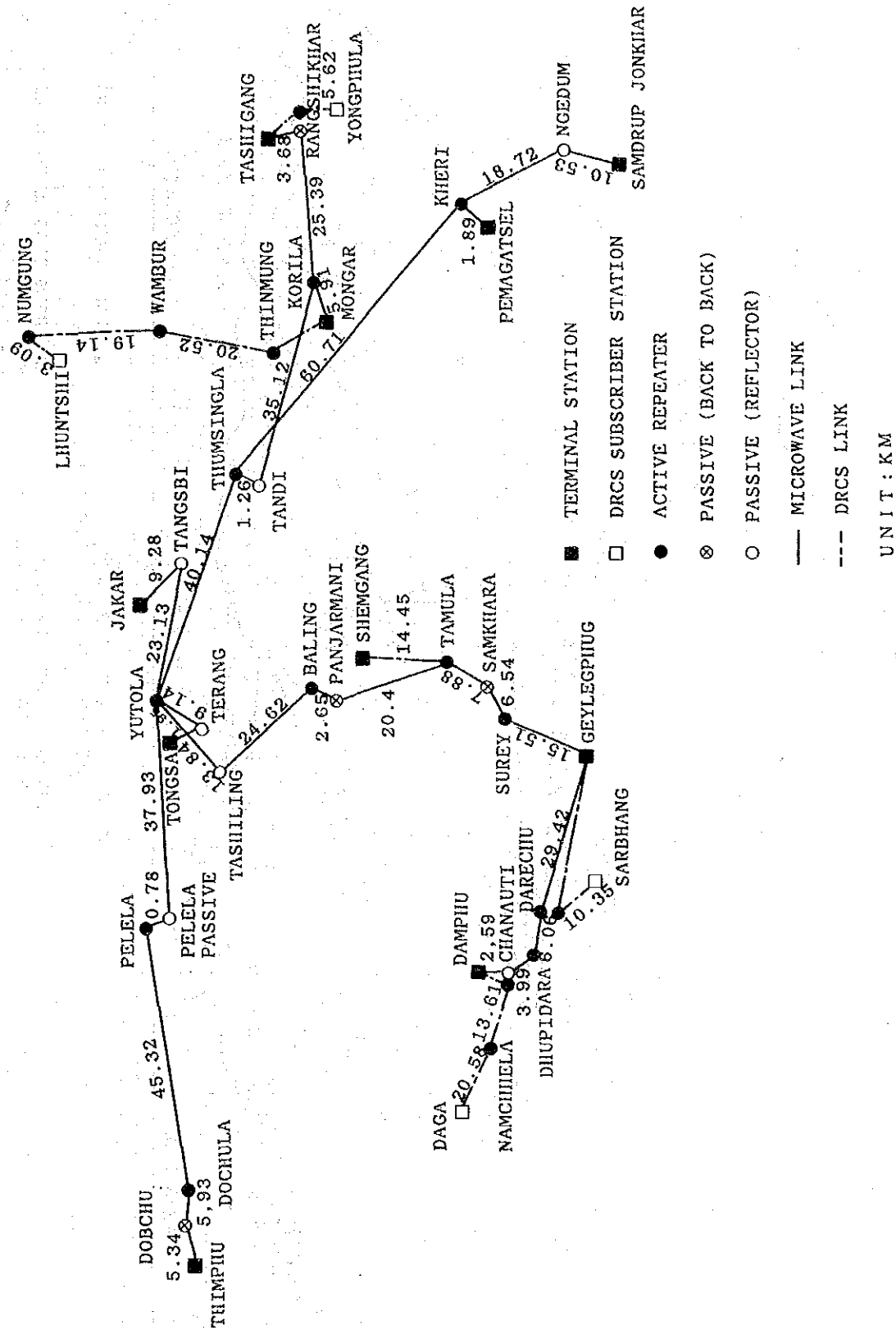
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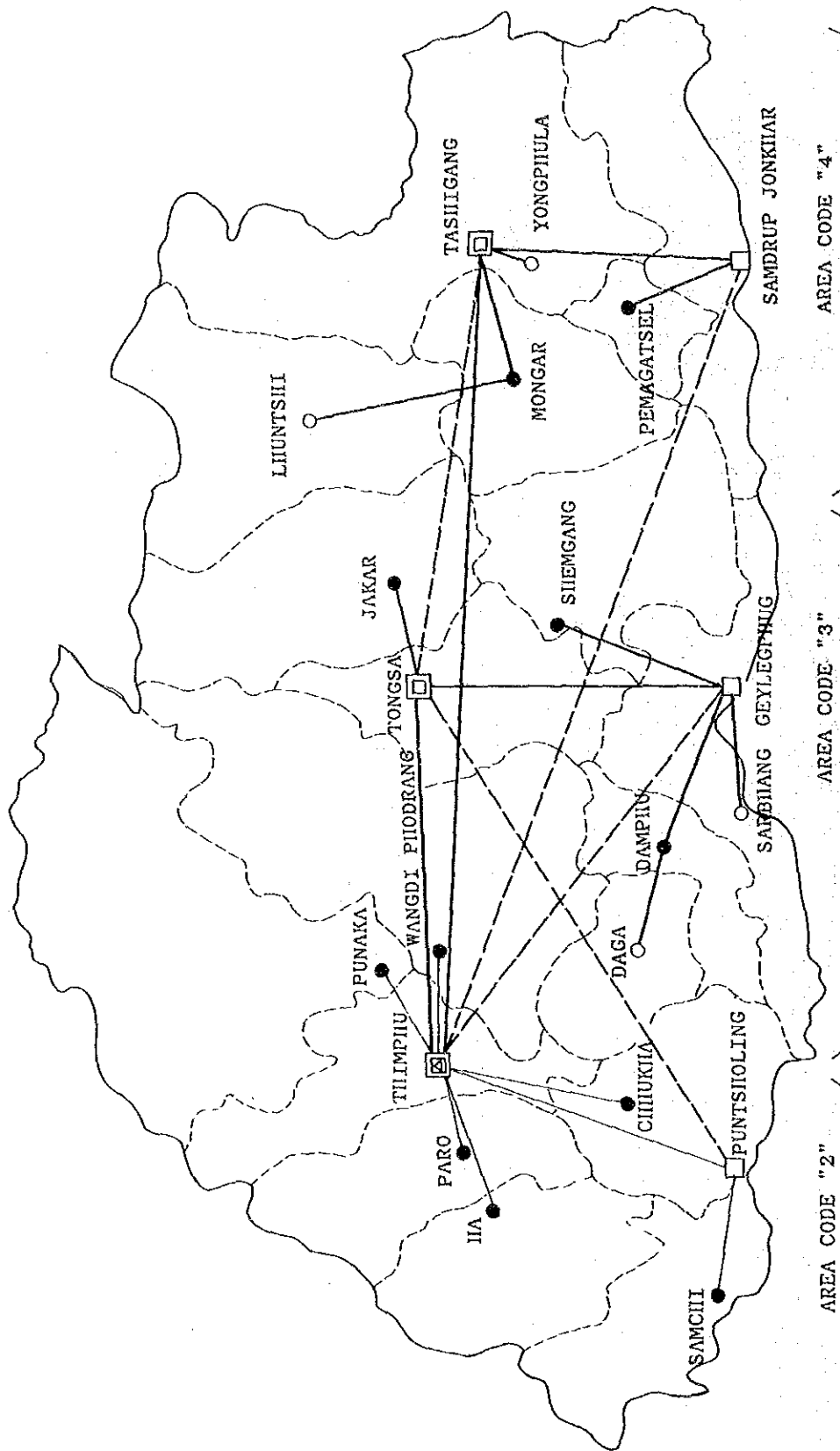
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Microwave Transmission Network Plan

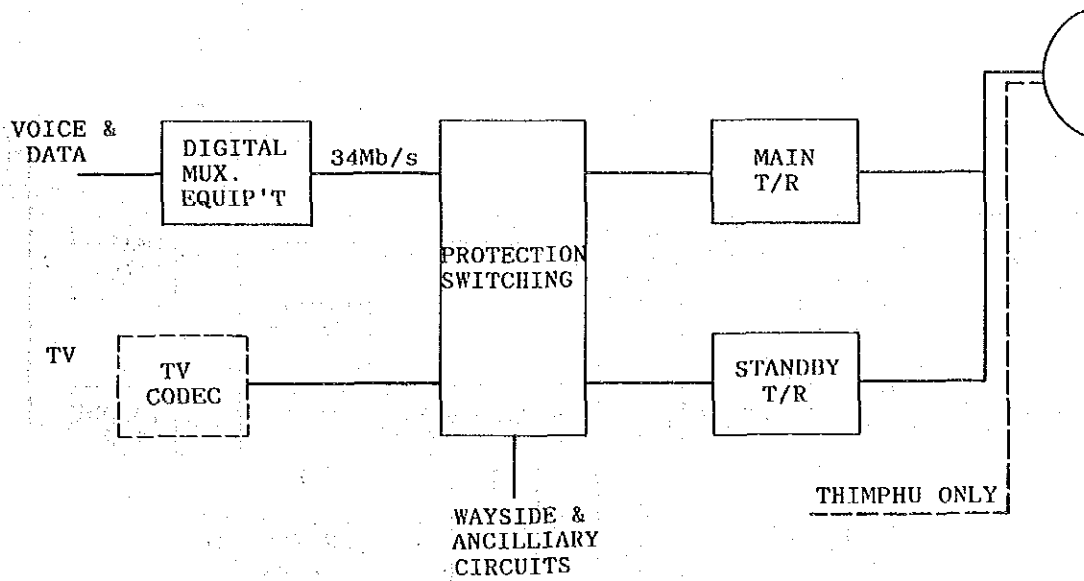


- ◻ SECONDARY CENTER (S.C) COMBINED WITH INTS., P.C AND L.E
- ◻ SECONDARY CENTER (S.C) COMBINED WITH P.C AND L.E
- ◻ PRIMARY CENTER (P.C) COMBINED WITH L.E
- LOCAL EXCHANGE (L.E)
- DRCS SUBSCRIBER STATION
- FINAL ROUTE
- - - HIGH USAGE ROUTE

Telephone Switching Network Plan

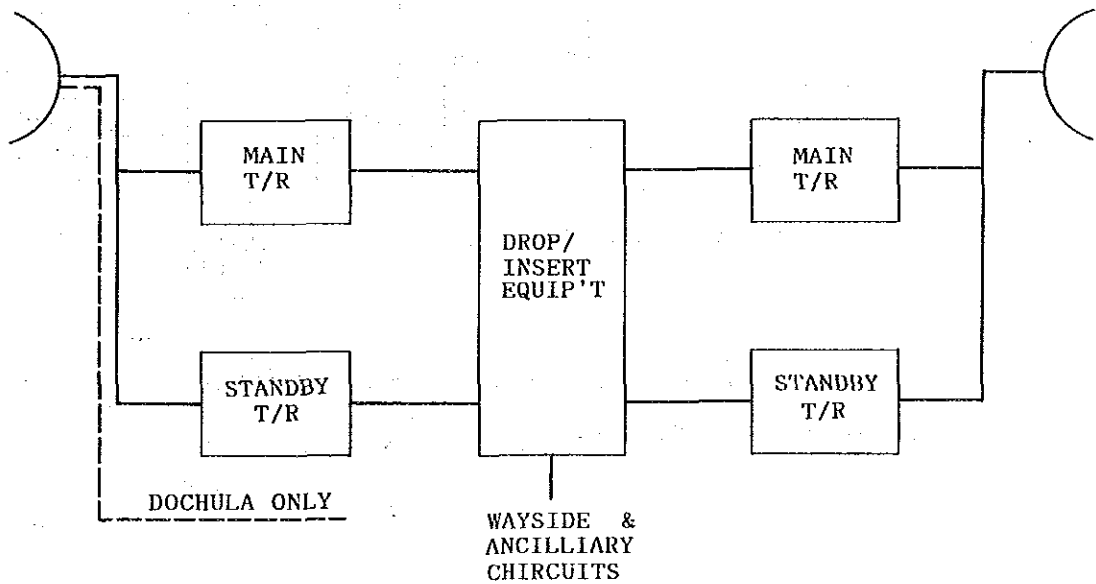
TERMINAL

(THIMPHU, TONGSA, JAKAR, MONGAR, TASHIGANG, SHEMGANG,
DAMPHU, PEMAGATSEL AND SAMDRUP JONKHAR)



THROUGH REPEATER

(DOCHULA, PELELA, BALING, SUREY, DARECHU, DHUPIDARA,
AND OTHERS)



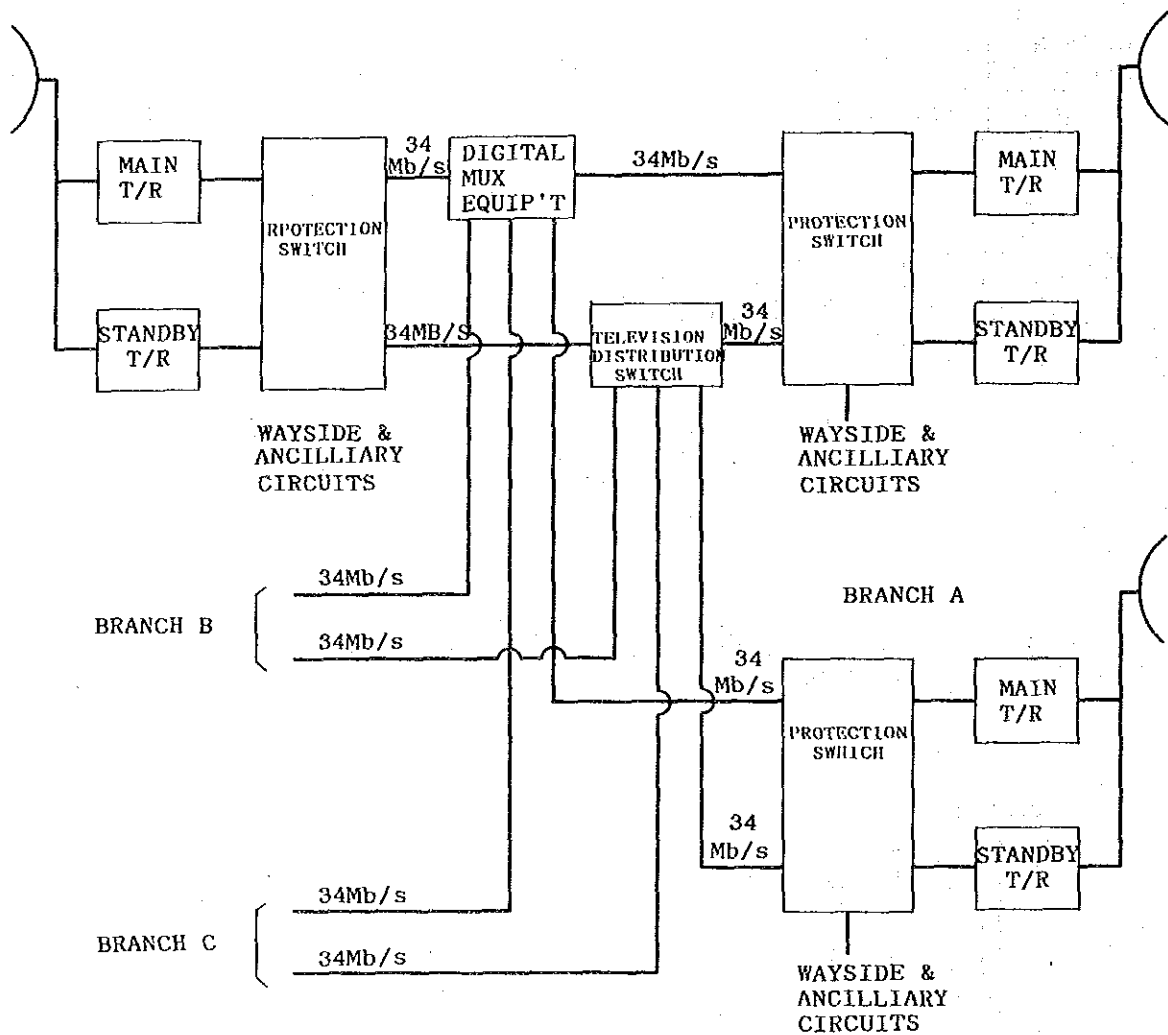
EQUIPMENT BLOCK SCHEMATIC

FIG. NO.

TR-1

REPEATER WITH BRANCHES

(YATOLA, THUMSINGLA, KORILA, TAMULA AND KHERI)

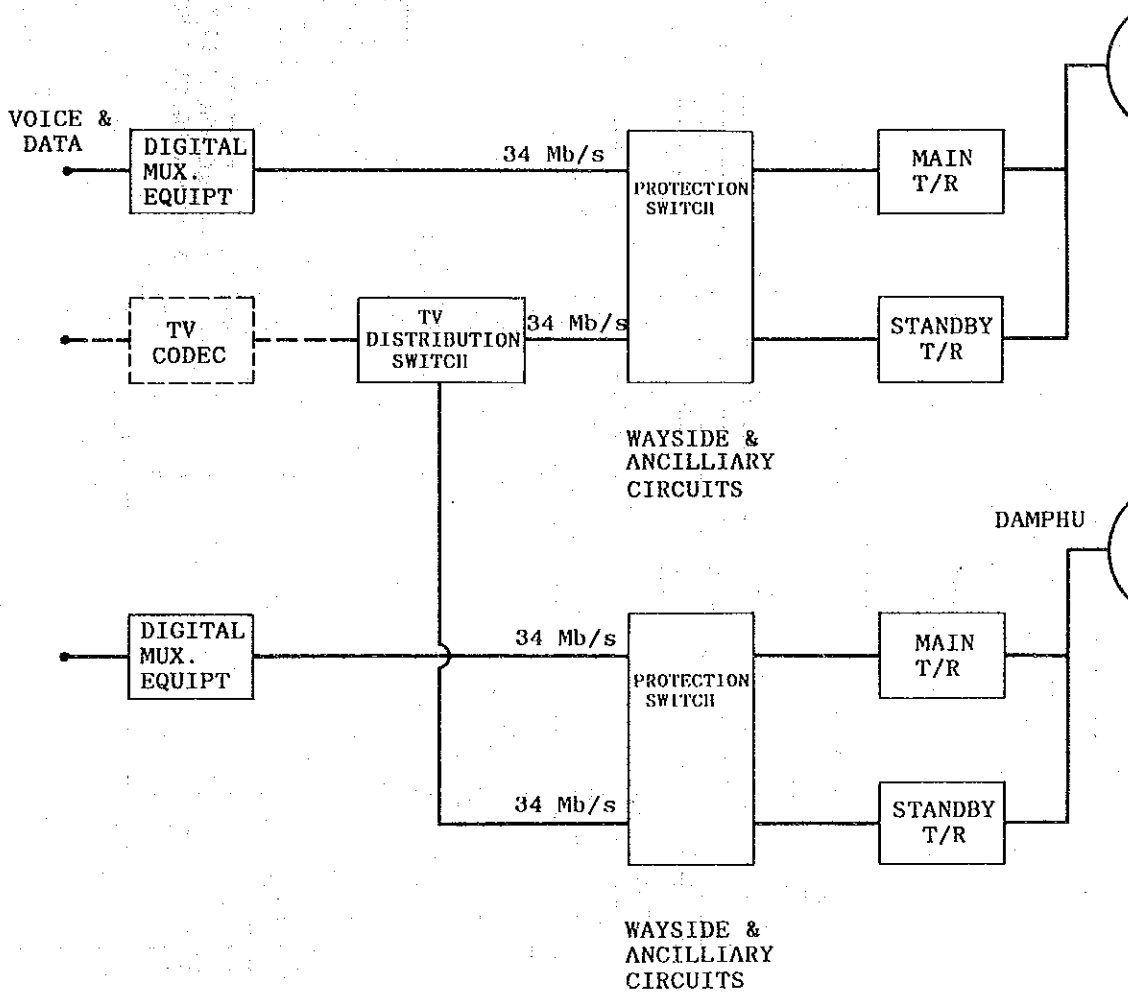


ONE-BRANCH : THUMSINGLA, KORILA, TAMULA AND KHERI

THREE-BRANCH : YUTOLA ONLY

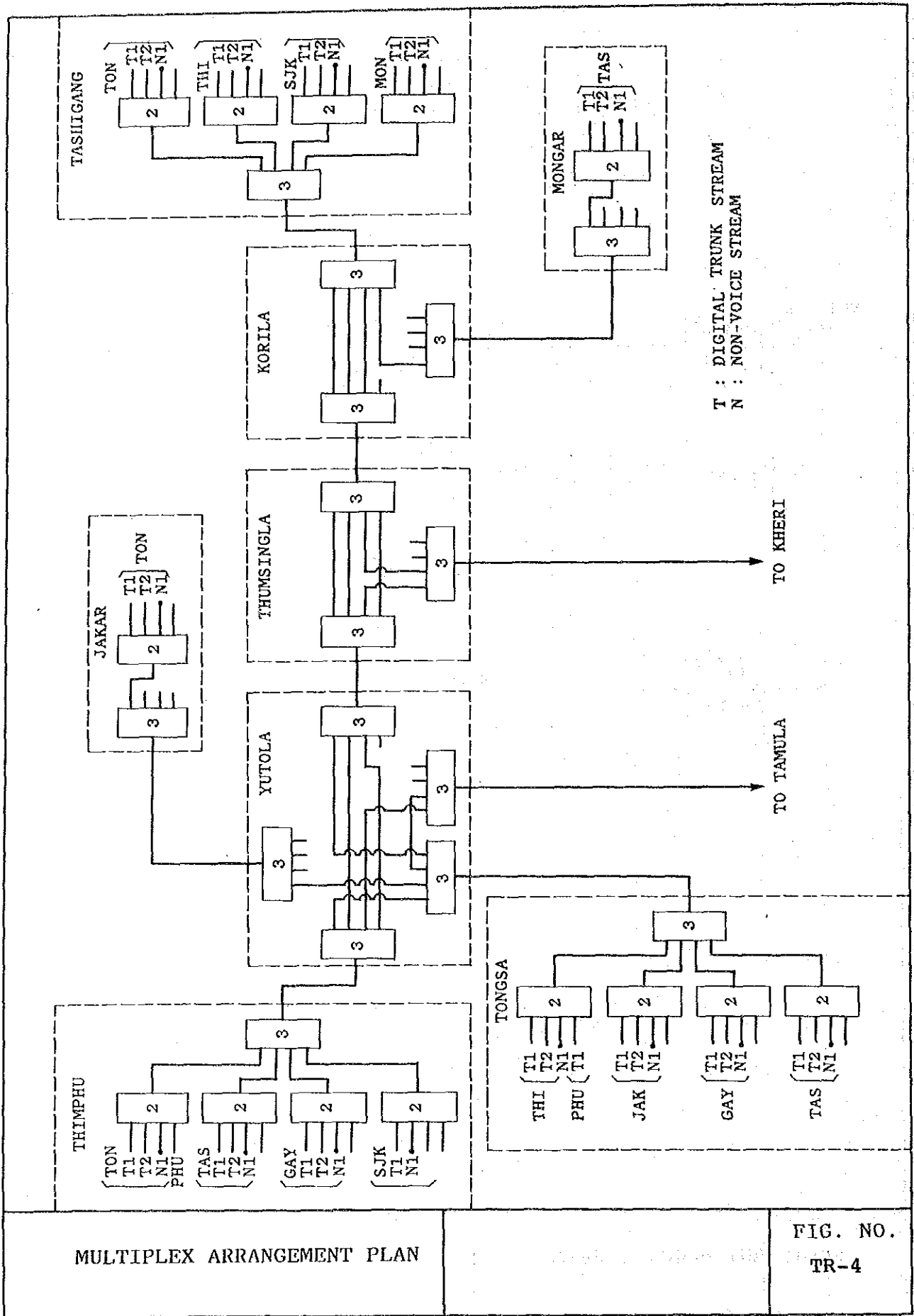
EQUIPMENT BLOCK SCHEMATIC		FIG. NO. TR-2
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GEYLEGPIUG



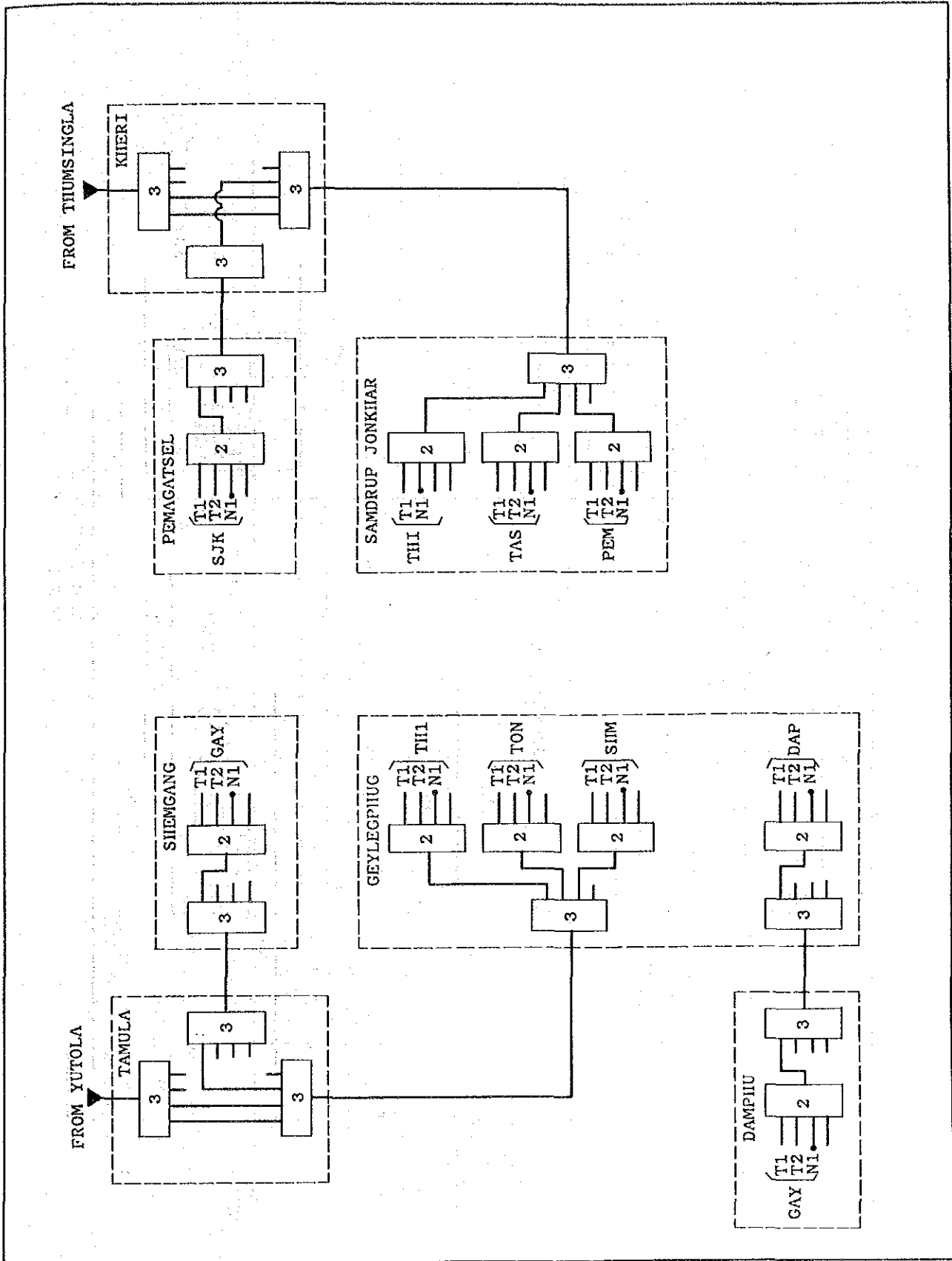
EQUIPMENT BLOCK SCHEMATIC

FIG. NO.
TR-3



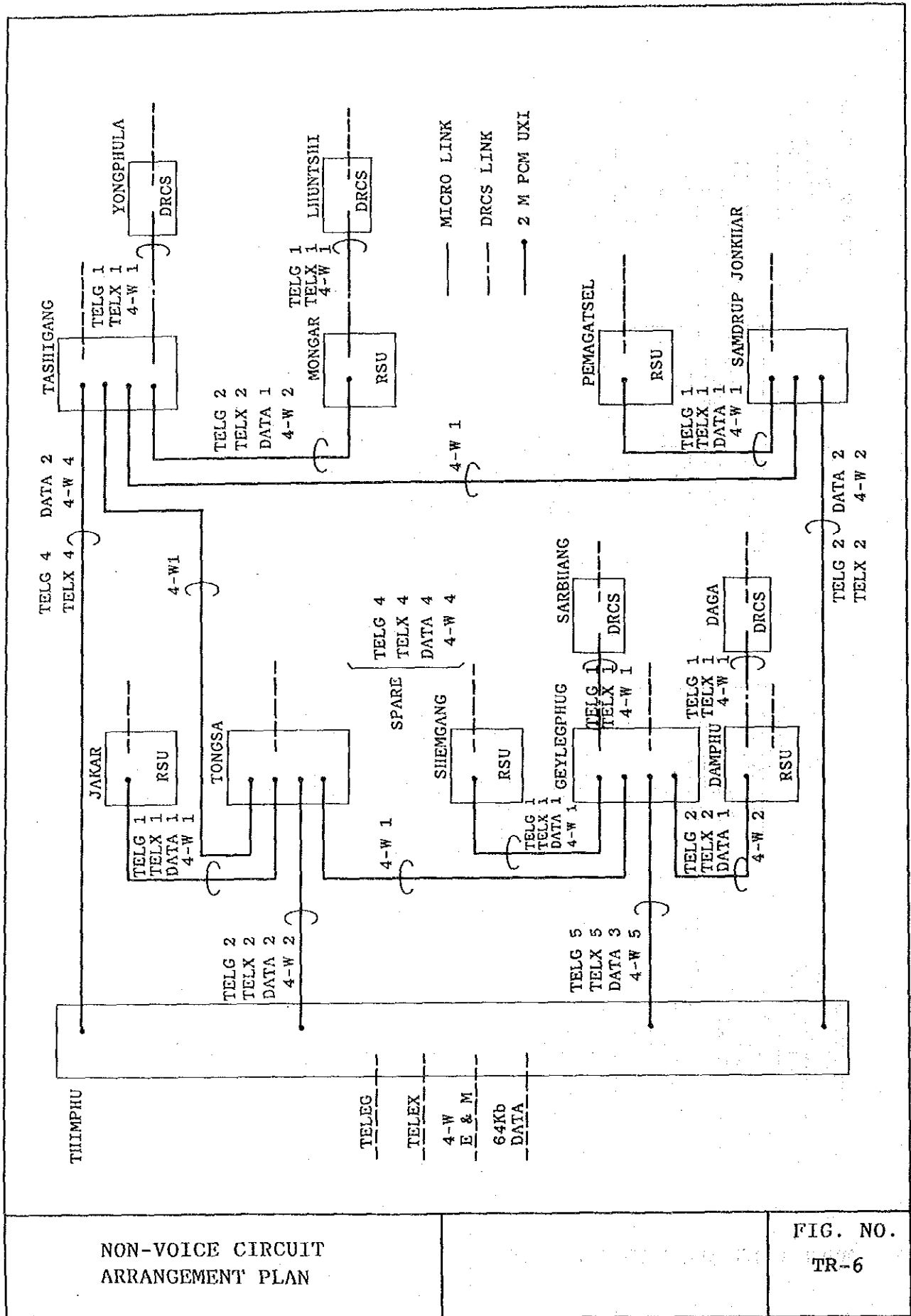
MULTIPLEX ARRANGEMENT PLAN

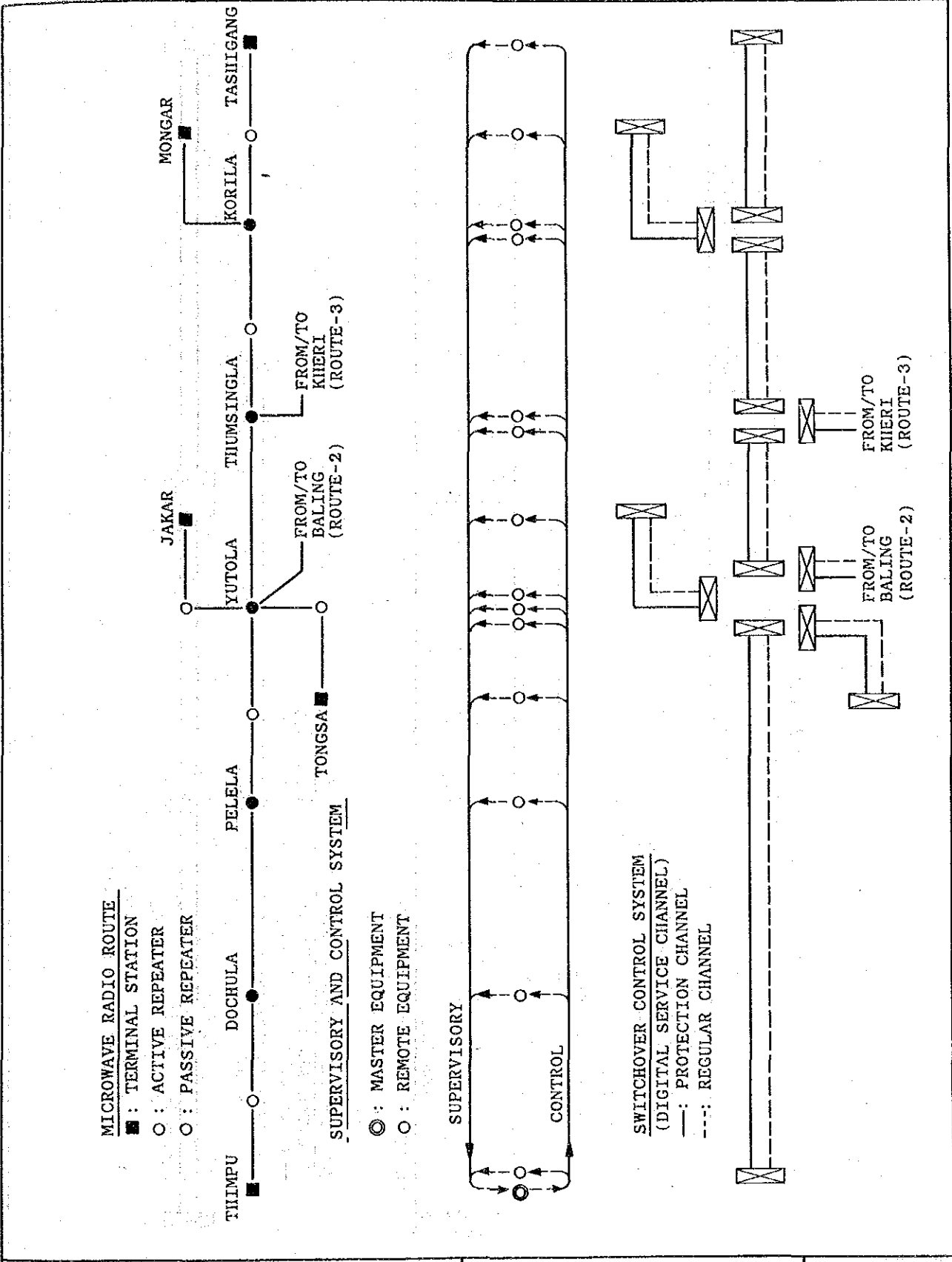
FIG. NO.
TR-4



MULTIPLEX ARRANGEMENT PLAN

FIG. NO.
TR-5

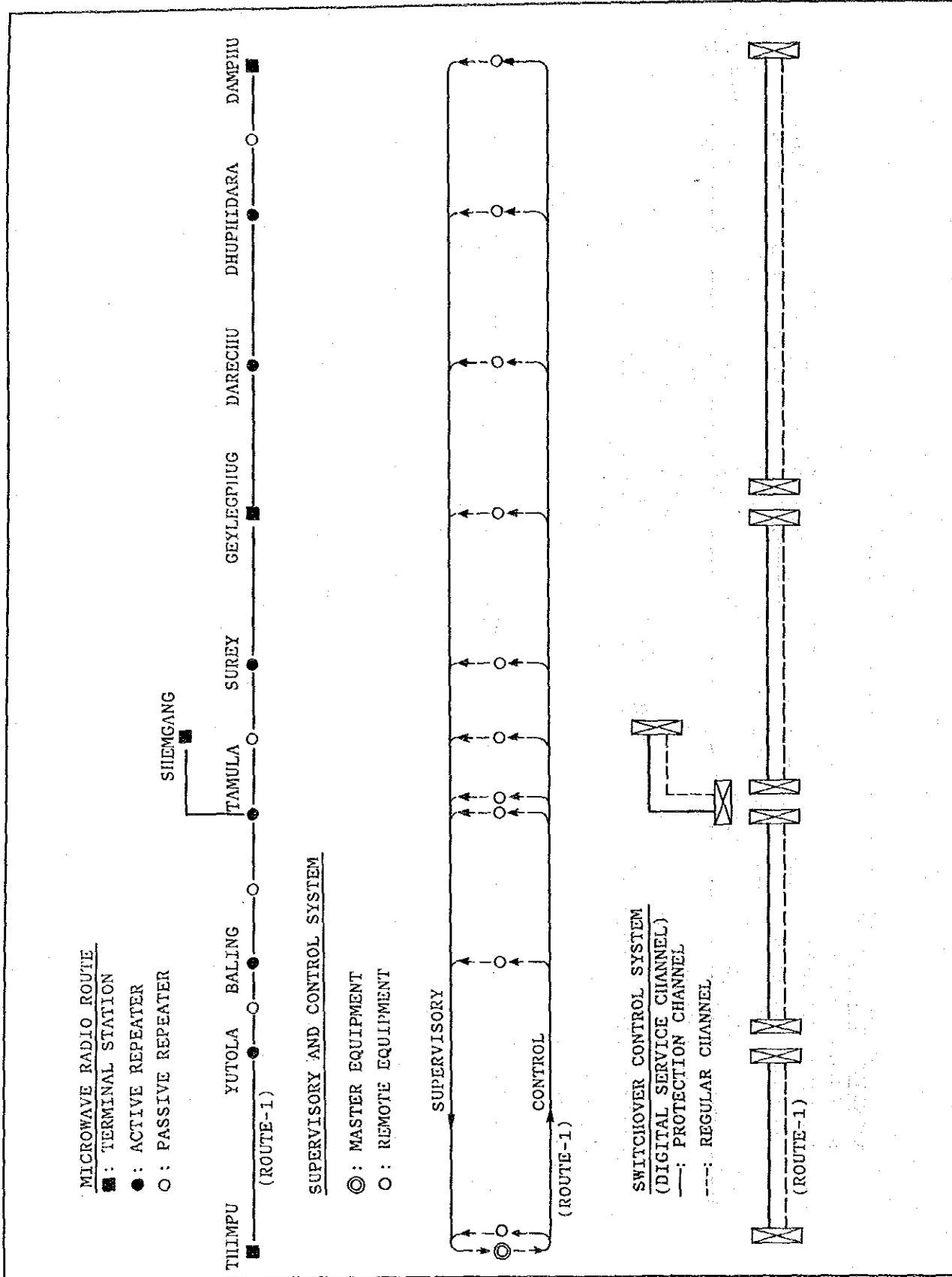




SYSTEM CONFIGURATION OF SUPERVISORY AND CONTROL SYSTEM

ROUTE-1

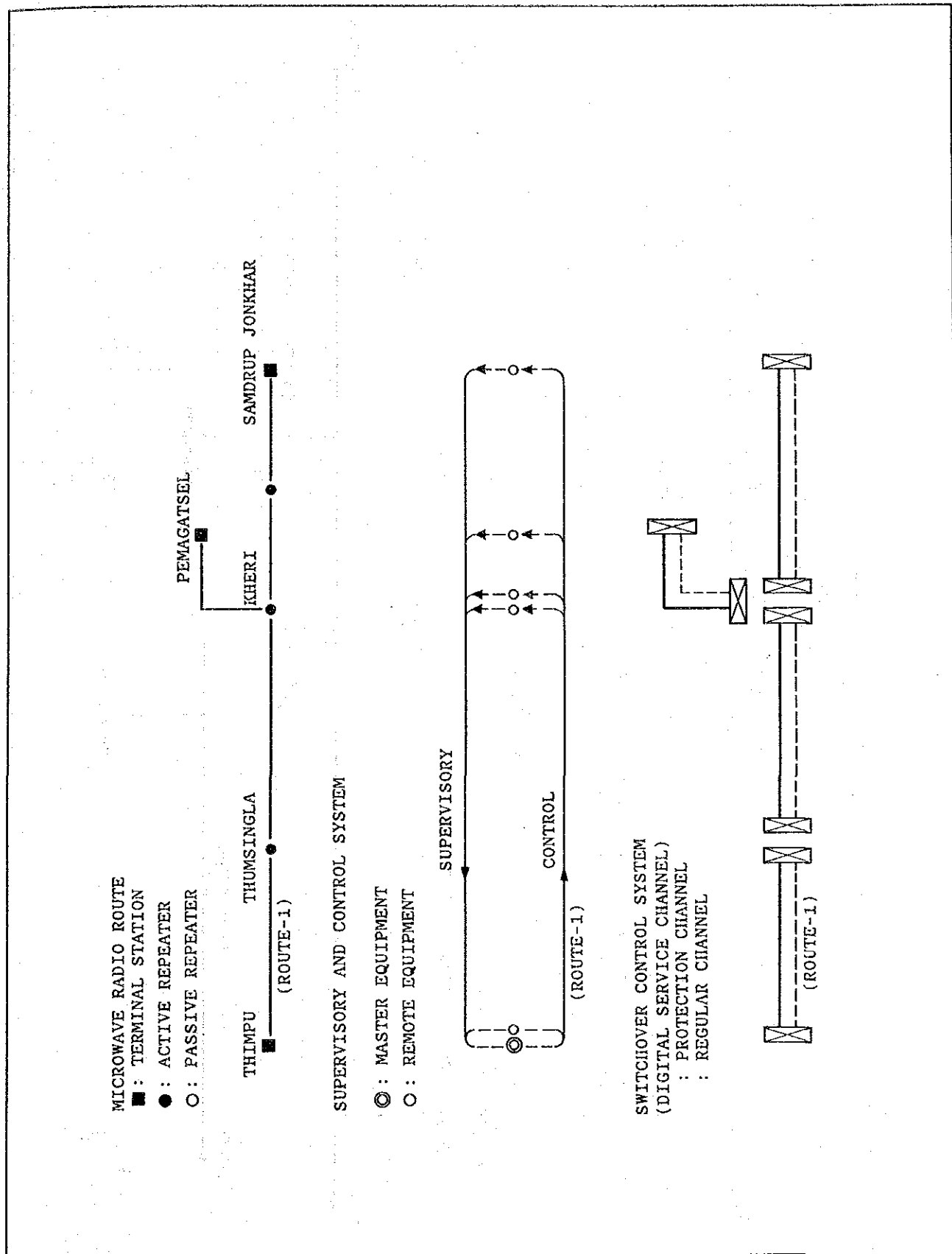
FIG. NO. TR-7



SYSTEM CONFIGURATION OF SUPERVISORY AND CONTROL SYSTEM

ROUTE-2

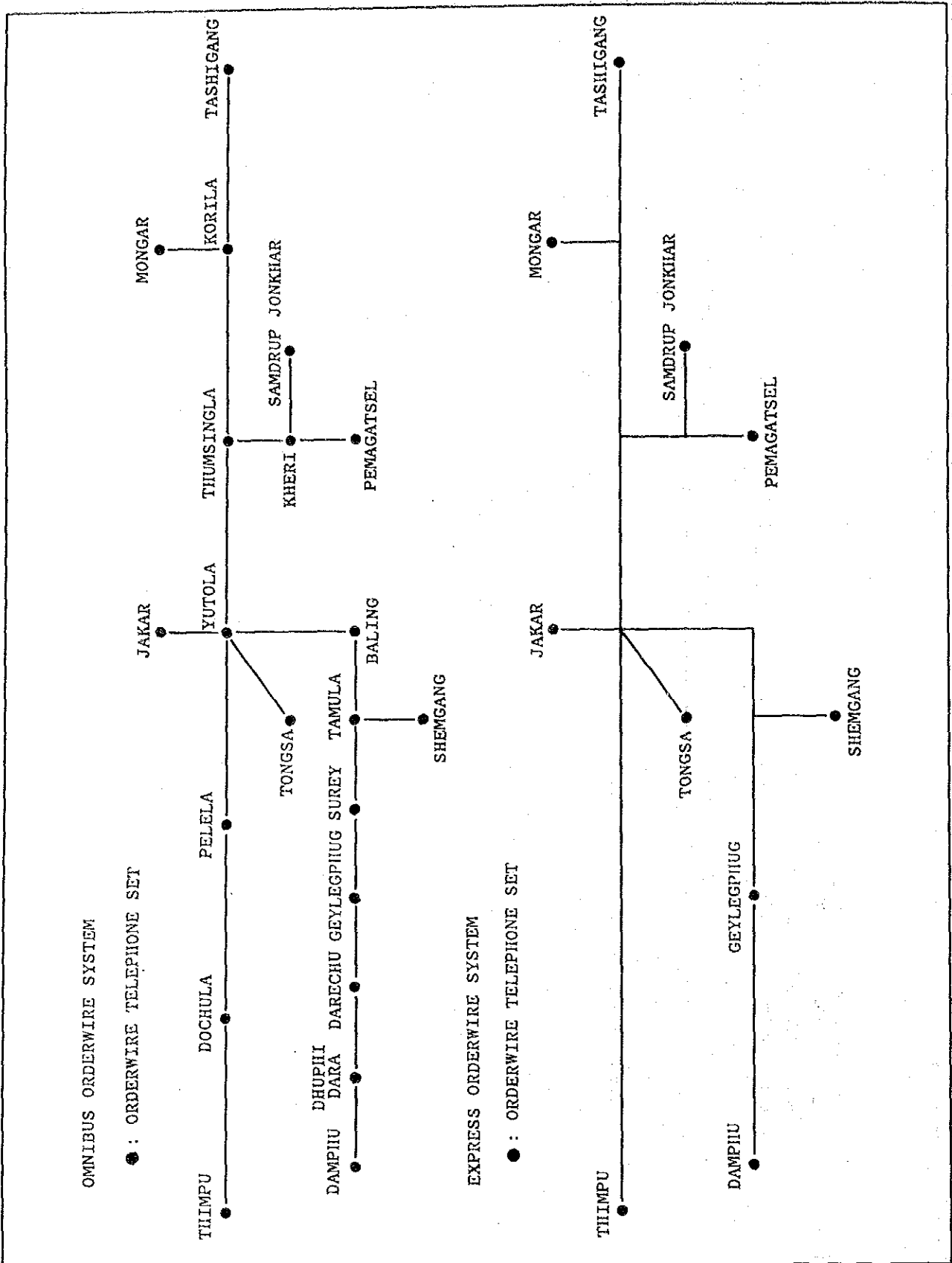
FIG. NO. TR-8



SYSTEM CONFIGURATION OF SUPERVISORY AND CONTROL SYSTEM

ROUTE-3

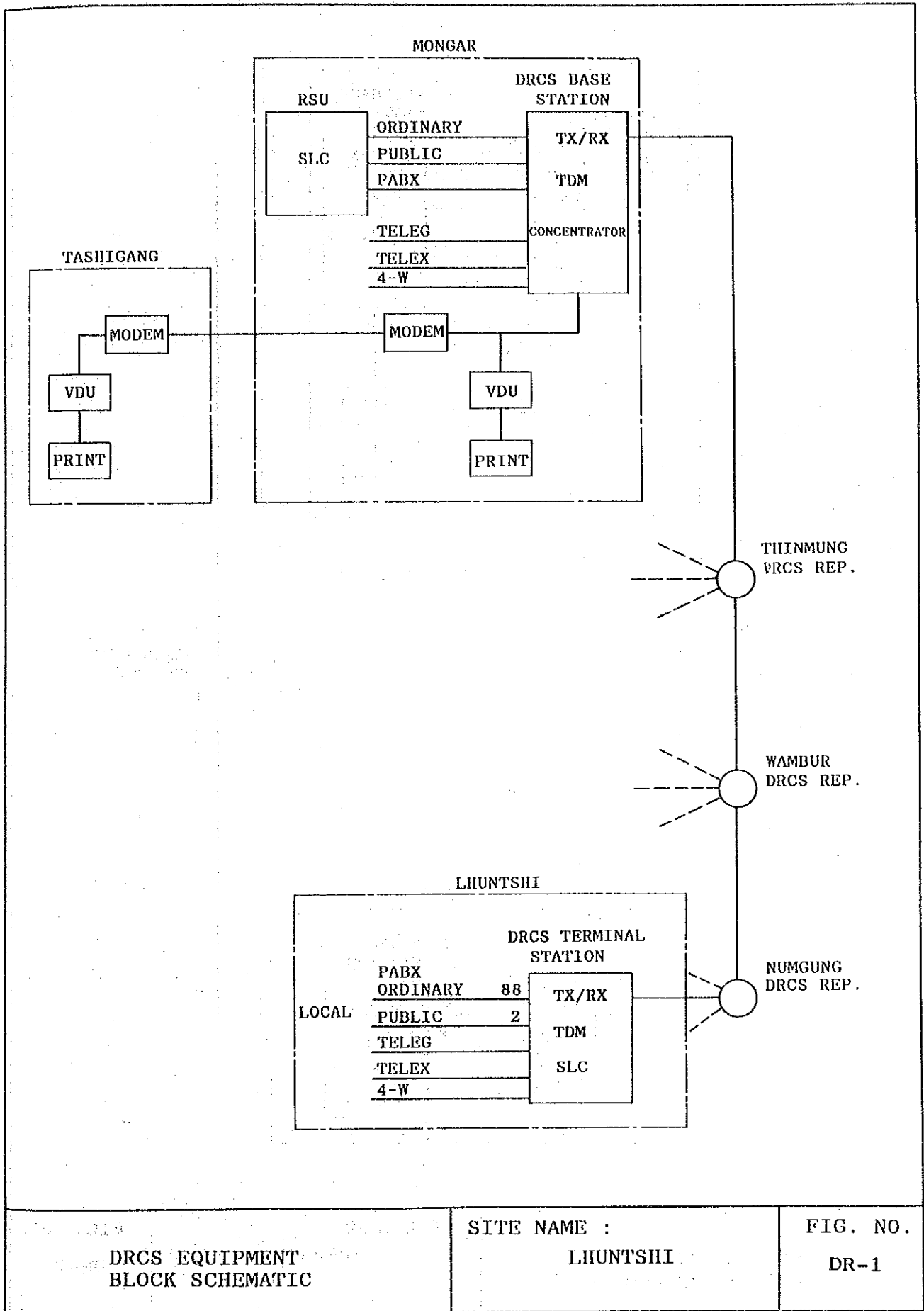
FIG. NO. TR-9



SYSTEM CONFIGURATION OF ORDERWIRE SYSTEM

WHOLE ROUTES

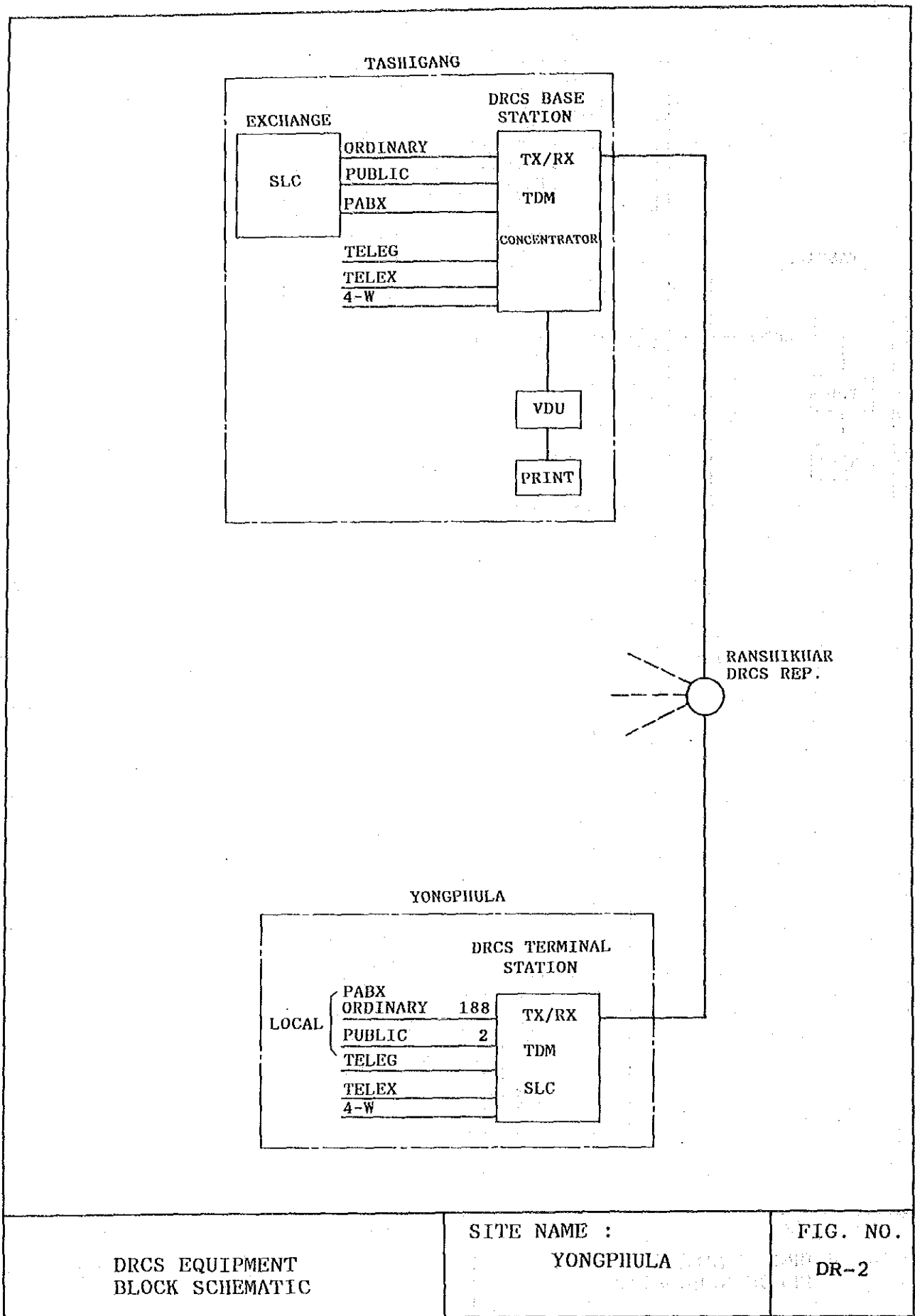
FIG. NO. TR-10

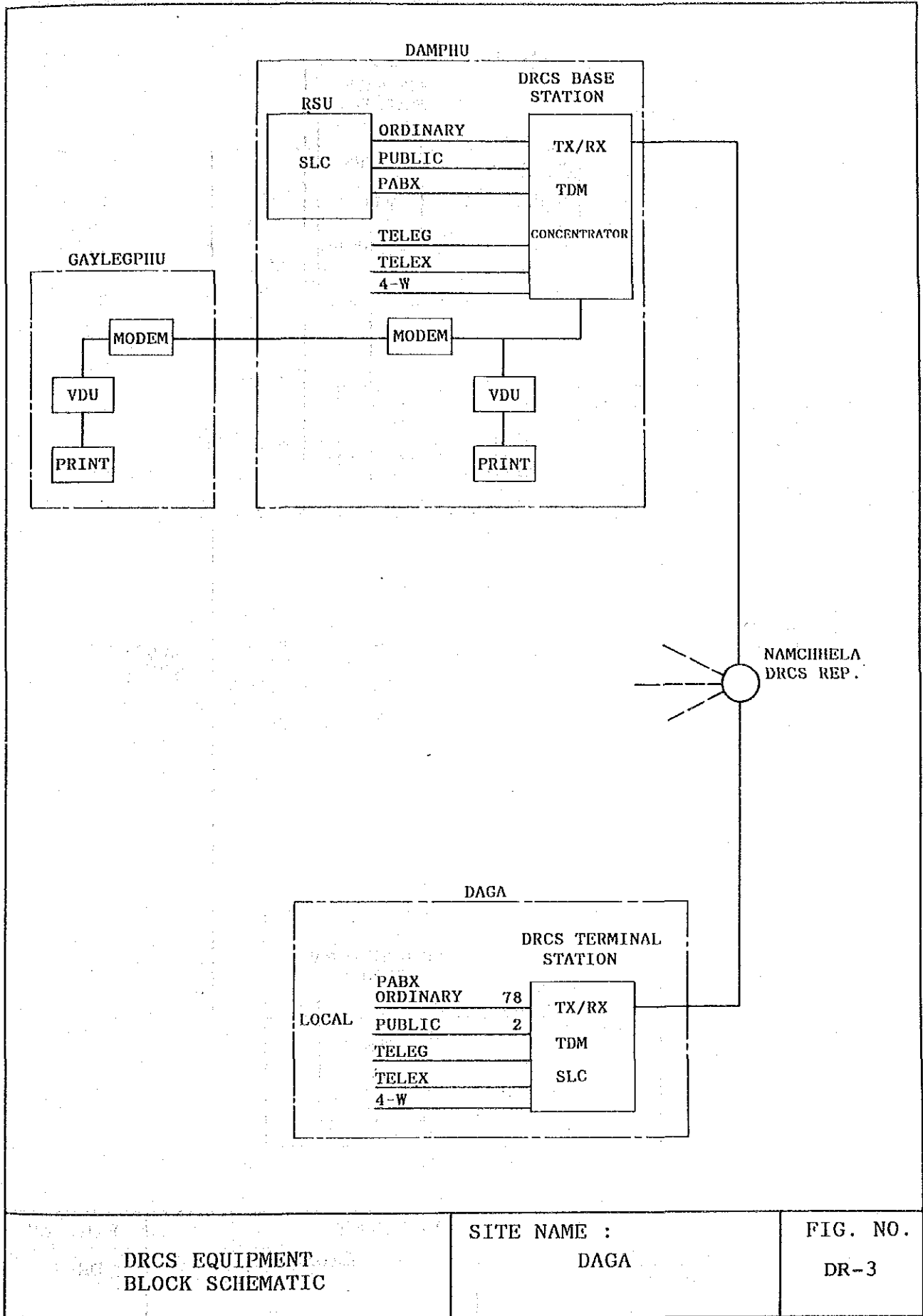


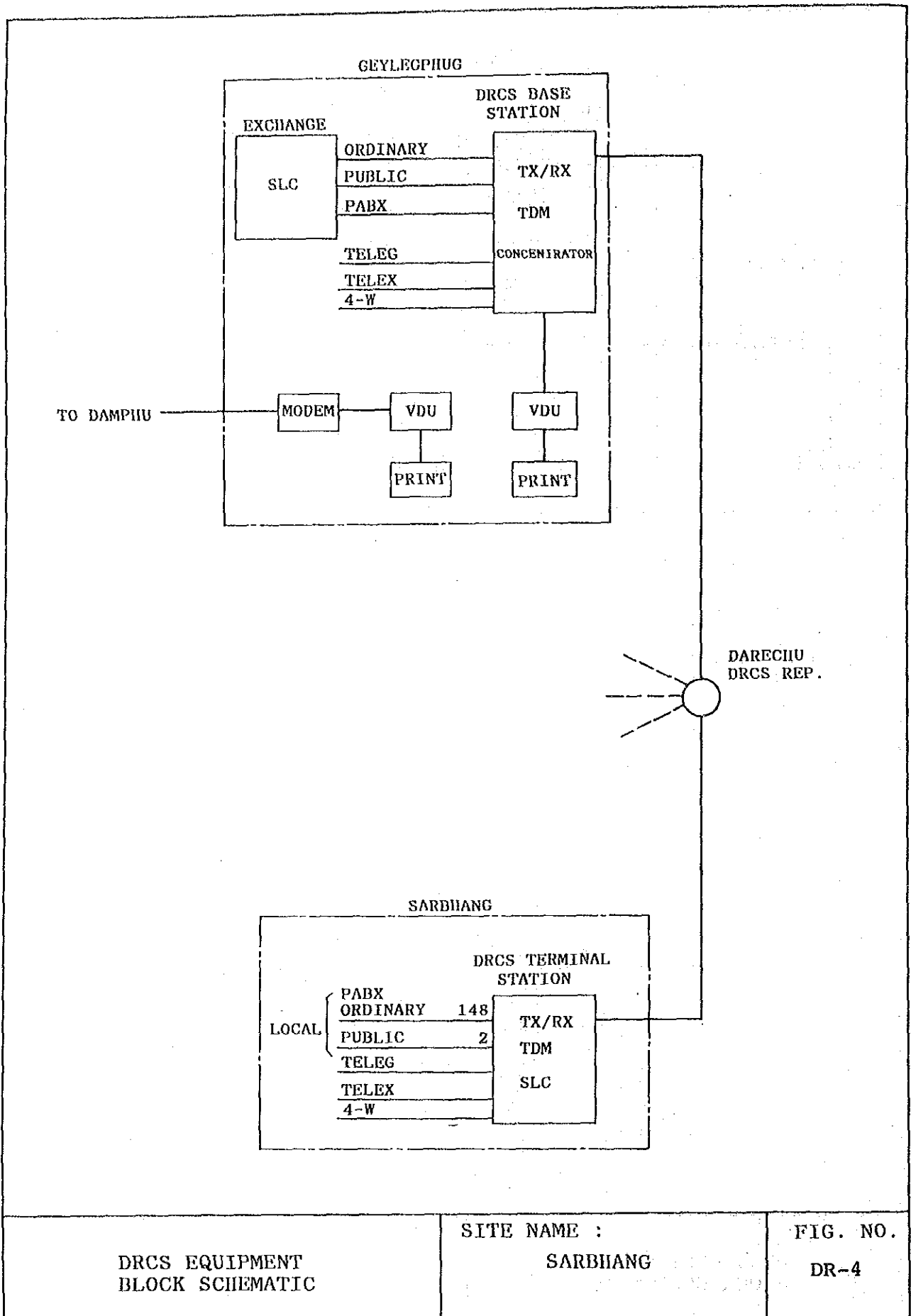
DRCS EQUIPMENT
BLOCK SCHEMATIC

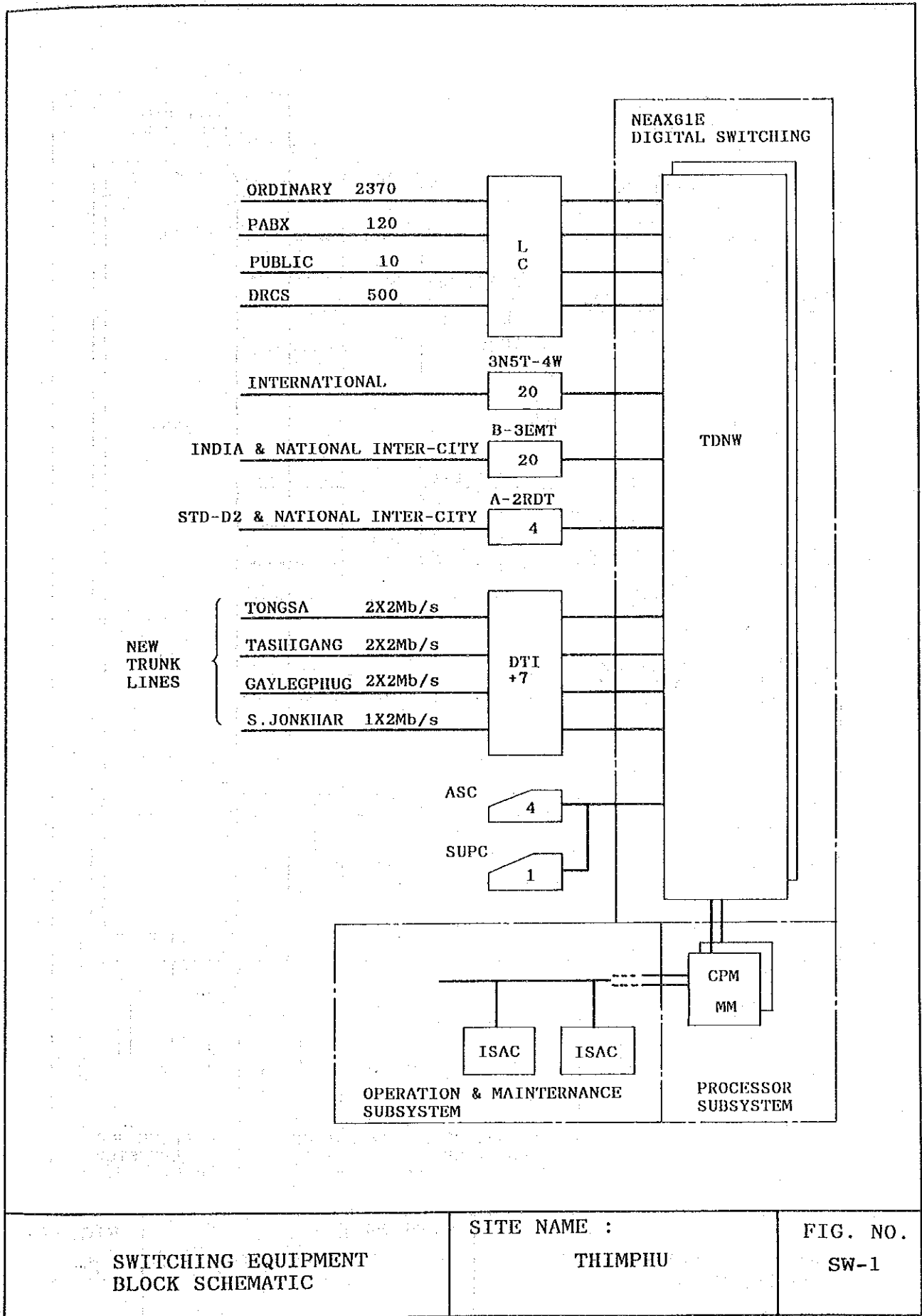
SITE NAME :
LIHUNTSHI

FIG. NO.
DR-1





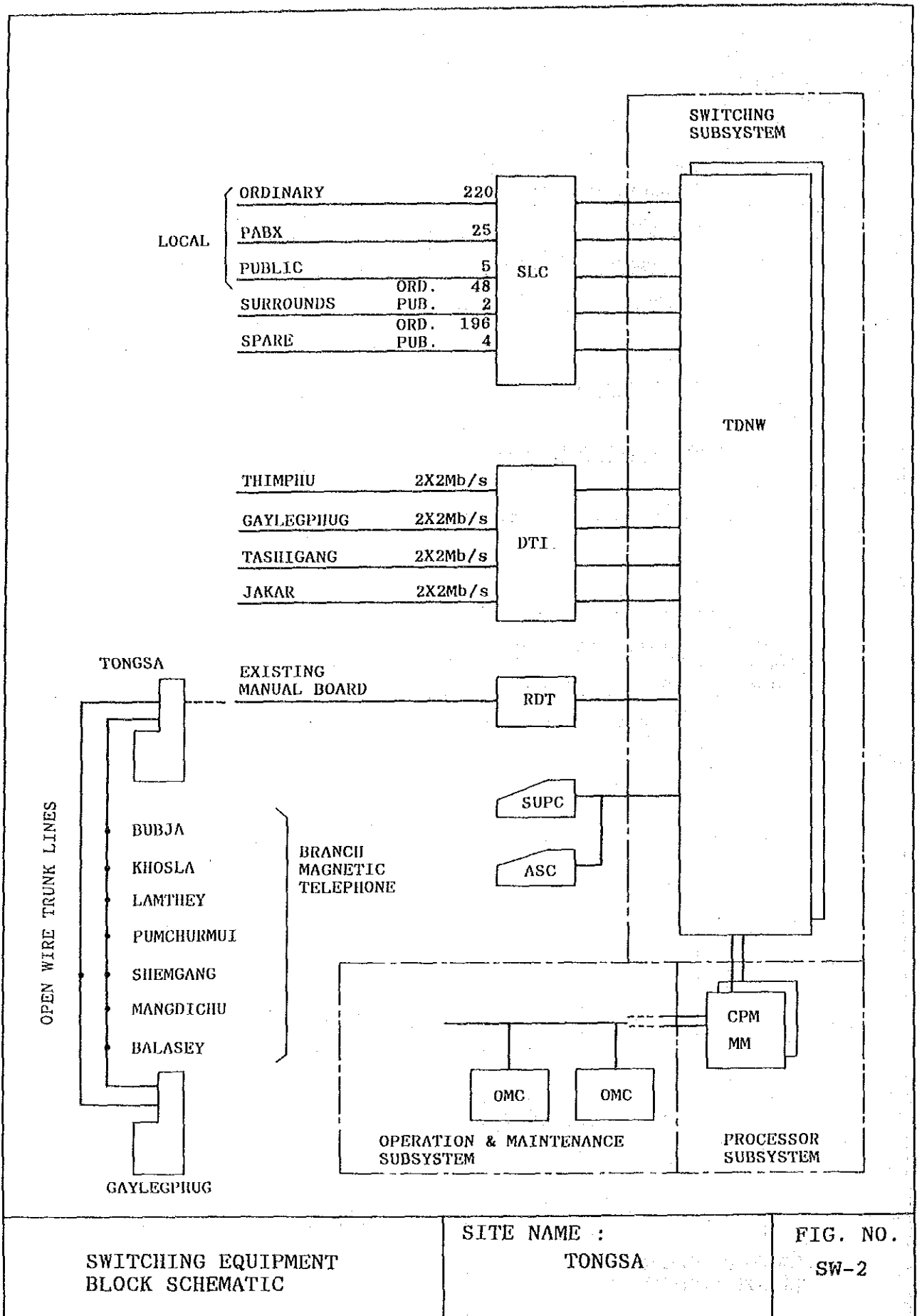




SWITCHING EQUIPMENT
BLOCK SCHEMATIC

SITE NAME :
THIMPHU

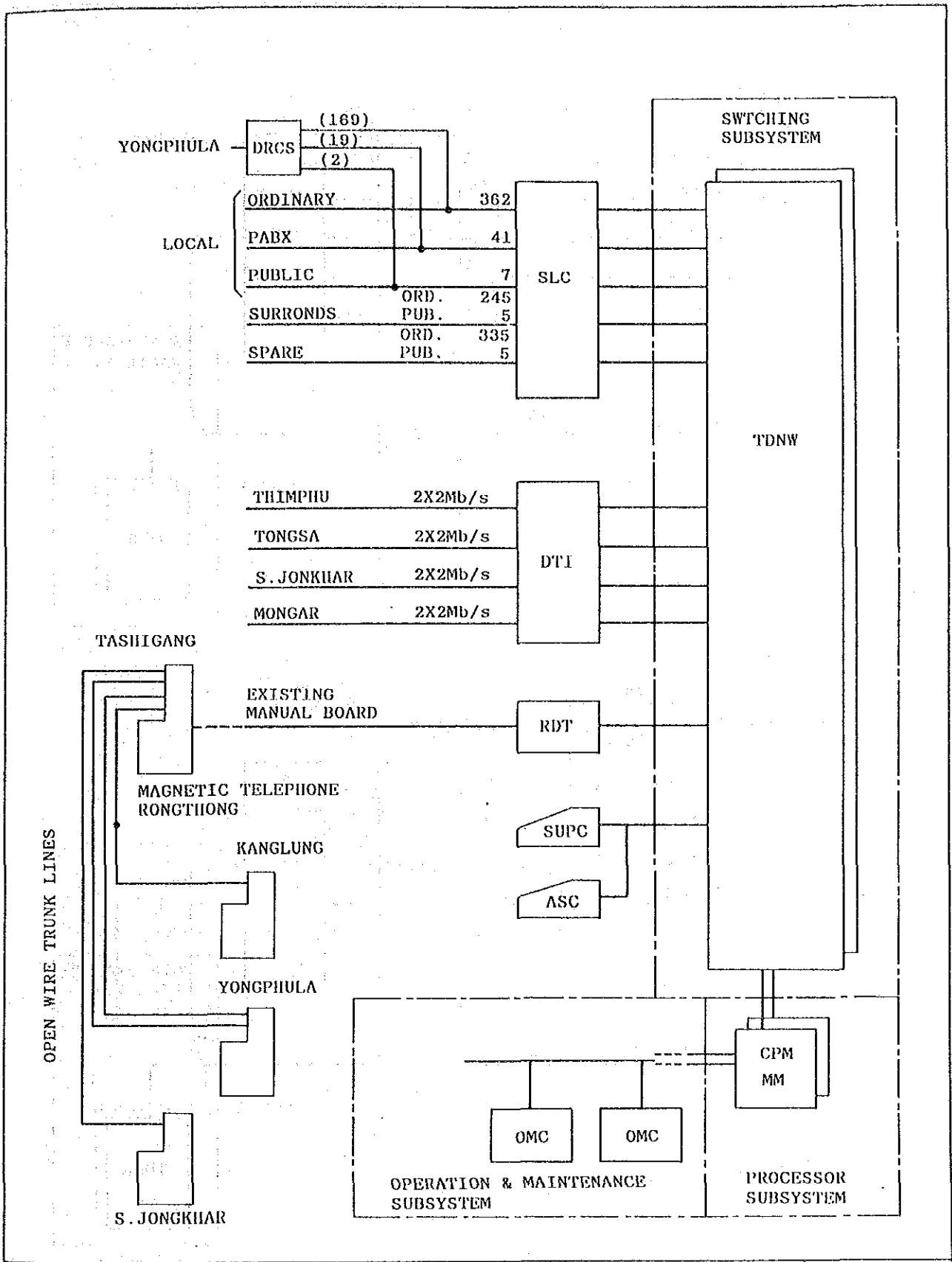
FIG. NO.
SW-1



SWITCHING EQUIPMENT
BLOCK SCHEMATIC

SITE NAME :
TONGSA

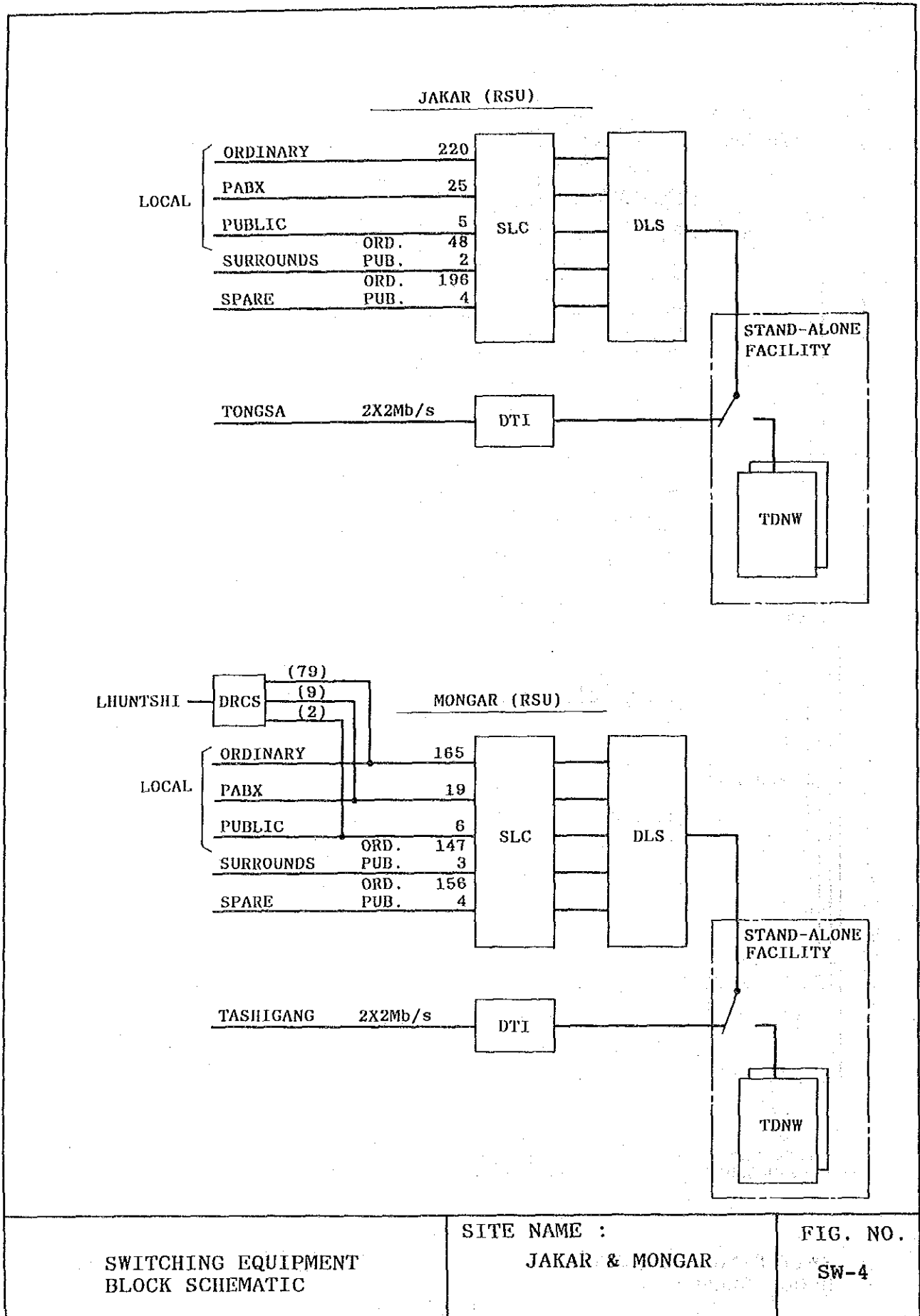
FIG. NO.
SW-2

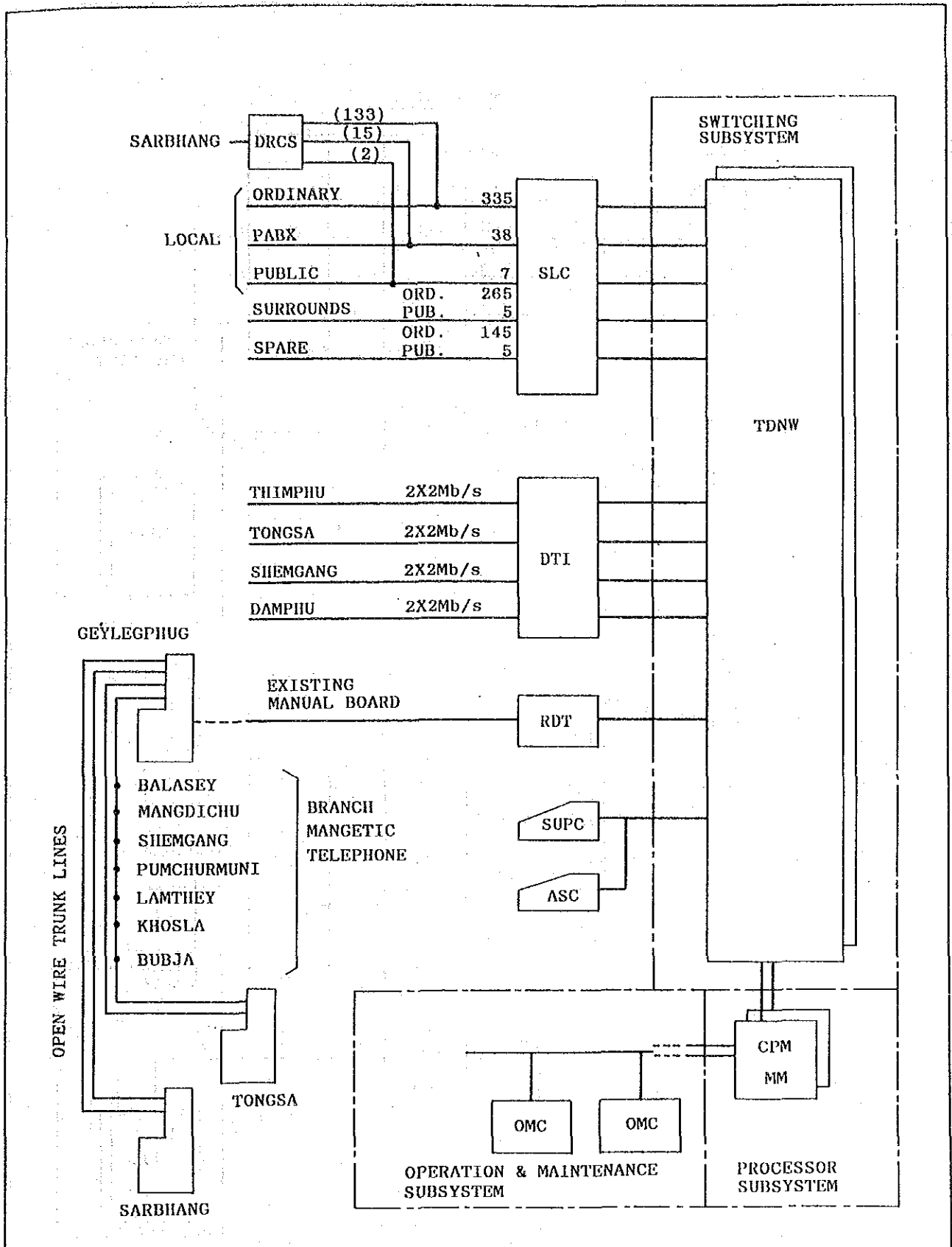


SWITCHING EQUIPMENT
BLOCK SCHEMATIC

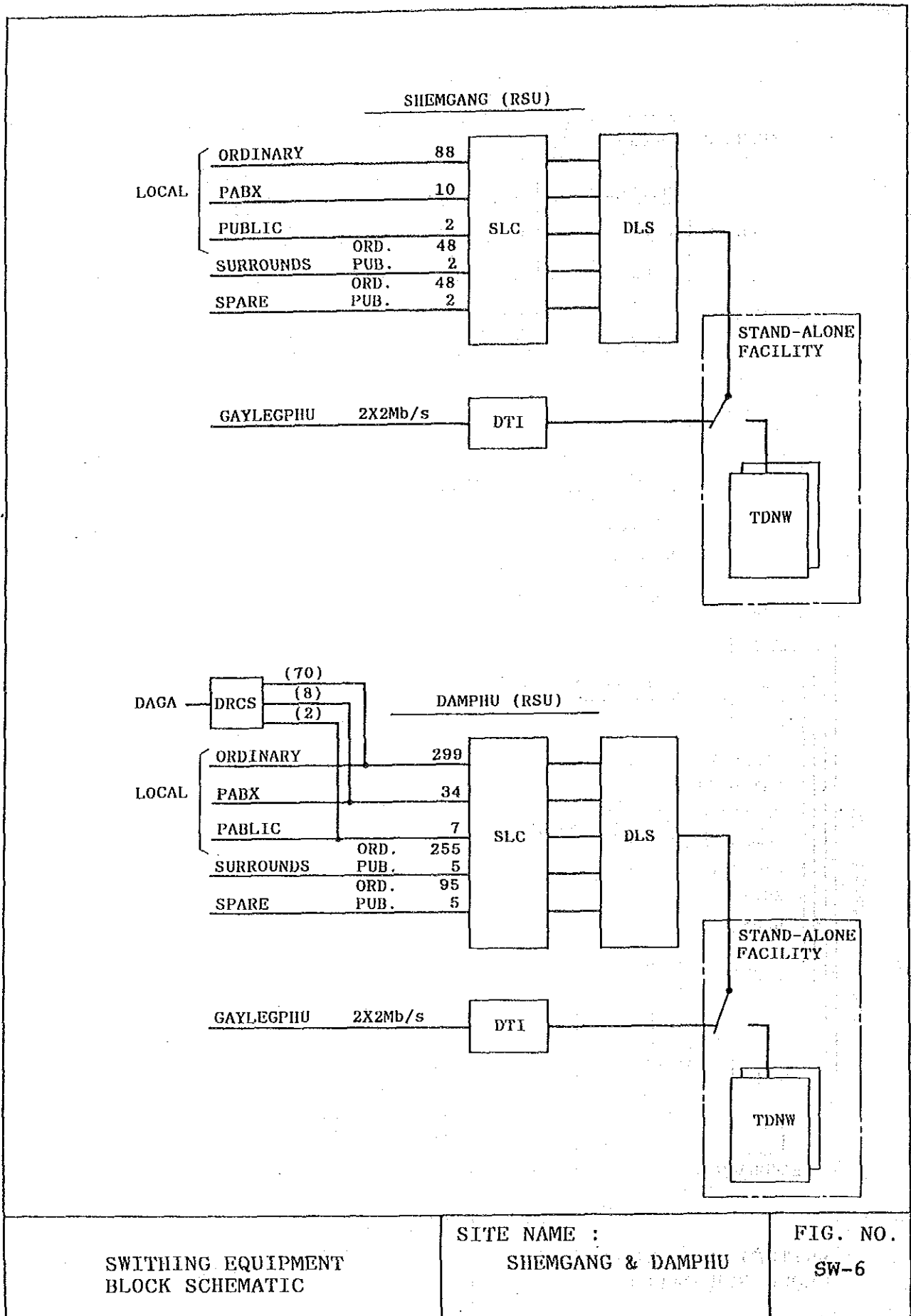
SITE NAME :
TASHIGANG

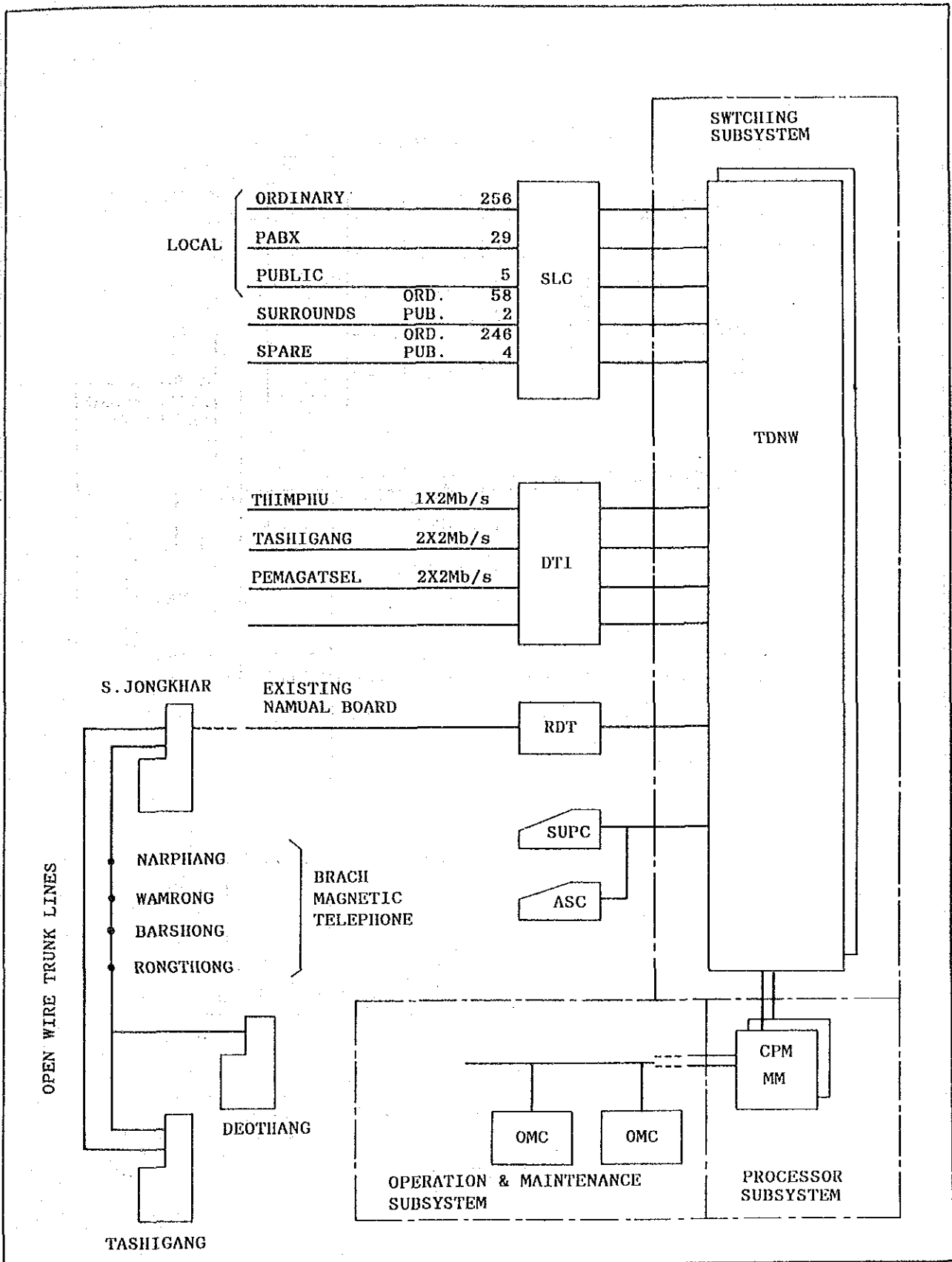
FIG. NO.
SW-3





<p>SWITCHING EQUIPMENT BLOCK SCHEMATIC</p>	<p>SITE NAME : GEYLEGPHUG</p>	<p>FIG. NO. SW-5</p>
--	-----------------------------------	--------------------------



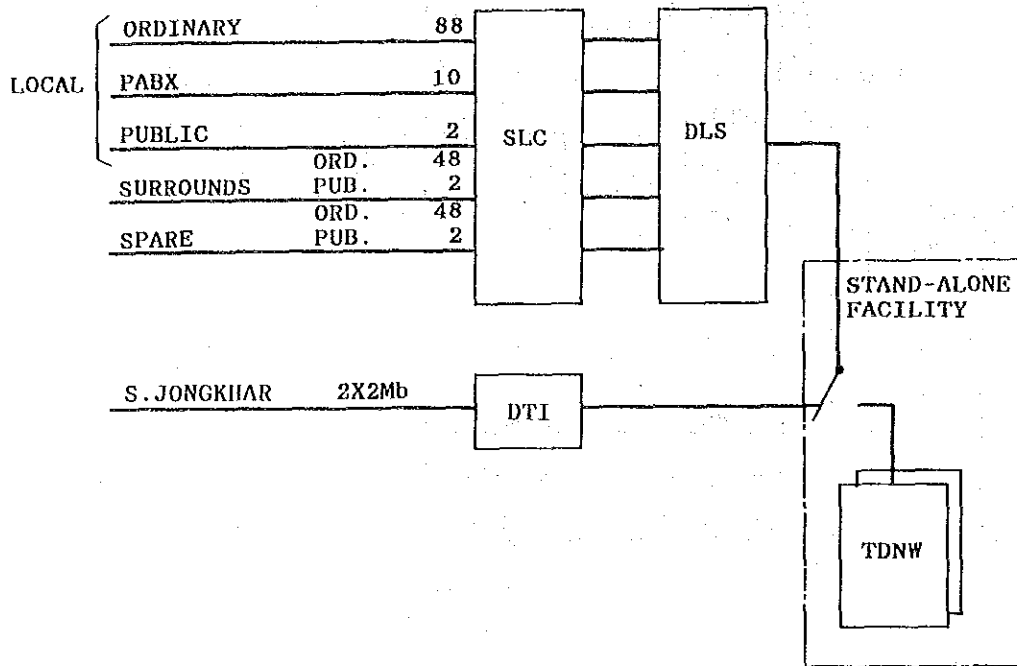


SWITCHING EQUIPMENT
BLOCK SCHEMATIC

SITE NAME :
SAMDRUP JONKHAR

FIG. NO.
SW-7

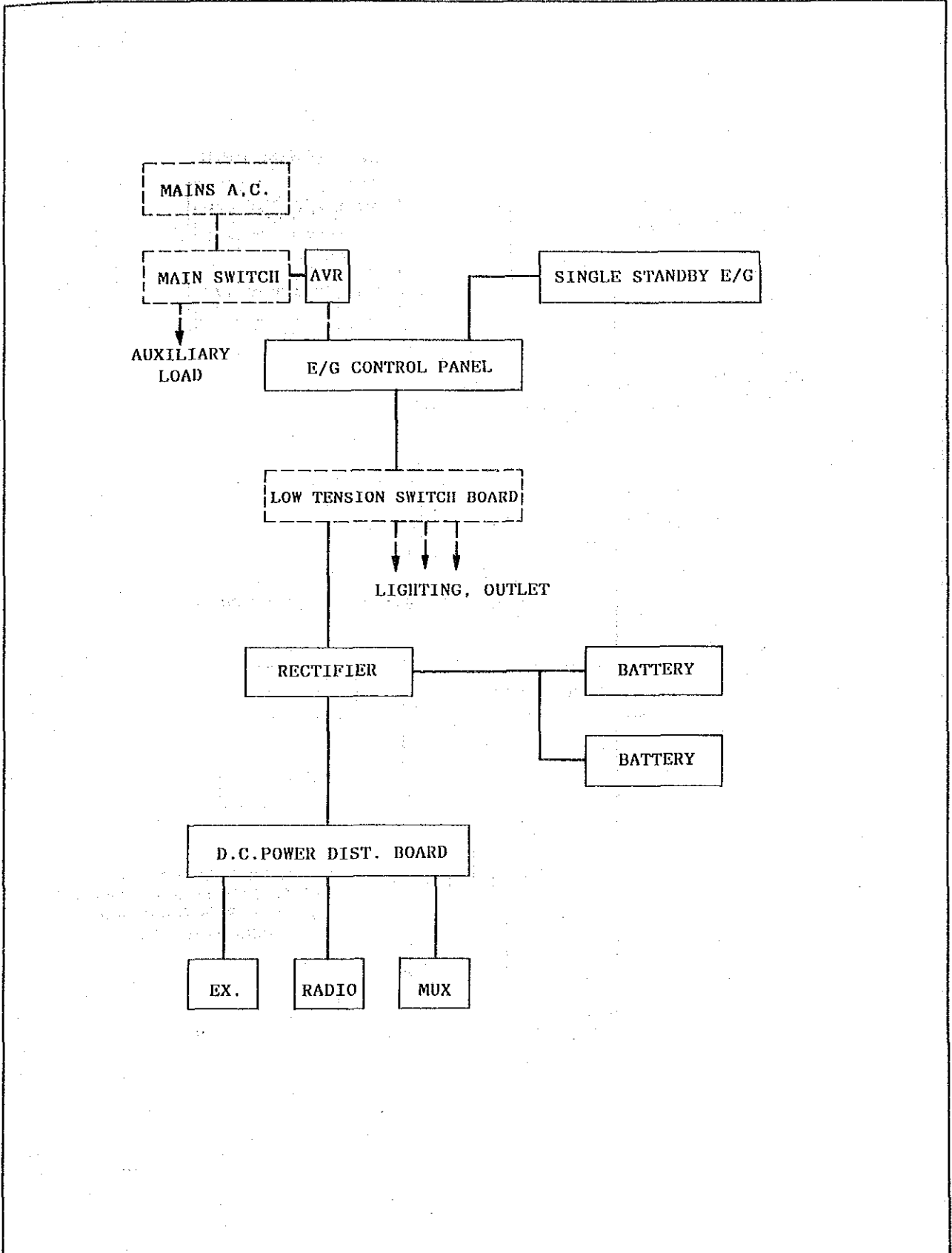
PEMAGATSEL (RSU)



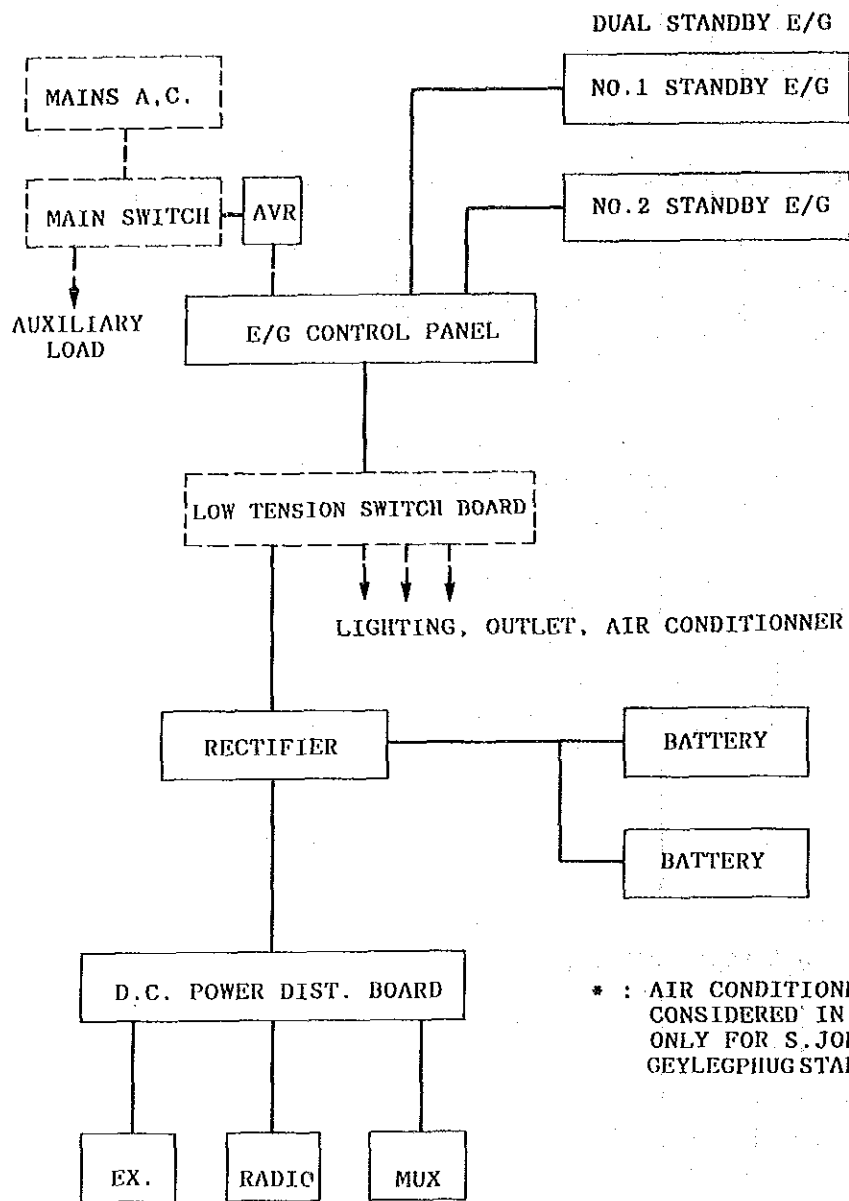
SWITCHING EQUIPMENT
BLOCK SCHEMATIC

SITE NAME :
PEMAGATSEL

FIG. NO.
SW-8



EQUIPMENT BLOCK SCHEMATIC	SITE NAME : JAKAR, TONGSA, MONGAR, SHEMGANG, DANPHU	FIG. NO. PW-1
---------------------------	---	------------------

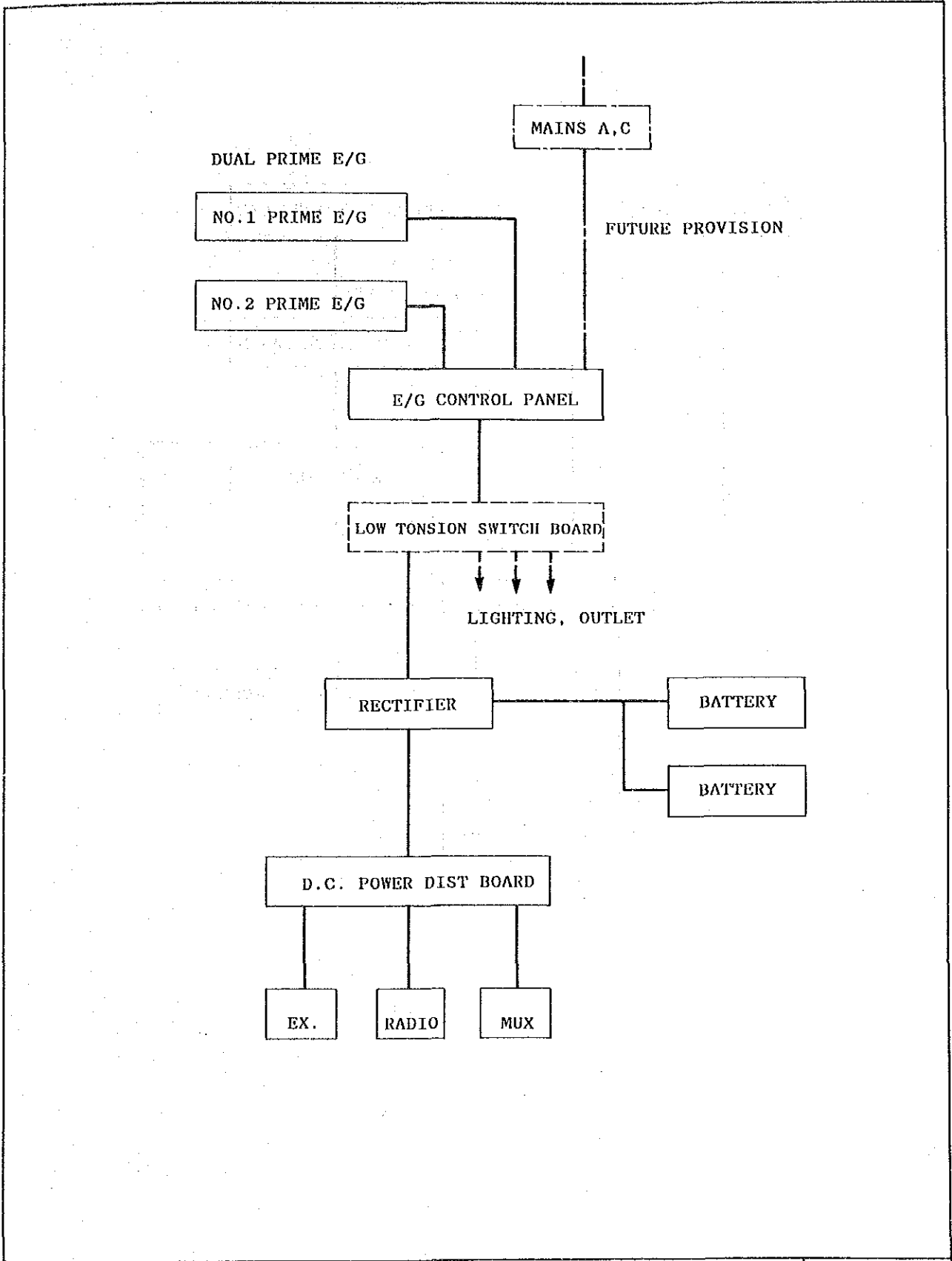


* : AIR CONDITIONER LOAD IS CONSIDERED IN E/G CAPACITY ONLY FOR S. JONGKAR AND GEYLEGPHUG STATIONS.

EQUIPMENT BLOCK SCHEMATIC

SITE NAME :
TASHIGANG, GEYLEGPHUG
SAMDRUP, JONKHAR

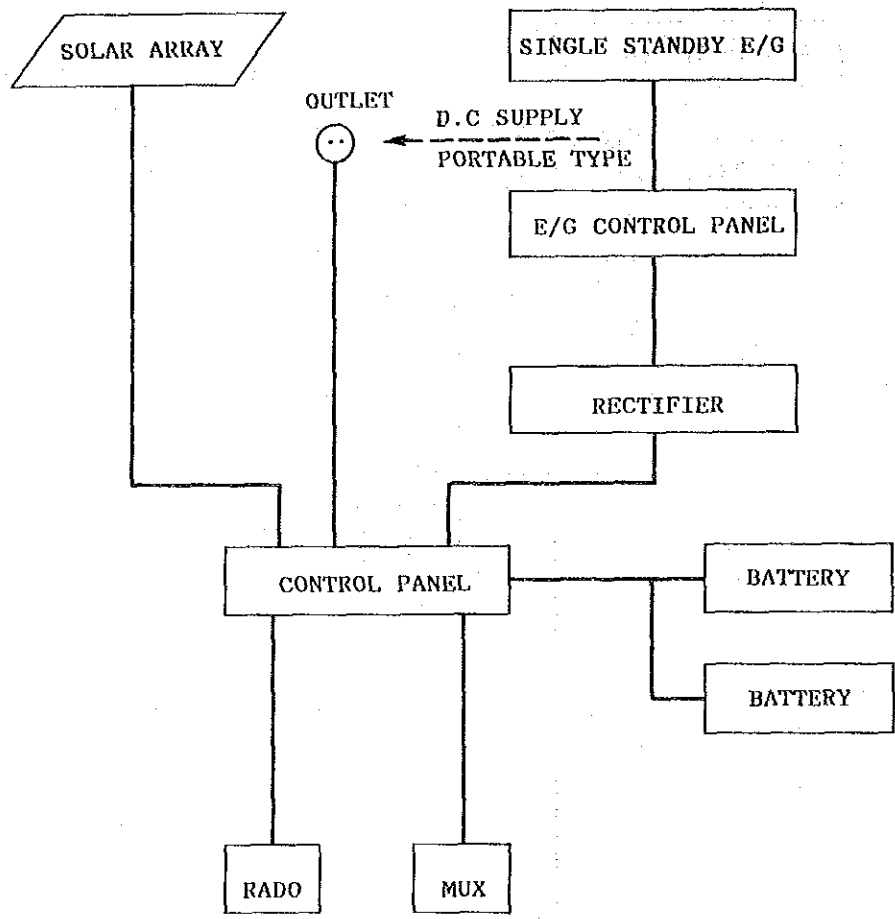
FIG. NO.
PW-2



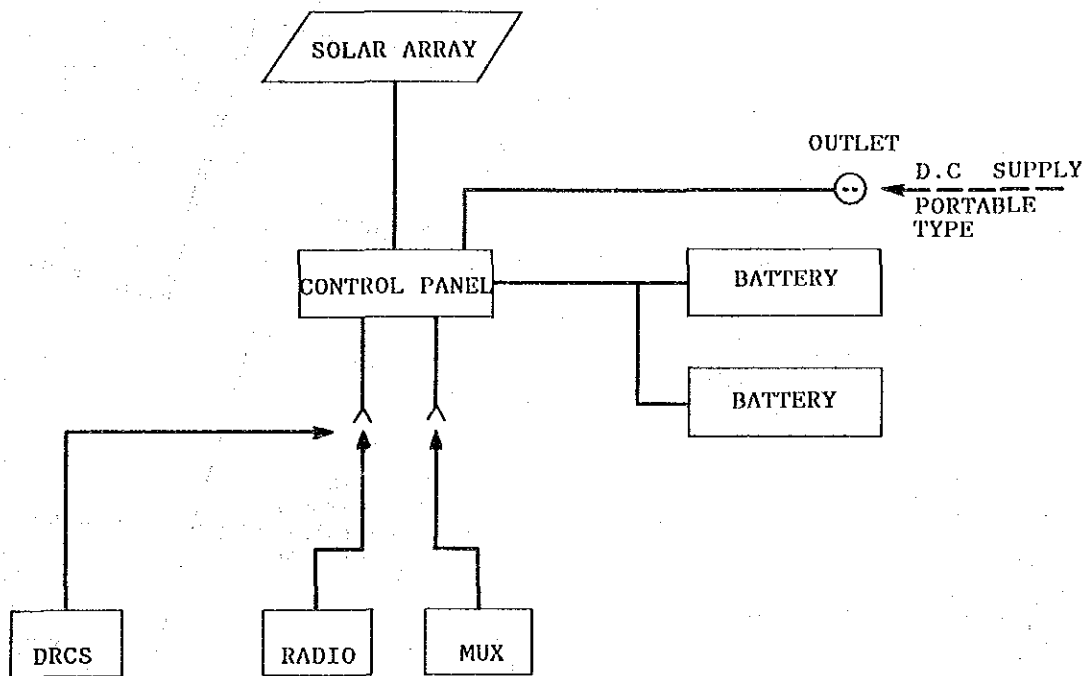
EQUIPMENT BLOCK SCHEMATIC

SITE NAME :
PEMAGATSEL

FIG. NO.
PW-3



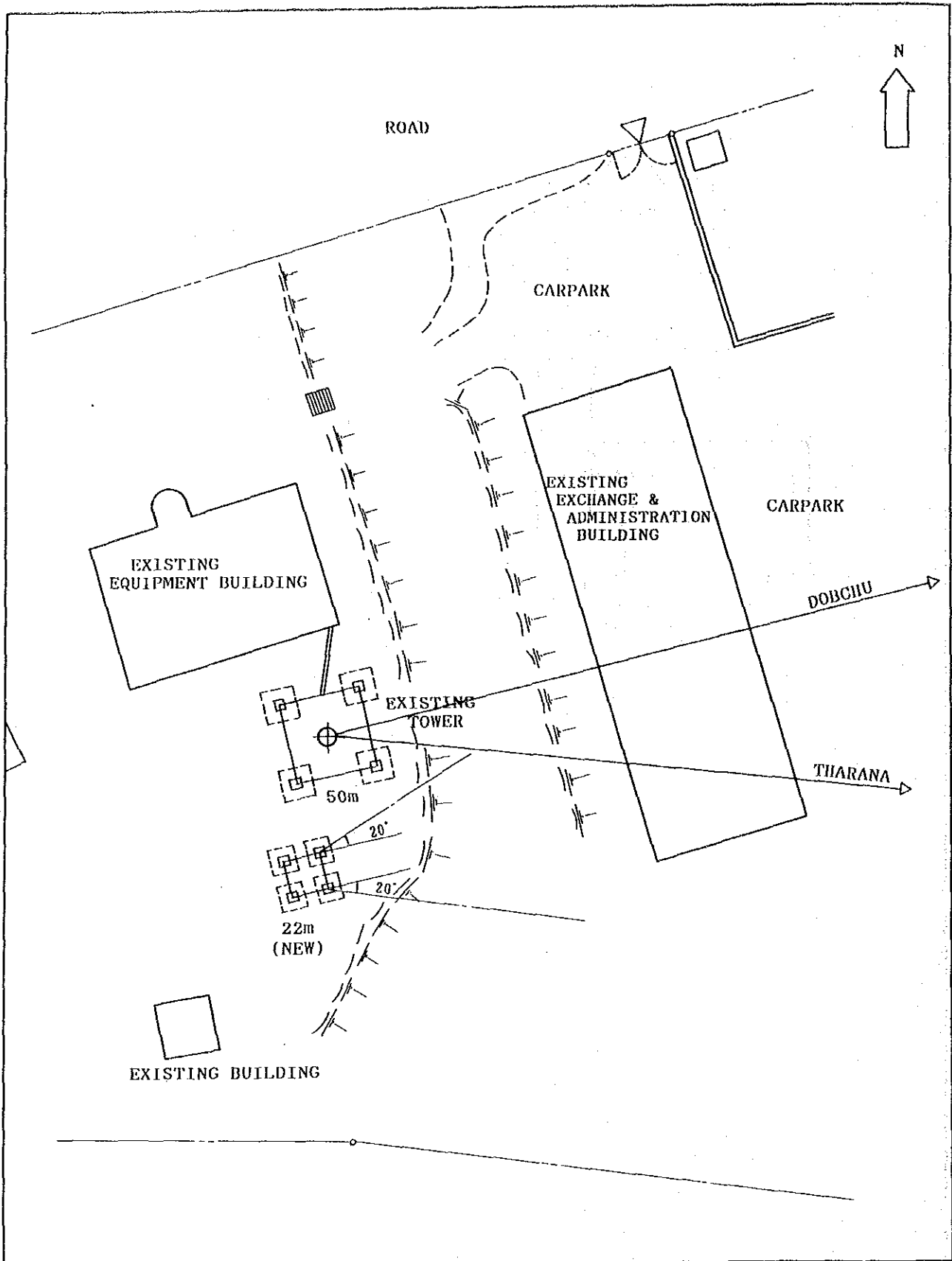
EQUIPMENT BLOCK SCHEMATIC	SITE NAME : YUTOLA, THUMSINGLA, KORILA, TAMULA, DARECHU, KHERI	FIG. NO. PW-4
---------------------------	--	------------------



EQUIPMENT BLOCK SCHEMATIC


SITE NAME :
OTHER REPEATER STATIONS
& DRCS TERMINAL STATIONS


FIG. NO.
PW-5



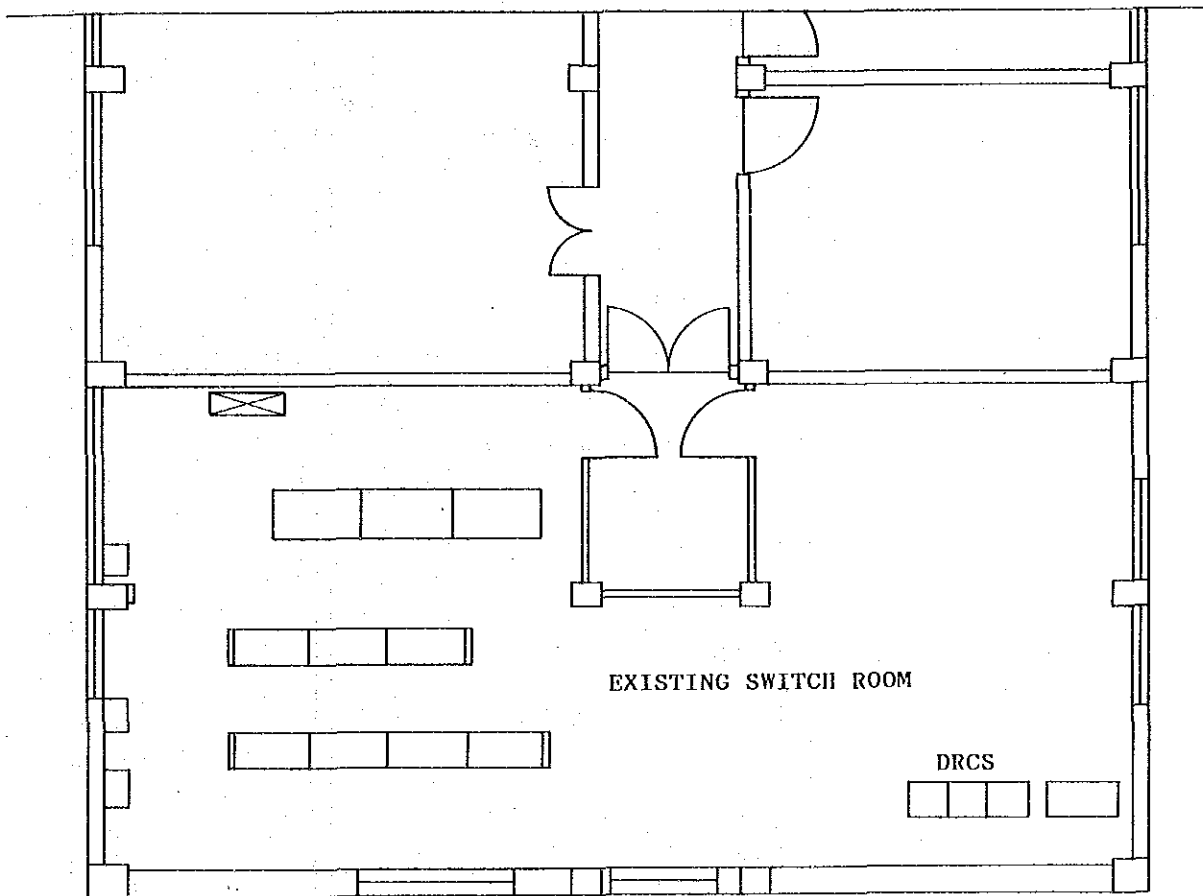
<p>EQUIPMENT SITE LAYOUT PLAN</p> <p>SCALE : 1/500</p>	<p>SITE NAME :</p> <p>THIMPHU</p>	<p>FIG. NO.</p> <p>EQ-1</p>
--	-----------------------------------	-----------------------------

EQUIPMENT

 NEW

 PHU FUTURE

 EXISTING



EQUIPMENT FLOOR LAYOUT PLAN



SCALE : 1/100

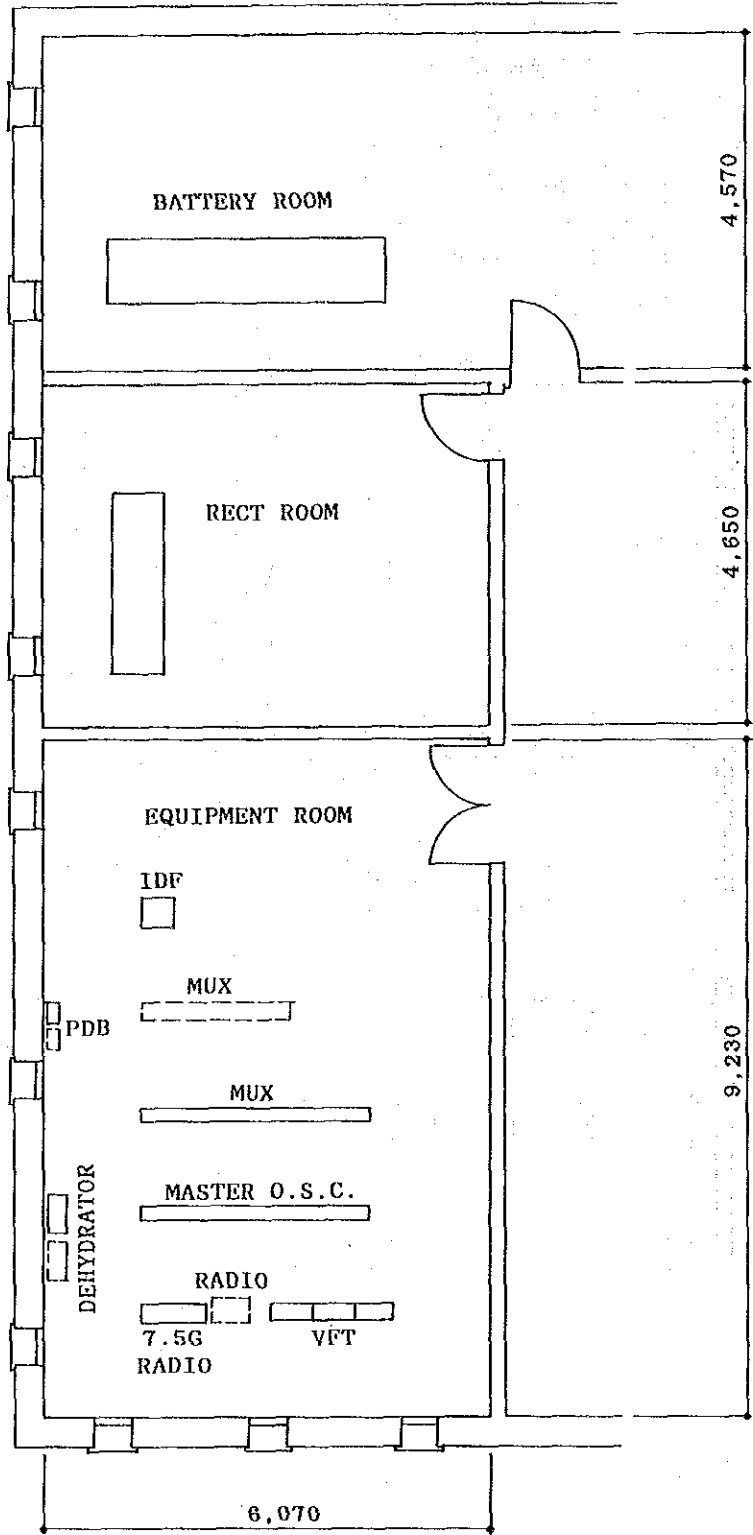
SITE NAME :
THIMPHU

FIG. NO.
EQ-2

EQUIPMENT BUILDING

UNIT : mm

-  NEW EQUIPMENT
-  EXISTING EQUIPMENT



EQUIPMENT FLOOR LAYOUT PLAN

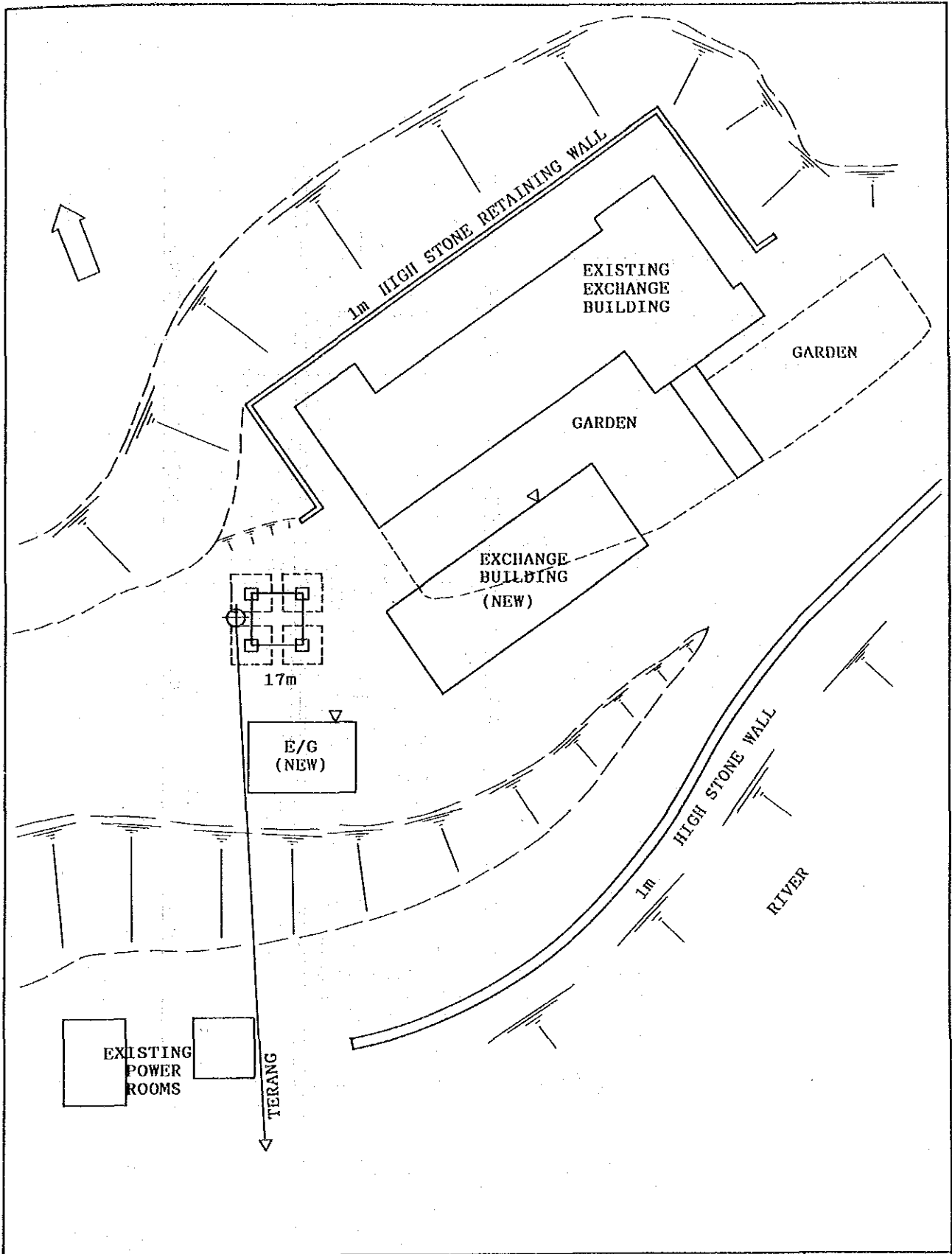
SCALE : 1/100

SITE NAME :

THIMPHU




FIG. NO.

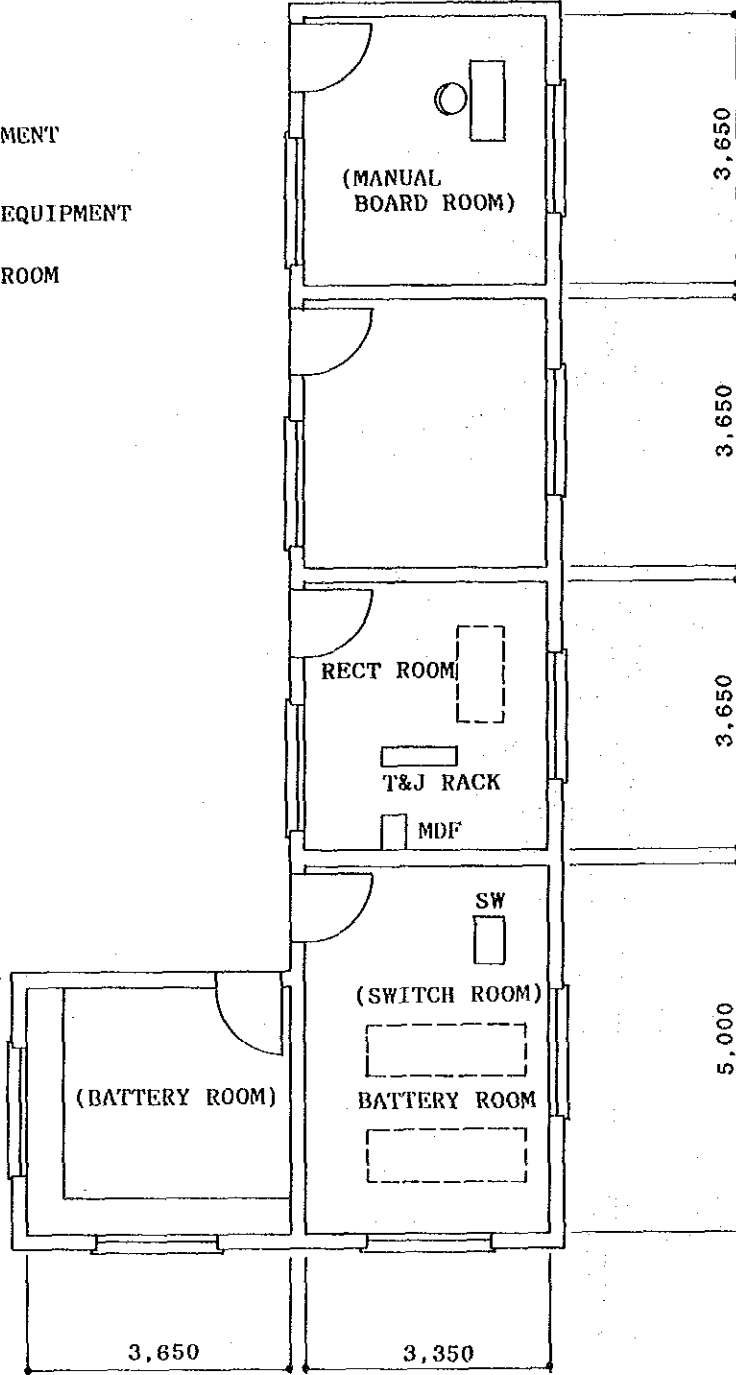
EQ-3



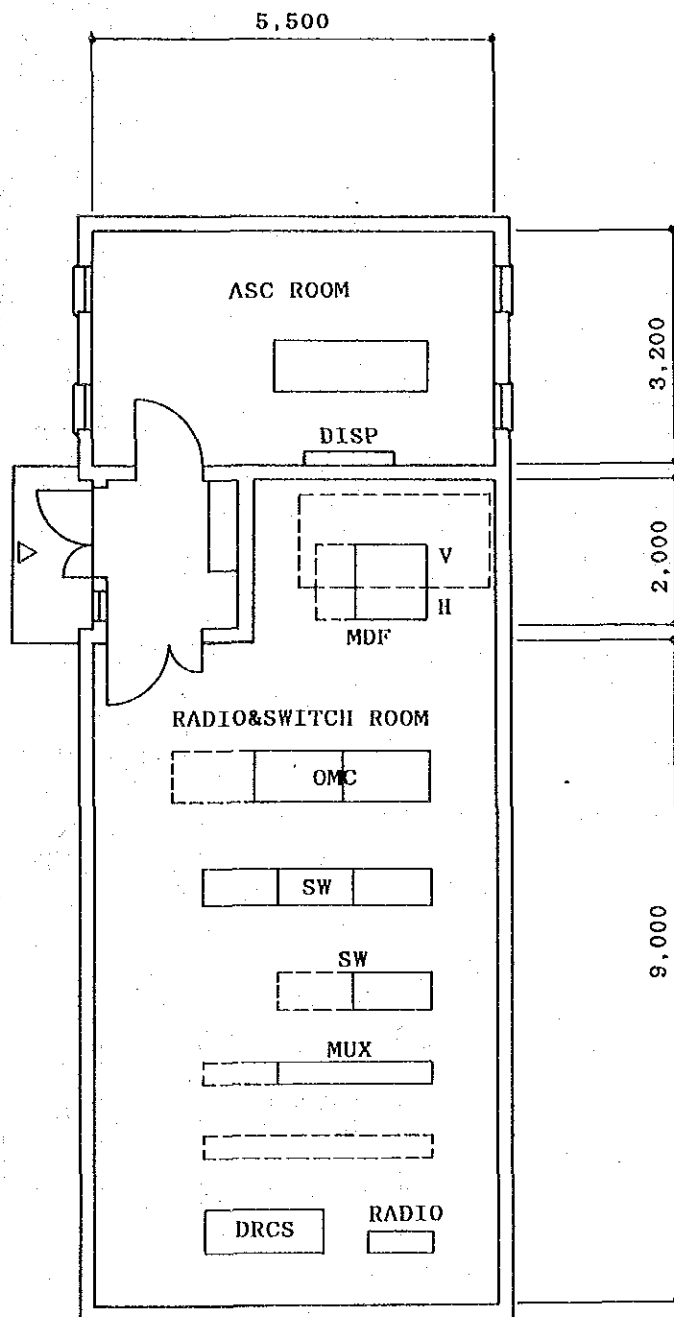
<p>EQUIPMENT SITE LAYOUT PLAN</p> <p>SCALE : 1/300</p>	<p>SITE NAME : TONGSA</p>	<p>FIG. NO. EQ-4</p>
--	-------------------------------	--------------------------

UNIT : mm

-  NEW EQUIPMENT
-  EXISTING EQUIPMENT
-  EXISTING ROOM



EQUIPMENT FLOOR LAYOUT PLAN SCALE : 1/100	SITE NAME : TONGSA	FIG. NO. EQ-5
--	-----------------------	------------------



EQUIPMENT FLOOR LAYOUT PLAN

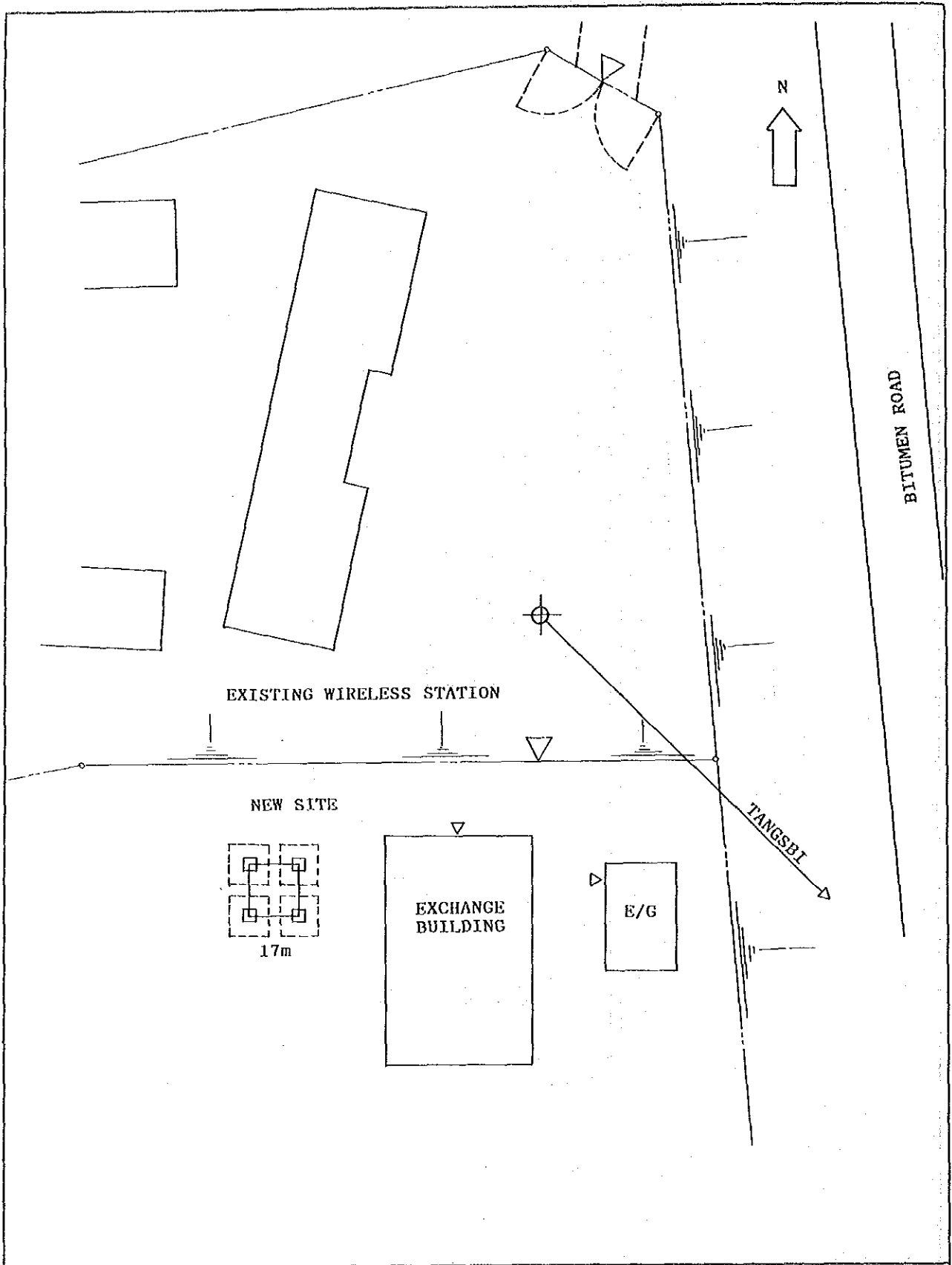
SCALE : 1/100

SITE NAME :

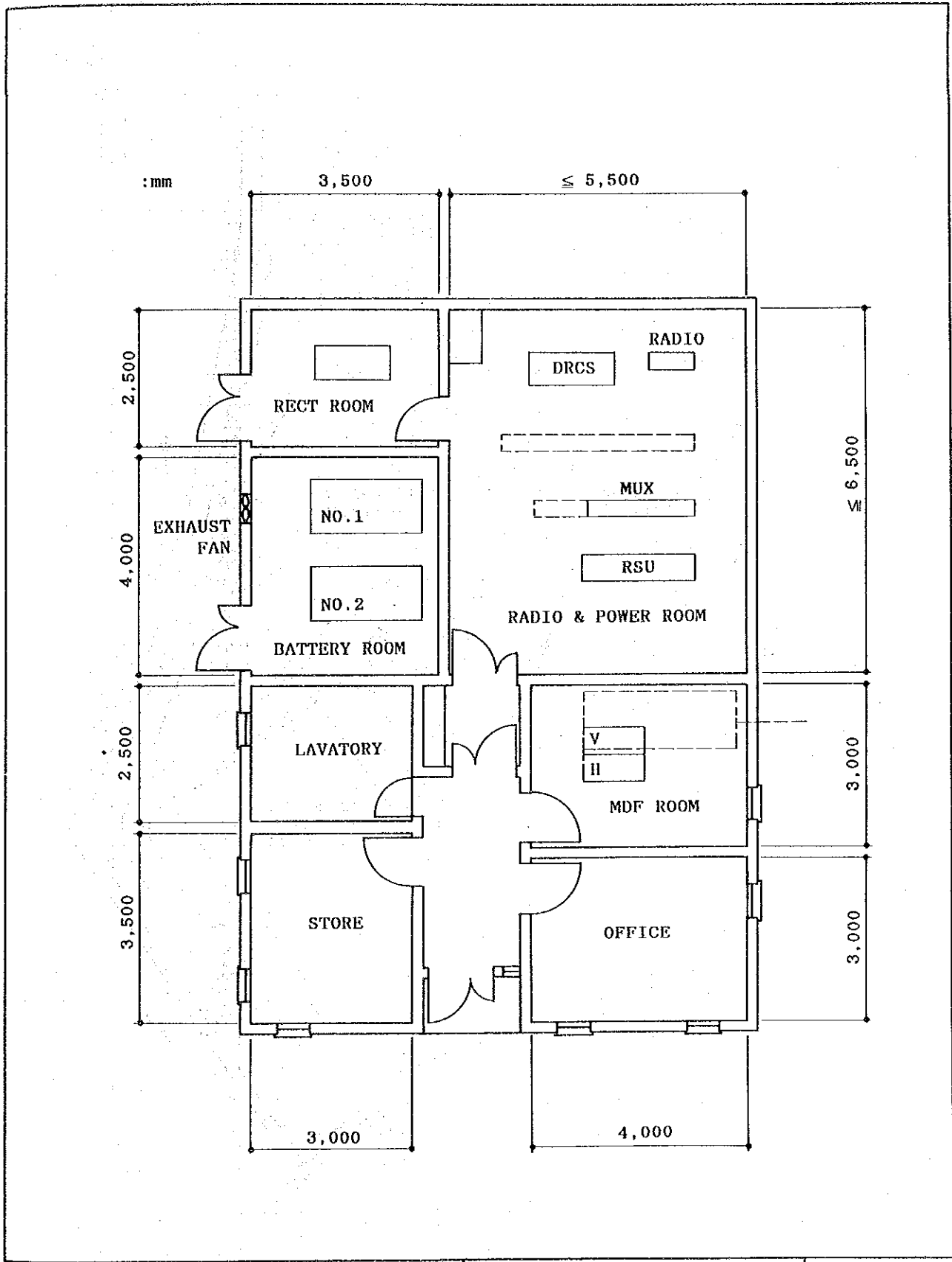
TONGSA

FIG. NO.

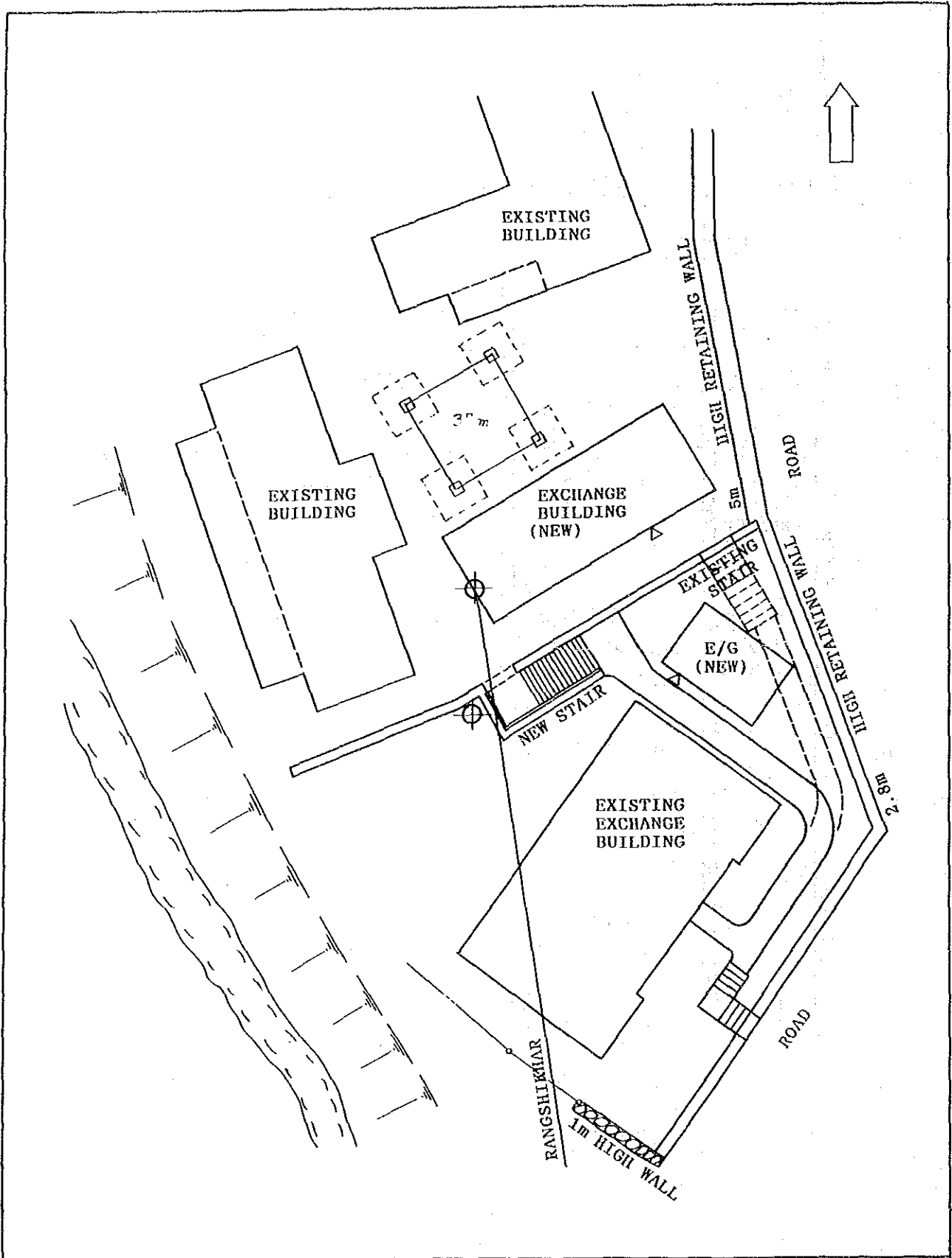
EQ-6



<p>EQUIPMENT SITE LAYOUT PLAN</p> <p>SCALE : 1/300</p>	<p>SITE NAME : JAKAR</p>	<p>FIG. NO. EQ-7</p>
--	--------------------------	----------------------



<p>EQUIPMENT FLOOR LAYOUT PLAN</p> <p>SCALE : 1/100</p>	<p>SITE NAME : JAKAR</p>	<p>FIG. NO. EQ-8</p>
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




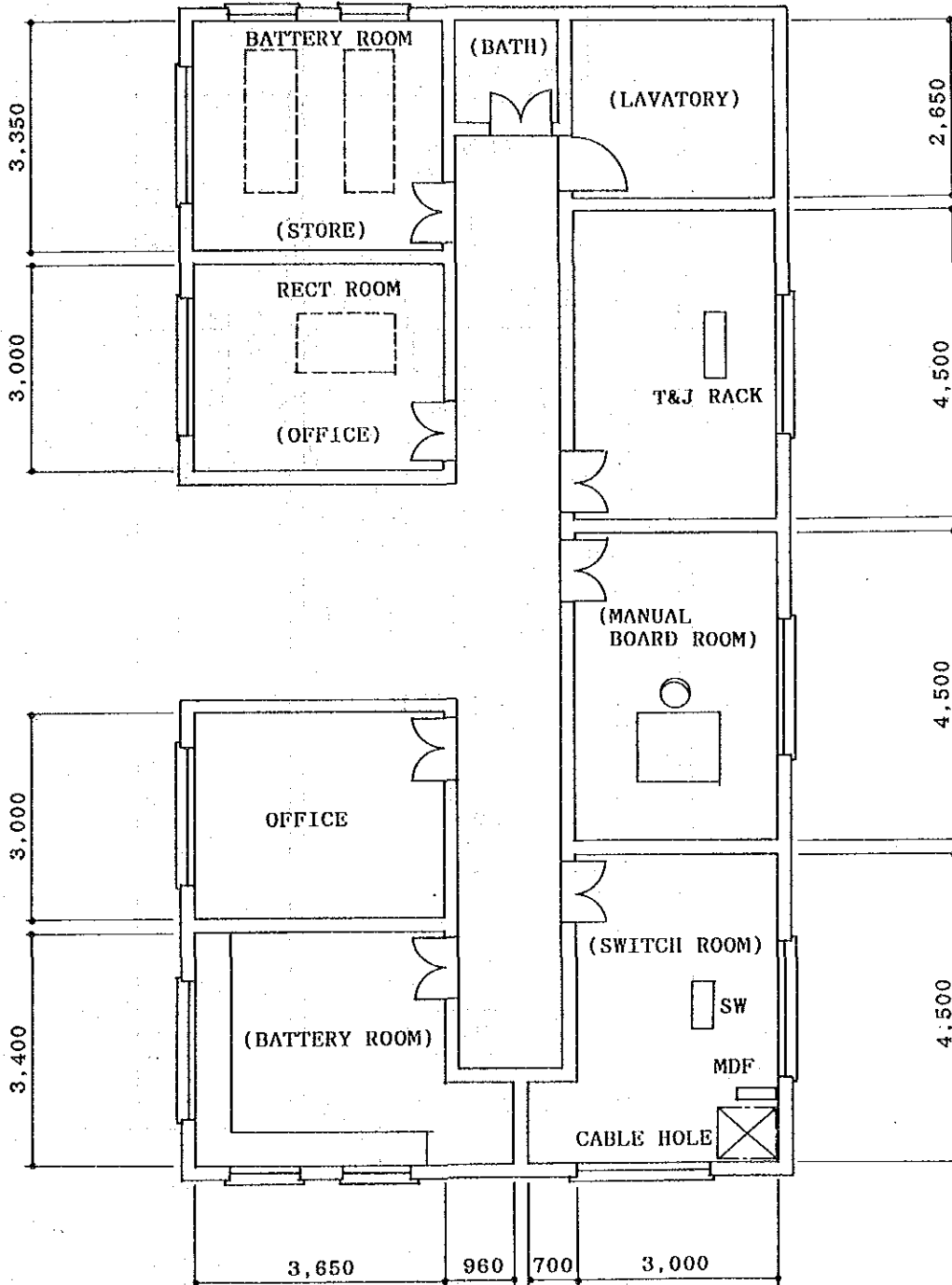
EQUIPMENT SITE LAYOUT PLAN
SCALE : 1/300

SITE NAME :
TASHIGANG

FIG. NO.
EQ-9

UNIT : mm

-  NEW EQUIPMENT
-  EXISTING EQUIPMENT
-  EXISTING ROOM



EQUIPMENT FLOOR LAYOUT PLAN

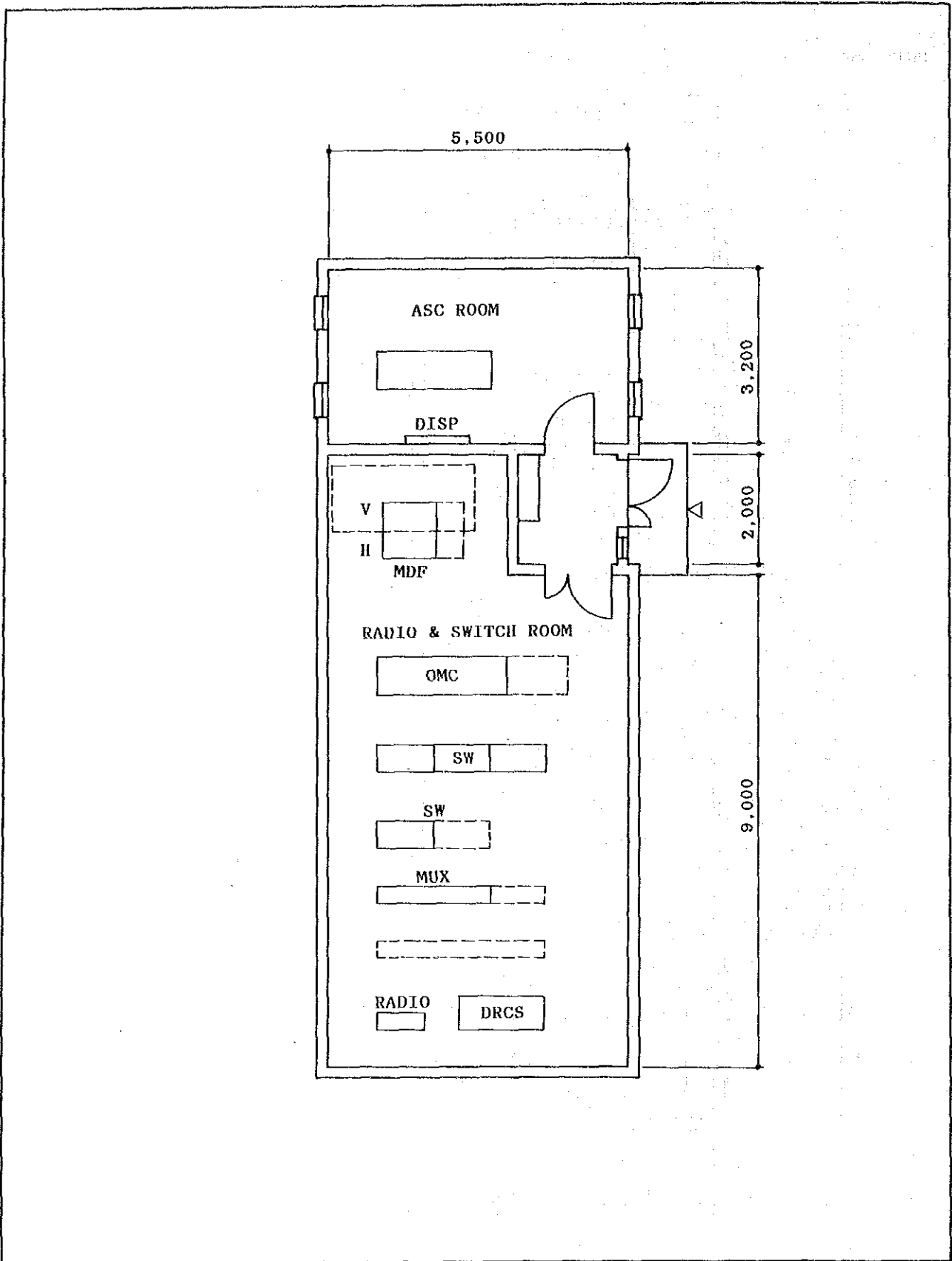
SCALE : 1/100

SITE NAME:

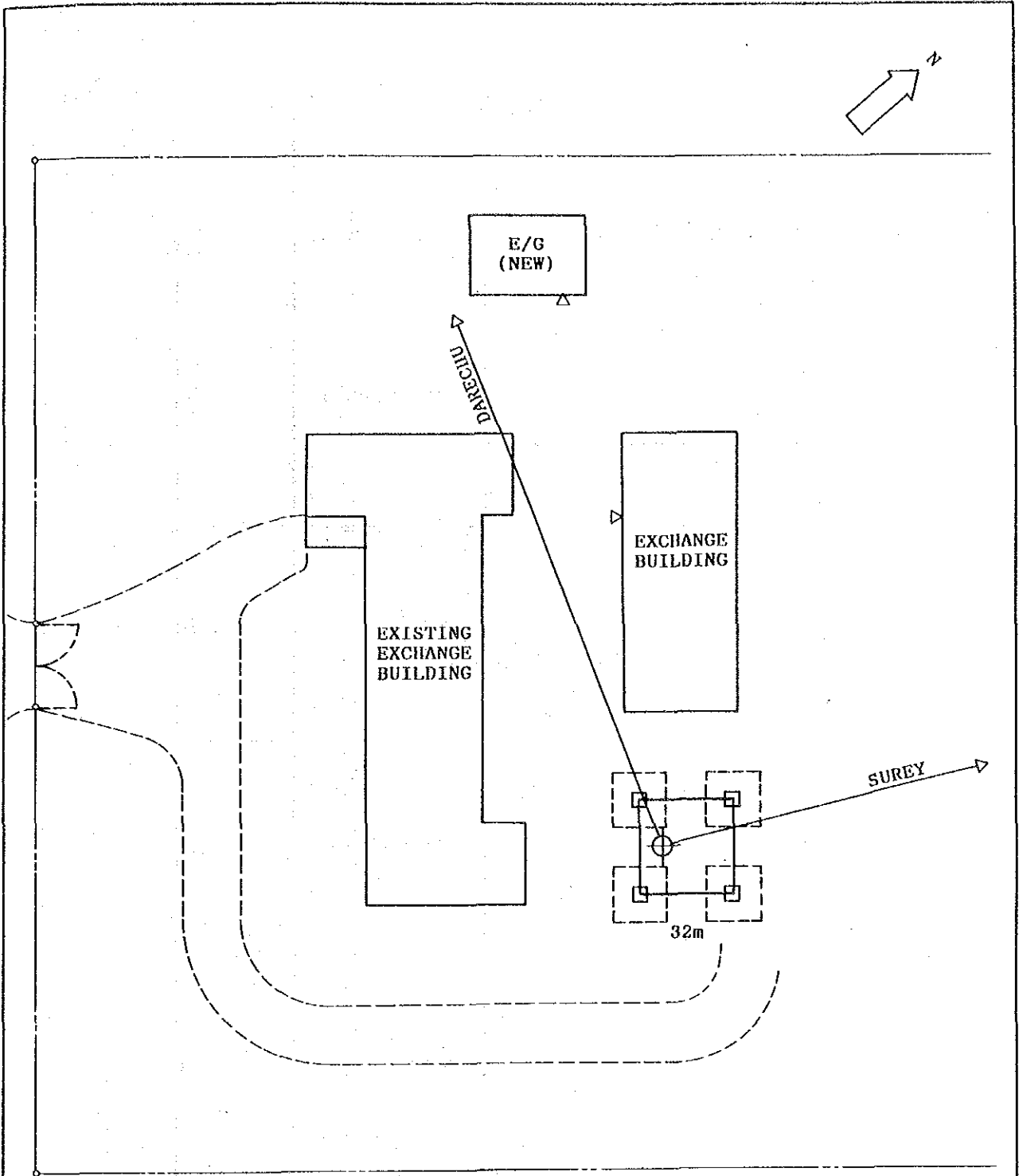
TASHIGANG

FIG. NO.

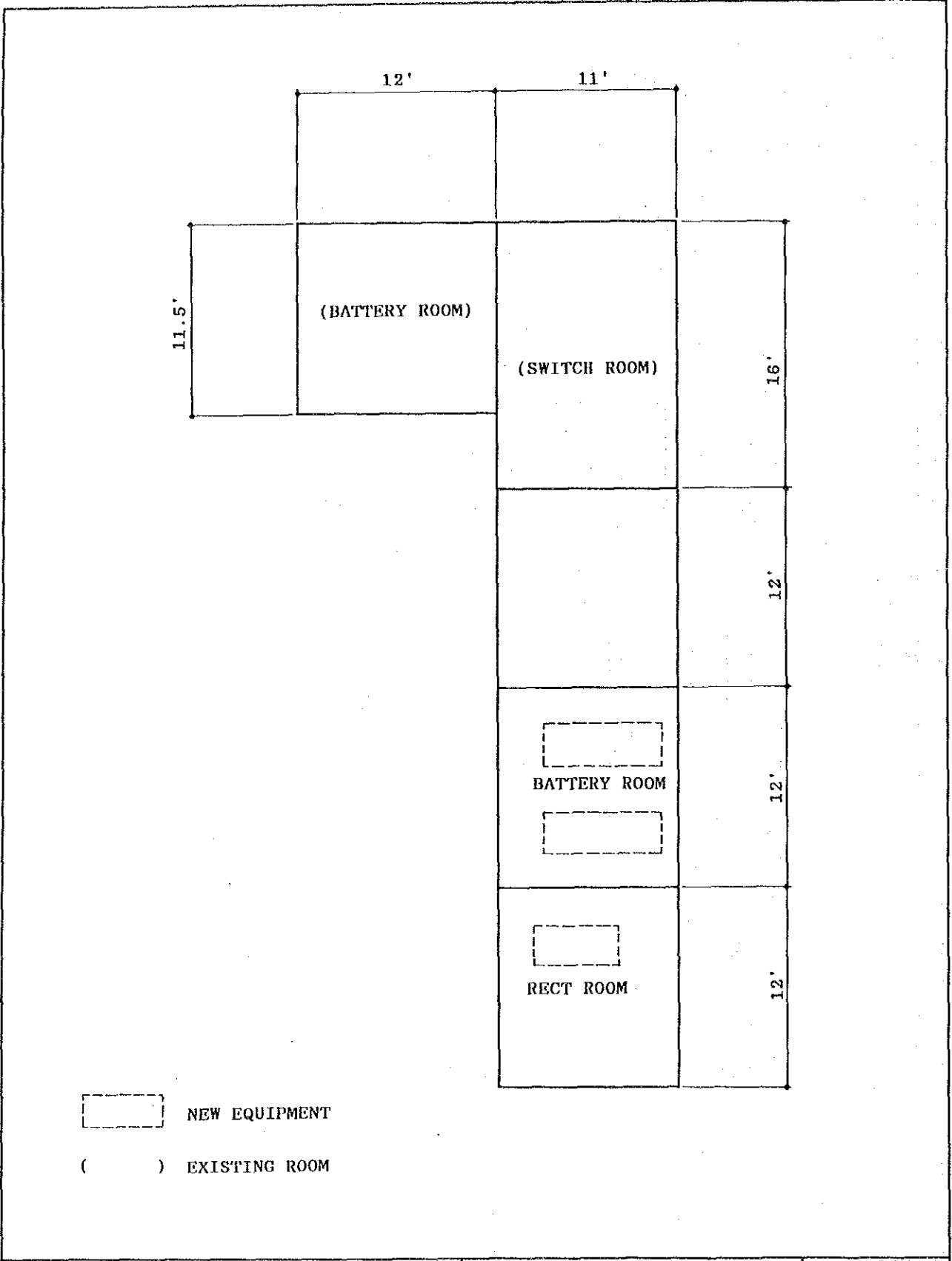
EQ-10



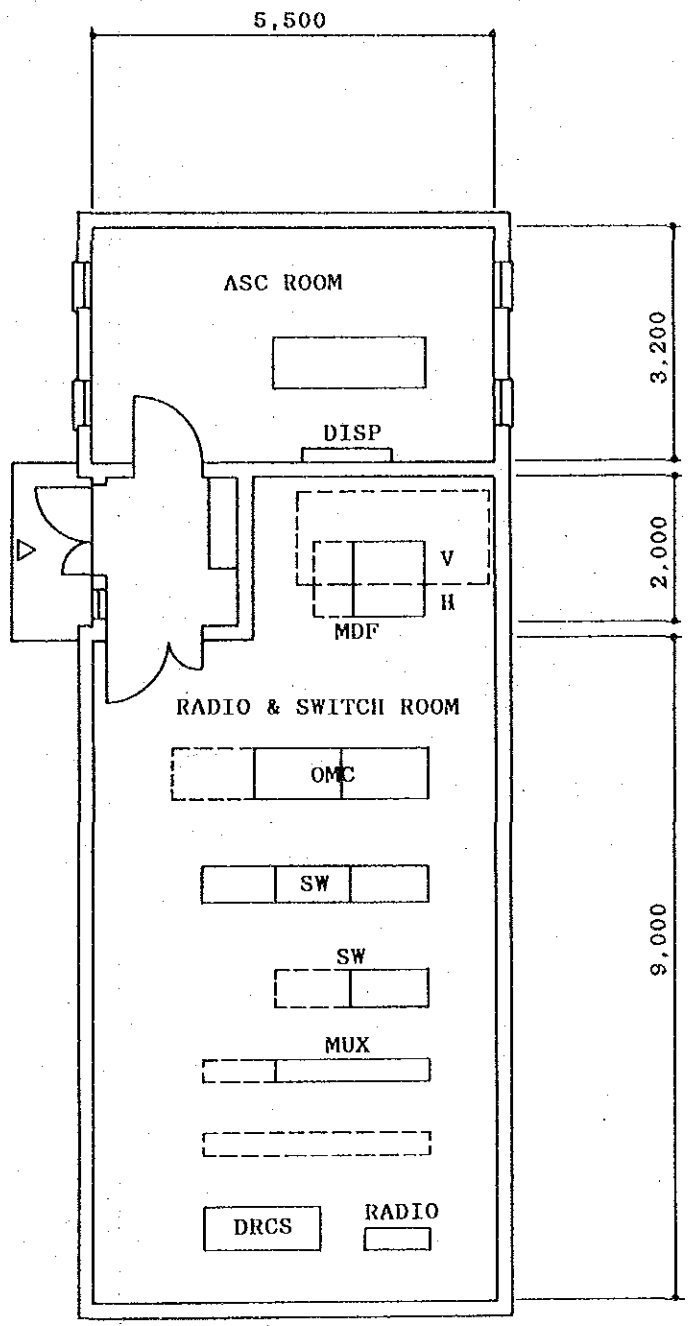
<p>EQUIPMENT FLOOR LAYOUT PLAN SCALE 1/100</p>	<p>SITE NAME : TASHIGANG</p>	<p>FIG. NO. EQ-11</p>
--	----------------------------------	---------------------------



<p>EQUIPMENT SITE LAYOUT PLAN</p> <p>SCALE : 1/300</p>	<p>SITE NAME :</p> <p>GEYLEGPHUG</p>	<p>FIG. NO.</p> <p>EQ-12</p>
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EQUIPMENT FLOOR LAYOUT PLAN SCALE : 1/100	SITE NAME : GEYLEGPHUG	FIG. NO. EQ-13
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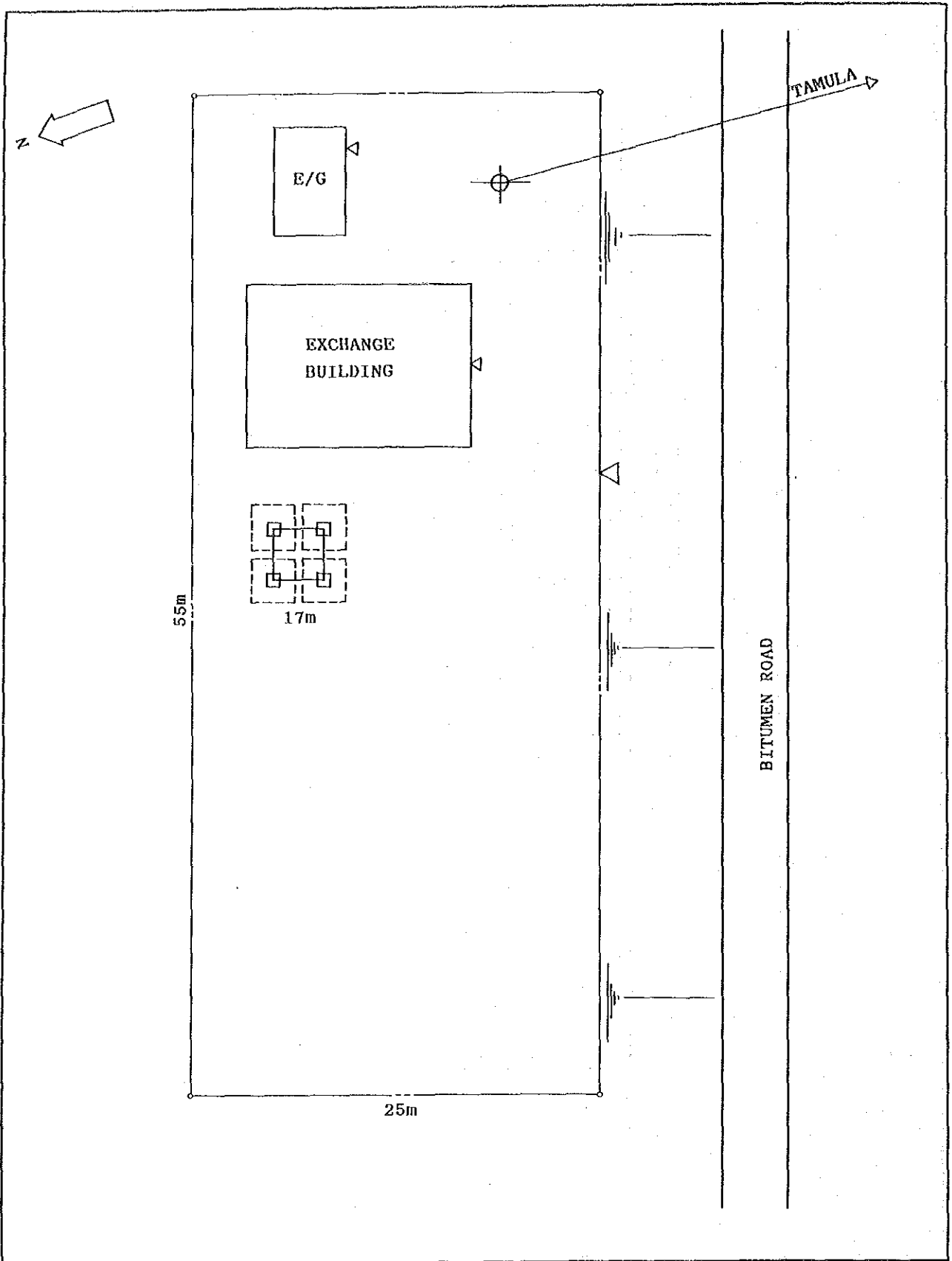


EQUIPMENT FLOOR LAYOUT PLAN

SCALE : 1/100

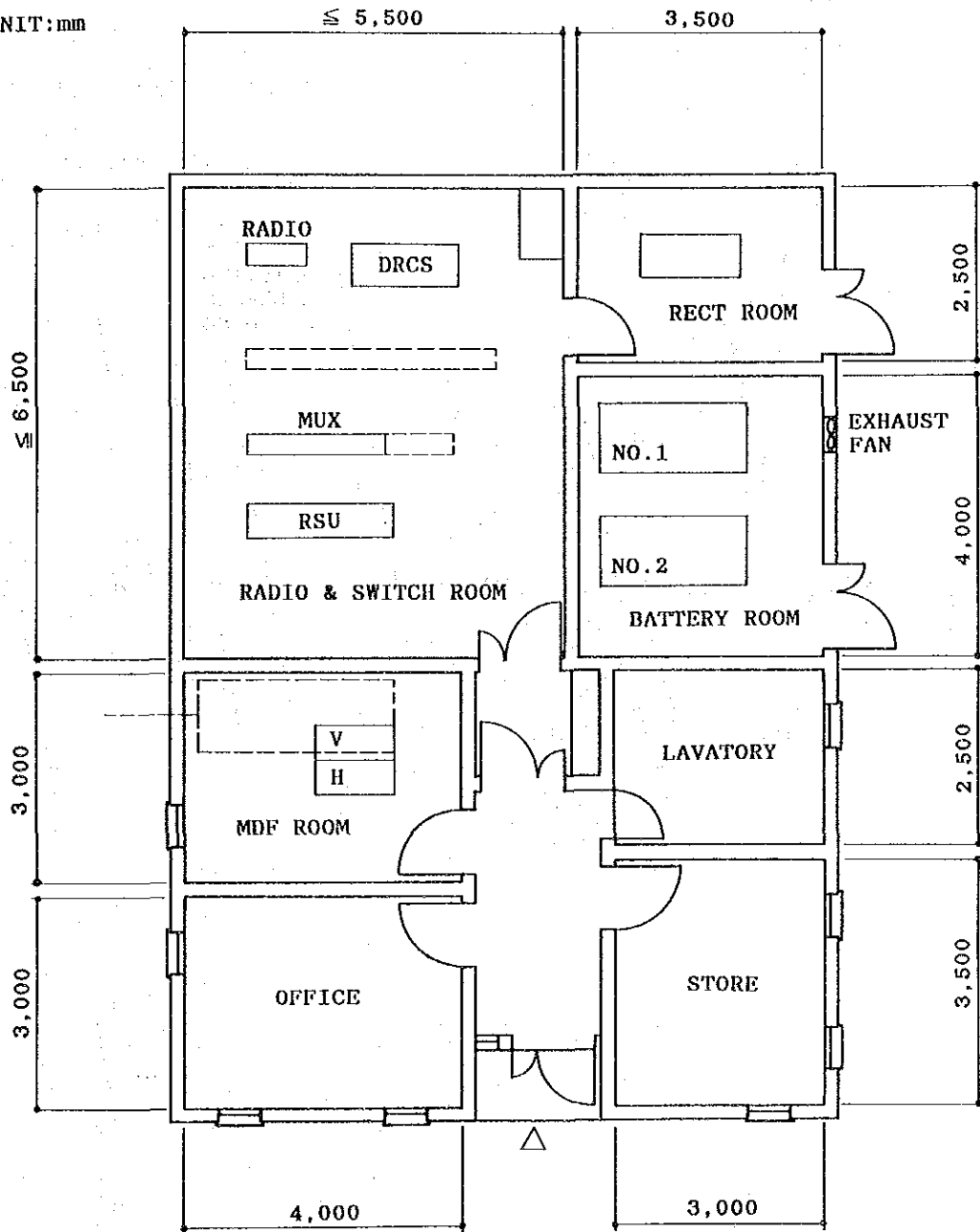
SITE NAME :
GEYLEGPHUG

FIG. NO.
EQ-14



<p>EQUIPMENT SITE LAYOUT PLAN</p> <p>SCALE : 1/300</p>	<p>SITE NAME : SHEMGANG</p>	<p>FIG. NO. EQ-15</p>
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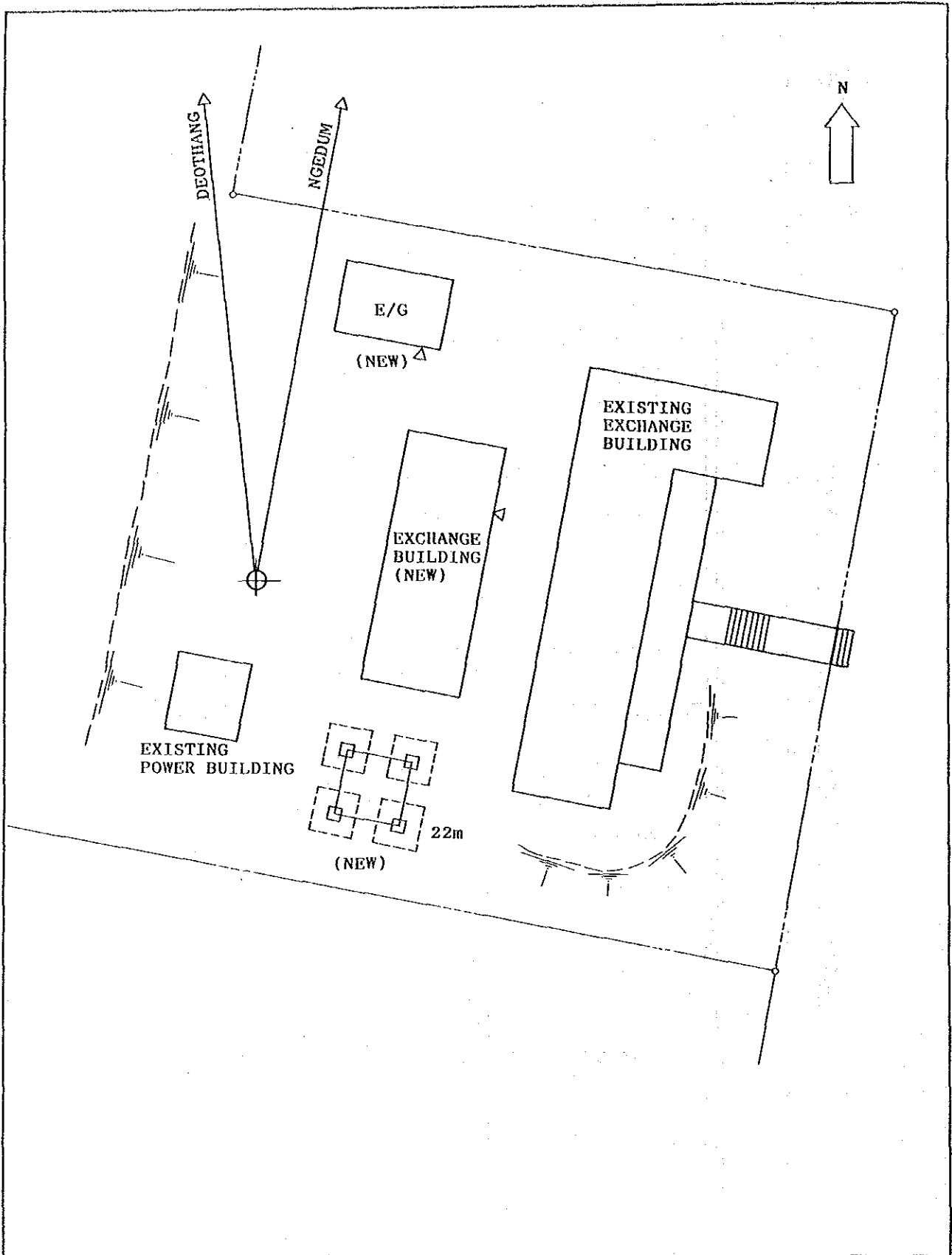
UNIT: mm



EQUIPMENT FLOOR LAYOUT PLAN
SCALE : 1/100




SITE NAME :
SHEMGANG

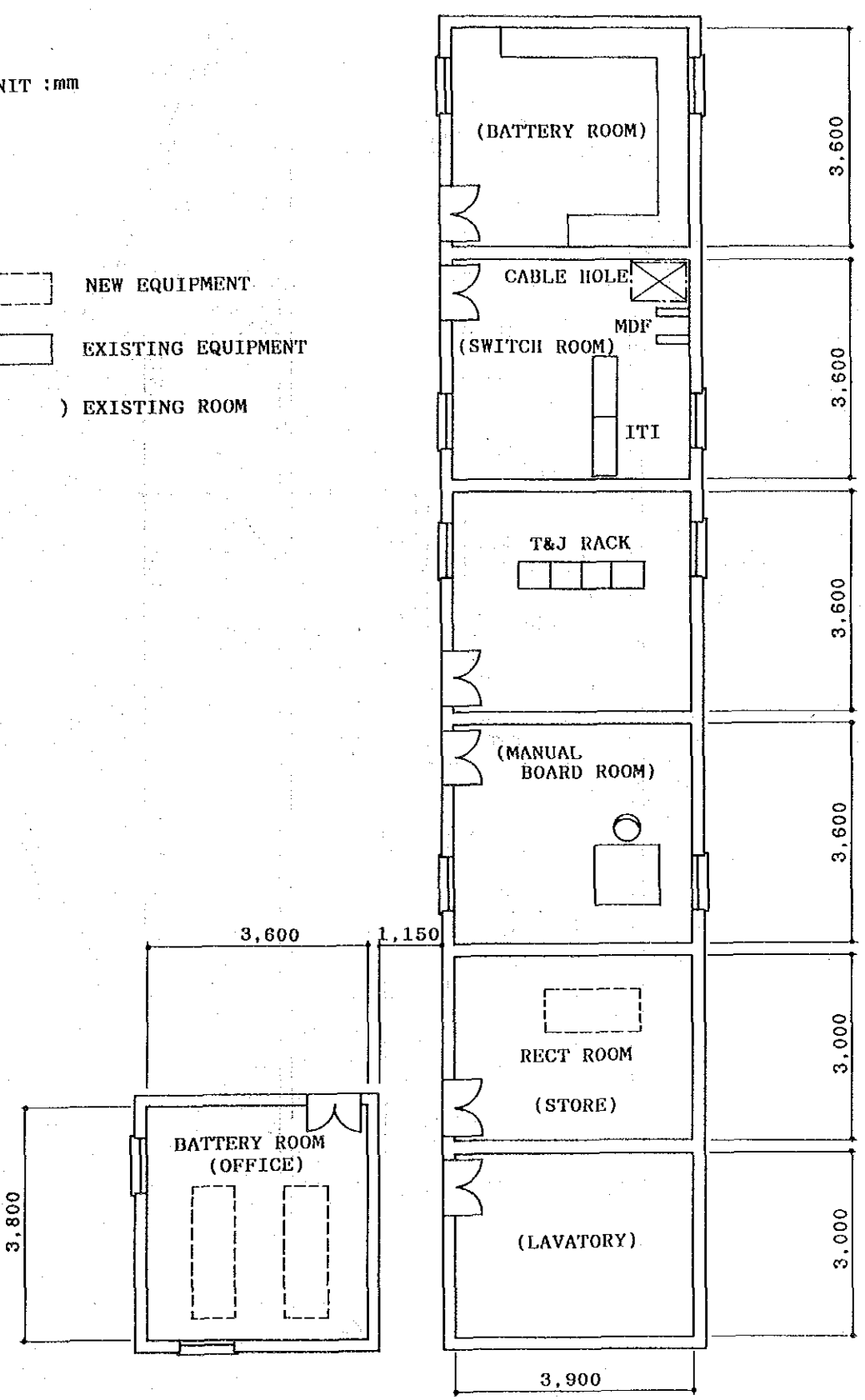
FIG. NO.
EQ-16



<p>EQUIPMENT SITE LAYOUT PLAN</p> <p>SCALE : 1/300</p>	<p>SITE NAME : SAMDRUP JONGKHAR</p>	<p>FIG. NO. EQ-17</p>
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UNIT : mm

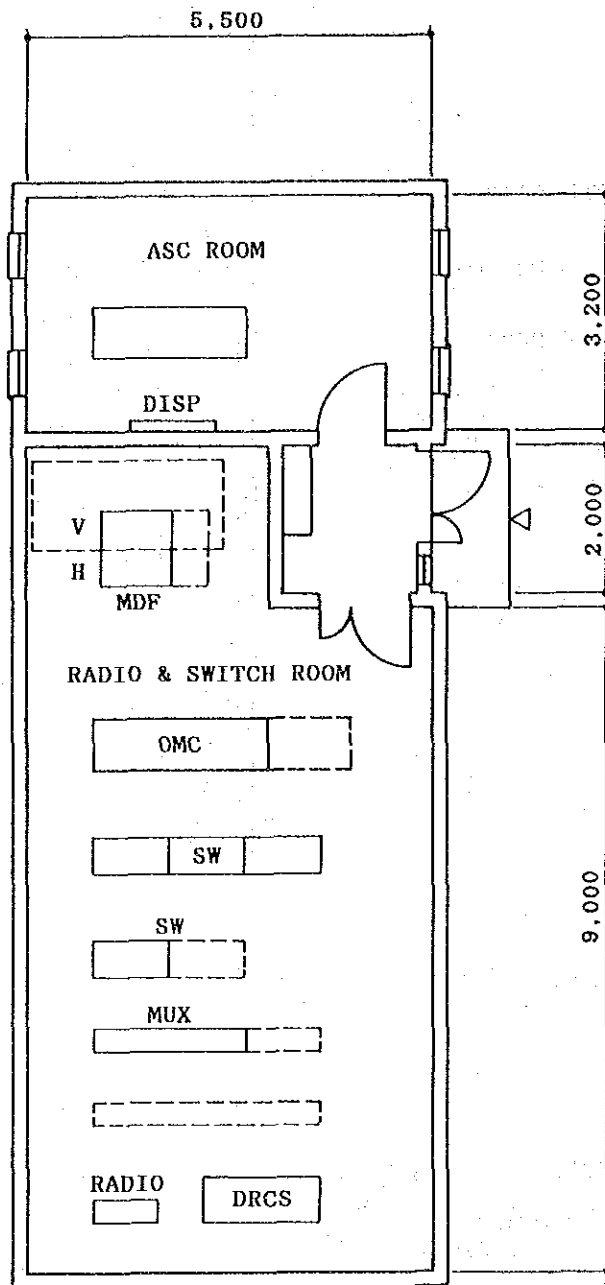
-  NEW EQUIPMENT
-  EXISTING EQUIPMENT
-  EXISTING ROOM



EQUIPMENT FLOOR LAYOUT PLAN
SCALE : 1/100

SITE NAME :
SAMDRUP JONGKHAR

FIG. NO.
EQ-18

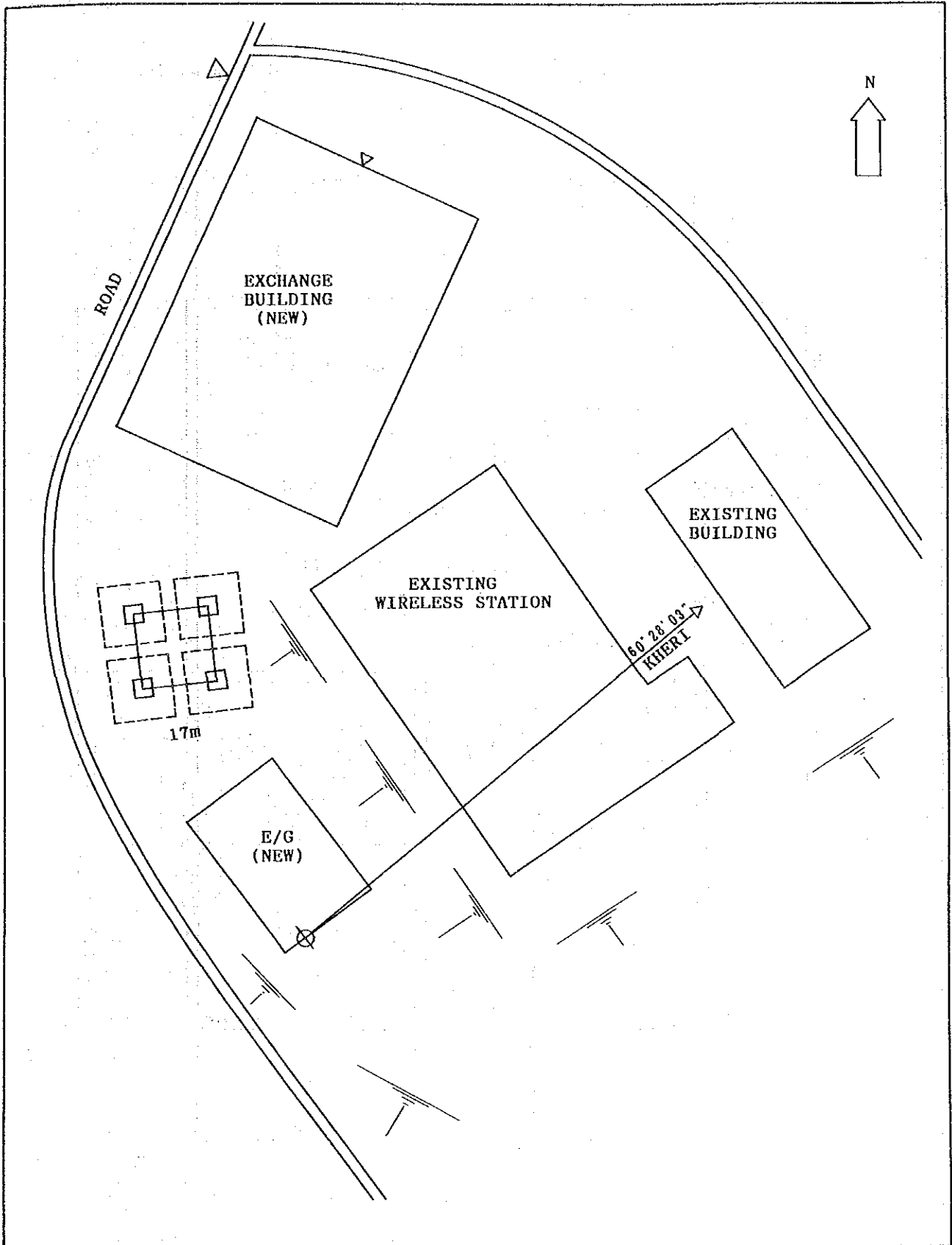


EQUIPMENT FLOOR LAYOUT PLAN

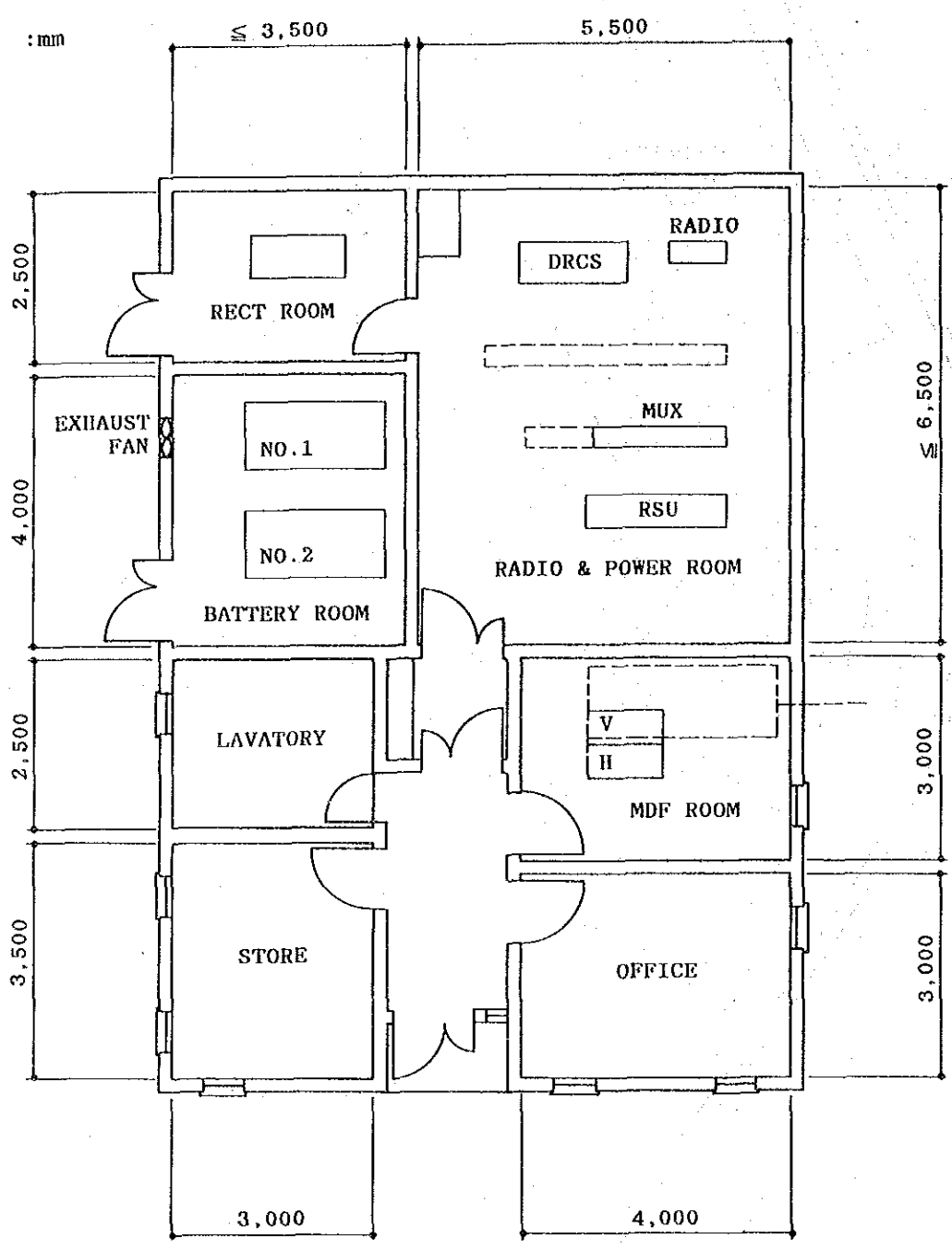
SCALE : 1/100

SITE NAME :
SAMDRUP JONGKHAR

FIG. NO.
EQ-19



<p>EQUIPMENT SITE LAYOUT PLAN</p> <p>SCALE : 1/200</p>	<p>SITE NAME :</p> <p>PEMAGATSEL</p>	<p>FIG. NO.</p> <p>EQ-20</p>
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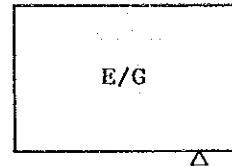
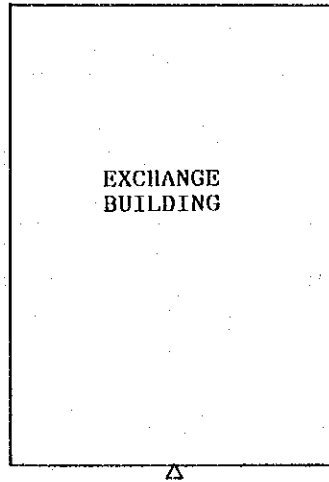
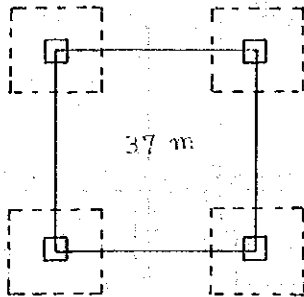
EQUIPMENT FLOOR LAYOUT PLAN
SCALE : 1/100

SITE NAME :
PEMAGATSEL

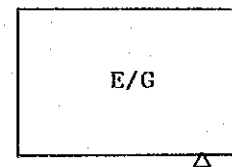
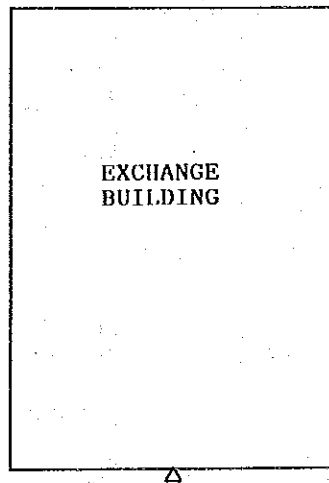
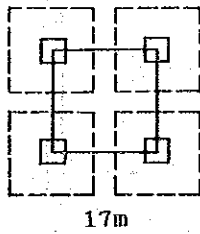
FIG. NO.
EQ-21

(ILLUSTRATION)

DAMPHU



MONGAR



EQUIPMENT SITE LAYOUT PLAN

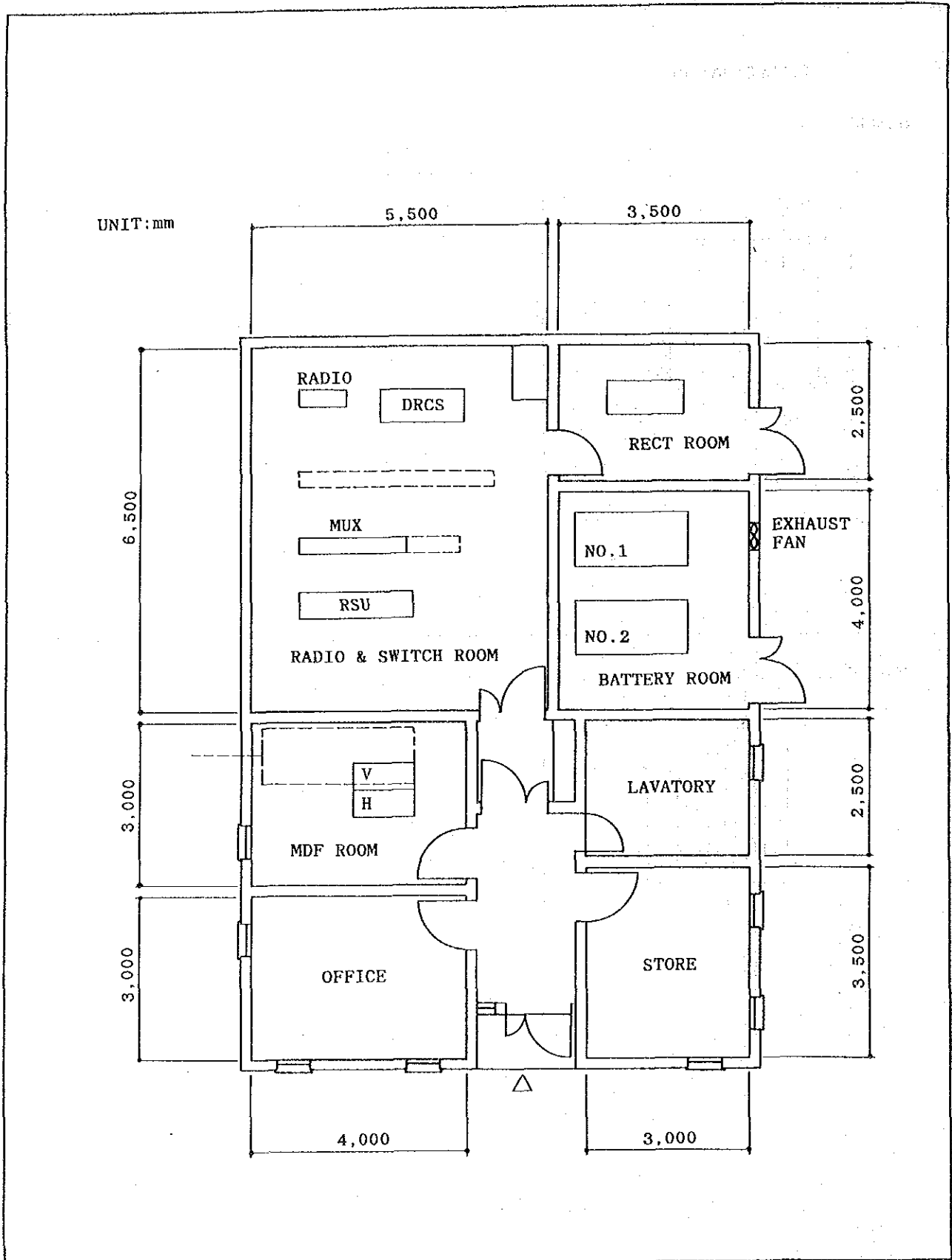
SCALE : 1/200

SITE NAME :

DAMPHU
MONGAR

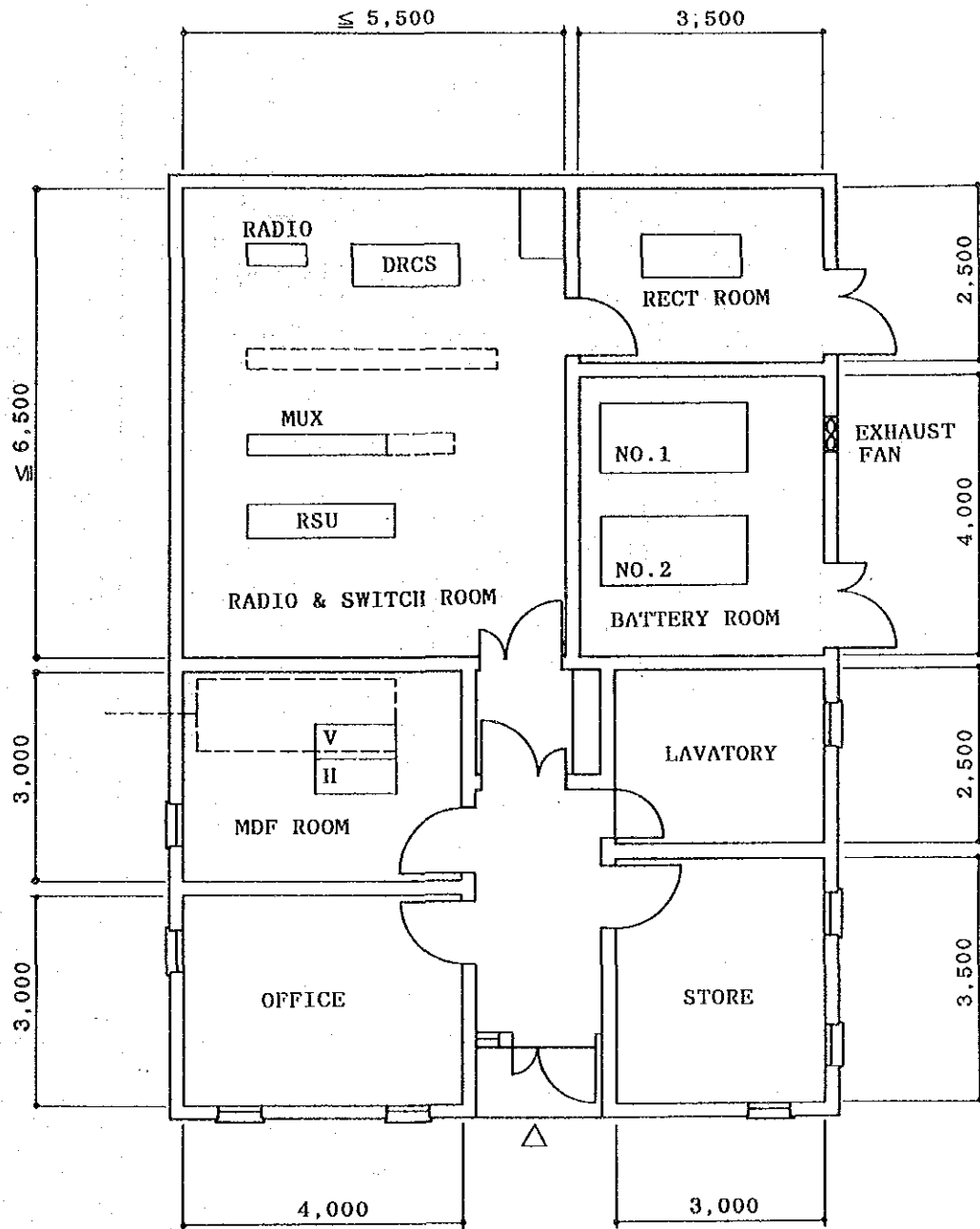
FIG. NO.

EQ-22



<p>EQUIPMENT FLOOR LAYOUT PLAN SCALE : 1/100</p>	<p>SITE NAME : DAMPHU</p>	<p>FIG. NO. EQ-23</p>
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UNIT: mm

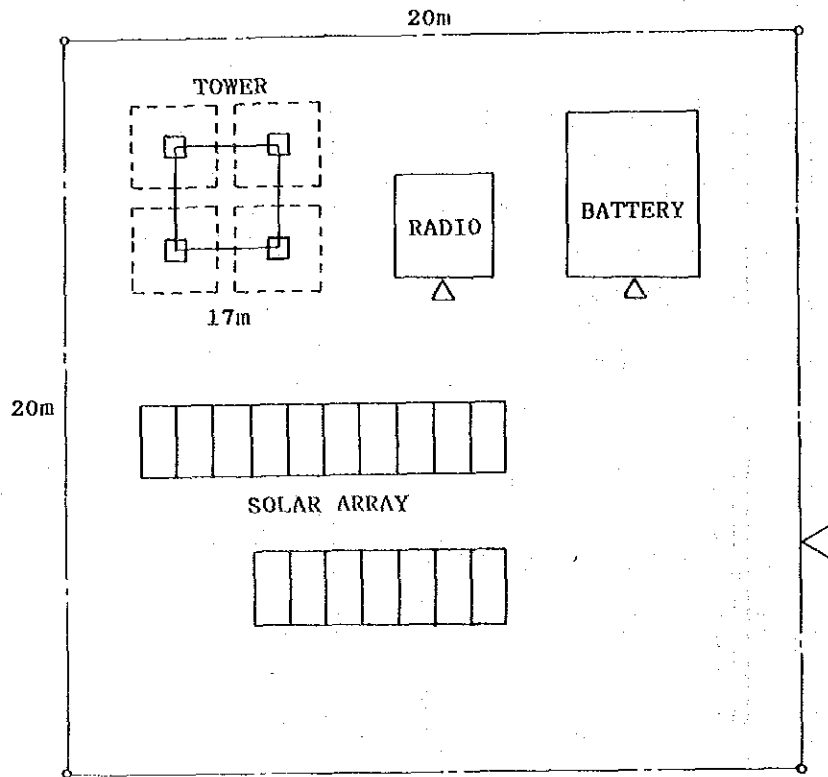


EQUIPMENT FLOOR LAYOUT PLAN

SCALE : 1/100

SITE NAME :
MONGCAR

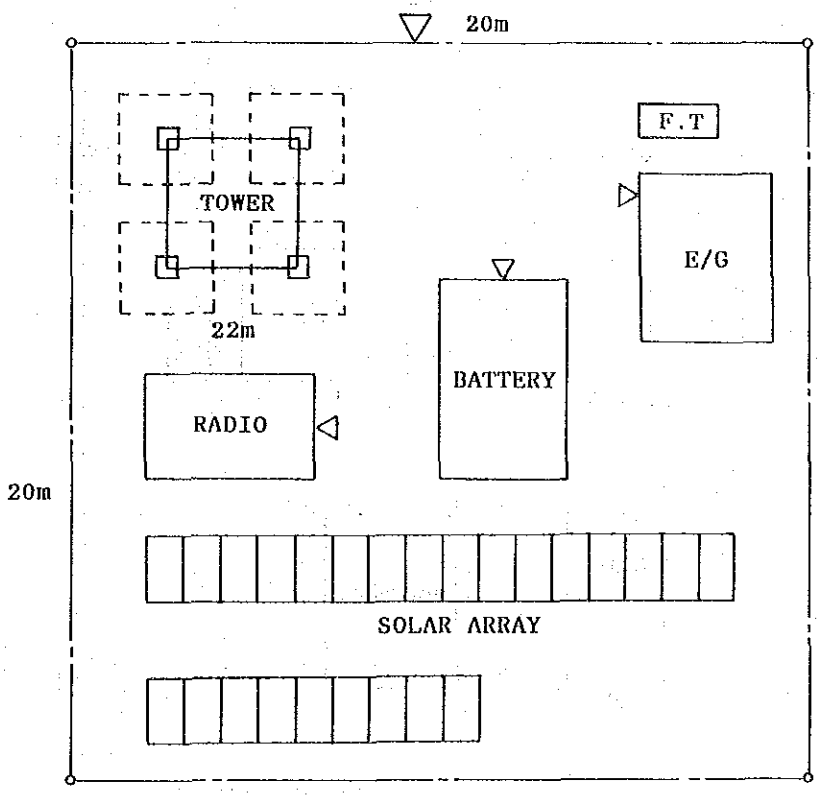
FIG. NO.
EQ-24



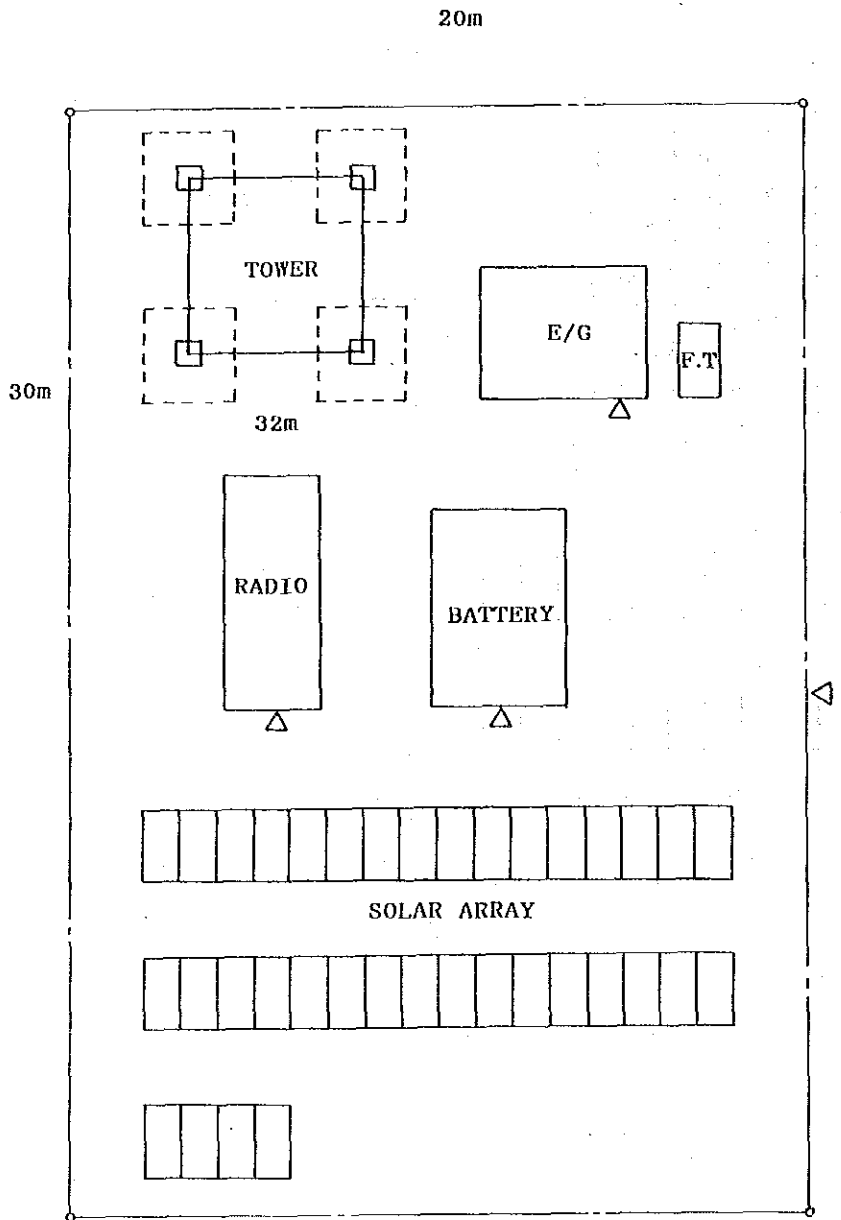
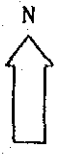
EQUIPMENT SITE LAYOUT PLAN

SITE NAME :
TYPICAL THROUGH
REPEATER STATION

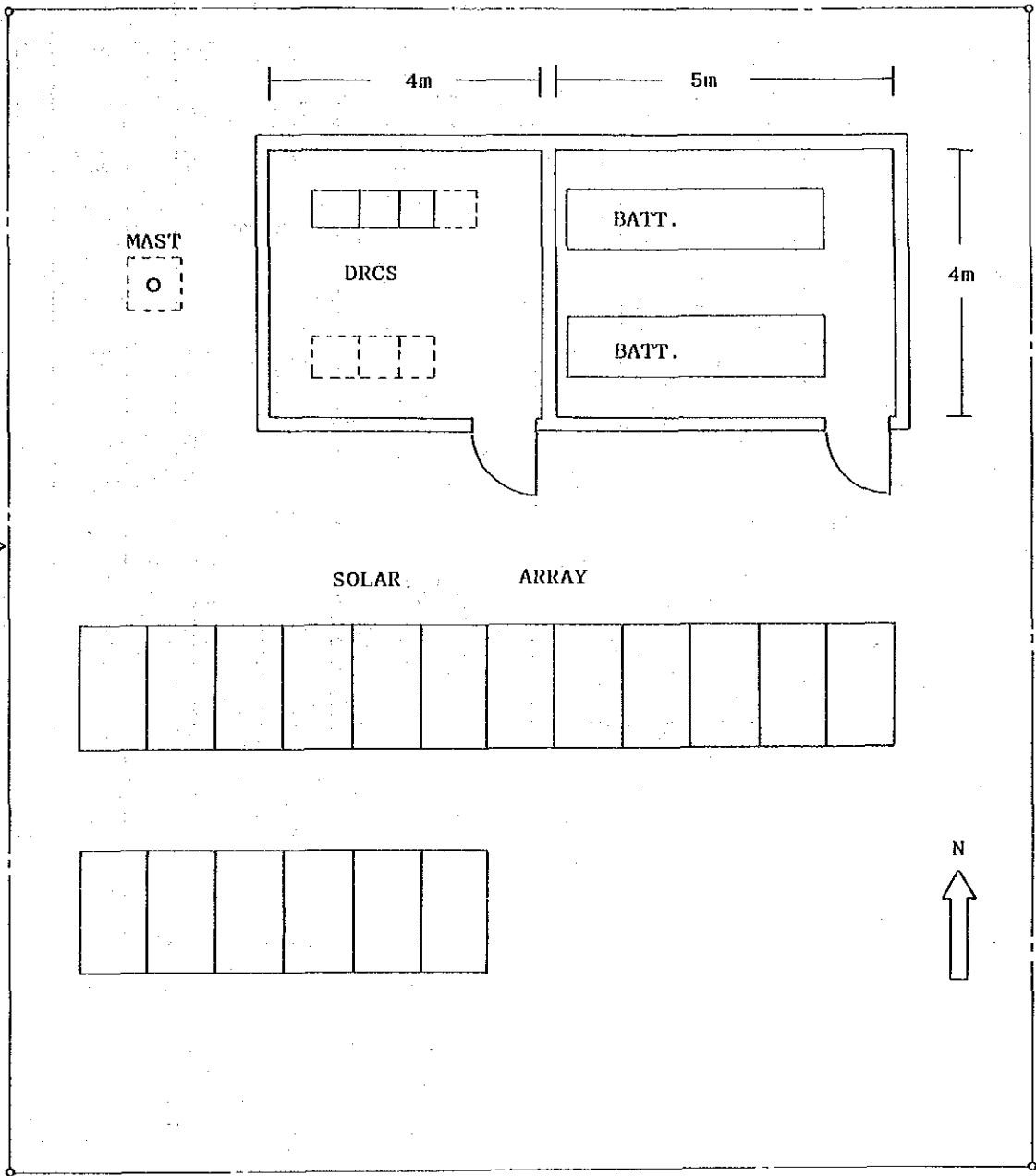
FIG. NO.
EQ-25



EQUIPMENT SITE LAYOUT PLAN	SITE NAME : TYPICAL BRANCH REPEATER STATION (A)	FIG. NO. EQ-26
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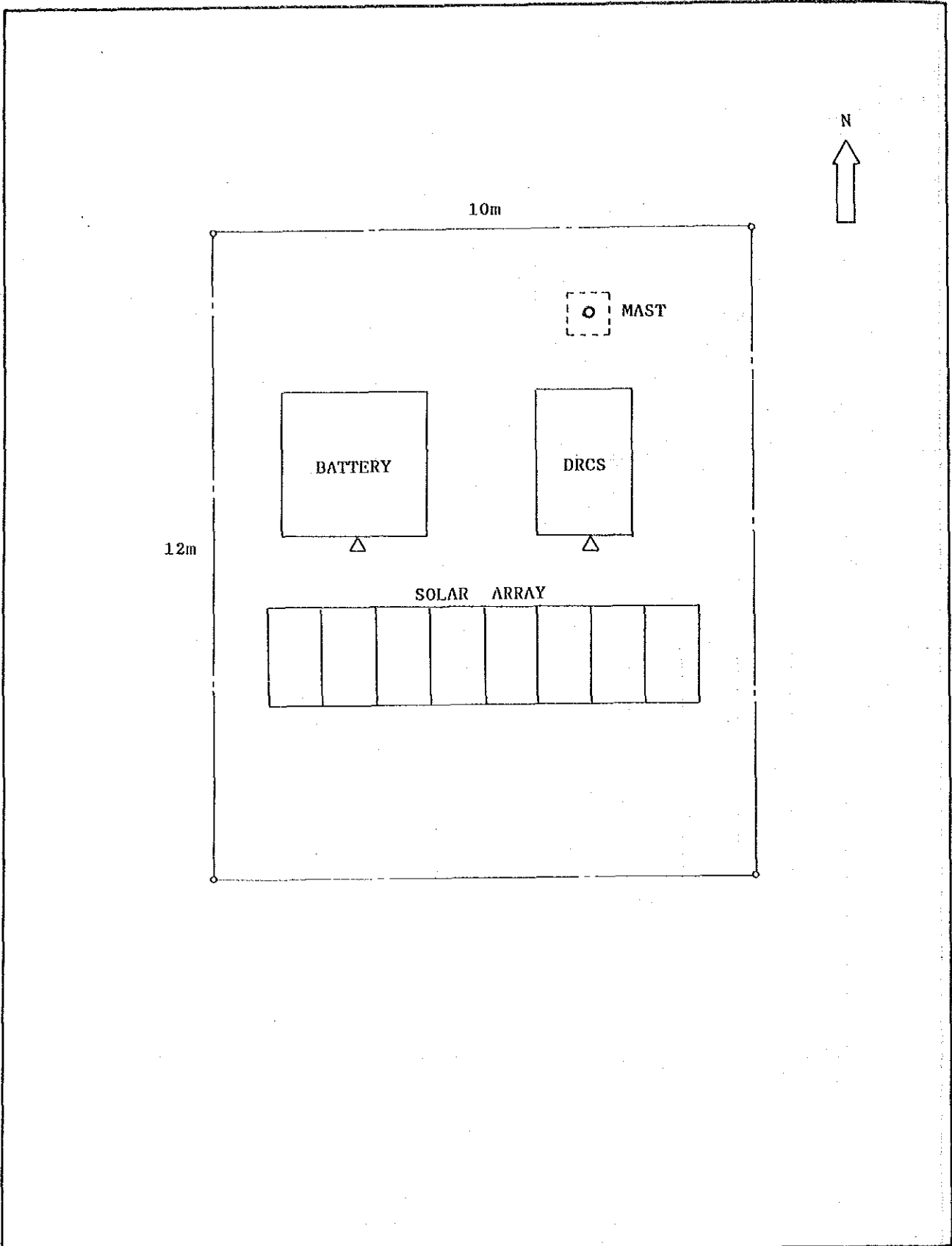
EQUIPMENT SITE LAYOUT PLAN	SITE NAME : TYPICAL BRANCH REPEATER STATION (B)	FIG. NO. EQ-27
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EQUIPMENT SITE LAYOUT PLAN

SITE NAME :
TYPICAL DRCS SUBSCRIBER
STATION

FIG. NO.
EQ-28



EQUIPMENT SITE LAYOUT PLAN

SITE NAME :
TYPICAL DRCS REPEATER
STATION

FIG. NO.
EQ-29

ROUTE 1

SITE NAME	(Ab.)	LONGITUDE	LATITUDE	GROUND LEVEL (m)	AZIMUTH	DISTANCE (Km)	DIRECTION
THIMPHU	THI	89° 38' 10"	27° 28' 50"	2360	76° 19' 00"	5.34	DOB
DOBCHU	DOB	89° 41' 19"	27° 29' 31"	3880	256° 20' 27" 89° 59' 10"	5.34 5.93	THI DOC
DOCHULA	DOC	89° 44' 55"	27° 29' 31"	3160	270° 00' 50" 83° 27' 54"	5.93 45.32	DOB PEL
PELELA	PEL	90° 12' 17"	27° 32' 16"	3480	263° 40' 28" 161° 30' 55"	45.32 0.78	DOC PEL-P
PELELA-P	PEL-P	90° 12' 26"	27° 31' 52"	3600	341° 30' 59" 92° 56' 02"	0.78 37.93	PEL YUT
YUTOLA	YUT	90° 35' 27"	27° 30' 47"	3520	273° 06' 37" 109° 00' 55" 96° 53' 53" 250° 32' 53" 248° 02' 30"	37.93 40.14 23.13 9.14 13.64	PEL-P THM TAN TER TAL
THUMSINGLA	THM	90° 58' 29"	27° 23' 40"	4015	289° 11' 28" 220° 49' 23" 130° 17' 34"	40.14 1.26 60.71	YUT TAD KHE
TANDI	TAD	90° 57' 59"	27° 23' 09"	4000	40° 49' 09" 108° 18' 21"	1.26 35.12	THM KOR
KORILA	KOR	91° 18' 12"	27° 17' 09"	2440	288° 27' 35" 86° 23' 55" 260° 25' 29"	35.12 25.39 5.91	TAD RAN MON
RANGSIKHAR	RAN	91° 33' 34"	27° 18' 00"	2080	266° 30' 56" 350° 32' 48"	25.39 3.68	KOR TAS
TASHIGANG	TAS	91° 33' 12"	27° 18' 58"	1090	170° 25' 38"	3.68	RAN
TANGSBI	TAN	90° 49' 24"	27° 29' 16"	2900	277° 00' 17" 314° 22' 34"	23.13 9.28	YUT JAK
JAKAR	JAK	90° 45' 22"	27° 32' 47"	2580	134° 20' 43"	9.28	TAN
TERANG	TER	90° 30' 13"	27° 29' 08"	2140	70° 30' 29" 18° 52' 16"	9.14 1.95	YUT TON
TONGSA	TON	90° 30' 36"	27° 30' 08"	2040	198° 52' 27"	1.95	TER
MONGAR	MON	91° 14' 40"	27° 16' 37"	1580	80° 23' 52"	5.91	KOR

COORDINATE OF SITE

TABLE NO.

1

ROUTE 2

SITE NAME	(Ab.)	LONGITUDE	LATITUDE	GROUND LEVEL (m)	AZIMUTH	DISTANCE (Km)	DIRECTION
TASHILING	TAL	90° 27' 46"	27° 28' 01"	2435	67° 58' 59" 143° 47' 54"	13.64 24.62	YUT BAL
BALING	BAL	90° 36' 35"	27° 17' 15"	1500	323° 51' 56" 181° 11' 26"	24.62 2.65	TAL PAN
PANJARMANI	PAN	90° 36' 33"	27° 15' 49"	1720	1° 11' 26" 168° 05' 03"	2.65 20.4	BAL TAM
TAMULA	TAM	90° 39' 06"	27° 05' 00"	2280	348° 06' 12" 209° 58' 58" 3° 29' 27"	20.4 7.88 14.45	PAN SAM SHM
SAMKHARA	SAM	90° 36' 43"	27° 01' 18"	2080	29° 57' 53" 245° 33' 19"	7.88 6.54	TAM SUR
SUREY	SUR	90° 33' 07"	26° 59' 50"	1230	65° 31' 41" 203° 21' 50"	6.54 15.51	SAM GEY
GEYLEGPHUG	GEY	90° 29' 24"	26° 52' 07"	215	23° 20' 10" 285° 31' 47"	15.51 29.42	SUR DAR
DARECHU	DAR	90° 12' 16"	26° 56' 22"	2100	105° 24' 05" 288° 57' 43"	29.42 6.06	GEY DUP
DHUPIDARA	DUP	90° 08' 48"	26° 57' 26"	1840	108° 56' 10" 320° 30' 22"	6.06 3.99	DAR CHA
CHANAUTI	CHA	90° 07' 16"	26° 59' 06"	1660	140° 29' 40" 12° 55' 10"	3.99 2.59	DUP DAP
SAMPHU	DAP	90° 07' 37"	27° 00' 28"	1600	192° 55' 20"	2.59	CHA
SHEMGANG	SHM	90° 39' 38"	27° 12' 49"	1930	183° 29' 42"	14.45	TAM

ROUTE 3

SITE NAME	(Ab.)	LONGITUDE	LATITUDE	GROUND LEVEL (m)	AZIMUTH	DISTANCE (Km)	DIRECTION
KHERI	KHE	91° 26' 30"	27° 02' 21"	2300	310° 30' 19" 154° 25' 23" 230° 35' 35"	60.71 18.72 1.89	THM NED PEM
NGEDUM	NED	91° 31' 23"	26° 53' 12"	1832	334° 27' 35" 190° 06' 59"	18.72 10.53	KHE SJK
SANDRUP JONKHAR	SJK	91° 30' 16"	26° 47' 35"	190	10° 06' 29"	10.53	NED
PEMAGATSEL	PEM	91° 25' 37"	27° 01' 42"	1550	50° 35' 11"	1.89	KHE

COORDINATE OF SITE

TABLE NO.

2

DRCS

SITE NAME (Ab.)		LONGITUDE	LATITUDE	GROUND LEVEL (m)	AZIMUTH	DISTANCE (Km)	DIRECTION
MONGAR	MON	91° 14' 40"	27° 16' 37"	1580	313° 17' 38"	8.79	THN
THINMUNG	THN	91° 10' 47"	27° 19' 53"	2343	133° 15' 51" 6° 22' 08"	8.79 20.52	MON WAM
WAMBUR	WAM	91° 12' 10"	27° 30' 56"	2210	186° 22' 46" 359° 40' 19"	20.52 19.14	THN NAM
NUMGUNG	NUM	91° 12' 06"	27° 41' 18"	2400	179° 40' 17" 203° 32' 03"	19.14 3.09	WAM LHU
LHUNTSHI	LHU	91° 11' 21"	27° 39' 46"	1660	23° 31' 42"	3.09	NAM
TASHIGANG	TAS	91° 33' 12"	27° 19' 58"	1090	170° 32' 38"	3.68	RAN
RANGSIKHAL	RAN	91° 33' 34"	27° 18' 00"	2080	350° 32' 48" 226° 48' 48"	3.68 5.62	TAS YON
YONGPHULA	YON	91° 31' 05"	27° 15' 55"	2400	46° 47' 41"	5.62	RAN
GEYLEGPHUG	GEY	90° 29' 24"	26° 52' 07"	215	285° 31' 47"	29.42	DAR
DARECHU	DAR	90° 12' 16"	26° 56' 22"	2100	105° 24' 05" 141° 58' 37"	29.42 10.35	GEY SAR
SARBHANG	SAR	90° 16' 07"	26° 51' 57"	320	322° 00' 21"	10.35	DAR
DAMPHU	DAP	90° 07' 37"	27° 00' 28"	1600	192° 55' 20"	2.59	CHA
CHANAUTI	CHA	91° 07' 16"	26° 59' 06"	1660	12° 55' 10" 237° 38' 36"	2.59 13.61	DAP NAM
NAMCHHELA	NAM	90° 00' 19"	26° 55' 09"	1440	57° 35' 28" 324° 35' 12"	13.61 20.58	CHA DAG
DAGA	DAG	89° 53' 06"	27° 04' 14"	1520	144° 31' 57"	20.58	NAM

COORDINATE OF SITE

TABLE NO.

3

ROUTE 1

SITE NAME (Ab.)		ANT TYPE	ANT SIZE	ANT HEIGHT (m)	DIRECTION
THIMPHU	THI	Parabolic	3.6mD	20	DOB
DOBCHU	DOB	Parabolic	3.6mD	5	THI
		Parabolic	3.6mD	5	DOC
DOCHULA	DOC	Parabolic	3.6mD	30	DOB
		Parabolic	3.0mD	30	PEL
PELELA	PEL	Parabolic	3.6mD	15	DOC
		Parabolic	3.0mD	10	PEL-P
PELELA-P	PEL-P	Reflector	12*16ft	3	PEL YUT
YUTOLA	YUT	Parabolic	3.0mD	30	PEL-P
		Parabolic	3.0mD	30	THM
		Parabolic	3.0mD	10	TAN
		Parabolic	1.8mD	20	TER
		Parabolic	4.6mD	30	TAL
THUMSINGLA	THM	Parabolic	3.0mD	20	YUT
		Parabolic	2.4mD	10	TAD
		Parabolic	2.4mD	20	KHE
TANDI	TAD	Reflector	12*16ft	3	THM KOR
KORILA	KOR	Parabolic	3.0mD	20	TAD
		Parabolic	4.6mD	20	RAN
		Parabolic	1.2mD	10	MON
RANGSIKHAR	RAN	Parabolic	4.6mD	35	KOR
		Parabolic	4.6mD	35	TAS
TASHIGANG	TAS	Parabolic	4.6mD	35	RAN
TANGSBI	TAN	Reflector	20*32ft	3	YUT JAK
JAKAR	JAK	Parabolic	3.0mD	15	TAN
TERANG	TER	Reflector	8*10ft	3	YUT TON
TONGSA	TON	Parabolic	2.4mD	15	TER
MONGAR	MON	Parabolic	1.2mD	15	KOR

ANTENNAS FOR ROUTE 1

TABLE NO.

4

ROUTE 2

SITE NAME	(Ad.)	ANT TYPE	ANT SIZE	ANT HEIGHT (m)	DIRECTION
TASHILING	TAL	Reflector	20*30ft	3	YUT BAL
BALING	BAL	Parabolic	4.6mD	15	TAL
		Parabolic	3.6mD	15	PAN
PANJARMANI	PAN	Parabolic	3.6mD	5	BAL
		Parabolic	3.6mD	5	TAM
TAMULA	TAM	Parabolic	3.6mD	20	PAN
		Parabolic	3.6mD	20	SAM
		Parabolic	1.2mD	10	SHM
SAMKHARA	SAM	Parabolic	3.0mD	5	TAM
		Parabolic	3.0mD	5	SUR
SUREY	SUR	Parabolic	3.6mD	20	SAM
		Parabolic	1.2mD	20	GEY
GEYLEGPHUG	GEY	Parabolic	1.2mD	20	SUR
		Parabolic	2.4mD	30	DAR
DARECHU	DAR	Parabolic	1.8mD	20	GEY
		Parabolic	1.2mD	10	DUP
DHUPIDARA	DUP	Parabolic	1.2mD	10	DAR
		Parabolic	1.2mD	10	CHA
CHANAUTI	CHA	Reflector	8*10ft	3	DUP DAP
DAMPHU	DAP	Parabolic	1.8mD	35	CHA
SHEMGANG	SHM	Parabolic	1.2mD	15	TAM

ANTENNAS FOR ROUTE 2

TABLE NO.

5

ROUTE 3

SITE NAME	(Ad.)	ANT TYPE	ANT SIZE	ANT HEIGHT (m)	DIRECTION
KHERI	KHE	Parabolic	2.4mD	20	THM
		Parabolic	4.6mD	30	NED
		Parabolic	1.2mD	25	PEM
NGEDUM	NED	Reflector	16*20ft	3	KHE SJK
SANDRUP JONKHAR	SJK	Parabolic	4.6mD	20	NED
PEMAGATSEL	PEM	Parabolic	1.2mD	20	KHE

ANTENNAS FOR ROUTE 3

TABLE NO.

6

DRCS

SITE NAME	(Ab.)	ANT TYPE	ANT HEIGHT (m)	DIRECTION
MONGAR	MON	OMNI	10	THN
THINMUNG	THN	HORN	10	MON
		OMNI	10	WAM
WAMBUR	WAM	HORN	10	THN
		OMNI	10	NAM
NUMGUNG	NUM	HORN	10	WAM
		OMNI	10	LHU
LHUNTSHI	LHU	HORN	10	NAM
TASHIGANG	TAS	OMNI	10	RAN
RANGSIKHAL	RAN	HORN	10	TAS
		OMNI	10	YON
YONGPHULA	YON	HORN	10	RAN
GEYLEGPHUG	GEY	OMNI	10	DAR
DARECHU	DAR	HORN	10	GEY
		OMNI	10	SAR
SARBHANG	SAR	HORN	10	DAR
DAMPHU	DAP	OMNI	10	CHA
CHANAUTI	CHA	1.2mD GP	10	DAP
		OMNI	10	NAM
NAMCHHELA	NAM	HORN	10	CHA
		OMNI	10	DAG
DAGA	DAG	HORN	10	NAM

ANTENNAS FOR DRCS

TABLE NO.

7

STATION A	THIMPHU		DUBCHU		DOCHULA		PELELA		PELELA(P)		YUTOLA		YUTOLA		YUTOLA		THUMSINGLA			
	8000	34	8000	34	8000	34	8000	34	8000	34	8000	34	8000	34	8000	34	8000	34		
STATION B																				
FREQUENCY	8000	34	8000	34	8000	34	8000	34	8000	34	8000	34	8000	34	8000	34	8000	34	8000	34
TRANS CAPACITY	5.34	5.93	11.27	20	30	15	45.32	37.93	38.71	40.14	142.57	142.08	250.43	142.57	250.43	142.57	250.43	142.57	250.43	142.57
HOP DISTANCE	20	5	20	5	30	15	30	10	5	10	5	5	5	5	5	5	5	5	5	5
ANT H A	5	30	30	30	30	30	15	10	5	5	5	5	5	5	5	5	5	5	5	5
ANT H B	125.05	125.96	251.02	36.5	46.5	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
SPAN LOSS	35	1.5	36.5	46.5	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
FEEDER LENGTH A	1.5	45	46.5	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
FEEDER LENGTH B	0.068	3.162	5.644	5.8	5.8	133.33	134.92	262.46	154.53	115.84	150.94	260.99	153.81	150.94	260.99	153.81	150.94	260.99	153.81	150.94
FEEDER LOSS/m	2.482	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
FEEDER LOSS A+B	133.33	134.92	262.46	154.53	115.84	150.94	260.99	153.81	150.94	260.99	153.81	150.94	260.99	153.81	150.94	260.99	153.81	150.94	260.99	153.81
BR CKT LOSS	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
TOTAL LOSS	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
ANT DIA A	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
ANT DIA B	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
ANT GAIN A	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94
ANT GAIN B	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94
TOTAL GAIN	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94	94
NET LOSS	74.46	20	-54.46	-84.5	30.04	0.00028	0.000318	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13	-84.5	42.37	0.060318	0.000092	0.000349	0.000225
TX POWER	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
RX INPUT	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
THRESHOLD LEVEL	-54.46	-84.5	30.04	0.00028	0.000318	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13	-84.5	42.37	0.060318	0.000092	0.000349	0.000225	0.000906	62.13
FADE MARGIN	30.04	0.00028	0.000318	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13	-84.5	42.37	0.060318	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13
RAYLEIGH FADE	0.00028	0.000318	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13	-84.5	42.37	0.060318	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13	-84.5
PROBABILITY %	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13	-84.5	42.37	0.060318	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13	-84.5	42.37	0.060318
OBJECTIVE %	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13	-84.5	42.37	0.060318	0.000092	0.000349	0.000225	0.000906	62.13	20	-42.13	-84.5	42.37	0.060318

	REFLECTOR										B to B		
	THUMSINGLA TANDI	THUMSINGLA TANDI	KORILA	KORILA	KORILA	KORILA	KORILA	RANGSHIKHA TASIGANG	RANGSHIKHA TASIGANG	RANGSHIKHA TASIGANG	KORILA	TASIGANG	TOTAL
STATION A	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000	
STATION B	34	34	34	34	34	34	34	34	34	34	34	34	
FREQUENCY	1.26	35.12	36.38	25.39	3.68	29.07	200.89						
HOP DISTANCE	10	5	20	35	35	20	35	35	20	35	35	20	
ANT H A	5	20	35	35	20	35	35	20	35	35	20	35	
ANT H B	112.51	141.41	253.92	138.60	121.82	260.41	36.5	51.5	0.068	5.984	5.8	272.20	
SPAN LOSS	25	0	35	1.5	50	0.068	0.068	3.502	5.8	131.12	4.6	4.6*2	
FEEDER LENGTH A	0	35	1.5	50	0.068	0.068	3.502	5.8	131.12	4.6	4.6*2	97	
FEEDER LENGTH B	0.068	0.068	4.08	2.482	5.8	146.88	131.12	4.6	4.6	4.6	4.6*2	97	
FEEDER LOSS/m	1.7	2.38	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	
FEEDER LOSS A+B	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	
BR CKT LOSS	120.01	149.59	263.80	146.88	131.12	272.20	4.6	4.6	4.6	4.6	4.6*2	97	
TOTAL LOSS	2.4	12*16FT	12*16FT	2.4+3.0	100.76	88.9	189.66	74.14	49.88	34.12	78.20	30	
ANT DIA A	43.5	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	
ANT DIA B	43.5	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	
ANT GAIN A	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	
ANT GAIN B	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	
TOTAL GAIN	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	45.4	
NET LOSS	74.14	49.88	34.12	78.20	30	-48.20	-84.5	36.30	0.015919	0.000373	0.0015183	0.000581	0.0040178
TX POWER	-44.14	-84.5	40.36	0.031201	0.000287	0.000728							
RX INPUT													
THRESHOLD LEVEL													
FADE MARGIN													
RAYLEIGH FADE													
PROBABILITY %													
OBJECTIVE %													

	REFLECTOR		REFLECTOR		REFLECTOR		REFLECTOR	
	→	→	→	→	→	→	→	→
	*****		*****		*****		*****	
STATION A	YUTOLA	TANGSBI	YUTOLA	JAKAR	YUTOLA	TERANG	YUTOLA	KORILA
STATION B	TANGSBI	JAKAR	JAKAR	JAKAR	TERANG	TONGSA	TONGSA	MONGAR
FREQUENCY	8300	8300	8300	8300	8300	8300	8300	8300
TRANS CAPACITY	34	34	34	34	34	34	34	34
HOP DISTANCE	23.13	9.28	32.41	9.14	1.95	11.09	5.91	5.91
ANT H A	10	5	10	20	5	20	10	10
ANT H B	5	15	15	5	15	15	15	15
SPAN LOSS	138.11	130.17	268.28	130.04	116.62	246.66	126.25	126.25
FEEDER LENGTH A	25	0	25	35	0	35	25	25
FEEDER LENGTH B	0	30	30	0	30	30	30	30
FEEDER LOSS/ft	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
FEEDER LOSS A+B	1.7	2.04	3.74	2.38	2.04	4.42	3.74	3.74
BR CKT LOSS	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
TOTAL LOSS	145.61	138.01	277.82	138.22	124.46	256.88	135.79	135.79
ANT DIA A	3	20*32FT	20*32FT	1.8	8*10FT	8*10FT	1.2	1.2
ANT DIA B	20*32FT	3	3.0*2	8*10FT	2.4	1.8+2.4	1.2	1.2
ANT GAIN A	45.8	45.8	112.99	41.3	45.8	96.03	37.8	37.8
ANT GAIN B			91.6			85.1	37.8	37.8
TOTAL GAIN			204.59			181.13	75.6	75.6
NET LOSS			73.23			75.75	60.19	60.19
TX POWER			30			20	20	20
RX INPUT			-43.23			-55.75	-40.19	-40.19
THRESHOLD LEVEL			-84.5			-84.5	-84.5	-84.5
FADE MARGIN			41.27			28.75	44.31	44.31
RAYLEIGH FADE			0.022888			0.000917	0.000139	0.000139
PROBABILITY %			0.000171			0.000122	0.000001	0.000001
OBJECTIVE %			0.000648			0.000222	0.000118	0.000118

TRANSMISSION ENGINEERING

TABLE NO.
11

	REFLECTOR		B to B		B to B		*****		*****	
* STATION A	YUTOLA	TASILING	YUTOLA	BALING	PANJARMANI	BALING	TAMULA	SAMKHARA	TAMULA	SAMKHARA
STATION B	TASILING	BALING	BALING	PANJARMANI	TAMULA	TAMULA	SAMKHARA	SUREY	SUREY	SUREY
FREQUENCY	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000
TRANS CAPACITY	34	34	34	34	34	34	34	34	34	34
HOP DISTANCE	13.64	24.62	38.26	20.4	23.05	7.88	6.54	14.42	14.42	14.42
ANT H A	30	5	30	5	15	20	5	20	20	20
ANT H B	5	15	15	5	20	5	20	20	20	20
SPAN LOSS	133.20	138.33	271.53	118.97	136.69	255.66	126.81	255.25	255.25	255.25
FEEDER LENGTH A	45	0	45	30	1.5	31.5	1.5	36.5	36.5	36.5
FEEDER LENGTH B	0	30	30	1.5	35	36.5	35	36.5	36.5	36.5
FEEDER LOSS/m	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068
FEEDER LOSS A+B	3.06	2.04	5.1	2.142	2.482	4.624	2.482	4.964	4.964	4.964
BR CKT LOSS	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
TOTAL LOSS	142.06	146.17	282.43	126.91	144.98	266.09	135.10	266.01	266.01	266.01
ANT DIA A	4.6	20*32FT	20*32FT	3.6	3.6	3.6*2	3.6	3.6*2	3.6*2	3.6*2
ANT DIA B	20*32FT	4.6	4.6*2	3.6	3.6	3.6*2	3	3.0*2	3.0*2	3.0*2
ANT GAIN A	48.5	48.5	110.74	47	47	94	47	94	94	94
ANT GAIN B	48.5	48.5	97	47	47	94	47	90.8	90.8	90.8
TOTAL GAIN	97	97	207.74	94	94	188	92.4	184.8	184.8	184.8
NET LOSS			74.69			78.09		81.21	81.21	81.21
TX POWER			30			30		30	30	30
RX INPUT			-44.69			-48.09		-51.21	-51.21	-51.21
THRESHOLD LEVEL			-84.5			-84.5		-84.5	-84.5	-84.5
FADE MARGIN			39.81			36.41		33.29	33.29	33.29
RAYLEIGH FADE			0.036232			0.007936		0.001943	0.001943	0.001943
PROBABILITY %			0.000379			0.000181		0.000091	0.000091	0.000091
OBJECTIVE %			0.000765			0.000461		0.000288	0.000288	0.000288

	REFLECTOR										TOTAL	TAMULA	
	SUREY	GEYLEPHUG DARECHU	DHUPHIDARA CHANAUTI	CHANAUTI DAMPHU	CHANAUTI DAMPHU	CHANAUTI DAMPHU	CHANAUTI DAMPHU	CHANAUTI DAMPHU	CHANAUTI DAMPHU	CHANAUTI DAMPHU	CHANAUTI DAMPHU		SHENGANG
STATION A	8000	8000	8000	8000	8000	8000	8000	8000	8000	8000		8300	
STATION B	34	34	34	34	34	34	34	34	34	34		34	
FREQUENCY	15.51	29.42	6.06	3.99	2.59	2.59	2.59	2.59	2.59	2.59		14.45	
HOP DISTANCE	20	20	10	10	5	5	5	5	5	5		10	
ANT H A	20	20	10	10	35	35	35	35	35	35		15	
ANT H B	134.31	139.87	126.15	122.52	118.77	118.77	118.77	118.77	118.77	118.77		134.02	
SPAN LOSS	35	45	25	25	0	0	0	0	0	0		25	
FEEDER LENGTH A	35	35	25	25	50	50	50	50	50	50		30	
FEEDER LENGTH B	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068		0.068	
FEEDER LOSS/m	4.76	5.44	3.4	1.7	3.4	3.4	3.4	3.4	3.4	3.4		3.74	
FEEDER LOSS A+B	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8		5.8	
BR CKT LOSS	144.87	151.11	135.35	130.02	127.97	127.97	127.97	127.97	127.97	127.97		143.56	
TOTAL LOSS													
ANT DIA A	1.2	2.4	1.2	1.2	8*10FT	8*10FT	8*10FT	8*10FT	8*10FT	8*10FT		1.2	
ANT DIA B	1.2	1.8	1.2	1.2	1.8	1.8	1.8	1.8	1.8	1.8		1.2	
ANT GAIN A	37.5	43.5	37.5	37.5	41	41	41	41	41	41		37.8	
ANT GAIN B	37.5	41	37.5	37.5	78.5	78.5	78.5	78.5	78.5	78.5		37.8	
TOTAL GAIN	75	84.5	75	75	172.73	172.73	172.73	172.73	172.73	172.73		75.6	
NET LOSS	69.87	66.61	60.35	60.35	79.46	79.46	79.46	79.46	79.46	79.46		67.96	
TX POWER	20	20	20	20	20	20	20	20	20	20		20	
RX INPUT	-49.87	-46.61	-40.35	-40.35	-59.46	-59.46	-59.46	-59.46	-59.46	-59.46		-47.96	
THRESHOLD LEVEL	-84.5	-84.5	-84.5	-84.5	-84.5	-84.5	-84.5	-84.5	-84.5	-84.5		-84.5	
FADE MARGIN	34.63	37.89	44.15	44.15	25.04	25.04	25.04	25.04	25.04	25.04		36.54	
RAYLEIGH FADE	0.002418	0.016501	0.000144	0.000144	0.000185	0.000185	0.000185	0.000185	0.000185	0.000185		0.002028	
PROBABILITY %	0.000083	0.000269	0.000001	0.000001	0.000058	0.000058	0.000058	0.000058	0.000058	0.000058		0.000045	
OBJECTIVE %	0.000310	0.000588	0.000121	0.000121	0.000132	0.000132	0.000132	0.000132	0.000132	0.000132		0.000289	

	THUMSINGLA KHERI	KHERI NGEDUM	NGEDUM SANDRUP J. SANDRUP J.	KHERI KHERI	TOTAL	REFLECTOR *****	KHERI PEMAGATSEL
STATION A	8000	8000	8000	8000			8300
STATION B	34	34	34	34			34
FREQUENCY	60.71	18.72	10.53	29.25	225.4		1.89
TRANS CAPACITY	20	30	5	30			25
HOP DISTANCE	20	5	20	20			20
ANT H A	146.17	135.95	130.95	266.90			116.35
ANT H B	35	45	0	45			40
SPAN LOSS	35	0	35	35			35
FEEDER LENGTH A	0.068	0.068	0.068	0.068			0.068
FEEDER LENGTH B	4.76	3.06	2.38	5.44			5.1
FEEDER LOSS/m	5.8	5.8	5.8	5.8			5.8
FEEDER LOSS A+B	156.73	144.81	139.13	278.14			127.25
BR CKT LOSS							
TOTAL LOSS							
ANT DIA A	2.4	4.6	16*20FT W	16*20FT			1.2
ANT DIA B	2.4	16*20FT	4.6	4.6*2			1.2
ANT GAIN A	43.5	48.5	48.5	104.01			37.8
ANT GAIN B	43.5			97			37.8
TOTAL GAIN	87			201.01			75.6
NET LOSS	69.73			77.13			51.65
TX POWER	30			30			20
RX INPUT	-39.73			-47.13			-31.65
THRESHOLD LEVEL	-84.5			-84.5			-84.5
FADE MARGIN	44.77			37.37			52.85
RAYLEIGH FADE	0.144996			0.016216			0.000005
PROBABILITY %	0.000483			0.000297			0.000000
OBJECTIVE %	0.001214	0.000374	0.000211	0.000585	0.004508		0.000038

STATION A	MONGAR	THINMUNG	THINMUNG	WAMBUR	WAMBUR	NUMGUNG]	TASHIGANG	RANGSIKHAR
STATION B	THINMUNG	WAMBUR	NUMGUNG	NUMGUNG	LHUNTSHI	RANGSIKHAR	YONGPHULA	
FREQUENCY	2400	2400	2400	2400	2400	2400	2400	2400
TRANS CAPACITY	34	34	34	34	34	34	34	34
HOP DISTANCE	8.79	20.52	19.14	3.09	3.68	5.62		
ANT H A	10	10	10	10	10	10	10	10
ANT H B	10	10	10	10	10	10	10	10
SPAN LOSS	118.92	126.29	125.68	109.84	111.36	115.04		
FEEDER LENGTH A	25	25	25	25	25	25	25	25
FEEDER LENGTH B	25	25	25	25	25	25	25	25
FEEDER LOSS/m	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075
FEEDER LOSS A+B	3.75	3.75	3.75	3.75	3.75	3.75	3.75	3.75
BR CKT LOSS	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
TOTAL LOSS	128.47	135.84	135.23	119.39	120.91	124.59		
ANT DIA A	OM	OM	OM	OM	OM	OM	OM	OM
ANT DIA B	HO	HO	HO	HO	HO	HO	HO	HO
ANT GAIN A	10	10	10	10	10	10	10	10
ANT GAIN B	20	20	20	20	20	20	20	20
TOTAL GAIN	30	30	30	30	30	30	30	30
NET LOSS	98.47	105.84	105.23	89.39	90.91	94.59		
TX POWER	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
RX INPUT	-66.97	-74.34	-73.73	-57.89	-59.41	-63.09		
THRESHOLD LEVEL	-92	-92	-92	-92	-92	-92	-92	-92
FADE MARGIN	25.03	17.66	18.27	34.11	32.59	28.91		
RAYLEIGH FADE	0.000132	0.001680	0.001363	0.000006	0.000010	0.000035		
PROBABILITY %	0.000042	0.002877	0.002032	0.000000	0.000001	0.000004		
OBJECTIVE %	0.003750	0.003750	0.003750	0.003750	0.003750	0.007500	0.007500	0.007500

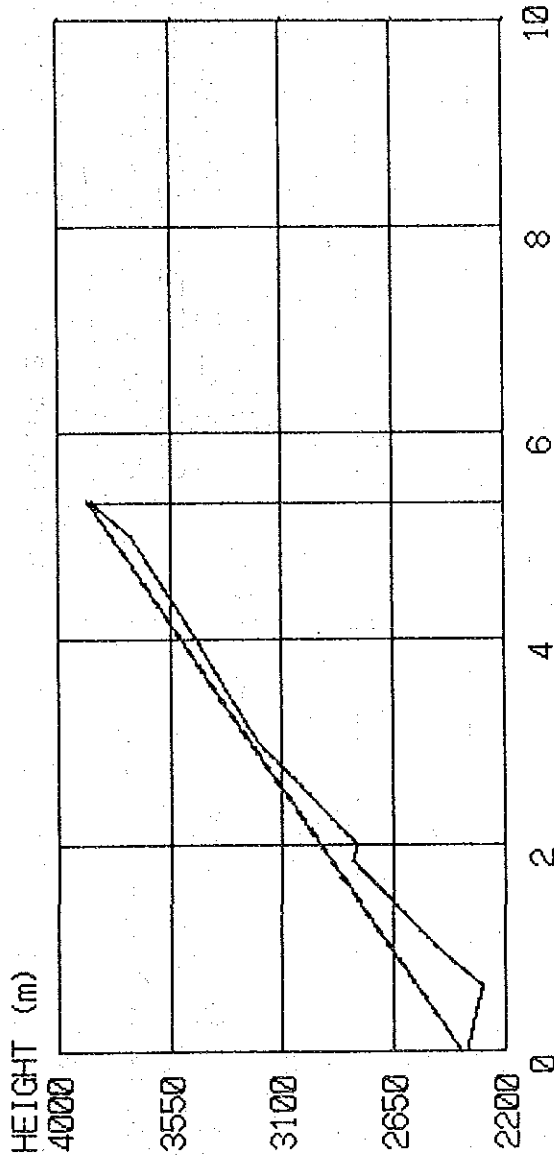
TRANSMISSION ENGINEERING

TABLE NO.

14

PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



SITE NAME : THIMPHU GROUND LEVEL : 2360.0 m ANT.HEIGHT 1 : 20.0 m	DISTANCE : 5.34 km SITE NAME : DOBCHU GROUND LEVEL : 3880.0 m ANT.HEIGHT 2 : 5.0 m
ANT.HEIGHT 1 : 20.0 m CLITICAL POINT : 3.0 Km TREE HEIGHT : 0.0 m CLEARANCE : 25.1 m FREE SPACE LOSS : 125.1 dB TOTAL LOSS : 124.7 dB	ANT.HEIGHT 2 : 5.0 m RIDGE HEIGHT : 3200.0 m FRESNEL DEP. : 7.0 m CLEARANCE FAC. : 3.6 RIDGE LOSS : -0.4 dB

DRAWING NAME:

PATH NAME:

FIG. NO.:

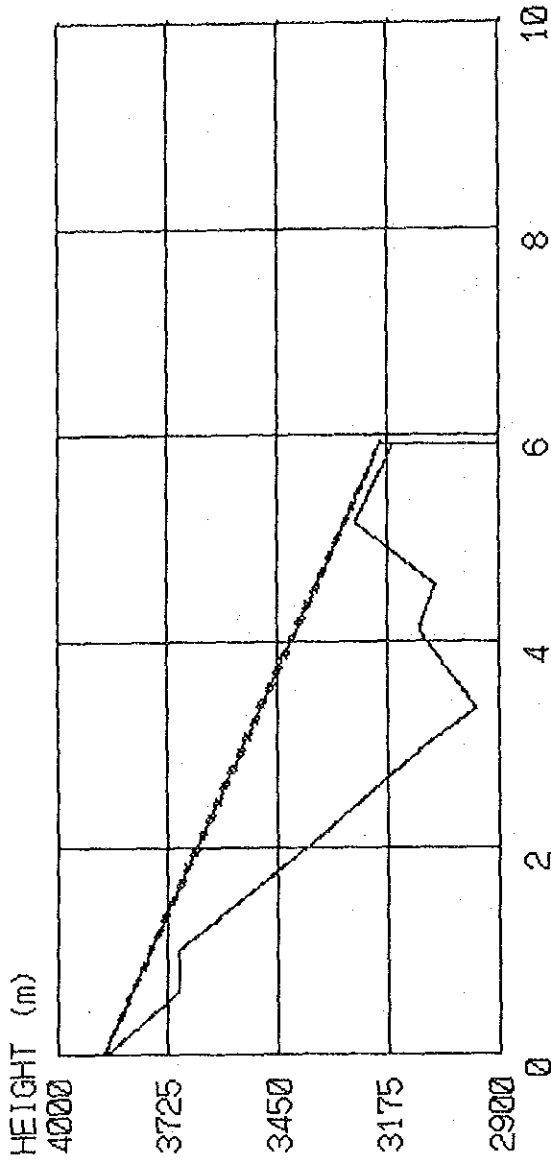
PATH PROFILE

THIMPHU ~ DOBCHU

P-1

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)

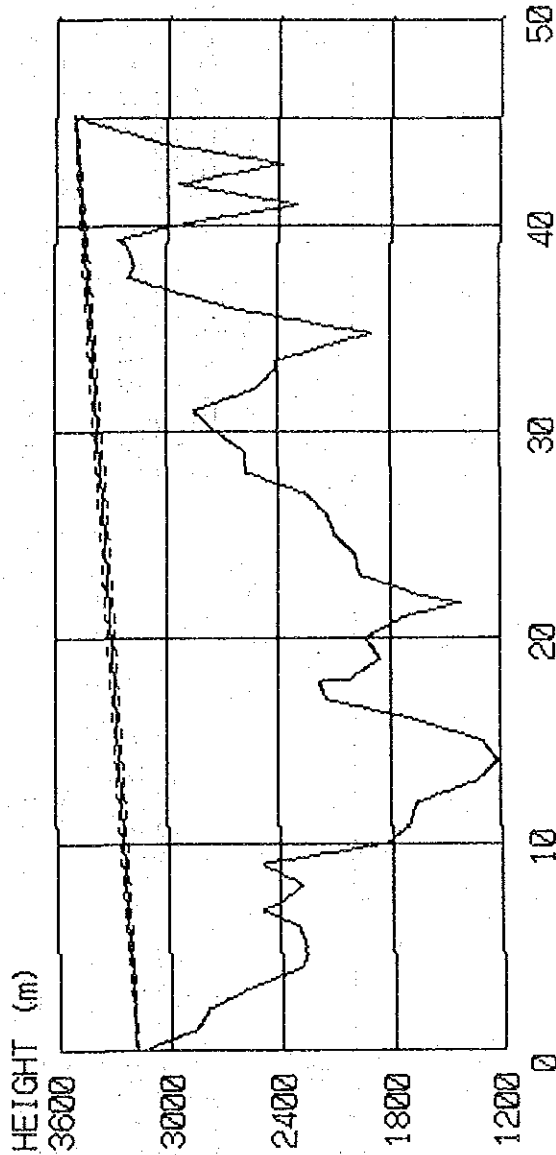


SITE NAME : DOBCHU GROUND LEVEL : 3880.0 m ANT.HEIGHT 1 : 5.0 m	DISTANCE : 5.93 km SITE NAME : DOCHULA GROUND LEVEL : 3160.0 m ANT.HEIGHT 2 : 30.0 m
ANT.HEIGHT 1 : 5.0 m CLITICAL POINT : 5.2 Km TREE HEIGHT : 0.0 m CLEARANCE : 21.2 m FREE SPACE LOSS : 126.0 dB TOTAL LOSS : 126.3 dB	ANT.HEIGHT 2 : 30.0 m RIDGE HEIGHT : 3260.0 m FRESNEL DEP. : 5.0 m CLEARANCE FAC. : 4.2 RIDGE LOSS : 0.3 dB

DRAWING NAME: PATH PROFILE	PATH NAME: DOBCHU~DOCHULA	FIG.NO.: P-2
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P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)



D I S T A N C E : 45.32 km

S I T E N A M E : DOCHULA	S I T E N A M E : PELELA
G R O U N D L E V E L : 3160.0 m	G R O U N D L E V E L : 3480.0 m
A N T . H E I G H T 1 : 30.0 m	A N T . H E I G H T 2 : 15.0 m

A N T . H E I G H T 1 : 30.0 m	A N T . H E I G H T 2 : 15.0 m
C L I T I C A L P O I N T : 39.3 Km	R I D G E H E I G H T : 3280.0 m
T R E E H E I G H T : 0.0 m	F R E S N E L D E P . : 14.0 m
C L E A R A N C E : 160.5 m	C L E A R A N C E F A C . : 11.5
F R E E S P A C E L O S S : 143.6 dB	R I D G E L O S S : 0.1 dB
T O T A L L O S S : 143.8 dB	

DRAWING NAME:

P A T H P R O F I L E

PATH NAME:

D O C H U L A ~

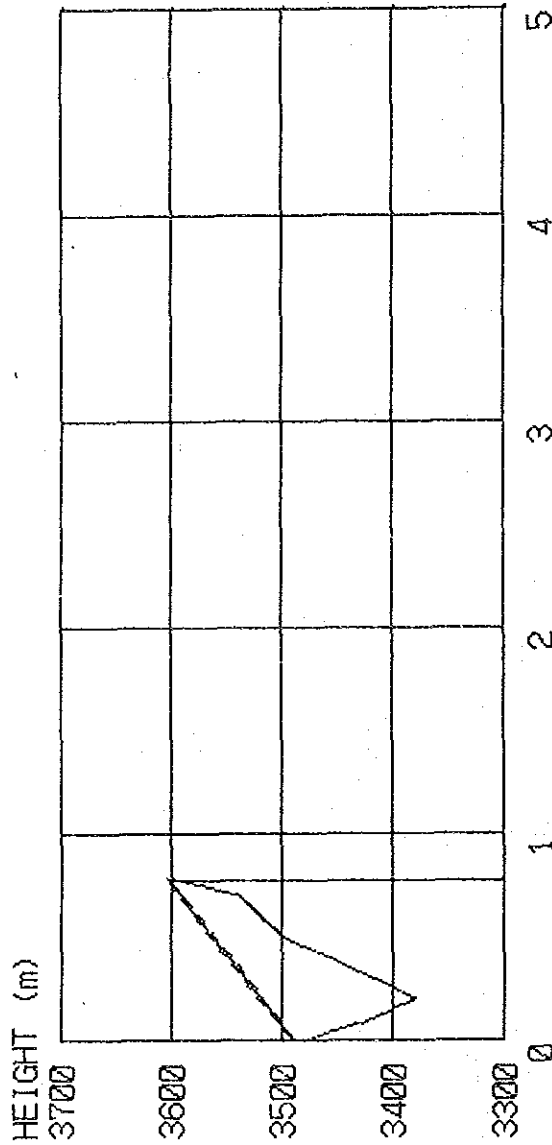
P E L E L A

FIG. NO. :

P-3

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)



DISTANCE : .78 km
 SITE NAME : PELELA
 GROUND LEVEL : 3480.0 m
 ANT.HEIGHT 1 : 10.0 m
 SITE NAME : PELELA PASS
 GROUND LEVEL : 3600.0 m
 ANT.HEIGHT 2 : 3.0 m

ANT.HEIGHT 1	:	10.0 m	ANT.HEIGHT 2	:	3.0 m
CLITICAL POINT	:	0.5 Km	RIDGE HEIGHT	:	3500.0 m
TREE HEIGHT	:	0.0 m	FRESNEL DEP.	:	2.6 m
CLEARANCE	:	62.4 m	CLEARANCE FAC.	:	24.1
FREE SPACE LOSS	:	108.4 dB	RIDGE LOSS	:	-0.0 dB
TOTAL LOSS	:	108.3 dB			

DRAWING NAME:

P A T H P R O F I L E

PATH NAME:

P E L E L A ~

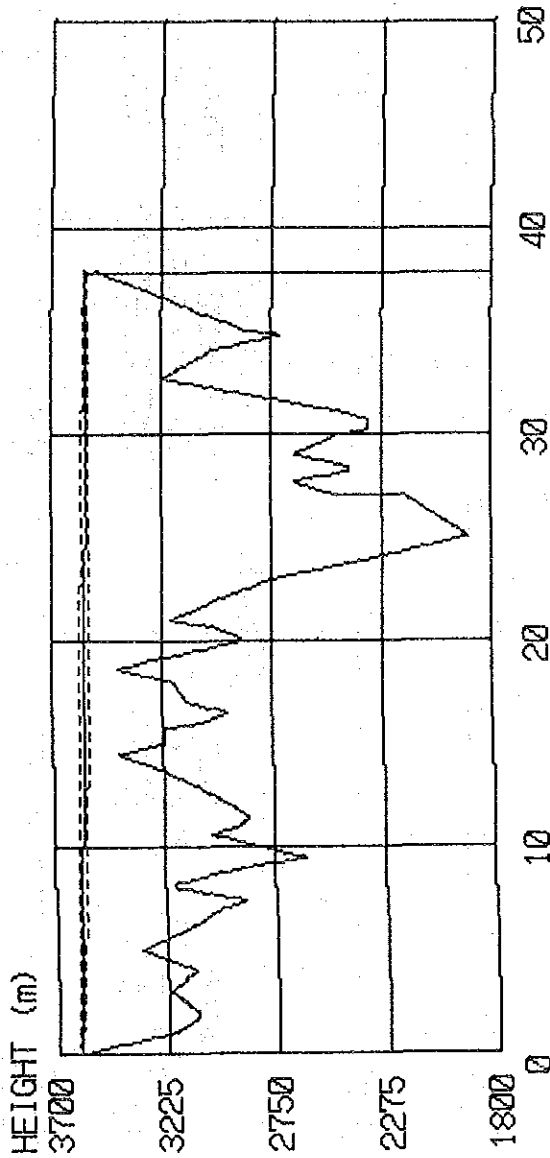
P E L E L A P A S S

FIG. NO.:

P-4

PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



SITE NAME : PELELA PASS	DISTANCE : 37.93 km
GROUND LEVEL : 3600.0 m	SITE NAME : YUTOLA
ANT.HEIGHT 1 : 3.0 m	GROUND LEVEL : 3520.0 m
	ANT.HEIGHT 2 : 30.0 m
ANT.HEIGHT 1 : 3.0 m	ANT.HEIGHT 2 : 30.0 m
CLITICAL POINT : 18.6 Km	RIDGE HEIGHT : 3420.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 18.9 m
CLEARANCE : 135.8 m	CLEARANCE FAC. : 7.2
FREE SPACE LOSS : 142.1 dB	RIDGE LOSS : 0.2 dB
TOTAL LOSS : 142.3 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

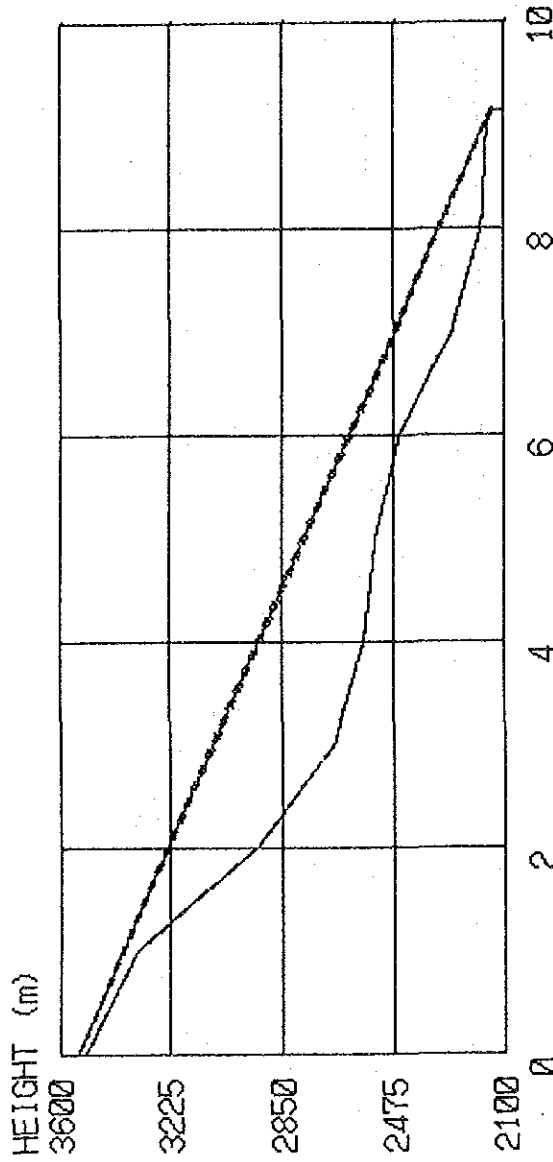
PELELA PASS ~
YUTOLA

FIG. NO.:

P-5

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8300 M H Z)



D I S T A N C E : 9.14 km

S I T E N A M E : YUTOLA	S I T E N A M E : TERANG
G R O U N D L E V E L : 3520.0 m	G R O U N D L E V E L : 2140.0 m
A N T . H E I G H T 1 : 20.0 m	A N T . H E I G H T 2 : 3.0 m

A N T . H E I G H T 1 : 20.0 m	A N T . H E I G H T 2 : 3.0 m
C L I T I C A L P O I N T : 9.0 Km	R I D G E H E I G H T : 2160.0 m
T R E E H E I G H T : 0.0 m	F R E S N E L D E P . : 2.2 m
C L E A R A N C E : 4.3 m	C L E A R A N C E F A C . : 1.9
F R E E S P A C E L O S S : 130.1 dB	R I D G E L O S S : 0.7 dB
T O T A L L O S S : 130.8 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

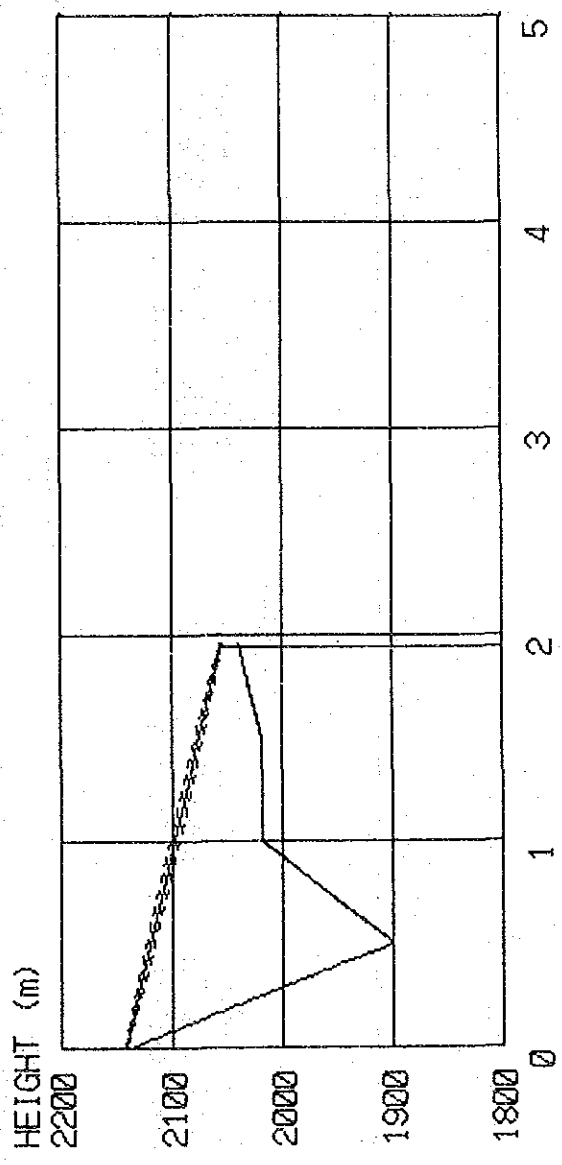
YUTOLA ~ TERANG

FIG. NO.:

P-6

PROFILE

(K : 1.33 FREQUENCY : 8300 MHz)



DISTANCE : 1.95 km

SITE NAME : TERANG SITE NAME : TONGSA
 GROUND LEVEL : 2140.0 m GROUND LEVEL : 2040.0 m
 ANT.HEIGHT 1 : 3.0 m ANT.HEIGHT 2 : 15.0 m

ANT.HEIGHT 1 : 3.0 m	ANT.HEIGHT 2 : 15.0 m
CLITICAL POINT : 1.5 Km	RIDGE HEIGHT : 2020.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 3.5 m
CLEARANCE : 55.3 m	CLEARANCE FAC. : 15.6
FREE SPACE LOSS : 116.6 dB	RIDGE LOSS : 0.0 dB
TOTAL LOSS : 116.7 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

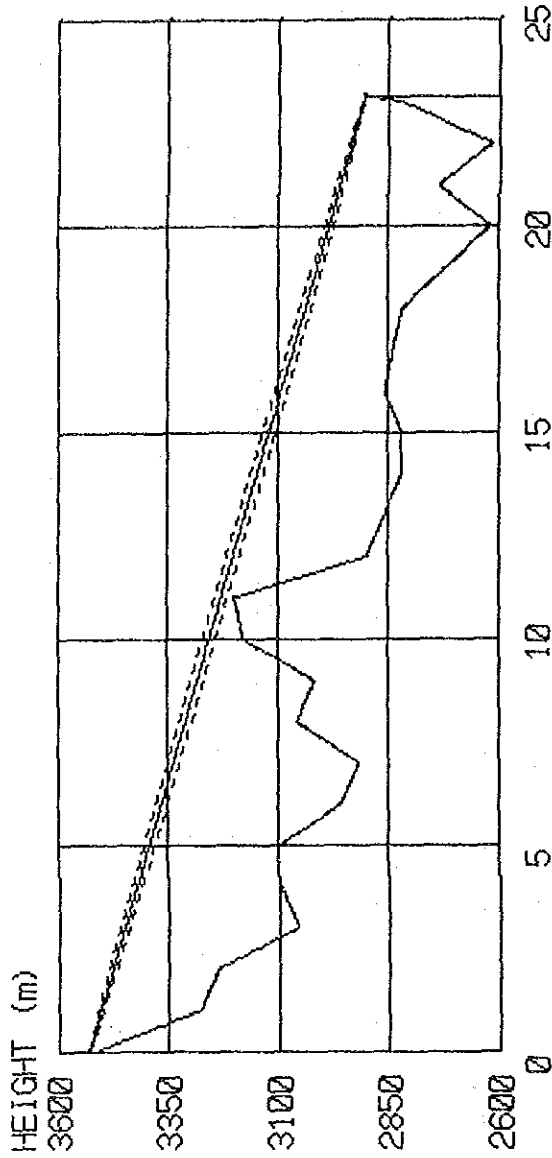
TERANG ~ TONGSA

FIG. NO. :

P-7

PROFILE

(K : 1.33 FREQUENCY : 8300 MHz)



SITE NAME : YUTOLA GROUND LEVEL : 3520.0 m ANT.HEIGHT 1 : 10.0 m	DISTANCE : 23.13 km SITE NAME : TANGSBI GROUND LEVEL : 2900.0 m ANT.HEIGHT 2 : 3.0 m
ANT.HEIGHT 1 : 10.0 m CLITICAL POINT : 11.0 Km TREE HEIGHT : 0.0 m CLEARANCE : 23.9 m FREE SPACE LOSS : 138.1 dB TOTAL LOSS : 137.3 dB	ANT.HEIGHT 2 : 3.0 m RIDGE HEIGHT : 3200.0 m FRESNEL DEP. : 14.4 m CLEARANCE FAC. : 1.7 RIDGE LOSS : -0.8 dB

DRAWING NAME:

PATH PROFILE

PATH NAME:

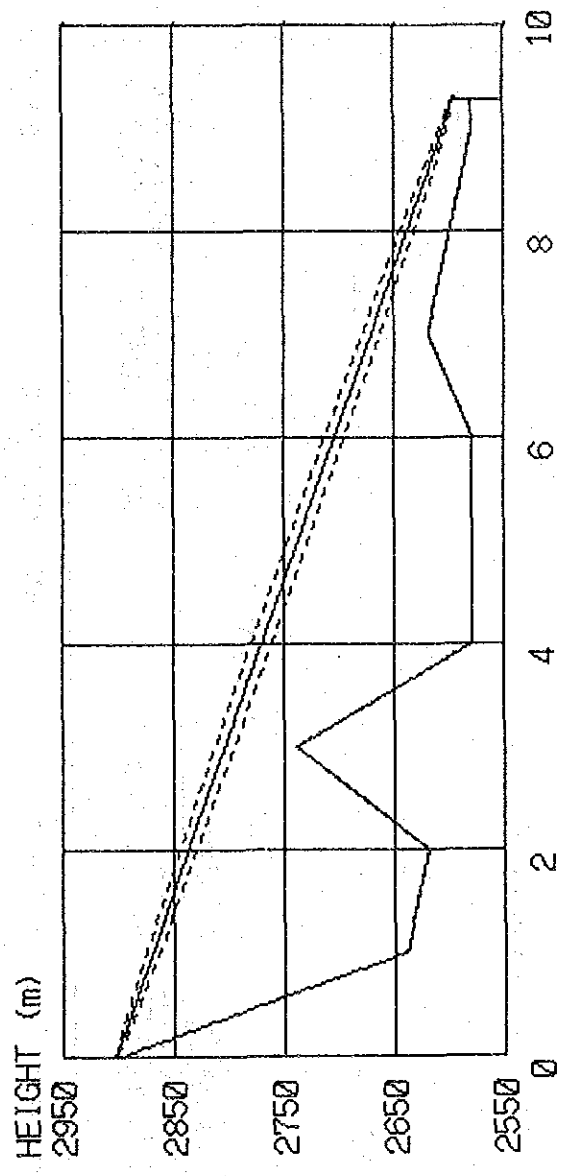
YUTOLA ~ TANGSBI

FIG. NO.:

P-8

PROFILE

(K : 1.33 FREQUENCY : 8300 MHz)

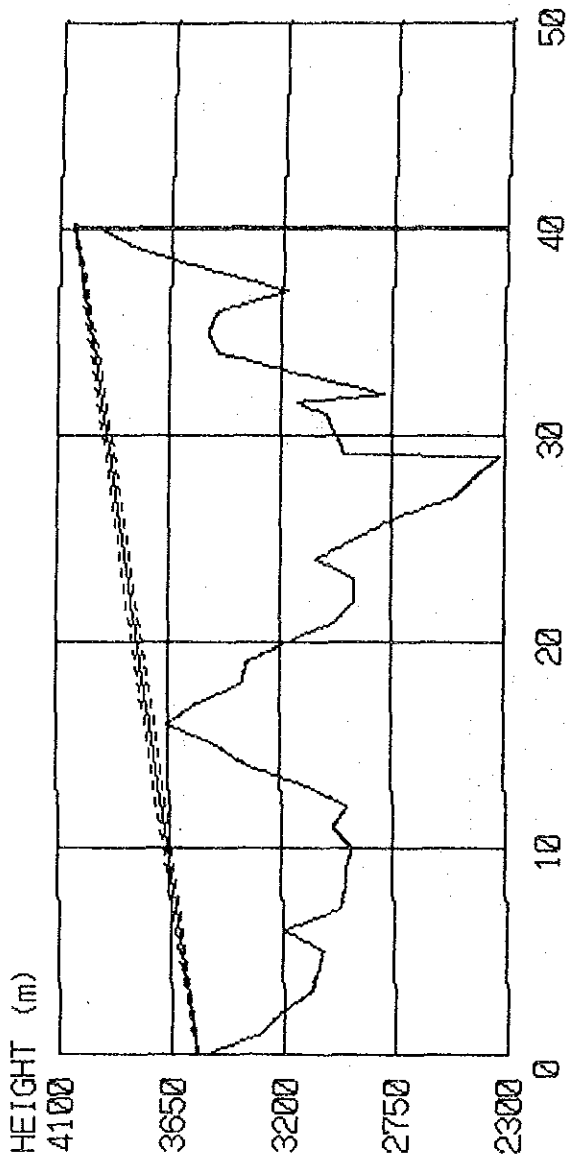


SITE NAME : TANGSBI GROUND LEVEL : 2900.0 m ANT.HEIGHT 1 : 3.0 m	DISTANCE : 9.28 km SITE NAME : JAKARTA GROUND LEVEL : 2580.0 m ANT.HEIGHT 2 : 15.0 m
ANT.HEIGHT 1 : 3.0 m CLITICAL POINT : 8.0 Km TREE HEIGHT : 0.0 m CLEARANCE : 36.9 m FREE SPACE LOSS : 130.2 dB TOTAL LOSS : 130.3 dB	ANT.HEIGHT 2 : 15.0 m RIDGE HEIGHT : 2600.0 m FRESNEL DEP. : 6.3 m CLEARANCE FAC. : 5.8 RIDGE LOSS : 0.1 dB

DRAWING NAME: PATH PROFILE	PATH NAME: TANGSBI ~ JAKARTA	FIG. NO. : P-9
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P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)



D I S T A N C E : 40.14 km

S I T E N A M E : Y U T O L A S I T E N A M E : T H U M S I N G L A
 G R O U N D L E V E L : 3520.0 m G R O U N D L E V E L : 4015.0 m
 A N T . H E I G H T 1 : 30.0 m A N T . H E I G H T 2 : 20.0 m

A N T . H E I G H T 1	:	30.0 m	:	A N T . H E I G H T 2	:	20.0 m
C L I T I C A L P O I N T	:	16.0 Km	:	R I D G E H E I G H T	:	3660.0 m
T R E E H E I G H T	:	0.0 m	:	F R E S N E L D E P .	:	19.0 m
C L E A R A N C E	:	60.5 m	:	C L E A R A N C E F A C .	:	3.2
F R E E S P A C E L O S S	:	142.6 dB	:	R I D G E L O S S	:	0.1 dB
T O T A L L O S S	:	142.7 dB	:		:	

DRAWING NAME:

P A T H P R O F I L E

PATH NAME:

Y U T O L A ~

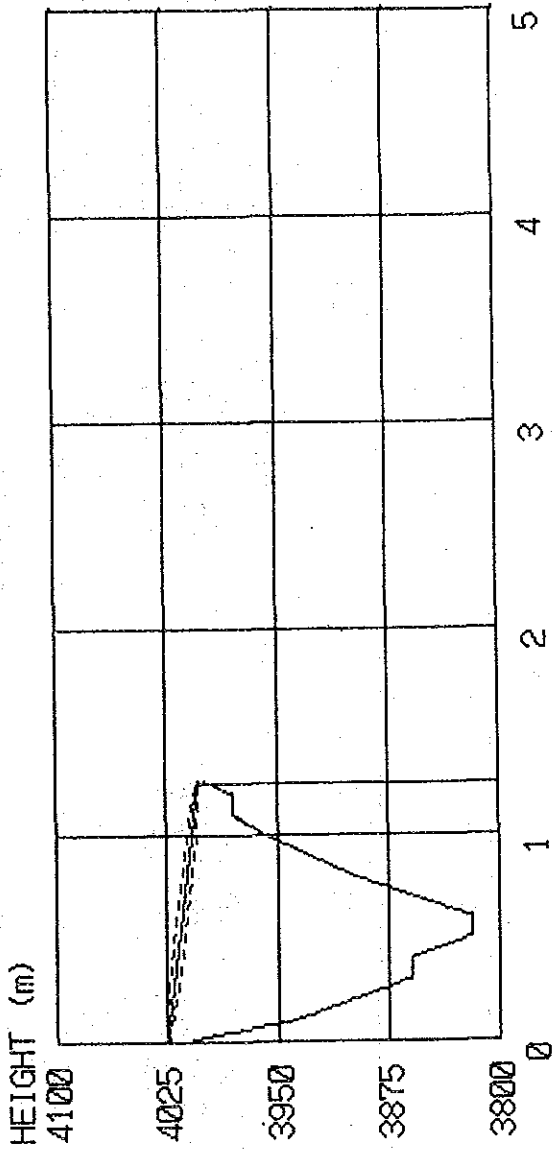
T H U M S I N G L A

FIG. NO.:

P-10

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)



SITE NAME : THUMSINGLA DISTANCE : 1.26 km SITE NAME : TANDI
 GROUND LEVEL : 4015.0 m GROUND LEVEL : 4000.0 m
 ANT.HEIGHT 1 : 10.0 m ANT.HEIGHT 2 : 3.0 m

ANT. HEIGHT 1 : 10.0 m	ANT. HEIGHT 2 : 3.0 m
CLITICAL POINT : 1.1 Km	RIDGE HEIGHT : 3980.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 2.3 m
CLEARANCE : 25.8 m	CLEARANCE FAC. : 11.3
FREE SPACE LOSS : 112.5 dB	RIDGE LOSS : -0.1 dB
TOTAL LOSS : 112.4 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

THUMSINGLA ~

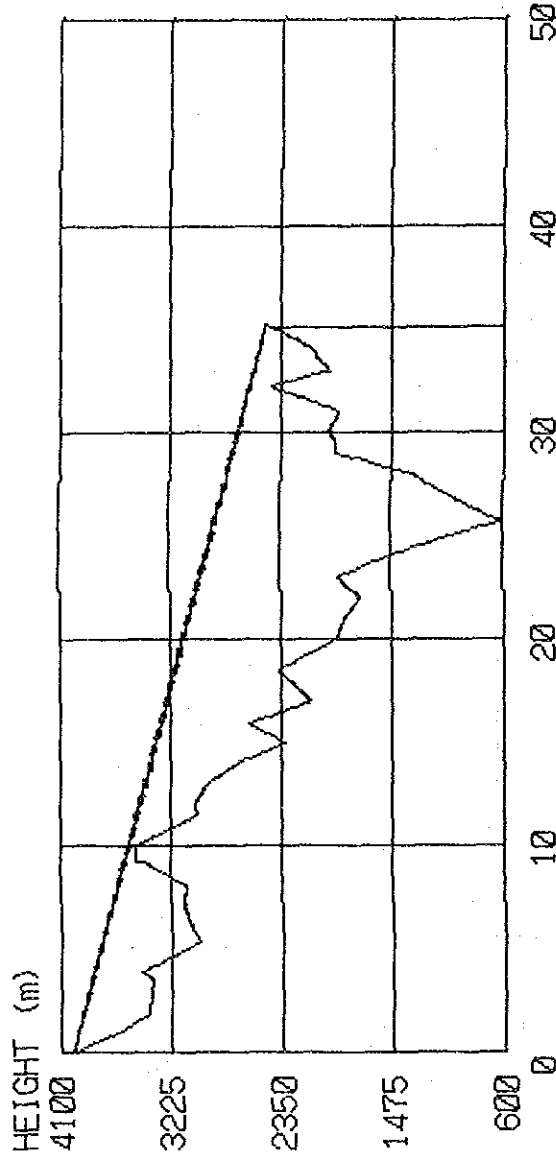
TANDI

FIG. NO. :

P-11

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)

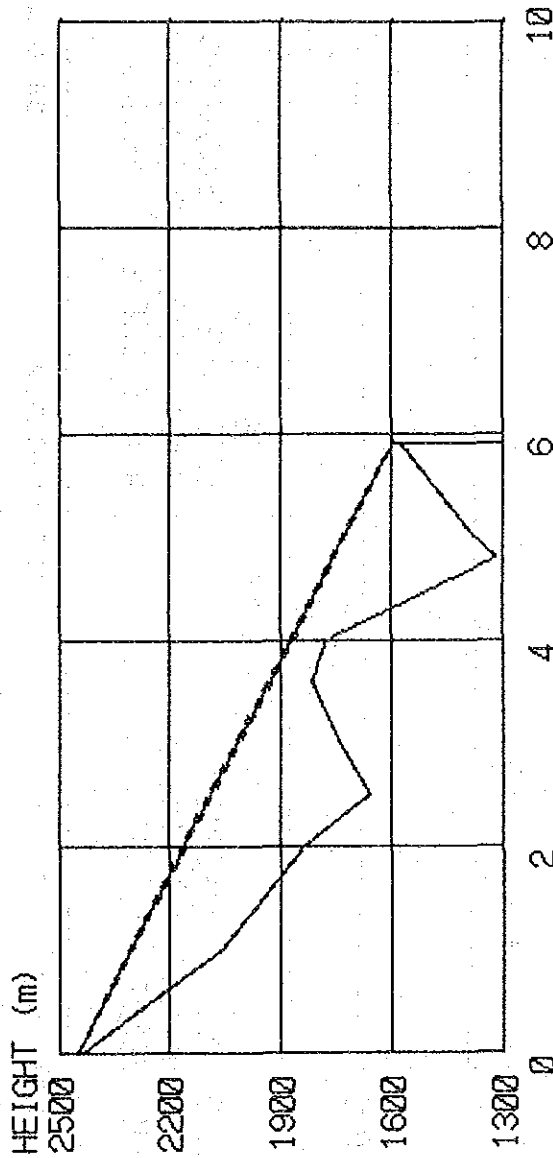


SITE NAME : TANDI GROUND LEVEL : 4000.0 m ANT.HEIGHT 1 : 3.0 m	DISTANCE : 35.12 km SITE NAME : KORILA GROUND LEVEL : 2440.0 m ANT.HEIGHT 2 : 20.0 m
ANT.HEIGHT 1 : 3.0 m CLITICAL POINT : 10.0 Km TREE HEIGHT : 0.0 m CLEARANCE : 48.8 m FREE SPACE LOSS : 141.4 dB TOTAL LOSS : 141.0 dB	ANT.HEIGHT 2 : 20.0 m RIDGE HEIGHT : 3500.0 m FRESNEL DEP. : 16.4 m CLEARANCE FAC. : 3.0 RIDGE LOSS : -0.4 dB

DRAWING NAME: PATH PROFILE	PATH NAME: T A N D I ~ K O R I L A	FIG. NO. : P-12
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P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8300 M H Z)



SITE NAME : KORILA DISTANCE : 5.91 km SITE NAME : MONGAR
 GROUND LEVEL : 2440.0 m GROUND LEVEL : 1580.0 m
 ANT. HEIGHT 1 : 10.0 m ANT. HEIGHT 2 : 15.0 m

ANT. HEIGHT 1	:	10.0 m	ANT. HEIGHT 2	:	15.0 m
CLITICAL POINT	:	4.0 Km	RIDGE HEIGHT	:	1780.0 m
TREE HEIGHT	:	0.0 m	FRESNEL DEP.	:	6.8 m
CLEARANCE	:	90.9 m	CLEARANCE FAC.	:	13.3
FREE SPACE LOSS	:	126.3 dB	RIDGE LOSS	:	-0.1 dB
TOTAL LOSS	:	126.2 dB			

DRAWING NAME:

P A T H P R O F I L E

PATH NAME:

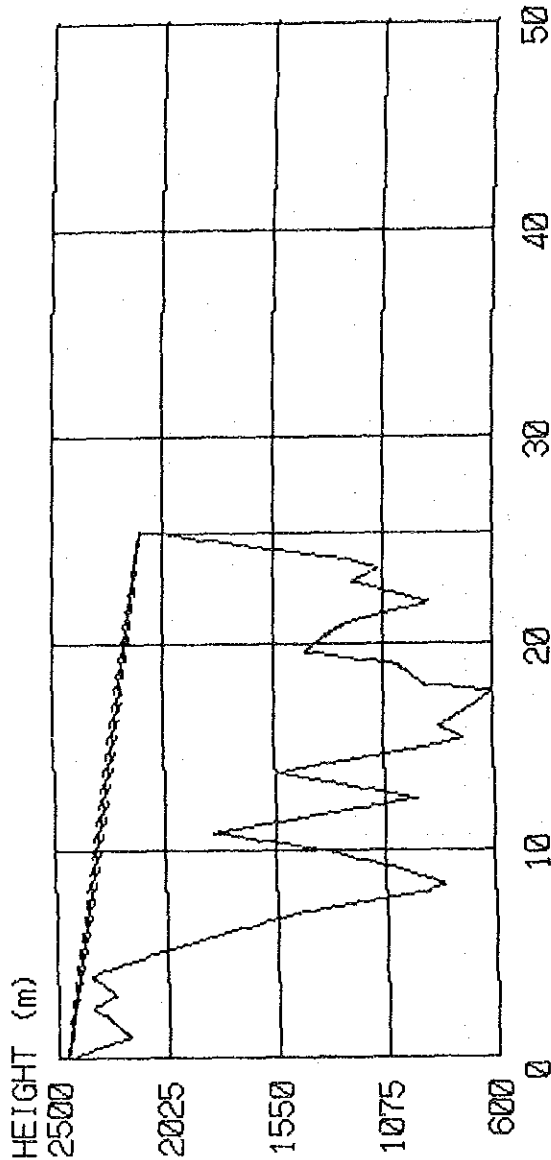
K O R I L A ~ M O N G A R

FIG. NO.:

P-13

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)



SITE NAME : KORILA	DISTANCE : 25.39 km
GROUND LEVEL : 2440.0 m	SITE NAME : RANGSIKHAR
ANT.HEIGHT 1 : 20.0 m	GROUND LEVEL : 2080.0 m
	ANT.HEIGHT 2 : 35.0 m

ANT.HEIGHT 1 : 20.0 m	ANT.HEIGHT 2 : 35.0 m
CLITICAL POINT : 4.0 Km	RIDGE HEIGHT : 2360.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 11.2 m
CLEARANCE : 41.3 m	CLEARANCE FAC. : 3.7
FREE SPACE LOSS : 138.6 dB	RIDGE LOSS : 0.4 dB
TOTAL LOSS : 139.0 dB	

DRAWING NAME:

P A T H P R O F I L E

PATH NAME:

K O R I L A ~

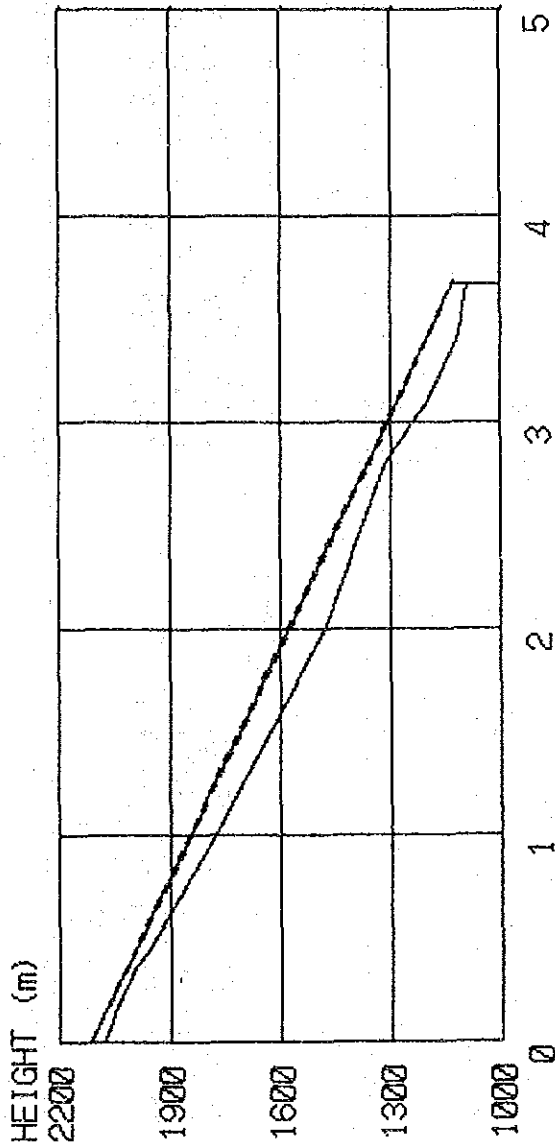
R A N G S H I K H A R

FIG. NO.:

P-14

PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



DISTANCE : 3.68 km

SITE NAME : RANGSIKHAR	SITE NAME : TASHIGANG
GROUND LEVEL : 2080.0 m	GROUND LEVEL : 1090.0 m
ANT.HEIGHT 1 : 35.0 m	ANT.HEIGHT 2 : 35.0 m

ANT.HEIGHT 1 : 35.0 m	ANT.HEIGHT 2 : 35.0 m
CLITICAL POINT : 0.4 Km	RIDGE HEIGHT : 2000.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 3.4 m
CLEARANCE : 20.8 m	CLEARANCE FAC. : 6.0
FREE SPACE LOSS : 121.8 dB	RIDGE LOSS : -0.1 dB
TOTAL LOSS : 121.8 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

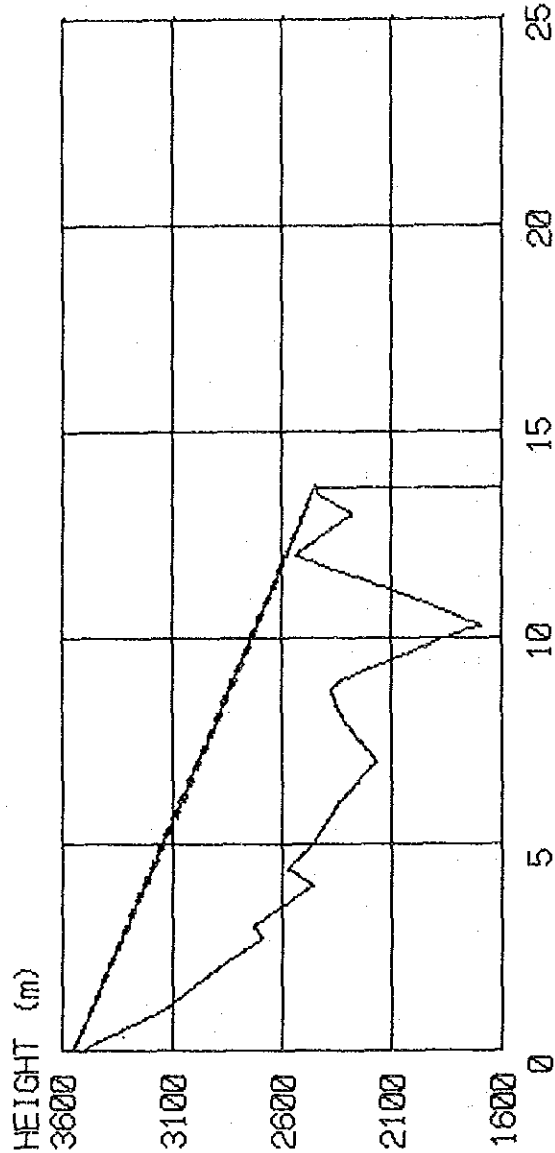
RANGSHIKHAR ~
TASHIGANG

FIG. NO.:

P-15

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)



DISTANCE : 13.64 km
 SITE NAME : TASHILING
 GROUND LEVEL : 2435.0 m
 ANT.HEIGHT 2 : 3.0 m
 SITE NAME : YUTOLA
 GROUND LEVEL : 3520.0 m
 ANT.HEIGHT 1 : 30.0 m

ANT. HEIGHT 1 : 30.0 m	ANT. HEIGHT 2 : 3.0 m
CLITICAL POINT : 13.5 Km	RIDGE HEIGHT : 2440.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 2.3 m
CLEARANCE : 9.3 m	CLEARANCE FAC. : 4.1
FREE SPACE LOSS : 133.2 dB	RIDGE LOSS : -0.3 dB
TOTAL LOSS : 132.9 dB	

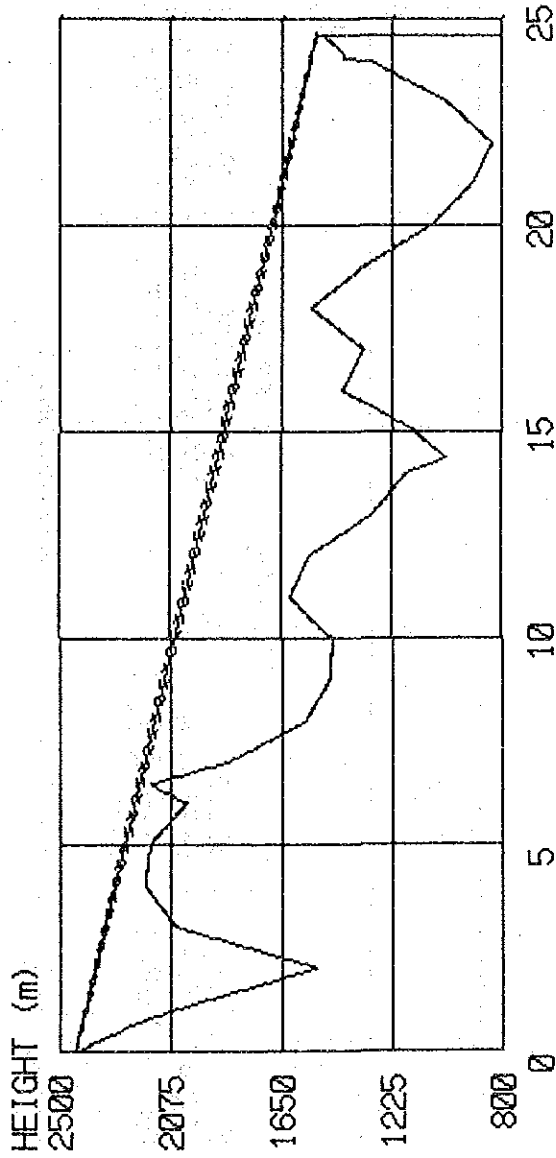
DRAWING NAME:
PATH PROFILE

PATH NAME:
YUTOLA ~
TASHILING

FIG. NO. :
P-16

PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



DISTANCE : 24.62 km

SITE NAME : TASHILING SITE NAME : BALING
 GROUND LEVEL : 2435.0 m GROUND LEVEL : 1500.0 m
 ANT.HEIGHT 1 : 3.0 m ANT.HEIGHT 2 : 15.0 m

ANT.HEIGHT 1 : 3.0 m	ANT.HEIGHT 2 : 15.0 m
CLITICAL POINT : 6.5 Km	RIDGE HEIGHT : 2160.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 13.4 m
CLEARANCE : 29.3 m	CLEARANCE FAC. : 2.2
FREE SPACE LOSS : 138.3 dB	RIDGE LOSS : -0.6 dB
TOTAL LOSS : 137.7 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

TASHILING ~

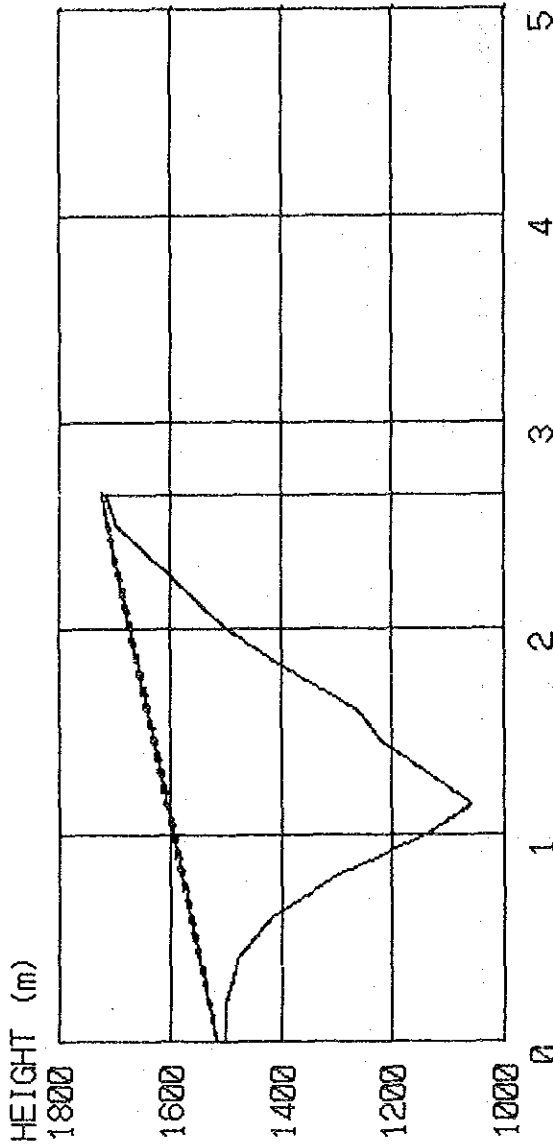
BALING

FIG.NO.:

P-17

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)



D I S T A N C E : 2.65 km

S I T E N A M E : B A L I N G	S I T E N A M E : P A N J A R M A N I
G R O U N D L E V E L : 1500.0 m	G R O U N D L E V E L : 1720.0 m
A N T . H E I G H T 1 : 15.0 m	A N T . H E I G H T 2 : 5.0 m

A N T . H E I G H T 1 : 15.0 m	A N T . H E I G H T 2 : 5.0 m
C L I T I C A L P O I N T : 2.5 Km	R I D G E H E I G H T : 1700.0 m
T R E E H E I G H T : 0.0 m	F R E S N E L D E P . : 2.3 m
C L E A R A N C E : 13.1 m	C L E A R A N C E F A C . : 5.7
F R E E S P A C E L O S S : 119.0 dB	R I D G E L O S S : -0.0 dB
T O T A L L O S S : 118.9 dB	

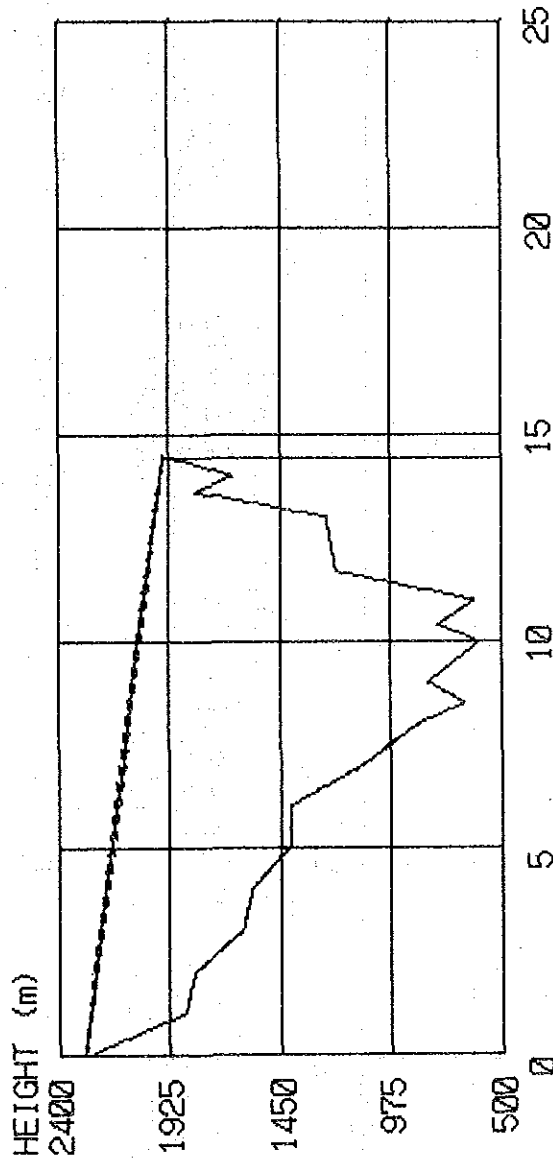
DRAWING NAME:
PATH PROFILE

PATH NAME:
B A L I N G ~
P A N J A R M A N I

FIG. NO. :
P-18

PROFILE

(K : 1.33 FREQUENCY : 8300 MHz)



DISTANCE : 14.45 km
 SITE NAME : SHEMGANG
 GROUND LEVEL : 1930.0 m
 ANT.HEIGHT 2 : 15.0 m

SITE NAME : TAMULA
 GROUND LEVEL : 2280.0 m
 ANT.HEIGHT 1 : 10.0 m

ANT.HEIGHT 1	:	10.0 m	ANT.HEIGHT 2	:	15.0 m
CLITICAL POINT	:	13.6 Km	RIDGE HEIGHT	:	1820.0 m
TREE HEIGHT	:	0.0 m	FRESNEL DEP.	:	5.4 m
CLEARANCE	:	144.6 m	CLEARANCE FAC.	:	26.9
FREE SPACE LOSS	:	134.0 dB	RIDGE LOSS	:	-0.0 dB
TOTAL LOSS	:	134.0 dB			

DRAWING NAME:

PATH PROFILE

PATH NAME:

TAMULA ~

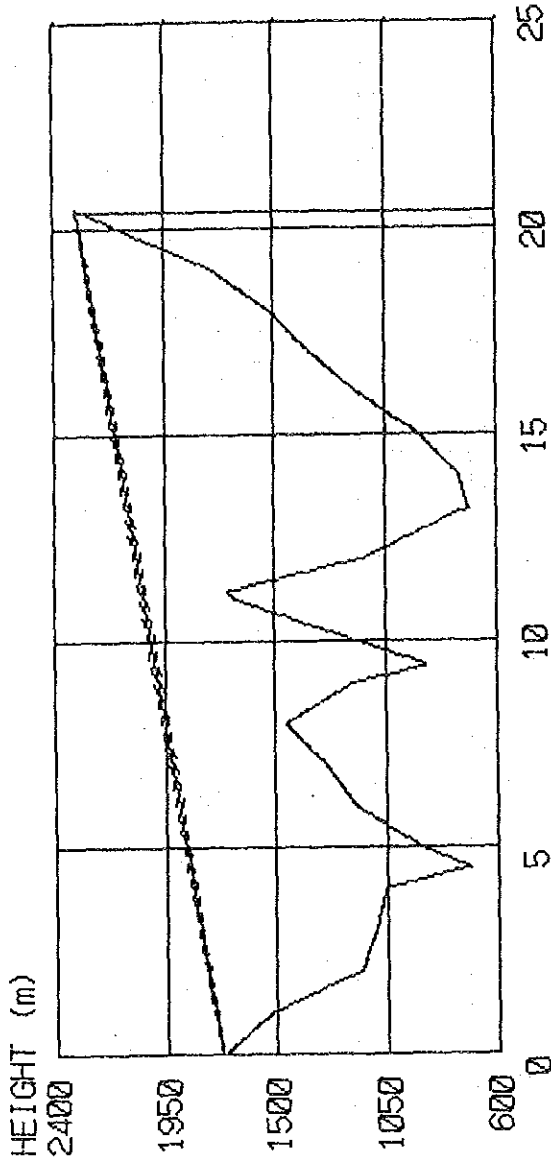
SHEMGANG

FIG.NO.:

P-19

PROFILE

(K : 1.33 FREQUENCY : 8000 MHZ)



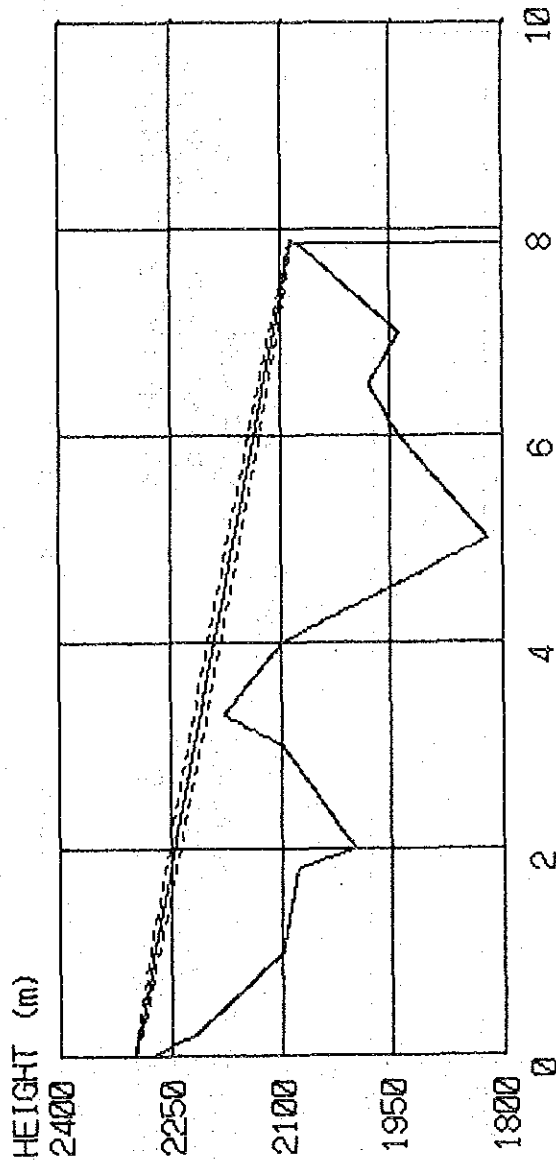
DISTANCE : 20.4 km
 SITE NAME : PANJARMANI : TAMULA
 GROUND LEVEL : 1720.0 m GROUND LEVEL : 2280.0 m
 ANT.HEIGHT 1 : 5.0 m ANT.HEIGHT 2 : 20.0 m

ANT.HEIGHT 1 : 5.0 m	ANT.HEIGHT 2 : 20.0 m
CLITICAL POINT : 11.2 Km	RIDGE HEIGHT : 1700.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 13.8 m
CLEARANCE : 334.6 m	CLEARANCE FAC. : 24.3
FREE SPACE LOSS : 136.7 dB	RIDGE LOSS : -0.0 dB
TOTAL LOSS : 136.7 dB	

DRAWING NAME: PATH PROFILE	PATH NAME: PANJARMANI TAMULA	FIG.NO. : P-20
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PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



DISTANCE : 7.88 km
 SITE NAME : SAMKHARA
 GROUND LEVEL : 2080.0 m
 ANT.HEIGHT 2 : 5.0 m

SITE NAME : TAMULA
 GROUND LEVEL : 2280.0 m
 ANT.HEIGHT 1 : 20.0 m

ANT.HEIGHT 1	: 20.0 m	ANT.HEIGHT 2	: 5.0 m
CLITICAL POINT	: 3.3 Km	RIDGE HEIGHT	: 2180.0 m
TREE HEIGHT	: 0.0 m	FRESNEL DEP.	: 8.5 m
CLEARANCE	: 29.1 m	CLEARANCE FAC.	: 3.4
FREE SPACE LOSS	: 128.5 dB	RIDGE LOSS	: 0.4 dB
TOTAL LOSS	: 128.9 dB		

DRAWING NAME:

PATH PROFILE

PATH NAME:

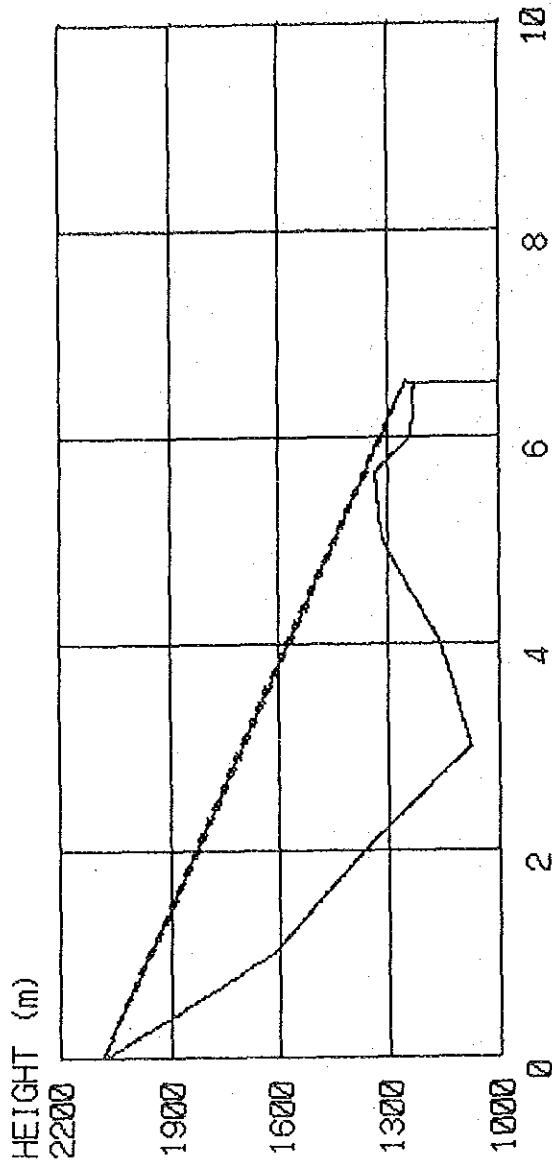
TAMULA ~ SAMKHARA

FIG.NO.:

P-21

PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



DISTANCE : 6.54 km
 SITE NAME : SUREY
 GROUND LEVEL : 1230.0 m
 ANT.HEIGHT 2 : 20.0 m

SITE NAME : SAMKHARA
 GROUND LEVEL : 2080.0 m
 ANT.HEIGHT 1 : 5.0 m

ANT.HEIGHT 1 : 5.0 m	ANT.HEIGHT 2 : 20.0 m
CLITICAL POINT : 5.7 km	RIDGE HEIGHT : 1340.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 5.4 m
CLEARANCE : 23.3 m	CLEARANCE FAC. : 4.3
FREE SPACE LOSS : 126.8 dB	RIDGE LOSS : -0.3 dB
TOTAL LOSS : 126.5 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

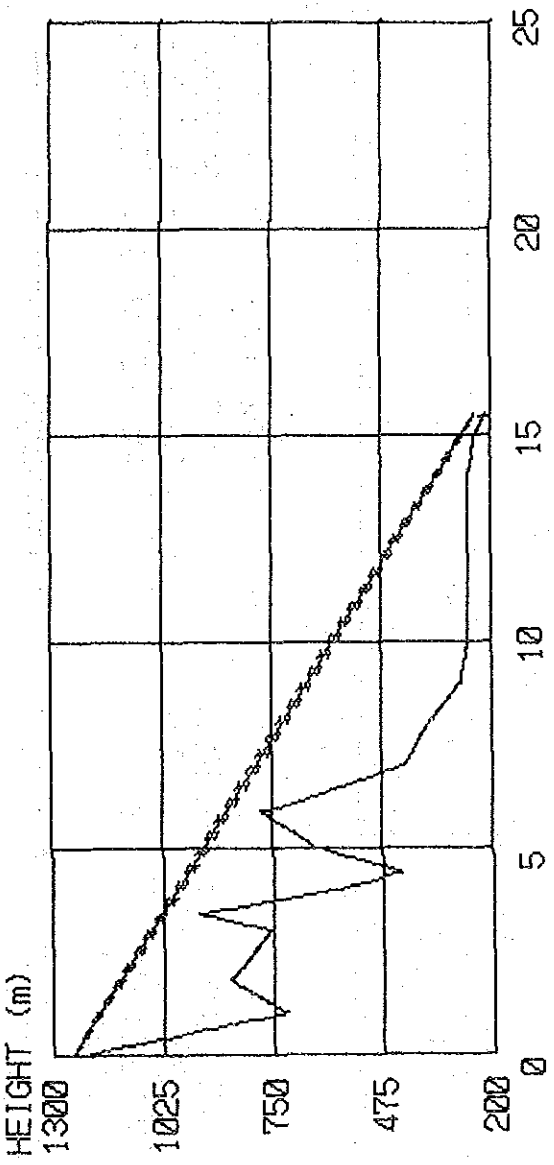
S A M K H A R A ~
S U R E Y

FIG. NO. :

P-22

PROFILE

(K : 1.33 FREQUENCY : 8000 MHZ)



DISTANCE : 15.51 km
 SITE NAME : GEYLEGPHUG
 GROUND LEVEL : 215.0 m
 ANT. HEIGHT 2 : 20.0 m

SITE NAME : SUREY GROUND LEVEL : 1230.0 m ANT. HEIGHT 1 : 20.0 m	ANT. HEIGHT 1 : 20.0 m CLITICAL POINT : 15.0 Km TREE HEIGHT : 0.0 m CLEARANCE : 27.9 m FREE SPACE LOSS : 134.3 dB TOTAL LOSS : 134.4 dB
ANT. HEIGHT 2 : 20.0 m RIDGE HEIGHT : 240.0 m FRESNEL DEP. : 4.3 m CLEARANCE FAC. : 6.5 RIDGE LOSS : 0.1 dB	

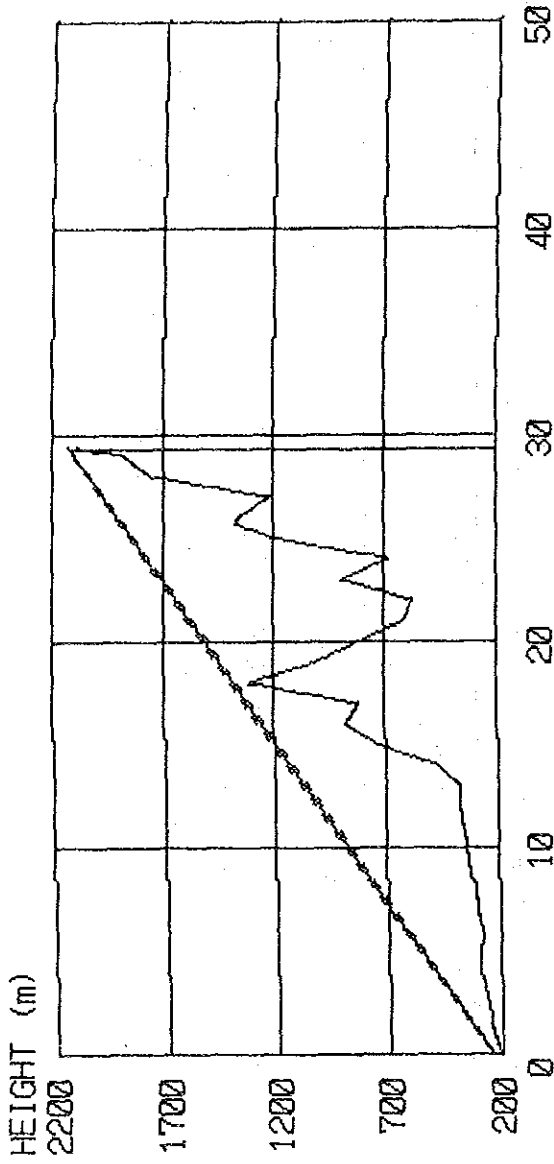
DRAWING NAME:
 PATH PROFILE

PATH NAME:
 SUREY ~
 GEYLEGPHUG

FIG. NO. :
 P-23

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)



D I S T A N C E : 29.42 km

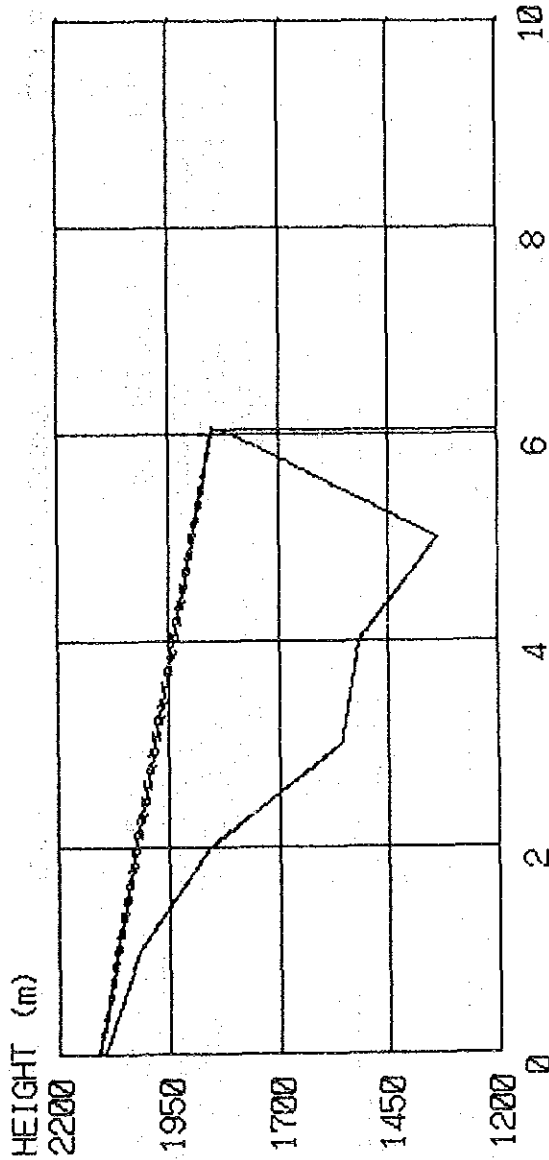
S I T E N A M E : G E Y L E G P H U G S I T E N A M E : D A R E C H U
 G R O U N D L E V E L : 215.0 m G R O U N D L E V E L : 2100.0 m
 A N T . H E I G H T 1 : 30.0 m A N T . H E I G H T 2 : 20.0 m

A N T . H E I G H T 1 : 30.0 m	A N T . H E I G H T 2 : 20.0 m
C L I T I C A L P O I N T : 18.0 Km	R I D G E H E I G H T : 1320.0 m
T R E E H E I G H T : 0.0 m	F R E S N E L D E P . : 16.2 m
C L E A R A N C E : 60.0 m	C L E A R A N C E F A C . : 3.7
F R E E S P A C E L O S S : 139.9 dB	R I D G E L O S S : 0.4 dB
T O T A L L O S S : 140.3 dB	

DRAWING NAME: P A T H P R O F I L E	PATH NAME: G E Y L E G P H U G ~ D A R E C H U	FIG. NO. : P-24
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PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



DISTANCE : 6.06 km

SITE NAME : DARECHU	SITE NAME : DHUPIDARA
GROUND LEVEL : 2100.0 m	GROUND LEVEL : 1840.0 m
ANT.HEIGHT 1 : 10.0 m	ANT.HEIGHT 2 : 10.0 m

ANT.HEIGHT 1 : 10.0 m	ANT.HEIGHT 2 : 10.0 m
CLITICAL POINT : 1.0 Km	RIDGE HEIGHT : 2020.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 5.6 m
CLEARANCE : 46.8 m	CLEARANCE FAC. : 8.4
FREE SPACE LOSS : 126.2 dB	RIDGE LOSS : 0.1 dB
TOTAL LOSS : 126.3 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

DARECHU ~

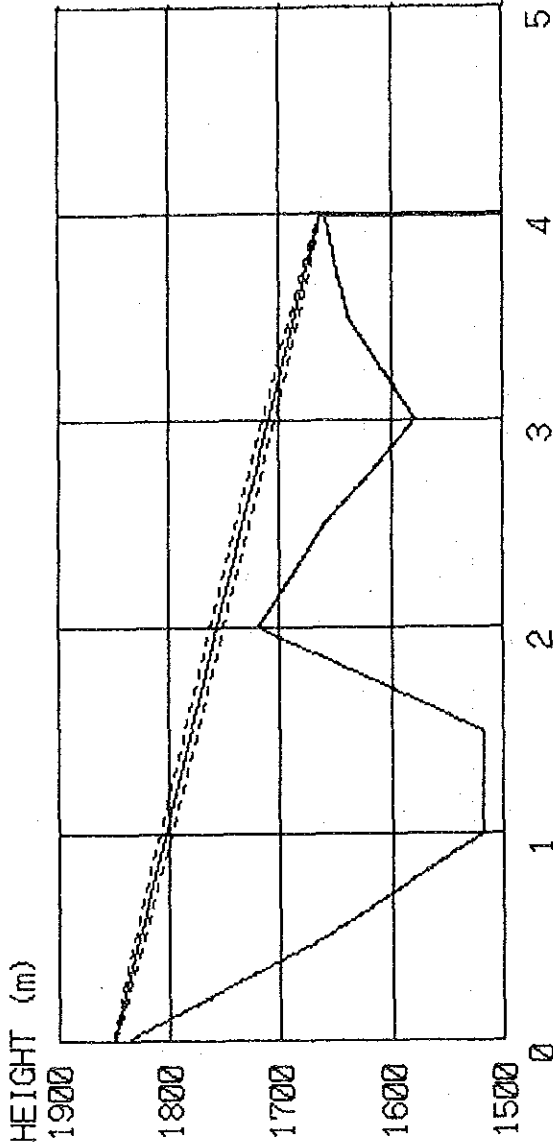
DHUPIDARA

FIG. NO.:

P-25

PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



DISTANCE : 3.99 km

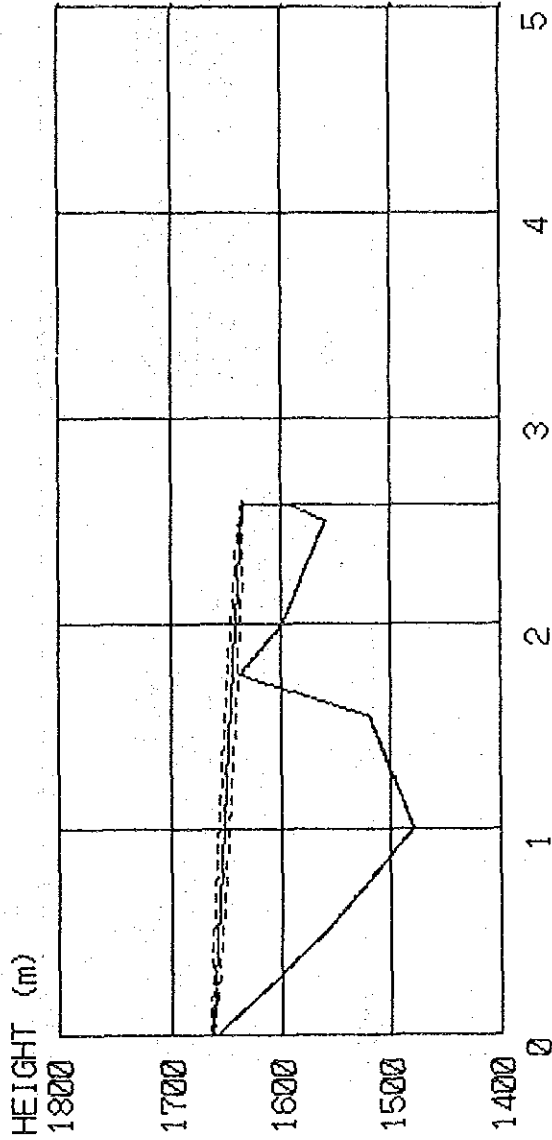
SITE NAME : DHUPIDARA	SITE NAME : CHANAUTI
GROUND LEVEL : 1840.0 m	GROUND LEVEL : 1660.0 m
ANT.HEIGHT 1 : 10.0 m	ANT.HEIGHT 2 : 3.0 m

ANT.HEIGHT 1 : 10.0 m	ANT.HEIGHT 2 : 3.0 m
CLITICAL POINT : 2.0 Km	RIDGE HEIGHT : 1720.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 6.1 m
CLEARANCE : 36.0 m	CLEARANCE FAC. : 5.9
FREE SPACE LOSS : 122.5 dB	RIDGE LOSS : -0.2 dB
TOTAL LOSS : 122.3 dB	

DRAWING NAME: PATH PROFILE	PATH NAME: DHUPIDARA ~ CHANAUTI	FIG.NO. : P-26
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PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



DISTANCE : 2.59 km
SITE NAME : DAMPHU
GROUND LEVEL : 1600.0 m
ANT.HEIGHT 2 : 35.0 m

SITE NAME : CHANAUTI
GROUND LEVEL : 1660.0 m
ANT.HEIGHT 1 : 3.0 m

ANT.HEIGHT 1	:	3.0 m	ANT.HEIGHT 2	:	35.0 m
CLITICAL POINT	:	1.8 Km	RIDGE HEIGHT	:	1639.0 m
TREE HEIGHT	:	0.0 m	FRESNEL DEP.	:	4.6 m
CLEARANCE	:	5.0 m	CLEARANCE FAC.	:	1.1
FREE SPACE LOSS	:	118.8 dB	RIDGE LOSS	:	-0.5 dB
TOTAL LOSS	:	118.3 dB		:	

DRAWING NAME:

PATH PROFILE

PATH NAME:

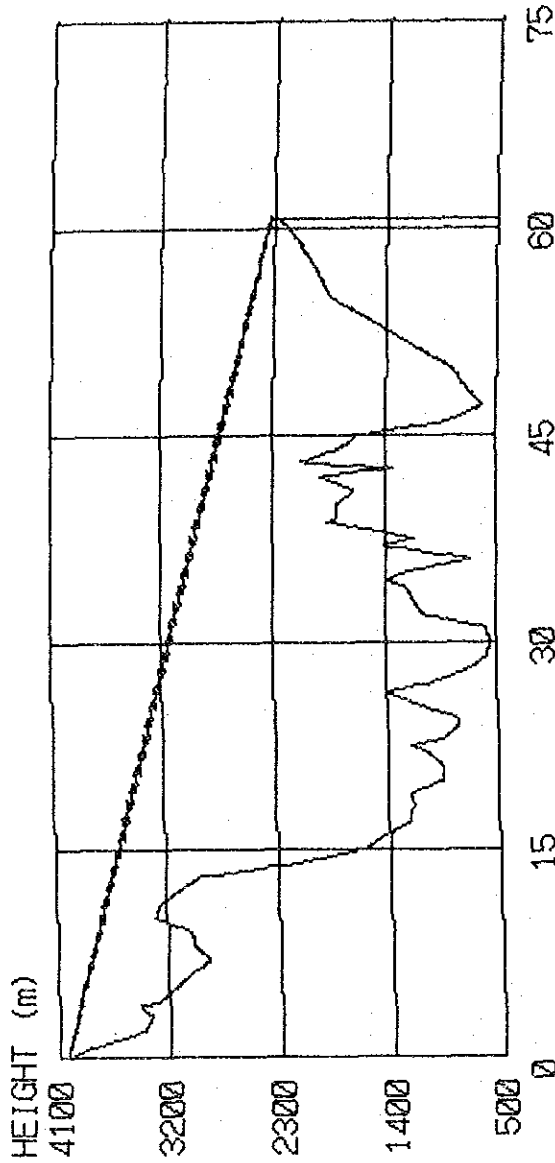
CHANAUTI ~ DAMPHU

FIG. NO. :

P-27

PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



SITE NAME : THUMSINGLA	DISTANCE : 60.71 km
GROUND LEVEL : 4015.0 m	SITE NAME : KHERI
ANT.HEIGHT 1 : 20.0 m	GROUND LEVEL : 2300.0 m
	ANT.HEIGHT 2 : 20.0 m
ANT.HEIGHT 1 : 20.0 m	ANT.HEIGHT 2 : 20.0 m
CLITICAL POINT : 0.1 Km	RIDGE HEIGHT : 4020.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 1.9 m
CLEARANCE : 11.8 m	CLEARANCE FAC. : 6.1
FREE SPACE LOSS : 146.2 dB	RIDGE LOSS : 0.0 dB
TOTAL LOSS : 146.2 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

THUMSINGLA ~

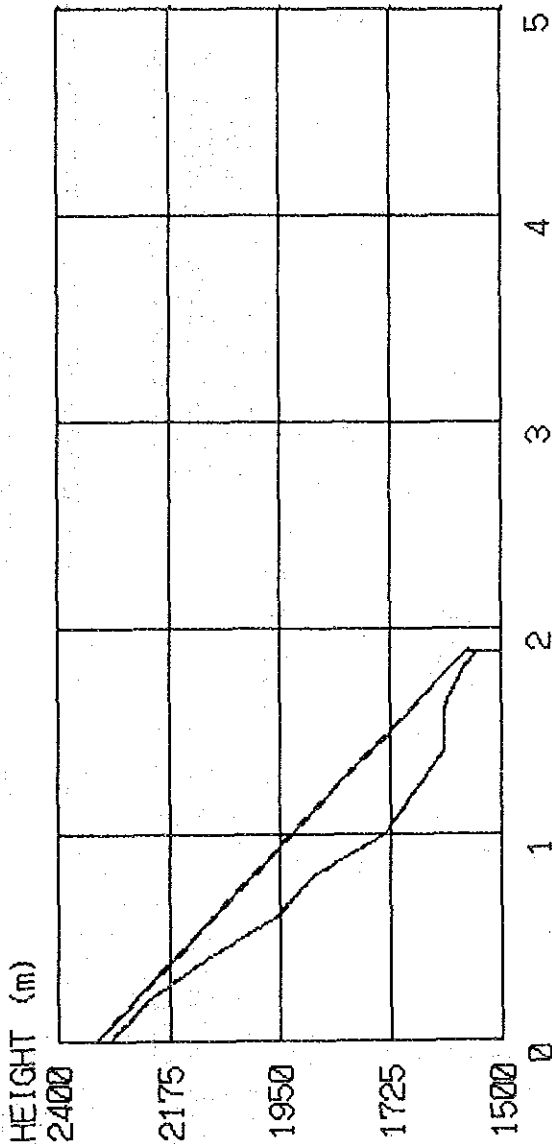
KHERI

FIG. NO.:

P-28

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 8000 M H Z)



SITE NAME : KHERI	DISTANCE : 1.89 km
GROUND LEVEL : 2300.0 m	SITE NAME : PEMAGATSEL
ANT.HEIGHT 1 : 25.0 m	GROUND LEVEL : 1550.0 m
	ANT.HEIGHT 2 : 20.0 m

ANT.HEIGHT 1 : 25.0 m	ANT.HEIGHT 2 : 20.0 m
CLITICAL POINT : 0.2 Km	RIDGE HEIGHT : 2220.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 2.6 m
CLEARANCE : 25.1 m	CLEARANCE FAC. : 9.7
FREE SPACE LOSS : 116.0 dB	RIDGE LOSS : 0.1 dB
TOTAL LOSS : 116.2 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

K H E R I ~

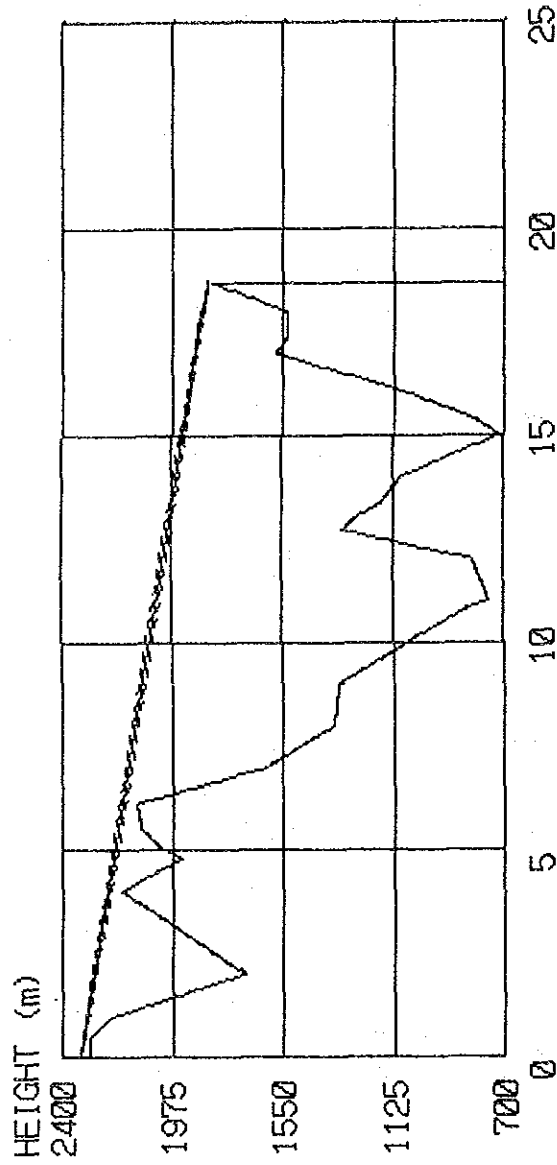
P E M A G A T S E L

FIG. NO. :

P-29

PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



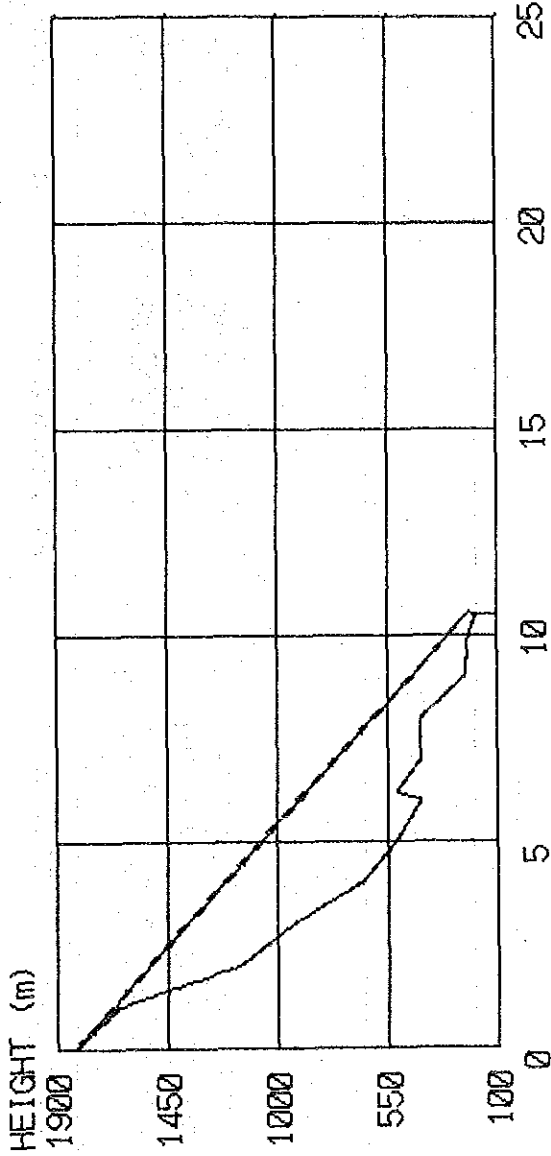
DISTANCE : 18.72 km
 SITE NAME : KHERI SITE NAME : NGEDUM
 GROUND LEVEL : 2300.0 m GROUND LEVEL : 1832.0 m
 ANT.HEIGHT 1 : 30.0 m ANT.HEIGHT 2 : 3.0 m

ANT.HEIGHT 1	:	30.0 m	ANT.HEIGHT 2	:	3.0 m
CLITICAL POINT	:	6.1 Km	RIDGE HEIGHT	:	2120.0 m
TREE HEIGHT	:	0.0 m	FRESNEL DEP.	:	12.4 m
CLEARANCE	:	44.2 m	CLEARANCE FAC.	:	3.6
FREE SPACE LOSS	:	136.0 dB	RIDGE LOSS	:	-0.4 dB
TOTAL LOSS	:	135.6 dB			

DRAWING NAME: PATH PROFILE	PATH NAME: KHERI ~ NGEDUM	FIG. NO. : P-30
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PROFILE

(K : 1.33 FREQUENCY : 8000 MHz)



DISTANCE : 10.53 km
 SITE NAME : SAMDRUP JONKHAR
 GROUND LEVEL : 190.0 m
 ANT.HEIGHT 2 : 20.0 m
 SITE NAME : NGEDUM
 GROUND LEVEL : 1832.0 m
 ANT.HEIGHT 1 : 3.0 m

ANT.HEIGHT 1	:	3.0 m	ANT.HEIGHT 2	:	20.0 m
CLITICAL POINT	:	1.0 Km	RIDGE HEIGHT	:	1660.0 m
TREE HEIGHT	:	0.0 m	FRESNEL DEP.	:	5.8 m
CLEARANCE	:	20.1 m	CLEARANCE FAC.	:	3.5
FREE SPACE LOSS	:	131.0 dB	RIDGE LOSS	:	0.3 dB
TOTAL LOSS	:	131.3 dB			

DRAWING NAME:

PATH PROFILE

PATH NAME:

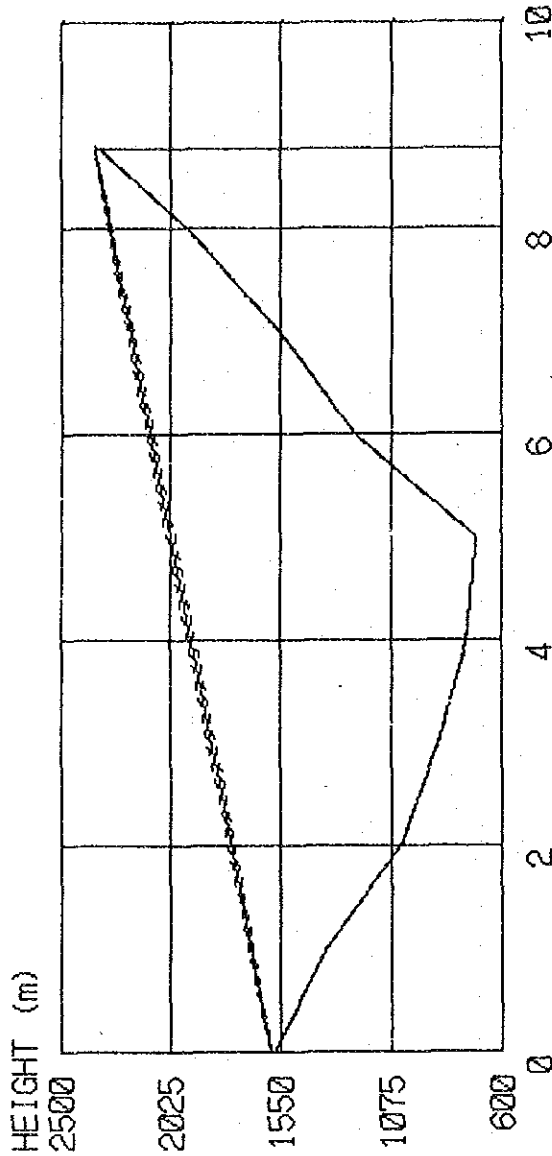
NGEDUM ~
SAMDRUP JONKHAL

FIG. NO.:

P-31

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 2400 M H Z)



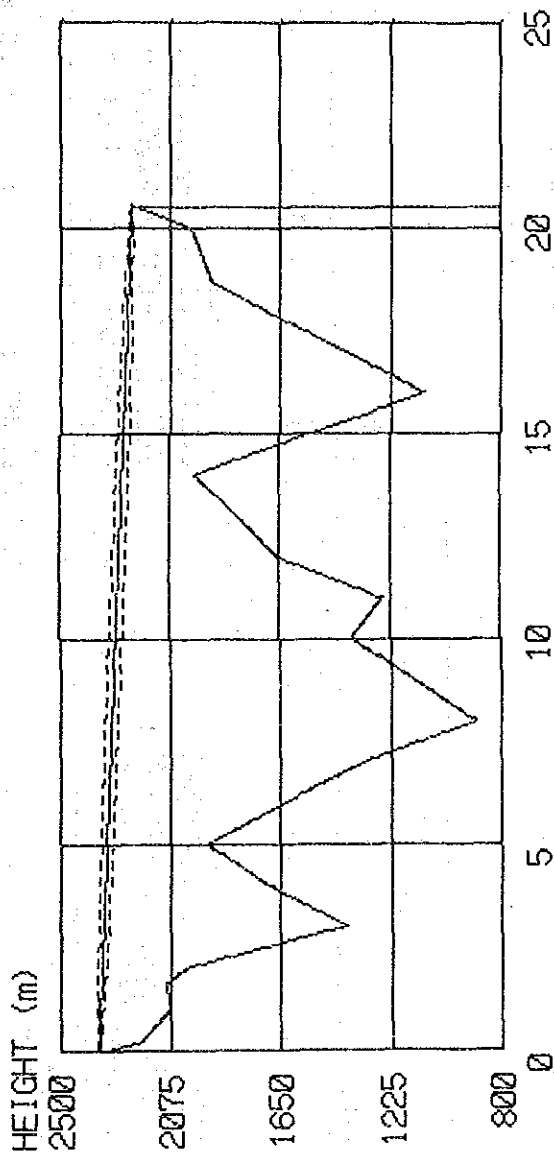
DISTANCE : 8.79 km
 SITE NAME : THINMUNG
 GROUND LEVEL : 2343.0 m
 ANT.HEIGHT 2 : 10.0 m

ANT.HEIGHT 1	:	10.0 m	ANT.HEIGHT 2	:	10.0 m
CLITICAL POINT	:	1.0 Km	RIDGE HEIGHT	:	1360.0 m
TREE HEIGHT	:	0.0 m	FRESNEL DEP.	:	10.5 m
CLEARANCE	:	316.3 m	CLEARANCE FAC.	:	30.1
FREE SPACE LOSS	:	118.9 dB	RIDGE LOSS	:	0.0 dB
TOTAL LOSS	:	119.0 dB		:	

DRAWING NAME: PATH PROFILE	PATH NAME: MONGAR ~ THINMUNG	FIG. NO. : P-32
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PROFILE

(K : 1.33 FREQUENCY : 2400 MHz)



DISTANCE : 20.52 km
 SITE NAME : WAMBUR
 GROUND LEVEL : 2210.0 m
 ANT. HEIGHT 2 : 10.0 m

SITE NAME : THINMUNG
 GROUND LEVEL : 2343.0 m
 ANT. HEIGHT 1 : 10.0 m

ANT. HEIGHT 1	: 10.0 m	ANT. HEIGHT 2	: 10.0 m
CLITICAL POINT	: 14.0 Km	RIDGE HEIGHT	: 1980.0 m
TREE HEIGHT	: 0.0 m	FRESNEL DEP.	: 23.6 m
CLEARANCE	: 276.9 m	CLEARANCE FAC.	: 11.7
FREE SPACE LOSS	: 126.3 dB	RIDGE LOSS	: 0.1 dB
TOTAL LOSS	: 126.4 dB		

DRAWING NAME:

PATH PROFILE

PATH NAME:

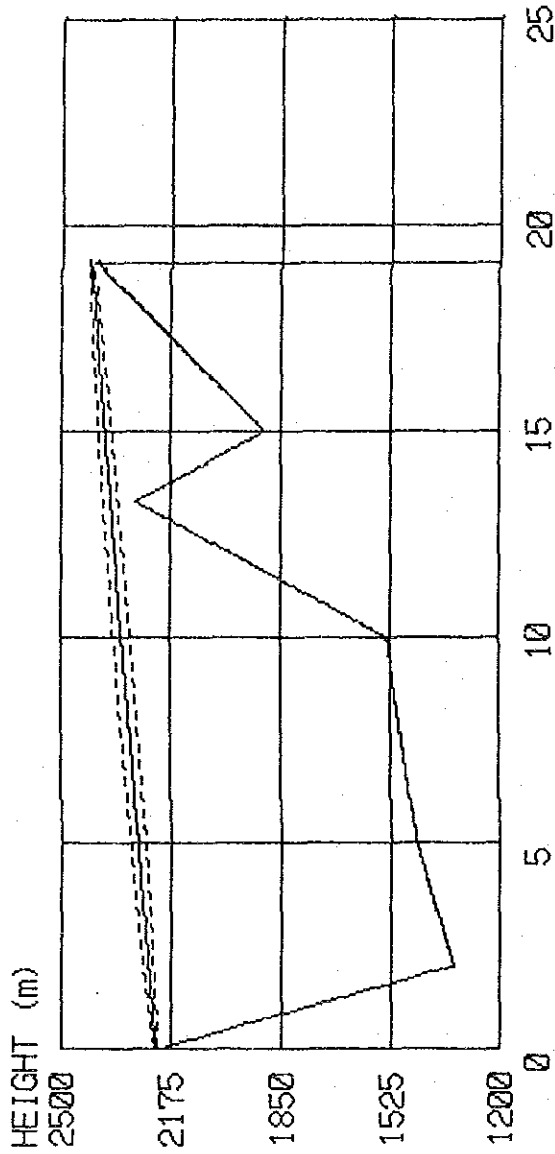
THINMUNG ~ WAMBUR

FIG. NO.:

P-33

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 2400 M H Z)



SITE NAME : WAMBUR DISTANCE : 19.14 km SITE NAME : NUMGUNG
 GROUND LEVEL : 2210.0 m GROUND LEVEL : 2400.0 m
 ANT.HEIGHT 1 : 10.0 m ANT.HEIGHT 2 : 10.0 m

ANT.HEIGHT 1	:	10.0 m	ANT.HEIGHT 2	:	10.0 m
CRITICAL POINT	:	13.3 Km	RIDGE HEIGHT	:	2280.0 m
TREE HEIGHT	:	0.0 m	FRESNEL DEP.	:	22.5 m
CLEARANCE	:	67.4 m	CLEARANCE FAC.	:	3.0
FREE SPACE LOSS	:	125.7 dB	RIDGE LOSS	:	-0.4 dB
TOTAL LOSS	:	125.3 dB			

DRAWING NAME:

PATH PROFILE

PATH NAME:

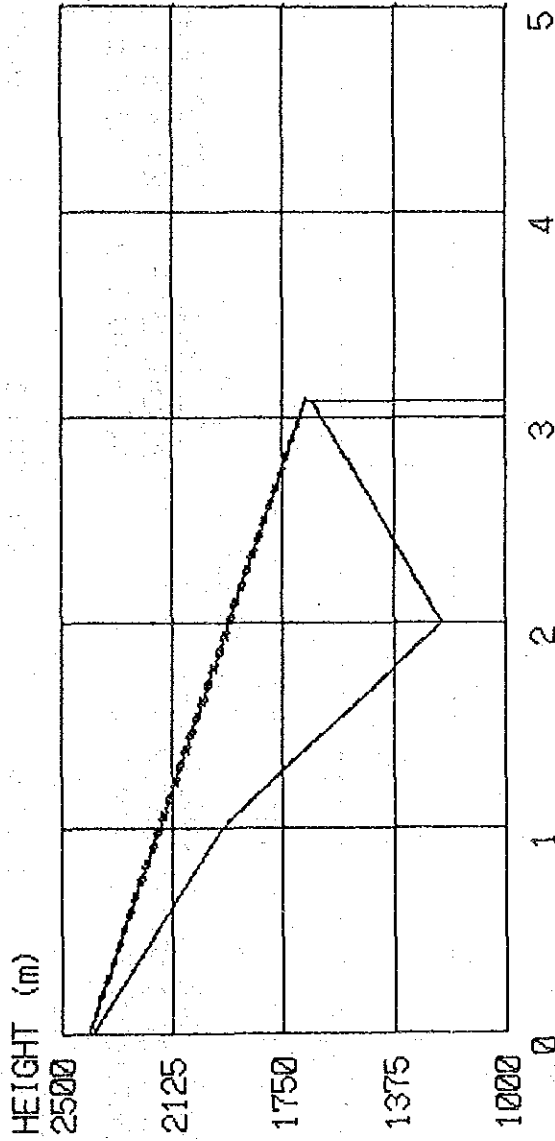
WAMBUR ~ NUMGUNG

FIG. NO.:

P-34

PROFILE

(K : 1.33 FREQUENCY : 2400 MHz)



DISTANCE : 3.09 km
 SITE NAME : LHUNTSHI
 GROUND LEVEL : 1660.0 m
 ANT.HEIGHT 2 : 10.0 m
 SITE NAME : NUMGUNG
 GROUND LEVEL : 2400.0 m
 ANT.HEIGHT 1 : 10.0 m

ANT.HEIGHT 1 : 10.0 m	ANT.HEIGHT 2 : 10.0 m
CLITICAL POINT : 1.0 Km	RIDGE HEIGHT : 1960.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 9.2 m
CLEARANCE : 210.4 m	CLEARANCE FAC. : 22.9
FREE SPACE LOSS : 109.9 dB	RIDGE LOSS : 0.1 dB
TOTAL LOSS : 109.9 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

NUMGUNG ~

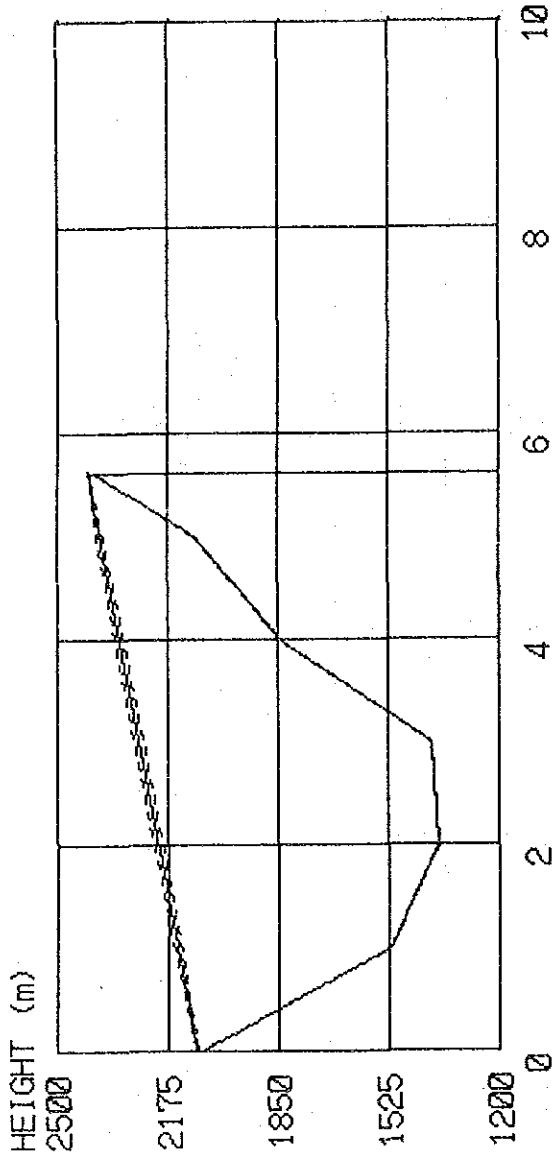
LHUNTSHI

FIG. NO.:

P-35

PROFILE

(K : 1.33 FREQUENCY : 2400 MHZ)



DISTANCE : 5.62 km

SITE NAME : RANGSIKHAR	SITE NAME : YONGPHULA
GROUND LEVEL : 2080.0 m	GROUND LEVEL : 2400.0 m
ANT.HEIGHT 1 : 10.0 m	ANT.HEIGHT 2 : 10.0 m

ANT.HEIGHT 1 : 10.0 m	ANT.HEIGHT 2 : 10.0 m
CLITICAL POINT : 5.0 Km	RIDGE HEIGHT : 2100.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 8.3 m
CLEARANCE : 274.5 m	CLEARANCE FAC. : 33.1
FREE SPACE LOSS : 115.1 dB	RIDGE LOSS : -0.0 dB
TOTAL LOSS : 115.0 dB	

DRAWING NAME:

PATH PROFILE

PATH NAME:

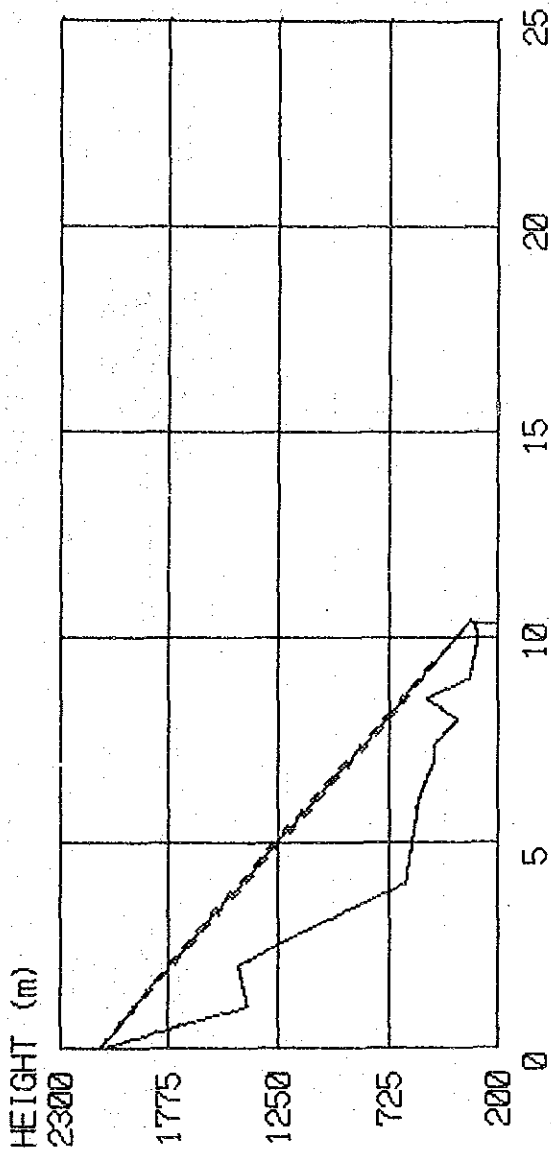
RANGSHIKHAR ~
YONGPHULA

FIG. NO.:

P-36

P R O F I L E

(K : 1.33 F R E Q U E N C Y : 2400 M H Z)



SITE NAME : DARECHU GROUND LEVEL : 2100.0 m ANT.HEIGHT 1 : 10.0 m	DISTANCE : 10.35 km SITE NAME : SARBHANG GROUND LEVEL : 320.0 m ANT.HEIGHT 2 : 10.0 m
ANT.HEIGHT 1 : 10.0 m CLITICAL POINT : 8.5 km TREE HEIGHT : 0.0 m CLEARANCE : 97.2 m FREE SPACE LOSS : 120.4 dB TOTAL LOSS : 120.6 dB	ANT.HEIGHT 2 : 10.0 m RIDGE HEIGHT : 550.0 m FRESNEL DEP. : 13.8 m CLEARANCE FAC. : 7.1 RIDGE LOSS : 0.2 dB

DRAWING NAME:

P A T H P R O F I L E

PATH NAME:

D A R E C H U ~

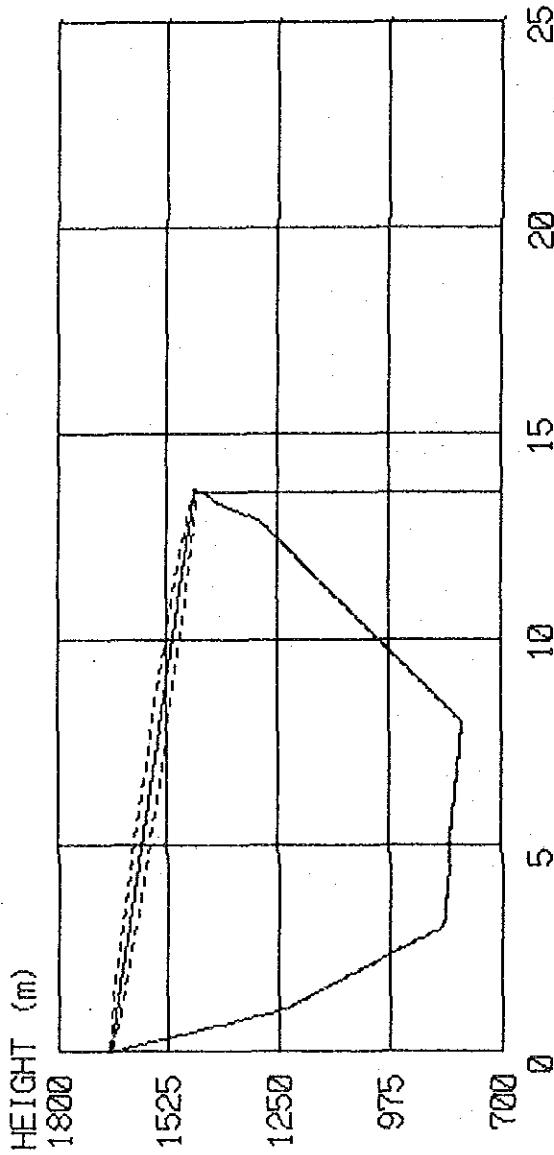
S A R B H A N G

FIG. NO.:

P-37

PROFILE

(K : 1.33 FREQUENCY : 2400 MHz)



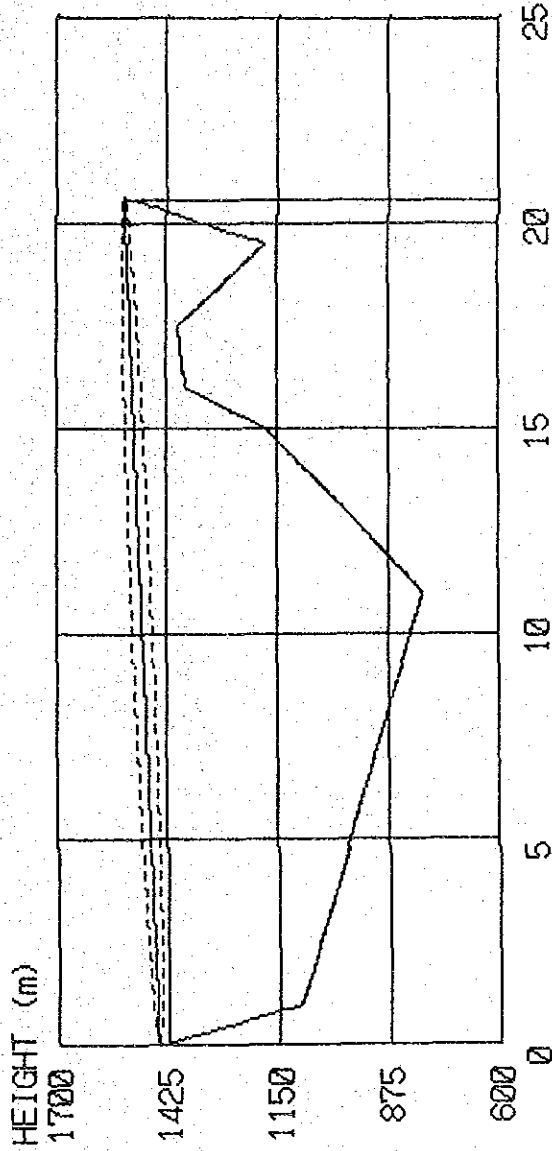
SITE NAME : CHANAUTI DISTANCE : 13.61 km SITE NAME : NAMCHELA
 GROUND LEVEL : 1660.0 m GROUND LEVEL : 1440.0 m
 ANT.HEIGHT 1 : 10.0 m ANT.HEIGHT 2 : 10.0 m

ANT.HEIGHT 1 : 10.0 m	ANT.HEIGHT 2 : 10.0 m
CLITICAL POINT : 13.3 Km	RIDGE HEIGHT : 1400.0 m
TREE HEIGHT : 0.0 m	FRESNEL DEP. : 6.2 m
CLEARANCE : 54.8 m	CLEARANCE FAC. : 8.9
FREE SPACE LOSS : 122.7 dB	RIDGE LOSS : -0.0 dB
TOTAL LOSS : 122.7 dB	

DRAWING NAME: PATH PROFILE	PATH NAME: CHANAUTI NAMCHELA	FIG. NO. : P-38
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PROFILE

(K : 1.33 FREQUENCY : 2400 MHz)



DISTANCE : 20.58 km
 SITE NAME : DAGA
 GROUND LEVEL : 1520.0 m
 ANT.HEIGHT 1 : 10.0 m
 ANT.HEIGHT 2 : 10.0 m

ANT.HEIGHT 1	:	10.0 m	ANT.HEIGHT 2	:	10.0 m
CLITICAL POINT	:	16.0 Km	RIDGE HEIGHT	:	1380.0 m
TREE HEIGHT	:	0.0 m	FRESNEL DEP.	:	21.1 m
CLEARANCE	:	127.9 m	CLEARANCE FAC.	:	6.1
FREE SPACE LOSS	:	126.3 dB	RIDGE LOSS	:	-0.2 dB
TOTAL LOSS	:	126.1 dB			

DRAWING NAME:

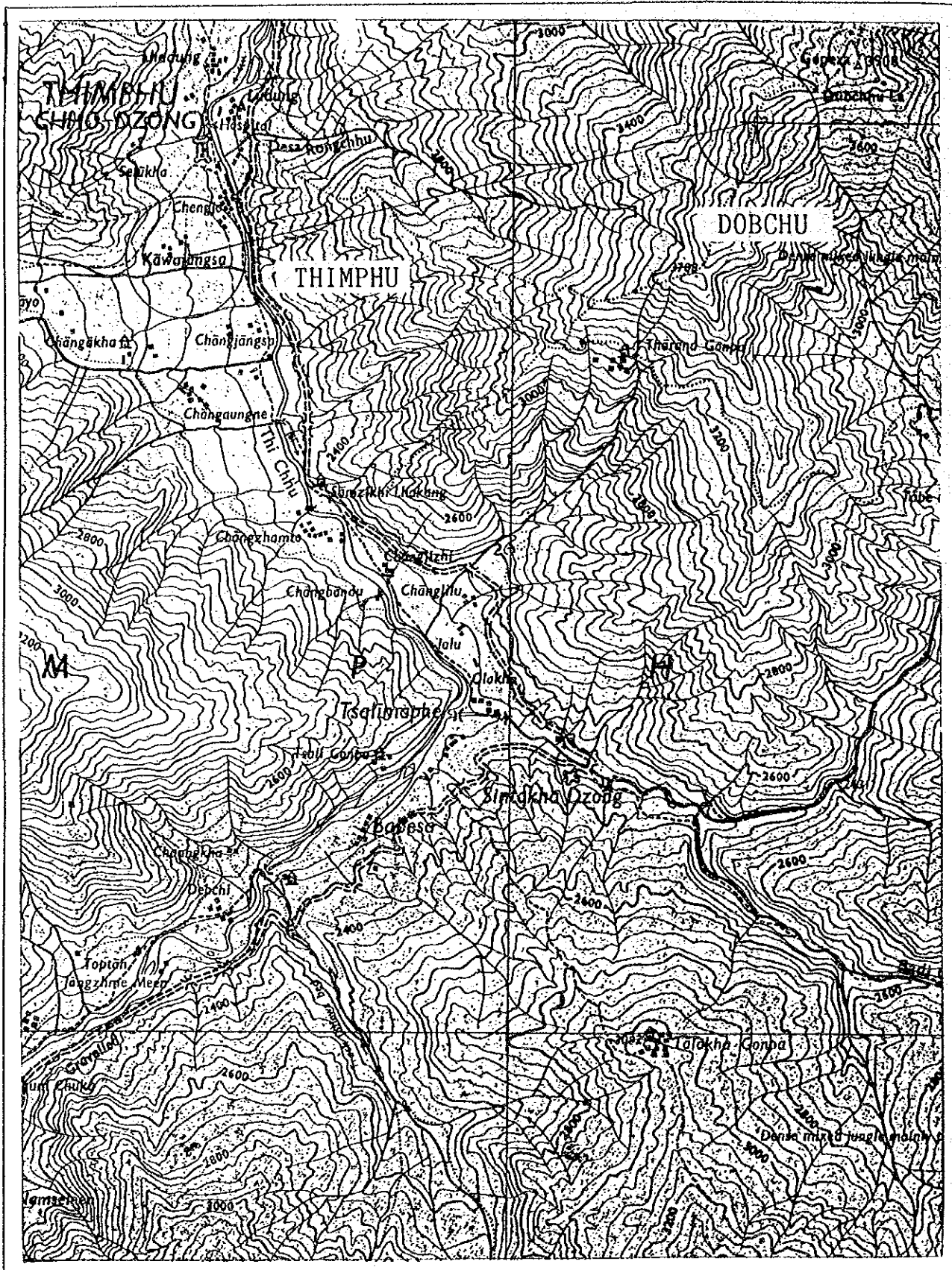
PATH PROFILE

PATH NAME:

NAMCHHELA ~ DAGA

FIG. NO. :

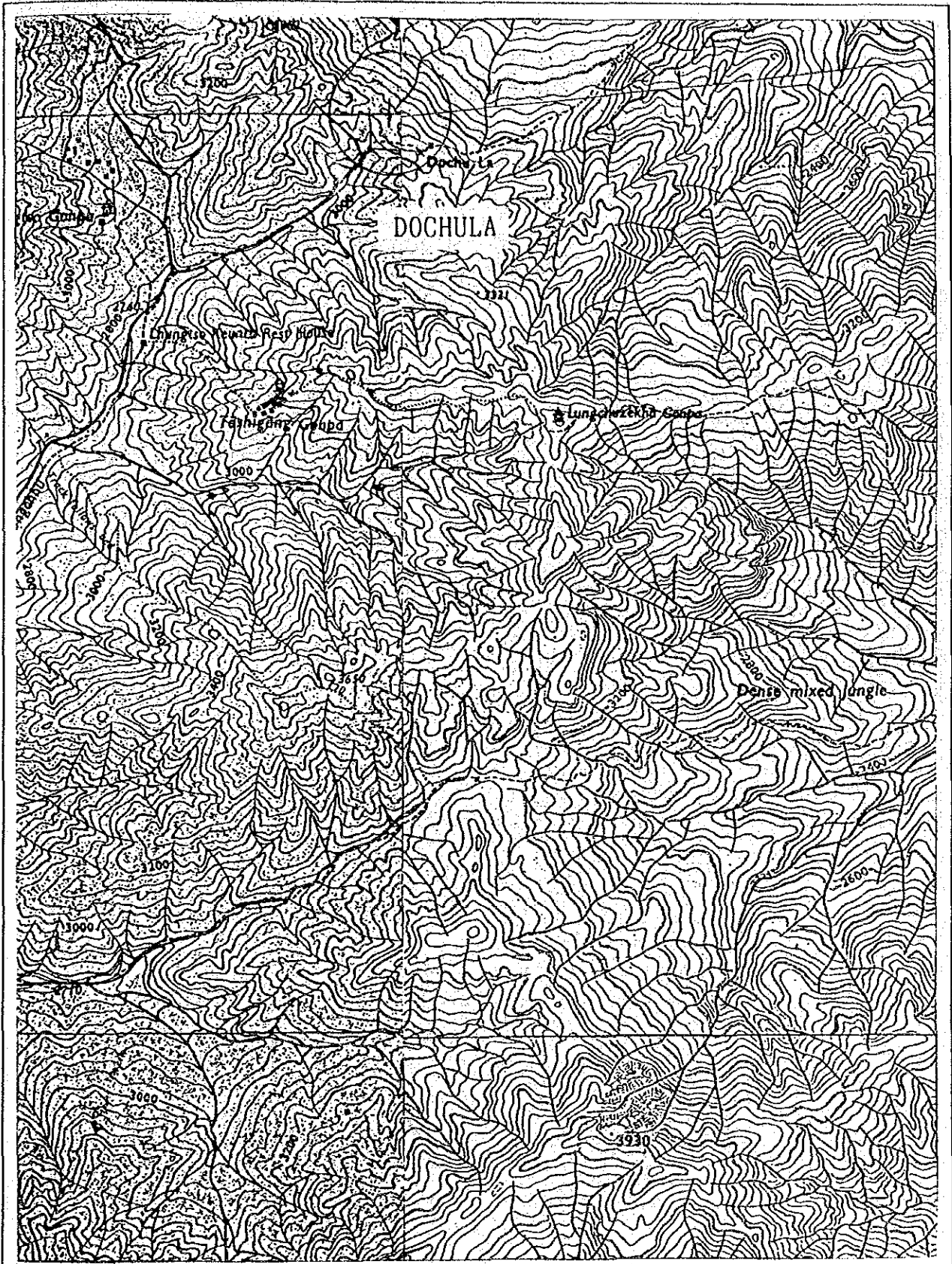
P-39



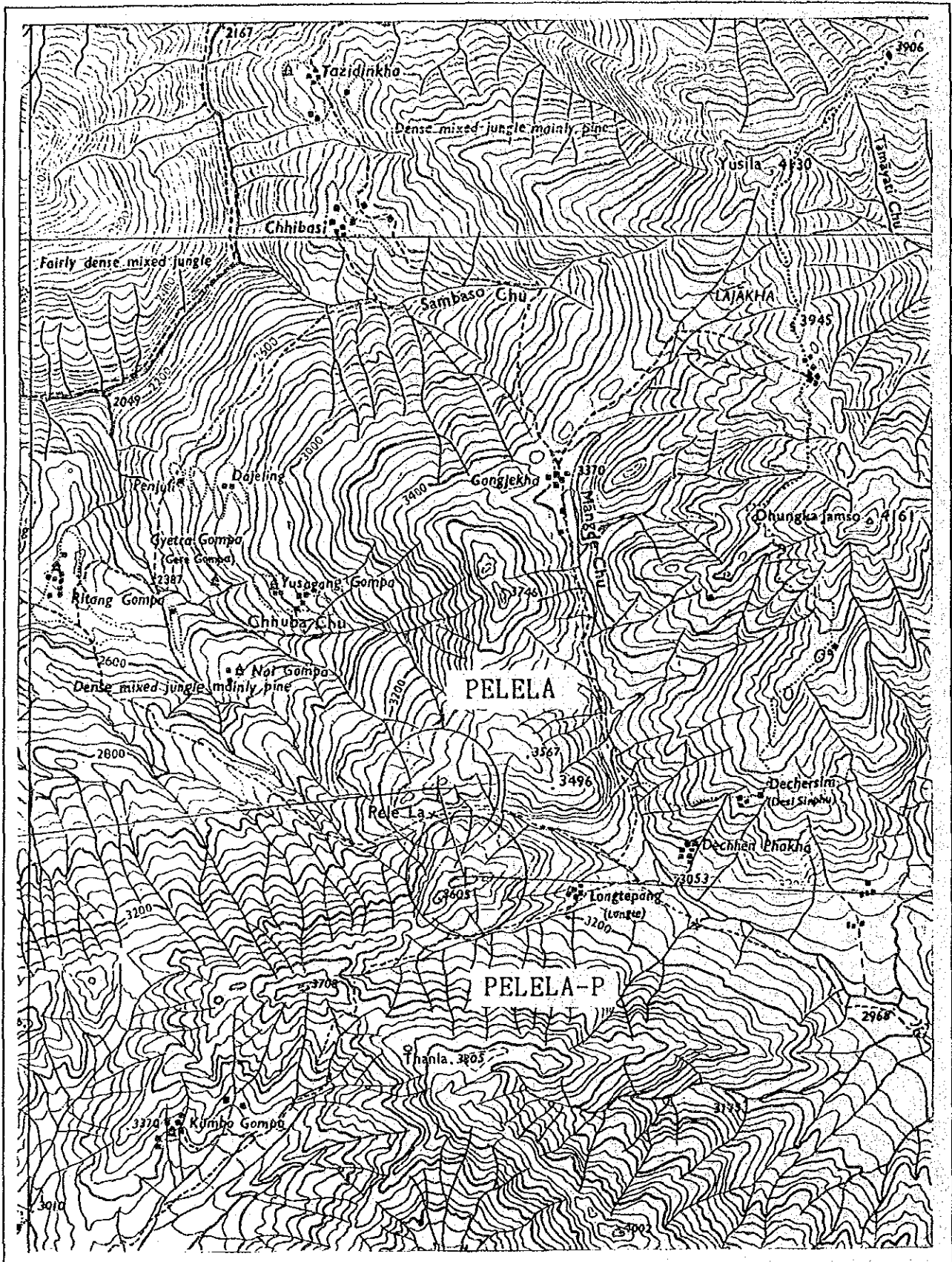
DRAWING NAME:
 GUIDE MAP

SITE NAME:
 THIMPHU
 DOBCHU

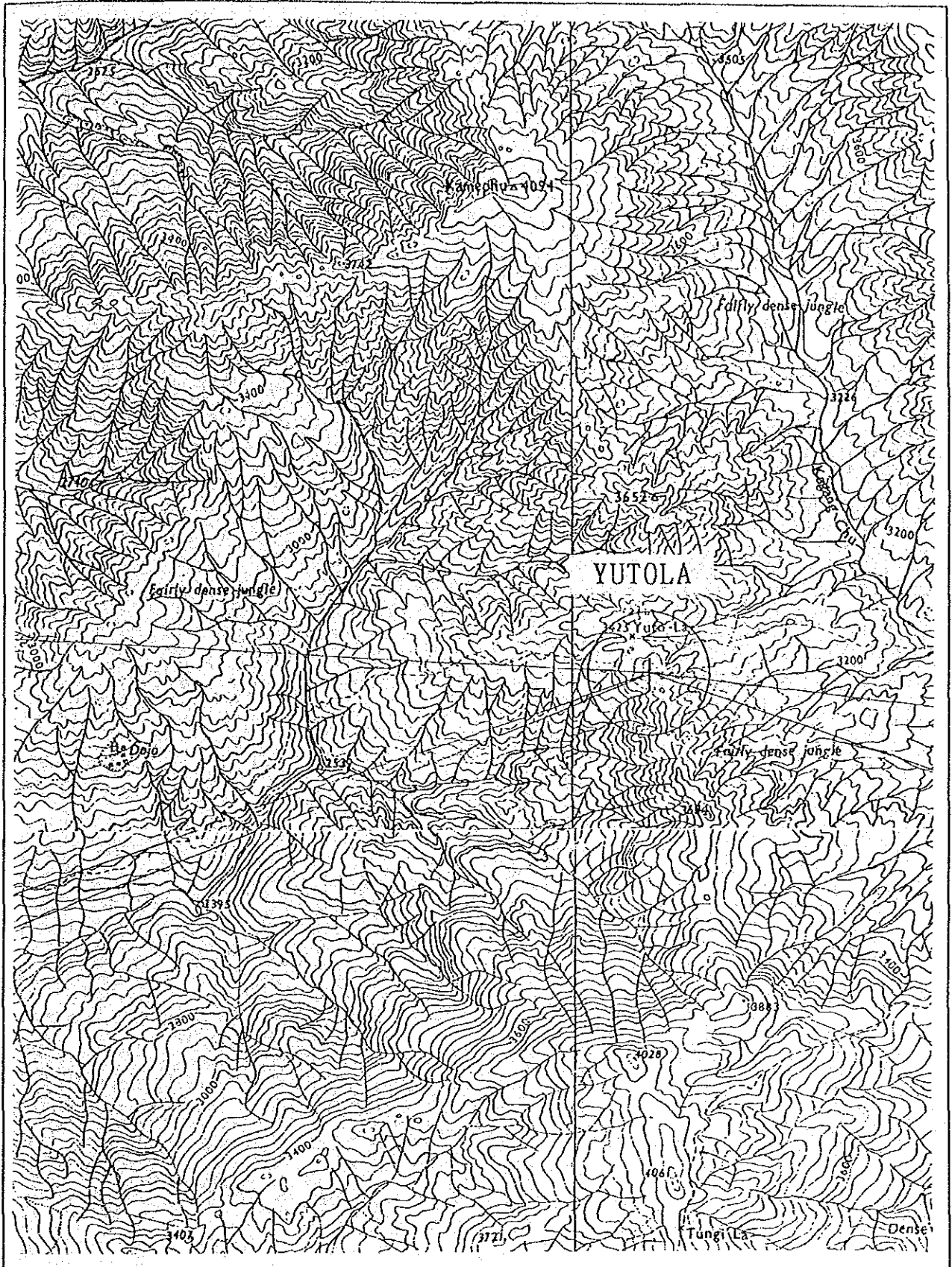
FIG. NO. :
 M-1



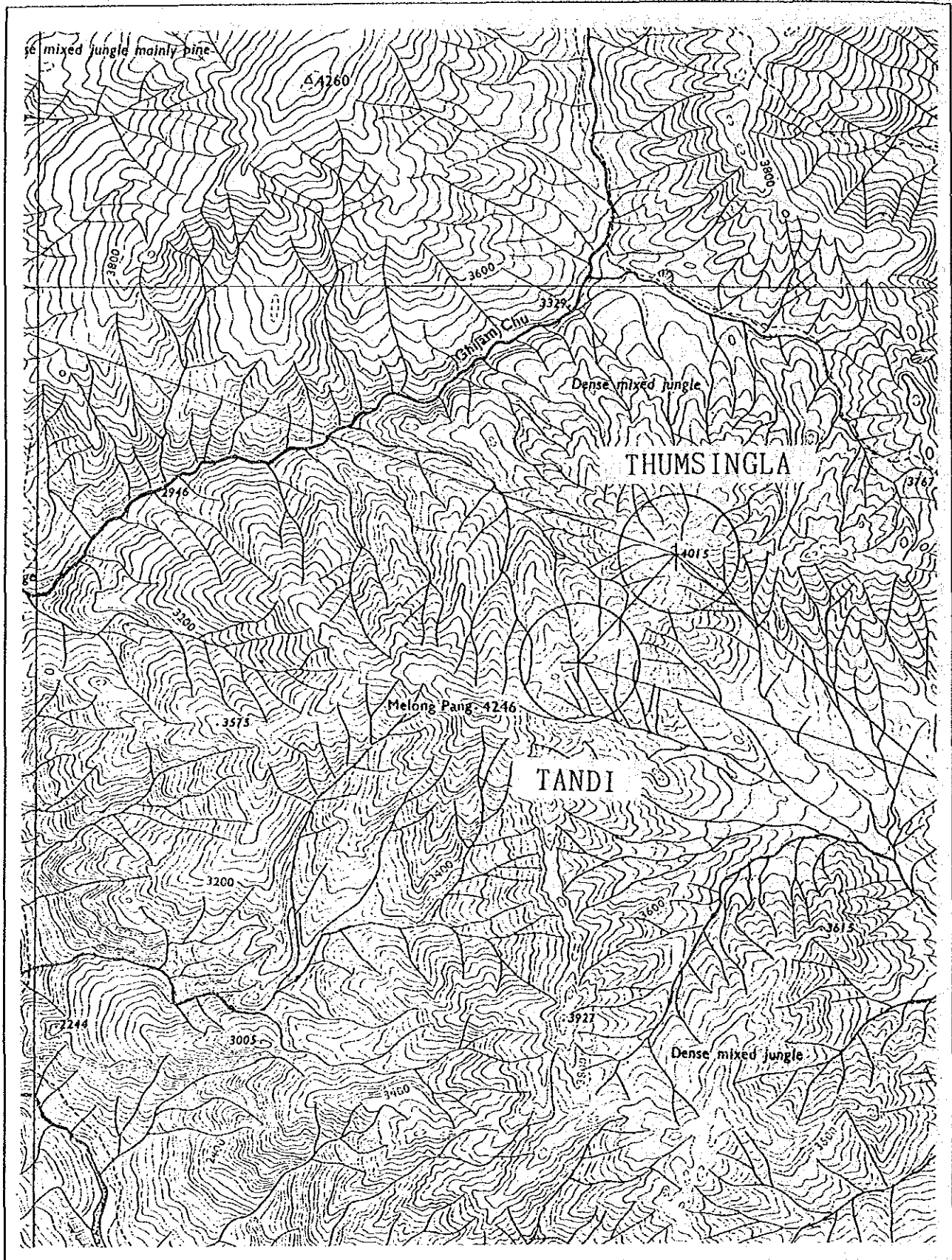
DRAWING NAME: G U I D E M A P	SITE NAME: DOCHULA	FIG. NO. : M-2
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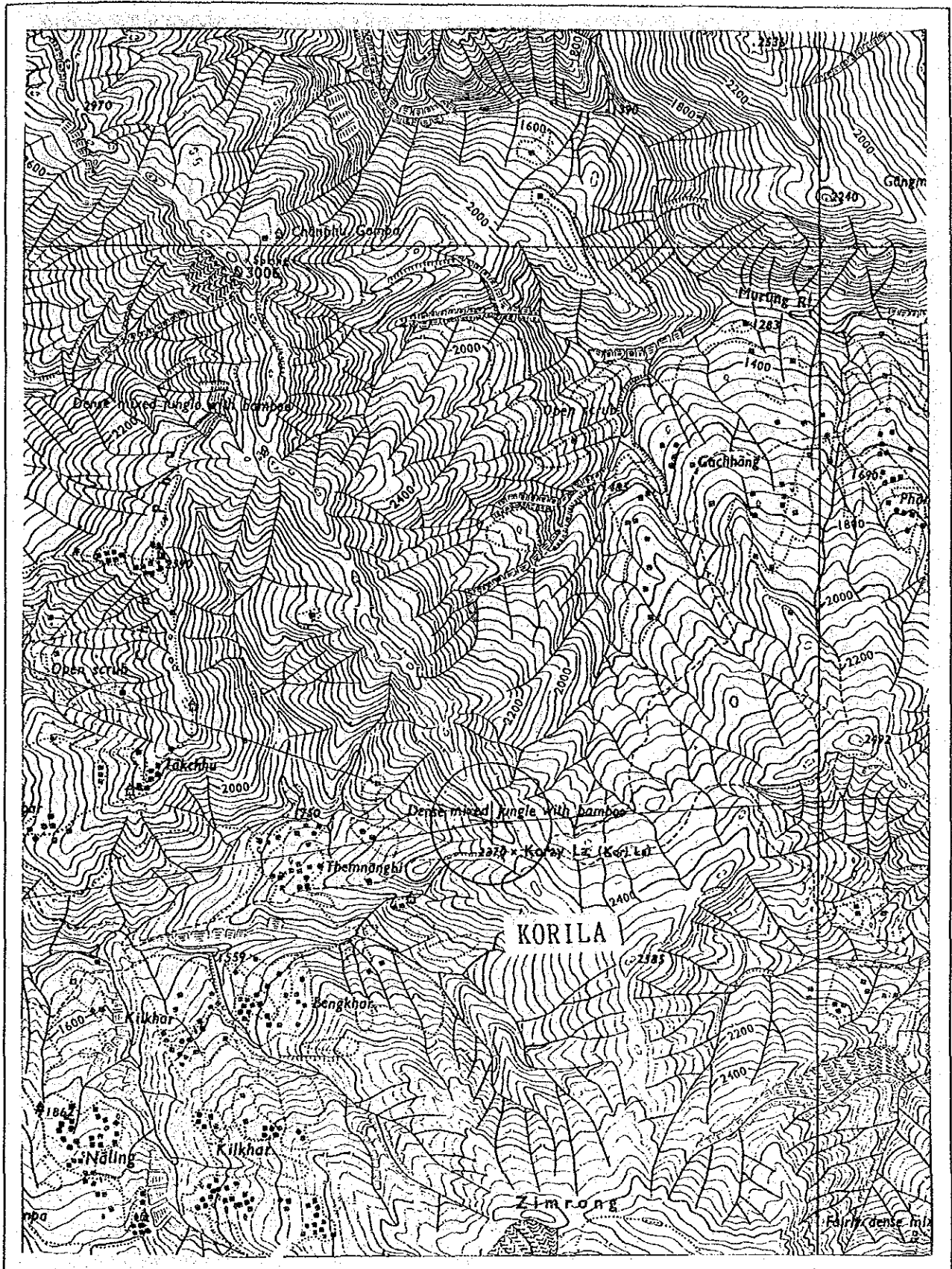
DRAWING NAME:	SITE NAME:	FIG. NO.:
GUIDE MAP	PELELA PELELA-P	M-3



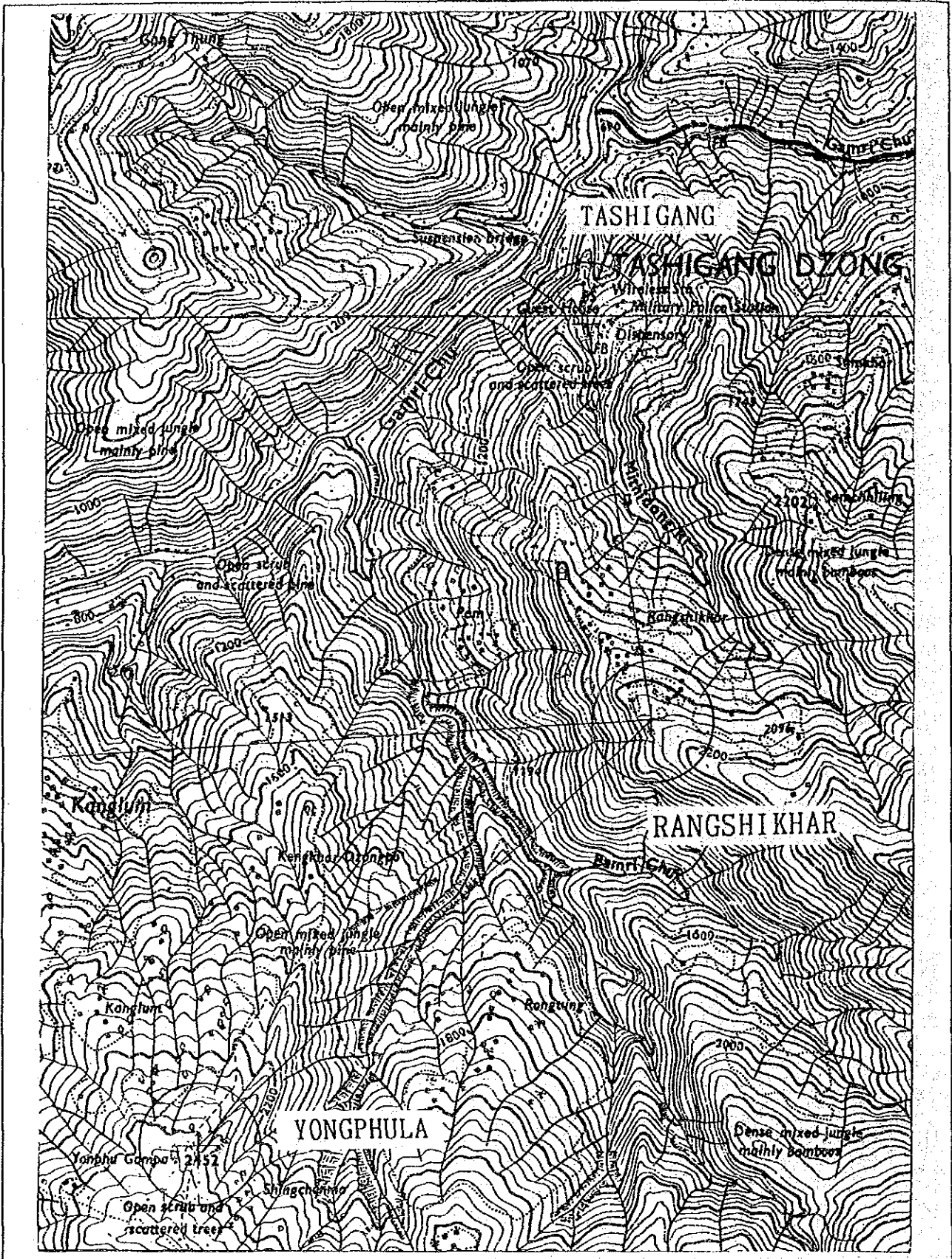
DRAWING NAME:	SITE NAME:	FIG. NO. :
GUIDE MAP	YUTOLA	M-4



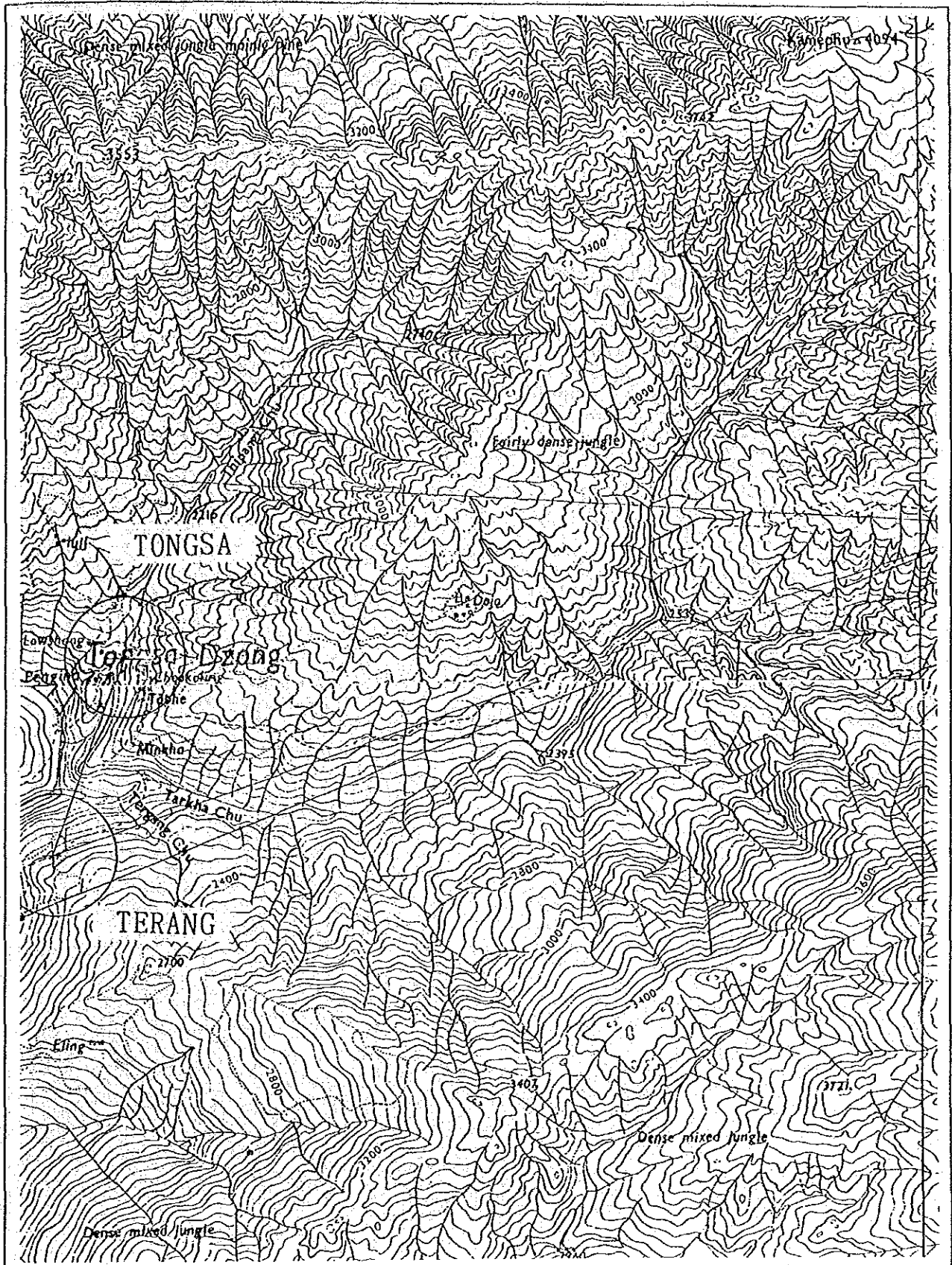
DRAWING NAME: GUIDE MAP	SITE NAME: THUMSINGLA TANDI	FIG. NO.: M-5
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DRAWING NAME:	SITE NAME:	FIG. NO. :
GUIDE MAP	KORILA	M-6



DRAWING NAME: G U I D E M A P	SITE NAME TASHIGANG RANGSHIKHAR YONGPHULA	FIG. NO. : M-7
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DRAWING NAME: GUIDE MAP	SITE NAME: TONGSA TERANG	FIG. NO. : M-8
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