

3-3 Basic Plan

3-3-1 Equipment Plan

(1) Transmitting Equipment of Rebroadcast Stations

Transmitting equipment for educational television in rebroadcast stations based on design policies and criteria are described below in parallel with the existing GTV transmitting facilities.

Station	Mingora GTV	Mingora ETV
Channel	CH 7	CH 11
Antenna	VHF 4-Dipole Panel Antenna 2-Stack, 4-Face	GTV antenna is used in common with ETV. Channel Combiner 1 unit Main Feeder 39D 1 set
Tower	Self-supported tower 55m high	
Transmitter	VHF TV TX 1 kW	VHF TV TX 1 kW 1 set
Programme Link	Cable link from PTC Mingora station	TVRO ^{*1)} 1 set
Power Supply	CS ^{*2)} : 100 kVA EG ^{*3)} : 45 kVA 1 unit	EG : To be exchanged for 1 unit of 75 kVA.
Building	One-storied RC building (Floor area: approx. 50 m ²) TX room shall be expanded by about 4 m ² .	
Site	Located 135 km north north-west of Islamabad, going north from Nowshera on the GT road and up the Swatt Valley. The road is paved for the whole journey of 270 km and there's no problem for equipment transportation. The service area includes Mingora and villages on the opposite side of the Swatt River.	

Note * 1) TVRO : TV Receiving Only Earth Station

Note * 2) CS : City Power Supply

Note * 3) EG : Engine Generator

Station	Gulibagh GTV	Gulibagh ETV
Channel	CH 9	CH 12
Antenna	VHF 2-Dipole Panel Antenna 2-Stack, 2-Face	GTV antenna is used in common with ETV. Channel Combiner 1 unit
Tower	Guyed tower 54m high	
Transmitter	VHF TV TX 100W	VHF TV TX 100W 1 set
Programme Link	Off-air relay from Mingora CH 7	TVRO 1 set
Power Supply	CS : 50 kVA EG : 12.5 kVA 1 unit	EG : To be exchanged for 1 unit of 20 kVA.
Building	One-storied RC building (Floor area: approx. 35 m ²)	New equipment can be installed in the existing building.
Site	Gulibagh station is located in the Swatt valley, 17 km north-east from Mingora. The road is paved and well maintained. Although the road passes through the bazaar in Mingora and large sized trucks can't be used, there's no problem for equipment transportation. The service area includes the Mata area on the opposite side of the Swatt River.	

Station	Layyah GTV	Layyah ETV
Channel	CH 12	CH 9
Antenna	VHF 4-Dipole Panel Antenna 2-Stack, 4-Face	GTV antenna is used in common with ETV. Channel Combiner 1 unit Main Feeder 39D 1 set
Tower	Guyed tower 152m high	
Transmitter	VHF TV TX 1 kW	VHF TV TX 1 kW 1 set
Programme Link	Microwave link from PTC Kot Adu station.	TVRO 1 set
Power Supply	CS : 100 kVA EG : 27 kVA 2 units	
Building	One-storied RC building (Floor area: approx. 136 m ²)	New equipment can be installed in the existing building.
Site	The station is located on the east bank of the middle of the Indus River, 13 km south of the city of Layyah with a population of 50,000. It's surrounded with flat and well cultivated land. The station facilities have been completed in 1994 and transmission was initiated in April. Since some interference was found in a part of the service area, the present frequency on CH 5 will be changed to CH 12 by PTV.	

Station	Quetta GTV	Quetta ETV
Channel	CH 8	CH 10
Antenna	VHF 4-Dipole Panel Antenna 1-Stack, 4-Face	GTV antenna is used in common with ETV. Channel Combiner 1 unit Main Feeder 39D 1 set
Tower	Self-supported tower 50m high	
Transmitter	VHF TV TX 500W	VHF TV TX 500W 1 set
Programme Link	Microwave link from PTC Quetta station	TVRO 1 set
Power Supply	CS : 500 kVA EG : 345 kVA 2 units	
Building	The station is in the studio site. TX room is approx. 16 m ² .	New equipment can be installed in the existing TX room.
Site	Quetta is the capital city of the province of Baluchistan. Since it is situated in a basin, the transmission scale is small.	

Station	Morasar GTV	Morasar ETV
Channel	CH 6	CH 8
Antenna	PTV shall move existing 4-D, 1-Stack 2-Face antenna to new tower.	GTV antenna is used in common with ETV. Channel Combiner 1 unit
Tower	PTV will construct a self-supported tower 25m high at new site.	
Transmitter	PTV shall move existing VHF TV TX of 50W to new site.	VHF TV TX 50W 1 set
Programme Link	Off-air relay from Cherat CH 10	TVRO 1 set
Power Supply	CS : PTV shall provide 25 kVA for new building. EG : 14kVA	EG : To be exchanged for 1 unit of 20 kVA.
Building	A one-storied RC building of about 40 m ² is now under construction.	New ETV TX can be installed in the TX room of the new building under construction.
Site	The town of Thana is located at the southern end of the Swatt Valley. Going south south-east from there, make a left turn 4 km from Thana and go up the mountain road to Morasar station. It is about 8 km long, a narrow, partially steep and bumpy road, and has many sharp curves. The final access to the new site, about 100m long, from the road to the present site is not a metaled road at present. The service area includes Thana and villages on the opposite side of the Swatt River.	

Station	Chitral GTV	Chitral ETV
Channel	CH 9	CH 7
Antenna	VHF 4-Dipole Panel Antenna 2-Stack, 2-Face	GTV antenna is used in common with ETV. Channel Combiner 1 unit
Tower	Self-supported tower 32m high	
Transmitter	VHF TV TX 50W	VHF TV TX 50W 1 set
Programme Link	Cable link from PTC Chitral station	TVRO 1 set
Power Supply	CS : Receives two kinds of power supplies (Hydro and EG) from WAPDA EG : 12 kVA 1 unit 3.8 kVA 1 unit	EG : To be exchanged for 1 unit of 20 kVA.
Building	A stone wall, one-storied building (Floor area: approx. 50 m ²) TX room shall be extended by about 3 m ² .	
Site	Chitral is located 260 km north north-west of Islamabad, in the valley close to the Afghanistan border. Making a turn north at Nowshera on the GT road, head north-west at the southern end of the Swatt Valley, passing through Dir and going over the Lowari pass at 3,200m. The road, for 90% of the entire trip of 431 km from Islamabad, is paved and well maintained, but the remaining about 45 km to go over the pass is steep and bumpy, and has many sharp turns. The service area covers the Chitral valley.	

Station	Dir GTV	Dir ETV
Channel	Undecided	CH 12
Antenna		VHF 2-Dipole Panel Antenna 2-Stack, 2-Face 1-Stack, 2-Face
Tower	PTV shall construct a self-supported tower 70m high.	
Transmitter		VHF TV TX 100W 1 set
Programme Link		TVRO 1 set
Power Supply	CS : PTV shall arrange with 25 kVA City Power facilities. EG : PTV shall arrange.	
Building	PTV shall construct a station building.	
Site	Dir is located 195 km north north-west of Islamabad, in a valley north-west from the southern end of the Swatt Valley. The distance by road from Islamabad is approx. 350 km. It's paved and well maintained, and even the 115 km in mountainous areas presents no problem for transportation. The proposed site (25m by 25m) is farmland located at the southern end of the town at the east side of the road. It's private property at present, but no problem is expected for PTV to acquire it.	

Station	Thandiani GTV	Thandiani ETV
Channel	CH 6	CH 12
Antenna	VHF 4-Dipole Panel Antenna 2-Stack, 4-Face	GTV antenna is used in common with ETV. Channel Combiner 1 unit Main Feeder 39D 1 set
Tower	Self-supported tower 45m high	
Transmitter	VHF TV TX 500W	VHF TV TX 500W 1 set
Programme Link	Off-air relay from Murree CH 8	TVRO 1 set
Power Supply	CS : No WAPDA service EG : 80 kVA 2 units 50 kVA 1 unit	
Building	One-storied RC building (Floor area: approx. 340 m ²)	New equipment can be installed in the existing building.
Site	The station is located on a mountaintop about 2,700m above sea level. The mountain road is about 29 km (about 1 hour by car) from Abbottabad which is 50 km north north-east of Islamabad. The elevation difference with Abbottabad is about 1,260m. The mountain road is steep and bumpy, and has many sharp curves. Abbottabad and Mansera are the main service area.	

Station	Pasrur GTV	Pasrur ETV
Channel	PTV shall change present CH 10 to UHF.	UHF
Antenna	Existing 2-Dipole (8-Stack, 4-Face) antenna will be removed and ETV antenna will be mounted. GTV will use in common with ETV antenna.	UHF 4-Dipole Antenna 8-Stack, 1-Face 4-Stack, 2-Face Channel Combiner 1 unit
Tower	Guyed tower 96m high	
Transmitter	PTV shall exchange VHF TX (0.5 kW, made in 1977) with UHF TV TX of 3 kW.	UHF TV TX 3 kW 1 set
Programme Link	Off-air relay from K.S.K. CH 5	TVRO 1 set
Power Supply	CS : 100 kVA EG : 60 kVA 1 unit	EG : To be exchanged for 1 unit of 75 kVA.
Building	One-storied RC building (Floor area: approx. 240 m ²)	New equipment can be installed in the existing building.
Site	The station is located approx. 80 km north north-east of Lahore, in the city of Pasrur, in a flat area surrounded by farmland. The service area includes Sialkot in the north-west, Narowal in the south-east and Zafarwal in the north-east.	

Station	Faisalabad GTV	Faisalabad ETV
Channel	PTV Shall change present CH 6 to UHF.	UHF
Antenna	Existing 2-Dipole (14-Stack, 4-Face) antenna will be removed and ETV antenna will be mounted. GTV will use in common with ETV antenna.	UHF 4-Dipole Antenna 8-Stack, 3-Face 4-Stack, 1-Face Channel Combiner 1 unit
Tower	Guyed tower 96m high	
Transmitter	PTV shall exchange VHF TX (1 kW, made in 1977) with UHF TV TX of 3 kW.	UHF TV TX 3 kW 1 set
Programme Link	Microwave link from Faisalabad PTC station	TVRO 1 set
Power Supply	CS : 100 kVA EG : 63 kVA 1 unit 45 kVA 1 unit	
Building	One-storied RC building (Floor area: approx. 270 m ²)	New equipment can be installed in the existing building.
Site	The station is located in the city of Faisalabad, surrounded by an urban area and along a major road. The premises are small with the minimum triangle area to support the guyed tower.	

Station	Sahiwal GTV	Sahiwal ETV
Channel	CH 10	CH 6 of Faisalabad shall be transferred here.
Antenna	4-Dipole Panel Antenna 8-Stack, 4-Face	GTV antenna will be used in common. Channel Combiner 1 unit Main feeder 152D 1 set
Tower	Self-supported tower 288m high	
Transmitter	VHF TV TX 10 kW.	VHF TV TX 10 kW 1 set
Programme Link	Cable link from PTC Sahiwal station	TVRO 1 set
Power Supply	CS : 200 kVA. PTV shall reinforce it to 300 kVA EG : 150 kVA 1 unit	EG : To be added with 1 unit of 75 kVA.
Building	One-storied RC building (Floor area: approx. 490 m ²)	New equipment can be installed in the existing building.
Site	The station is located in the city of Sahiwal. Due to the surrounding urban area with a population of 300,000 and the small premises, a self-supported tower is used. The service area is an extensive area of open fields, and dairy farming is the major industry.	

Station	Bahawalnagar GTV	Bahawalnagar ETV
Channel	CH 7	CH 11
Antenna	PTV is providing 4-Dipole panel antennas. 8-Stack, 4-Face	GTV antenna will be used in common. Channel Combiner 1 unit
Tower	PTV is providing a guyed tower 245m high.	
Transmitter	PTV is providing one set of VHF TV TX 2 kW.	VHF TV TX 2 kW 1 set
Programme Link	Providing a microwave link from PTC Chishtian station	TVRO 1 set
Power Supply	PTV is providing the following. CS : 100 kVA EG : 25 kVA 1 unit	
Building	PTV is providing a one-storied RC building. (Floor area: approx. 160 m ²)	Equipment can be installed in the existing building.
Site	The proposed site is located along a major road in the town of Chishtian. The site and surrounding area are flat, with a mixture of farmland and uncultivated land. It is government property. There will be no problem for PTV to acquire the site. There exists an 11 kV power line.	

Station	Mailsi GTV	Mailsi ETV
Channel	Undecided	CH 9
Antenna		VHF 4-Dipole Panel Antenna 8-Stack, 2-Face.
Tower	PTV shall construct a guyed tower 152m high.	
Transmitter		VHF TV TX 1 kW 1 set
Programme Link		TVRO 1 set
Power Supply	PTV shall provide a city power facility for 100 kVA and one EG of 25 kVA.	
Building	PTV shall construct a one-storied RC building of approx. 140 m ² in area.	
Site	The proposed site is located along the road connecting Mailsi and Kahrer, and at the middle of two towns. The neighbourhood is a completely flat area and has very good farmland. An 11 kV power line is available.	

Station	Khewra GTV	Khewra ETV
Channel	CH 9	CH 11
Antenna		VHF 4-Dipole Panel Antenna 4-Stack, 1-Face 1-Stack, 2-Face.
Tower	PTV shall construct a guyed tower 96m high.	
Transmitter		VHF TV TX 1 kW 1 set
Programme Link		TVRO 1 set
Power Supply	PTV shall provide a 100 kVA city power facility and one EG of 25 kVA.	
Building	PTV shall construct a one-storied RC building of approx. 140 m ² in area.	
Site	Khewra is a city with mountains on the north side and a population of about 200,000. There are rock salt mines and soda and cement plants there. The proposed site is located along the road to Dandoto, in the west suburbs of Khewra, and is uncultivated land. An 11 kV power line is there. The land is about 30m higher than the area along the Jhelum River, and no danger from floods is expected.	

Station	Karachi GTV	Karachi ETV
Channel	CH 7	CH 4
Antenna	VHF 4-Dipole Panel Antenna 8-Stack, 4-Face	VHF 2-Dipole Panel Antenna 4-Stack, 2-Face 3-Stack, 1-Face 1-Stack, 1-Face Since existing 6-stack superturn style antenna has deteriorated very much, it will be exchanged together with the main feeder.
Tower	Guyed tower 245m high	Existing self-supported 70m tower is used.
Transmitter	VHF TV TX 20kW	Existing VHF TV TX (10 kW, installed in 1977) has deteriorated very much, and it will be replaced with a new TX.
Programme Link	Linked with studio by STL	Existing TVRO will be used.
Power Supply		Existing power source and AVR will be used.
Building	One-storied RC building (Floor area: approx. 190 m ²)	New equipment can be installed in the existing TX room.
Site	<p>Karachi TV Centre is facing the Stadium Road in the east part of the city, and is surrounded by the urban area.</p> <p>GTV transmitting station is located 22 km east of the TV Centre.</p> <p>The road distance is 31 km and it takes about 50 minutes by car. It is almost surrounded by flat farmland and uncultivated land.</p>	

(2) Satellite Reception and Communications System

The programmes of educational television (ETV) are transmitted nationwide from the Islamabad ETV Centre via the communication satellite, AsiaSat. Satellite reception equipment (TVRO) is installed at each rebroadcast station to receive the television programmes and feed them to the transmitter.

The communications system includes, according to the design policy and design criteria, the equipment to give the following functions to each station.

Islamabad ETV Centre	Communication channel control/connection
Islamabad PTV HQ	VSAT (Very Small Aperture Terminal) system
Lahore Centre	VSAT system
Peshawar Centre	VSAT system
Rebroadcast stations	Communication channel connection
(30 stations*Note)	

The outline of the above-mentioned functions are as follows.

The communication channel control function is provided in the Islamabad ETV Centre. When one station dials another station, this function receives the dialing signal first and assigns an unoccupied communication channel to both stations and the connection is immediately made. This is the core function of the system and the Islamabad ETV Centre is called a hub station of the system.

*Note : In the Initial Two Year Plan, 15 rebroadcast stations and Karachi earth station facilities were newly installed, and for ETV transmission in Karachi, an old transmitter in PTV Karachi Centre was used as it was on the premise that it was to be replaced with a new one in the Later Three Year Plan.

In this Project, 15 rebroadcast stations including renewal of the Karachi transmitter are to be established.

Among 30 rebroadcast stations, Karachi and Quetta stations are co-sited with respective centres, which means the 2 stations are regional centres as well as rebroadcast stations.

The communication channel connection function receives the control signal from the hub station and connects its own telephone system (telephone set or PABX) to the assigned communication channel.

VSAT system facilities are necessary to add telephone facilities into the satellite communications system and consists of a parabolic satellite antenna, outdoor unit and indoor unit. Islamabad PTV HQ, Lahore and Peshawar Centres are very important stations having many rebroadcast stations under their control as a national or regional centres, but they are not rebroadcast stations. Therefore, they connect their telephone facilities into the satellite communications system by means of the VSAT systems. Quetta and Karachi are also regional centres, but they have rebroadcast equipment in the centres and therefore in the communication channel expansion plan, they are treated the same as the rebroadcast stations.

In each rebroadcast station, the TVRO is installed for satellite reception and only needs the communication connection function for the expanded satellite communications system.

3-3-2 Equipment List

(1) Transmitting Equipment of Rebroadcast Stations

Main items of transmitting equipment to be installed in rebroadcast stations are shown below.

Station	Equipment	Q'ty	Remarks
Mingora	TV Transmitter	1 unit	VHF, 1 kW
	Feeder	1 set	39D, 90m
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (1 kW + 1 kW), Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR *1)	1 unit	10 kVA, with P.D.B.*2)
	Engine Generator	1 unit	75 kVA, w/Changeover Switch
Gulibagh	TV Transmitter	1 unit	VHF, 100W
	Output Equipment	1 set	Combiner (100W + 100W), Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	5 kVA, with P.D.B.
	Engine Generator	1 unit	20 kVA, w/Changeover Switch
Layyah	TV Transmitter	1 unit	VHF, 1 kW
	Feeder	1 set	39D, 170m
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (1 kW + 1 kW), Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	10 kVA, with P.D.B.
Quetta	TV Transmitter	1 unit	VHF, 500W
	Feeder	1 set	39D, 70m
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (500W + 500W), Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	10 kVA, with P.D.B.

Note *1) AVR : Automatic Voltage Regulator

*2) P.D.B. : Power Distribution Board

Station	Equipment	Q'ty	Remarks
Morasar	TV Transmitter	1 unit	VHF, 50W
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (50W + 50W), Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	10 kVA, with P.D.B.
	Engine Generator	1 unit	20 kVA, w/Changeover Switch
Chitral	TV Transmitter	1 unit	VHF, 50W
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (50W + 50W), Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	10 kVA, with P.D.B.
	Engine Generator	1 unit	20 kVA, w/Changeover Switch
Dir	TV Transmitter	1 unit	VHF, 100W
	Antenna	1 set	VHF 2D, 2-stack 2-face, 1-stack 2-face
	Feeder	1 set	20D, 60m
	Dehydrator	1 unit	
	Output Equipment	1 set	Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	5 kVA, with P.D.B.
	Measuring Equipment	1 set	Oscilloscope 1 Circuit Tester 1 Electronic Voltmeter 1
Thandiani	TV Transmitter	1 unit	VHF, 500W
	Feeder	1 set	39D, 90m
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (500W + 500W), Dummy Load, U-Link
	TV Monitor	1 unit	
	P.D.B.	1 unit	

Station	Equipment	Q'ty	Remarks
Pasrur	TV Transmitter	1 unit	UHF, 3 kW
	Antenna	1 set	UHF 4D, 8-stack 1-face 4-stack 2-face
	Feeder	1 set	77D, 100m
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (3 kW + 3 kW), Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	20 kVA, with P.D.B.
	Engine Generator	1 unit	75 kVA, w/Changeover Switch
Faisalabad	TV Transmitter	1 unit	UHF, 3 kW
	Antenna	1 set	UHF 4D, 8-stack 3-face, 4-stack 1-face
	Feeder	1 set	77D, 100m
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (3 kW + 3 kW), Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	20 kVA, with P.D.B.
Sahiwal	TV Transmitter	1 unit	VHF, 10 kW
	Feeder	1 set	152D, 300m
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (10 kW + 10 kW), Dummy Load, U-Link
	P.I.E.*Note	1 set	
	TV Monitor	1 unit	
	AVR	1 unit	50 kVA, with P.D.B.
	Engine Generator	1 unit	75 kVA, w/Changeover Switch

*Note P.I.E. : Programme Input Equipment

Station	Equipment	Q'ty	Remarks
Bahawalnagar	TV Transmitter	1 unit	VHF, 2 kW
	Dehydrator	1 unit	
	Output Equipment	1 set	Combiner (2 kW + 2 kW), Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	15 kVA, with P.D.B.
Mailsi	TV Transmitter	1 unit	VHF, 1 kW
	Antenna	1 set	VHF 4D, 8-stack 2-face
	Feeder	1 set	39D, 150m
	Dehydrator	1 unit	
	Output Equipment	1 set	Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	10 kVA, with P.D.B.
	Measuring Equipment	1 set	Oscilloscope 1 Circuit Tester 1 Electronic Voltmeter 1
Khewra	TV Transmitter	1 unit	VHF, 1 kW
	Antenna	1 set	VHF 4D, 4-stack 1-face, 1-stack 2-face
	Feeder	1 set	39D, 120m
	Dehydrator	1 unit	
	Output Equipment	1 set	Dummy Load, U-Link
	TV Monitor	1 unit	
	AVR	1 unit	10 kVA, with P.D.B.
	Measuring Equipment	1 set	Oscilloscope 1 Circuit Tester 1 Electronic Voltmeter 1
Karachi	TV Transmitter	1 unit	VHF, 10 kW
	Antenna	1 set	VHF 2D, 4-stack 2-face, 3-stack 1-face, 1-stack 1-face
	Feeder	1 set	77D, 120m
	Dehydrator	1 unit	
	Output Equipment	1 set	Dummy Load, U-Link
	P.I.E.	1 set	
	TV Monitor	1 unit	

Station	Equipment	Q'ty	Remarks
Measuring Equipment for All RBSs	Video Signal Generator	1 unit	
	Oscilloscope with Cart	1 unit	Up to 50 MHz
	Circuit Tester	1 unit	
	Electronic Voltmeter	1 unit	
	RF Push Button Attenuator	1 unit	DC to 1,000 MHz
	Frequency Counter	1 unit	Up to 1,000 MHz
	Audio Distortion Meter	1 unit	
	Spectrum Analyzer	1 unit	10 kHz to 2,000 MHz
	Group Delay Measuring Set	1 unit	
	DG-DP Measuring Instrument	1 unit	
	Measuring Receiver/Antenna	1 unit	25 MHz to 1,000 MHz
	Coaxial Reducer	1 set	
	Dummy Load (VHF)	1 unit	100W
	Dummy Load (UHF)	1 unit	100W

(2) Satellite Reception and Communications System

Main items of satellite reception equipment and communications system via satellite are shown below.

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|--|---------|
| 1) Satellite reception equipment (TVRO)
for 14 rebroadcast stations (except Karachi) | 14 sets |
| 2) Order-wire connection and control modules
for Islamabad ETV Centre | 1 set |
| 3) VSAT (Very Small Aperture Terminal) equipment
for Islamabad PTV Headquarters, Lahore Centre
and Peshawar Centre
consisting of 2.4 m parabolic antenna
and order-wire modules. | 3 sets |
| 4) Order-wire modules for rebroadcast stations | 30 sets |

3-3-3 Basic Design Drawings

- FIG.3-3-1 COVERAGE AREA MAP OF ETV RBS
- FIG.3-3-2 SITE LAYOUT OF RBS MINGORA
- FIG.3-3-3 SITE LAYOUT OF RBS GULIBAGH
- FIG.3-3-4 SITE LAYOUT OF RBS LAYYAH
- SITE LAYOUT OF RBS BAHAWALNAGAR
- SITE LAYOUT OF RBS MAILSI
- SITE LAYOUT OF RBS KHEWRA
- FIG.3-3-5 SITE LAYOUT OF TV TRANSMITTER IN TV CENTRE QUETTA
- FIG.3-3-6 SITE LAYOUT OF RBS MORASAR
- FIG.3-3-7 SITE LAYOUT OF RBS CHITRAL
- FIG.3-3-8 SITE LAYOUT OF RBS DIR
- FIG.3-3-9 SITE LAYOUT OF RBS THANDIANI
- FIG.3-3-10 SITE LAYOUT OF RBS PASRUR
- FIG.3-3-11 SITE LAYOUT OF RBS FAISALABAD
- FIG.3-3-12 SITE LAYOUT OF RBS SAHIWAL
- FIG.3-3-13 SITE LAYOUT OF TV TRANSMITTER IN TV CENTRE KARACHI
- FIG.3-3-14 EQUIPMENT LAYOUT OF RBS MINGORA
- FIG.3-3-15 EQUIPMENT LAYOUT OF RBS GULIBAGH
- FIG.3-3-16 EQUIPMENT LAYOUT OF RBS BAHAWALNAGAR
- EQUIPMENT LAYOUT OF RBS LAYYAH
- FIG.3-3-17 EQUIPMENT LAYOUT OF RBS MAILSI
- EQUIPMENT LAYOUT OF RBS KHEWRA
- FIG.3-3-18 EQUIPMENT LAYOUT OF QUETTA TV TRANSMITTER
- FIG.3-3-19 EQUIPMENT LAYOUT OF RBS MORASAR
- FIG.3-3-20 EQUIPMENT LAYOUT OF RBS CHITRAL
- FIG.3-3-21 EQUIPMENT LAYOUT OF RBS DIR
- FIG.3-3-22 EQUIPMENT LAYOUT OF RBS THANDIANI
- FIG.3-3-23 EQUIPMENT LAYOUT OF RBS PASRUR
- FIG.3-3-24 EQUIPMENT LAYOUT OF RBS FAISALABAD
- FIG.3-3-25 EQUIPMENT LAYOUT OF RBS SAHIWAL
- FIG.3-3-26 EQUIPMENT LAYOUT OF KARACHI TV TRANSMITTER
- FIG.3-3-27 SYSTEM DIAGRAM OF RBS MINGORA
- SYSTEM DIAGRAM OF RBS CHITRAL

- FIG.3-3-28 SYSTEM DIAGRAM OF RBS GULIBAGH
SYSTEM DIAGRAM OF RBS MORASAR
SYSTEM DIAGRAM OF RBS THANDIANI
SYSTEM DIAGRAM OF RBS PASRUR
- FIG.3-3-29 SYSTEM DIAGRAM OF RBS LAYYAH
SYSTEM DIAGRAM OF QUETTA TV TRANSMITTER
SYSTEM DIAGRAM OF RBS FAISALABAD
SYSTEM DIAGRAM OF RBS BAHAWALNAGAR
- FIG.3-3-30 SYSTEM DIAGRAM OF RBS DIR
SYSTEM DIAGRAM OF RBS MAILSI
SYSTEM DIAGRAM OF RBS KHEWRA
- FIG.3-3-31 SYSTEM DIAGRAM OF RBS SAHIWAL
- FIG.3-3-32 SYSTEM DIAGRAM OF KARACHI TV TRANSMITTER
- FIG.3-3-33 FUNCTIONAL DIAGRAM OF ORDER-WIRE SYSTEM VIA
SATELLITE
- FIG.3-3-34 TOWER & ANTENNA OF RBS MINGORA
- FIG.3-3-35 TOWER & ANTENNA OF RBS GULIBAGH
- FIG.3-3-36 TOWER & ANTENNA OF RBS MAILSI
TOWER & ANTENNA OF RBS LAYYAH
- FIG.3-3-37 TOWER & ANTENNA OF TV CENTRE QUETTA
- FIG.3-3-38 TOWER & ANTENNA OF RBS MORASAR
- FIG.3-3-39 TOWER & ANTENNA OF RBS CHITRAL
- FIG.3-3-40 TOWER & ANTENNA OF RBS DIR
- FIG.3-3-41 TOWER & ANTENNA OF RBS THANDIANI
- FIG.3-3-42 TOWER & ANTENNA OF RBS PASRUR
TOWER & ANTENNA OF RBS FAISALABAD
- FIG.3-3-43 TOWER & ANTENNA OF RBS SAHIWAL
- FIG.3-3-44 TOWER & ANTENNA OF RBS BAHAWALNAGAR
- FIG.3-3-45 TOWER & ANTENNA OF RBS KHEWRA
- FIG.3-3-46 TOWER & ANTENNA OF TV CENTRE KARACHI

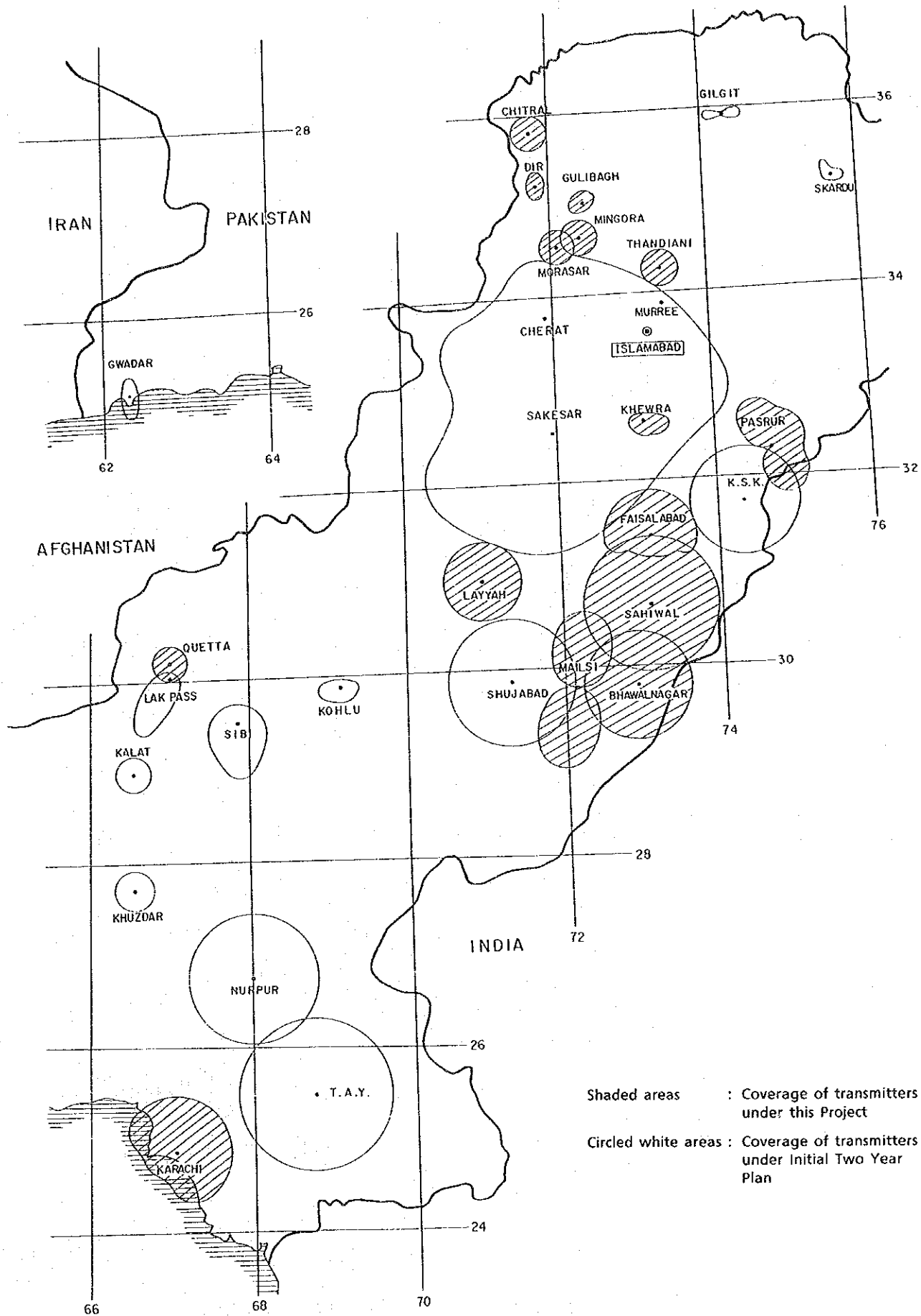
Abbreviations and Legends Used in the Drawings

Abbreviations

A/C	:	Air Conditioner
AVR	:	Automatic Voltage Regulator
CIN	:	Constant Impedance Notch Diplexer
COAX RX	:	Coaxial Cable Receiver
COMB	:	Combiner
D/L	:	Dummy Load
E (ETV)	:	Educational Service
EG	:	Engine Generator
G (GTV)	:	General Service
GL	:	Ground Level
ITF	:	Isolation Transformer
KESC	:	Karachi Electric Supply Corporation
μ W	:	Microwave
OW	:	Order-Wire
PDB	:	Power Distribution Board
PIE	:	Programme Input Equipment
PTC	:	Pakistan Telecommunications Corporation
RBS	:	Rebroadcast Station
RX	:	Receiver
TN	:	True North
TR	:	Transformer
TVRO	:	TV Receiving Only Earth Station
TX	:	Transmitter
WAPDA	:	Water and Power Development Authority

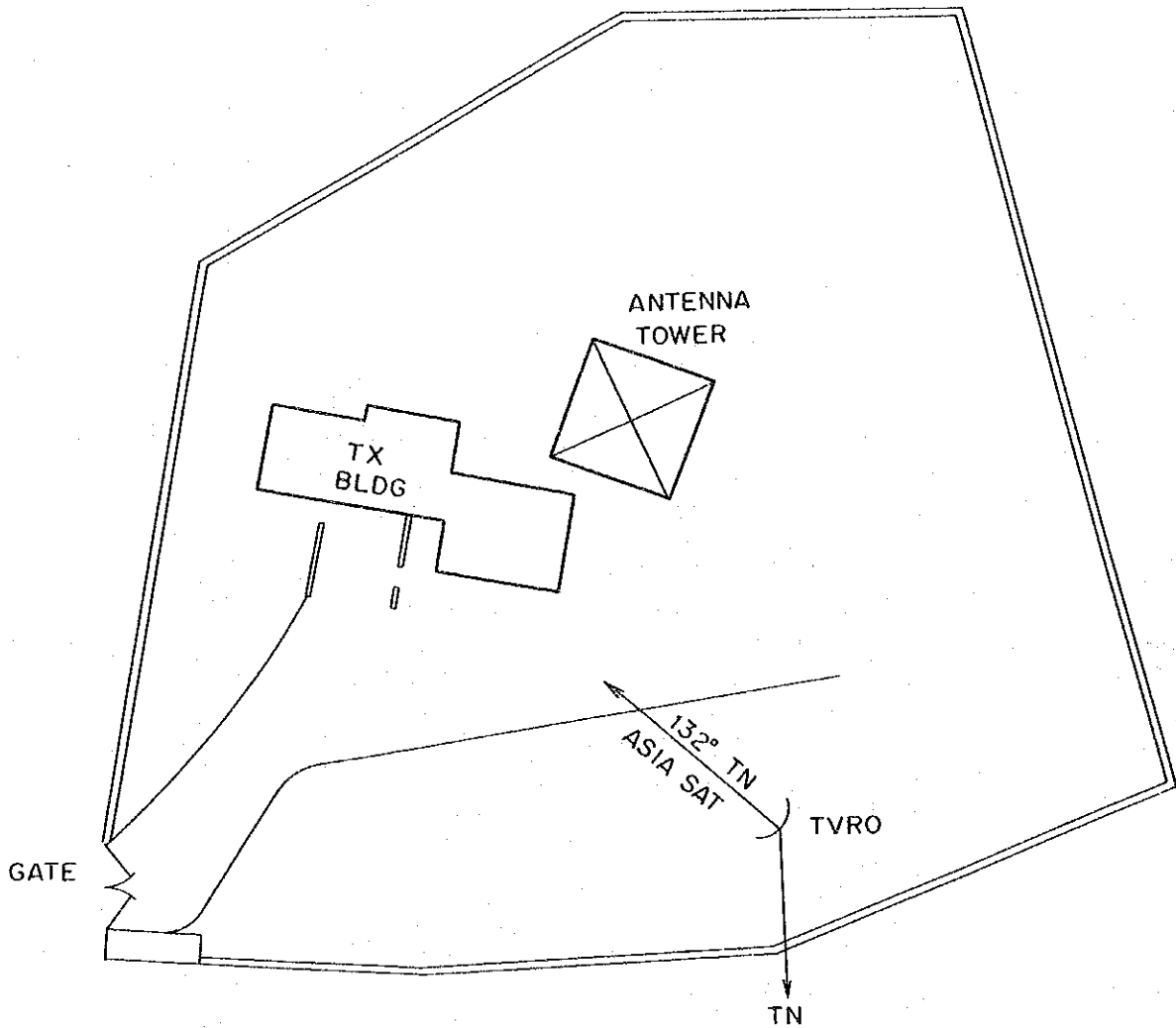
Legends

Dotted line (----)	:	New equipment to be provided by the Japanese side
Solid line (—)	:	Existing equipment or equipment to be provided by PTV
※	:	Items within dash-dot-line with the mark(※) to be provided by the Japanese side



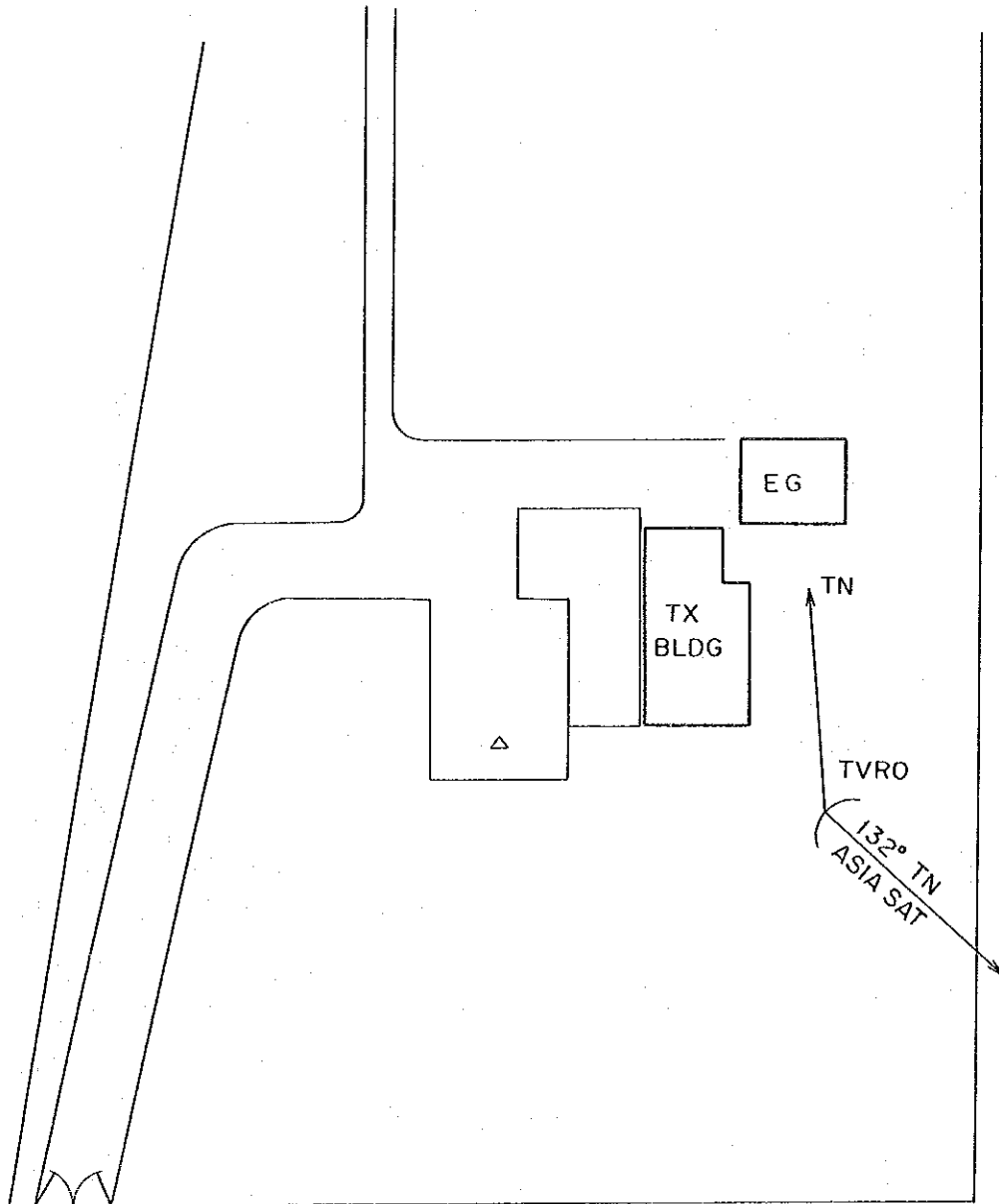
Shaded areas : Coverage of transmitters under this Project
 Circled white areas : Coverage of transmitters under Initial Two Year Plan

FIG. 3-3-1 COVERAGE AREA MAP OF ETV RBS



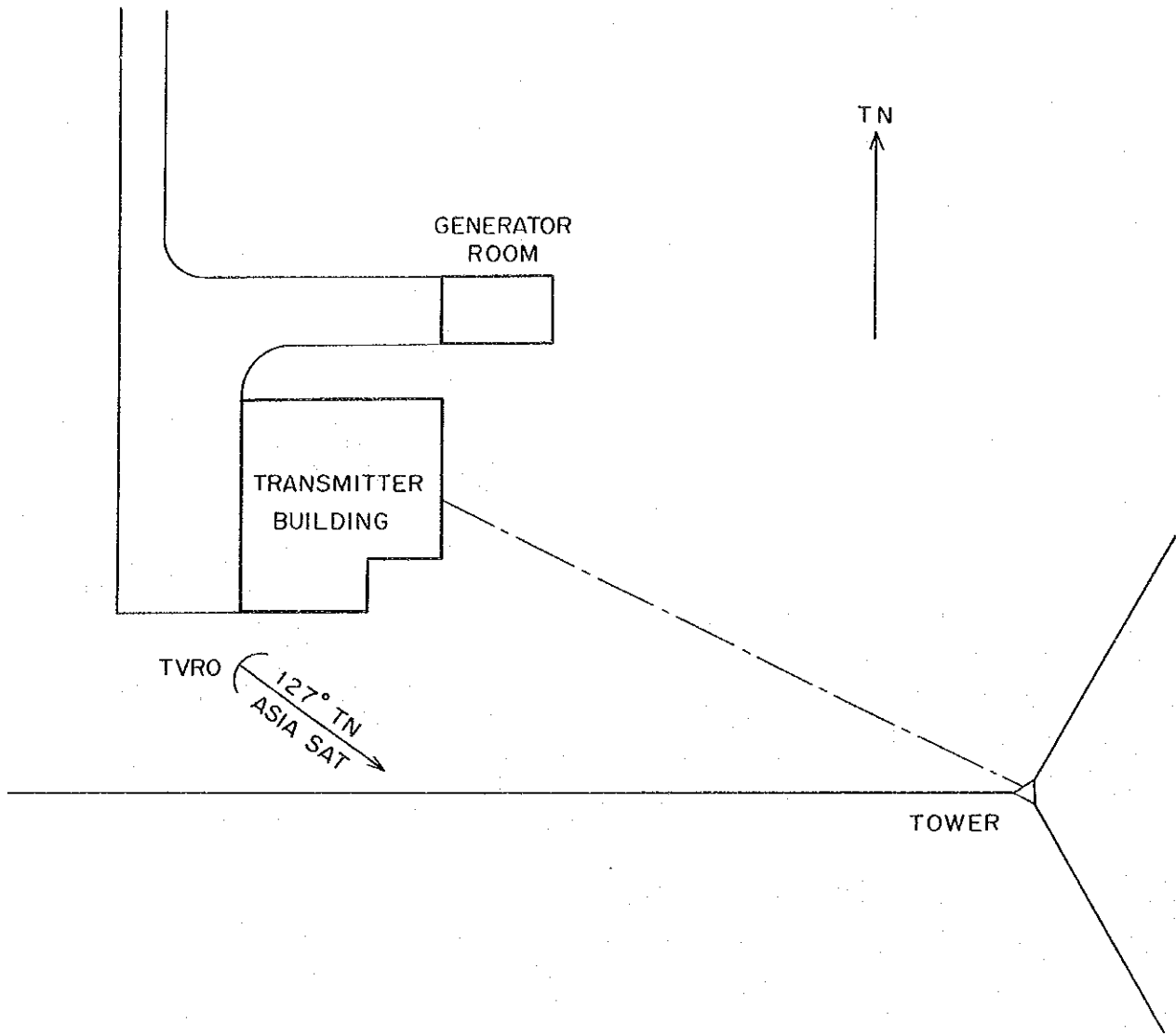
Scale: 1/300

FIG. 3-3-2 SITE LAYOUT OF RBS MINGORA



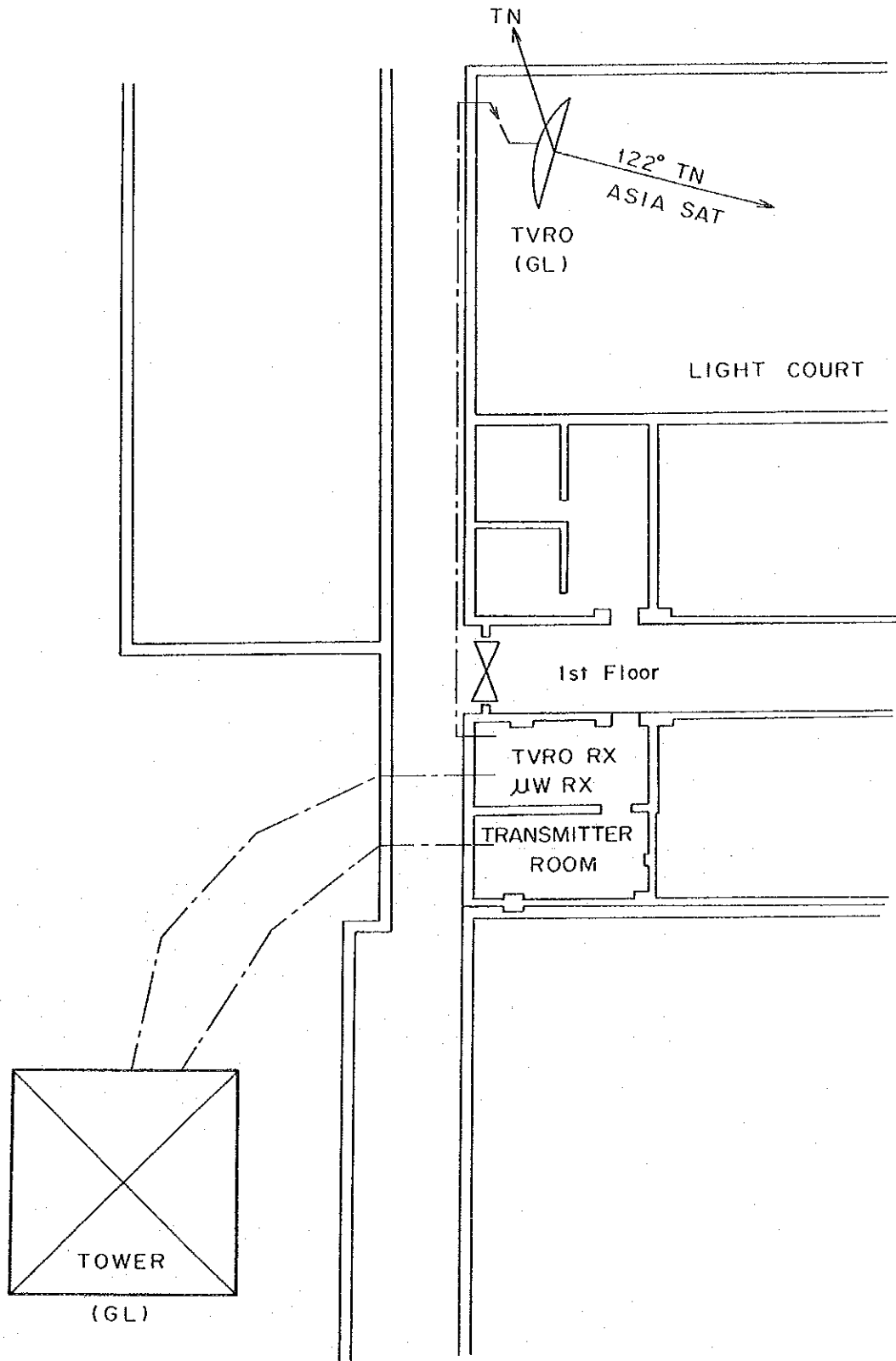
Scale: 1/300

FIG. 3-3-3 SITE LAYOUT OF RBS GULIBAGH



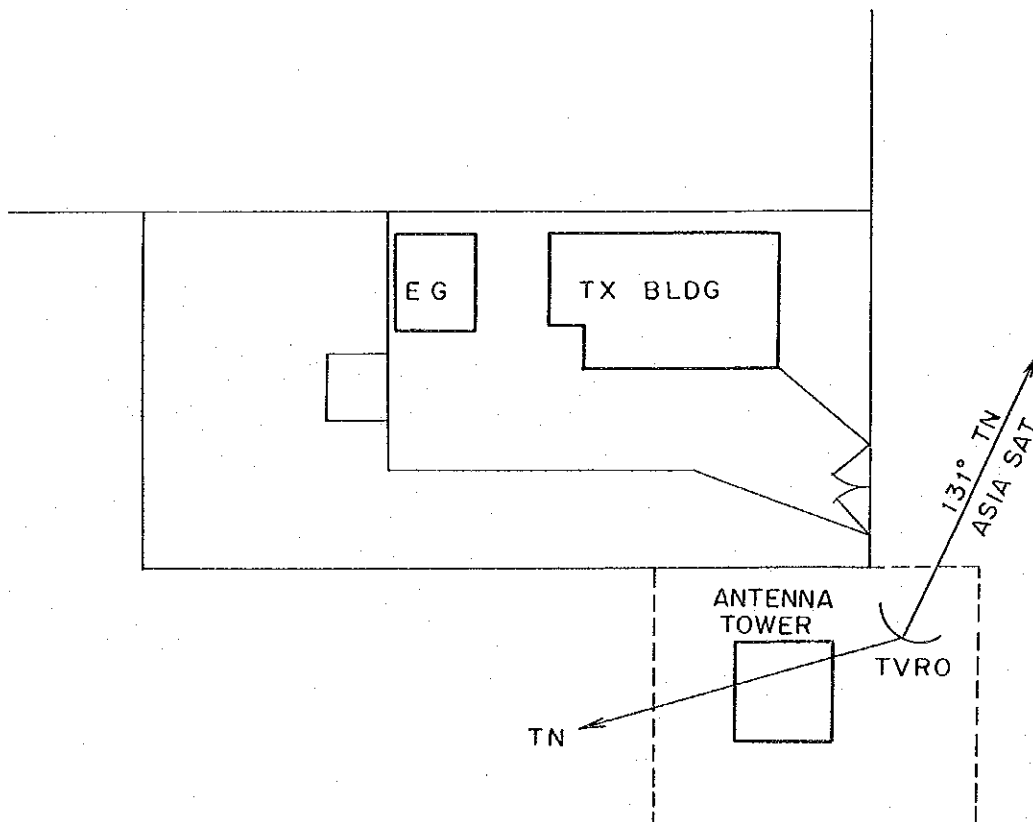
Scale: 1/400

FIG. 3-3-4 SITE LAYOUT OF RBS LAYYAH
 SITE LAYOUT OF RBS BAHAWALNAGAR
 SITE LAYOUT OF RBS MAILSI
 SITE LAYOUT OF RBS KHEWRA



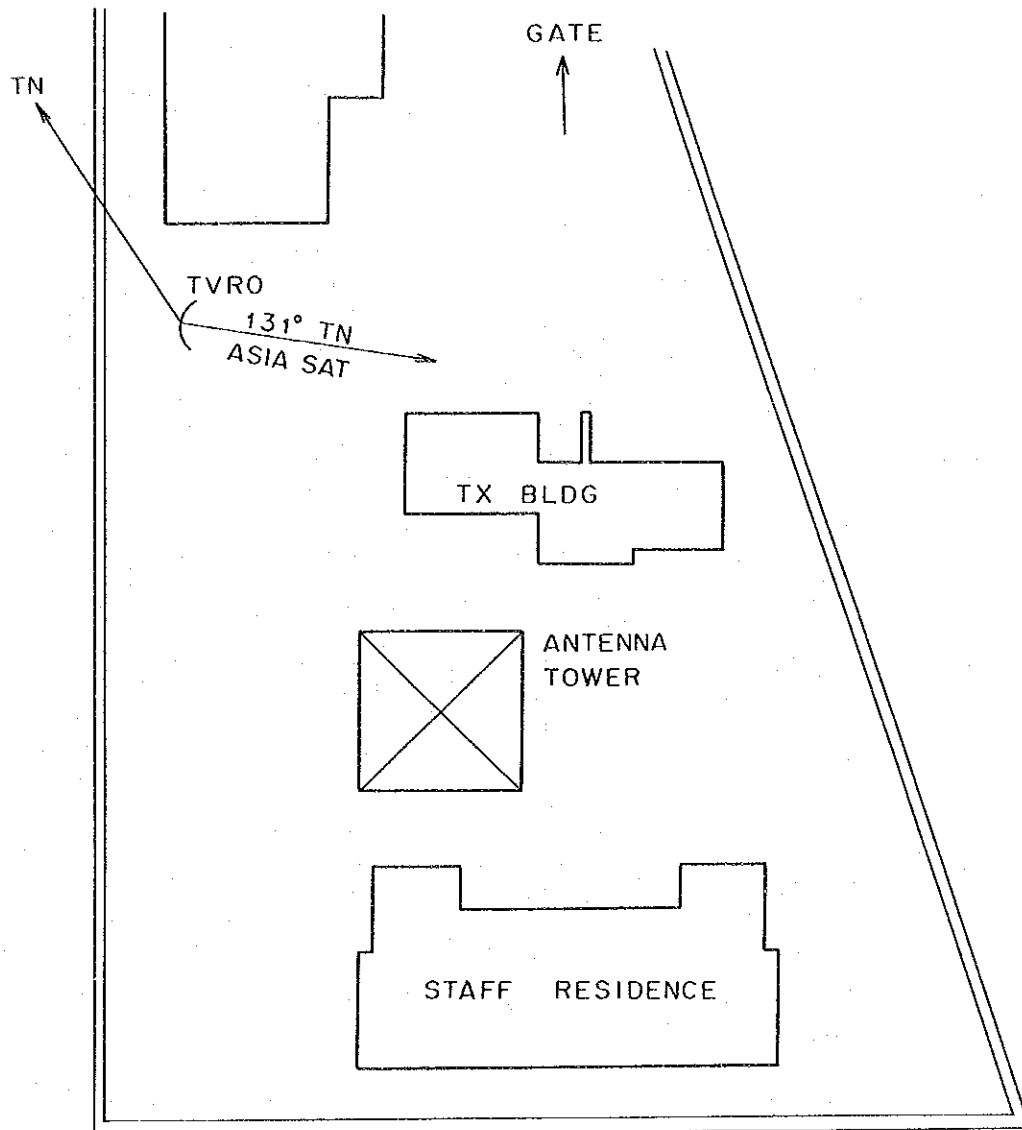
Scale : 1/200

FIG. 3-3-5 SITE LAYOUT OF TV TRANSMITTER IN TV CENTRE QUETTA



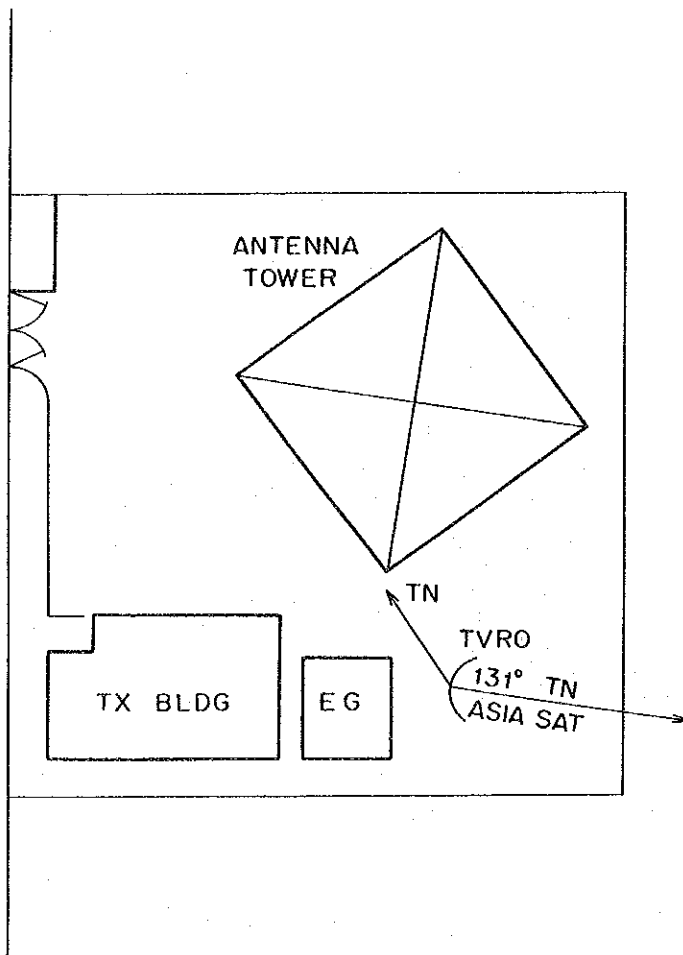
Scale: 1/300

FIG. 3-3-6 SITE LAYOUT OF RBS MORASAR



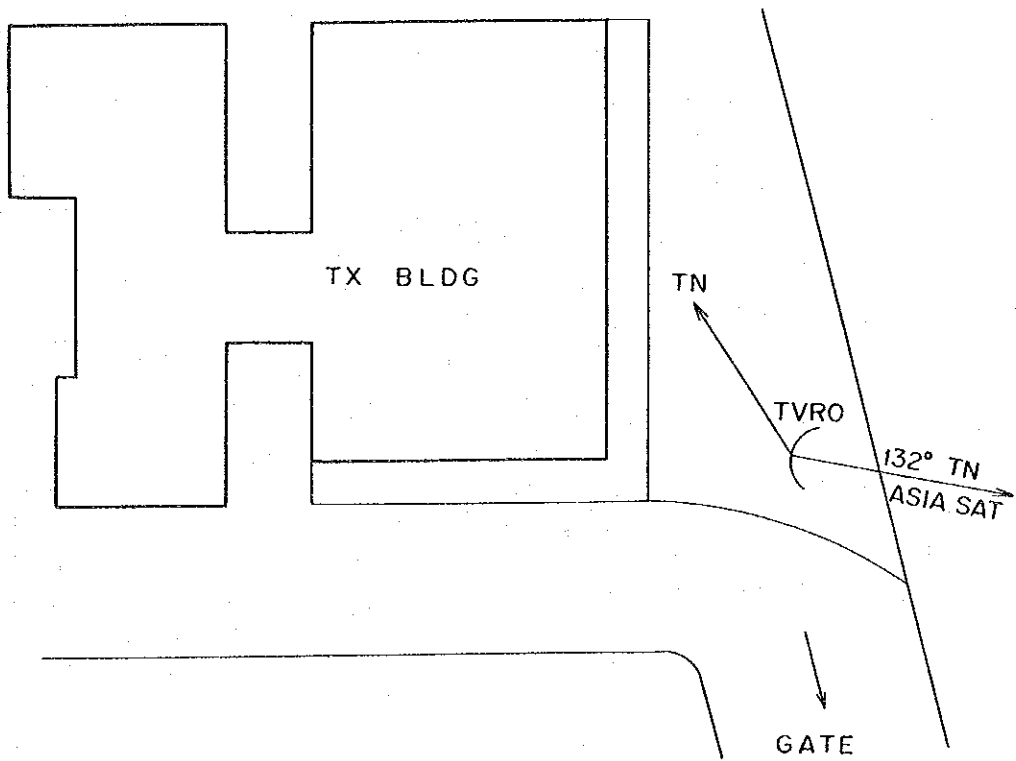
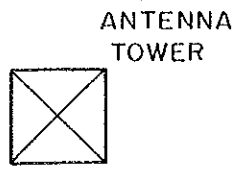
Scale: 1/300

FIG. 3-3-7 SITE LAYOUT OF RBS CHITRAL



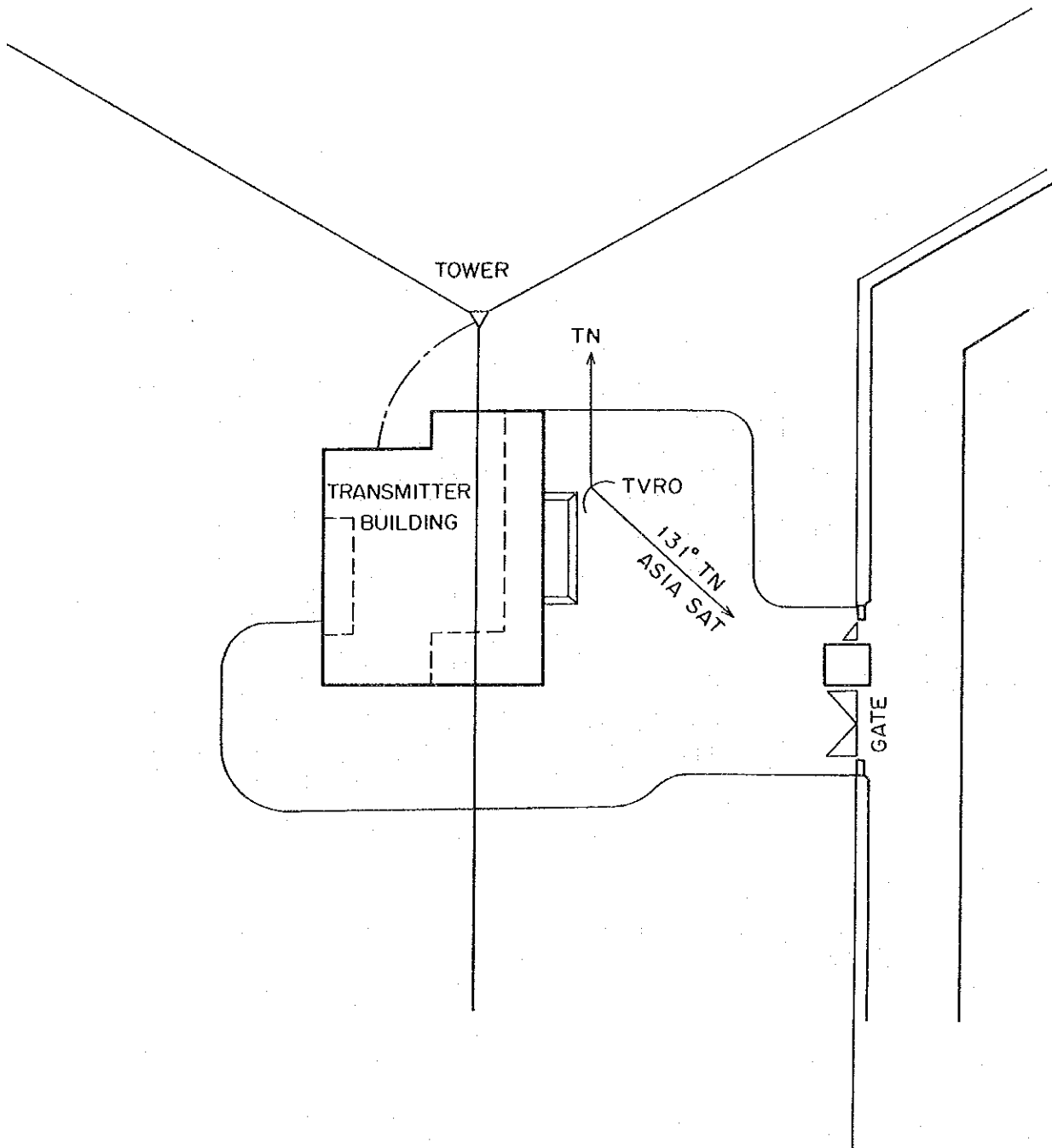
Scale: 1/300

FIG. 3-3-8 SITE LAYOUT OF RBS DIR



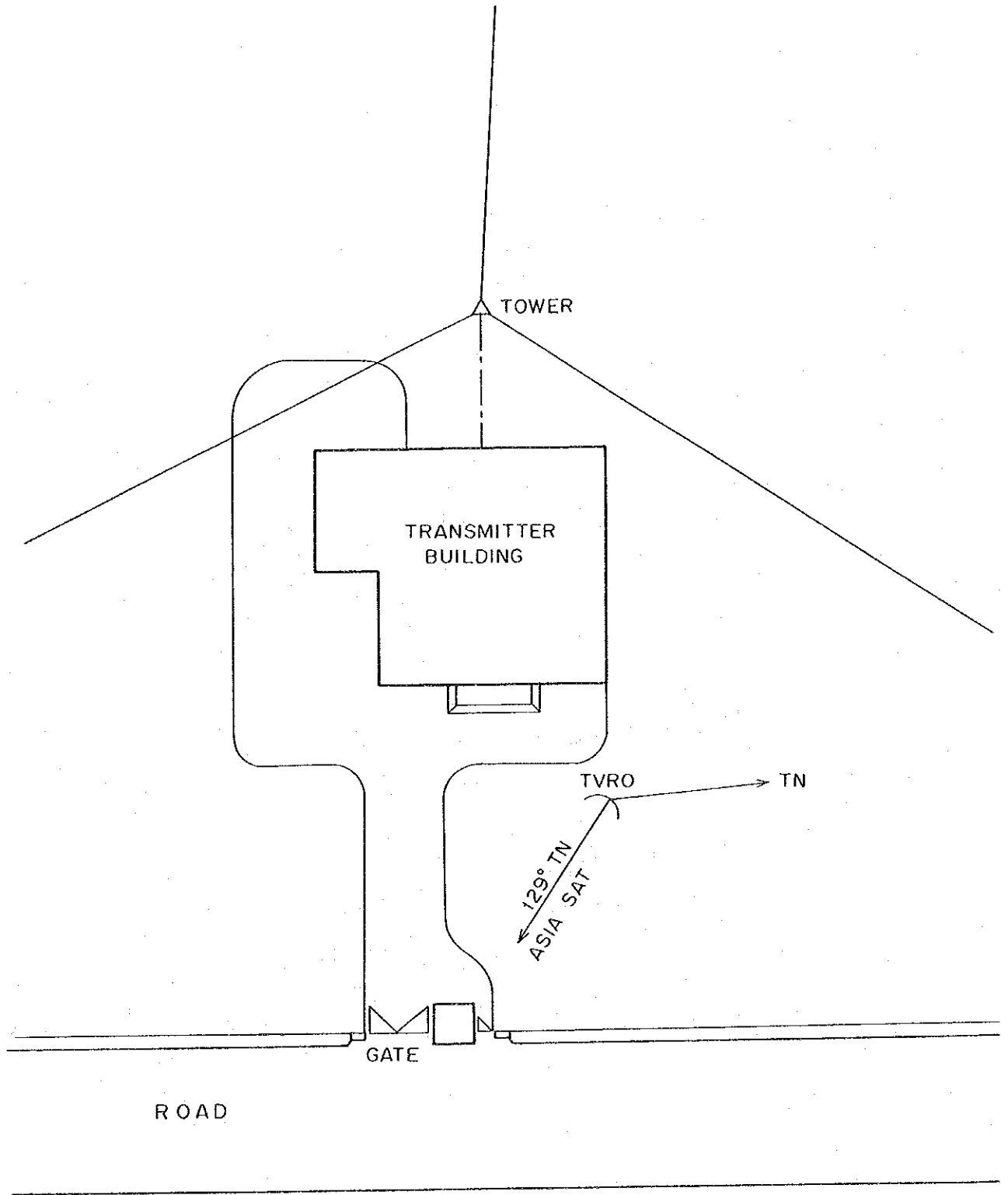
Scale : 1/300

FIG. 3-3-9 SITE LAYOUT OF RBS THANDIANI



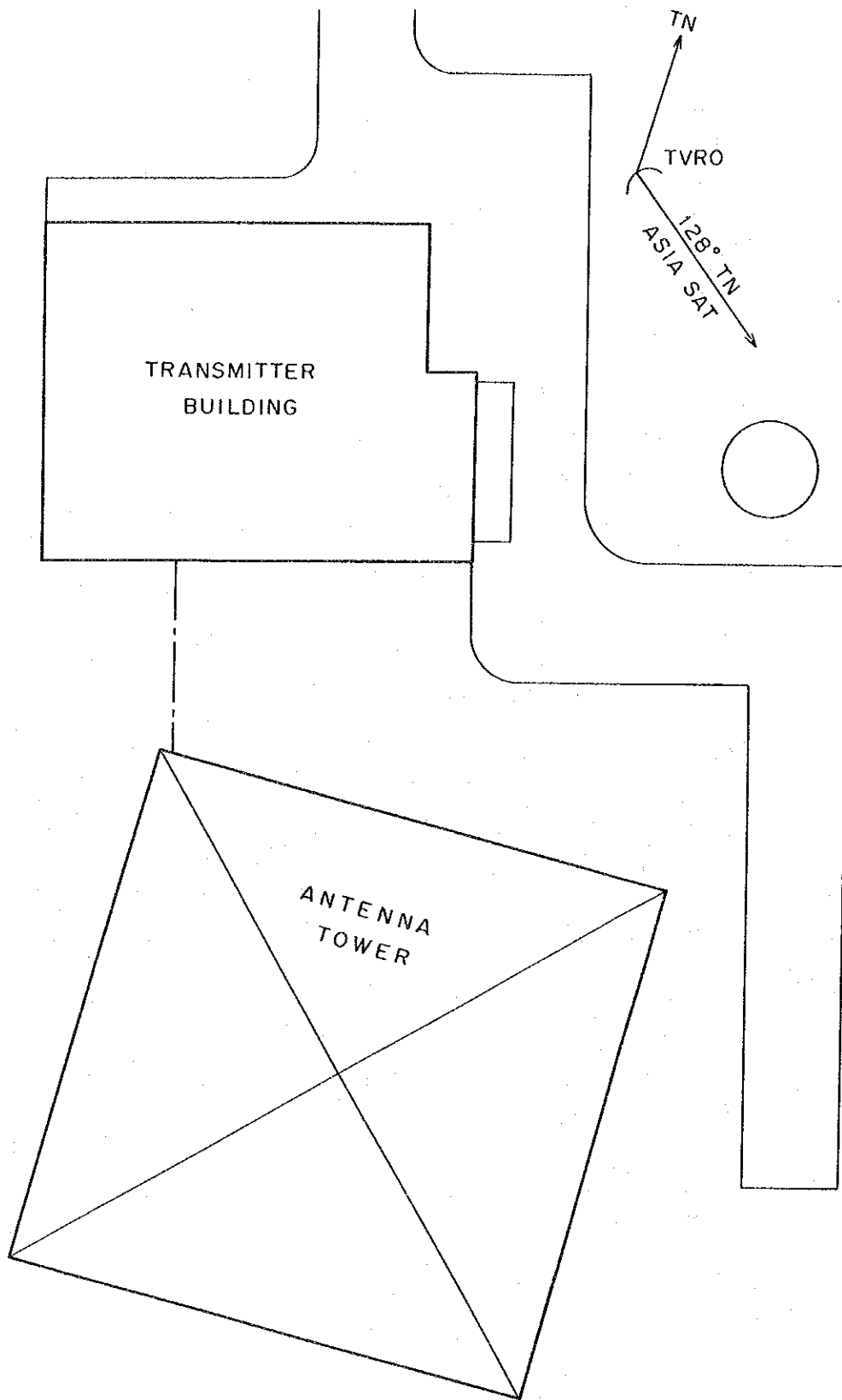
Scale: 1/400

FIG. 3-3-10 SITE LAYOUT OF RBS PASRUR



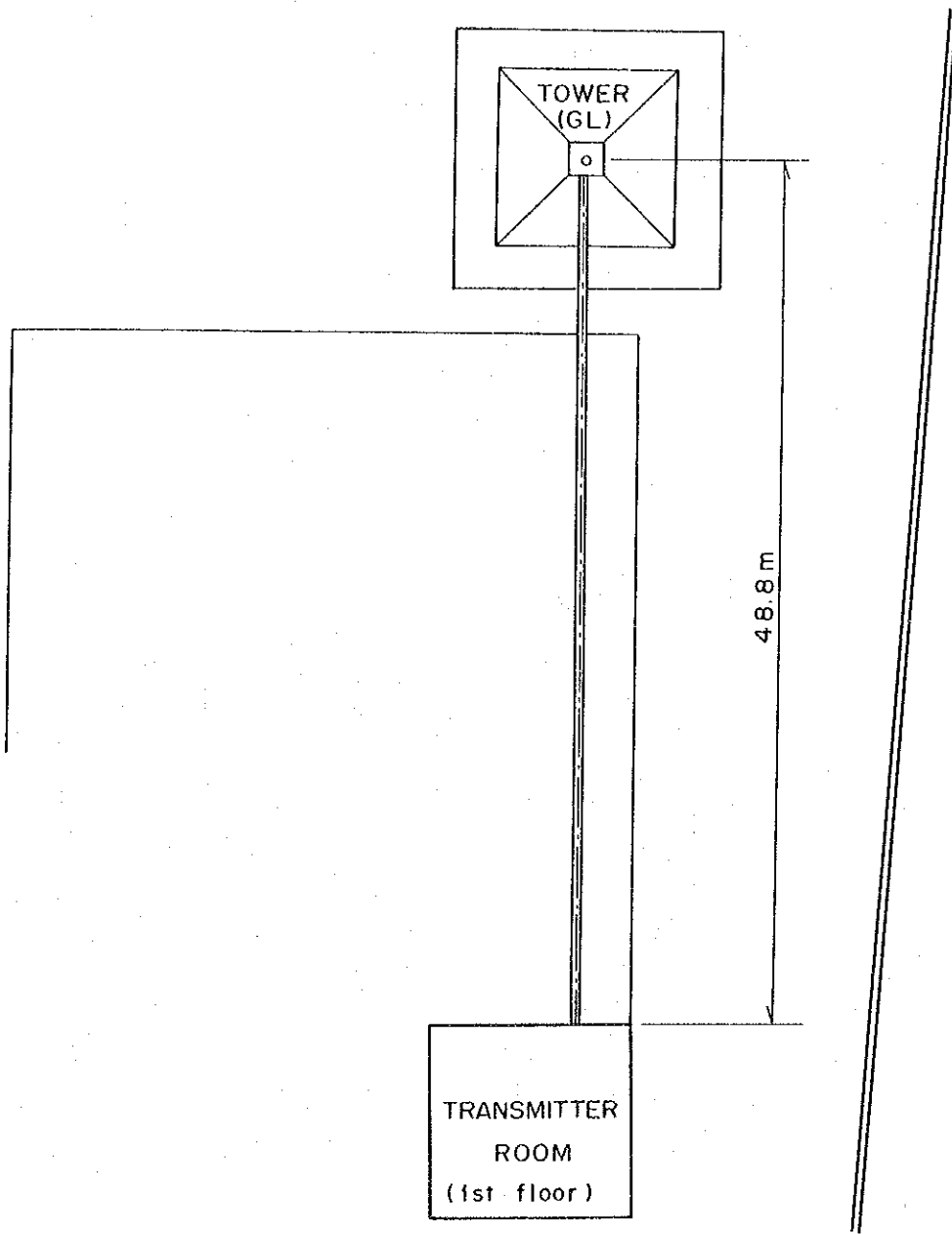
Scale: 1/400

FIG. 3-3-11 SITE LAYOUT OF RBS FAISALABAD



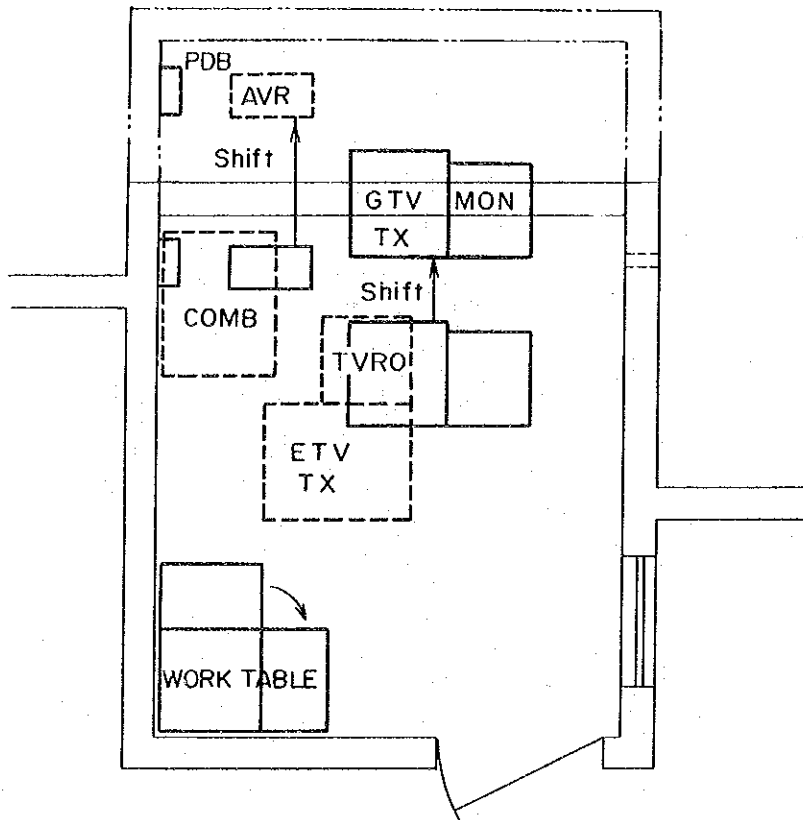
Scale : 1/400

FIG. 3-3-12 SITE LAYOUT OF RBS SAHIWAL



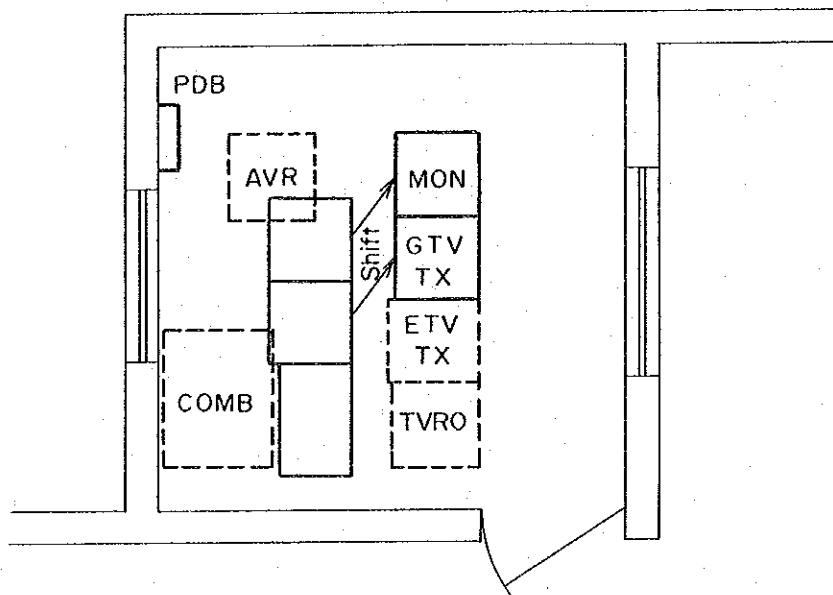
Scale : 1/400

FIG. 3-3-13 SITE LAYOUT OF TV TRANSMITTER
IN TV CENTRE KARACHI



Scale : 1/50

FIG. 3-3-14 EQUIPMENT LAYOUT OF RBS MINGORA



Scale: 1/50

FIG. 3-3-15 EQUIPMENT LAYOUT OF RBS GULIBAGH

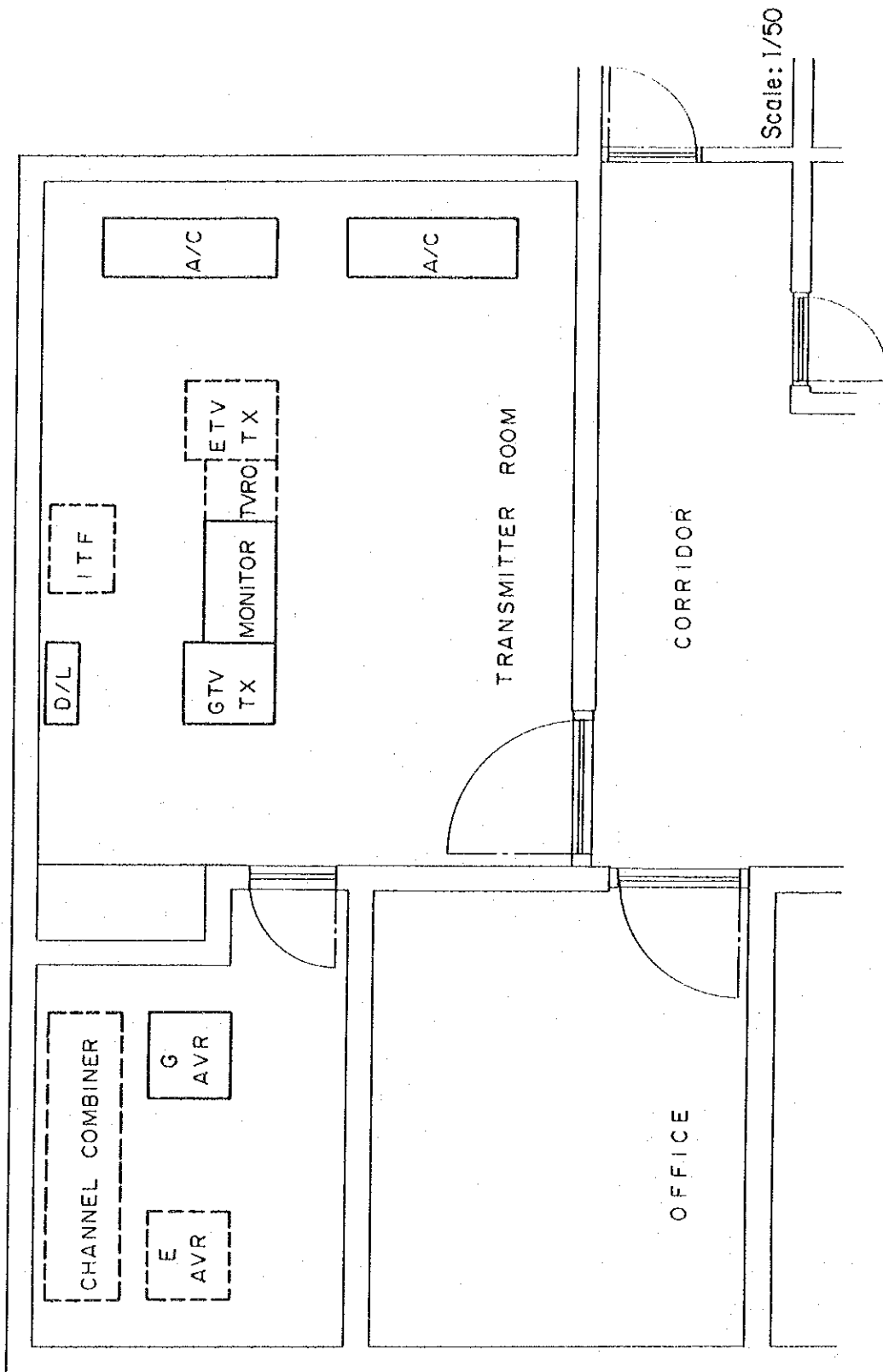


FIG. 3-3-16 EQUIPMENT LAYOUT OF RBS BAHAWALNAGAR
EQUIPMENT LAYOUT OF RBS LAY YAH

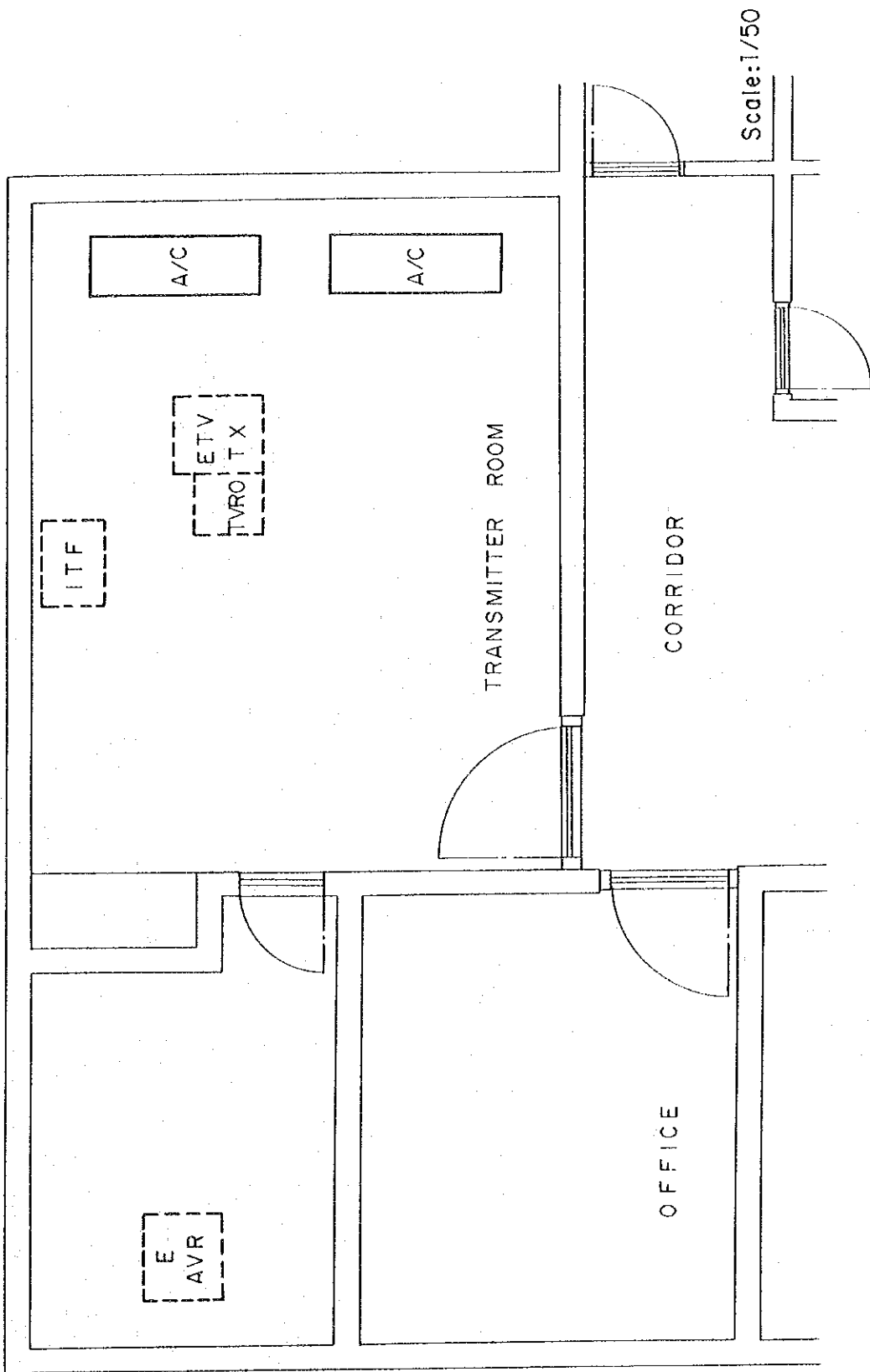
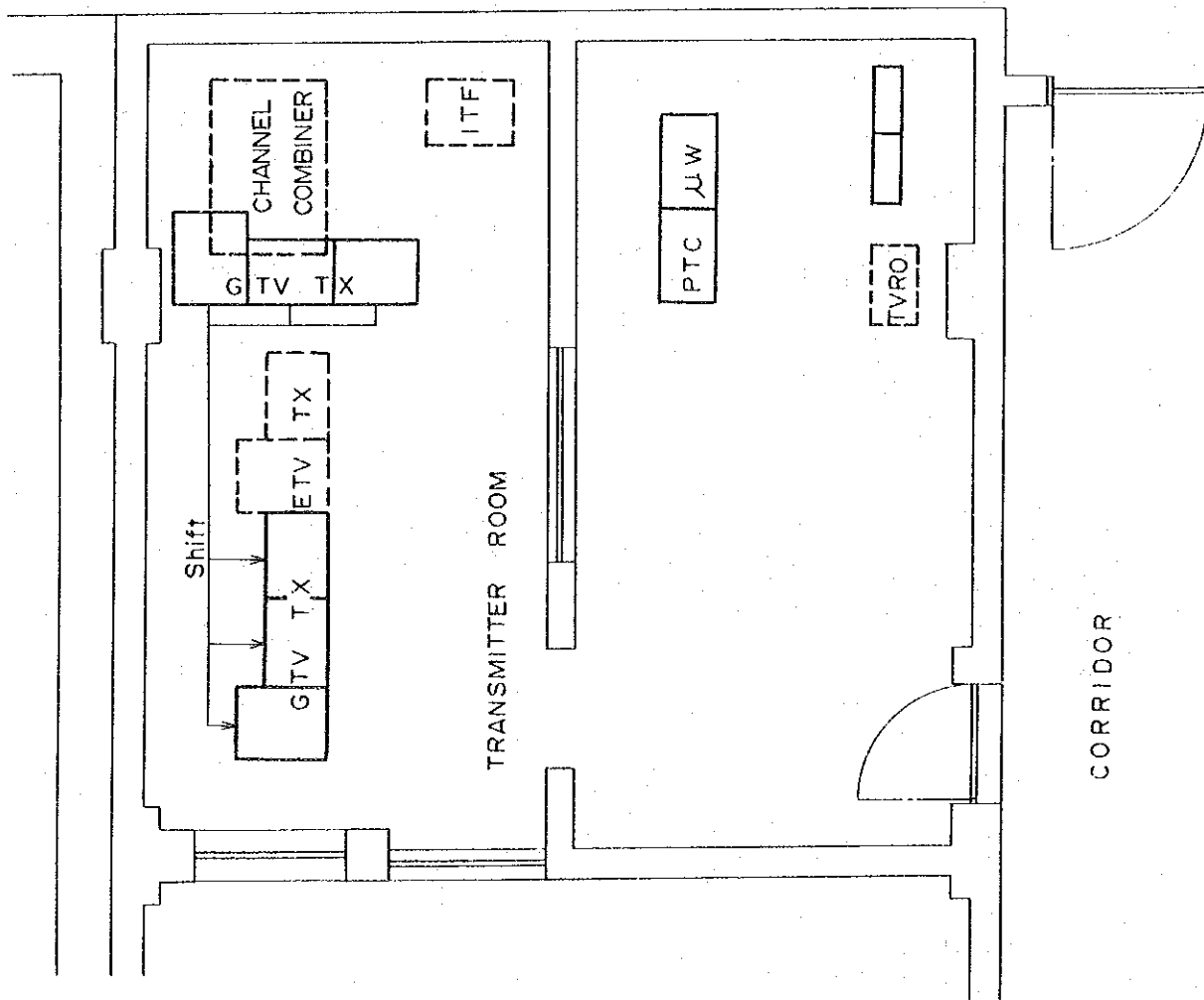
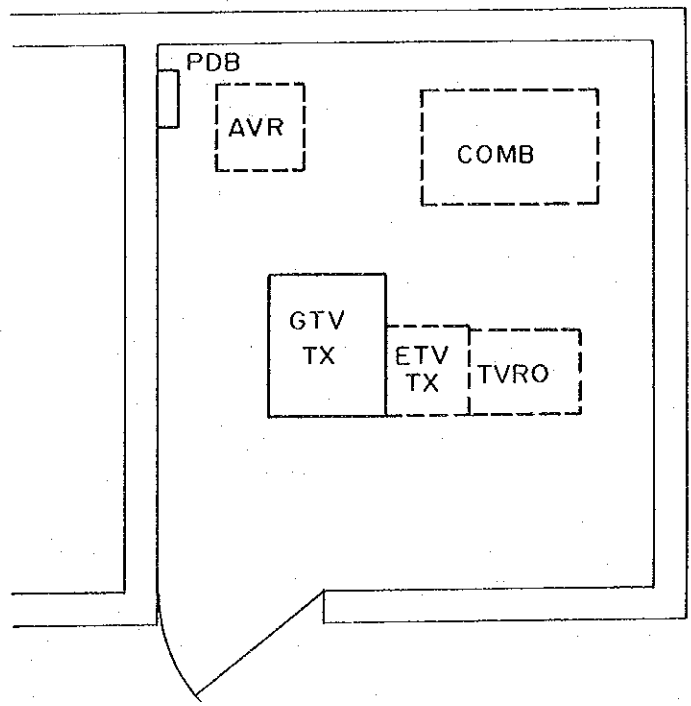


FIG. 3-3-17 EQUIPMENT LAYOUT OF RBS MAILSI
EQUIPMENT LAYOUT OF RBS KHEWRA



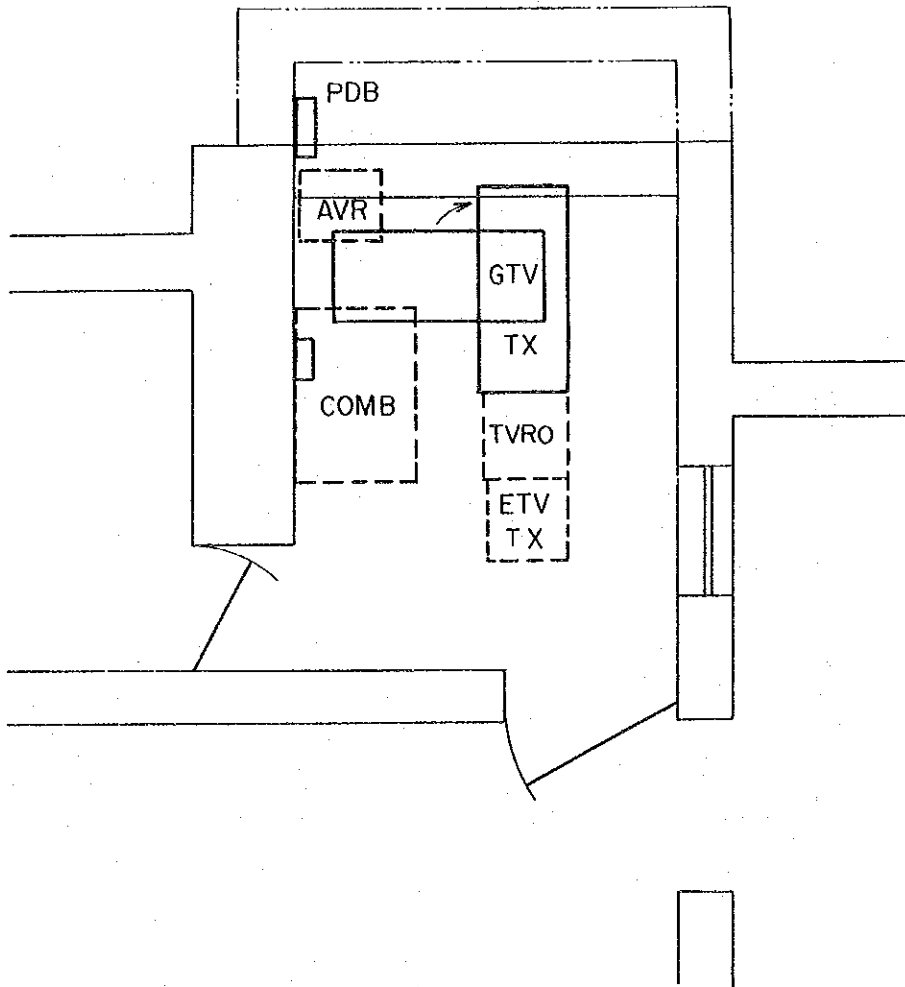
Scale: 1/50

FIG. 3-3-18 EQUIPMENT LAYOUT OF QUETTA TV TRANSMITTER



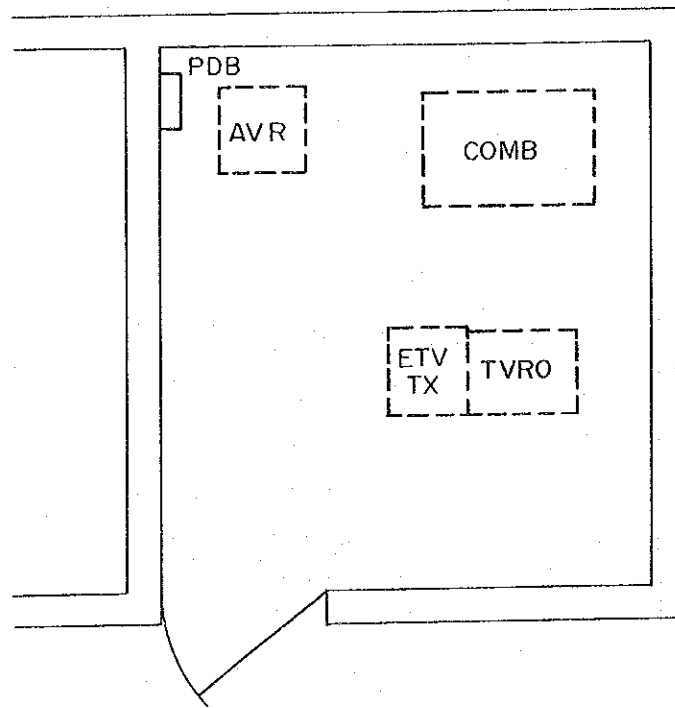
Scale: 1/50

FIG. 3-3-19 EQUIPMENT LAYOUT OF RBS MORASAR



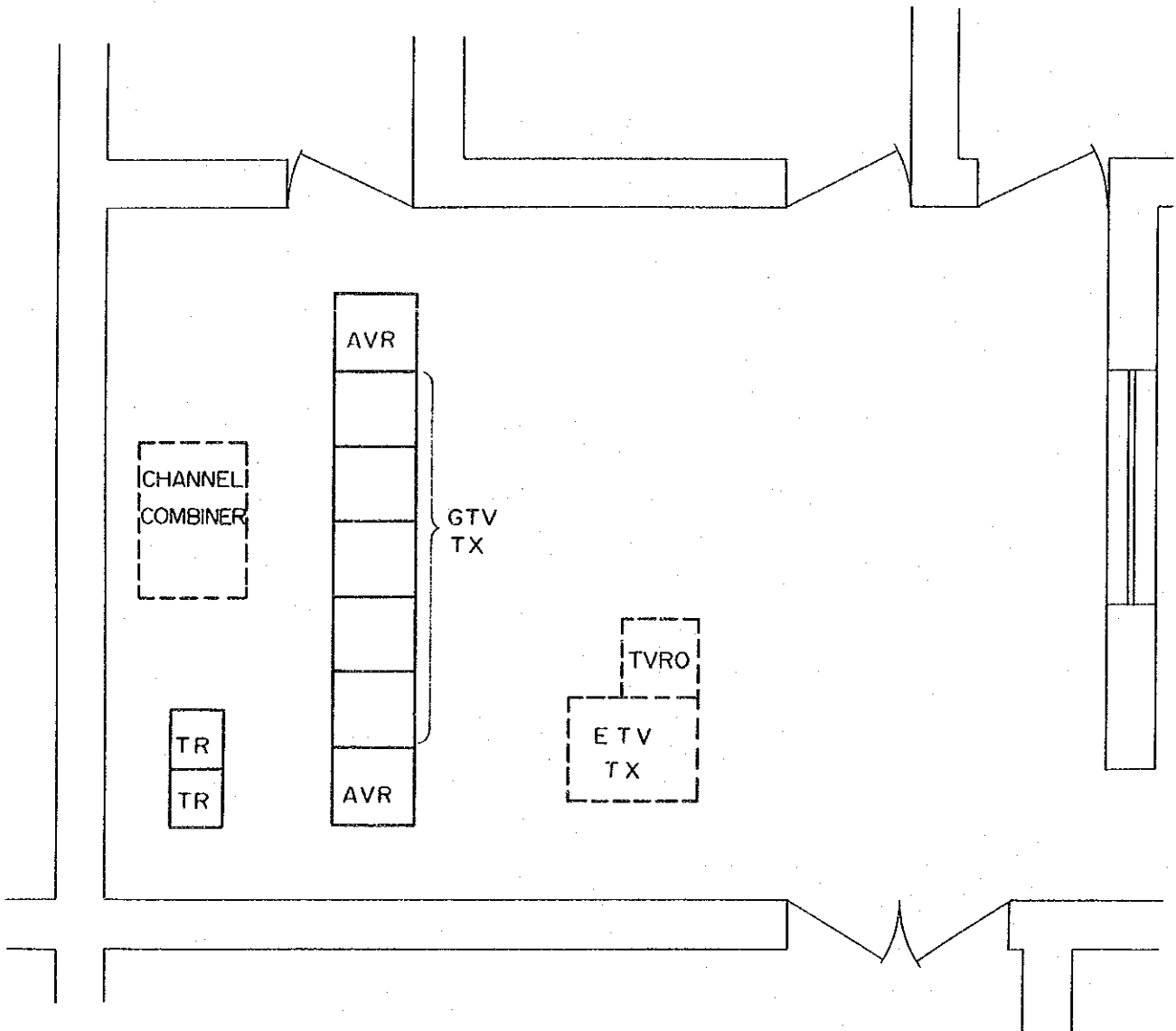
Scale: 1/50

FIG. 3-3-20 EQUIPMENT LAYOUT OF RBS CHITRAL



Scale: 1/50

FIG. 3-3-21. EQUIPMENT LAYOUT OF RBS DIR



Scale : 1/50

FIG. 3-3-22 EQUIPMENT LAYOUT OF RBS THANDIANI

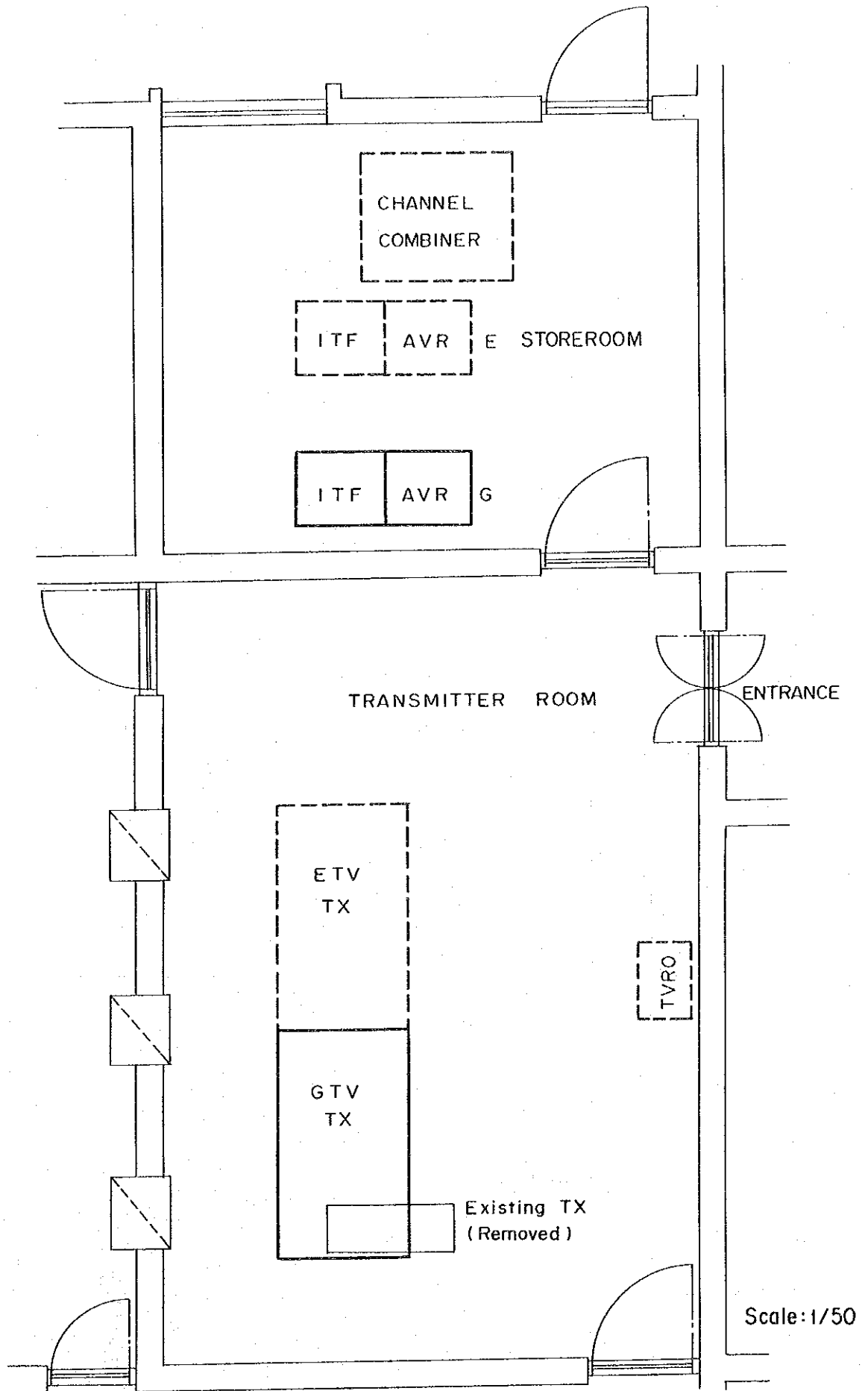
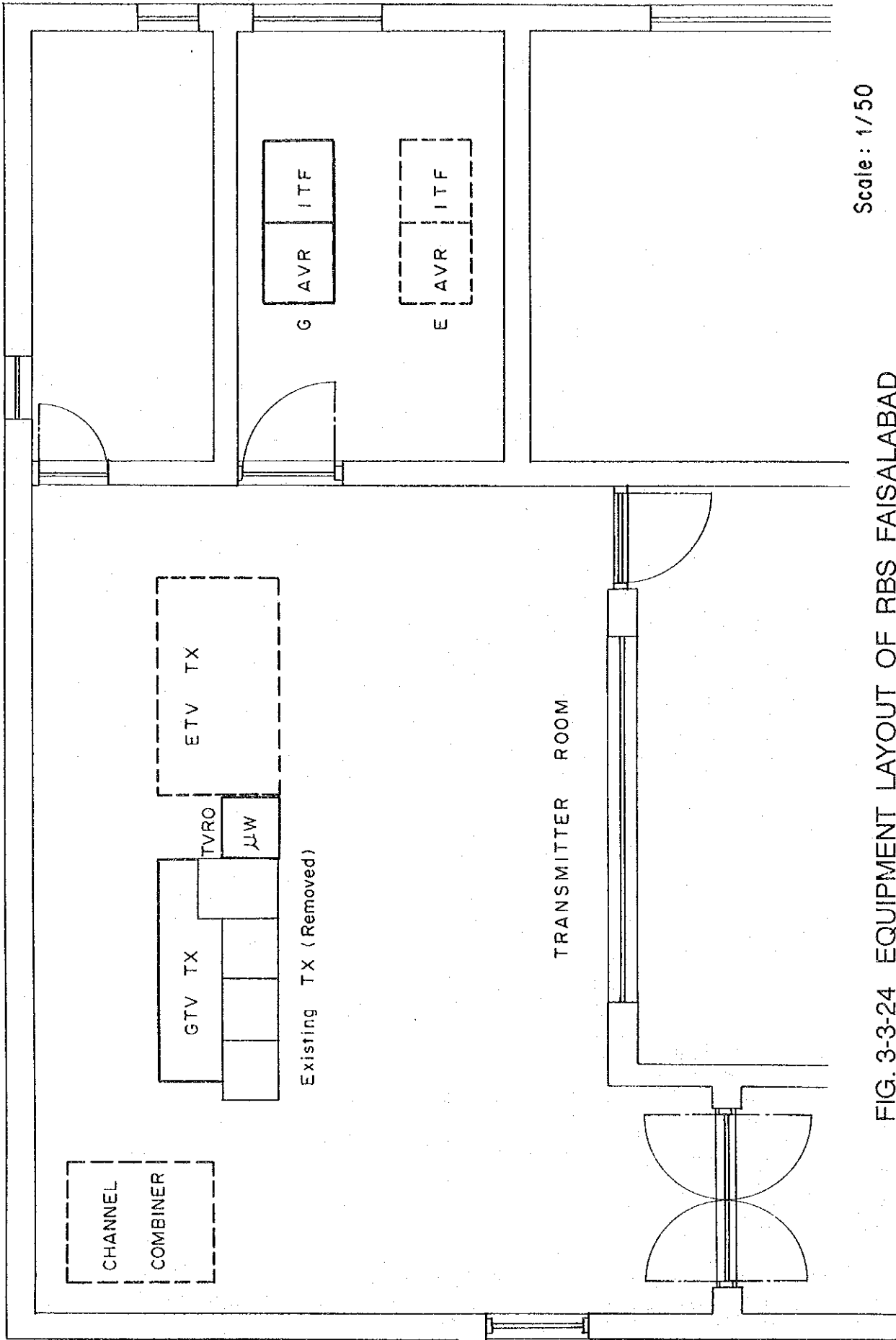
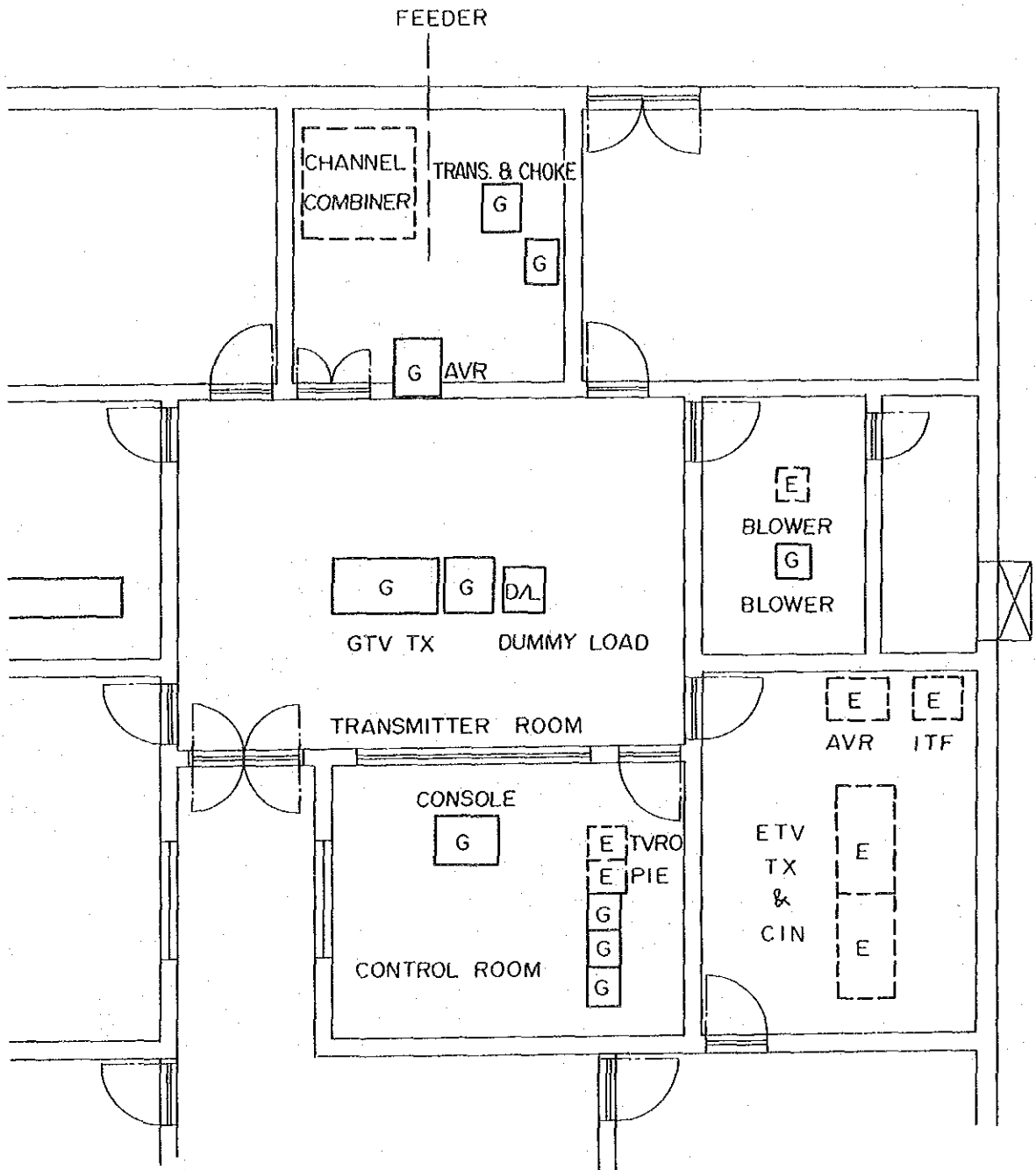


FIG. 3-3-23 EQUIPMENT LAYOUT OF RBS PASRUR



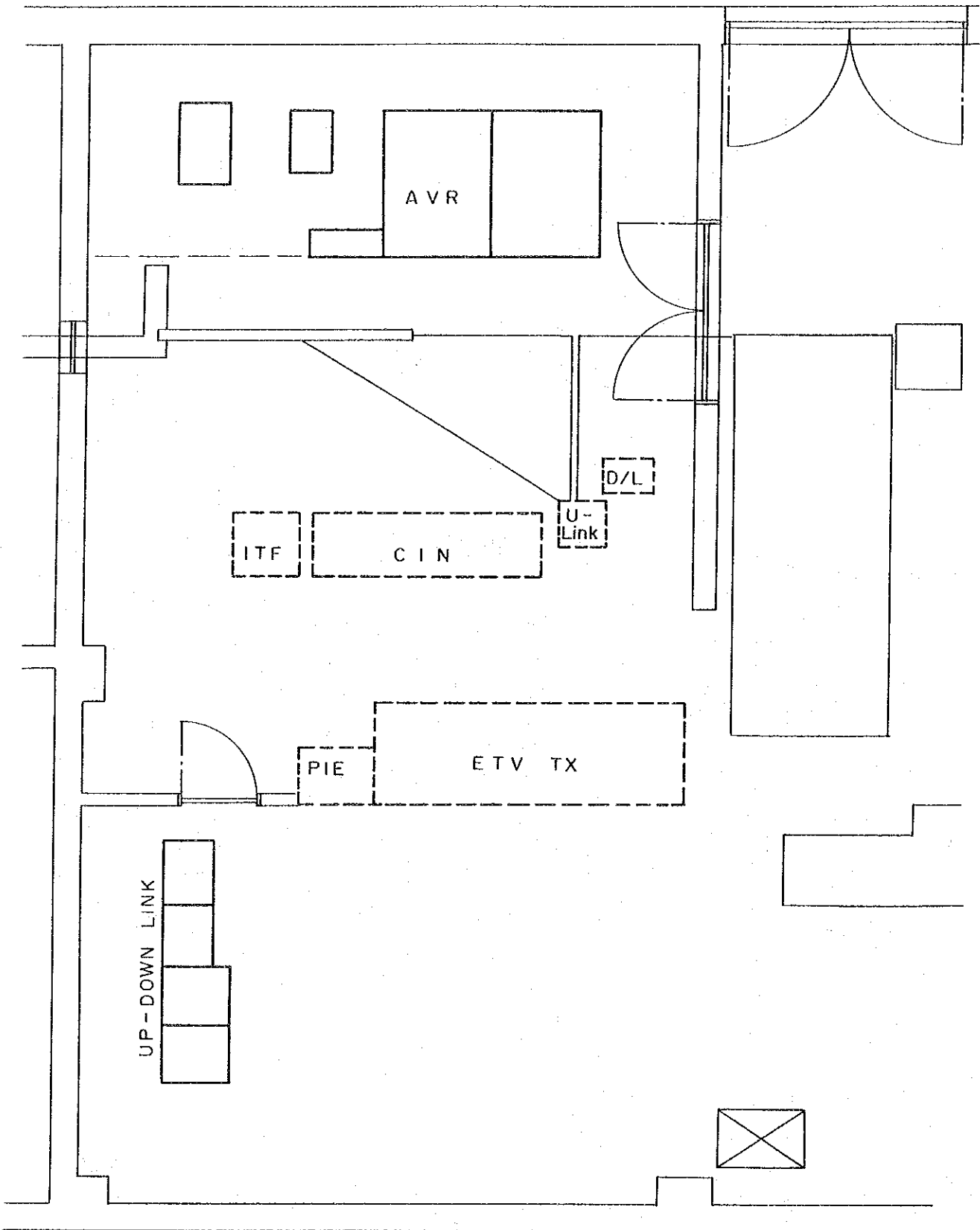
Scale: 1/50

FIG. 3-3-24 EQUIPMENT LAYOUT OF RBS FAISALABAD



Scale: 1/100

FIG. 3-3-25 EQUIPMENT LAYOUT OF RBS SAHIWAL



Scale: 1/50

FIG. 3-3-26 EQUIPMENT LAYOUT OF KARACHI TV TRANSMITTER

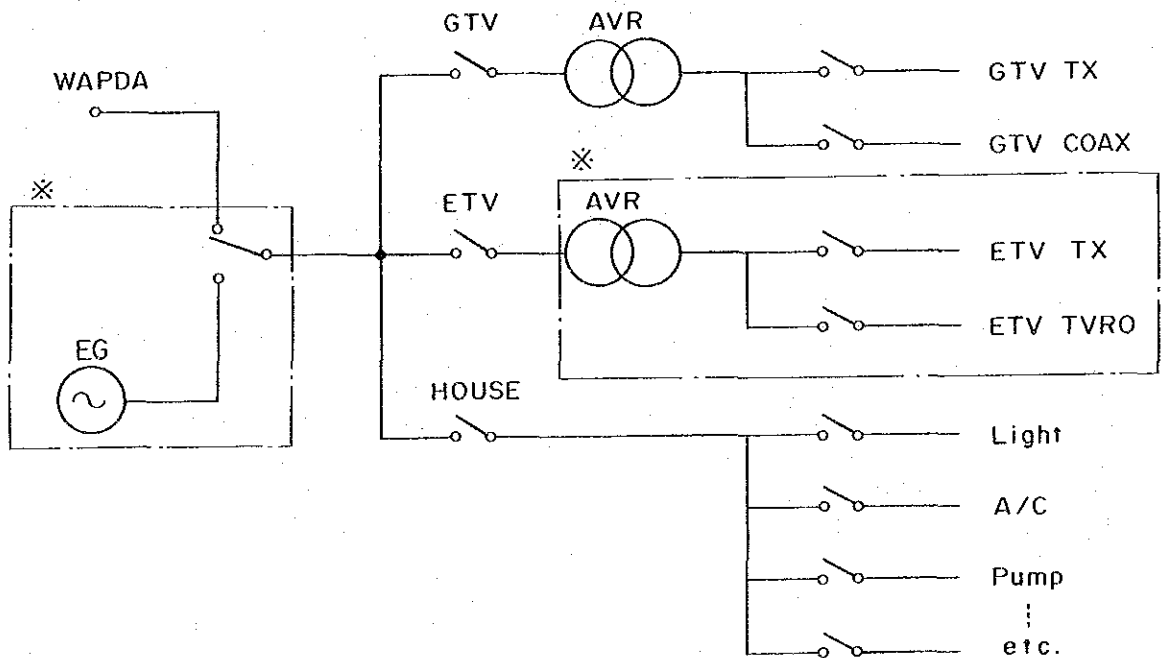
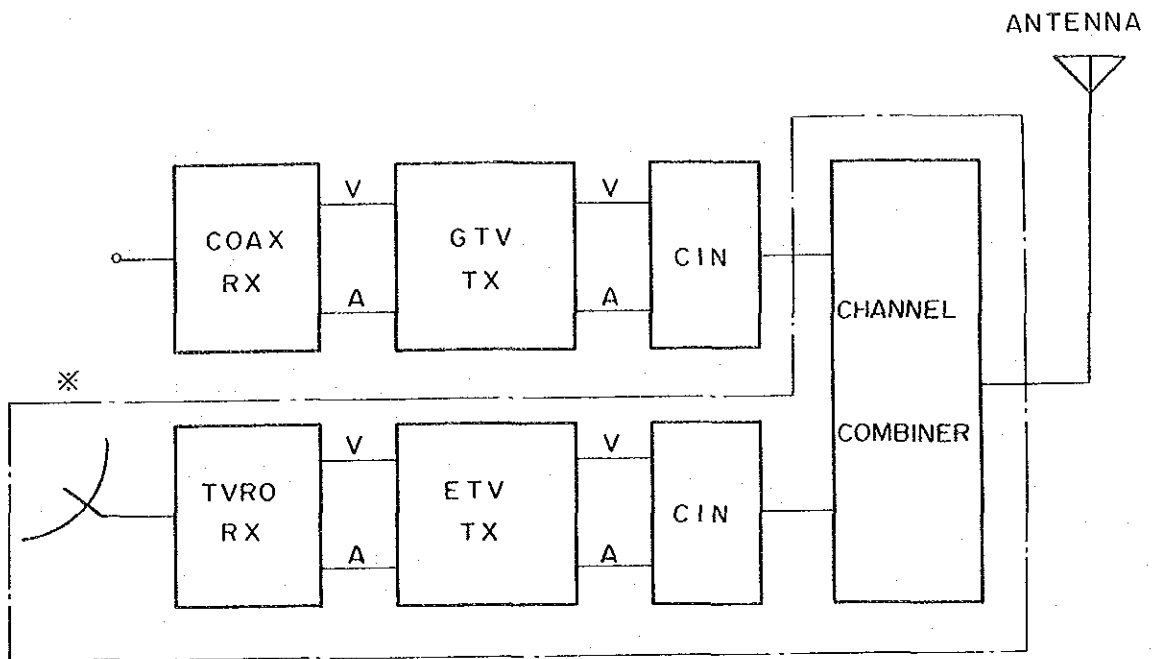


FIG. 3-3-27 SYSTEM DIAGRAM OF RBS MINGORA
SYSTEM DIAGRAM OF RBS CHITRAL

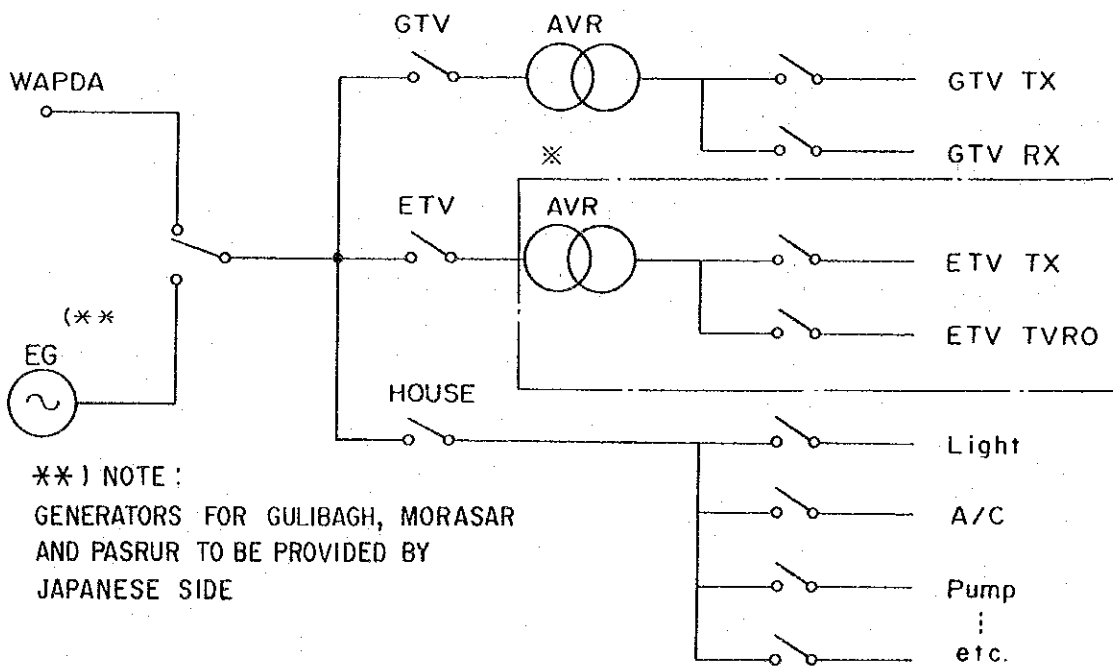
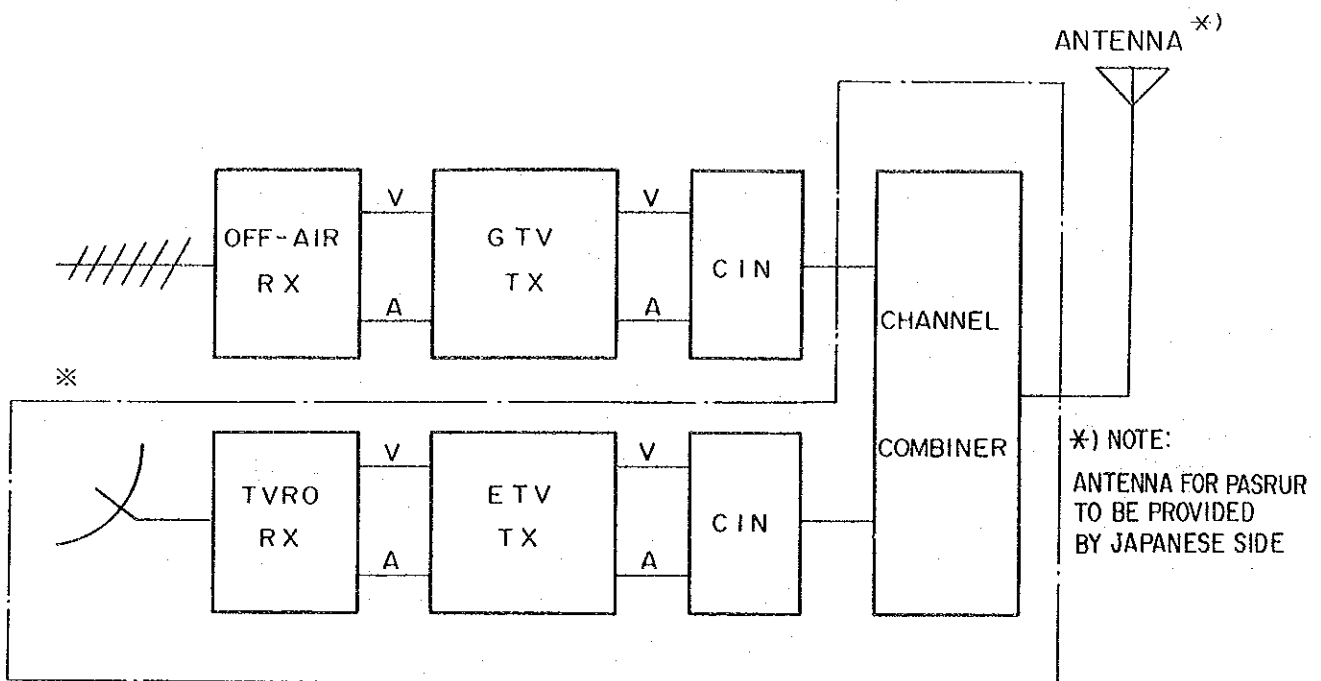


FIG. 3-3-28 SYSTEM DIAGRAM OF RBS GULIBAGH
SYSTEM DIAGRAM OF RBS MORASAR
SYSTEM DIAGRAM OF RBS THANDIANI
SYSTEM DIAGRAM OF RBS PASRUR

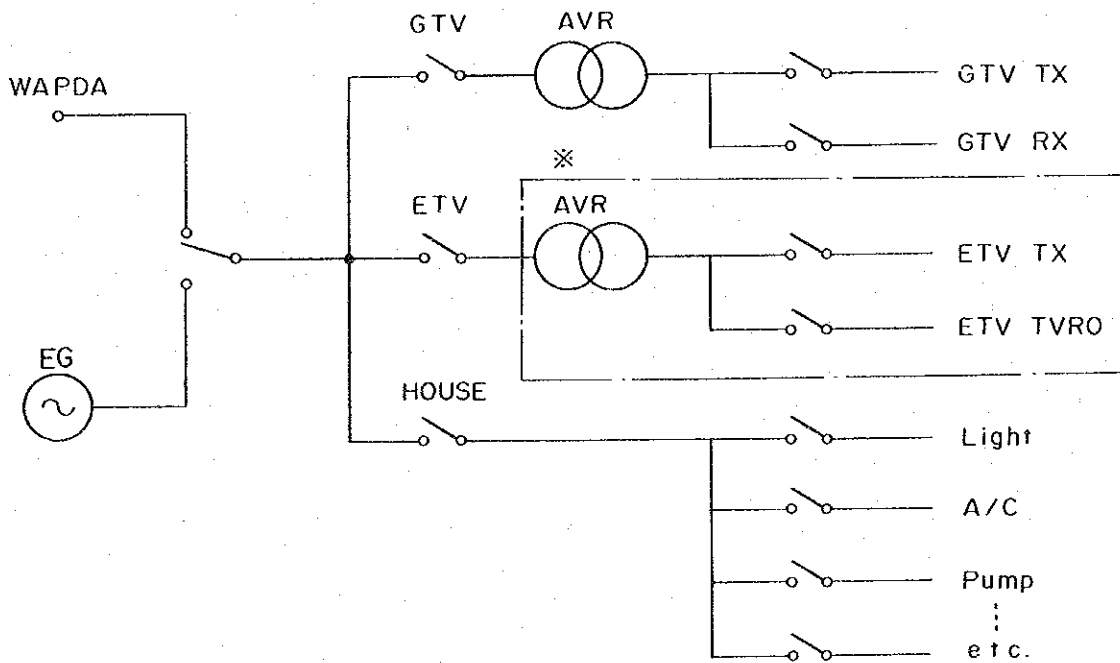
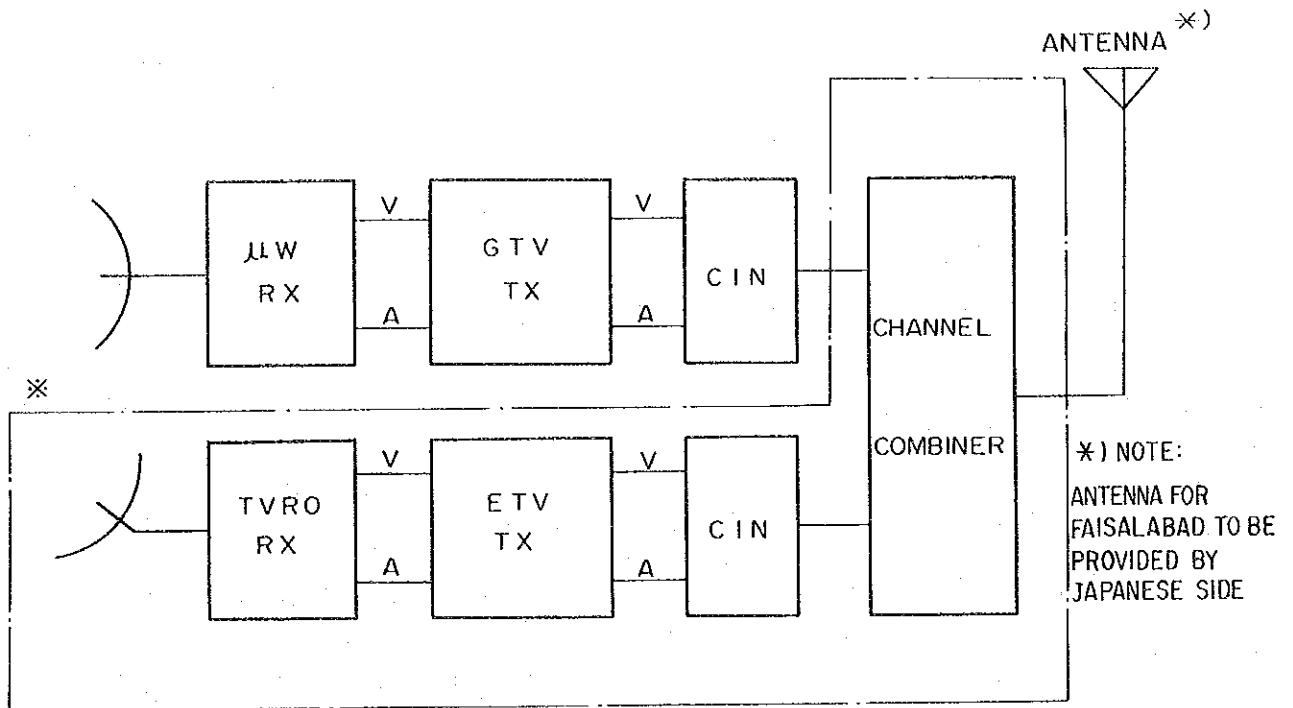


FIG. 3-3-29 SYSTEM DIAGRAM OF RBS LAYYAH
 SYSTEM DIAGRAM OF QUETTA TV TRANSMITTER
 SYSTEM DIAGRAM OF RBS FAISALABAD
 SYSTEM DIAGRAM OF RBS BAHAWALNAGAR

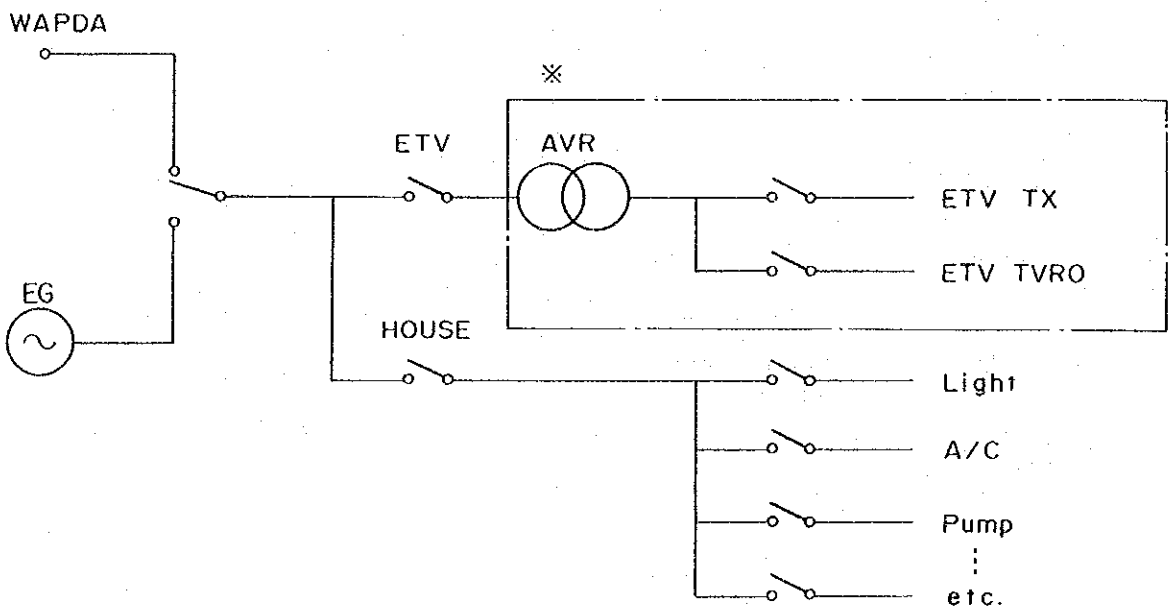
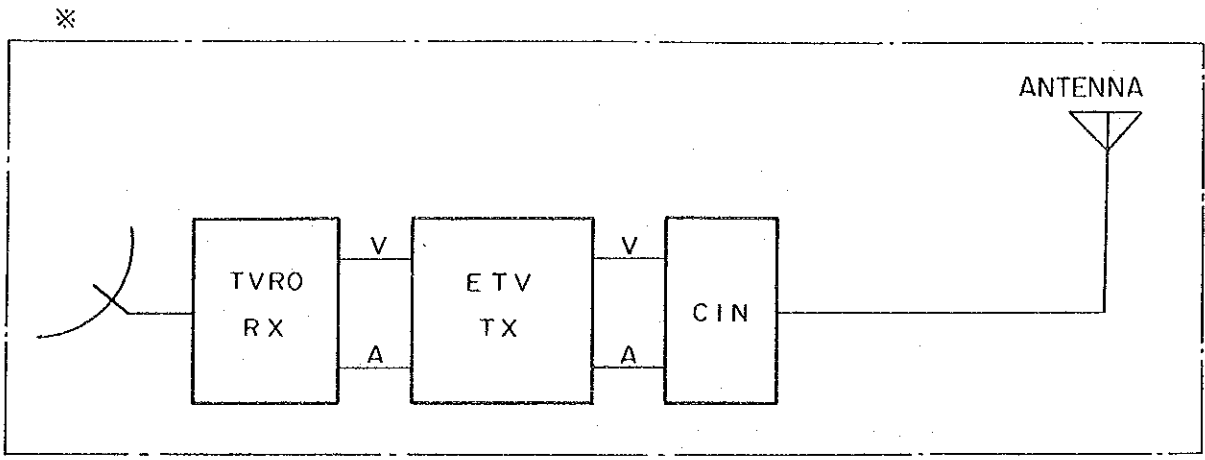


FIG. 3-3-30 SYSTEM DIAGRAM OF RBS DIR
 SYSTEM DIAGRAM OF RBS MAILSI
 SYSTEM DIAGRAM OF RBS KHEWRA

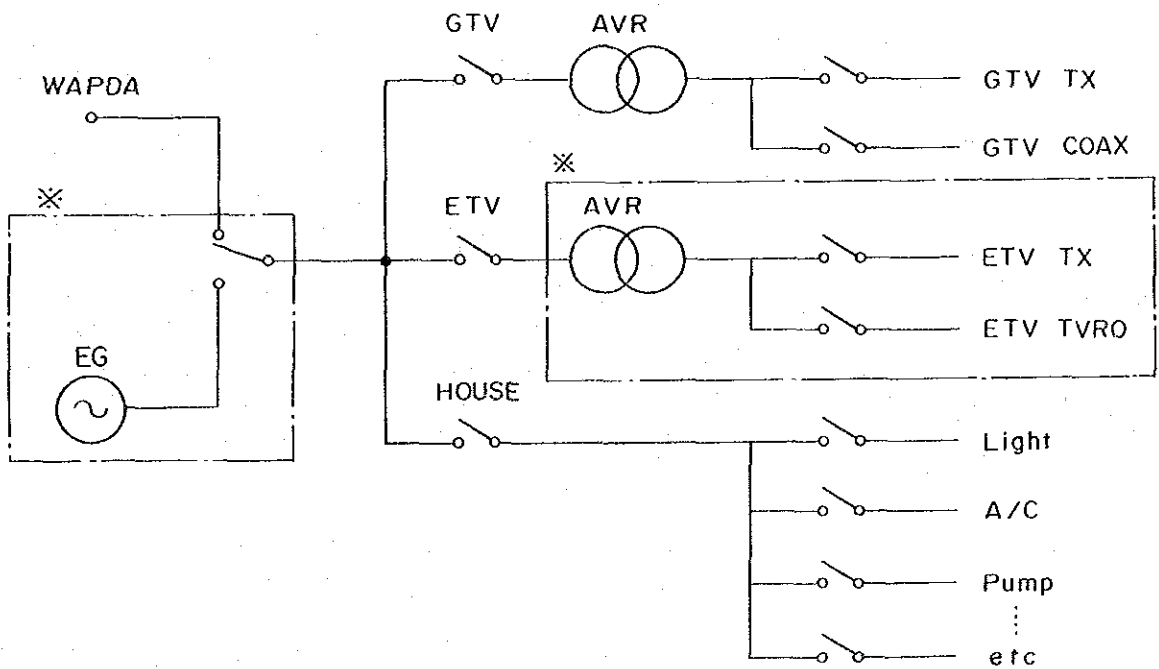
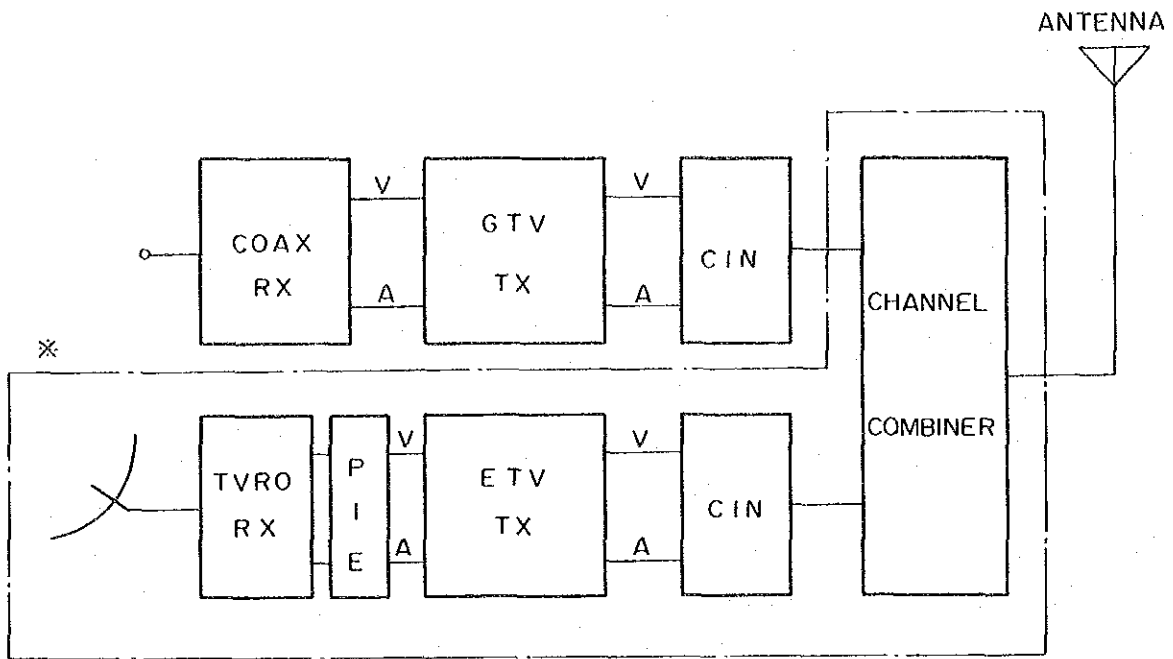


FIG. 3-3-31 SYSTEM DIAGRAM OF RBS SAHIWAL

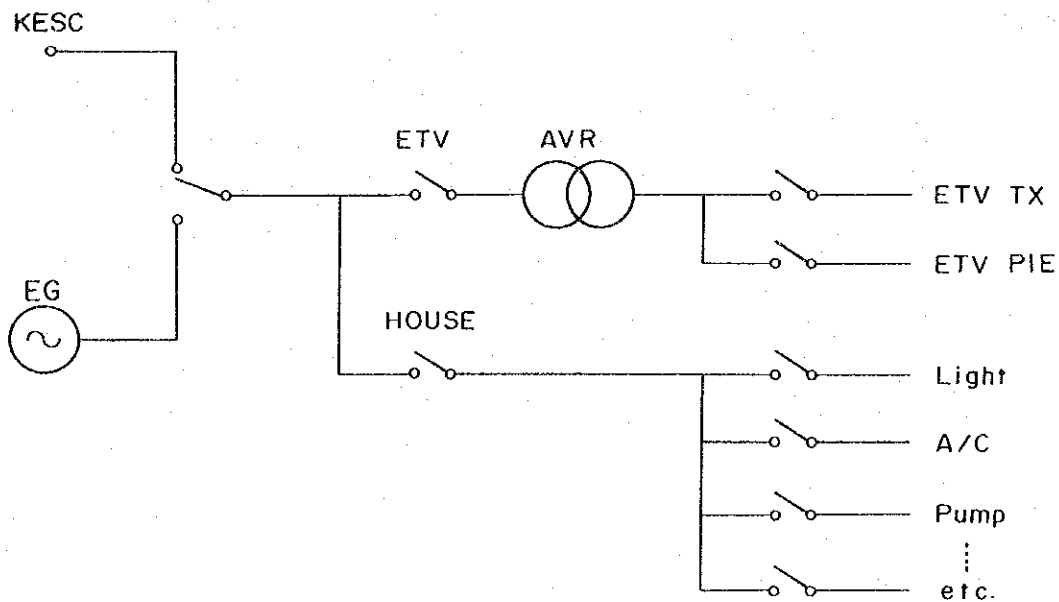
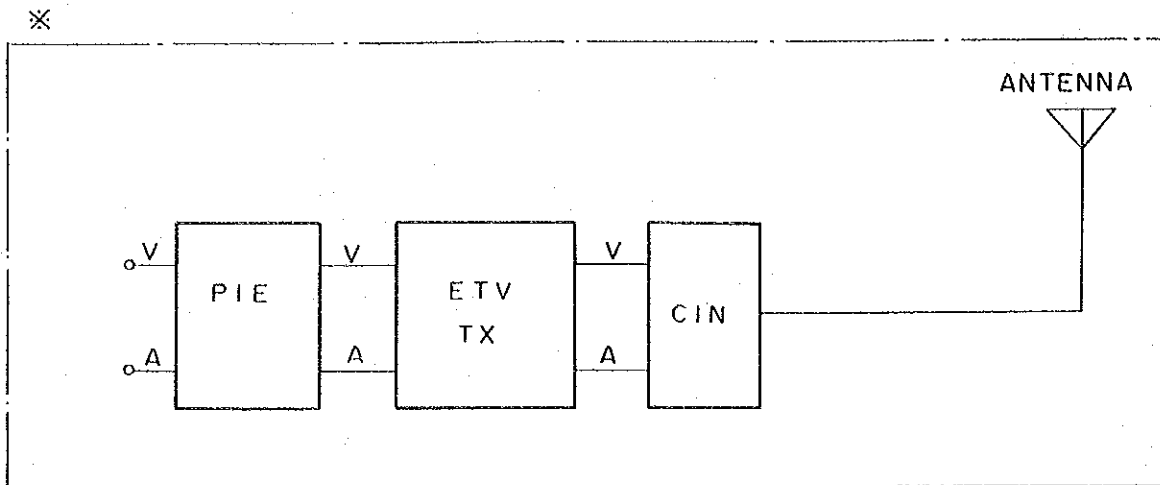


FIG. 3-3-32 SYSTEM DIAGRAM OF KARACHI TV TRANSMITTER

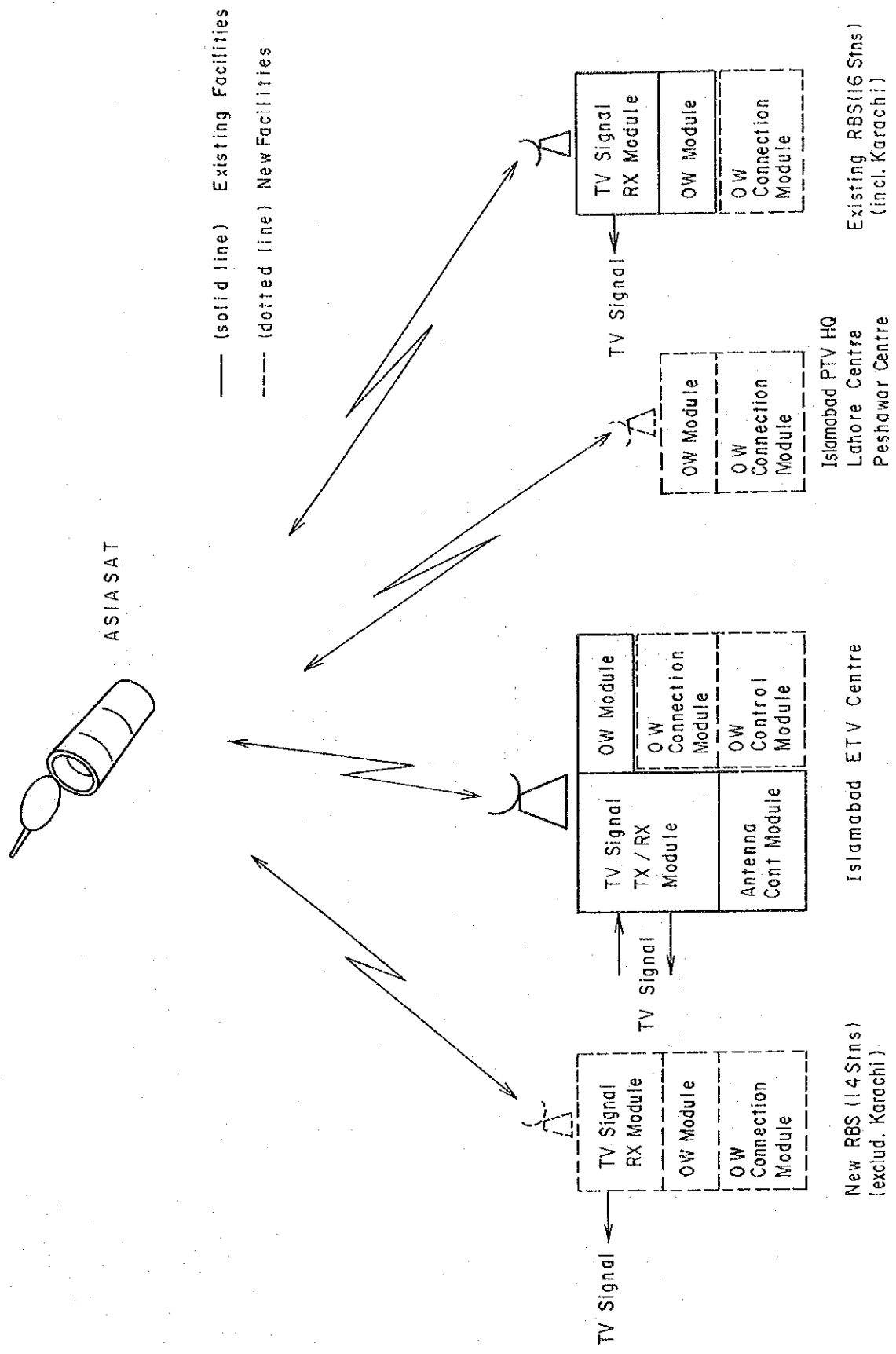
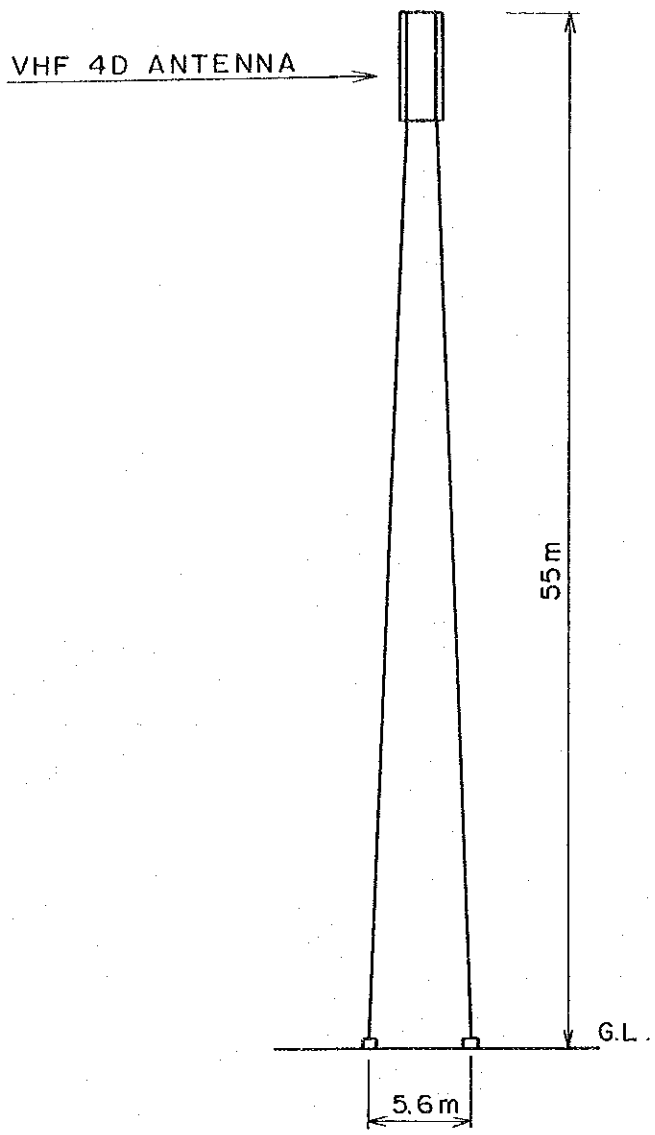
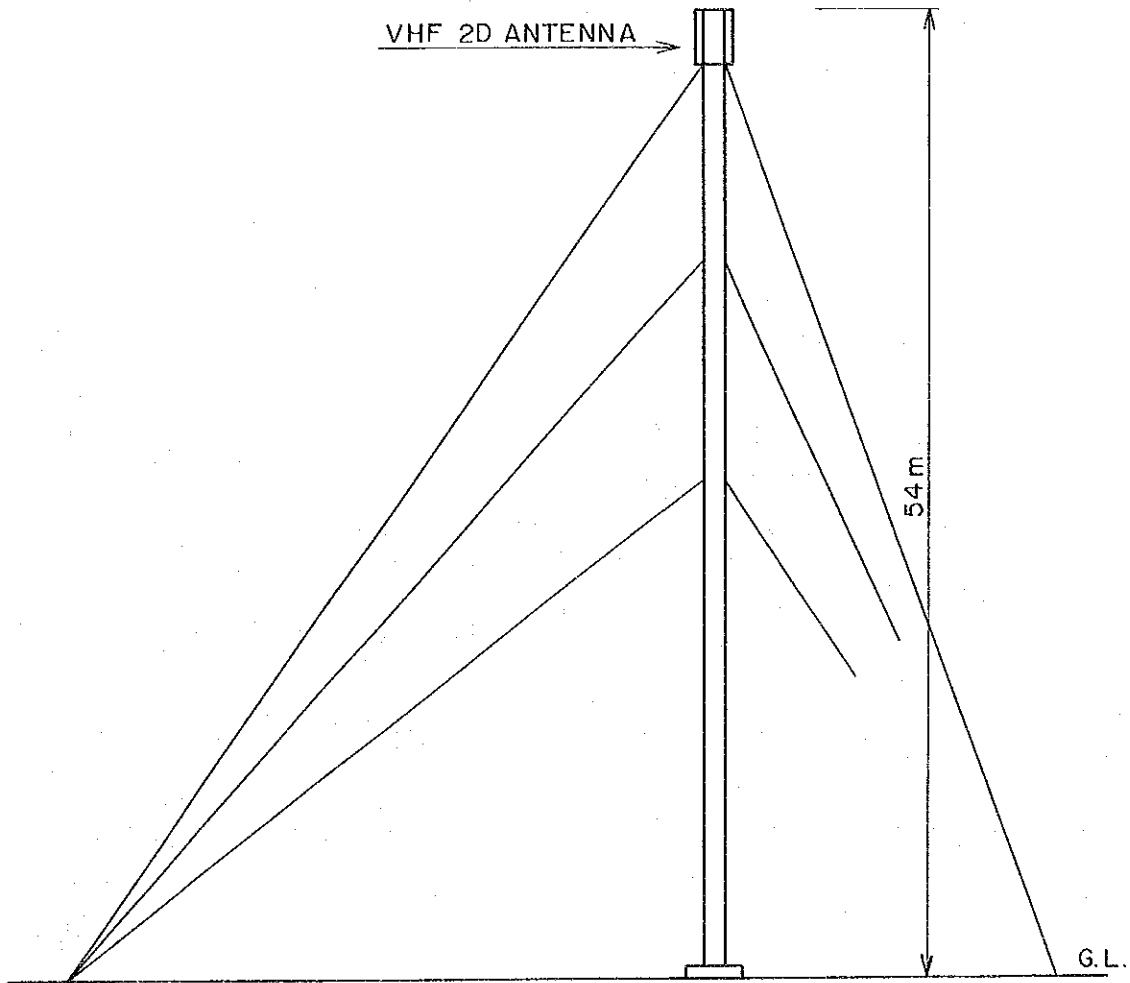


FIG. 3-3-33 FUNCTIONAL DIAGRAM OF ORDER-WIRE SYSTEM VIA SATELLITE



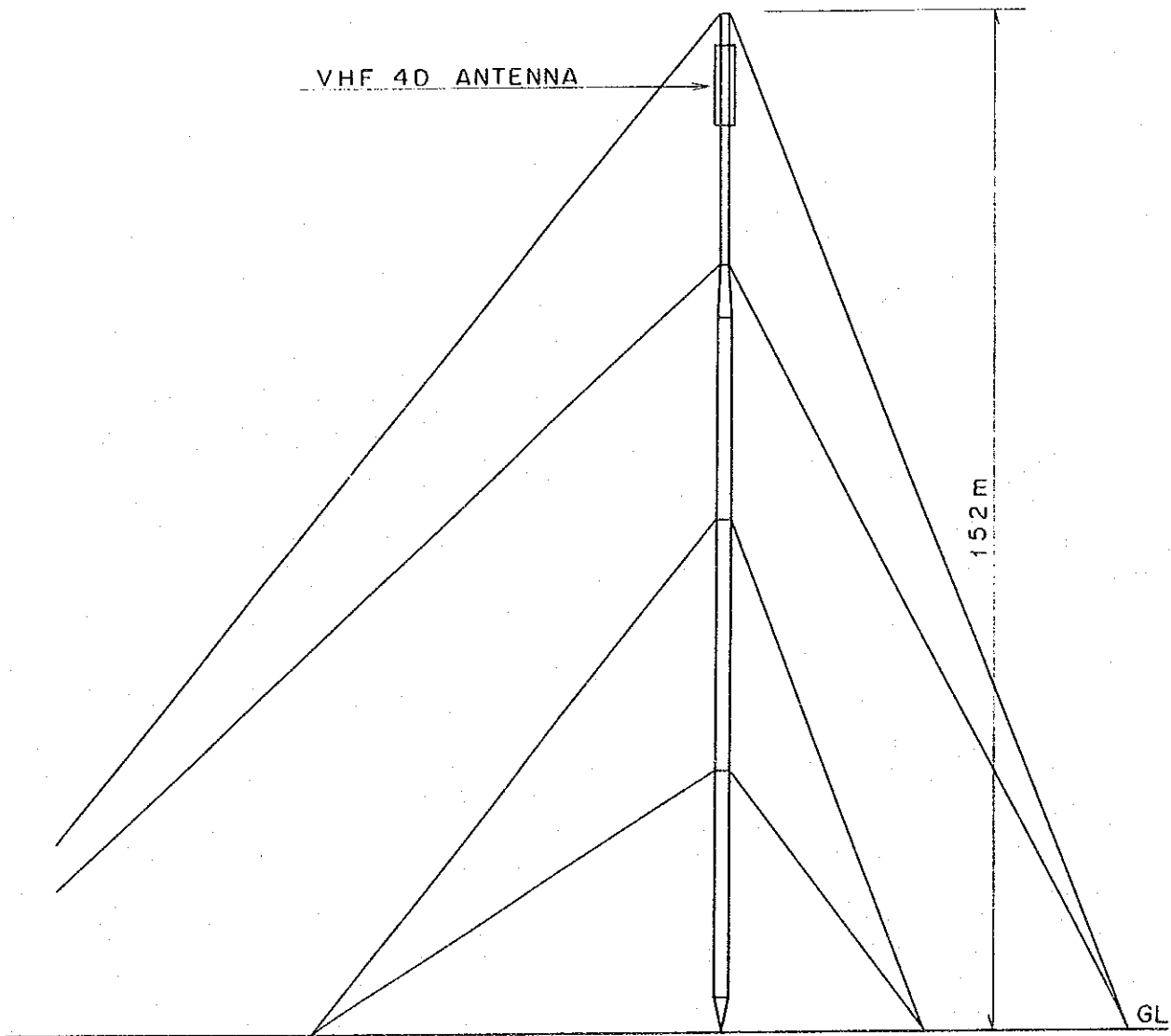
Scale: 1/400

FIG. 3-3-34 TOWER & ANTENNA OF RBS MINGORA



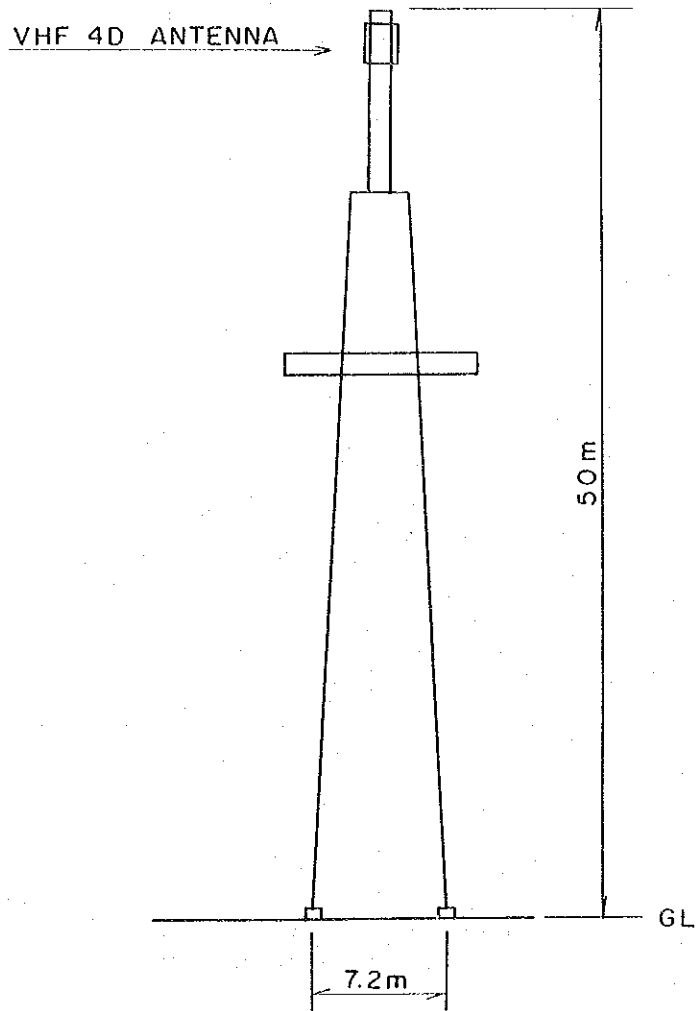
Scale: 1/400

FIG. 3-3-35 TOWER & ANTENNA OF RBS GULIBAGH



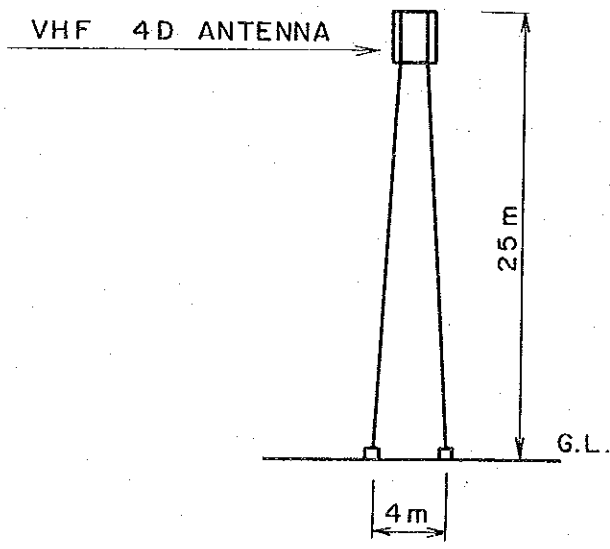
Scale: 1/1000

FIG. 3-3-36 TOWER & ANTENNA OF RBS MAILSI
TOWER & ANTENNA OF RBS LAYYAH



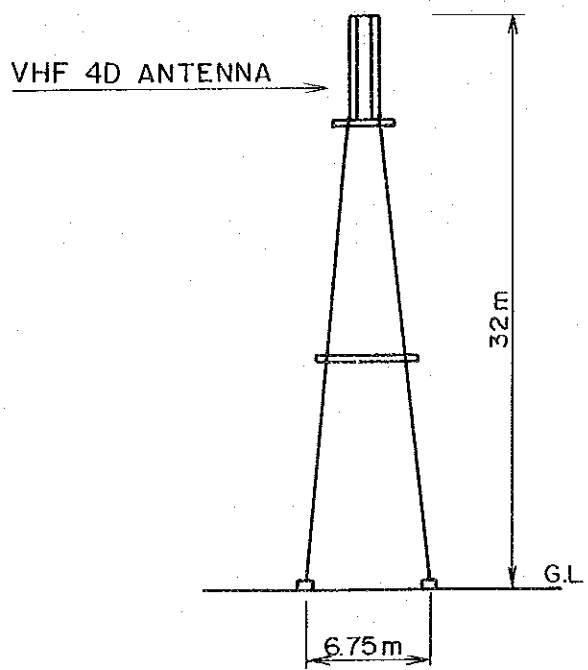
Scale: 1/400

FIG. 3-3-37 TOWER & ANTENNA OF TV CENTRE QUETTA



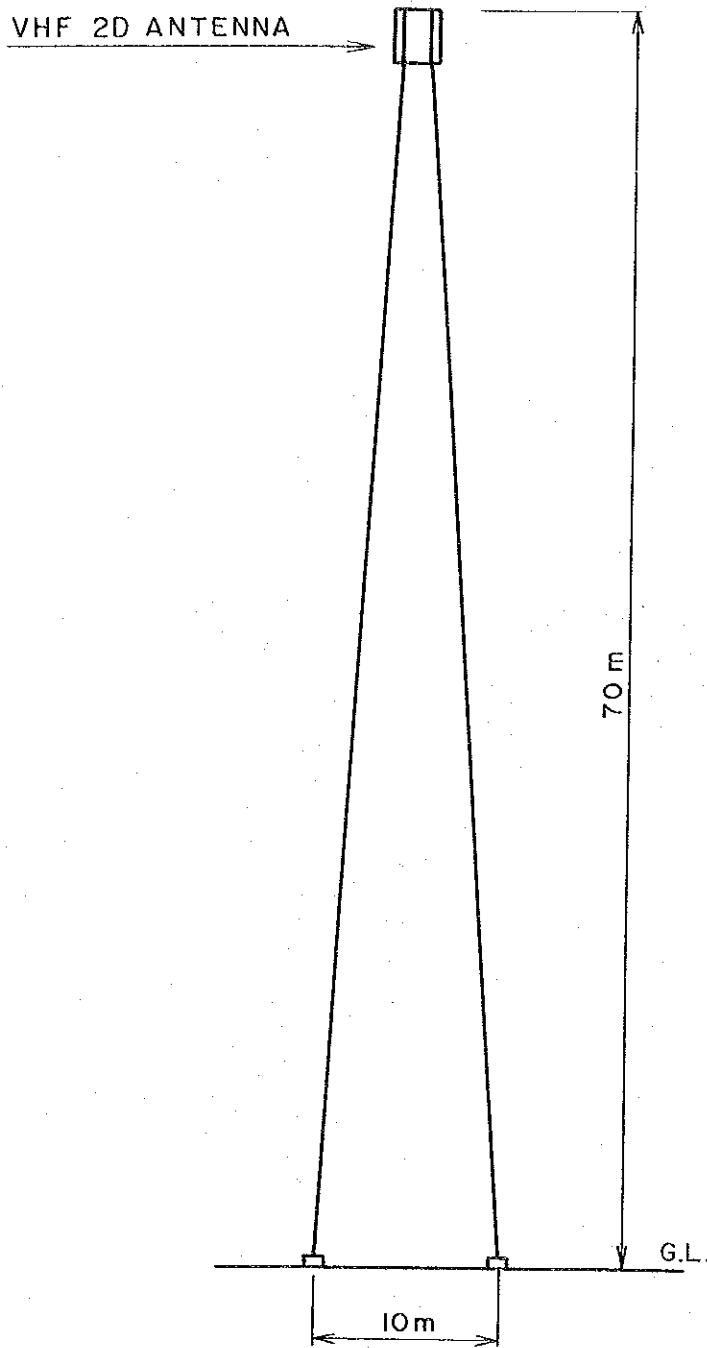
Scale : 1/400

FIG. 3-3-38 TOWER & ANTENNA OF RBS MORASAR



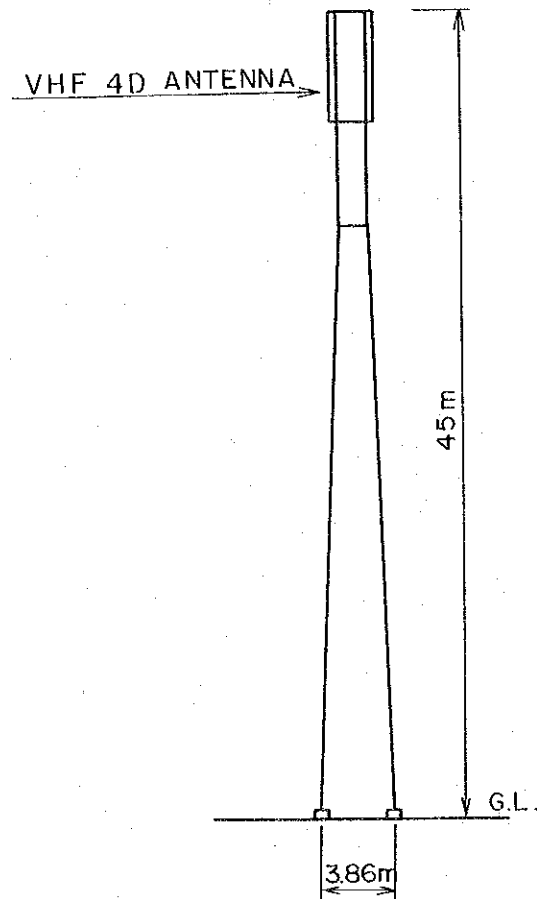
Scale: 1/400

FIG. 3-3-39 TOWER & ANTENNA OF RBS CHITRAL



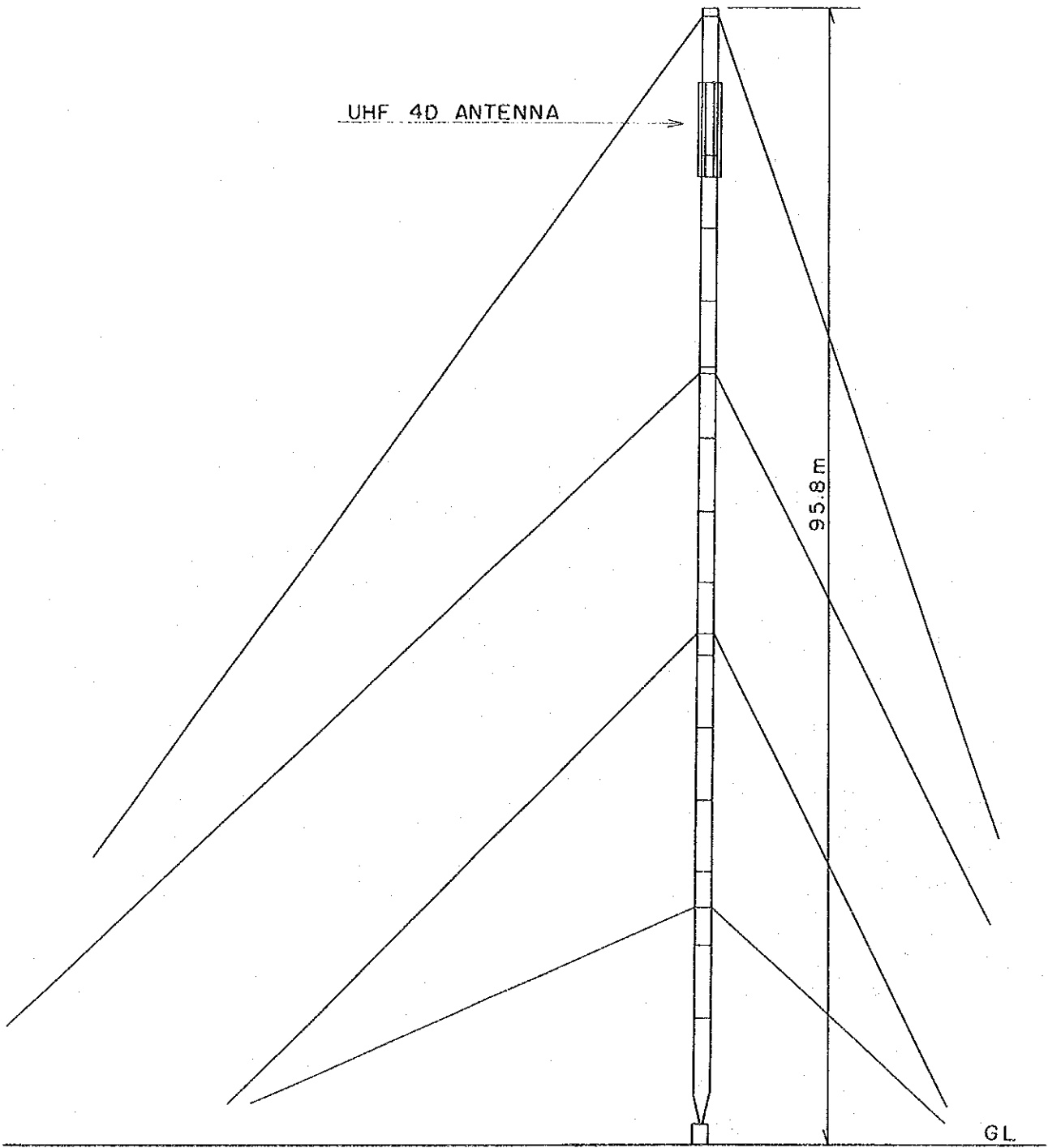
Scale: 1/400

FIG. 3-3-40 TOWER & ANTENNA OF RBS DIR



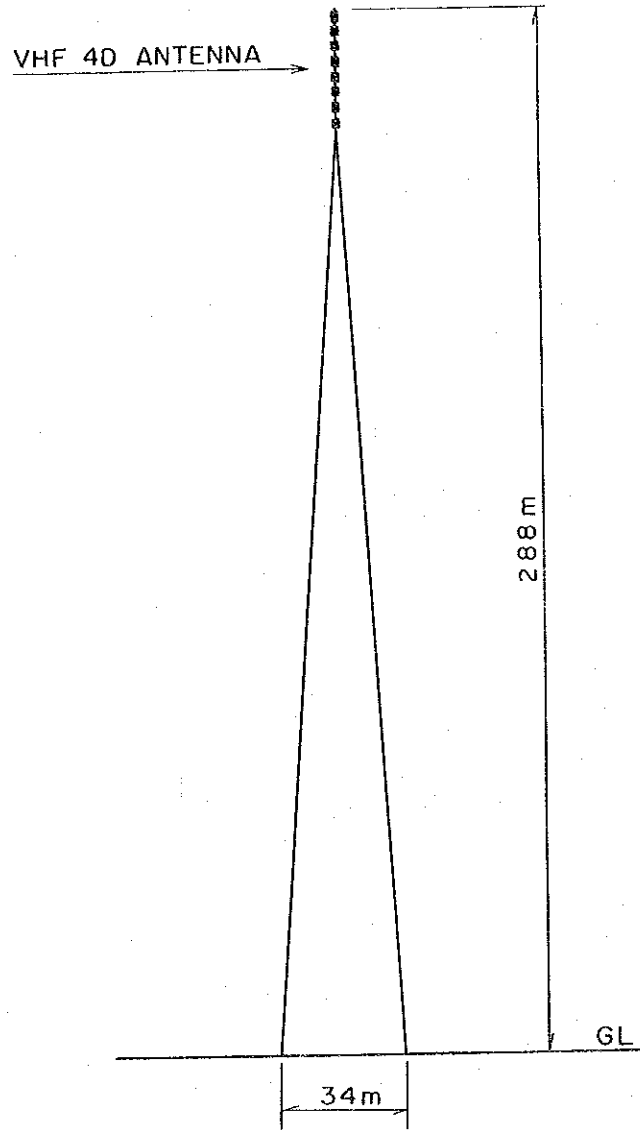
Scale : 1/400

FIG. 3-3-41 TOWER & ANTENNA OF RBS THANDIANI



Scale : 1/500

FIG. 3-3-42 TOWER & ANTENNA OF RBS PASRUR
TOWER & ANTENNA OF RBS FAISALABAD



Scale: 1/2000

FIG. 3-3-43 TOWER & ANTENNA OF RBS SAHIWAL

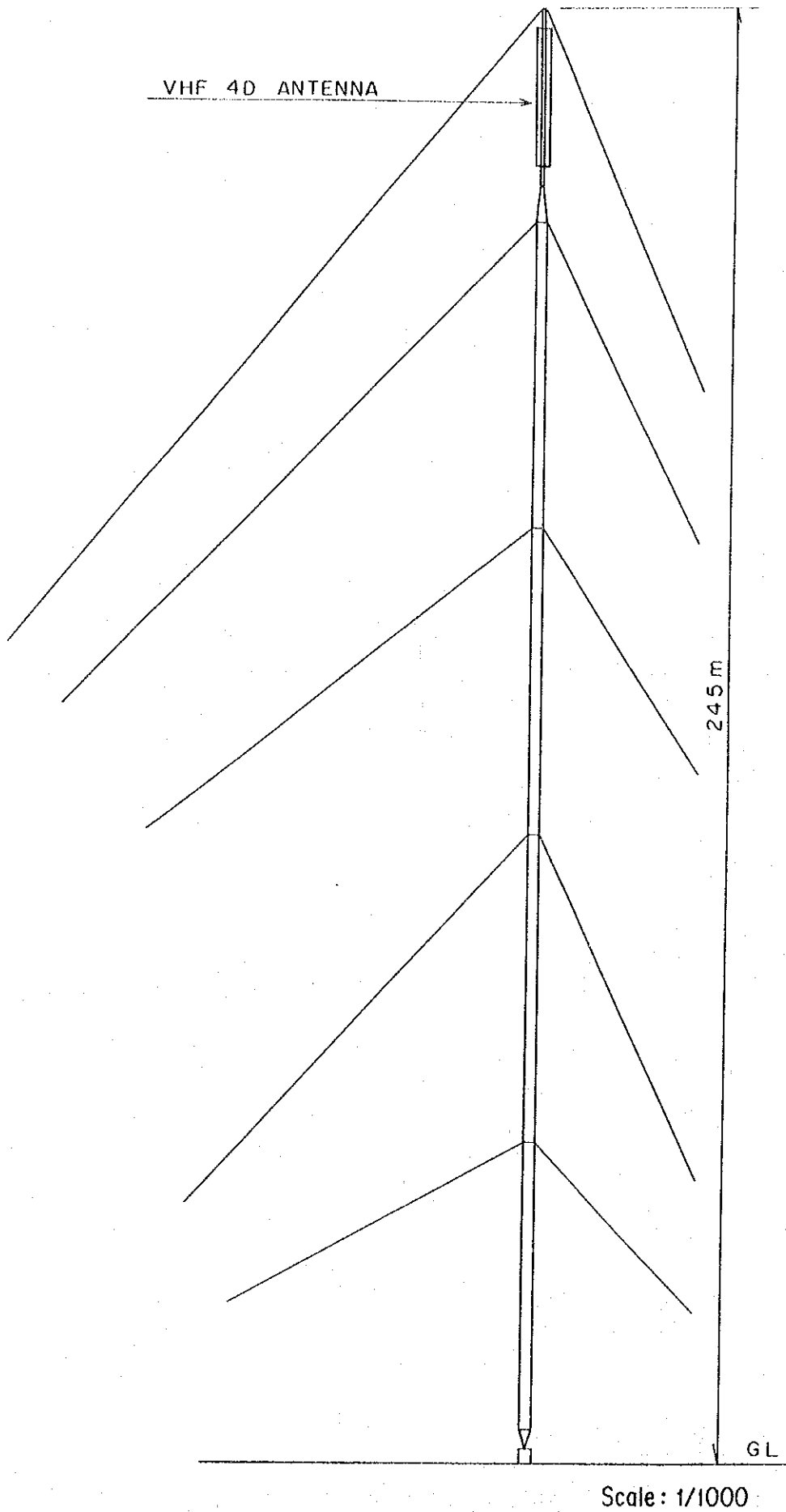
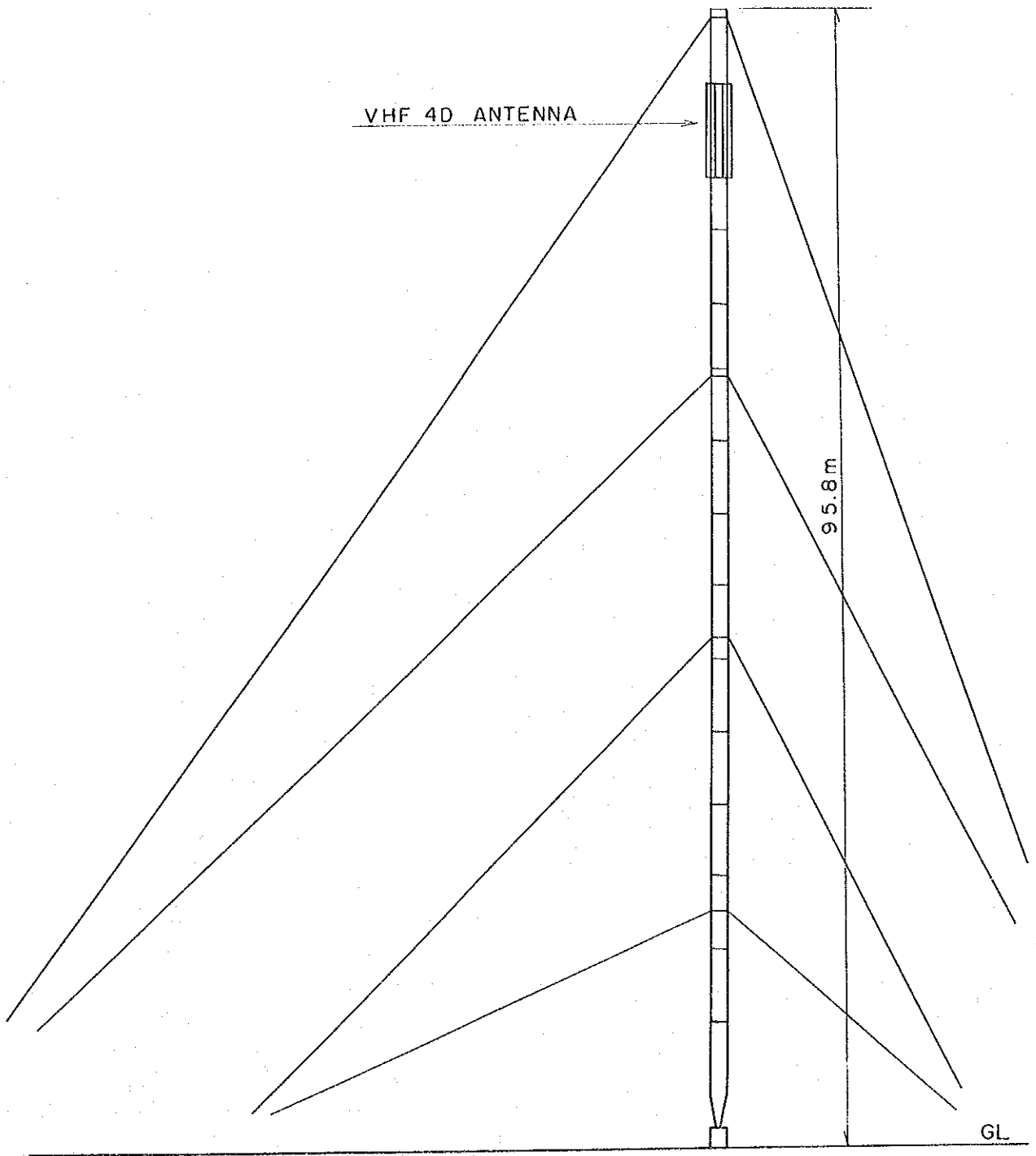
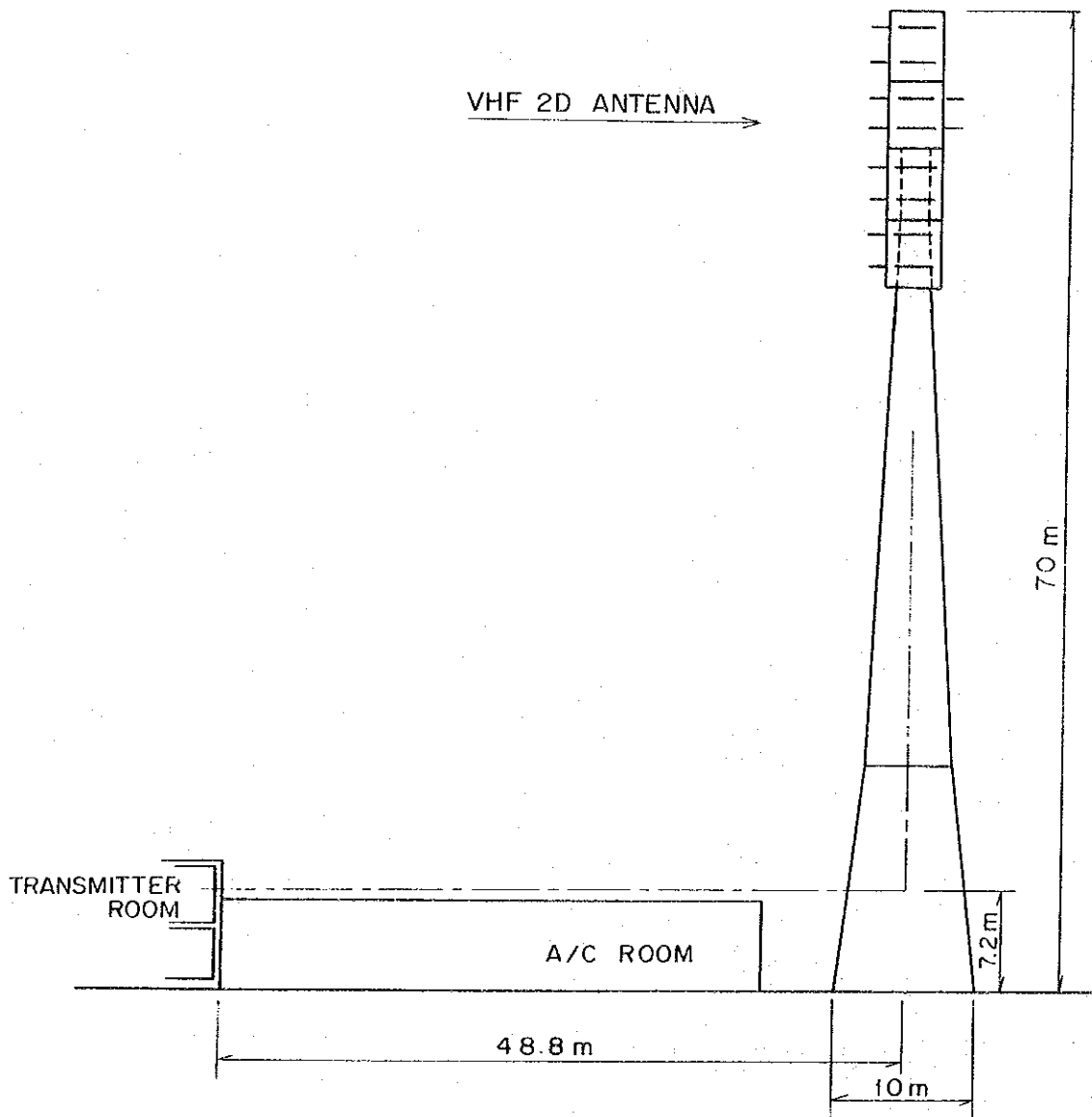


FIG. 3-3-44 TOWER & ANTENNA OF RBS BAHAWALNAGAR



Scale: 1/500

FIG. 3-3-45 TOWER & ANTENNA OF RBS KHEWRA



Scale: 1/500

FIG. 3-3-46 TOWER & ANTENNA OF TV CENTRE KARACHI

3-4 Implementation Plan

3-4-1 Implementation Method

(1) Basic Policy

Based on the fundamental idea of the Japanese Government's Grant Aid System, the consultant needs to keep the objectives in mind and to be in charge of the entire implementation of the Project from detailed design until completion. The following are the basic policies for implementing the Project.

- 1) The consultant will be stationed at the site of the work during the installation period and maintain close contact with its counterpart in Pakistan and the contractor. The consultant will work to establish a proper system of cooperation to ensure smooth implementation of the project.
- 2) The consultant will coordinate new equipment to be supplied and installed under this Project with the existing equipment, the existing buildings, and the new building.
- 3) The consultant will pay the utmost attention to safety and see to it that the work is completed within the scheduled deadline.
- 4) The consultant will abide by laws and regulations involving electricity, construction, wireless and other related matters, and respect the customs and habits and working situation in Pakistan.
- 5) The consultant will ensure safe storage of materials and equipment while the installation work is going on.

(2) Contractors and their Status

The supply and installation of the equipment will be entrusted to a Japanese contractor with an adequate capability of ensuring the required quality and completing the work within the allotted period.

Since the equipment to be provided includes a variety of items produced by different manufacturers, it is thought best to appoint a general trading company as the contractor.

(3) Necessity of Japanese Staff for Installation

Most of the equipment provided by this Project will be inspected in Japan and then transported to each site, being disassembled into pieces when necessary. After arrival of the equipment at each site, reassembly, installation and adjustment work is needed for the equipment. Furthermore, installation work involves the handover procedure, which includes the explanation of the methods for handling the equipment, training and inventory, etc. So, it is necessary to dispatch Japanese engineers to carry out the installation work. Dispatching of Japanese staff (number and duration) will be minimized and optimum usage of Pakistani engineers will be encouraged.

Two teams will be arranged for the installation and adjustment work in consideration of the number of project sites, installation period and environmental conditions of project sites, etc.

For the sake of proper preparation for receiving Japanese staff, a notice of their dispatch will be made to PTV at least four weeks before their visit.

3-4-2 Supervision Plan

(1) Supervision Policies

Taking into full account the aims of the Basic Design, the consultant must form an integrated project team for detailed design and supervision, which will endeavor to effect the accomplishment of the Project while ensuring the coordination of opinions among those concerned. The following basic policies will apply for this supervision work.

- 1) The consultant will do its best to ensure the completion of the Project without delays, within the agreed term.
- 2) The consultant will ensure the smooth progress of the work by reporting to and maintaining close contact with those responsible in the relevant agencies in the two countries and by issuing appropriate and timely advice and guidance to the contractors.

3) The consultant will ensure achievement of the intended effects of the work as a grant aid project through its endeavors for technological transfer.

(2) Details of Supervision Work

1) Detailed Design

- To design a system with appropriate equipment of appropriate scales, following the design policy.
- To prepare tender documents such as the specifications of the equipment, design drawings, etc.

2) Work related to Contract

- To publish the tender notice in an English newspaper widely circulated in Japan.
- To procure the equipment and services through an open tender.
- To examine carefully statements of items of work, work conditions, etc., to ensure there will be no mistakes and to report the findings to the Pakistani side to enable them to enter into a contract with the selected Japanese contractor.

3) Approval of drawings

- To check the system.
- To check whether the amount of equipment and the specifications agree with the ones specified in the tender documents.

4) Factory inspection

- To inspect equipment at plants. For inspection purposes, equipment will be arranged in a way as close as possible to how they would be installed in Pakistan. There is a certain limit to what can be done by checking drawings alone. This is the stage to check anything that could have been missed at the stage of checking the drawings and to ensure that equipment and systems agree with the specifications of the tender documents.

5) Supervision at the sites

- To examine the work plan and schedule charts.
- To direct the contractor.
- To report on the progress of work to the client regularly.
- To pay the utmost attention to safety when work is going on.
- To ensure close contact among those involved with the Project.
- To see to it that necessary technological knowledge is transferred to Pakistani personnel.

6) Acceptance inspection at sites

- To attend and approve the final inspections of the equipment carried out after installation work.
- To see to it that all equipment works as shown in plant inspection data.

7) Completion of work

- To report to those concerned in the Government of Japan on the progress of work, payment schedule, completion and handover, etc.
- All the residue materials should be removed and the work site should be cleaned up before the items of equipment included in the Project are officially handed over to Pakistan.

(3) Supervisory Personnel Plan

Most of the equipment for educational television provided under this Project will be installed at the existing rebroadcast stations where GTV is broadcasting at present. So it is required that efficient installation work be completed in a short time without any disturbance to GTV. The main stress of the supervision work carried out by the consultant will be on the constant monitoring of the overall progress of work and the sustained provision of guidance and advice to the contractor and to the responsible parties in the Government of Pakistan, aimed at ensuring the smooth progress of the Project and adherence to the schedule. Therefore, appropriate experts

and engineers should be dispatched at appropriate times in order to complete the necessary work within a specified period of time, smoothly and efficiently. In addition to having ample experience and the ability to make appropriate judgments, the supervisors selected must be broad minded and have a capacity for coordination work.

3-4-3 Equipment Procurement Plan

(1) Equipment Procurement Plan

Of the procured items, most of the equipment are not manufactured in Pakistan. All equipment, with the exception of engine generators, will be manufactured in Japan to ensure reliability in terms of their quality and supply, to facilitate aftercare maintenance services by the suppliers and from the aspect of conformity with the equipment provided by the Initial two Year Plan.

The engine generators provided under this Project will be manufactured in Pakistan in consideration of the fact that the engine generators included in the Initial Two Year Plan were locally procured and are working well.

(2) Transportation Plan

The equipment imported from Japan will be transported by sea to the port of Karachi and from there by lorries or trailers to the sites.

The transportation from Japan to each site will require 30 to 40 days.

It often takes time to get clearance through customs in Pakistan. The contractor and the Pakistani executing agency which will be the consignee should be well acquainted with the tax-exemption procedures and permits relating to importation, and make ample allowances for the time required for these procedures.

3-4-4 Implementation Schedule

(1) Scope of Work

Table 3-4-1 below shows work to be covered by Japan under the grant aid cooperation and that to be undertaken by Pakistan.

Table 3-4-1 Scope of Work

Items	Work to be undertaken by Japanese Side	Work to be undertaken by Pakistani Side
Construction of new building or modification of existing building for RBS	—	Responsibility of Pakistan, where necessary
Acquisition or rental of lands for new RBS	—	Responsibility of Pakistan
Erection or modification of antenna tower	—	Responsibility of Pakistan, where necessary
Foundation work for TVRO	To supply data and information	Responsibility of Pakistan
Provision of Air-Conditioners	—	Responsibility of Pakistan when need arises
Increasing of the capacity of city power	—	Responsibility of Pakistan when need arises
Equipment under the project	To manufacture, transport, install and adjust equipment	To provide office and storage space with locks during installation period

In addition to the above, the following will be carried out by the Pakistani side and their cost should be covered by Pakistan.

- To provide data and information necessary for the detailed design.

- To obtain all licensing necessary for implementation of the Project.
- To ensure prompt unloading, tax exemption (including octroi, etc.) and customs clearance at ports of disembarkation in Pakistan and internal transportation therein of the materials and equipment provided under the Grant.
- To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contract such facilities as may be necessary for their entry into Pakistan and stay therein for the performance of their work.
- To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Pakistan with respect to the supply of the products and services under the verified contract.
- To bear the following commissions to the Japanese foreign exchange bank for banking services based upon the Banking Arrangement (B/A)
 - Commission for advising of Authorization to Pay (A/P)
 - Commission for payment
- To bear all the expenses necessary for implementation of the Project, other than those to be borne by the Grant.
- To maintain and use properly and effectively the equipment provided under the Grant.

(2) Implementation Schedule

This Project will be divided into two phases. Each phase will be completed through the following respective procedures.

- After the conclusion of the Exchange of Notes between the Government of Japan and the Government of Pakistan, a consultancy agreement for the implementation of the Project will be made between the Government of Pakistan and a Japanese consultant company.
- After that, the detailed design and preparation of tender documents are carried out by the consultant and the tender will take place.

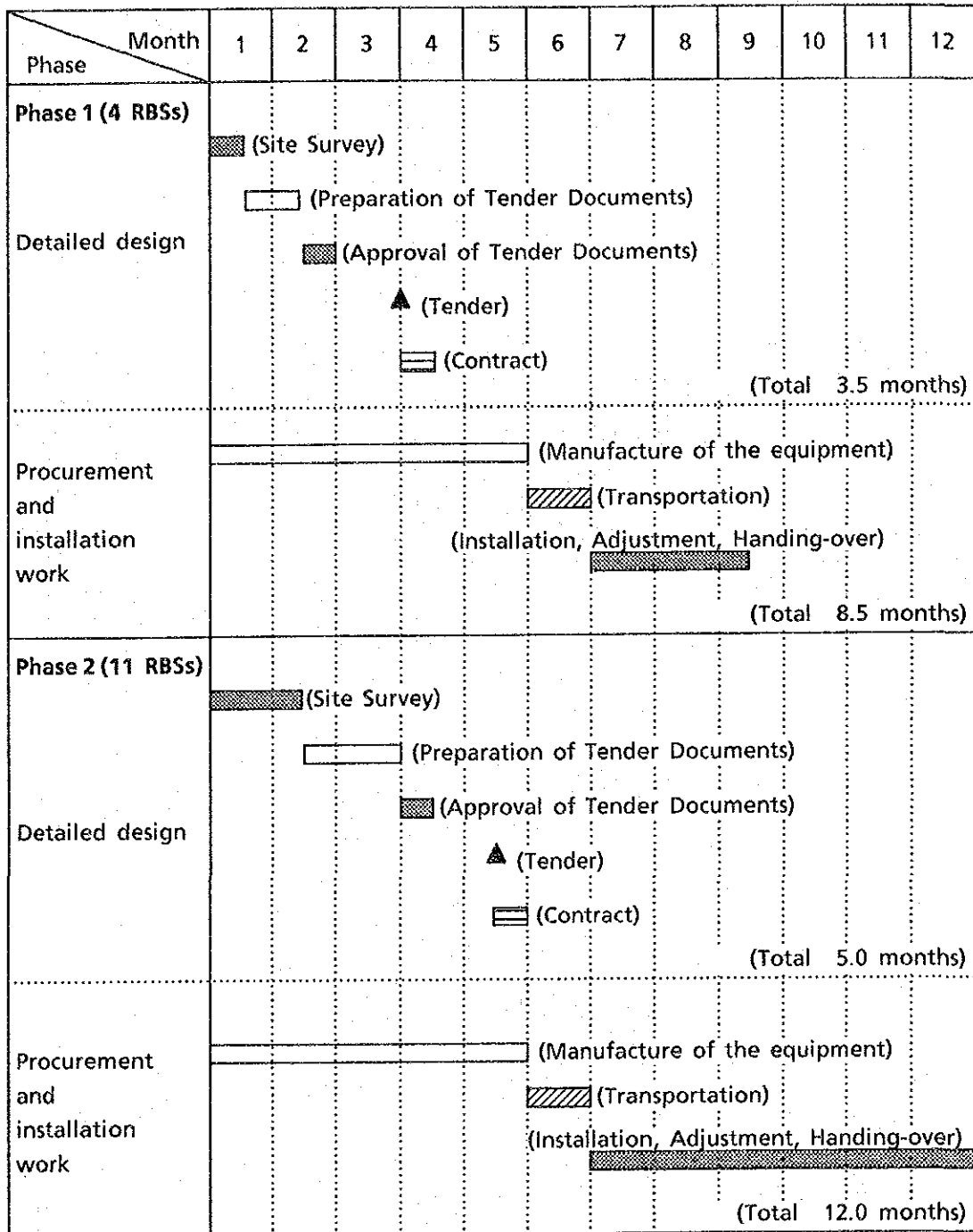
- After the evaluation of the tender proposals, a contract for the execution of the Project will be entered into between the Government of Pakistan and a Japanese contractor. The work will then be started.

The term of the implementation of Phase 1 will be 3.5 months for the detailed design and tender, and 8.5 months for procurement and installation after the signing of the contract.

The term of the implementation of Phase 2 will be 5.0 months for the detailed design and tender, and 12 months for procurement and installation after the signing of the contract.

The tentative implementation schedule is shown in Table 3-4-2.

Table 3-4-2 Implementation Schedule



3-4-5 Approximate Project Cost

The approximate project cost to be borne by the Pakistani side is estimated as shown in Table 3-4-3. (Refer to Appendix 5.10 for further details.)

Table 3-4-3 Project Cost

(Unit: 1,000 Rs)

Items \ Phase	Phase 1	Phase 2	Total
Acquisition of lands	—	9,000	9,000
Civil and building	1,125	21,840	22,965
Tower	1,500	9,000	10,500
A/C equipment	150	2,750	2,900
Power supply	—	3,200	3,200
Total	2,775	45,790	48,565

Chapter 4 Project Evaluation and Conclusions

Chapter 4 Project Evaluation and Conclusions

4-1 Benefits

Current status and issues	Measures to be taken in this Project	Benefits of the Project and degree of improvements expected
<p>The Government of Pakistan believes that the promotion of education and improvement of living standards of the general public are urgent tasks for the development of the country.</p> <p>The literacy rate in Pakistan still remains as low as 36.8% at present and needs immediate measures for improvement.</p> <p>The government wishes to utilize television broadcasting to achieve the above goals. It desires to broaden and improve broadcasting services which are effective in the simultaneous and extensive dissemination of information.</p> <p>However, the 16 rebroadcast stations that have been completed under the Initial Two Year Plan only cover 56.5% of the population. There are still many people who are deprived of information.</p>	<p>The Project plans to establish a total of 15 rebroadcast stations: 6 in NWFP, one in Baluchistan, 7 in Punjab, and one in Sind (renewal of Karachi transmitter).</p>	<p>Educational broadcasts provide such functions as dissemination of the official language, offering opportunities of lifelong education, supplementary education, reeducation of teachers, enhancement of awareness of social unity, etc.</p> <p>After completion of the Project, the covered population will expand from the current 56.5% (about 70 million) to 75% (about 93 million). These people will be able to view a variety of educational programmes including literacy education, health, hygiene, population welfare, child care, agriculture, vocational training, etc.</p> <p>Six rebroadcast stations will be in North-West Frontier Province in which there is a lack of educational opportunities and information for everyday living.</p>

4-2 Appropriateness of the Project

Since November 26th 1992, the 16 rebroadcast stations completed in the Initial Two Year Plan have been operating without any problem.

For carrying out this Project, an increase in staff and operation and maintenance expenses will be needed. With the lifting of the ban on new staff recruitment on July 1st 1994, PTV has been working for new staff recruitment and their subsequent OJT (on the job training). It plans to set up a better financial administration with earnings from increased ETV programme productions at the Islamabad ETV Centre and from revision of tariffs including transmitting costs.

The 8th Five Year National Development Plan states that the Later Three Year Plan should be established during the development period. The National Development Plan aims at achieving higher education standards, proliferation of public health education, and promotion of family planning, etc. The Project supports these policies through strengthening a powerful mass medium.

In view of the Project's contribution to the development of the people of Pakistan in general, it is considered most appropriate to carry out this Project under the Japanese government's grant aid.

4-3 Recommendations

As mentioned in the previous section, this Project is expected to contribute many benefits to the masses and to satisfy their basic human needs. Accordingly it is confirmed that implementation of this Project with grant aid cooperation of the Government of Japan is appropriate. Furthermore there are no problems expected with regard to staffing and financing after the completion of this Project.

However, improvement of the following points will further contribute to smooth and beneficial operation of the Project.

(1) Establishment of Evaluation System for Educational Broadcasting

It is necessary to investigate periodically the state of utilization of the educational broadcast programmes by the targeted viewers, to ensure the effectiveness of broadcasting.

Especially for non-formal educational programmes, which are watched by viewers at homes, it is important to establish a feedback system in which how many people watch the programme and how they utilize it in their everyday lives can be surveyed scientifically and the results reflected in the next programme compilation (kinds of programmes to be produced and their transmission hours).

In addition, the programme priority committee meeting with the user ministries and agencies, held a few times in the beginning days of ETV, should be restored to evaluate broadcast programmes regularly.

It is considered useful to discuss programmes to be produced as well as to evaluate them after their transmission in the committee meeting.

(2) Implementation of Four Different Language Broadcasting

Basic education for illiterate people who comprise 63% of the total population is one of the most important programmes of ETV. In order to make the broadcasting more effective, it is necessary to telecast in the people's own languages to make education directly accessible to those who are illiterate.

Facilities for dubbing in 4 regional languages and simultaneous transmission of the 4 dubbed audio signals with one common video transmission have been provided in Islamabad ETV Centre. And in each rebroadcast station, receiving the signals via satellite and selecting

one required regional language, rebroadcasting of programmes with the selected language will be done.

It is most desirable to start the four-language literacy broadcasting as soon as possible.

(3) Full Utilization of Programme Production Functions in Islamabad
ETV Centre

As described above, the post-production room is equipped with systems and functions for dubbing in 4 different languages and foreign programmes to be dubbed in Urdu but the operation has not been conducted so far due to the shortage of staff. Straight foreign language (normally English) programmes can only be understood by people who can understand the language and therefore the effect of the broadcasting is limited.

ETV should conduct the Urdu dubbing of imported programmes (or regional languages in some programmes), and make them understood more widely, enhancing the broadcasting effect.

Studio B of the ETV Centre is suitable in its floor size and provided functions for the production of school broadcasts and literacy education programmes.

It can easily record more than one programme in a single day in succession by using the same performers (teacher and students) and studio set because of the programme's nature.

ETV should establish such an effective production method at the earliest possible time maintaining close cooperation with provincial education departments and various educational organizations.

EFP equipment provided in the ETV Centre can record realistic scenes on location which cannot be taken in the studio.

EFP can be used in various situations, for instance, shooting of an actual school class, repairing of automobiles and outdoor recording of agricultural promotion programmes. In the Master Plan, it was planned to produce a 30-minute EFP programme per day.

Full utilization of the existing EFP equipment is required to achieve the goal.

(4) Cooperation with Ministry of Education and AIOU

It is recommended that PTV proceed with the production of educational and literacy programmes, while maintaining close communications with the Ministry of Education, Provincial Education Departments, and other related organizations, regarding programme contents and utilization plan.

Furthermore, these programmes will be produced more efficiently if they can be made with the collaboration of AIOU which has long years of experience in this field.

(5) Implementation of Technical Cooperation

PTV desires to dispatch some of its staff to Japan as trainees and to receive Japanese experts on programme production and broadcasting technology as a means of technical cooperation.

It is desirable to implement such cooperation for the promotion of a higher technical level as well as better programme quality for ETV.

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1. Member List of Survey Team

1. Member List of Survey Team

(1) Basic Design Study

Masatomo MURAKAMI	Leader	Deputy Director, HDTV Promotion Office, Satellite Broadcasting Division, Broadcasting Bureau, Ministry of Posts and Telecommunications	June 20 to July 3, 1994
Makoto KASHIWAYA	Project Coordinator	Deputy Director, Follow-up Division, Grant Aid Project Management Department, JICA	June 20 to July 3, 1994
Toru ENDO	Chief of the Consultant and Broadcasting Planner	NHK Integrated Technology Inc.	June 20 to July 24, 1994
Hiromu KAMIJO	Architectural Designer	NHK Integrated Technology Inc.	June 27 to July 15, 1994
Katsuhiro AOKI	Architectural Facilities Designer	NHK Integrated Technology Inc.	June 27 to July 15, 1994
Toshinori MIURA	Transmittal Station Designer	NHK Integrated Technology Inc.	June 20 to July 31, 1994
Fumio SATO	Transmittal Station Designer	NHK Integrated Technology Inc.	June 20 to July 24, 1994
Toshioki TANAKA	Programme Transmission Planner	NHK Integrated Technology Inc.	June 24 to July 17, 1994
Akira NAGASE	Programme Transmission Planner	NHK Integrated Technology Inc.	June 24 to July 17, 1994
Yasumasa KOKUBU	Studio Facilities Designer cum Programme Production Equipment Planner	R and D International Consultants	June 27 to July 15, 1994

(2) Explanation of Draft Report

Ichirou MUKAI	Leader	Second Basic Design Study Division, Grant Aid Study and Design Department, JICA	Oct. 11 to Oct. 20, 1994
Kazunori UCHIYAMA	Broadcasting Administration	Engineering Division, Broadcasting Bureau, Ministry of Posts and Telecommunications	Oct. 11 to Oct. 20, 1994
Toru ENDO	Chief of the Consultant and Broadcasting Planner	NHK Integrated Technology Inc.	Oct. 11 to Oct. 20, 1994
Toshinori MIURA	Transmittal Station Designer	NHK Integrated Technology Inc.	Oct. 11 to Oct. 20, 1994

2. Survey Schedule

2. Survey Schedule

(1) Basic Design Study

No.	Date	Contents							
		Government Officials	Consultants						
		MURAKAMI, KASHIWAYA	ENDO	SATO	NAGASE	MIURA	TANAKA	KOKUBU	KAMIJYO, AOKI
1	20 (Mon.)	Lv. Narita, Ar. Islamabad				Lv. Narita, Ar. Islamabad			
2	21 (Tue.)	Meeting at JICA Islamabad Office							
3	22 (Wed.)	Meeting with the Embassy of Japan and EAD	Preparation for Site Survey			Preparation for Site Survey			
4	23 (Thu.)	Meeting with MOIB and PTV							
5	24 (Fri.)	Internal Meeting		Lv. Narita, Ar. Islamabad			Lv. Narita, Ar. Islamabad		
6	25 (Sat.)	Visit to Islamabad ETV Centre	Meeting with PTV on Site Survey					Meeting with PTV	
7	26 (Sun.)	Meeting with PTV							
8	27 (Mon.)	Meeting with PTV	Islamabad → Faisalabad			Islamabad → Mingora		Meeting with PTV	Lv. Narita, Ar. Islamabad
9	28 (Tue.)	Meeting with World Bank and MOIB	Survey at RBS Faisalabad			Survey at RBS Mingora		Islamabad → Peshawar	Survey on Building and Facilities
10	29 (Wed.)	Discussion on Minutes Report to the Embassy of Japan							
11	30 (Thu.)	Report to JICA and EAD	Faisalabad → Sahiwal			Mingora → Morasar	Peshawar → Islamabad		
12	1 (Fri.)	Internal Meeting	Survey at RBS Sahiwal			Survey at RBS Morasar		Survey on PTV	
13	2 (Sat.)	Lv. Islamabad → Lahore → Bangkok Ar. Narita		Meeting with PTV Islamabad → Karachi					
14	3 (Sun.)		Sahiwal → Mailsi			Morasar → Gulibagh		Islamabad → Karachi	
15	4 (Mon.)		Survey at Karachi Centre	Survey at RBS Mailsi		Survey at RBS Gulibagh		Survey at Karachi Centre	
16	5 (Tue.)			Mailsi → Bahawalnagar					
17	6 (Wed.)		Karachi → Lahore	Survey at RBS Bahawalnagar		Gulibagh → Chitral		Karachi → Lahore	
18	7 (Thu.)		Survey at Lahore Centre	Bahawalnagar → Layyah		Survey at RBS Chitral		Survey at Lahore Centre	
19	8 (Fri.)			Survey at RBS Layyah					
20	9 (Sat.)		Lahore → Islamabad	Layyah → Pasrur		Chitral → Dir		Lahore → Islamabad	
21	10 (Sun.)			Survey at RBS Pasrur		Survey at RBS Dir			
22	11 (Mon.)						Dir → Thandiani		Survey on PTV
23	12 (Tue.)			Pasrur → Khewra		Survey at RBS Thandiani			
24	13 (Wed.)			Study at RBS Khewra		Thandiani → Islamabad			
25	14 (Thu.)			Khewra → Islamabad		Reviews of Data collected		Islamabad → Quetta	Lv. Islamabad → Karachi → Bangkok Ar. Narita
26	15 (Fri.)			Reviews of Data collected Islamabad → Quetta		Reviews of Data collected Islamabad → Quetta		Survey at Quetta Centre	
27	16 (Sat.)							Quetta → Islamabad	
28	17 (Sun.)			Survey at RBS Quetta	Lv. Islamabad, Ar. Narita	Survey at RBS Quetta	Lv. Islamabad, Ar. Narita	Meeting with PTV	
29	18 (Mon.)								
30	19 (Tue.)			Quetta → Karachi		Quetta → Karachi		Lv. Islamabad → Karachi → Bangkok Ar. Narita	
31	20 (Wed.)								
32	21 (Thu.)			Survey at RBS Karachi		Survey at RBS Karachi			
33	22 (Fri.)			Karachi → Islamabad		Karachi → Islamabad			
34	23 (Sat.)			Reviews of Data collected		Reviews of Data collected			
35	24 (Sun.)		Lv. Islamabad, Ar. Narita						
36	25 (Mon.)					Meeting with PTV on Channel Plan			
37	26 (Tue.)								
38	27 (Wed.)								
39	28 (Thu.)					Meeting with PTV on Scope of Work			
40	29 (Fri.)								
41	30 (Sat.)					Reviews of Data collected			
42	31 (Sun.)					Lv. Islamabad, Ar. Narita			

(2) Explanation of Draft Report

No.	Date	C o n t e n t s
1	Oct. 11 (Tue.)	Lv. Tokyo, Ar. Karachi via Bangkok
2	12 (Wed.)	Lv. Karachi, Ar. Islamabad Meeting at JICA office, meeting with Embassy of Japan. Courtesy call on the Economic Affairs Division Courtesy call on the Ministry of Information and Broadcasting. Meeting with the World Bank Courtesy call on and meeting with PTV
3	13 (Thu.)	Explanation of the DF/R to PTV. Meeting with the Ministry of Education.
4	14 (Fri.)	Preparation for the Explanation of the DF/R.
5	15 (Sat.)	Observation of the ETV Centre.
6	16 (Sun.)	Meeting and Discussion of the DF/R. Draft of Minutes of Discussion.
7	17 (Mon.)	Signing of the Minutes of Discussion.
8	18 (Tue.)	Report to JICA Office, Embassy of Japan and the Economic Affairs Division. Lv. Islamabad, Ar. Karachi
9	19 (Wed.)	Lv. Karachi, Ar. Singapore
10	20 (Thu.)	Lv. Singapore, Ar. Tokyo

3. Member List of Parties Concerned in Pakistan

3. Member List of Parties Concerned in Pakistan

- Ministry of Information and Broadcasting
 - Ex-Secretary Mr. Tanvir Ahamad Khan
 - Secretary Mr. Husain Haqqani
 - Director General, External Publicity/Additional Secretary Mr. Mubarik Shah
 - Director General, Internal Publicity/Joint Secretary Mr. Salim Gul Shaikh
- Ministry of Finance
 - Deputy Secretary (Japan), Economic Affairs Division Mr. Shahid Humayun
- Ministry of Education
 - Joint Education Advisor Dr. Abdul Aziz Khan
- The World Bank
 - Education Specialist Dr. Sarah Tirmazi
 - Project Adviser (Education) Mr. Bashir Pervez
- Pakistan Television Corporation (Islamabad Headquarters)
 - Managing Director, PTV Mr. Farhad Zaidi
 - Deputy Managing Director, PTV Mr. Suleman Ghani
 - Director, Finance, PTV Mr. Mutee-ur-Rehman Mirza
 - Director, Educational Television, PTV Mr. Nisar Hussain
 - Director, Engineering, PTV Mr. Akhtar M. Dad
 - Controller, Engineering Planning, PTV Mr. Nasir A. Sajjad
 - Deputy Controller, Engineering, PTV Mr. A. Baseer Saighal
 - Deputy Controller, Engineering, PTV Mr. Anwar Sadique Paul
 - General Manager, ETV Mr. Shaukat Parvez
 - Controller, ETV Mr. Ishrat A. Ansari
 - Deputy Controller, Finance, PTV Mr. Mazhar Hussain
 - Assistant Controller, Accounts, PTV Mr. Mohammad Ashraf Bhutta
 - Assistant Controller, Finance, PTV Mr. Khalil Asif
 - Senior Executive Engineer, PTV Mr. Asghar Ali
 - Senior Planning Officer, PTV Mr. Mohammad Farooq
 - Senior TV Engineer, PTV Mr. Iftikhar Qureshi
 - TV Engineer, PTV Mr. Khalid Yusuf

(Karachi Centre-RBS)

General Manager
Engineer in Charge
Assistant Engineer

Mr. Abdul Karim Baloch
Mr. Zulfiqar A. Jafari
Mr. F. A. Khan

(Karachi Transmitter)

Engineer in Charge
Assistant Engineer

Mr. Z. Jafri
Mr. F. A. Khan

(Lahore Centre)

General Manager
Engineer Manager
Programme Manager
Engineer in Charge
Engineer in Charge

Mr. S. M. Anwar
Mr. Mehmood A. Rana
Mr. Bukhtiar Ahmed
Mr. Mazhar Bukhari
Mr. Aftab Bhatti

(Peshawar Centre)

General Manager
Engineer Manager
Finance Manager
Programme Manager
Chief Cameraman

Mr. Muhamad Arbab Khan
Mr. Mujahid Bin Syed
Mr. Hatim Ali Cheema
Mr. Tawfik Hissein Shah
Mr. Muhamad Riaz Khan

(Quetta Centre-RBS)

General Manager
Engineer in Charge
Programme Manager
Engineer in Charge
Senior TV Engineer
Assistant Engineer

Mr. Mustafa K. Mandokhail
Mr. Manoomal K. Bathija
Mr. Ziaur Rehman
Mr. Manzoor Elahi
Mr. M. R. Khan
Mr. N. Das

(Quetta Transmitter)

Engineer in Charge
Assistant Engineer

Mr. M. K. Bhatija
Mr. N. Das

(RBS Layyah)

Engineer in Charge
Assistant Engineer

Mr. Shafiq Anwar
Mr. Nasir Hossan

(RBS Sahiwal)	
Engineer in Charge	Mr. A. K. Toor
Assistant Engineer	Mr. Abid Aziz
(RBS Faisalabad)	
Engineer in Charge	Mr. Rehan Pervex
Assistant Engineer	Mr. Ashfaq Ahmed
(RBS Pasrur)	
Engineer in Charge	Mr. M. Manzoor
Assistant Engineer	Mr. Parvaiz
(RBS Mingora)	
Engineer in Charge	Mr. Kateeb Shah
Assistant Engineer	Mr. Fayyaz Ahmad
(RBS Morasar)	
TV Engineer	Mr. Abdul Khaliq
(RBS Gulibagh)	
Technician	Mr. Muhammad Saeed
(RBS Chitral)	
Engineer in Charge	Mr. Arif Noor
(RBS Thandiani)	
Engineer in Charge	Mr. M. A. Latif
TV Engineer	Mr. Basim Sehgel
● Allama Iqbal Open University	
Director	Mr. Amar Jaleel Kazi
Deputy Director	Mr. Javed Mahmood Kasuri
Head Engineering Dept.	Mr. Mehmood Ali
● Embassy of Japan	
Minister	Mr. Tatsuaki Iwata
Second Secretary	Mr. Mitsuyoshi Nakada
● JICA Pakistan Office	
Resident Representative	Mr. Akira Murata
Deputy Resident Representative	Mr. Noriaki Nishimiya

4. Minutes of Discussions

4. Minutes of Discussions (Basic Design Study)

MINUTES OF DISCUSSIONS
BASIC DESIGN STUDY ON THE PROJECT FOR
THE EXPANSION OF THE SECOND TV CHANNEL FOR EDUCATION IN
THE ISLAMIC REPUBLIC OF PAKISTAN

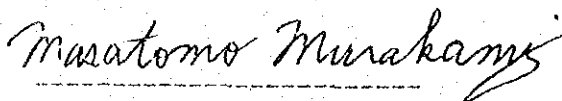
In response to a request from the Government of the Islamic Republic of Pakistan, the Government of Japan decided to conduct a Basic Design Study on the Project for the Expansion of the Second TV Channel for Education (hereinafter referred to as "the Project"), and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Pakistan a study team, which is headed by Mr. Masatomo MURAKAMI, Deputy Director, HDTV Promotion Office, Satellite Broadcasting Division, Broadcasting Bureau, Ministry of Posts and Telecommunications, and is scheduled to stay in the country from June 20 to July 31, 1994

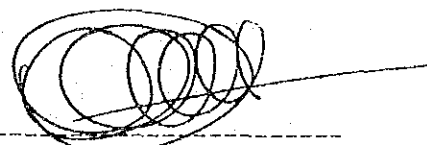
The team held discussions on the Project with the officials concerned of the Government of the Islamic Republic of Pakistan and conducted a field survey at the study area.

In the course of discussions and field survey, both parties have confirmed the main items described on the attached sheets. The team will proceed to further works and prepare the Basic Design Study Report.

Islamabad, July 20, 1994



Mr. Masatomo MURAKAMI
Leader
Basic Design Study Team
JICA



Mr. Nisar HUSSAIN
Director Educational Television
Pakistan TV Corporation Ltd.

ATTACHMENT

1. Objective

The objective of the Project is to enhance the education and knowledge levels of the people as one of the essential factors for the development of the nation, by improving capacity of educational programme production and by expanding TV transmission network.

2. Executing Agency

Pakistan Television Corporation Limited is responsible for execution of the Project.

3. The request made by the Pakistani side is shown in ANNEX-1

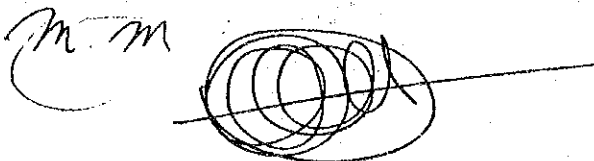
The Team will, at their discretion, determine the final components of the Project after further studies in Japan.

4. Japan's Grant Aid system

- (1) The Government of the Islamic Republic of Pakistan has understood the system of Japanese Grant Aid explained by the Team.
- (2) The Government of the Islamic Republic of Pakistan will take the necessary measures described in ANNEX-2 for smooth implementation of the Project, on condition that the Grant Aid by the Government of Japan is extended to the Project.

5. Schedule of the Study

- (1) The consultants will proceed to further studies in Pakistan until July 31, 1994.
- (2) Based on the Minutes of Discussions and technical examination of the study results, JICA will prepare a draft report in English and dispatch a mission in order to explain its contents in September, 1994.
- (3) In case that the contents of the report are accepted, in principle, by the Government of the Islamic Republic of Pakistan, JICA will complete the final report and send it to the Government of the Islamic Republic of Pakistan by February 1995.

M. M. 

ANNEX-1: The Request made by the Pakistani Side

1. Building

The construction of PTV-2 (ETV) studio building in the site of PTV Karachi Centre

2. Broadcasting equipment

(1) Rebroadcast transmitters at 28 stations as listed below

1)Leiah, 2)Mailsi, 3)Bahawalnagar, 4)Sahiwal, 5)Faisalabad, 6)Pasrur, 7)Haranpur, 8)Mingora, 9)Morasar, 10)Gulibagh, 11)Chitral, 12)Dir, 13)Thandiani, 14)Quetta, 15)Karachi, 16)Shikarpur, 17)Jamal Din Wali, 18)Gazaband, 19)Khojakpass, 20)Mehtarzai, 21)Qila Saifullah, 22)Loralai, 23)Ziarat, 24)Maiwand (Pir Chattar), 25)Muzaffarabad, 26)Parachinar, 27)Razmak, 28)Khokhrapar

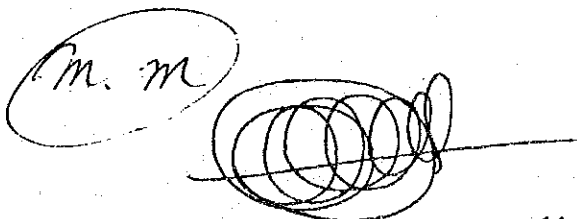
Out of 28 stations listed in 2 (1) above, there was no difference so far in the perception of Basic Design Study Team (JICA) and PTV's officials, regarding the justification of the establishment of 13 stations numbered at 16) to 28), but the Team was of the opinion that the law and order situation at these sites is not, presently, conducive for undertaking site survey of these stations.

While appreciating the concern of the Team, the PTV officials gave full assurance on behalf of PTV as well as conveyed the assurance of the provincial governments about the complete safety of the Japanese officials involved in the implementation of the Project at these sites. It was, therefore, considered that the site survey of these 13 stations would be reactivated as soon as the Government of Japan is satisfied about the law and order situation in these areas.

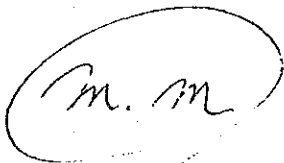
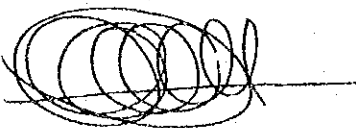
(2) Satellite TVRO for reception of programmes and order-wire communication systems among the following Centres at Islamabad, Lahore, Karachi, Quetta, Peshawar, and all PTV-2 (ETV) rebroadcast stations nationwide.

(3) Programme production studio equipment for Lahore and Karachi studios (one studio each)

M. M.

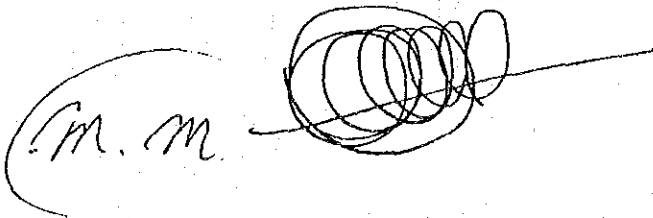
A handwritten signature consisting of the initials 'M. M.' inside an oval, followed by a large, dense scribble of overlapping loops and a horizontal line extending to the right.

- (4) An EFP vehicle with three cameras and ancillary equipment including portable vision mixer, audio mixer, VCR's, etc., for field production at Peshawar and Quetta TV Centres (one vehicle each)
- (5) One set of post production equipment each for Lahore, Karachi, Quetta and Peshawar
- (6) Two sets of ENG equipment (camcorders) each for Lahore and Karachi TV Centres
- (7) One set of editing equipment each for Lahore, Karachi, Peshawar and Quetta

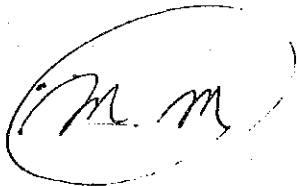
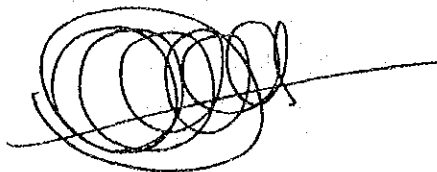


ANNEX-2: Necessary measures to be taken by the Government of the Islamic Republic of Pakistan, in case Japan's Grant Aid is extended.

1. To secure necessary lands for the Project.
2. To clear level and reclaim the sites prior to commencement of the construction.
3. To undertake incidental outdoor works such as gardening, fencing, gates and exterior lighting in and around the sites.
4. To construct the access road to the sites prior to commencement of the construction.
5. To provide the following facilities to the sites.
 - (1) Electricity distributing line to the sites.
 - (2) City water distribution main to the sites.
 - (3) City drainage main to the sites.
 - (4) Telephone trunk line, the main distribution frame and PABX facility.
 - (5) General furniture such as carpets, curtains, tables, chairs and others.
6. To undertake necessary modifications of one of the existing PTV studios at Lahore for PTV-2 (ETV) production.
7. To undertake necessary modifications of existing PTV buildings at Lahore, Karachi, Quetta and Peshawar for installation of post production equipment, if necessary.
8. To construct new buildings and towers or to undertake necessary modifications of existing transmitter buildings for the installation of PTV-2 rebroadcast transmitters.
9. To prepare data and information necessary for detailed design.

M. M. 

10. To ensure prompt unloading and customs clearance on the materials and equipment provided under the Grant at ports of disembarkation in Pakistan.
11. To exempt all custom duties, import taxes and inland transportation taxes (including octroi, etc.,) and to take necessary measures for customs clearance on the materials and equipment brought for the Project at the port of disembarkation.
12. To bear following commissions to the Japanese foreign exchange bank for banking services based upon the Banking Arrangement (B/A).
 - (1) Advising commission of Authorization to Pay (A/P).
 - (2) Payment commission.
13. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contract such facilities as may be necessary for their entry into Pakistan and stay therein for the performance of their work.
14. To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in Pakistan with respect to the supply of the products and services under the verified contract.
15. To maintain and use properly and effectively the facilities constructed and the equipment provided under the Grant.
16. To bear all the expenses other than those to be borne by the Grant.



(Explanation of Draft Report)

Minutes of Discussions

on

the Basic Design Study on the Project for the Expansion of
the Second TV Channel for Education

in

the Islamic Republic of Pakistan

(Draft Report Explanation)

From the 20th of June to the 31st of July, 1994, the Japan International Cooperation Agency (JICA) dispatched a Basic Design Study Team on the Project for the Expansion of the Second TV Channel for Education (hereinafter referred to as the "Project"), to the Islamic Republic of Pakistan, and through discussions, field surveys, and technical examination of the results in Japan, has prepared the Draft Study Report.

In order to explain and to consult the Pakistani side on the components of the Draft Study Report, JICA sent to Pakistan the Draft Report Explanation Team headed by Mr. MUKAI Ichirou, Second Basic Design Study Division, Grant Aid Study and Design Department, JICA, from the 12th to the 18th of October, 1994.

As a result of discussions, both parties agreed the main items described on the attached sheets.

Islamabad, the 17th October, 1994



Mr. MUKAI, ICHIROU

Leader,

Draft Report Explanation Team,

JICA



Mr. NISAR HUSSAIN

Director,

Educational Television,

Pakistan TV Corporation

ATTACHMENT

1. CONTENTS OF THE DRAFT STUDY REPORT

The Government of the Islamic Republic of Pakistan has agreed and accepted in principle the components of the Draft Study Report proposed by the Team.

2. CHARACTERISTICS OF THE JAPAN'S GRANT AID PROGRAMME

The Pakistani side has understood the system and characteristics of Japan's Grant Aid Programme explained by the Team including the following items.

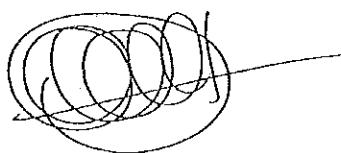
- 1) Japan's Grant Aid is extended in the form of financial assistance which makes available the funds for procuring services and products necessary for implementing the Project defined in the "Exchange of Notes" (E/N). Therefore the usage of the fund provided under the Japan's Grant is strictly limited by the stipulation of the E/N.
- 2) A project assisted by the Japan's Grant Aid must be implemented under " Japanese single year bud get system ". This means that the project cycle must be, as a rule, completed, from signing on E/N to the final payment, within the same fiscal year in which the E/N signed.
- 3) For smooth implementation of a Project, a consulting firm that was selected by JICA for the Basic Design Study will be recommended as a Project Consultant to the Pakistani side by JICA.
- 4) The Pakistani side will conclude the contract(-s) for implementing the Project with Japanese company(-ies). And all such contract to be concluded shall be verified by Ministry of Foreign Affairs of Japan through JICA.
- 5) Procuring services and products for implementing the Project shall be executed in accordance with " GUIDELINES FOR PROCUREMENT UNDER THE JAPANESE GRANT, 1991, JICA ".

3. NECESSARY MEASURES TO BE TAKEN BY THE PAKISTANI SIDE

- 1) The Pakistani side will take necessary measures described in Annex I for smooth implementation of the Project on condition that the Grant Aid by the Government of Japan is extended to the Project.
- 2) Especially, for the purpose to install rebroadcast transmitters, the Pakistani side will make necessary works and modifications as shown in Annex II.

4. FURTHER SCHEDULE OF THE STUDY

JICA will finalize the Basic Design Study Report and send it to the Pakistani side by February, 1995.



ANNEX I NECESSARY MEASURES TO BE TAKEN BY THE PAKISTANI SIDE

Following necessary measures should be taken by the Government of the Islamic Republic of Pakistan on condition that the Grant Aid by the Government of Japan is extended to the Project.

1. To provide data and information necessary for the Project;
2. To secure, clear, level and reclaim the sites for the Project prior to the Project implementation;
3. To provide proper access roads to the Project sites;
4. To undertake incidental outdoor works, such as gardening, fencing, exterior lighting in and around the Project sites, if necessary;
5. To provide facilities for electricity, water supply, telephone, drainage and other incidental facilities to the Project sites, if necessary;
6. To bear commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement, namely the advising commission of the "Authorization to Pay", and payment commission;
7. To ensure and take necessary measures for prompt unloading, tax exemption (including inland transportation taxes ie. octroi), customs clearance at the port of disembarkation in Pakistan and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid;
8. To exempt Japanese juridical and physical nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Pakistan with respect to the supply of the products and services under the verified contracts;
9. To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such facilities as may be necessary for their entry into Pakistan and stay therein for the performance of their work;
10. To provide necessary permissions, licences and other authorizations for implementing the Project, if necessary;
11. To maintain and use properly and effectively the equipment provided under the Project; and
12. To bear all the expenses other than those to be borne by the Japan's Grant Aid within the scope of the Project.

Works to be Undertaken by the Pakistani Side

Name of Rebroadcast Station (RBS)	Land	Civil Work	Tower	Electric Equipment	A/C Equipment	Furniture	Fire Fighting Equipment	Generator	Building
Phase 1									
Mingora	—	○	—	—	○	—	○	—	—
Layyah	—	○	—	—	○	○	○	—	—
Quetta	—	○	—	—	—	—	—	—	—
Karachi	—	○	○	—	—	—	—	—	—
Phase 2									
Morasar	—	○	—	—	○	○	○	—	—
Chitral	—	○	—	—	○	—	○	—	—
Dir	○	○	○	○	○	○	○	○	○
Thandiani	—	○	—	—	—	○	○	—	—
Pasrur	—	○	—	—	○	○	○	—	—
Faisalabad	—	○	—	—	○	○	○	—	—
Sahiwal	—	○	—	—	○	○	○	—	—
Bahawalnagar	—	○	—	—	○	○	○	—	—
Mailsi	○	○	○	○	○	○	○	○	○
Khewra	○	○	○	○	○	○	○	○	○
Gulibagh	—	○	—	—	○	○	○	—	—

5

5. Reference Data Attached

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	(for reference only)	
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5.1 Country Data

General Indexes					
Country Name	Islamic Republic of Pakistan	*1	Area	796,000,000 Km ²	*1
Form of Government	Republican Form	*1	Population	124,450,000 (1994)	*6
Sovereign	President Ghulam Ishaq Khan	*1	Capital City	Islamabad	*1
Date Independence	August 14, 1947	*1	Name of Major Cities	Karachi, Lahore Peshawar, Quetta	*1
Racial Composition	Punjabi, Sindhi	*1	Economically Active Population	28,900,000 (1987)	*1
Language, Official Language	Urdu, English	*1	Enrollment Rate in Primary Education	42.0% (1990)	*2
Religion	Islam 97%	*1	Literacy Rate	36.8% (1994)	*6
Participation in United Nations	September, 1947	*1	Population Density	156 person/km ² (1994)	*6
Participation in World Bank : IMF	July, 1950	*1	Population Growth Rate	3.0% (1994)	*6
			Average Life Span	Average 57.1 Male 56.5 Female 57.7	*1
			Infant Mortality Rate of 5 years and under	103/1000% (1993)	*1
			Calorie Supply	2,280.0 cal/day/person (1990)	*2

Economic Indexes					
Currency Unit	Pakistan Rupee	*1	International Trade	(1993)	*3
Exchange Rates (1US\$)	1US\$ = 30.50 (1992)	*3	Export	US\$ 6,688.0 million	*2
Fiscal Year	July ~ June	*1	Import	US\$ 9,500.0 million	*2
National Budget		*2	Import Cover Rate	1.40% (1992)	*4
Revenue	US\$ 7,369.70 million (1992)	*2	Main Export Commodities	Cotton, Textile Clothes, Rice	*1
Expenditure	US\$ 9,547.40 million (1992)	*2	Main Import Commodities	Petroleum & Products, Machine, Transport Equipment	*1
Balance of Payments	US\$ 530.00 million (1992)	*2	Export to Japan	US\$ 527.0 million (1992)	*5
ODA Receipts	US\$ 1,169.00 million (1992)	*2	Import from Japan	US\$ 1,297.0 million (1992)	*5
Gross Domestic Products (GDP)	US\$ 50,160.00 million (1992)	*2			
GDP per Capita	US\$ 400	*2	Foreign Exchange Reserves	US\$ 1,350.0 million (1994)	*1
GDP Composition by Industry	Agriculture 26.0%	*2	External Debt	US\$ 24,072.0 million (1992)	*4
	Mining and Industry 25.0%		External Debt Repayment Rate	23.3 % (1992)	*4
	Service 49.0%		Inflation	9.1 % (1992)	*2
Employment by Industry	Agriculture 47.0%	*2			
	Mining and Industry 20.0%				
	Service 33.0%				
Economic Growth Rate	7.8% (1992)	*2			

Weather (1949~1979 average) at Islamabad. (Elevation 511m above sea level)														
Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Average / Total	
Highest Temperature	16.0	19.0	24.0	31.0	37.0	40.0	36.0	34.0	34.0	32.0	28.0	20.0	29.2 °C	
Lowest Temperature	2.0	6.0	10.0	15.0	21.0	25.0	25.0	24.0	21.0	15.0	9.0	3.0	14.6 °C	
Precipitation	64.0	64.0	81.0	42.0	23.0	55.0	233.0	258.0	85.0	21.0	12.0	23.0	961.0 mm	
Rainy Season / Dry Season								Rain						

- *1 The World Fact Book (C.I.A)
- *2 Human Development Report (UNDP)
- *3 International Financial Statistics (IMF)
- *4 World Debt Tables (World)
- *5 Latest World Almanac (Tokyo Books)
- *6 1993~94 Economic Survey

*7

Results of ODA of Japan (Fund Aid on commitment base, Unit in million Yen)				
Fiscal Year	1989	1990	1991	1992
Grant Aid	204,346	238,247	251,530	269,997
Technical Cooperation	214,674	198,963	205,070	219,495
ODA Loan	516,142	567,639	736,447	585,205
Total	935,162	1,004,849	1,193,047	1,074,697

*7

Result of ODA of Japan for Country Concerned (Net disbursement, Unit in million dollars)				
Calendar Year	1989	1990	1991	1992
Grant Aid	14.26	11.54	12.67	12.82
Technical Cooperation	74.78	56.06	74.13	59.39
ODA Loan	88.42	125.96	40.55	101.04
Total	177.46	193.56	127.35	173.25

*8

Result of Economic Cooperation of ODA Countries (Net disbursement, Unit in million dollars)			
	Official development assistance (ODA)	Other official flows and private flows	Total economic cooperation
Bilateral Aid	550.00	0.00	550.00
Multilateral Aid	821.30	0.00	821.30
Others	553.80	288.40	842.20
Total	1,925.10	288.40	2,213.50

*9

Aid Recipient Organization	
Technical	Public corporation → Each ministry concerned → EAD
Grant aid	Public corporation → Each ministry concerned → EAD
Cooperation volunteers	Public corporation → Each ministry concerned → EAD

*7 Official Development Assistance of Japan (Ministry of Foreign Affairs)

*8 Overseas Economic Assistance of Japan (Overseas Economic Cooperation Fund)

*9 Cooperation Information by Country (JICA)

5.2 Approved Budget of PTV (1992-93)

Particulars	GTV			ETV (Rs.)	Total (Rs.)
	Viable Projects (Rs.)	Non-viable Projects (Rs.)	Subtotal (Rs.)		
INCOME					
Advertising Income	638,051,700	50,827,300	688,879,000	108,862,300	797,741,300
TV Licence Fee Collection	209,600,000	9,400,000	219,000,000	0	219,000,000
VCR Licence Fee Collection	0	0	0	13,000,000	13,000,000
TBRSA Licence Fees	1,916,000	84,000	2,000,000	0	2,000,000
Sales of Programmes	10,000,000	0	10,000,000	0	10,000,000
Income from ETV Programmes	0	0	0	150,000,000	150,000,000
Others	35,000,000	0	35,000,000	0	35,000,000
Total	894,567,700	60,311,300	954,879,000	271,862,300	1,226,741,300
EXPENDITURE					
Programme Production	36,243,500	14,640,800	50,884,300	1,300,000	52,184,300
News Bulletins	27,584,200	14,624,700	42,208,900	0	42,208,900
Purchased Programmes	10,723,500	7,128,000	17,851,500	9,704,300	27,555,800
Sports Programmes	9,580,200	5,503,800	15,084,000	0	15,084,000
Education Programmes	0	0	0	9,279,200	9,279,200
Overseas Projection	1,272,000	0	1,272,000	0	1,272,000
Current Affairs Programmes	2,484,800	680,600	3,165,400	0	3,165,400
Commercial Programmes	890,300	0	890,300	0	890,300
Operation and Maintenance	39,947,300	35,732,100	75,679,400	85,511,700	161,191,100
Salaries and Benefits	203,150,800	98,007,400	301,158,200	19,175,700	320,333,900
Staff Expenses	136,615,200	69,606,000	206,221,200	9,955,800	216,177,000
Travel and Transport	10,751,200	6,226,800	16,978,000	1,744,000	18,722,000
Office Expenses	33,645,200	20,408,100	54,053,300	6,645,000	60,698,300
TV Licence Fee Collection	9,641,600	6,616,600	16,258,200	1,358,900	17,617,100
Training and Delegation	780,000	520,000	1,300,000	0	1,300,000
Legal and Professional	732,400	446,500	1,178,900	0	1,178,900
Financial	2,137,100	1,421,400	3,558,500	10,000	3,568,500
Special Fund for Contingencies	26,595,000	11,752,000	38,347,000	76,561,000	114,908,000
Depreciation	87,534,500	30,186,300	117,720,800	50,616,700	168,337,500
Total	640,308,800	323,501,100	963,809,900	271,862,300	1,235,672,200
Net Profit (Loss)	254,258,900	△263,189,800	△8,930,900	0	△8,930,900

5.3 Balance Sheet of PTV (1992-93)

	GTV (Rs.)	ETV (Rs.)	Total (Rs.)
INCOME			
Advertising Income	709,499,999	20,268,157	729,768,156
TV Licence Fees	233,932,163	—	233,932,163
VCR Licence Fees	—	10,906,599	10,906,599
TBRSA Licence Fees	6,097,770	—	6,097,770
Sales of Programmes	7,538,258	—	7,538,258
Income from ETV Programmes	—	82,545,000	82,545,000
Others	87,761,521	44	87,761,565
Total	1,044,829,711	113,719,800	1,158,549,511
EXPENDITURE			
Programme Production	55,697,653	1,578,592	57,276,245
News Bulletins	37,844,021	—	37,844,021
Purchased Programmes	12,511,447	6,921,980	19,433,427
Sports Programmes	29,439,294	—	29,439,294
Education Programmes	—	1,373,839	1,373,839
Overseas Projection	841,667	—	841,667
Current Affairs Programmes	3,084,662	—	3,084,662
Commercial Programmes	18,598	—	18,598
Operation and Maintenance	92,449,899	76,527,619	168,977,518
Salaries and Benefits	319,789,077	10,251,119	330,040,196
Staff Expenses	205,389,617	4,985,461	210,375,078
Travel and Transport	18,823,556	799,584	19,623,140
Office Expenses	58,794,081	2,398,538	61,192,619
TV Licence Fee Collection	12,067,955	—	12,067,955
VCR Licence Fee Collection	—	558,267	558,267
TBRSA Licence Fee Collection	35,258	—	35,258
Training and Delegation	868,845	—	868,845
Legal and Professional	1,584,906	—	1,584,906
Financial and Deferred Costs	10,928,096	236,325	11,164,421
Depreciation	102,179,919	52,818,676	154,998,595
Provision for Taxation	4,827,341	568,599	5,395,940
Total	967,175,892	159,018,599	1,126,194,491
Income (Loss) for the Year	77,653,819	△45,298,799	32,355,020
Income (Loss) Brought forward from Previous Year	48,957,218	△53,123,407	△4,166,189
Income (Loss) Available for Appropriation	126,611,037	△98,422,206	28,188,831
Transferred to Reserve for Replacement of Old Equipment	△25,000,000	—	△25,000,000
Final Income (Loss) for the Year	101,611,037	△98,422,206	3,188,831

5.4 Approved Budget of PTV (1993-94)

Particulars	GTV			ETV (Rs.)	Total (Rs.)
	Viable Projects (Rs.)	Non-viable Projects (Rs.)	Subtotal (Rs.)		
INCOME					
Advertising Income	795,379,000	61,821,000	857,200,000	33,800,000	891,000,000
TV Licence Fee Collection	239,000,000	11,000,000	250,000,000	0	250,000,000
VCR Licence Fee Collection	0	0	0	13,000,000	13,000,000
TBRSA Licence Fees	5,747,000	253,000	6,000,000	0	6,000,000
Sales of Programmes	10,000,000	0	10,000,000	0	10,000,000
Income from ETV Programmes	0	0	0	150,000,000	150,000,000
Others	44,873,700	0	44,873,700	0	44,873,700
Total	1,094,999,700	73,074,000	1,168,073,700	196,800,000	1,364,873,700
EXPENDITURE					
Programme Production	40,178,000	15,571,000	55,749,000	880,000	56,629,000
News Bulletins	28,043,200	15,057,700	43,100,900	0	43,100,900
Purchased Programmes	12,219,600	8,145,700	20,365,300	10,286,600	30,651,900
Sports Programmes	18,331,000	11,111,100	29,442,100	0	29,442,100
Education Programmes	0	0	0	5,000,000	5,000,000
Overseas Projection	763,200	508,800	1,272,000	0	1,272,000
Current Affairs Programmes	2,803,700	550,800	3,354,500	0	3,354,500
Commercial Programmes	534,200	356,100	890,300	0	890,300
Operation and Maintenance	45,126,400	39,521,600	84,648,000	105,482,500	190,130,500
Salaries and Benefits	214,819,200	106,220,700	321,039,900	17,969,800	339,009,700
Staff Expenses	149,950,100	73,419,200	223,369,300	10,621,200	233,990,500
Travel and Transport	11,830,000	7,584,900	19,414,900	1,916,700	21,331,600
Office Expenses	36,098,900	23,215,500	59,314,400	6,839,500	66,153,900
TV Licence Fee Collection	9,311,900	6,390,400	15,702,300	1,190,400	16,892,700
Training and Delegation	780,000	520,000	1,300,000	0	1,300,000
Legal and Professional	1,074,000	654,700	1,728,700	0	1,728,700
Financial	1,778,400	1,355,300	3,133,700	10,600	3,144,300
Special Fund for Contingencies	54,111,000	19,751,300	73,862,300	79,353,700	153,216,000
Depreciation	87,743,000	30,257,800	118,000,800	49,634,300	167,635,100
Total	715,495,800	360,192,600	1,075,688,400	289,185,300	1,364,873,700
Net Profit (Loss)	379,503,900	△287,118,600	92,385,300	△92,385,300	0

5.5 Balance Sheet (estimated) of PTV (1993-94)

	GTV (Rs.)	ETV (Rs.)	Total (Rs.)
INCOME			
Advertising Income	762,076,903	2,152,142	764,229,045
TV Licence Fees	254,632,519	0	254,632,519
VCR Licence Fees	0	9,560,327	9,560,327
TBRSA Licence Fees	10,622,560		10,622,560
Sales of Programmes	4,734,840	0	4,734,840
Income from ETV Programmes	0	41,995,000	41,995,000
Others	60,590,302	0	60,590,302
Total	1,092,657,124	53,707,469	1,146,364,593
EXPENDITURE			
Programme Production	66,298,159	322,368	66,620,527
News Bulletins	38,914,710	0	38,914,710
Purchased Programmes	15,259,118	7,526,143	22,785,261
Sports Programmes	28,341,402	0	28,341,402
Education Programmes	0	1,485,166	1,485,166
Overseas Projection	595,478	0	595,478
Current Affairs Programmes	4,412,437	0	4,412,437
Commercial Programmes	13,613	0	13,613
Operation and Maintenance	88,818,496	100,185,552	189,004,048
Salaries and Benefits	356,130,616	14,691,675	370,822,291
Staff Expenses	232,497,268	7,711,886	240,209,154
Travel and Transport	20,787,210	1,160,310	21,947,520
Office Expenses	58,418,769	4,161,404	62,580,173
TV Licence Fee Collection	15,843,080	0	15,843,080
VCR Licence Fee Collection	0	697,077	697,077
TBRSA Licence Fee Collection	172,309	0	172,309
Training and Delegation	476,268	0	476,268
Legal and Professional	1,265,166	0	1,265,166
Financial and Deferred Costs	1,173,937	4,537	1,178,474
Contingencies	14,805,676	123,904	14,929,580
Depreciation	118,120,400	49,634,300	167,754,700
Provision for Taxation	5,160,334	268,537	5,428,871
Total	1,067,504,446	187,972,859	1,255,477,305
Income (Loss) for the Year	25,152,678	△134,265,390	△109,112,712
Income (Loss) Brought forward from Previous Years	9,204,143	0	9,204,143
Income (Loss) Available for Appropriation	101,611,037	△98,422,206	3,188,831
Final Income (Loss) for the Year	135,967,858	△232,687,596	△96,719,738

5.6 Approved Budget of PTV (1994-95)

Particulars	GTV			ETV (Rs.)	Total (Rs.)
	Viable Projects (Rs.)	Non-viable Projects (Rs.)	Subtotal (Rs.)		
INCOME					
Advertising Income	918,601,400	71,398,600	990,000,000	60,000,000	1,050,000,000
TV Licence Fee Collection	258,320,000	11,680,000	270,000,000	0	270,000,000
VCR Licence Fee Collection	0	0	0	10,000,000	10,000,000
TBRSA Licence Fees	4,782,500	217,500	5,000,000	0	5,000,000
Sales of Programmes	10,000,000	0	10,000,000	0	10,000,000
Income from ETV Programmes	0	0	0	180,000,000	180,000,000
Others	50,000,000	0	50,000,000	0	50,000,000
Total	1,241,703,900	83,296,100	1,325,000,000	250,000,000	1,575,000,000
EXPENDITURE					
Programme Production	48,560,500	21,612,500	70,173,000	1,026,300	71,199,300
News Bulletins	27,465,200	14,899,800	42,365,000	0	42,365,000
Purchased Programmes	15,131,400	10,087,600	25,219,000	9,355,200	34,574,200
Sports Programmes	22,498,500	5,963,200	28,461,700	0	28,461,700
Education Programmes	0	0	0	5,133,500	5,133,500
Overseas Projection	565,500	377,000	942,500	0	942,500
Current Affairs Programmes	3,650,400	1,163,400	4,813,800	0	4,813,800
Commercial Programmes	431,100	287,400	718,500	0	718,500
Operation and Maintenance	69,484,500	32,829,100	102,313,600	109,910,800	212,224,400
Salaries and Benefits	274,334,300	143,698,900	418,033,200	22,863,100	440,896,300
Staff Expenses	182,765,600	95,076,600	277,842,200	13,518,800	291,361,000
Travel and Transport	14,872,900	8,924,700	23,797,600	1,445,700	25,243,300
Office Expenses	40,912,100	26,918,000	67,830,100	4,895,400	72,725,500
TV Licence Fee Collection	17,426,500	787,900	18,214,400	1,220,000	19,434,400
Training and Delegation	826,800	551,200	1,378,000	0	1,378,000
Legal and Professional	1,235,600	797,100	2,032,700	0	2,032,700
Financial	1,386,000	2,034,200	3,420,200	665,900	4,086,100
Special Fund for Contingencies	40,685,600	33,459,600	74,145,200	78,019,500	152,164,700
Depreciation	88,593,000	32,260,200	120,853,200	44,391,900	165,245,100
Total	850,825,500	431,728,400	1,282,553,900	292,446,100	1,575,000,000
Net Profit (Loss)	390,878,400	△348,432,300	42,446,100	△42,446,100	0

5.7 Produced Programmes, User Ministries/Agencies and Income
(1992-93)

	Produced Programmes	Length & Series	Contents of Programmes	User Ministries/ Agencies	Income (Rs.)
1	Bismillah	10' x 365	Teaching of Holy Quraan	Education	25,858,790.00
2	Hamara Qaeda	30' x 52	Functional literacy	Education	928,980.00
3	Aasan Hesaab	30' x 52	Teaching of simple arithmetic	Education	928,980.00
4	Computers	30' x 13	Computers & their use	Education	232,245.00
5	Batoon Batoon Mein	30' x 13	Illustrated talks on scientific topics	Education	1,767,675.00
6	Ehtiat Behtar Hai	30' x 13	Tips on health & hygiene	Health	1,767,675.00
7	Bunyaad	30' x 12	Child care from birth to one year	Health	232,245.00
8	Kaam Ki Baat	30' x 13	Storage of household & industrial chemicals	Education	1,767,675.00
9	Matti Sona	30' x 52	Agriculture & related subjects	Agriculture	7,848,464.00
10	Salamati	30' x 52	Health, diseases & medical subjects	Health	7,848,464.00
11	Hamaray Saath	30' x 52	Art, culture & general interest subjects	Education	7,848,464.00
12	Agla Qadam	30' x 13	Drama series on population themes	Pop. Welfare	1,767,675.00
13	Sports Show	30' x 13	Sports & sportsmen	Education	2,705,625.00
14	Meri Kitaab	30' x 52	Functional literacy	Education	6,132,776.00
15	Hunarmand	30' x 13	Vocational guidance & skill development	Manpower	1,767,675.00
16	Raastay	30' x 13	Parental guidance for pre-school children	Education	232,245.00
17	Tabiyat Key Kammal	30' x 13	Physics for secondary school students	Education	232,245.00
18	Ham Qadam	30' x 13	Documentaries on women's issues	Women Dev.	1,767,675.00
19	Aasan Hesaab P-2	30' x 52	Teaching of basic arithmetic	Education	7,848,464.00
20	Janwar Aur Hamari Maeeshat	30' x 13	Livestock development & its importance	Agriculture	1,533,194.00
21	ETV Quiz	30' x 13	Science quiz show for secondary students	Education	1,767,675.00
				Total	82,784,906.00

5.8 ETV Weekly On-Air Timetable after Recruitment

	Sat.	Sun.	Mon.	Tue.	Wed.	Thu.	Fri.
10:00	School programme (1-1) → repeat	School programme (2-2) → repeat	School programme (1-2) → repeat	School programme (1-2) → repeat	School programme (2-1) → repeat	Experimental transmission (Studio B)	
10:20			School programme (3-1) → repeat	School programme (3-1) → repeat	School programme (3-2) → repeat		
10:40			Literacy programme (1) → repeat	Literacy programme (2) → repeat	Literacy programme (3) → repeat		
11:00							
12:00							
13:00	Quraan reading						
13:10	GTV Programmes produced in local centres (repeat)						
14:00	GTV Prime time programmes (repeat)						
14:50	Educational and cultural programmes (imported)						
15:20	A I O U (repeat)						
15:50	Imported programmes (dubbed to Urdu) (P.P.)						
16:35	English language programmes (imported)						ETV programmes (repeat)
17:00	Educational; cultural; vocational programmes (EFP)						
17:30	Educational; cultural programmes (Studio A)						
18:00	A I O U						
18:30	Literacy programmes (repeat)						ETV Progrms. (repeat)
18:50	Arabic news						
19:00							

5.9 Fault/Breakdown Report of Karachi Transmitter During July '93 to July '94

PCA TRANSMITTER TT15FL 10 KW
DATE OF INSTALLATION: 08-01-1977

FAULT / BREAKDOWN REPORT DURING JULY - 93 to JULY - 94

Date	Nature of fault	Rectification	Time taken for rectification (Minutes)
28-07-1993	No High Voltage	Changed Rectifier of high voltage supply	20
06-08-1993	Plate not ready indication	Changed K6 Relay in the control cabinet.	32
13-08-1993	Aural Frequency shifted	Tuned the AFC/Reference Oscillator with the help of Frequency Counter.	40
20-10-1993	NO visual Exciter power indication	Changed the 20 Watt visual amplifier unit	12
30-10-1993	110 Voltage not present.	Changed the power transistor in modulator power supply	30
10-11-1993	NO Video receive visual processing Amplifier.	Changed the transistor 2N3148 of processor unit	45
15-11-1993	NO output 5W visual amplifier	Changed the 5 watt visual amplifier	10
25-11-1993	Visual output power dropped	Changed the visual IPA tube 8791 (Intermediate power amplifier)	39
03-01-1994	Aural power dropped	Retuned the Aural transmitter oscillator	25
23-01-1994	Visual power amplifier 6KV not available.	High voltage interlock relay adjusted	58
08-02-1994	NO 1.5 watt visual output power.	Changed the 1.5 watt visual output power unit	10
12-02-1994	NO Filament voltage available.	Relay K3 for filament circuit cleaned & adjusted	20

(contd...P/2...)

: - (2) - :

Date	Nature of fault	R e c t i f i c a t i o n	Time taken for rectification
31-3-1994	Visual frequency shifted.	Tuned the visual reference Oscillator	15
11-4-1994	NO video output from amplifier unit	Changed the transistor 2N3635 of video amplifier.	25
29-4-1994	Aural power dropped.	Tube faulty, changed the tube of Aural power Amplifier.	15
06-13-1994	-110 volt, -24 volt, - 10 volt + 10 volt absent	Changed the transistor NO. 2N3055 of modulator power supply.	25
28-6-1994	Aural frequency shifted.	Tune the reference oscillator frequency with the help of frequency counter.	10
15-7-1994	-110 volt absent	Changed the transistor No.2N1711 of modulator power supply.	20

(Minutes)

N. A. Sajjad
 (NASIR A. SAJJAD)
 Controller Engineering
 Planning & Procurement

5.10 Cost Estimation Borne by the Pakistani Side

(Unit:mRs)

Name of Broadcast Station (RBS)	Land	Civil Work	Tower	Electric Equipment	A/C Equipment	Furniture	Fire Fighting Equipment	Generator	Vehicle	Total
Phase 1										
Mingora	—	0.30	—	—	0.06	—	0.025	—	—	0.385
Layyah	—	0.20	—	—	0.09	0.025	0.025	—	—	0.34
Quetta	—	0.20	—	—	—	—	—	—	—	0.20
Karachi	—	0.35	1.50	—	—	—	—	—	—	1.85
Total of Phase 1	—	1.05	1.50	—	0.15	0.025	0.050	—	—	2.775
Phase 2										
Morasar	—	0.05	—	—	0.03	0.025	0.025	—	—	0.13
Chitral	—	0.15	—	—	0.06	—	0.025	—	—	0.235
Dir	1.00	5.50	3.00	0.50	0.10	0.080	0.025	0.50	0.90	11.605
Thandiani	—	0.40	—	—	—	0.025	0.025	—	—	0.45
Pasrur	—	0.40	—	—	0.10	0.025	0.025	—	—	0.55
Faisalabad	—	0.15	—	—	0.10	0.025	0.025	—	—	0.30
Sahiwal	—	0.45	—	—	1.00	0.025	0.025	—	—	1.50
Bahawalnagar	—	0.20	—	—	0.50	0.025	0.025	—	—	0.75
Mailsi	5.00	5.50	4.00	0.50	0.50	0.080	0.050	0.60	0.90	17.13
Khewra	3.00	5.50	2.00	0.50	0.30	0.080	0.050	0.60	0.90	12.93
Gulibagh	—	0.10	—	—	0.06	0.025	0.025	—	—	0.21
Total of Phase 2	9.00	18.40	9.00	1.50	2.75	0.415	0.325	1.70	2.70	45.79
Total	48.565									