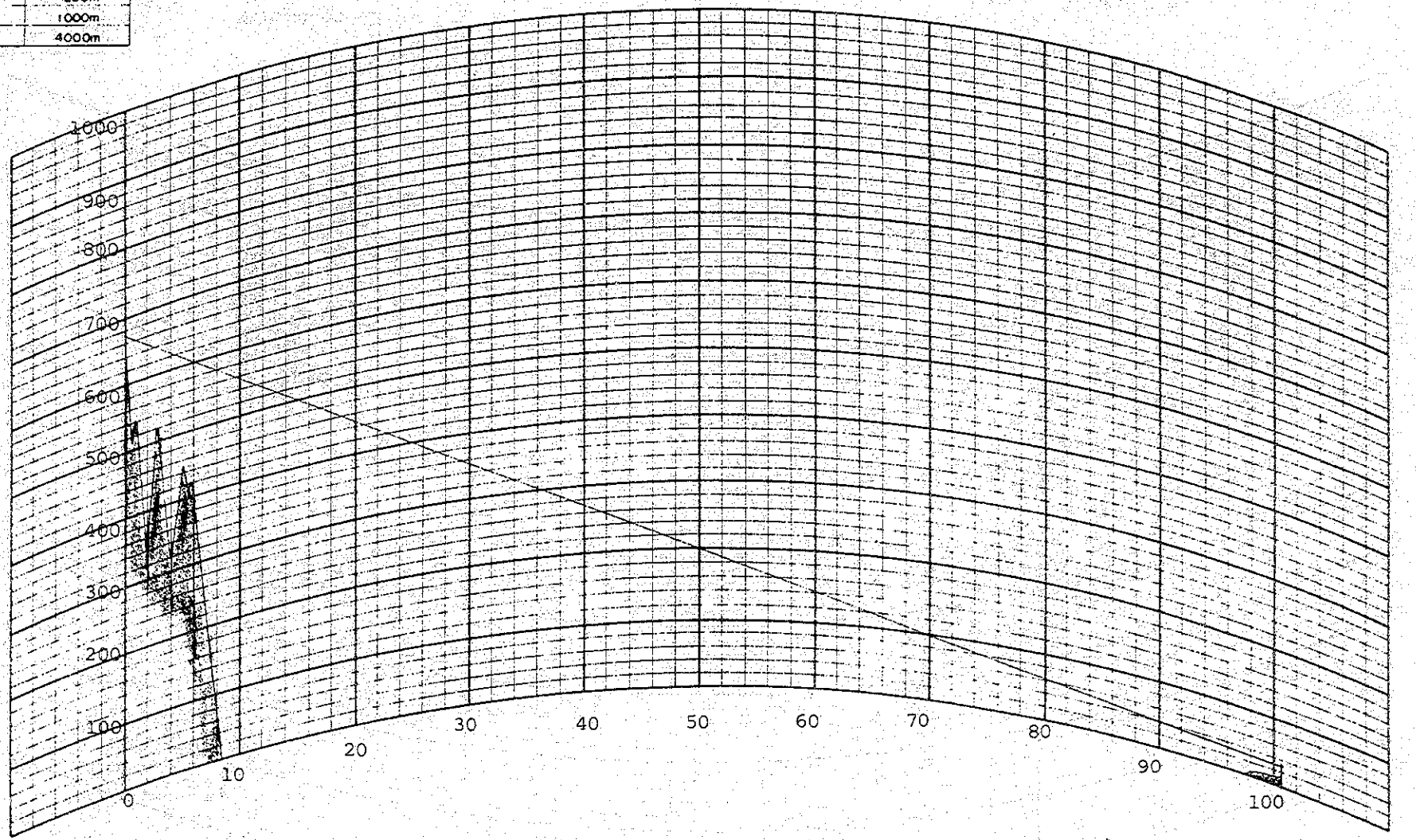
PATH PROFILE (4/3 RADIUS)

FULL SCALE	DISTANCE	HEIGHT
1/	60km	250m
1/	120km	1000m
1/	240km	4000m

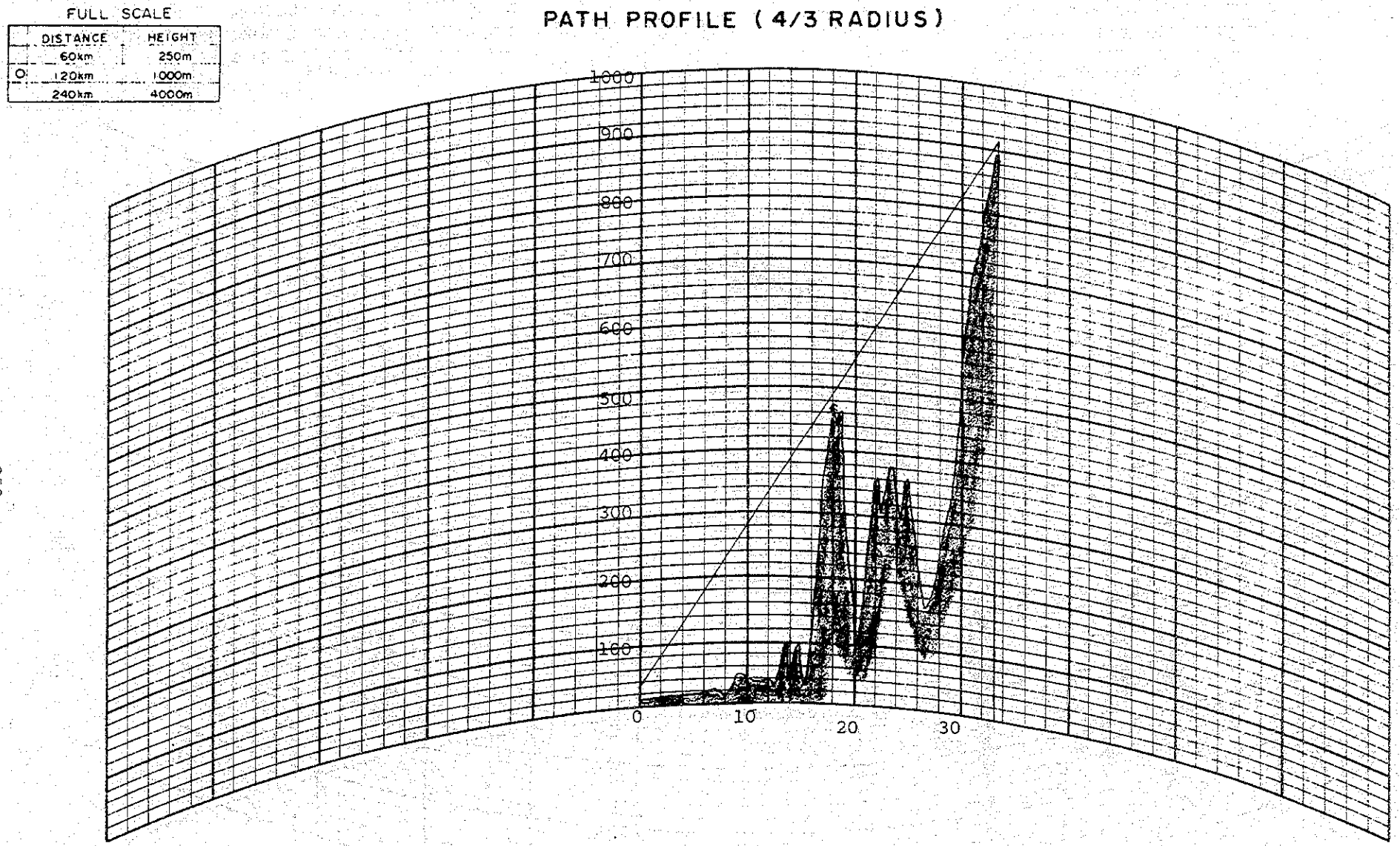


Tablas R.S.
SITE
GROUND ELEVATION 640 m
ANTENNA HEIGHT 30 m

DISTANCE 100.7 km

Kalibo
SITE
GROUND ELEVATION 10 m
ANTENNA HEIGHT 20 m

Fig. VII-2-2-2(9/17)



SITE: San Jose
GROUND ELEVATION: 10 m
ANTENNA HEIGHT: 20 m

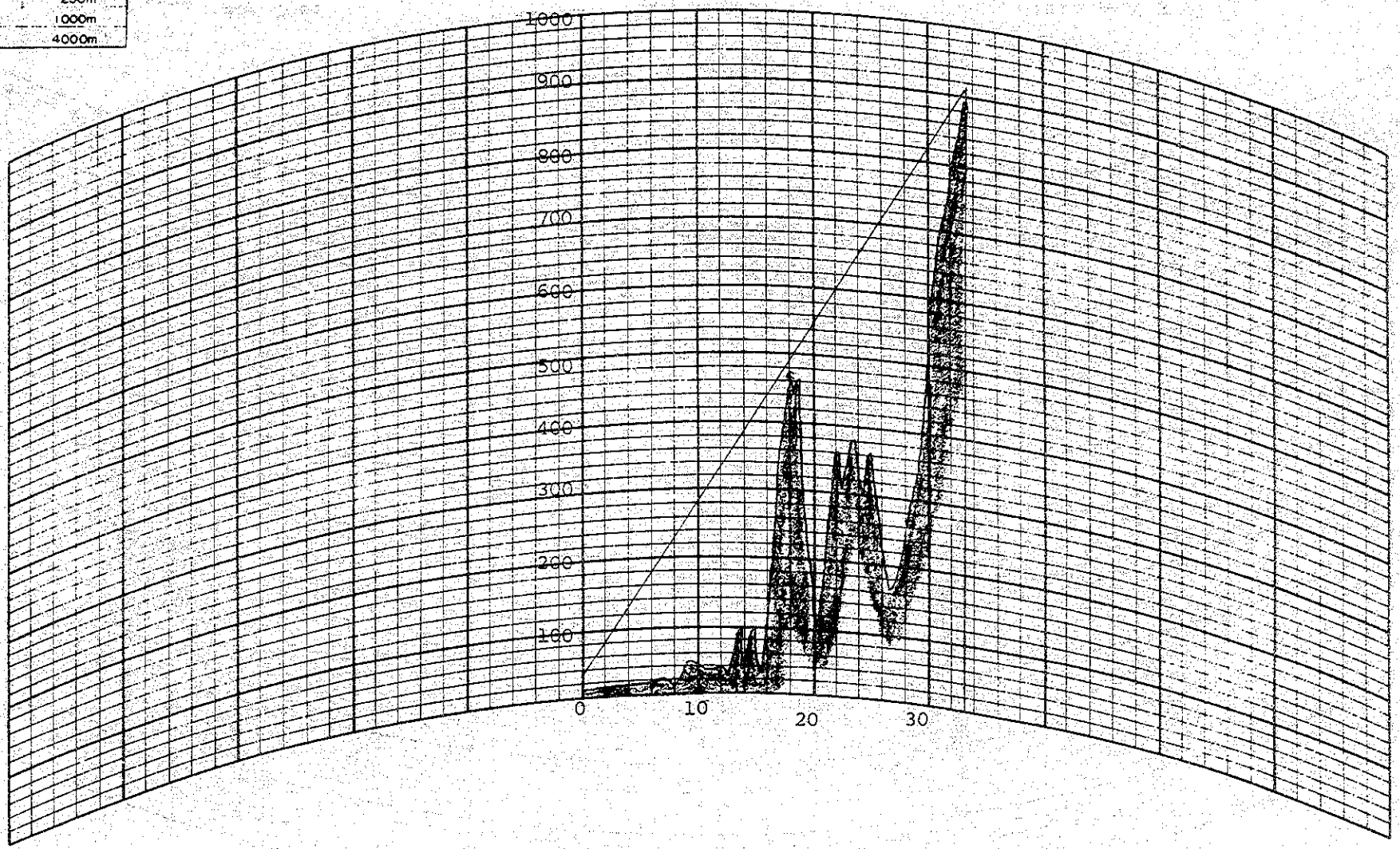
DISTANCE: 33.4 km

SITE: Knob Peak R.S.
GROUND ELEVATION: 890 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-2(10/17)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	
DISTANCE	HEIGHT
60km	250m
120km	1000m
240km	4000m



SITE: San Jose
GROUND ELEVATION: 10 m
ANTENNA HEIGHT: 20 m

DISTANCE: 33.4 km

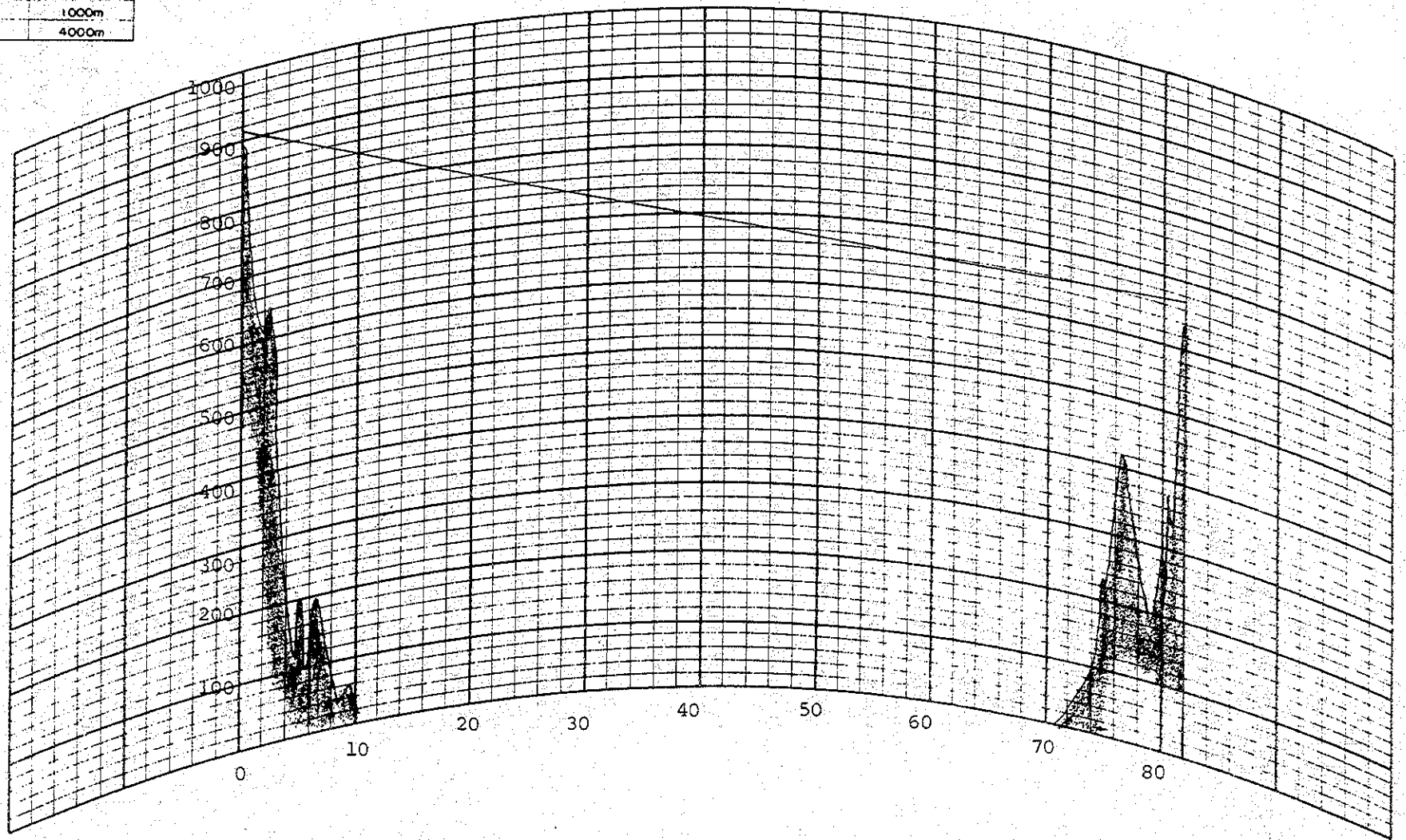
SITE: Knob Peak R.S.
GROUND ELEVATION. 890 m
ANTENNA HEIGHT. 20 m

Fig.VII-2-2-2(10/17)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE Knob Peak R.S.
GROUND ELEVATION 890 m
ANTENNA HEIGHT 20 m

DISTANCE 82.0 km

SITE Tablas R.S.
GROUND ELEVATION 640 m
ANTENNA HEIGHT 30 m

Fig.VII-2-2-2(11/17)

2-2-2 UHF/VHF Routes

(1) Route selection

Two different means may be considered for the transmission line between PC and LE (or IPTS): Radio and cable systems. When the transmission distance is less than about 10km, a cable system is to be employed as per the route selection principles described in paragraph VII-2-1, item (2). However, in the following cases, proper transmission systems are to be selected depending on the conditions of the individual cases.

1) For such short-haul sections that have a river or the like on the way but have no bridge to cross it, the adoption of a cable system is difficult and thus a radio system is to be employed.

2) For such long-haul sections that will not allow the setup of a proper radio route because of their topographical conditions, a cable system is to be employed.

The principles of path clearance introduced in the site selection for radio routes are the same as those employed for SHF routes. The UHF/VHF routes to be constructed in consideration of these conditions are shown in Fig. VII-2-2-3.

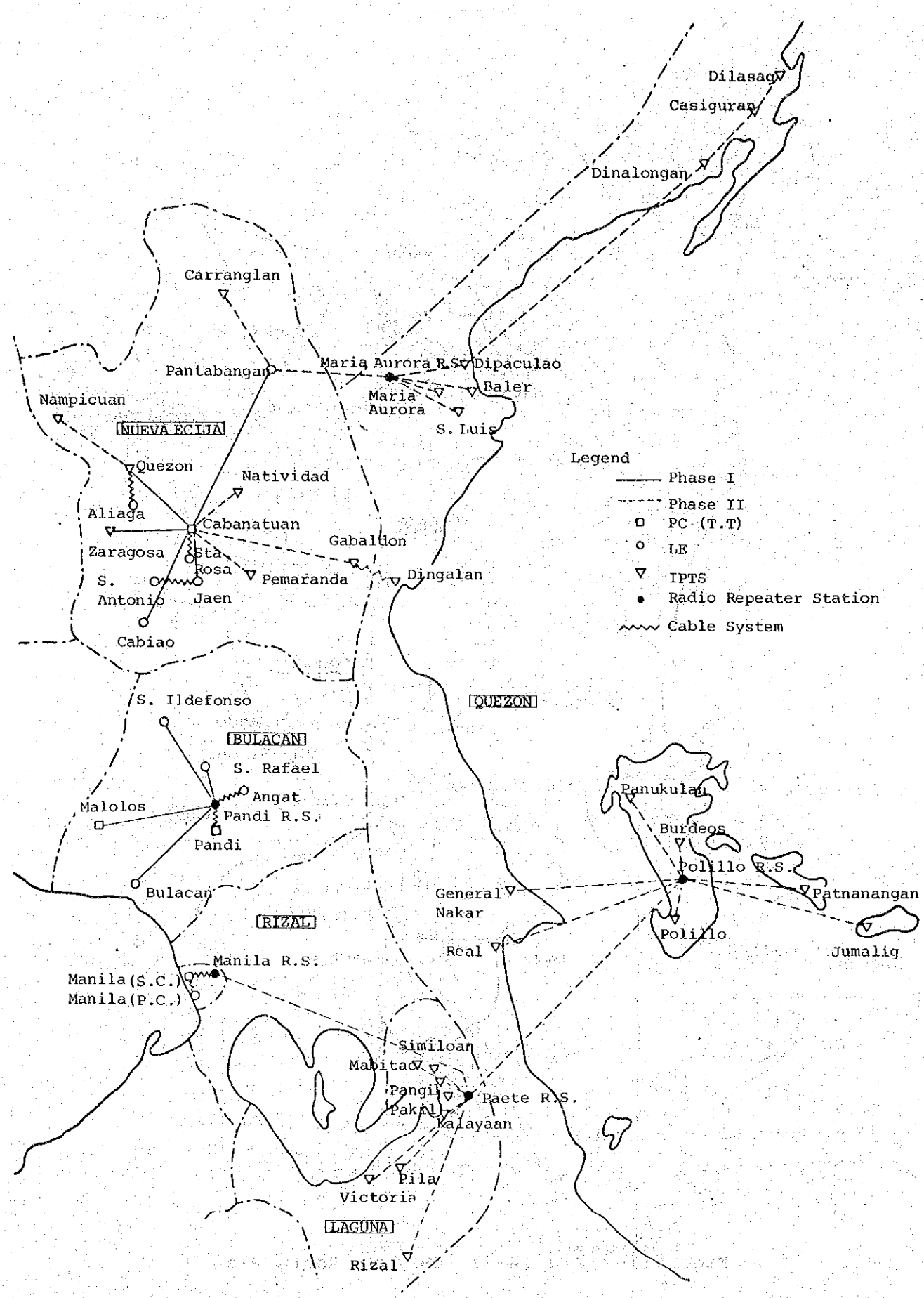


Fig. VII-2-2-3 (1/5) UHF/VHF Route Plan

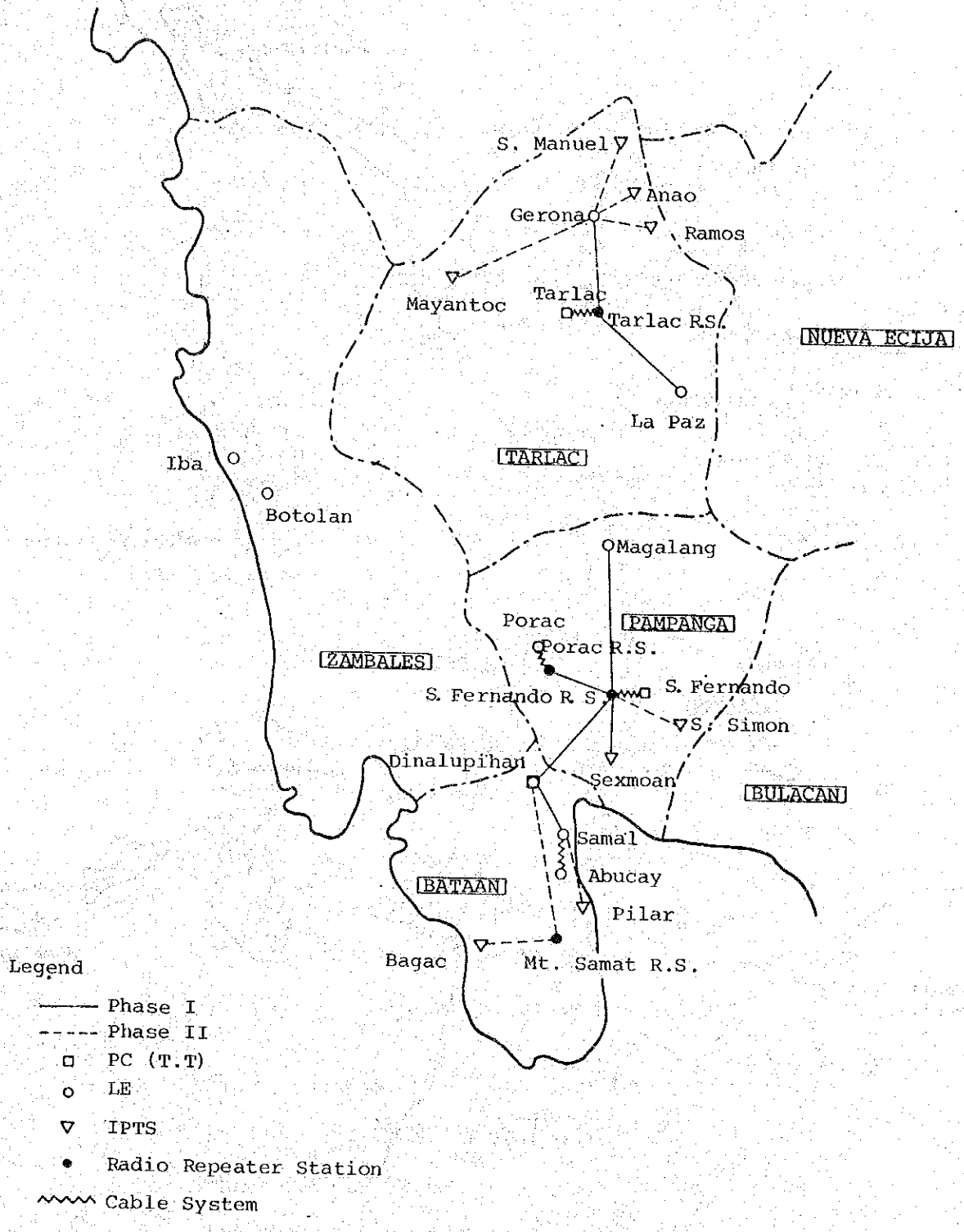


Fig. VII-2-2-3 (2/5) UHF/VHF Route Plan

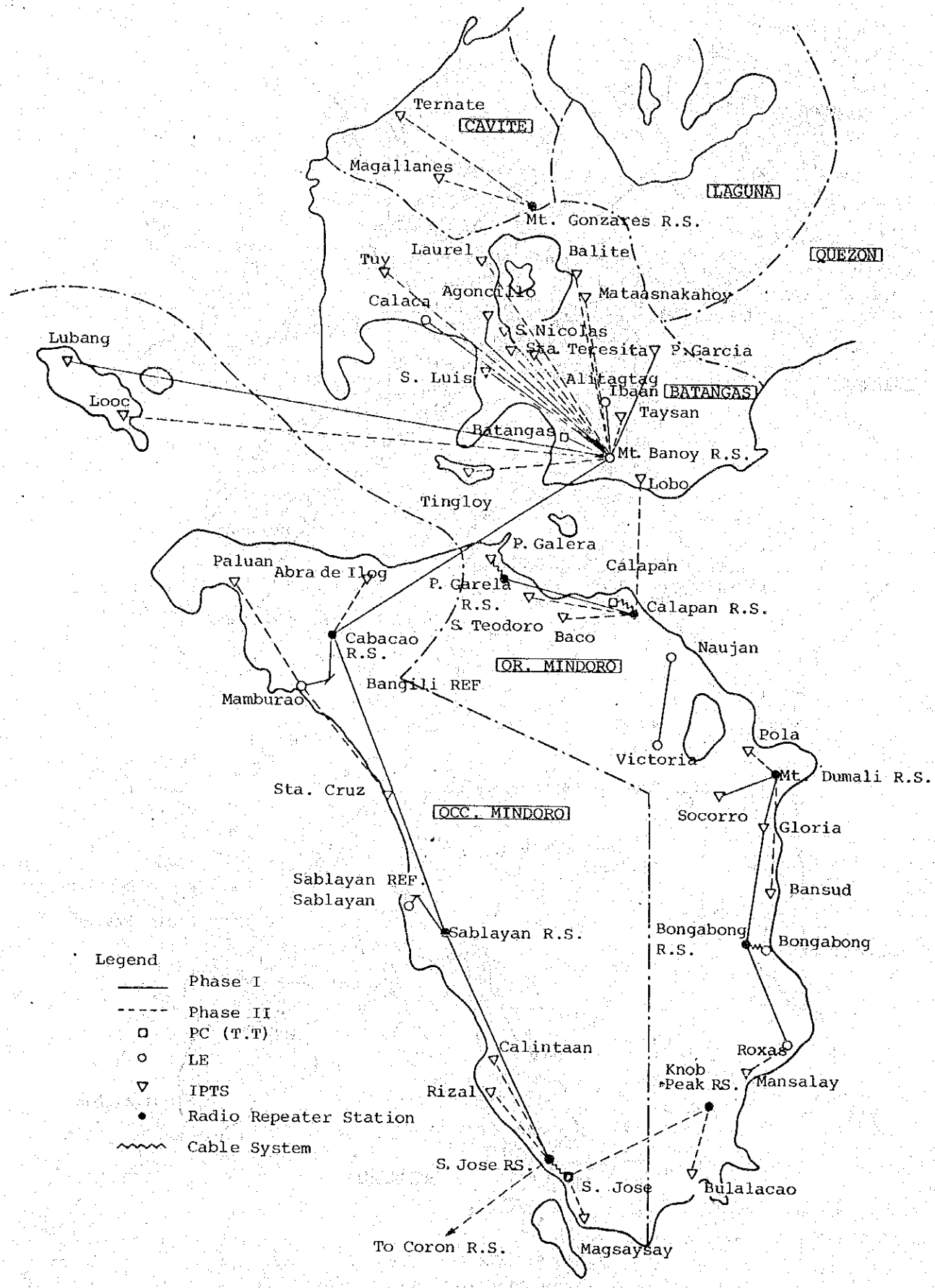


Fig. VII-2-2-3 (3/5) UHF/VHF Route Plan

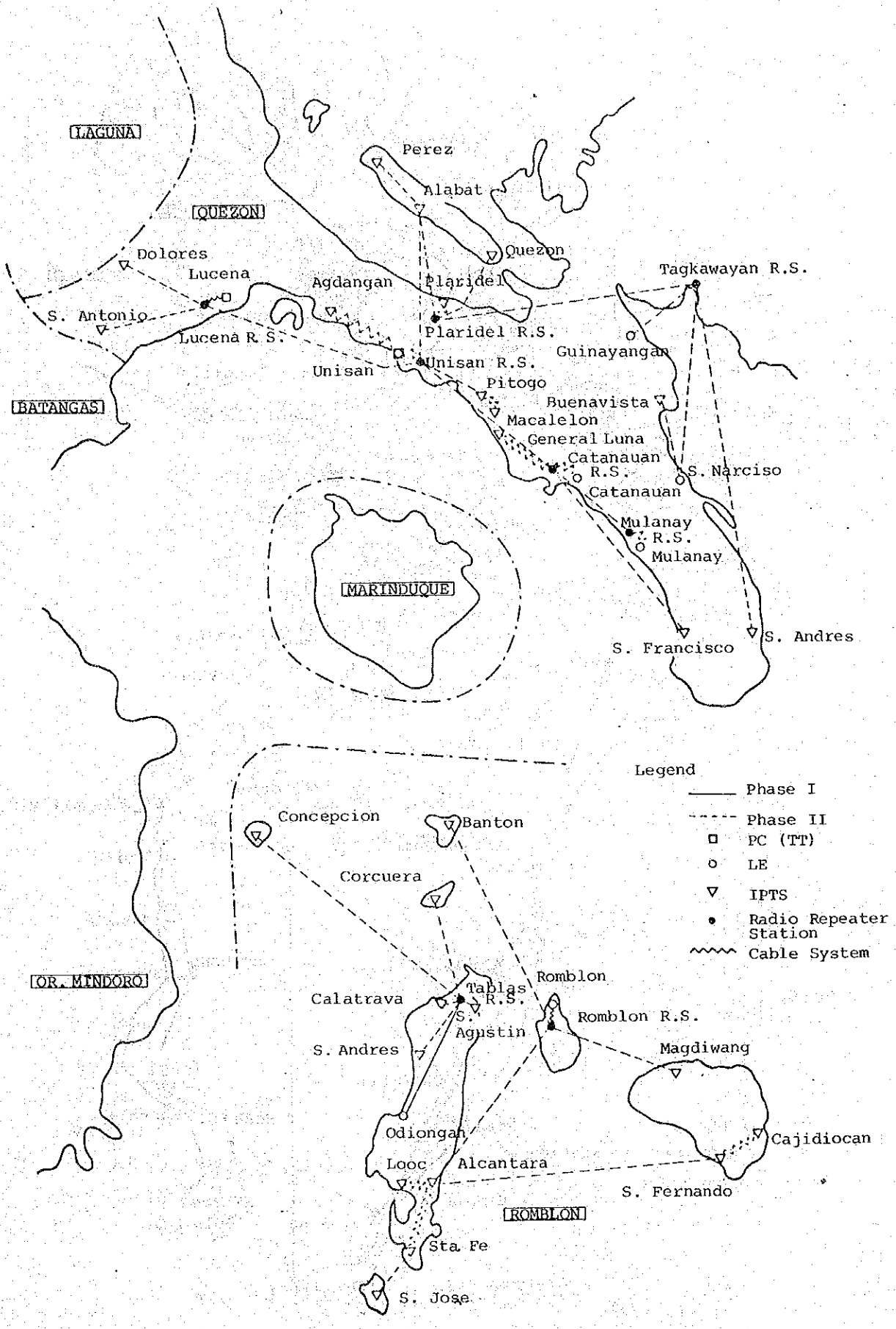


Fig. VII-2-2-3 (4/5) UHF/VHF Route Plan

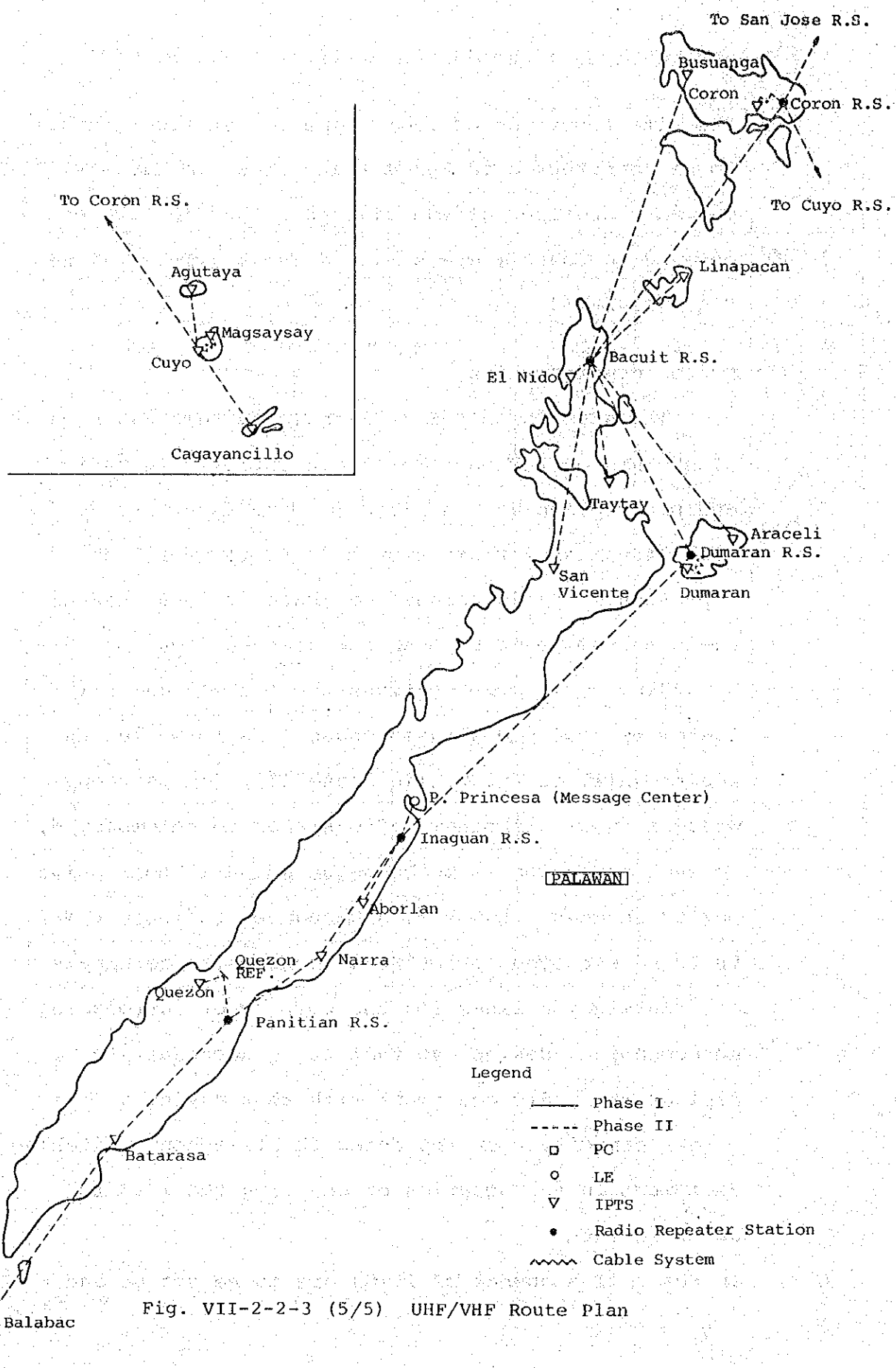


Fig. VII-2-2-3 (5/5) UHF/VHF Route Plan

The site locations of radio repeater stations, etc., to be constructed in Phase I are shown in Table VII-2-2-3. The path profiles of the individual sections to be covered in Phase I are shown in Table VII-2-2-4 and Fig. VII-2-2-4.

(2) System configuration

The adoption of UHF/VHF radio systems has been determined on the basis of the principles in radio equipment planning described in paragraph II-7-2. Each 240-channel radio system is to be provided with a protection radio channel and each 60- ~ 6-channel radio system is to form an set stand-by system. Accordingly, in some sections where a 240-channel system is employed a radio channel is to be set up additionally in future (in Phase II). In sections where a 60- ~ 6-channel radio system to be employed, no such expansion is to be required until the design period reaches. However, a 6-channel radio system is to be employed for IPTSs to become the terminals of transmission lines for the purpose of introducing an economical design, so that it is necessary to replace the radio equipment with that having a larger capacity upon replacing the telephone switching equipment on the occation of changing the IPTS to an LE in future.

In Phase II a number of IPTSs are to be set up and

Table VII-2-2-3 (1/2) Locations of UHF/VHF Radio Repeater Stations (Phase I)

Repeater Station		Longitude (E)	Latitude (N)	Elevation (m)	Tower Height (m)	Map No.
1	Pantabangan	121°08'26"	15°48'28"	340	30	3267 IV
2	Quezon	120°48'51"	15°33'06"	25	20	3166 I
3	Zaragosa	120°47'25"	15°27'03"	20	30	3166 II
4	Cabiao	120°51'29"	15°15'49"	10	30	3165 I
5	Jaen	120°54'36"	15°20'26"	20	20	3166 II
6	Tarlac R.S.	120°35'13"	15°28'48"	50	30	3166 II
7	Gerona	120°35'52"	15°36'16"	25	20	3166 IV
8	La Paz	120°43'43"	15°26'34"	18	20	3166 III
9	San Ildefonso	120°56'25"	15°04'51"	10	20	3165 II
10	San Rafael	120°57'42"	14°57'30"	15	20	3164 I
11	Bulacan	120°52'46"	14°47'41"	2	20	3164 II
12	San Fernando R.S.	120°41'10"	15°01'32"	3	40	3165 III
13	Magalang	120°39'35"	15°12'58"	38	30	3165 IV
14	Porac R.S.	120°32'42"	15"04'01"	80	20	3165 III
15	Sexmoan	120°37'16"	14°56'14"	0	20	3164 IV
16	Dinalupihan	120°27'13"	14°52'03"	5	50	3064 I

Table VII-2-2-3 (2/2) Locations of UHF/VHF Radio Repeater Stations (Phase I)

Repeater Station		Longitude (E)	Latitude (N)	Elevation (m)	Tower Height(m)	Map No.
17	Samal	120°32'17"	14°46'07"	5	40	3164 III
18	Padre Garcia	121°12'43"	13°52'47"	170	20	3261 IV
19	Ibaan	121°07'42"	13°49'12"	115	20	3261 III
20	Agoncillo	120°55'39"	13°56'10"	55	20	3161 I
21	Calaca	120°48'42"	13°56'03"	18	20	3161 I
22	Lubang	120°07'21"	13°51'36"	3	20	3061 IV
23	Cabacao R.S.	120°37'04"	13°20'34"	280	30	3160 III
24	Bangili REF.	120°39'10"	13°17'28"	132	5	3159 IV
25	Mamburao	120°35'30"	13°13'39"	5	20	3159 IV
26	Sablayan R.S.	120°51'48"	12°47'21"	316	30	3158 II
27	Sablayan REF.	120°47'38"	12°51'36"	70	5	3158 I
28	Sablayan	120°46'32"	12°50'40"	3	30	3158 I
29	San Jose R.S.	121°01'52"	12°22'47"	2	30	3257 III
30	Puerto Galera R.S.	120°57'00"	13°30'10"	30	20	3160 I
31	Naujan	121°18'07"	13°19'28"	5	30	3259 I
32	Socorro	121°24'17"	13°03'16"	15	20	3259 II
33	Gloria	121°28'27"	12°58'24"	7	30	3258 I
34	Bongabong R.S.	121°27'56"	12°47'07"	40	30	3258 II
35	Roxas	121°30'56"	12°35'07"	3	40	3357 IV
36	San Agustin	122°07'53"	12°34'07"	2	20	3457 IV
37	Odiongan	121°58'52"	12°24'04"	2	20	3457 III

Table VII-2-2-4 (1/2) Profile List of UHF/VHF Spans
(Phase I)

UHF/VHF Span	Relevant Figure
Cabanatuan - Pantabangan	Fig. VII-2-2-4 (1/33)
Cabanatuan - Quezon	do. (2/33)
Cabanatuan - Zaragosa	do. (3/33)
Cabanatuan - Cabiao	do. (4/33)
Cabanatuan - Jaen	do. (5/33)
Tarlac R.S. - Gerona	do. (6/33)
Tarlac R.S. - La Paz	do. (7/33)
Pandi R.S. - San Ildefonso	do. (8/33)
Pandi R.S. - San Rafael	do. (9/33)
Pandi R.S. - Bulacan	do. (10/33)
San Fernando R.S. - Magalang	do. (11/33)
San Fernando R.S. - Porac R.S.	do. (12/33)
San Fernando R.S. - Sexmoan	do. (13/33)
San Fernando R.S. - Dinalupihan	do. (14/33)
Dinalupihan - Samal	do. (15/33)
Mt. Banoy R.S. - Padre Garcia	do. (16/33)
Mt. Banoy R.S. - Ibaan	do. (17/33)
Mt. Banoy R.S. - Agoncillo	do. (18/33)
Mt. Banoy R.S. - Calaca	do. (19/33)
Mt. Banoy R.S. - Lubang	do. (20/33)
Mt. Banoy R.S. - Cabacao R.S.	do. (21/33)

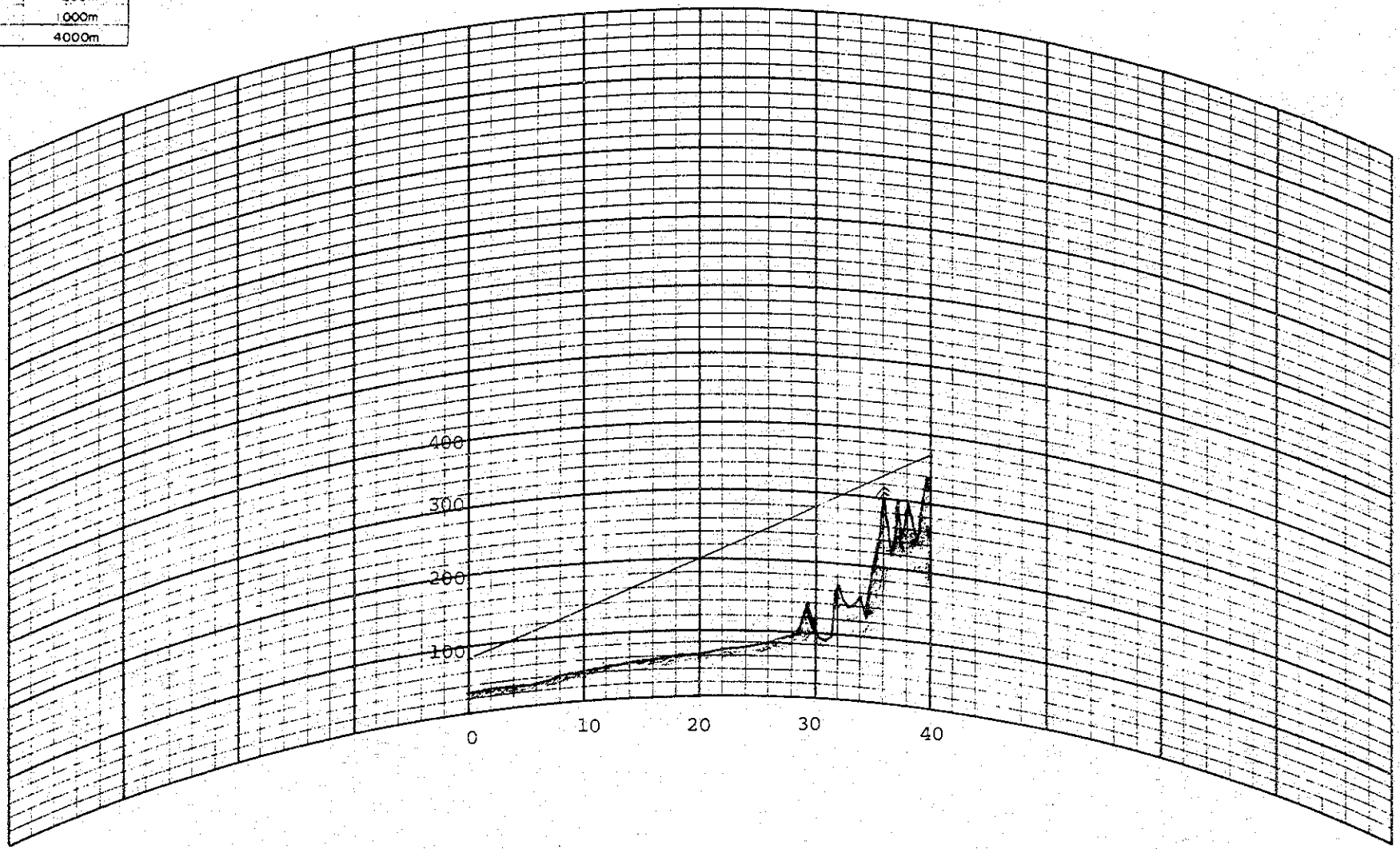
Table VII-2-2-4 (2/2) Profile List of UHF/VHF Spans
(Phase I)

UHF/VHF Span	Relevant Figure
Cabacao R.S. - Bangili REF. - Mamburao	Fig. VII-2-2-4 (22/33)
Cabacao R.S. - Sablayan R.S.	do. (23/33)
Sablayan R.S. - Sablayan REF. - Sablayan	do. (24/33)
Sablayan R.S. - San Jose R.S.	do. (25/33)
Calapan R.S. - Puerto Galera R.S.	do. (26/33)
Victoria - Naujan	do. (27/33)
Mt. Dumali R.S. - Socorro	do. (28/33)
Mt. Dumali R.S. - Gloria	do. (29/33)
Gloria - Bongabong R.S.	do. (30/33)
Bongabong R.S. - Roxas	do. (31/33)
Tablas R.S. - San Agustin	do. (32/33)
Tablas R.S. - Odiongan	do. (33/33)

FULL SCALE

DISTANCE	HEIGHT
60km	250m
120km	1000m
240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE Cabanatuan
GROUND ELEVATION: 30 m
ANTENNA HEIGHT 50 m

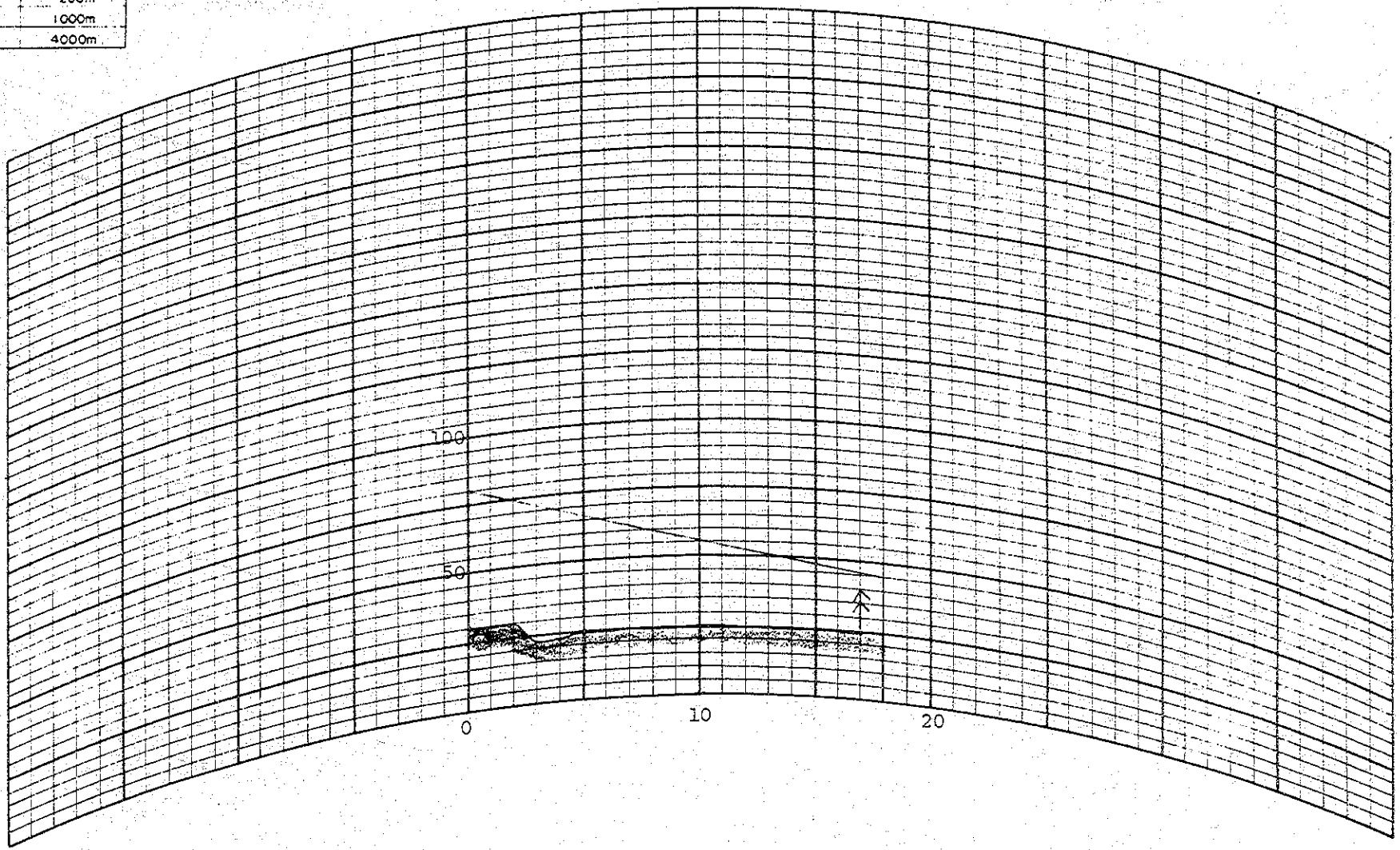
DISTANCE: 39.7 km

SITE: Pantabangan
GROUND ELEVATION: 340 m
ANTENNA HEIGHT: 30 m

Fig.VII-2-2-4(1/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	
DISTANCE	HEIGHT
O 60km	250m
120km	1000m
240km	4000m



SITE: Cabanatuan
GROUND ELEVATION: 30 m
ANTENNA HEIGHT: 50 m

DISTANCE: 17.9 km

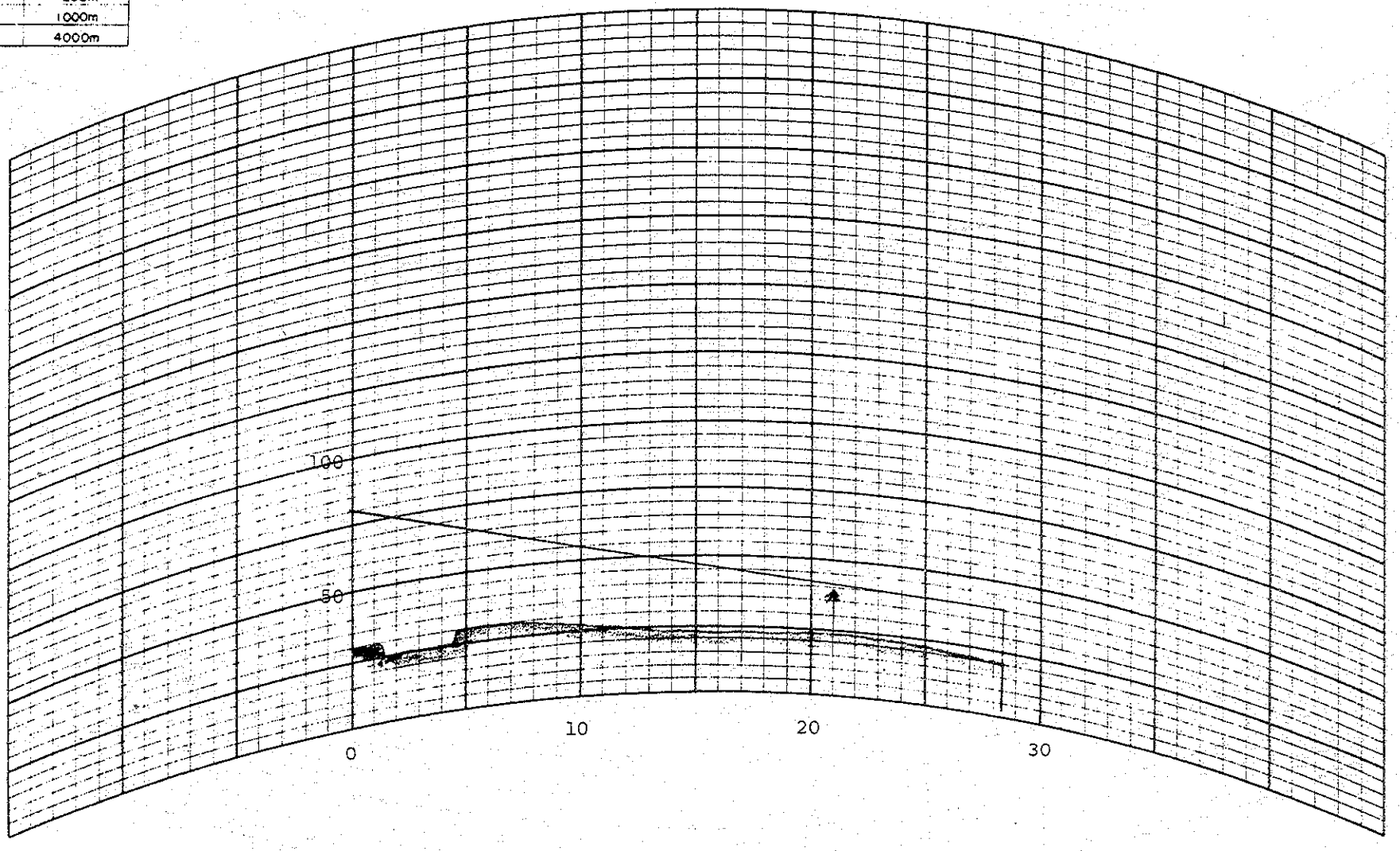
SITE: Quezon
GROUND ELEVATION: 25 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4(2/33)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE Cabanatuan
GROUND ELEVATION 30 m
ANTENNA HEIGHT 50 m

DISTANCE 28.4 km

SITE: Zaragosa
GROUND ELEVATION: 20 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4 (3/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

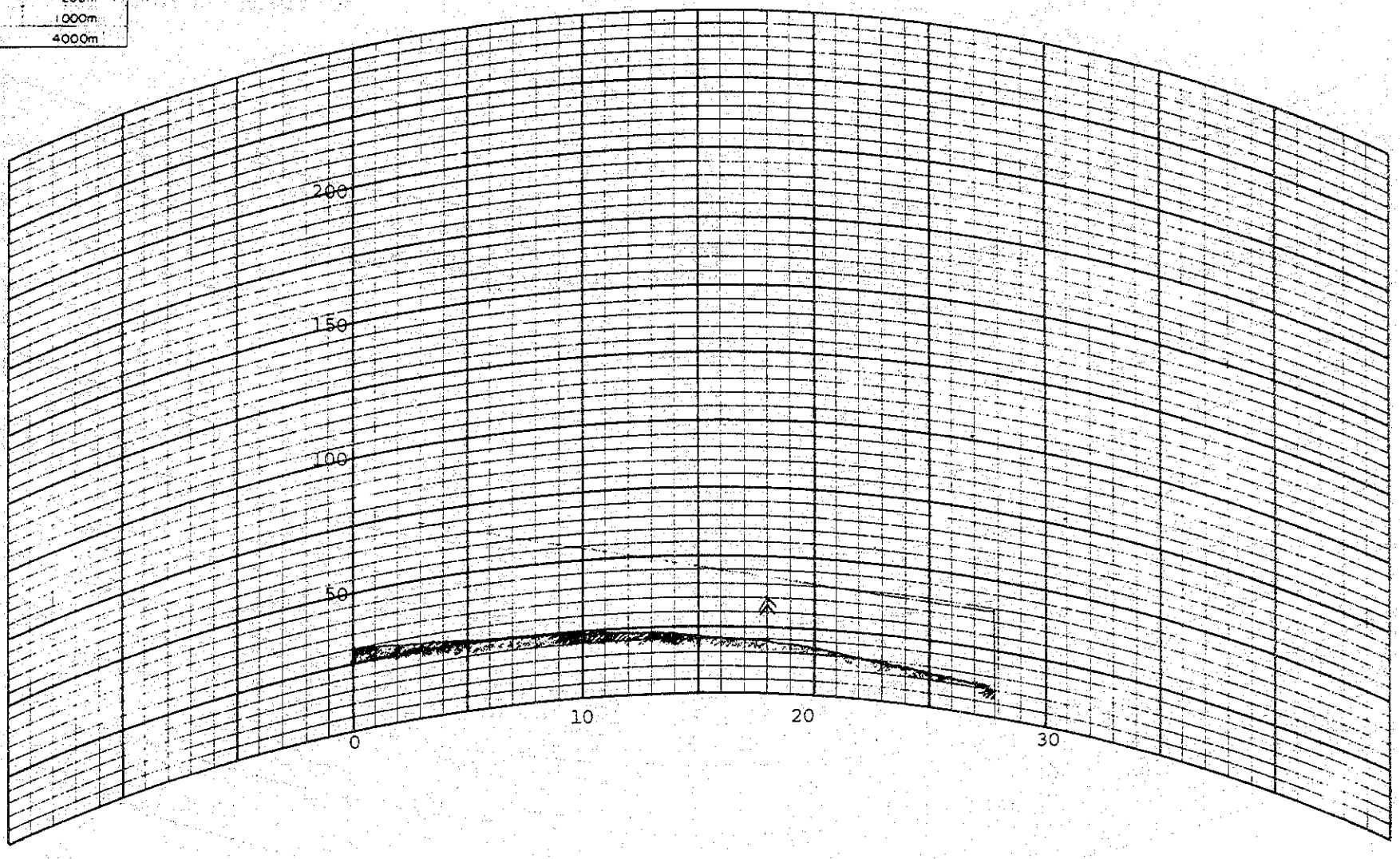


Fig.VII-2-2-4(4/33)

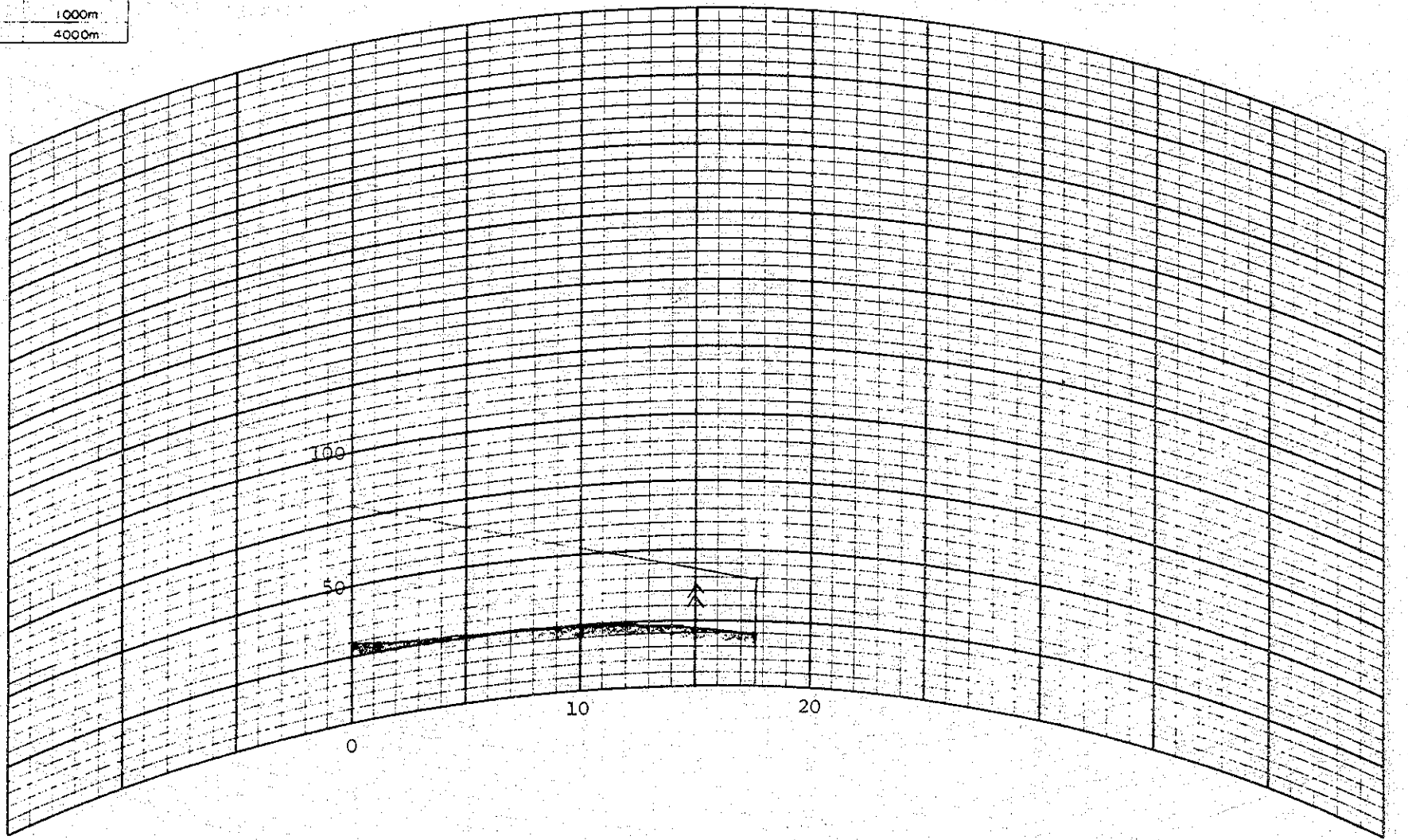
SITE: Cabanatuan
GROUND ELEVATION: 30 m
ANTENNA HEIGHT: 50 m

DISTANCE: 27.8 km

SITE: Cabiao
GROUND ELEVATION: 10 m
ANTENNA HEIGHT: 30 m

PATH PROFILE (4/3 RADIUS)

FULL SCALE	
DISTANCE	HEIGHT
60km	250m
120km	1000m
240km	4000m



SITE: Cabanatuan
GROUND ELEVATION: 30 m
ANTENNA HEIGHT: 50 m

DISTANCE: 17.7 km

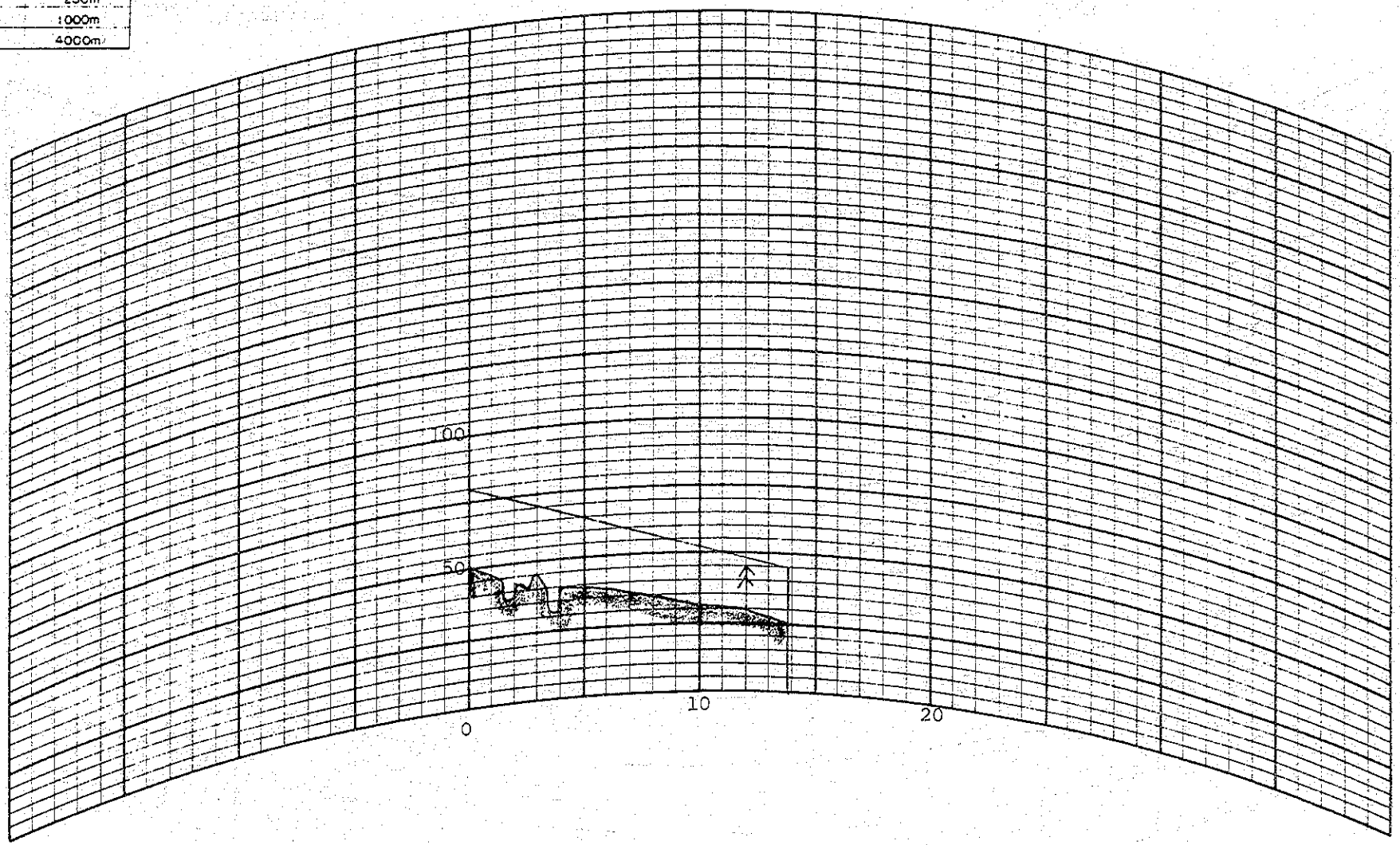
SITE: Jaen
GROUND ELEVATION: 20 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4(5/33)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE: Tarlac R.S.
GROUND ELEVATION: 50 m
ANTENNA HEIGHT: 30 m

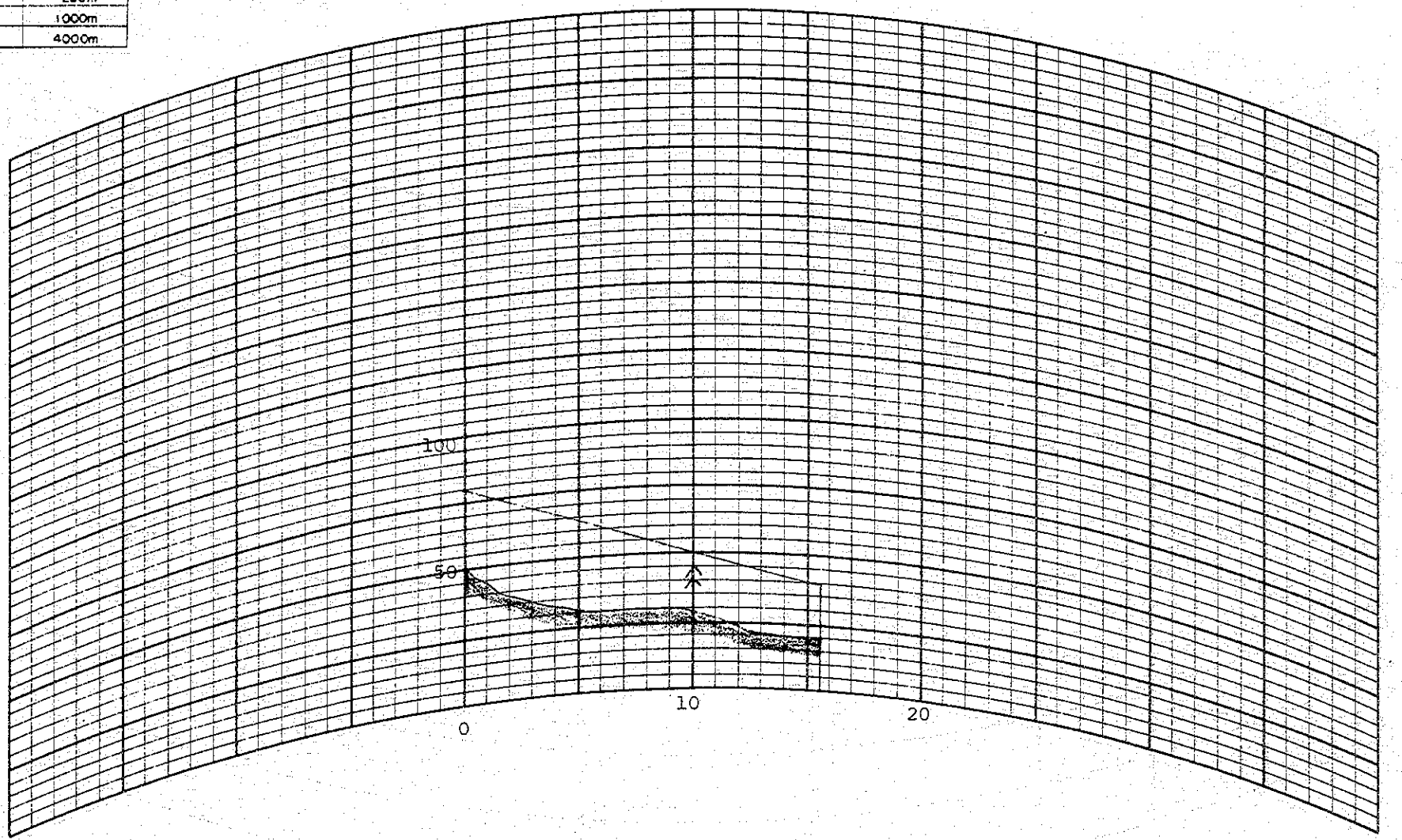
DISTANCE: 13.8 km

SITE: Gerona
GROUND ELEVATION: 25 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4(6/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	
DISTANCE	HEIGHT
60km	250m
120km	1000m
240km	4000m



SITE: Tarlac R.S.
GROUND ELEVATION: 50 m
ANTENNA HEIGHT: 30 m

DISTANCE: 15.7 km

SITE: La Paz
GROUND ELEVATION: 18 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4(7/33)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)

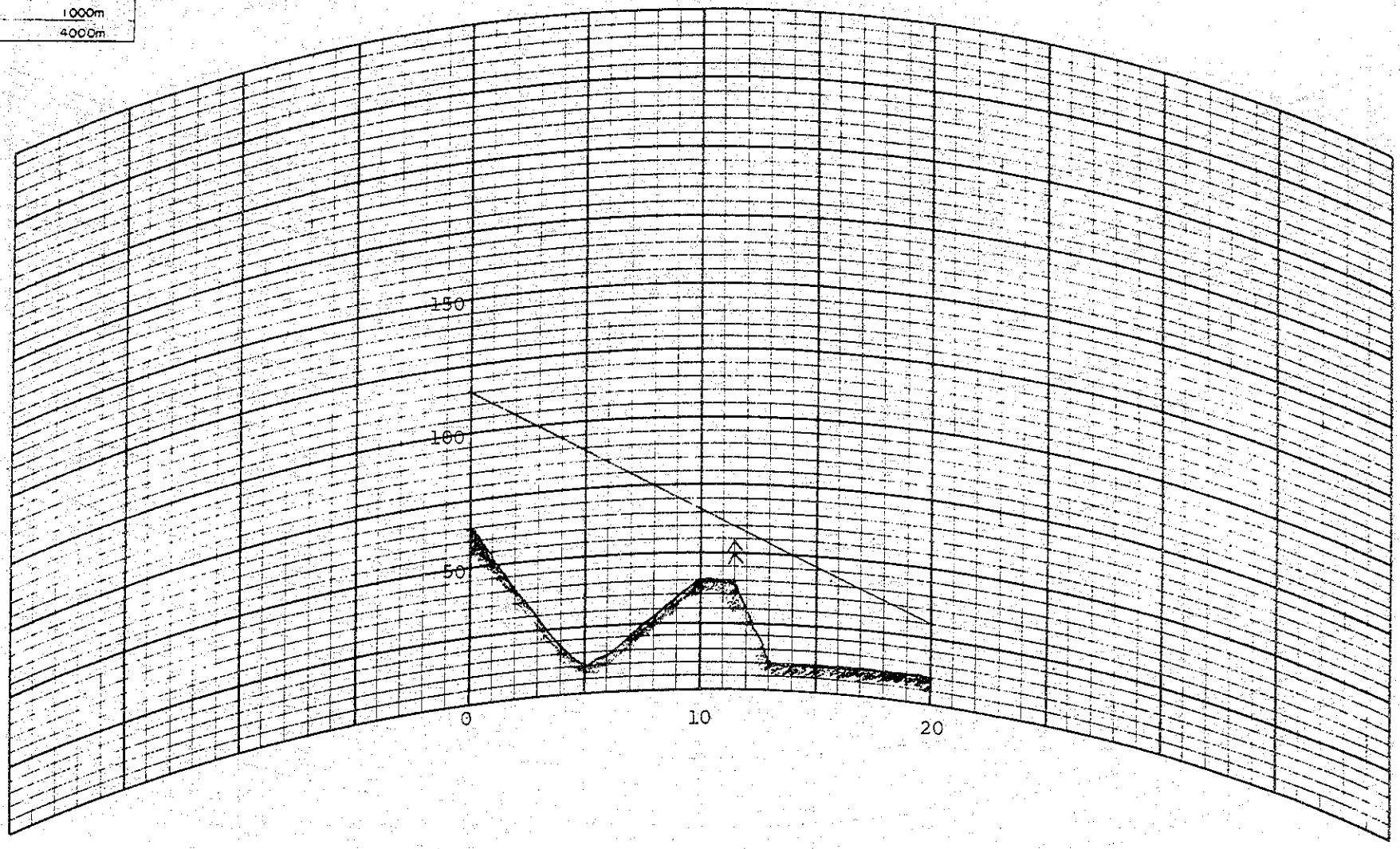


Fig. VII-2-2-4 (8/33)

SITE: Pandi R.S.
GROUND ELEVATION: 65 m
ANTENNA HEIGHT: 50 m

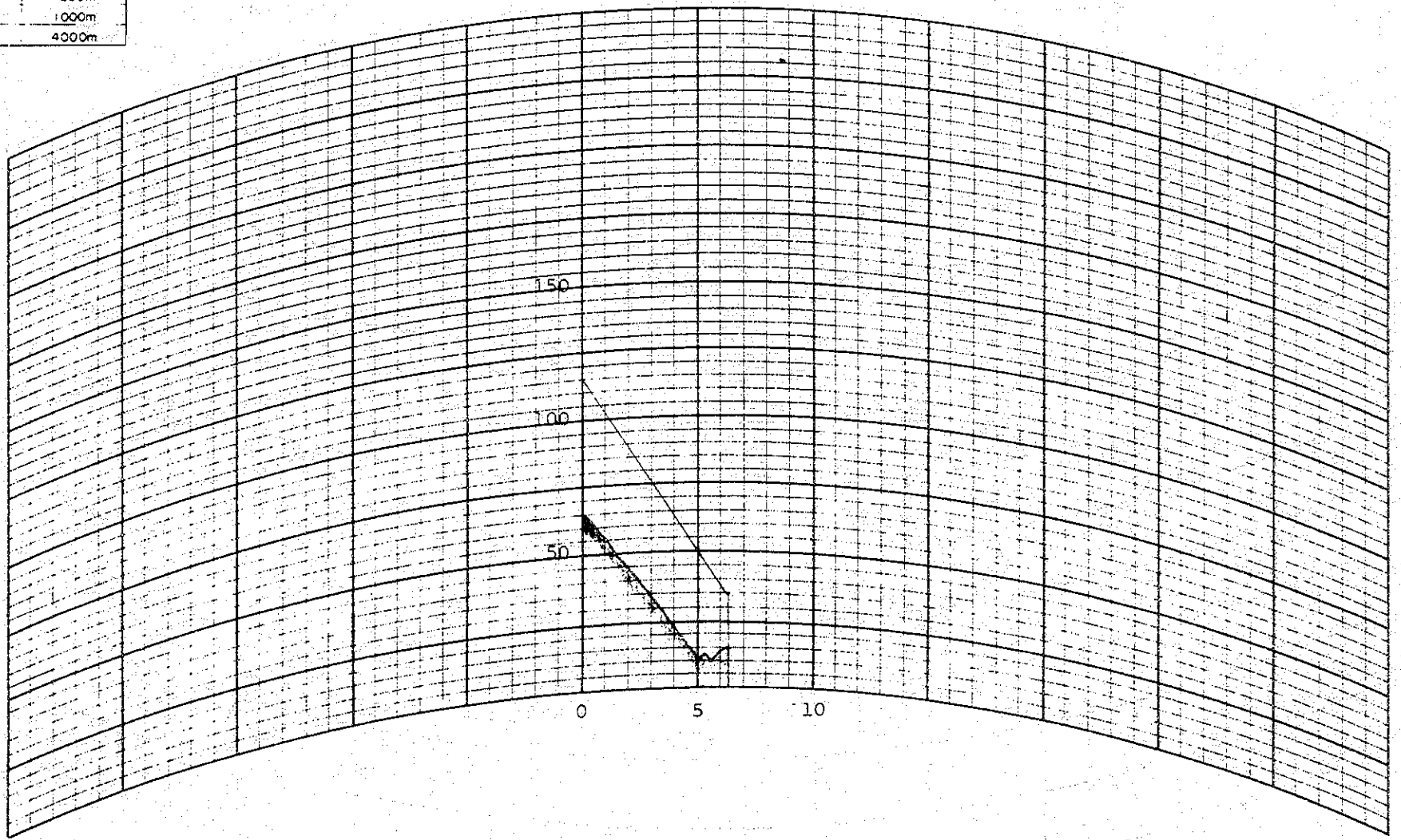
DISTANCE: 20.0 km

SITE: San Ildefonso
GROUND ELEVATION: 10 m
ANTENNA HEIGHT: 20 m

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE: Pandi R.S.
GROUND ELEVATION: 65 m
ANTENNA HEIGHT: 50 m

DISTANCE: 6.3 km

SITE: San Rafael
GROUND ELEVATION 15 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4 (9/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

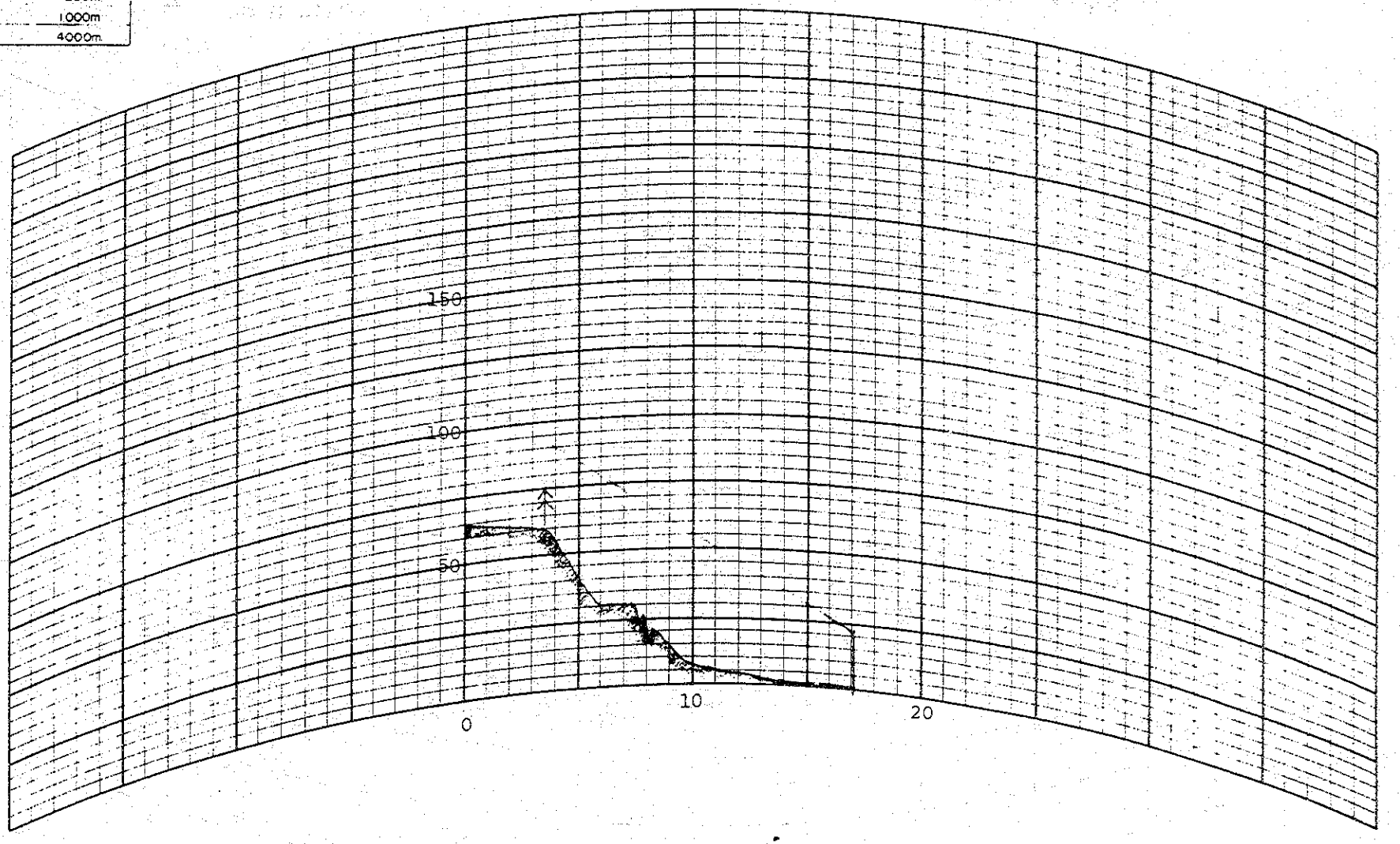


Fig.VII-2-2-4 (10/33)

SITE: Pandi R.S.
GROUND ELEVATION: 65 m
ANTENNA HEIGHT: 50 m

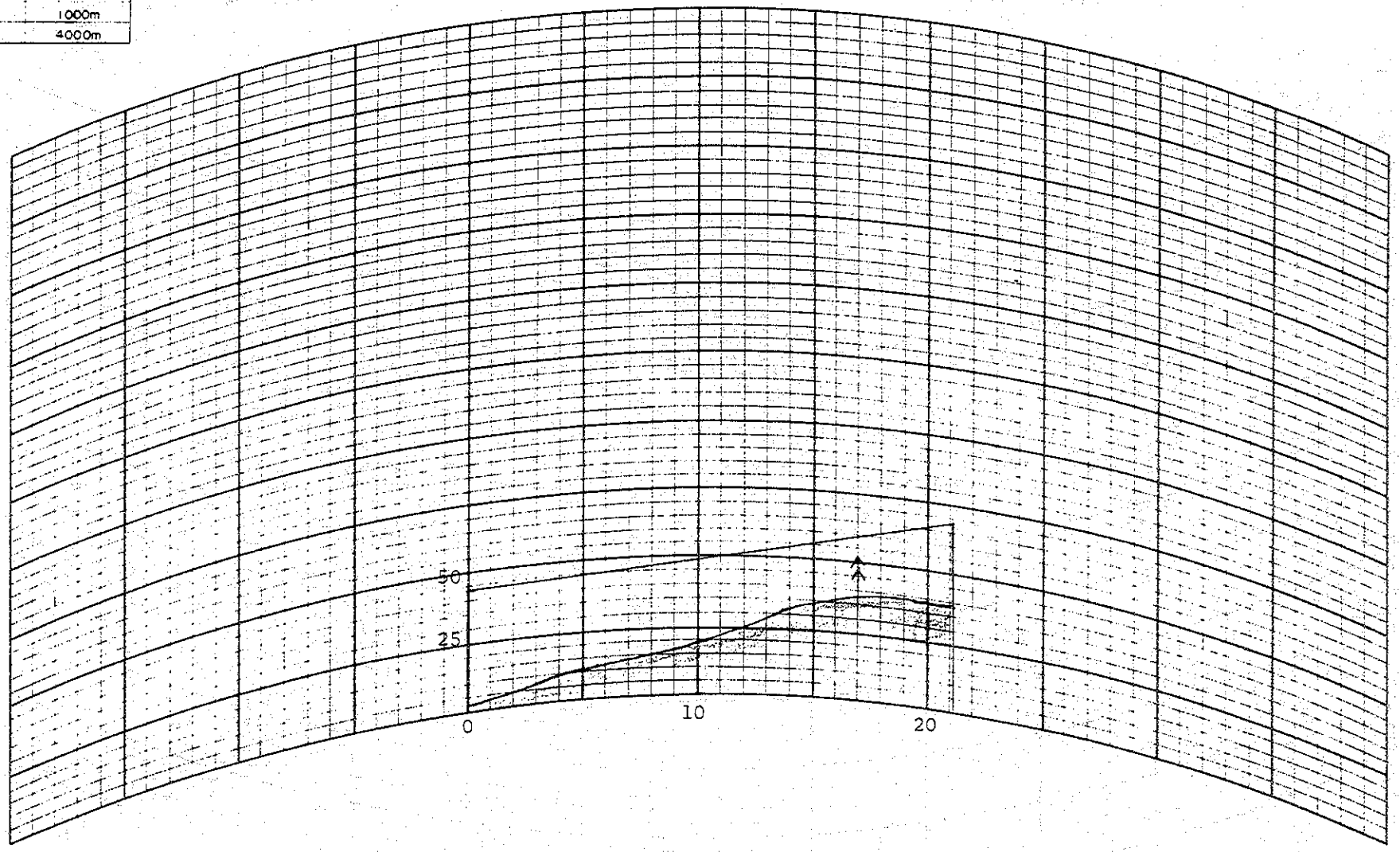
DISTANCE: 17.1 km

SITE: Bulacan
GROUND ELEVATION: 2 m
ANTENNA HEIGHT: 20 m

FULL SCALE

	DISTANCE	HEIGHT
0	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE San Fernando R.S.
GROUND ELEVATION 3 m
ANTENNA HEIGHT 40 m

DISTANCE 21.3 km

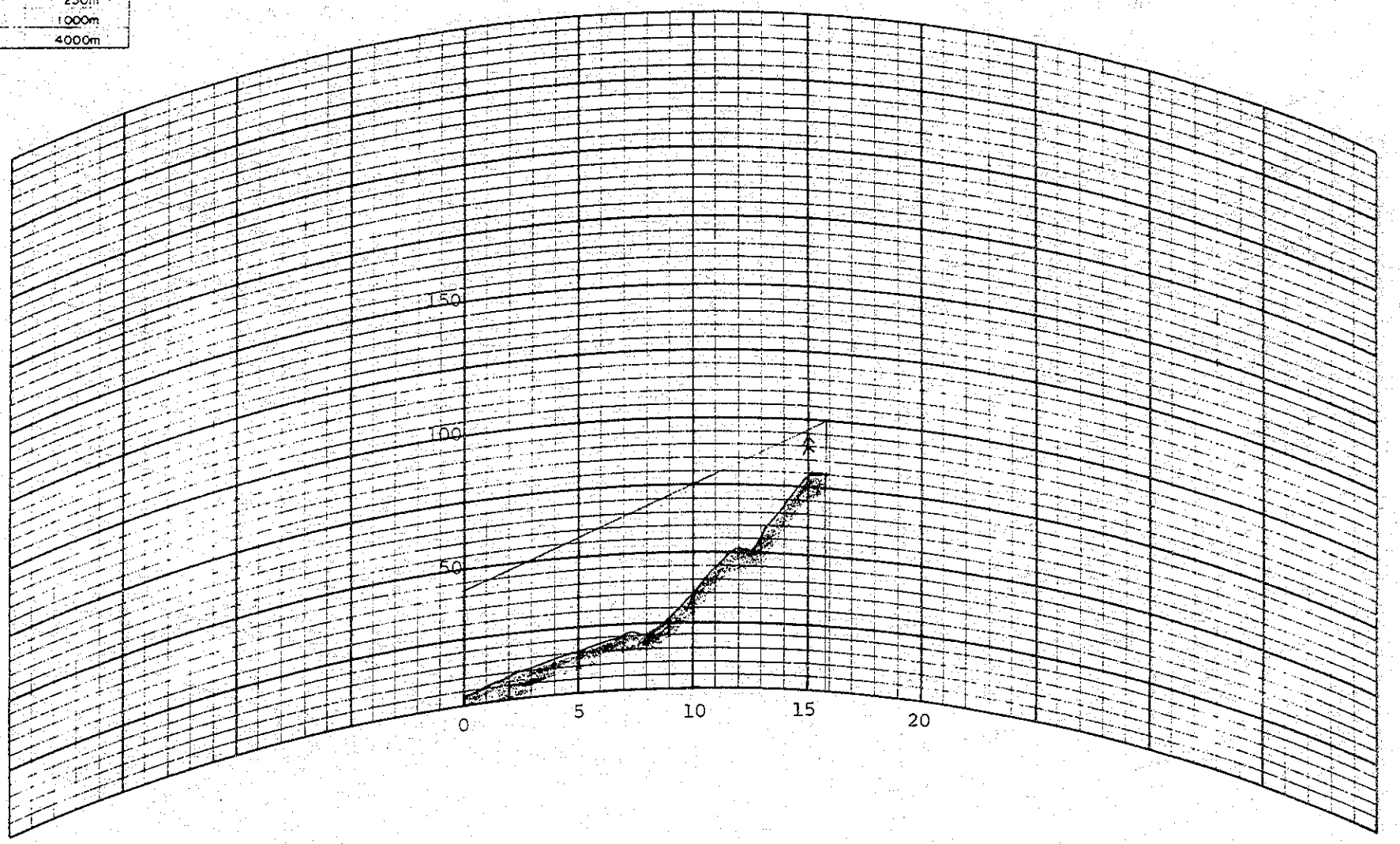
SITE: Magalang
GROUND ELEVATION: 38 m
ANTENNA HEIGHT 30 m

Fig.VII-2-2-4(11/33)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE: San Fernando R.S.
GROUND ELEVATION: 3 m
ANTENNA HEIGHT: 40 m

DISTANCE: 15.8 km

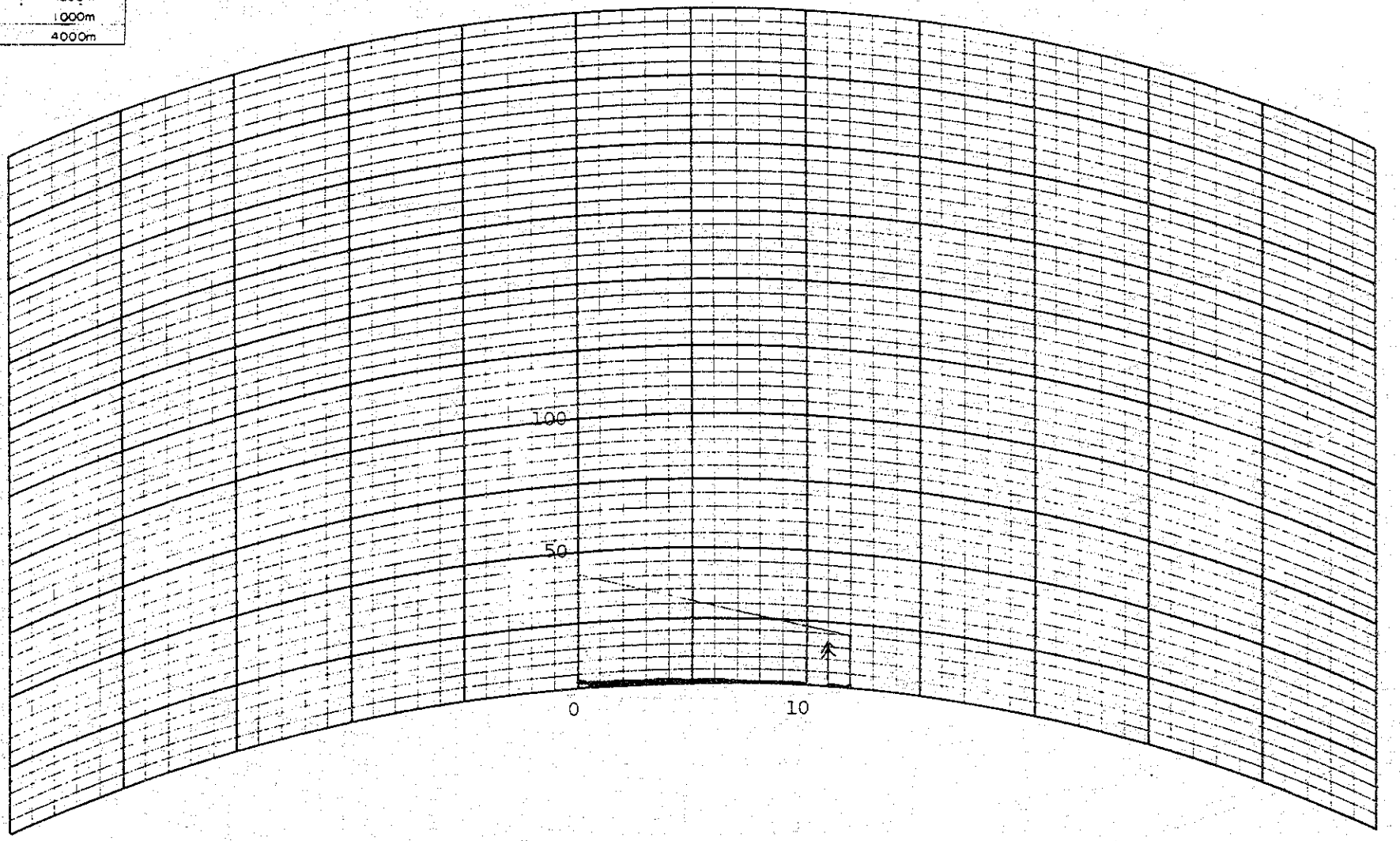
SITE: Porac R.S.
GROUND ELEVATION: 80 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4 (12/33)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE San Fernando R.S.
GROUND ELEVATION 3 m
ANTENNA HEIGHT 40 m

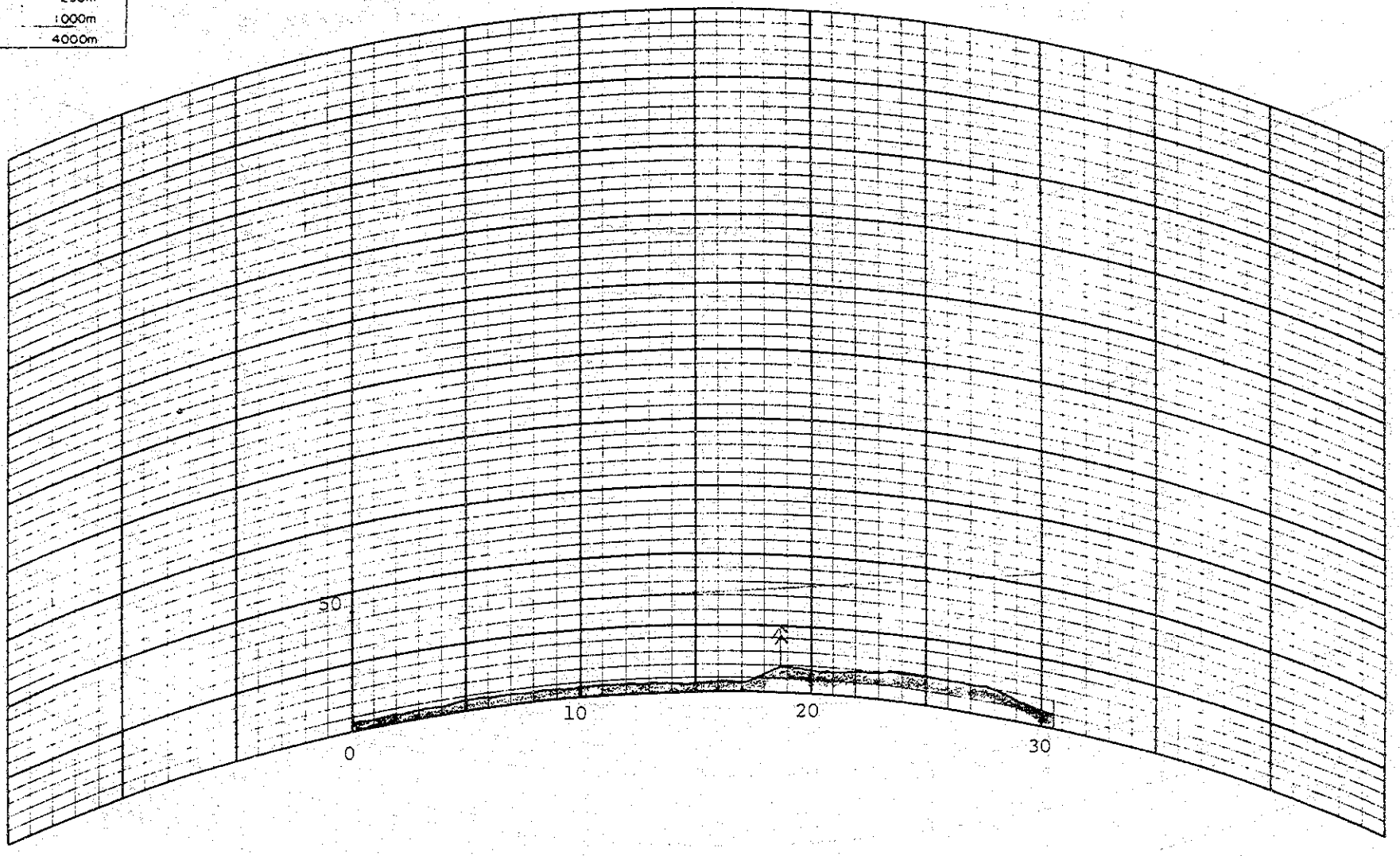
DISTANCE 12.0 km

SITE Sexmoan
GROUND ELEVATION 0 m
ANTENNA HEIGHT 20 m

Fig.VII-2-2-4 (13/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m



SITE: San Fernando R.S.
GROUND ELEVATION: 3 m
ANTENNA HEIGHT: 40 m

DISTANCE: 30.5 km

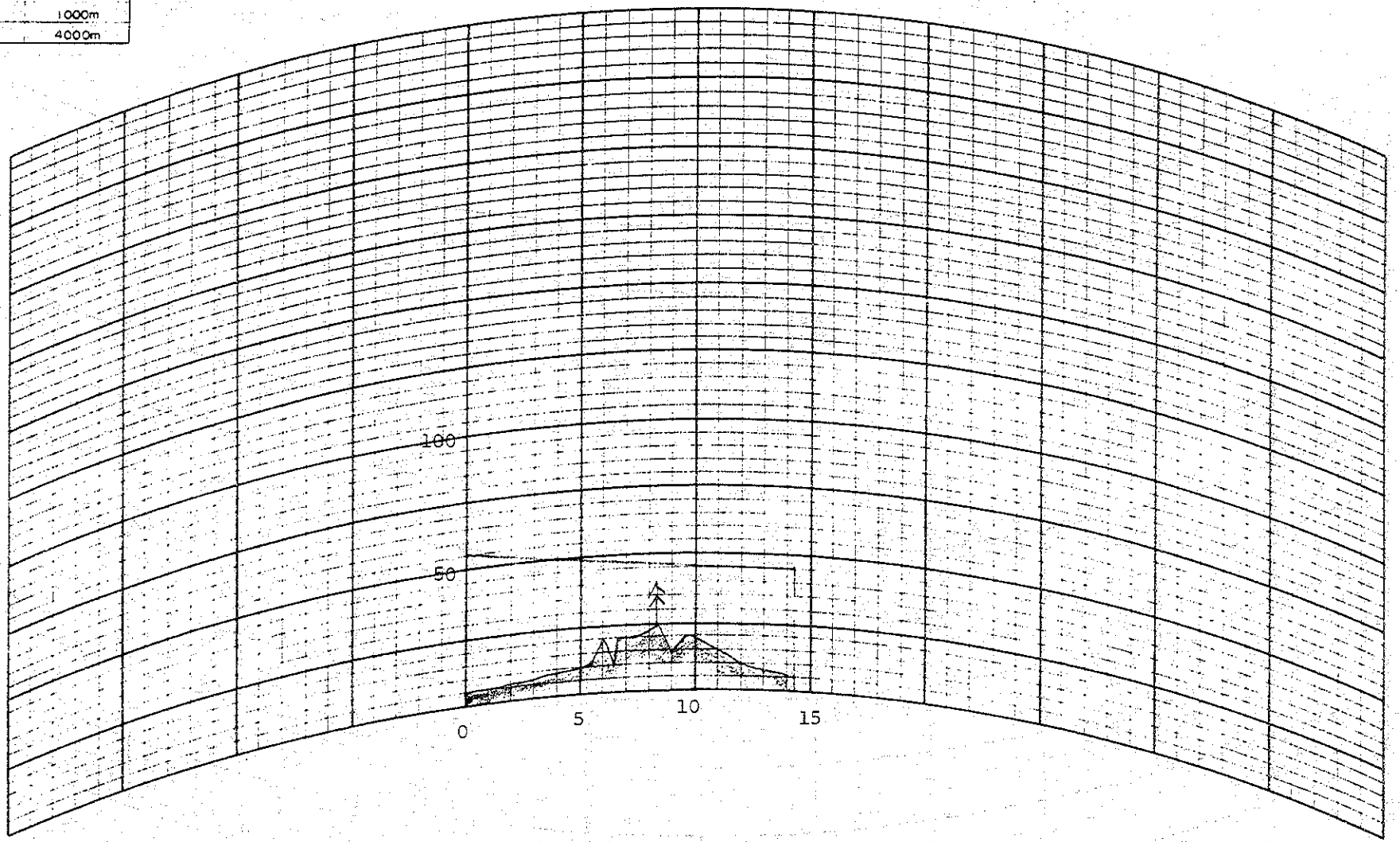
SITE: Dinalupihan
GROUND ELEVATION: 5 m
ANTENNA HEIGHT: 50 m

Fig.VII-2-2-4(14/33)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE Dinalupihan
GROUND ELEVATION 5 m
ANTENNA HEIGHT 50 m

DISTANCE 14.2 km

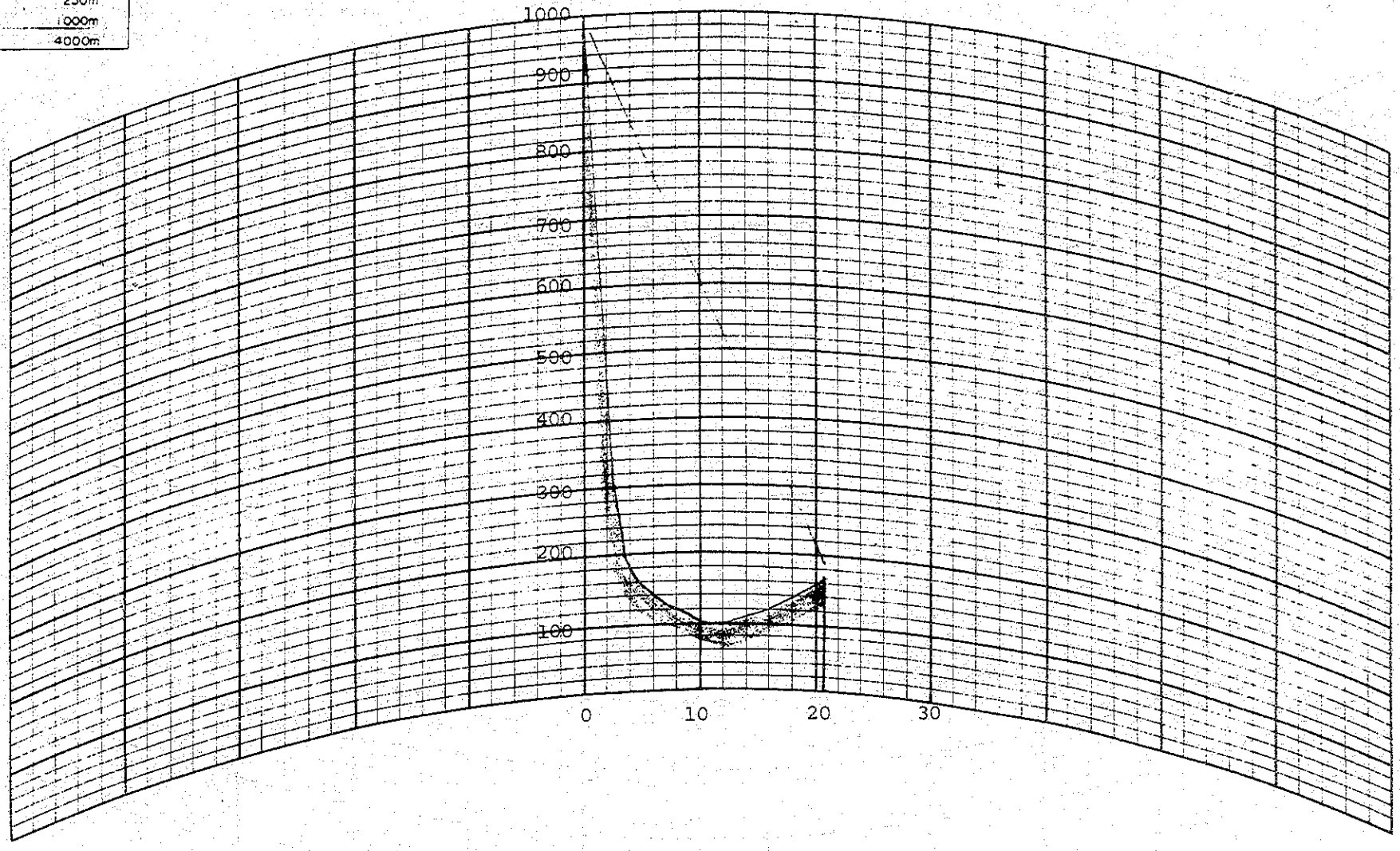
SITE Samal
GROUND ELEVATION 5 m
ANTENNA HEIGHT 40 m

Fig.VII-2-2-4 (15/33)

FULL SCALE

DISTANCE	HEIGHT
60km	250m
120km	1000m
240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE: Mt. Banoy R.S.
GROUND ELEVATION: 968 m
ANTENNA HEIGHT: 30 m

DISTANCE: 20.7 km

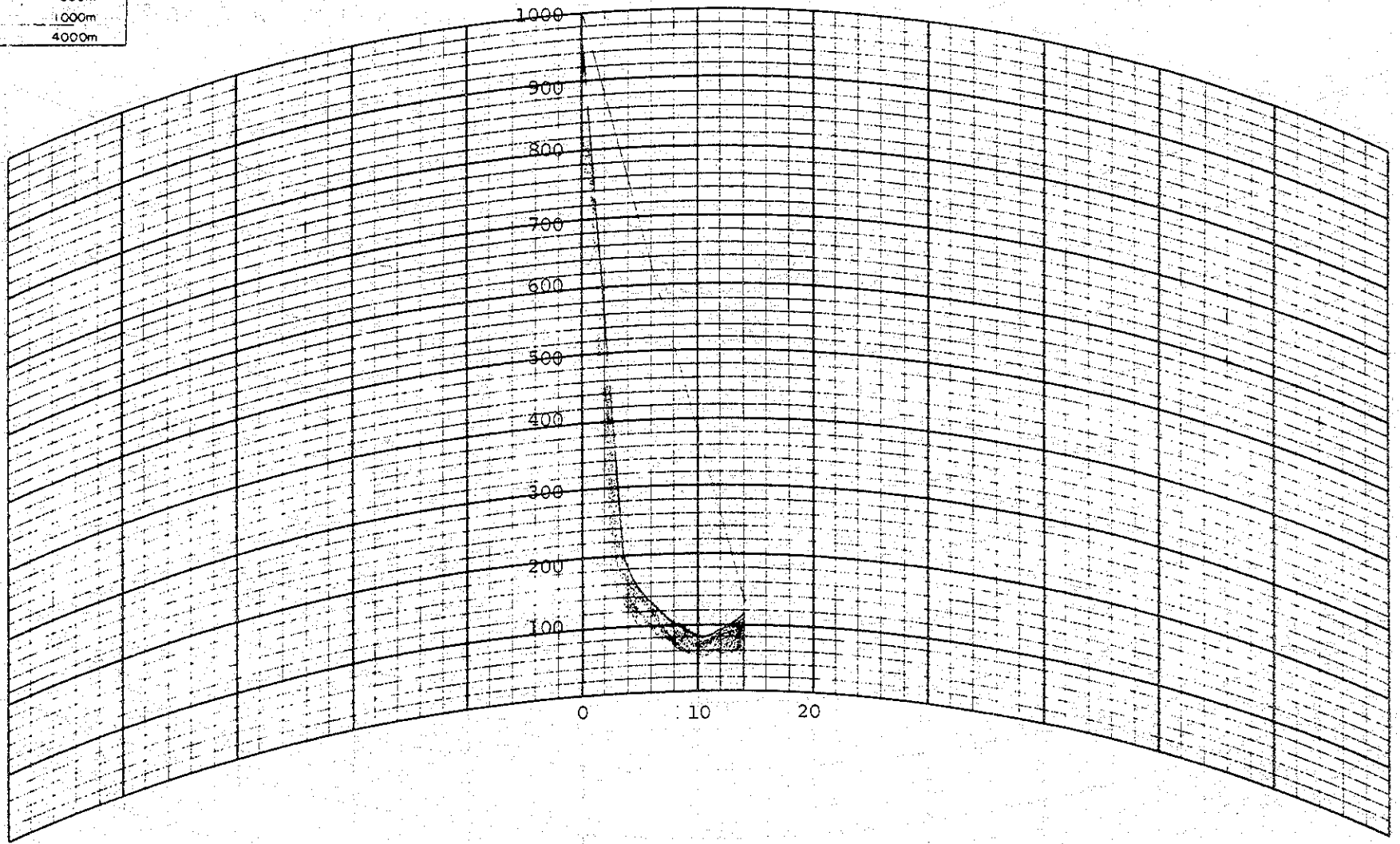
SITE: P. Garica
GROUND ELEVATION: 170 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-24(16/33)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE Mt. Banoy R.S.
GROUND ELEVATION 968 m
ANTENNA HEIGHT 30 m

DISTANCE 13.9 km

SITE: Ibaan
GROUND ELEVATION 115 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4(17/33)

PATH PROFILE (4/3 RADIUS)

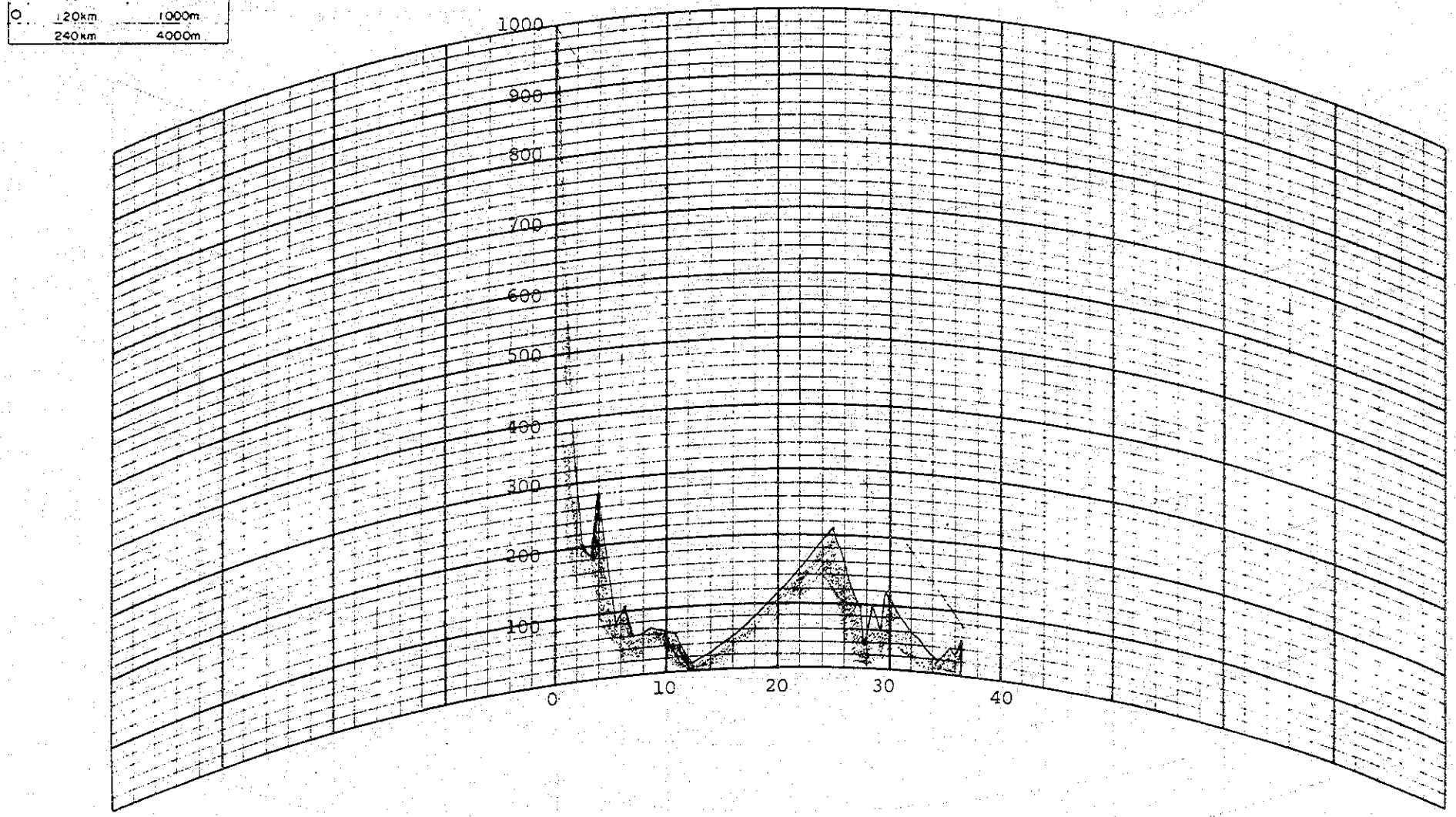


Fig.VII-2-2-4 (18/33)

SITE: Mt. Banoy R.S.
GROUND ELEVATION: 968 m
ANTENNA HEIGHT: 30 m

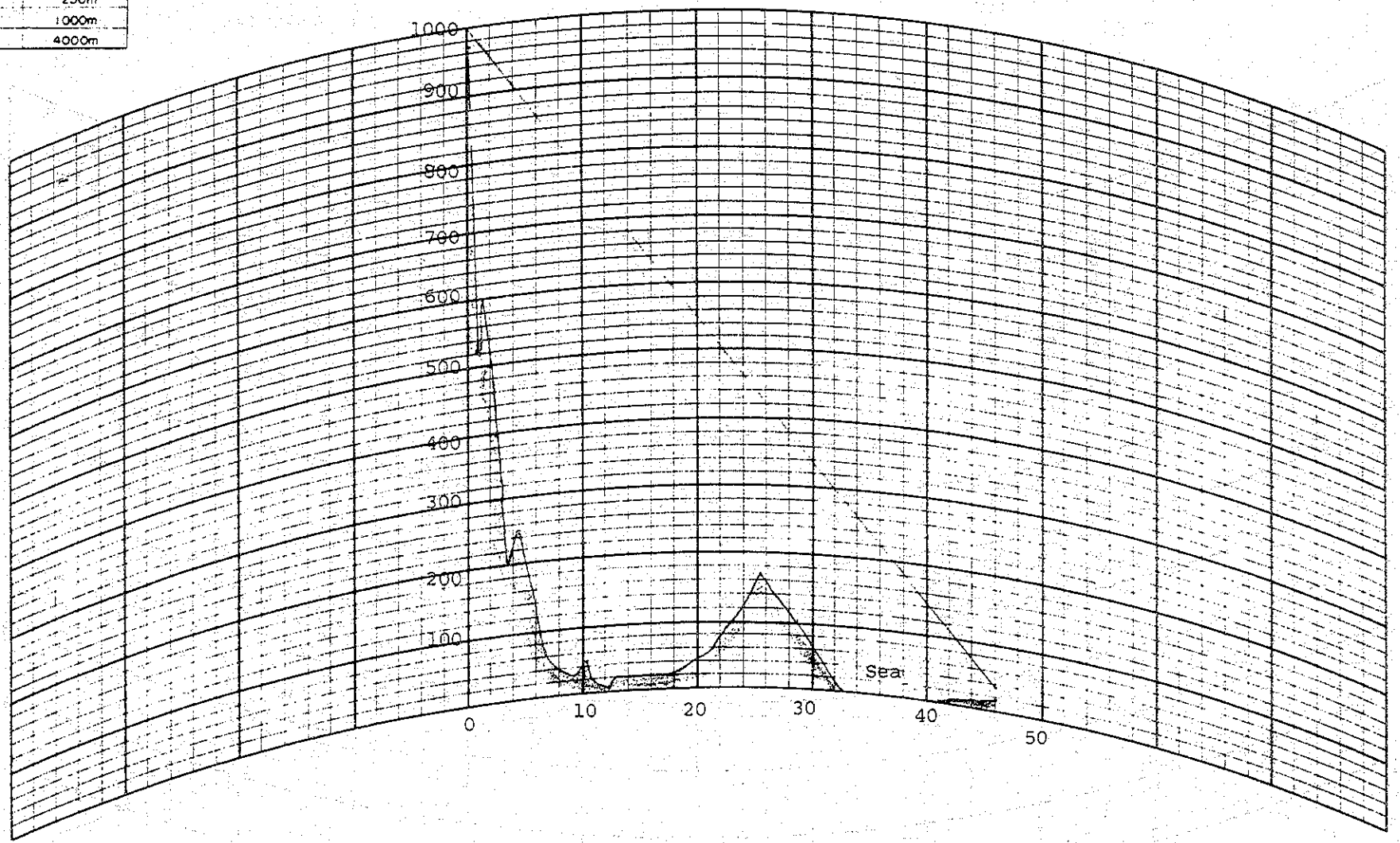
DISTANCE: 36.6 km

SITE: Agoncillo
GROUND ELEVATION: 55 m
ANTENNA HEIGHT: 20 m

FULL SCALE

DISTANCE	HEIGHT
60km	250m
120km	1000m
240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE Mt. Banoy R.S.
GROUND ELEVATION 968 m
ANTENNA HEIGHT 30 m

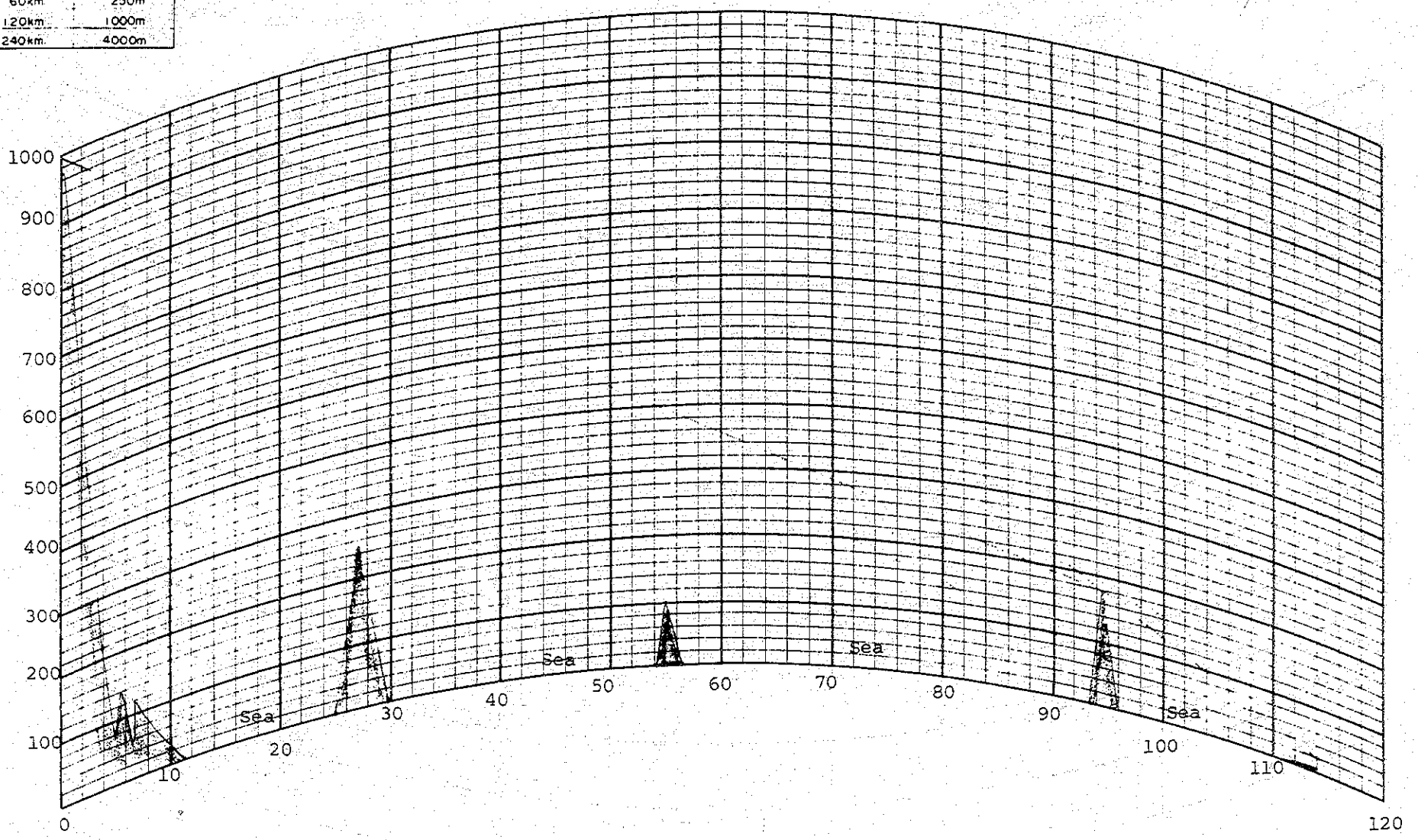
DISTANCE 46.1 km

SITE Calaca
GROUND ELEVATION 18 m
ANTENNA HEIGHT 20 m

Fig.VII-2-2-4 (19/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	
DISTANCE	HEIGHT
60km	250m
120km	1000m
240km	4000m



SITE: Mt. Banoy R.S.
GROUND ELEVATION: 968 m
ANTENNA HEIGHT: 30 m

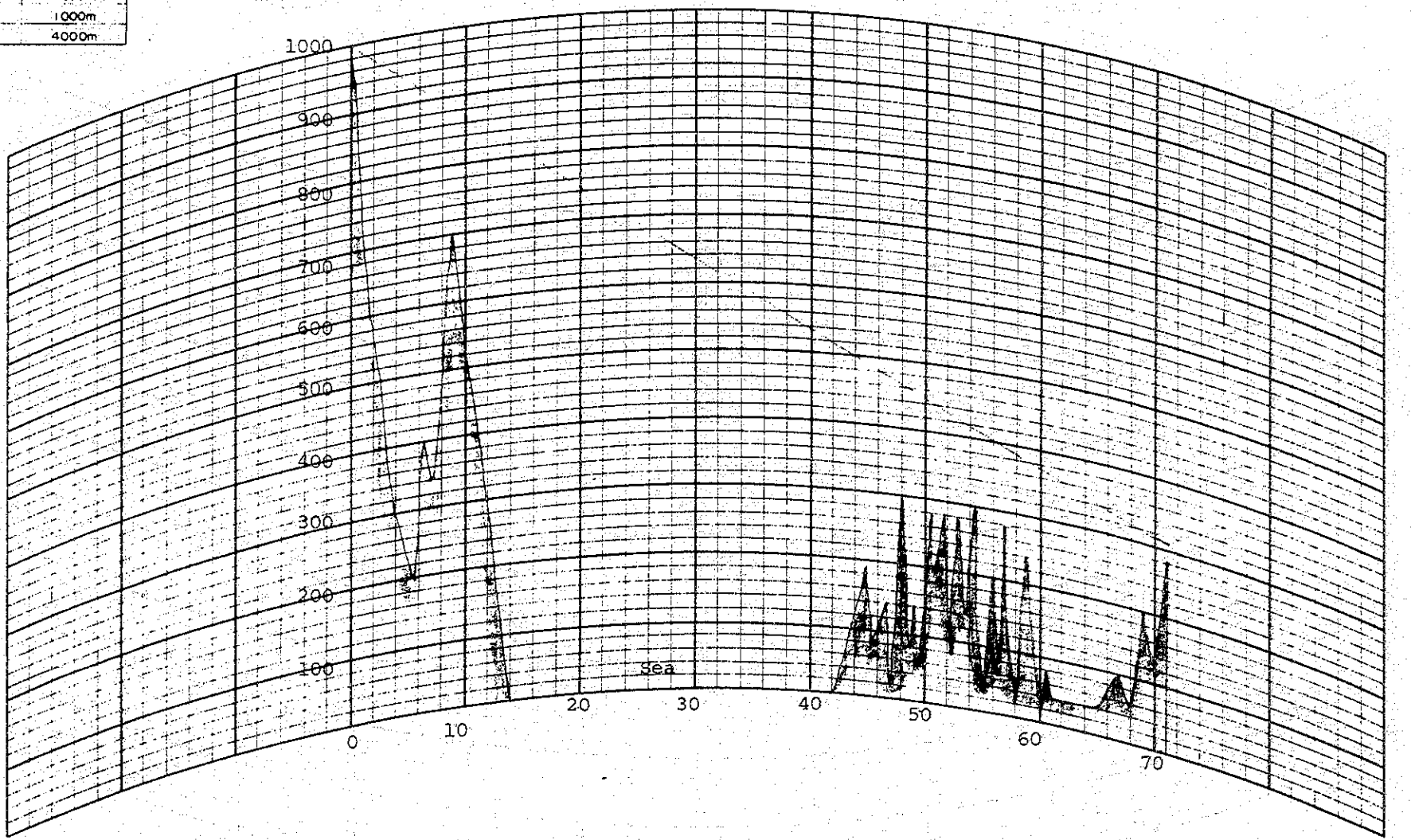
DISTANCE: 114.0 km

SITE: Lubang
GROUND ELEVATION: 3 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4 (20/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	
DISTANCE	HEIGHT
60km	250m
120km	1000m
240km	4000m



SITE: Mt. Banoy R.S.
GROUND ELEVATION: 968 m
ANTENNA HEIGHT: 30 m

DISTANCE: 71.0 km

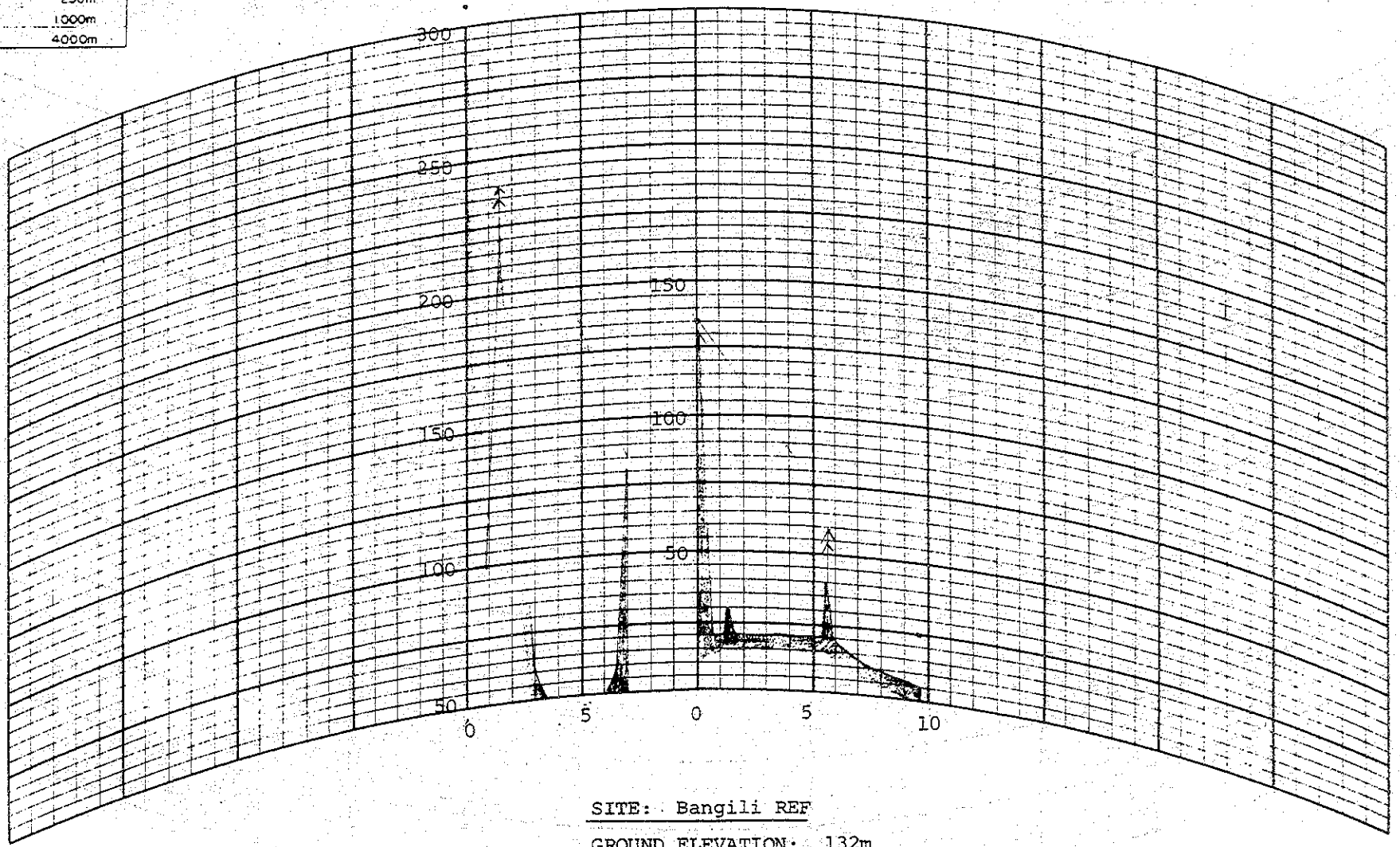
SITE: Cabacao R.S.
GROUND ELEVATION: 280 m
ANTENNA HEIGHT: 30 m

Fig.VII-2-2-4 (21/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m



SITE: Bangili REF

GROUND ELEVATION: 132m

REFLECTOR HEIGHT: 5m

DISTANCE: 6.9 + 9.7 km

SITE: Cabacao R.S.

GROUND ELEVATION: 280 m

ANTENNA HEIGHT: 30 m

SITE: Mamburao

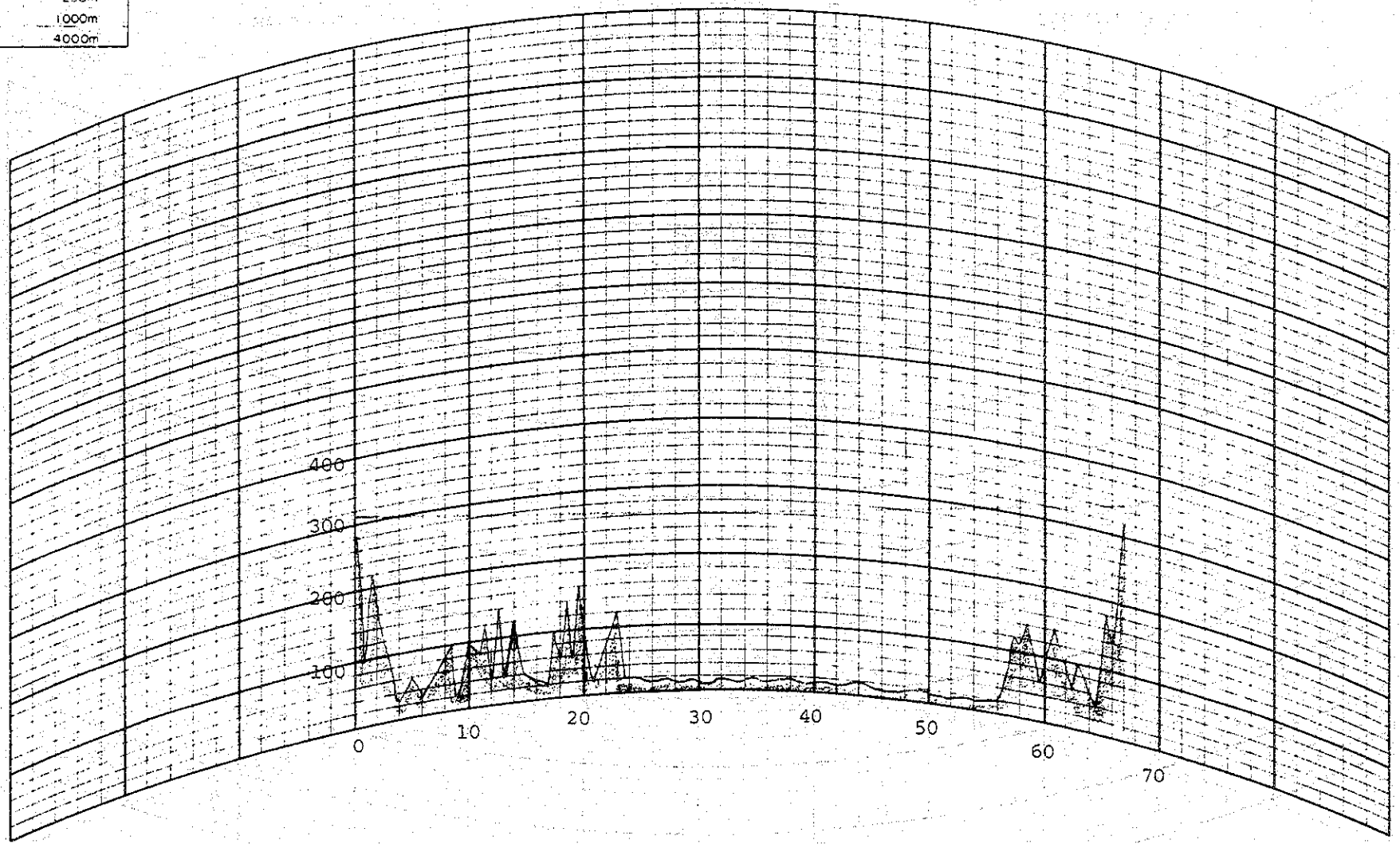
GROUND ELEVATION: 5 m

ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4 (22/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	DISTANCE	HEIGHT
	60km	250m
O	120km	1000m
	240km	4000m



SITE: Cabacao R.S.
GROUND ELEVATION: 280 m
ANTENNA HEIGHT: 30 m

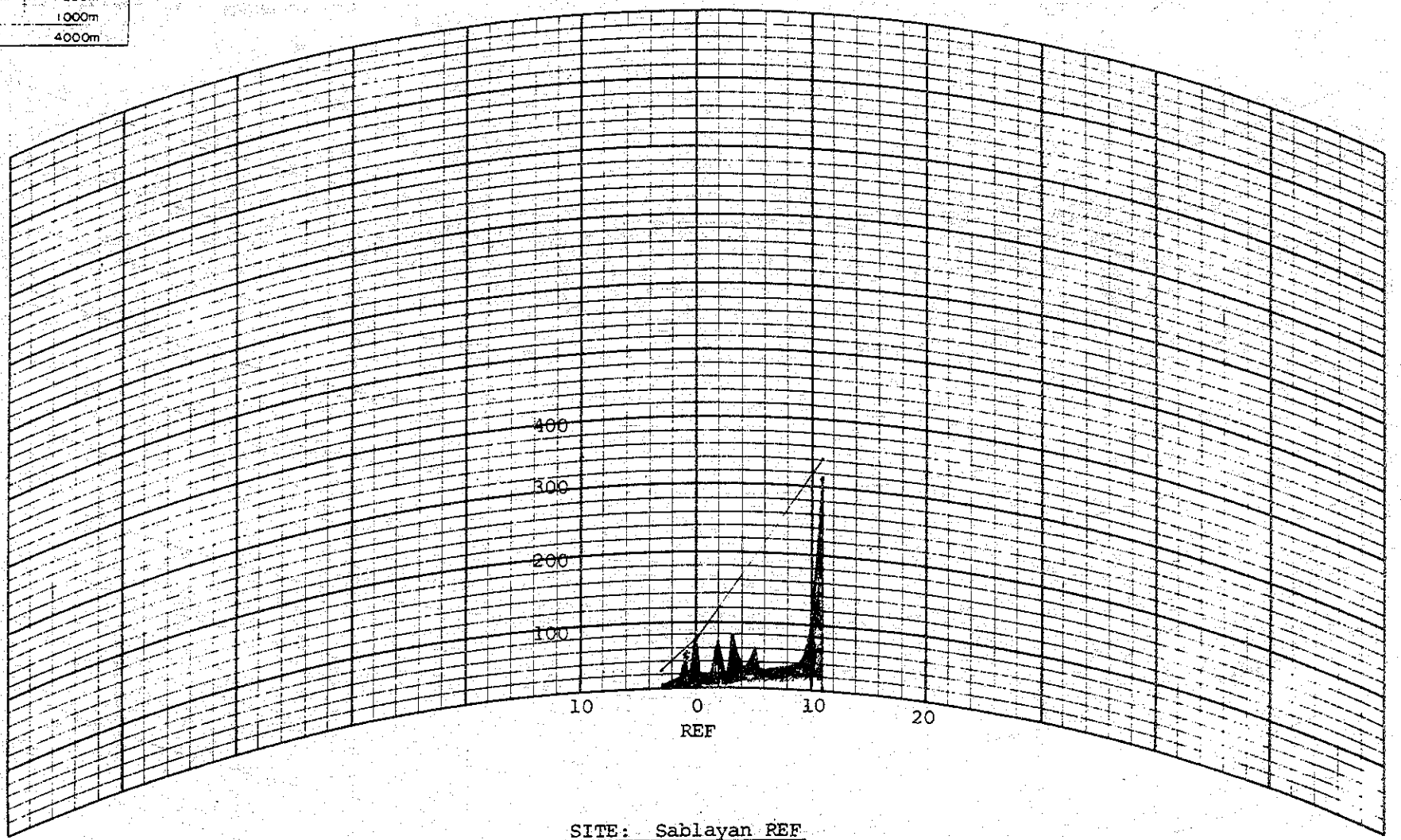
DISTANCE: 66.8 km

SITE: Sablayan R.S.
GROUND ELEVATION: 316 m
ANTENNA HEIGHT: 30 m

Fig.VII-2-2-4(23/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE	DISTANCE	HEIGHT
	60km	250m
O	120km	1000m
	240km	4000m



SITE: Sablayan REF

GROUND ELEVATION: 70m

REFLECTOR HEIGHT: 5m

DISTANCE: 2.6 + 10.9 km

Sablayan

SITE

GROUND ELEVATION: 3 m

ANTENNA HEIGHT: 30 m

Sablayan R.S.

SITE

GROUND ELEVATION: 316 m

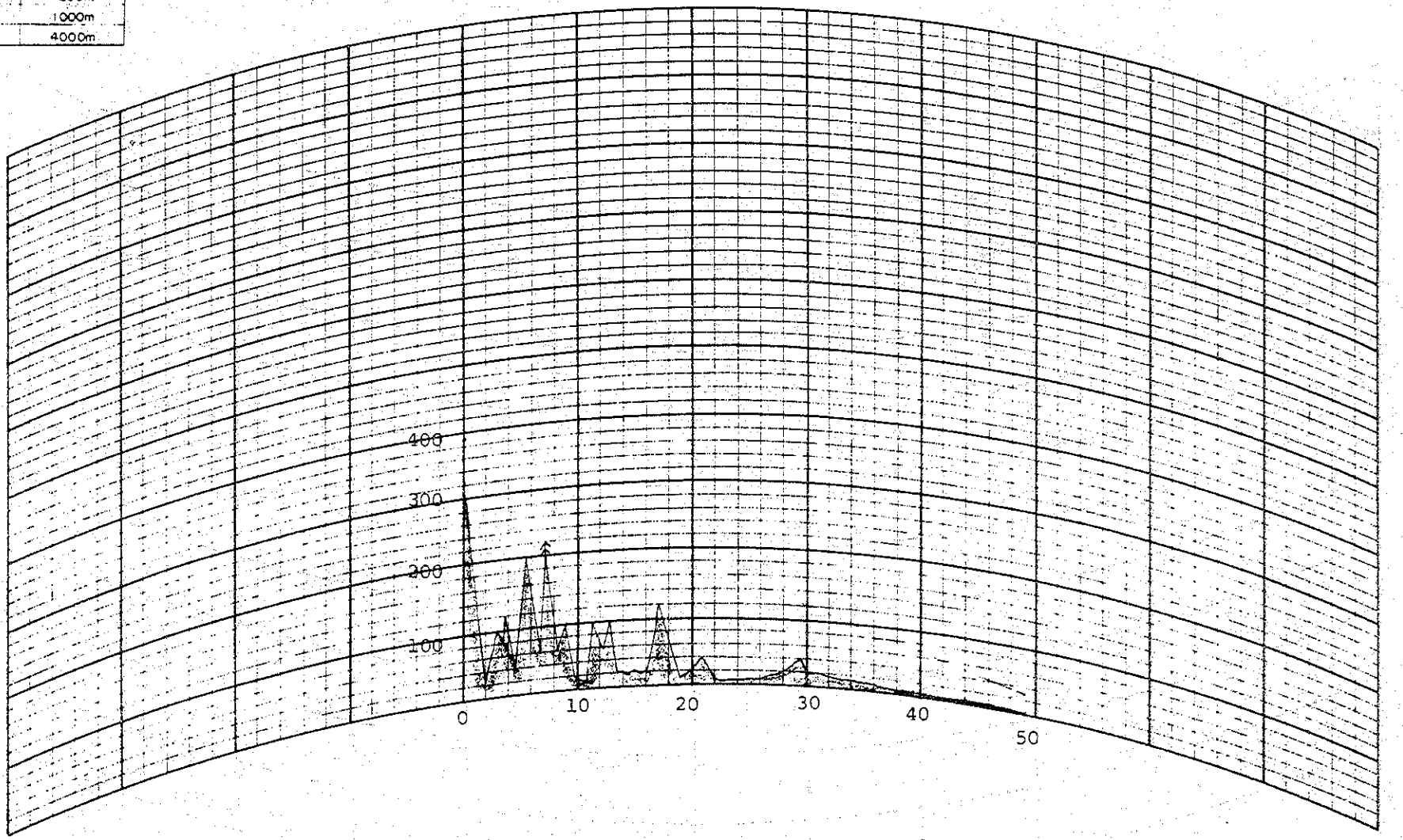
ANTENNA HEIGHT: 30 m

Fig.VII-2-2-4(24/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE

	DISTANCE	HEIGHT
	60km	250m
O.	120km	1000m
	240km	4000m



Sablayan R.S.
SITE
GROUND ELEVATION 316 m
ANTENNA HEIGHT 30 m

DISTANCE 48.8 km

San Jose R.S.
SITE
GROUND ELEVATION 2 m
ANTENNA HEIGHT 30 m

Fig.VII-2-2-4 (25/33)

PATH PROFILE (4/3 RADIUS)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m

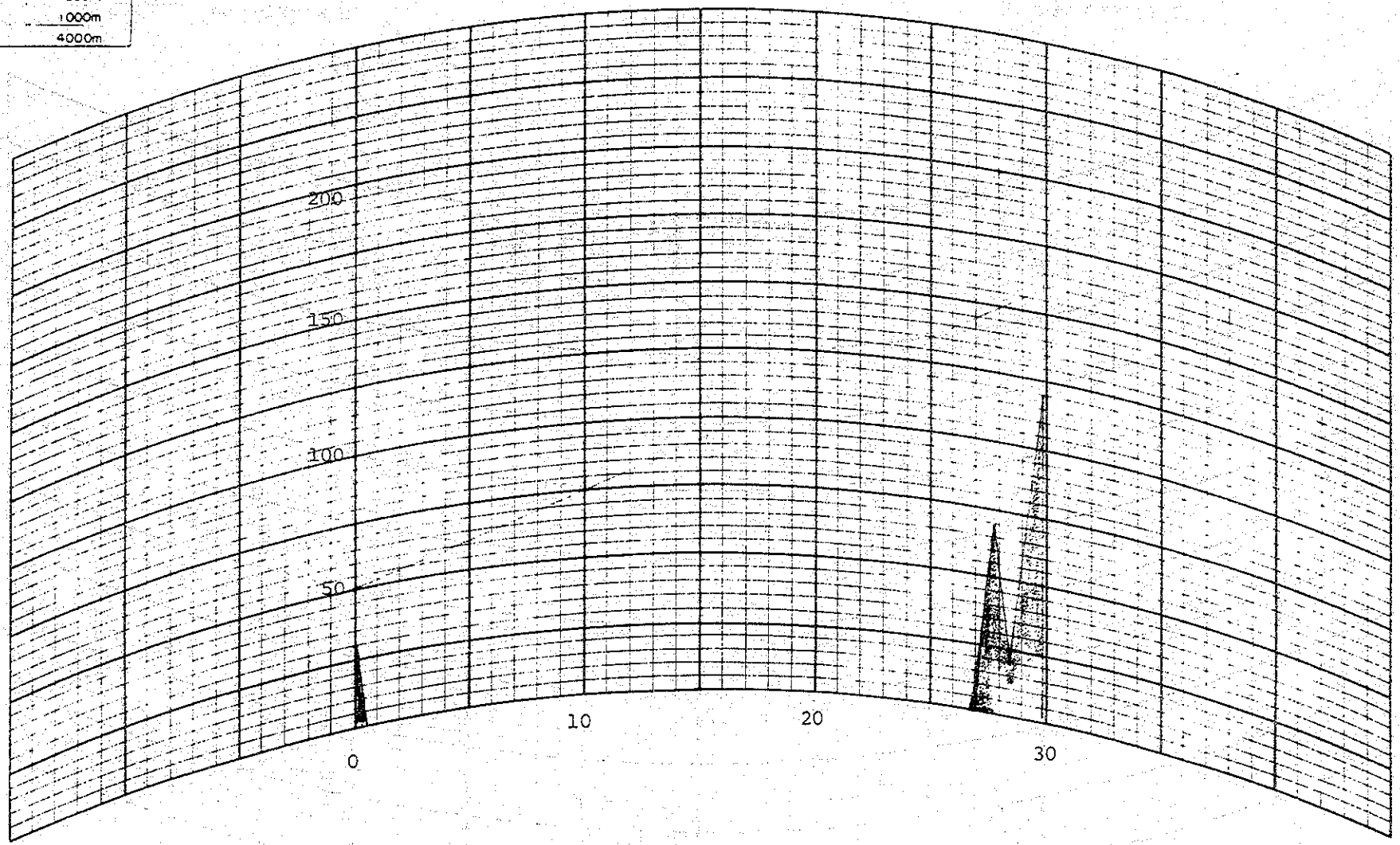


Fig. VII-2-2-4 (26/33)

SITE: P. Galera R.S.
GROUND ELEVATION: 30 m
ANTENNA HEIGHT: 20 m

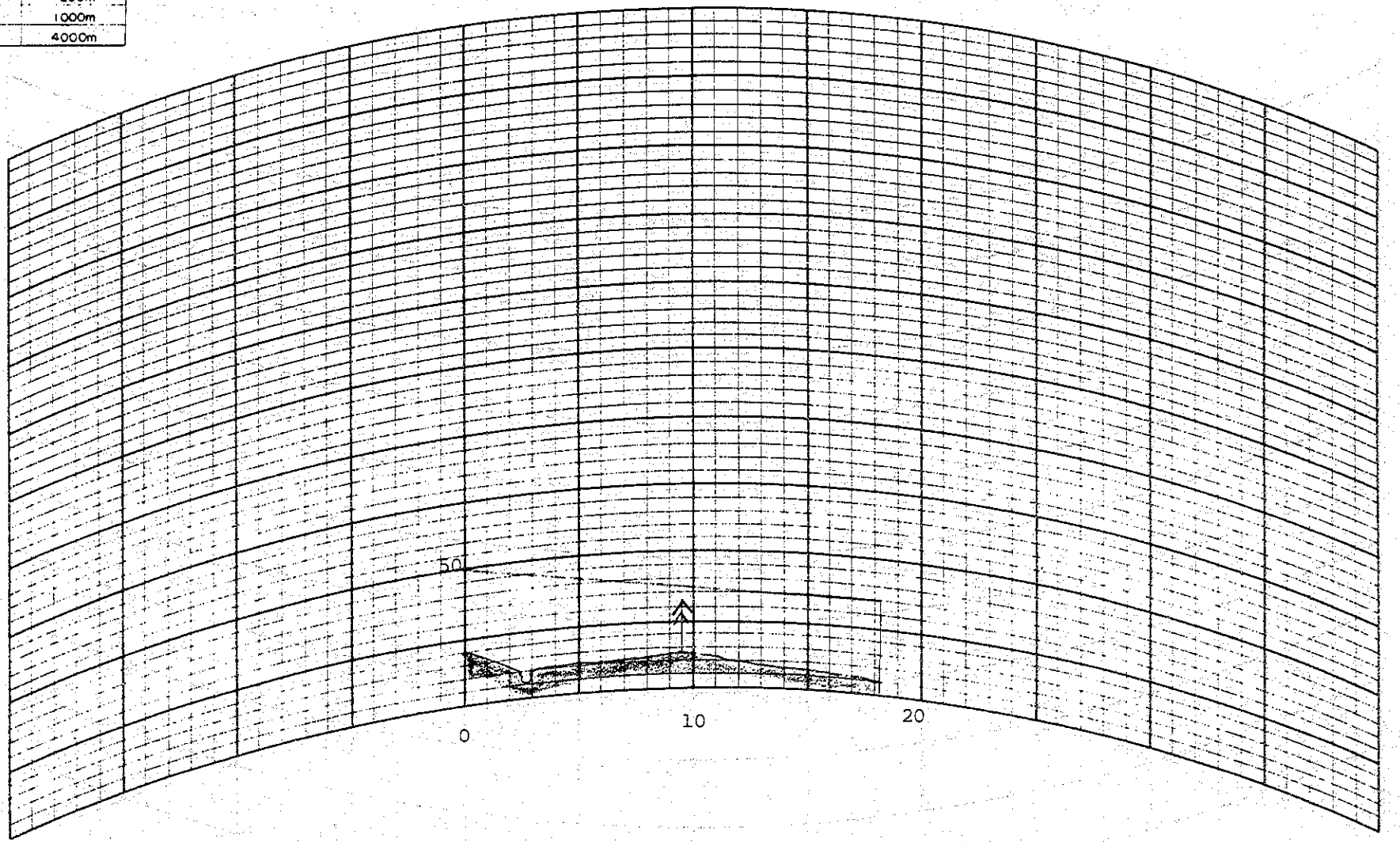
DISTANCE: 29.8 km

SITE: Calapan R.S.
GROUND ELEVATION: 120 m
ANTENNA HEIGHT: 40 m

PATH PROFILE (4/3 RADIUS)

FULL SCALE

	DISTANCE	HEIGHT
O	60km	250m
	120km	1000m
	240km	4000m



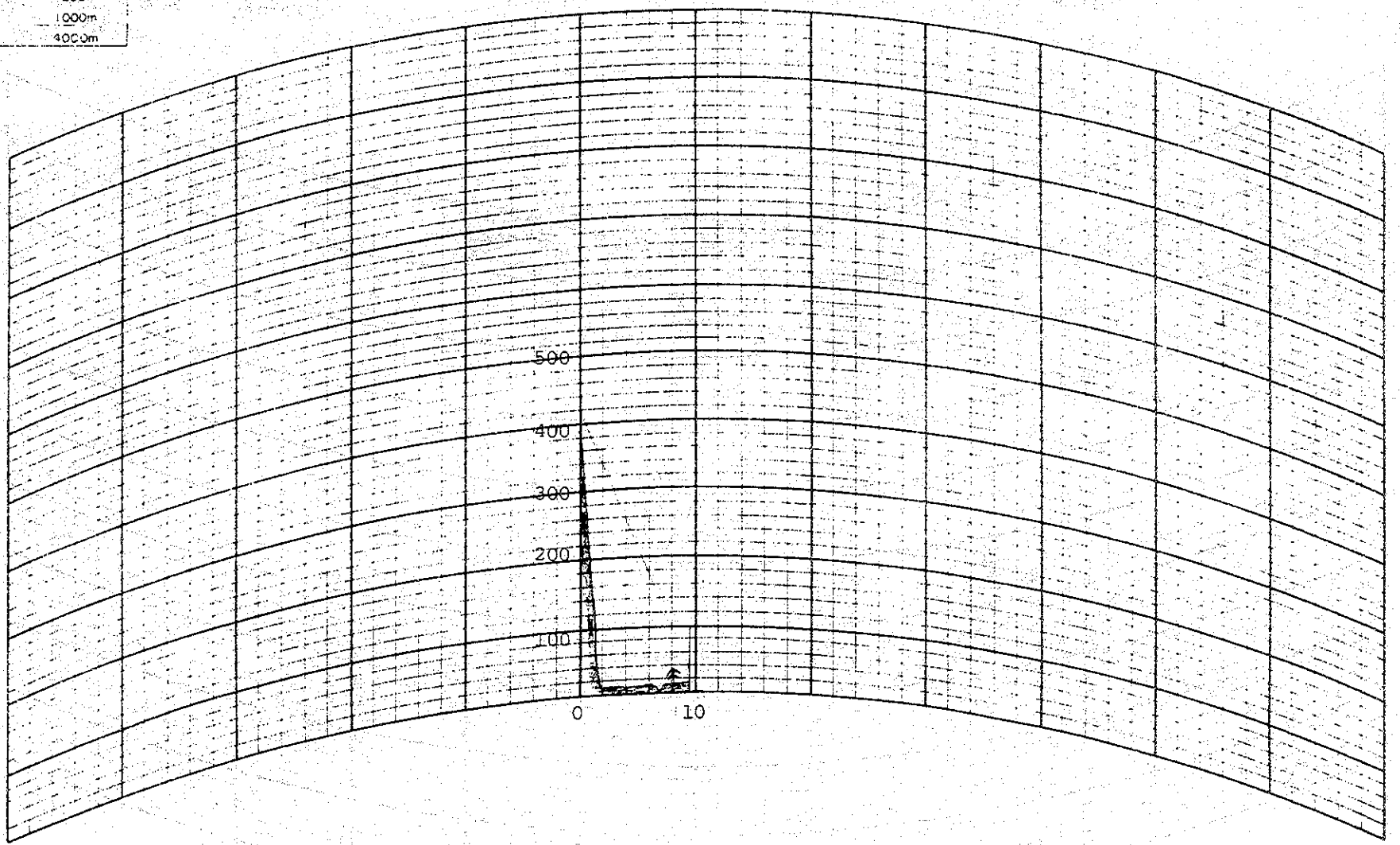
SITE Victoria
GROUND ELEVATION 20 m
ANTENNA HEIGHT 30 m

DISTANCE 18.2 km

SITE Naujan
GROUND ELEVATION 5 m
ANTENNA HEIGHT 30 m

Fig.VII-2-2-4(27/33)

PATH PROFILE (4/3 RADIUS)



SITE: Mt. Dumali R.S.
GROUND ELEVATION: 390 m
ANTENNA HEIGHT: 30 m

DISTANCE: 9.7 km

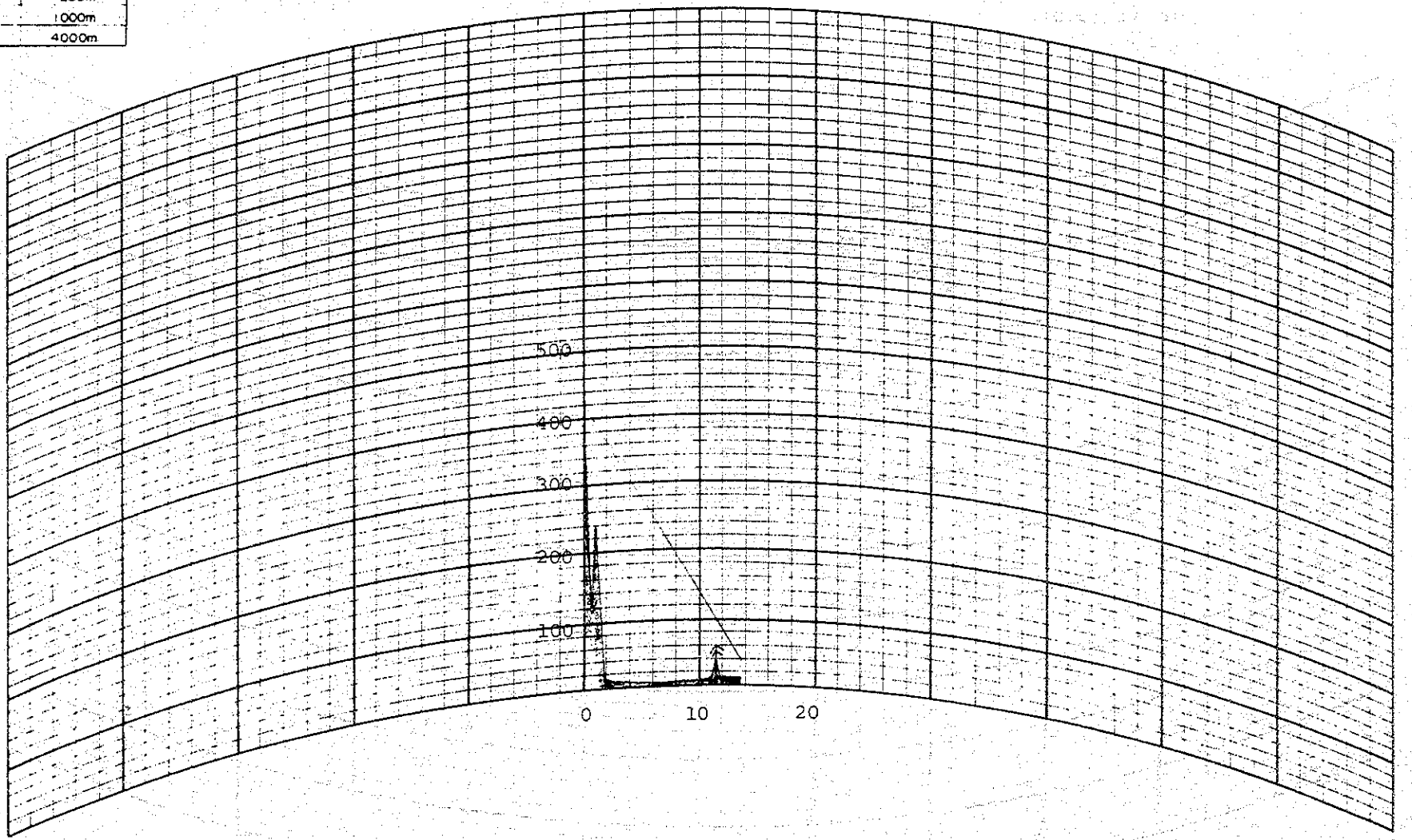
SITE: Socorro
GROUND ELEVATION: 15 m
ANTENNA HEIGHT: 20 m

Fig.VII-2-2-4 (28/33)

FULL SCALE

DISTANCE	HEIGHT
60km	250m
120km	1000m
240km	4000m

PATH PROFILE (4/3 RADIUS)



SITE Mt. Dumali R.S.
GROUND ELEVATION 390 m
ANTENNA HEIGHT 30 m

DISTANCE 13.4 km

SITE Gloria
GROUND ELEVATION 7 m
ANTENNA HEIGHT 30 m

Fig.VII-2-2-4 (29/33)