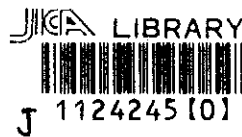


JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
MINISTRY OF POSTS AND TELECOMMUNICATIONS
THE KINGDOM OF CAMBODIA

THE FEASIBILITY STUDY
ON
TELECOMMUNICATIONS NETWORK
FOR
PHNOM PENH CITY AND ITS SURROUNDING AREA
IN
THE KINGDOM OF CAMBODIA

APPENDIX
(SUPPORTING/DATA)

JULY 1995



NTT INTERNATIONAL CORPORATION
NIPPON TELECOMMUNICATIONS CONSULTING CO., LTD.

SSS
JR
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APPENDIX
THE FEASIBILITY STUDY ON TELECOMMUNICATIONS NETWORK FOR PHNOM PENH CITY

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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
MINISTRY OF POSTS AND TELECOMMUNICATIONS
THE KINGDOM OF CAMBODIA

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JICA

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Appendix 1

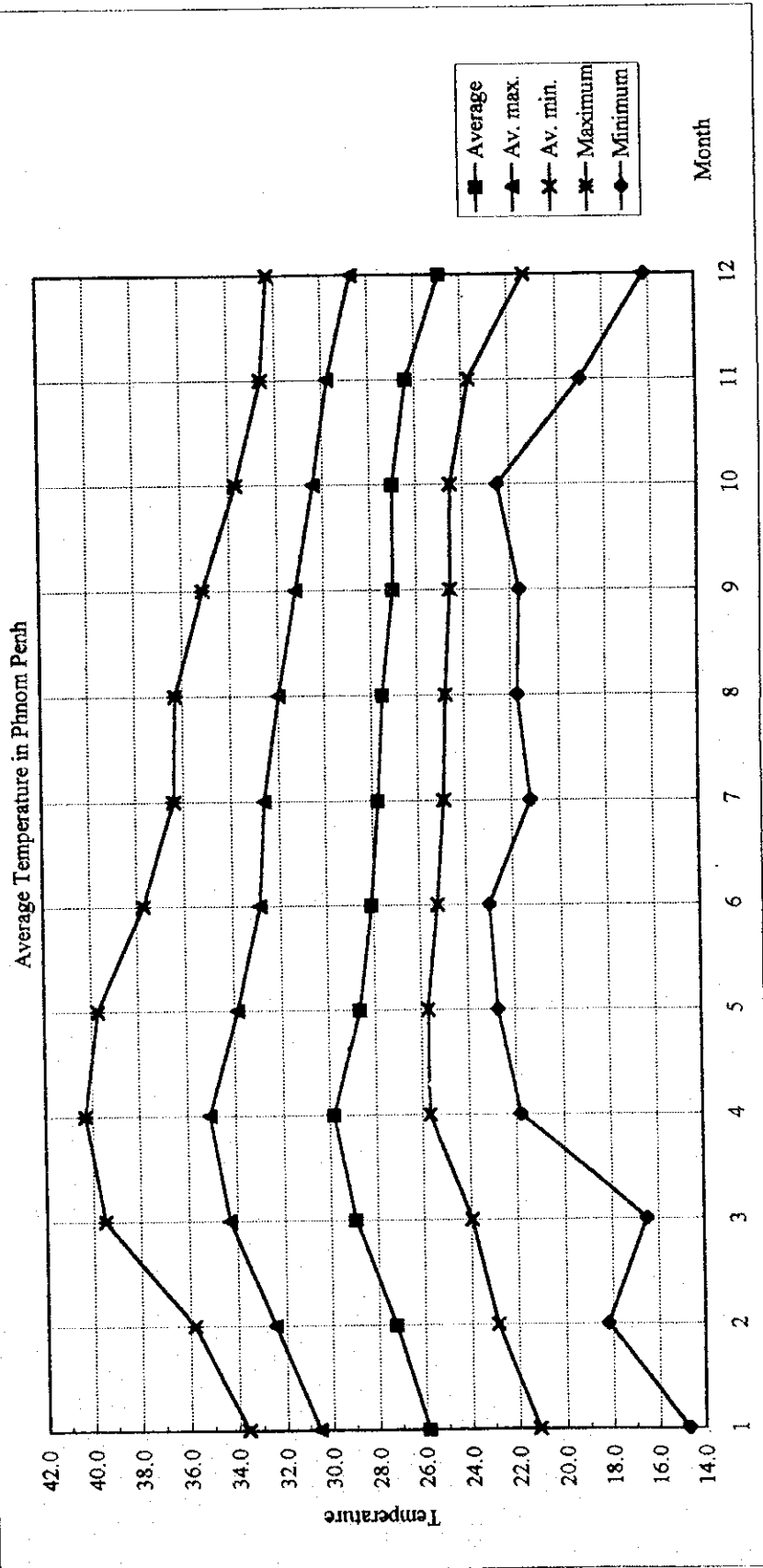
Introduction

Appendix 2
Socio-Economic Conditions

Appendix 2-1 Weather Conditions in Phnom Penh (1/7)

Average of Data from 1981 to 1990

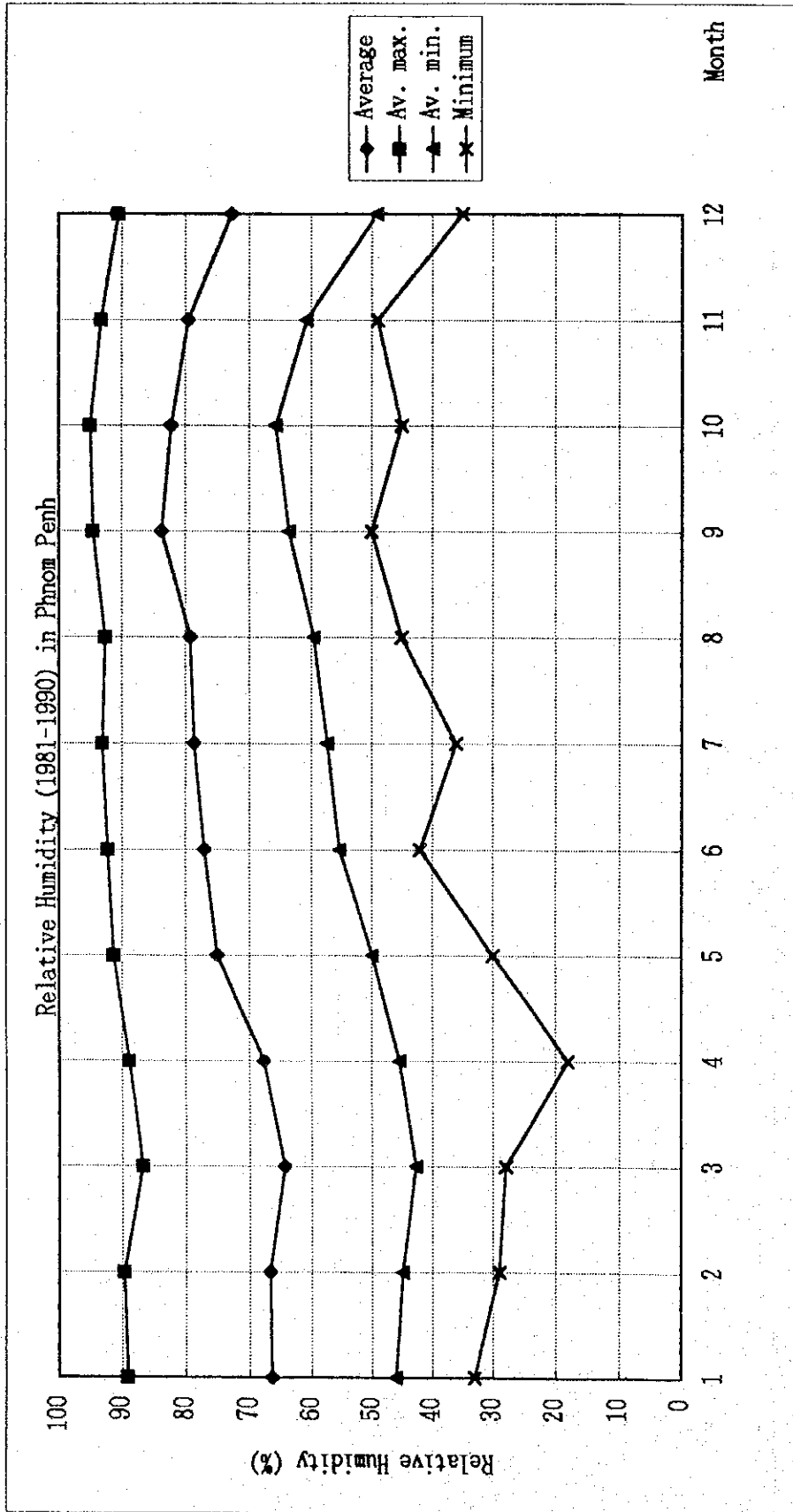
Item	Type	January	February	March	April	May	June	July	August	September	October	November	December
Average	Average	25.9	27.2	28.9	29.8	28.6	28.1	27.7	27.5	27.0	27.0	26.4	24.9
	Av. max.	30.6	32.5	34.3	35.1	33.8	32.9	32.6	32.0	31.2	30.4	29.7	28.7
	Av. min.	21.2	22.9	24.0	25.7	25.7	25.2	24.9	24.8	24.6	24.5	23.7	21.3
	Maximum	33.6	35.8	39.5	40.3	39.7	37.7	36.4	36.3	35.1	33.7	32.6	32.3
	Minimum	14.7	18.2	16.5	21.8	22.7	23.0	21.2	21.7	21.6	22.5	19.0	16.2



Appendix 2-1 Weather Conditions in Phnom Penh (2/7)

Average of Data from 1981 to 1990

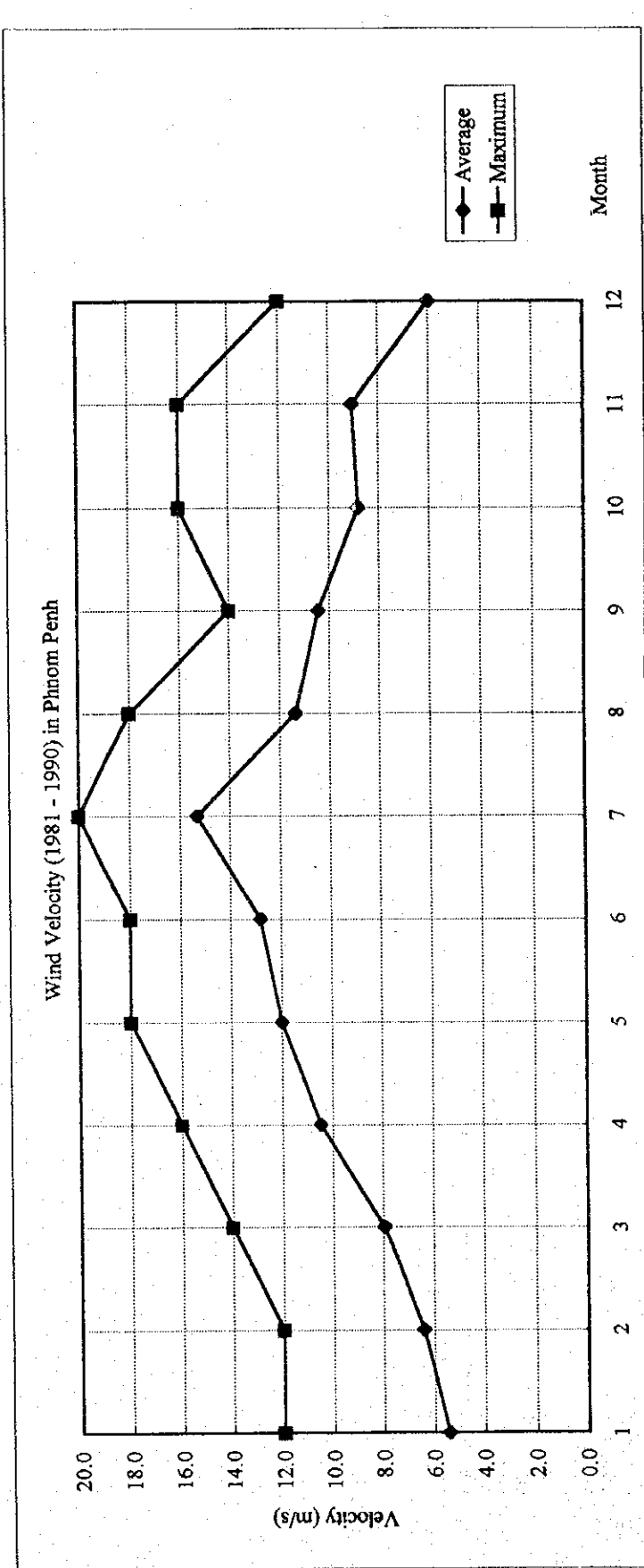
Item	Type	January	February	March	April	May	June	July	August	September	October	November	December
Average	Average	67	67	64	68	75	77	79	79	84	82	80	73
1981-1990	Av. max.	89	90	87	89	91	92	93	93	95	95	93	91
	Av. min.	46	45	43	45	50	55	57	60	64	66	61	49
	Minimum	33	29	28	18	30	42	36	45	50	45	49	35



Appendix 2-1 Weather Conditions in Phnom Penh (3/7)

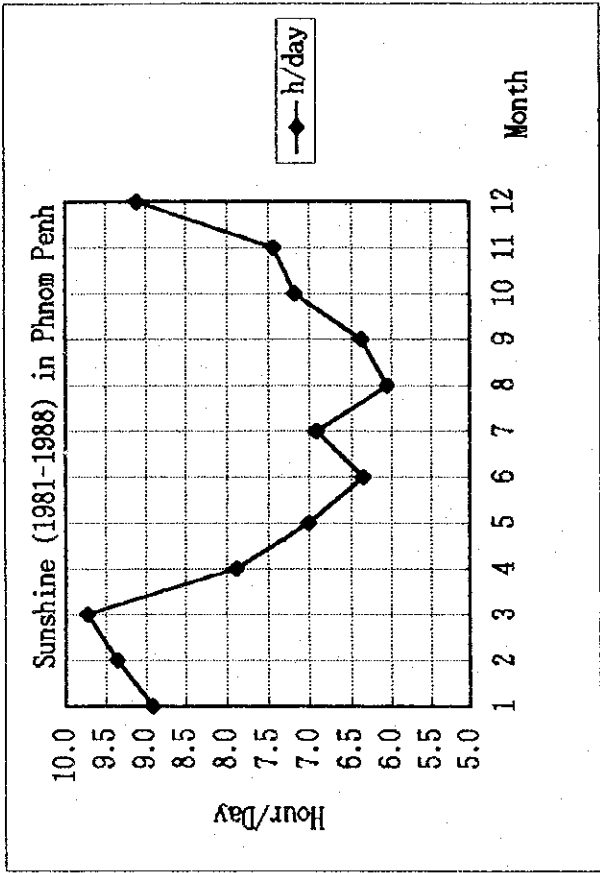
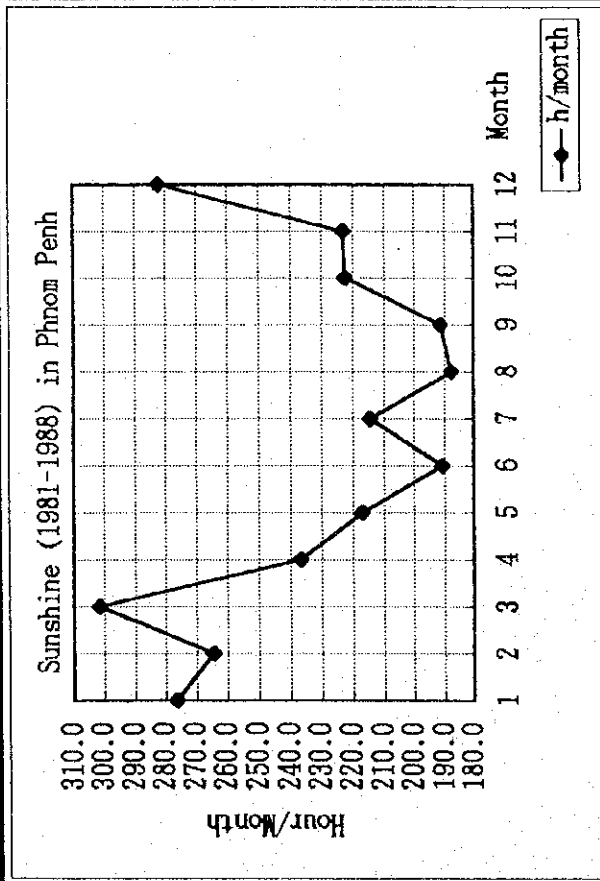
Wind Velocity (1981 - 1990) in Phnom Penh (Pouchentong)

Item	Type	January	February	March	April	May	June	July	August	September	October	November	December
Wind	Average	5.4	6.4	8.0	10.5	12.0	12.8	15.3	11.4	10.5	8.8	9.1	6.0
	Maximum	12.0	12.0	14.0	16.0	18.0	18.0	20.0	18.0	14.0	16.0	16.0	12.0



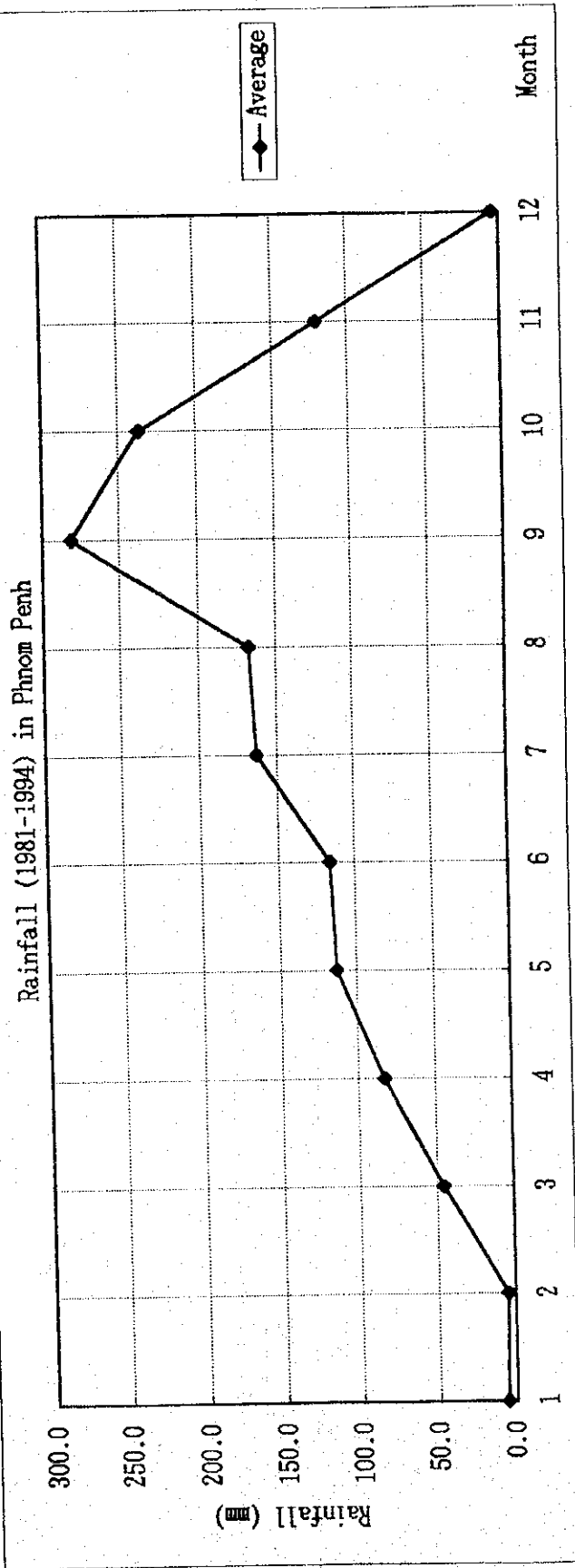
Sunshine (Daylight) (1981 - 1988) in Phnom Penh

Year	Type	January	February	March	April	May	June	July	August	September	October	November	December
	day/month	31	28	31	30	31	30	31	31	30	31	30	31
Average	h/month	276.4	264.3	301.7	236.8	217.2	190.7	214.5	187.7	191.4	222.5	223.2	282.3
	h/day	8.9	9.4	9.7	7.9	7.0	6.4	6.9	6.1	6.4	7.2	7.4	9.1



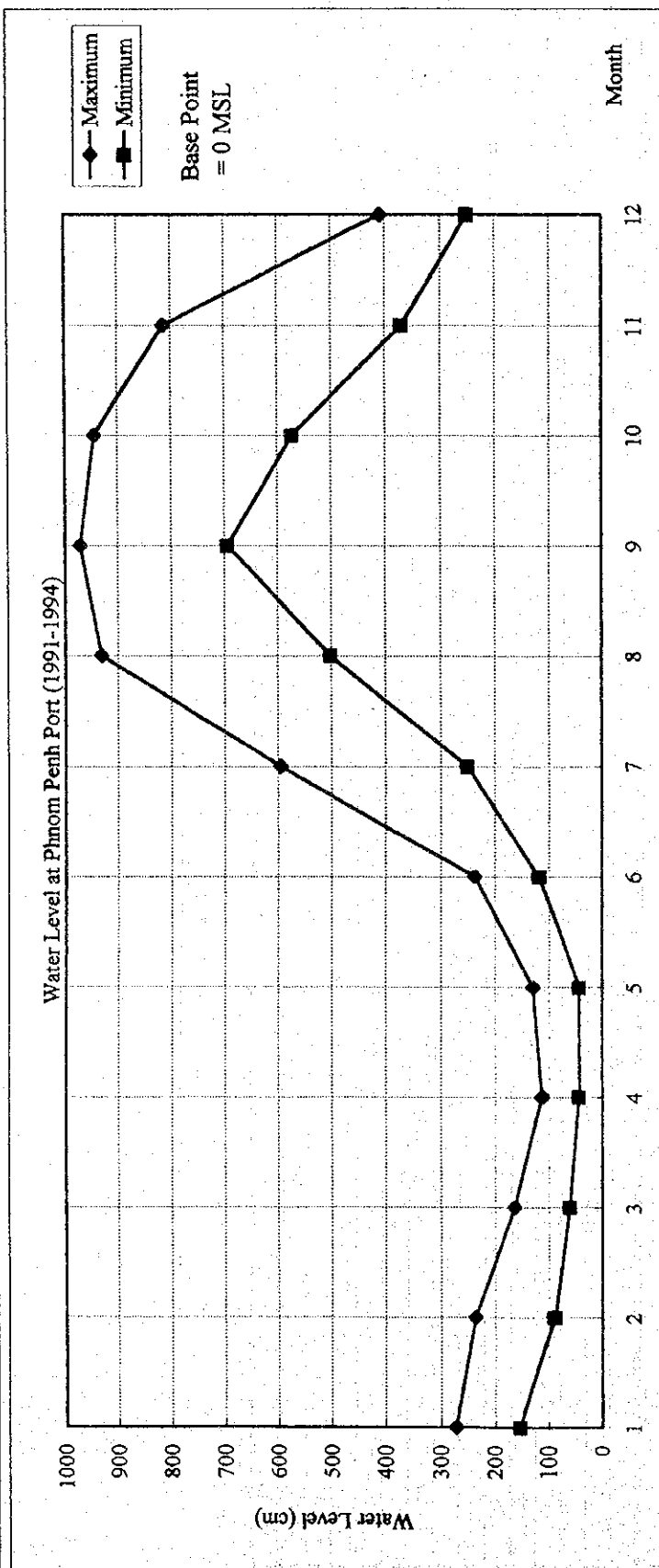
Rainfall (1981-1994) in Phnom Penh

Year	January	February	March	April	May	June	July	August	September	October	November	December	Total
1981	0.0	1.3		45.4	143.5	70.9	224.7	126.7	239.2	151.1	264.0	0.1	1266.8
1982	0.4	0.5	14.2	181.0	196.8	158.9	74.9	161.1	246.7	218.5	107.5	3.2	1360.6
1983					47.5	55.1	170.1	312.2	174.1	203.1	155.4	3.2	1120.7
1984	1.4	1.1		128.7	62.2	142.6	127.1	106.1	264.3	292.7	51.5	1.1	1178.8
1985		1.1		157.6	102.7	77.0	117.6	92.5	283.7	260.8	188.6	0.9	1282.5
1986		4.5	4.5	48.7	149.8	90.9	181.3	224.5	301.3	235.1	86.9	23.8	1351.3
1987				24.6	24.6	150.2	138.2	183.6	474.3	257.1	323.8		1551.8
1988		22.9	22.2	96.3	70.2	172.9	152.9	177.8	445.0	137.4	71.4		1369.0
1989	15.0		54.0	63.2	182.5	38.4	86.6	162.4	398.7	328.6	107.3	0.0	1436.7
1990				26.2	227.1	63.8	166.8	174.6	246.6	198.3	138.7	0.0	1242.1
1991				83.4	53.4	304.5	284.3	193.7	120.2	210.2	2.2	1.7	1253.6
1992	3.1	2.5	0.6	35.0	93.4	113.9	219.5	198.4	216.5	197.2	10.9	3.8	1094.8
1993	21.1		61.4	63.7	73.2	83.0	245.1	79.6	246.6	385.8	59.4	12.4	1331.3
1994	0.4		164.2	61.1	157.7	106.1	96.5	154.3					740.3
Average	5.9	4.8	45.9	82.5	113.2	116.3	163.3	167.7	281.3	236.6	120.6	4.7	-



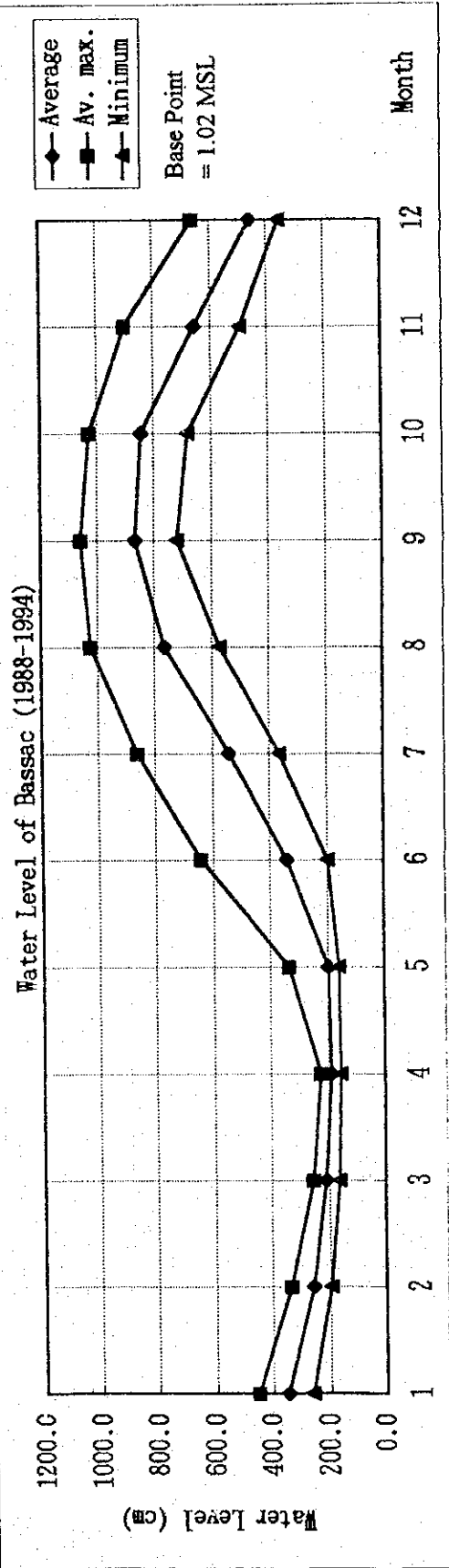
Water Level at Phnom Penh Port (1991-1994) in Phnom Penh

Year	Type	January	February	March	April	May	June	July	August	September	October	November	December
1991	Average								931	971	944	814	
	Maximum								646	914	828	564	
	Minimum												
1992	Average								767	786	746	658	362
	Maximum	236	171	162	112	114	211		502	714	572	370	251
	Minimum			92	79	81	117						
1993	Average												
	Maximum	247	152	114	102	128	237	595	710	779	759	605	408
	Minimum	152	90	63	46	45	119	251	510	694	619	412	281
1994	Average												
	Maximum	273	168		108								
	Minimum	169	101		63								
Average	Average												
	Maximum	273	236	162	112	128	237	595	931	971	944	814	408
	Minimum	152	90	63	46	45	117	251	502	694	572	370	251



Water Level of Bassac (1988-1994) in Phnom Penh

Year	Type	January	February	March	April	May	June	July	August	September	October	November	December
1988	Average	340	256	212	199	220	391	442	709	735	779	640	441
	Maximum	398	288	233	223	266	483	525	774	751	832	783	512
	Minimum	289	220	176	176	182	269	385	574	719	689	579	366
1989	Average	313	239	206	186	204	375	476	780	843	857	665	453
	Maximum	363	260	225	219	334	469	712	820	877	879	797	536
	Minimum	261	216	167	164	163	292	373	667	791	799	539	383
1990	Average	381	283	234	213	280	644	741	875	973	982	884	662
	Maximum	286	209	190	160	167	283	634	766	891	896	671	455
	Minimum	392	290	221	199	195	274	566	838	1023	982	754	527
1991	Average	452	334	253	226	227	406	767	1024	1057	1027	898	622
	Av. max.	336	256	191	165	174	199	422	736	995	902	623	446
	Minimum	391	290	223	190	188	286	469	738	853	786	627	418
1992	Average	443	322	254	208	203	498	680	890	902	856	772	495
	Av. max.	324	258	185	170	170	202	363	622	827	683	497	356
	Minimum	310	228	198	177	194	276	563	753	865	813	609	460
1993	Average	352	262	219	206	238	350	711	829	895	875	716	516
	Maximum	262	197	176	158	170	218	364	618	812	720	520	394
	Minimum	326	238	210	196	193	432	743					
1994	Average	390	276	237	218	247	612	861					
	Maximum	277	209	189	170	166	244	611					
	Minimum	345.3	256.8	211.7	191.2	199.0	339.0	543.2	763.6	863.8	843.4	659.0	459.8
Average	Av. max.	452.0	334.0	254.0	226.0	334.0	644.0	861.0	1024.0	1057.0	1027.0	898.0	662.0
	Minimum	261.0	197.0	167.0	158.0	163.0	199.0	363.0	574.0	719.0	683.0	497.0	356.0



A2-2 Statistics on Po Nhea Loeu (Prek Phnou)

(1/2)

Commune Name	Number of Village	Number of Group	Number of Households	Population	Number of Male	Number of Female
Prek Phnou	5	59	1,236	8,304	3,890	4,414
Som Rong	4	33	835	3,875	1,839	2,036
Prek Taten	3	56	944	5,890	2,812	3,078
Po Nhi Lea	3	23	443	2,439	1,039	1,400
Kom Pong Os	5	56	758	4,567	2,199	2,368
Koschen	11	67	1,079	6,760	3,199	3,561
Kos Chen Kom Pong Lung	8	72	1,323	7,180	3,052	4,128
Vihea Lung	12	51	881	4,530	2,080	2,450
Psa Dek	10	51	919	4,451	2,121	2,330
Phnom Bat	22	73	1,257	6,645	3,322	3,323
Chey Los	15	86	1,093	6,119	2,917	3,202
Tom Nob Them Chhlang	19	40	895	4,746	2,154	2,592
Chhlang	16	68	1,122	5,947	2,754	3,193
Po Nhea Pon	8	50	722	4,121	1,920	2,201
Total	141	785	13,507	75,574	35,298	40,276

(2/2)

Commune Name	Number of 18-year-old-up	Number of public official	Number of Business-man	Number of Farmer	Number of un-employed
Prek Phnou	4,422	520	3,222	580	0
Som Rong	2,167	63	194	1,869	0
Prek Taten	2,920	89	8	5,882	0
Po Nhi Lea	1,210	20	14	1,163	6
Kom Pong Os	2,030	50	0	1,980	0
Koschen	3,147	74	36	2,726	0
Kos Chen Kom Pong Lung	875	59	783	357	0
Vihea Lung	2,267	103	40	1,989	0
Psa Dek	2,252	77	0	2,151	0
Phnom Bat	3,423	63	0	3,343	0
Chey Los	2,836	58	0	2,746	0
Tom Nob Them Chhlang	2,262	62	0	2,200	0
Chhlang	2,201	64	0	0	0
Po Nhea Pon	2,584	44	0	4,077	0
Total	34,596	1,346	4,297	31,063	6

A2-3 Statistics on Takhmau

Commune Name	Number of Group	Number of Village	Number of Households	Population	Number of Male	Number of Female
Takhmau	3	143	2,384	13,531	6,672	6,859
Dam Mean	4	100	1,407	7,561	3,576	3,985
Kom Pong Somnainh	3	31	1,000	4,881	2,340	2,541
Prek Rusey	3	55	986	5,208	2,680	2,528
Ta Kdoi	3	42	550	3,053	1,520	1,533
Prek Ho	3	51	645	3,652	1,659	1,993
Total	19	422	6,972	37,886	18,447	19,439

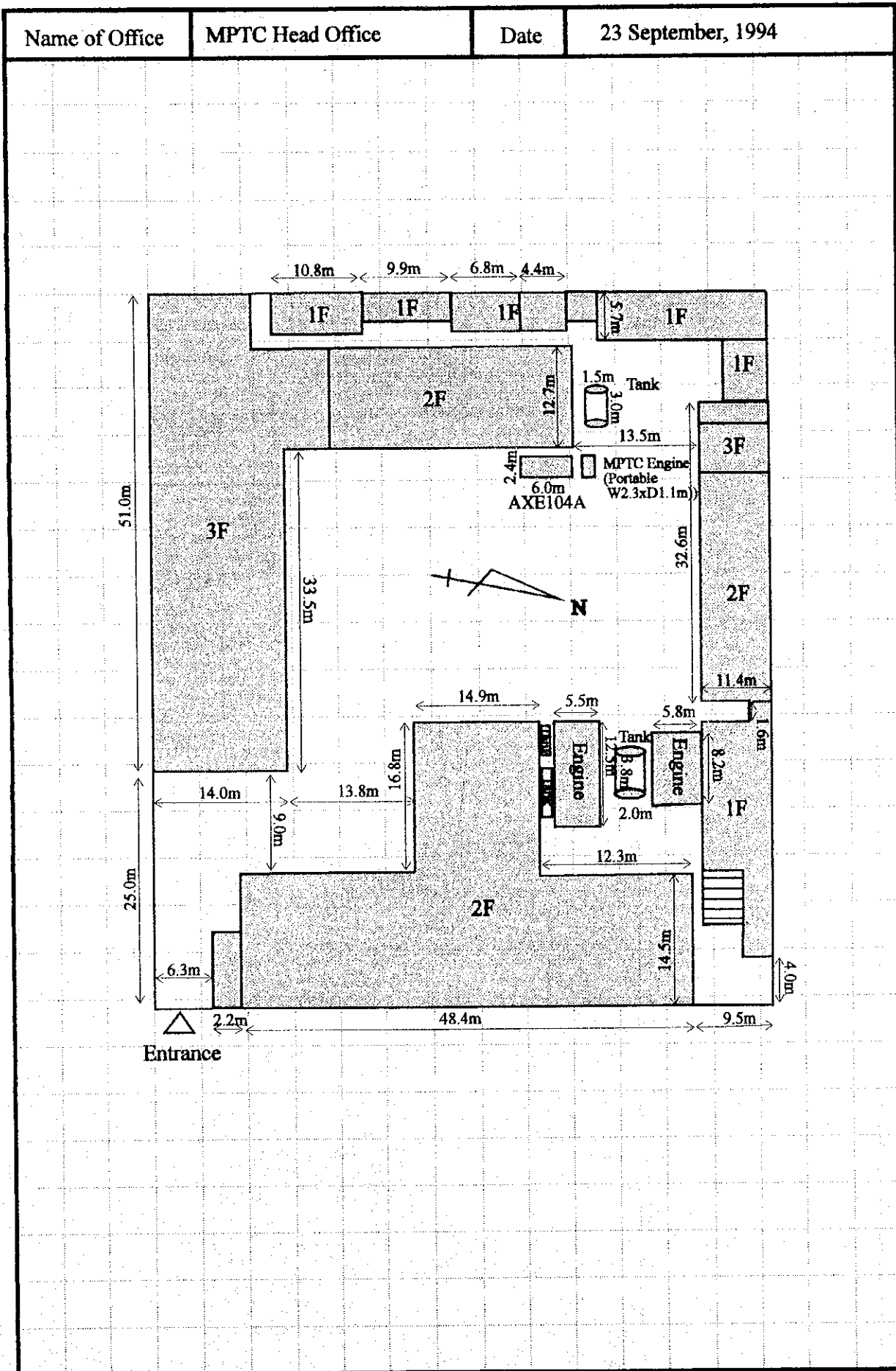
Appendix 3

Telecommunications Sector Outlook

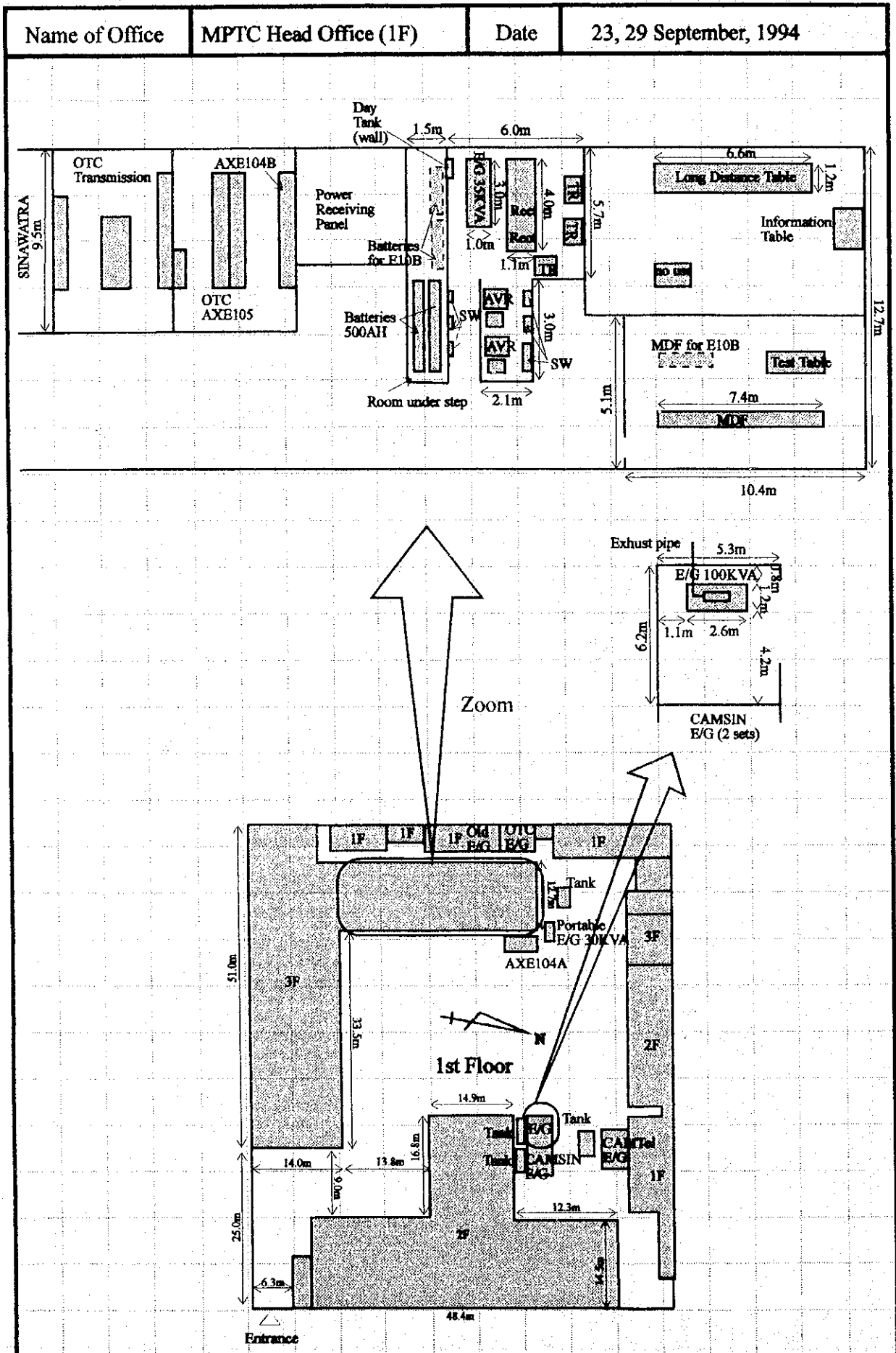
Appendix 4

Present Telecommunications Services and Facilities

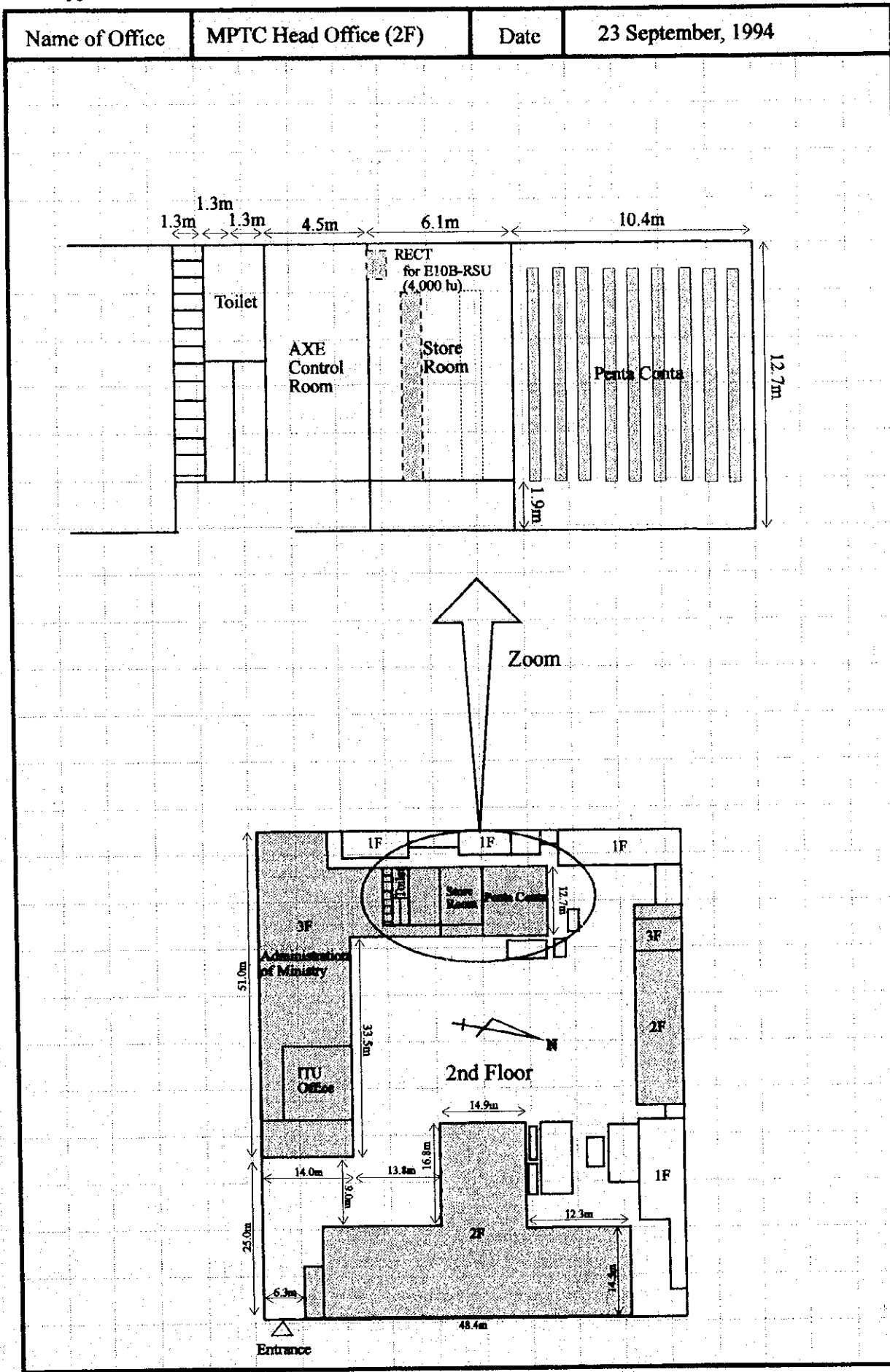
Appendix 4-1 Site Condition in Study Area (1/19)



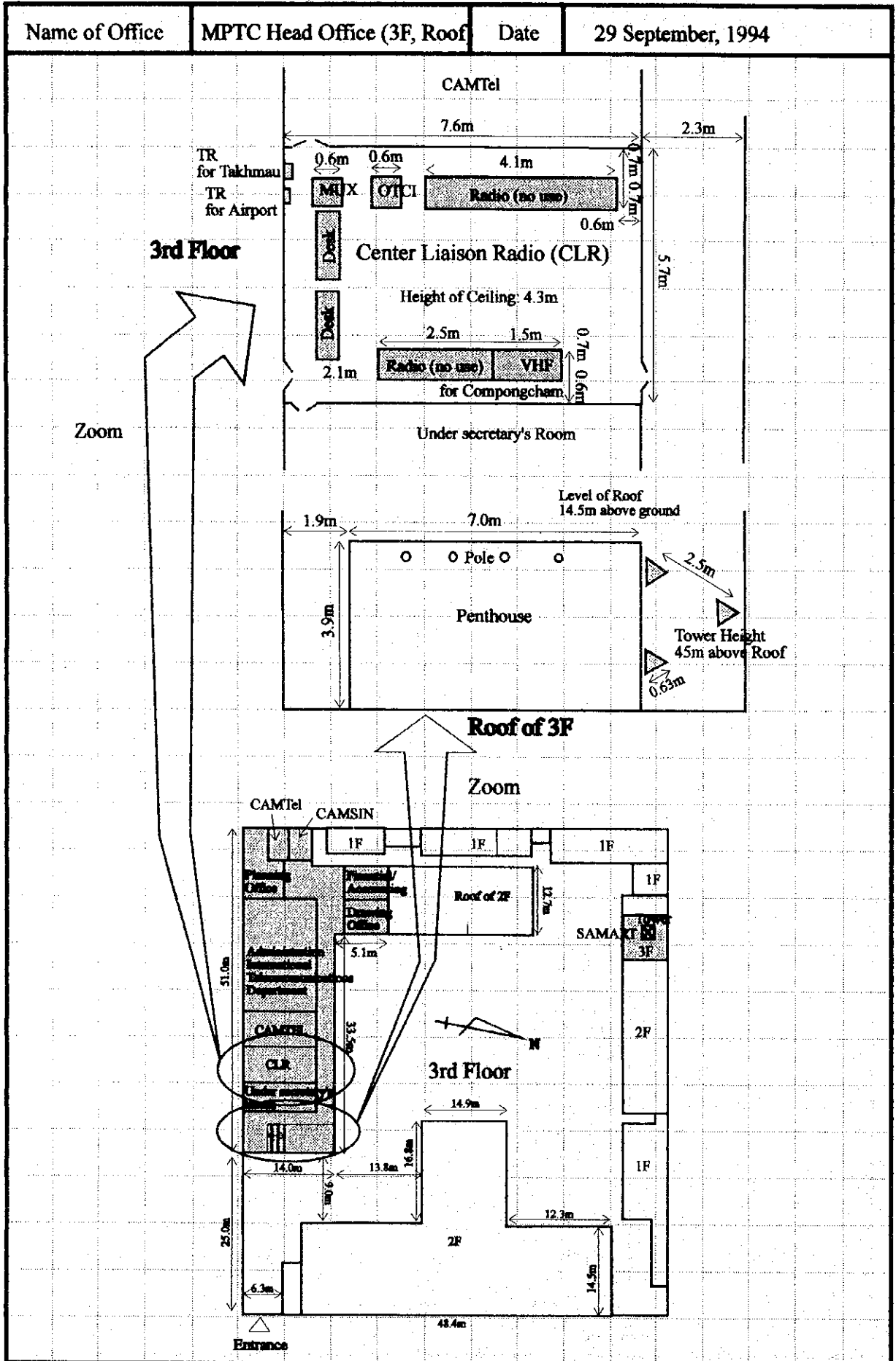
Appendix 4-1 Site Condition in Study Area (2/19)



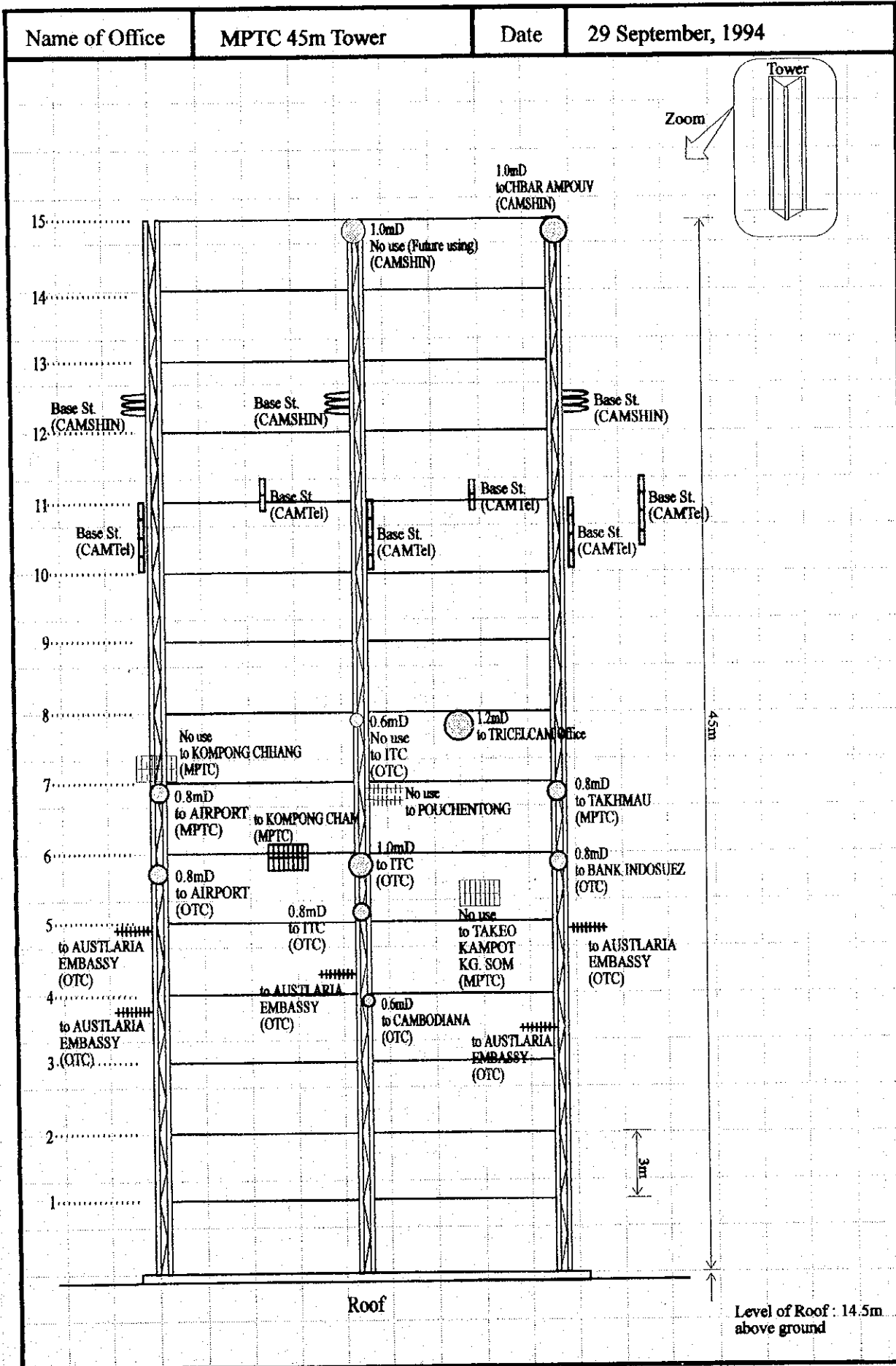
Appendix 4-1 Site Condition in Study Area (3/19)



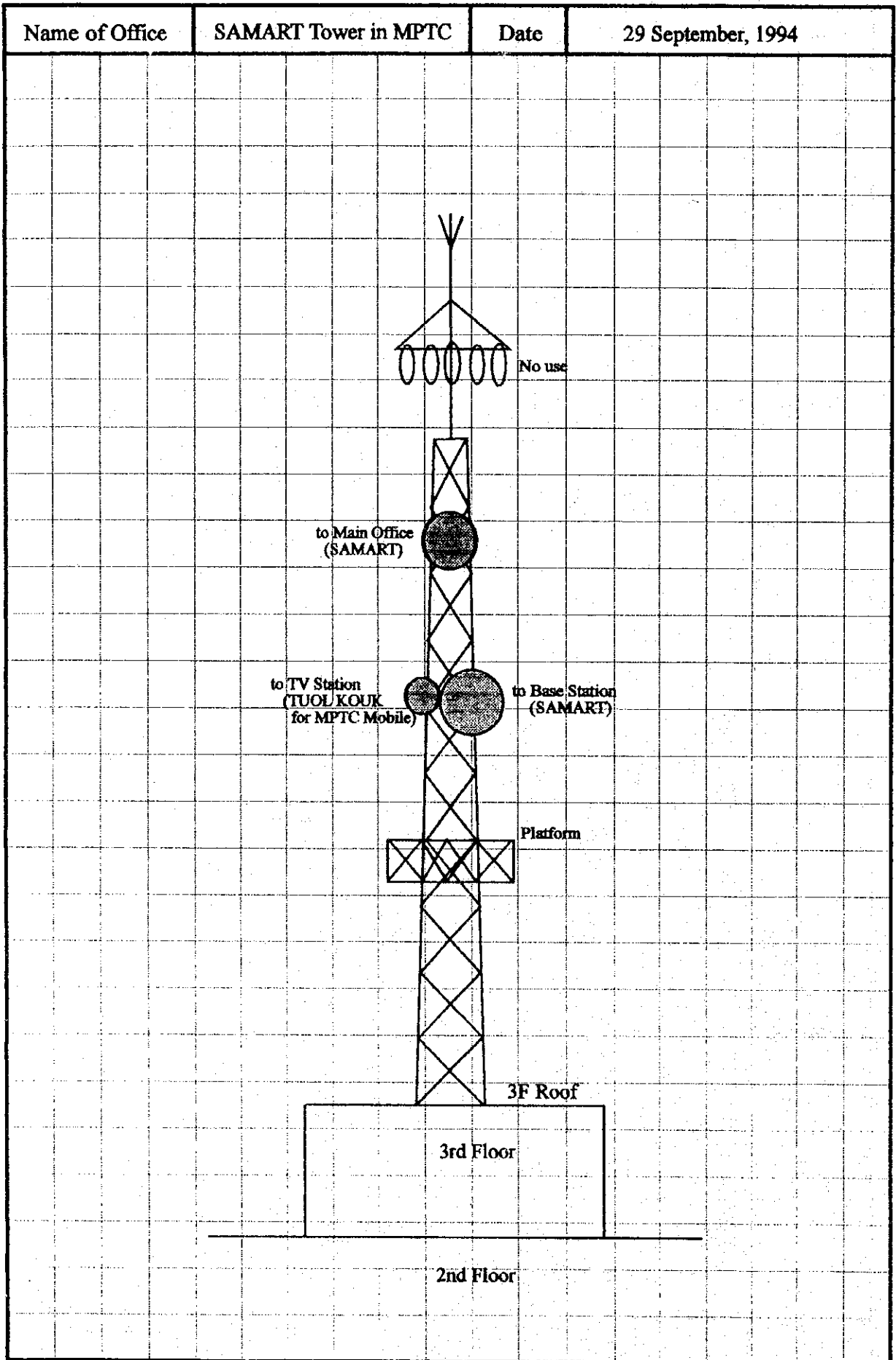
Appendix 4-1 Site Condition in Study Area (4/19)



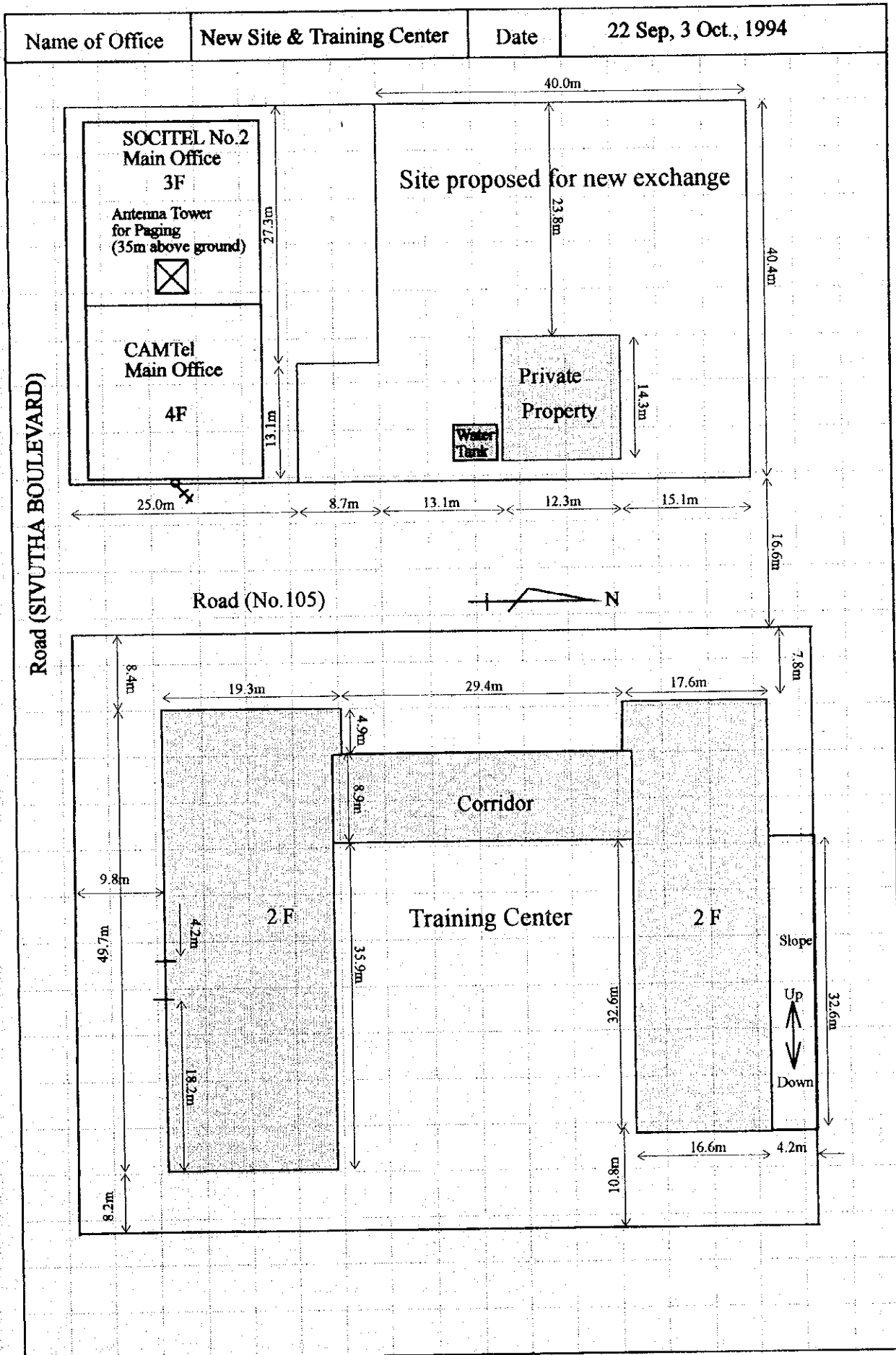
Appendix 4-1 Site Condition in Study Area (5/19)



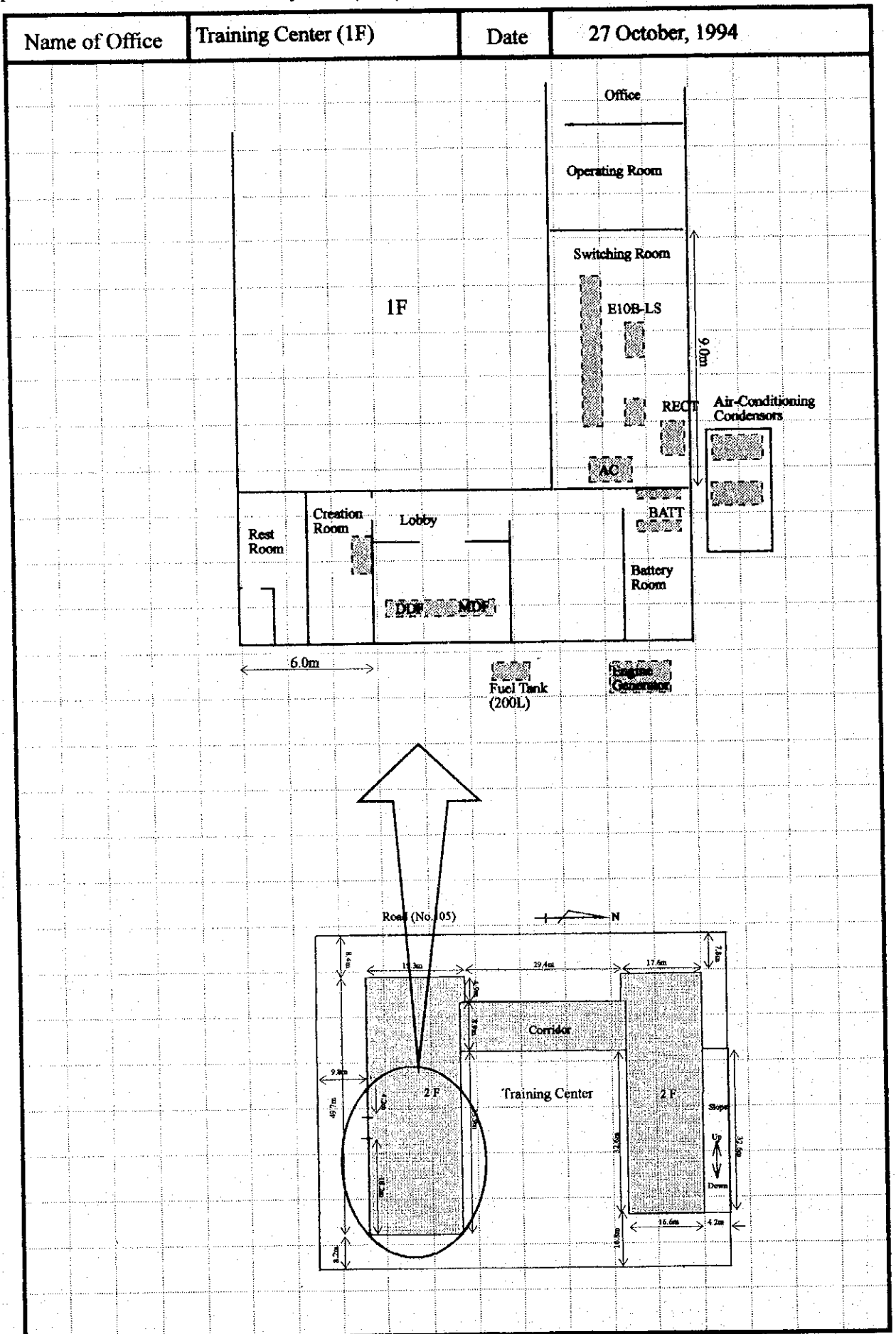
Appendix 4-1 Site Condition in Study Area (6/19)



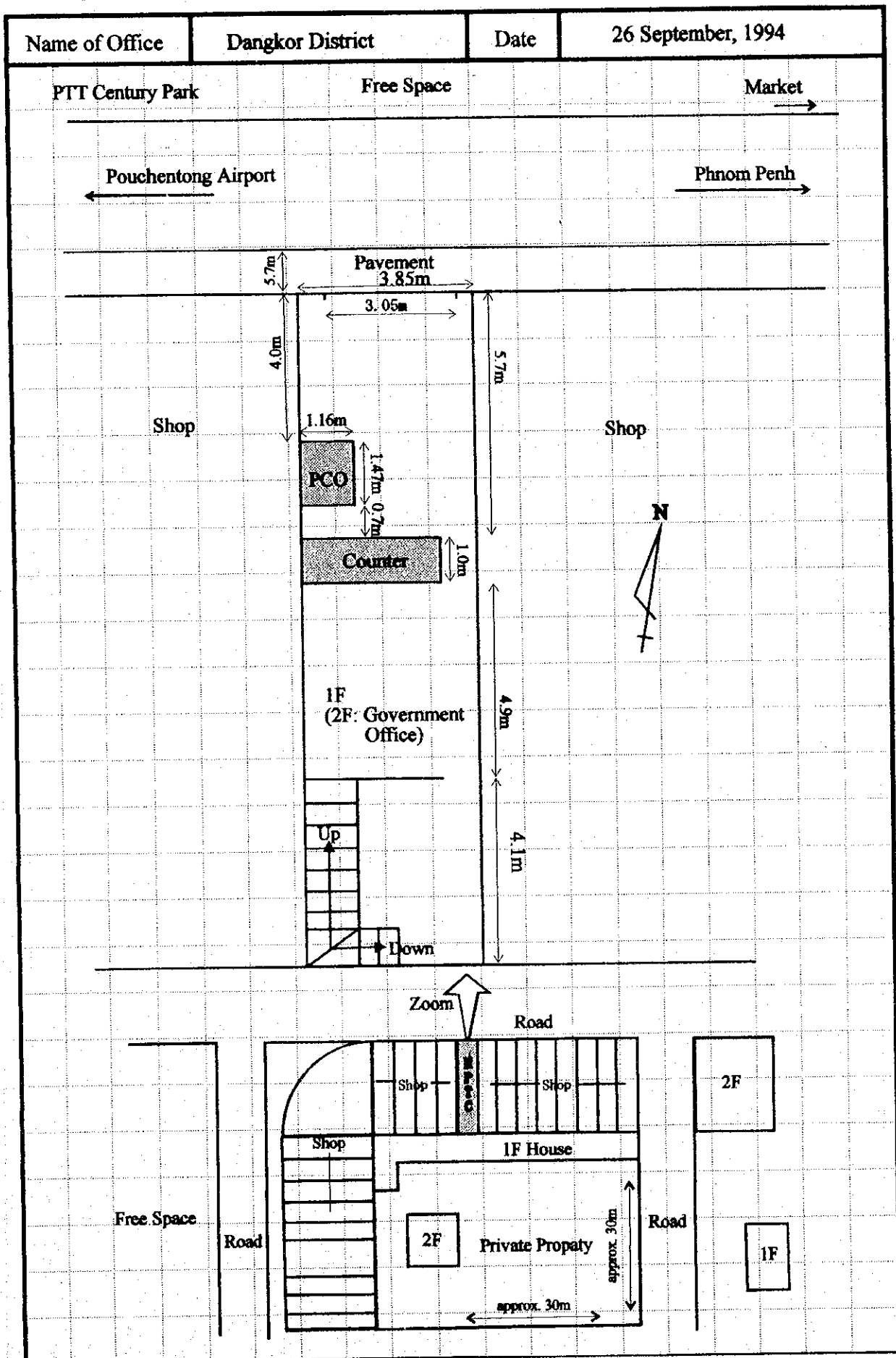
Appendix 4-1 Site Condition in Study Area (7/19)



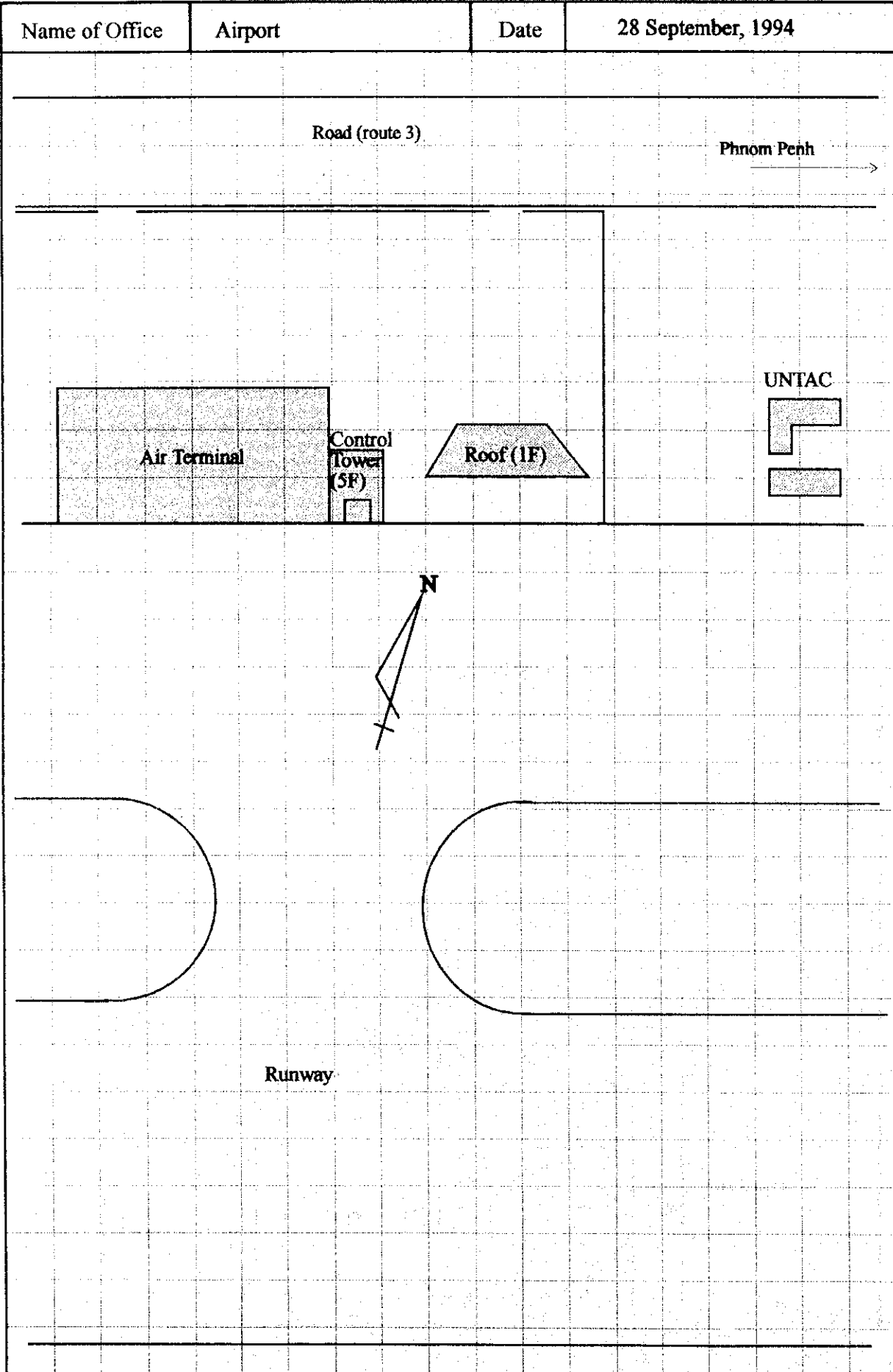
Appendix 4-1 Site Condition in Study Area (8/19)



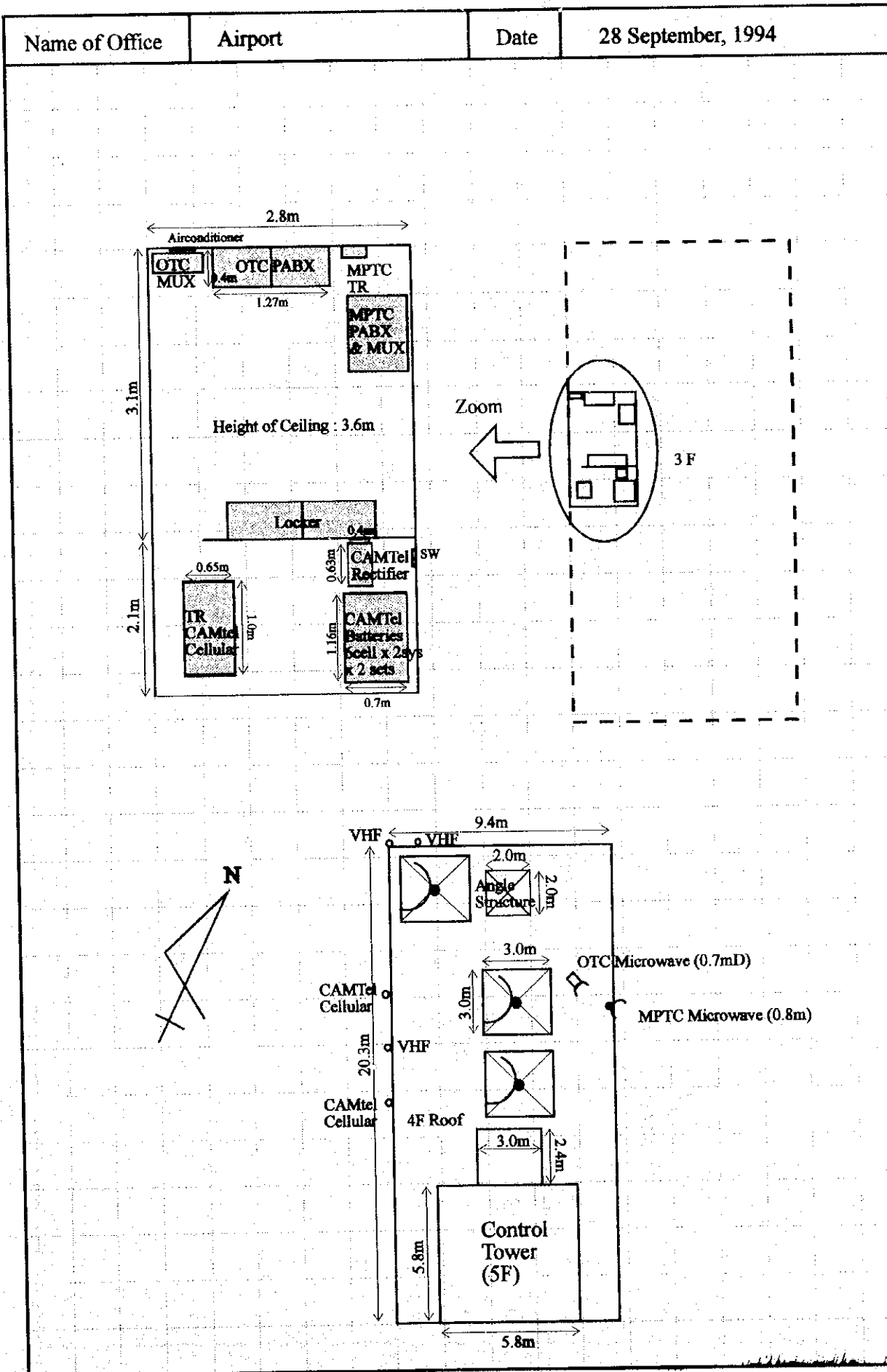
Appendix 4-1 Site Condition in Study Area (9/19)



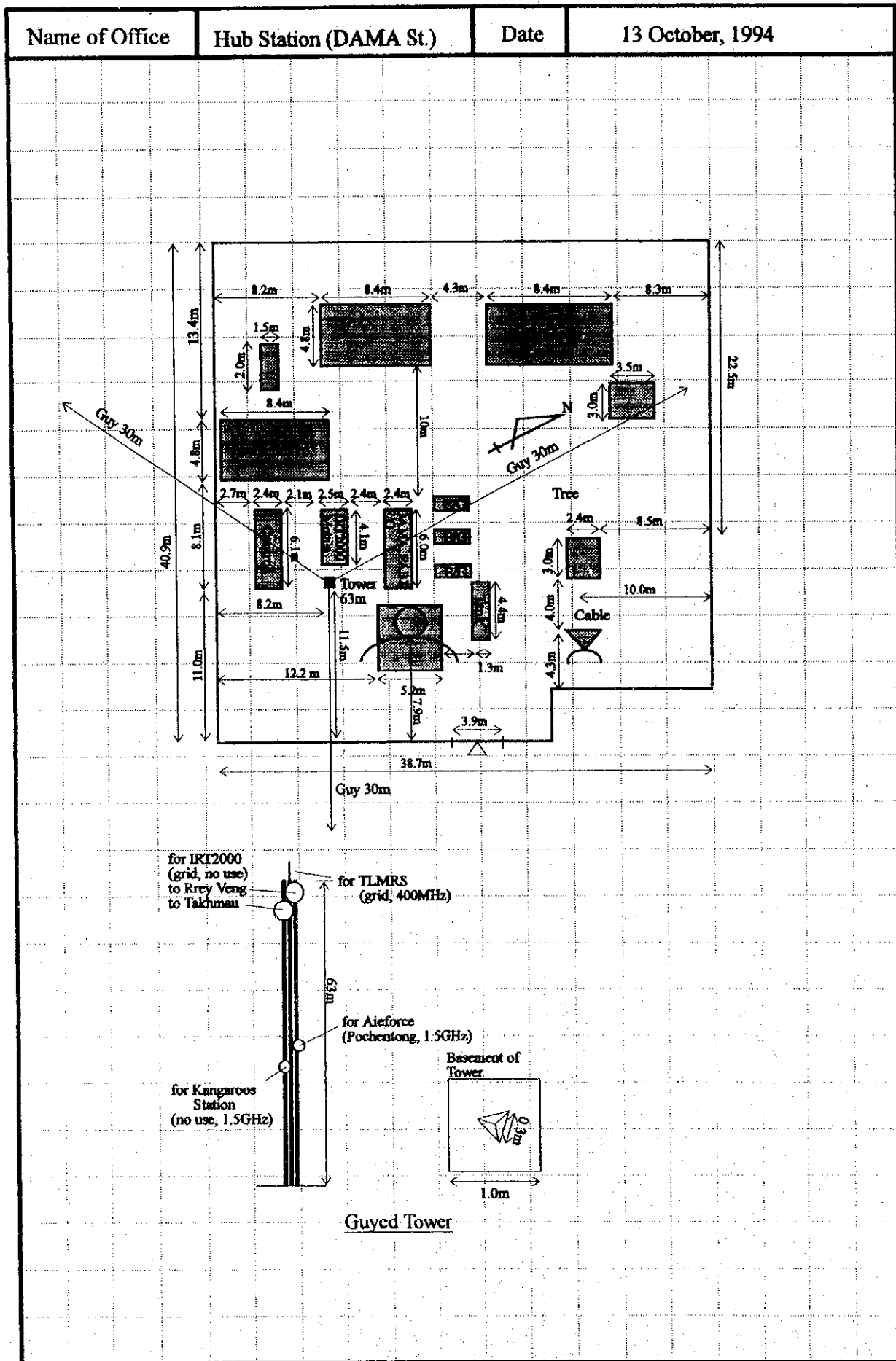
Appendix 4-1 Site Condition in Study Area (10/19)



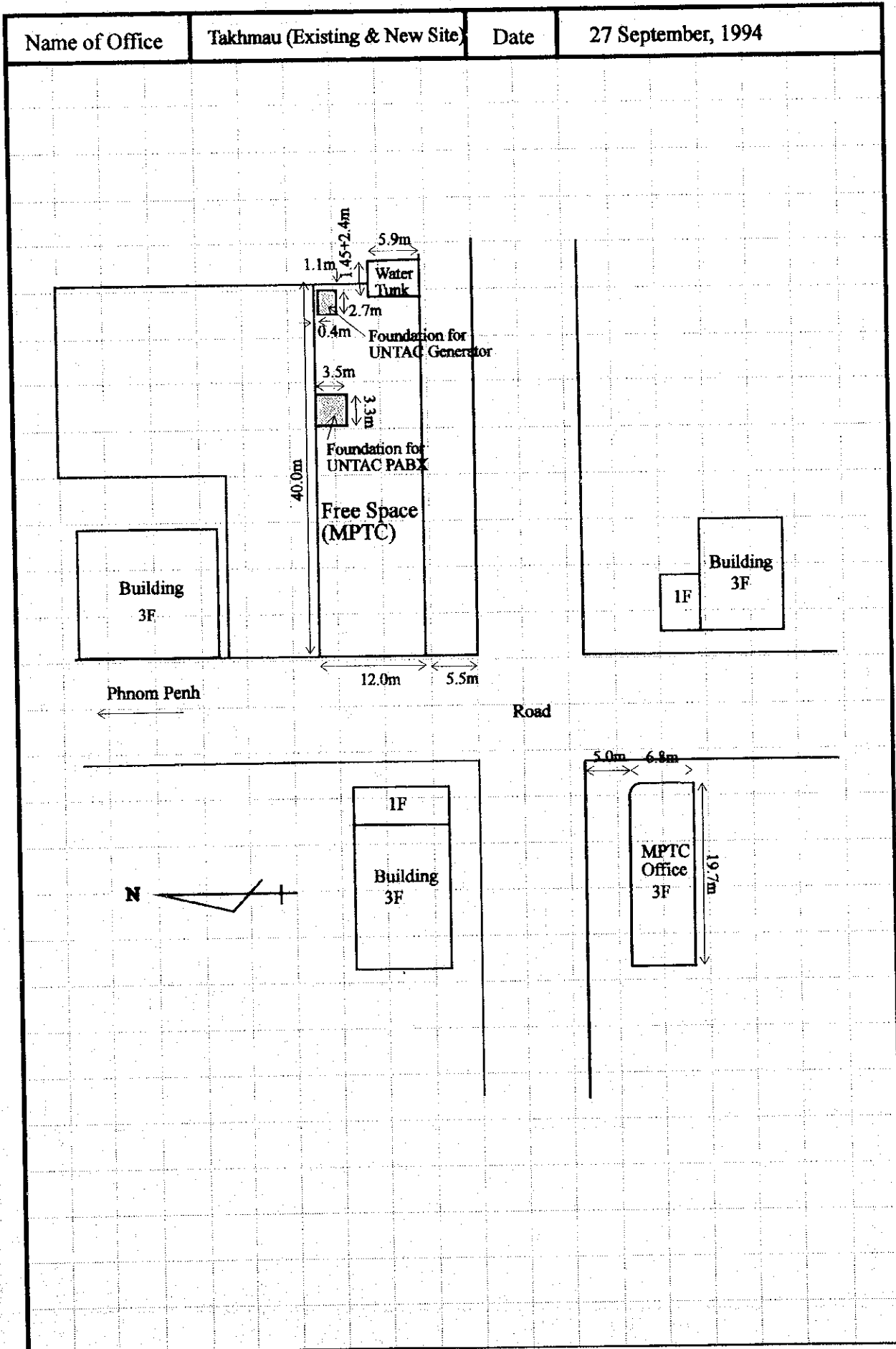
Appendix 4-1 Site Condition in Study Area (11/19)



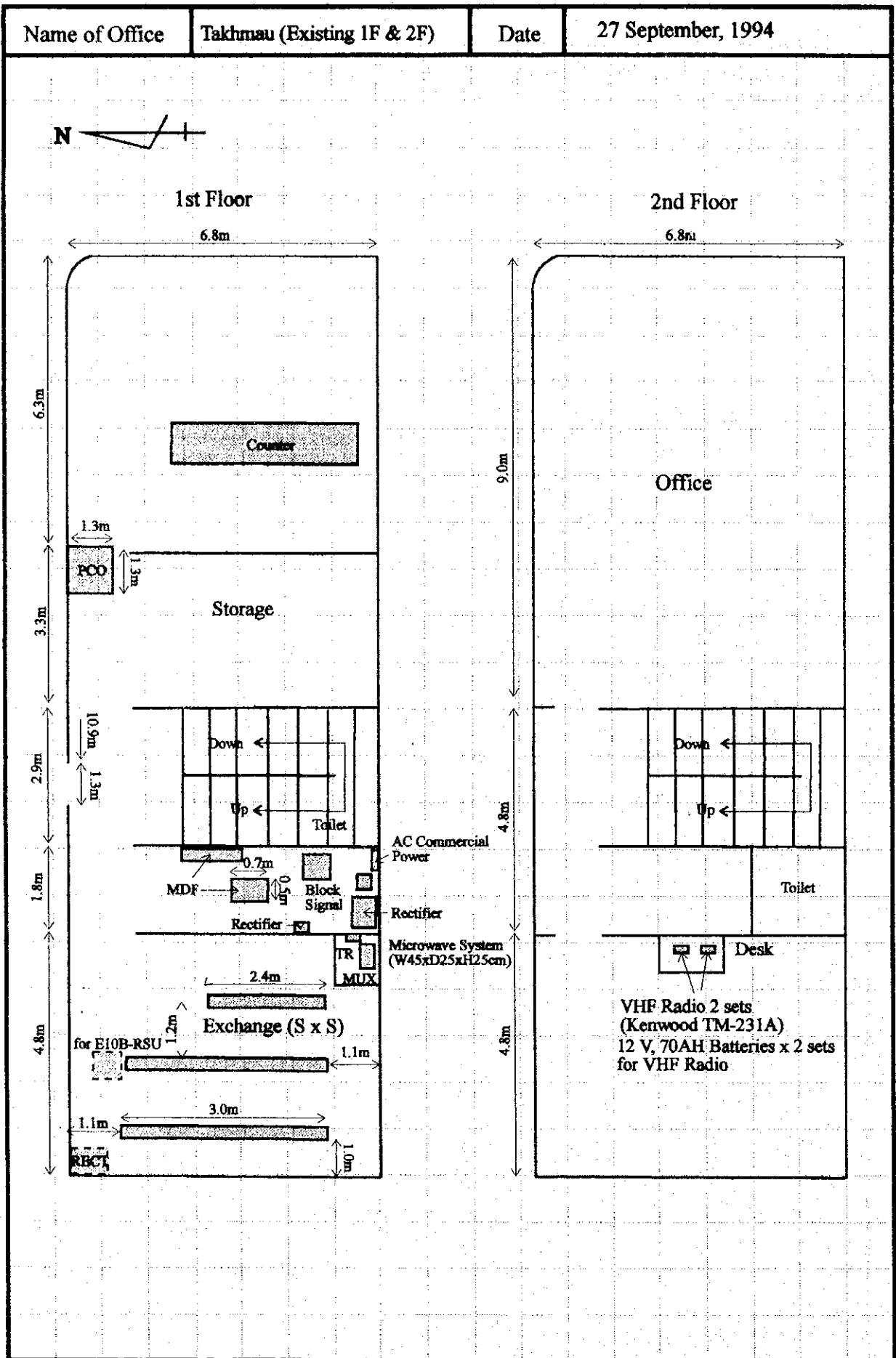
Appendix 4-1 Site Condition in Study Area (12/19)



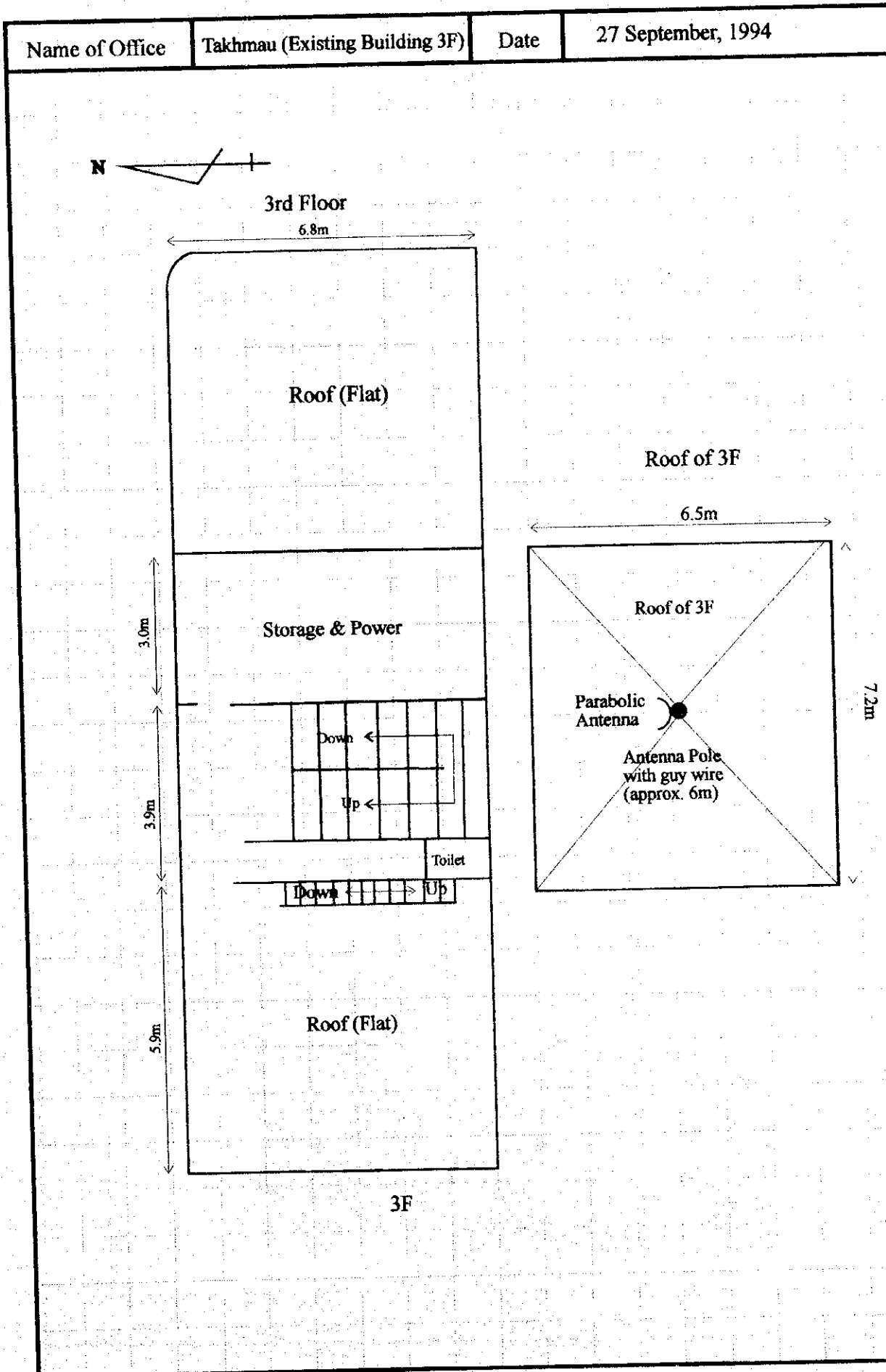
Appendix 4-1 Site Condition in Study Area (13/19)



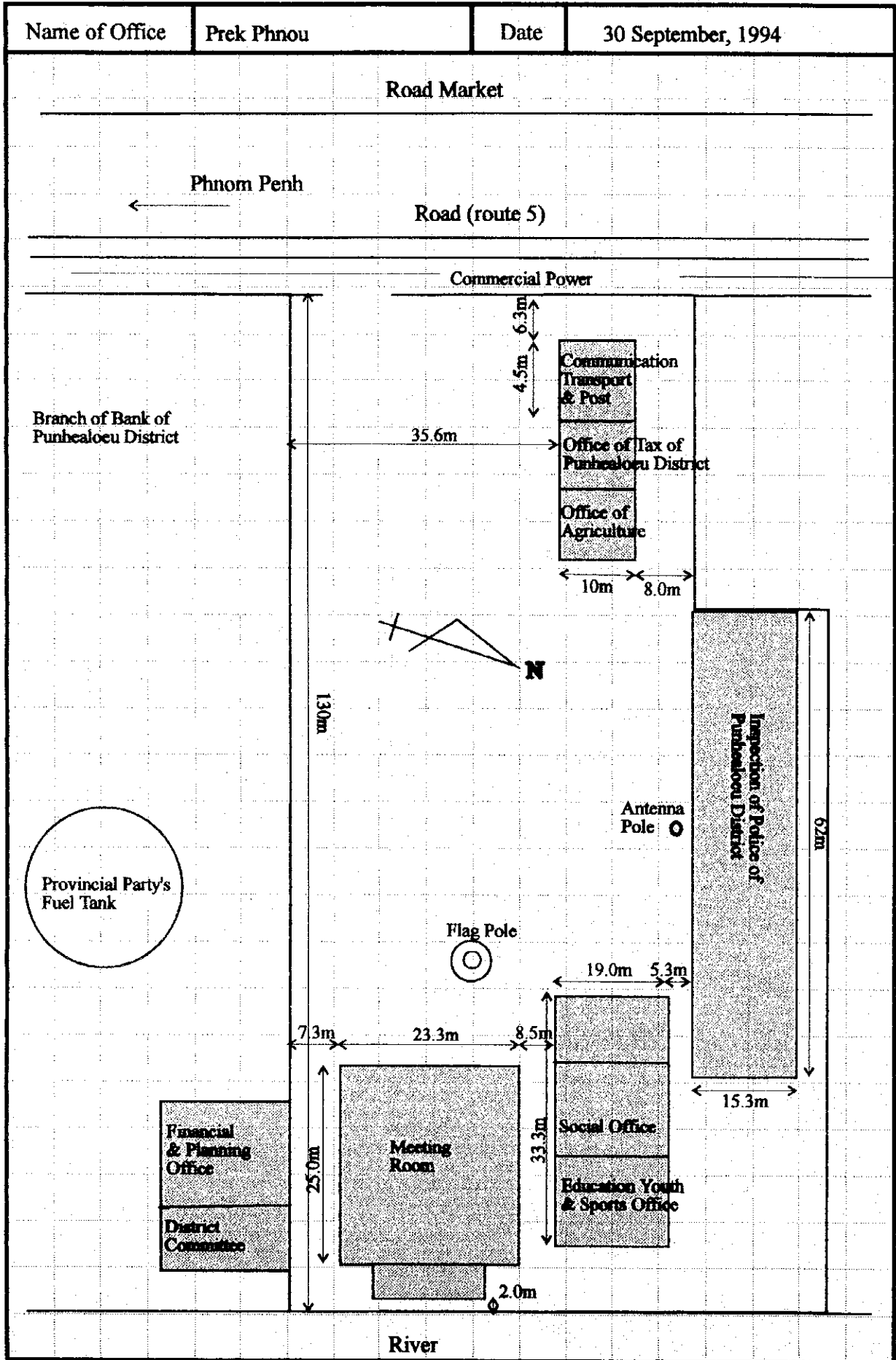
Appendix 4-1 Site Condition in Study Area (14/19)



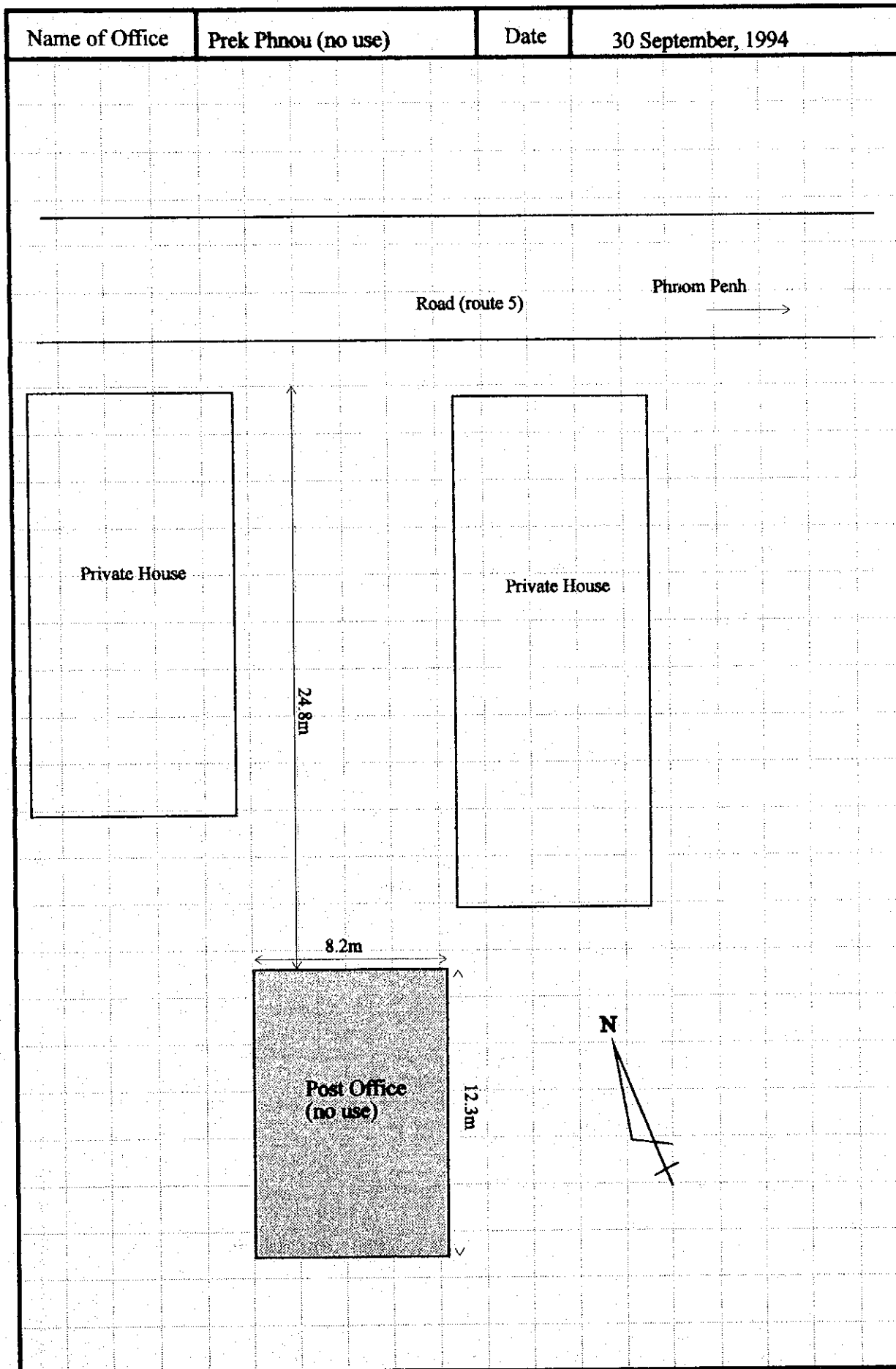
Appendix 4-1 Site Condition in Study Area (15/19)



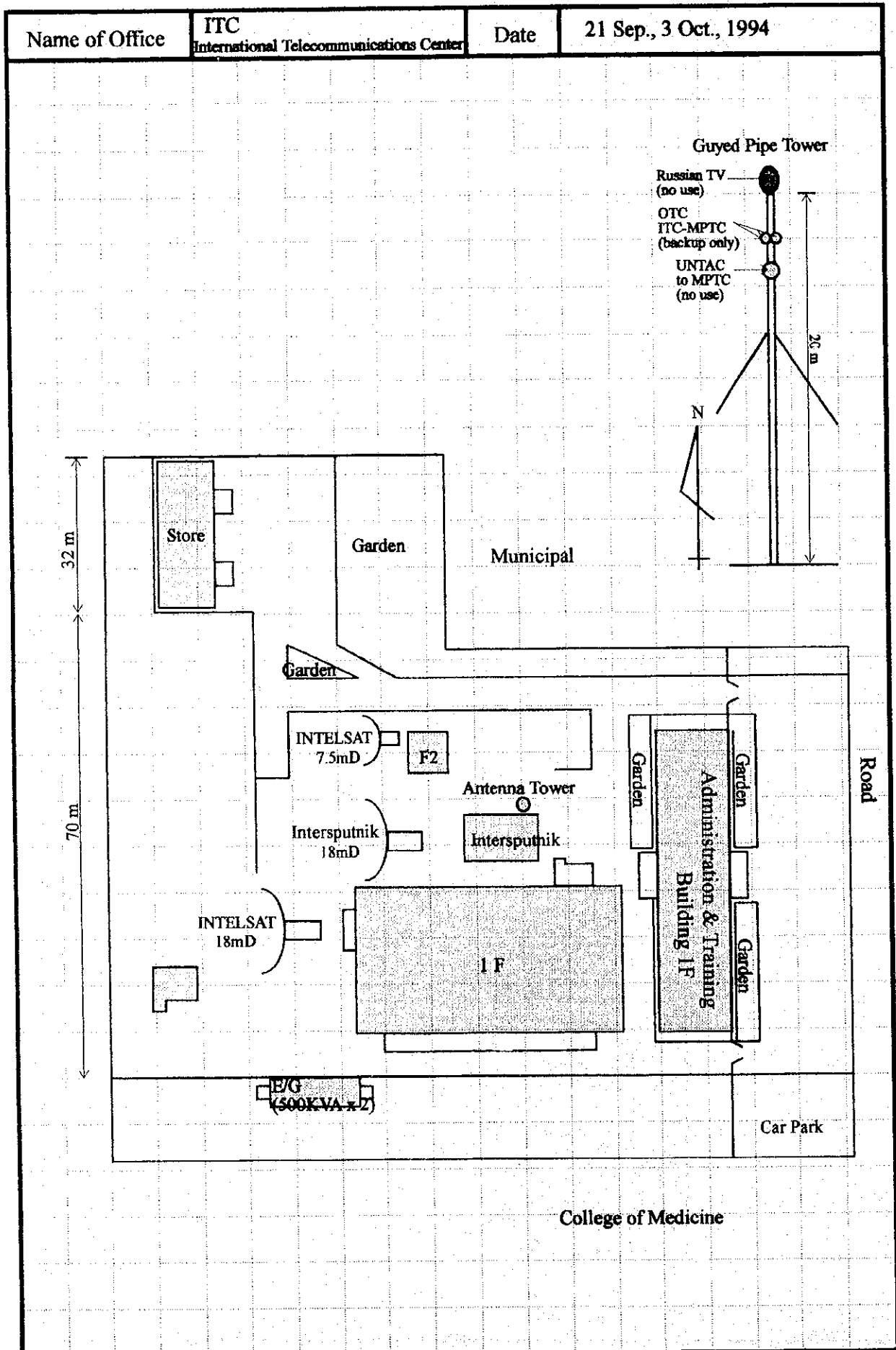
Appendix 4-1 Site Condition in Study Area (16/19)



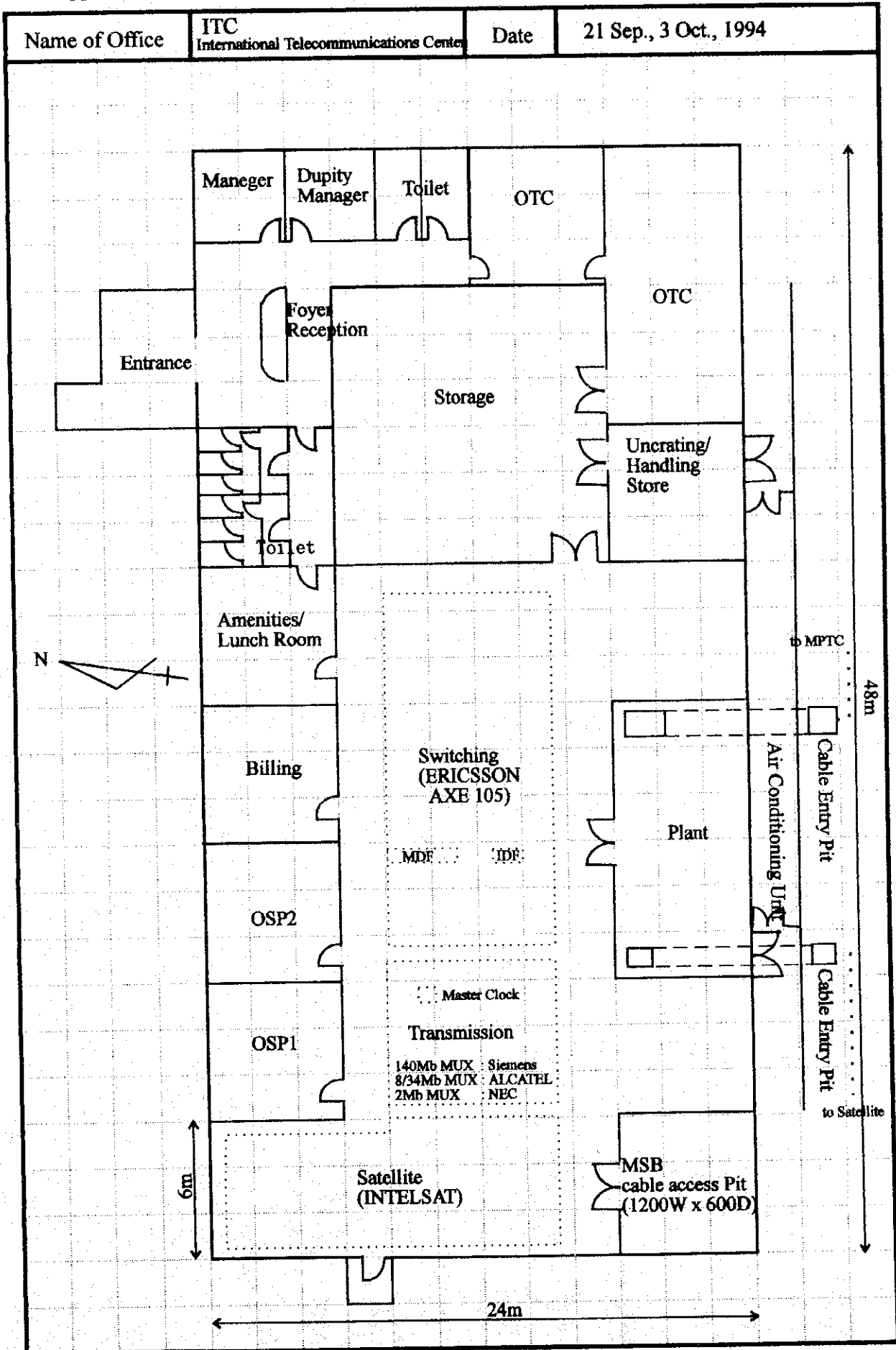
Appendix 4-1 Site Condition in Study Area (17/19)



Appendix 4-1 Site Condition in Study Area (18/19)



Appendix 4-1 Site Condition in Study Area (19/19)



Fault Report

Fault Report

AXE	Jan	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1992	45	58	40	91	152	197	131	183	225	282	195	212	1,811
1993	45	55	35	87	110	107	100	110	144	213	166	160	1,332
1994	261	261	315	217	271	275	338	270	314	452	276	339	3,589
	216	184	210	170	188	212	230	200	242	310	224	290	2,676
	226	234	319	258	442	352	319	392					2,542
	195	202	250	216	340	285	220	325					2,033

Pentaconta

	Jan	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1992	437	420	490	452	439	585	510	580	432	399	435	418	5,597
1993	230	210	210	290	191	300	220	282	229	234	222	200	2,818
1994	436	438	434	276	337	313	356	317	349	211	195	236	3,898
	198	210	219	136	164	171	214	177	195	148	141	164	2,137
	198	149	181	275	278	887	699	706					3,373
	130	107	110	165	165	320	240	270					1,507

Total

	Jan	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Total
1992	482	478	530	543	591	782	641	763	657	681	630	630	7,408
1993	275	265	245	377	301	407	320	392	373	447	388	360	4,150
1994	697	699	749	493	608	588	694	587	663	663	471	575	7,487
	414	394	429	306	352	383	444	377	437	458	365	454	4,813
	424	383	500	533	720	1,239	1,018	1,098					5,915
	325	309	360	381	505	605	460	595					3,540

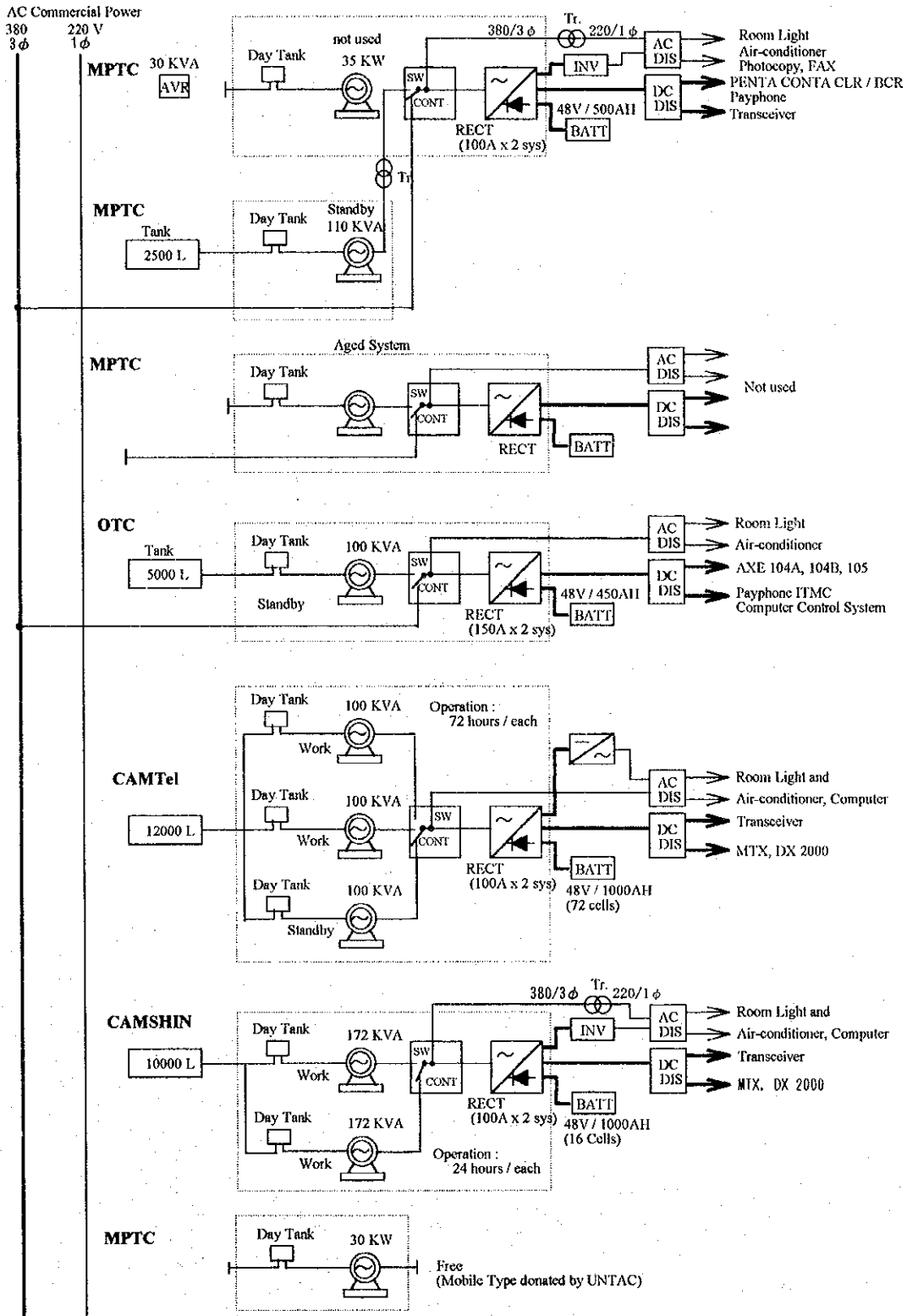
No. of Subscriber

	AXE	Pentaconta	Total
1992	1,900		1,900
1993	2,800		2,800
1994	4,700		4,700

Fault/month,100Subscriber (Japan)

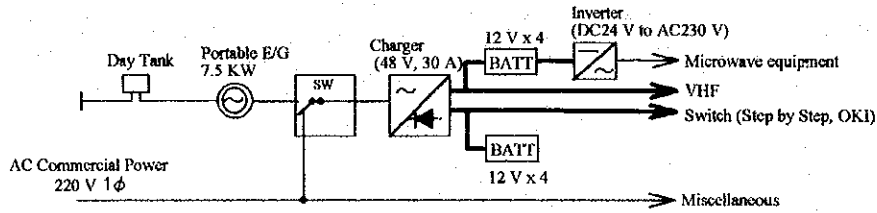
	All	OSP(w/i Phone)	OSP
1992	0.48	0.46	0.12
1993	0.47	0.45	0.12
1994	0.47	0.45	0.12

Appendix 4-3 Power Supply System (1/2)

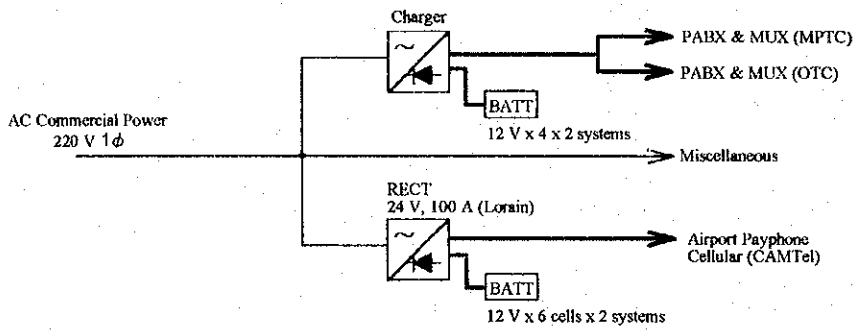


System Configuration of Power Supply System in MPTC

Appendix 4-3 Power Supply System (2/2)



AC / DC Power Supply System in Takhmau

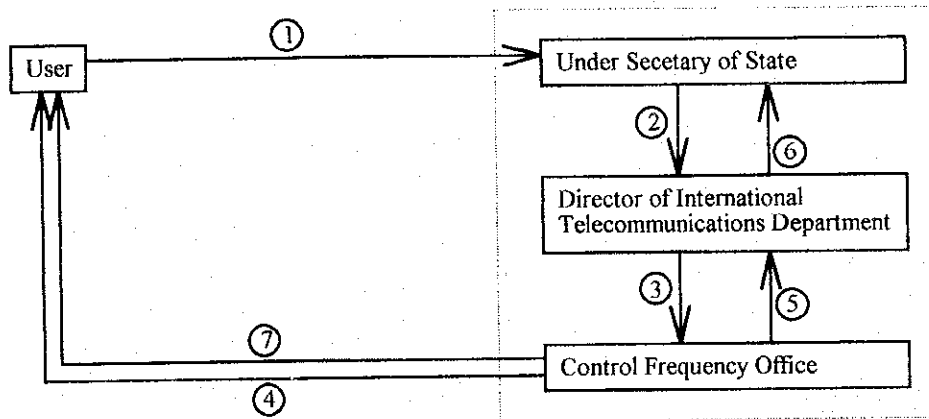


AC / DC Power Supply System in Airport

Appendix 4-4 Conditions of Radio Frequency Assignment (1/3)

1. Procedure of Radio Frequency Assignment

The radio frequency assignment in Cambodia is carried out by the following procedure:



① Request license to MPTC with application form

②, ③ Check of application

④ Check & collection of information at User

The MPTC sends two (2) MPTC staffs to user for checking and obtaining following information:

- Type of radio equipment, Output power, Height of antenna, Type of antenna, Call sign, etc.

If the check and information satisfy the MPTC requirements, the Control Frequency Office prepares a report. This report is approved by the Under Secretary and Director, and finally the Control Frequency Office assigns a radio frequency to the user.

⑤, ⑥ Approval of report

⑦ Provision of License

Source : Information from the MPTC

Figure 1 Procedure of Radio Frequency Assignment

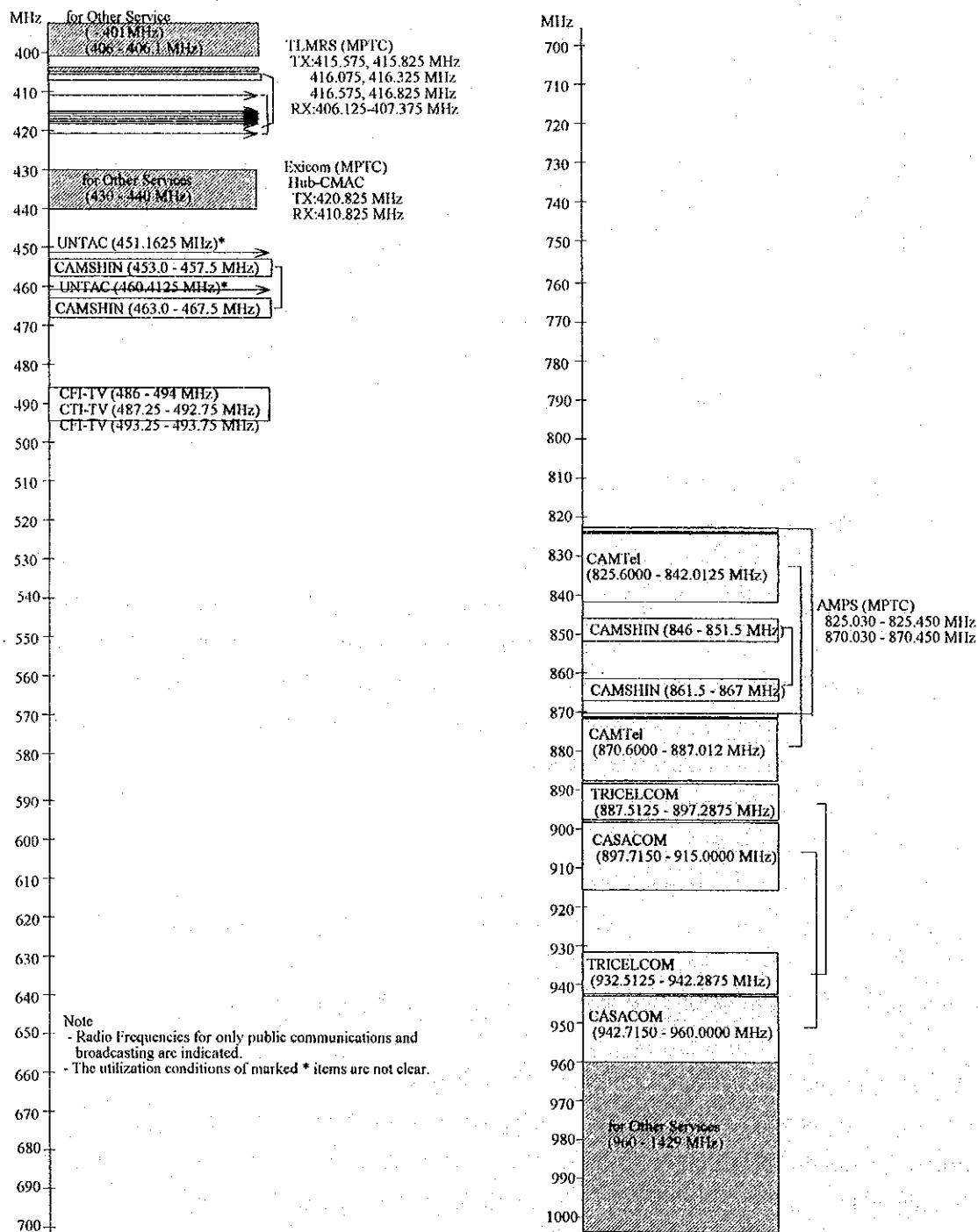
This procedure will be modified based on the result of study performed by ITU.

2. Assignment and Utilization Conditions of Radio Frequency

The radio frequencies are assigned by the above procedure, and the assignment and utilization conditions of public communications and broadcasting in the range of radio frequency from 400 MHz to 20 GHz are indicated in Figure 2 and Figure 3.

Appendix 4-4 Conditions of Radio Frequency Assignment (2/3)

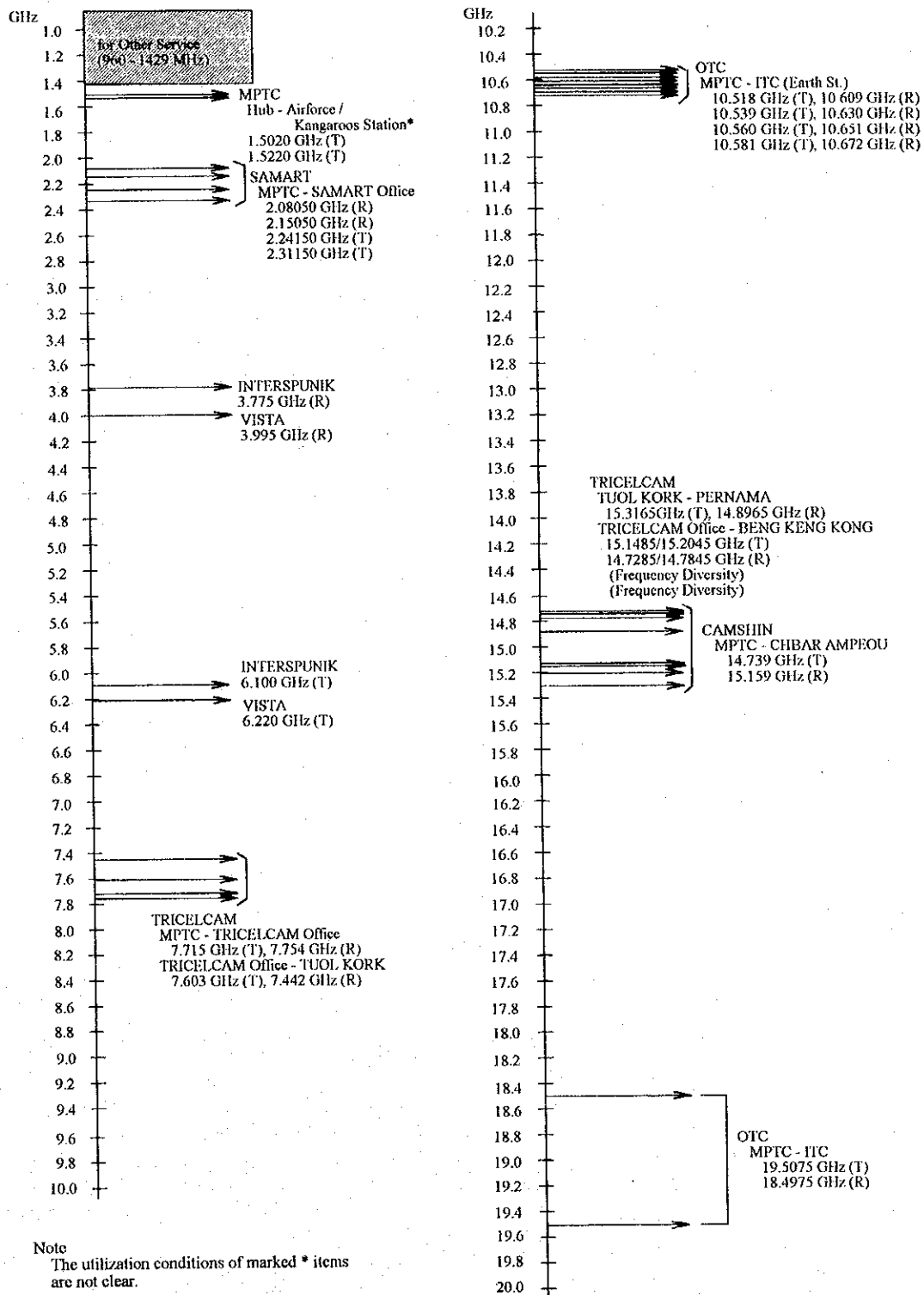
At present, the comprehension of existing assigned radio frequencies is not sufficient, so the data may not be complete compared with the actual assignment conditions.



Source : Information from the MPTC and result o

Figure 2 Radio Frequency Assignment in Cambodia (400 MHz - 1,000 MHz)

Appendix 4-4 Conditions of Radio Frequency Assignment (3/3)



Source : Information from the MPTC and result of survey

Figure 3 Radio Frequency Assignment in Cambodia (1.0 GHz - 20.0 GHz)

Appendix 5
Demand Forecast

A5-1 Main Line Density and GDP per capita (1/2)

Country	GDP per capita (US\$)	Density (ML) (/100 pops)	Density (ML+WL) (/100 pops)
Aruba	13,475	28.439	28.439
Australia	14,977	45.246	45.246
Austria	19,407	41.797	42.127
Barbados	5,767	32.428	33.541
Belgium	19,625	39.153	39.337
Benin	382	0.312	0.372
Brazil	818	6.006	8.448
Canada	19,166	56.988	56.988
Cyprus	8,322	36.004	38.839
China	232	0.475	0.518
Colombia	1,112	7.322	8.710
Congo	1,638	0.700	0.769
Costa Rica	1,654	9.336	10.834
Cote D'Ivoire	912	0.594	0.677
Denmark	21,830	56.634	56.634
Ethiopia	110	0.249	0.471
Fiji	1,783	5.892	7.645
Finland	25,217	53.593	123.705
France	22,399	49.761	57.873
Ghana	417	0.298	0.378
Greece	5,687	38.523	49.170
Guatemala	718	2.087	2.312
Honduras	178	1.921	2.505
Hong Kong	10,812	39.650	39.717
Indonesia	450	0.490	1.055
Iran	5,816	3.901	4.717
Iceland	23,394	50.977	50.977
Ireland	12,785	28.062	28.120
Israel	10,461	33.732	34.145
Italy	18,325	38.768	38.881
Jamaica	1,497	3.717	6.488
Japan	18,981	42.061	42.061
Jordan	895	6.142	7.649
Kenya	242	0.705	1.021
Luxembourg	20,899	48.215	49.594
Macao	7,979	20.172	20.659
Malaysia	2,164	8.001	8.001
Malta	7,814	36.643	71.728
Morocco	1,087	1.921	2.593
Mexico	2,217	5.565	6.431
Netherlands	18,039	46.236	46.369
New Zealand	11,972	42.991	42.999
Norway	23,707	50.174	50.174
Oman	3,986	5.040	5.327
Pakistan	375	0.776	1.448
Panama	1,950	9.331	9.905

ML : Main Line, ML+WL : Mine Line + Waiting Applicants

source : ITU Yearbook 1993

A5-1 Main Line Density and GDP per capita (2/2)

Country	GDP per capita (US\$)	Density (ML) (/100 pops)	Density (ML+WL) (/100 pops)
Papua New Guinea	764	0.810	0.810
Paraguay	910	2.703	2.929
Philippines	716	0.951	1.705
Portugal	4,325	22.595	24.707
Qatar	15,185	18.945	19.017
Senegal	746	0.599	0.716
Singapore	12,182	38.667	38.691
South Africa	2,738	9.740	10.085
South Korea	5,526	31.514	31.515
Spain	9,700	30.405	31.305
Sri Lanka	427	0.714	0.996
Sweden	23,492	68.077	68.077
Switzerland	34,073	58.015	58.123
Surinam	3,012	8.765	10.908
Tanzania	83	0.298	0.611
Chad	193	0.070	0.074
Czech & Slovak	1,820	14.898	17.571
Togo	417	0.297	0.350
Tunisia	656	3.764	5.323
Turkey	1,734	12.207	14.719
United States	21,700	50.880	50.880
Uruguay	1,867	12.718	16.012
Venezuela	2,416	7.576	10.542
West Germany	22,664	47.534	47.575
Zambia	271	0.832	1.504
Zimbabwe	543	1.338	2.112

ML : Main Line, ML+WL : Mine Line + Waiting Applicants

source : ITU Yearbook 1993

A5-2 Big City Density ratio and GDP per capita

Country	GDP per capita	Telephone Density (National)	City	Telephone Density (City)	City Density / National Density
Tanzania	105	0.29	Dar Es Salaam	1.95	6.83
Senegal	746	0.94	Dakar	2.87	3.05
Morocco	963	1.20	Casablanca	3.27	2.74
Papua New Guinea	764	0.83	Port Moresby	3.97	4.78
Ethiopia	110	0.25	Addis Ababa	4.05	16.3
Philippines	716	0.82	Metro Manila	4.70	5.77
Honduras	538	1.36	Tegucigalpa	4.99	3.67
Paraguay	910	2.30	Asuncion	8.49	3.67
Jamaica	1,441	3.59	Kingston & St. Andrew	8.78	2.45
Iran	5,816	4.32	Tehran	10.55	2.44
Fiji	1,783	5.81	Suva	11.86	2.04
Oman	3,986	6.00	Muscat	12.02	2.01
Brazil	818	5.78	San Paulo	14.61	2.53
Surinam	3,012	9.10	Paramaribo	17.35	1.91
Costa Rica	1,654	8.89	San Jose	17.59	1.98
Tunisia	656	3.77	Tunis, Ariana & Ben Arous	17.62	4.67
South Africa	2,738	9.62	Johannesburg	18.39	1.91
Uruguay	1,867	11.69	Montevideo	19.10	1.63
Turkey	1,734	12.16	Istanbul	24.56	2.02
Malaysia	2,164	7.38	Kuala Lumpur	24.89	3.37
Israel	10,461	33.73	Jerusalem	30.81	0.91
Malta	7,814	28.42	Gozo	32.40	1.14
South Korea	4,940	24.60	Seoul	32.66	1.33
Czech & Slovak	3,958	12.84	Prague	36.01	2.80
Portugal	4,581	17.83	Lisbon	36.42	2.04
Spain	9,700	28.06	Madrid	38.74	1.38
Cyprus	8,322	42.71	Nicosia	45.94	1.08
Italy	14,937	34.93	Rome	46.63	1.34
Australia	14,638	46.57	Melbourne	47.38	1.02
New Zealand	12,595	43.22	Auckland Metropolitan Area	47.72	1.10
Greece	5,687	38.55	Athens	54.77	1.42

source : ITU Yearbook, 1993, World Telephone by AT&T, 1991

A5-3 Population Prospects (1/2)

Year	Whole Country		Phnom Penh	
	Population	Increment	Population	Increment
1994	9,473	2.31%	904	4.03%
1995	9,692	2.31%	940	3.98%
1996	9,885	1.99%	978	4.04%
1997	10,082	1.99%	1,016	3.89%
1998	10,283	1.99%	1,056	3.94%
1999	10,488	1.99%	1,097	3.88%
2000	10,697	1.99%	1,140	3.92%
2001	10,887	1.78%	1,189	4.30%
2002	11,081	1.78%	1,241	4.37%
2003	11,278	1.78%	1,295	4.35%
2004	11,479	1.78%	1,351	4.32%
2005	11,683	1.78%	1,410	4.37%
2006	11,876	1.65%	1,472	4.40%
2007	12,072	1.65%	1,538	4.48%
2008	12,271	1.65%	1,607	4.49%
2009	12,473	1.65%	1,678	4.42%
2010	12,679	1.65%	1,753	4.47%
2011	12,865	1.47%	1,826	4.16%
2012	13,054	1.47%	1,903	4.22%

A5-3 Population Prospects (2/2)

Year	Population (thousand)						
	Phnom Penh Municipality					Takmau	Prek Phnou
	Phnom Penh (4Khans)	Srok					
		Mean Chey	Russey Keo	Dang Kor			
1994	528	112	170	95	38	9	
1995	532	133	175	101	45	9	
1996	544	151	187	97	51	10	
1997	555	160	198	104	54	10	
1998	566	169	210	110	57	11	
1999	579	179	222	117	61	12	
2000	590	189	236	124	64	12	
2001	605	200	251	132	68	13	
2002	619	213	268	141	72	14	
2003	632	226	286	151	76	15	
2004	647	239	305	160	81	16	
2005	662	253	325	170	86	17	
2006	675	269	347	181	91	18	
2007	692	285	369	192	96	19	
2008	708	301	393	204	102	20	
2009	724	318	418	217	108	22	
2010	740	337	445	230	114	23	
2011	754	355	473	243	120	25	
2012	769	374	502	258	126	26	

A5-4 GDP and GDP per capita Estimation

Year	GDP (Million US\$)	GDP per capita (US\$)
1994	2,403.9	254
1995	2,584.2	267
1996	2,778.0	281
1997	2,986.4	296
1998	3,210.4	312
1999	3,451.1	329
2000	3,709.9	347
2001	3,988.1	366
2002	4,287.3	387
2003	4,608.9	409
2004	4,954.5	432
2005	5,326.2	456
2006	5,725.6	482
2007	6,155.0	510
2008	6,579.8	536
2009	7,000.9	561
2010	7,413.9	585
2011	7,814.2	607
2012	8,205.0	629

A5-5 Demand in Phnom Penh Municipality

Year	Phnom Penh (4Khan)	Srok			Total
		Mean Chey	Russey Keo	Dang Kor	
1997	15,500	2,300	2,900	1,500	22,200
1998	16,600	2,700	3,300	1,700	24,300
1999	17,800	3,000	3,700	2,000	26,500
2000	19,200	3,400	4,300	2,200	29,100
2001	20,800	3,900	4,900	2,600	32,200
2002	22,600	4,500	5,700	3,000	35,800
2003	24,500	5,200	6,600	3,500	39,800
2004	26,600	6,000	7,700	4,000	44,300
2005	29,000	6,900	8,900	4,700	49,500
2006	31,600	8,000	10,400	5,400	55,400
2007	34,400	9,300	12,000	6,300	62,000
2008	37,500	10,700	13,900	7,200	69,300
2009	40,600	12,200	16,000	8,300	77,100
2010	43,800	13,900	18,300	9,500	85,500
2011	47,000	15,600	20,800	10,700	94,100
2012	50,300	17,500	23,500	12,100	103,400

A5-6 Demand in Takhmau and Prek Phnou

Year	Takhmau		Prek Phnou	
	Population	Demand	Population	Demand
1997	54,121	1,000	10,276	80
1998	57,163	1,100	10,899	100
1999	60,547	1,300	11,521	120
2000	63,932	1,400	12,248	140
2001	67,653	1,700	13,027	160
2002	72,050	2,000	13,909	180
2003	76,445	2,200	14,844	220
2004	80,841	2,600	15,830	260
2005	85,578	3,000	16,868	300
2006	90,987	3,400	18,010	360
2007	96,401	4,000	19,152	420
2008	101,809	4,500	20,397	490
2009	107,561	5,100	21,694	570
2010	113,982	5,900	23,095	650
2011	120,069	6,600	24,548	750
2012	126,493	7,300	26,053	860
2013	133,260	8,200	27,559	970
2014	140,363	9,100	29,221	1,090
2015	147,465	10,000	30,933	1,230
2016	154,234	10,900	32,542	1,380
2017	161,344	11,900	34,306	1,530
2018	168,782	13,000	36,124	1,700
2019	176,563	14,000	37,992	1,880
2020	184,349	15,200	39,861	2,170