APPENDIX 5A

ILS OPERATIONAL REQUIREMENT

Appendix 5A ILS OPERATIONAL REQUIREMENTS

Operational requirements of ICAO by category of Instrument Landing System (ILS) are as follows:

Table 5A-1 ICAO ILS OPERATIONAL REQUIREMENTS BY CATEGORY

Category	Decision Height meter (ft.)		Runway Visual Range meter (ft.)	
I	60	(200)	800	(2600)
II	30	(100)	400	(1200)
III	-	-	Below 200	(700)

The frequency of occurrence of below Cat-I operational minima at each meteorological observation point based on data obtained 24 times a day for a 12-month period are as follows:

Table 5A-2 PERCENTAGE OF OCCURRENCE OF WEATHER CONDITIONS BELOW CAT-I OPERATIONAL MINIMA

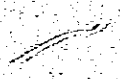
	Toncontin	Pedregal	Hule	Talanga
Average for 12-month period	0.7%	4.4%	11.5%	
Jan	0	12.1	5.0	
Feb	0	0.5	5.0	
Mar	0	1.6	3.5	0
Apr	0	1.9	14.6	0.15
May	0.7	0.9	6.1	0
Jun	3.1	4.3	14.7	0.15
Jul	0.7	7.7	13.2	
Aug	1.3	1.8	13.3	
Sep	0	0.5	16.7	
Oct	2.2	3.2	19.5	
Nov	0	11.3	13.4	
Dec	0	13.6	8.0	

Provision of ILS at airports regularly handling international jet flights is generally required by international airlines. ILS is often an economic necessity where its absence could result in excessive delays and diversions of traffic. As Tegucigalpa area is surrounded by mountains and is elevated high, it has low cloud height and poor visibility as shown in Table 3A-2 above.

Notwithstanding the fact that according to the ICAO recommendation as stipulated in the "Requirements of ILS at New Tegucigalpa International Airport, ANP 1977", ILS Category I operation with Category II ILS equipment and appropriate airfield lighting system are recommended, in this site selection study Category I equipment is selected for economic reasons, especially of cost-effectiveness considerations based on (1) expected number of flight movements and (2) costs of equipment, operation and maintenance.

APPENDIX 5B

AERONAUTICAL METEOROLOGICAL ANALYSIS



Appendix 5B AERONAUTICAL METEOROLOGICAL ANALYSIS

1. Observation Data Obtained

1) Source

Dirección General de Aeronautica Civil, Servicio Meteorologico Nacional

2) Observation Points, Period, Time and Interruption

i) Toncontin (Existing Airport Site) - Elev. 1000m

January to December, 1976 (12 months)
Hourly observation (24 times a day)
No interruption of observation

ii) El Pedregal - Elev. 1500m

January to December, 1976 (12 months)
Hourly observation (24 times a day)
Interruption 23%

iii) Cerro de Hule - Elev. 1500m

a) January, 1962 (1 month)
Hourly observation (12 times a day)
No interruption of observation

b) February, 1962 to January, 1963 (12 months)
Hourly observation (24 times a day)
Interruption %

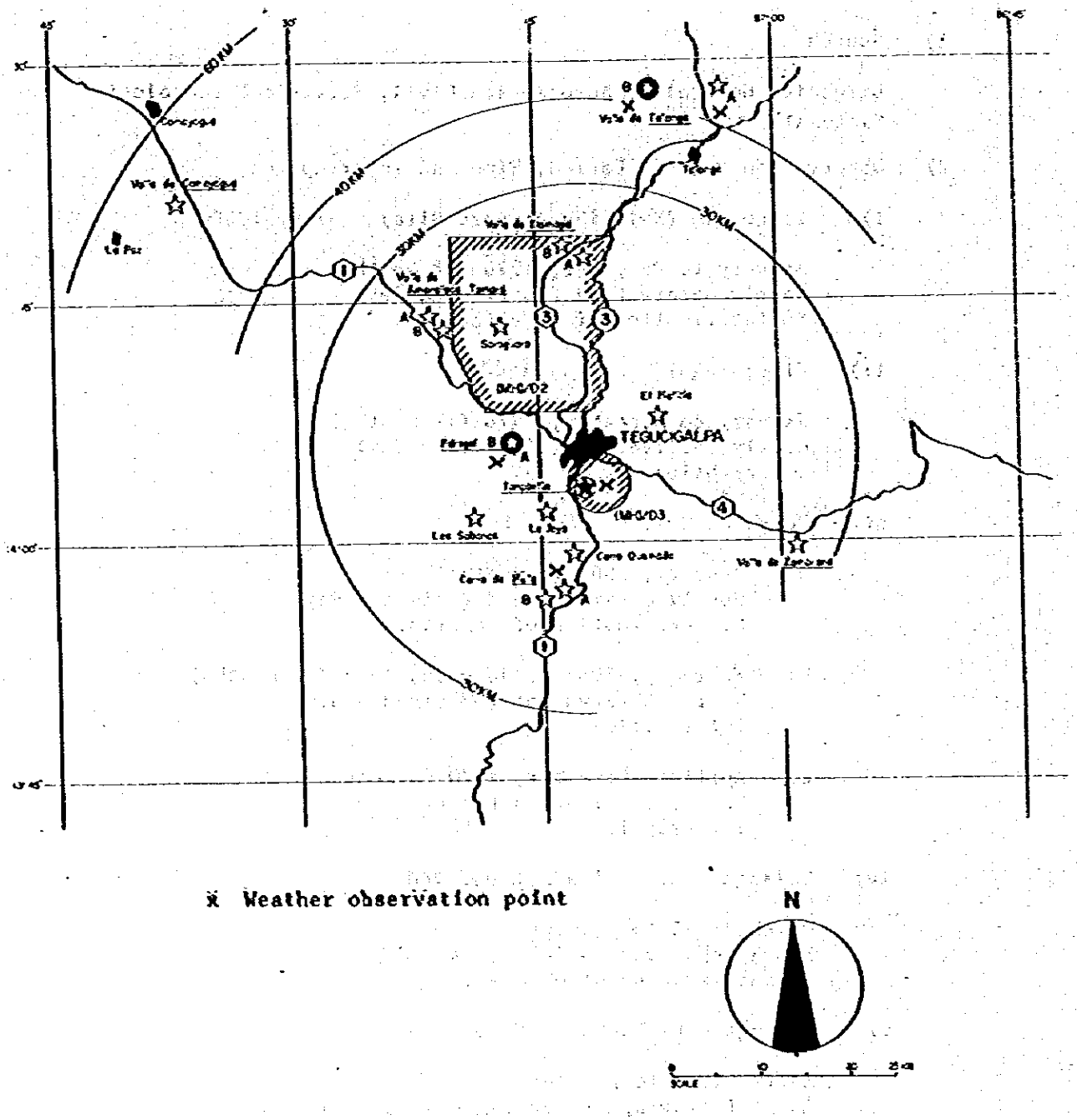
c) April to December, 1970 (9 months)
Hourly observation (12 times a day)
Interruption 24%

iv) Talanga - La Ermita - Elev. 760m

March, 1978 to present
Hourly observation (24 times a day)
No interruption of observation

v) Talanga - El Espino - Elev. 760m

April, 1978 to present
Anemocinemograph recording (24 hours a day)
No interruption of observation



x Weather observation point

Fig. 5B-2 LOCATION OF WEATHER OBSERVATION POINTS

2. Results of Analysis

1) Toncontin

i) Prevailing wind direction : N to NNE

ii) Frequency of occurence of calm wind:

39% of the total number of observations

25% of the number of daytime observations only

iii) Annual frequency of occurence of weather conditions below weather minimum (ceiling/visibility):

	Below 200ft - 800m	Below 1200ft - 2800m (Operating minima for the existing runway)
Out of the total number of observations	0.7%	17%
Out of the number of daytime observations only	0.8%	21%

iv) Wind coverage

	Maximum cross-wind component :	
	10kts	15kts
RWY 01/19	95.2%	99.8%
RWY 06/24	89.5%	99.3%
RWY 13/31	85.3%	98.7%

2) El Pedregal

i) Prevailing wind direction : N to NNE

ii) Frequency of occurence of calm wind:

52% Whole year

44% Dry season

58% Wet season

iii) Frequency of occurence of weather conditions below weather minimum (ceiling/visibility, 24 hours):

	Below 200ft - 800m	Below 200ft - 1200m
Whole year	4%	7%
Dry season	4%	6%
Wet season	4%	7%

iv) Wind coverage

Not less than 99% for any direction under the maximum cross-wind component of 15kts.

3) Cerro de Hule

i) Prevailing wind direction : N

ii) Frequency of occurence of calm wind:

32% Whole year

27% Dry season

35% Wet season

iii) Frequency of occurence of weather conditions below weather minimum (ceiling/visibility, 24 hours):

	Below 200ft - 800m	Below 200ft - 1200m
Whole year	12%	12%
Dry season	7%	7%
Wet season	15%	15%

iv) Wind coverage:

	Max. cross-wind component	
	10kts	15kts
RWY 04/22		
Whole year	74.8%	93.1%
Dry season	73.1%	92.0%
Wet season	75.9%	94.4%
RWY 18/36		
Whole year	97.3%	99.7%
Dry season	97.0%	99.7%
Wet season	97.5%	99.6%

v) Other findings:

During January, 1962, wind of over 30kts was observed, with frequency of occurence of 57%.

4) Valle de Talanga

i) Prevailing wind direction : E

ii) Frequency of occurence of calm wind:

More than 50%

iii) Frequency of occurence of weather conditions below weather minimum (Ceiling 200ft, Visibility 800m)

No more than 1%

Table 5B-1 SUMMARY (1)

Observation Point	Year	D.S	W.S.	Dry Season (D.S.)						Wet Season (W.S.)					
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov

a) Prevailing Wind Direction

Toncontin 12 hrs	N,NNE	N,NNE	N	NNE	NNE	NNE	NW	N,NE	NW	N,NW	NW	NW	NW	N	NNE
24 hrs	N,NNE	N	NNE	NNE	NNE	NNE	NW	N	NW	N	N	NW	NW	N	NNE
Pedregal	N	N	N,NNE	NE	N	N	N	N	N	E	NNE	NNE	NNE	N	N
Hule 1962*1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
1970	N	N	N												
Talanga															
La Ermita							E	E	E	E					
El Espino								E	E	E					

*1 March to December only

b) Frequency of Occurence of Calm Wind (%)

Toncontin 12 hrs	25.4	24.6	26.3	18.4	15.1	14.1	29.0	32.3	38.2	51.8	15.6	21.1	26.2	26.8	16.7
24 hrs	39.0	34.4	43.7	30.9	23.3	24.0	40.1	40.6	47.0	63.1	34.7	41.7	46.3	44.8	31.5
Pedregal	51.9	44.4	58.3	32.5	22.4	28.2	43.5	51.3	68.8	83.6	38.6	51.4	64.1	60.1	48.4
Hule 1962*1	31.6	27.4	35.2	11.5	13.6	24.6	46.3	31.5	25.9	58.8	7.1	36.7	52.4	43.1	13.8
1970	17.1	11.9	20.3												
Talanga															
La Ermita							66.1	56.6	59.7	62.2					
El Espino								54.9	45.1	52.5					

*1 March to December only

Table 5B-1 SUMMARY (2)

Observation Point	Year	D.S.	W.S.	Dry Season (D.S.)						Wet Season (W.S.)					
				Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
C) Frequency of Occurence of Wind Velocity More Than 20 kts (%)															
Toncontin															
12 hrs	0.36	0.50	0.21	0.25	1.49	1.06	0.25	0	0	0	0	0.25	0.26	0	0.77
24 hrs	0.33	0.52	0.14	0.40	0.81	0.57	1.07	0.14	0.13	0.14	0	0.13	0.14	0	0.42
Pedregal	0.09	0.19	0	0	0.40	1.00	0	0	0	0	0	0	0	0	0
Hule 1962	6.85	8.36	5.56	*1 17.69	75.53	12.63	6.33	7.50	0.94	0.42	5.91	3.36	0.28	0.95	22.79
Hule 1970 *2	13.58	20.53	9.09		11.53										
Talanga															
La Ermita															
El Espino															

*1 12 hrs. 1962 only

*2 March to December, 1970

Table 5B-1 SUMMARY (3)

Observation Point	Year	D.S.	W.S.	Dry Season (D.S.) Dec	Jan	Feb	Mar	Apr	May	Wet Season (W.S.) Jun	Jul	Aug	Sep	Oct	Nov
d) Frequency of Occurence of Ceiling/Visibility Minimum (%)															
Toncontin (12hrs)															
200ft - 800m	0.76	0.08	1.47	0	0	0	0	0	0	3.85	0	1.24	0	3.72	0
1200ft - 2800m*1	20.55	12.99	24.30	34.99	17.87	9.28	1.99	5.90	7.69	36.15	22.58	15.14	13.85	29.53	26.92
(24hrs)															
200ft - 800m	0.74	0.11	1.25	0	0	0	0	0	0.67	3.14	0.68	1.34	0	2.15	0
1200ft - 2800m	17.06	12.48	21.65	33.91	18.01	7.89	1.47	4.43	8.74	34.67	19.35	9.66	11.20	31.95	23.19
Pedregal															
200ft - 800m	4.38	4.34	4.34	13.61	12.10	0.50	1.59	1.87	0.94	4.28	7.69	1.82	0.46	3.23	11.29
200ft - 1200m	6.70	6.32	7.10	24.17	14.48	0.75	2.07	2.43	1.75	8.22	9.74	3.33	1.98	7.22	15.21
Hule (1962)					12.20*2										
200ft - 800m	11.46	7.14	15.11	8.97	5.03	5.02	3.50	14.58	6.05	14.71	13.17	13.31	16.67	19.50	13.36
200ft - 1200m	11.71	7.28	15.46	8.97	5.36	5.02	3.50	14.72	6.32	15.13	13.31	13.31	16.81	19.86	14.35
(1970)*3															
200ft - 800m	13.63	9.67	16.01												
200ft - 1200m	14.54	10.55	16.50												
Talanga - La Ermita															
200ft - 800m							0	0.15	0	0.15					
200ft - 1200m							0	0.58	1.11	0.15					

*1 Existing Runway Operation Minimum
*2 12hrs, 1962 only
*3 March to December only

Table 5B-1 SUMMARY (4)

c) Wind Coverage

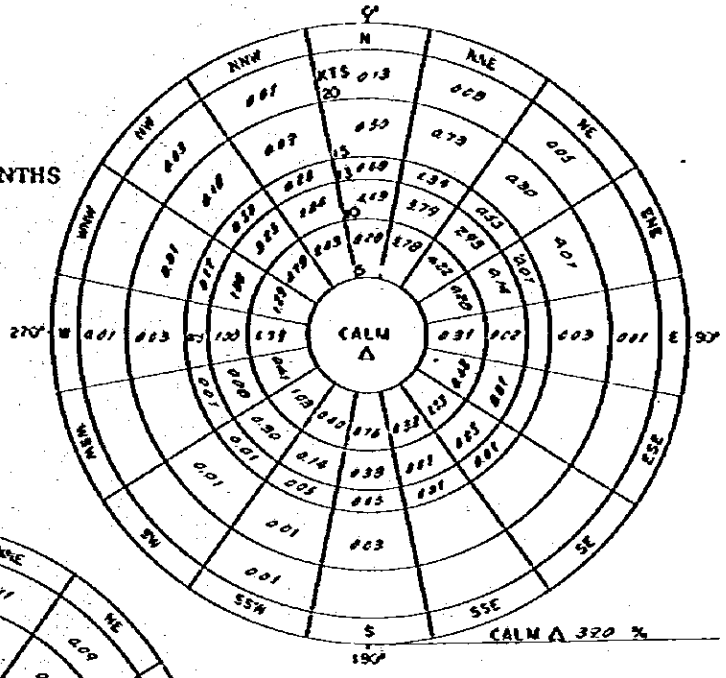
(%)

Observation Point		RWY	Cross Wind Components of 10kts Year	10kts Dry Season	10kts Wet Season	15kts Year	15kts Dry Season	15kts Wet Season
Toncontin	12hrs	01/19	91.6 x	91.2 x	92.2 x	99.7	99.6	99.8
		06/24	84.6 x	82.8 x	85.4 x	98.9	98.6	99.3
		13/31	79.8 x	75.5 x	83.6 x	98.0	97.3	99.2
	24hrs	01/19	95.2	94.6	95.4	99.8	99.8	99.9
		06/24	89.5 x	88.7 x	90.7 x	99.3	99.0	99.5
		13/31	85.3 x	82.0x	89.0 x	98.7	97.9	99.8
Pedregal	24hrs	01/19	99.6	100.0	99.7	99.99	99.4	99.97
Hule (1962)	24hrs	04/22	74.8 x	73.1 x	75.9 x	93.1 x	92.0 x	94.4 x
		18/36	97.3	97.0	97.5	99.7	99.7	99.6
Talanga *1 La Ermita	24hrs	17/35		90.1 x	87.1 x		98.2	94.5 x
		10/28		96.7	97.9		99.5	99.5
El Espino *2		17/35		88.9 x	86.3 x		99.7	99.4
		10/28		98.2	99.5		99.9	100.0

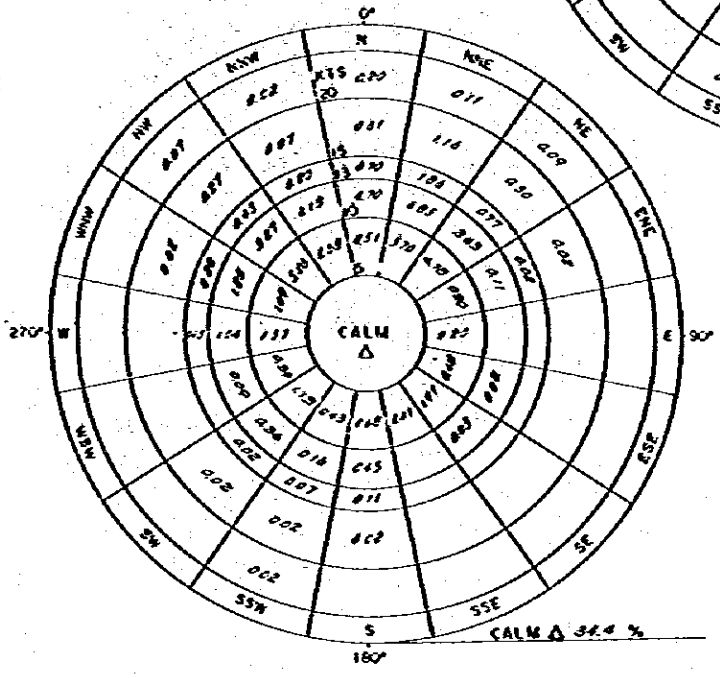
Notes to Observation Period: *1 March to June, 1978 *2 April to June, 1978

Mark x indicates wind coverage less than 95%

12 MONTHS



DRY SEASON,
(DEC - MAY)



WET SEASON,
(JUN - NOV)

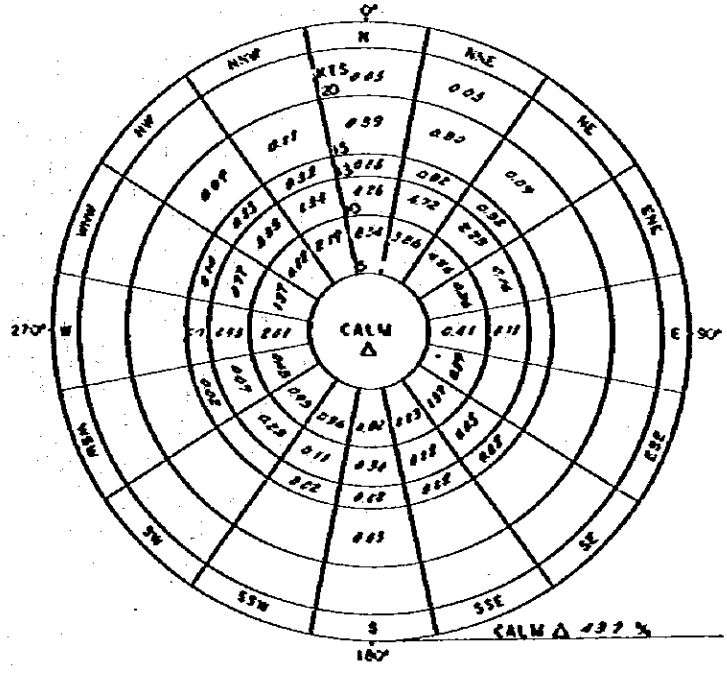


Fig. 5B-2 (a) TONCONTIN WIND ROSE, 1976

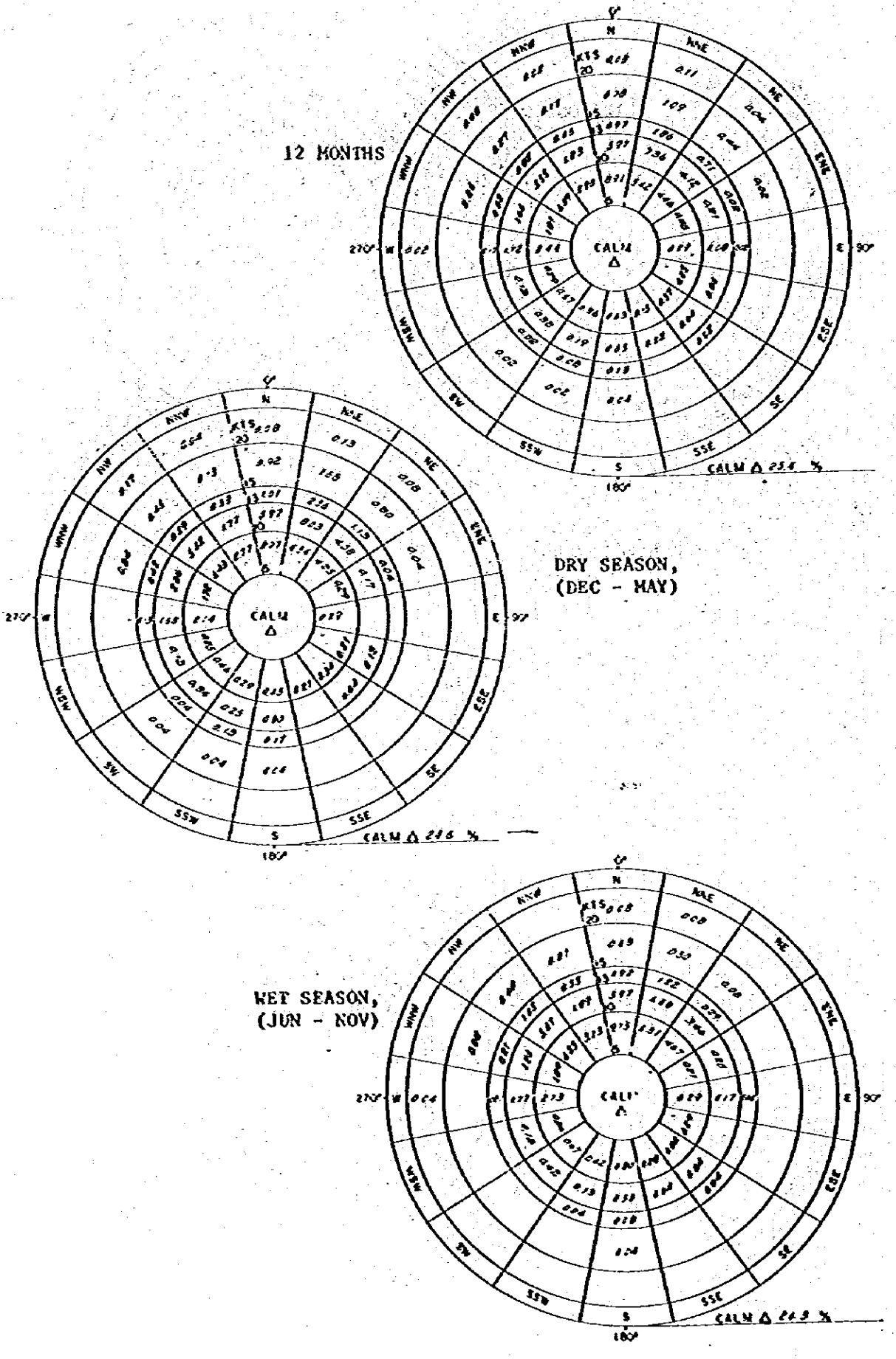


Fig. 5B-2 (b) TONCONTIN-DAYTIME WIND ROSE, 1976

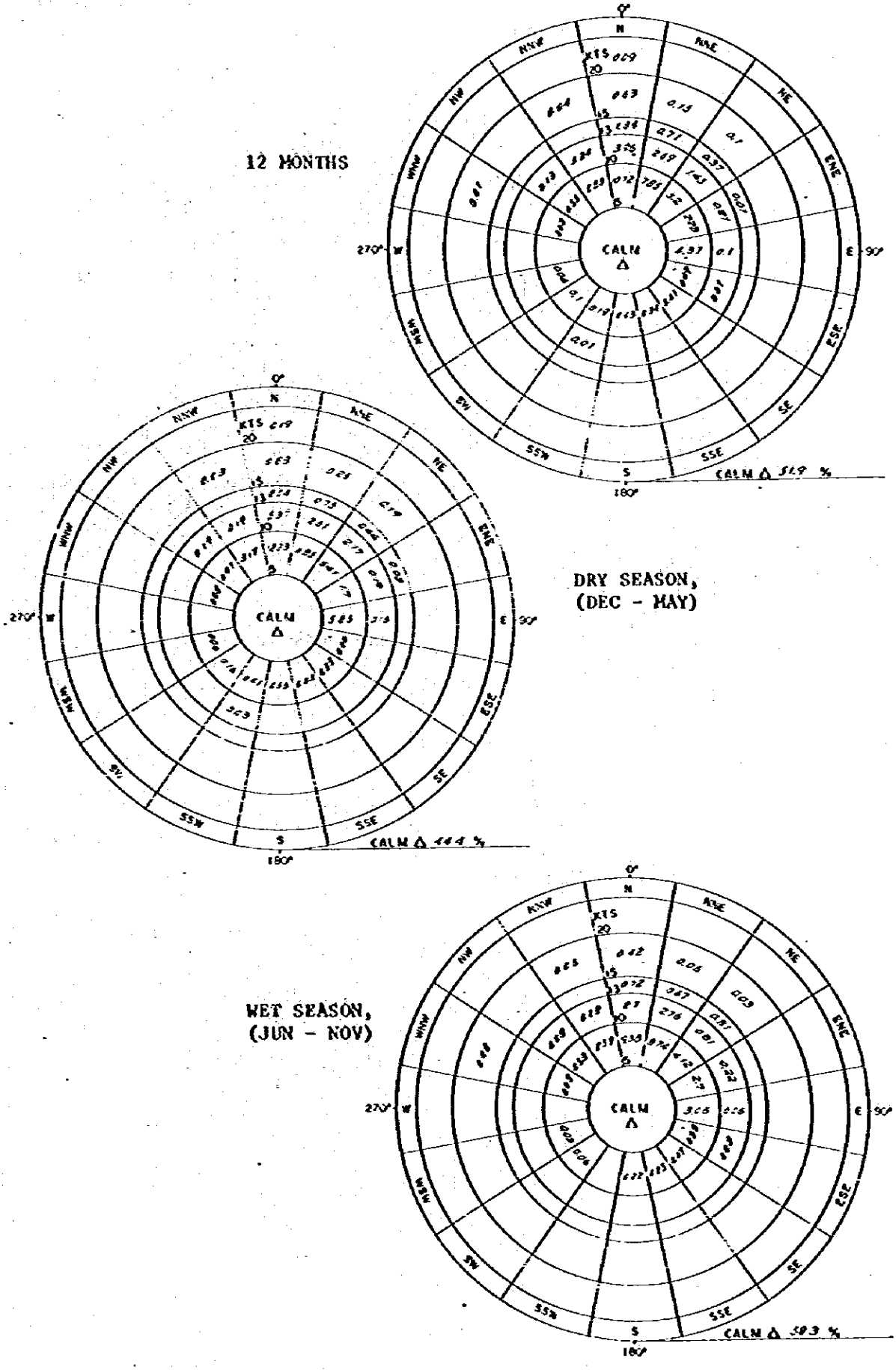


Fig. 5B-3 PEDREGAL WIND ROSE, 1976

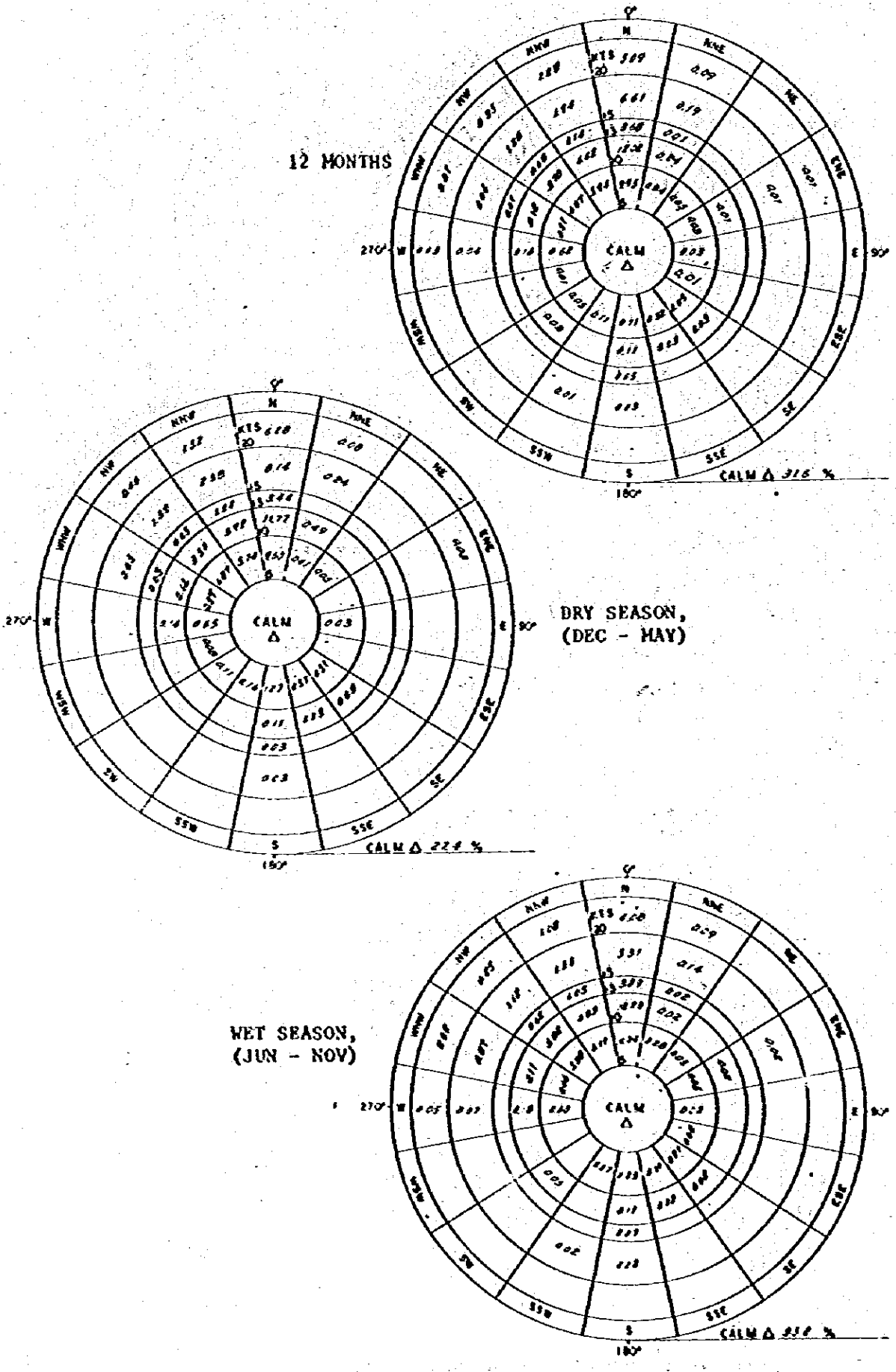


Fig. 5B-4 HULE WIND ROSE, 1962 - 1963

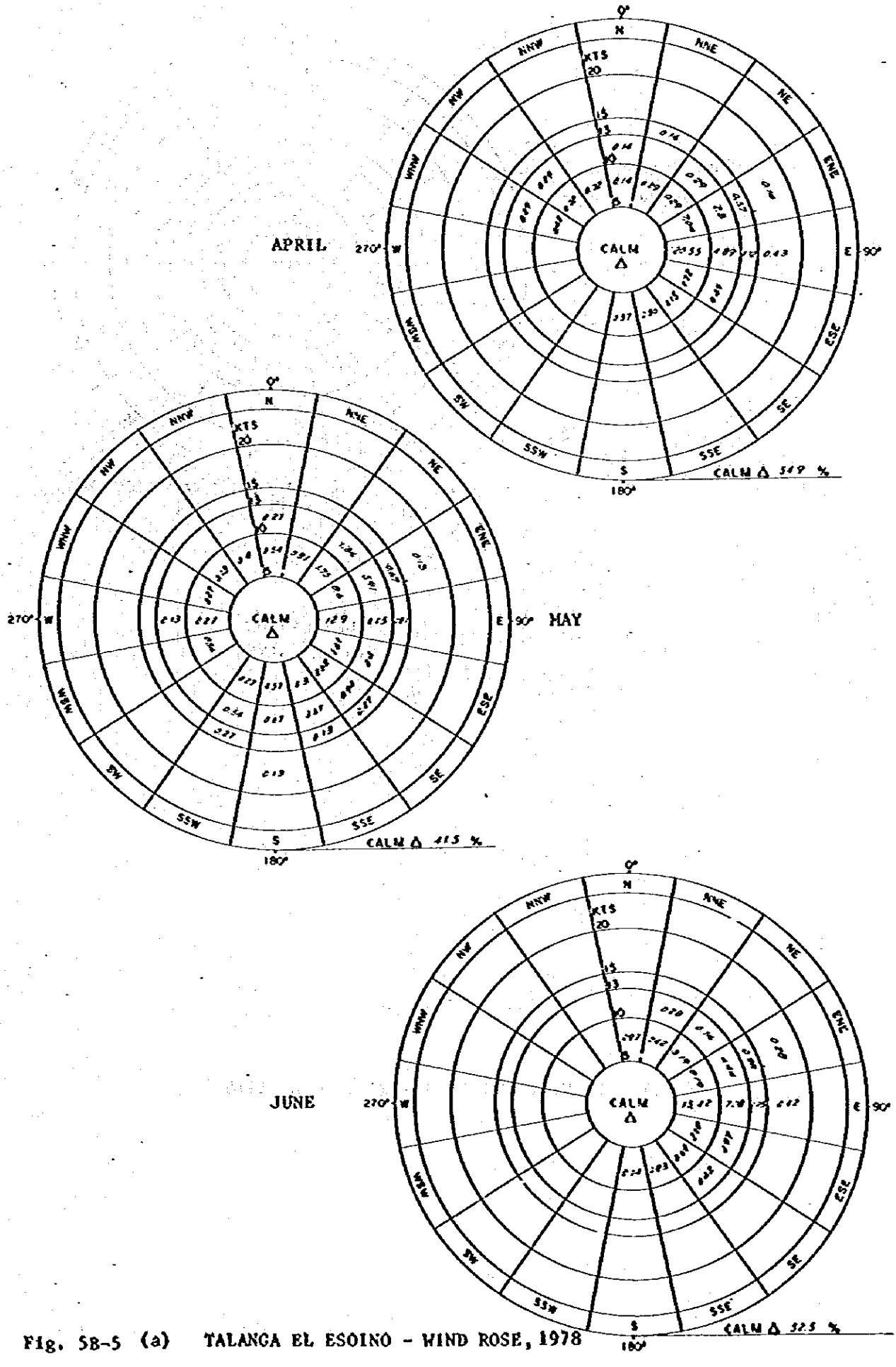
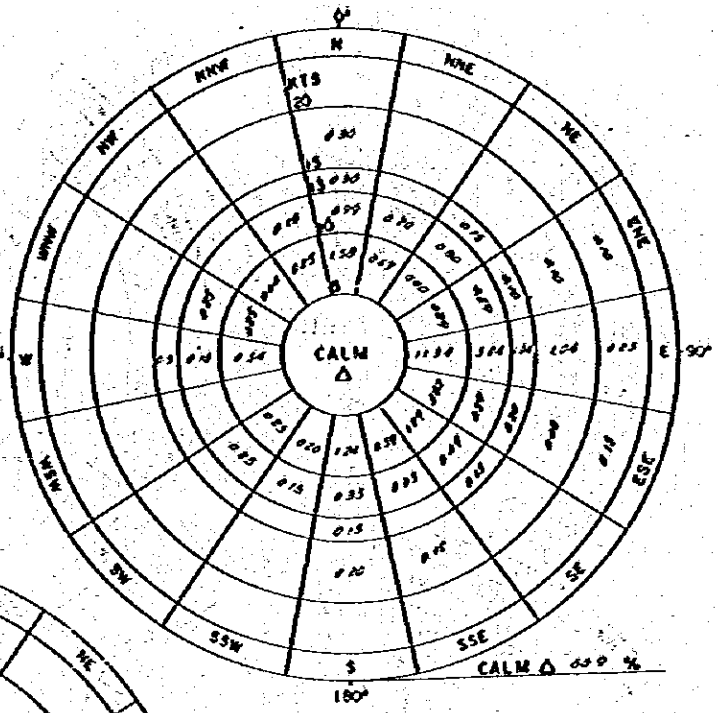
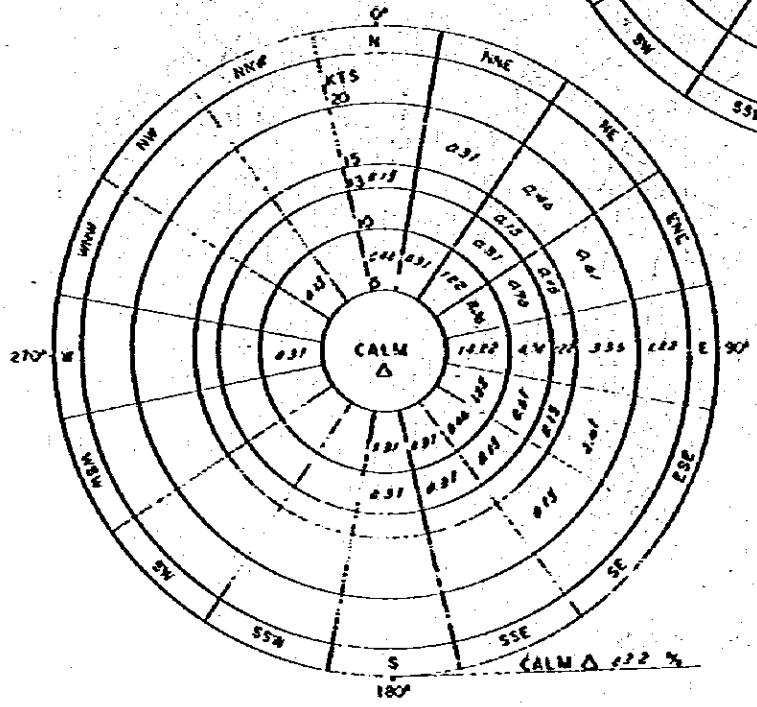


Fig. 5B-5 (a) TALANGA EL ESOINO - WIND ROSE, 1978

DRY SEASON
(MAR. APR. MAY ONLY)





WET SEASON
(JUNE ONLY)

Fig. 5B-6 (6) TALANGA LA ERMITA - WIND ROSE, 1978

STATION: TONCONTIN — 12 MONTHS — YEAR: 1976

CEILING (meter) \ VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600 - 2,000	2,000 - 3,000	3,000 - 5,000	6,000 or more	TOTAL	%
Cloud layer 5/8 or more: Unknown																						
50 or less											1								2	5	8	0.02
50 - 100											6						3	3	7	32	51	0.13
100 - 200									2		2						11	16	35	214	280	0.70
200 - 300						1					5						7	19	33	835	897	2.23
300 - 600											3						2	3	13	403	424	1.06
600 - 1,000						2	1		1		4	1				1	10	17	36	3315	3388	8.42
1,000 - 1,500																	1	3	9	291	304	0.75
1,500 - 2,000																						
2,000 - 2,500																						
2,500 or more																	1			27	28	0.07
Cloud layer 4/8 or less						2											2	3	13	2905	2925	7.27
TOTAL						5	1		3		21	1				1	37	64	135	8317	8795	
%						0.06	0.01		0.03		0.24	0.01				0.01	0.42	0.73	1.65	94.54		

DRY SEASON, (DEC - MAY)

STATION: TONCONTIN — YEAR: 1976

CEILING (meter) \ VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600 - 2,000	2,000 - 3,000	3,000 - 5,000	6,000 or more	TOTAL	%
Cloud layer 5/8 or more: Unknown																						
50 or less																						
50 - 100																			2	3	5	0.11
100 - 200																	2	3	13	47	65	1.47
200 - 300						1					4						1	5	5	339	354	8.03
300 - 600											1						2	2	3	183	195	4.45
600 - 1,000						1	1		1		2						4	9	19	1325	1362	30.91
1,000 - 1,500																		1	5	397	403	9.14
1,500 - 2,000																						
2,000 - 2,500																						
2,500 or more																	1			6	7	0.15
Cloud layer 4/8 or less						2											1	3	11	1978	2015	45.72
TOTAL						4	1		1		7						11	23	58	4312	4407	
%						0.09	0.02		0.02		0.16						0.25	0.52	1.32	97.82		

WET SEASON, (JUN - NOV)

STATION: TONCONTIN — YEAR: 1976

CEILING (meter) \ VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600 - 2,000	2,000 - 3,000	3,000 - 5,000	6,000 or more	TOTAL	%
Cloud layer 5/8 or more: Unknown																						
50 or less											1								2	5	8	0.16
50 - 100											6						3	3	5	29	46	1.03
100 - 200									2		2						9	13	22	157	215	4.80
200 - 300											1						6	14	25	497	543	12.13
300 - 600											2							1	10	215	228	5.10
600 - 1,000						1					2	1				1	6	8	17	1993	2026	45.17
1,000 - 1,500																						
1,500 - 2,000																						
2,000 - 2,500																	1	2	4	384	391	8.71
2,500 or more																				21	21	0.47
Cloud layer 4/8 or less																	1		2	907	910	20.14
TOTAL						1			2		14	1				1	26	41	87	4215	4383	
%						0.02			0.03		0.32	0.02				0.02	0.59	0.93	1.98	N/a		

Table 5B-2 (a) TONCONTIN-CEILING/VISIBILITY 1976

STATION: TONCONTIN-DAYTIME 12 MONTHS YEAR: 1976

CEILING (meter) / VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600 2,000	2,000 3,000	3,000 5,000	5,000 or more	TOTAL	%
Cloud layer 5/8 or more: Unknown																						
50 or less																						
50 - 100											6						3	1	4	21	35	0.74
100 - 200									1		2						7	8	17	110	145	3.05
200 - 300											5						4	17	23	496	545	11.44
300 - 600											1						1	3	6	230	249	5.23
600 - 1,000						1					4					1	1	14	18	834	873	18.37
1,000 - 1,500																		3	8	559	610	12.82
1,500 - 2,000																						
2,000 - 2,500																						
2,500 or more																				5	5	0.11
Cloud layer 4/8 or less						1											1	3	7	1283	1330	27.97
TOTAL						2			1		18					1	23	49	83	4321	4758	
%						0.04			0.02		0.38					0.02	0.48	1.03	1.74	90.85		

STATION: TONCONTIN-DAYTIME DRY SEASON, (DEC - MAY) YEAR: 1976

CEILING (meter) / VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600 2,000	2,000 3,000	3,000 5,000	5,000 or more	TOTAL	%
Cloud layer 5/8 or more: Unknown																						
50 or less																						
50 - 100																						
100 - 200																	1	1	3	27	32	1.33
200 - 300											4						1	6	5	178	194	8.15
300 - 600											1						1	2	1	113	120	5.04
600 - 1,000						1					2						3	9	13	331	359	15.08
1,000 - 1,500																		1	4	284	289	12.13
1,500 - 2,000																						
2,000 - 2,500																						
2,500 or more																				5	5	0.21
Cloud layer 4/8 or less						1											1	3	6	919	929	39.01
TOTAL						2					7						7	22	32	2357	2378	
%						0.08					0.29						0.29	0.92	1.35	98.96		

STATION: TONCONTIN-DAYTIME WET SEASON, (JUN - NOV) YEAR: 1976

CEILING (meter) / VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600 2,000	2,000 3,000	3,000 5,000	5,000 or more	TOTAL	%
Cloud layer 5/8 or more: Unknown																						
50 or less																						
50 - 100											6						3	1	4	21	35	1.47
100 - 200									1		2						6	7	14	63	113	4.75
200 - 300											1						3	11	15	320	341	14.35
300 - 600																		1	5	123	129	5.42
600 - 1,000											2					1	4	5	5	1103	1120	47.09
1,000 - 1,500																		2	4	315	321	13.49
1,500 - 2,000																						
2,000 - 2,500																						
2,500 or more																						
Cloud layer 4/8 or less																				1	319	320	13.45
TOTAL									1		11					1	16	27	51	2232	2379	
%									0.04		0.46					0.04	0.67	1.13	2.14	93.82		

Table 5B-2 (a) TONCONTIN-DAYTIME CEILING/VISIBILITY 1976

STATION : PEDREGAL 12 MONTHS YEAR: 1976

CEILING (feet) \ VISIBILITY (meter x100)	1 or less	1	2	4	6	8	10	12	14	16	20	24	28	32	36	40	48	64	80	90	112	160	240 or more	TOTAL	%
Cloud layer 5/8 or more: 50 or less	52	4	2	13			1				3					2								77	1.14
100	9		1	1			2																	13	.019
200	5	1	1	1	1		4				5		5			2	6		1	1			10	43	.063
300		2		2			4				3		1				5			1			1	19	.028
400	3		1	9			3									1								17	.025
500	1	1		4	1		4									1							1	15	.022
600	2			4			5						1			2	1						2	17	.025
700																							1	1	.001
800	2			1			1																1	6	.009
900																									
1,000	17		3	7		1	18				15		7			2	19	4	6	1	4		23	127	.187
1,100																									
1,200	10	1	2	7		2	32			1	38		23			22	43	4	50	1	1	1	133	371	.548
1,300 ~ 1,500	3	1	1	3			7				17		31			9	31	12	21	3	9	12	201	361	.533
1,600 ~ 2,000	13	3	3	2		2	34				10		13			11	37	4	34	14	38	87	552	820	1.21
2,100 ~ 3,000																	5		10	1	1	23	377	417	.615
3,100 ~ 5,000							1																6	7	.01
5,100 ~ 10,000	5		3	10	3	1	33				45		15			27	58	11	66	13	8	3	345	646	.951
10,000 or more				4			1				5		6			7	17	2	23	2	2	22	515	606	.894
Cloud layer 4/8 or less	42	1		11			9				32		23			53	75	6	106	18	65	134	2651	3214	47.44
TOTAL	167	19	17	81	5	6	157	0	1	1	173	0	125	0	0	145	297	43	315	55	105	284	3771	6775	
%	2.46	.28	.25	1.2	.07	.09	2.32	0	.01	.01	2.55	0	1.85	0	0	2.14	4.38	.63	4.65	.81	1.55	4.19	55.7		100

STATION : PEDREGAL DRY SEASON, (DEC - MAY) YEAR: 1976

CEILING (feet) \ VISIBILITY (meter x100)	1 or less	1	2	4	6	8	10	12	14	16	20	24	28	32	36	40	48	64	80	90	112	160	240 or more	TOTAL	%
Cloud layer 5/8 or more: 50 or less	33	4	2	10			1				3					2								55	.173
100																									
200		1		1	1		2												1					6	.019
300		2		2			1				3		1										1	10	.031
400	3		1	8			2									1								15	.047
500	1	1		6	1		4									1							1	15	.047
600	2			4			5						1			2	1						2	17	.053
700																							1	1	.003
800				1			1		1															3	.009
900																									
1,000	1		1	3		1	3				3		1				3						6	22	.069
1,100																									
1,200				4		1	9			1	6		2			4	5	1	5				55	98	.308
1,300 ~ 1,500	1	1	1				1				7		10			5	12	1	9				83	131	.412
1,600 ~ 2,000	1	8	3	1		2	25				10		6			3	16	1	15	11	25	37	237	440	1.383
2,100 ~ 3,000																	2		6		1	11	247	269	.845
3,100 ~ 5,000							1																6	7	.022
5,100 ~ 10,000				2			3				5		3			1	13		8				132	169	.531
10,000 or more				2			1				2		3			1	5		6	1		3	205	229	.72
Cloud layer 4/8 or less	10			3			1				9		2			6	27		26	2	11	67	1551	1,695	53.27
TOTAL	58	17	8	47	2	4	60	0	1	1	48	0	34	0	0	26	86	3	76	14	37	98	2562	3182	
%	1.82	.053	.025	1.48	.064	.013	1.89	0	.003	.003	1.51	0	1.07	0	0	.082	2.7	.009	2.39	.044	1.16	3.08	80.52		100

STATION : PEDREGAL WET SEASON, (JUN - NOV) YEAR: 1976

CEILING (feet) \ VISIBILITY (meter x100)	1 or less	1	2	4	6	8	10	12	14	16	20	24	28	32	36	40	48	64	80	90	112	160	240 or more	TOTAL	%
Cloud layer 5/8 or more: 50 or less	19			3																				22	.061
100	9		1	1			2																	13	.035
200	5		1				2				5		5			2	6			1			10	37	.103
300							3										5			1				9	.025
400				1			1																	2	.006
500																									
600																									
700																									
800	2																						1	3	.008
900																									
1,000	16		2	4			13				12		6			2	16	4	6	1	4		17	105	.292
1,100																									
1,200	18	1	2	3		1	23				32		14			18	38	3	45	1	1	1	78	273	.76
1,300 ~ 1,500	2			3			4				12		21			4	19	11	12	3	9	12	118	230	.64
1,600 ~ 2,000	6			1			9						2			14	21	3	18	3	13	32	232	380	1.056
2,100 ~ 3,000																	3		4	1		12	128	148	.412
3,100 ~ 5,000																									
5,100 ~ 10,000	5		3	8	3	1	38				40		12			26	43	11	56	13	8	3	213	475	1.322
10,000 or more				2							3		3			6	12	2	17	1	2	19	310	377	1.047
Cloud layer 4/8 or less	32	1		8			8				23		21			47	68	4	80	18	34	87	[illegible]	1519	4.228
TOTAL	126	2	9	34	3	2	89	0	0	0	125	0	91	0	0	119	211	40	239	41	71	186	2215	3593	
%	.35	.056	.025	.095	.008	.006	.248	0	0	0	.348	0	.253	0	0	.331	.587	.111	.665	.114	.198	.518	6.165		100

Table 5B-3 PEDREGAL-CEILING/VISIBILITY 1976

STATION: HULE — 12 MONTHS — YEAR: 1962, 1963

CEILING (meter) \ VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600 2,000	2,000 3,000	3,000 5,000	5,000 or more	TOTAL	%
Cloud layer 5/8 or more: Unknown	4				1												1			7	13	0.2
50 or less	238		1		79				12								69	3	39	160	621	27
50 ~ 100	9		2		1	1			3				1				2	1	12	19	51	0.6
100 ~ 200	34		2		18				4						2		41	1	24	345	332	6.9
200 ~ 300	35		1	1	23				1				3			1	18		37	229	349	4.3
300 ~ 600	4				9												3		10	165	192	2.4
600 ~1,000	33				20				3		1						27		54	2177	2315	29.1
1,000 ~1,500	6				6												2		12	928	954	11.8
1,500 ~2,000																				1	1	—
2,000 ~2,500	1																			21	22	0.3
2,500 or more	8				2				1								5		3	69	89	1.1
Cloud layer 4/8 or less	4				2				4	2	3	1				1	8		31	2069	2125	30.0
TOTAL	376		6	1	191	1			28	2	4	1	4		2	2	176	5	212	6972	8363	
%	4.9		0.1	—	2.4	—			0.4	—	0.1	—	0.1		—	—	2.2	0.1	3.4	86.5		

DRY SEASON, (DEC - MAY) — STATION: HULE — YEAR: 1962, 1963

CEILING (meter) \ VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600 2,000	2,000 3,000	3,000 5,000	5,000 or more	TOTAL	%
Cloud layer 5/8 or more: Unknown			3		1												1			4	8	0.2
50 or less	39		1		49				1								18		5	35	185	4.5
50 ~ 100	5								2				1				2	1	3	12	26	0.7
100 ~ 200	13		2		12				2								10	1	18	123	179	4.8
200 ~ 300	2		1		8								3				1		2	60	77	2.1
300 ~ 600					7												1		4	81	93	2.7
600 ~1,000	1				5												6		25	632	670	18.1
1,000 ~1,500	2				2												1		1	321	327	9.7
1,500 ~2,000																					0	
2,000 ~2,500																					0	
2,500 or more	6								1								3			31	41	1.3
Cloud layer 4/8 or less	3				2				2								1		4	2055	2067	55.9
TOTAL	91		4		85				8				4				42	2	63	3399	3698	
%	2.5		0.1		2.3				0.2				0.1				1.1	0.1	1.6	92.0		

WET SEASON, (JUN - NOV) — STATION: HULE — YEAR: 1962

CEILING (meter) \ VISIBILITY (meter)	100 or less	100	200	300	400	500	600	700	800	900	1,000	1,100	1,200	1,300	1,400	1,500	1,600 2,000	2,000 3,000	3,000 5,000	5,000 or more	TOTAL	%
Cloud layer 5/8 or more: Unknown	4																			3	7	0.2
50 or less	199				31				11								53	3	34	125	456	13.4
50 ~ 100	4		2		1	1			1										9	7	25	0.8
100 ~ 200	21				35				2						2		31		58	223	373	8.3
200 ~ 300	33			1	13				1							1	17		33	169	272	6.2
300 ~ 600	4				2												2		6	79	93	2.1
600 ~1,000	32				14				3		1						21		29	1345	1845	42.1
1,000 ~1,500	4				4												1		11	574	594	13.6
1,500 ~2,000																				1	1	—
2,000 ~2,500	1																			21	22	0.5
2,500 or more	2				2												2		3	33	41	0.9
Cloud layer 4/8 or less	1								2	2	3	1				1	1		27	704	839	19.2
TOTAL	315		2	1	113	1			20	2	4	1			2	2	134	3	212	3313	4347	
%	7.2		—	—	2.6	—			0.5	—	0.1	—			—	—	3.1	0.1	4.9	76.2		

Table 5B-4 HULE-CEILING/VISIBILITY 1962 - 1963

STATION: LA ERMITA — MARCH — YEAR: 1978

CEILING (feet) \ VISIBILITY (meters x100)	1 or less	1	2	4	6	8	10	12	14	16	20	24	28	32	36	40	48	64	80	90	112	160	240 or more	TOTAL	%
Cloud layer 5/8 or more: 50 or less																								0	
100																								0	
200																								0	
300																								0	
400																								0	
500																								0	
600																								0	
700																								0	
800																								0	
900																								0	
1,000																								0	
1,100																								0	
1,200																								0	
1,300 ~ 1,500																								0	
1,600 ~ 2,000																	1						11	12	12
2,100 ~ 3,000																	1		1				98	100	141
3,100 ~ 5,000																							168	168	236
5,100 ~ 10,000																1	1			1			17	20	28
10,000 or more																	2		2				47	51	72
Cloud layer 4/8 or less													1				1						358	360	506
TOTAL													1			1	6		3	1			639	711	
%													01			01	08		04	01			93		

STATION: LA ERMITA — APRIL — YEAR: 1978

CEILING (feet) \ VISIBILITY (meters x100)	1 or less	1	2	4	6	8	10	12	14	16	20	24	28	32	36	40	48	64	80	90	112	160	240 or more	TOTAL	%
Cloud layer 5/8 or more: 50 or less																									
100																									
200																									
300																									
400																									
500																									
600																									
700																									
800																									
900																									
1,000																									
1,100																									
1,200																									
1,300 ~ 1,500																									
1,600 ~ 2,000																							4	4	06
2,100 ~ 3,000													2			3	3	1	21	4			65	102	144
3,100 ~ 5,000											4		6			9	13		13	3			93	141	205
5,100 ~ 10,000																	3		1	1			3	8	12
10,000 or more	1												1			15	16		21	6			63	124	181
Cloud layer 4/8 or less							3				3		15			14	23	3	9	11			227	368	450
TOTAL	1						3				7		24			42	58	4	65	25			414	685	
%	02						04				10		35			61	85	06	95	37			606		

STATION: LA ERMITA — MAY — YEAR: 1978

CEILING (feet) \ VISIBILITY (meters x100)	1 or less	1	2	4	6	8	10	12	14	16	20	24	28	32	36	40	48	64	80	90	112	160	240 or more	TOTAL	%
Cloud layer 5/8 or more: 50 or less																									
100																									
200																									
300																									
400																									
500																									
600																									
700																									
800																									
900																									
1,000																									
1,100																									
1,200																									
1,300 ~ 1,500																									
1,600 ~ 2,000											2						2		1				1	6	10
2,100 ~ 3,000							3						1			2	5		13	2			93	121	193
3,100 ~ 5,000						1					1		1			1	5		8	8			168	133	212
5,100 ~ 10,000							3									1	6		2	3			23	38	61
10,000 or more																	1		2	2			95	105	167
Cloud layer 4/8 or less											4		4			3	25	1	38	14			140	225	358
TOTAL						1	6				7		6			7	44	1	67	29			415	628	
%						02	10				11		10			11	70	03	107	46			661		

Table 5B-5 (a) TALANGA LA ERMITA-CEILING/VISIBILITY 1978

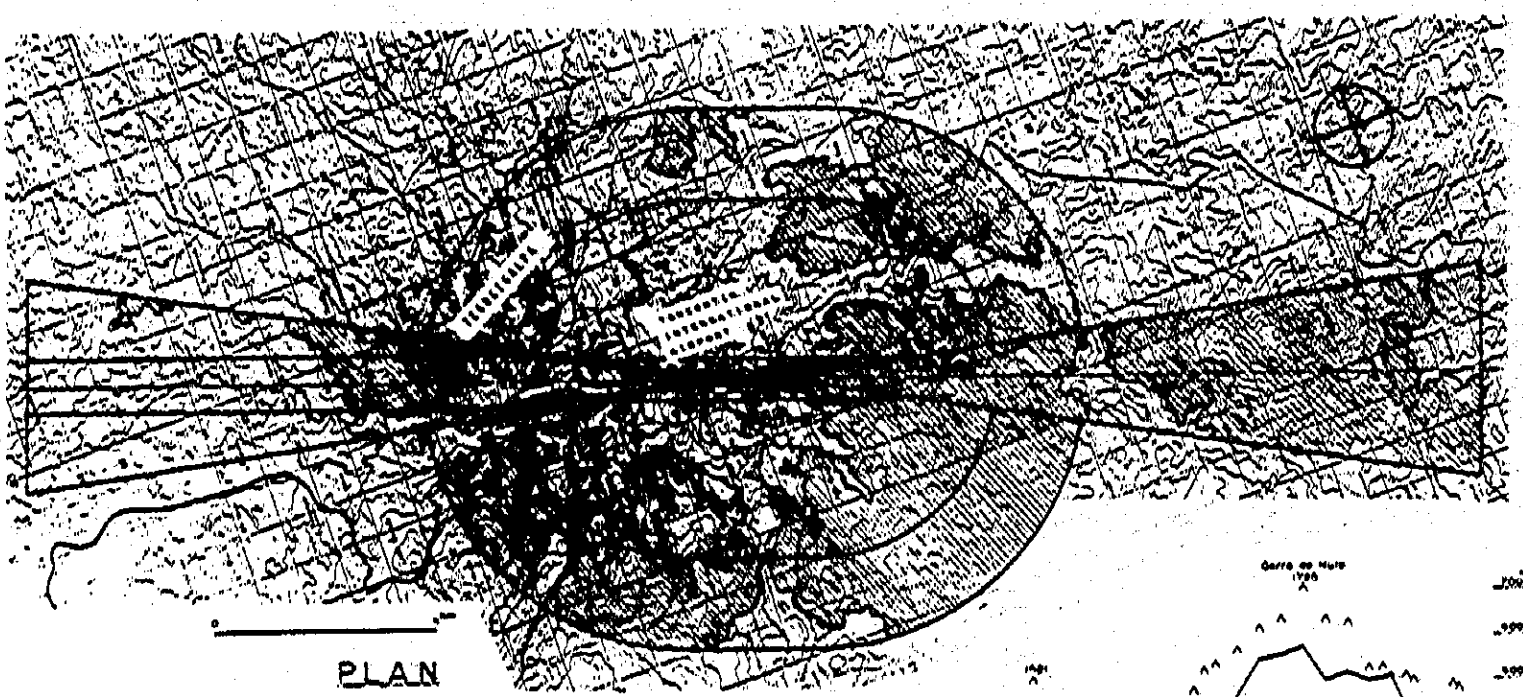
STATION : LA ERMITA — JUNE — YEAR : 1978

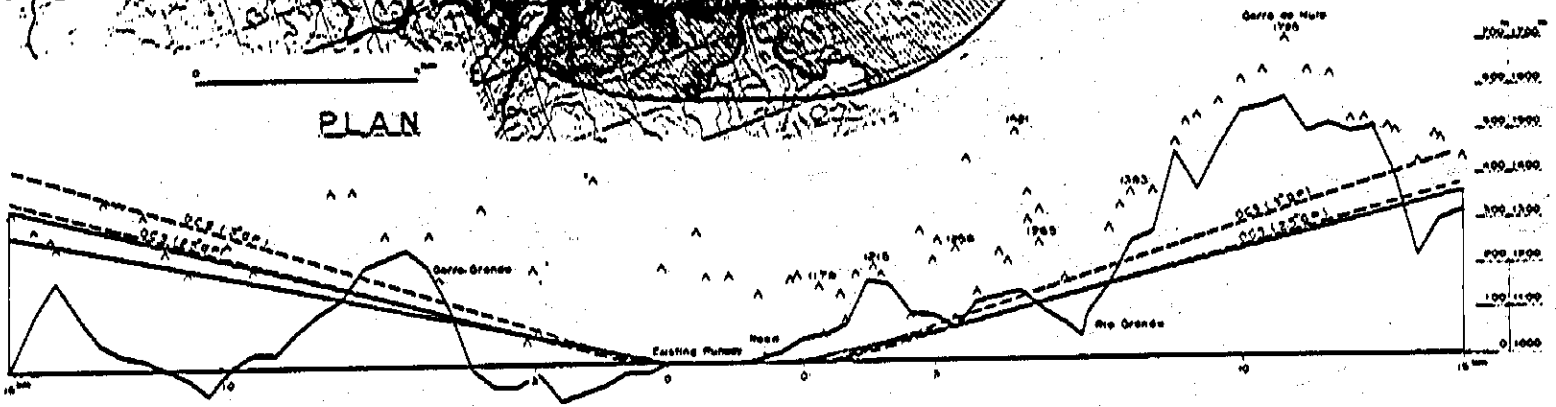
CEILING (feet) \ VISIBILITY (miles)	1/4 or less	1	2	4	6	8	10	12	14	16	20	24	28	32	36	40	48	64	80	96	112	160	240 or more	TOTAL	%
Cloud layer 5/8 or more: 50 or less																									
100																									
200																									
300																									
400																									
500																									
600																									
700																									
800																									
900																									
1,000																									
1,100																									
1,200																									
1,300 ~ 1,500																									
1,600 ~ 2,000			1																2				10	13	2.65
2,100 ~ 3,000											1					1	5	1	7	10			215	244	37.31
3,100 ~ 5,000																			1				35	36	5.50
5,100 ~ 10,000																	2		4				46	52	7.95
10,000 or more																	1		1	1			113	116	17.74
Cloud layer 4/8 or less																1	1		1	2			182	183	28.59
TOTAL			1								1					2	9	1	15	13			411	654	
%			0.15								0.15					0.31	1.38	0.15	2.45	1.99			62.84		

Table 5B-5(b) TALANGA - LA ERMITA-CEILING/VISIBILITY 1978

APPENDIX 5C

DRAWINGS OF SITES SCREENING





PROFILE OF OBSTRUCTION LIMITATION AREA (RWY 01/19)

NOTES
RUNWAY DATA
(1) INSTRUMENT RUNWAY
(2) ICAO OBSTRUCTION RESTRICTION
(3) LENGTH 2000m
(4) ELEVATION 1000m (ASSUMED)
(5) ORIENTATION N19°30'E (TENTATIVE)

= TOPOGRAPHICALLY OBSTRUCTED AREA

Fig. 5C-1 (a) EXISTING TONCONTIN AIRPORT:
RWY (01/19) EXTENSION & OBSTACLES

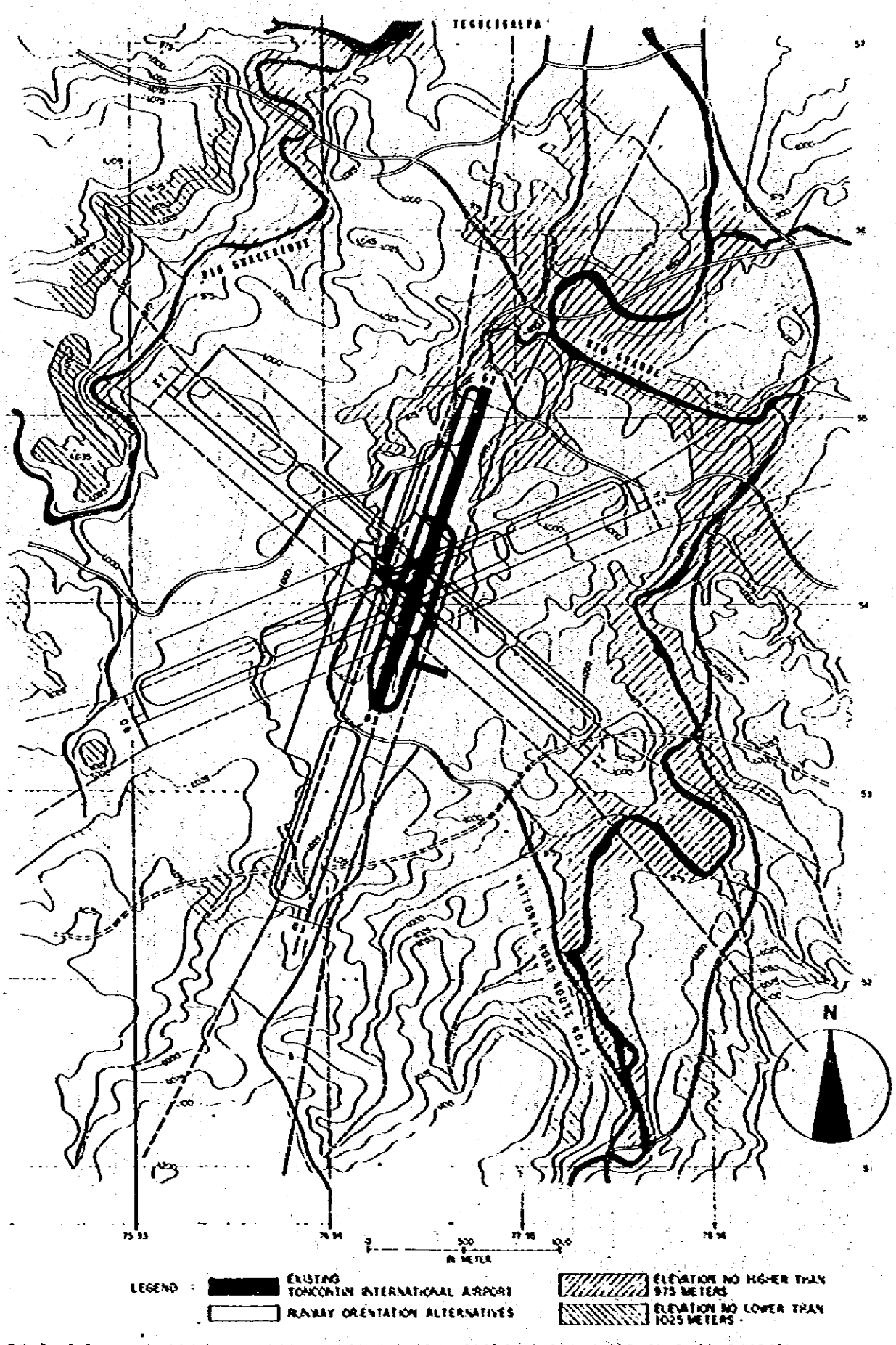


Fig. 5C-1 (b) TOPOGRAPHICALLY FEASIBLE ORIENTATION ALTERNATIVES OF RUNWAY EXTENSION NEEDED IN IMPROVEMENT OF EXISTING TONCONTIN AIRPORT

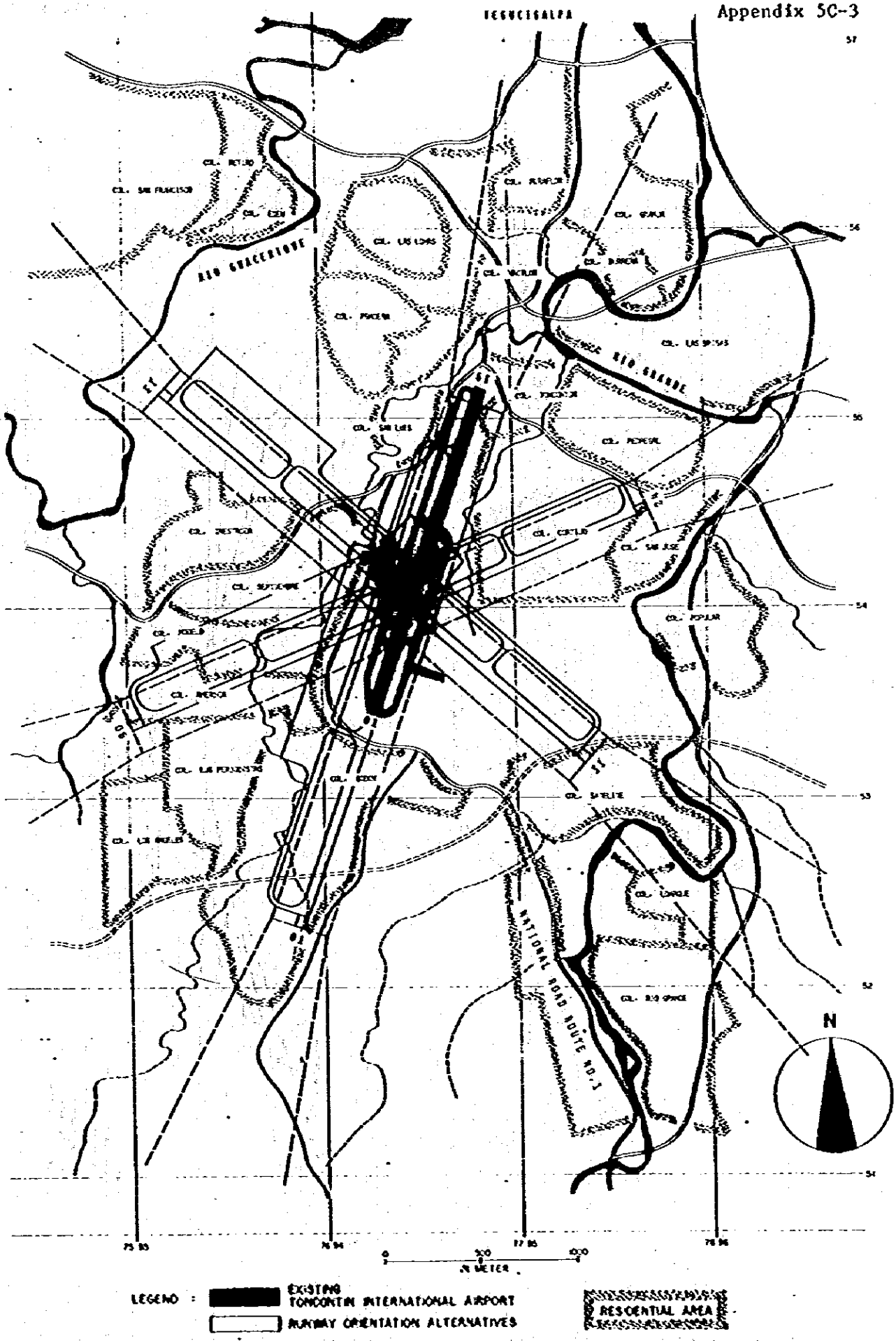
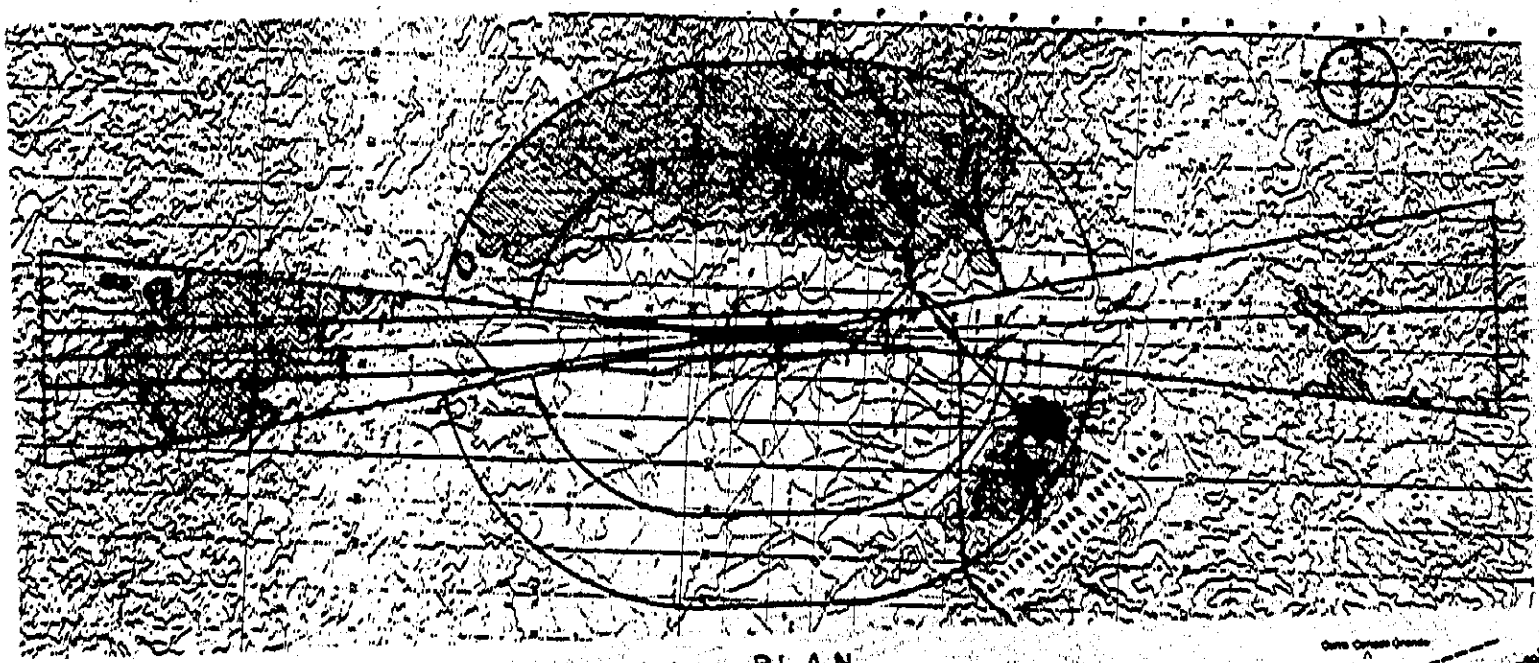


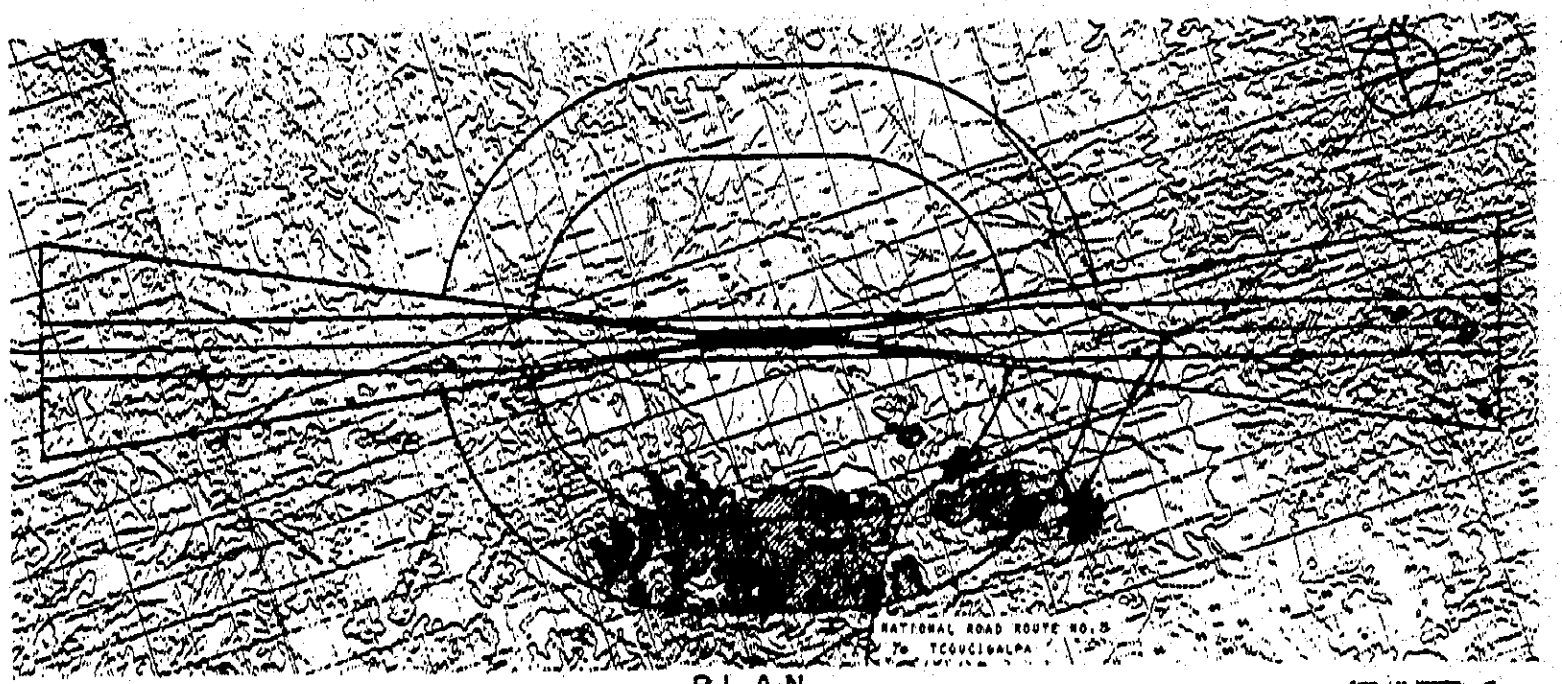
Fig. 5C-1 (c) INCOMPATIBILITY WITH SURROUNDING LAND USE OF TOPOGRAPHICALLY FEASIBLE EXPANSION POSSIBILITIES OF EXISTING TONCONTIN AIRPORT

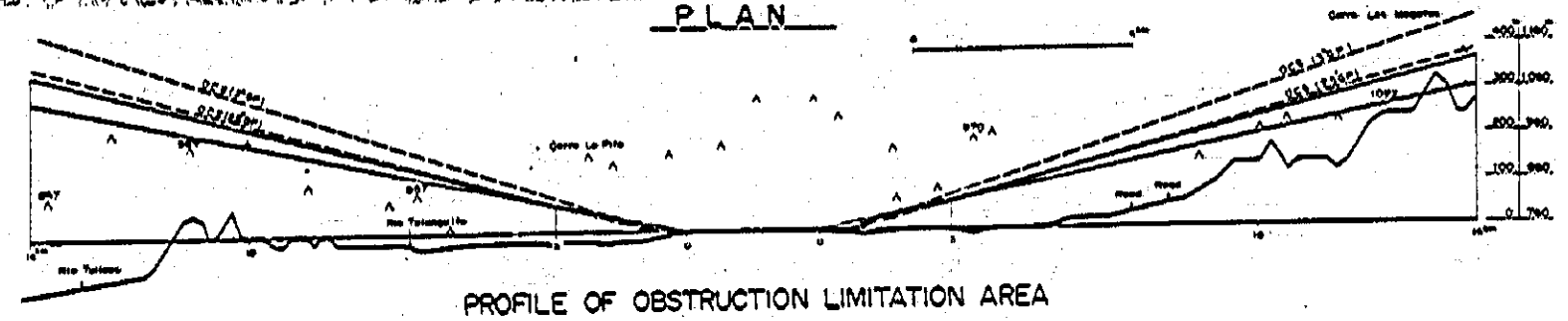


PROFILE OF OBSTRUCTION LIMITATION AREA

– TOPOGRAPHICALLY OBSTRUCTED AREA

Fig. 5C-2 (a) VALLE DE TALANGA – A : RWY LOCATION & OBSTACLES





PROFILE OF OBSTRUCTION LIMITATION AREA

NOTES
RUNWAY DATA
(1) INSTRUMENT RUNWAY
(2) OBSTRUCTION RESTRICTION
(3) LENGTH 2000'
(4) ELEVATION 700' (ASSUMED)
(5) ORIENTATION 07°W (TENTATIVE)

TOPOGRAPHICALLY OBSTRUCTED AREA

Fig. 5C-2 (b) VALLES DE TALANGA - B : RWY LOCATION & OBSTACLES

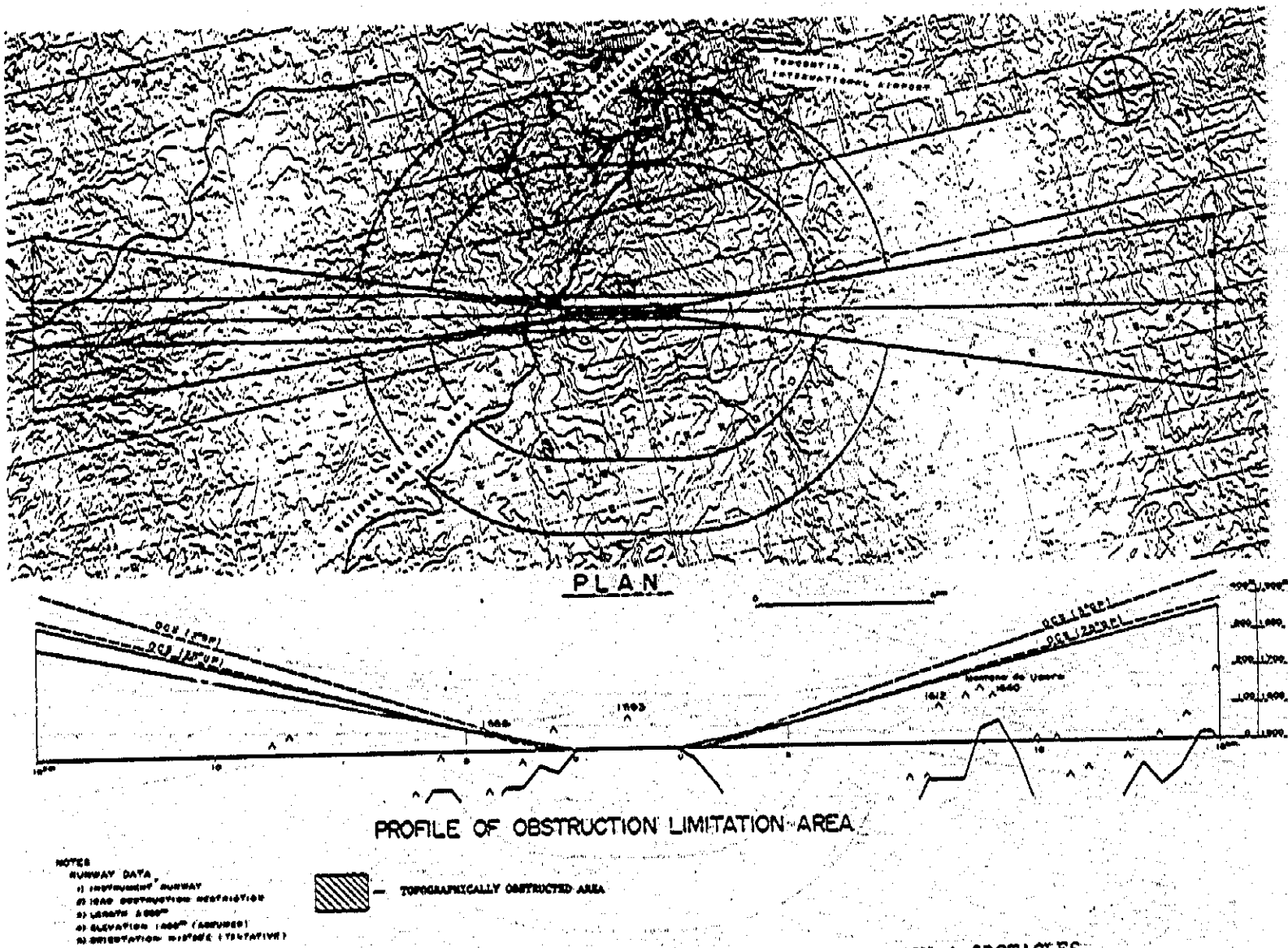
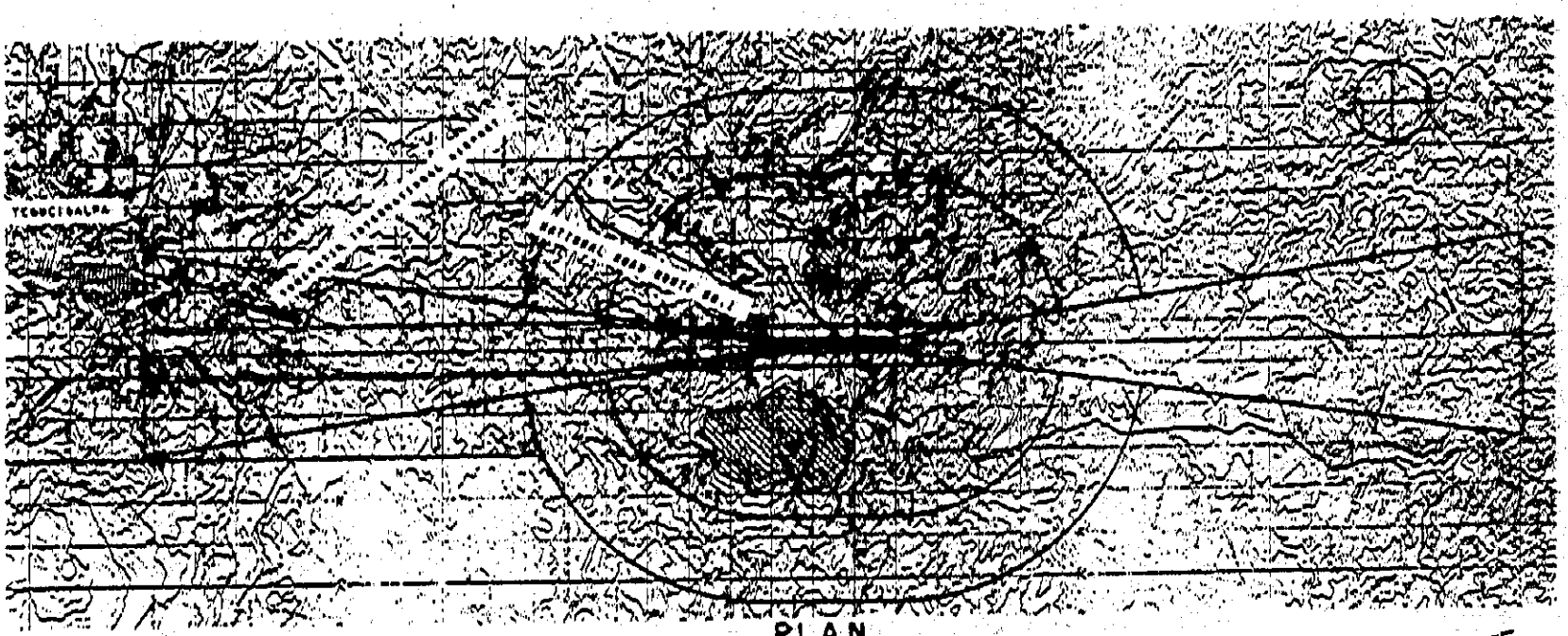
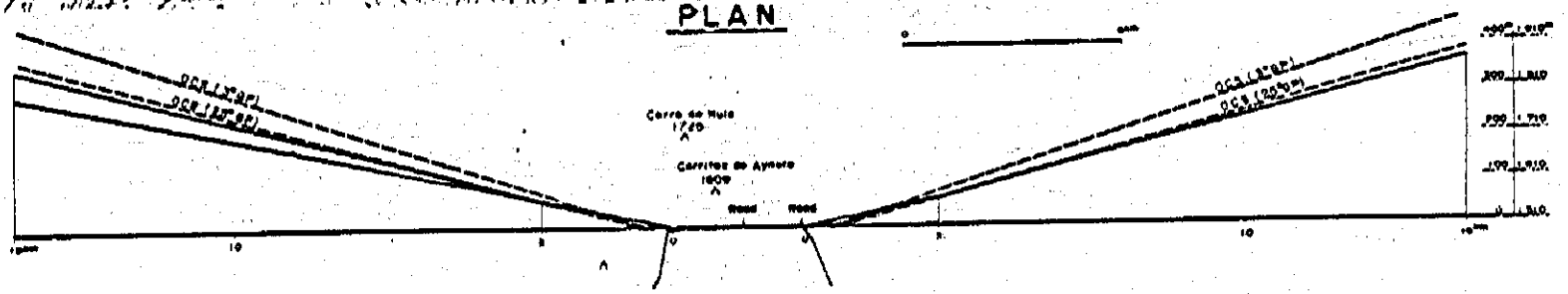


Fig. 5C-3 LAGUNA EL PEDREGAL - B : RWY LOCATION & OBSTACLES



PLAN

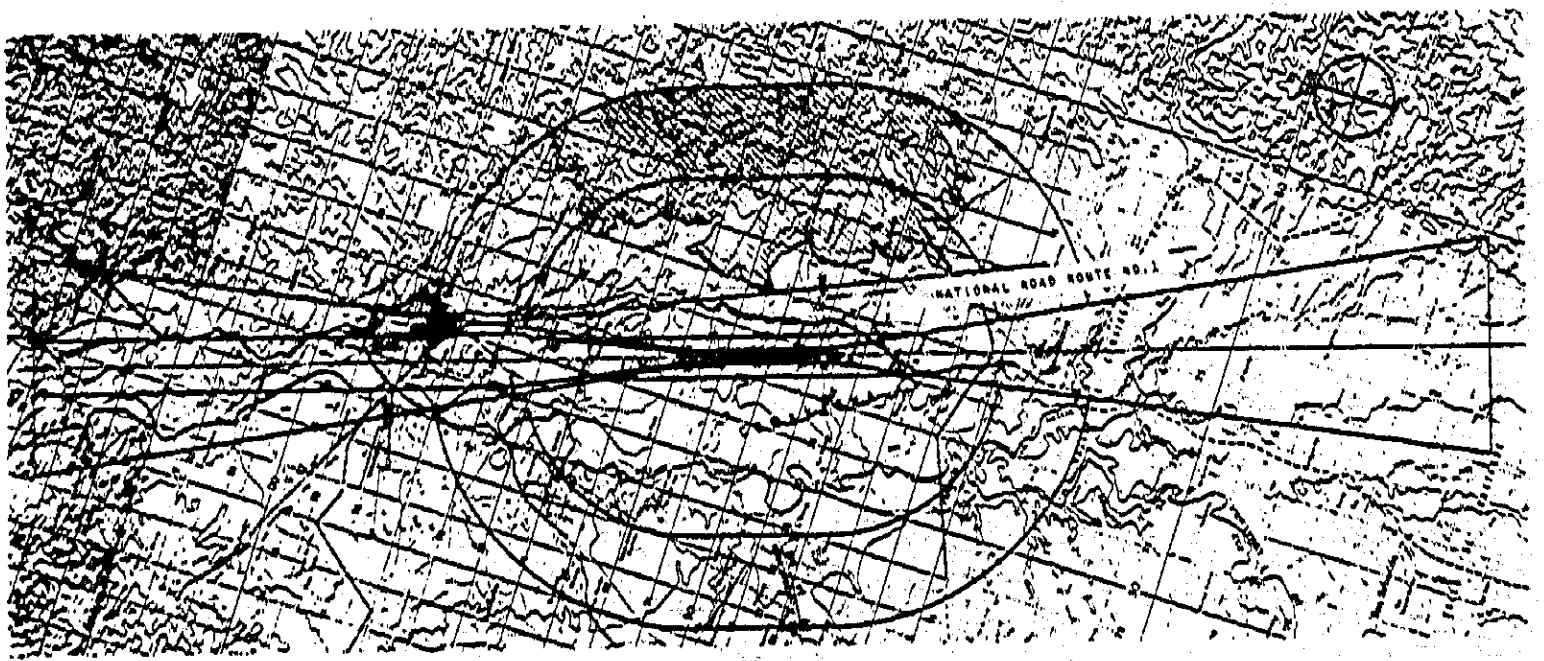


PROFILE OF OBSTRUCTION LIMITATION AREA

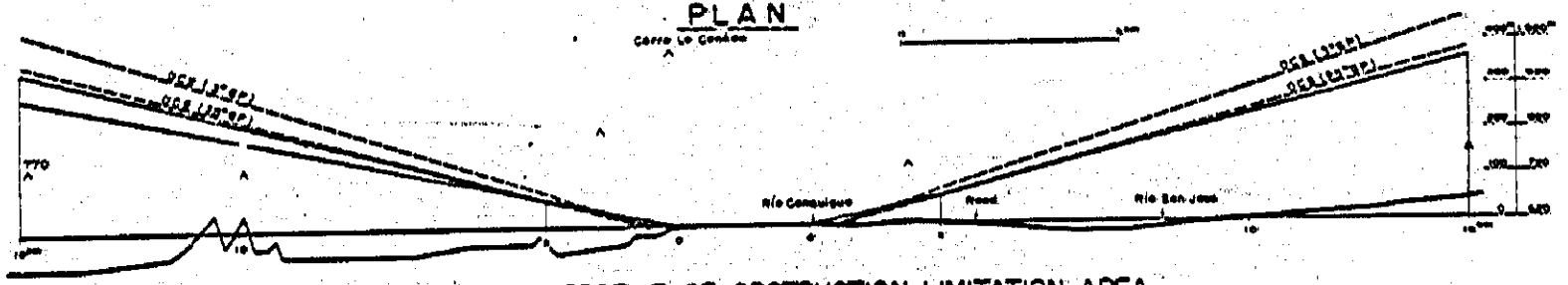
NOTES
RUNWAY DATA
1) INSTRUMENT RUNWAY
2) ROAD OBSTRUCTION RESTRICTION
3) LENGTH 2000m
4) ELEVATION 1910' (ASSUMED)
5) ORIENTATION 100°E (TENTATIVE)

— TOPOGRAPHICALLY OBSTRUCTED AREA

Fig. 5C-4 CERRO DE HULE - B : RWY LOCATION & OBSTACLES



PLAN



PROFILE OF OBSTRUCTION LIMITATION AREA

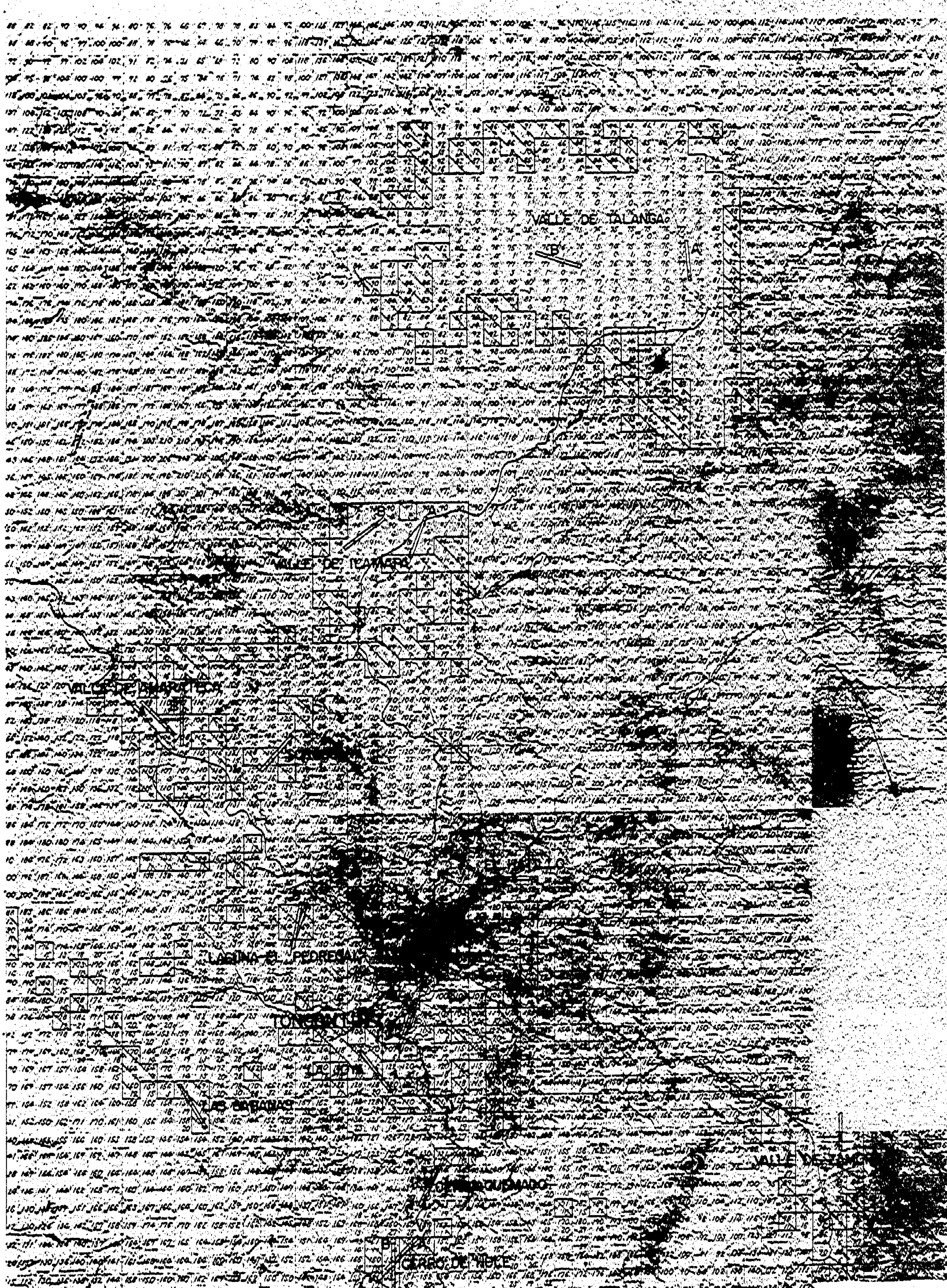
NOTES
RUNWAY DATA

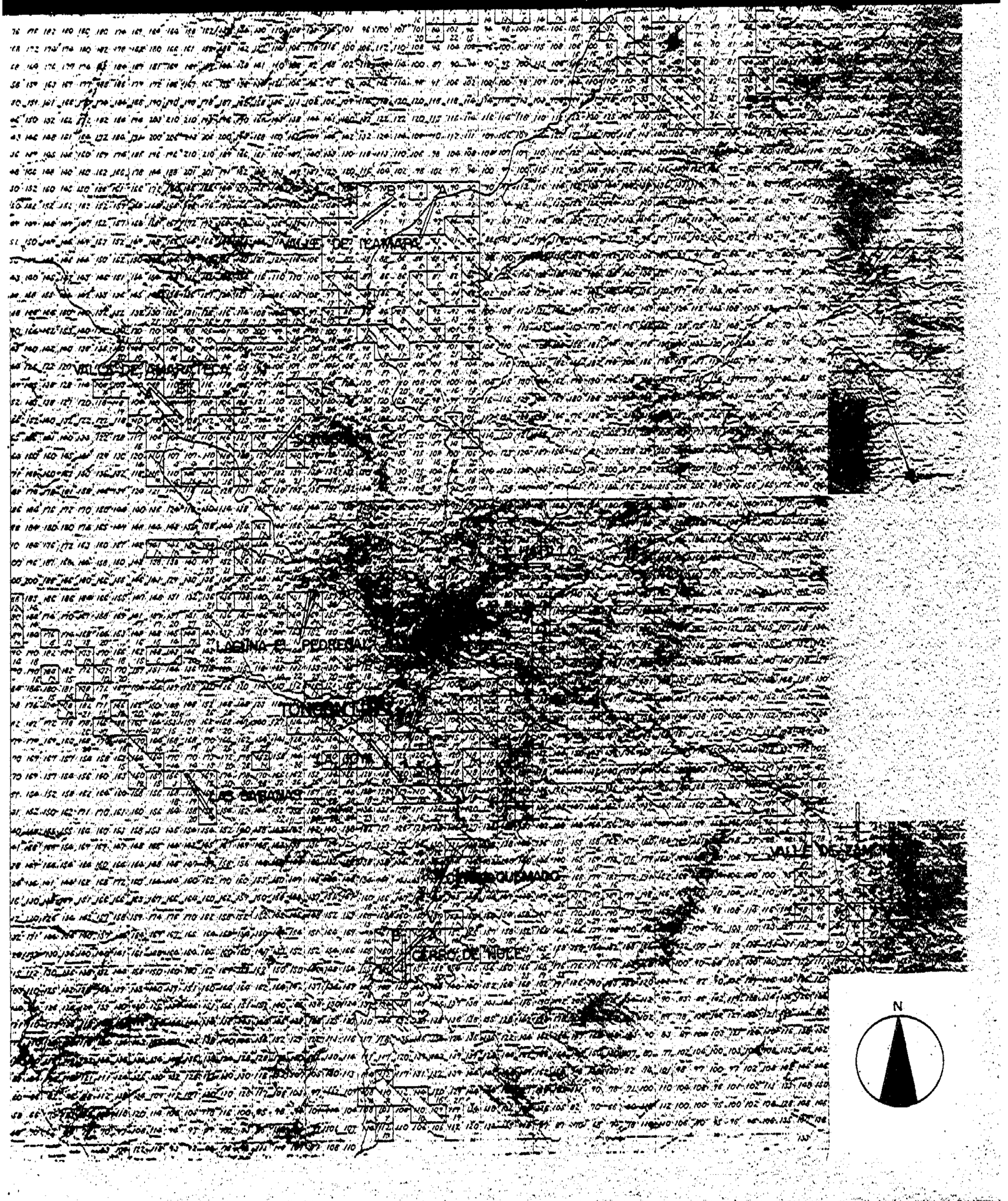
— TOPOGRAPHICALLY OBSTRUCTED AREA

Fig. 5C-5 COMAYAGUA : RWY LOCATION & OBSTACLES

APPENDIX 5D

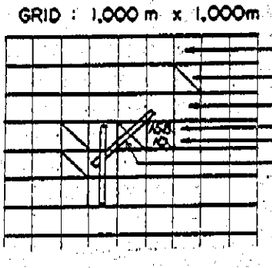
GRID MAP


VALLE DE TALANGA
LAGUNA EL PEDREGAL



LEGEND :

GRID : 1,000 m x 1,000m



MAX. ELEVATION RANGE IN GRID 120m AND OVER
MAX. ELEVATION RANGE IN GRID 60m – 120m
MAX. ELEVATION RANGE IN GRID 0m – 60m
HEIGHEST ELEVATION IN GRID 158 (x10) = 1580m
MAX. ELEVATION RANGE IN GRID 10 (x10) = 100m
POTENTIAL SITE (RUNWAY LOCATION)

NOTE : COMAYAGUA-SITE IS NOT SHOWN

SCALE : 1 : 200.000

AIRPORT POTENTIAL SITES / EARTHWORK PRACTICABILITY GRID MAP

NEW TEGUCIGALPA AIRPORT DEVELOPMENT – HONDURAS, C.A.

Appendix 5.0