4.8 ACCESS ROAD AND CAR PARKING

4.8.1 Access Road

The estimation of the peak-hour traffic volume of the access road was made as shown in Table 4-12 on assumptions that the passengers and visitors come in and go out of the airport with a certain time lags before departure and after arrival times of aircraft, that is, the departing passengers and their greeters will arrive at the airport 60 minutes before the departure time, and the arriving pasengers and their greeters will go out of the airport 30 minutes after the arrival time.

Table 4-12 PEAK-HOUR TRAFFIC VOLUME

Items	Volumes in the Year 2000	Remarks
Peak-hour Traffic	264	In both directions
Design Hour Traffic	146	In one direction

Accordingly two lanes of carriageway in both directions have to be provided to deal with the projected traffic volume.

4.8.2 Car Parking

The required number of cars to park was calculated by the following formula:

$E = P \times C$

where,

E: Required number of cars to park

P: Number of passengers at peak hour

C: Number of cars to park per passenger at peak-hour

The number of cars to park and the area of car parking lot was calculated as shown in Table 4-13.

With the increase of air traffic as forecasted in Chapter 3, the designed car parking capacity would be overflowed after the year 2000. It has been envisaged, therefore, that the parking area will be extended twofold to 14,400 m^2 so as to be able to accommodate the estimated number of cars during the years 2000 to 2015.

Table 4-13 NUMBER OF CARS TO PARK AND AREA REQUIREMENTS

Items	Quantities
No. of Cars to park	205
Parking Area	7,200 m^2

CHAPTER 5

DEVELOPMENT PLAN OF AIRPORT FACILITIES

CHAPTER 5

DEVELOPMENT PLAN OF AIRPORT FACILITIES

5.1 GENERAL

A layout of the required airport facilities described in Chapter 4 was finalized as shown in Fig. 5-1. Also included in this figure are tentative locations of the cargo terminal building and aviation fuel storage facilities which may be needed in the future. The envisaged features of the required airport facilities are shown in Table 4-1.

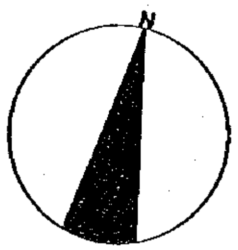
5.2 SITE CONDITIONS

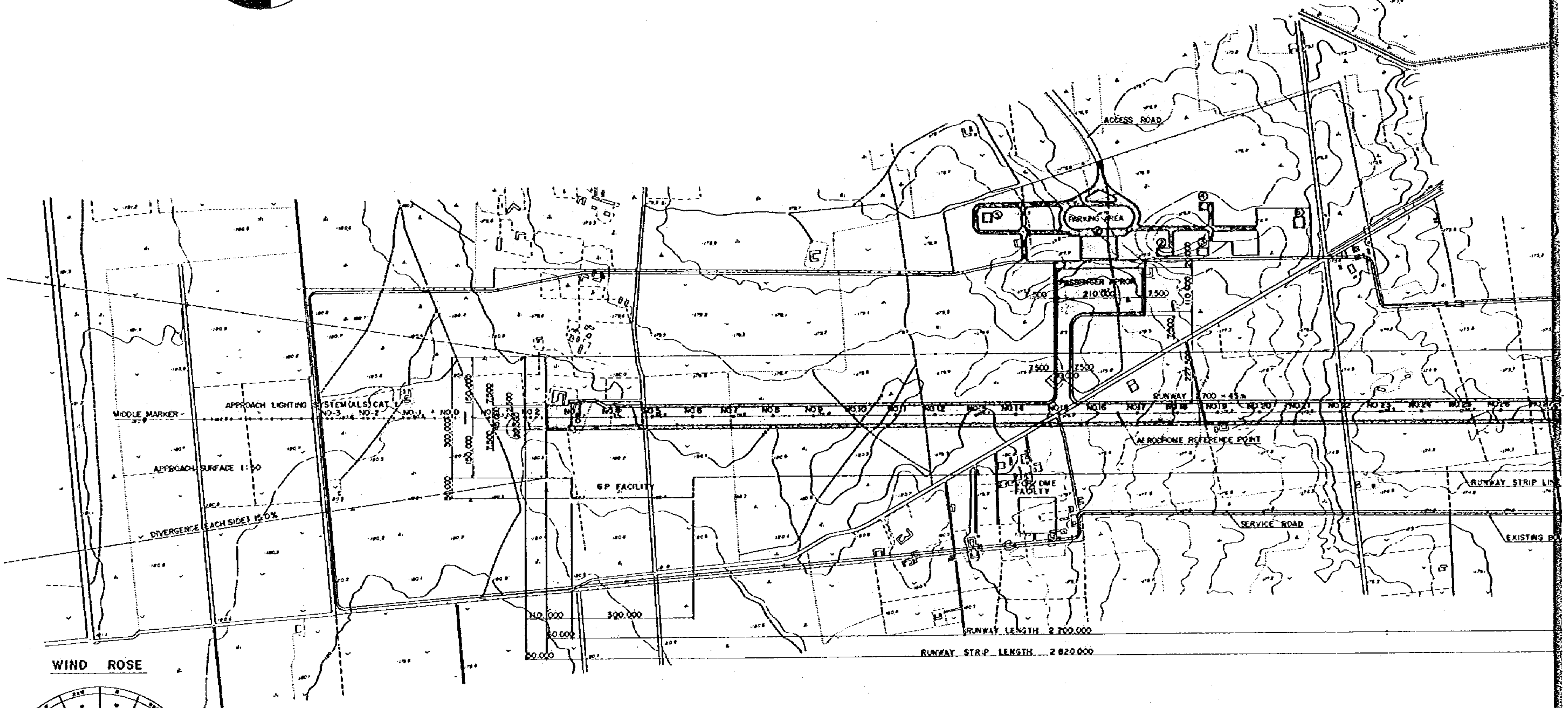
The proposed new airport site is located approximately 26 km south-southeast of the center of Nador City, and approximately 20 km from the existing Nador Airport (See Appendix VII-1). The topographical, geological and meteorological conditions and land use of the area are summarized below.

5.2.1 Topography and Geology

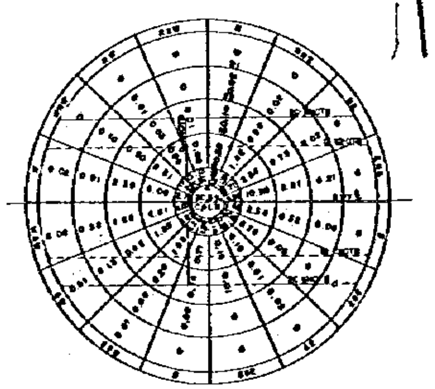
The proposed site is situated in a flat area stretching from east to west, and is moderately down-sloped to the coastal line. There is a stretch of small hills in the direction from the north to the south.

The Selouane River runs approximately 2 km east of the proposed site; it has little or no water in the dry season.





WIND ROSE



20KNOTS 99.66%
13KNOTS 97.83%

AIRPORT DATA

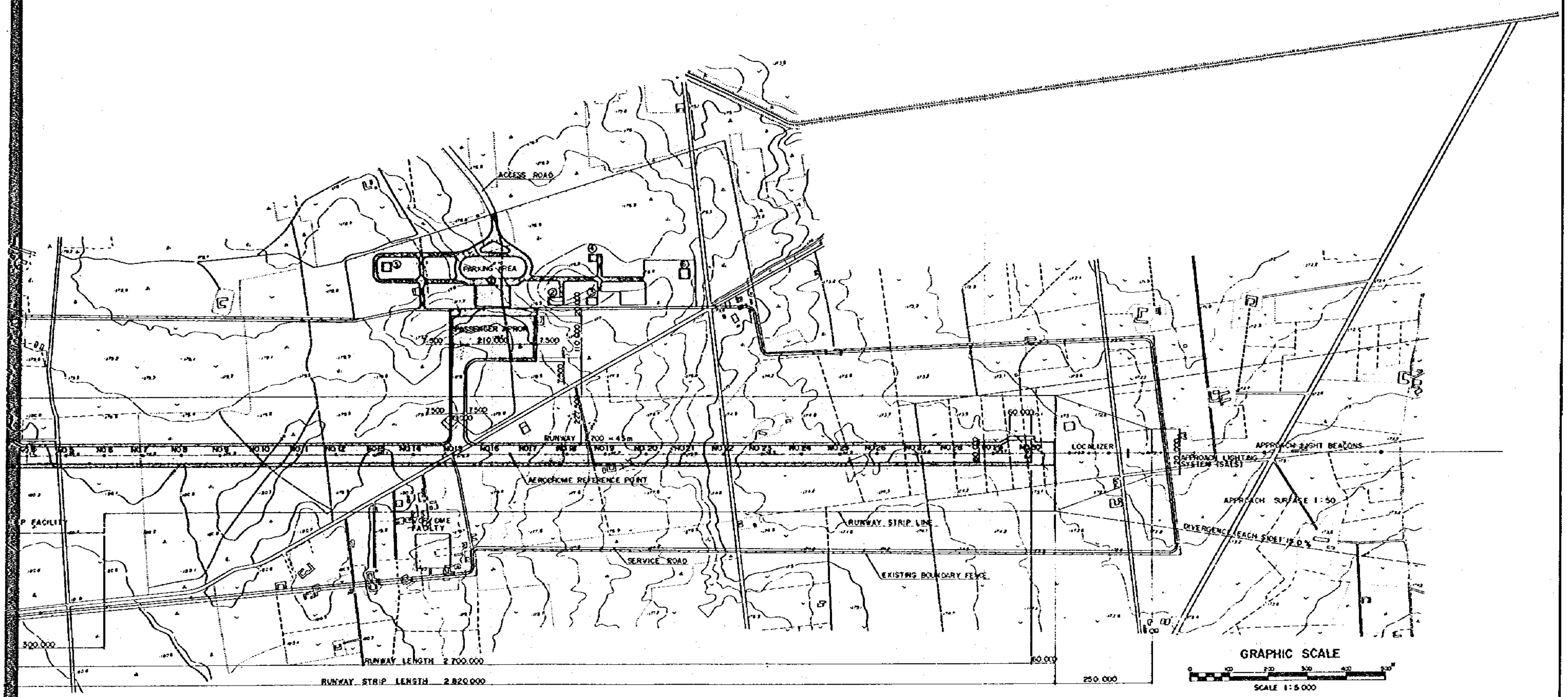
AIRPORT ELEVATION	160m
AIRPORT REFFERENCE POINT(APRX) COORDINATE	N 34°59'32" W. 3°01'45"

RUNWAY DATA

ORIENTATION	N78°16E
AVERAGE LONGITUDINAL SLOPE (IN %)	0.25
PERCENT WIND COVERAGE 20KT	99.51%
13KT	97.12%
PRECISION APPROACH RUNWAY	CAT-I ON RWY-08 ALS, SALS, VASIS NDB, VOR, DME
PAVEMENT STRENGTH	A-300 TYPE
APPROACH SLOPE	1:50
MARKING	ICAO STANDARDS

BUILDINGS

1. PASSENGER TERMINAL BUILDING
2. MAINTENANCE CENTER BUILDING
3. RESCUE AND FIRE FIGHTING STATION
4. MAIN SUBSTATION
5. WEATHER STATION
6. AVIATION FUEL STORAGE



RUNWAY DATA

ORIENTATION		N78°16E
AVERAGE LONGITUDINAL SLOPE (IN %)		0.25
PERCENT WIND COVERAGE	20KT	99.51%
	13KT	97.12%
PRECISION APPROACH RUNWAY		CAT-I ON RWY-08 ALS, SALS, VASIS NDB, VOR, DME
PAVEMENT STRENGTH		A-300 TYPE
APPROACH SLOPE		1:50
MARKING		ICAO STANDARDS

BUILDINGS

① PASSENGER TERMINAL BUILDING
② MAINTENANCE CENTER BUILDING
③ RESCUE AND FIRE FIGHTING STATION
④ MAIN SUBSTATION
⑤ WEATHER STATION
⑥ AVIATION FUEL STORAGE

Fig. 5-1 AIRPORT LAYOUT PLAN

The elevation of the site is between 173 - 180 metres above sea level. The pattern of the overlying deposits is of silt with boulders of 0.3 metre to 0.5 metre thick on a lower flat layer of massive limestone. Further, beneath this layer, there is a layer of tuffaceous limestone. The details of the soil conditions are shown in Appendix V-1.

5.2.2 Land Use

As explained in Chapter 2 about the present land use conditions (Refer to Fig. 2-6), the land area surrounding the proposed site is cultivated mainly for vegetables and grains. There is no settlements within the area except some dwelling houses scattered over the area. The boundary of the area is delineated by rock fence.

5.2.3 Meteorology

1) Temperature, Humidity and Rainfall

In general, the climate in the north-eastern region of Morocco is under the Mediterranean influence; it is mild with rains in wet season (from November to March), and hot and comparatively arid in dry season (from April to October).

The meteorological data listed in Table 5-1 are observed and processed by the Weather Station located in the existing Nador Airport. According to these data, the annual average temperature is 17.9°C and the monthly average maximum is 28.2°C in August, while the annual rainfall is very small with an average of 256.0 mm and a recorded maximum of 296.0 mm.

2) Wind Direction, Wind Velocity, Visibility and Ceiling

Wind data such as wind direction, wind velocity and visibility are shown in Table 5-1 and Appendix V-1, 2.

Table 5-1 METEOROLOGICAL CONDITIONS AT NADOR

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
Temperature														
Monthly Average	°C	11.7	13.0	14.7	15.5	18.0	22.1	23.7	24.3	23.2	19.1	15.9	13.0	17.9
Average Minimum	°C	5.7	8.5	9.8	11.5	13.8	18.1	19.5	20.4	19.5	14.1	11.3	7.9	13.3
Absolute Minimum	°C	-1.0	0.5	2.8	3.1	8.0	13.2	14.5	13.5	12.0	5.5	2.4	0.5	-1.0
Average Maximum	°C	17.5	17.6	19.5	22.2	26.1	28.0	28.2	26.9	24.1	20.5	18.0	22.4	22.6
Absolute Maximum	°C	26.0	26.8	31.0	25.8	29.3	33.0	37.5	39.8	33.5	34.0	30.0	25.0	39.8
Humidity														
Monthly Average	%	71	77	72	77	73	72	69	76	77	72	76	70	74
Rainfall														
Monthly Average	mm	18.0	43.2	41.0	50.4	32.1	4.3	1.4	9.1	9.7	7.9	18.5	20.4	256.0
Maximum in 24 hours	mm	17.0	53.0	38.0	50.7	39.7	5.5	2.0	22.5	20.5	7.9	15.3	16.5	53.0
Average number of rainy days														
1 mm R 10 mm		2	3	3	4	3	1	1	1	1	2	3	4	28
10 mm R		1	1	1	1	1	0	0	0	0	0	1	1	7
(30 mm R)		0.3	0.3	0.3	0.3	0.3	0	0	0	0	0	0	0	1.5
Wind														
Maximum Velocity m/s.		25	26	26	20	24	21	24	20	21	24	27	32	32
Predominant Directions		SW-NW	SW-NW	N-E	N-E	N-E	N-E	N-E	N-E	N-E	N-E	SW-NW	N-E	N-E

Remark: The data were measured at existing Nador/Taouine Airport for the period of 1980 - 1982.

The wind conditions of the proposed site seem to be comparatively calm: the annual percentage of times when wind velocities are more than 20 knots (10.3 m/s) is less than 2%.

5.3 OBSTACLE LIMITATION SURFACE

The obstacle limitation surface for the instrument landing system of category-I recommended by ICAO ANNEX 14 was employed in the planning. No existing objects which penetrate the obstacle limitation surface have been found out as the results of field investigation. The employed dimensional standards of the obstacle limitation surface are shown in Fig. 5-2.

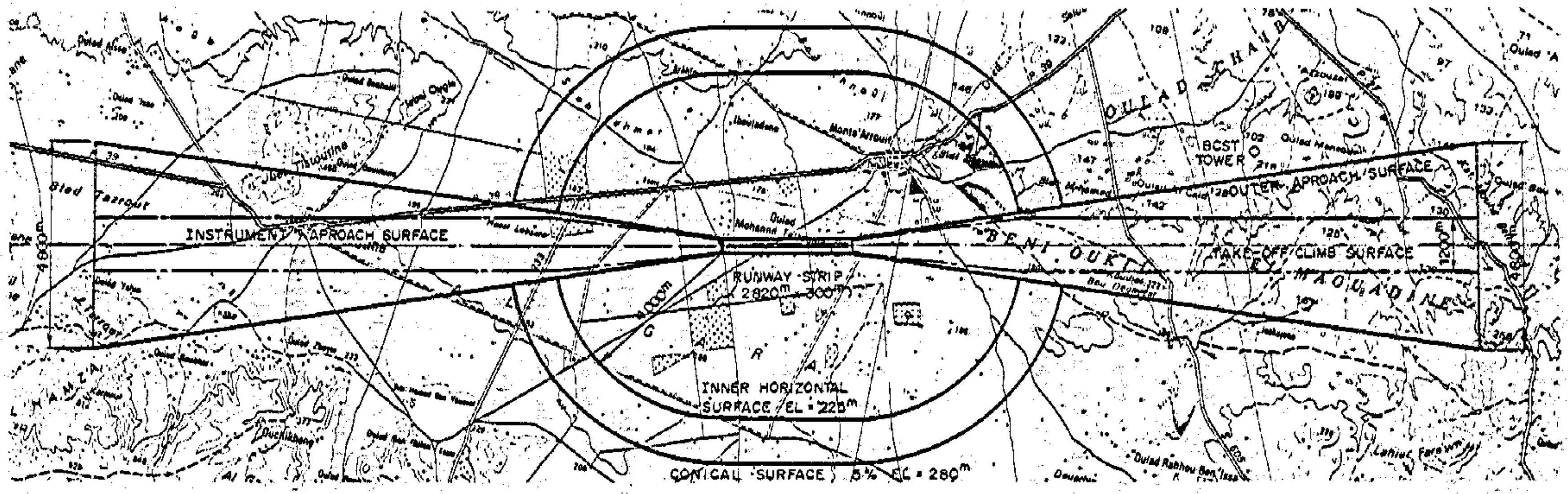
5.4 AIRFIELD FACILITIES

5.4.1 Runway

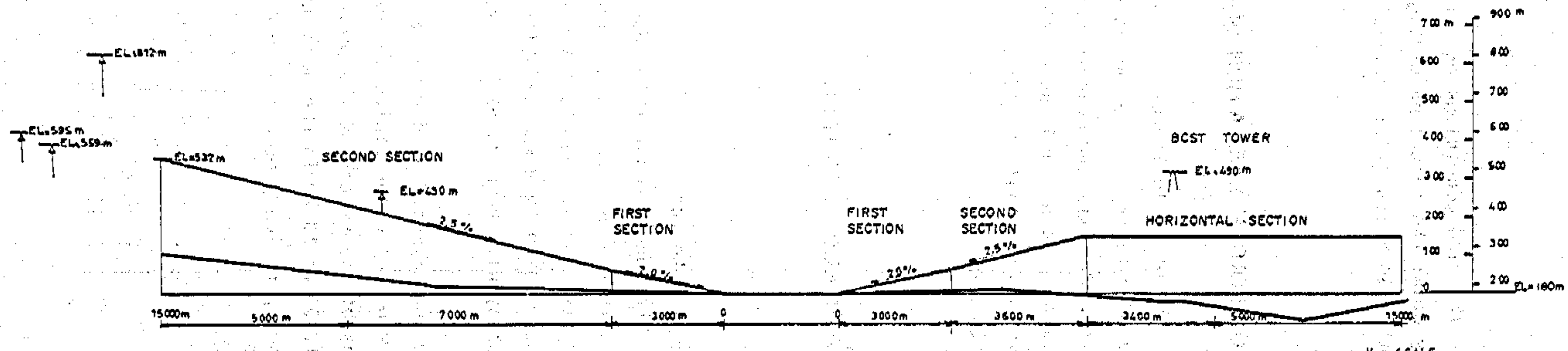
1) Orientation

The runway orientation was designated to be N78°16'E in accordance with the prominent wind direction. The threshold of the runway at its west end (threshold 08) was planned to be located at the coordinates 34°59'32"N and 03°01'45"W, and the further extension of the runway will be made eastwards.

The expected wind coverage of the runway will be 99.51% at the cross wind component limitation of 20 km and 97.12% at 13 km. The very high usability factor of the proposed airport such as 99.44% at 20 km and 97.05% at 13 km in the most unfavorable meteorological conditions for the operation procedures as decided in Chapter 6 can be expected.



PLAN



PROFILE

Fig. 5-2 OBSTACLE LIMITATION SURFACE

2) Longitudinal Slope of Runway

The average longitudinal slope of the runway was determined to be 0.25% to permit easy extension, desirable co-ordination with surrounding area and economical grading and drainage works (See Appendix VII-3).

3) Turning-Pad

The turning-pads will be provided at both ends of the runway to enable expeditious movements of the airfield traffic. The structure of the runway except its length was determined to meet the operational requirements of the aircraft of A-300B type which is the largest among those intended to be placed in service.

It is noted that the airports in service now in Morocco are very often utilized for charter flights. In case that the proposed airport will be used for charter flights of large-sized aircraft, the improvement of its turning-pads will be needed.

5.4.2 Longitudinal Slope and Cross Section of Runway Strip

The longitudinal slope of the runway strip was determined to be 1.5% to avoid rock excavation as much as possible and to provide adequate drainage slopes, because a flat massive limestone stratus lies about 0.3 to 0.5 metres below the ground surface of the site. The typical cross sections of the runway strip are illustrated in Appendix VII-4.

5.4.3 Taxiway

An exit taxiway from the middle part of the runway to the apron was planned to be constructed in order to connect them in the shortest distance permitting installation of the parallel taxiway in the future.

5.4.4 Passenger Loading Apron

The passenger loading apron was planned to be located on the north side of the runway to permit smooth functional connection between the terminal area and other required facilities. The layout of the facilities was arranged with a view of providing enough space for expansion of passenger loading apron and for construction of cargo loading and aircraft maintenance aprons in the future.

The elevation of the apron was planned in such a manner as to permit the maximum utilization of existing ground elevation, referring to the proposed elevations of the runway center-line and of the terminal area.

5.4.5 Pavement Structure

1) Subgrade Bearing Capacity

The existing surface layer which consists of silt with boulders is comparatively thin and, except some part, has adequate bearing capacity as a whole. The subgrade of the airfield pavement will be formed by selected filling materials in conformity with the required longitudinal and transversal slopes of the runway and the runway strip. The design C.B.R. value of the proposed subgrade was determined to be 20% because the selected materials to be supplied are of good quality and their C.B.R. strength is expected to be more than 20%.

2) Type of Pavement

The pavement work for this Project was determined to be of asphalt concrete type taking into due consideration the easiness of construction, operation and maintenance as well as economical efficiency, etc. as shown in Table 5-2.

It is noted that the asphalt concrete pavement of the apron may bring about, to some extent, unfavorable conditions to the apron such as rutting, surface damage by fuel spillage, and waving. However, the asphalt concrete pavement was adopted for the reasons that the site has rather firm ground and that the aircraft to be in service are of middle size which is not so heavy, and moreover that the improvement of the apron pavement will be required in the future when the introduction of large-sized aircraft will be needed.

Table 5-2 COMPARISON BETWEEN ASPHALT CONCRETE AND CEMENT CONCRETE PAVEMENTS

	Asphalt Concrete	Cement Concrete
Total Thickness	48 cm(Asphalt Concrete thickness: 13 cm)	50 cm (Cement Concrete thickness: 35 cm)
Joint	Not needed	Needed between panels
Load Bearing	Possible rutting by channelized traffic and surface damage by fuel spillage	Very little possibility of rutting
Cost	DH245/m^2	DH521/m^2
Construction Period	Relatively short	Relatively long
Maintenance and Repair	Easier because spot repair is possible	Comparatively more difficult

3) Pavement Structure

The pavement structure of runway, taxiway and apron was designed by C.B.R. Method on the following conditions:

Design Load	:	A-300B type aircraft
Coverage	:	5,000 times
Subgrade C.B.R.	:	20 %

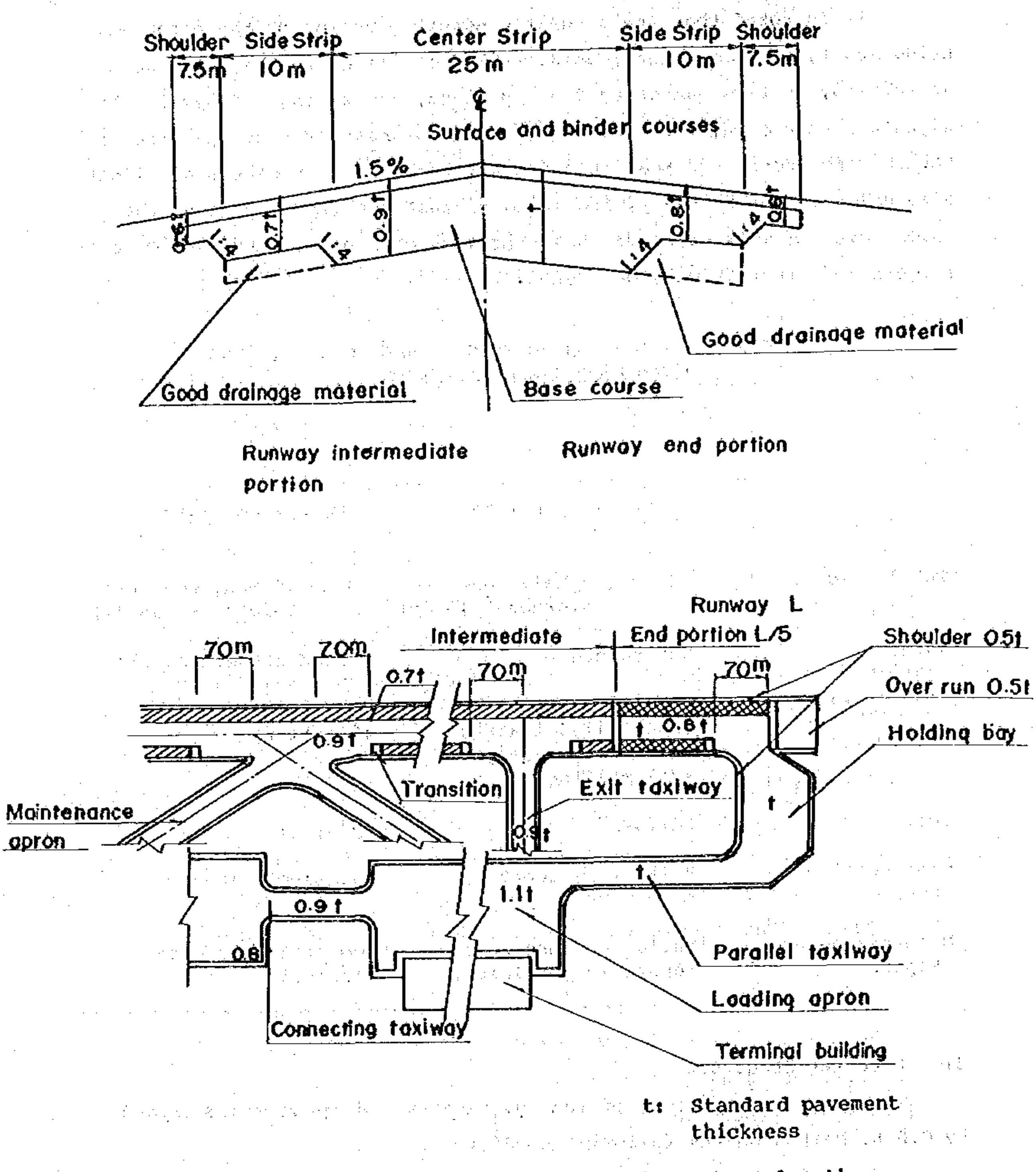


Fig. 5-3 REDUCTION OF STANDARD PAVEMENT THICKNESS

The required thickness is shown in Table 5-2, and the basis of calculation is explained in Appendix V-4, and the structure of the airfield pavement is shown in Appendix VII-5.

The reduction of standard pavement thickness will be made within a range of 10 to 50% in accordance with the estimated frequency of loading. The reduction specified in ICAO's Airport Pavement Design Manual is shown in Fig. 5-3.

5.5 SITE PREPARATION

5.5.1 Grading Plan

The proposed elevation of the site was so determined as to facilitate the cut and fill works and the supply of selected materials as well as to enable the economical execution of the works taking into account the fact that the existing ground is comparatively flat and a rock stratum exists near the ground surface. Consideration on easiness of runway extension and construction of parallel taxiway in the future was also given in this planning.

The planned longitudinal slopes of the site were determined to be 2 to 3% with a view to permit the maximum utilization of the existing ground slopes. The proposed transversal slopes were determined so that their toes will meet the existing ground surface at a distance of 105 metres from the runway center-line and an open ditch shall be provided along the toes.

The soil of existing surface layer, on which the pavement will be executed, will be replaced with selected materials. The removed soil will be re-used for filling of the runway strip.

5.5.2 Airport Drainage System

The existing open ditch which runs on the north of the site and discharges into the Selouane River at a distance of 2 km from the site, is close to the middle part of the site. Therefore, the proposed drainage facilities will be connected to this existing open ditch. The capacity of the existing open ditch was estimated to be enough to discharge the estimated rainwater.

1) Drainage System on Air and Terminal-side

The drainage systems of the proposed airport are roughly composed of the storm-drainage system along both sides of the runway and in the apron and terminal area.

The rainwater which flows into the proposed open ditches on both sides of the runway will be collected at the east end of the site and discharged into the existing open ditch at a distance of about 1.5 km from the site. The rainwater within the apron and terminal area will be collected at the middle part of the airport north boundary and be discharged into the existing open ditch at a distance of 20 to 30 metres from that point. The layout of the whole storm drainage systems is illustrated in Appendix VII-6.

2) Design Criteria

a. Run-off Estimation

The run-off of rainwater was estimated by Rational Formula as shown below:

$$Q = 1/360 \times C \times I \times A$$

where Q : Peak run-off in m^3/s.

C : Run-off coefficient

I : Rainfall intensity in mm/h based on concentration time

A : Drainage area in ha.

b. Run-off Coefficients "C"

The run-off coefficients to be employed in calculation are derived as shown below from the reference values of Coefficient "C" specified in FAA's airport drainage:

Pavement area	:	0.85
Building area	:	0.85
Sodding and Other area	:	0.30

Run-off Coefficient "C"

Type of surface	Run-off Coefficient "C"
All watertight roof surface	0.75 to 0.95
Asphalt runway pavements	0.80 to 0.95
Concrete runway pavements	0.70 to 0.90
Gravel or macadam pavements	0.35 to 0.70
Impervious soilds (heavy)*	0.40 to 0.65
Impervious soils, with turf*	0.30 to 0.55
Slightly pervious soils*	0.15 to 0.40
Slightly pervious soils, with turf*	0.10 to 0.30
Moderately pervious soils*	0.05 to 0.20
Moderately pervious soils, with turf*	0.00 to 0.10

Source: FAA's Airport Drainage
* For slopes ranging from 1% to 2%.

c. Rainfall Intensity

The rainfall intensity was analysed from the data collected for 3 years at Nador Weather Station during 1980 to 1983, and the result is shown in Appendix V-5. In the calculation, the rainfall intensity of once in 5 years was employed to obtain design discharge.

Concentration time is assumed to be the total of "overland flow time" and "channel flow time" to be employed, which were referred to FAA's Diagram and calculated by Manning's Formula respectively as follows:

$$Q = 1/n \cdot R^{2/3} \cdot I^{1/2} \cdot A$$

where

- Q : Discharge in m^3/s
- n : Coefficient of roughness
- R : Hydraulic radius in m
- I : Slope of invert
- A : Cross-sectional area in m^2

5.6 AIRFIELD LIGHTING SYSTEMS

The installation of the airfield lighting system specified in the Recommendations of ICAO ANNEX 14 and Aerodrome Design Manual Part 4 was planned as mentioned below.

Approach Lighting System (ALS) will be provided for Runway 08, and Simplified Approach Lighting System (SALT) for Runway 26 because the majority of landings will be made on Runway 08. Visual Approach Slope Indicator System (VASIS) will be provided for both of Runway 08 and Runway 26.

The layout of the proposed airfield lighting systems is illustrated in Appendix VII-7.

5.7 AIRPORT TERMINAL FACILITIES

5.7.1 Passenger Terminal Building

1) Passenger Terminal

The passenger terminal building was planned so as to meet the concept composed of pattern of aircraft parking on the apron, passenger handling system, passenger flow plan and pattern of C.I.Q. and other passenger processing in order to realize simple passengers movement and shortest walking distance in the terminal building. At the same time future expansion of the terminal building was considered in order to sufficiently handle the increased number of passengers from the economic view of point.

a. Pattern of Aircraft Parking for Passengers' Embarkment and Disembarkment

The four patterns such as remote stands served by vehicle, satellite or pavillion terminals, piers stands and linear stands are commonly employed. Out of them, the linear stands type is preferable for the expected air traffic volume at the Nador New Airport because of such advantages as minimum disturbance to terminal operations and easy expansion of terminal building without relocation of aircraft stands in the future.

b. Pattern of Passengers' Getting in and out of the Terminal Building and Path of Passengers' Flow in the Terminal Building

There are normally two alternatives for passengers' entry into and leaving from the terminal building: either both on the ground floor or separately on two floors. In view of the air traffic volume, it is recommendable to use the ground floor for both entry into and leaving from the terminal building. Hazards on apron to passengers' pass, apron security problems, impossibility of addition of bridges in later stage, and poor passenger handling in inclement weather etc. seem to become disadvantageous for a single-floor passenger handling. However, since air traffic volume of the new airport is not expected to be so high, the disadvantages mentioned above will not become crucial even if the design of a single floor terminal building was employed.

The planned flow of passengers movements in the passenger terminal is shown in Fig. 5-4.

c. Pattern of C.I.Q. and Other Passenger Processing

The centralized concept for C.I.Q. and other passenger processing can avoid duplication of functions in staff and facilities, because at the Nador New Airport the Government and the airline staff may be engaged in ground operations and formalities for both international and domestic flights. The initial capital cost and annual operating costs of the centralized system would be lower than those of the decentralized system.

d. Configuration of Required Facilities in Terminal Building

The configuration of required facilities in the terminal building is shown in Fig. 5-5 (b). In this study future expansion of terminal building was considered to meet the increased demand in the future from the economic view of point. From this viewpoint, as shown in the floor plan of the terminal building in Fig. 5-5 (b), the restaurant, VIP room and offices equipped with complicated equipment are planned to be located on the west side of the building for the purpose of providing enough space for the future expansion on its eastside.

The features of the terminal building are shown in Fig. 5-5 (a), (b) and (c).

2) Administration Offices

The administration offices were planned to be housed on the first floor of the terminal building not so as to disturb the passenger's movements on the ground floor in order to spare the construction of independent facilities for the administration and airline offices, thus resulting in cost saving.

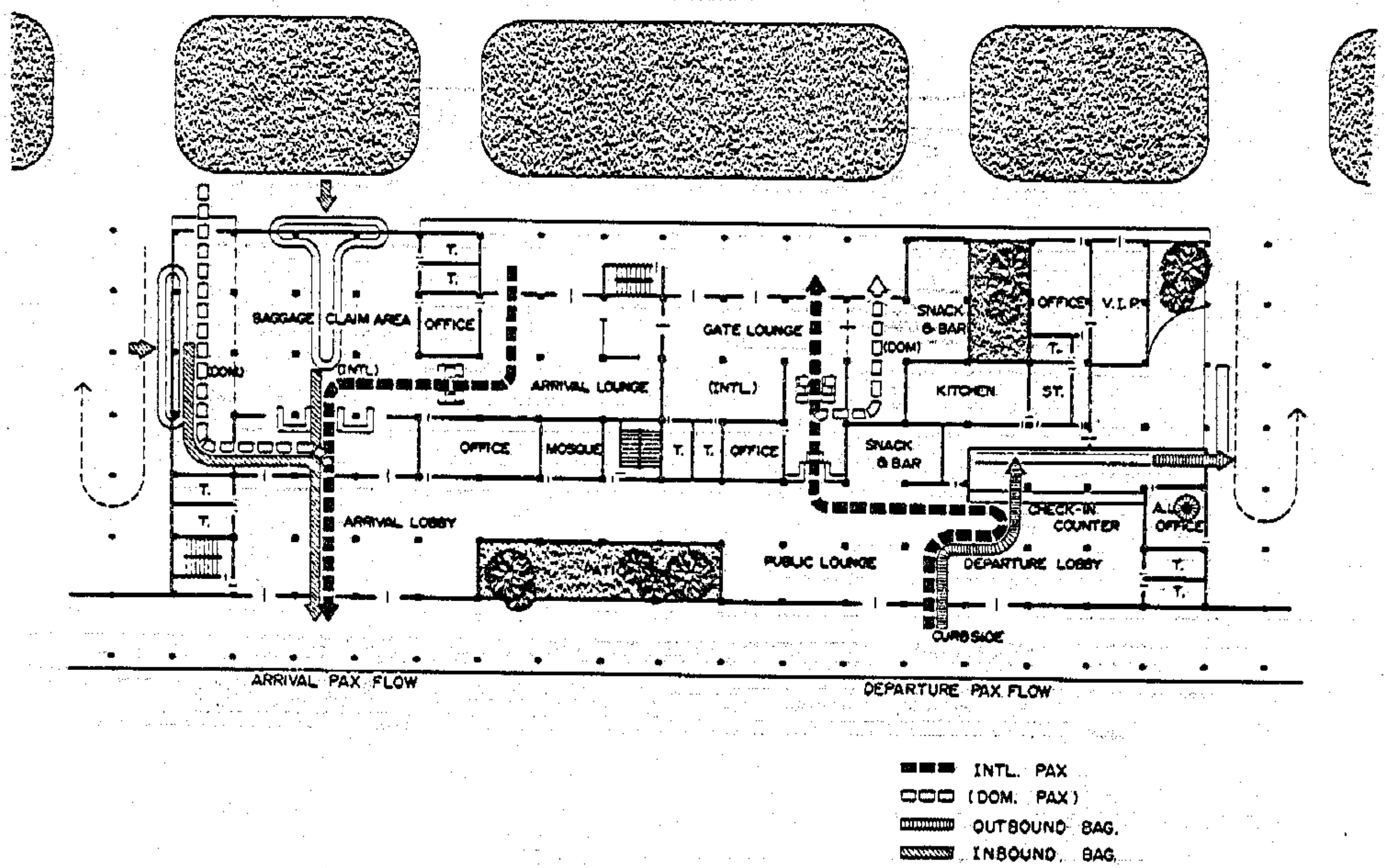


Fig. 5-4 PASSENGER FLOW IN PASSENGER TERMINAL

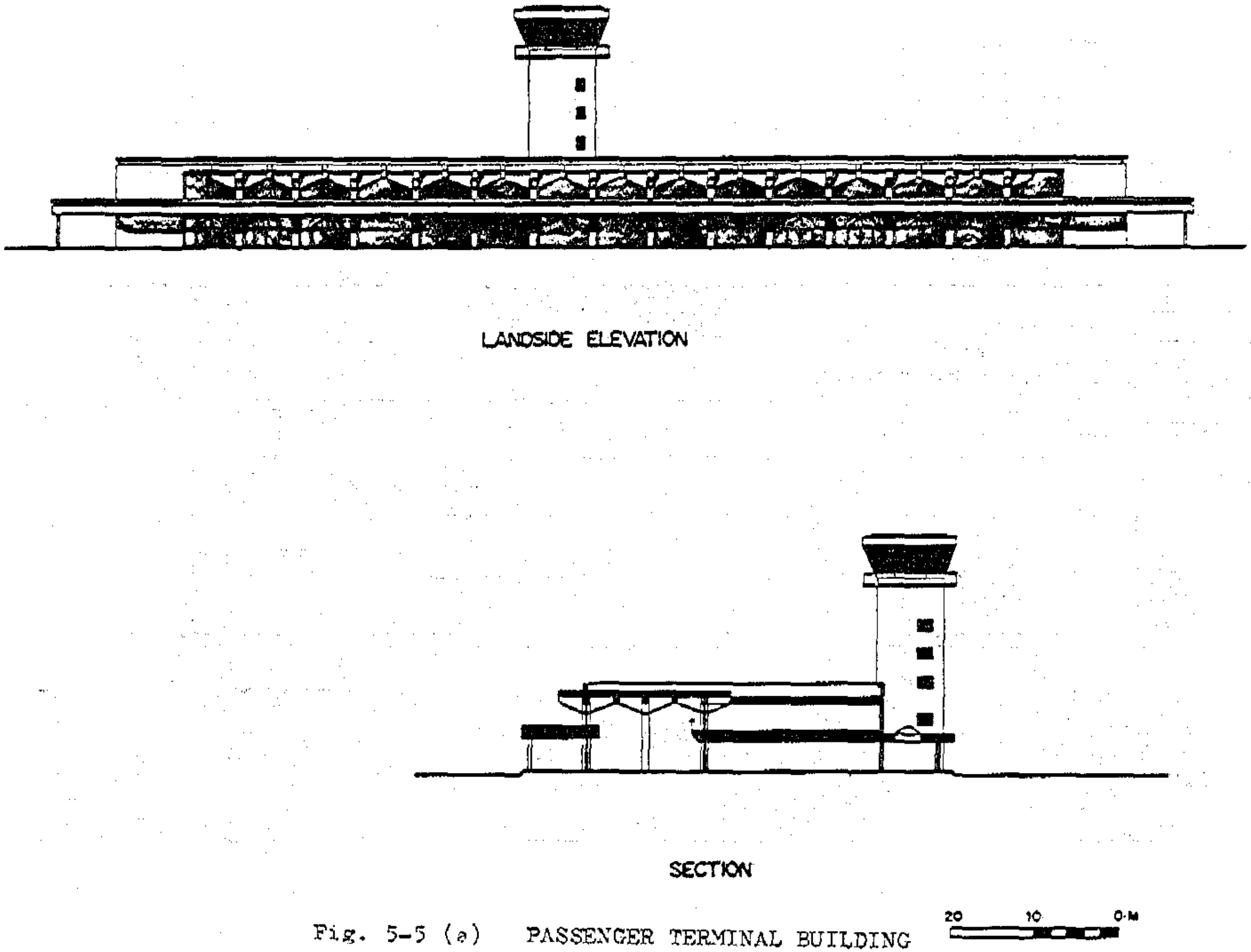
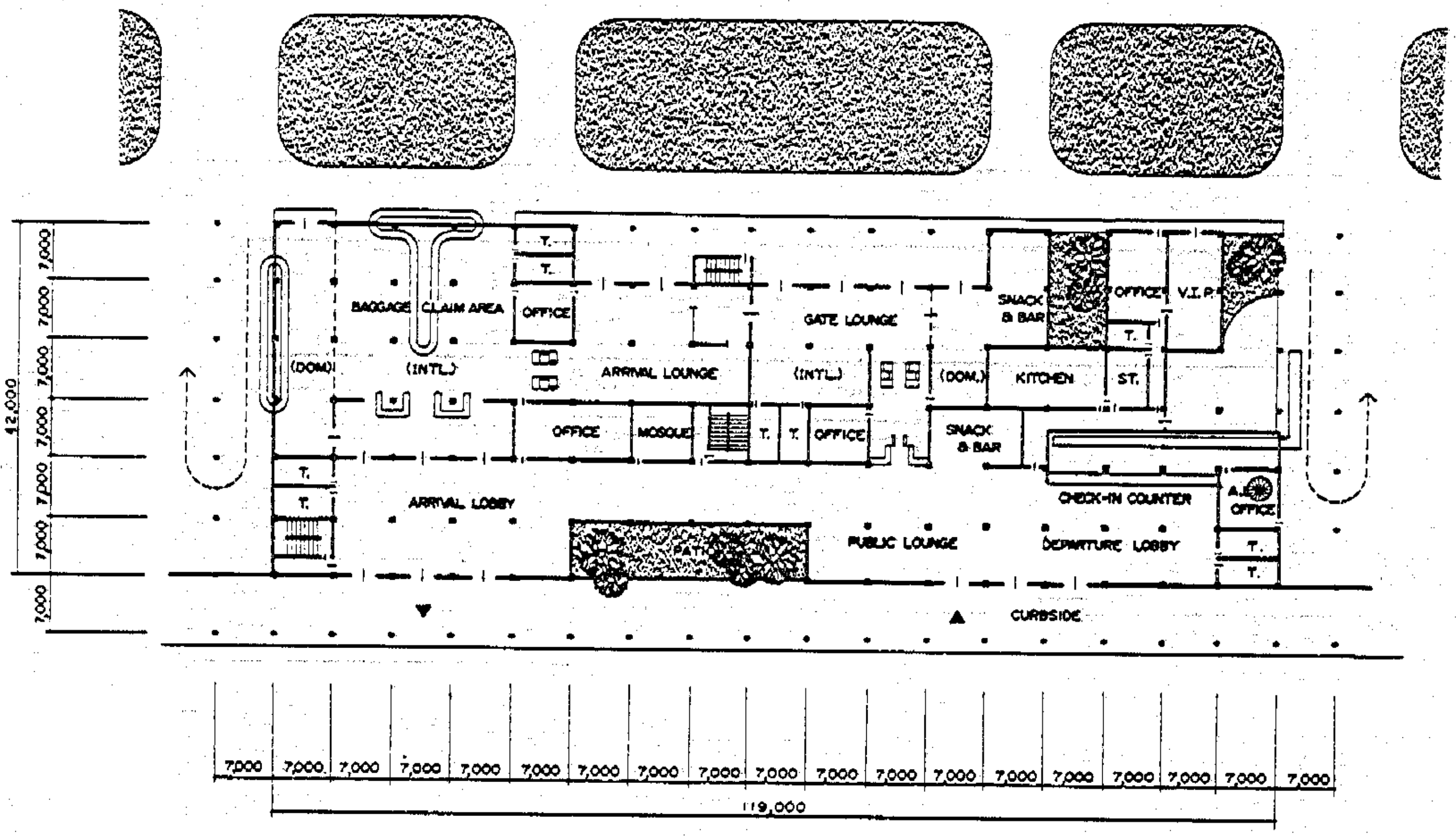


Fig. 5-5 (a) PASSENGER TERMINAL BUILDING



GROUND FLOOR PLAN

Fig. 5-5 (b) PASSENGER TERMINAL BUILDING

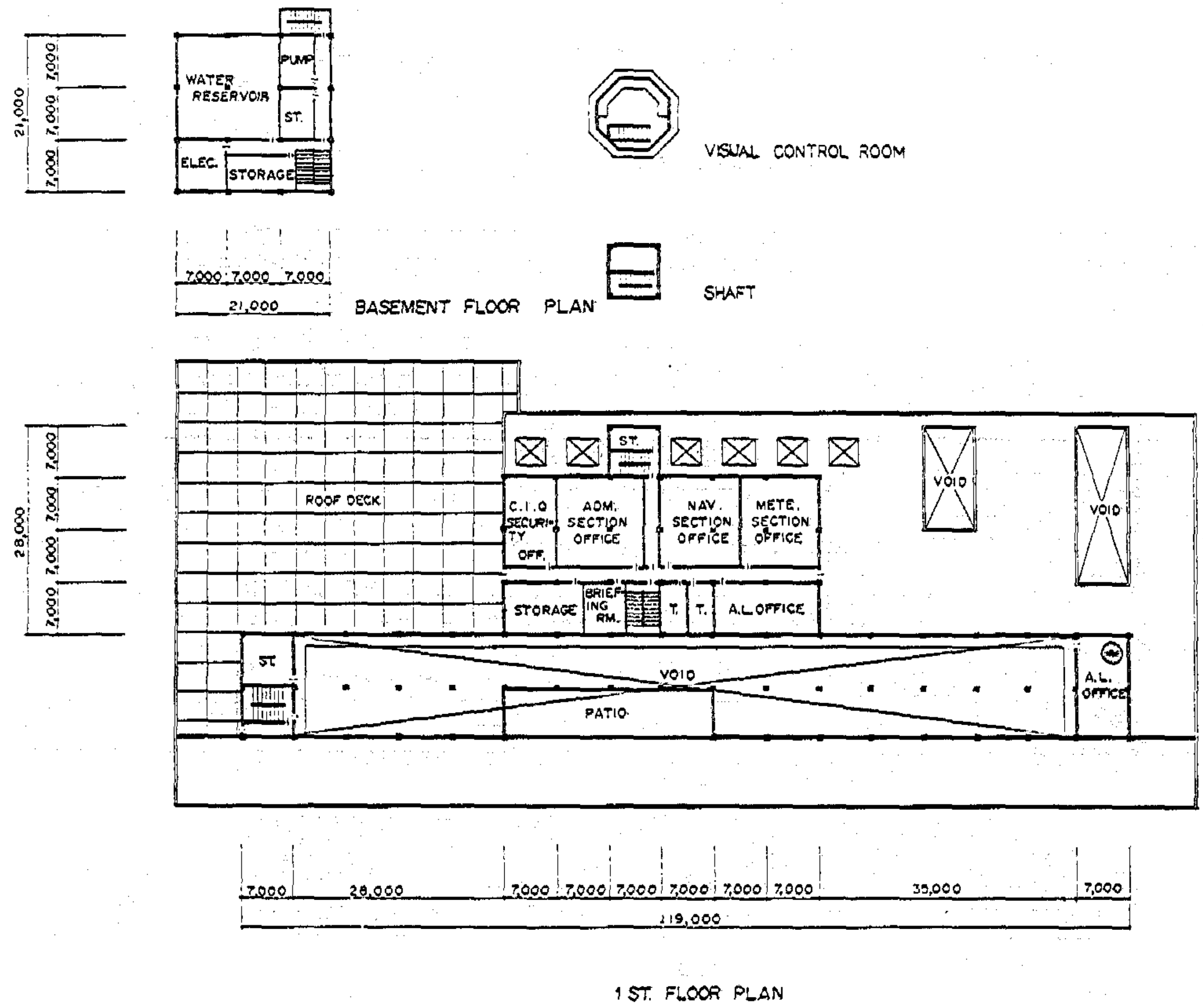


Fig. 5-5 (c) PASSENGER TERMINAL BUILDING

3) Navigation Control Tower and Meteorological and Telecommunication Facilities

The control tower and the communication and meteorological facilities are closely inter-related in their functions, and therefore the communication and meteorological facilities were combined into one and placed at the air-side on the first floor of the terminal building. The control tower was planned to be placed on the rooftop of the terminal building securing necessary height in order to ensure maximum view of the apron, the taxiway and the runway from the control tower. It was considered to provide the stairs leading to the administration section, the control tower and other offices directly from the apron without entering the terminal building.

5.7.2 Other Facilities

1) Maintenance Center Building

Maintenance center building was so placed to the west of the terminal building as to facilitate speedy performance of maintenance operations of the airport facilities. The features of the maintenance center building are shown in Appendix VII-11, 12.

2) Rescue and Fire-fighting Facilities

These facilities were so planned on the west side of the maintenance center building as to facilitate speedy mobilization in case of emergency. The features of the said station are shown in Appendix VII-13.

3) Main Substation

Main substation will be placed to the south-west of the terminal area for the sake of optimum layout of the electric power distribution system of the airport. The features of the main substation are shown in Appendix VII-14.

4) Aviation Fuel Storage Facilities

Aviation fuel storage facilities will be placed to the west of the terminal area away from other facilities of the airport for reasons of safety and security, but not too far from the approach road so as to facilitate bulk delivery of fuel.

5.8 ACCESS ROAD AND CAR PARKING

The existing access road connecting with National Road P. 39 at a distance of approximately 1 km from the airport, has 10 metres in width and bituminous treated surface, and the alignment of the road within the proposed airport was planned to enable the smooth traffic flows between them.

The car parking, which requires an area shown in Table 4-1, was planned to be provided in front of the terminal building with enough space for double extension in area from the year 2000 as mentioned in Sub-section 4.8.2.

CHAPTER 6

FLIGHT OPERATIONS

CHAPTER 6

FLIGHT OPERATIONS

6.1 GENERAL

Due to several obstacles existing in and around the project site, certain measures were taken to ensure necessary clearance between the limitation surfaces and some obstacles as well as to establish the approach procedures with enough clearance between actual flight path and the said obstacles (Refer to Fig. 6-1 and 6-2).

Details of the preferable approach procedures and required navigational systems which have been designed based on the results of survey and study for the above-mentioned purposes are described hereinafter. Especially regarding the approach procedures for the RWY 08 which requires more accurate flight path to keep necessary clearance from the top of mountains during approach, the study team proposed to set ILS approach which was attested by ICAO CRM (collision risk model), computer analysis for more flight safety. The result of this computer analysis indicates that this ILS approach has such a quite high safety level as total risk is 2.6×10^{-8}. Further explanations and data concerning this CRM are referred to in Section 6.2 and in APPENDIX VI.

6.2 OBSTACLE ANALYSIS

Obstacles have been analysed on the basis of operational requirements of instrument approaches and landings at the project site.

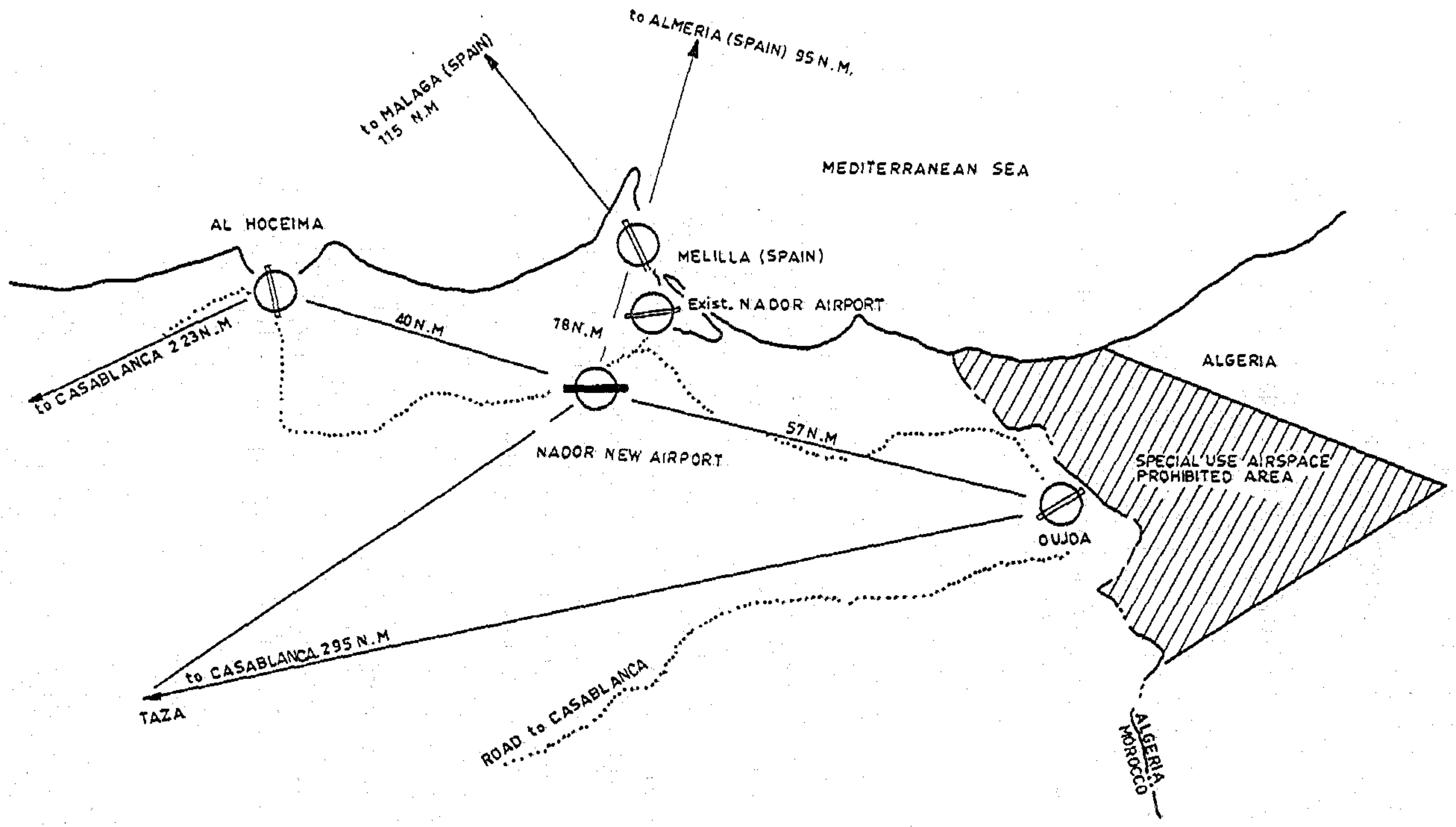
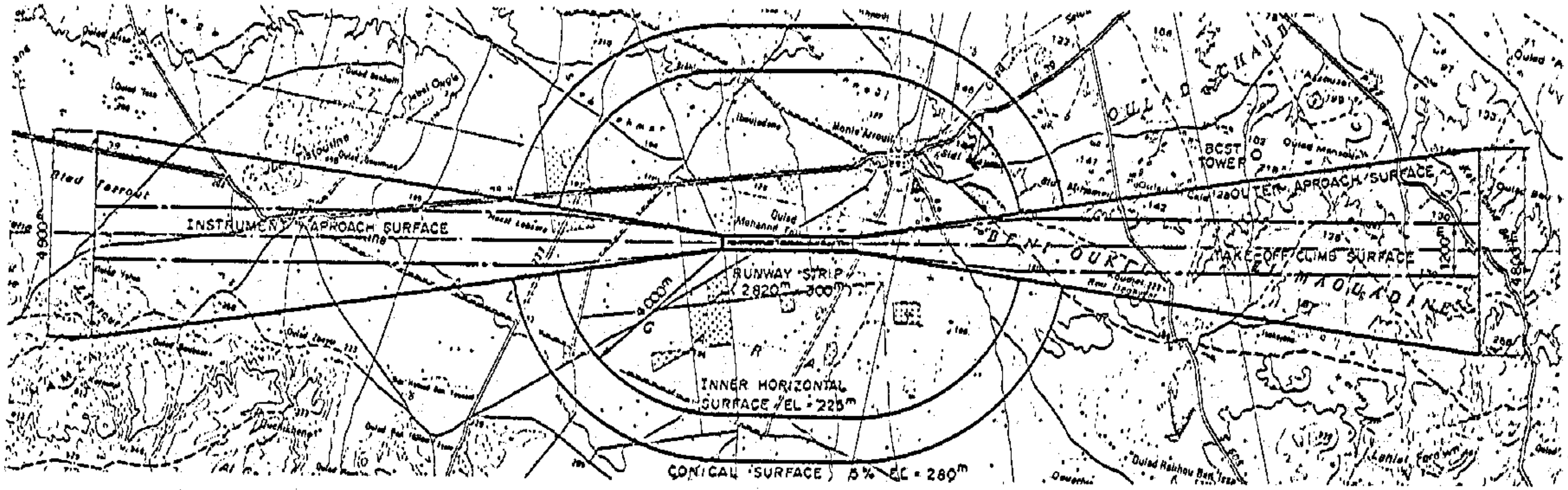


Fig. 6-1 LOCATION OF EXISTING AIRPORTS AND PROJECT SITE OF THE NADOR NEW AIRPORT



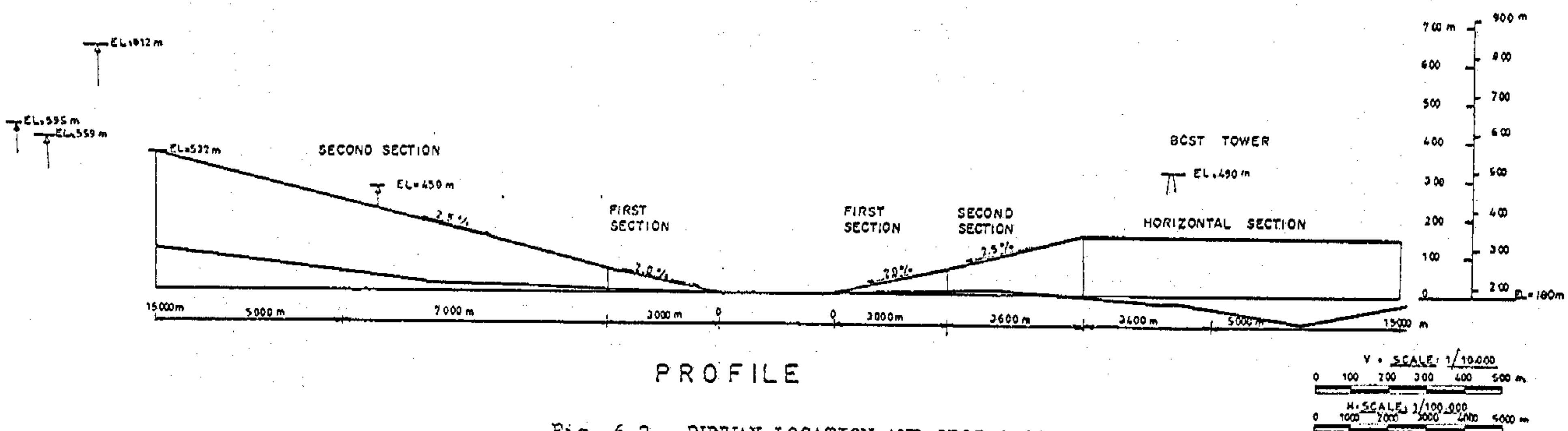


Fig. 6-2 RUNWAY LOCATION AND OBSTACLES

6.2.1 Basic Conditions of Procedure Planning

The planning of the procedures was made based on the basic conditions assumed for the purposes as tabulated in Table 6-1.

Table 6-1 BASIC CONDITIONS OF PROCEDURE PLANNING

Description	Conditions	Remarks
Runway Orientation Designation	N 78° 16' E 08 - 26	VAR 5° W
Type of Approach	Instrument Approach for Runway 08 (Precision Approach) and for Runway 26 (Non-Precision Approach)	Precision Approach is of CAT-1
Operating Aircraft	Category D	B-747, A-300, B-707, B-727, etc.
Runway Length	2,700 m	400 m Eastward Extension in Future
Touchdown Zone Elevation	Runway 08 Threshold 181 m Runway 26 Threshold 175 m	Elevated Runway Surface by 1-2 m

6.2.2 Obstacles

Examination was made basically on the maps of 1 : 50,000 scale to identify the location and nature of objects constituting obstructions within the airspace defined by the obstacle limitation surfaces in ANNEX 14 and PANS-OPS Basic ILS Surfaces. Obstacles to which special attention was paid are as follows.

a. West-side Mountain

It is planned that the threshold of the runway at its west end (threshold 08) will be located at the co-ordinates 34^{o} 59' 32" N and 03^{o} 01' 45" W, and future extension of the runway will be made eastwards so that the top of the mountain on the west side does not penetrate the ANNEX 14 Instrument Approach Surfaces and PANS-OPS Basic ILS Surfaces.

b. Northeast Broadcasting Tower

Regarding the very high tower of the Radio Mediteraneen International Broadcasting Station located on the northeast side of the project site, the result of the actual measurement of the tower confirmed its altitude at 490 m and its height of 380 m. However, although its location is out of the conical surface, careful consideration should be required to work out approach and missed approach procedures to maintain safety of flight operations.

c. East-side High Voltage Power Cable

So far, the existing high voltage cable line of 30 m high which is now at a distance of about 2,300 m from the runway end and will get closer to it at a distance of 1,900 m when the runway extension will be completed in future, does not penetrate the obstacle limitation surface provided for in ANNEX 14. But it seems necessary to design some measure of warning the pilots of the existence of such high voltage cable near the runway. In case its height would be increased sometime in future, special attention will be required to deal with this matter.

6.3 FLIGHT OPERATION PROCEDURES

Following is the plan for approach procedures prepared taking into account the problems discussed in Section 6.2. Matters for which special attention was paid in the formulation of this plan are also described below.