AD 2. AERODROME

VNKT AD 2.1 AERODROME LOCATION INDICATOR AND NAME

VNKT - TRIBHUVAN/International

VNKT AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1.	ARP Coordinates and site at AD	274149.727 N 0852128.527 E *
2.	Direction and Distance from (city)	5.56 Km, East of Kathmandu City
3.	Elevation/Reference Temperature	1339.54 m (4394.76 ft)/29.81°C
4.	MAG VAR/Annual Change	0° W
5.	AD Administration, address Telephone, Telefax, Telex AFS	Civil Aviation Authority of Nepal Tribhuvan International Airport Civil Aviation Office (TIACAO) Tel +977-1-4113163, 977-1- 4113033 Fax +977-1-4113180 AFS - VNKTYDYX
6.	Types of traffic permitted (IFR/VFR)	IFR / VFR
7.	Remarks	-

VNKT AD 2.3 OPERATIONAL HOURS

1.	AD Administration	SUN-THU 10:00 -17:00 LT (SUMMER), 10:00-1600 LT (WINTER), FRI 10:00-1500 LT
2.	Customs and immigration	0015-1845 UTC**
3.	Health and sanitation	0015-1845 UTC**
4.	AIS Briefing Office	As ATS
5.	ATS Reporting Office (ARO)	As ATS
6.	MET Briefing Office	H24
7.	ATS	*1) From Nov 16- Feb 15 (0045-2115) UTC* *2) From Feb 16- Nov 15 (0015 -2115) UTC***
8.	Fuelling	0015-1845 UTC**
9.	Handling (Cargo)	0015-1845 UTC
10.	Security	H24
11.	Remarks	Any change will be notified via NOTAM

* *WGS -84 Coordinates*
** *Extension of service available with prior permission from General Manager/TIA*

VNKT AD 2.4 HANDLING SERVICES AND FACILITIES

1.	Cargo-handling facilities	Available with local airlines operator
2.	Fuel/Oil Types	JET A-1 / Not available
3.	Fuelling facilities/capacity	**Storage Capacity (KL):** Physical -7640, Mobile-161 **Storage Type:** Vertical Tank (1600×3, 760×3), UG Tank (70×8), Refueller **Refueller Details:** AR26, 27, 38 (27 KL), AR34, 35, 36, 37, 40 (16 KL)
4.	De-icing facilities	NIL
5.	Hangar space for visiting aircraft	NIL
6.	Repair facilities for visiting aircraft	NIL
7.	Remarks	-

VNKT AD 2.5 PASSENGER FACILITIES

1.	Hotels	Hotels in the city
2.	Restaurants	Available at AD and in the city
3.	Transportation	Airport Taxi Service, Buses from AD
4.	Medical Facilities	First Aid treatment, rest room, two ambulances available at AD, Hospitals in the city.
5.	Bank and Post Office	Available at AD within AD HRS
6.	Tourist Office	Tourist information center, TIA. Tel :4470537
7.	Remarks	-

VNKT AD 2.6 RESCUE AND FIRE FIGHTING SERVICE

1.	AD Category for fire fighting	Category IX
2.	Rescue equipment	Available as per Category.
3.	Capability for removal of disable aircraft	Available
4.	Remarks	-

VNKT AD 2.7 SEASONAL AVAILABILITY

Aerodrome is available throughout the year.

VNKT AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designation RWY NR	TRUE & MAG BRG	Dimensions of RWY M	Strength PCN and surface of RWY and SWY	THR Coordinates RWY end coordinates	THR elevation
1	2	3	4	5	6
02	022°	3050 x 46	54 F/ A/W/T	274101.964 N * 0852112.202 E -	1316.9m 4320 '
20	202°	3050 x 46	54 F/A/W/T	274230.058 N * 0852152.283 E 274233.762 N* 0852153.969 E	1339.5m 4395 '
Slope of RWY-SWY	SWY Dimensions M	CWY Dimensions M	Strip Dimensions M		Remarks
7	8	9	10	11	12
1.2 %	123	245x 150 150x150	3140x150		

VNKT AD 2.13 DECLARED DISTANCES

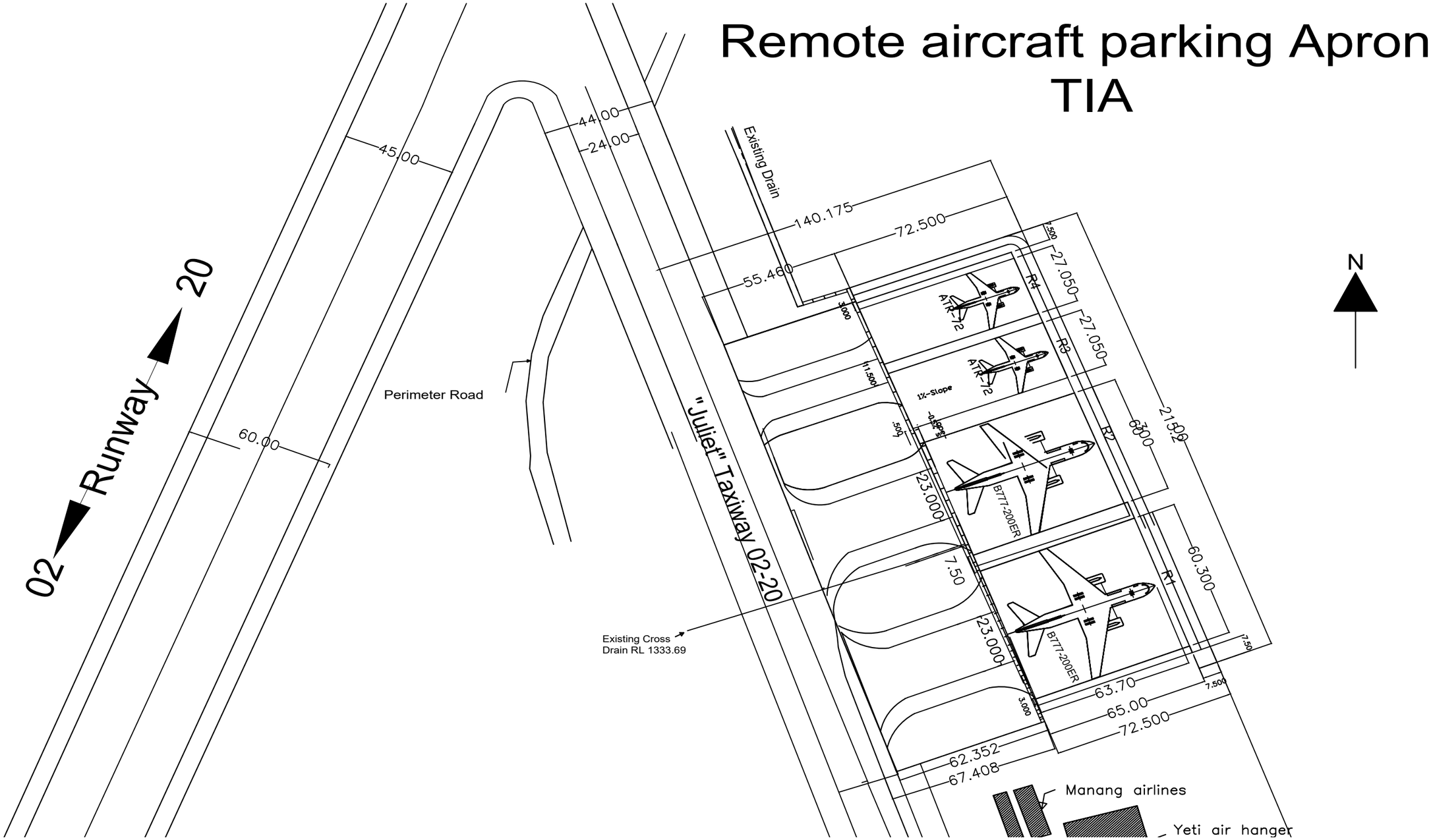
RWY Designator	TORA m	TODA m	ASDA m	LDA m	Remarks
1	2	3	4	5	6
02 20	3050 3050	3200 3295	3050 3050	3050 2927	

VNKT AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY Designator	APCH LGT Type Length INTST	THR LGT color WBAR	VASIS PAPI	TDZ LGT LEN	RWY Center Line LGT Length, spacing color, INTST	RWY edge LGT LEN, spacing color INTST	RWY End LGT Color	SWY LGT LEN M Color	Remarks
1	2	3	4	5	6	7	8	9	10
02	870M (29 X30) LIH (High intensity consisting of extended center line)	Green	PAPI 3.00°	NIL	NIL	High intensity, bi-directional raised white amber edge lights	Red	NIL	
20	NIL	Green	PAPI 3.00°	NIL	NIL	Bi-directional raised white amber edge lights	Red	NIL	PAPI RWY 20 is restricted to be usable within 3NM from Run-way Threshold with clearly visible.

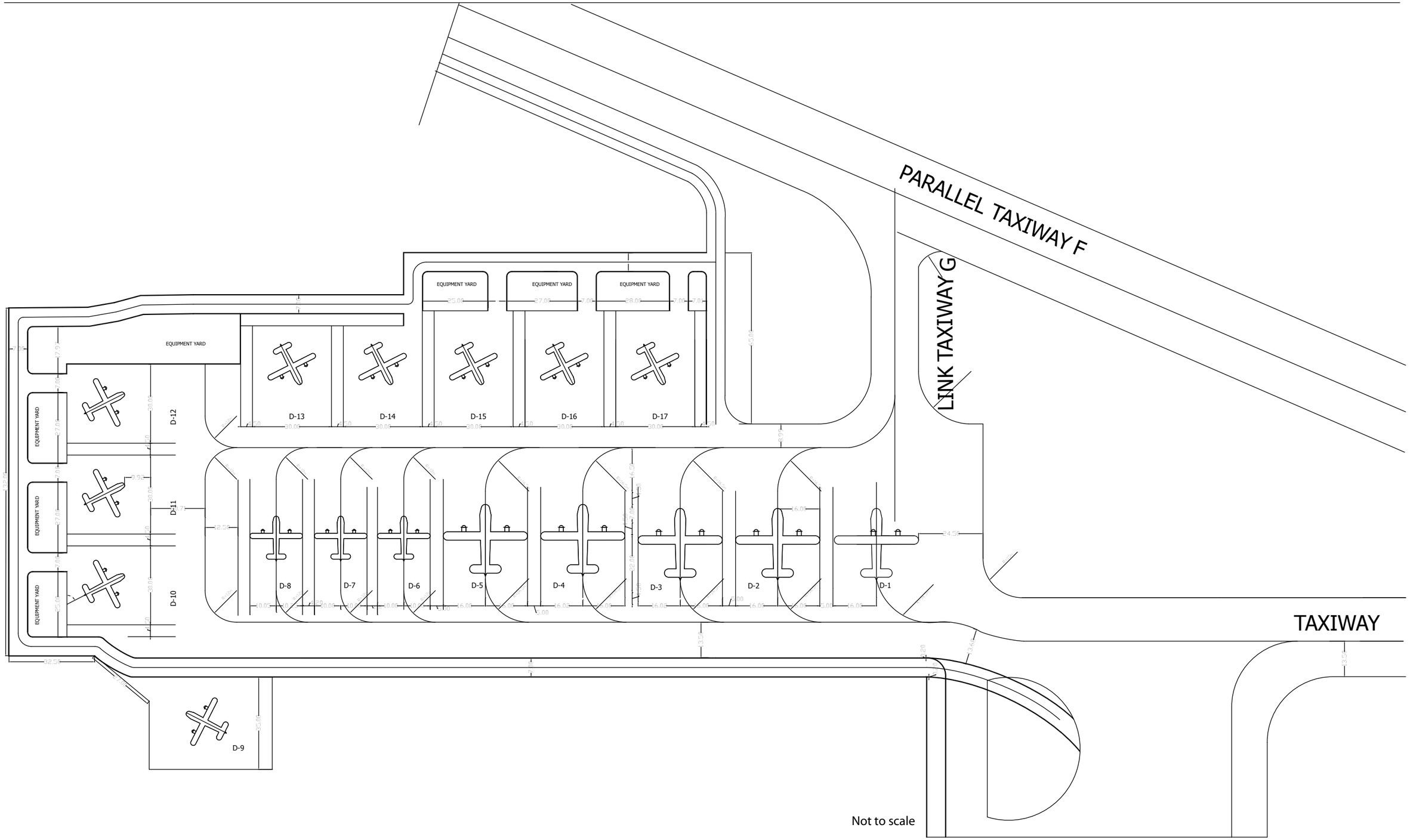
* WGS -84 Coordinates

Remote aircraft parking Apron TIA



AIRCRAFT STAND	COORDINATES(LAT, LONG.)	ELEVATION (M. AMSL)	AIRCRAFT TYPE	SURFACE & STRENGTH
BAY- R1	27°41'55" N , 085°21'50" E	1335.027	B777-200ER AND SIMILAR AIRCRAFT TYPES	RIGID PAVEMENT / DESIGN AIRCRAFT B777-200 ER
BAY- R2	27°41'57" N , 085°21'49" E	1335.230	B777-200ER AND SIMILAR AIRCRAFT TYPES	
BAY- R3	27°41'58" N , 085°21'48" E	1335.399	ATR- 72 AND SIMILAR AIRCRAFT TYPES	RIGID PAVEMENT / DESIGN AIRCRAFT ATR-72
BAY- R4	27°41'59" N, 085°21'48" E	1335.517	ATR-72 AND SIMILAR AIRCRAFT TYPES	

AIRCRAFT PARKING CHART- ICAO (DOMESTIC)



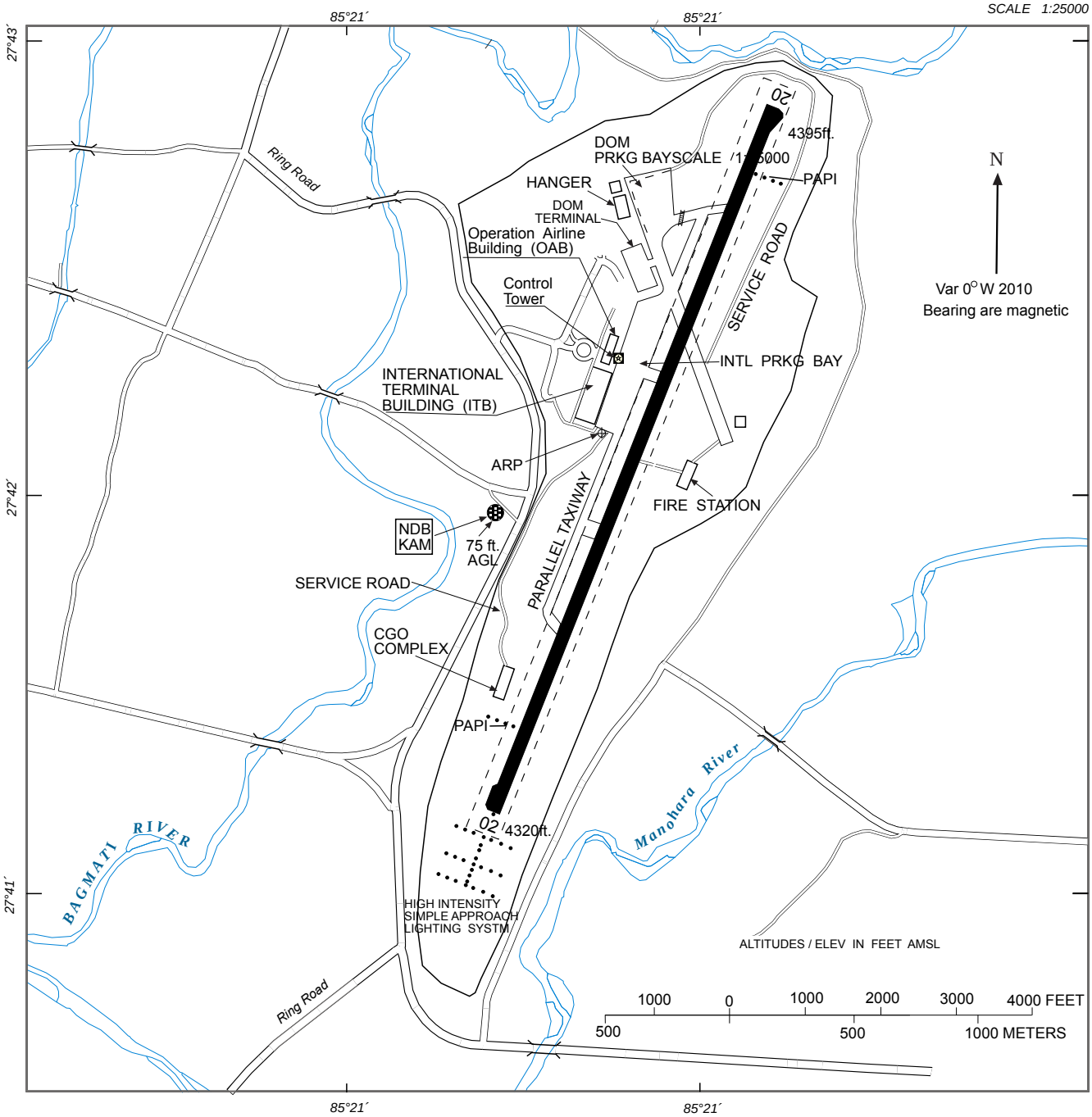
AERODROME GROUND MOVEMENT CHART - ICAO

APRON ELEV 4395 ft.

TWR	118.1
GND	121.9
ATIS	127.0

KATHMANDU, NEPAL
Tribhuvan Int'l

SCALE 1:25000



Airport Lighting

Approach lighting RWY 02 High intensity Cat-I Lighting System

RWY Lighting System

White high intensity edge light of variable brillance.

PAPI RWY 20 / 02

Medium Intensity of variable brillance (Angle 3.0°)

THR. Other Lighting

ABN, flood. obstructions

FIRST DISTANCE TO GO MARKER AT 188M. FROM THR REMAINING MARKERS 305M APART LOCATED 2.1 M FROM RWY EDGE.

AIRPORT OPERATING MINIMA

TAKE OFF RWY 02-20

RUNWAY DECLEARED DISTANCES

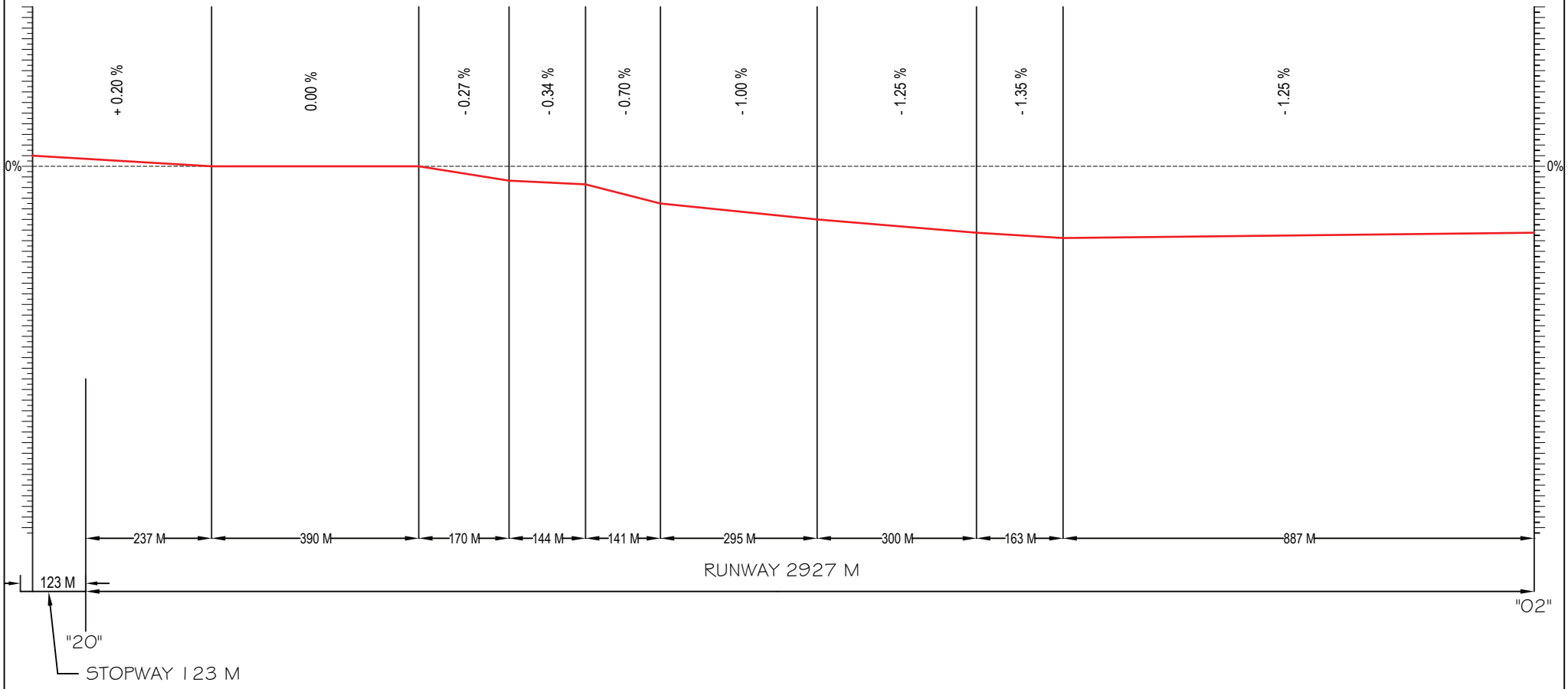
RWY	TORA	TODA	ASDA	LDA
02	3050	3200	3050	3050
20	3050	3295	3050	2927

VOR Check Points :TWY A (27°42'20.412"N; 085°21'44.042"E)
TWY E (27°41'27.270"N; 085°21'18.489"E)

TURBO Prop ACFT	1 & 2 ENG	1600M	VISIBILITY
	3 & 4 ENG	800M	
Jet / ACFT	2 OR MORE ENG	800M	

SLOPE: LONGITUDINAL PROFILES OF RWY, SWY AND CWY

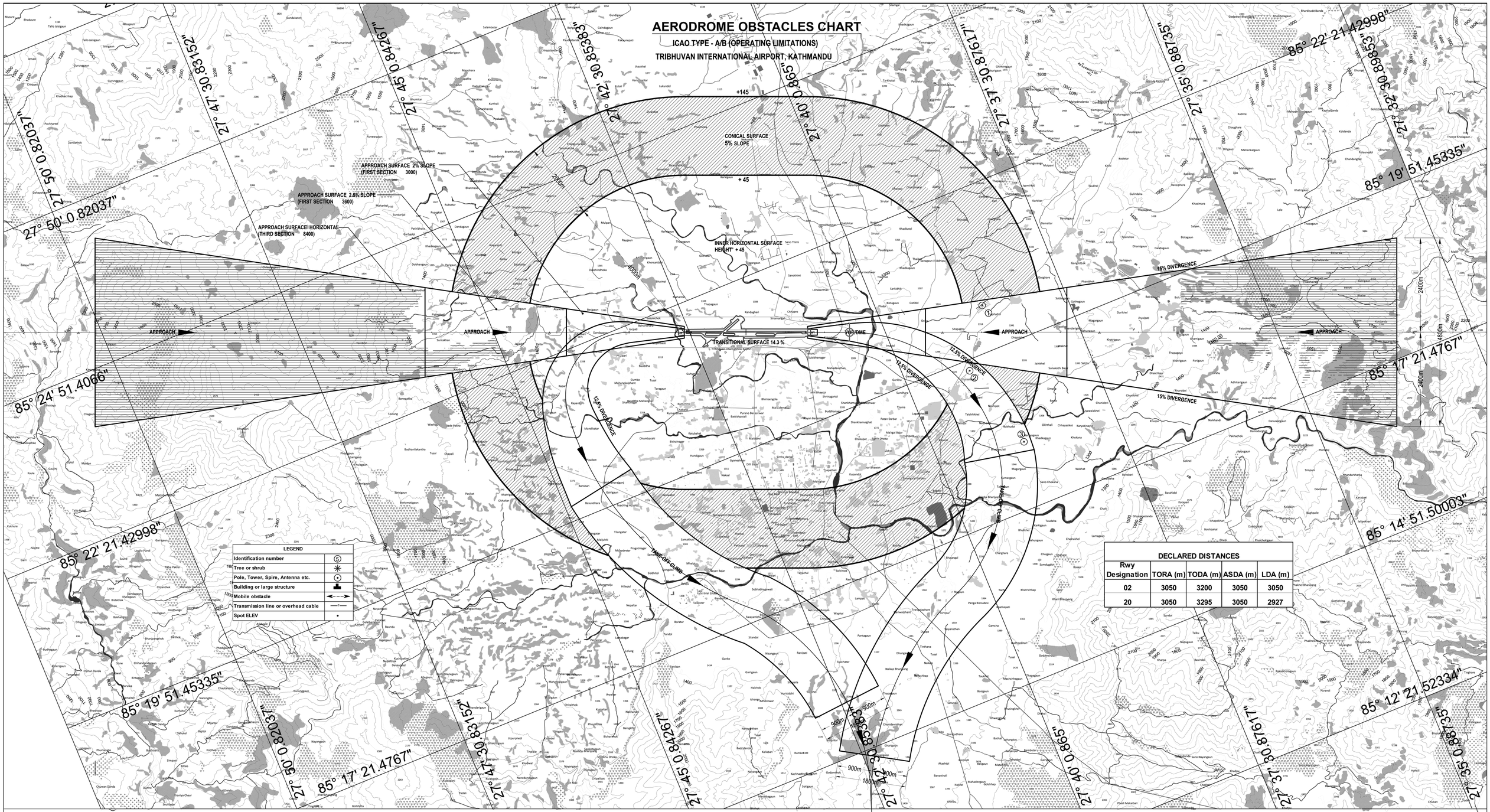
RUNWAY 02/20 LONGITUDINAL SLOPE



AERODROME OBSTACLES CHART

ICAO TYPE - A/B (OPERATING LIMITATIONS)

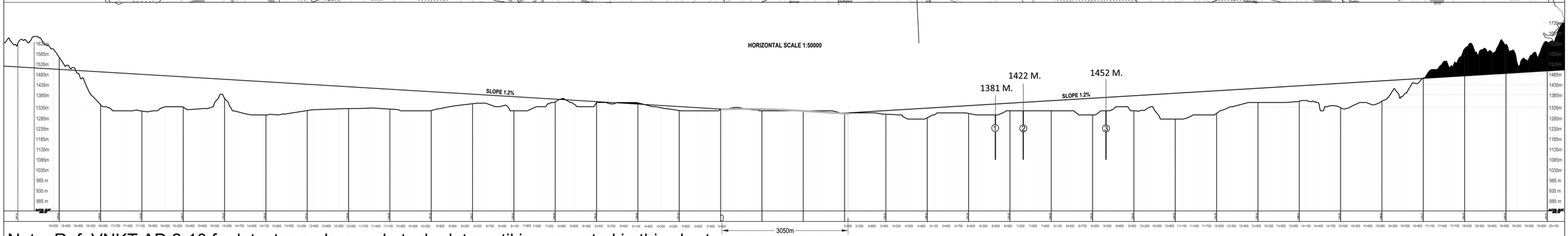
TRIBHUVAN INTERNATIONAL AIRPORT, KATHMANDU



LEGEND	
Identification number	⑤
Tree or shrub	✳
Pole, Tower, Spire, Antenna etc.	⊙
Building or large structure	
Mobile obstacle	◄- - -►
Transmission line or overhead cable	—/—
Spot ELEV	•

DECLARED DISTANCES				
Rwy Designation	TORA (m)	TODA (m)	ASDA (m)	LDA (m)
02	3050	3200	3050	3050
20	3050	3295	3050	2927

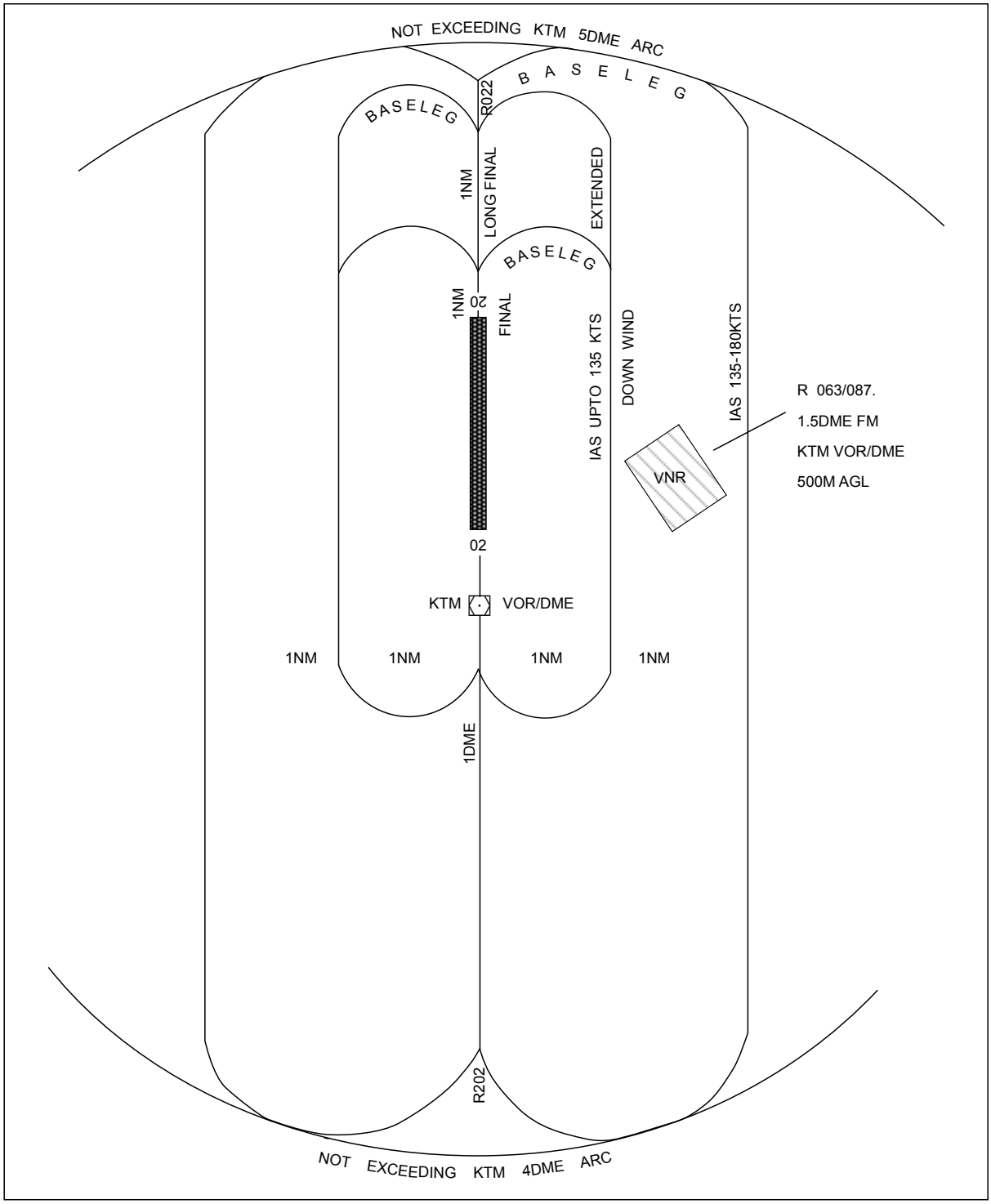
HORIZONTAL SCALE 1:50000



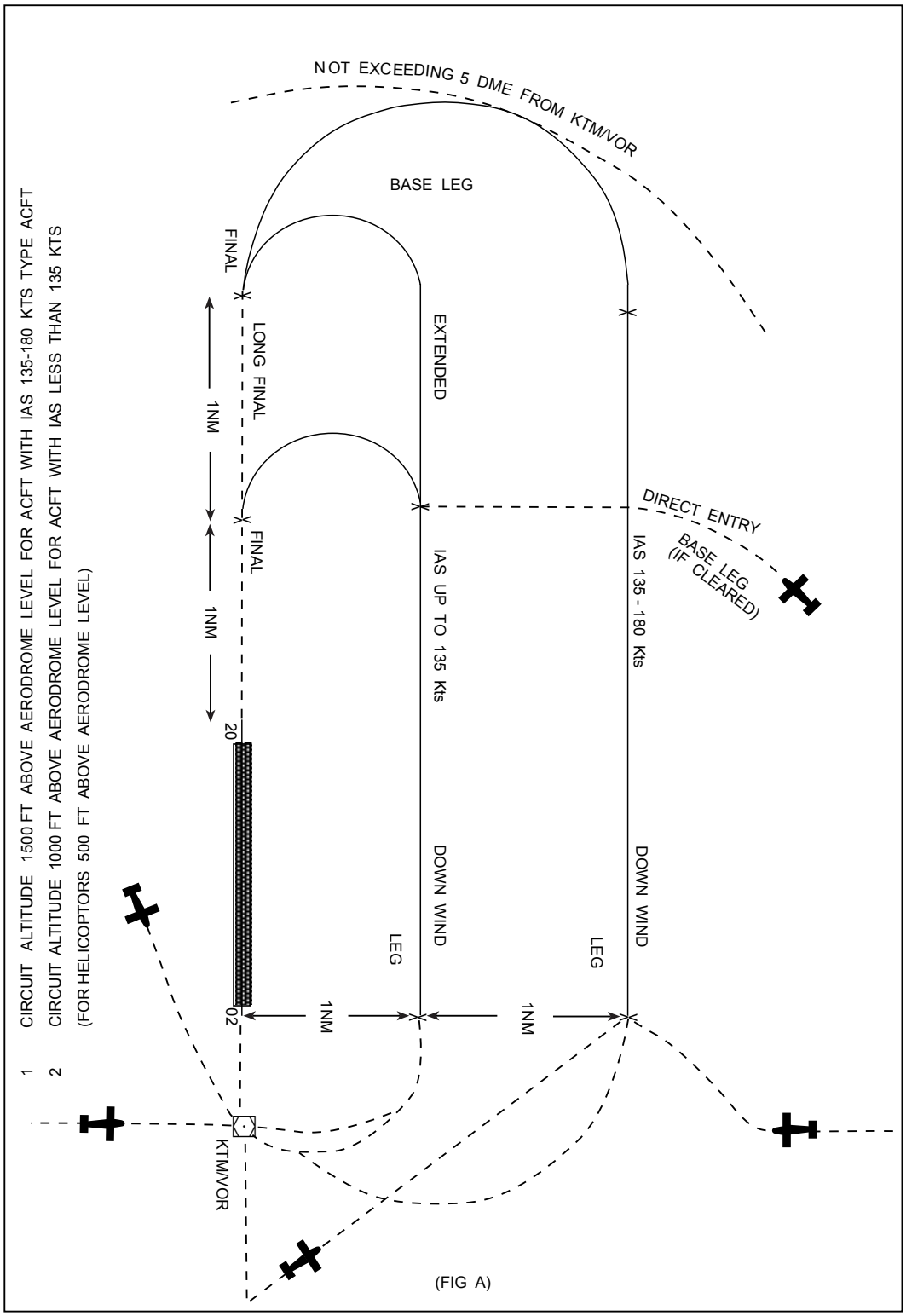
TAKE OFF CLIMB PROFILE
VERTICLE SCALE FACTOR : 5

Note: Ref. VNKT AD 2-10 for latest aerodrome obstacle data until incorporated in this chart.

TIA
VISUAL AERODROME TRAFFIC CIRCUIT

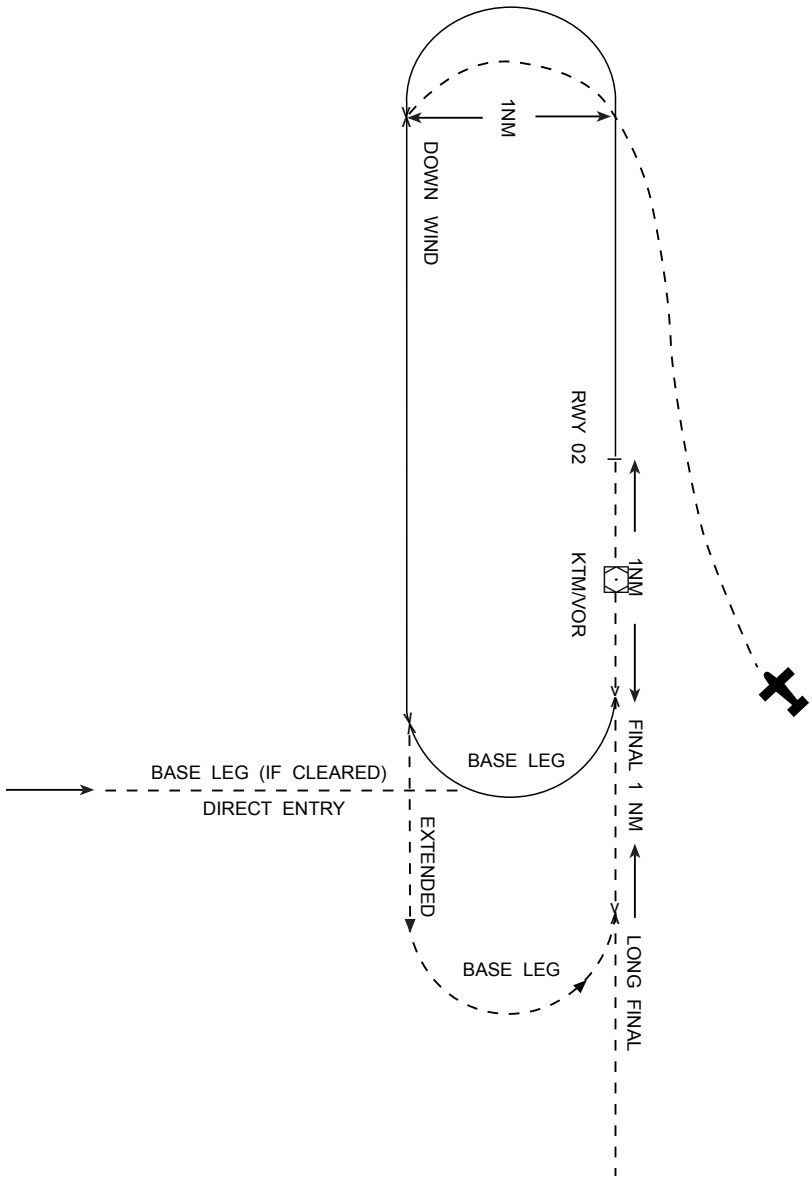


VISUAL AERODROME TRAFFIC CIRCUIT AT TIA



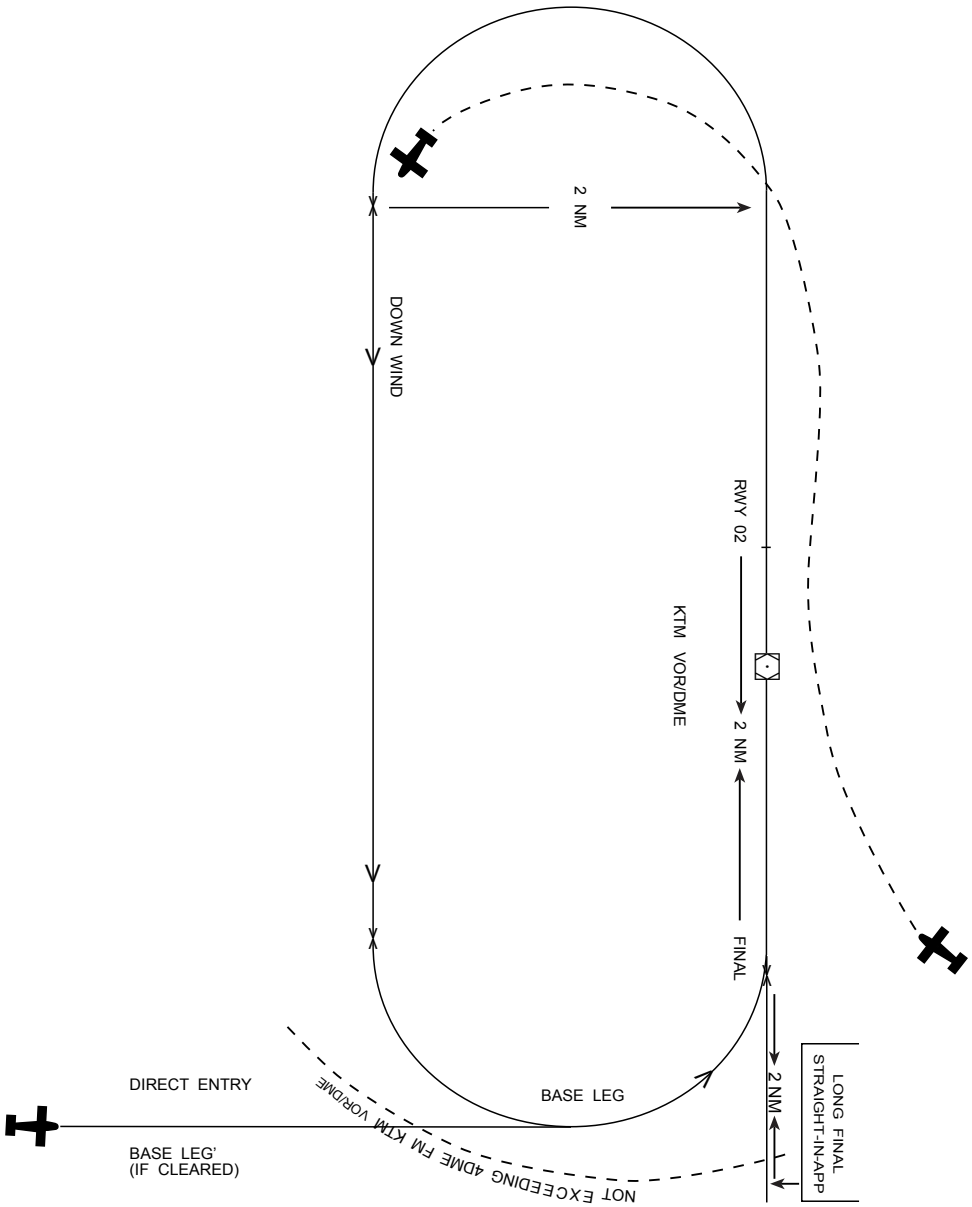
(FIG A)

AERODROME TRAFFIC CIRCUIT RWY 02 FOR. ACFT WITH IAS LESS THAN 135 KTS, CIRCUIT ALTITUDE 1000 FT. ABOVE AERODROME LEVEL



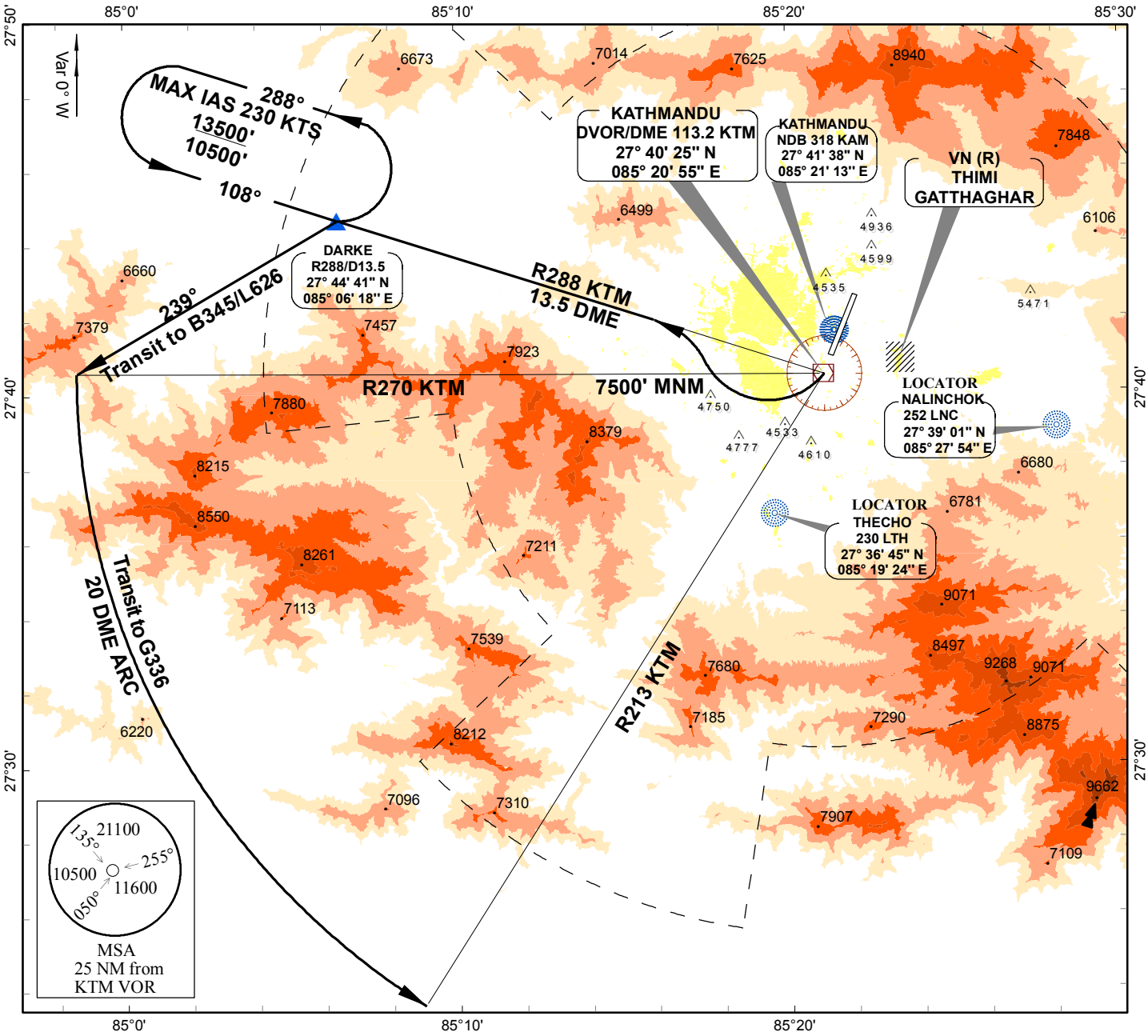
(FIG. B1)

AERODROME TRAFFIC CIRCUIT RWY 02 FOR. ACFT WITH IAS 135-180KTS CIRCUIT ALTITUDE 1500 FT. ABOVE AERODROME LEVEL



(FIG. B2)

STANDARD DEPARTURE CHART (SID) - ICAO	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500 VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport RWY 20 DARKE 1A



Coordinates are in WGS-84 system.

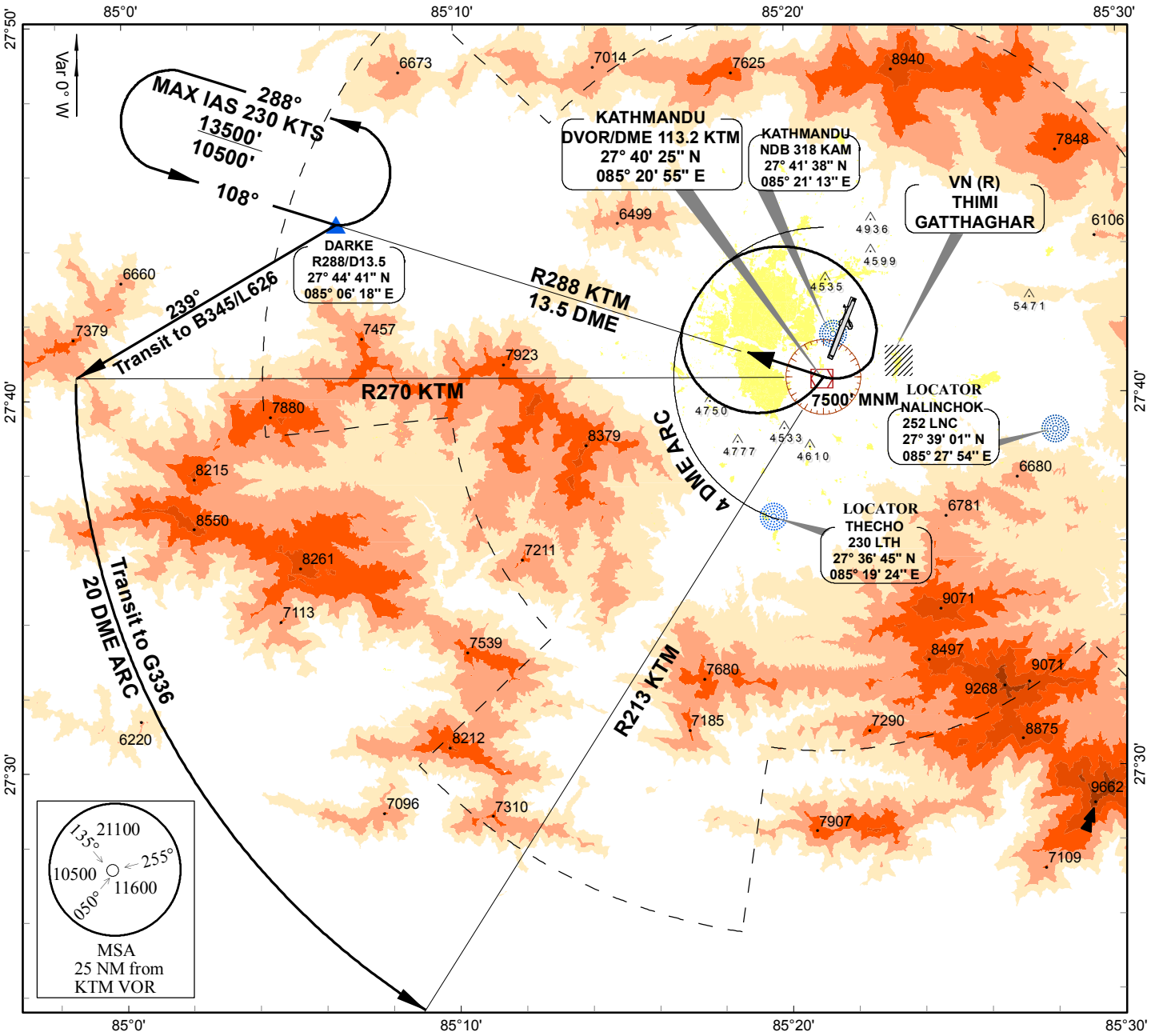
Bearings, tracks and radials are magnetic, height in feet
Distances in nautical miles

Scale 1:300000
Nautical Miles
0 1 2 4 6 8 10
0 2.5 5 10 15 20
Kilometers

SID DARKE 1A RWY20

Departure turn limited to 180 KIAS maximum. Procedure Design Gradient (PDG) 8%.
Climb straight ahead and cross KTM at or above 4700 ft. At KTM turn right remaining within 4 DME arc. When crossing R270 KTM at or above 7500 ft, turn left to intercept outbound R288 KTM to DARKE (R288/D13.5 'KTM') at or above 10500 ft. Continue climb to MEA.

STANDARD DEPARTURE CHART (SID) - ICAO	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500 VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport RWY 20 DARKE 1B



Coordinates are in WGS-84 system.

SID DARKE 1B RWY20

Bearings, tracks and radials are magnetic, height in feet
Distances in nautical miles

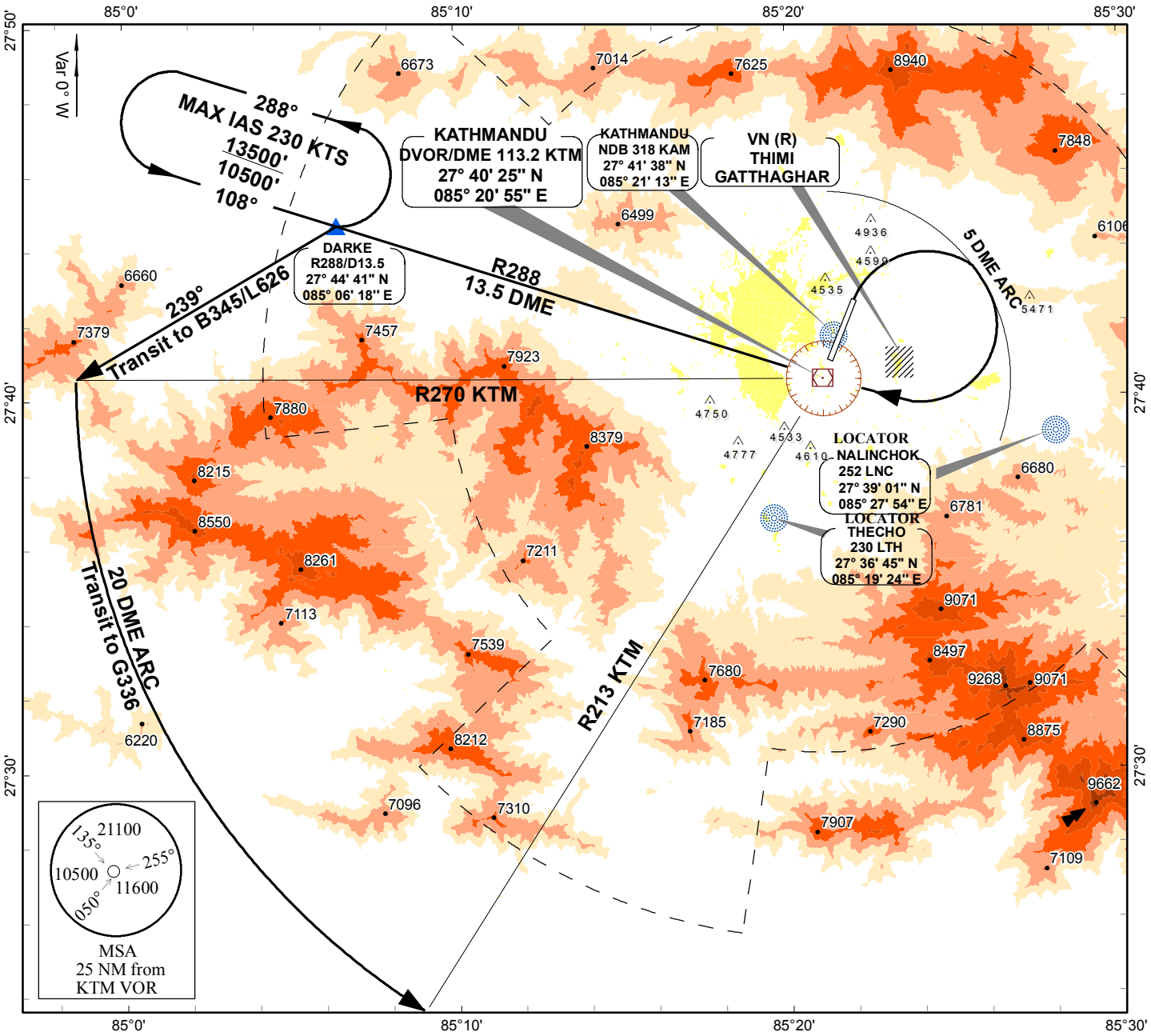
Scale 1:300000

Nautical Miles: 0 1 2 4 6 8 10

Kilometers: 0 2.5 5 10 15 20

Departure turn limited to 180 KIAS maximum. Procedure Design Gradient (PDG) 6%.
Climb straight ahead and cross KTM at or above 4700 ft. At KTM turn right remaining within 4 DME arc. After crossing R040 KTM turn right inbound KTM at or above 7500 ft. and follow outbound R288 KTM to DARKE (R288/D13.5 'KTM') at or above 10500 ft. Continue climb to MEA.

STANDARD DEPARTURE CHART (SID) - ICAO	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500 VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport RWY 02 DARKE 1C



WGS 84 Coordinates

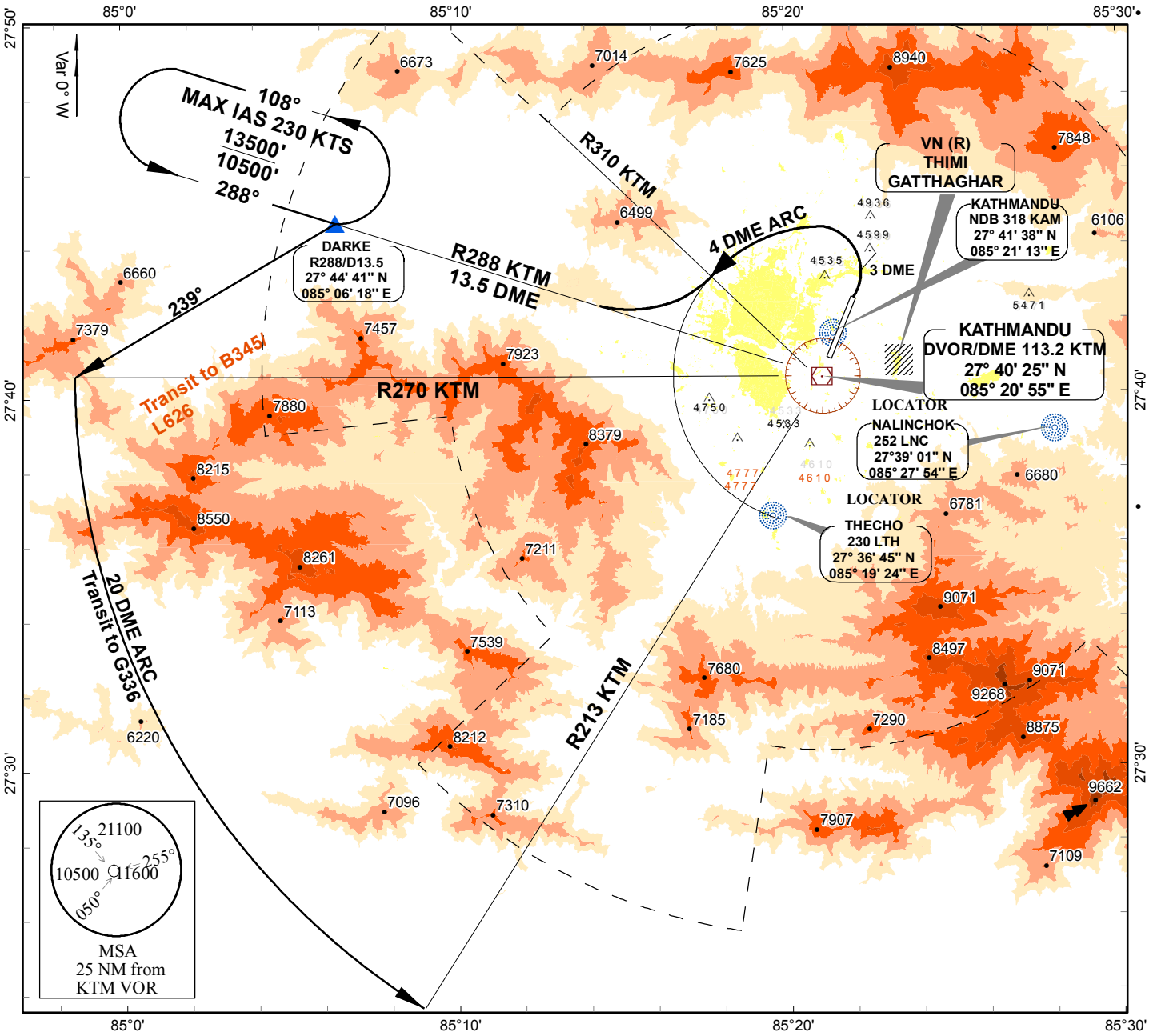
Bearings, tracks and radials are magnetic, height in feet
Distances in nautical miles

Scale 1:300000
Nautical Miles
0 1 2 4 6 8 10
0 2.5 5 10 15 20
Kilometers

SID DARKE 1C RWY02

Departure turn limited to 180 KIAS maximum. Procedure Design Gradient (PDG) 6%.
Climb straight ahead to 2.5 DME KTM then make right turn inbound KTM at or above 7500 ft and follow outbound R288 KTM to DARKE (R288/ D13.5 'KTM') at or above 10500 ft. Continue climb to MEA.

STANDARD DEPARTURE CHART (SID) - ICAO	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500 VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport RWY 02 DARKE 1D



WGS 84 Coordinates

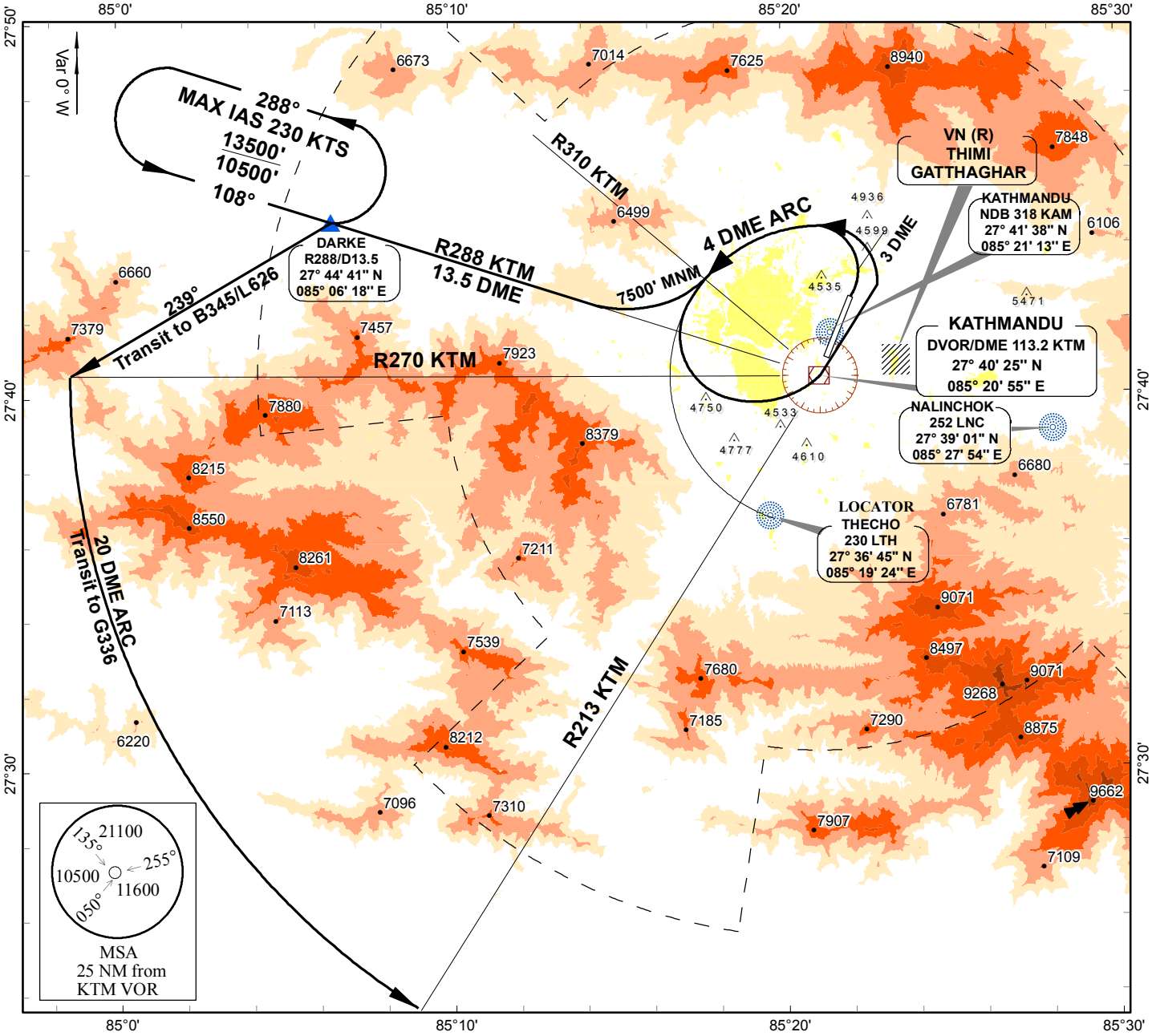
Bearings, tracks and radials are magnetic, height in feet
Distances in nautical miles

Scale 1:300000
Nautical Miles
0 1 2 4 6 8 10
0 2.5 5 10 15 20
Kilometers

SID DARKE 1D RWY02

Departure turn limited to 180 KIAS maximum. Procedure Design Gradient (PDG) 6%.
Climb straight ahead to 3 DME KTM then make left turn ito intercept 4 DME arc. When crossing R310 KTM at or above 7500 ft. turn right to intercept outbound R288 KTM to DARKE (R288/ D13.5) at or above 10500 ft. Continue climb to MEA.

STANDARD DEPARTURE CHART (SID) - ICAO	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500 VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport RWY 02 DARKE 1E



Coordinates are in WGS-84 system

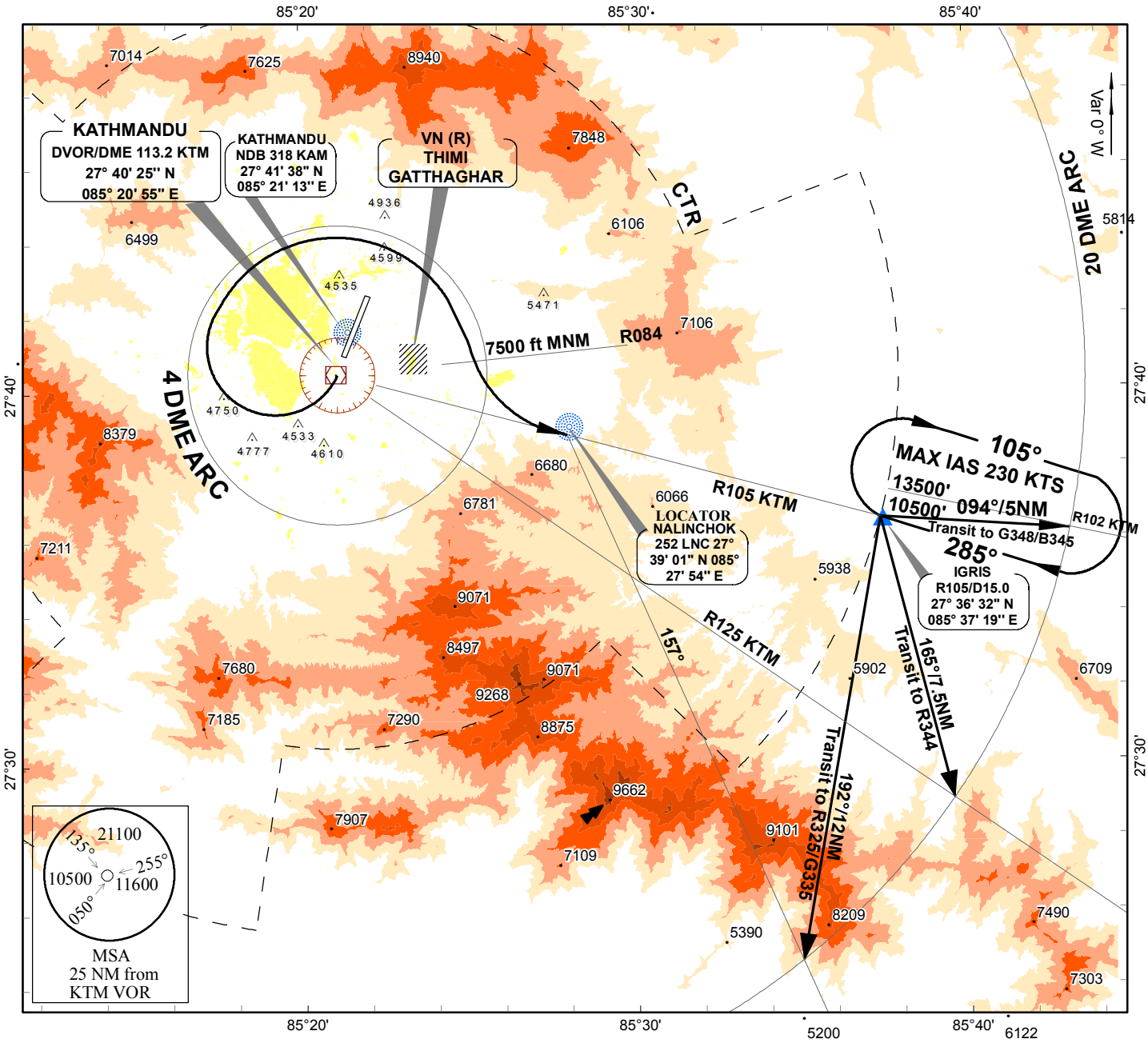
Bearings, tracks and radials are magnetic, height in feet
Distances in nautical miles

Scale 1:300000
Nautical Miles 0 1 2 4 6 8 10
Kilometers 0 2.5 5 10 15 20

SID DARKE 1E RWY02

Departure turn limited to 180 KIAS maximum. Procedure Design Gradient (PDG) 6%.
Climb straight ahead to 3 DME KTM then make left turn ito intercept 4 DME arc. When crossing R310 KTM turn left inbound KTM, climb on R038 KTM to 2.2 DME, turn left to intercept 4 DME arc. At R310 KTM turn right to intercept outbound R288KTM to DARKE (R288/13.5 DME) at or above 10500 ft. Continue climb to MEA.

STANDARD DEPARTURE CHART (SID) - ICAO	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500 VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport RWY 20 IGRIS 1A



Coordinates are in WGS-84 system.

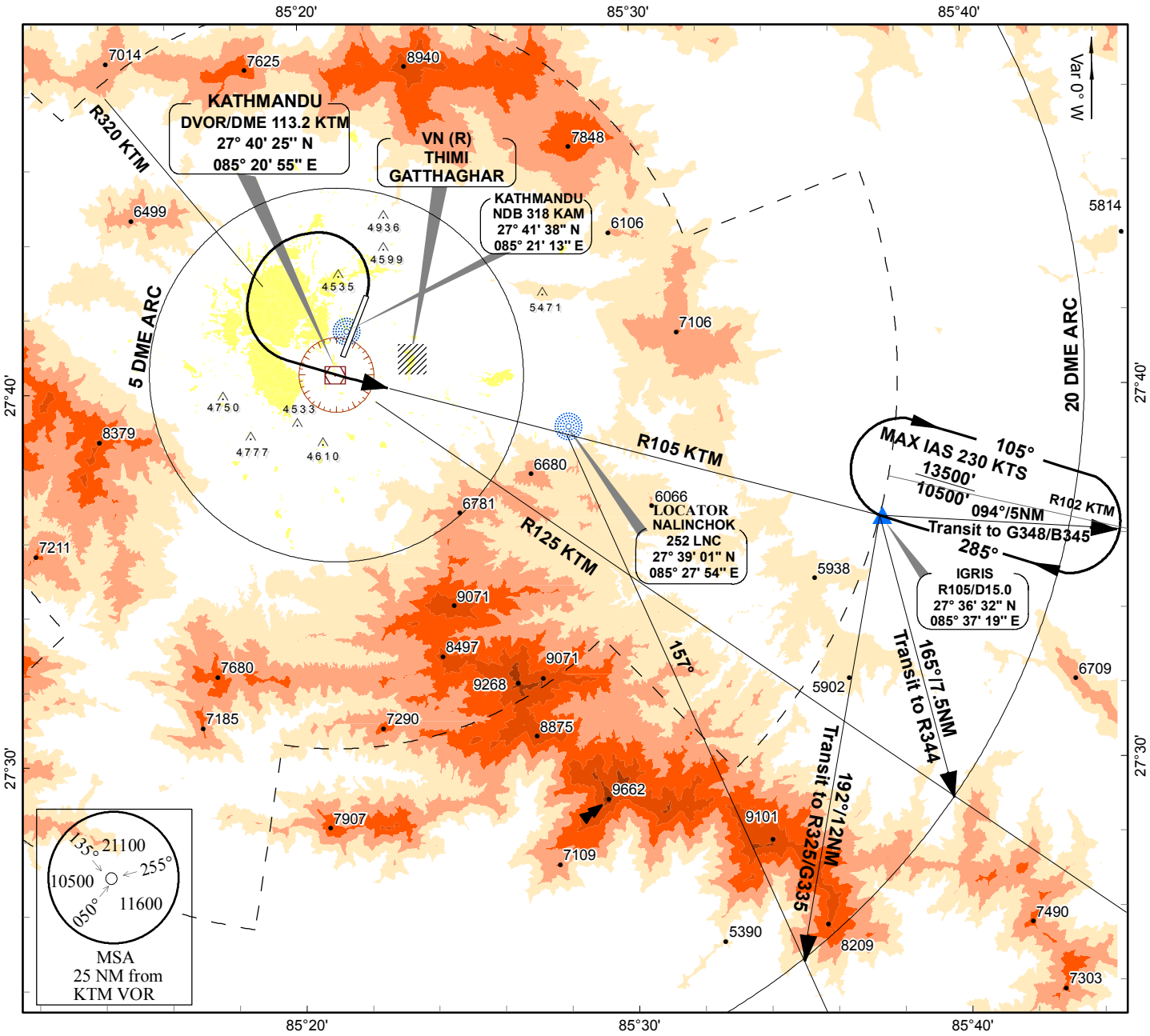
Bearings, tracks and radials are magnetic, height in feet
Distances in nautical miles

Scale 1:300000
Nautical Miles
0 1 2 4 6 8 10
0 2.5 5 10 15 20
Kilometers

SID IGRIS 1A RWY20

Departure turn limited to 180 KIAS maximum. Procedure Design Gradient (PDG) 6%.
Climb straight ahead and cross KTM at or above 4700 ft. At KTM turn right remaining within 4 DME arc. When crossing R084 KTM at or above 7500 ft. turn left to intercept outbound R105 KTM to IGRIS (R105/15 DME) at or above 10500 ft. Continue climb to MEA.

STANDARD DEPARTURE CHART (SID) - ICAO	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500 VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport RWY 02 IGRIS 1B



Coordinates are in WGS-84 system

Bearings, tracks and radials are magnetic, height in feet
Distances in nautical miles

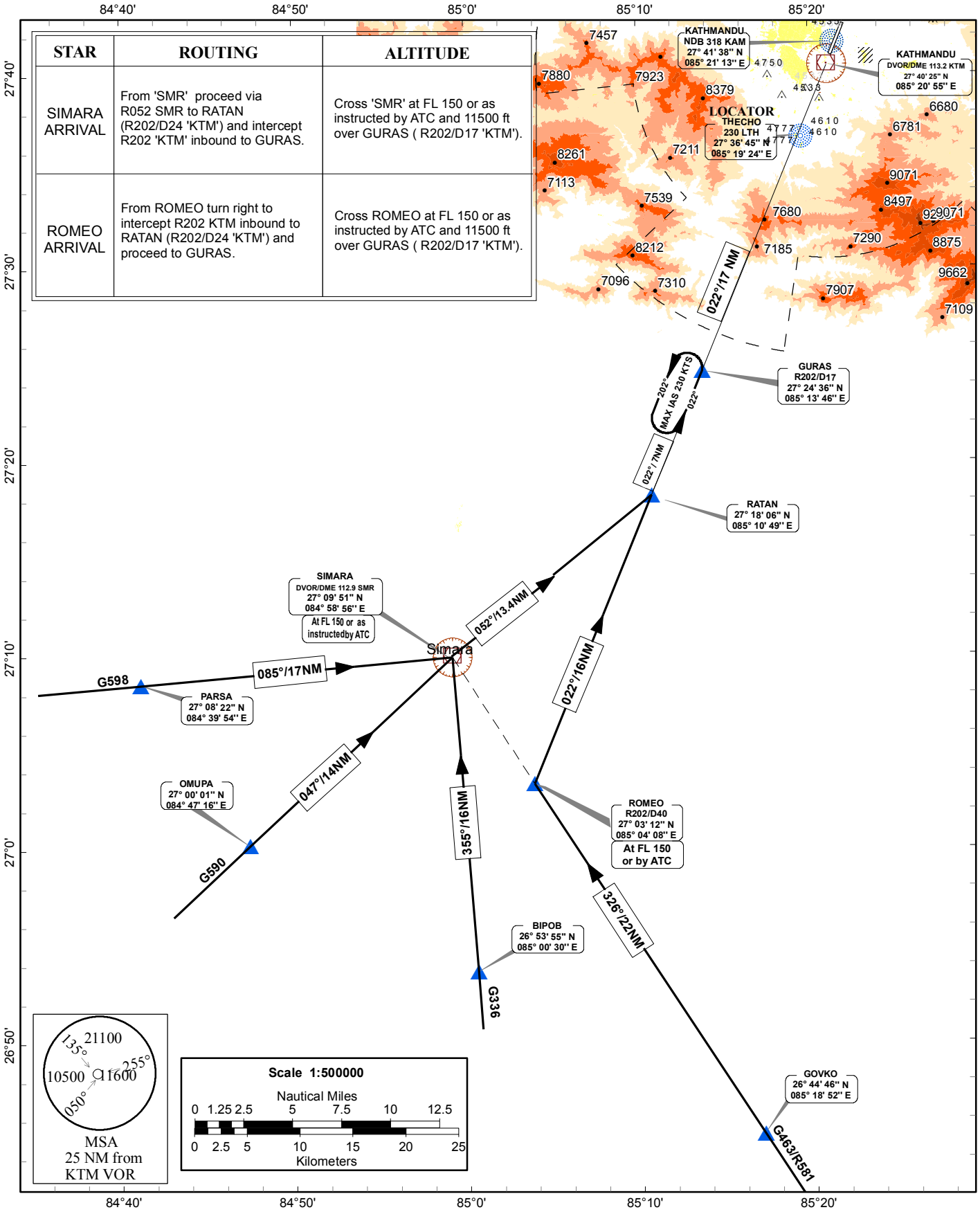
Scale 1:300000
Nautical Miles
0 1 2 4 6 8 10
0 2.5 5 10 15 20
Kilometers

SID IGRIS 1B RWY02

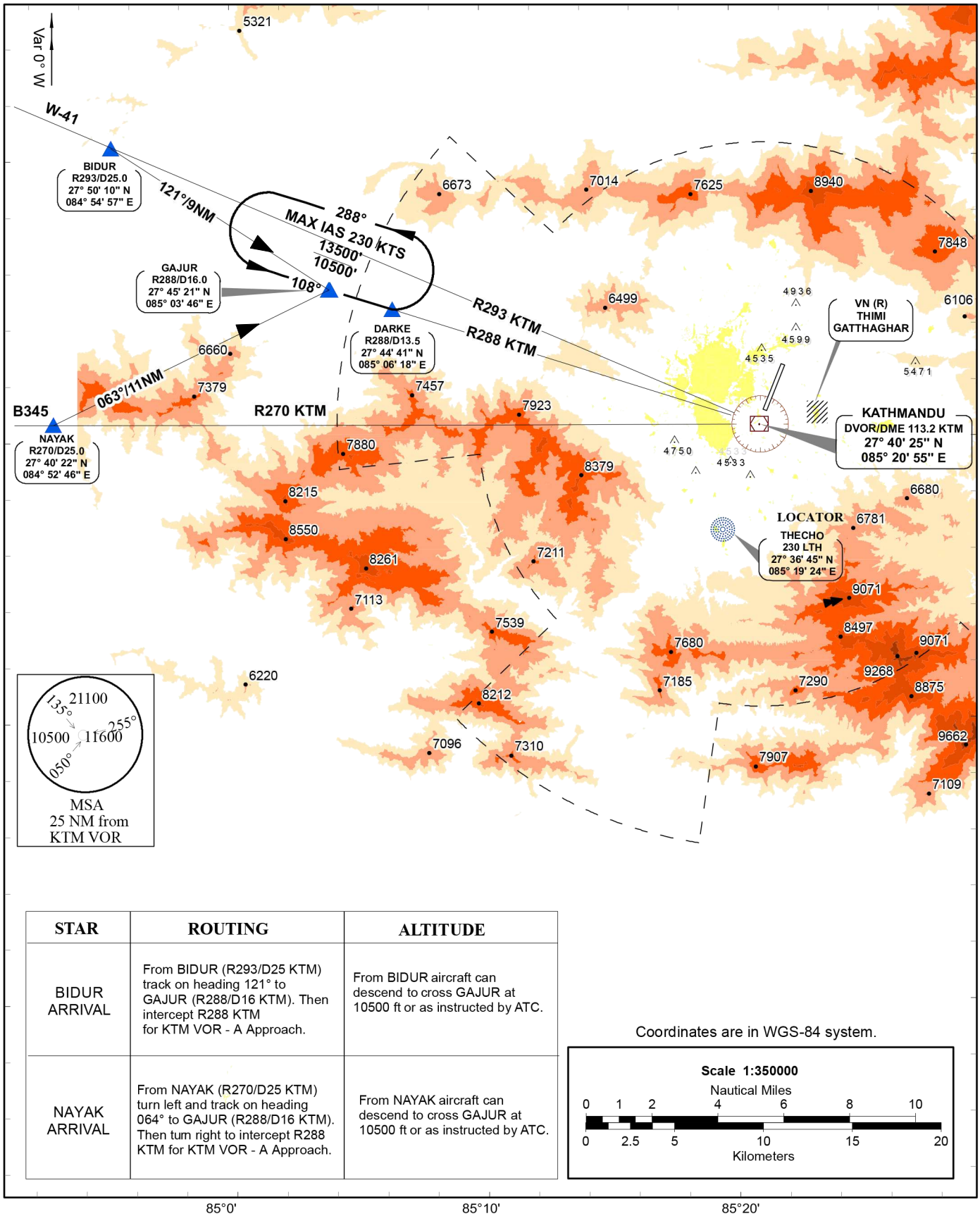
Departure turn limited to 180 KIAS . Procedure Design Gradient (PDG) 8%.
Climb straight ahead. At 2.5 DME KTM turn left remaining within 5 DME arc. When crossing R320 turn left to KTM at or above 7500 ft. and follow outbound R105 KTM to IGRIS (R105/15 DME) at or above 10500 ft. Continue climb to MEA.

STANDARD ARRIVAL CHART - INSTRUMENT (STAR) - I CAO SIMARA ARRIVAL ROMEO ARRIVAL	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500' VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport STAR

STAR	ROUTING	ALTITUDE
SIMARA ARRIVAL	From 'SMR' proceed via R052 SMR to RATAN (R202/D24 'KTM') and intercept R202 'KTM' inbound to GURAS.	Cross 'SMR' at FL 150 or as instructed by ATC and 11500 ft over GURAS (R202/D17 'KTM').
ROMEO ARRIVAL	From ROMEO turn right to intercept R202 KTM inbound to RATAN (R202/D24 'KTM') and proceed to GURAS.	Cross ROMEO at FL 150 or as instructed by ATC and 11500 ft over GURAS (R202/D17 'KTM').



STANDARD TERMINAL ARRIVAL ROUTE BIDUR ARRIVAL NAYAK ARRIVAL	AD ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500' VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport STAR

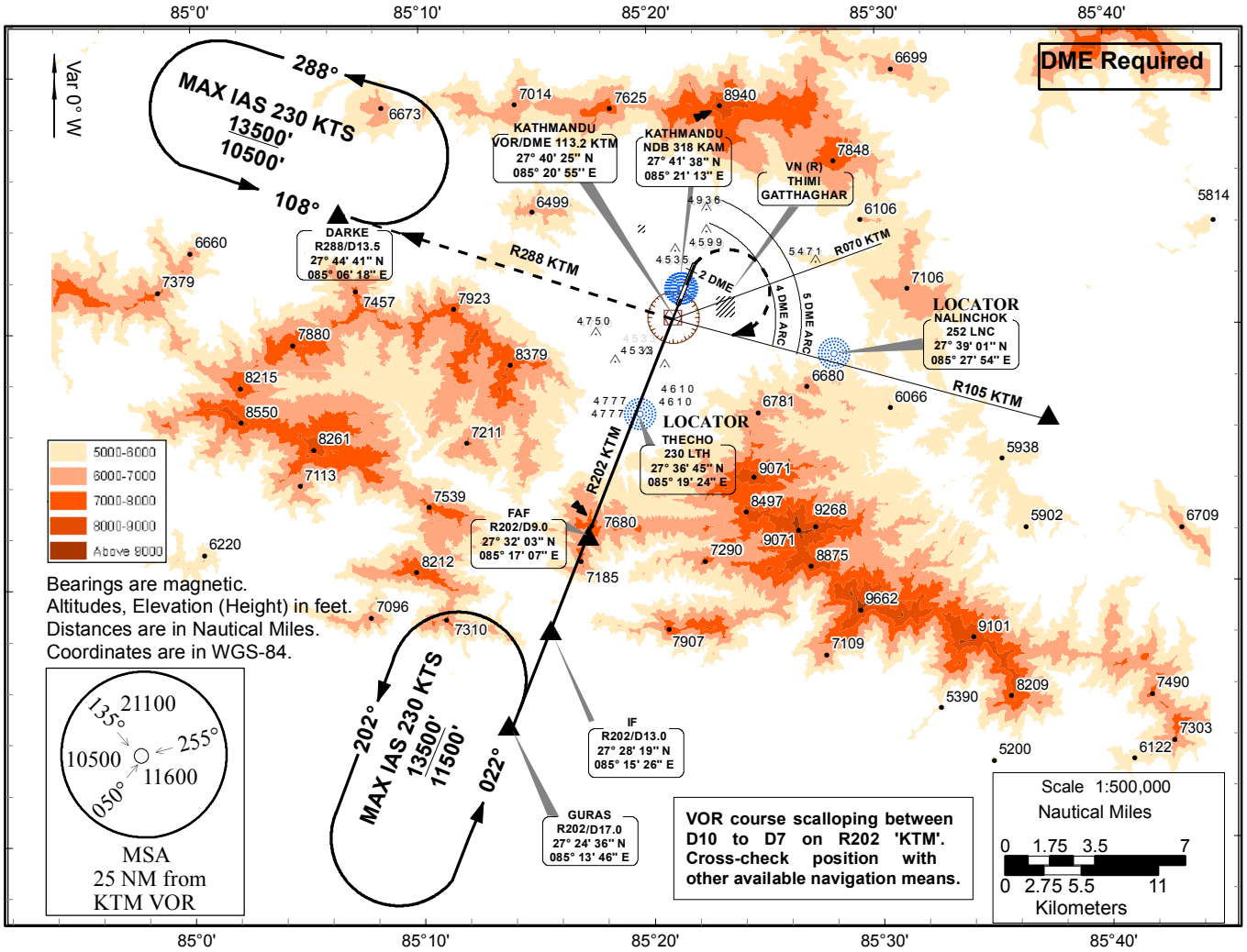


STAR	ROUTING	ALTITUDE
BIDUR ARRIVAL	From BIDUR (R293/D25 KTM) track on heading 121° to GAJUR (R288/D16 KTM). Then intercept R288 KTM for KTM VOR - A Approach.	From BIDUR aircraft can descend to cross GAJUR at 10500 ft or as instructed by ATC.
NAYAK ARRIVAL	From NAYAK (R270/D25 KTM) turn left and track on heading 064° to GAJUR (R288/D16 KTM). Then turn right to intercept R288 KTM for KTM VOR - A Approach.	From NAYAK aircraft can descend to cross GAJUR at 10500 ft or as instructed by ATC.

Coordinates are in WGS-84 system.

Scale 1:350000
Nautical Miles
0 1 2 4 6 8 10
0 2.5 5 10 15 20
Kilometers

INSTRUMENT APPROACH CHART - ICAO	AERODROME ELEV 4395' HEIGHTS RELATED TO THR-RWY 02 - ELEV 4320' VARIATION 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport VOR RWY 02 VOR 'KTM' 113.2

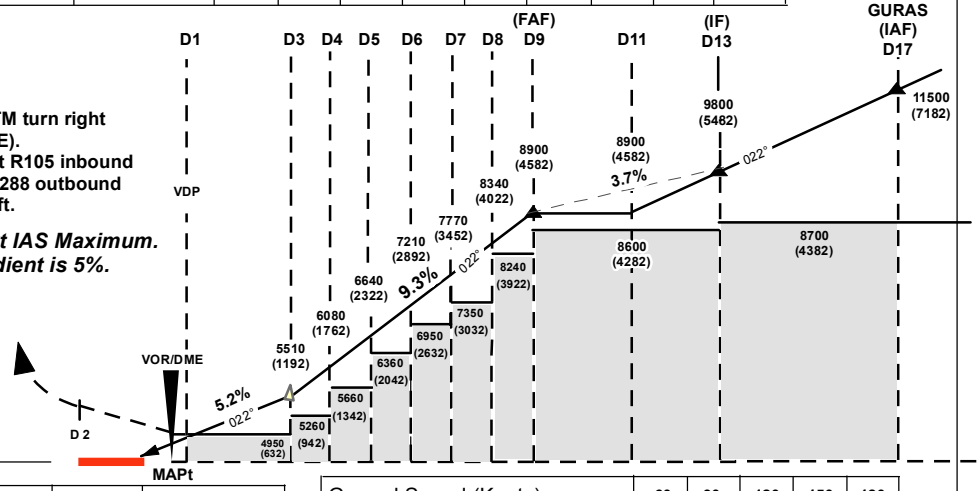


RECOMMENDED PROFILE	DIST BY DME	9	8	7	6	5	4	3	2	0.9
Final Gradient FAF To 3 DME 9.3% (5.5°) (565 FT/NM) 3 DME to THR 5.2% (3.0°) (316 FT/NM)	ALT (HGT)	8900 (4582)	8340 (4022)	7770 (3452)	7210 (2892)	6640 (2322)	6080 (1762)	5510 (1192)	5200 (882)	4950 (632)

Missed Approach:

Climb straight ahead. At 2 DME on R022 KTM turn right to intercept 4 DME arc (not to exceed 5 DME). Crossing R070 KTM turn right and intercept R105 inbound to 'KTM' VOR at or above 7500 ft. Follow R-288 outbound to DARKE (D13.5/R-288) at or above 10500 ft.

Missed approach turn limited to 185 kt IAS Maximum. Minimum Missed approach climb gradient is 5%.



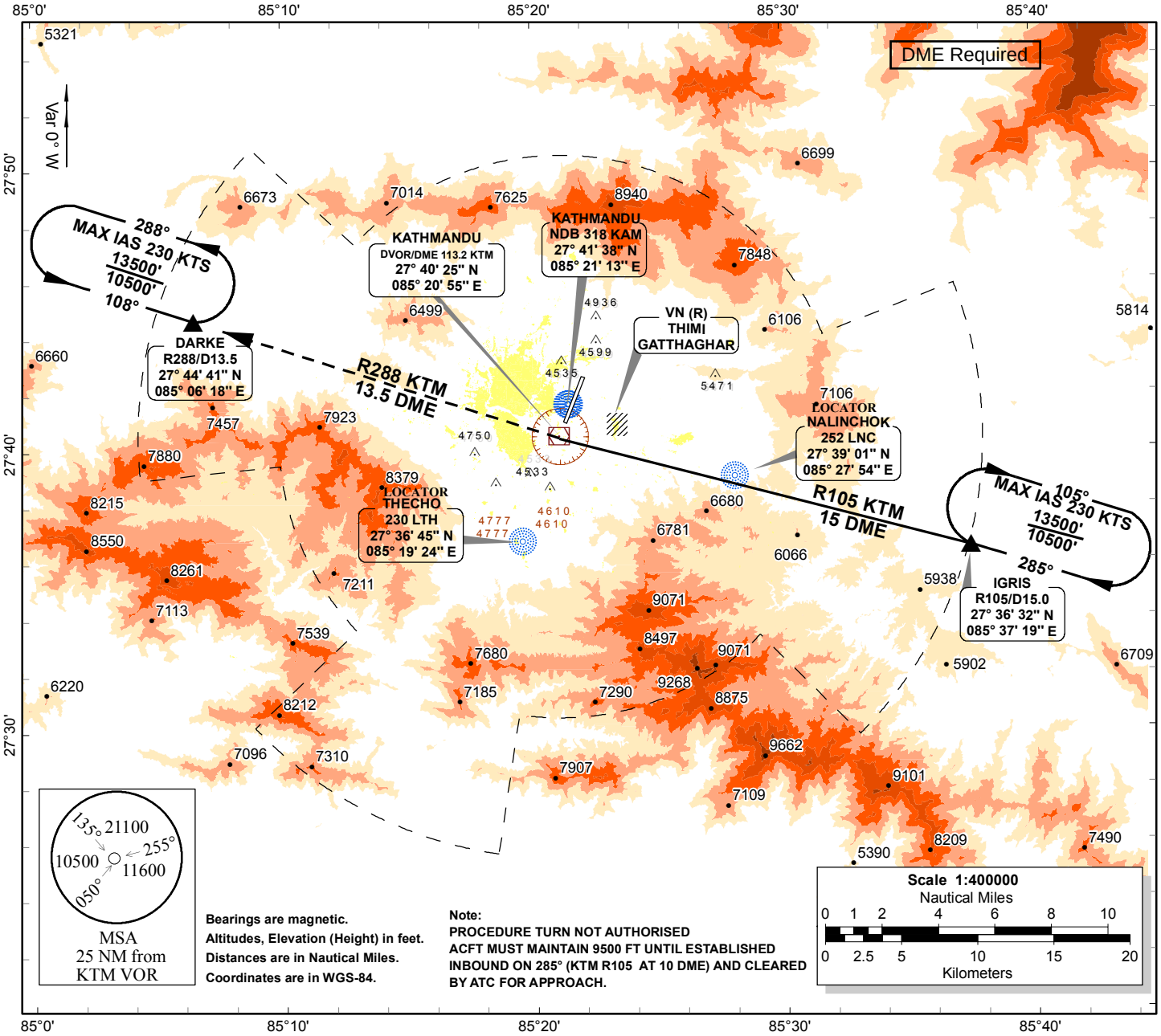
CATEGORY		A	B		C	D	
		OCA (OCH)	VISIBILITY	OCA (OCH)	VISIBILITY	OCA (OCH)	VISIBILITY
Straight-in	Full	4950 (632)	1600 m	4950 (632)	2800 m	4950 (632)	3200 m
	ALS Out		2400 m		3600 m		4000 m
Circling		4950 (632)	2400 m	NOT AUTHORIZED			
		CIRCLING NOT AUTHORIZED AT NIGHT					

Ground Speed (Knots)	60	90	120	150	180
D3 to MAPt : 3 NM (min:sec)	3:00	2:00	1:30	1:12	1:00
Rate of descent (ft/min) at 5.2%	316	474	632	790	948

Note: From 13D to 9D, aircraft may descend with constant descent gradient of 3.7% .

** Descent gradient from D9 to D3 does not meet standard criteria.*

INSTRUMNET APPROACH CHART-ICAO	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500 VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport VOR - B VOR 'KTM' 113.2

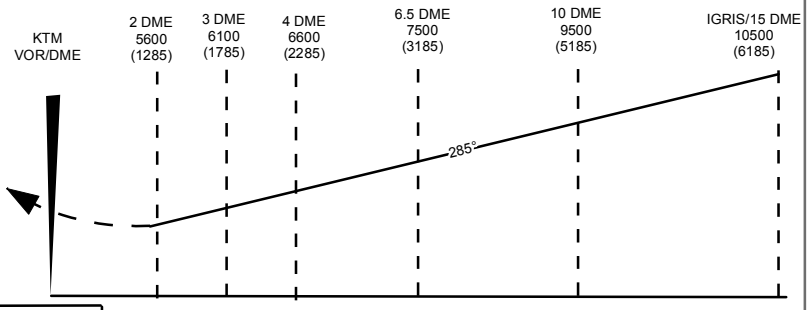


Missed Approach

**At 2.0 DME, climb straight ahead to KTM.
Then proceed via outbound R288 to
'DARKE' (R288/D13.5). Reach 'DARKE'
at or above 10500' and join holding pattern.**

Elev - RWY-02 4320'
AP ELEV 4395'

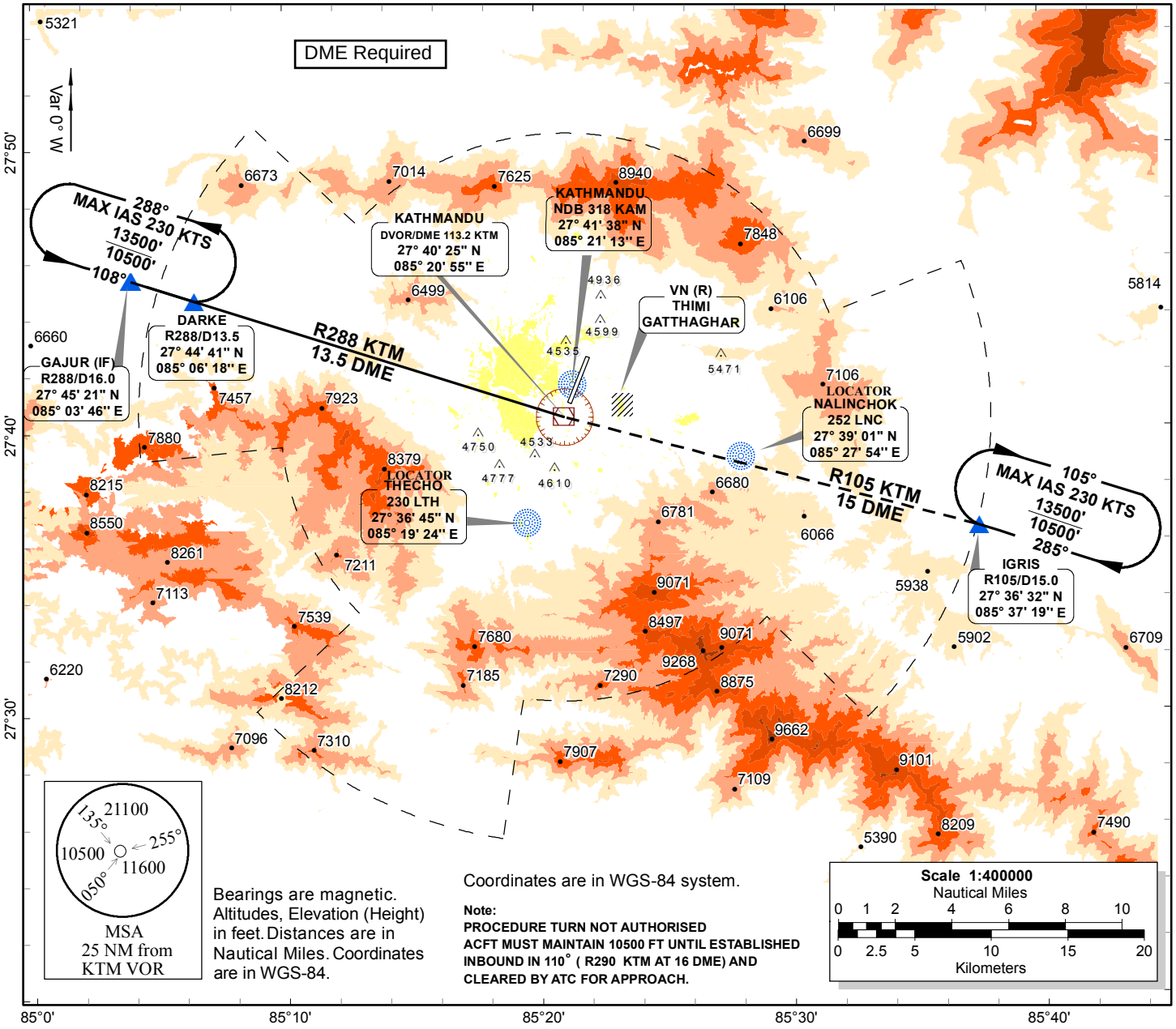
DISTANCE (DME)	15	10	6.5	4	3	2
Altitude (ft)	10500	9500	7500	6600	6100	5600
Ground Speed (KT)	60	90	120	150	180	
Rate of Descent (ft/min) @ 6.9%	420'	630'	840'	1050'	1260'	

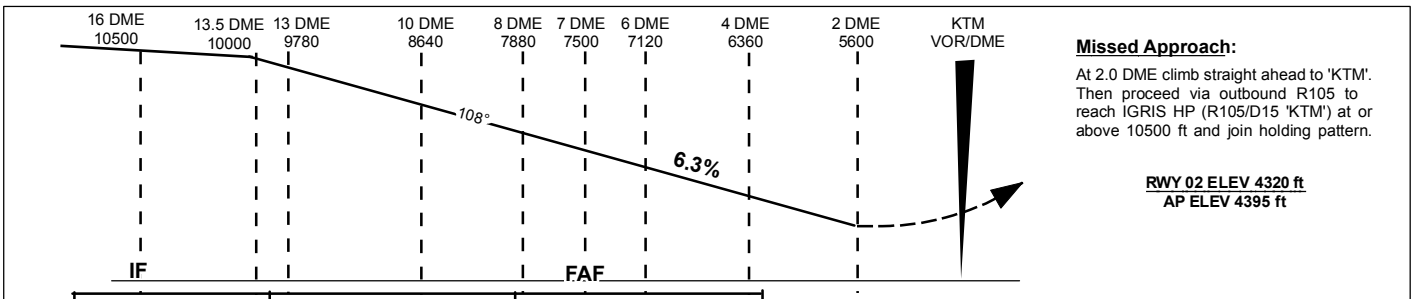


AIRPORT OPERATING MINIMA	DAY				NIGHT	
	CAT A,B		CAT C		CAT A,B	
	OCA (OCH)	VISIBILITY	OCA (OCH)	VISIBILITY	OCA (OCH)	VISIBILITY
CIRCLE TO LAND	5600 (1285)	3700 m	5800 (1485)	3700 m	5600 (1285)	5000 m

- ACFT must establish visual contact by 2 DME.
- ACFT shall execute visual manoeuvre maintaining 5600 ft AMSL and remaining within 2.5 D arc within the quadrant of R105 and R202 and within 3 DME for rest sector.
- When no traffic from 'GURAS'
- During night, only from RWY 02

INSTRUMENT APPROACH CHART-ICAO	AERODROME ELEV 4395' TRANS LEVEL FL150 TRANS ALT 13500 VAR 0° W (2010)	APP 120.6 MHZ TWR 118.1 MHZ GND 121.9 MHZ	KATHMANDU/NEPAL Tribhuwan International Airport VOR- A VOR 'KTM' 113.2





Missed Approach:

At 2.0 DME climb straight ahead to 'KTM'. Then proceed via outbound R105 to reach IGRIS HP (R105/D15 'KTM') at or above 10500 ft and join holding pattern.

RWY 02 ELEV 4320 ft
AP ELEV 4395 ft

AIRPORT OPERATING MINIMA	DAY		NIGHT	
	CAT A,B		CAT A,B	
	OCA (OCH)	VISIBILITY	OCA (OCH)	VISIBILITY
CIRCLE TO LAND	5600 (1285)	3700 m	5600 (1285)	5000 m

- ACFT must establish visual contact by 2 DME.
- ACFT shall execute visual manoeuvre maintaining 5600 ft AMSL and remaining WI 2.5 DME within the quadrant of R105 and R202 and within 3 DME for rest sector.
- Only from RWY 02 during night

This procedure requires aircraft to maintain minimum climb gradient of 5.8% in the missed approach.

DISTANCE (DME)	10	9	8	7	6	5	4	3	2
Altitude (ft) 6.3%	8640'	8260'	7880'	7500'	7120'	6740'	6360'	5980'	5600'
Ground Speed (KT)	90	110	120	130	140	150	160		
Rate of Descent (ft/min)	570'	697'	760'	823'	887'	950'	1013'		

RNP AR (Authorization Required) approach procedure at TRIBHUVAN INTERNATIONAL AIRPORT (VNKT)

1. INTRODUCTION

1.1 This RNP AR [RNAV (RNP)] Approach Procedure is designed for VNKT in accordance with the criteria as stipulated in the ICAO PANS-OPS (DOC 8168) Vol. II and ICAO RNP AR Manual (DOC 9905).

1.2 A full arrival, approach and missed approach procedure have been designed for Runway 02 by NAVBLUE (formerly named Airbus Prosky), an Airbus Company whose logo will appear on the STAR and RNP AR Approach Procedure Chart.

1.3 The RNAV (RNP) Instrument Approach Procedure to VNKT is designed to enhance the overall safety of the operation by facilitating the aircraft energy management and to improve the airport access, while taking into account ATC constraints.

1.4 This is the modified RNP AR STAR and Approach procedure including missed approach procedure to right.

2. APPROVED USERS, EQUIPMENT AND OPERATIONS

2.1 For the VNKT RNAV (RNP) Instrument Approach Procedure, the operators shall ensure that they hold all the necessary operational approvals as part of the Operations Specifications of the AOC from its authority including the Baro VNAV Approval in order to conduct the RNAV (RNP) Approach to VNKT. (Ref to ICAO PBN Manual, Doc 9613)

2.2 The operator must have a Special Authorization from its authority in order to use the RNP AR approaches to VNKT. (Ref to EASA AMC 20-26, FAA AC 90-101A or equivalent)

2.3 The operators shall seek authorization from Civil Aviation Authority of Nepal to conduct VNKT RNP AR Approach procedure at Kathmandu.

2.4 The operator is responsible of conducting a Flight Operational Safety Assessment (FOSA) including the Flight Simulation of the procedure.

2.5 The RNP AR approach procedures require a navigation accuracy of RNP 0.3 and RF-leg capability.

2.6 The vertical guidance is based on Baro VNAV with GNSS and requires RNAV equipment which uses barometric altimeter input.

2.7 The 7 RNAV STAR (SIMRA 2R, ROMEO 2R, IGRIS 1R, DOLAL 1R, DARIM 1R , KIMTI1R , MUNAL1R) are based on the use of RNAV with RNP 1.0 and are designed to be used only in conjunction with corresponding RNP AR procedure.

Note: This information must be included in Company Route Manuals.

3. NAMING OF PROCEDURES

There is one RNP AR approach procedure to runway 02. The new ICAO naming convention is used as RNP RWY02 (AR).

RWY		
02	SIMRA 2R STAR	RNP AR Approach RNP RWY02 (AR)
	ROMEO 2R	
	IGRIS 1R	
	DOLAL 1R	
	DARIM 1R	
	KIMTI 1R	
	MUNAL 1R	

4. RAIM-CHECK

During flight planning or before dispatching the aircraft, the pilot shall ensure a RAIM check with a mask angle appropriate to the terrain (Minimum mask angle 5°).

5. LIMITATIONS OF THE PROCEDURES

The procedure is designed for a temperature down to -10°C. (Temperature correction of the barometric altimeter is not required)

6. RNP CAPABILITY LOST

If the RNP capability is lost, ATC shall be informed as soon as possible the alternate course of action from the pilots of the concerned aircraft.

7. LIST OF WAYPOINTS

W/P **ID**	**W/P ICAO Code**	**W/P Type**	**Latitude**	**Longitude**
DANFE	VN	ICAO	27°26'36.0000"N	084°42'38.0000"E
DARIM	VN	ICAO	27°26'24.4300"N	085°43'18.3850"E
DARKE	VN	ICAO	27°44'41.0000"N	085°06'18.0000"E
DOLAL	VN	ICAO	27°34'01.1850"N	085°54'22.0690"E
DOVAN	VN	ICAO	27°33'46.4800"N	085°15'14.0420"E
GURAS	VN	ICAO	27°24'36.0000"N	085°13'46.0000"E
IGRIS	VN	ICAO	27°36'32.0000"N	085°37'19.0000"E
KIMTI	VN	ICAO	27°29'48.0000"N	086°16'04.0000"E
KT520	VN	ADHP	27°38'11.0460"N	085°19'54.4930"E
KT522	VN	ADHP	27°35'43.2120"N	085°17'28.9890"E
KT524	VN	ADHP	27°34'41.7830"N	085°16'06.1480"E
KT528	VN	ADHP	27°30'09.5010"N	085°14'20.0440"E
KT530	VN	ADHP	27°28'40.4310"N	085°14'46.8580"E
KT532	VN	ADHP	27°26'30.1030"N	085°14'37.8560"E
KT534	VN	ADHP	27°24'23.8420"N	085°11'35.5390"E
KT536	VN	ADHP	27°23'06.7790"N	085°01'00.9890"E

KT538	VN	ADHP	27°22'05.6550"N	084°52'42.4930"E
KT540	VN	ADHP	27°25'03.8100"N	084°44'04.6780"E
KT590	VN	ADHP	27°42'41.1390"N	085°21'57.3260"E
KT592	VN	ADHP	27°39'35.2680"N	085°27'38.6160"E
KT634	VN	ADHP	27°10'03.7760"N	085°01'39.0630"E
KT636	VN	ADHP	27°15'18.4940"N	085°09'33.7190"E
KT640	VN	ADHP	27°07'03.7010"N	085°19'08.3080"E
KT642	VN	ADHP	27°07'03.6800"N	085°23'37.2790"E
KT644	VN	ADHP	27°08'46.6870"N	085°41'08.9620"E
KT646	VN	ADHP	27°16'08.4860"N	085°53'19.6360"E
KT656	VN	ADHP	27°28'27.2650"N	085°37'18.9420"E
KT658	VN	ADHP	27°11'05.4070"N	085°21'11.4390"E
KT812	VN	ADHP	27°38'32.1770"N	085°22'32.0570"E
KT814	VN	ADHP	27°39'20.1000"N	085°20'25.8800"E
KT890	VN	ADHP	27°45'23.9520"N	085°02'20.5940"E
KT892	VN	ADHP	27°45'23.7300"N	084°53'19.5460"E
KT894	VN	ADHP	27°43'24.8810"N	084°47'24.4220"E
KT896	VN	ADHP	27°39'19.2900"N	084°42'09.1110"E
KT898	VN	ADHP	27°28'08.1740"N	084°41'11.2820"E
KT914	VN	ADHP	27°42'01.2510"N	085°13'20.7370"E
KTC01	VN	ADHP	27°41'33.3420"N	085°25'05.2690"E
KTC02	VN	ADHP	27°36'22.0610"N	085°02'20.5030"E
KTC08	VN	ADHP	27°18'26.0770"N	085°00'49.9090"E
KTC09	VN	ADHP	27°15'50.3410"N	085°17'03.4390"E
KTC10	VN	ADHP	27°28'28.8070"N	085°23'05.5960"E
KTC21	VN	ADHP	27°27'47.1830"N	085°11'04.6870"E
KTC22	VN	ADHP	27°31'11.7160"N	085°18'40.7900"E
KTC23	VN	ADHP	27°31'47.6640"N	085°19'58.7770"E
KTC24	VN	ADHP	27°40'02.9970"N	085°14'43.5470"E
KTC29	VN	ADHP	27°37'22.4070"N	084°53'20.1250"E
KTC30	VN	ADHP	27°33'17.2720"N	084°48'04.6520"E
KTC31	VN	ADHP	27°30'32.2780"N	084°51'24.1300"E
KTC47	VN	ADHP	27°42'10.6430"N	085°24'16.7920"E
KTC69	VN	ADHP	27°15'05.0590"N	085°19'08.1960"E
KTC70	VN	ADHP	27°17'04.6950"N	085°34'51.2610"E
MUNAL	VN	ICAO	27°07'03.0000"N	085°34'50.0000"E
RATAN	VN	ICAO	27°18'06.0000"N	085°10'49.0000"E
ROMEO	VN	ICAO	27°03'12.0000"N	085°04'08.0000"E
RW02	VN	ADHP	27°41'01.9640"N	085°21'12.2020"E
SIMRA	VN	ICAO	27°09'51.0000"N	084°58'56.0000"E
SINDU	VN	ICAO	27°18'28.2630"N	085°31'49.4690"E

8. STARS CODING TABLE

ROMEO 2R STAR CODING TABLE

W/P ID	PT	Fly over	TD	CRS (°) mag	DIST NM	ALT FT	SPD kt	RNP	RADIUS NM	ARC CTR ID
ROMEO	IF					AA 10500		1		
KT636	TF	N		022	13.0			1		
RATAN	TF	N		022	3.0	AA 10500	250.00 KT	1		

SIMRA 2R STAR CODING TABLE

W/P ID	PT	Fly over	TD	CRS (°) mag	DIST NM	ALT FT	SPD kt	RNP	RADIUS NM	ARC CTR ID
SIMRA	IF					AA 10500		1		
KT634	TF	N		085	2.4			1		
KT636	RF		L	022	9.2			1	8	KTC08
RATAN	TF	N		022	3.0	AA 10500	250.00 KT	1		

MUNAL 1R STAR CODING TABLE

W/P ID	PT	Fly over	TD	CRS (°) mag	DIST NM	ALT FT	SPD kt	RNP	RADIUS NM	ARC CTR ID
MUNAL	IF					AA 10500	250.00 KT	1		
KT642	TF			270	10.0			1		
KT640	TF			270	4.0			1		
RATAN	RF		R	022	15.7	AA 10500	250.00 KT	1	8.0	KTC69

KIMTI 1R STAR CODING TABLE

W/P ID	PT	Fly over	TD	CRS (°) mag	DIST NM	ALT FT	SPD kt	RNP	RADIUS NM	ARC CTR ID
KIMTI	IF					AA 17000		1		
KT646	TF	N		236	24.4	AA 12400		1		
KT644	TF	N		236	13.1		250.00 KT	1		
MUNAL	RF		R	270	6.0	AA 10500	250.00 KT	1	10.0	KTC70
KT642	TF	N		270	10.0			1		
KT640	TF	N		270	4.0			1		
RATAN	RF		R	022	15.7	AA 10500	250.00 KT	1	8.0	KTC69

IGRIS 1R STAR CODING TABLE

W/P ID	PT	Fly over	TD	CRS (°) mag	DIST NM	ALT FT	SPD kt	RNP	RADIUS NM	ARC CTR ID
IGRIS	IF					AA 11600		1		
KT656	TF	N		180	8.1			1		
SINDU	RF		R	232	11.5	AA 10700		1	13	KTC10
KT658	TF	N		232	12.0		250.00 KT	1		
RATAN	RF		R	022	15.7	AA 10500	250.00 KT	1	6.0	KTC09

DARIM 1R STAR CODING TABLE

W/P ID	PT	Fly over	TD	CRS (°) mag	DIST NM	ALT FT	SPD kt	RNP	RADIUS NM	ARC CTR ID
DARIM	IF					AA 11500		1		
SINDU	TF	N		232	12.9	AA 10700		1		
KT658	TF	N		232	12.0		250.00 KT	1		
RATAN	RF		R	022	15.7	AA 10500	250.00 KT	1	6.0	KTC09

DOLAL 1R STAR CODING TABLE

W/P ID	PT	Fly over	TD	CRS (°) mag	DIST NM	ALT FT	SPD kt	RNP	RADIUS NM	ARC CTR ID
DOLAL	IF					AA 15000		1		
DARIM	TF	N		232	12.4	AA 11500		1		
SINDU	TF	N		232	12.9	AA 10700		1		
KT658	TF	N		232	12.0		250.00 KT	1		
RATAN	RF		R	022	15.7	AA 10500	250.00 KT	1	6.0	KTC09

9. HOLDING PROCEDURE CODING TABLE

Region Code	ICAO Code	W/P ID / Name	Inbound CRS Val (°)	TD	Inbound time val	ALT MIN FT	ALT MAX FL	SPD LMT kt	Magnetic CRS val(°)
VNKT	VN	RATAN	022	L	60s	10500	190	230	22
VNKT	VN	MUNAL	270	L	60s	10500	190	230	270
VNKT	VN	DANFE	140	L	60s	10500	190	230	140

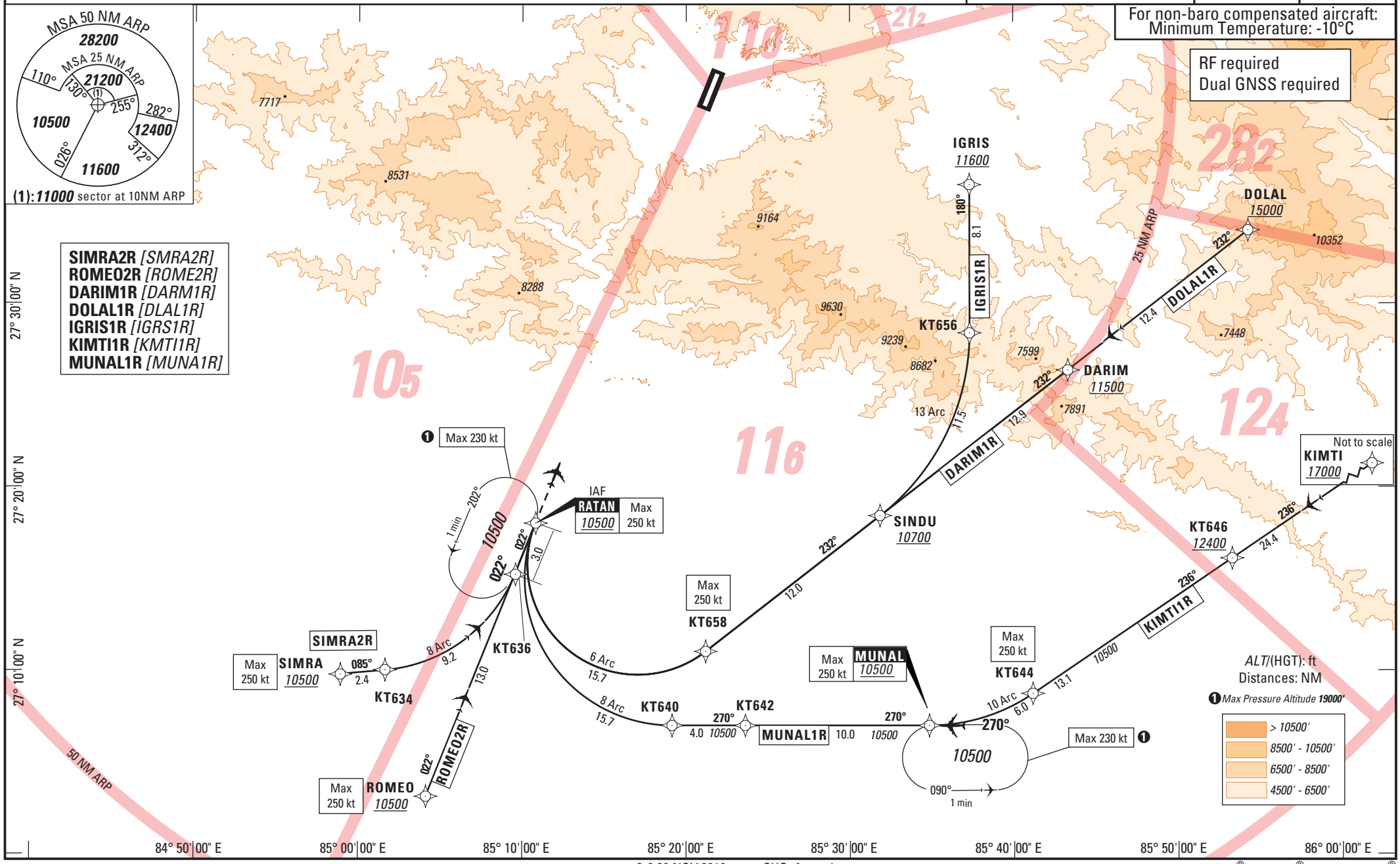
10. APPROACH CODING TABLE

W/P ID	PT	Fly over	TD	CRS (°) mag	Time Val	DIST NM	ALT FT	SPD kt	FPA	RNP	RADIUS NM	ARC CTR ID
RATAN	IF						AA 10500	250		0.3		
GURAS	TF	N		022		7.0				0.3		
KT532	TF	N		022		2.0		200		0.3		
KT530	RF		L	345		2.2	AT 8700	170		0.3	3.4	KTC21
DANFE	IF						AA 10500	250		0.3		
KT540	TF	N		140		2.0				0.3		
KT538	RF		L	082		8.6				0.3	9	KTC31
KT536	TF	N		082		7.5	AA 10500			0.3		
KT534	TF	N		082		9.5		200		0.3		
KT532	RF		L	022		3.6				0.3	3.4	KTC21
KT530	RF		L	345		2.2	AT 8700	170		0.3	3.4	KTC21
KT530	IF						AT 8700	170		0.3		
KT528	TF	N		345		1.5			-2.8	0.3		
DOVAN	RF		R	040		3.8			-2.8	0.3	4.0	KTC22
KT524	TF	N		040		1.2			-2.8	0.3		
KT522	RF		R	060		1.6			-2.8	0.3	4.5	KTC23
KT520	RF		L	022		3.3			-2.8	0.3	5.0	KTC24
RW02	TF	Y		022		3.1	AT 4370		-2.8	0.3		
KT590	TF	N		022		1.8				0.3		
KT592	RF		R	221		10.4				0.3	3.0	KTC01
KT812	RF		R	293		5.0		220		0.3	3.9	KTC47
KT814	TF	N		293		2.0	AA 7500			0.3		
KT914	TF	N		293		6.8				0.3		
DARKE	TF	N		293		6.8				0.3		
KT890	RF		L	270		3.6				1	9.0	KTC02
KT892	TF	N		270		8.0				1		
KT894	RF		L	229		5.7				1	8.0	KTC29
KT896	TF	N		229		6.2				1		
KT898	RF		L	140		12.4				1	8.0	KTC30
DANFE	TF	N		140		2.0	AA 10500			1		
DANFE	HM		L	140	60s		AA 10500	230		NA		

Standard Arrival Chart - Instrument (STAR) - ICAO
CAT: A B C D *AD ELEV: 4395*

KATHMANDU - VNKT
RNAV (RNP) - STAR - RWY02

APP: 120.6 Tower: 118.1 GND: 121.9 | *RNP 1.0* | *Trans Alt: 13500'* | **AUTHORIZATION REQUIRED** | ARP: 27°41'50"N 085°21'29"E | VAR: 0°W (10) | STAR 1



v3-6 29 NOV 2016 CHG: Arc value

AIRBUS PROSKY® GéoTITAN® & AIP-GIS Charting®

INSTRUMENT APPROACH CHART - ICAO

CAT: A B C D
*AD ELEV: 4395, **THR ELEV: 4320 (148 hPa)***

Kathmandu- VNKT
RNP RWY 02 (AR)

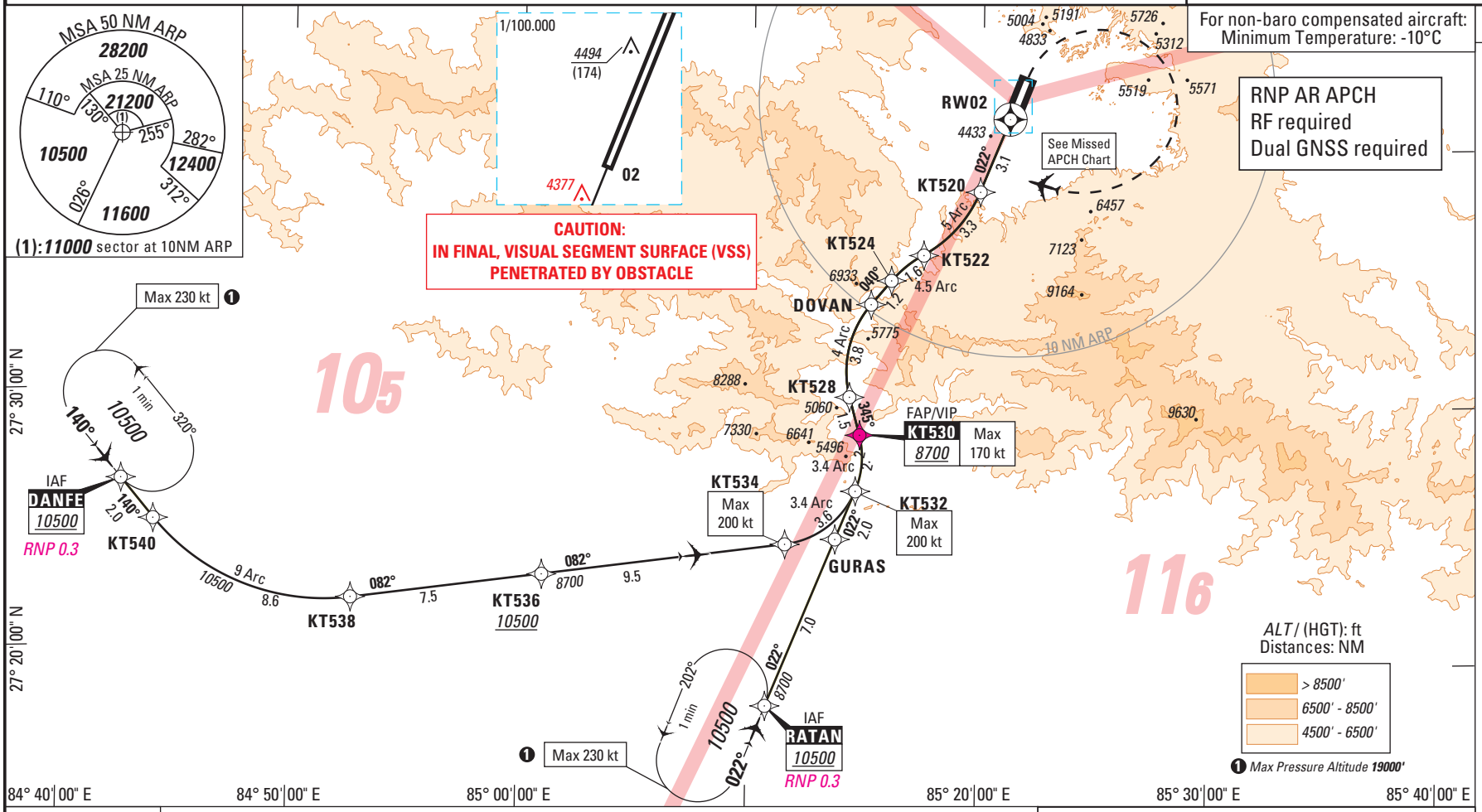
APP: 120.6 TWR: 118.1 GND:121.9

AUTHORIZATION REQUIRED | VAR: 0°W (10) | APP 1

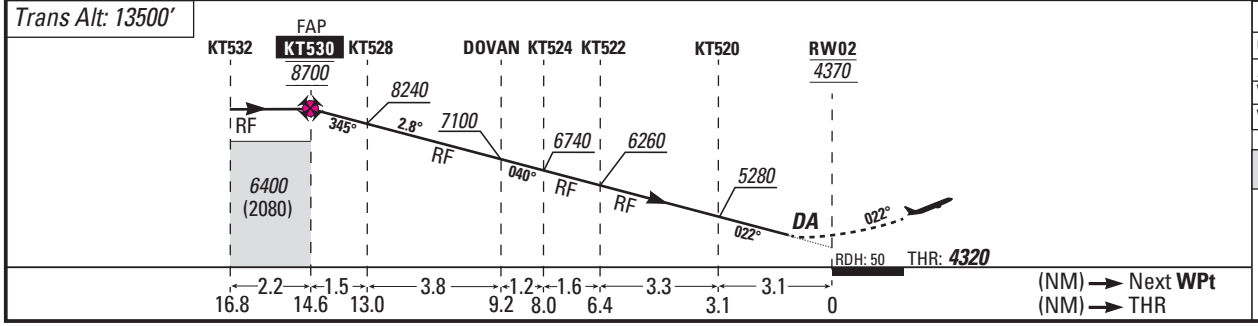
For non-baro compensated aircraft:
Minimum Temperature: -10°C

ARP: 27°41'50"N - 085°21'29"E

[R02] **via DANFE**
[R02] **via RATAN**



Trans Alt: 13500'



RNP 0.3				
CAT	A	B	C	D
DA (H)	***4620*** (300)			
VIS (m) ALS	1100			
VIS (m) no ALS	2000			

Missed Approach (see APP2 chart)

*Climb to **10500'** via the RNAV (RNP) missed approach to **DANFE.***
*At **DANFE** hold or start a new approach.*

v3-6 29 NOV 2016 CHG: Arc value

AIRBUS PROSKY® GéoTITAN® & AIP-GIS Charting®

CAT: A B C D
AD ELEV: 4395, ***THR ELEV: 4320 (148 hPa)***

KATHMANDU - VNKT

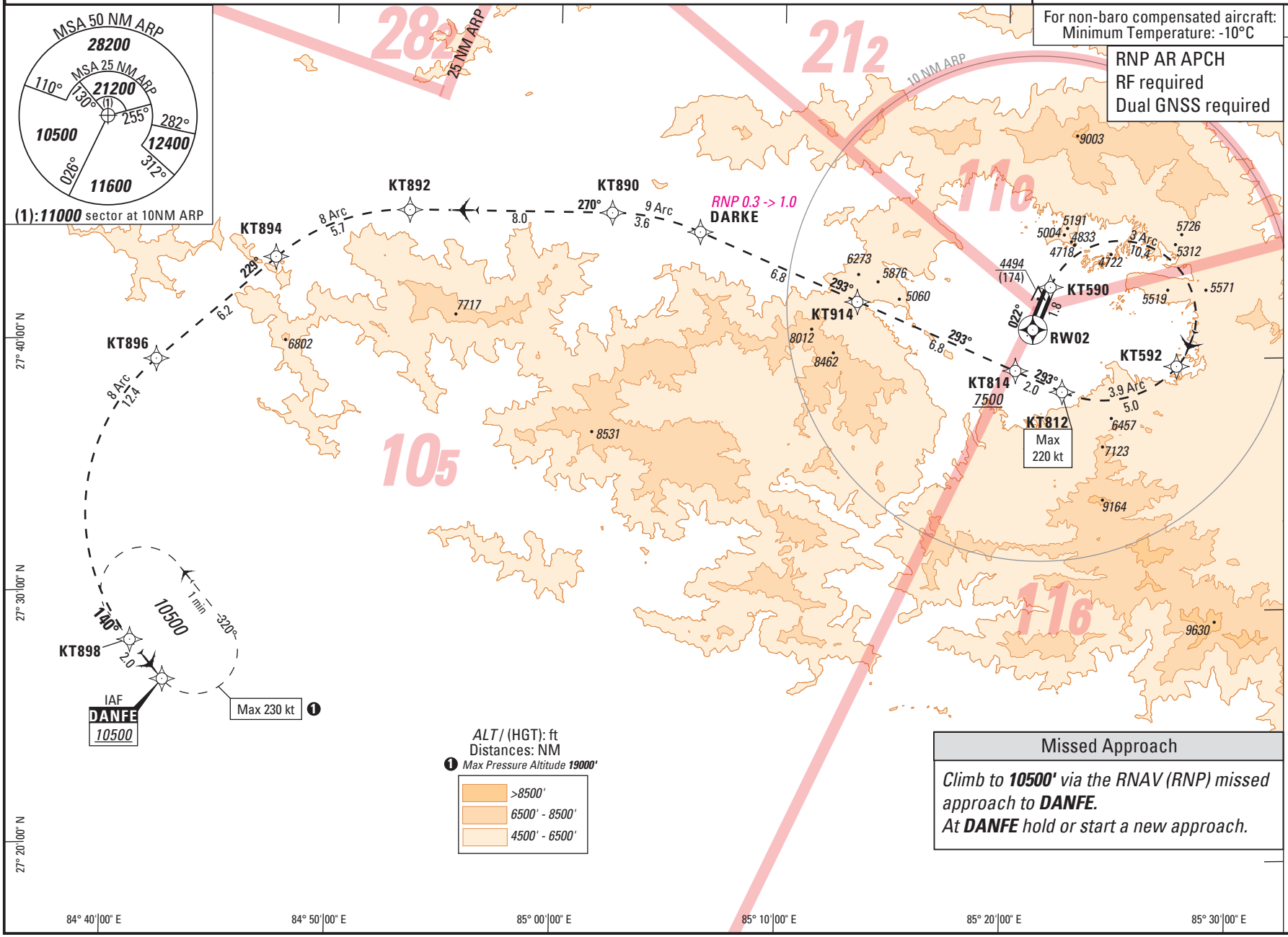
RNP MISSED APPROACH RWY 02 (AR)

APP: 120.6 TWR: 118.1 GND:121.9 | *Trans Alt : 13500'* | **AUTHORIZATION REQUIRED** | VAR: 0°W (10) | APP 2

For non-baro compensated aircraft:
Minimum Temperature: -10°C

ARP: 27°41'50"N - 085°21'29"E

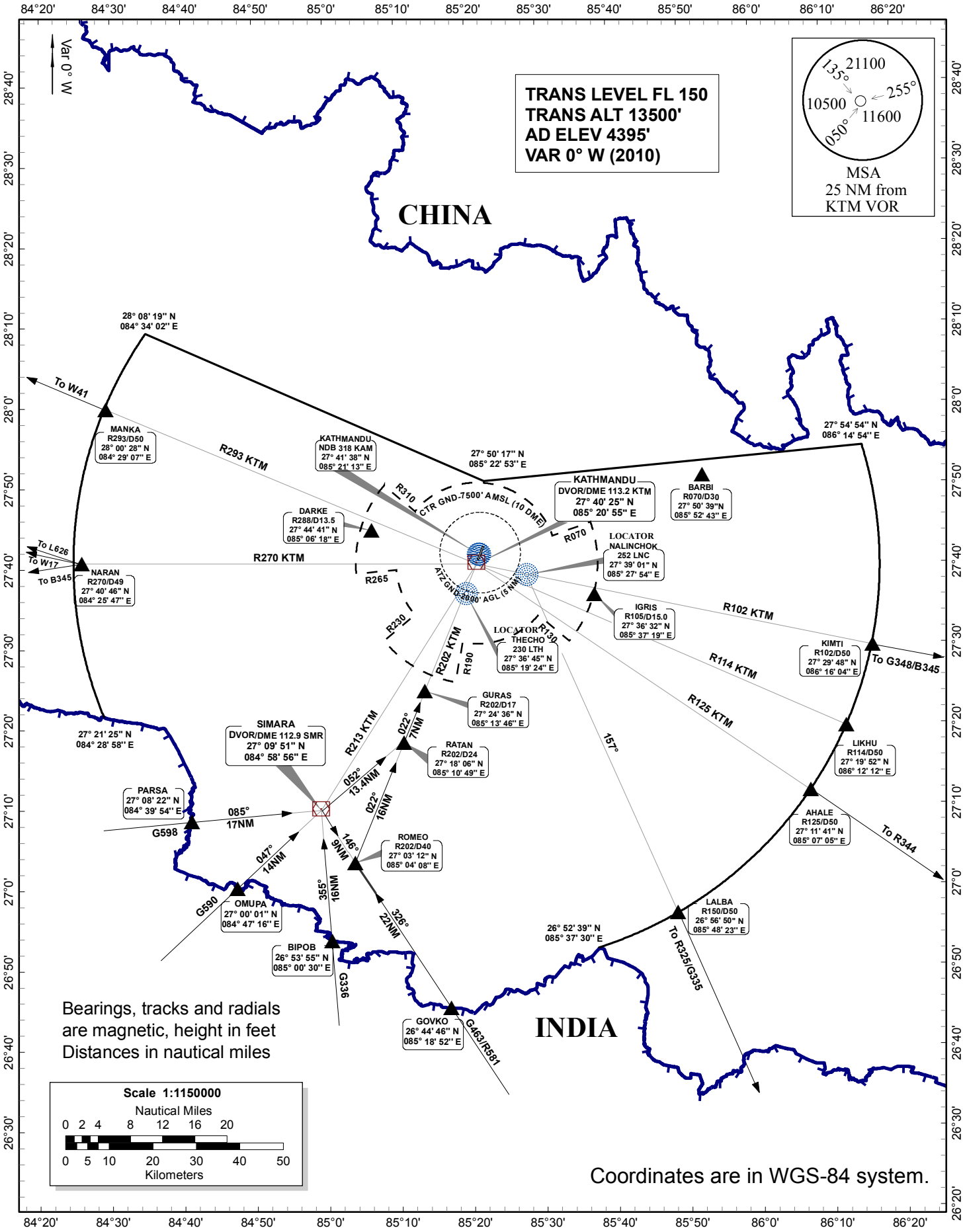
RNP AR APCH
RF required
Dual GNSS required



V3.5 25 NOV 2016 CHG: Hldg outbound.

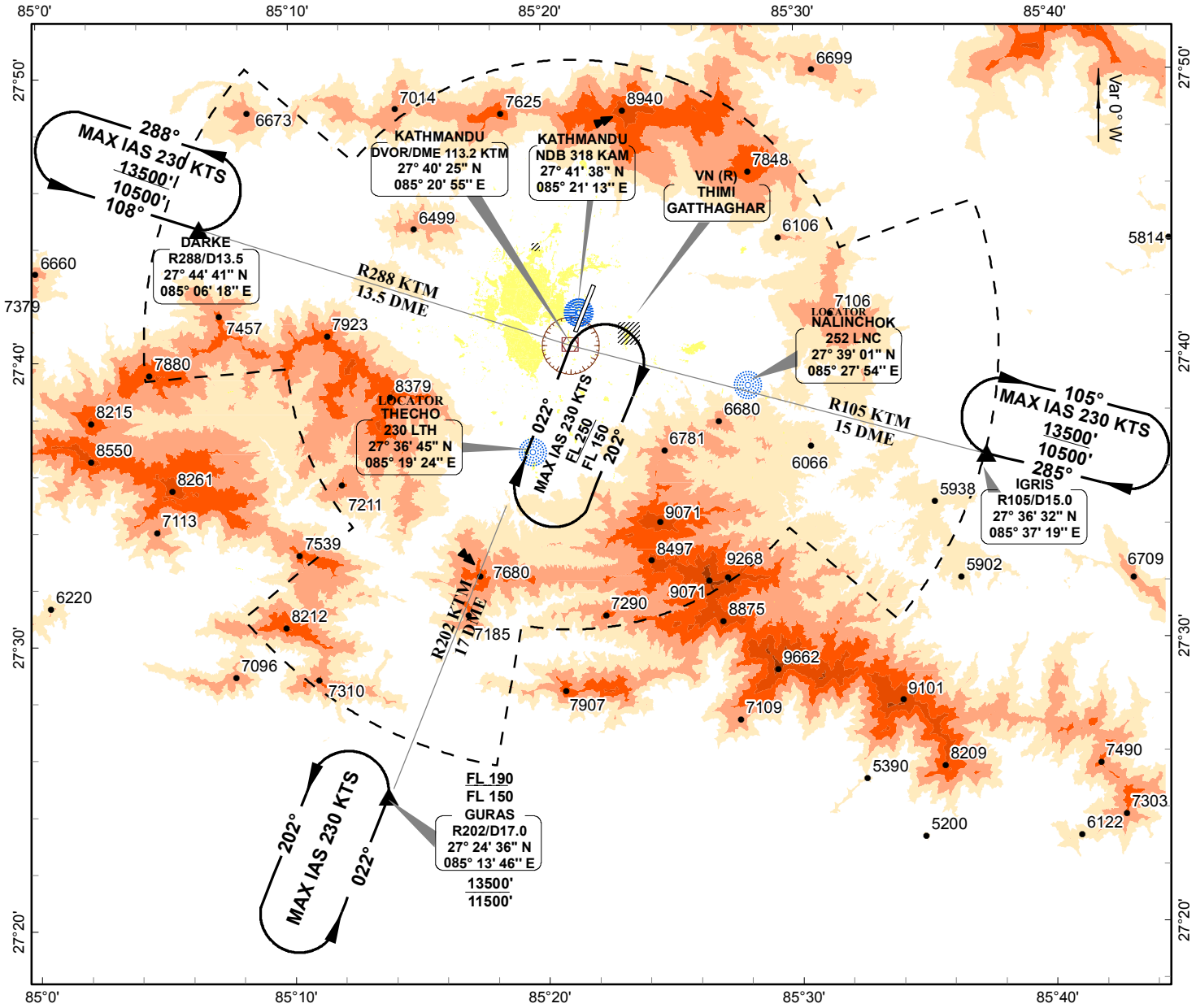
AIRBUS PROSKY® GéoTITAN® & AIP-GIS Charting®

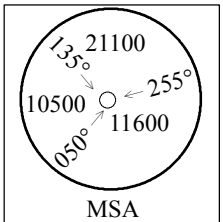
KATHMANDU TERMINAL AREA CHART



5321

KATHMANDU IFR HOLDINGS



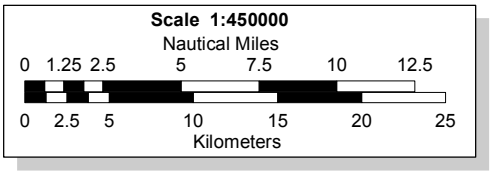


MSA
25 NM from
KTM VOR

TRANS LEVEL FL 150
TRANS ALT 13500'
AD ELEV 4395'
VAR 0° W (2010)

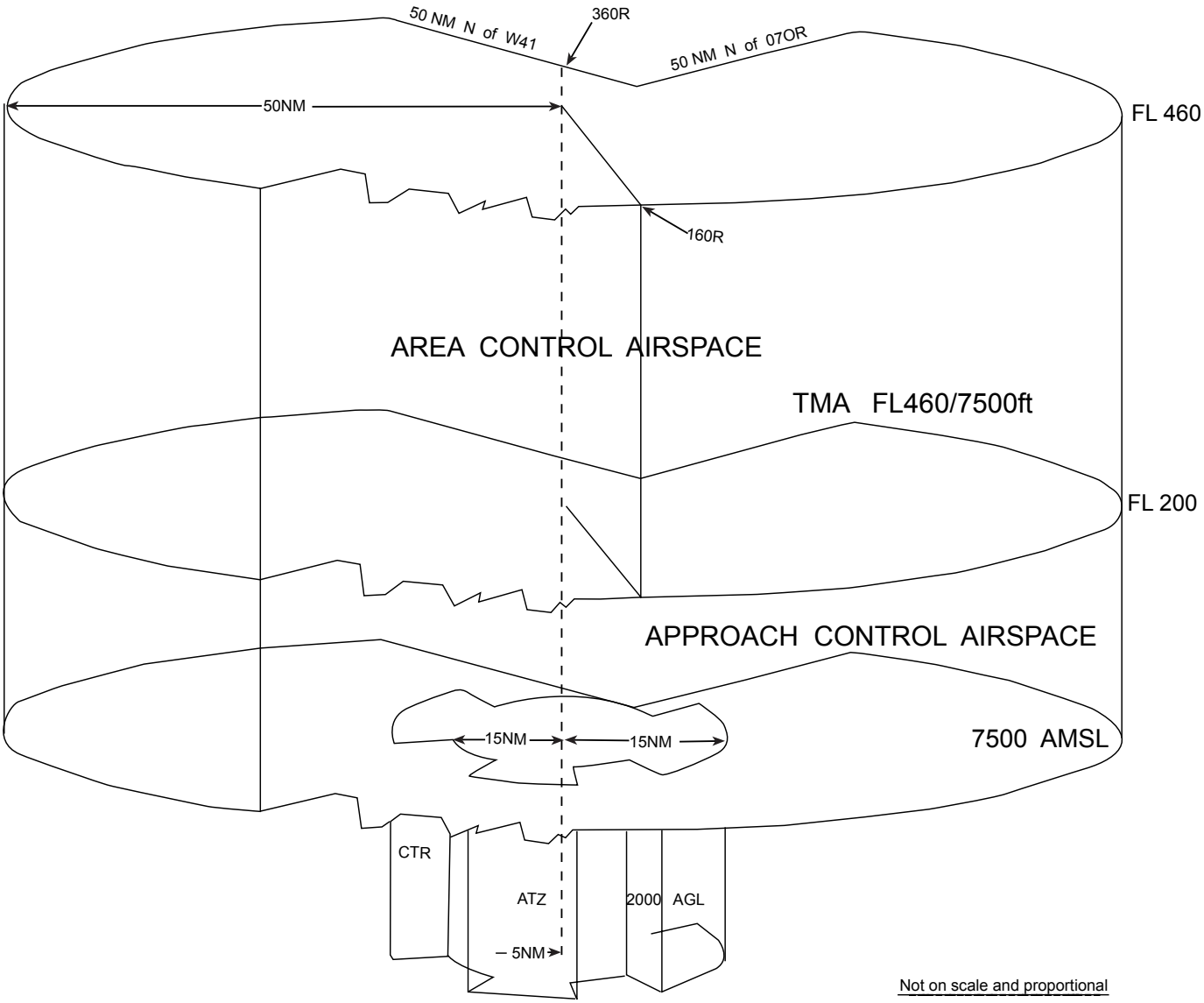
Bearings, tracks and radials are magnetic, height in feet
Distances in nautical miles

Coordinates are in WGS-84 system.

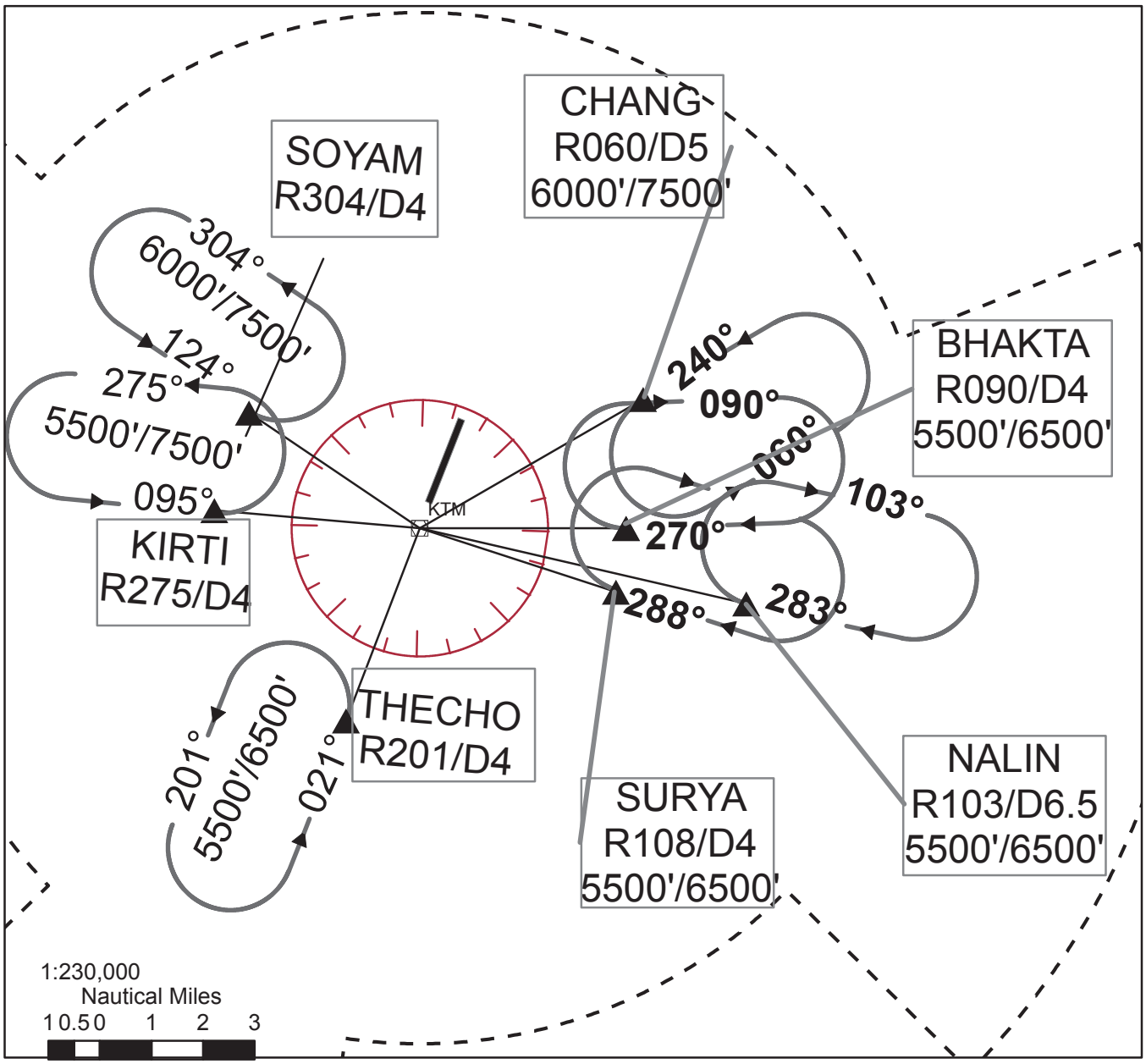


NOTE.-1. IGRIS, GURAS, DARKE holdings are laterally separated
2. GURAS and KTM VOR holdings shall not be used simultaneously at same level.

Tribhuvan Int'l Airport, Controlled Airspace



VFR HOLDING POINTS FOR TIA (INSIDE VALLEY)

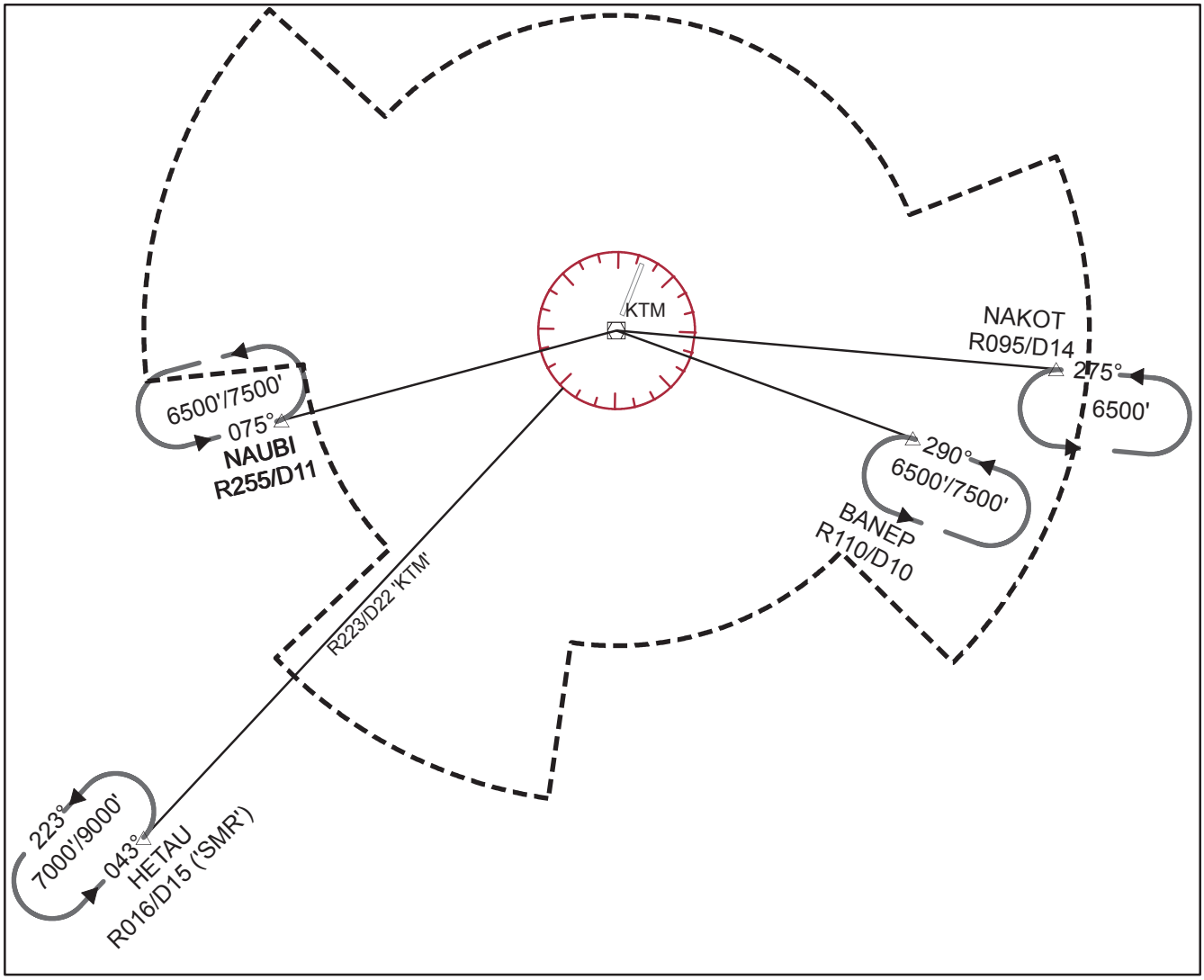


HOLDING DETAILS

NAME	LOCATION	Inbound Track	Visual Reference	Remarks
KIRTI	'KTM' (R275/D4)	095°	Kirtipur City	**Remain north of R258 and outside 2.5D arc**
SOYAM	'KTM' (R304/D4)	124°	Swoyambhu Stupa	**Remain south of R332 and outside 2.5D arc**
THECHO	'KTM' (R201/D4)	021°	Locator 'LTH'	
NALIN	'KTM' (R103/D6.5)	283°	Locator 'LNC'	
BHAKTA	'KTM' (R090/D4)	270°	Bhaktapur City	
CHANG	'KTM' (R060/D5)	240°	Temple	
SURYA	'KTM' (R108/D4)	288°	Temple	

Note:- 1. All holding at these points shall be made in VMC.
2. Terrain clearance shall be a pilot responsibility.

ADDITIONAL VFR HOLDINGS FOR TIA (OUTSIDE VALLEY)

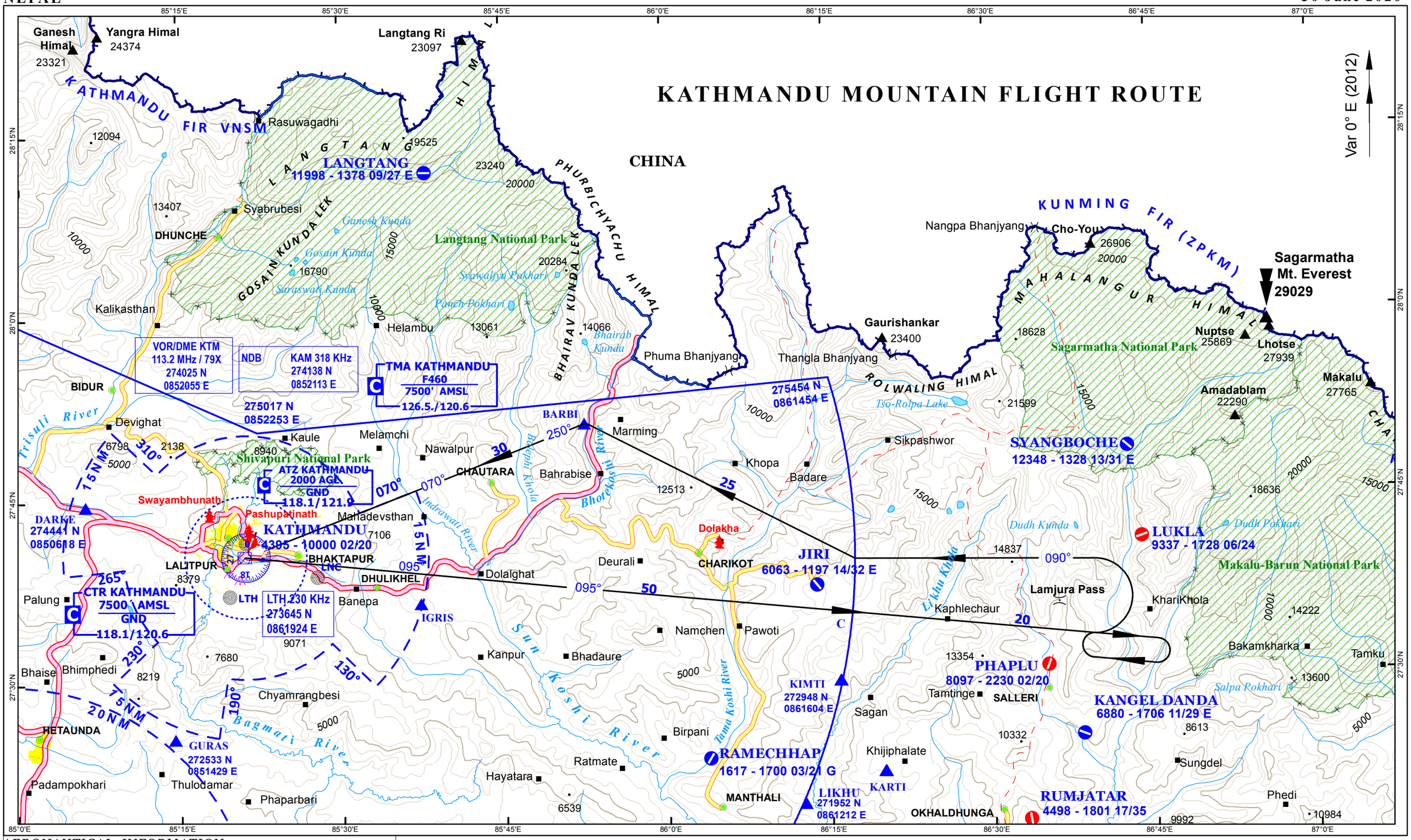


HOLDING DETAILS

NAME	LOCATION	Inbound Track	Visual Reference	Remarks
NAUBI	'KTM' (R255/D11)	075°	Naubise City	
HETAU	'SMR' (R016/D15)	043°	Hetauda Area	
BANEP	'KTM' (R110/D10)	290°	Banepa City	
NAKOT	'KTM' (R095/D14)	275°	Nagarkot Hills	

Note:- 1. All holding at these points shall be made in VMC.
2. Terrain clearance shall be a pilot responsibility.

KATHMANDU MOUNTAIN FLIGHT ROUTE



AERONAUTICAL INFORMATION

- Flight Information Region (FIR)
- Control zone boundary
- TMA boundary
- Mountain flight route
- Non - Directional Radio Beacon (NDB)
- Locator
- Compulsory reporting point
- VOR/DME
- Aerodrome: Paved with refuelling facility
- Aerodrome: Paved(AC)
- Aerodrome: Unpaved (E or G)
- Aerodrome: Not in operation
- Holding Pattern

Scale - 1:550,000

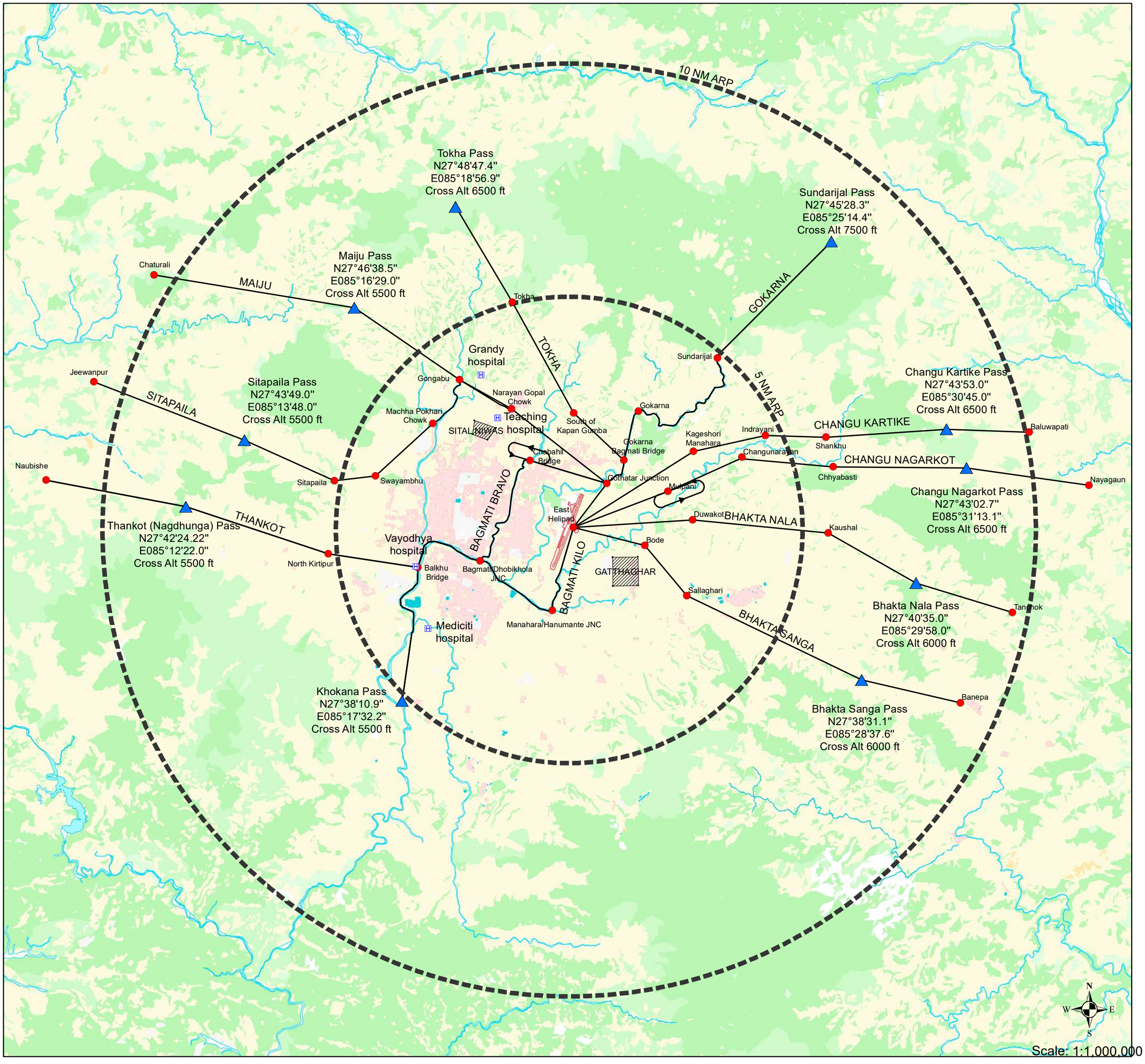
Existing High Level mountain flight route

1. After take off from RWY 02/20 come overhead at or above 10500 ft.
2. Proceed outbound on R095 climbing to FL250.
3. Reach FL200 or above by 35DME.
4. Maintain FL250 by 50DME.
5. AT 80DME KTM turn left descending to FL240 track inbound R090 of KTM till 50DME.
6. At 50DME track direct to BARBI to reach FL 150 or as instructed by ATC to enter Kathmandu valley.
7. Pilots to maintain at least 10 miles longitudinal separation on TCAS with other traffic at same level and same route.

Note:

1. Aircraft proceeding outbound must follow R095 strictly or remain south of R095.
2. Inbound aircraft to track notrh of R090 as far as possible considering weather and turbulence.
3. This route is designed specifically for Beechraft, Jet Stream and ATR aircraft.
4. In case of circling due weather/operational requirement make a right orbit at 80DME KTM descend to FL230.
5. Outbound and inbound tracks to be followed even in the case of abortive flight. Alternate course to be approved by the ATC.
6. Avoiding high terrain and remaining VMC during flight is pilot responsibility.

Heli-lane (Kathmandu)



Kathmandu –Name of Heli Lane and Sector with Entry and Exit Point as well as Altitude

Name of Heli-Lane		Sector	Entry/Exit Point	Altitude	Remarks
BAGMATI	**Bravo**	Gothatar Junction- Chabhil Bridge- Follow Dhobikhola River -Bagmati/Dhobikhola Junction Follow Bagmati River - Balkhu Bridge-**Khokana Pass**	**Khokana**	**5500**	
	Kilo	Manahara/Humanute Junction- Follow ManaharaRiver -Bagmati/Dhobikhola Junction - Follow Bagmati River- Balkhu Bridge-**Khokana Pass**	**Khokana**	**5500**	
GOKARNA		Gothatar Junction - Follow Bagmati River -Gokarna-Sundarijal - **Sundarijal Pass**	**Sundarijal**	**7500**	
MAIJU		Gothatar Junction- Narayan Gopal Chowk - Follow Ringroad- Gangabu-**Maiju Pass**-Chaturali	**Maiju**	**5500**	
THANKOT	**Bravo**	Gothatar Junction - Chabhil Bridge-Follow Dhobikhola River - Bagmati/Dhobikhola Junction - Follow BagmatiRiver - Balkhu Bridge-NorthKirtipur-**Thankot Pass** (Nagdhunga)– Naubishe	**Thankot**	**5500**	
	Kilo	Manahara/Humanute Junction-Follow Manahara River - Bagmati/Dhobikhola Junction - Follow Bagmati River - Balkhu Bridge - North Kirtipur-**Thankot Pass** (Nagdhunga)–Naubishe	**Thankot**	**5500**	
TOKHA		Gothatar Junction-Gokarna Bagmati Bridge - South of Kapan Gumba - Tokha-**Tokha Pass**	**Tokha**	**6500**	
SITAPAILA		Gothatar Junction - Narayan Gopal Chowk - Gangabu- Machha Pokhari Chowk -Swayambhu-Sitapaila-**Sitapaila Pass**–Jeewanpur	**Sitapaila**	**5500**	
BHAKTA	**Nala(Exit)**	Duwakot- Kaushal - **Nala Pass** - Tanchok	**Nala**	**6000**	
	Sanga (Entry)	Banepa-**Sanga Pass**- Sallaghari- Bode	**Sanga**	**6000**	
CHANGU	**Kartike(Exit)**	Kageshori Manahara - Indrayani - Sankhu-**Kartike Pass**–Baluwapati	**Kartike**	**6500**	
	Nagarkot (Entry)	Nayagaun-Nagarkot pass-Chhyabasti-Changu Narayan-Mulpani	**Changu**	**6500**	

HELI-LANE

Notes:

1. Helicopter Holding Point Chabahil Bridge for West – Non-standard - Holding speed not more than 80 knots. Altitude shall be 5000 ft.

2. Helicopter Holding Point Mulpani for East – Non-standard- Holding speed not more than 80 knots. Altitude shall be 5000 ft.

3. Heli lane must be followed as per Heli Check point

4. Maintain 5000 ft.till 5NMthen gradually climb to cross the pass as per given Heli-Lane altitude.

5. All inbound helicopters will reach 5000 ft.by 5 NM after entering valley

6. While flying inside the valley, it is the responsibility of PIC to avoid congested/restricted areas, natural/cultural heritage areas and the obstacles as per Civil Aviation Requirements

7. Heli-lane shall be used in VFR condition only.

8. Heli-lanes are defined by straight lines joining successively the coordinates of respective Heli-lane

9. Unless it is otherwise instructed by Air Traffic Control unit PIC have to maintain the publishedHeli-lane altitude. After leaving valley helicopter will maintain level as per quadrant rule upto 6500 ft. till 25 NM except north.

10. Departing helicopters are required to maintain 4800 ft. crossing take off/landing path of RWYthen follow lane altitude.

11. If instructed by ATC exit & entry point can be changed as per the Air traffic requirement.

12. When landing aircraft crossed initial approach fix for approach no helicopter shall be permitted to cross Bagmati-Kilo lane.

13. No crossing when traffic on final RWY 20 or landing traffic is within 4 miles final on Runway02 and when traffic departing from 02.

Heli Lane - Kathmandu (TIA)

Co-ordinates

S.N.	Name of Sector	Latitude	Longitude	Remarks
1	Bagmati/Dhobikhola JNC	N27°41'10.0"	E085°19'27.0"	
2	Balkhu Bridge	N27°41'02.5"	E085°17'57.0"	
3	Baluwapati	N27°43'48"	E085°32'44.64"	
4	Banepa	N27°38'00"	E085°31'00"	
5	Bhakta North (Nala) Pass	N 27°40'35"	E085°29'58"	
6	Bhakta South (Sanga) Pass	N 27°38'31.1"	E085°28'37.6"	
7	Bode	N27°41'27.48"	E085°23'26"	
8	Chabahil Bridge	N27°43'19.0"	E085°20'41.0"	
9	Changunarayan	N27°43'20.0"	E085°25'48.0"	
10	Chaturali	N27°47'23.36"	E085°11'39.33"	
11	Chhyabasti	N27°43'06.36"	E085°28'00"	
12	Duwakot	N27 °42'00"	E085°24'35.6"	
13	East Helipad	N27°41'52.0"	E085°21'43"	
14	Gokarna	N27°44'21.0"	E085°23'19.0"	
15	Gokarna Bagmati Bridge	N27°43'18.00"	E085°22'57"	
16	Gongabu	N27°45'04.0"	E085°19'00.0"	
17	Gothatar Junction	N27°42'48.25"	E085°22'32"	
18	Indrayani	N27°43'48"	E085°26'22.33"	
19	Jeewanpur	N27°45'06"	E085°10'10.46"	
20	Kageshori Manahara	N27°43'28.41"	E085°24'38"	
21	Kartike Pass	N27°43'53.0"	E085°30'45.0"	
22	Kaushal	N27°41'41"	E085°27'51.50"	
23	Khokana Pass	N27°38'10.9	E085°17'32.2"	
24	Machha Pokhari Chowk	N27°44'08.0"	E085°18'21.0"	
25	Maiju Pass	N27°46'38.5"	E085°16'29.0"	
26	Manahara/Hanumante JNC	N27°40'05.0"	E085°21'11.0"	
27	Mulpani	N27°42'37"	E085°24'00"	
28	Nagarkot Pass	N27°43'02.7"	E085°31'13.1"	
29	Narayan Gopal Chowk	N 27°44'26.0"	E085°20'15.0"	
30	Naubishe	N27°42'59.8"	E085°09'00.0"	
31	Nayagaun	N27°42'38.44"	E085°34'10"	
32	North Kirtipur	N27°41'21.3"	E085°15'47.5"	
33	Sallaghari	N27°40'22.31"	E085°24'25.86"	
34	Shankhu	N27°43'44.39"	E085°27'50"	
35	Sitapaila	N27°42'55.6"	E085°15'57.5"	
36	Sitapaila Pass	N27°43'49.0"	E085°13'48.0"	
37	South of Kapan Gumba	N27°44'19.50"	E085°21'45.20"	
38	Sundarijal	N27°45'28.3"	E085°25'14.4"	
39	Sundarijal Pass	N27°47'56.8"	E085°28'01.4"	
40	Swayambhu	N27°43'01.0"	E085°16'57.0"	
41	Tanchok	N27°39'55.6"	E085°32'17"	
42	Thankot (Nagdhunga) Pass	N27°42'24.22"	E085°12'22"	
43	Tokha	N27°46'43.5"	E085°20'18.1"	
44	Tokha Pass	N27°48'47.4"	E085°18'56.9"	