

AIRAC AIP SUPPLEMENT

TEL: 91-11-24632950 Extn: 2219/2233 AFS: VIDDYXAX FAX: 91-11-24615508 E_mail:- gmais@aai.aero	AERONAUTICAL INFORMATION SERVICES AIRPORTS AUTHORITY OF INDIA RAJIV GANDHI BHAVAN SAFDARJUNG AIRPORT NEW DELHI – 110003	32/2008
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Following supplement is issued for information, guidance and necessary action.



K. RAMALINGAM
CHAIRMAN
AIRPORTS AUTHORITY OF INDIA

[Effective date to be notified later by G-Series NOTAM]

RNAV(GNSS/DME-DME-IRU) SIDS AND STARS
Delhi Airport

1. INTRODUCTION

1.1 For RNAV(GNSS/DME-DME-IRU) SIDs and STARS operations, the aircraft shall be GNSS/DME-DME-IRU equipped and the navigation systems shall meet ICAO RNAV-1 standard of accuracy or equivalent.

1.2 Operators/pilots who are not approved to fly the RNAV(GNSS/DME-DME-IRU) SIDs and STARS shall fly the conventional SIDs or expect radar vectors from ATC.

2. ARRIVALS

2.1 STARs are presented in diagrammatic format on a chart which comprises two main elements:

- a) A TRANSITION route; and
- b) An ARRIVAL route.

2.2 A TRANSITION starts at a waypoint on the ATS route and then requires VOR/DME or RNAV tracking to position the aircraft for the ARRIVAL route.

2.3 All arriving aircraft are required to follow the appropriate TRANSITION and ARRIVAL routes.

2.4 Additional elements on the STAR chart include the following:

- a) Vertical restrictions - designed to contain aircraft in controlled airspace and to separate aircraft from obstacles and to avoid, to the degree possible, conflict with departing traffic.
- b) Speed restrictions - designed for flow control purposes.
- c) Minimum safe altitude (MSA) - provides a minimum clearance of 1000Ft above all objects located in an area within 25NM of DPN VOR.

2.5 Arrivals can expect radar vectors to intercept the localizer for an ILS approach from the RNAV STARs.

2.6 STARs shall be issued by ATC in the following order:

- a) ARRIVAL identifier;
- b) TRANSITION identifier;
- c) Runway-in-use;
- d) An assigned level

2.7 Holdings:

- a) Holding waypoints – AKBAN, SAPLO, SSB VOR, SAM VOR. Minimum Holding altitude FL150 and maximum holding altitude FL230.
- b) AKBAN– Right hand race track pattern, outbound distance 10NM, inbound track 067 deg M, minimum holding altitude FL150, maximum holding altitude FL230
- c) SAPLO –Right hand race track pattern outbound distance 10NM, inbound track 357 deg M, minimum holding altitude FL150, maximum holding altitude FL230
- d) SSB VOR – Right hand race track pattern, outbound distance 10NM, inbound track 291 deg M, minimum holding altitude FL150, maximum holding altitude FL230
- e) SAM VOR – Right hand race track pattern, outbound distance 10NM, inbound track 132 deg M, minimum holding altitude FL150, maximum holding altitude FL230

3. DEPARTURES

- 3.1 All departing aircraft will be cleared on the appropriate RNAV(GNSS/DME-DME-IRU) SID.
- 3.2 A Transition will be issued by ATC in conjunction with the RNAV(GNSS/DME-DME-IRU) SID

4. TRANSITION

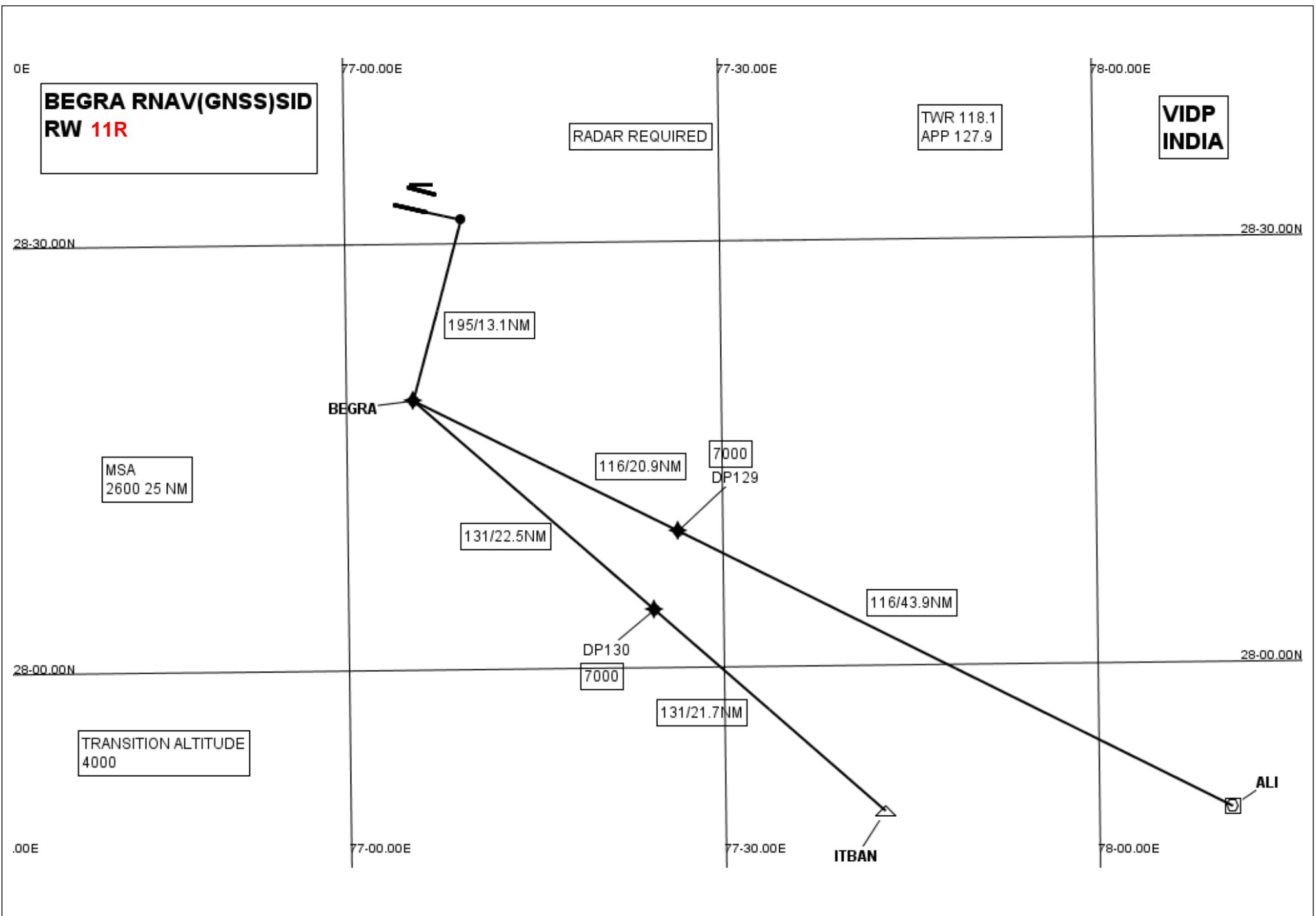
- 4.1 Aircraft may be radar vectored off a Transition/RNAV SID/RNAV STAR. Such aircraft will subsequently be given an instruction to intercept the appropriate Transition/RNAV SID/RNAV STAR.

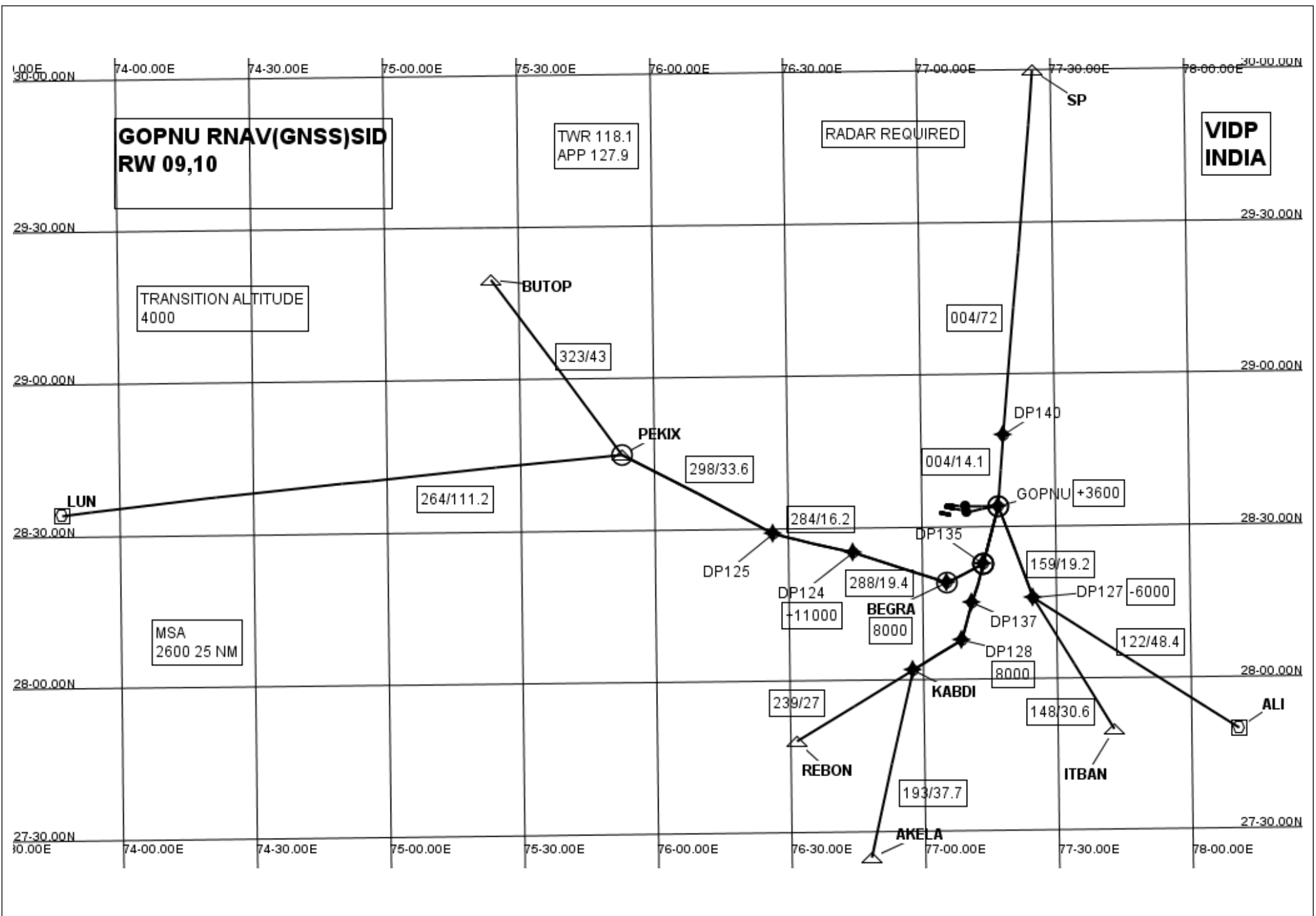
5. VERTICAL AND SPEED RESTRICTIONS

- 5.1 Pilots shall comply with an ATC assigned level. Pilots shall also adhere to the vertical and speed restrictions depicted on the cleared Transition and RNAV(GNSS/DME-DME-IRU) SIDs/STARs. ATC clearance will take precedence when the ATC clearance does not allow the pilots to adhere to the vertical and speed restrictions depicted on the Transition and RNAV(GNSS/DME-DME-IRU) SIDs/STARs.

6. OPERATORS' PROCEDURES

- 6.1 Pilots shall inform ATC when on-board equipment does not meet the requirements of RNAV. Pilots can then expect radar vector from ATC.





**KABDI 1B RNAV(GNSS)SID
RW 09,10,11R**

TWR 118.1
APP 127.9

**VIDP
INDIA**

28-30.00N

28-30.00N

TRANSITION ALTITUDE
4000

RADAR REQUIRED

BEGRA

-7000

N 28 19 0.70
E 77 5 20.15

201/18.5

KABDI

10000

N 28 1 49.66
E 76 57 34.96

239/27

REBON

193/37.7

AKELA

28-00.00N

28-00.00N

27-30.00N

27-30.00N

76-00.00E

76-30.00E

77-00.00E

77-30.00E

78-00.00E

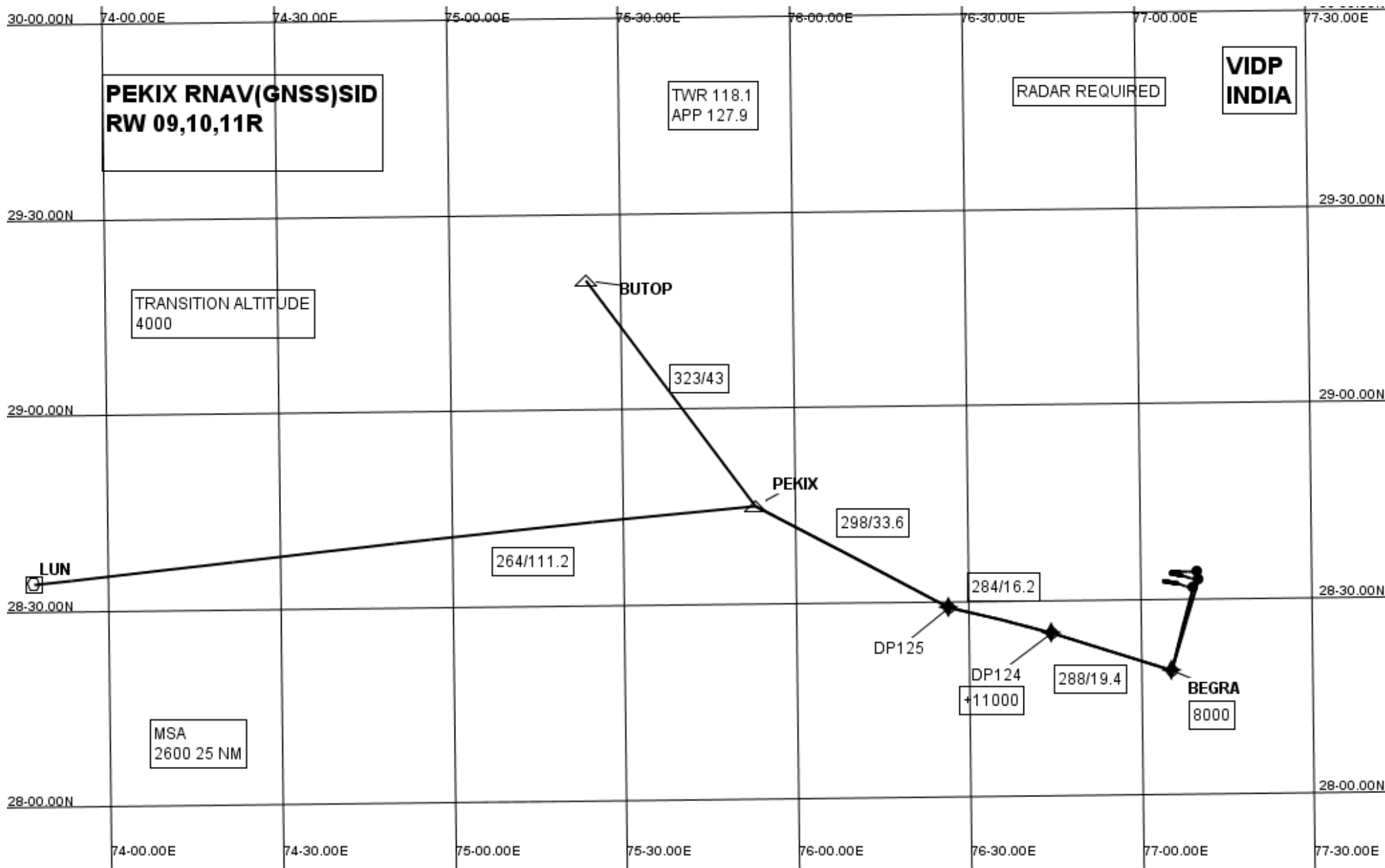
76-00.00E

76-30.00E

77-00.00E

77-30.00E

78-00.00E



KABDI 1B RNAV SID

Runway Transition Data - RW09

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW09				N28 34 11.36	E077 07 01.06							
		2.50	VA				91.51	90.84	1222				
	BEGRA WP	15.59	DF	FB	N28 19 00.70	E077 05 20.15	194.83	194.16	-7000				
	KABDI WP	18.46	TF	FB	N28 01 49.66	E076 57 34.96	201.82	201.15	10000				

Runway Transition Data - RW10

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW10				N28 33 30.60	E077 07 21.09							
		2.53	VA				104.61	103.95	+1219				
	BEGRA WP	14.46	CF	FB	N28 19 00.70	E077 05 20.15	196.91	196.24	-7000				
	KABDI WP	18.46	TF	FB	N28 01 49.66	E076 57 34.96	201.82	201.15	10000				

Runway Transition Data - RW11R

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
NACO	DER RW11R				N28 32 15.86	E077 06 34.15							
		2.53	VA				103.66	102.99	+1225				
	BEGRA WP	13.11	CF	FB	N28 19 00.70	E077 05 20.15	195.59	194.92	-7000				
	KABDI WP	18.46	TF	FB	N28 01 49.66	E076 57 34.96	201.82	201.15	10000				

En Route Transition Data - AKELA

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	KABDI WP		IF		N28 01 49.66	E076 57 34.96							
DAFIF	AKELA VOR	37.70	TF	FB	N27 25 00.55	E076 47 55.66	193.17	192.50					

En Route Transition Data - REBON

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	KABDI WP		IF		N28 01 49.66	E076 57 34.96			10000				
DAFIF	REBON VOR	27.02	TF	FB	N27 48 00.70	E076 31 20.60	239.45	238.78					

BEGRA RNAV SID

Runway Transition Data - RW11R

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
NACO	DER RW11R				N28 32 15.86	E077 06 34.15							
		2.50	VA				103.66	102.99	1225				
	BEGRA WP	13.11	DF	FB	N28 19 00.70	E077 05 20.15	195.59	194.92					

En Route Transition Data - ALI

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	BEGRA WP		IF		N28 19 00.70	E077 05 20.15							
	DP129 WP	20.90	DF	FB	N28 09 35.58	E077 26 28.36	116.63	115.96	7000				
DAFIF	ALI 4	43.86	TF	FB	N27 49 45.50	E078 10 42.00	116.63	115.96					

En Route Transition Data - ITBAN

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	BEGRA WP		IF		N28 19 00.70	E077 05 20.15							
	DP130 WP	22.52	DF	FB	N28 04 05.85	E077 24 28.03	131.27	130.60	7000				
DAFIF	ITBAN VOR	21.65	TF	FB	N27 49 43.40	E077 42 47.55	131.38	130.71					

GOPNU RNAV SID

Runway Transition Data - RW09

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW09				N28 34 11.36	E077 07 01.06							
		2.50	VA				91.51	90.84	1222				
	GOPNU WP	6.34	DF	FO	N28 33 57.00	E077 17 03.05	91.53	90.86					

Runway Transition Data - RW10

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW10				N28 33 30.60	E077 07 21.09							
		2.50	VA				104.62	103.95	1219				

	GOPNU WP	6.22	DF	FO	N28 33 57.00	E077 17 03.05	80.06	79.39	+3600				
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En Route Transition Data - ET AKELA

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	GOPNU WP		IF		N28 33 57.00	E077 17 03.05			+3600				
	DP135 WP	11.66	DF	FO	N28 22 40.35	E077 13 33.84	195.29	194.63	8000				
	DP137 WP	7.96	DF	FB	N28 14 59.47	E077 11 07.87	195.67	195.00	8000				
	DP128 WP	7.64	CF	FB	N28 07 37.73	E077 08 44.95	195.62	194.96					
	KABDI WP	11.45	TF	FB	N28 01 49.66	E076 57 34.96	239.68	239.02					
DAFIF	AKELA VOR	37.70	TF	FB	N27 25 00.55	E076 47 55.66	193.17	192.50					

En Route Transition Data - ET ALI

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	GOPNU WP		IF		N28 33 57.00	E077 17 03.05			3600				
	DP127 WP	19.19	TF	FB	N28 15 55.83	E077 24 41.35	159.43	158.76	-6000				
DAFIF	ALI 4	48.36	TF	FB	N27 49 45.50	E078 10 42.00	122.49	121.82					

En Route Transition Data - ET PEKIX

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	GOPNU WP		IF		N28 33 57.00	E077 17 03.05			+3600				
	DP135 WP	11.66	DF	FO	N28 22 40.35	E077 13 33.84	195.29	194.63	8000				
	BEGRA WP	8.13	DF	FO	N28 19 00.70	E077 05 20.15	243.33	242.67	8000				
	DP124 WP	19.42	DF	FB	N28 25 04.15	E076 44 25.10	288.21	287.54	+11000				
	DP125 WP	16.18	TF	FB	N28 29 01.95	E076 26 36.85	284.21	283.54					
DAFIF	PEKIX VOR	33.65	TF	FO	N28 45 00.06	E075 52 56.07	298.38	297.72					
DAFIF	BUTOP VOR	42.98	DF	FB	N29 19 44.85	E075 23 56.30	323.86	323.19					

En Route Transition Data - ET REBON

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	GOPNU WP		IF		N28 33 57.00	E077 17 03.05			+3600				
	DP135 WP	11.66	DF	FO	N28 22 40.35	E077 13 33.84	195.29	194.62	8000				
	DP137 WP	7.96	DF	FB	N28 14 59.47	E077 11 07.87	195.67	195.00					
	DP128 WP	7.64	CF	FB	N28 07 37.73	E077 08 44.95	195.62	194.95	8000				
	KABDI WP	11.45	TF	FB	N28 01 49.66	E076 57 34.96	239.68	239.01					
DAFIF	REBON VOR	27.02	TF	FB	N27 48 00.70	E076 31 20.60	239.45	238.78					

En Route Transition Data - ET SP

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	GOPNU WP		IF		N28 33 57.00	E077 17 03.05			+3600				
	DP140 WP	14.18	DF	FB	N28 48 06.64	E077 18 30.58	5.19	4.52	-7000				
DAFIF	SP VOR	72.00	TF	FB	N29 59 59.68	E077 25 55.23	5.13	4.46					

En Route Transition Data - ITBAN

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	GOPNU WP		IF		N28 33 57.00	E077 17 03.05			+3600				
	DP127 WP	19.19	TF	FB	N28 15 55.83	E077 24 41.35	159.43	158.76	-6000				
DAFIF	ITBAN VOR	30.65	TF	FB	N27 49 43.40	E077 42 47.55	148.43	147.76					

En Route Transition Data - LUN

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	GOPNU WP		IF		N28 33 57.00	E077 17 03.05							
	DP135 WP	11.66	DF	FO	N28 22 40.35	E077 13 33.84	195.29	194.62					
	BEGRA WP	8.13	DF	FB	N28 19 00.70	E077 05 20.15	243.33	242.66					
	DP124 WP	19.42	TF	FB	N28 25 04.15	E076 44 25.10	288.21	287.54					
	DP125 WP	16.18	TF	FB	N28 29 01.95	E076 26 36.85	284.21	283.54					
DAFIF	PEKIX VOR	33.65	TF	FB	N28 45 00.06	E075 52 56.07	298.38	297.71					
DAFIF	LUN 4	111.26	TF	FB	N28 34 13.08	E073 47 03.14	264.96	264.29					

PEKIX RNAV SID

Runway Transition Data - RW09

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW09				N28 34 11.36	E077 07 01.06							
		2.50	VA				91.51	90.84	1222				
	BEGRA WP	15.59	DF	FB	N28 19 00.70	E077 05 20.15	194.83	194.16	7000				

Runway Transition Data - RW10

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW10				N28 33 30.60	E077 07 21.09							
		2.50	VA				104.61	103.95	1219				
	BEGRA WP	14.45	DF	FB	N28 19 00.70	E077 05 20.15	196.91	196.24	7000				

Runway Transition Data - RW11R

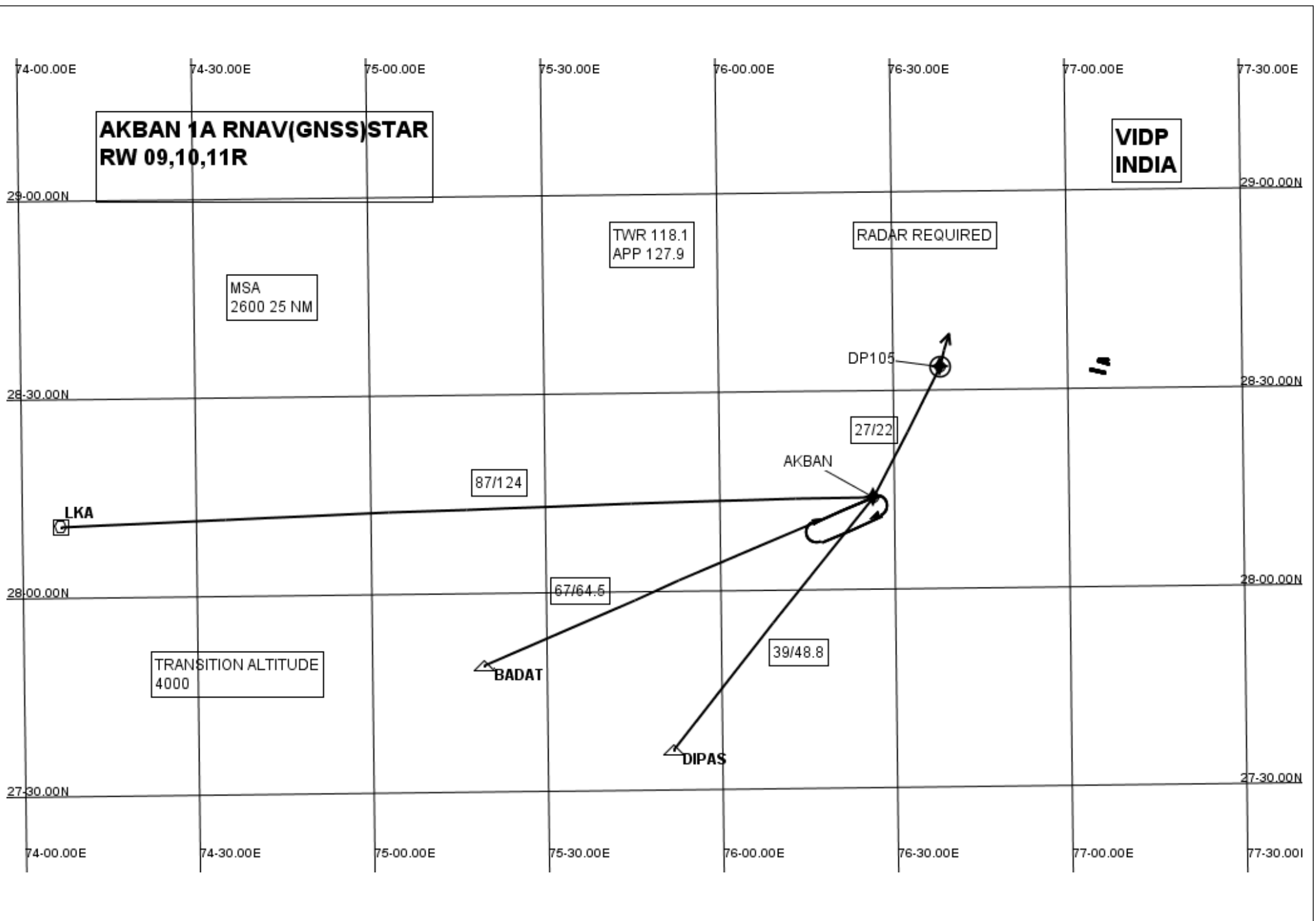
DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
NACO	DER RW11R				N28 32 15.86	E077 06 34.15							
		2.50	VA				103.66	102.99	1225				
	BEGRA WP	13.11	DF	FB	N28 19 00.70	E077 05 20.15	195.59	194.92	7000				

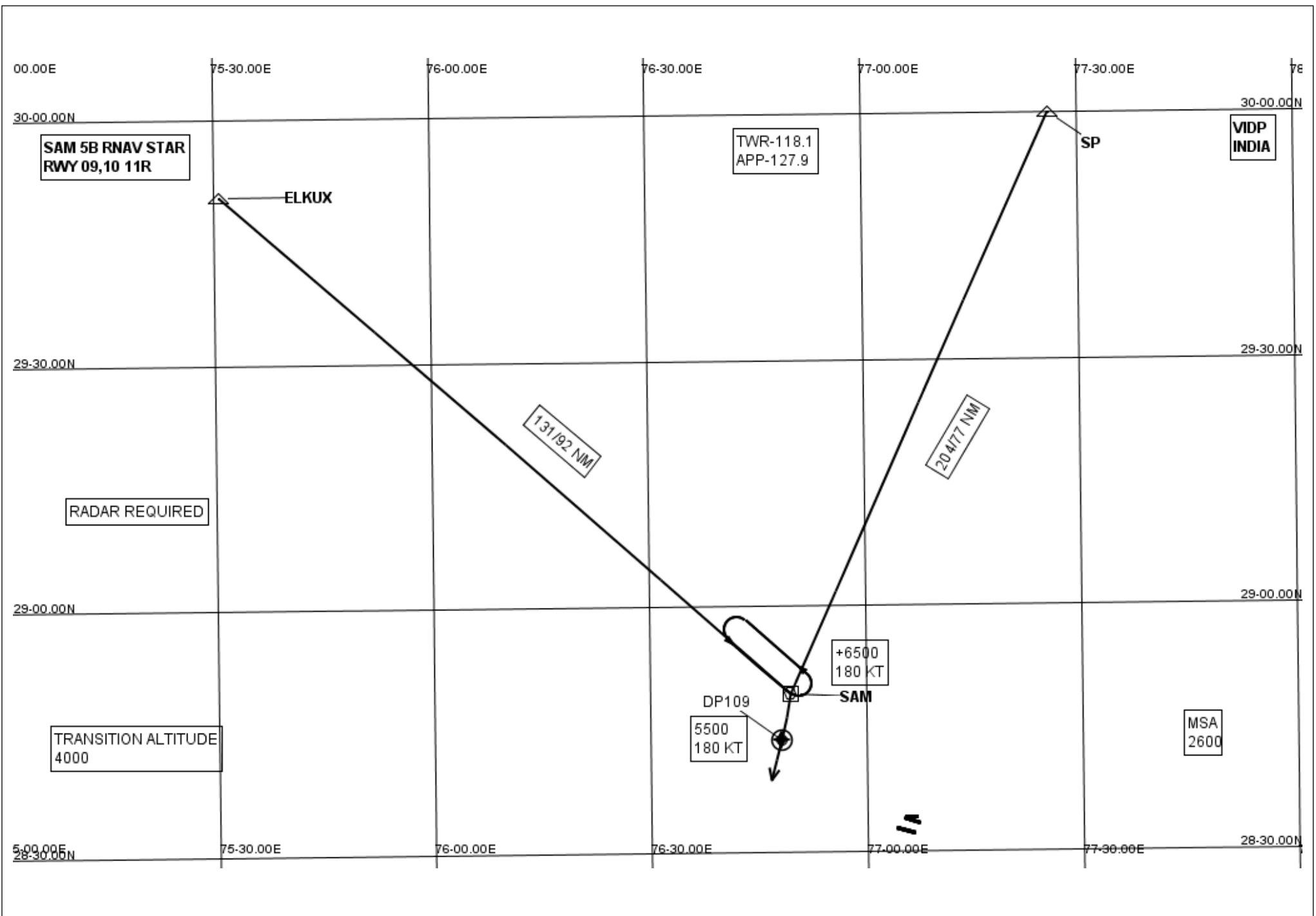
En Route Transition Data - BUTOP

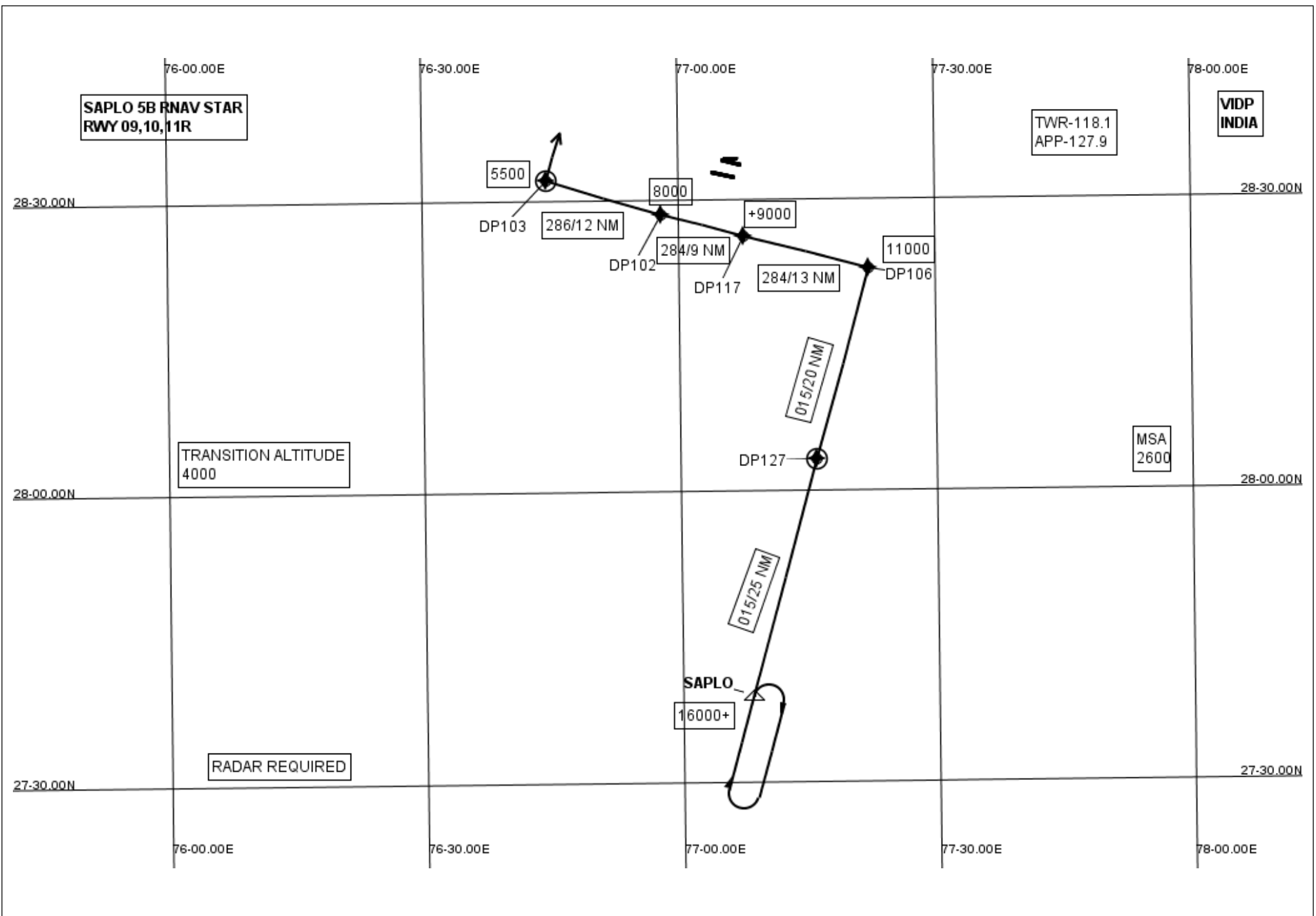
DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	BEGRA WP		IF		N28 19 00.70	E077 05 20.15			7000				
	DP124 WP	19.42	TF	FB	N28 25 04.15	E076 44 25.10	288.21	287.54	+11000				
	DP125 WP	16.18	TF	FB	N28 29 01.95	E076 26 36.85	284.21	283.54					
DAFIF	PEKIX VOR	33.65	TF	FB	N28 45 00.06	E075 52 56.07	298.38	297.72					
DAFIF	BUTOP VOR	42.98	TF	FB	N29 19 44.85	E075 23 56.30	323.86	323.19					

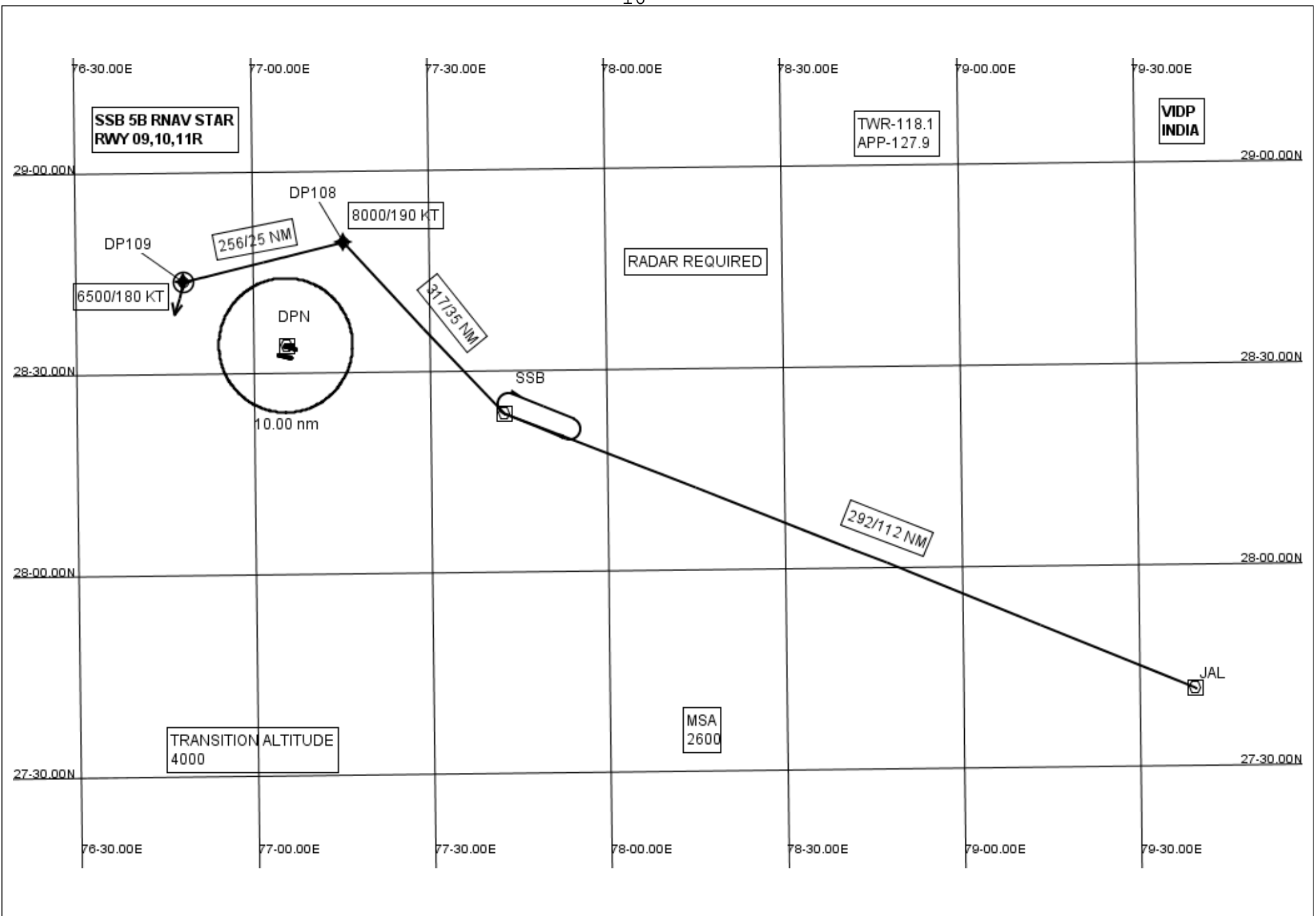
En Route Transition Data - LUN

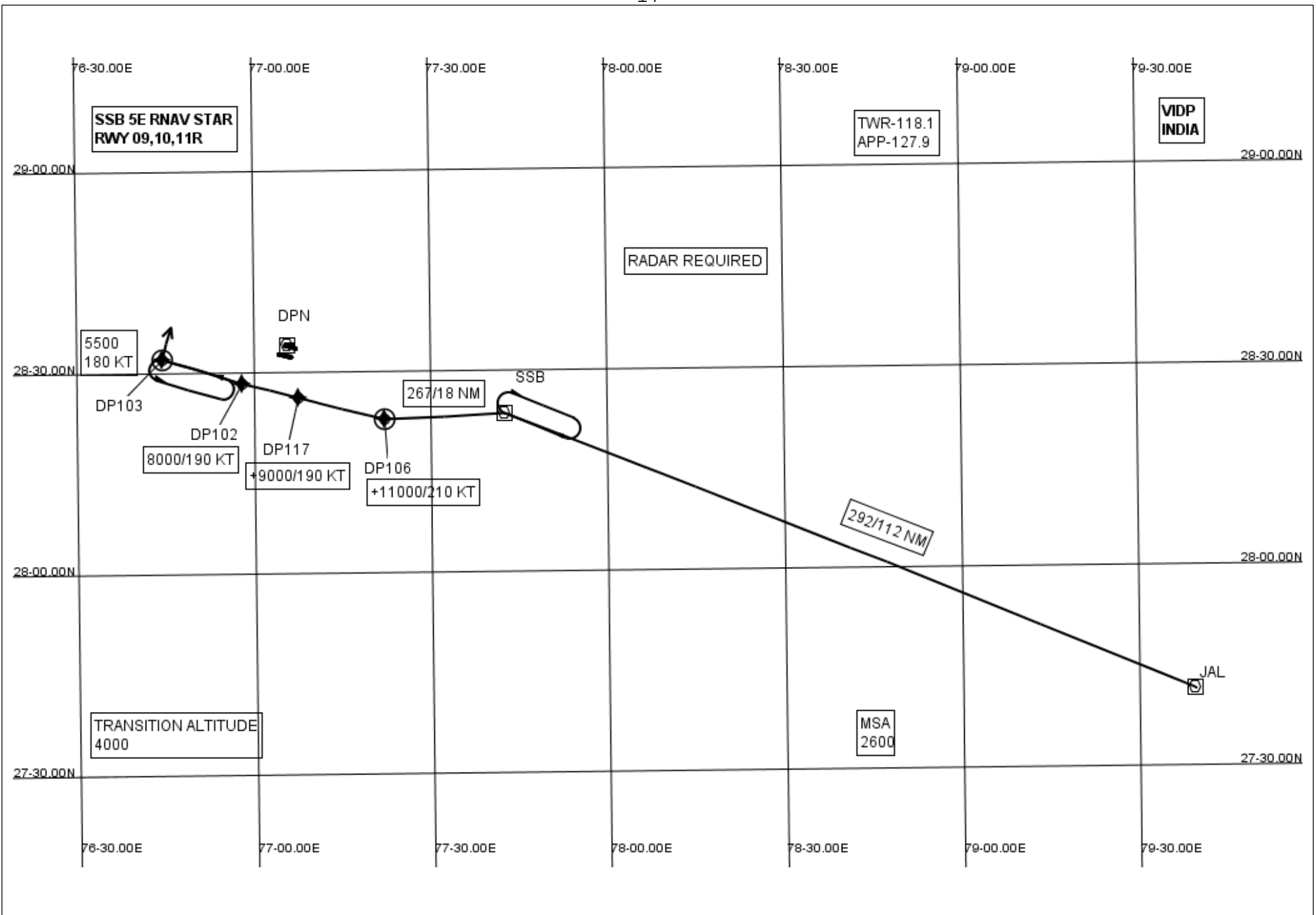
DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	BEGRA WP		IF		N28 19 00.70	E077 05 20.15							
	DP124 WP	19.42	TF	FB	N28 25 04.15	E076 44 25.10	288.21	287.54					
	DP125 WP	16.18	TF	FB	N28 29 01.95	E076 26 36.85	284.21	283.54					
DAFIF	PEKIX VOR	33.65	TF	FB	N28 45 00.06	E075 52 56.07	298.38	297.72					
DAFIF	LUN 4	111.26	TF	FB	N28 34 13.08	E073 47 03.14	264.96	264.29					











AKBAN 1A RNAV STAR

En Route Transition Data - BADAT

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
BADAT		IF		N27 49 06.37	E075 19 08.39							
AKBAN WP	64.49	TF	FB	N28 13 53.58	E076 26 26.95	67.20	66.53	10000	210			
AKBAN WP	10.00	HF		N28 13 53.58	E076 26 26.95	67.20	66.53					

En Route Transition Data - DIPAS

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DIPAS		IF		N27 36 01.50	E075 51 32.10							
AKBAN WP	48.81	TF	FB	N28 13 53.58	E076 26 26.95	39.18	38.51	10000	210			
AKBAN WP	10.00	HF		N28 13 53.58	E076 26 26.95	67.20	66.53					

En Route Transition Data - LKA

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
LKA		IF		N28 10 46.22	E074 06 32.99							
AKBAN WP	123.64	TF	FB	N28 13 53.58	E076 26 26.95	88.01	87.34	10000	210			
AKBAN WP	10.00	HF		N28 13 53.58	E076 26 26.95	67.20	66.53					

Runway Transition Data - RW09,RW10,RW11R

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
AKBAN WP		IF		N28 13 53.58	E076 26 26.95							
DP105 WP	22.07	TF	FO	N28 33 25.82	E076 38 11.67	27.95	27.28	6500	180			
	5.00	VM				14.67	14.00					

SAM 5B RNAV STAR

En Route Transition Data - ELKUX

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
ELKUX		IF		N29 50 29.67	E075 30 41.22							
SAM	91.96	TF	FB	N28 49 21.07	E076 49 25.59	131.22	130.56					

SAM	10.00	HF		N28 49 21.07	E076 49 25.59	131.22	130.56					
En Route Transition Data - SP												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SP NDB		IF		N29 59 59.68	E077 25 55.23							
SAM	77.34	TF	FB	N28 49 21.07	E076 49 25.59	204.49	203.82					
SAM	10.00	HF		N28 49 21.07	E076 49 25.59	131.23	130.56					
Runway Transition Data - RW09, RW10,RW11R												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SAM		IF		N28 49 21.07	E076 49 25.59			+6500	180			
DP109 WP	5.76	TF	FO	N28 43 40.86	E076 48 11.56	190.86	190.19	5500				
	5.00	VM				194.67	194.00					

SAPLO 5B RNAV STAR

En Route Transition Data - SAPLO												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SAPLO		IF		N27 38 54.10	E077 08 15.10							
SAPLO	10.00	HF		N27 38 54.10	E077 08 15.10	15.70	15.03	16000				
DP127 WP	25.14	DF	FO	N28 03 09.92	E077 15 56.98	15.72	15.05					
DP106 WP	20.34	DF	FB	N28 22 47.59	E077 22 12.22	15.74	15.07					
Runway Transition Data - RW09, RW10, RW11R												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DP106 WP		IF		N28 22 47.59	E077 22 12.22			11000				
DP117 WP	13.34	DF	FB	N28 26 13.04	E077 07 34.78	284.89	284.22	+9000	190			
DP102 WP	8.77	TF	FB	N28 28 26.66	E076 57 57.09	284.70	284.03	8000	190			
DP103 WP	12.40	TF	FO	N28 32 05.96	E076 44 29.96	287.15	286.48	5500	180			
	5.00	VM				16.67	16.00					

SSB 5E RNAV STAR

En Route Transition Data - JAL

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
JAL		IF		N27 41 39.56	E079 39 20.23							
SSB	111.53	TF	FB	N28 23 36.20	E077 42 29.20	292.48	291.81					
SSB	10.00	HF		N28 23 36.20	E077 42 29.20	292.48	291.81					

Runway Transition Data - RW09,RW10,RW11R

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SSB		IF		N28 23 36.20	E077 42 29.20							
DP106 WP	17.91	TF	FO	N28 22 47.59	E077 22 12.22	267.49	266.82	+11000	210			
DP117 WP	13.34	DF	FB	N28 26 13.04	E077 07 34.78	284.89	284.22	+9000	190			
DP102 WP	8.77	TF	FB	N28 28 26.66	E076 57 57.09	284.70	284.03	8000	190			
DP103 WP	12.40	TF	FO	N28 32 05.96	E076 44 29.96	287.15	286.48	5500	180			
DP103 WP	10.00	HF		N28 32 05.96	E076 44 29.96	287.15	286.48					
	5.00	VM				14.67	14.00					

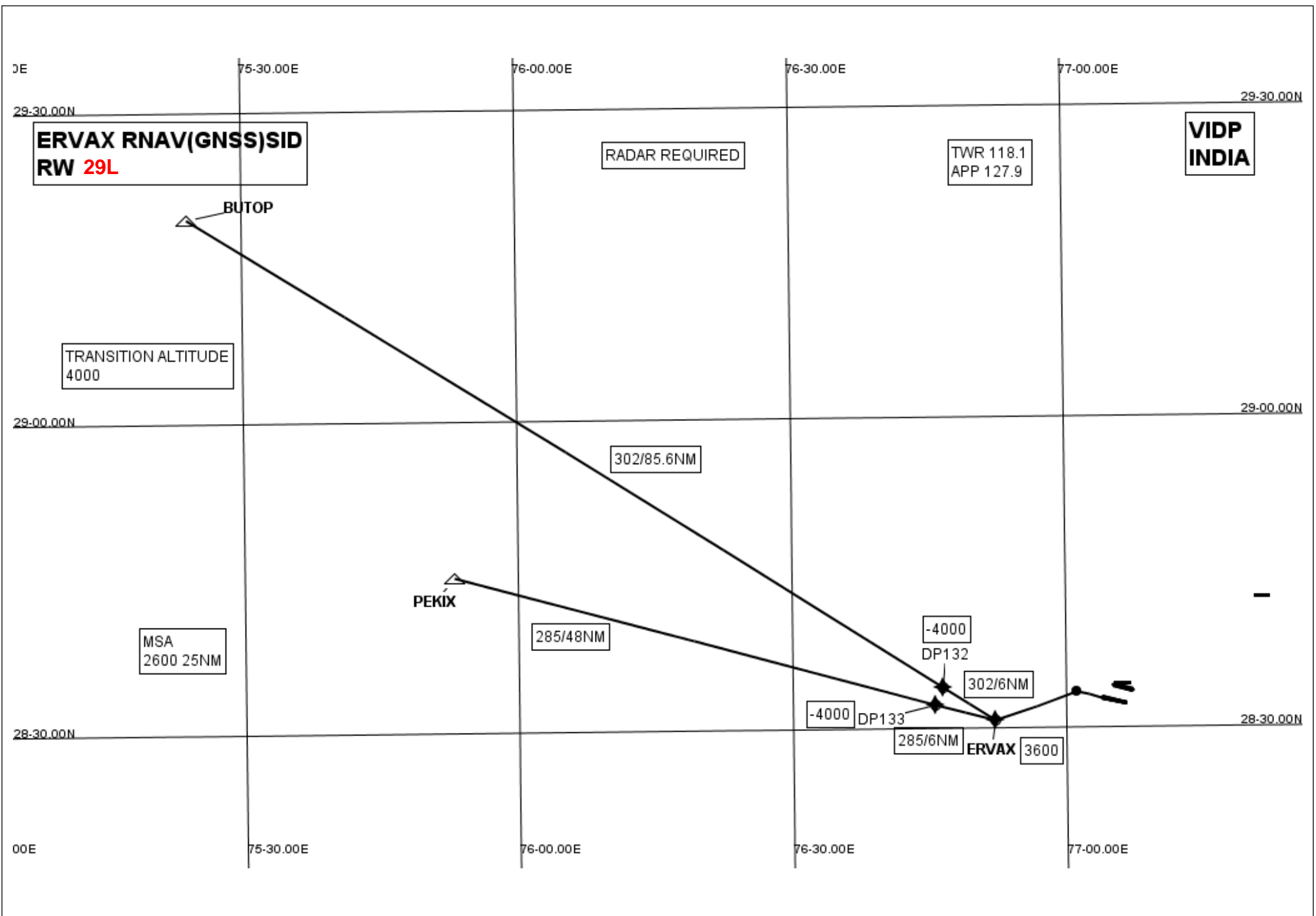
SSB 5B RNAV STAR

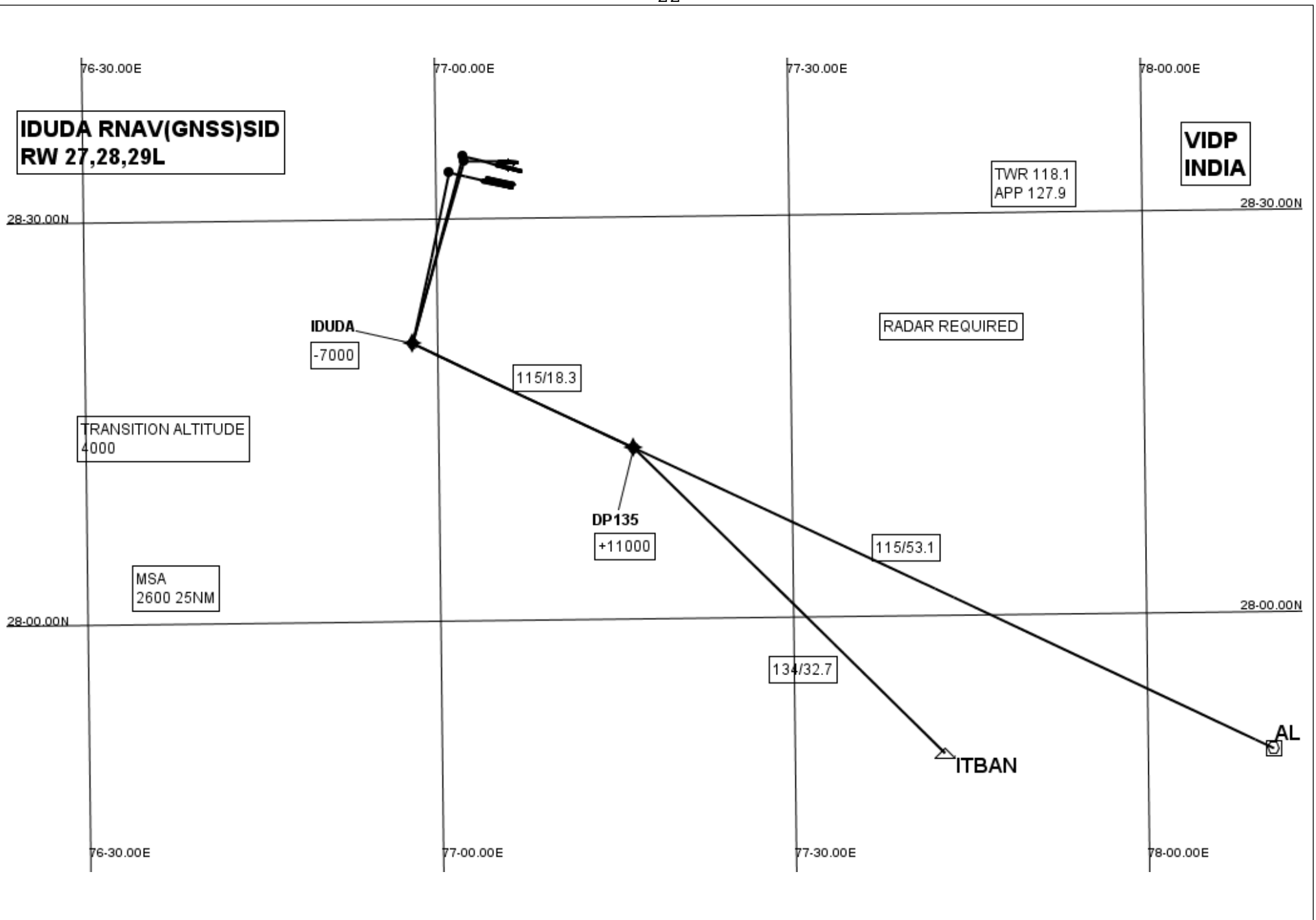
En Route Transition Data - JAL

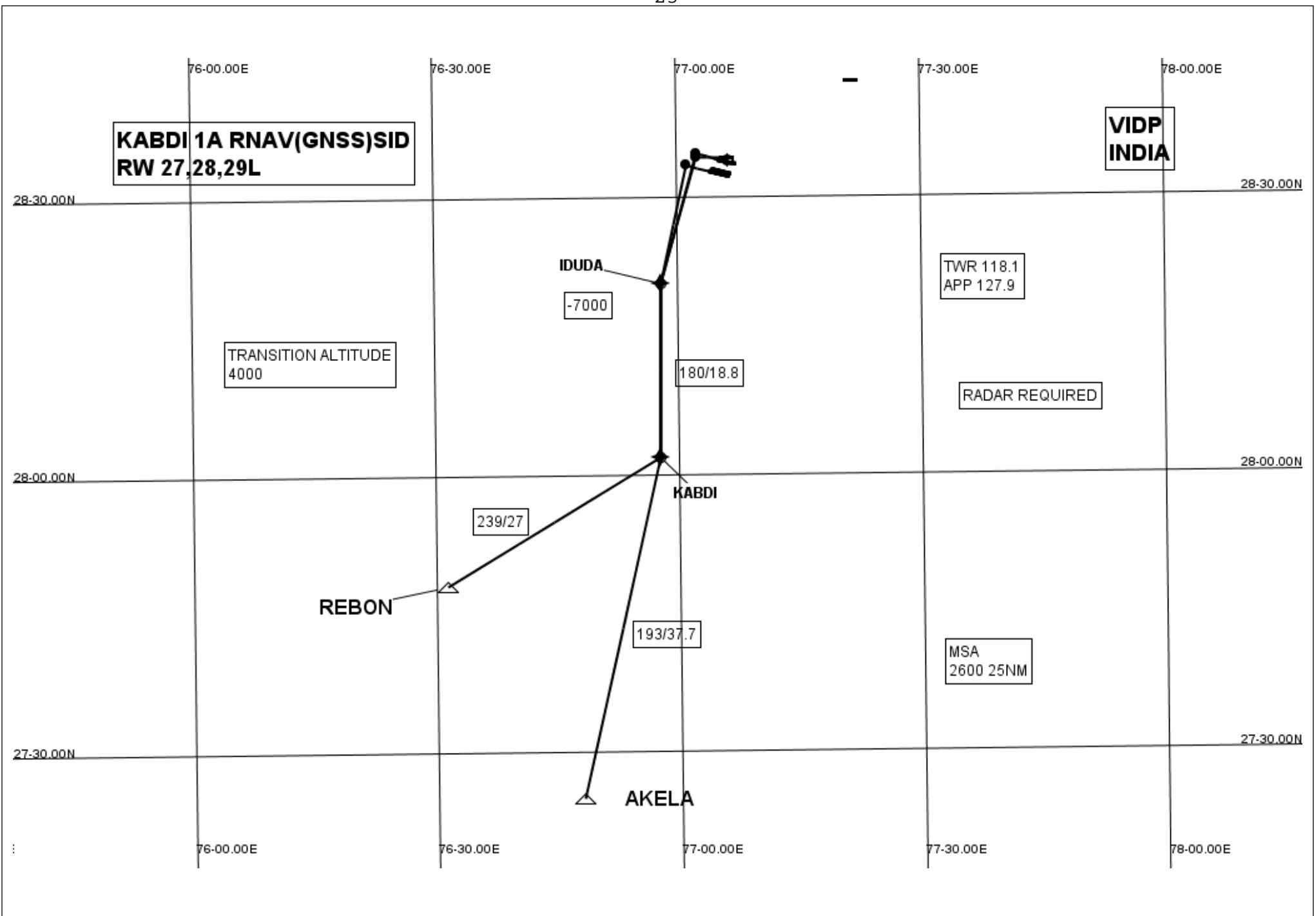
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
JAL		IF		N27 41 39.56	E079 39 20.23							
SSB	111.53	TF	FB	N28 23 36.20	E077 42 29.20	292.48	291.81					
SSB	10.00	HF		N28 23 36.20	E077 42 29.20	292.48	291.81					

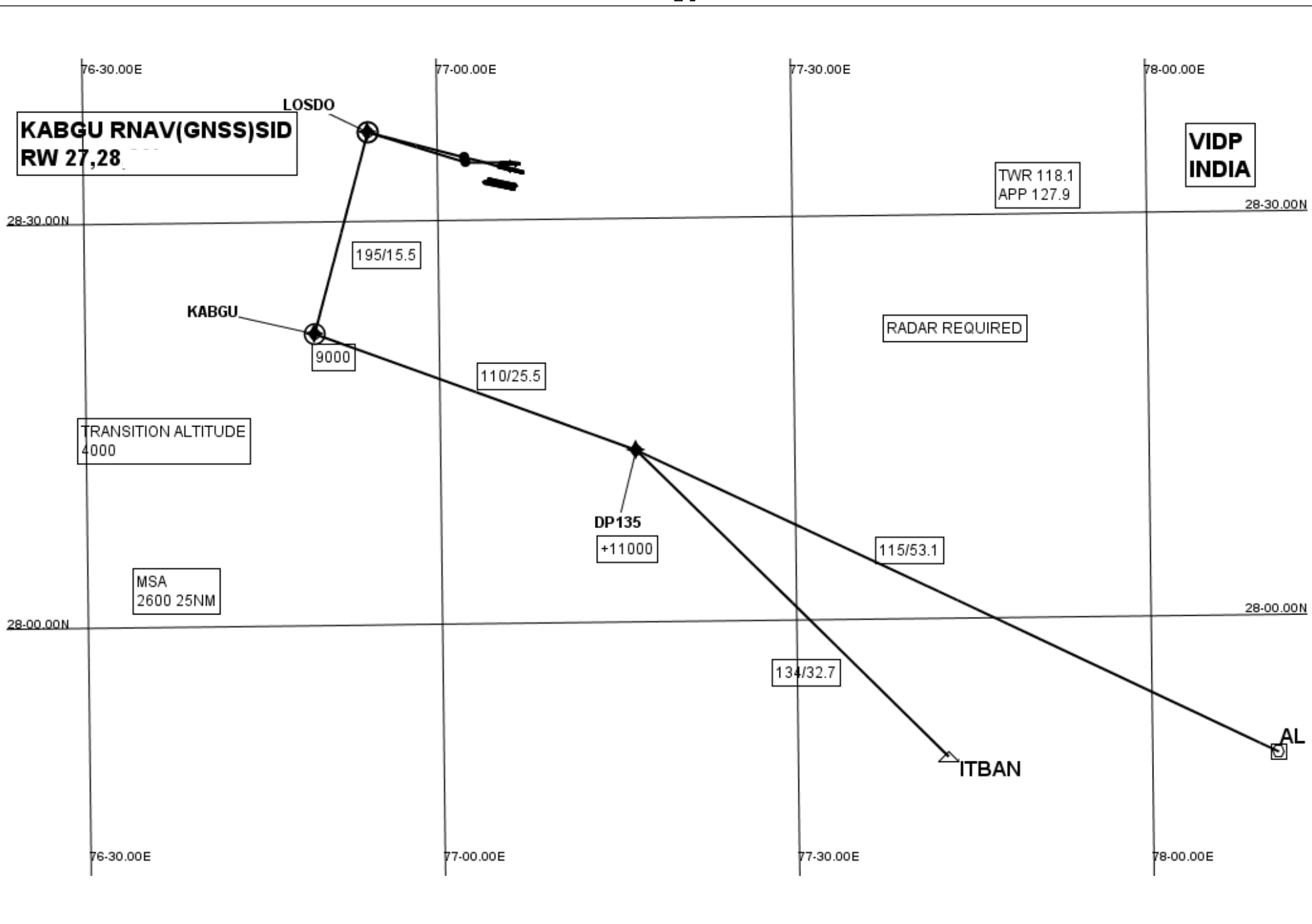
Runway Transition Data - RW09,10,11R

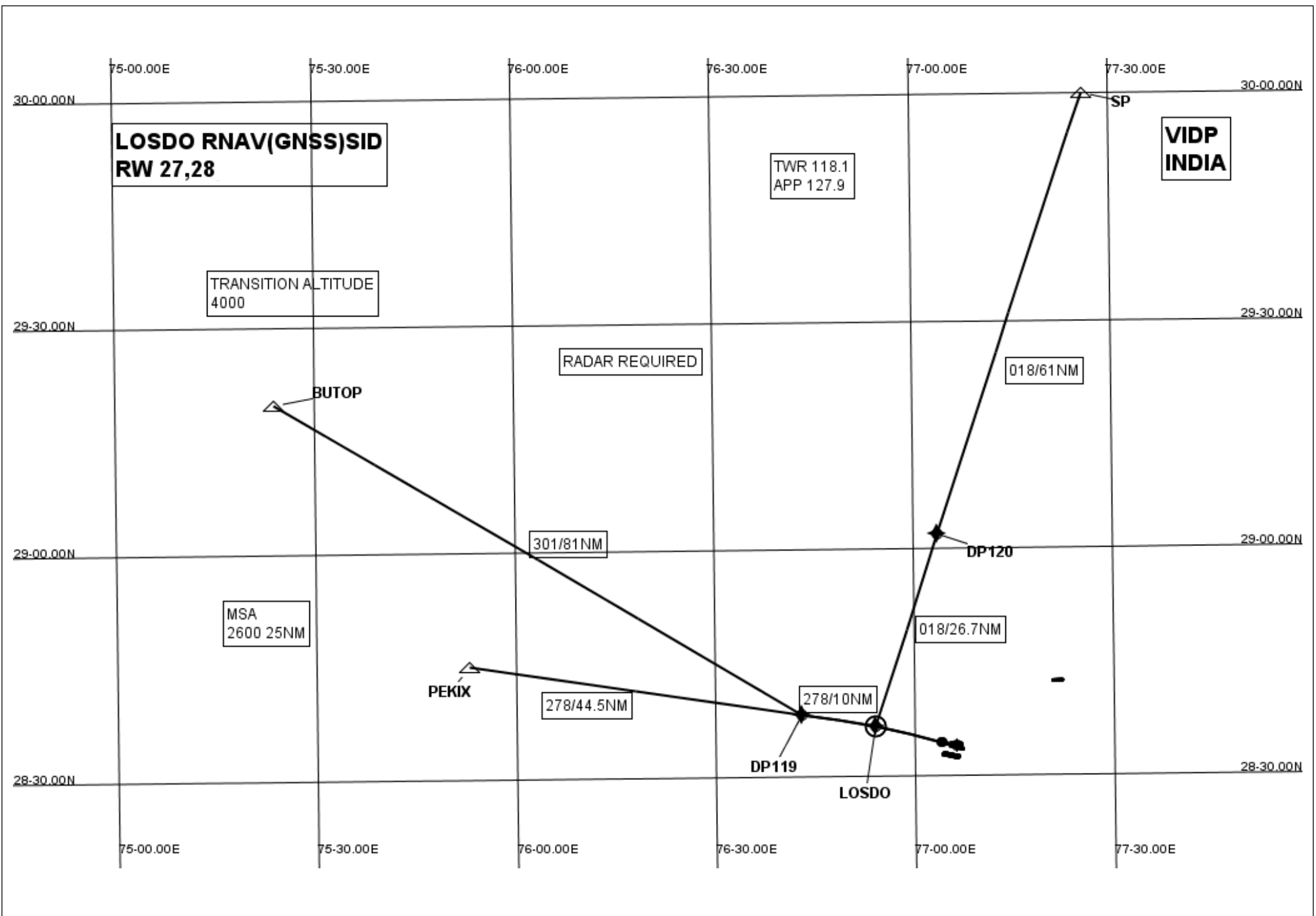
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SSB		IF		N28 23 36.20	E077 42 29.20							
DP108 WP	35.04	TF	FB	N28 49 23.59	E077 15 26.76	317.33	316.66	8000	190			
DP109 WP	24.62	TF	FO	N28 43 40.86	E076 48 11.56	256.73	256.06	6500	180			
	5.00	VM				194.67	194.00					











**NUBGU RNAV(GNSS)SID
RW 27,28**

**VIDP
INDIA**

TWR 118.1
APP 127.9

RADAR REQUIRED

TRANSITION ALTITUDE
4000

MSA
2600 25NM

+5000
LOSDO

9000
KABGU

195/15.5NM

NUBGU

195/17.6NM

214/20.1NM

REBON

175/39.7NM

AKELA

76-00.00E

76-30.00E

77-00.00E

77-30.00E

78-00.00E

28-30.00N

28-30.00N

28-00.00N

28-00.00N

27-30.00N

27-30.00N

76-00.00E

76-30.00E

77-00.00E

77-30.00E

78-00.00E

ERVAX RNAV SID

Runway Transition Data - RW29L

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
NACO	DER RW29L				N28 32 49.82	E077 03 55.81							
		2.50	VA				283.64	282.97	1225				
	ERVAX WP	8.35	DF	FB	N28 30 40.64	E076 52 12.98	250.90	250.23	3600	160			

En Route Transition Data - BUTOP

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	ERVAX WP		IF		N28 30 40.64	E076 52 12.98			3600	160			
	DP132 WP	6.07	DF	FB	N28 33 56.99	E076 46 24.34	302.55	301.88	-4000	180			
DAFIF	BUTOP VOR	85.56	TF	FB	N29 19 44.85	E075 23 56.30	302.60	301.93					

En Route Transition Data - PEKIX

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	ERVAX WP		IF		N28 30 40.64	E076 52 12.98			3600	160			
	DP133 WP	6.06	DF	FB	N28 32 17.60	E076 45 34.76	285.44	284.77	-4000	180			
DAFIF	PEKIX VOR	48.02	TF	FB	N28 45 00.06	E075 52 56.07	285.51	284.84					

IDUDA RNAV SID

Runway Transition Data - RW27

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW27				N28 34 13.77	E077 05 16.96							
		2.50	VA				271.50	270.83	1250	180			
	IDUDA WP	14.13	DF	FB	N28 20 43.10	E076 57 50.79	196.68	196.01	-7000	250			

Runway Transition Data - RW28

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW28				N28 34 01.82	E077 05 05.39							
		2.50	VA				284.60	283.93	1277	180			

	IDUDA WP	14.46	DF	FB	N28 20 43.10	E076 57 50.79	195.92	195.25	-7000	250			
Runway Transition Data - RW29L													
DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
NACO	DER RW29L				N28 32 49.82	E077 03 55.81							
		2.50	VA				283.64	282.97	1225	180			
	IDUDA WP	13.00	DF	FB	N28 20 43.10	E076 57 50.79	193.04	192.37	-7000	250			

En Route Transition Data - ALI

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	IDUDA WP		IF		N28 20 43.10	E076 57 50.79			-7000	250			
	DP135 WP	18.33	DF	FB	N28 12 44.14	E077 16 32.83	115.67	115.00	+11000				
DAFIF	ALI 4	53.12	TF	FB	N27 49 45.50	E078 10 42.00	115.34	114.67					

En Route Transition Data - ITBAN

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	IDUDA WP		IF		N28 20 43.10	E076 57 50.79			-7000	250			
	DP135 WP	18.33	DF	FB	N28 12 44.14	E077 16 32.83	115.67	115.00	+11000				
DAFIF	ITBAN VOR	32.65	TF	FB	N27 49 43.40	E077 42 47.55	134.55	133.88					

KABDI 1A RNAV SID

Runway Transition Data - RW27

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW27				N28 34 13.77	E077 05 16.96							
		2.47	VA				271.50	270.83	+1250	180			
	IDUDA WP	14.14	CF	FB	N28 20 43.10	E076 57 50.79	196.68	196.01	-7000	230			
	KABDI WP	18.84	TF	FB	N28 01 49.66	E076 57 34.96	180.71	180.04		280			

Runway Transition Data - RW28

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW28				N28 34 01.82	E077 05 05.39							
		2.47	VA				284.60	283.93	+1277	180			
	IDUDA WP	14.46	CF	FB	N28 20 43.10	E076 57 50.79	195.92	195.25	-7000	230			
	KABDI WP	18.84	TF	FB	N28 01 49.66	E076 57 34.96	180.71	180.04		280			

Runway Transition Data - RW29L

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
NACO	DER RW29L				N28 32 49.82	E077 03 55.81							
		2.48	VA				283.64	282.97	+1225	180			
	IDUDA WP	13.00	CF	FB	N28 20 43.10	E076 57 50.79	193.04	192.37	-7000	230			
	KABDI WP	18.84	TF	FB	N28 01 49.66	E076 57 34.96	180.71	180.04		280			

En Route Transition Data - AKELA

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	KABDI WP		IF		N28 01 49.66	E076 57 34.96				280			
DAFIF	AKELA VOR	37.70	TF	FB	N27 25 00.55	E076 47 55.66	193.17	192.50					

En Route Transition Data - REBON

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	KABDI WP		IF		N28 01 49.66	E076 57 34.96				280			
DAFIF	REBON VOR	27.02	TF	FB	N27 48 00.70	E076 31 20.60	239.45	238.78					

KABGU RNAV SID

Runway Transition Data - RW27

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW27				N28 34 13.77	E077 05 16.96							
		2.50	VA				271.50	270.83	1250				
	LOSDO WP	7.71	DF	FO	N28 36 37.67	E076 54 05.85	287.61	286.94	+5000	220			

Runway Transition Data - RW28

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW28				N28 34 01.82	E077 05 05.39							
		2.50	VA				284.60	283.93	1277				
	LOSDO WP	7.52	DF	FO	N28 36 37.67	E076 54 05.85	285.15	284.49	+5000	220			

Common Route Data - DP112

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
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	LOSDO WP		IF		N28 36 37.67	E076 54 05.85			+5000	220			
	KABGU WP	15.47	TF	FO	N28 21 39.86	E076 49 28.59	195.28	194.61	9000	280			
	DP135 WP	25.50	TF	FB	N28 12 44.14	E077 16 32.83	110.33	109.66	+11000				

En Route Transition Data - ALI

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	DP135 WP		IF		N28 12 44.14	E077 16 32.83			+11000				
DAFIF	ALI 4	53.12	TF	FB	N27 49 45.50	E078 10 42.00	115.34	114.67					

En Route Transition Data - ITBAN

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	DP135 WP		IF		N28 12 44.14	E077 16 32.83			+11000				
DAFIF	ITBAN VOR	32.65	TF	FB	N27 49 43.40	E077 42 47.55	134.55	133.88					

LOSDO RNAV SID

Runway Transition Data - RW27

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW27				N28 34 13.77	E077 05 16.96							
		1.04	VA				271.50	270.83	1250				
	LOSDO WP	9.12	DF	FO	N28 36 37.67	E076 54 05.85	285.07	284.40	+3600	180			

Runway Transition Data - RW28

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW28				N28 34 01.82	E077 05 05.39							
		1.04	VA				284.60	283.93	1277				
	LOSDO WP	8.98	DF	FO	N28 36 37.67	E076 54 05.85	285.07	284.40	+3600	180			

En Route Transition Data - BUTOP

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	LOSDO WP		IF		N28 36 37.67	E076 54 05.85				180			
	DP119 WP	10.00	TF	FB	N28 38 06.10	E076 42 51.78	278.50	277.83		210			
DAFIF	BUTOP VOR	80.73	TF	FB	N29 19 44.85	E075 23 56.30	301.29	300.62					

En Route Transition Data - PEKIX

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	LOSDO WP		IF		N28 36 37.67	E076 54 05.85			+3600	180			
	DP119 WP	10.00	DF	FB	N28 38 06.10	E076 42 51.78	278.50	277.83		210			
DAFIF	PEKIX VOR	44.45	TF	FB	N28 45 00.06	E075 52 56.07	279.11	278.44					

En Route Transition Data - SP

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	LOSDO WP		IF		N28 36 37.67	E076 54 05.85			+3600	180			
	DP120 WP	26.66	DF	FB	N29 01 59.66	E077 03 40.12	18.34	17.67	8000	210			
DAFIF	SP VOR	61.03	TF	FB	N29 59 59.68	E077 25 55.23	18.46	17.79					

NUBGU RNAV SID

Runway Transition Data - RW27

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW27				N28 34 13.77	E077 05 16.96							
		1.25	VA				271.50	270.83	1250				
	LOSDO WP	8.91	DF	FO	N28 36 37.67	E076 54 05.85	285.39	284.72	+5000				

Runway Transition Data - RW28

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DER RW28				N28 34 01.82	E077 05 05.39							
		2.50	VA				284.60	283.93	1277				
	LOSDO WP	7.52	DF	FO	N28 36 37.67	E076 54 05.85	285.15	284.48	+5000				

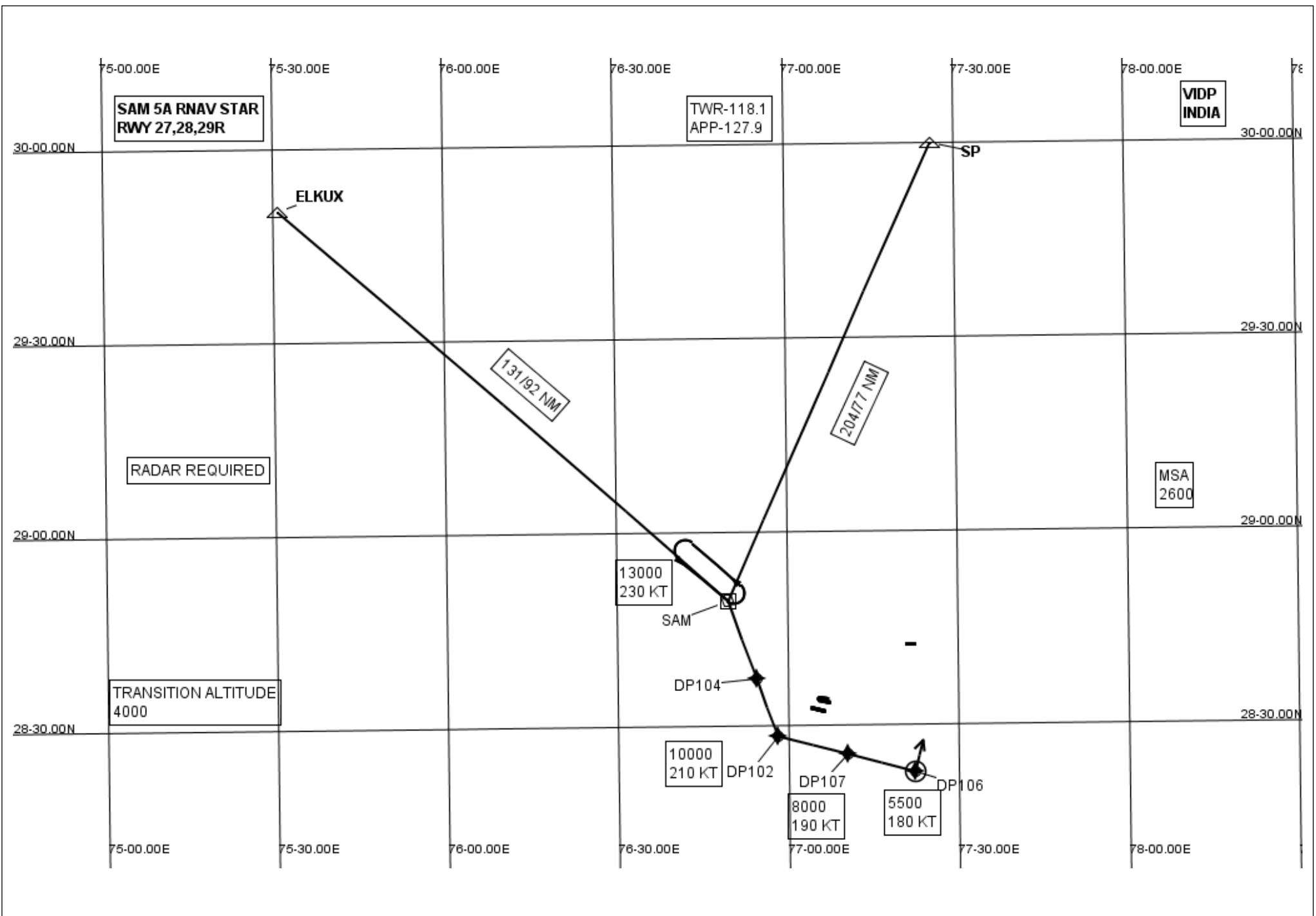
Common Route Data - CR 02

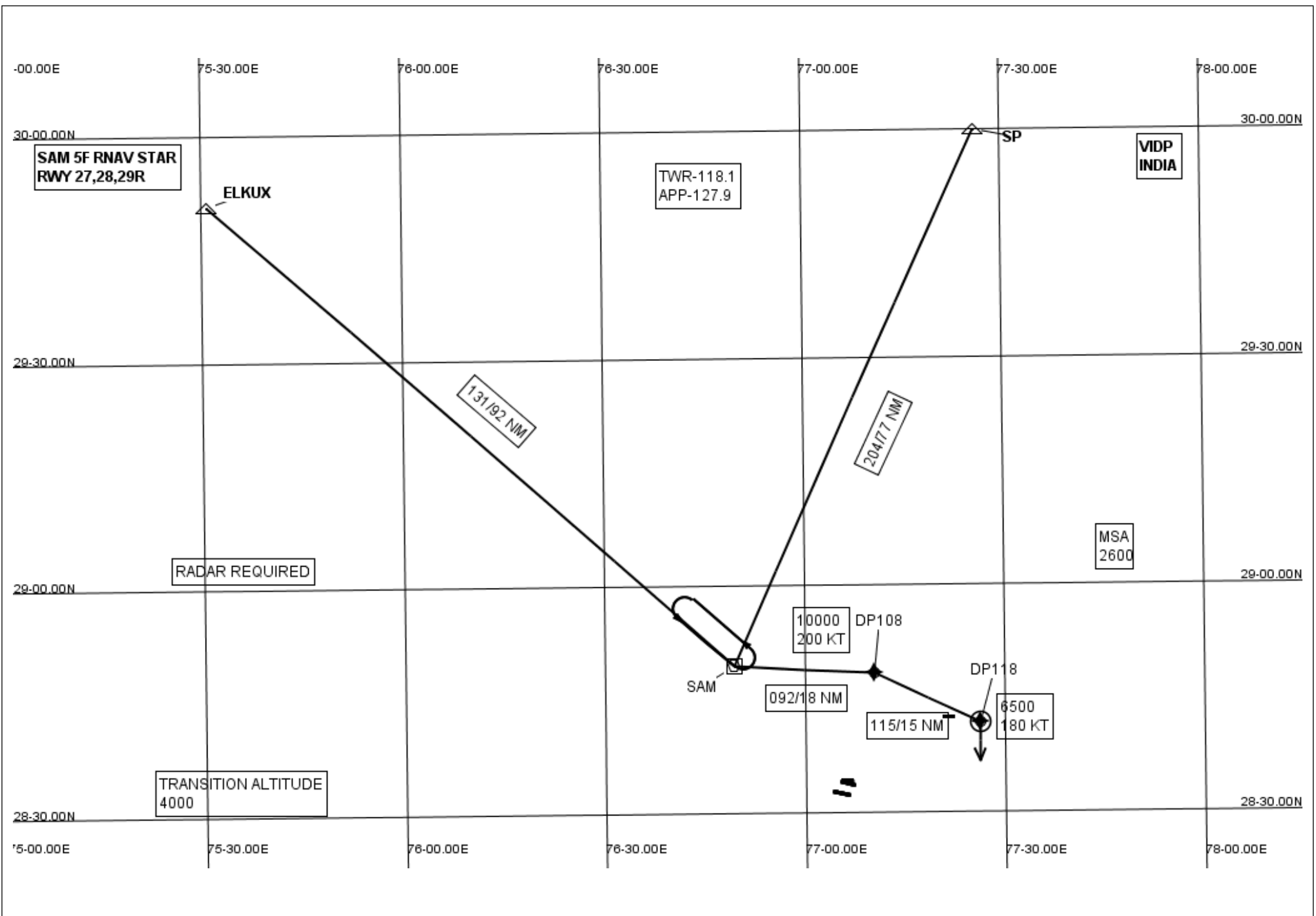
DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	LOSDO WP		IF		N28 36 37.67	E076 54 05.85			+5000				
	KABGU WP	15.47	TF	FB	N28 21 39.86	E076 49 28.59	195.28	194.61	9000	250			
	NUBGU WP	17.59	TF	FB	N28 04 39.03	E076 44 13.74	195.30	194.63		300			

En Route Transition Data - AKELA

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	NUBGU WP		IF		N28 04 39.03	E076 44 13.74				300			

DAFIF	AKELA VOR	39.67	TF	FB	N27 25 00.55	E076 47 55.66	175.24	174.57					
En Route Transition Data - REBON													
DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	NUBGU WP		IF		N28 04 39.03	E076 44 13.74				300			
DAFIF	REBON VOR	20.14	TF	FB	N27 48 00.70	E076 31 20.60	214.57	213.90					

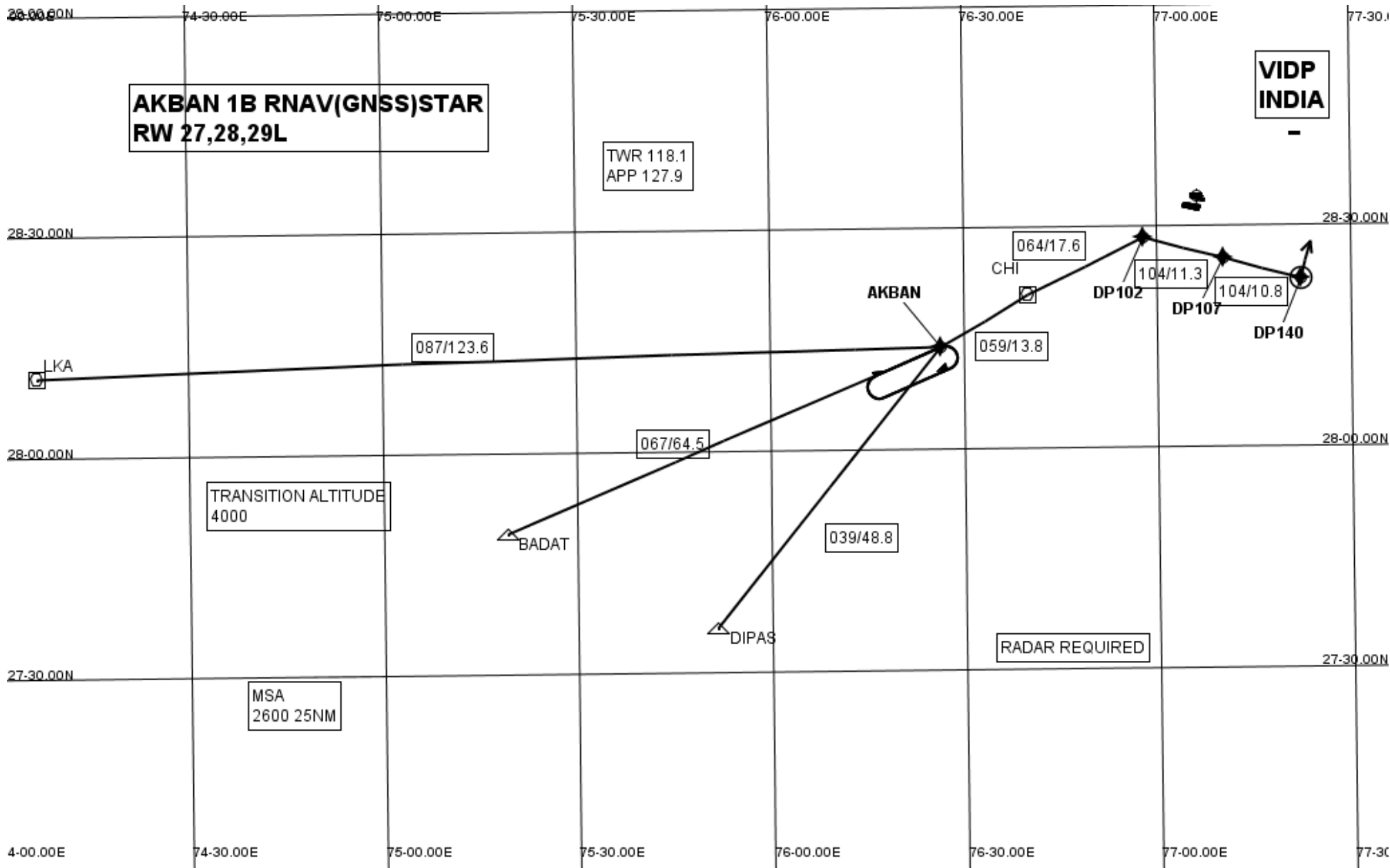


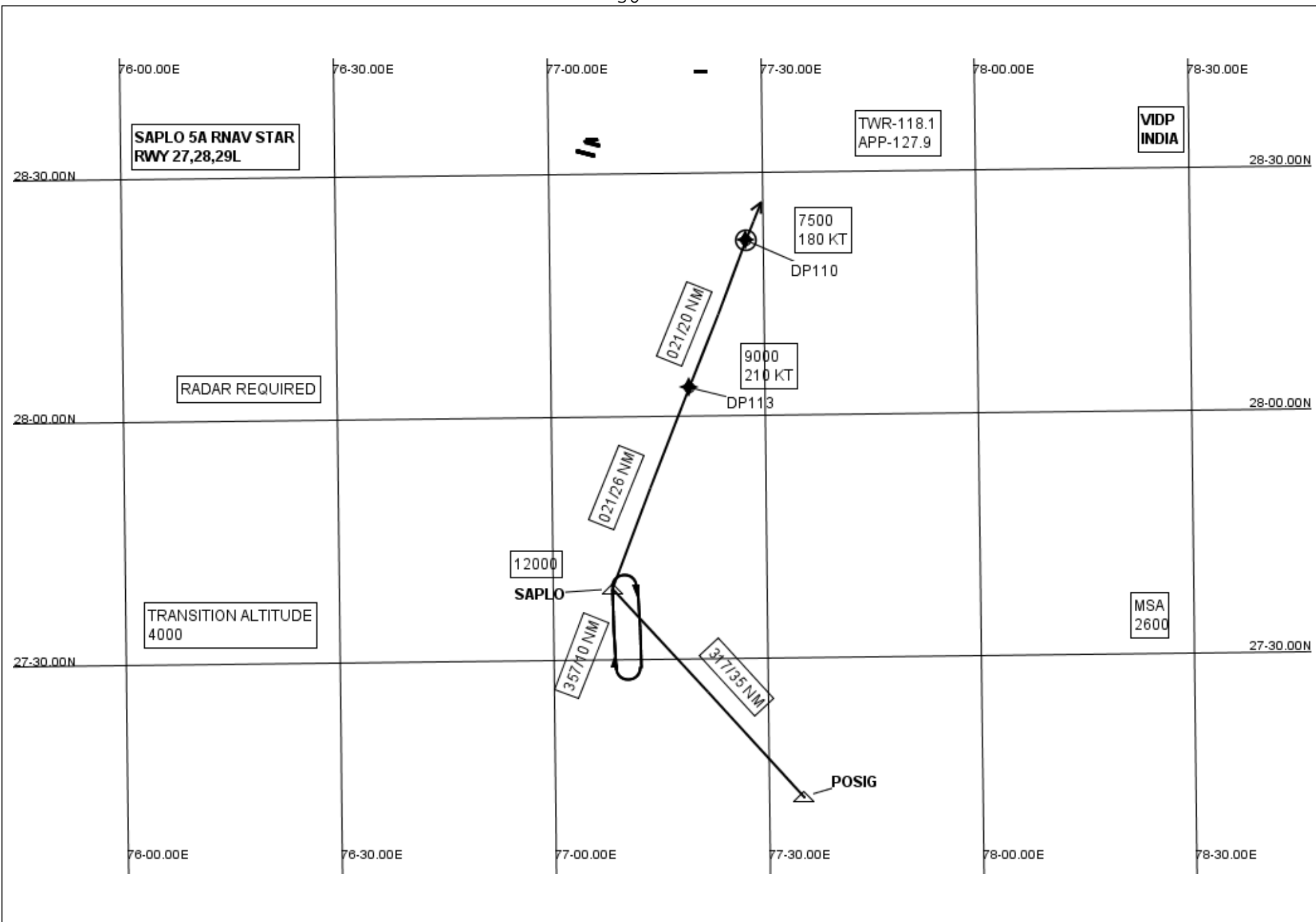


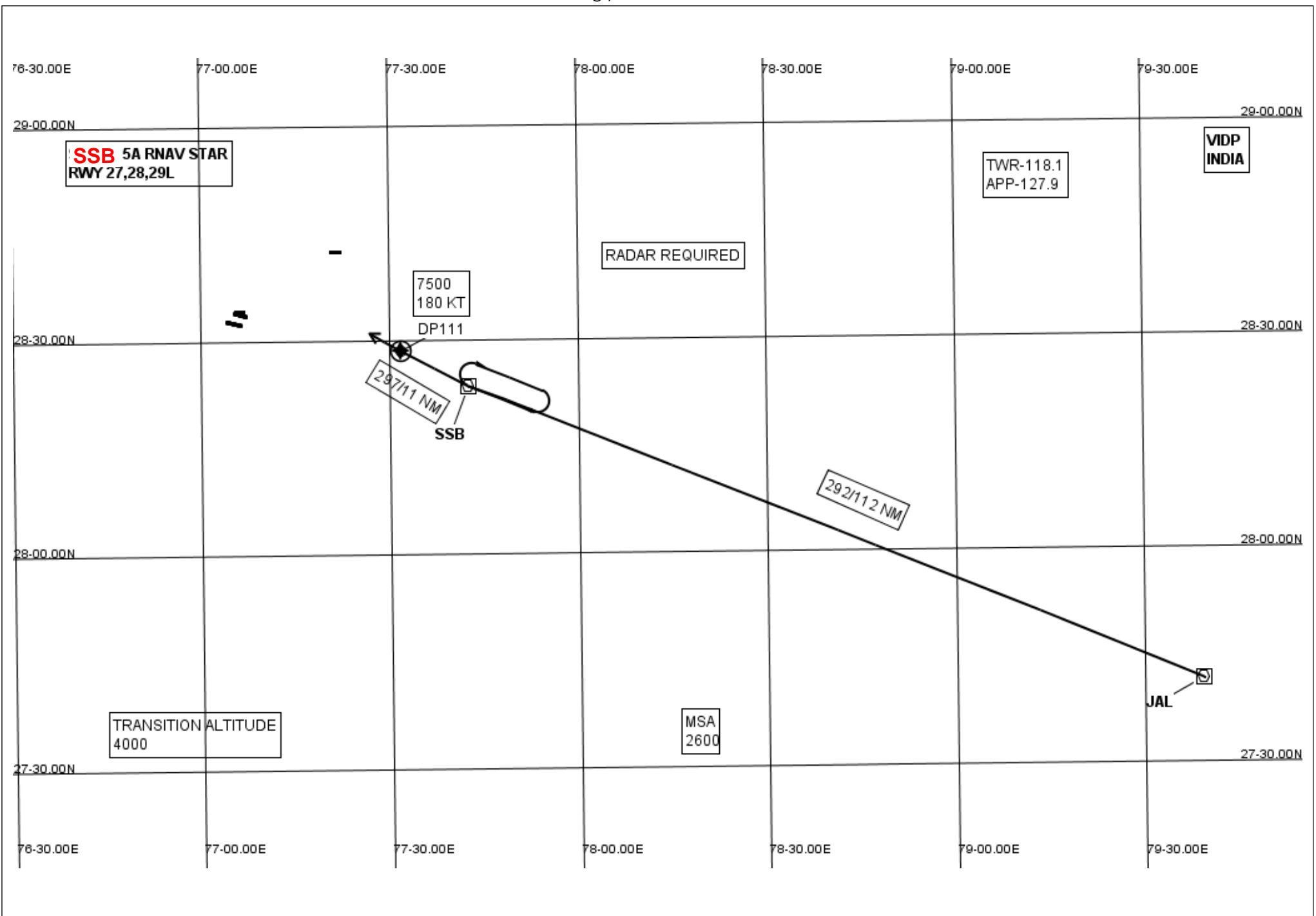
**AKBAN 1B RNAV(GNSS)STAR
RW 27,28,29L**

TWR 118.1
APP 127.9

**VIDP
INDIA**







AKBAN 1B RNAV STAR

En Route Transition Data - BADAT

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	BADAT VOR		IF		N27 49 06.37	E075 19 08.39							
	AKBAN WP	64.49	TF	FB	N28 13 53.58	E076 26 26.95	67.20	66.53					
	AKBAN WP	10.00	HF		N28 13 53.58	E076 26 26.95	67.20	66.53					

En Route Transition Data - DIPAS

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	DIPAS VOR		IF		N27 36 01.50	E075 51 32.10							
	AKBAN WP	48.81	TF	FB	N28 13 53.58	E076 26 26.95	39.18	38.51					
	AKBAN WP	10.00	HF		N28 13 53.58	E076 26 26.95	67.20	66.53					

En Route Transition Data - LKA

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
DAFIF	LKA 4		IF		N28 10 46.22	E074 06 32.99							
	AKBAN WP	123.64	TF	FB	N28 13 53.58	E076 26 26.95	88.01	87.34					
	AKBAN WP	10.00	HF		N28 13 53.58	E076 26 26.95	67.20	66.53					

Runway Transition Data - RW29L, RW28, RW27

DB	Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
	AKBAN WP		IF		N28 13 53.58	E076 26 26.95							
DAFIF	CHI 4	13.80	TF	FB	N28 20 51.20	E076 39 57.70	59.75	59.08	15000	250			
	DP102 WP	17.58	TF	FB	N28 28 26.66	E076 57 57.09	64.42	63.75	11000	210			
	DP107 WP	11.28	TF	FB	N28 25 33.79	E077 10 19.25	104.72	104.05	8000	190			
	DP140 WP	10.84	TF	FO	N28 22 47.59	E077 22 12.22	104.72	104.05	5500	180			
		5.00	VM				14.67	14.00					

SAM 5A RNAV STAR

En Route Transition Data - ELKUX												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
ELKUX		IF		N29 50 29.67	E075 30 41.22							
SAM WP	91.71	TF	FB	N28 49 32.17	E076 49 14.12	131.21	130.54					
SAM	10.00	HF		N28 49 21.07	E076 49 25.59	131.22	130.56					
En Route Transition Data - SP												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SP		IF		N29 59 59.68	E077 25 55.23							
SAM	77.34	TF	FB	N28 49 21.07	E076 49 25.59	204.49	203.82					
SAM	10.00	HF		N28 49 21.07	E076 49 25.59	131.23	130.56					
Runway Transition Data - RW29L, RW28, RW27												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SAM		IF		N28 49 21.07	E076 49 25.59			13000	230			
DP104 WP	12.78	DF	FB	N28 37 17.85	E076 54 20.70	160.20	159.53	10000	210			
DP102 WP	9.38	TF	FB	N28 28 26.66	E076 57 57.09	160.20	159.53	10000	210			
DP107 WP	11.28	TF	FB	N28 25 33.79	E077 10 19.25	104.72	104.05	8000	190			
DP106 WP	10.84	TF	FO	N28 22 47.59	E077 22 12.22	104.72	104.05	5500	180			
	5.00	VM				14.67	14.00					

SAM 5F RNAV STAR

En Route Transition Data - ELKUX												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
ELKUX		IF		N29 50 29.67	E075 30 41.22							
SAM	91.71	TF	FB	N28 49 32.17	E076 49 14.12	131.21	130.54					
SAM	10.00	HF		N28 49 21.07	E076 49 25.59	131.22	130.56					
En Route Transition Data - SP												

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SP		IF		N29 59 59.68	E077 25 55.23							
SAM	77.34	TF	FB	N28 49 21.07	E076 49 25.59	204.49	203.82					
SAM	10.00	HF		N28 49 21.07	E076 49 25.59	131.23	130.56					
Runway Transition Data - RW 27,28,29L												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SAM		IF		N28 49 21.07	E076 49 25.59							
DP108 WP	18.47	TF	FB	N28 48 20.92	E077 10 25.09	93.02	92.35	10000	200			
DP118 WP	15.41	TF	FO	N28 41 44.32	E077 26 15.66	115.27	114.60	6500	180			
	5.00	VM				180.67	180.00					

SAPLO 5A RNAV STAR

En Route Transition Data - OSRAM												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
OSRAM		IF		N27 29 00.54	E077 08 45.48							
SAPLO	9.88	TF	FB	N27 38 54.10	E077 08 15.10	357.39	356.72	12000				
SAPLO	10.00	HF		N27 38 54.10	E077 08 15.10	357.39	356.72					
En Route Transition Data - POSIG												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
POSIG		IF		N27 13 00.65	E077 34 53.30							
SAPLO	35.05	TF	FB	N27 38 54.10	E077 08 15.10	317.55	316.88	12000				
SAPLO	10.00	HF		N27 38 54.10	E077 08 15.10	357.39	356.72					
Runway Transition Data - RW29L,RW28,RW27												
Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SAPLO		IF		N27 38 54.10	E077 08 15.10							
DP113 WP	26.47	DF	FB	N28 03 29.39	E077 19 29.58	22.07	21.40	9000	210			
DP110 WP	19.50	TF	FO	N28 21 38.40	E077 27 42.85	21.83	21.16	7500	180			
	5.00	VM				21.85	21.18					

SSB 5A RNAV STAR

En Route Transition Data - JAL

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
JAL		IF		N27 41 39.56	E079 39 20.23							
SSB	111.53	TF	FB	N28 23 36.20	E077 42 29.20	292.48	291.81					
SSB	10.00	HF		N28 23 36.20	E077 42 29.20	292.48	291.81					

Runway Transition Data - RW29L,RW28,RW27

Waypoint	Distance	Leg	FO/FB	Latitude	Longitude	TC	MC	Altitude	Speed	Arc Center Lat (D° M' S.ss")	Arc Center Lon (D° M' S.ss")	Arc Radius (NM)
SSB		IF		N28 23 36.20	E077 42 29.20							
DP111 WP	10.73	TF	FO	N28 28 33.88	E077 31 41.43	297.51	296.84	7500	180			
	5.00	VM				300.67	300.00					

Consolidated List of Waypoints - Delhi RNAV SIDs and STARs

Waypoint	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
	(Deg)	(Deg)	(Deg, Decimal Min)	(Deg, Decimal Min)	(D° M' S.ss")	(D° M' S.ss")
AKELA	N 27.4168190	E 76.7987940	N27 25.009	E76 47.928	N27 25 00.55	E076 47 55.66
AKBAN	N 28.2315502	E 76.4408183	N28 13.893	E76 26.449	N28 13 53.58	E076 26 26.95
ALI VOR	N 27.8293060	E 78.1783330	N27 49.758	E78 10.700	N27 49 45.50	E078 10 42.00
BADAT	N 27.8184360	E 75.3189970	N27 49.106	E75 19.140	N27 49 06.37	E075 19 08.39
BEGRA	N 28.3168610	E 77.0889307	N28 19.012	E77 05.336	N28 19 00.70	E077 05 20.15
BUTOP	N 29.3291250	E 75.3989720	N29 19.748	E75 23.938	N29 19 44.85	E075 23 56.30
CHI VOR	N 28.3475560	E 76.6660280	N28 20.853	E76 39.962	N28 20 51.20	E076 39 57.70
DIPAS	N 27.6004170	E 75.8589170	N27 36.025	E75 51.535	N27 36 01.50	E075 51 32.10
DP102 WP	N 28.4740719	E 76.9658594	N28 28.444	E76 57.952	N28 28 26.66	E076 57 57.09
DP103 WP	N 28.5349889	E 76.7416567	N28 32.099	E76 44.499	N28 32 05.96	E076 44 29.96
DP103 WP	N 28.5349889	E 76.7416567	N28 32.099	E76 44.499	N28 32 05.96	E076 44 29.96
DP106 WP	N 28.3798855	E 77.3700620	N28 22.793	E77 22.204	N28 22 47.59	E077 22 12.22
DP107 WP	N 28.4260518	E 77.1720152	N28 25.563	E77 10.321	N28 25 33.79	E077 10 19.25
DP108 WP	N 28.8058116	E 77.1736361	N28 48.349	E77 10.418	N28 48 20.92	E077 10 25.09
DP109 WP	N 28.7280154	E 76.8032099	N28 43.681	E76 48.193	N28 43 40.86	E076 48 11.56
DP110 WP	N 28.3606660	E 77.4619031	N28 21.640	E77 27.714	N28 21 38.40	E077 27 42.85
DP111 WP	N 28.4760770	E 77.5281764	N28 28.565	E77 31.691	N28 28 33.88	E077 31 41.43
DP118 WP	N 28.7279710	E 77.4146863	N28 43.678	E77 24.881	N28 43 40.70	E077 24 52.87
DP119 WP	N 28.6350291	E 76.7143824	N28 38.102	E76 42.863	N28 38 06.10	E076 42 51.78
DP120 WP	N 29.0332387	E 77.0611442	N29 01.994	E77 03.669	N29 01 59.66	E077 03 40.12
DP124 WP	N 28.4178203	E 76.7403056	N28 25.069	E76 44.418	N28 25 04.15	E076 44 25.10
DP125 WP	N 28.4838742	E 76.4435691	N28 29.032	E76 26.614	N28 29 01.95	E076 26 36.85
DP127 WP	N 28.2655084	E 77.4114871	N28 15.931	E77 24.689	N28 15 55.83	E077 24 41.35
DP128 WP	N 28.1271483	E 77.1458187	N28 07.629	E77 08.749	N28 07 37.73	E077 08 44.95
DP129 WP	N 28.1598826	E 77.4412104	N28 09.593	E77 26.473	N28 09 35.58	E077 26 28.36
DP130 WP	N 28.0682913	E 77.4077856	N28 04.097	E77 24.467	N28 04 05.85	E077 24 28.03

Waypoint	Latitude	Longitude	Latitude	Longitude	Latitude	Longitude
	(Deg)	(Deg)	(Deg, Decimal Min)	(Deg, Decimal Min)	(D° M' S.ss")	(D° M' S.ss")
DP132 WP	N 28.5658306	E 76.7734266	N28 33.950	E76 46.406	N28 33 56.99	E076 46 24.34
DP133 WP	N 28.5382220	E 76.7596555	N28 32.293	E76 45.579	N28 32 17.60	E076 45 34.76
DP134 WP	N 28.0581637	E 77.3248820	N28 03.490	E77 19.493	N28 03 29.39	E077 19 29.58
DP135 WP	N 28.3778752	E 77.2260662	N28 22.673	E77 13.564	N28 22 40.35	E077 13 33.84
DP136 WP	N 28.4369548	E 77.1263281	N28 26.217	E77 07.580	N28 26 13.04	E077 07 34.78
DP137 WP	N 28.2498523	E 77.1855183	N28 14.991	E77 11.131	N28 14 59.47	E077 11 07.87
DP139 WP	N 28.6216240	E 76.9057505	N28 37.297	E76 54.345	N28 37 17.85	E076 54 20.70
DP140 WP	N 28.8018434	E 77.3084946	N28 48.111	E77 18.510	N28 48 06.64	E077 18 30.58
ELKUX	N 29.8415750	E 75.5114500	N29 50.494	E75 30.687	N29 50 29.67	E075 30 41.22
ERVAX	N 28.5112891	E 76.8702726	N28 30.677	E76 52.216	N28 30 40.64	E076 52 12.98
GOPNU	N 28.5658337	E 77.2841799	N28 33.950	E77 17.051	N28 33 57.00	E077 17 03.05
IDUDA	N 28.3453058	E 76.9641093	N28 20.718	E76 57.847	N28 20 43.10	E076 57 50.79
ITBAN	N 27.8287220	E 77.7132080	N27 49.723	E77 42.792	N27 49 43.40	E077 42 47.55
JAL VOR	N 27.6943220	E 79.6556190	N27 41.659	E79 39.337	N27 41 39.56	E079 39 20.23
KABDI	N 28.0304601	E 76.9597107	N28 01.828	E76 57.583	N28 01 49.66	E076 57 34.96
KABGU	N 28.3610713	E 76.8246073	N28 21.664	E76 49.476	N28 21 39.86	E076 49 28.59
LKA VOR	N 28.1795060	E 74.1091640	N28 10.770	E74 06.550	N28 10 46.22	E074 06 32.99
LOSDO	N 28.6104633	E 76.9016254	N28 36.628	E76 54.098	N28 36 37.67	E076 54 05.85
LUN VOR	N 28.5703000	E 73.7842060	N28 34.218	E73 47.052	N28 34 13.08	E073 47 03.14
NUBGU	N 28.0775088	E 76.7371493	N28 04.651	E76 44.229	N28 04 39.03	E076 44 13.74
OSRAM	N 27.4834830	E 77.1459670	N27 29.009	E77 08.758	N27 29 00.54	E077 08 45.48
PEKIX	N 28.7500170	E 75.8822420	N28 45.001	E75 52.935	N28 45 00.06	E075 52 56.07
POSIG	N 27.2168470	E 77.5814720	N27 13.011	E77 34.888	N27 13 00.65	E077 34 53.30
REBON	N 27.8001940	E 76.5223890	N27 48.012	E76 31.343	N27 48 00.70	E076 31 20.60
SAM VOR	N 28.8225190	E 76.8237750	N28 49.351	E76 49.426	N28 49 21.07	E076 49 25.59
SAM WP	N 28.8204965	E 76.8256017	N28 49.230	E76 49.536	N28 49 13.79	E076 49 32.17
SAPLO	N 27.6483610	E 77.1375280	N27 38.902	E77 08.252	N27 38 54.10	E077 08 15.10
SP NDB	N 29.9999110	E 77.4320080	N29 59.995	E77 25.920	N29 59 59.68	E077 25 55.23
SSB VOR	N 28.3933890	E 77.7081110	N28 23.603	E77 42.487	N28 23 36.20	E077 42 29.20