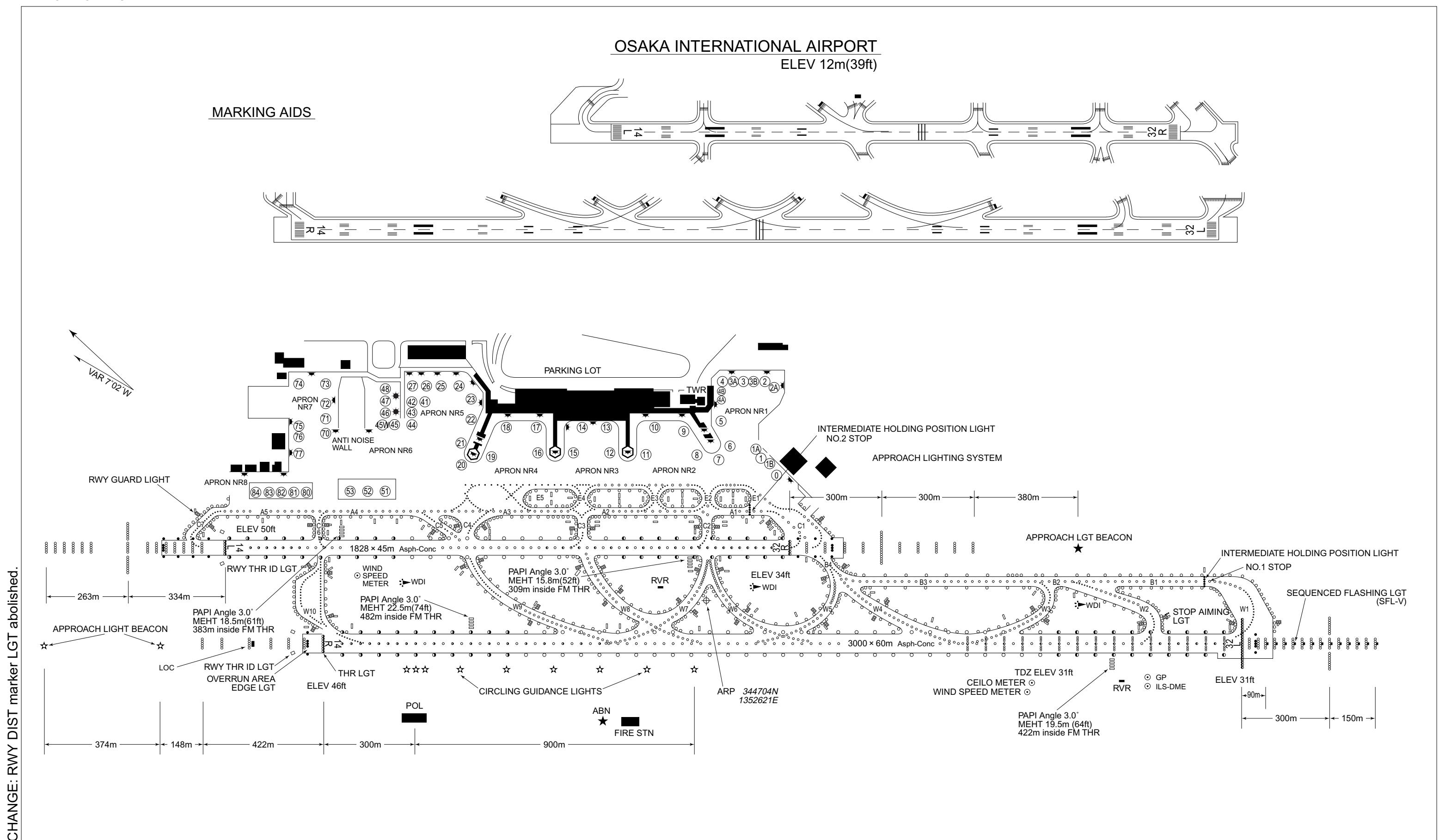


AERODROME CHART



RJOO / OSAKA INTL

AD CHART

OSAKA INTERNATIONAL AIRPORT		
ELEV 12m(39ft)		
Designation	Call Sign	Frequency (MHz)
ATIS	Osaka Intl Airport	128.6
DLVRY	Osaka Delivery	118.8
GND	Osaka Ground	121.7 126.2
TWR	Osaka Tower	118.1 126.2 236.8



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DIMENSIONS AND ELEVATIONS IN FEET BEARINGS ARE MAGNETIC

AERODROME OBSTACLE CHART-ICAO
TYPE A (OPERATING LIMITATIONS)

MAGNETIC VARIATION 8° W-FEB 2017



DIMENSIONS AND ELEVATIONS IN FEET BEARINGS ARE MAGNETIC

AERODROME OBSTACLE CHART-ICAO
TYPE A (OPERATING LIMITATIONS)

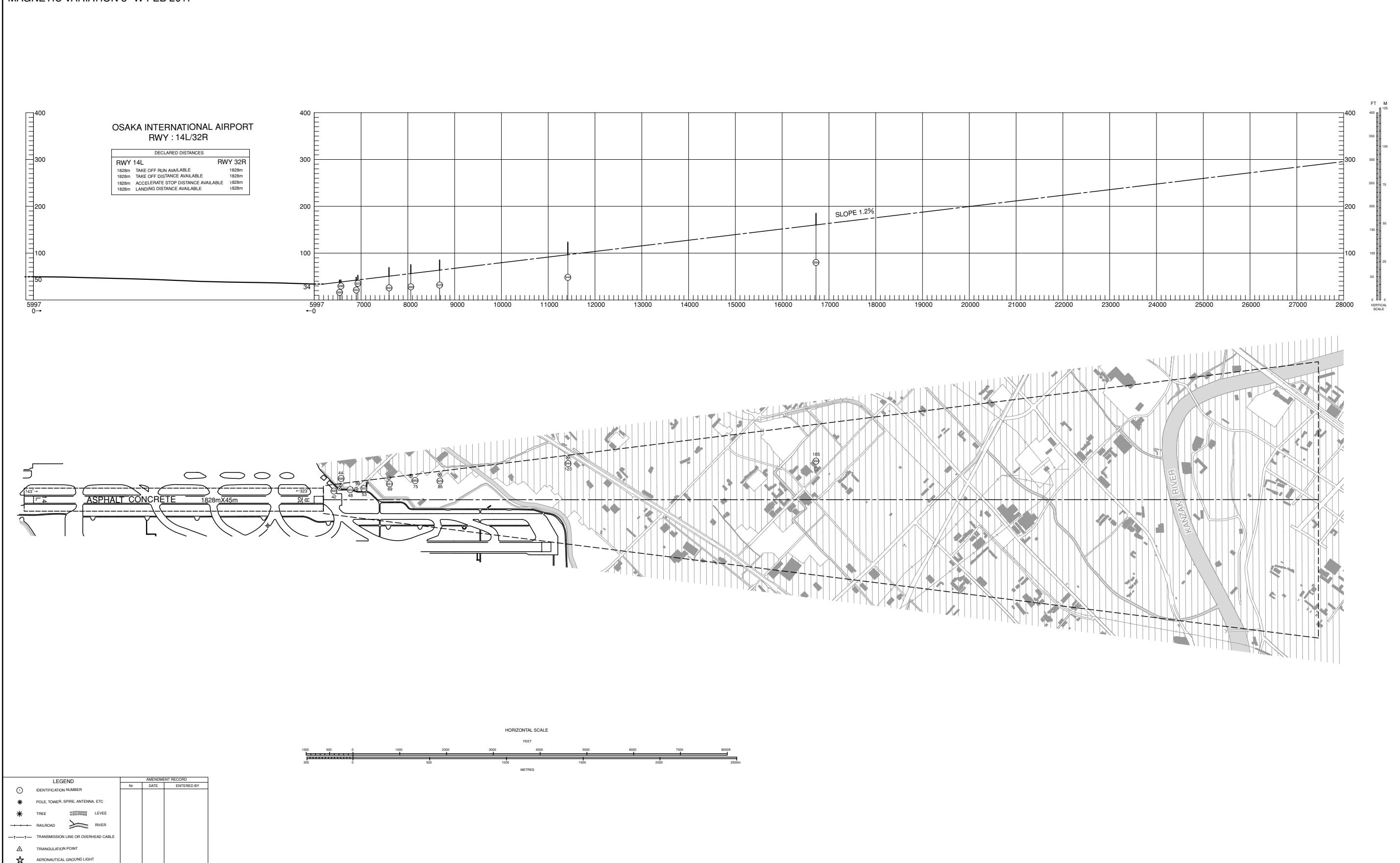
MAGNETIC VARIATION 8° W-FEB 2017



DIMENSIONS AND ELEVATIONS IN FEET BEARINGS ARE MAGNETIC

AERODROME OBSTACLE CHART-ICAO
TYPE A (OPERATING LIMITATIONS)

MAGNETIC VARIATION 8° W-FEB 2017



DIMENSIONS AND ELEVATIONS IN FEET BEARINGS ARE MAGNETIC

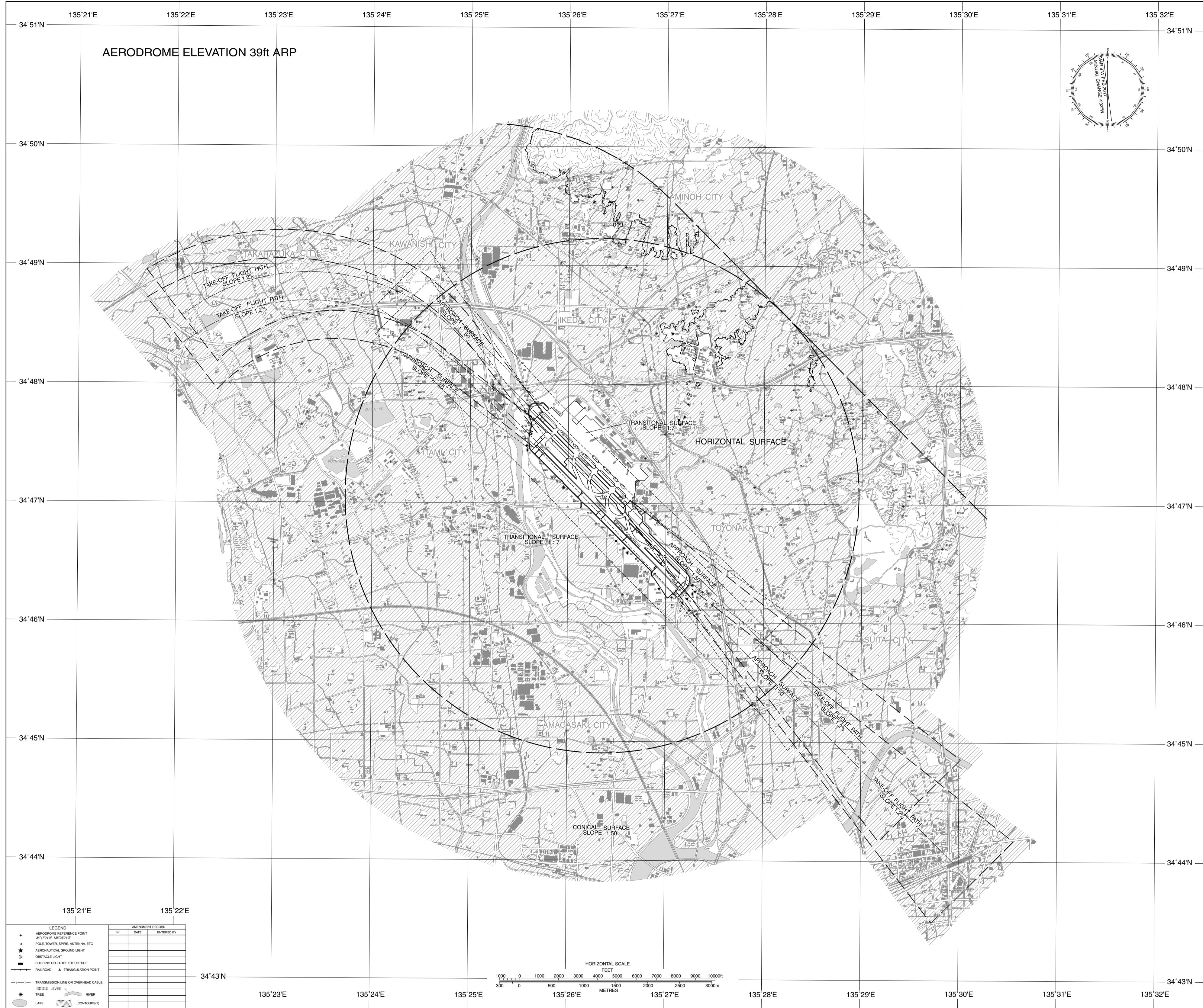
AERODROME OBSTACLE CHART-ICAO
TYPE A (OPERATING LIMITATIONS)

MAGNETIC VARIATION 8° W-FEB 2017



AERODROME OBSTACLE CHART-ICAO TYPE B

DIMENSIONS AND ELEVATIONS IN FEET BEARINGS ARE MAGNETIC



STANDARD DEPARTURE CHART -INSTRUMENT

RJOO / OSAKA INTL

SID

ASUKA FOUR DEPARTURE

RWY 32R/32L : Climb RWY HDG to 500FT or above, turn left within 4NM from RWY end/ITE 2.1DME,...

RWY 14R/14L : Climb RWY HDG to 500FT or above, turn left,...
...via ITE R101 to ASUKA.

Cross ASUKA at or above 5000FT.

Note : When take off RWY 14R/14L, following climb gradient should be maintained until 500FT.

Speed (Knots)	60	90	120	150	180	210
Rate (Feet/Min)	300	450	600	750	900	1050

PANAS ONE DEPARTURE

RWY 32R/32L : Climb RWY HDG to 500FT or above, turn left within 4NM from RWY end/ITE 2.1DME,...

RWY 14R/14L : Climb RWY HDG to 500FT or above, turn left,...
...via ITE R101 to PANAS.

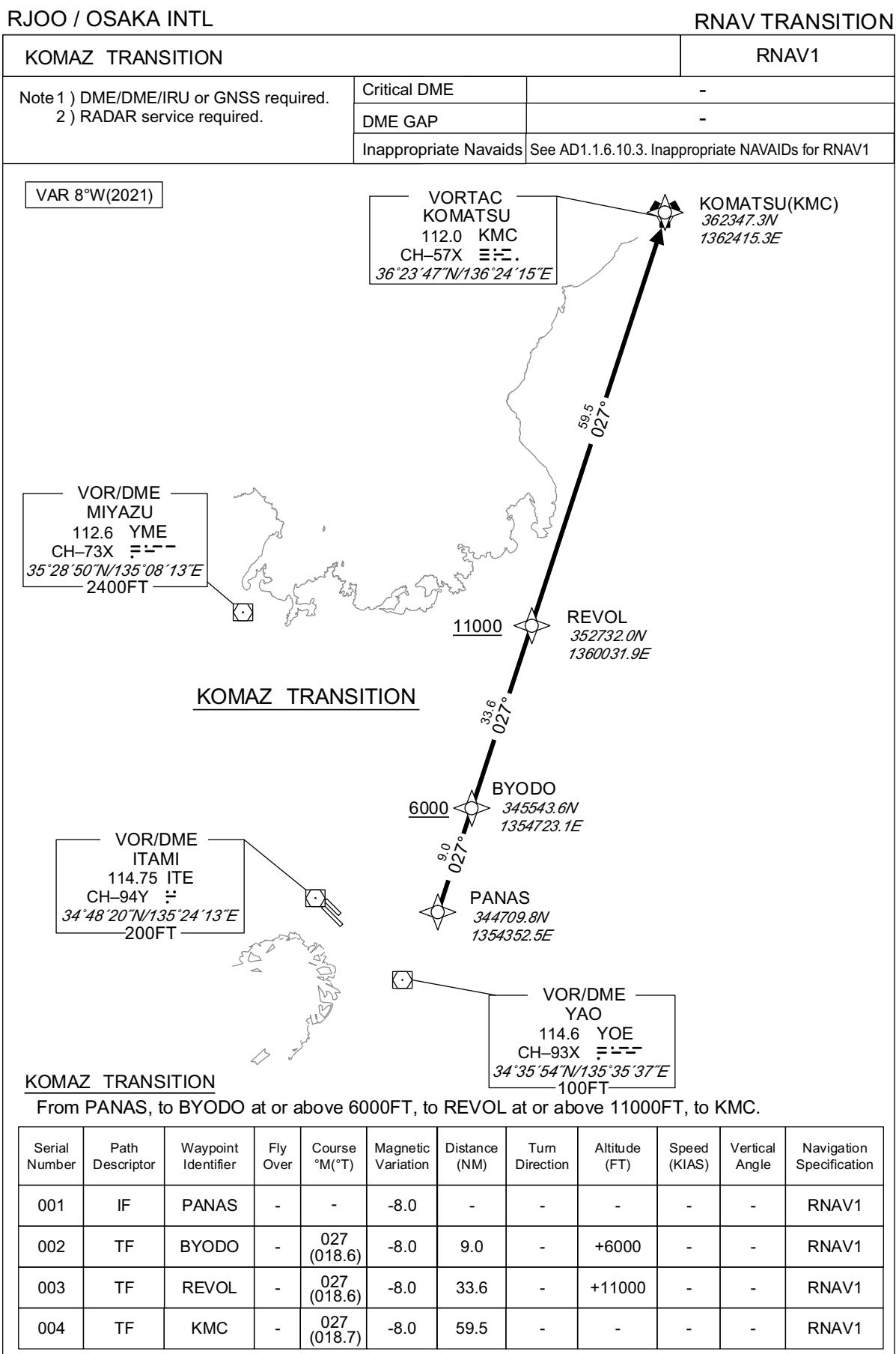
Note : When take off RWY 14R/14L, following climb gradient should be maintained until 500FT.

Speed (Knots)	60	90	120	150	180	210
Rate (Feet/Min)	300	450	600	750	900	1050

CHANGE: New PROC(PANAS ONE DEPARTURE).



STANDARD DEPARTURE CHART -INSTRUMENT



STANDARD DEPARTURE CHART -INSTRUMENT

RJOO / OSAKA INTL

SID

IZUMI ONE DEPARTURE

RWY 32R/32L : Climb RWY HDG to 500FT or above, turn left within 4NM from RWY end/ITE 2.1DME, via ITE R201 to YODOH,...

RWY 14R/14L : Climb RWY HDG to 500FT or above, turn right HDG230° to intercept and proceed via ITE R201 to YODOH,...

...turn left, via YOE R295 to intercept and proceed via ITE R184 to IZUMI.
Cross IZUMI at or above 6000FT.

Note : When take off RWY 14R/14L, following climb gradient should be maintained until 500FT.

Speed (Knots)	60	90	120	150	180	210
Rate (Feet/Min)	300	450	600	750	900	1050



STANDARD DEPARTURE CHART -INSTRUMENT

RJOO / OSAKA INTL

SID

EAST REVERSAL FOUR DEPARTURE

RWY 32R/32L : Climb RWY HDG to 500FT or above, turn left within 4NM from RWY end/ITE 2.1DME,...

RWY 14R/14L : Climb RWY HDG to 500FT or above, turn left,...
...via ITE R101 to 3000FT or above, turn left direct to ITE VOR/DME within ITE 14.0DME.
Cross ITE VOR/DME at assigned altitude.
Note : When take off RWY 14R/14L, following climb gradient should be maintained until 500FT.

Speed (Knots)	60	90	120	150	180	210
Rate (Feet/Min)	300	450	600	750	900	1050

EAST REVERSAL FOUR DEPARTURE

STANDARD DEPARTURE CHART -INSTRUMENT

RJOO / OSAKA INTL

SID

TIGER TWO DEPARTURE

RWY 32R/32L : Climb RWY HDG to 500FT or above, turn left within 4NM from RWY end/ITE 2.1DME, via ITE R201 until crossing YOE R301...

RWY 14R/14L : Climb RWY HDG to 500FT or above, turn right HDG230° until crossing YOE R301...

...turn right to intercept and proceed via YOE R291 to TIGER.
Cross TIGER at or above 6000FT.

Note : Following climb gradient should be maintained until 2500FT.

Speed (Knots)	60	90	120	150	180	210
Rate (Feet/Min)	300	450	600	750	900	1050



STANDARD DEPARTURE CHART -INSTRUMENT

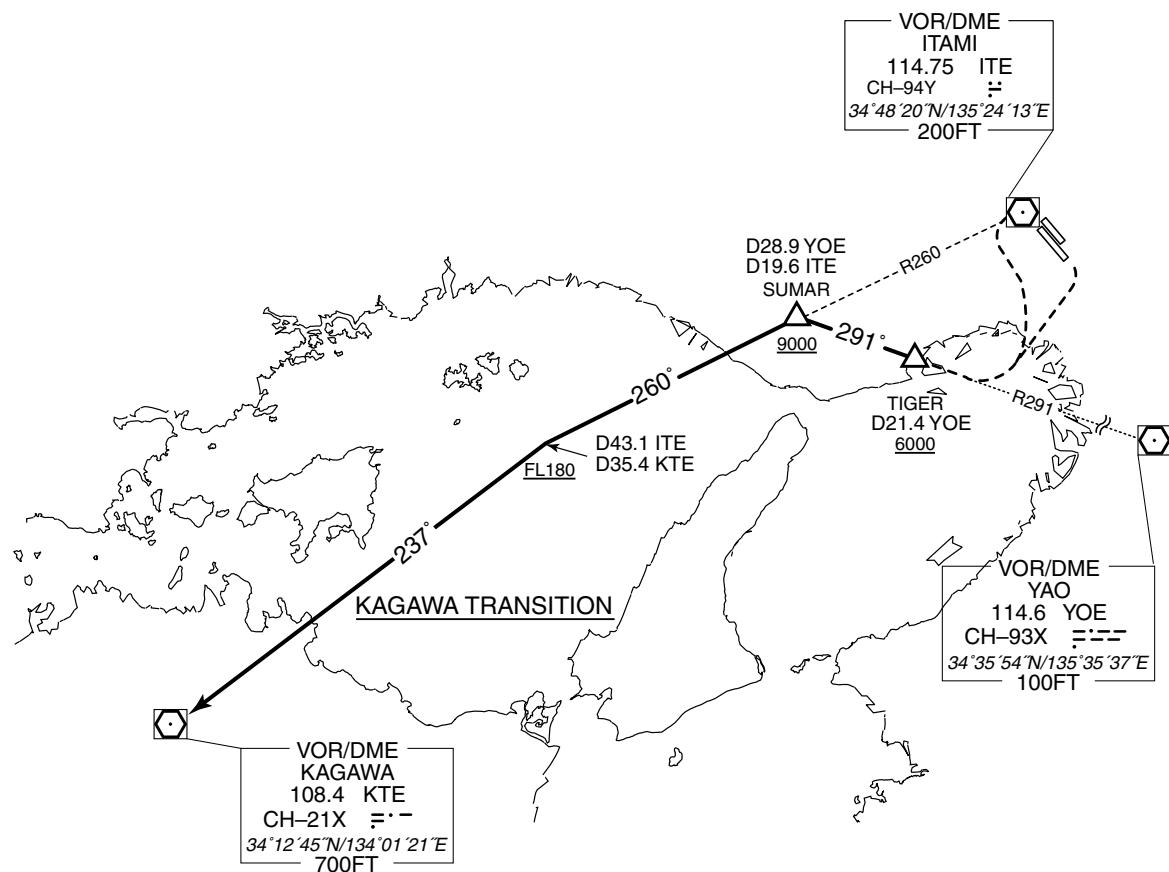
RJOO / OSAKA INTL

TRANSITION

KAGAWA TRANSITION

From over TIGER, via YOE R291 to SUMAR, via ITE R260 to intercept and proceed via KTE R057 to KTE VOR/DME.

Cross SUMAR at or above 9000FT, cross ITE R260/43.1DME at or above FL180.



STANDARD DEPARTURE CHART -INSTRUMENT

RJOO / OSAKA INTL

TRANSITION

ASAGI TRANSITION

From over TIGER, via KCE R324 to ASAGI.
Cross KCE R324/22.4DME at or above 7000FT.

TOZAN TRANSITION

From over TIGER, via KCE R324 to TOZAN, via ASAGI.
Cross KCE R324/22.4DME at or above 7000FT, cross KCE R324/47.0DME at or above 10000FT.

BUMER TRANSITION

From over TIGER, via YOE R291 to intercept and proceed via KCE R311 to BUMER.

CHANGE : TOZAN TRANSITION. Radial FM KCE.



STANDARD DEPARTURE CHART-INSTRUMENT

RJOO / OSAKA INTL

SID and TRANSITION

MINAC FOUR DEPARTURE

RWY 32R/32L : Climb RWY HDG to 500FT or above, turn left within 4NM from RWY end/ITE 2.1DME,...

RWY 14R/14L : Climb RWY HDG to 500FT or above, turn left,...
...via ITE R101 to intercept and proceed via KCE R077 to MINAC.

Note: When take off RWY14R/14L, following climb gradient should be maintained until 500FT.

Speed (Knots)	60	90	120	150	180	210
Rate (Feet/Min)	300	450	600	750	900	1050

NAGOYA TRANSITION

From over MINAC, via KCE R077 to YOKKA, via KCC R243 to KCC VORTAC.

CHANGE : PROC renamed. Radial FM KCE.



STANDARD DEPARTURE CHART-INSTRUMENT

RJOO / OSAKA INTL

RNAV TRANSITION

GUJYO TRANSITION / SHTLE TRANSITION		RNAV1
NOTE 1) DME/DME/IRU or GNSS required. 2) RADAR service required.	Critical DME	-
	DME GAP	-
	Inappropriate Navaids	See AD1.1.6.10.3. Inappropriate NAVADs for RNAV1



GUJYO TRANSITION

From MINAC, to GUJYO at or above FL200.

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	MINAC	—	—	-8.0	—	—	—	—	—	RNAV1
002	TF	GUJYO	—	045 (036.7)	-8.0	33.0	—	+FL200	—	—	RNAV1

SHTLE TRANSITION

From ASUKA, to SHTLE.

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	ASUKA	—	—	-8.0	—	—	—	—	—	RNAV1
002	TF	SHTLE	—	093 (084.9)	-8.0	45.3	—	—	—	—	RNAV1

CHANGE : VAR, PROC course.

STANDARD DEPARTURE CHART-INSTRUMENT

RJOO / OSAKA INTL

RNAV TRANSITION

AWAJI TRANSITION			RNAV1																																																
NOTE 1) DME/DME/IRU or GNSS required. 2) RADAR service required.	Critical DME	—	—																																																
	DME GAP	—	—																																																
	Inappropriate Navaids	See AD1.1.6.10.3. Inappropriate NAVAIDS for RNAV1	—																																																
VAR 8°W (2021)																																																			
<p>The map illustrates the Awaji Transition route. It starts at TIGER (34°40'50.4N 135°10'16.7E), passes over MAIKO (34°36'39.7N 134°59'49.1E) with a DME gap of 9.6 nm, and ends at AWAJI (34°16'13.1N 134°42'46.6E). The route also includes KCE (Kobe) and KIE (Itami) as waypoints. Other labels include YOE (Yao) and YOZ (Takamatsu). The map shows coastlines and various navigation aids like DME Shodo, DME Awaji, VOR/DME Kansai, VOR/DME Kobe, VOR/DME Itami, VOR/DME Yao, and TACAN Takamatsu.</p>																																																			
<u>AWAJI TRANSITION</u> From TIGER, to MAIKO, to AWAJI.																																																			
<table border="1"> <thead> <tr> <th>Serial Number</th> <th>Path Descriptor</th> <th>Waypoint Identifier</th> <th>Fly Over</th> <th>Course °M(°T)</th> <th>Magnetic Variation</th> <th>Distance (NM)</th> <th>Turn Direction</th> <th>Altitude (FT)</th> <th>Speed (KIAS)</th> <th>Vertical Angle</th> <th>Navigation Specification</th> </tr> </thead> <tbody> <tr> <td>001</td> <td>IF</td> <td>TIGER</td> <td>—</td> <td>—</td> <td>-8.0</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>RNAV1</td> </tr> <tr> <td>002</td> <td>TF</td> <td>MAIKO</td> <td>—</td> <td>252 (244.2)</td> <td>-8.0</td> <td>9.6</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>RNAV1</td> </tr> <tr> <td>003</td> <td>TF</td> <td>AWAJI</td> <td>—</td> <td>223 (214.6)</td> <td>-8.0</td> <td>24.8</td> <td>—</td> <td>—</td> <td>—</td> <td>—</td> <td>RNAV1</td> </tr> </tbody> </table>				Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification	001	IF	TIGER	—	—	-8.0	—	—	—	—	—	RNAV1	002	TF	MAIKO	—	252 (244.2)	-8.0	9.6	—	—	—	—	RNAV1	003	TF	AWAJI	—	223 (214.6)	-8.0	24.8	—	—	—	—	RNAV1
Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification																																								
001	IF	TIGER	—	—	-8.0	—	—	—	—	—	RNAV1																																								
002	TF	MAIKO	—	252 (244.2)	-8.0	9.6	—	—	—	—	RNAV1																																								
003	TF	AWAJI	—	223 (214.6)	-8.0	24.8	—	—	—	—	RNAV1																																								

CHANGE : VAR. Course FM MAIKO to AWAJI. KANSAI VOR/DME relocated(KNE→KIE). Critical DME deleted.

STANDARD DEPARTURE CHART-INSTRUMENT

RJOO / OSAKA INTL

RNAV TRANSITION



STANDARD DEPARTURE CHART-INSTRUMENT

RJOO / OSAKA INTL

RNAV TRANSITION

WASYU TRANSITION

From TIGER, to SUMAR, to AYAME, to SETOH, to WASYU.

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	TIGER	—	—	-8.0	—	—	—	—	—	RNAV1
002	TF	SUMAR	—	291 (283.2)	-8.0	7.4	—	—	—	—	RNAV1
003	TF	AYAME	—	265 (257.2)	-8.0	28.9	—	—	—	—	RNAV1
004	TF	SETOH	—	265 (256.8)	-8.0	15.7	—	—	—	—	RNAV1
005	TF	WASYU	—	272 (263.9)	-8.0	37.9	—	—	—	—	RNAV1

CHANGE : VAR. Course FM AYAME to SETOH.

STANDARD ARRIVAL CHART-INSTRUMENT

RJOO / OSAKA INTL

STAR

IZUMI ARRIVAL

From over IZUMI, via ITE 21.9DME counter-clockwise ARC to intercept and proceed via ITE R141 to IKOMA.

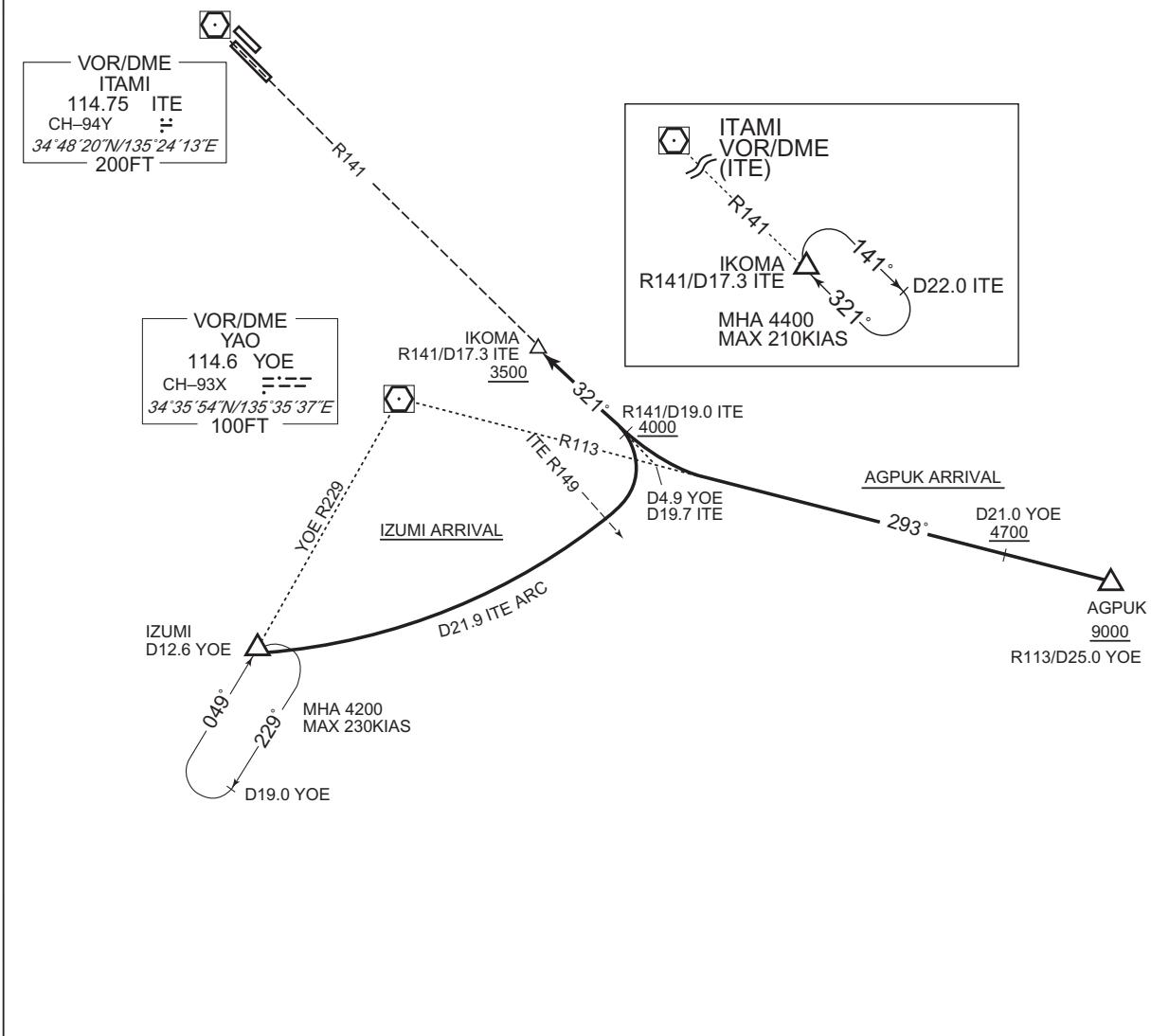
Cross ITE R141/19.0DME at or above 4000FT, cross IKOMA at or above 3500FT.

AGPUK ARRIVAL

From over AGPUK, via YOE R113 to intercept and proceed via ITE R141 to IKOMA.

Cross AGPUK at or above 9000FT, cross YOE R113/21.0DME at or above 4700FT, cross ITE R141/19.0DME at or above 4000FT, cross IKOMA at or above 3500FT.

CHANGE : AGPUK ARRIVAL established.



STANDARD ARRIVAL CHART-INSTRUMENT



STANDARD ARRIVAL CHART-INSTRUMENT

RJOO / OSAKA INTL

RNAV STAR RWY32L/32R

IKOMA EAST ARRIVAL

From AGPUK, to MIRAI at or above 6000FT, to ABENO, to IKOMA at or above 3500FT.

Critical DME	KCC : AGPUK – MIRAI
DME GAP	–
Inappropriate Navaids	See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	AGPUK	–	–	-8.0	–	–	–	–	–	RNAV1
002	TF	MIRAI	–	297 (288.7)	-8.0	9.5	–	+6000	–	–	RNAV1
003	TF	ABENO	–	297 (288.6)	-8.0	10.5	–	–	–	–	RNAV1
004	TF	IKOMA	–	296 (288.5)	-8.0	2.3	–	+3500	–	–	RNAV1

IKOMA NORTH ARRIVAL

From ROKKO at or above 7000FT, to KAMEO at or above 7000FT, to OTABE, to ABENO, to IKOMA at or above 3500FT.

Critical DME	ITE : 9.9NM to KAMEO – KAMEO YME : 19.7NM to OTABE – 13.7NM to OTABE
DME GAP	–
Inappropriate Navaids	See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	ROKKO	–	–	-8.0	–	–	+7000	–	–	RNAV1
002	TF	KAMEO	–	148 (140.4)	-8.0	12.9	–	+7000	–	–	RNAV1
003	TF	OTABE	–	148 (140.5)	-8.0	22.8	–	–	–	–	RNAV1
004	TF	ABENO	–	226 (218.0)	-8.0	5.0	–	–	-210	–	RNAV1
005	TF	IKOMA	–	296 (288.5)	-8.0	2.3	–	+3500	-210	–	RNAV1

CHANGE : VAR. KODAI abolished. AGPUK established. PROC course.

STANDARD ARRIVAL CHART-INSTRUMENT

RJOO / OSAKA INTL

RNAV STAR RWY32L/32R

HABIK ARRIVAL

RNAV1

- Note 1) DME/DME/IRU or GNSS required
 2) RADAR service required

VAR 8°W (2021)

VOR/DME
ITAMI
114.75 ITE
CH-94Y
 $34^{\circ}48'20''N/135^{\circ}24'13''E$
200FT



HABIK ARRIVAL

From IZUMI, to HABIK, to IKOMA at or above 3500FT.

Critical DME	-
DME GAP	-
Inappropriate Navaids	See AD1.1.6.10.3. Inappropriate NAVAIDs for RNAV1

Serial Number	Path Descriptor	Waypoint Identifier	Fly Over	Course °M(°T)	Magnetic Variation	Distance (NM)	Turn Direction	Altitude (FT)	Speed (KIAS)	Vertical Angle	Navigation Specification
001	IF	IZUMI	-	-	-8.0	-	-	-	-	-	RNAV1
002	TF	HABIK	-	(060.8)	-8.0	13.0	-	-	-	-	RNAV1
003	TF	IKOMA	-	(000.1)	-8.0	3.5	-	+3500	-	-	RNAV1

CHANGE : VAR. Course FM IZUMI to HABIK. KANSAI VOR/DME relocated(KNE→KIE).

INSTRUMENT APPROACH CHART

RJOO / OSAKA INTL

ILS RWY32L

KANSAI APP
120.45 - 124.7
261.2

ILS-LOC
110.1 ISK ::--
ILS-GP 334.4
ILS-DME CH-38X

OSAKA TOWER
118.1 - 236.8
126.2 - 121.7G

RADAR AVBL
ATIS 128.6

VAR 7°W (2016)

MSA 25NM

EQPT REQUIRED
DME
VOR

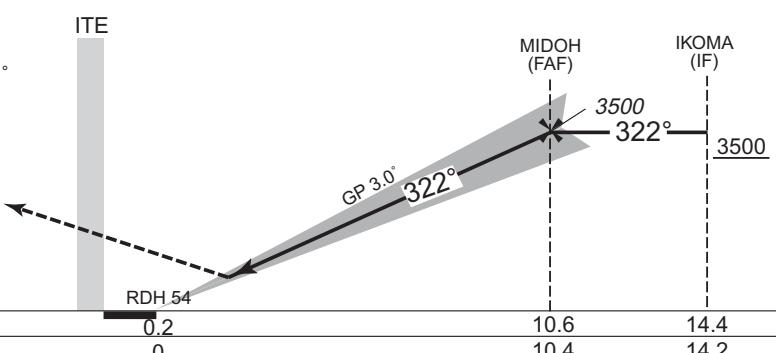
Approach and Departure Routes:

- Approach:** KANSAI APP (120.45 - 124.7), 261.2, VAR 7°W (2016).
- Departure:** RADAR AVBL (ATIS 128.6).
- Runways:** 110.1 ISK, 334.4, 114.75 CH-94Y, 114.6 CH-93X.
- Fixes:** ITAMI, D1.0 ITE, YAO AP, MIDOH (FAF), IKOMA (IF).
- Navigation Aids:** VOR/DME ITAMI (114.75, CH-94Y), VOR/DME YAO (114.6, CH-93X), ILS-LOC 110.1 ISK, ILS-GP 334.4, ILS-DME CH-38X.
- Surveillance:** RADAR AVBL (ATIS 128.6).
- Visual Reference:** EQPT REQUIRED (DME, VOR).
- Map Labels:** 1936, 2099, 2230, 2227, 255, 408, 422, 301, 522, 552, 1043, 2346, 1601, 322°, 332°, 184°, HDG145, HDG322°, R184, 3053, 1568, 1811, 1512, 1014, 090°, 180°, 270°, 049°, 229°, D19.0 YOE, MHA 4200, MAX 230KIAS, to IZUMI.

MISSED APPROACH

Climb to 5000FT on HDG322°, 1.0DME prior to ITE VOR/DME, turn left HDG145° to intercept and proceed via ITE R184 to IZUMI and hold.

Contact KANSAI APP.



Missed APCH climb gradient MNM 4.0%

MINIMA		THR elev. 31		AD elev. 39	
CAT	CAT I		CIRCLING		
	DA(H)	RVR/ CMV	MDA(H)		VIS
			TOTAL AREA	WEST of RWY	
A	281 (250)	700	590 (551)	590 (551)	1600
B			660 (621)	610 (571)	2400
C			760 (721)	760 (721)	3200
D					

MINIMA with Missed APCH climb gradient of 2.5% are not established.
JET circling to WEST side of RWY only.

INSTRUMENT APPROACH CHART



INSTRUMENT APPROACH CHART

RJOO / OSAKA INTL

VOR A



MISSED APPROACH
Climb to 5000FT on HDG321°, 1.0DME prior to ITE VOR/DME, turn left HDG145° to intercept and proceed via ITE R184 to IZUMI and hold.
Contact KANSAI APP.

Timing not authorized for defining the MAPt.

DME to ITE



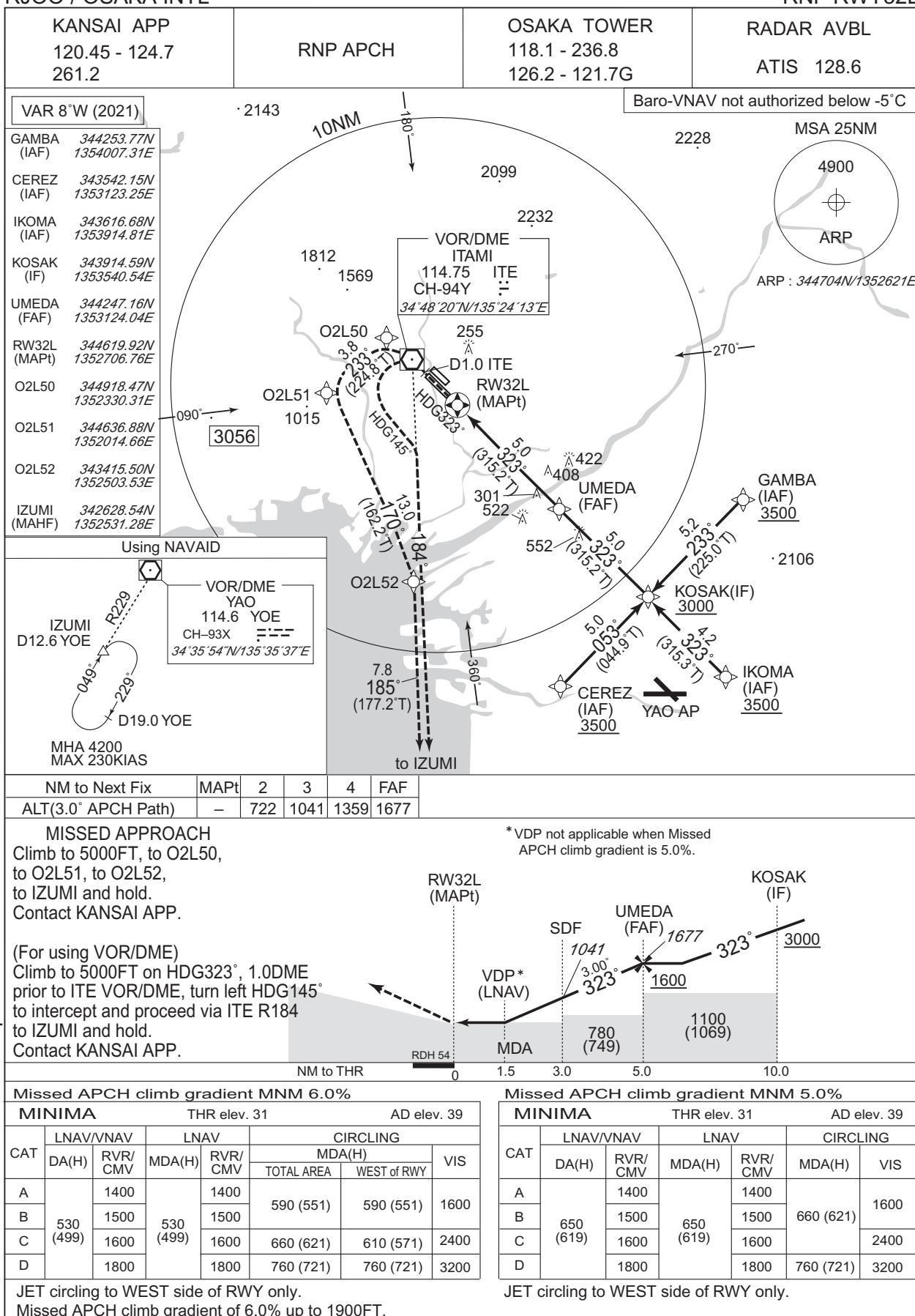
MINIMA		AD elev. 39
CAT	CIRCLING	
	MDA(H)	
	TOTAL AREA	WEST of RWY
A	590 (551)	590 (551)
B		1600
C	660 (621)	610 (571)
D	760 (721)	760 (721)

JET circling to WEST side of RWY only.

INSTRUMENT APPROACH CHART

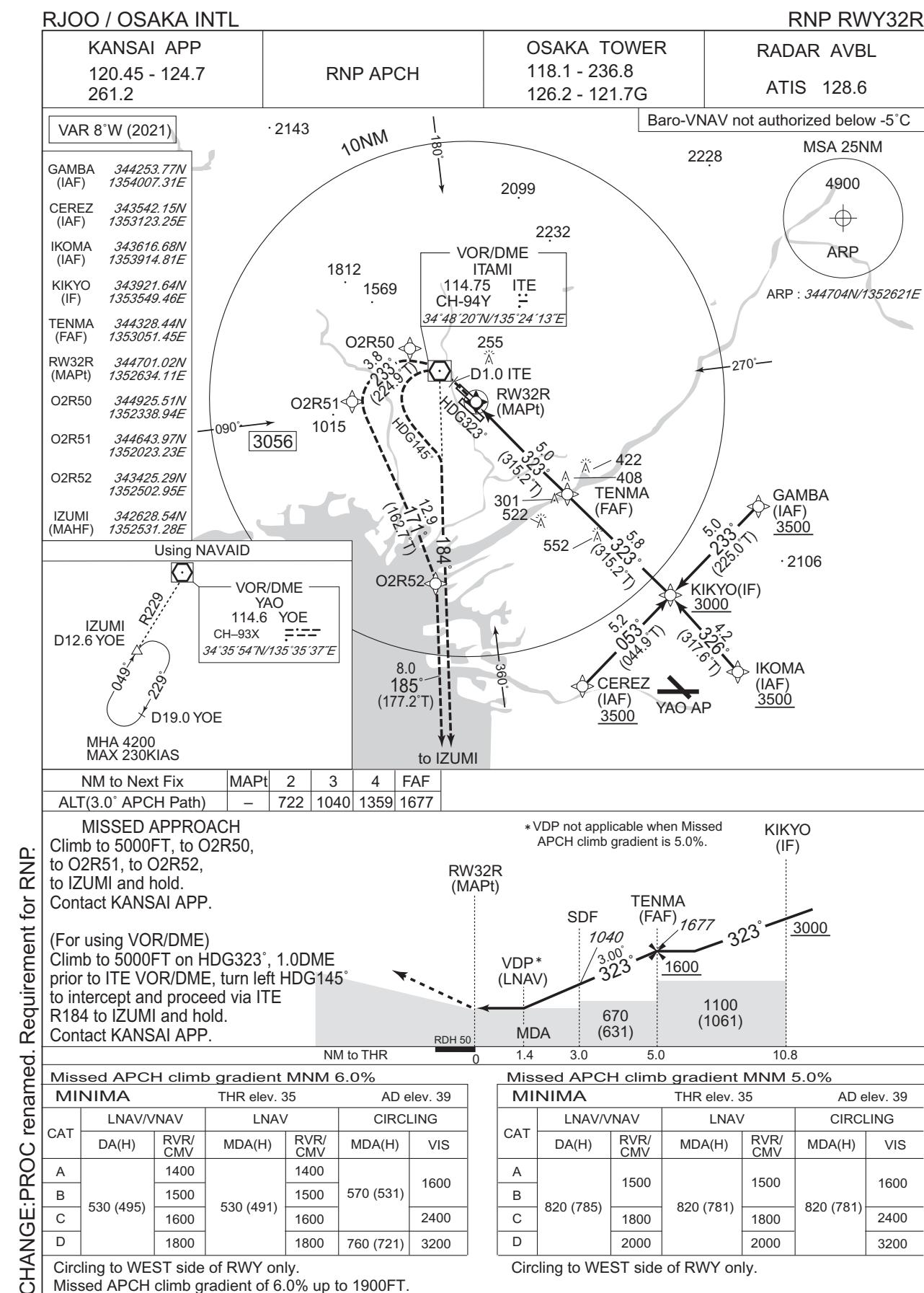
RJOO / OSAKA INTL

RNP RWY32L



CHANGE:PROC renamed. Requirement for RNP.

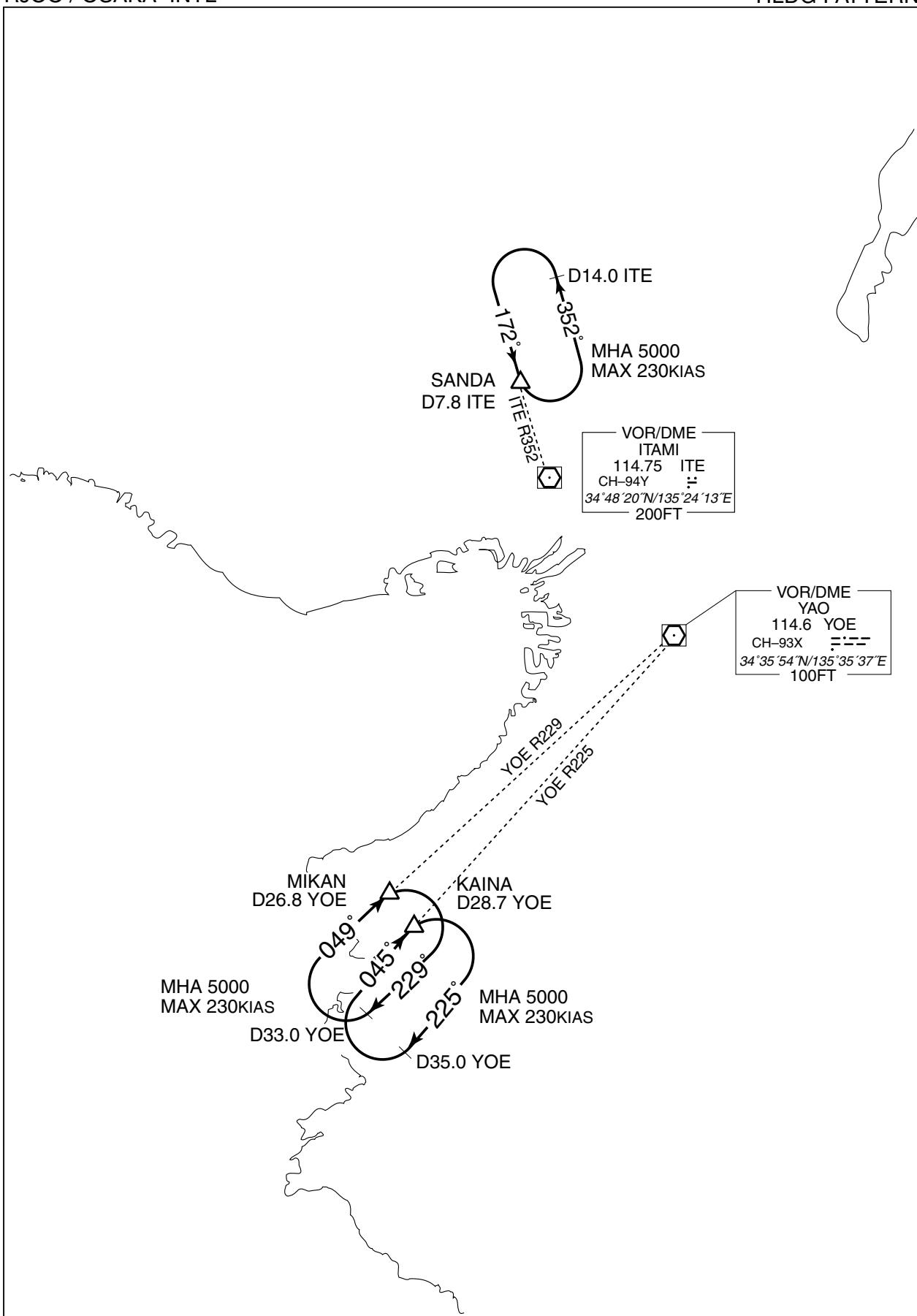
INSTRUMENT APPROACH CHART



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RJOO / OSAKA INTL

HLDG PATTERN



RJOO / OSAKA INTL

Visual REP



※図中に標高を示す数字がある場合、単位はメートル(m)である。The unit of measurement used to express elevation is meter(m).

CHANGE : Map updated. Call sign(Itami→Arioka). BRG/DIST from ARP. Senri(Remarks), Saita(Remarks).

Call sign	BRG / DIST from ARP	Remarks
川西 Kawanishi	339°T / 4.9NM	多田神社 Shrine
石橋 Ishibashi	013°T / 1.5NM	阪急石橋阪大前駅 Station
千里 Senri	063°T / 3.0NM	千里インターチェンジ Interchange
吹田 Saita	077°T / 5.2NM	吹田ジャンクション Junction
刀根山 Toneyama	037°T / 1.2NM	中国豊中インターチェンジ Interchange
有岡 Arioka	255°T / 0.9NM	JR伊丹駅 Station
鳥飼 Torikai	103°T / 6.8NM	鳥飼大橋 Bridge
鳴尾 Naruo	225°T / 5.4NM	甲子園球場 Baseball ground



RJOO / OSAKA INTL

Minimum Vectoring Altitude CHART

VAR 7°W (2011)



- ① 4500 (1) 342930N/1353527E
- ② 5000 (2) 342925N/1355432E
- ③ 7000 (3) 342918N/1360849E
- ④ 10000 (4) 342924N/1361335E

CENTER : 344752N/1352550E (No.1 RADAR SITE)
 CENTER : 344659N/1352600E (No.2 RADAR SITE)