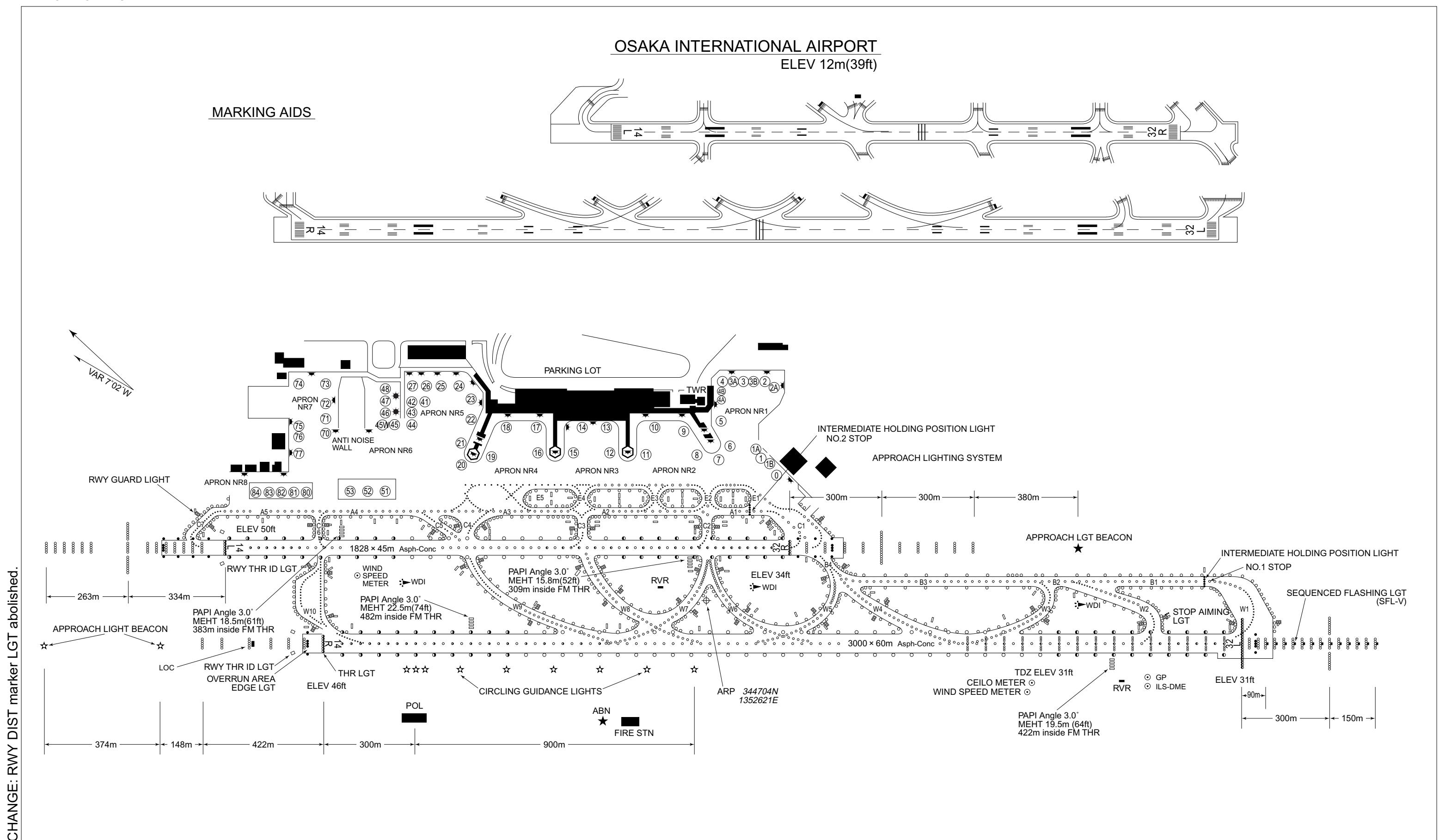


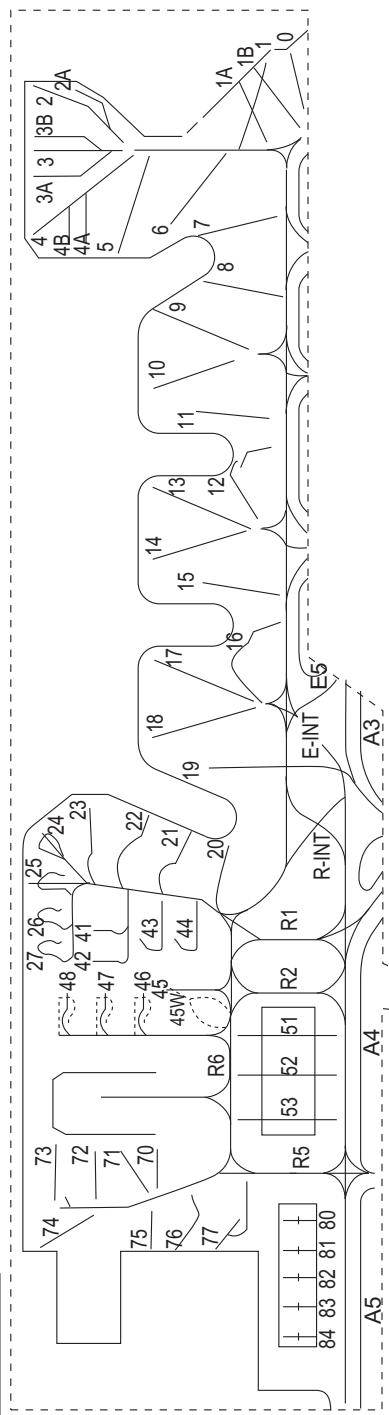
AERODROME CHART



RJOO / OSAKA INTL

AD CHART

| OSAKA INTERNATIONAL AIRPORT | | |
|-----------------------------|--------------------|-------------------------|
| | | ELEV 12m(39ft) |
| Designation | Call Sign | Frequency (MHz) |
| ATIS | Osaka Intl Airport | 128.6 |
| DLRY | 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)

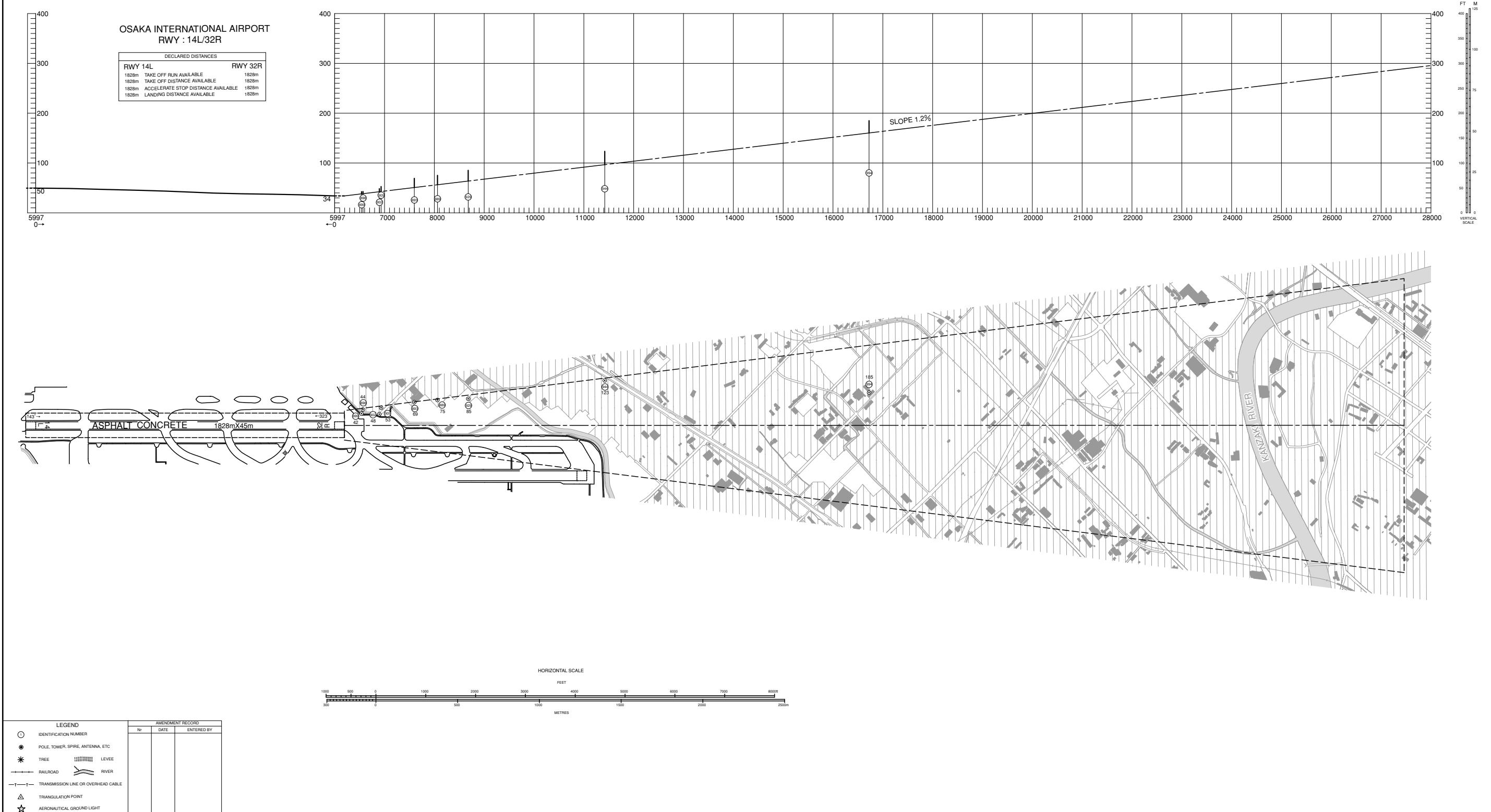
MAGNETIC VARIATION 8° W-FEB 2017



DIMENSIONS AND ELEVATIONS IN FEET BEARINGS ARE MAGNETIC

AERODROME OBSTACLE CHART-ICAO
TYPE A (OPERATING LIMITATIONS)

MAGNETIC VARIATION 8° W-FEB 2017



AERODROME OBSTACLE CHART-ICAO TYPE A (OPERATING LIMITATIONS)

DIMENSIONS AND ELEVATIONS IN FEET BEARINGS ARE MAGNETIC

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

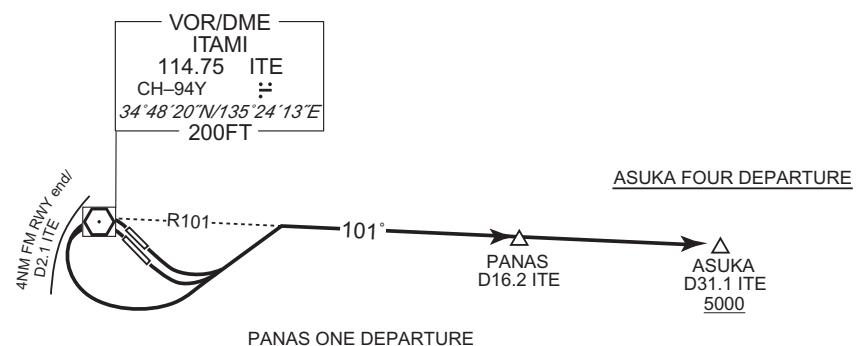
RWY 32R/32L : Climb RWY HDG to 500FT or above, turn left within 4NM from RWY end/ITE 2.1DME,...

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

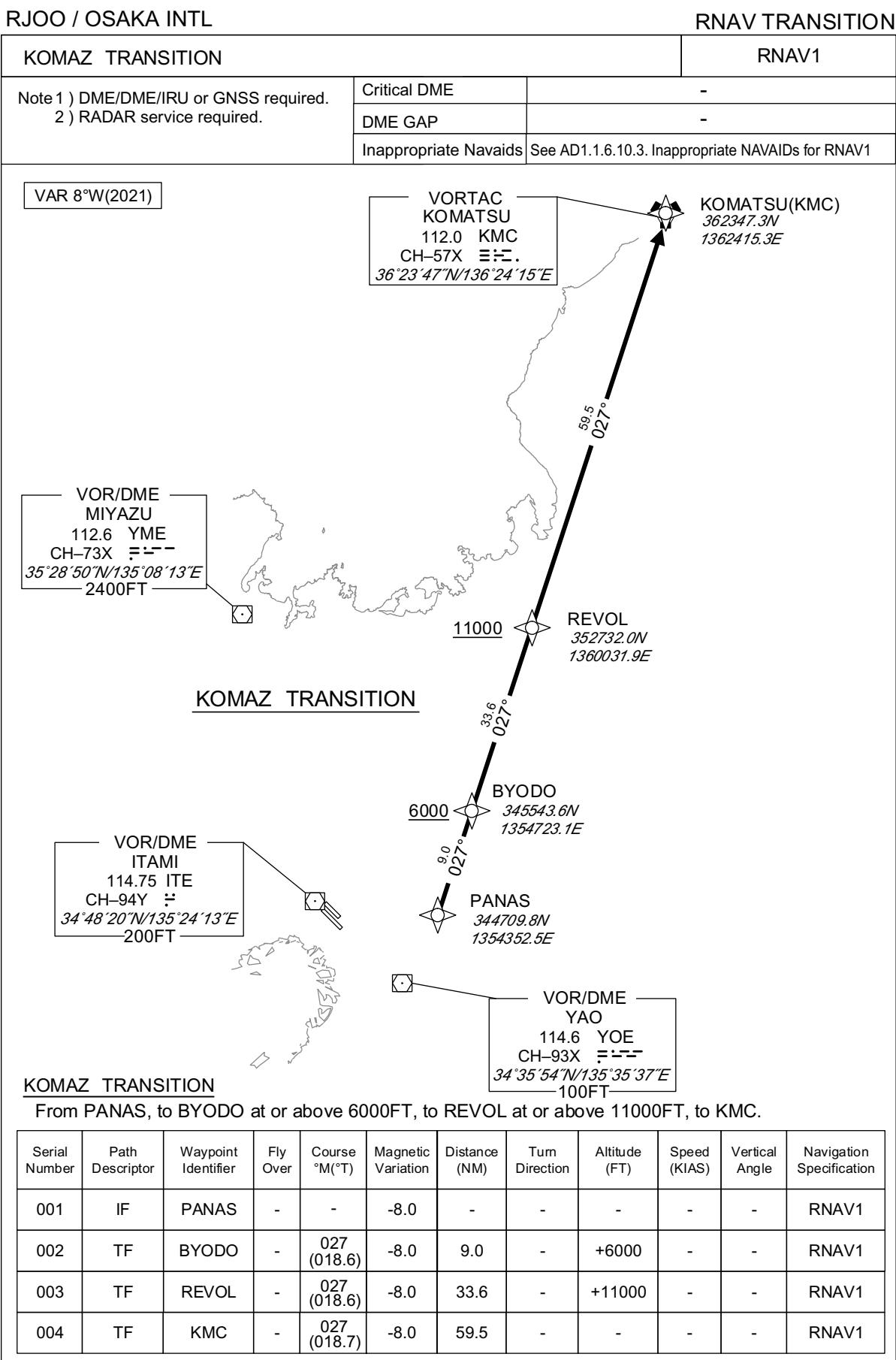
Note : When take off RWY 14R/14L, following climb gradient should be maintained until 500FT.

| | | | | | | |
|-----------------|-----|-----|-----|-----|-----|------|
| 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

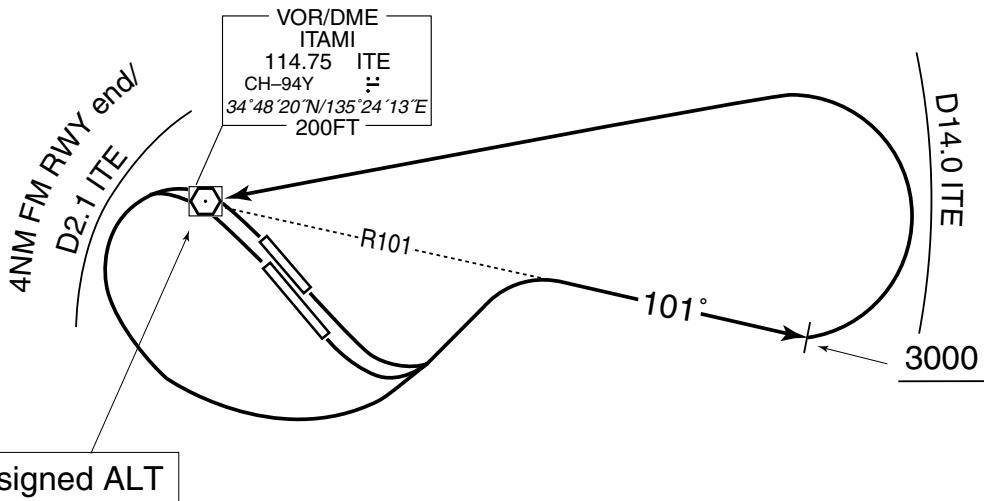
SID

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.

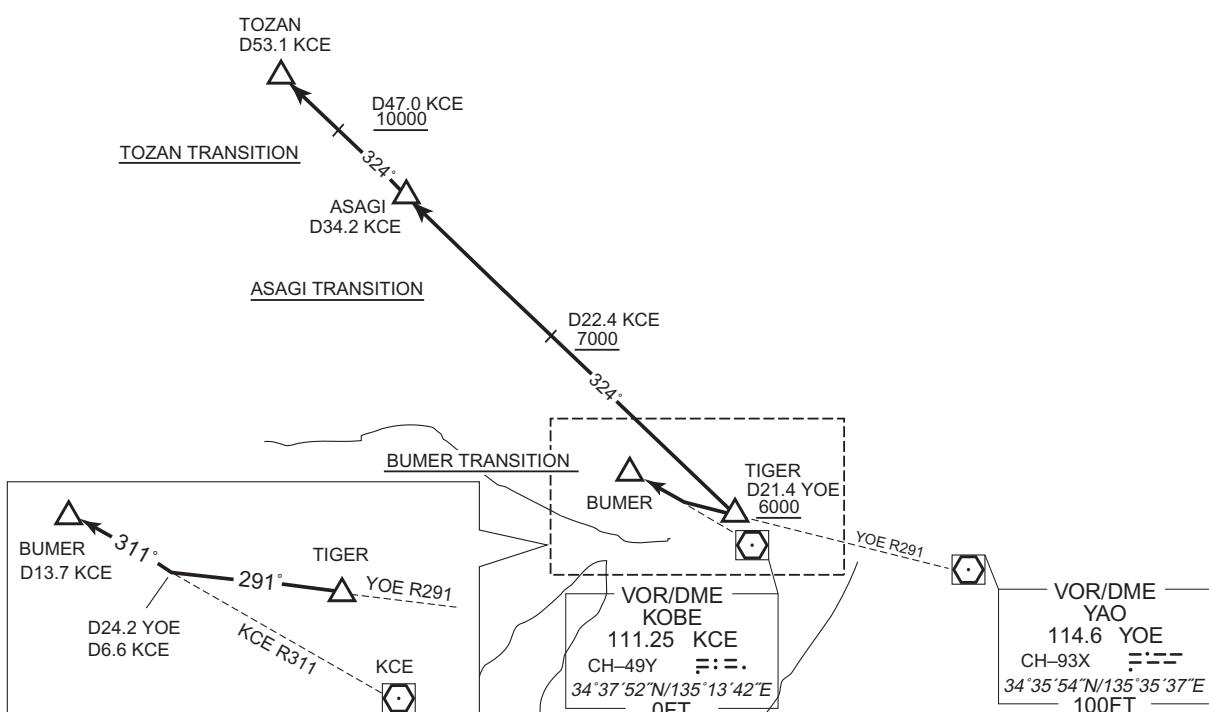
TOZAN TRANSITION

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.

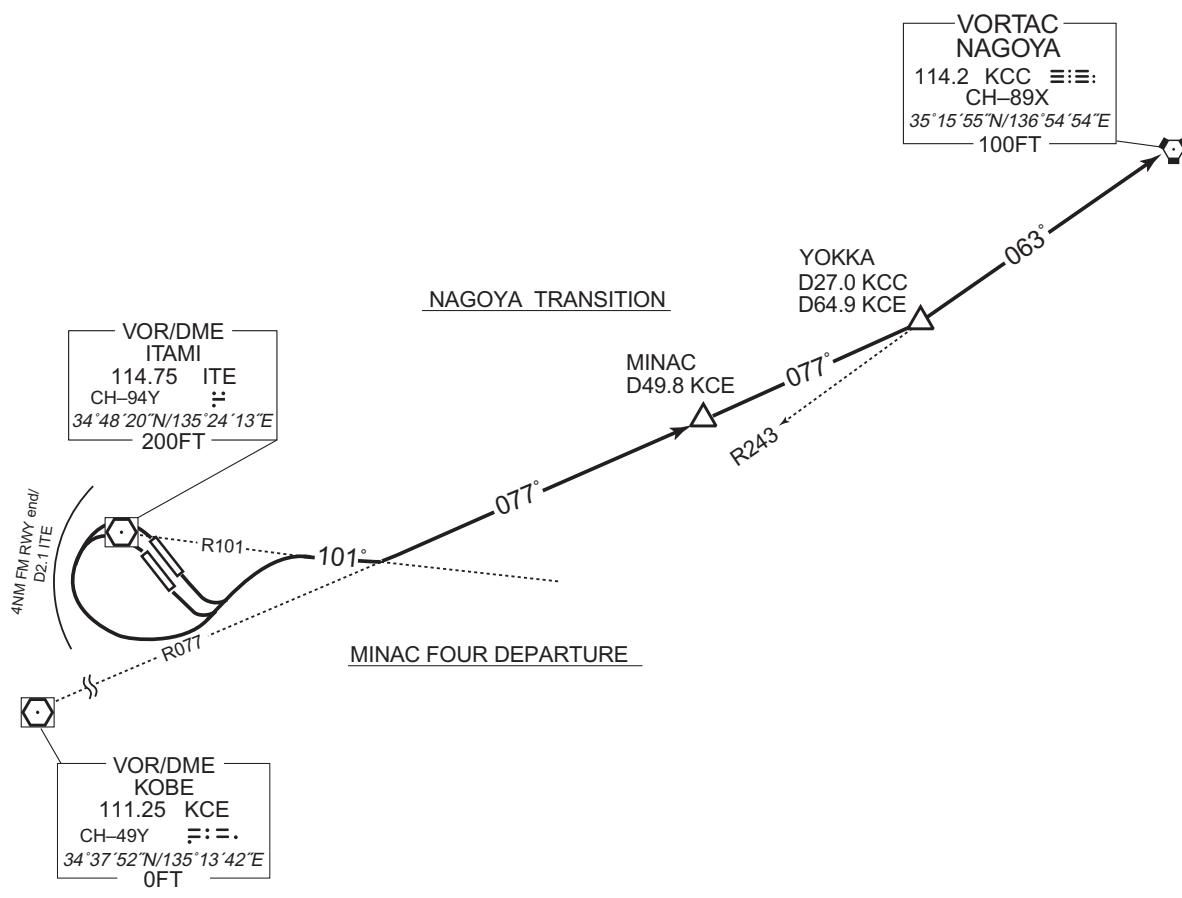
Note: When take off RWY14R/14L, following climb gradient should be maintained until 500FT.

| | | | | | | |
|-----------------|-----|-----|-----|-----|-----|------|
| 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 | — |
| <p>VAR 8°W (2021)</p> <p>The map shows the coastline of Awaji Island. The route starts at TIGER (34°40'50.4N 135°10'16.7E), passes over MAIKO (34°36'39.7N 134°59'49.1E), and ends at AWAJI (34°16'13.1N 134°42'46.6E). Other points shown include SHODO (1178 STD, CH-91X, 34°30'45"N 134°16'27"E, 2500FT), YOE (ITE, KCE, KIE), VOR/DME KAGAWA (108.4 KTE, CH-21X, 34°12'45"N 134°01'21"E, 700FT), VOR/DME KOBE (111.25 KCE, CH-49Y, 34°37'52"N 135°13'42"E, 0FT), VOR/DME ITAMI (114.75 ITE, CH-94Y, 34°48'20"N 135°24'13"E, 200FT), VOR/DME KANSAI (111.6 KIE, CH-53X, 34°25'33"N 135°12'28"E, 0FT), and VOR/DME YAO (114.6 YOE, CH-93X, 34°35'54"N 135°35'37"E, 100FT). TACAN TAKAMATSU (1209 TZT, CH-122X, 34°19'34"N 133°57'14"E, 1600FT) is also indicated.</p> | | | |

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

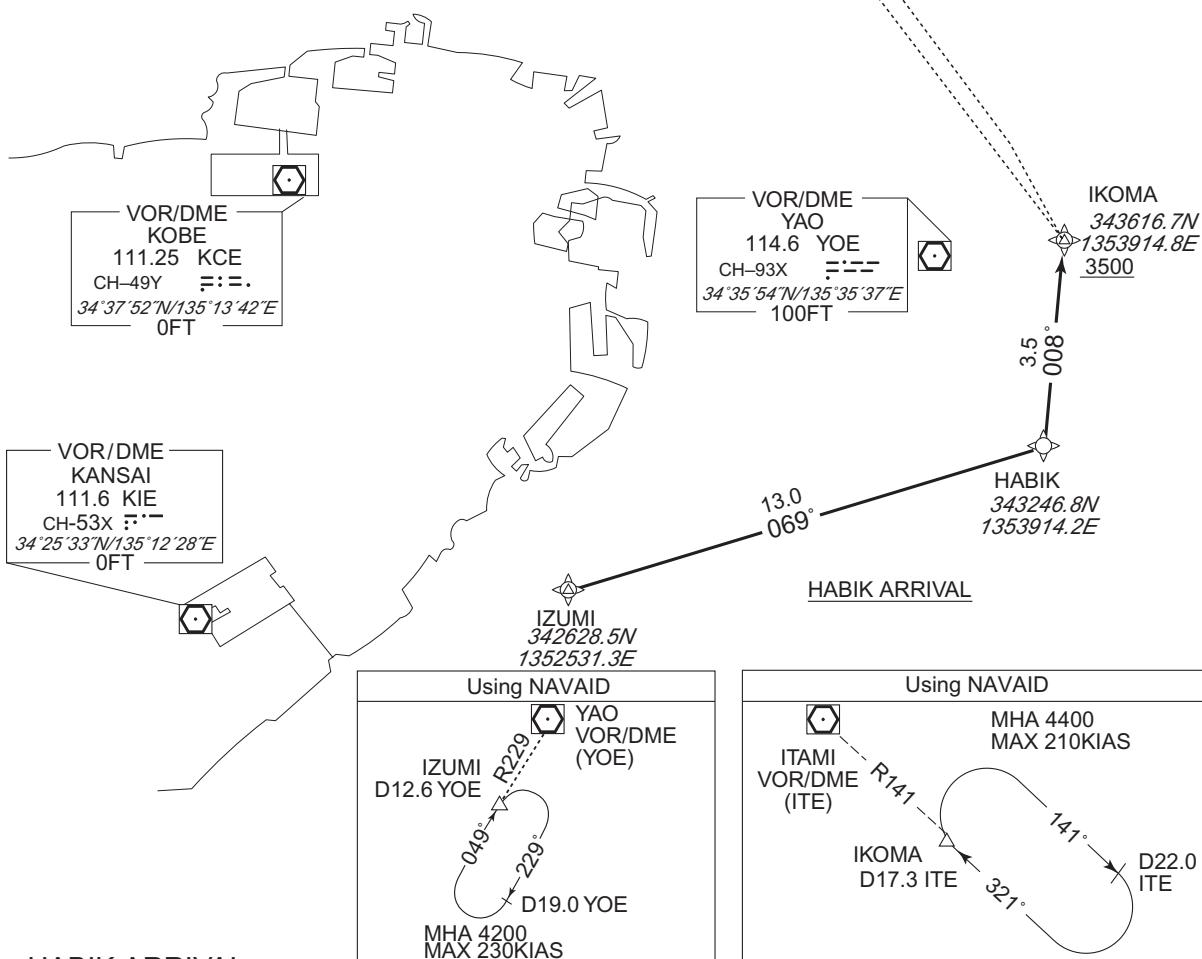
HABIK ARRIVAL

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).

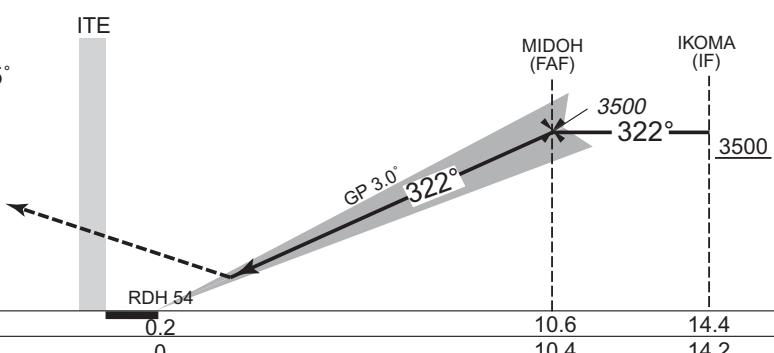
INSTRUMENT APPROACH CHART



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 | | | 590 (551) | 590 (551) | 1600 |
| B | | | 660 (621) | 610 (571) | 2400 |
| C | 281 (250) | 700 | 760 (721) | 760 (721) | 3200 |

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.

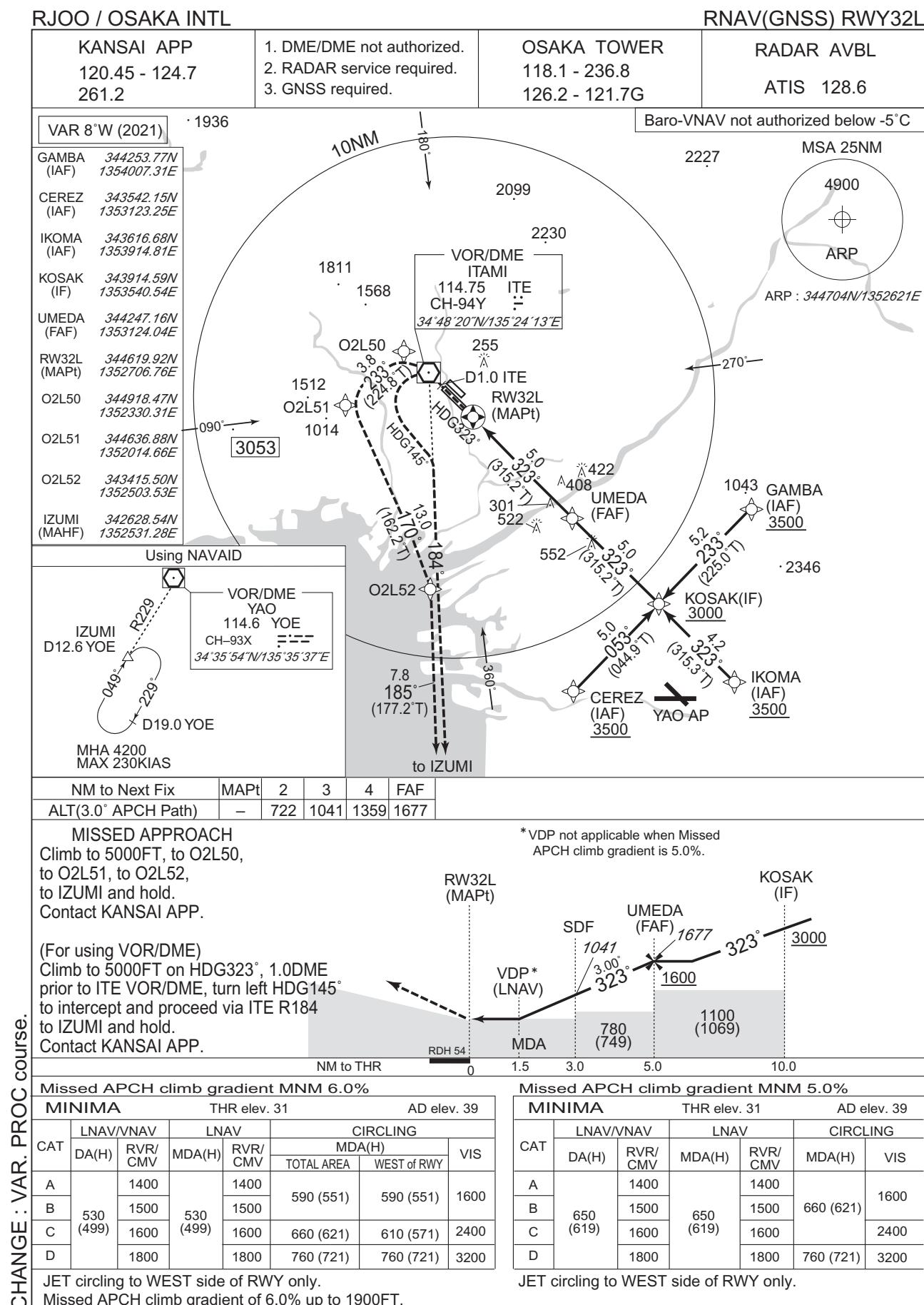
DME to ITE



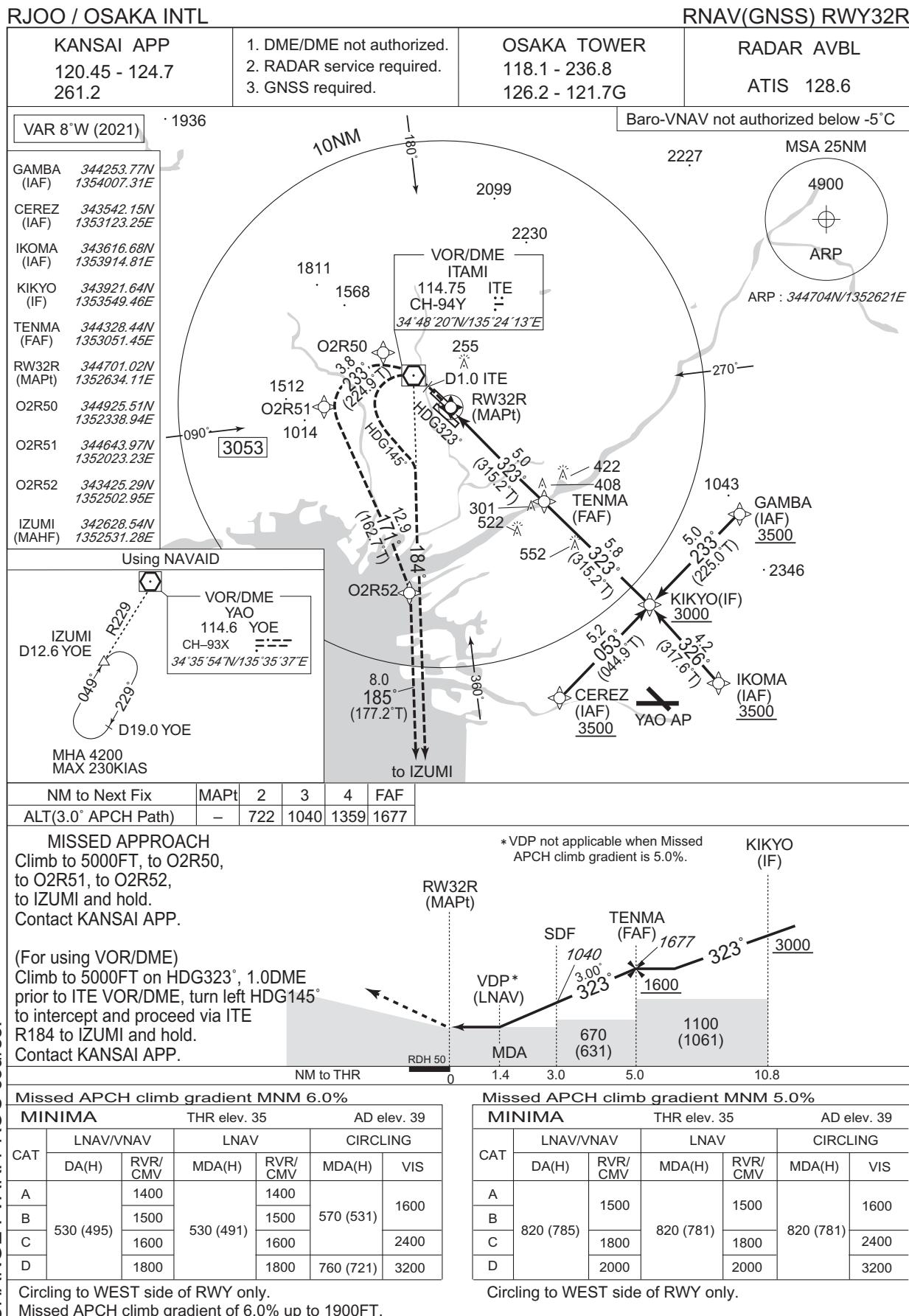
| MINIMA | | AD elev. 39 |
|--------|------------|-------------|
| CAT | CIRCLING | |
| | MDA(H) | |
| | TOTAL AREA | WEST of RWY |
| A | 590 (551) | 590 (551) |
| B | | 1600 |
| C | 660 (621) | 610 (571) |
| D | 760 (721) | 760 (721) |

JET circling to WEST side of RWY only.

INSTRUMENT APPROACH CHART



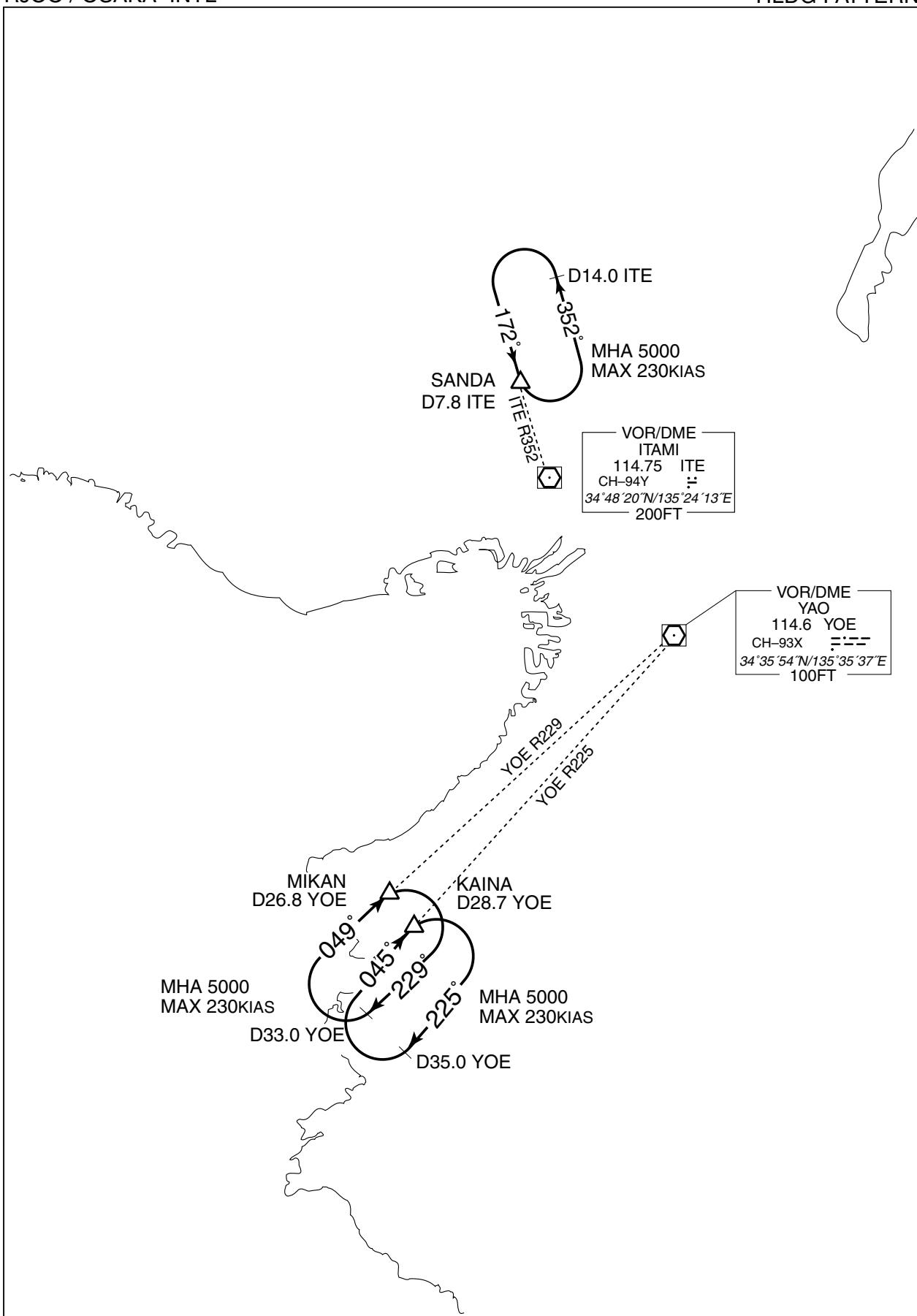
INSTRUMENT APPROACH CHART



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RJOO / OSAKA INTL

HLDG PATTERN



RJOO / OSAKA INTL

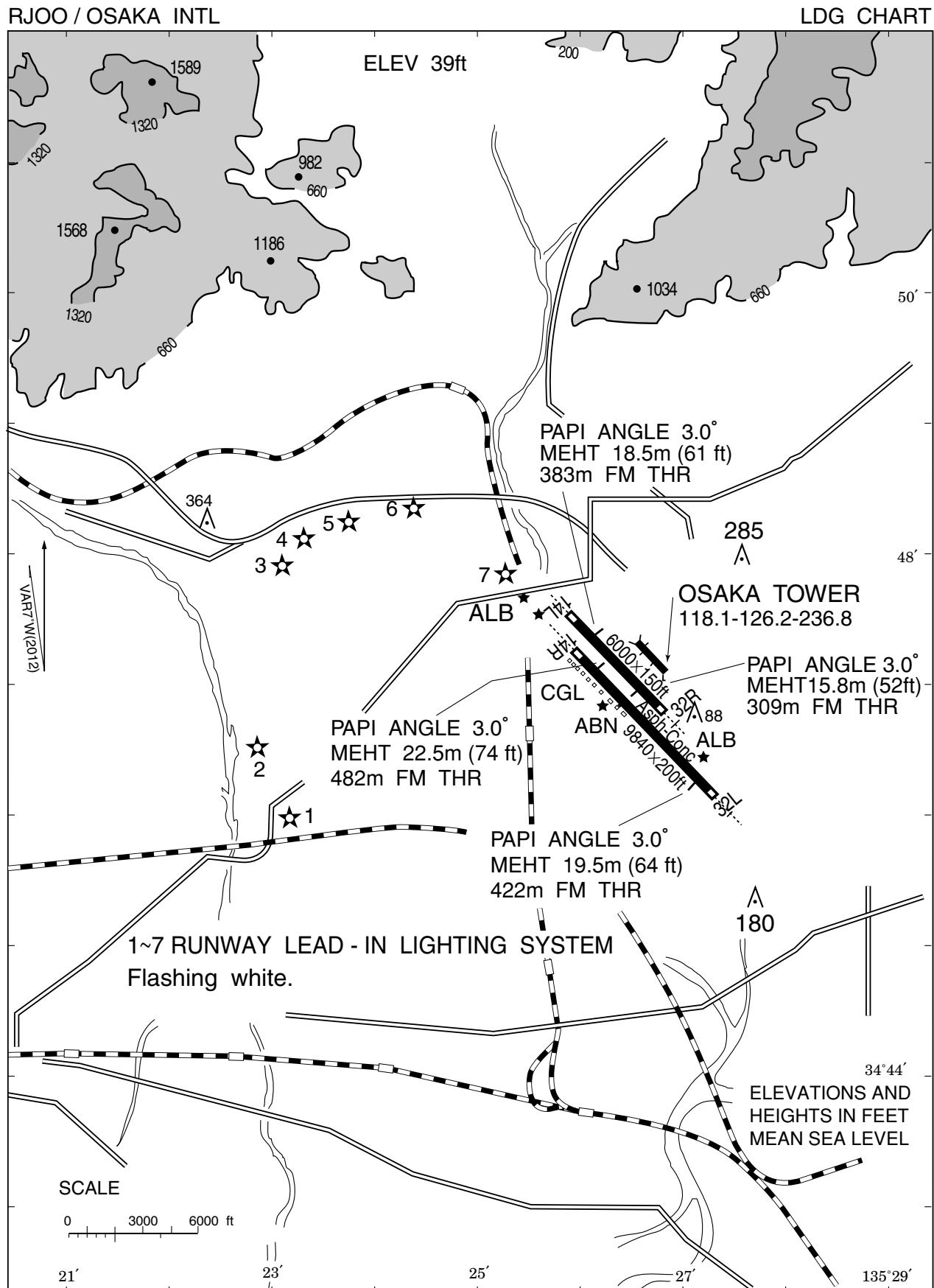
Visual REP



※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).

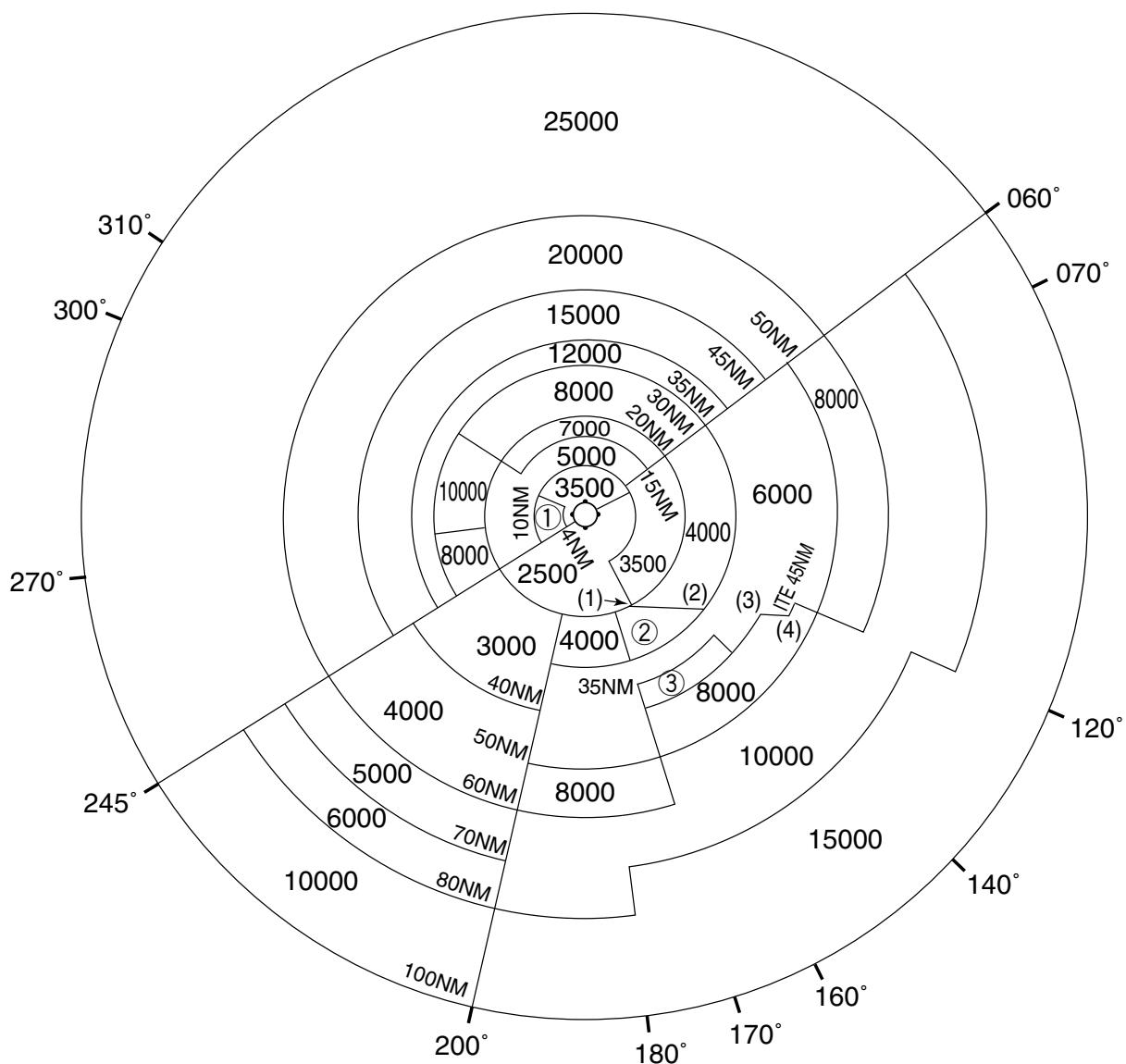
| Call sign | BRG / DIST from ARP | Remarks |
|-----------------|---------------------|-----------------------------|
| 川西 Kawanishi | 339°T / 4.9NM | 多田神社 Shrine |
| 石橋 Ishibashi | 013°T / 1.5NM | 阪急石橋阪大前駅 Station |
| 千里 Senri | 063°T / 3.0NM | 千里インターチェンジ Interchange |
| 吹田 Saita | 077°T / 5.2NM | 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) 342924N/1361335E |

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