MACAO SPECIAL ADMINISTRATIVE REGION
PEOPLE REPUBLIC OF CHINA
CIVIL AVIATION AUTHORITY

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AIP MACAO
AIRAC AMDT
02/25
26 JUN 2025

IMPLEMENTATION

07 AUG 2025

AIRAC

1. Significant Information and Changes :

1.1 The Zhuhai APP frequencies will be changed to 119.025 MHz (primary) / 125.525 MHz (secondary). All related charts are updated.

1.2 WEF 0000 UTC 07 AUG 2025, RWY 16/34 SIDs departure from Macau International Airport transiting Guangzhou FIR to VAVSO direction via IDUMA. The SHL SIDs will be replaced by the NEW SIDs "IDUMA" as summarized below:

	Existing SIDs	New SIDs
RWY 34	SHL 2E SHL 1G	IDUMA 1E IDUMA 1G
RWY 16	SHL 2F SHL 1H	IDUMA 1F IDUMA 1H

1.3 The updated special procedures and safeguards are applied during CAT II operations at aerodrome.

2. Destroy the following pages and/or charts on implementation date		3. Insert the following new pages and/or charts on implementation date	
GEN		GEN	
0.4-1/2	03 APR 25/03 APR 25	0.4-1/2	07 AUG 25/07 AUG 25
ENR		ENR	
1.10-1/1.10-2	01 DEC 22/16 JUN 22	1.10-1/1.10-2	07 AUG 25/16 JUN 22
AD		AD	
1.1-1/1.1-2	15 JUL 10/11 AUG 11	1.1-1/1.1-2	15 JUL 10/07 AUG 25
2 – VMMC – 25/26	13 JUL 23/27 JAN 22	2 – VMMC – 25/26	13 JUL 23/07 AUG 25
2 – VMMC – 58/59	22 FEB 24/22 FEB 24	2 – VMMC – 58/59	07 AUG 25/07 AUG 25
2 – VMMC – 60/60C	22 FEB 24/22 FEB 24	2 – VMMC – 60/60C	07 AUG 25/07 AUG 25
2 – VMMC – 60D/60E	22 FEB 24/05 OCT 23	2 – VMMC – 60D/60E	07 AUG 25/07 AUG 25
2 – VMMC – 60F/61	05 OCT 23/28 NOV 24	2 – VMMC – 60F/61	07 AUG 25/07 AUG 25
2 – VMMC – 62B/62C	28 NOV 24/28 NOV 24	2 – VMMC – 62B/62C	28 NOV 24/07 AUG 25
2 – VMMC – 62F/63	28 NOV 24/22 FEB 24	2 – VMMC – 62F/63	28 NOV 24/07 AUG 25
2 – VMMC – 63A/64A	22 FEB 24/22 FEB 24	2 – VMMC – 63A/64A	07 AUG 25/07 AUG 25
2 – VMMC – 64B/64C	05 OCT 23/05 OCT 23	2 – VMMC – 64B/64C	07 AUG 25/07 AUG 25
2 – VMMC – 64D/64E	05 OCT 23/28 NOV 24	2 – VMMC – 64D/64E	07 AUG 25/07 AUG 25
2 – VMMC – 64H/65	28 NOV 24/22 FEB 24	2 – VMMC – 64H/65	28 NOV 24/07 AUG 25
2 – VMMC – 65A/66A	23 FEB 23/22 FEB 24	2 – VMMC – 65A/66A	23 FEB 23/07 AUG 25
2 – VMMC – 66B/66C	23 FEB 23/22 FEB 24	2 – VMMC – 66B/66C	23 FEB 23/07 AUG 25

2 – VMMC – 66D/67	27 JAN 22/22 FEB 24	2 – VMMC – 66D/67	27 JAN 22/07 AUG 25
2 – VMMC – 68/68A	27 JAN 22/22 FEB 24	2 – VMMC – 68/68A	27 JAN 22/07 AUG 25
2 – VMMC – 68B/68C	27 JAN 22/22 FEB 24	2 – VMMC – 68B/68C	27 JAN 22/07 AUG 25
2 – VMMC – 69/69A	22 FEB 24/22 FEB 24	2 – VMMC – 69/69A	07 AUG 25/22 FEB 24
2 – VMMC – 69B/69C	22 FEB 24/22 FEB 24	2 – VMMC – 69B/69C	07 AUG 25/07 AUG 25
2 – VMMC – 69D/69E	22 FEB 24/22 FEB 24	2 – VMMC – 69D/69E	07 AUG 25/22 FEB 24
2 – VMMC – 70/-	22 FEB 24/-	2 – VMMC – 70/-	07 AUG 25/-
2 – VMMC – 71/71A	03 APR 25/20 FEB 25	2 – VMMC – 71/71A	07 AUG 25/20 FEB 25
2 – VMMC – 71B/-	20 FEB 25/-	2 – VMMC – 71B/-	07 AUG 25/-
2 – VMMC – 71C/-	20 FEB 25/-	2 – VMMC – 71C/-	07 AUG 25/-
2 – VMMC – 71D/71E	20 FEB 25/20 FEB 25	2 – VMMC – 71D/71E	07 AUG 25/20 FEB 25
2 – VMMC – 71F/71G	20 FEB 25/20 FEB 25	2 – VMMC – 71F/71G	07 AUG 25/20 FEB 25
2 – VMMC – 72/-	04 JAN 18/-	2 – VMMC – 72/-	07 AUG 25/-

4. INCORPORATE the following manuscript amendments :

   NIL.

5. Record entry of Amendment on page GEN 0.2 – 1

6. This Amendment incorporates information contained in the following AIP Supplement and/or NOTAM which are hereby cancelled:

   AIP Supplement: NIL.
   NOTAM: NIL

GEN 0.4 CHECKLIST OF AIP PAGES

PART 1 - GENERAL (GEN)

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0.1-1	01 FEB 07
0.1-2	01 FEB 07
0.1-3	01 FEB 07
0.2-1	11 JUN 15
0.3-1	02 JAN 97
0.4-1	07 AUG 25
0.4-2	07 AUG 25
0.5-1	02 JAN 97
0.6-1	05 APR 01
0.6-2	05 APR 01
0.6-3	02 JAN 97

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1.1-1	20 FEB 14
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1.2-3	24 NOV 16
1.2-4	24 NOV 16
1.2-5	24 NOV 16
1.2-6	19 OCT 23
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1.3-2	24 NOV 16
1.3-3	24 NOV 16
1.3-4	24 NOV 16
1.3-5	24 NOV 16
1.3-6	24 NOV 16
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1.4-1	19 NOV 20
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1.5-1	19 OCT 23
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1.6-3	23 MAY 19
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1.7-1	03 APR 25
1.7-2	03 APR 25
1.7-3	03 APR 25
1.7-4	03 APR 25

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2.1-2	27 MAR 08
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2.2-3	02 JAN 97
2.2-4	02 JAN 97
2.2-5	02 JAN 97
2.2-6	02 JAN 97
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2.7-2	02 JAN 97

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3.6-1	13 JUL 23
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PART 2 - EN-ROUTE (ENR)

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1.14-11	17 APR 14

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5.3-1	02 JAN 97
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2 - VMMC - 10	01 FEB 07
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2 - VMMC - 62 C	07 AUG 25
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2 - VMMC - 69 E	22 FEB 24
2 - VMMC - 70	07 AUG 25
2 - VMMC - 71	07 AUG 25
2 - VMMC - 71 A	20 FEB 25
2 - VMMC - 71 B	07 AUG 25
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3 - 8	24 NOV 16
3 - 9	04 JAN 18

ENR 1.10 FLIGHT PLANNING

1 Procedures for the submission of flight plan

1.1 All flight plan and related ATS messages for traffic inbound Macau International Airport shall be addressed to VMMCZTZX, ZBBBZFPM, ZSSSZFPM, ZGZUZQZX, ZGJDZAZX and VHHKZQZX additionally to the ICAO standard addressing (as per Doc 4444). Operators are strongly recommended to adhere strictly to this procedure in order to avoid inflight delays due to lack of Flight Plan on the above mentioned ATC Units.

2 Time of submission

2.1 Airline operator can file a FPL up to 5 days (120 hours) prior to the EOBT.

2.2 Except where necessary for operational or technical reasons, any aircraft departing from Macau should submit a flight plan at least 3 hours (and in no case later than 60 minutes) prior to the estimated off-block time (EOBT) except aircraft operating from Macau local flights which are permitted to give flight notification.

2.3 In the event of a delay of 30 minutes in excess of the EOBT for a flight for which a flight plan has been submitted, the flight plan should be amended or a new flight plan submitted and the old flight plan cancelled, whichever is applicable.

3 Place of submission

3.1 Operators shall submit to Macau International Airport ARO a Flight Plan according to ICAO SARPS (Annex 2) in one of the following ways: directly by the operator, or its representative, at the Flight Information Unit, or via AFTN/AMHS to VMMCZPZX. Subject to coordination with Macau International Airport ARO, submission of flight plan and related ATS messages may be sent by email or fax in case the above ways of submission are not available.

3.2 Operators shall keep available, at any time, individual Supplementary Flight Plan data (SPL) to be provided, on request, to Macau International Airport ATS.

4 Contents and Form of flight plan

4.1 As per ICAO Doc 4444 (PANS - ATM)

4.2 All operators are required to strictly comply with the route syntax specified as below:

4.2.1 Departing from Macau International Airport transiting Guangzhou FIR:

	Initial Flight Planned route to be filled in item 15 of the standard ICAO Flight Plan	**Connecting Route**
(1)	MIPAG	W21
(2)	SHL	A461/W22
(3)	BIGRO	R200/G221
(4)	NLG [1]	--
(5)	IDUMA	W41

1 For flights landing Shenzhen Bao'an International Airport

4.2.2 Departing from Macau International Airport transiting Hong Kong FIR:

Operators are to refer to Hong Kong AIP ENR 1.10 Flight Planning, Section 7.2 for the initial Flight Planned route.

5 Repetitive flight plan system

5.1 Not available to and from Macau International Airport.

NOTE: For all off shore oil support helicopters, the procedures will be according to existing letters of agreement (L.O.A.).

AD 1. AERODROME/HELIPORT — INTRODUCTION

AD 1.1 AERODROME/HELIPORT AVAILABILITY

1. General conditions under which aerodrome/heliport and associated facilities are available for use

1.1 Subject to the observance of the applicable rules, conditions, and limitations set forth in this document, foreign civil aircraft registered in a foreign country which at the time is a member of the International Civil Aviation Organisation, may be navigated in Macao.

1.2 Aircraft registered under the laws of foreign countries, not members of the International Civil Aviation Organisation, which grant reciprocal treatment to Macao aircraft and airmen may be navigated in Macao subject to the observance of the same rules, conditions, and limitations applicable in the case of aircraft of ICAO member states.

1.3 However, excluding when existing bilateral agreements for regular scheduled flights, a prior authorisation has to be forwarded to and granted by the Civil Aviation Authority in conditions laid in GEN 1.2 - 1 to 1.2 - 8 of this AIP.

1.4 Access of persons to restricted and controlled areas

1.4.1 As a general principle, access to restricted areas is only permitted in respect of persons who carry out regular duties in such areas and while performing such duties.

1.4.2 Special cases concerning persons whose duties include actually performing activities in restricted areas to an extent as justifies being granted access to such areas, may be considered, but are not included in the item above.

1.4.3 The principles governing the access of members of Diplomatic Legations as set forth in the Vienna Convention are upheld, and shall be addressed in the appropriate Resolution.

1.4.4 Access to restricted and controlled areas shall be granted by means of permanent or temporary access card, according to circumstances.

1.4.5 In order to provide efficient and stringent control of access of persons to restricted areas and controlled areas, the following access cards shall be issued:

a) Permanent access card (2 years)

b) Temporary access card (up to 5 consecutive days and according to the period authorized)

1.4.6 Details of access of persons to restricted and reserved areas refers to FAL/SEC Resolution No. 1/2010.

1.5 Access and circulation of vehicles in restricted areas

1.5.1 The access and circulation of vehicles in restricted areas is authorised as follow: on a permanent basis in respect of vehicles employed regularly in such areas, or on a temporary or single basis in respect of vehicles occasionally employed in such areas.

1.5.2 The authorisation applies only to the vehicle itself. The occupants or load carried in the vehicles, as well as the driver are excluded from such authorisation and shall comply will access rules and other pertaining requirements.

1.5.3 The authorisation applies to restricted areas shall further be subject to Safe Circulation Rules (Safety), that shall include, among others, flame damper for exhaust pipes, driver's license, appropriate insurance, etc.

1.5.4 The control of access and the surveillance of the circulation of vehicles in restricted areas is done by means of system of identification for vehicles, comprising three modes:

a) Fixed identification

b) Removable plates

c) Badges

1.5.5 Details of access and circulation of vehicles in restricted areas refers to FAL/SEC Resolution No. 2/95.

2. Applicable ICAO documents

ICAO Standards and Recommended Practices contained in Annex 14 are applied in so far as geographical limitations permit. Differences to ANNEX 9 are mentioned in Section GEN 1.7.

3. Civil use of military air base

NIL.

4. CAT II operations at aerodrome

RWY 34, subject to serviceability of the required facilities, is suitable for CAT II operations by operators whose minima have been accepted by the Civil Aviation Authority. LOW

VISIBILITY OPERATIONS PROCEDURES (LVP) will be in force whenever:

i) Runway Visual Range (RVR) - TDZ RWY 34 - is 800 m or below; or,

ii) Cloud base height (CBH) - RWY 34 - is 200 ft or below; or,

iii) Visibility conditions decrease rapidly;

Special procedures and safeguards will be applied during CAT II operations to protect aircraft operating in low visibility and to avoid interference to the ILS signals in accordance with ICAO Doc 9365 – Manual of All-Weather Operations.

Pilots will be informed when this procedure is in use by RTF and ATIS through the message "LOW VISIBILITY OPERATIONS IN FORCE".

CAT II operations at MIA by operators of aeroplanes not registered in Macao will be considered under proposal to Civil Aviation Authority indicating the aeroplane type, certification by the State of Registry to operate CAT II and minimum authorised by the State and the operators. Application form for authorization to conduct low visibility operations can be downloaded from AACM website.

4 Engine tests and ground runs

Engine run-up are subject to the following conditions:

4.1 Normally engine runs above ground idle power are not permitted during the critical hours of 2200 to 0700 local time. Exception may be considered case by case, depending on actual operational analyses (e.g. time needed for engine run-up, expected movements, etc).

4.2 Engine Ground Run Procedures

4.2.1 An engine ground run is defined as any engine start up not associated with the planned aircraft departure. Maintenance or test running of jet engine not mounted on an aircraft is prohibited unless performed in a test cell of adequate design.

4.2.2 Normally, engine ground running at idle power for duration not exceeding 15 minutes may be conducted on aircraft parking bays with previous coordination with Airport Operation Coordination Centre (AOCC). Extension of such limitation is subject to AOCC approval depending on airport conditions. Power runs above idle for maintenance purpose must be conducted at designated areas.

4.2.3 Initial requests for a ground run at any time should be made by telephone to Airport Operation Coordination Centre. The airline or their representatives are responsible for ensuring that all safety precautions against injury to persons or damage to properties, aircraft, vehicles, marine vessels (when the jet blast is directed towards the sea) and equipment in the vicinity are adopted. When ready to conduct the engine run, clearance from Macau Ground on 121.725 MHz. A listening watch must be maintained on the frequency throughout the engine run. The aircraft anti-collision beacons must be activated for the entire duration and that Macau Ground should be advised on its completion.

VMMC AD 2.22 FLIGHT PROCEDURES

See AD Charts

VMMC AD 2.23 ADDITIONAL INFORMATION

1 Automatic Terminal Information Service (ATIS)

STATION	BROADCAST ON FREQUENCY	HOURS	CONTENTS	REMARKS
MACAU International Airport	126.4 MHz	24 hours	Continuous broadcast in voice by Aerodrome control: - Runway in use, - Surface wind, - Visibility, - Runway visual range when it is less than 1500m - Present weather - Cloud - Trend forecast - Aerodrome QNH, - Air temperature and Dew Point, - Any essential information considered to be useful to operation of aircraft e.g. low visibility operation in force, thunderstorms warnings, typhoon signal no. 8 or above, aerodrome surface conditions, unserviceability of navigation aids, type(s) of approach to be expected etc.	Pilots are required to acknowledge the identifier at first contact on the frequency of responsible approach control unit (Zhuhai APP 119.025 MHz and 125.525 MHz, Hong Kong radar 126.3 MHz and 119.1 MHz) if aircraft is arriving and on 118.0 / 121.725 MHz as appropriate (see AD 2.20) if aircraft is departing

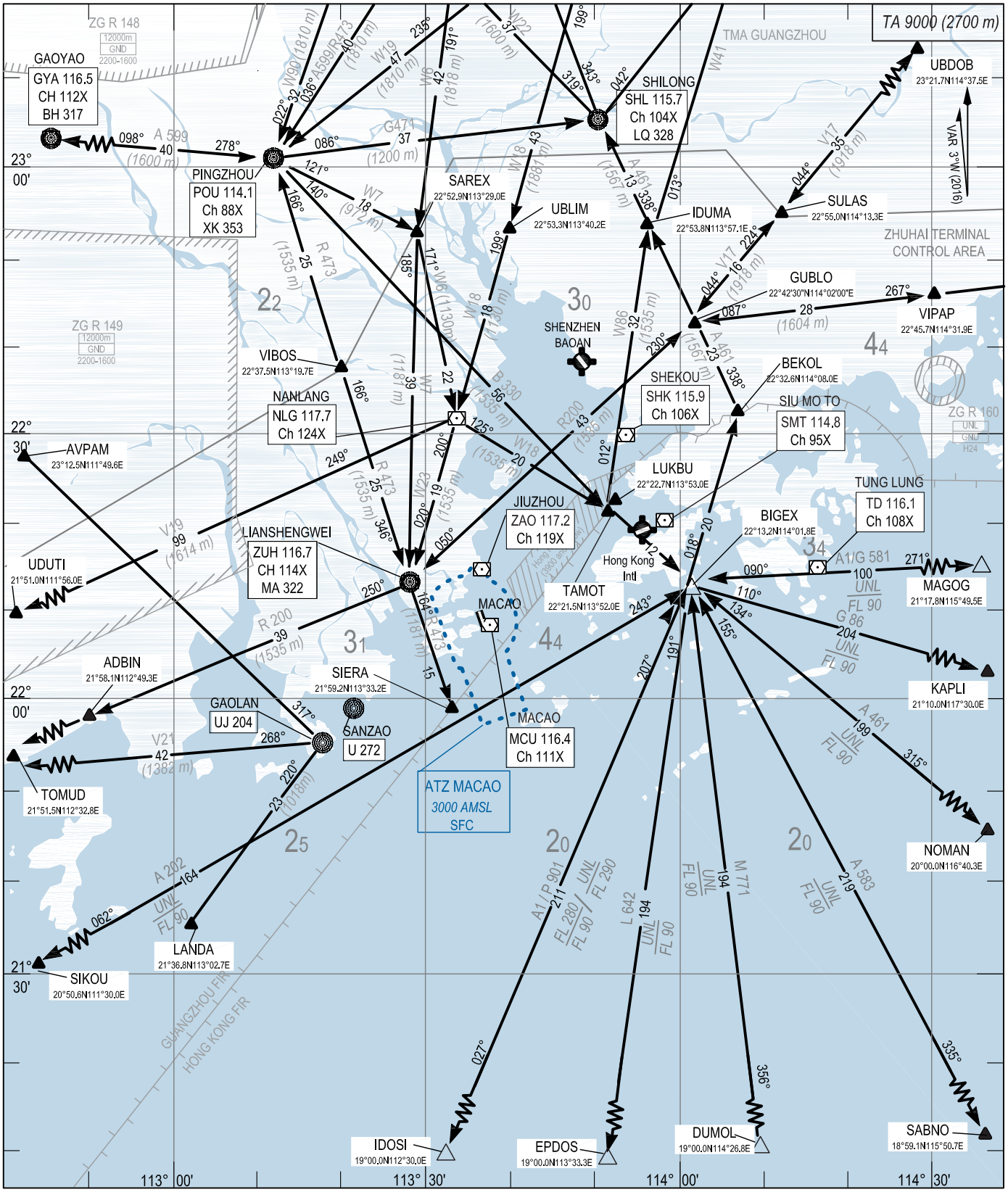
2 GNSS RAIM Prediction Services and Associated NOTAM Information

GNSS RAIM availability prediction service and the associated NOTAM information related to GNSS availability will not be provided by AACM or Macau International Airport.

In accordance with ICAO Doc 9613, PBN Manual, aircraft operators shall subscribe the necessary information provided by other service providers to verify the RAIM availability for the intended route of flight.

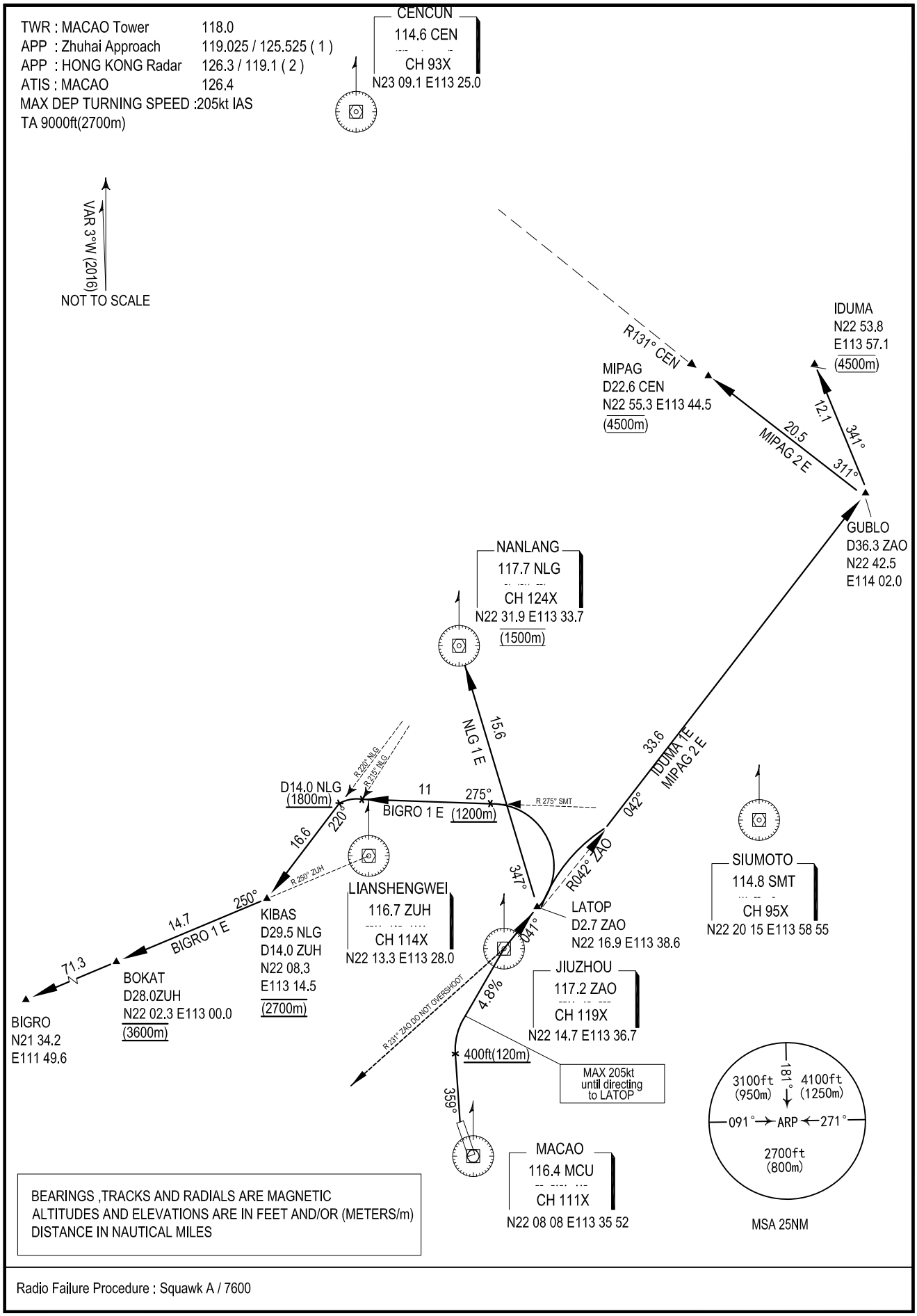
TWR :	MACAO Tower	118.0
APP :	ZHUHAI Approach	119.025 / 125.525 (1)
APP :	HONG KONG Radar	126.3 / 119.1 (2)
ATIS :	MACAO	126.4

BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND /OR (METERS / m)
DISTANCES IN NAUTICAL MILES



RADIO FAILURE PROCEDURE : Squawk A / 7600

GUANG ZHOU FIR - HONG KONG FIR
SID MACAO RWY 34
(BIGRO 1 E, MIPAG 2 E, NLG 1 E, IDUMA 1E)
CAT A, B, C, D



Radio Failure Procedure : Squawk A / 7600

BIGRO 1 E (minimum climb gradient of 4.8% required until leaving 1800 m)
Depart on track 359°M and climb to at or above 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R041°. Turn left at LATOP to intercept SMT R275° at or above 1200 m. Then continue climbing, at NLG R215° turn left to intercept NLG R220° at or above 1800 m. To KIBAS at 2700 m, turn right at KIBAS on ZUH 250°M, to BOKAT at 3600 m, to BIGRO.

If ZAO is unserviceable, depart on track 359°M, at MCU DME 3.3NM turn right on track 041°M and continue climbing. Turn left at MCU DME 9.0NM to intercept SMT 275°M at or above 1200m. Then join original procedure.

MIPAG 2 E (minimum climb gradient of 4.8% required until leaving 4500m)
Depart on track 359°M and climb to at or above 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R041°. At LATOP turn right to proceed on ZAO R042°and continue climbing to 4500 m and maintain. At ZAO DME 36.3NM (GUBLO) turn left to establish on CEN R131° to MIPAG at 4500m.

NLG 1 E (minimum climb gradient of 4.8% required until reaching 1500 m)
Depart on track 359°M and climb to at or above 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R041°. At LATOP turn left to establish on NLG R167° and reach 1500m by NLG.

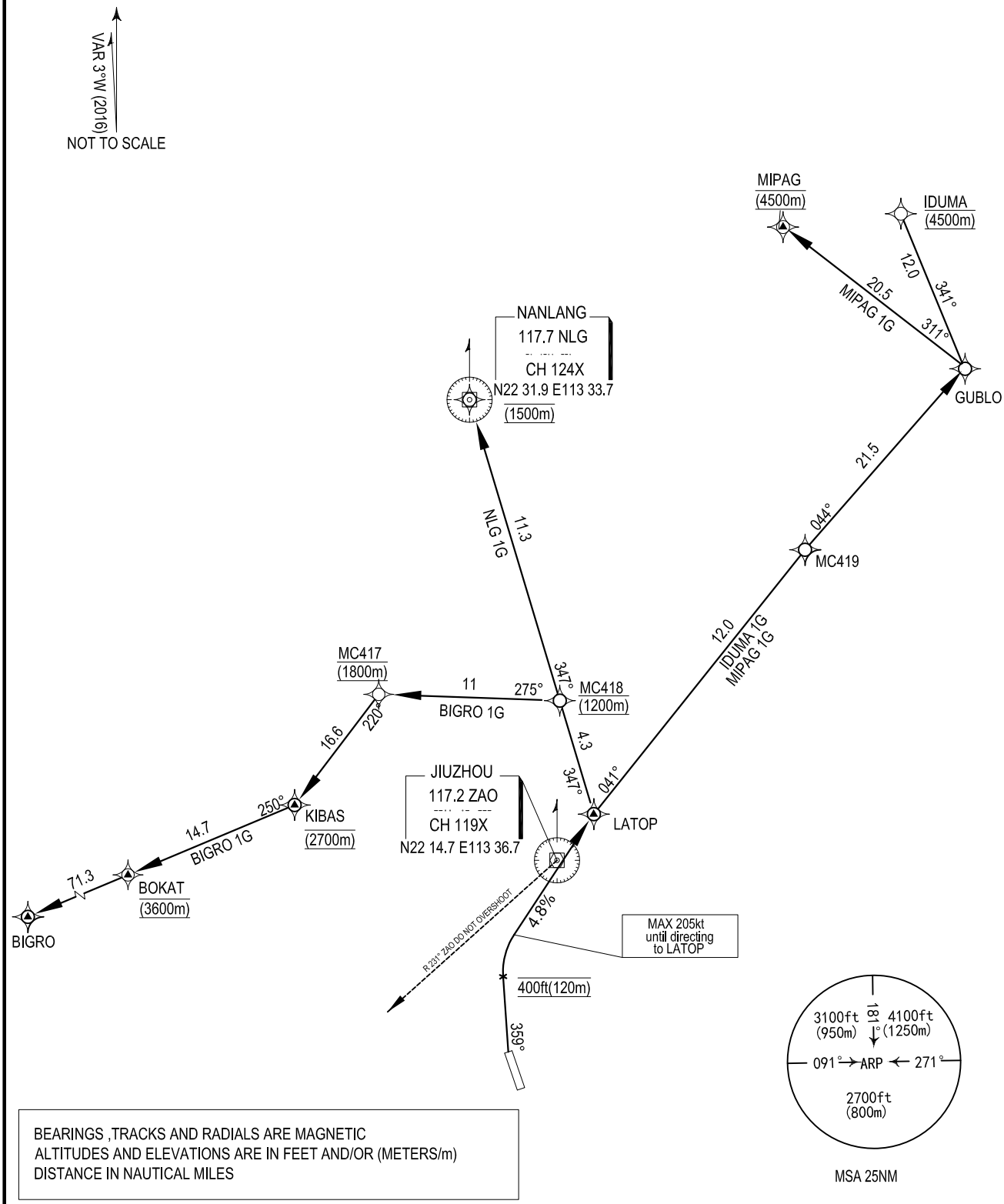
If ZAO is unserviceable, depart on track 359°M, at MCU DME 3.3NM turn right on track 041°M and continue climbing. At MCU DME 9.0NM turn left to establish on NLG R167°M. Then join original procedure.

IDUMA 1 E (minimum climb gradient of 4.8% required until leaving 4500m)
Depart on track 359°M and climb to 400 ft (120 m). Then turn right and continue climb to ZAO. Leave ZAO on R041°. At LATOP turn right to proceed on ZAO R042°and continue climbing to 4500 m and maintain. At ZAO DME 36.3NM (GUBLO) turn left on track 341°M to IDUMA at 4500m.

REMARK:
(1) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R231° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
(2) Aircraft unable to comply with the minimum climb gradient must inform Macao ground control at first contact to allow special coordination.
(3) Maximum departure turning speed: 205 kt IAS.
(4) Owing to the proximity of the Hong Kong international airport, any deviation from the standard SID track could result in direct conflict with Hong Kong traffic. Pilots departing on RWY 34 are reminded the need to follow the standard SID track until LATOP unless deviation is approved by ATC in advance.

GUANG ZHOU FIR - HONG KONG FIR
RNAV(GNSS) SID MACAO RWY 34
(BIGRO 1 G, MIPAG 1 G, NLG 1 G, IDUMA 1 G)
CAT A, B, C, D

TWR : MACAO Tower 118.0
APP : Zhuhai Approach 119.025 / 125.525 (1)
APP : HONG KONG Radar 126.3 / 119.1 (2)
ATIS : MACAO 126.4
MAX DEP TURNING SPEED :205kt IAS
TA 9000ft(2700m)



BEARINGS ,TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND/OR (METERS/m)
DISTANCE IN NAUTICAL MILES

The procedure applied to BASIC RNP1, GNSS required.

BIGRO 1 G (minimum climb gradient of 4.8% required until leaving 1800 m)
Climb on track 359°M, at 400 ft (120 m) turn right. Direct to LATOP, to MC418 at 1200m, turn left to MC417 at 1800 m, to KIBAS at 2700 m, to BOKAT at 3600 m and BIGRO.

MIPAG 1 G (minimum climb gradient of 4.8% required until leaving 4500m)
Climb on track 359°M, at 400 ft (120 m) turn right. Direct to LATOP, MC419, GUBLO, Turn left to MIPAG at 4500 m .

NLG 1 G (minimum climb gradient of 4.8% required until reaching 1500 m)
Climb on track 359°M, at 400 ft (120 m) turn right. Direct to LATOP, to MC418 at 1200m and to NLG at 1500m.

IDUMA 1 G (minimum climb gradient of 4.8% required until leaving 4500m)
Climb on track 359°M, at 400 ft (120 m) turn right. Direct to LATOP, MC419, GUBLO. Turn left to IDUMA at 4500m.

REMARK :
(1) For RNAV$_{(GNSS)}$ SID aircraft must be approved by State of Registry in accordance with ICAO RNP1 standard or equivalent. Carriage of certified GNSS receiver is mandatory.
(2) Aircraft that do not have approval or whose RNP1/ P-RNAV capability has been degraded before departure shall use the Conventional Departure Procedure: BIGRO 1 E, MIPAG 2 E, NLG 1 E, IDUMA 1 E.
(3) Aircraft are NOT TO OVERSHOOT JIUZHOU DVOR (ZAO 117.2 MHz) R231° which defines the northern limit for flights taking off RWY 34 due to NOISE ABATEMENT for Zhuhai City.
(4) Aircraft unable to comply with the minimum climb gradient must inform Macao ground control at first contact to allow special coordination.
(5) Maximum departure turning speed: 205 kt IAS.
(6) Owing to the proximity of the Hong Kong international airport, any deviation from the standard SID track could result in direct conflict with Hong Kong traffic. Pilots departing on RWY 34 are reminded the need to follow the standard SID track until LATOP unless deviation is approved by ATC in advance.

FMC Database Coding Reference for RNAV(GNSS) SIDs

BIGRO 1 G

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CA	—	—	359(356)	—		@ 400	-205
002	DF	LATOP	—	—	—	R	—	-205
003	TF	MC418	—	347(344)	4.3	—	@ 3900	—
004	TF	MC417	—	275(272)	11	—	@ 5900	—
005	TF	KIBAS	—	220(217)	16.6	—	@ 8900	—
006	TF	BOKAT	—	250(247)	14.7	—	@ 11800	—
007	TF	BIGRO	—	250(247)	71.3	—	—	—
001	IF	BIGRO	—	—	—	—	—	–

MIPAG 1 G

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CA	—	—	359(356)	—		@ 400	-205
002	DF	LATOP	—	—	—	R	—	-205
003	TF	MC419	—	041(038)	12.0	—	—	—
004	TF	GUBLO	—	044(041)	21.5	—	—	—
005	TF	MIPAG	—	311(308)	20.5	L	@ 14800	—

NLG 1 G

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CA	—	—	359(356)	—		@ 400	-205
002	DF	LATOP	—	—	—	R	—	-205
003	TF	MC418	—	347(344)	4.3	—	@ 3900	—
004	TF	NLG	—	347(344)	11.3	—	@ 4900	—

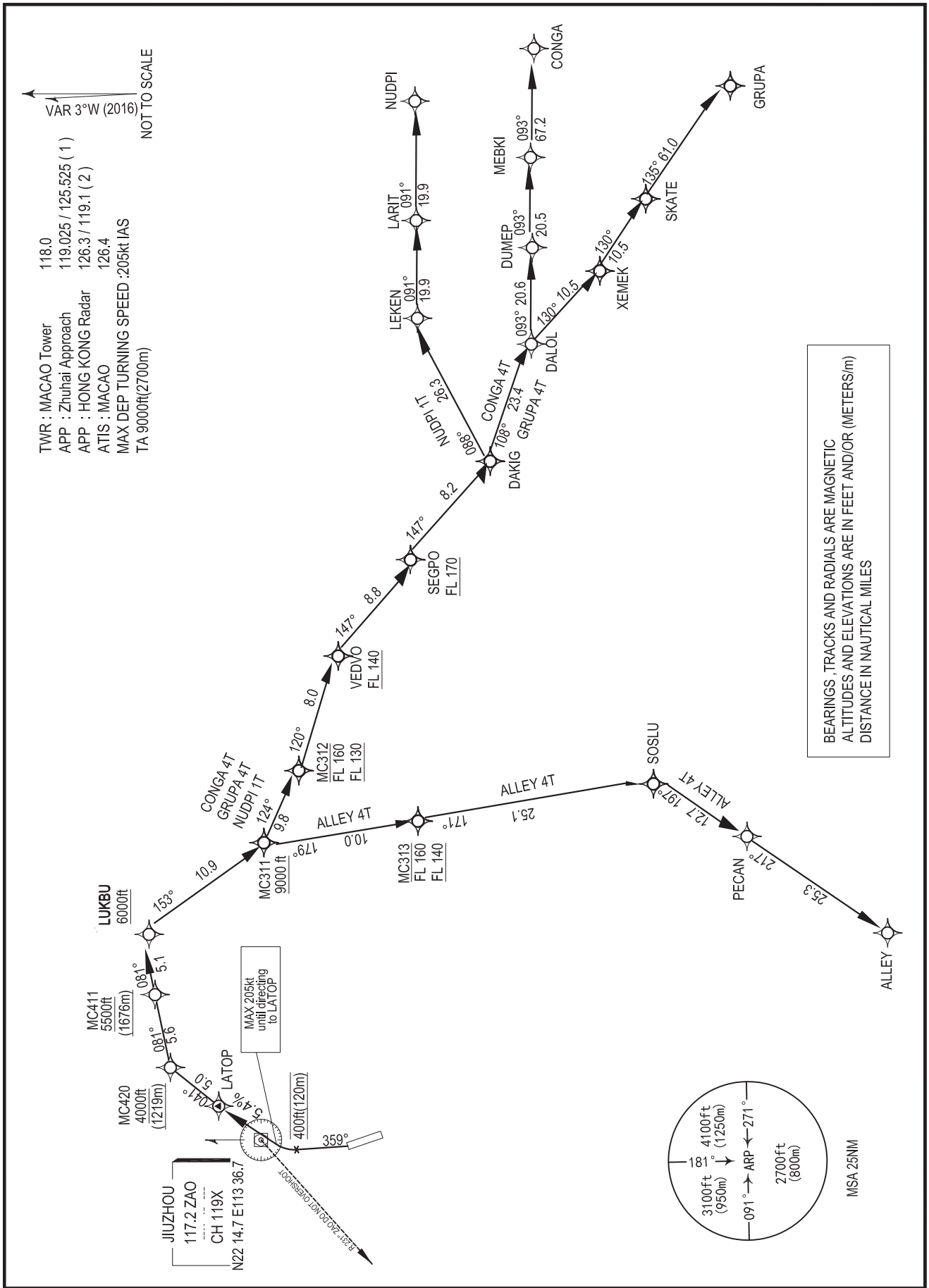
IDUMA 1 G

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CA	—	—	359(356)	—		@ 400	-205
002	DF	LATOP	—	—	—	R	—	-205
003	TF	MC419	—	041(038)	12.0	—	—	—
004	TF	GUBLO	—	044(041)	21.5	—	—	—
005	TF	IDUMA	—	341(338)	12.0	—	@ 14800	—

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
LATOP	22°16.9′N	113°38.6′E
MC418	22°20′59.43″N	113°37′16.98″E
MC417	22°21′22.48″N	113°25′20.13″E
KIBAS	22°08.3′N	113°14.5′E
BOKAT	22°02.3′N	113°00.0′E
NLG	22°31.9′N	113°33.7′E
MC419	22°26′25.37″N	113°46′47.49″E
MIPAG	22°55.3′N	113°44.5′E
GUBLO	22°42.5′N	114°02.0′E
IDUMA	22°53.8′N	113°57.1′E
SHL	23°05.5′N	113°51.0′E

GUANG ZHOU FIR - HONG KONG FIR
RNAV(GNSS) SID MACAO RWY 34
(ALLEY 4 T, CONGA 4 T, GRUPA 4 T, NUDPI 1T)
CAT A, B, C, D



The procedure applied to BASIC RNP1,GNSS required.

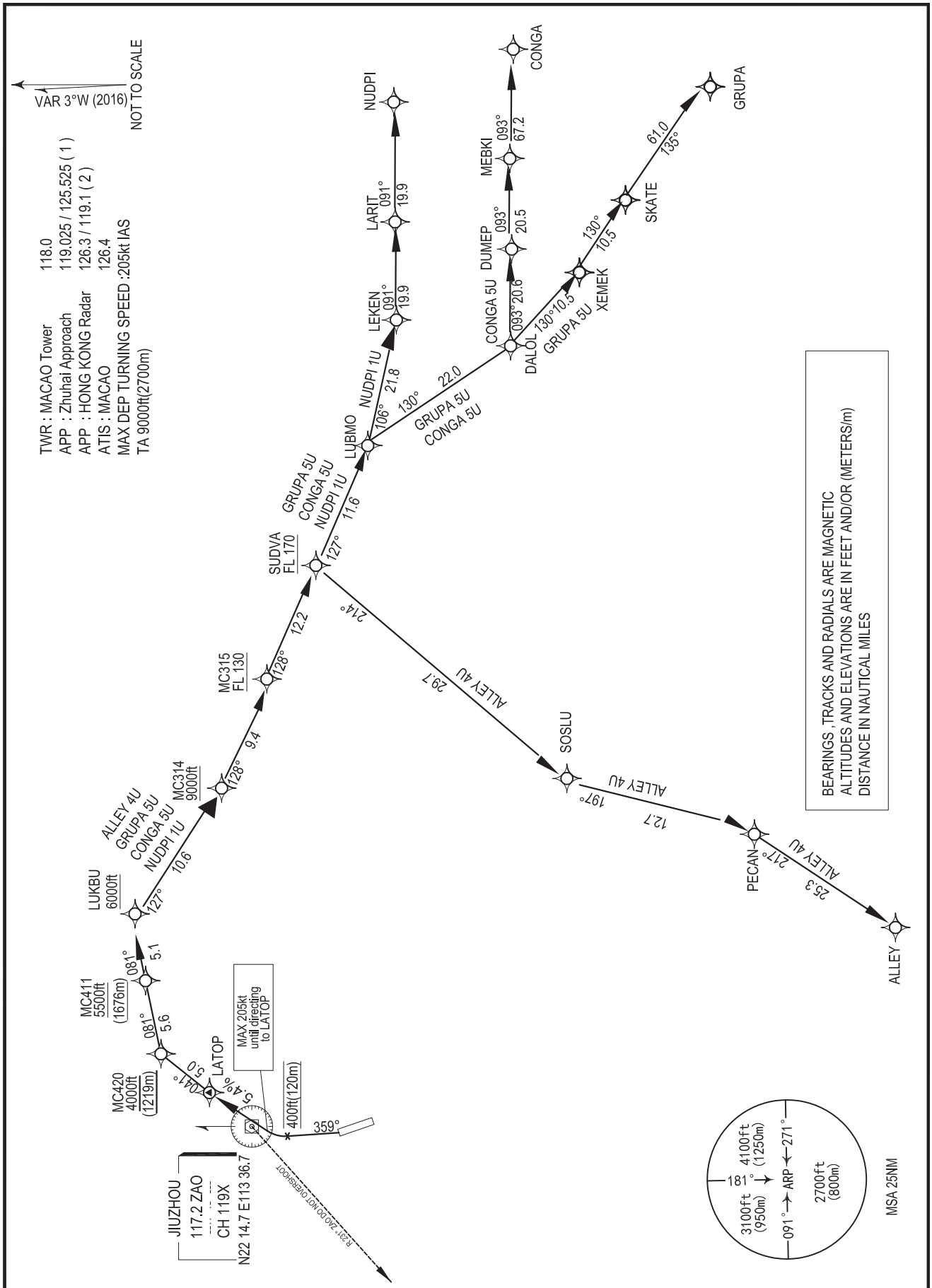
NUDPI 1 T (RWY34 SID)

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CA	—	—	359 (356)	—		@ 400	-205
002	DF	LATOP	—	—	—	R	—	-205
003	TF	MC420	—	041(038)	5.0	—	+4000	—
004	TF	MC411	—	081(078)	5.6	—	+5500	-250
005	TF	LUKBU	—	081(078)	5.1	—	+6000	—
006	TF	MC311	—	153(150)	10.9	—	+9000	—
007	TF	MC312	—	124(121)	9.8	—	-FL160 +FL130	—
008	TF	VEDVO	—	120(117)	8.0	—	+FL140	—
009	TF	SEGPO	—	147(144)	8.8	—	+FL170	—
010	TF	DAKIG	—	147(144)	8.2	—	—	—
011	TF	LEKEN	—	088(085)	26.3	—	—	—
012	TF	LARIT	—	091(088)	19.9	—	—	—
013	TF	NUDPI	—	091(088)	19.9	—	—	—

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
LATOP	22°16.9′N	113°38.6′E
MC420	22°20′32.29″N	113°41′43.59″E
MC411	22°21′41.20″N	113°47′37.58″E
LUKBU	22°22′44.12″N	113°53′01.50″E
MC311	22°13′18.51″N	113°58′56.18″E
MC313	22°03′18.39″N	113°59′36.70″E
MC312	22°08′16.69″N	114°08′02.37″E
VEDVO	22°04′38.19″N	114°15′43.05″E
SEGPO	21°57′32.77″N	114°21′18.59″E
DAKIG	21°50′52.90″N	114°26′33.33″E
DALOL	21°44′36.90″N	114°50′45.34″E
DUMEP	21°44′36.30″N	115°12′49.87″E
MEBKI	21°44′32.75″N	115°34′54.24″E
CONGA	21°44′02.50″N	116°47′05.90″E
XEMEK	21°38′16.17″N	114°59′43.04″E
SKATE	21°31′54.99″N	115°08′39.94″E
GRUPA	20°50′44.00″N	115°56′59.00″E
SOSLU	21°38′44.03″N	114°05′18.39″E
PECAN	21°26′20.19″N	114°02′05.64″E
ALLEY	21°05′11.15″N	113°47′09.50″E
LEKEN	21°53′01.06″N	114°54′44.95″E
LARIT	21°53′41.37″N	115°16′06.56″E
NUDPI	21°54′18.90″N	115°37′28.21″E

GUANG ZHOU FIR - HONG KONG FIR
RNAV(GNSS) SID MACAO RWY 34
(ALLEY 4 U, CONGA 5 U, GRUPA 5 U, NUDPI 1 U)
CAT A, B, C, D



The procedure applied to BASIC RNP1,GNSS required.

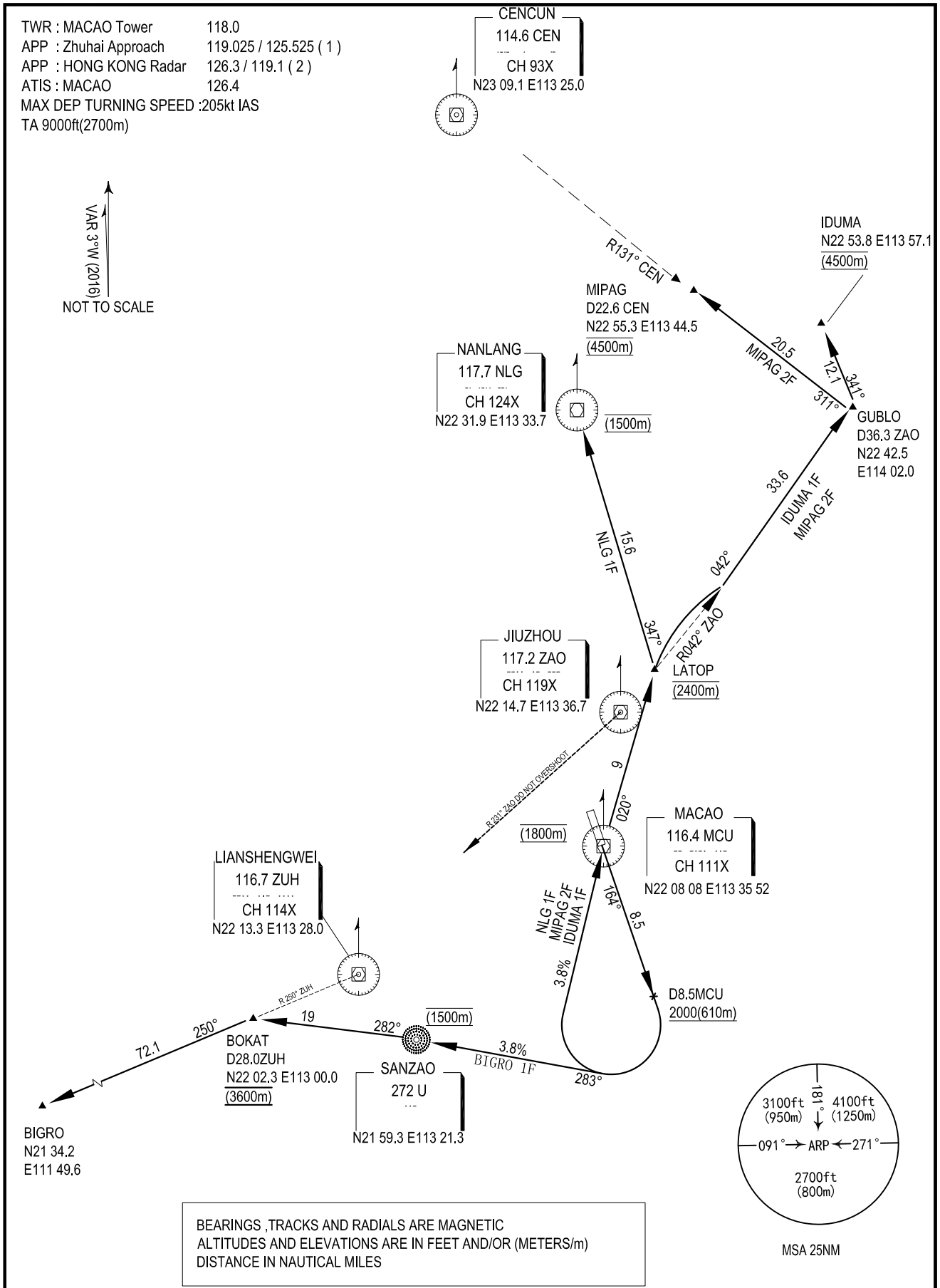
NUDPI 1U (RWY34 SID)

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CA	—	—	359 (356)	—	R	@ 400	-205
002	DF	LATOP	—	—	—	R	—	-205
003	TF	MC420	—	041 (038)	5.0	—	+4000	—
004	TF	MC411	—	081 (078)	5.6	—	+5500	-250
005	TF	LUKBU	—	081 (078)	5.1	—	+6000	—
006	TF	MC314	—	127 (124)	10.6	—	+9000	—
007	TF	MC315	—	128 (125)	9.4	—	+FL130	—
008	TF	SUDVA	—	128 (125)	12.2	—	+FL170	—
009	TF	LUBMO	—	127(124)	11.6	—	—	
010	TF	LEKEN	—	106(103)	21.8	—	—	
011	TF	LARIT	—	091(088)	19.9	—	—	
012	TF	NUDPI	—	091(088)	19.9	—	—	

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
LATOP	22°16.9′N	113°38.6′E
MC420	22°20′32.29″N	113°41′43.59″E
MC411	22°21′41.20″N	113°47′37.58″E
LUKBU	22°22′44.12″N	113°53′01.50″E
MC314	22°16′42.35″N	114°02′26.88″E
MC315	22°11′21.09″N	114°10′47.55″E
LUBMO	21°57′55.24″N	114°31′52.98″E
DALOL	21°44′36.90″N	114°50′45.34″E
DUMEP	21°44′36.30″N	115°12′49.87″E
MEBKI	21°44′32.75″N	115°34′54.24″E
CONGA	21°44′02.50″N	116°47′05.90″E
XEMEK	21°38′16.17″N	114°59′43.04″E
SKATE	21°31′54.99″N	115°08′39.94″E
GRUPA	20°50′44.00″N	115°56′59.00″E
SUDVA	22°04′25.14″N	114°21′33.87″E
SOSLU	21°38′44.03″N	114°05′18.39″E
PECAN	21°26′20.19″N	114°02′05.64″E
ALLEY	21°05′11.15″N	113°47′09.50″E
LEKEN	21°53′01.06″N	114°54′44.95″E
LARIT	21°53′41.37″N	115°16′06.56″E
NUDPI	21°54′18.90″N	115°37′28.21″E

GUANG ZHOU FIR - HONG KONG FIR
SID MACAO RWY 16
(BIGRO 1 F, MIPAG 2 F, NLG 1 F, IDUMA 1 F)
CAT A, B, C, D



BEARINGS ,TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND/OR (METERS/m)
DISTANCE IN NAUTICAL MILES

Radio Failure Procedure : Squawk A / 7600

BIGRO 1 F (minimum climb gradient of 3.8% required until leaving 1500 m)
Climb straight ahead to cross MCU DME 8.5 at 2000 ft (610 m) or above, then turn right on track 283°M, continue climbing and pass Sanzao beacon (U 272 kHz) at 1500 m. Climb on track 282°M and establish on ZUH R250° towards BIGRO, pass BOKAT at 3600 m.

If MCU is unserviceable, climb straight ahead to cross ZAO DME 14.8 NM at 2000 ft (610 m) or above then turn right on track 283°M. Then join original procedure.

MIPAG 2 F (minimum climb gradient of 3.8% required until leaving 2400 m)
Climb straight ahead to cross MCU DME 8.5 at 2000 ft (610 m) or above, then turn right to MCU via MCU R197° and cross MCU at 1800 m. Leave MCU on R020° and continue climbing to 2400 m, at LATOP turn right to establish on ZAO R042°. Continue climbing on ZAO R042° to 4500 m and maintain. At ZAO DME 36.3NM (GUBLO) turn left to establish on CEN R131° to MIPAG at 4500m.

If MCU is unserviceable, climb straight ahead to cross ZAO DME 14.8 NM at 2000 ft (610 m) or above then turn right to ZAO via ZAO R195°M and cross ZAO DME 6.7 NM at 1800 m, leave ZAO on R041°M and cross 2400 m by LATOP. Then join original procedure.

NLG 1 F (minimum climb gradient of 3.8% required until reaching 2400 m)
Climb straight ahead to cross MCU DME 8.5 at 2000 ft (610 m) or above, then turn right to MCU via MCU R197° and cross MCU at 1800 m. Leave MCU on R020° and reach 2400 m by LATOP. At LATOP turn left to establish NLG R167° and descend to reach 1500m by NLG.

If MCU is unserviceable, climb straight ahead to cross ZAO DME 14.8 NM at 2000 ft (610 m) or above then turn right to ZAO via ZAO R195°M and cross ZAO DME 6.7 NM at 1800 m, leave ZAO on R041°M and cross 2400 m by LATOP. Then join original procedure.

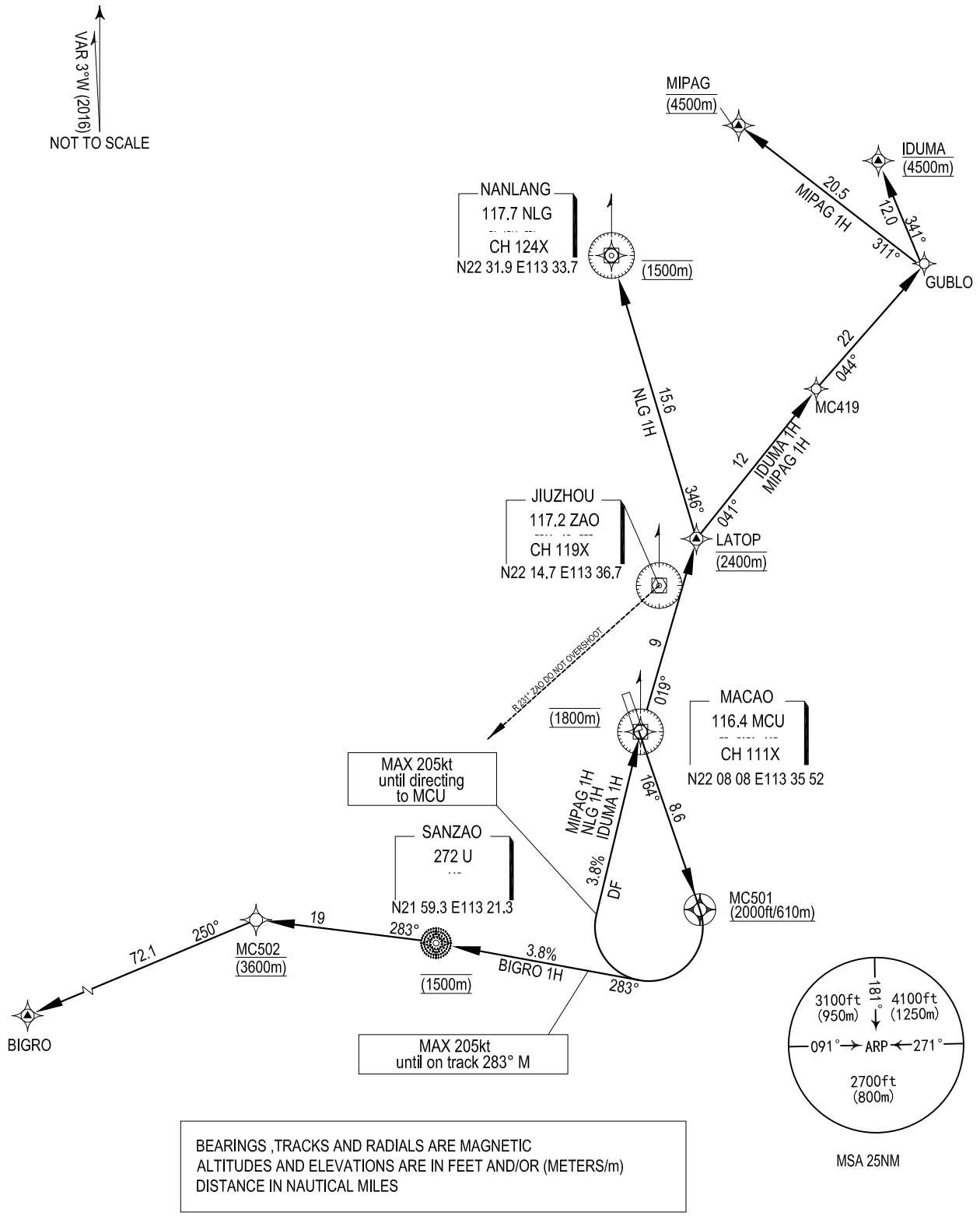
IDUMA 1 F (minimum climb gradient of 3.8% required until leaving 2400 m)
Climb straight ahead to cross MCU DME 8.5 at 2000 ft (610 m) or above, then turn right to MCU via MCU R197° and cross MCU at 1800 m. Leave MCU on R020° and continue climbing to 2400 m, at LATOP turn right to establish on ZAO R042°. Continue climbing on ZAO R042° to 4500 m and maintain. At ZAO DME 36.3NM (GUBLO) turn left on track 341°M to IDUMA at 4500m.

If MCU is unserviceable, climb straight ahead to cross ZAO DME 14.8 NM at 2000 ft (610 m) or above then turn right to ZAO via ZAO R195°M and cross ZAO DME 6.7 NM at 1800 m, leave ZAO on R041°M and cross 2400 m by LATOP. Then join original procedure.

REMARK:
(1) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordination.
(2) Maximum departure turning speed: 205 kt IAS.

GUANG ZHOU FIR - HONG KONG FIR
RNAV(GNSS) SID MACAO RWY 16
(BIGRO 1 H, MIPAG 1 H, NLG 1 H, IDUMA 1 H)
CAT A, B, C, D

TWR : MACAO Tower 118.0
APP : Zhuhai Approach 119.025 / 125.525 (1)
APP : HONG KONG Radar 126.3 / 119.1 (2)
ATIS : MACAO 126.4
MAX DEP TURNING SPEED :205kt IAS
TA 9000ft(2700m)



BEARINGS ,TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND/OR (METERS/m)
DISTANCE IN NAUTICAL MILES

The procedure applied to BASIC RNP1,GNSS required.

BIGRO 1 H (minimum climb gradient of 3.8% required until leaving 1500 m)
Depart and Climb to fly-over MC501 on course 164°M at 2000 ft (610 m) or above, then turn right to Sanzao beacon (U 272 kHz) at 1500 m on course 283°M. To MC502 at 3600 m and to BIGRO.

MIPAG 1 H (minimum climb gradient of 3.8% required until leaving 2400 m)
Depart and Climb to fly-over MC501 on course 164°M at 2000 ft (610 m) or above, then turn right direct to MCU at 1800 m. to LATOP at 2400m, to MC419, GUBLO, MIPAG at 4500 m.

NLG 1 H (minimum climb gradient of 3.8% required until reaching 2400 m)
Depart and Climb to fly-over MC501 on course 164°M at 2000 ft (610 m) or above, then turn right direct to MCU at 1800 m. to LATOP at 2400m, and to NLG at 1500m.

IDUMA 1 H (minimum climb gradient of 3.8% required until leaving 2400 m)
Depart and Climb to fly-over MC501 on course 164°M at 2000 ft (610 m) or above, then turn right direct to MCU at 1800 m. to LATOP at 2400m, to MC419, GUBLO, IDUMA at 4500 m.

REMARK :
(1) For RNAV(GNSS) SID aircraft must be approved by State of Registry in accordance with ICAO RNP1 standard or equivalent. Carriage of certified GNSS receiver is mandatory.
(2) Aircraft that do not have approval or whose RNP1/ P-RNAV capability has been degraded before departure shall use the Conventional Departure Procedure: BIGRO 1 F, NLG 1 F, IDUMA 1 F, MIPAG 2 F.
(3) Aircraft unable to comply with the minimum climb gradient must inform MACAO ground control at first contact to allow special coordinations.
(4) Maximum departure turning speed: 205 kt IAS.

FMC Database Coding Reference for RNAV(GNSS) SIDs

BIGRO 1 H

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CF	MC501	Y	164 (161)	8.6	—	+2000	-205
002	CF	U	—	283(280)	—	R	@ 4900	-205
003	TF	MC502	—	283(280)	19	—	@ 11800	-
004	TF	BIGRO	—	250(247)	72.1	—	—	—

MIPAG 1 H

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CF	MC501	Y	164 (161)	8.6	—	+2000	-205
002	DF	MCU	—	—	—	R	@ 5900	-205
003	TF	LATOP	—	019(016)	9	—	@ 7900	-
004	TF	MC419	—	041(038)	12	—	—	-
005	TF	GUBLO	—	044(041)	22	—	—	-
006	TF	MIPAG	—	311(308)	20.5	L	@ 14800	—

NLG 1 H

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CF	MC501	Y	164 (161)	8.6	—	+2000	-205
002	DF	MCU	—	—	—	R	@ 5900	-205
003	TF	LATOP	—	019(016)	9	—	@ 7900	—
004	TF	NLG	—	346(343)	15.6	—	@ 4900	—

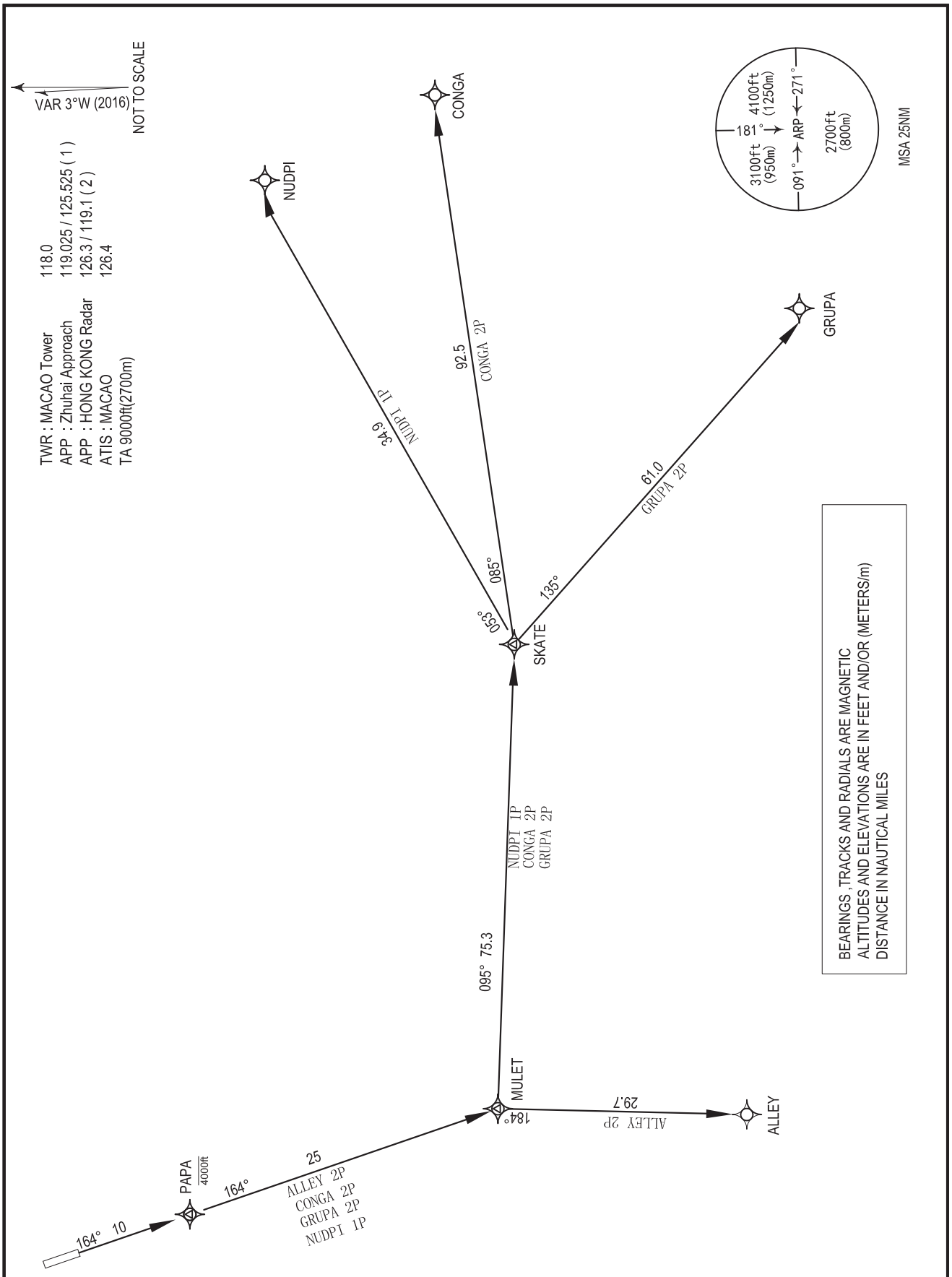
IDUMA 1 H

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	CF	MC501	Y	164 (161)	8.6	—	+2000	-205
002	DF	MCU	—	—	—	R	@ 5900	-205
003	TF	LATOP	—	019(016)	9	—	@ 7900	-
004	TF	MC419	—	041(038)	12	—	—	-
005	TF	GUBLO	—	044(041)	22	—	—	-
006	TF	IDUMA	—	341(338)	12.0	—	@ 14800	—

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
MC501	22°00′03.00″N	113°38′45.76″E
U	21°59.3′N	113°21.3′E
MC502	22°02′43.76″N	113°00′50.39″E
BIGRO	21°34.2′N	111°49.6′E
LATOP	22°16.9′N	113°38.6′E
NLG	22°31.9′N	113°33.7′E
MC419	22°26′25.37″N	113°46′47.49″E
GUBLO	22°42.5′N	114°02.0′E
IDUMA	22°53.8′N	113°57.1′E
SHL	23°05.5′N	113°51.0′E
MIPAG	22°55.3′N	113°44.5′E

GUANG ZHOU FIR - HONG KONG FIR
RNAV(GNSS) SID MACAO RWY 16
(ALLEY 2 P, CONGA 2 P, GRUPA 2 P, NUDPI 1 P)
CAT A, B, C, D

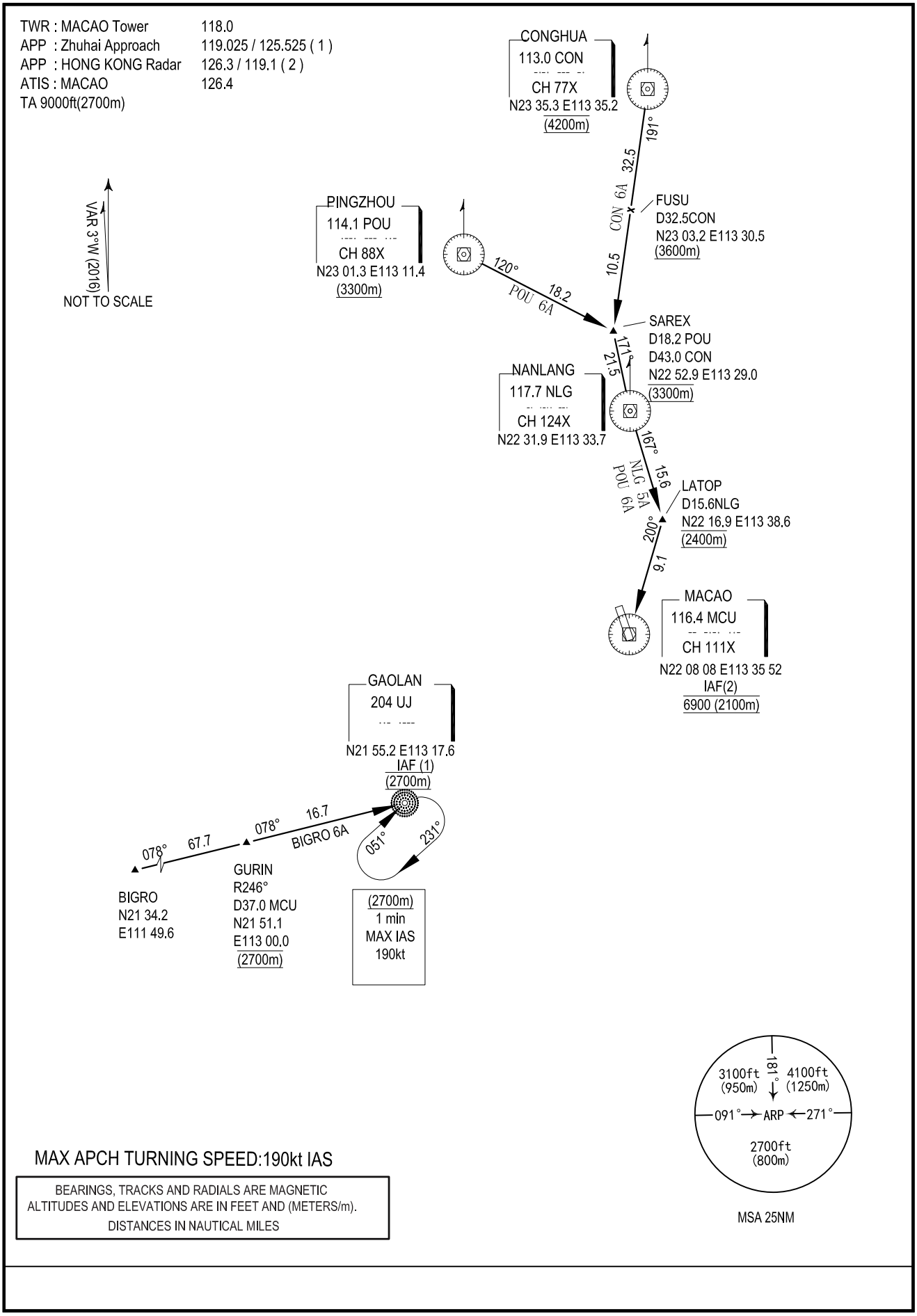


The procedure applied to BASIC RNP1,GNSS required.

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
PAPA	21°58′39.0″N	113°39′22.0″E
MULET	21°35′01.95″N	113°47′51.87″E
ALLEY	21°05′11.15″	113°47′09.50″E
SKATE	21°31′54.99″N	115°08′39.94″E
NUDPI	21°54′18.90″N	115°37′28.21″E
CONGA	21°44′02.5″N	116°47′05.9″E
GRUPA	20°50′44.0″N	115°56′59.0″E

GUANG ZHOU FIR - HONG KONG FIR
STAR MACAO RWY 34
(BIGRO 6 A, CON 6 A, NLG 5 A, POU 6 A)
CAT A, B, C, D



MAX APCH TURNING SPEED:190kt IAS

BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND (METERS/m).
DISTANCES IN NAUTICAL MILES

BIGRO 6 A
Proceed from BIGRO to UJ. Cross GURIN at 2700 m and cross UJ at 2700 m.

CON 6 A
Descend on CON 191°M and cross FUSU at 3600 m or above, cross SAREX at 3300 m. At SAREX turn left to establish on NLG R351° to cross NLG. Leave NLG at NLG R167° to cross LATOP at 2400 m, then proceed on MCU R020° to cross MCU at 2100 m.

If MCU is unserviceable, from original procedure, to NLG. Leave NLG at R174°M to ZAO, track on ZAO R184°M, cross ZAO DME 6.7 NM at 2100m.

NLG 5 A
Leave NLG on NLG R167° to cross LATOP at 2400 m, then proceed on MCU R020° to cross MCU at 2100 m.

If MCU is unserviceable, leave NLG at R174°M to ZAO, track on ZAO R184°M, cross ZAO DME 6.7 NM at 2100m.

POU 6 A
Descend on POU R120° to cross SAREX at 3300 m. At SAREX turn right to establish on NLG R351° to cross NLG. Leave NLG at NLG R167° to cross LATOP at 2400 m, then proceed on MCU R020° to cross MCU at 2100 m.

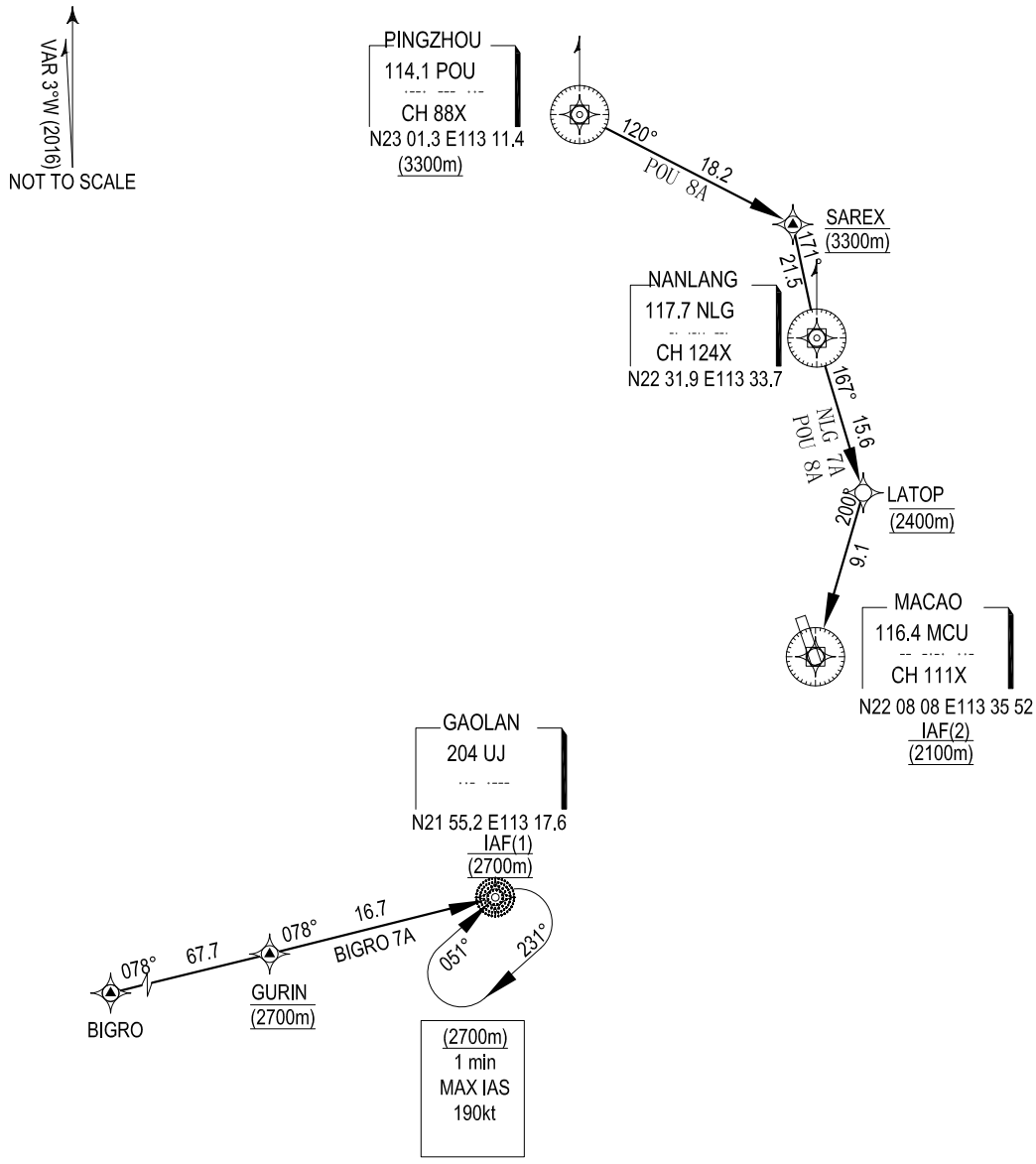
If MCU is unserviceable, from original procedure, to NLG. Leave NLG at R174°M to ZAO, track on ZAO R184°M, cross ZAO DME 6.7 NM at 2100m.

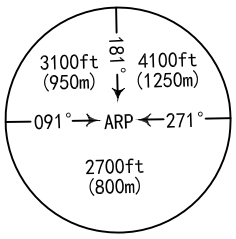
REMARK :
(1) Maximum approach turning speed: 190 kt IAS
(2) Standard Arrival Routes (STARS) to MIA Transiting Hong Kong Airspace
Speed control
(a) Speed control shall be in force unless other wise advised.
(b) Aircraft on STAR clearance shall fly at not more than 250 kt IAS whilst they are below FL 110.
Loss of communication
In the event of loss of communication, aircraft shall comply with the specified STAR procedure, then join the ILS approach to Macao RWY 34.

GUANG ZHOU FIR - HONG KONG FIR
RNAV(GNSS) STAR MACAO RWY 34
(BIGRO 7 A, NLG 7 A, POU 8 A)
CAT A, B, C, D

TWR : MACAO Tower	118.0
APP : Zhuhai Approach	119.025 / 125.525 (1)
APP : HONG KONG Radar	126.3 / 119.1 (2)
ATIS : MACAO	126.4

TA 9000ft(2700m)





MSA 25NM

MAX APCH TURNING SPEED:190kt IAS

BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND (METERS/m).
DISTANCES IN NAUTICAL MILES

The procedure applied to BASIC RNP1,GNSS required.

BIGRO 7 A
From BIGRO to GURIN at 2700 m, to UJ at 2700 m.

NLG 7 A
From NLG to LATOP at 2400 m, to MCU at 2100 m.

POU 8 A
From POU to SAREX at 3300 m, to NLG, then to LATOP at 2400 m, to MCU at 2100 m.

REMARK :
(1) For RNAV(GNSS) STAR aircraft must be approved by State of Registry in accordance with ICAO RNP1 standard or equivalent. Carriage of certified GNSS receiver is mandatory.
(2) Aircraft that do not have approval or whose RNP1/ P-RNAV capability has been degraded shall use the Conventional Procedure: BIGRO 6 A, NLG 5 A, POU 6 A.
(3) Maximum approach turning speed: 190 kt IAS
(4) Loss of communication
In the event of loss of communication, aircraft shall comply with the specified STAR procedure, then join the Macao RWY 34approach.

FMC Database Coding Reference for RNAV(GNSS) STARs

BIGRO 7A

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	IF	BIGRO	—	—	—	—	—	–
002	TF	GURIN	—	078(075)	67.7	—	@ 8900	–
003	TF	UJ	—	078(075)	16.7	—	@ 8900	–

NLG 7A (RWY34 STAR)

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	IF	NLG	—	—	—	—	—	–
002	TF	LATOP	—	167(164)	15.6	—	@ 7900	–
003	TF	MCU	—	200(197)	9.1	—	@ 6900	–

POU 8A

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	IF	POU	—	—	—	—	+10800	–
002	TF	SAREX	—	120(117)	18.2	—	@10800	–
003	TF	NLG	—	171(168)	21.5	—	—	–
004	TF	LATOP	—	167(164)	15.6	—	@ 7900	–
005	TF	MCU	—	200(197)	9.1	—	@ 6900	–

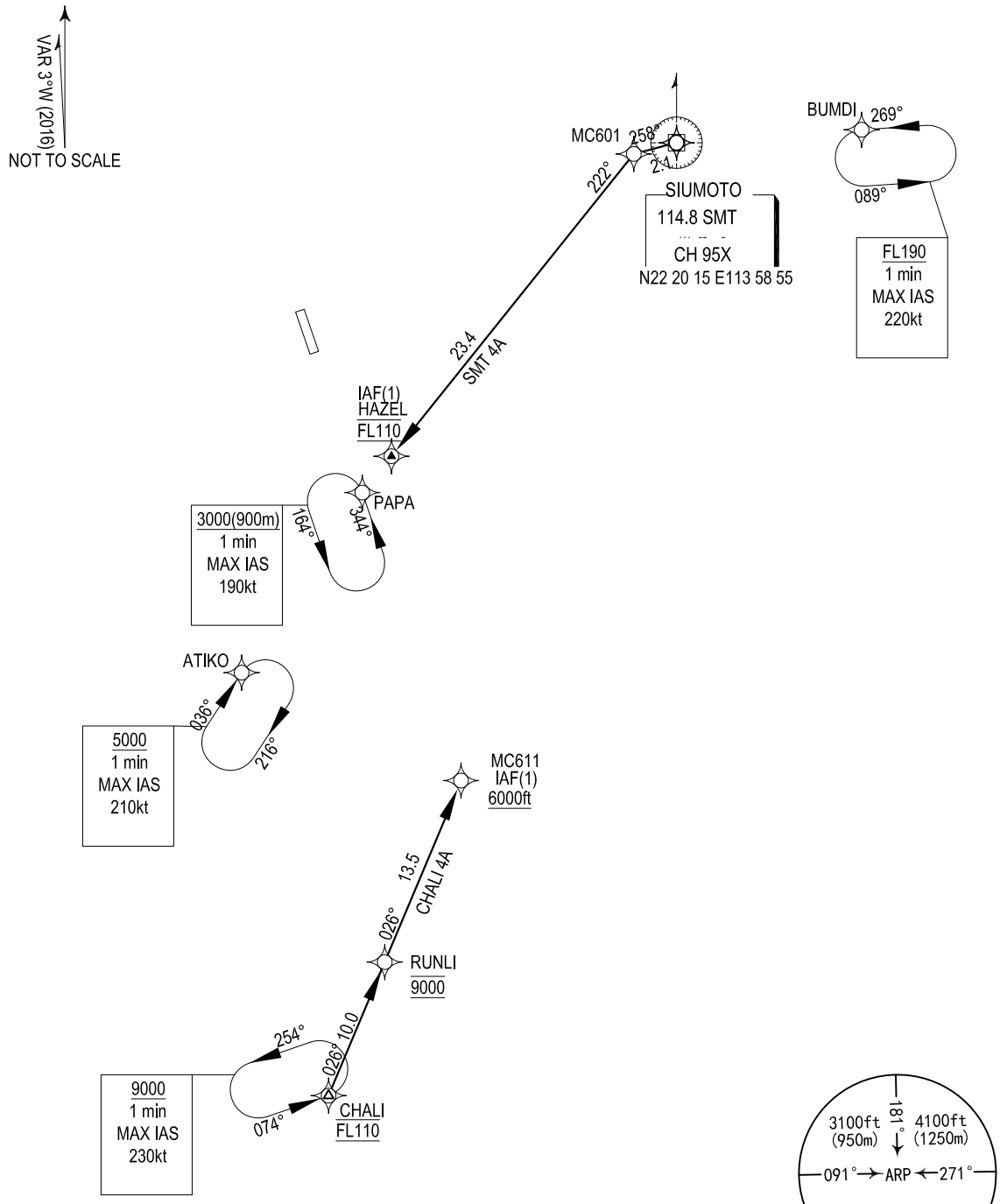
Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
BIGRO	21°34.2'N	111°49.6'E
GURIN	21°51.1'N	113°00.0'E
UJ	21°55.2'N	113°17.6'E
POU	23°01.3'N	113°11.4'E
SAREX	22°52.9'N	113°29.0'E
NLG	22°31.9'N	113°33.7'E
LATOP	22°16.9'N	113°38.6'E
MCU	22°08'08"N	113°35'52"E

GUANG ZHOU FIR - HONG KONG FIR
RNAV(GNSS) STAR MACAO RWY 34
(CHALI 4 A, SMT 4 A)
CAT A, B, C, D

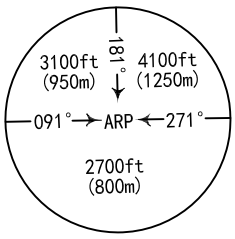
TWR : MACAO Tower	118.0
APP : Zhuhai Approach	119.025 / 125.525 (1)
APP : HONG KONG Radar	126.3 / 119.1 (2)
ATIS : MACAO	126.4

TA 9000ft(2700m)



MAX APCH TURNING SPEED:190kt IAS

BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND (METERS/m).
DISTANCES IN NAUTICAL MILES



MSA 25NM

The procedure applied to BASIC RNP1,GNSS required.

CHALI 4 A
Leave CHALI at FL 110, Turn left to RUNLI at 9000 ft, to MC611 at or above 6000 ft descending to 3000ft. **DO NOT DESCEND WITHOUT ATC CLEARANCE.**

Note:
Conventional procedure decommissioned. Aircraft that do not have approval or whose RNP1/ P-RNAV capability has been degraded shall report to HK ATC and expect radar vector from HK ATC.

SMT 4 A
Leave SMT to MC601, turn left to HAZEL at FL 110. **DO NOT DESCEND WITHOUT ATC CLEARANCE.**

Conventional Procedure
Leave SMT on R258º. At SMT DME 2.1 turn left track direct to HAZEL. Cross HAZEL at FL 110.

REMARK :
(1) For RNAV(GNSS) STAR aircraft must be approved by State of Registry in accordance with ICAO RNP1 standard or equivalent. Carriage of certified GNSS receiver is mandatory.
(2) Aircraft that do not have approval or whose RNP1/ P-RNAV capability has been degraded shall use the Conventional Procedure.
(3) Maximum approach turning speed: 190 kt IAS
(4) Standard Arrival Routes (STARS) to MIA Transiting Hong Kong Airspace
Speed control
Speed control shall be in force unless otherwise advised. Aircraft on STAR clearance shall fly at not more than 250 kt IAS whilst they are below FL 110.
Loss of communication
In the event of loss of communication, aircraft shall comply with the specified STAR procedure, then join the Macao RWY 34 approach.
Holding
The holding patterns for CHALI STAR are established at CHALI, PAPA and ATIKO. The holding patterns for SMT STAR are established at BUMDI, PAPA and ATIKO. In the event of holding, each flight will be instructed individually. In order to provide traffic management flexibility, traffic may be instructed to hold at other terminal holding (see HK AIP) as directed by ATC.

FMC Database Coding Reference for RNAV(GNSS) STARs

CHALI 4 A

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	IF	CHALI	—	—	—	—	@FL110	—
002	TF	RUNLI	—	026(023)	10.0	—	@9000	—
003	TF	MC611	—	026(023)	13.5	—	+6000	—

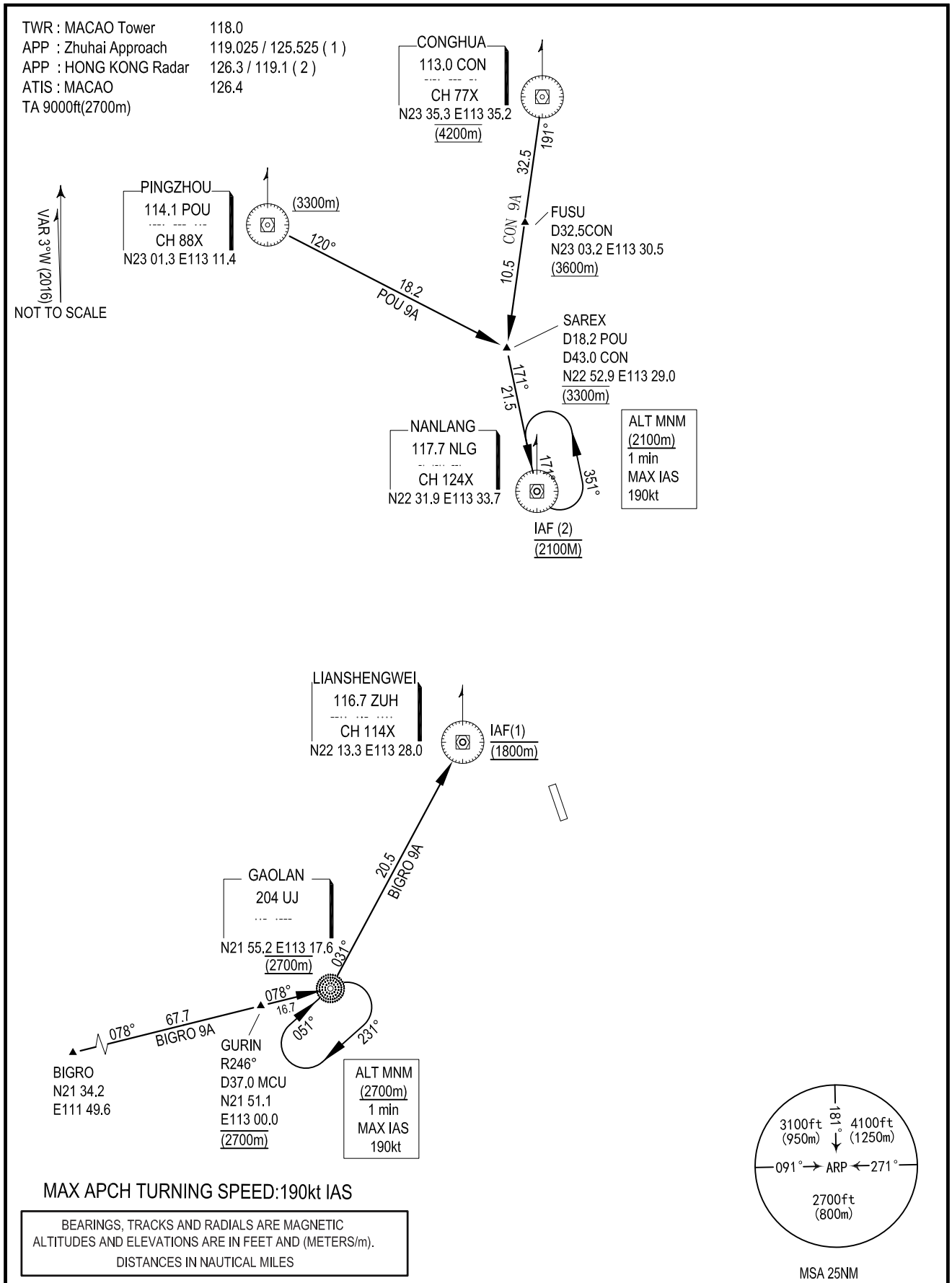
SMT 4 A

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	IF	SMT	—	—	—	—	—	–
002	TF	MC601	—	258(255)	2.1	—	—	–
003	TF	HAZEL	—	222(219)	23.4	L	@FL110	–

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)		Waypoint Name	Coordinates (WGS84)	
CHALI	21°17'45.00"N	113°36'41.00"E	HAZEL	22°01'26.49"N	113°40'56.63"E
RUNLI	21°26'59.72"N	113°40'51.00"E	ATIKO	21°48'29.56"N	113°32'26.04"E
MC611	21°39'36.00"N	113°46'30.00"E	BUMDI	22°21'39.62"N	114°18'52.61"E
SMT	22°20'15.43"N	113°58'55.46"E	PAPA	21°58'39"N	113°39'22"E
MC601	22°19'43.55"N	113°56'43.60"E			

GUANG ZHOU FIR - HONG KONG FIR
STAR MACAO RWY 16
(BIGRO 9 A, CON 9 A, POU 9 A)
CAT A, B, C, D



MAX APCH TURNING SPEED:190kt IAS

BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND (METERS/m).
DISTANCES IN NAUTICAL MILES

BIGRO 9 A
Proceed from BIGRO to UJ and cross GURIN at 2700 m. Leave UJ at 2700 m and turn left to establish on ZUH R211° to cross ZUH at 1800 m.

CON 9 A
Descend on CON 191°M and cross FUSU at 3600 m or above, cross SAREX at 3300 m. At SAREX turn left to establish on NLG R351° to cross NLG at 2100 m.

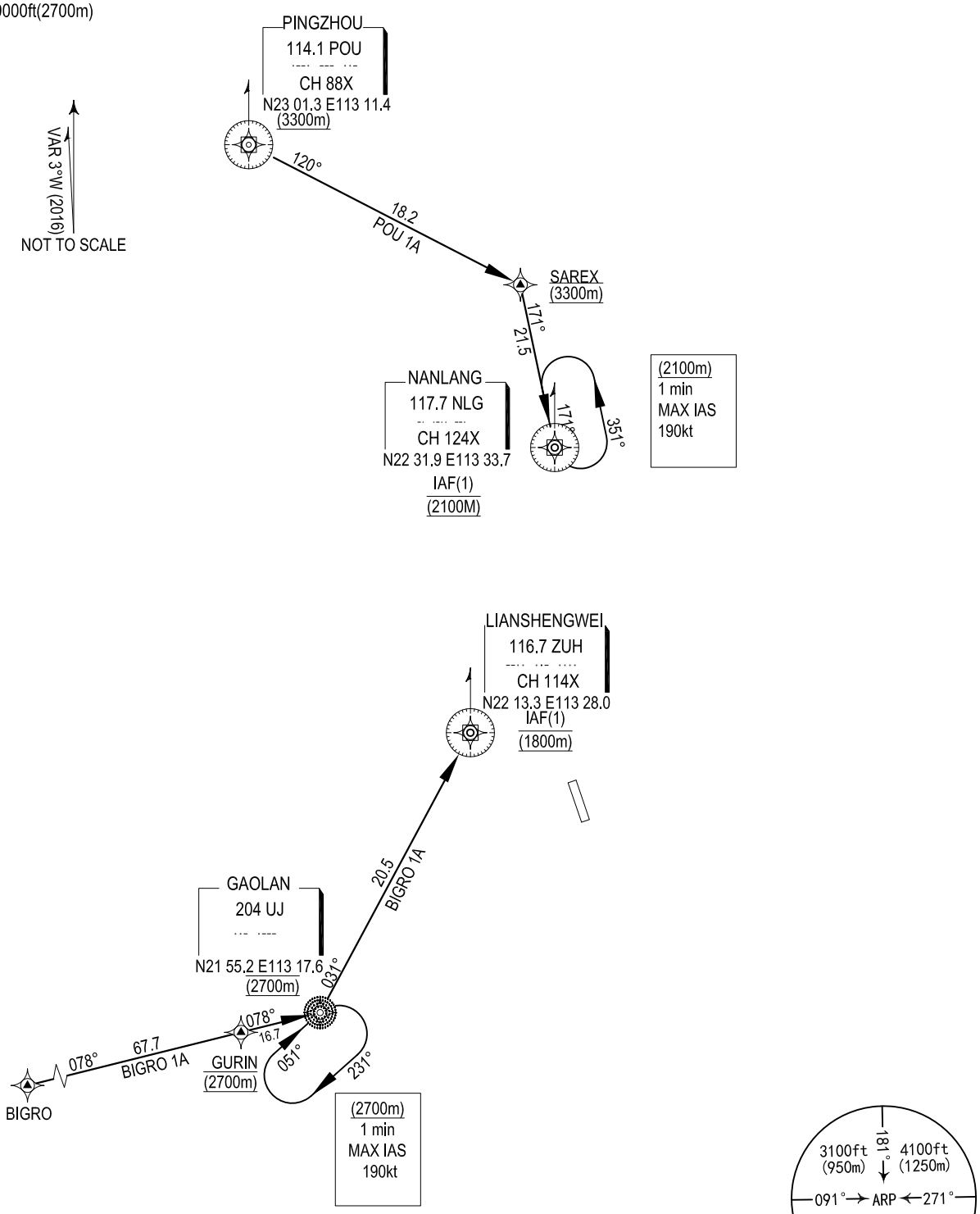
POU 9 A
Descend on POU R120° to cross SAREX at 3300 m. At SAREX turn right to establish on NLG R351° to cross NLG at 2100 m.

REMARK :
(1) Maximum approach turning speed: 190 kt IAS

GUANG ZHOU FIR - HONG KONG FIR
RNAV(GNSS) STAR MACAO RWY 16
(BIGRO 1 A, POU 1 A)
CAT A, B, C, D

TWR : MACAO Tower	118.0
APP : Zhuhai Approach	119.025 / 125.525 (1)
APP : HONG KONG Radar	126.3 / 119.1 (2)
ATIS : MACAO	126.4

TA 9000ft(2700m)



MAX APCH TURNING SPEED:190kt IAS

BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND (METERS/m).
DISTANCES IN NAUTICAL MILES

The procedure applied to BASIC RNP1,GNSS required.

BIGRO 1 A
From BIGRO to GURIN at 2700 m., to UJ at 2700 m and to ZUH at 1800 m .

POU 1 A
From POU to SAREX 3300 m, to NLG at 2100 m.

REMARK :
(1) For RNAV(GNSS) STAR aircraft must be approved by State of Registry in accordance with ICAO RNP1 standard or equivalent. Carriage of certified GNSS receiver is mandatory.
(2) Aircraft that do not have approval or whose RNP1/ P-RNAV capability has been degraded shall use the Conventional Procedure: BIGRO 9 A or POU 9 A.
(3) Maximum approach turning speed: 190 kt IAS
(4) Loss of communication:
In the event of loss of communication, aircraft shall comply with the specified STAR procedure, then join the Macao RWY 16 approach.

FMC Database Coding Reference for RNAV(GNSS) STARs

BIGRO 1A

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	IF	BIGRO	—	—	—	—	—	–
002	TF	GURIN	—	078(075)	67.7	—	@8900	–
003	TF	UJ	—	078(075)	16.7	—	@8900	–
004	TF	ZUH	—	031(028)	20.5	—	@5900	–

POU 1A

Sequence Number	Path Terminator	Waypoint	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)
001	IF	POU	—	—	—	—	+10800	–
002	TF	SAREX	—	120(117)	18.2	—	@10800	–
003	TF	NLG	—	171(168)	21.5	—	@6900	–

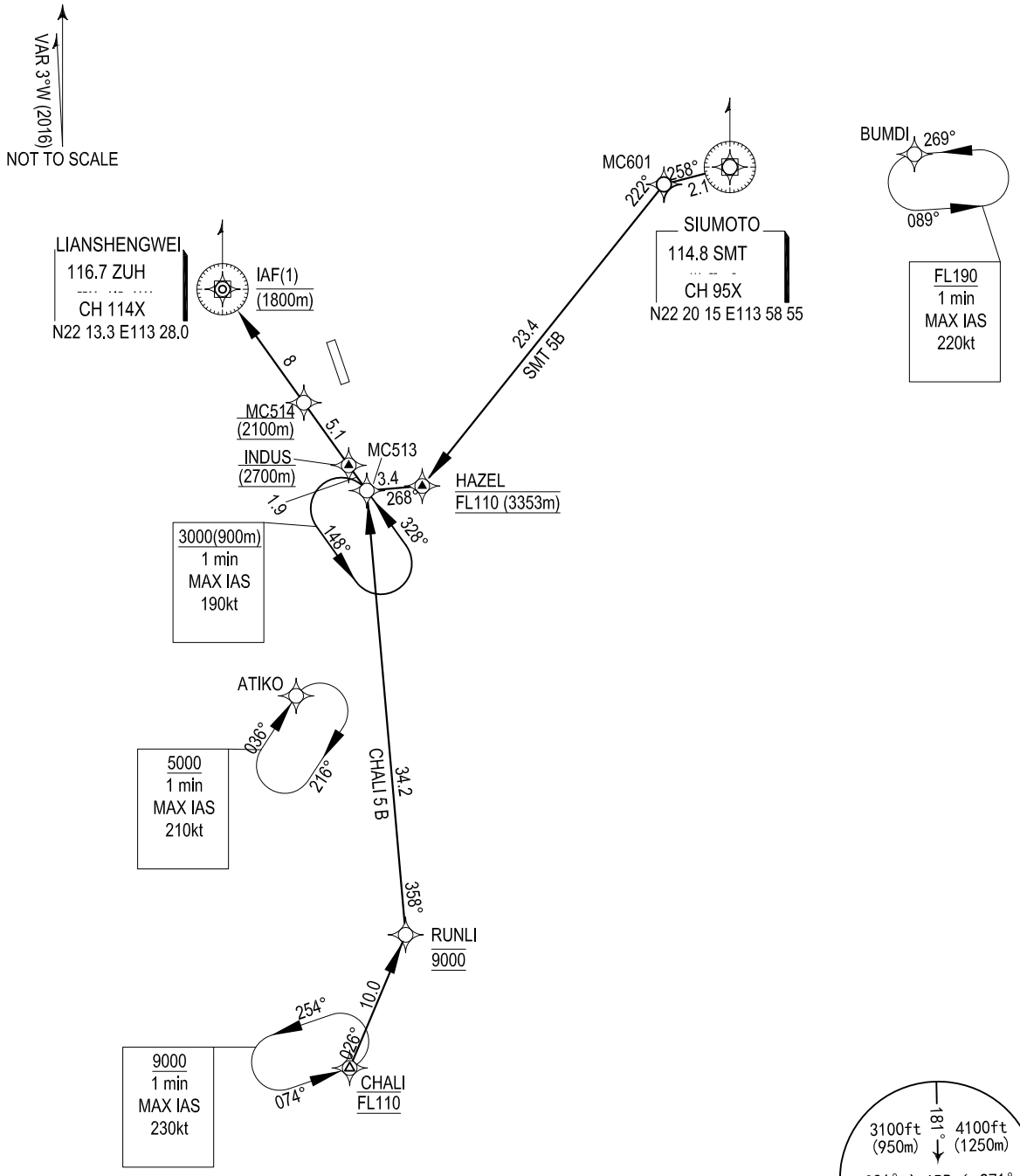
Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
POU	23°01.3′N	113°11.4′E
SAREX	22°52.9′N	113°29.0′E
NLG	22°31.9′N	113°33.7′E
BIGRO	21°34.2′N	111°49.6′E
GURIN	21°51.1′N	113°00.0′E
UJ	21°55.2′N	113°17.6′E
ZUH	22°13.3′N	113°28.0′E

GUANG ZHOU FIR - HONG KONG FIR
RNAV(GNSS) STAR MACAO RWY 16
(CHALI 5 B, SMT 5 B)
CAT A, B, C, D

TWR : MACAO Tower	118.0
APP : Zhuhai Approach	119.025 / 125.525 (1)
APP : HONG KONG Radar	126.3 / 119.1 (2)
ATIS : MACAO	126.4

TA 9000ft(2700m)



MAX APCH TURNING SPEED:190kt IAS

BEARINGS, TRACKS AND RADIALS ARE MAGNETIC
ALTITUDES AND ELEVATIONS ARE IN FEET AND (METERS/m).
DISTANCES IN NAUTICAL MILES

The procedure applied to BASIC RNP1,GNSS required.

INSTRUMENT APPROACH CHART - ICAO

PROTECTED FOR A B C D CAT

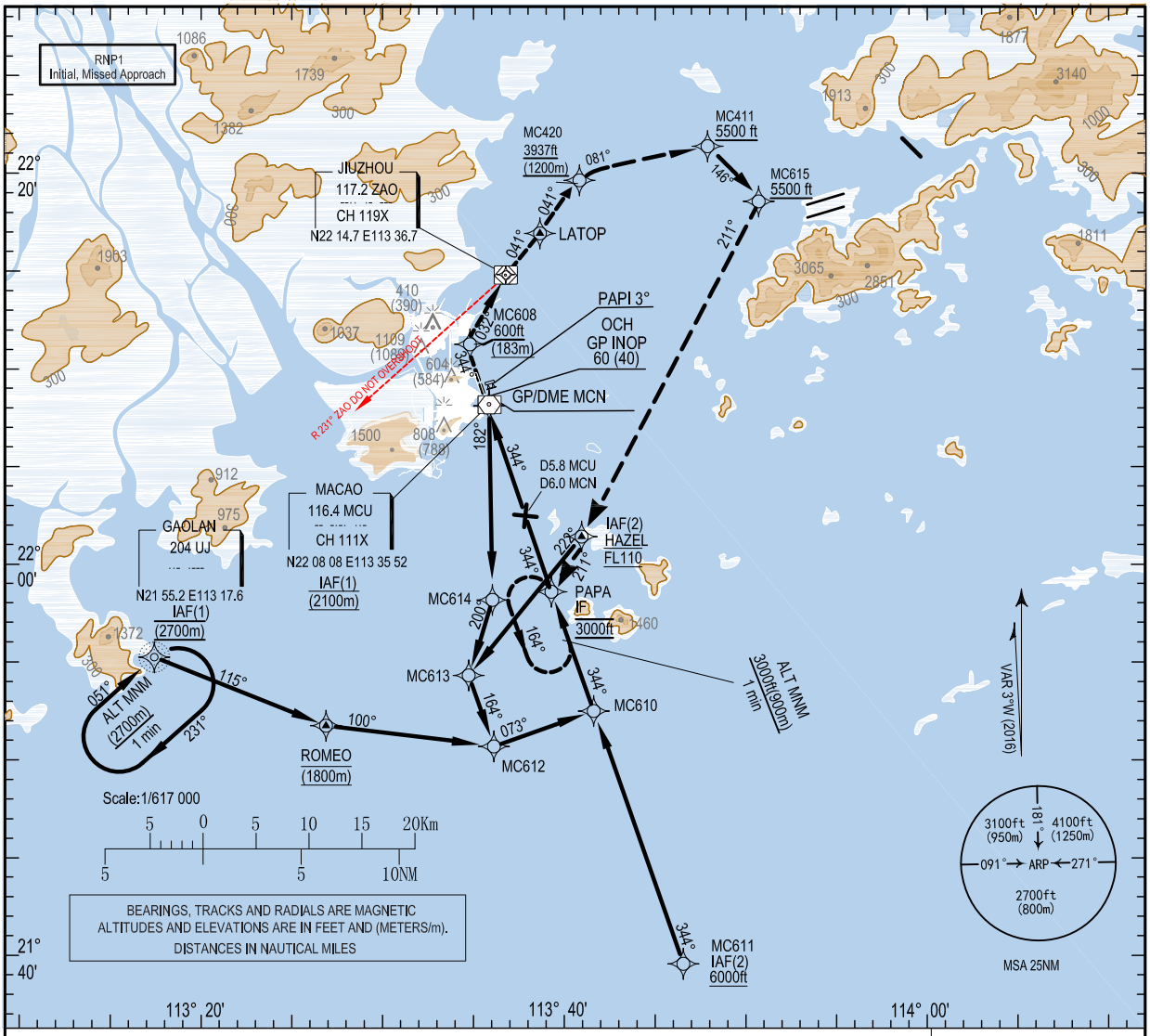
HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

07 AUG 2025

AD 2 - VMMC - 69
ILS z RWY 34 RNAV(GNSS)

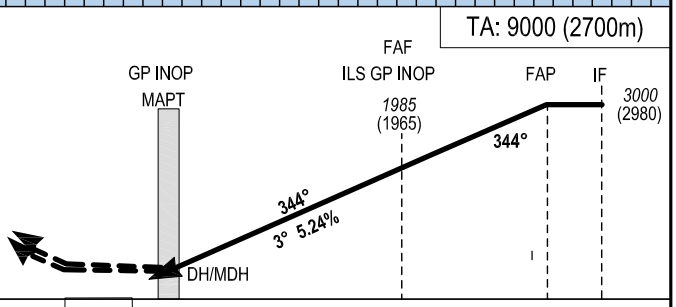
ILS
MCN 109.7
RDH: 54
MAX APCH TURNING SPEED : 190 kt IAS
MAX MISSED APCH TURNING SPEED : 185 kt IAS



MISSED APPROACH (2): (MNM climb gradient 5.4% required until passing 5500 ft) Climb to MC608 at 600ft (183m) or above, turn right track to ZAO, LATOP, MC420 at or above 1200m (3937ft). Track to MC411 at or above 5500ft and continue climb to 6000ft or as instructed by ATC. Then fly by MC615 on track 211°M to HAZEL, PAPA. When requested, join the holding pattern at PAPA at 3000ft or above, or proceed as directed by ATC.

Note: If unable RNP1 during missed approach, continue on the published missed approach track, climb and pass MSA 4100ft as soon as practicable.

TA: 9000 (2700m)



MCN/DME(4) ←(NM)									0	0.4		6.0		9.2	10.2
VOR/DME ←(NM)									3.3	0.2		5.8		9.0	10.0

Standard MNM : vertical distances in feet, horizontal visibility in meters.

REF HEIGHT : ALT SDE.

CAT	ILS CAT I		ILS CAT II		GP INOP OCH : 316		CIRCLING		OCH CAT I	OCH CAT II
	DA(DH)	HV(RVR)	DA(DH)	RVR	MDH	HV	MDH	HV		
A	220(200)	800	120(100)	350	320	1500	SEE CHART AD 2 - VMMC - 72		A : 141	A : 49
B	220(200)	800	120(100)	350	320	1500			B : 150	B : 62
C	220(200)	800	120(100)	350	320	1500			C : 164	C : 76
D	220(200)	800	120(100)	350	320	1600			D : 171	D : 89

GP/DME MCN							
NM	7	6	5	4	3	2	1
ALT	2303	1985	1666	1348	1029	711	392
(HEIGHT)	(2283)	(1965)	(1646)	(1328)	(1009)	(691)	(372)

Remarks : (3)OCH ILS CAT I (CAT A, B, C, D) AND CAT II (CAT D) - CAT II (CAT A, B, C) ground plane. (4)MCN/DME is provided from the displaced threshold

FAF - Displaced THR	6.0 NM	70 kt	85 kt	100 kt	115 kt	130 kt	160 kt	185 kt
		5 min 09	4 min 14	3 min 36	3 min 08	2 min 46	2 min 15	1 min 57

FMC Database Coding Reference for ILS z RWY 34

Seq. Nr.	Path Terminator	Waypoint	FAF MAP	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)	VPA/ TCH	Navigation Specification
001	CF	MC608	—	—	344(341)	3.1	—	+600	-185	—	RNP APCH
002	TF	ZAO	—	—	032(029)	4.0	—	—	-185	—	RNP APCH
003	TF	LATOP	—	—	041(038)	2.7	—	—	—	—	RNP APCH
004	TF	MC420	—	—	041(038)	4.7	R	+3900	—	—	RNP APCH
005	TF	MC411	—	—	081(078)	5.6	—	+5500	—	—	RNP APCH
006	TF	MC615	—	—	146(143)	4.4	—	+5500	—	—	RNP APCH
007	TF	HAZEL	—	—	211(208)	18.9	—	—	—	—	RNP APCH
008	TF	PAPA	—	—	211(208)	3.1	—	—	—	—	RNP APCH
009	HM	PAPA	—	Y	344(341)	—	—	+3000	-185	—	RNP APCH
001	IF	MCU	—	—	—	—	—	@6900	—	—	RNP APCH
002	TF	MC614	—	—	182(179)	9.9	—	—	—	—	RNP APCH
003	TF	MC613	—	—	200(197)	4.0	—	—	—	—	RNP APCH
004	TF	MC612	—	—	164(161)	3.8	—	—	—	—	RNP APCH
005	TF	MC610	—	—	073(070)	5.4	—	—	—	—	RNP APCH
006	TF	PAPA	—	—	344(341)	6.5	—	@3000	-190	—	RNP APCH
001	IF	MC611	—	—	—	—	—	+6000	—	—	RNP APCH
002	TF	MC610	—	—	344(341)	13.7	—	—	—	—	RNP APCH
003	TF	PAPA	—	—	344(341)	6.5	—	@3000	-190	—	RNP APCH
001	IF	UJ	—	—	—	—	—	@8900	—	—	RNP APCH
002	TF	ROMEO	—	—	115(112)	9.4	—	@5900	—	—	RNP APCH
003	TF	MC612	—	—	100(097)	8.6	—	—	—		RNP APCH
004	TF	MC610	—	—	073(070)	5.4	—	—	—	—	RNP APCH
005	TF	PAPA	—	—	344(341)	6.5	—	@3000	-190	—	RNP APCH
001	IF	HAZEL	—	—	—	—	—	@FL110	—	—	RNP APCH
002	TF	MC613	—	—	222(219)	9.1	—	—	—	—	RNP APCH
003	TF	MC612	—	—	164(161)	3.8	—	—	—	—	RNP APCH
004	TF	MC610	—	—	073(070)	5.4	—	—	—	—	RNP APCH
005	TF	PAPA	—	—	344(341)	6.5	—	@3000	-190	—	RNP APCH

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
HAZEL	22°01'26.49"N	113°40'56.63"E
LATOP	22°16.9'N	113°38.6'E
MC411	22°21'41.20"N	113°47'37.58"E
MC420	22°20'32.29"N	113°41'43.59"E
MC608	22°11'14.42"N	113°34'38.75"E
MC610	21°52'31.46"N	113°41'36.15"E
MC611	21°39'36.00"N	113°46'30.00"E
MC612	21°50'42.92"N	113°36'08.19"E
MC613	21°54'20.84"N	113°34'45.32"E
MC614	21°58'12.27"N	113°36'03.19"E
MC615	22°18'12.10"N	113°50'26.77"E
MCU	22°08'08"N	113°35'52"E
PAPA	21°58'39"N	113°39'22"E
ROMEO	21°51.8'N	113°26.9'E
UJ	21°55.2'N	113°17.6'E
ZAO	22°14.7'N	113°36.7'E

INSTRUMENT APPROACH CHART - ICAO

PROTECTED FOR A B C D CAT

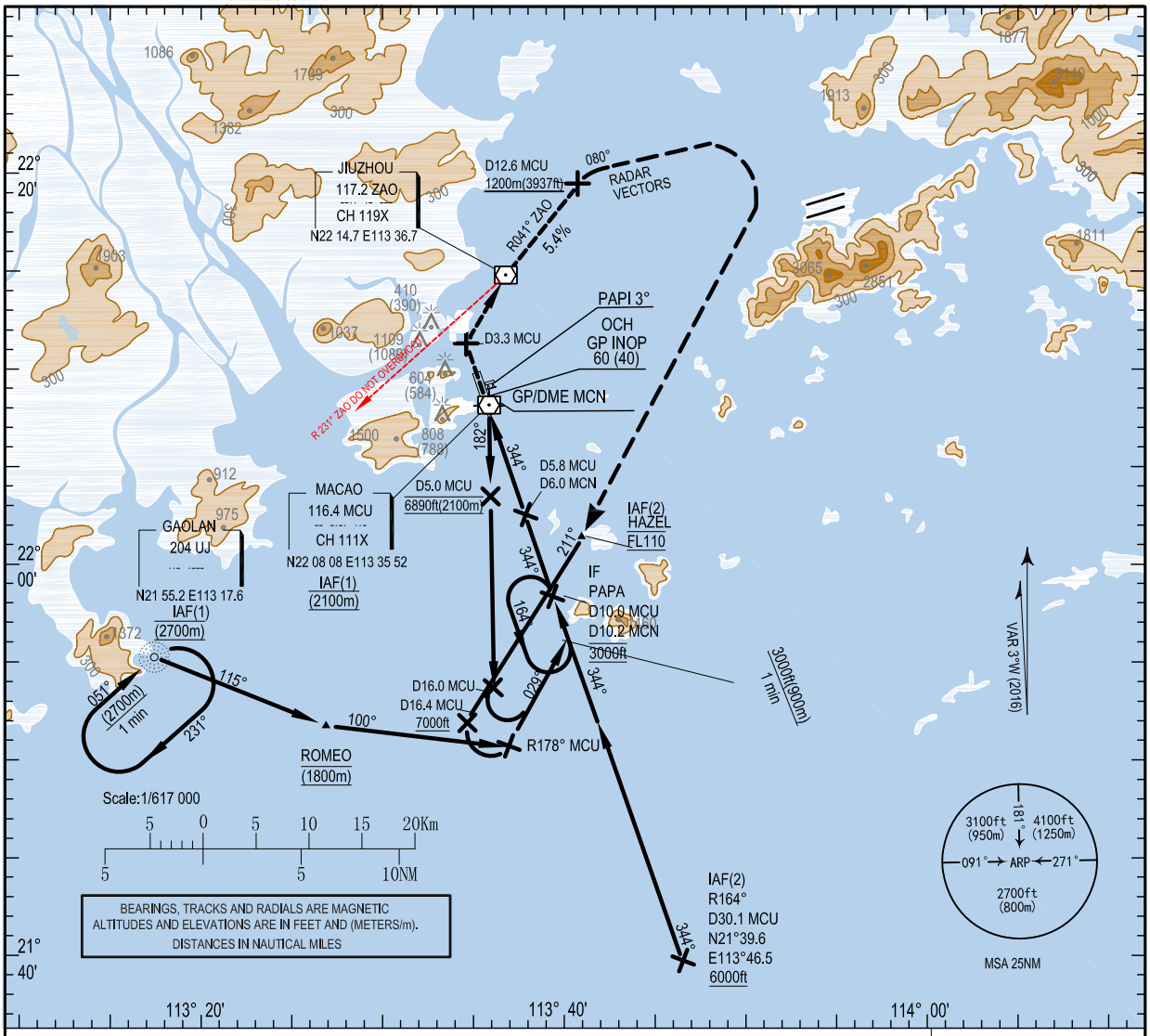
HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

07 AUG 2025

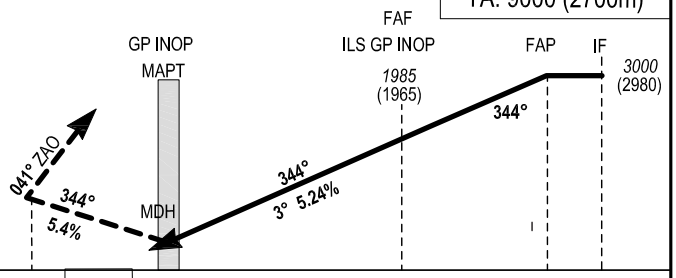
AD 2 - VMMC - 69B
ILS y RWY 34

ILS
MCN 109.7
RDH: 54
MAX APCH TURNING SPEED : 190 kt IAS
MAX MISSED APCH TURNING SPEED : 185 kt IAS



MISSED APPROACH(2):(MNM climb gradient 5.4% required until passing 5500 ft) Climb on runway heading to 600 ft (183m). At or before MCU 3.3NM turn right (MAX IAS 185kt) to ZAO, leave ZAO on ZAO R041°. Cross MCU 12.6 NM at or above 1200m (3937 ft) and turn right to track 080°M,continue climbing to 6000 ft (1829 m). Expect radar vectors by Hong Kong ATC to HAZEL.
If ZAO is unserviceable. Climb on runway heading, at MCU 3.3 NM turn right (MAX IAS 185kt) on Track 041°M. Cross MCU 13.1 NM at or above 1200m(3937 ft) and turn nght to track 080°M, continue climbing to 6000 ft (1829m). Expecl radar vectors by Hong Kong ATC to HAZEL.

TA: 9000 (2700m)



MCN/DME(4) ←(NM)									0	0.4		6.0		9.2	10.2
VOR/DME ←(NM)								3.3		0.2		5.8		9.0	10.0

Standard MNM : vertical distances in feet, horizontal visibility in meters. REF HEIGHT : ALT SDE.

CAT	ILS CAT I		ILS CAT II		GP INOP OCH : 316		CIRCLING		OCH CAT I	OCH CAT II
	DA(DH)	HV(RVR)	DA(DH)	RVR	MDH	HV	MDH	HV		
A	220(200)	800	120(100)	350	320	1500	SEE CHART AD 2 - VMMC - 72		A : 141	A : 49
B	220(200)	800	120(100)	350	320	1500			B : 150	B : 62
C	220(200)	800	120(100)	350	320	1500			C : 164	C : 76
D	220(200)	800	120(100)	350	320	1600			D : 171	D : 89

GP/DME MCN							
NM	7	6	5	4	3	2	1
ALT	2303	1985	1666	1348	1029	711	392
(HEIGHT)	(2283)	(1965)	(1646)	(1328)	(1009)	(691)	(372)

Remarks : (3)OCH ILS CAT I (CAT A, B, C, D) AND CAT II (CAT D) - CAT II (CAT A, B, C) ground plane. (4)MCN/DME is provided from the displaced threshold

FAF - Displaced THR	6.0 NM	70 kt	85 kt	100 kt	115 kt	130 kt	160 kt	185 kt
		5 min 09	4 min 14	3 min 36	3 min 08	2 min 46	2 min 15	1 min 57

INSTRUMENT APPROACH CHART - ICAO

PROTECTED FOR A B C D CAT

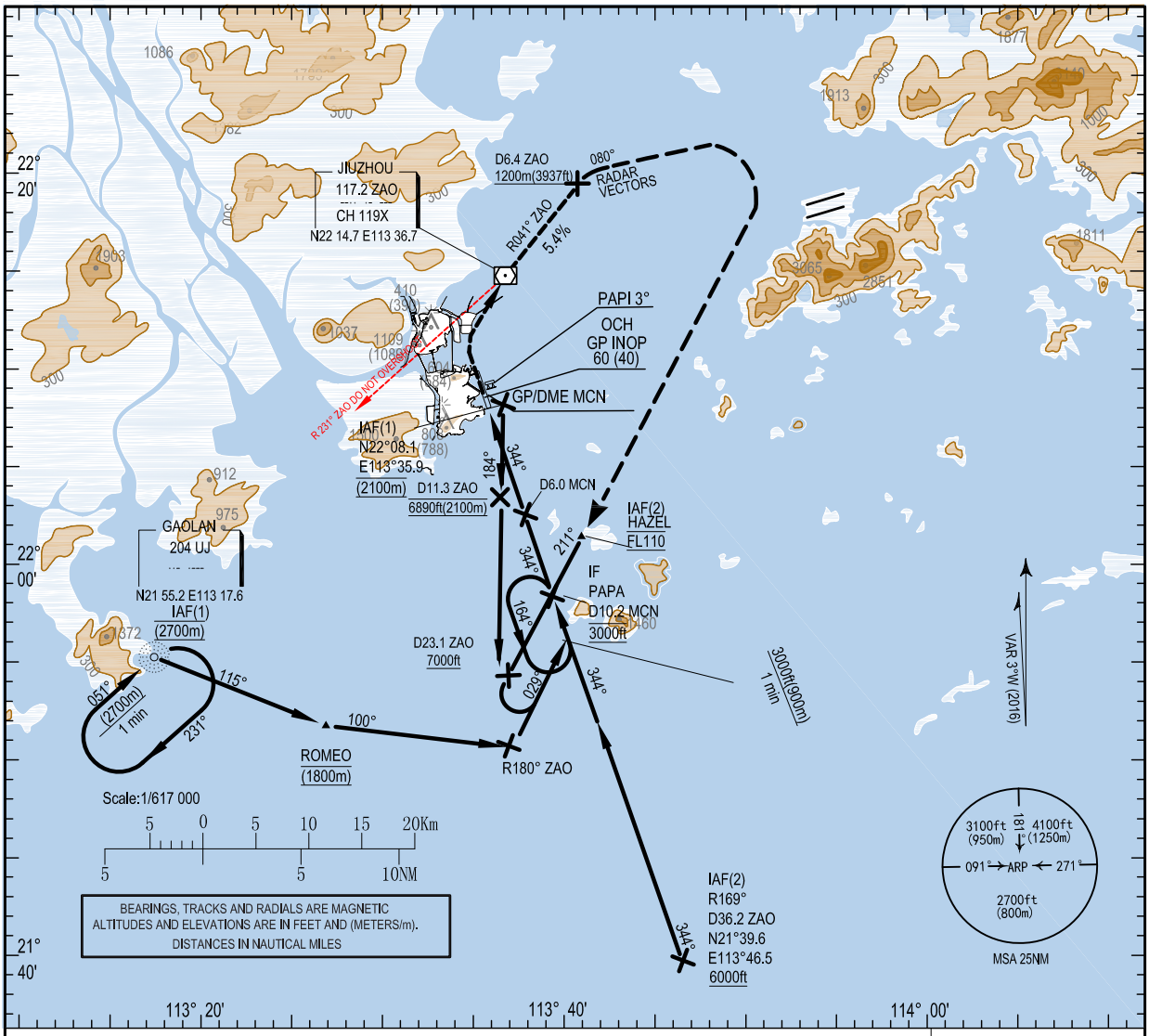
HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

07 AUG 2025

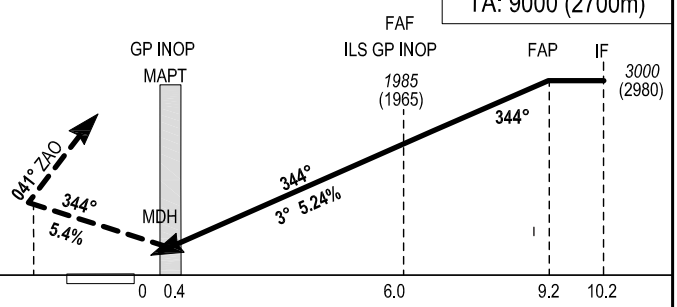
AD 2 - VMMC - 69C
ILS x RWY 34
(MCU Unserviceable)

ILS
MCN 109.7
RDH: 54
MAX APCH TURNING SPEED : 190 kt IAS
MAX MISSED APCH TURNING SPEED : 185 kt IAS



MISSED APPROACH(2):(MNM climb gradient 5.4% required until passing 5500 ft) Climb on runway heading to 600 ft (183m) turn right (MAX IAS 185kt) to ZAO, leave ZAO on ZAO R041°. Cross ZAO 6.4NM at or above 1200m(3937 ft) and turn right to track 080°M, continue climbing to 6000 ft (1829m). Expect radar vectors by Hong Kong ATC to HAZEL.

TA: 9000 (2700m)



Standard MNM : vertical distances in feet, horizontal visibility in meters.

REF HEIGHT : ALT SDE.

CAT	ILS CAT I DA(DH)	ILS CAT I HV(RVR)	ILS CAT II DA(DH)	ILS CAT II RVR	GP INOP OCH : 316 MDH	GP INOP OCH : 316 HV	CIRCLING MDH	CIRCLING HV	OCH CAT I	OCH CAT II
A	220(200)	800	120(100)	350	320	1500	SEE CHART AD 2 - VMMC - 72		A : 141	A : 49
B	220(200)	800	120(100)	350	320	1500			B : 150	B : 62
C	220(200)	800	120(100)	350	320	1500			C : 164	C : 76
D	220(200)	800	120(100)	350	320	1600			D : 171	D : 89

GP/DME MCN							
NM	7	6	5	4	3	2	1
ALT	2303	1985	1666	1348	1029	711	392
(HEIGHT)	(2283)	(1965)	(1646)	(1328)	(1009)	(691)	(372)

Remarks : (3)OCH ILS CAT I (CAT A, B, C, D) AND CAT II (CAT D) - CAT II (CAT A, B, C) ground plane. (4)MCN/DME is provided from the displaced threshold

FAF - Displaced THR 6.0 NM	70 kt	85 kt	100 kt	115 kt	130 kt	160 kt	185 kt
	5 min 09	4 min 14	3 min 36	3 min 08	2 min 46	2 min 15	1 min 57

INSTRUMENT APPROACH CHART - ICAO

PROTECTED FOR A B C D CAT

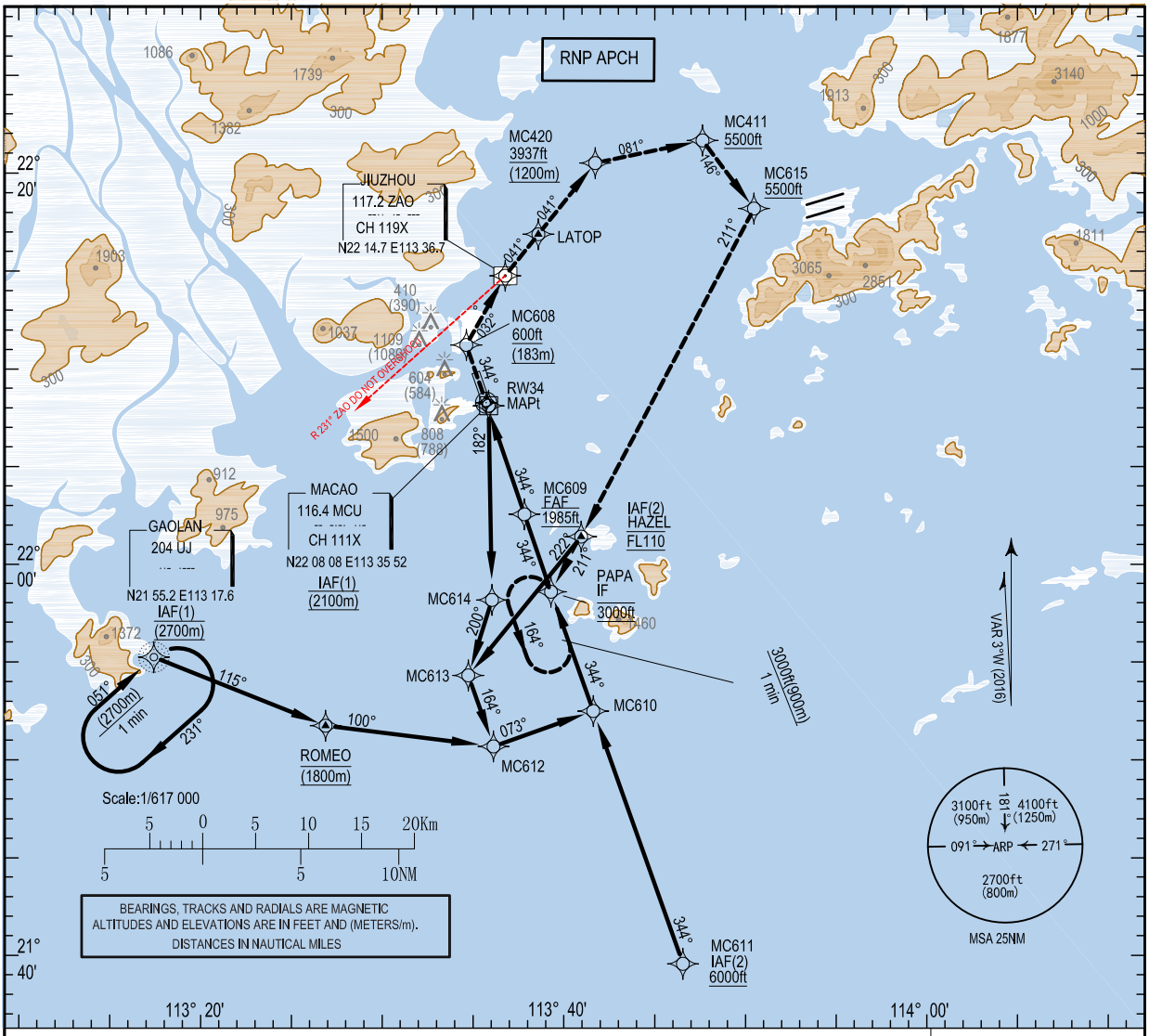
HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

07 AUG 2025

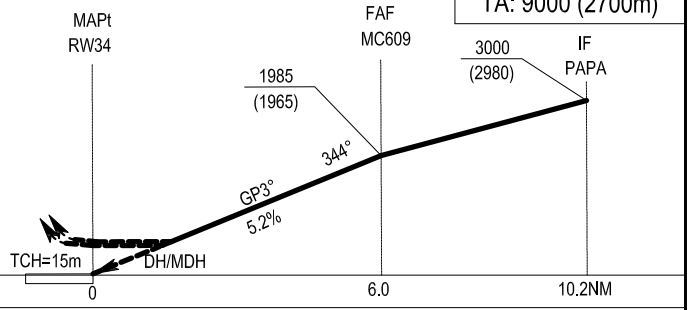
AD 2 - VMMC - 69D
RNP RWY 34

Minimum Temperature:+5℃
MAX APCH TURNING SPEED : 190 kt IAS
MAX MISSED APCH TURNING SPEED : 185 kt IAS



MISSED APPROACH
(MNM climb gradient 5.4% required until passing 5500ft) Climb to MC608 at 600 ft (183m) or above, turn right track to ZAO, LATOP,MC420 at or above 1200m (3937ft). Track to MC411 at or above 5500ft and continue climb to 6000 ft or as instructed by ATC.Then fly by MC615 on track 211°M to HAZEL, PAPA. When requested, join the holding pattern at PAPA at 3000ft or above,or proceed as directed by ATC.

TA: 9000 (2700m)



Standard MNM:vertical distances in feet,horizontal visibility in meters.

CAT	VNAV/LNAV		LNAV		CIRCLING	
	DA/DH	HV	MDA/MDH	HV	MDA/MDH	HV
A	540/520	2700	570/550	2900	SEE CHART AD2-VMMC-72	
B	540/520	2700	570/550	2900		
C	540/520	2700	570/550	2900		
D	540/520	2700	570/550	2900		

MAPT(RW34)

NM	6	5	4	3	2	1
ALT	1985	1663	1344	1026	707	388
(HEIGHT)	(1965)	(1643)	(1324)	(1006)	(687)	(368)

FAF-MAPT	6.0NM	70kt	85kt	100kt	115kt	130kt	145kt	160kt	185kt
		5 min 09	4 min 14	3 min 36	3 min 08	2 min 46	2 min 28	2 min 15	1 min 57

FMC Database Coding Reference for RNP RWY34 APCH

Seq. Nr.	Path Terminator	Waypoint	FAF MAP	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)	VPA/ TCH	Navigation Specification
001	IF	PAPA	—	—	—	—	—	@3000	-190	—	RNP APCH
002	TF	MC609	F	—	344(341)	4.2	—	@1985	-190	3.00	RNP APCH
003	TF	RW34	M	Y	344(341)	6.0	—	+570	-185	3.00	RNP APCH
004	TF	MC608	—	—	344(341)	3.1	—	+600	-185	—	RNP APCH
005	TF	ZAO	—	—	032(029)	4.0	—	—	-185	—	RNP APCH
006	TF	LATOP	—	—	041(038)	2.7	—	—	—	—	RNP APCH
007	TF	MC420	—	—	041(038)	4.7	R	+3900	—	—	RNP APCH
008	TF	MC411	—	—	081(078)	5.6	—	+5500	—	—	RNP APCH
009	TF	MC615	—	—	146(143)	4.4	—	+5500	—	—	RNP APCH
010	TF	HAZEL	—	—	211(208)	18.9	—	—	—	—	RNP APCH
011	TF	PAPA	—	—	211(208)	3.1	—	—	—	—	RNP APCH
012	HM	PAPA	—	Y	344(341)	—	—	+3000	-185	—	RNP APCH
001	IF	MCU	—	—	—	—	—	@6900	—	—	RNP APCH
002	TF	MC614	—	—	182(179)	9.9	—	—	—	—	RNP APCH
003	TF	MC613	—	—	200(197)	4.0	—	—	—	—	RNP APCH
004	TF	MC612	—	—	164(161)	3.8	—	—	—	—	RNP APCH
005	TF	MC610	—	—	073(070)	5.4	—	—	—	—	RNP APCH
006	TF	PAPA	—	—	344(341)	6.5	—	@3000	-190	—	RNP APCH
001	IF	MC611	—	—	—	—	—	+6000	—	—	RNP APCH
002	TF	MC610	—	—	344(341)	13.7	—	—	—	—	RNP APCH
003	TF	PAPA	—	—	344(341)	6.5	—	@3000	-190	—	RNP APCH
001	IF	UJ	—	—	—	—	—	@8900	—	—	RNP APCH
002	TF	ROMEO	—	—	115(112)	9.4	—	@5900	—	—	RNP APCH
003	TF	MC612	—	—	100(097)	8.6	—	—	—		RNP APCH
004	TF	MC610	—	—	073(070)	5.4	—	—	—	—	RNP APCH
005	TF	PAPA	—	—	343(341)	6.5	—	@3000	-190	—	RNP APCH
001	IF	HAZEL	—	—	—	—	—	@FL110	—	—	RNP APCH
002	TF	MC613	—	—	222(219)	9.1	—	—	—	—	RNP APCH
003	TF	MC612	—	—	164(161)	3.8	—	—	—	—	RNP APCH
004	TF	MC610	—	—	073(070)	5.4	—	—	—	—	RNP APCH
005	TF	PAPA	—	—	344(341)	6.5	—	@3000	-190	—	RNP APCH

Waypoint Coordinates

Waypoint Name	Coordinates	(WGS84)	Waypoint Name	Coordinates	(WGS84)
HAZEL	22°01'26.49"N	113°40'56.63"E	MC613	21°54'20.84"N	113°34'45.32"E
LATOP	22°16.9'N	113°38.6'E	MC614	21°58'12.27"N	113°36'03.19"E
MC411	22°21'41.20"N	113°47'37.58"E	MC615	22°18'12.10"N	113°50'26.77"E
MC420	22°20'32.29"N	113°41'43.59"E	MCU	22°08'08"N	113°35'52"E
MC608	22°11'14.42"N	113°34'38.75"E	PAPA	21°58'39"N	113°39'22"E
MC609	22°02'35.07"N	113°37'49.87"E	ROMEO	21°51.8'N	113°26.9'E
MC610	21°52'31.46"N	113°41'36.15"E	RW34	22°08'17.46"N	113°35'43.91"E
MC611	21°39'36.00"N	113°46'30.00"E	UJ	21°55.2'N	113°17.6'E
MC612	21°50'42.92"N	113°36'08.19"E	ZAO	22°14.7'N	113°36.7'E

INSTRUMENT APPROACH CHART - ICAO

HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

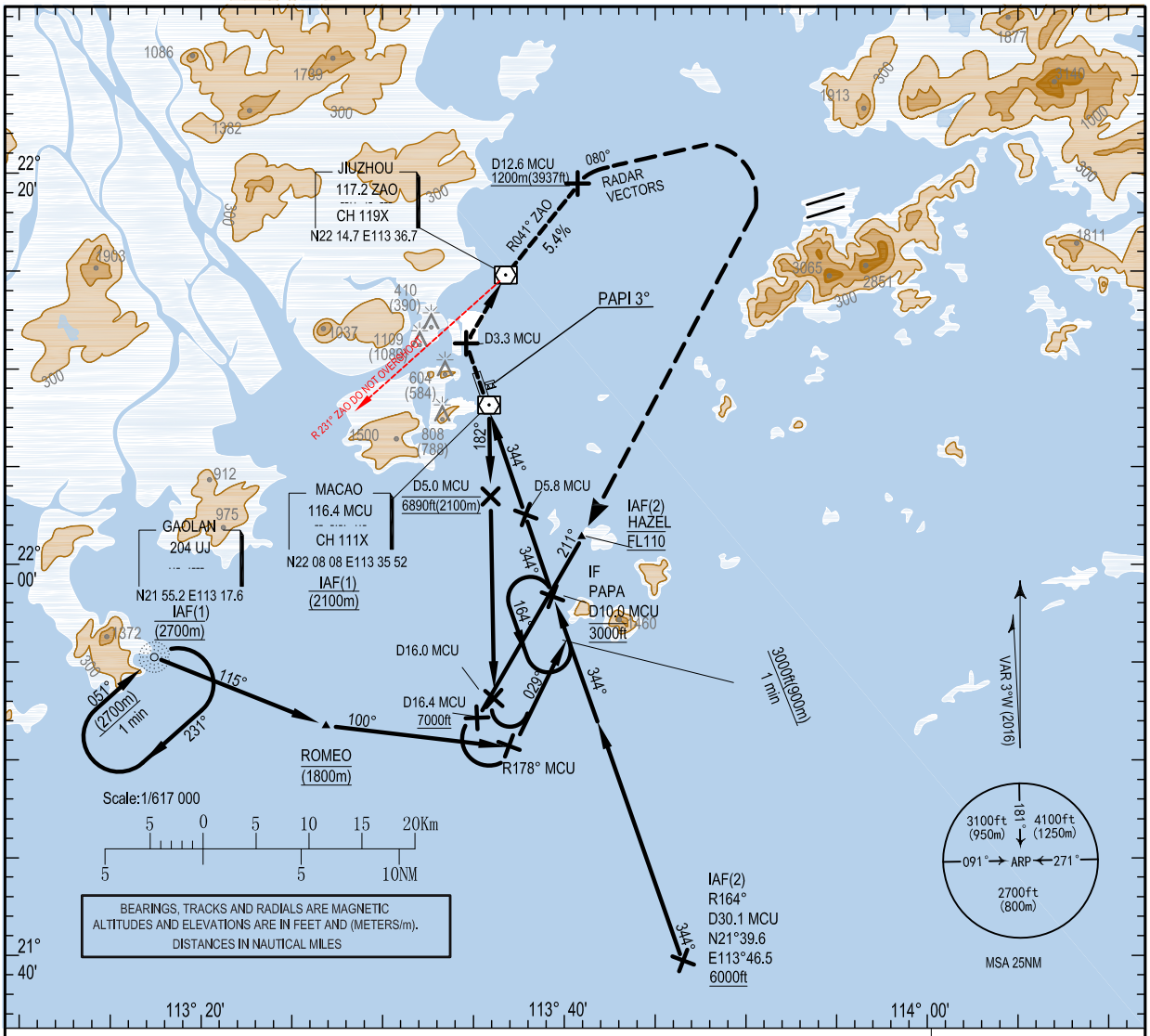
ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

AD 2 - VMMC - 70
VOR/DME RWY 34

PROTECTED FOR A B C D CAT

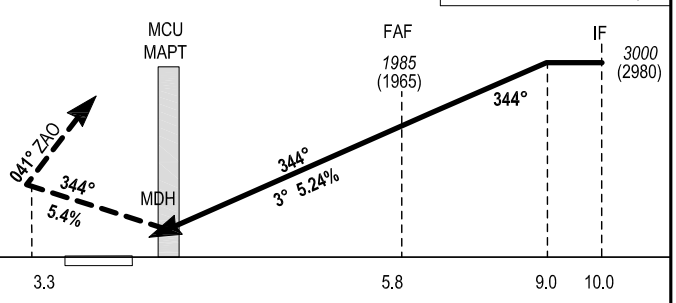
07 AUG 2025

MAX APCH TURNING SPEED : 190 kt IAS
MAX MISSED APCH TURNING SPEED : 185 kt IAS



TA: 9000 (2700m)

MISSED APPROACH(2):(MNM climb gradient 5.4% required until passing 5500 ft) Climb on runway heading to 600 ft (183m).At or before MCU 3.3NM turn right (MAX IAS 185kt) to ZAO, leave ZAO on ZAO R041°. Cross MCU 12.6 NM at or above 1200m(3937 ft) and turn right to track 080°M,continue climbing to 6000 ft (1829m). Expect radar vectors by Hong Kong ATC to HAZEL.
If ZAO is unserviceable.Climb on runway heading, at MCU 3.3 NM turn right (MAX IAS 185kt) on track 041°M. Cross MCU 13.1 NM at or above 1200m(3937 ft) and turn right to track 080°M, continue climbing to 6000 ft (1829m). Expect radar vectors by Hong Kong ATC to HAZEL.



Standard MNM : vertical distances in feet, horizontal visibility in meters.

REF HEIGHT : ALT AD

CAT	VOR/DME OCH : 522		CIRCLING	
	MDH	HV	MDH	HV
A	530	2000	SEE CHART AD 2 - VMMC - 72	
B	530	2000		
C	530	2400		
D	530	3200		

VOR/DME MCU

NM	7	6	5	4	3	2
ALT	2362	2044	1725	1407	1088	770
(HEIGHT)	(2342)	(2024)	(1705)	(1387)	(1068)	(750)

FAF - Displaced THR 5.8 NM	70 kt	85 kt	100 kt	115 kt	130 kt	160 kt	185 kt
	4 min 58	4 min 06	3 min 29	3 min 02	2 min 41	2 min 11	1 min 53

INTENTIONALLY

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INSTRUMENT APPROACH CHART - ICAO

HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

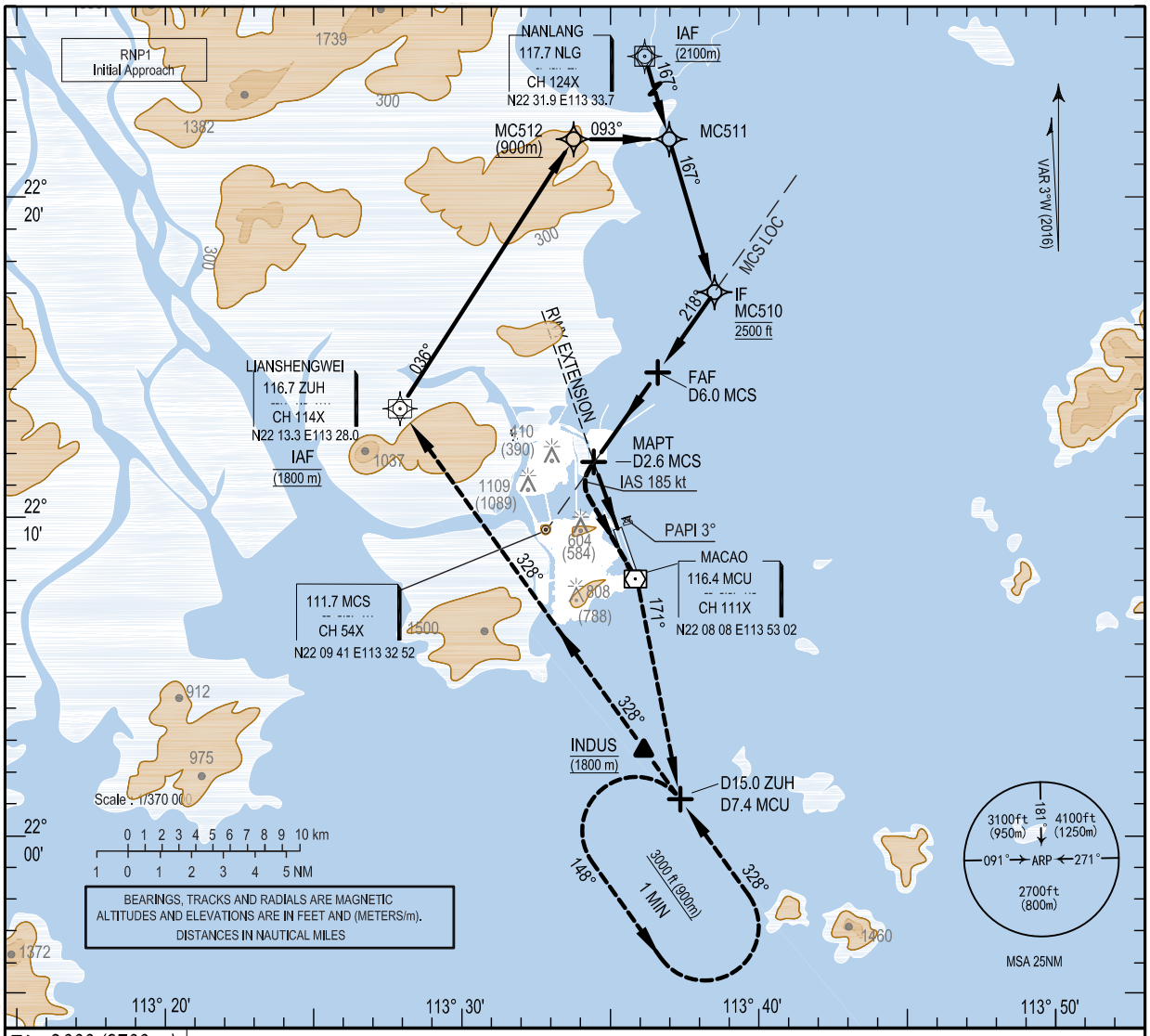
ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

AD 2 - VMMC - 71
LOC/DME z RWY 16
RNAV(GNSS)

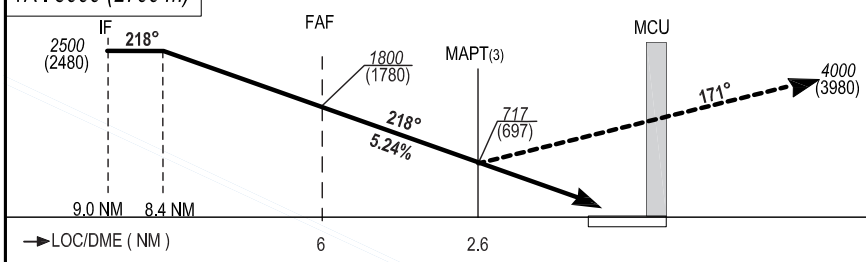
PROTECTED FOR A B C D CAT

07 AUG 2025

MAX APCH TURNING SPEED : 190 kt IAS
MAX MISSED APCH TURNING SPEED : 185 kt IAS



TA : 9000 (2700 m)



MISSED APPROACH(1)
Initial climb on MCU VOR R344° to 4000ft (1200m). At MCU VOR, track outbound on R171° until D7.4 MCU. Expect further instruction from Hong Kong Radar to cross INDUS and establish inbound on ZUH VOR R 148°. Cross ZUH VOR at 1800m or as directed by ATC.
When required, join the holding pattern at MCU R171°/D7.4(ZUH R148°/D15.0) at or above 3000ft (900m), or proceed as directed by ATC.

Standard MNM : vertical distances in feet, horizontal visibility in meters.

REF HEIGHT : *ALT AD.*

CAT	LOC OCH : 700		CIRCLING	
	MDH	HV	MDH	HV
A	700	3600	Not Applicable	
B	700	3600		
C	700	3600		
D	700	3600		

LOC/DME MCS

NM	6	5	4	3
ALT	*1800*	*1482*	*1163*	*845*
(HEIGHT)	(1780)	(1462)	(1143)	(825)

(3) The approach final segment is offset from landing direction by 054°
On the approach final segment, and at pilot discretion, a visual left turn should be initiated in time to allow lining up with the runway, considering the aircraft type, approach speed....
before the MAPT.
At MAPT (2.6 NM LOC/DME), even visual, the missed approach procedure is mandatory.

FAF - MAPT	3.4 NM	70 kt	85 kt	100 kt	115 kt	130 kt	160 kt	185 kt
		2 min 55	2 min 24	2 min 03	1 min 47	1 min 34	1 min 17	1 min 06

FMC Database Coding Reference for LOC/DME z RWY 16 APCH

Sequence Number	Path Terminator	Waypoint	FAF MAP	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)	VPA/ TCH	Navigation Specification
001	IF	ZUH	—	—	—	—	—	@5900	—	—	RNP APCH
002	TF	MC512	—	—	036(033)	10.0	—	+3000	-190	—	RNP APCH
003	TF	MC511	—	—	093(090)	3.0	—	—	-190	—	RNP APCH
004	TF	MC510	—	—	167(164)	5.0	—	@2500	-190	—	RNP APCH
001	IF	NLG	—	—	—	—		@6900		—	RNP APCH
002	TF	MC511	—	—	167(164)	10.4	—	—	—	—	RNP APCH
003	TF	MC510	—	—	167(164)	5.0	—	@2500	-190	—	RNP APCH

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
INDUS	22°02′41.0″N	113°36′01.0″E
MC510	22°17′02.13″N	113°38′29.61″E
MC511	22°21′49.23″N	113°36′58.39″E
MC512	22°21′49.25″N	113°33′45.41″E
MCU	22°08′08″N	113°35′52″E
NLG	22°31.9′N	113°33.7′E
ZUH	22°13.3′N	113°28.0′E

INSTRUMENT APPROACH CHART - ICAO

HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

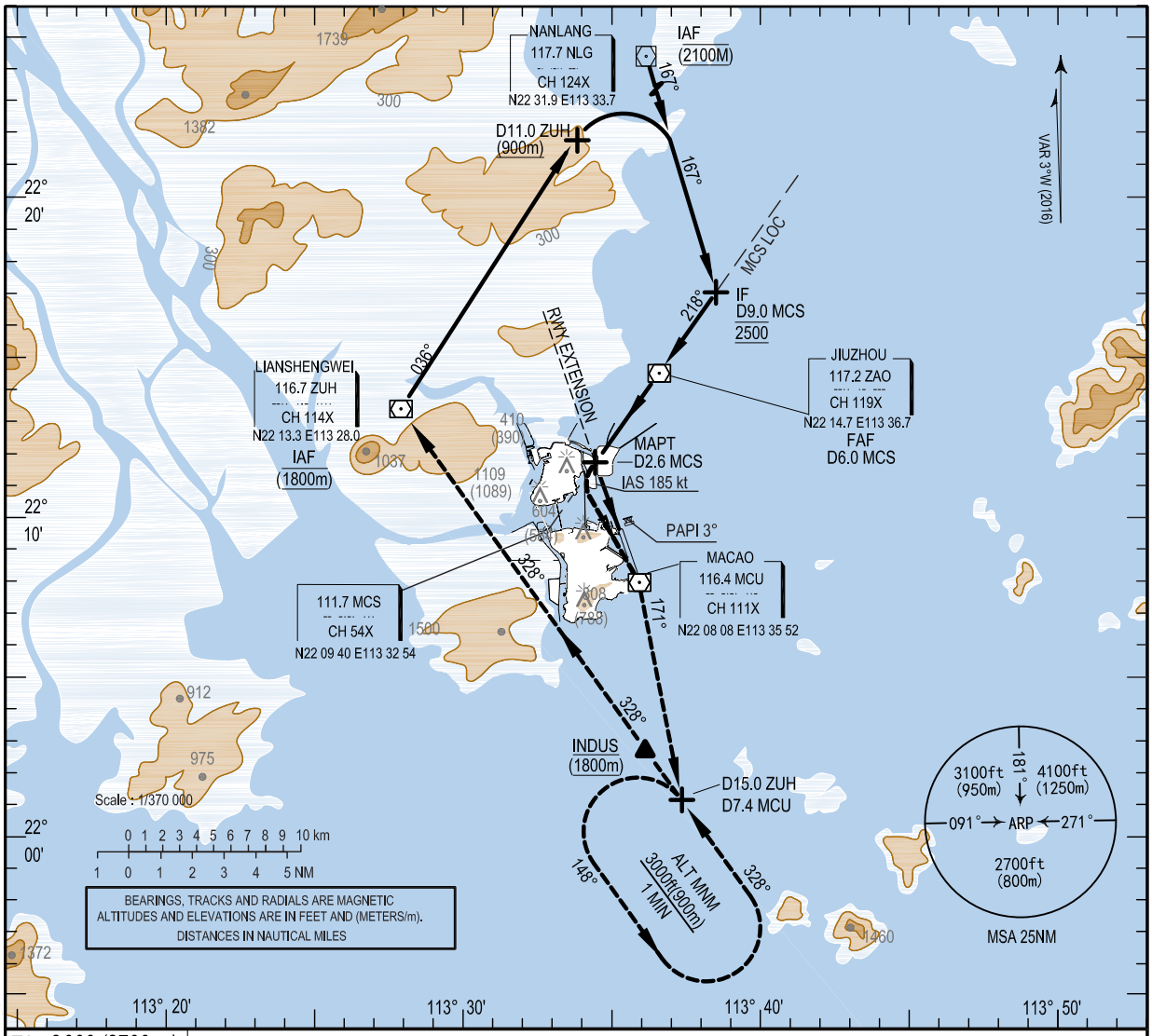
AD 2 - VMMC - 71B
LOC/DME y RWY 16

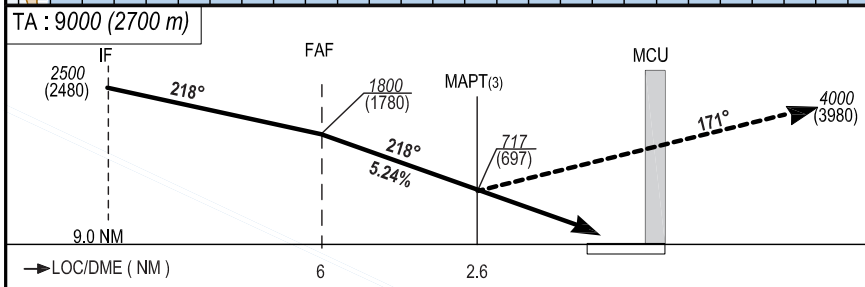
LOC
MCS 111.7

PROTECTED FOR A B C D CAT

07 AUG 2025

MAX APCH TURNING SPEED : 190 kt IAS
MAX MISSED APCH TURNING SPEED : 185 kt IAS





MISSED APPROACH(1)
(MNM climb gradient 3.3% required until D7.4 MCU). Initial climb on MCU VOR R344° to 4000ft (1200m). At MCU VOR, track outbound on R171° until D7.4 MCU. Expect further instruction from Hong Kong Radar to cross INDUS and establish inbound on ZUH VOR R148°. Cross ZUH VOR at 1800m or as directed by ATC.
When required, join the holding pattern at MCU R171°/D7.4 (ZUH R148°/D15.0) at or above 3000ft (900m), or proceed as directed by ATC.

Standard MNM : vertical distances in feet, horizontal visibility in meters.

REF HEIGHT : *ALT AD.*

CAT	LOC OCH : 700 MDH	LOC OCH : 700 HV	CIRCLING MDH	CIRCLING HV
A	700	3600	Not Applicable	
B	700	3600		
C	700	3600		
D	700	3600		

LOC/DME MCS

NM	6	5	4	3
ALT	*1800*	*1482*	*1163*	*845*
(HEIGHT)	(1780)	(1462)	(1143)	(825)

(3) The approach final segment is offset from landing direction by 054°
On the approach final segment, and at pilot discretion, a visual left turn should be initiated in time to allow lining up with the runway, considering the aircraft type, approach speed before the MAPT.
At MAPT (2.6 NM LOC/DME), even visual, the missed approach procedure is mandatory.

FAF - MAPT	3.4 NM	70 kt	85 kt	100 kt	115 kt	130 kt	160 kt	185 kt
		2 min 55	2 min 24	2 min 03	1 min 47	1 min 34	1 min 17	1 min 06

INTENTIONALLY

LEFT

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INSTRUMENT APPROACH CHART - ICAO

PROTECTED FOR A B C D CAT

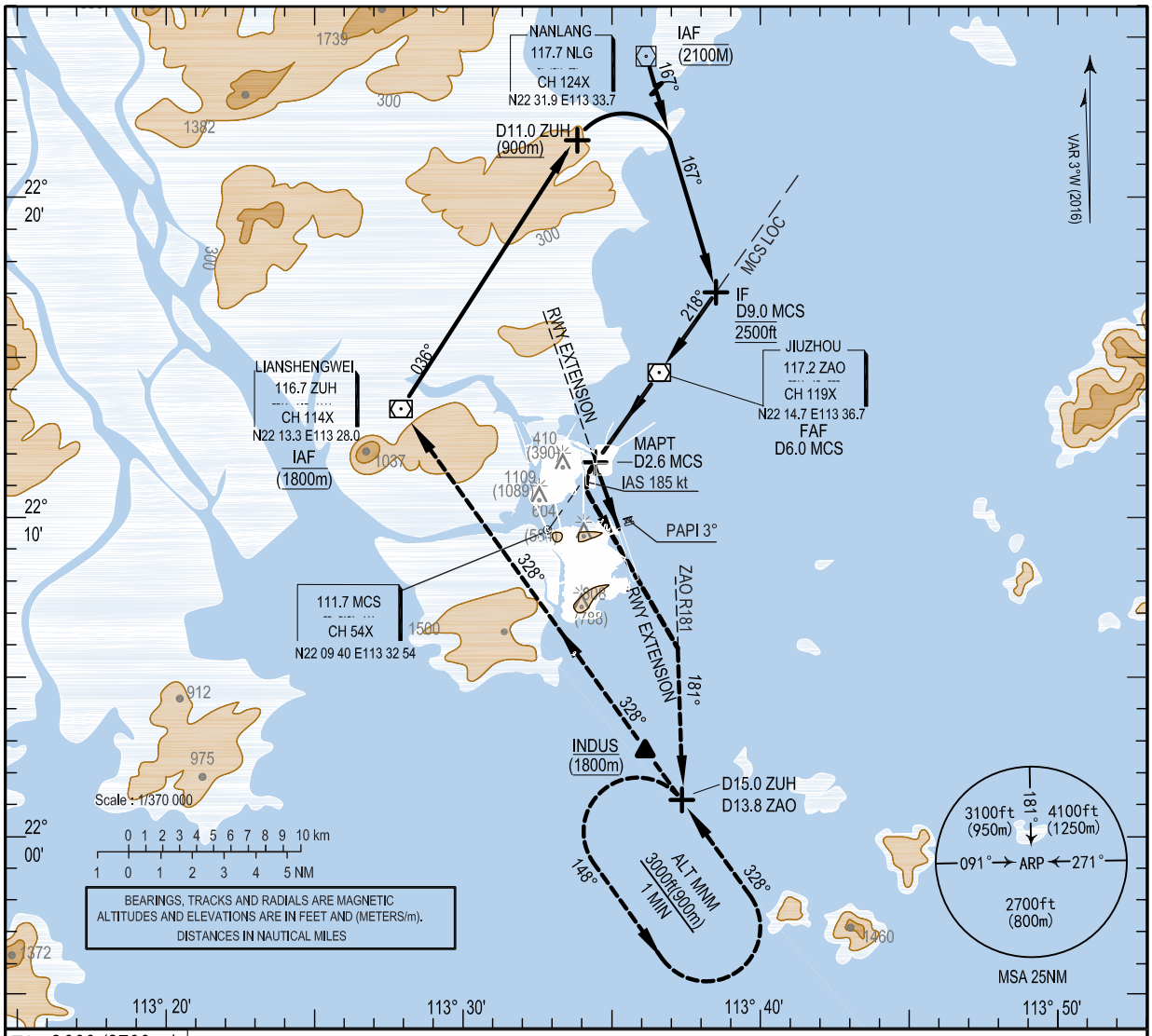
HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

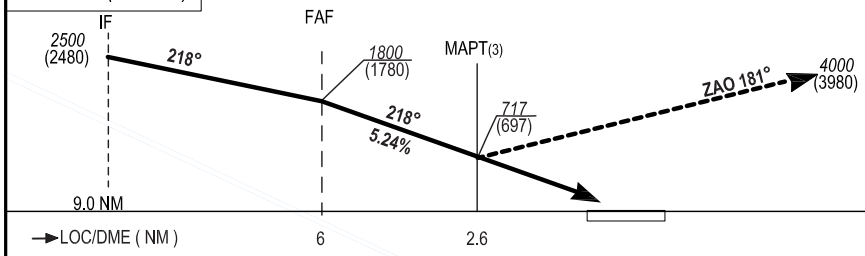
07 AUG 2025

AD 2 - VMMC - 71C
LOC/DME x RWY 16
(MCU Unserviceable)

LOC
MCS 111.7
MAX APCH TURNING SPEED : 190 kt IAS
MAX MISSED APCH TURNING SPEED : 185 kt IAS



TA : 9000 (2700 m)



MISSED APPROACH(1)
(MNM climb gradient 3.3% required until D13.8 ZAO) Turn left and initial climb to 4000ft(1200 m) on R181° until D13.8 ZAO and expect further instruction from Hong Kong Radar to cross INDUS and establish inbound on ZUH VOR R148°. Cross ZUH VOR at 1800m or as directed by ATC. When required, join the holding pattern at ZUH R148°/D15.0 at or above 3000ft(900 m), or proceed as directed by ATC.

Standard MNM : vertical distances in feet, horizontal visibility in meters.

REF HEIGHT : *ALT AD.*

CAT	LOC OCH : 700 MDH	LOC OCH : 700 HV	CIRCLING MDH	CIRCLING HV
A	700	3600	Not Applicable	
B	700	3600		
C	700	3600		
D	700	3600		

LOC/DME MCS

NM	6	5	4	3
ALT	*1800*	*1482*	*1163*	*845*
(HEIGHT)	(1780)	(1462)	(1143)	(825)

(3) The approach final segment is offset from landing direction by 054°
On the approach final segment, and at pilot discretion, a visual left turn should be initiated in time to allow lining up with the runway, considering the aircraft type, approach speed before the MAPT.
At MAPT (2.6 NM LOC/DME), even visual, the missed approach procedure is mandatory.

FAF - MAPT	3.4 NM	70 kt	85 kt	100 kt	115 kt	130 kt	160 kt	185 kt
		2 min 55	2 min 24	2 min 03	1 min 47	1 min 34	1 min 17	1 min 06

INTENTIONALLY

LEFT

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INSTRUMENT APPROACH CHART - ICAO

HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

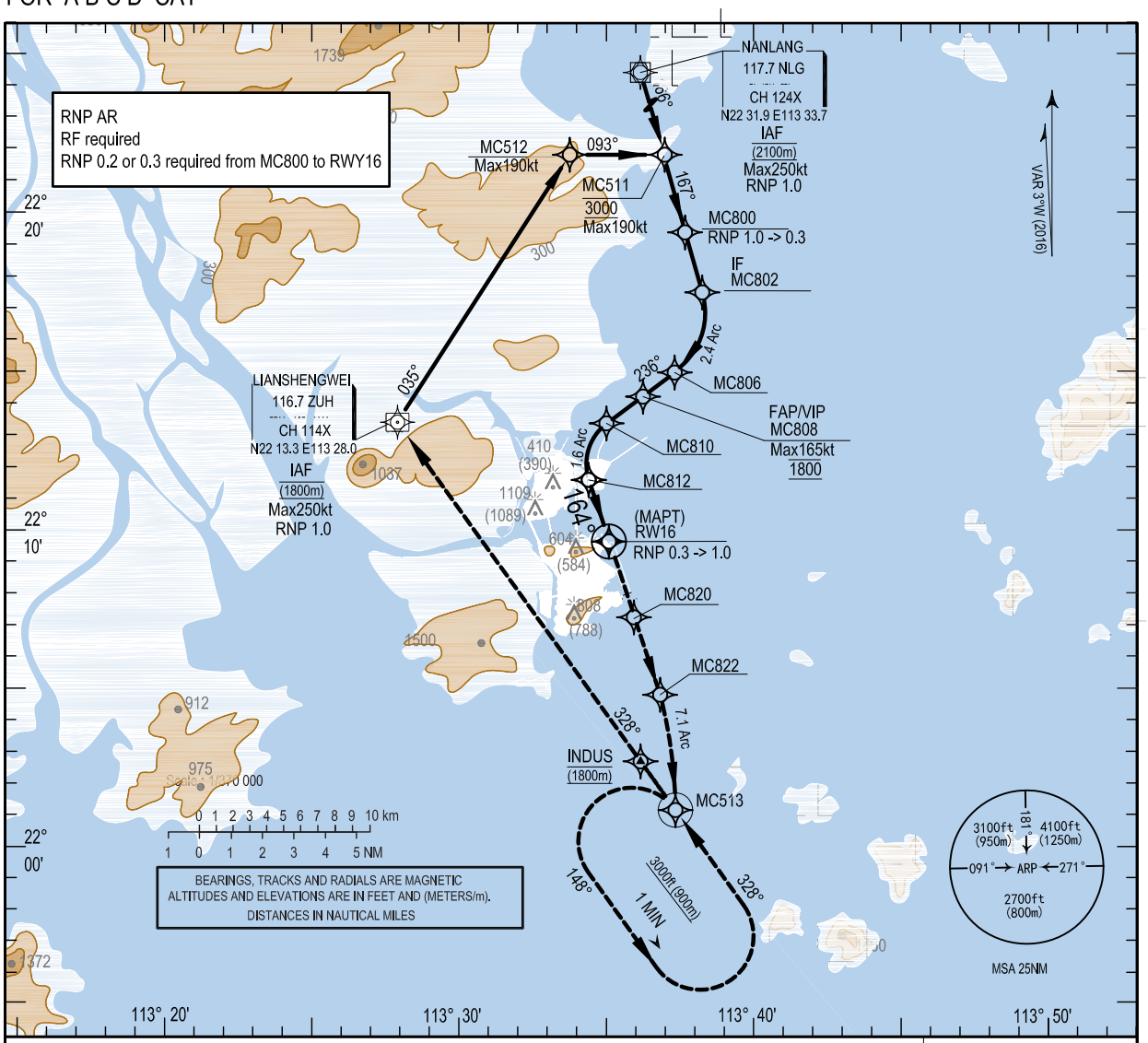
ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

AD 2 - VMMC - 71D
RNP z RWY 16 (AR)

Authorization required
TEMP RESTRICTION
MIN Temp 5°C

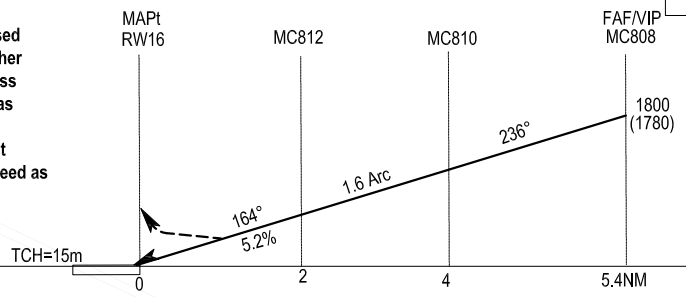
PROTECTED FOR A B C D CAT

07 AUG 2025



TA 9000 (2700m)

MISSED APPROACH
Initial climb to 4000ft(1200m) via the missed approach track to MC513 and expect further instruction from Hong Kong Radar to cross INDUS.Track to ZUH at 5900ft(1800m) or as directed by ATC.
When required, join the holding pattern at MC513 at or above 3000ft(900m), or proceed as directed by ATC.



Standard MNM:vertical distances in feet,horizontal visibility in meters.

CAT	RNP 0.2 ⓐ		RNP 0.2 ⓑ		RNP 0.3 ⓐ		RNP 0.3 ⓑ	
	OCA/OCH	HV	OCA/OCH	HV	OCA/OCH	HV	OCA/OCH	HV
A	270/250	900	270/250	900	300/280	1100	310/290	1100
B	270/250	900	270/250	900	310/290	1100	330/310	1300
C	270/250	900	280/260	1000	330/310	1300	350/330	1400
D	280/260	1000	300/280	1100	350/330	1400	370/350	1500

Note: RNP (LNAV/VNAV).
ⓐ 3.0% MNM Climb Gradient.
ⓑ 2.5% MNM Climb Gradient.

FMC Database Coding Reference for RNP z RWY 16 (AR) APCH

Seq. Nr.	Path Terminator	Waypoint	Fix Role	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)	VPA/ TCH	Navigation Specification
001	IF	NLG	IAF	—	—	—	—	@6900	-250	—	RNP AR APCH
002	TF	MC511	—	—	166(163)	10.492	—	+3000	-190	—	RNP AR APCH
003	TF	MC800	—	—	167(164)	2.500	—	—	—	—	RNP AR APCH
004	TF	MC802	—	—	167(164)	1.968	—	—	—	—	RNP AR APCH
005	RF Centre: MCC80 r = 2.360NM	MC806	—	—	236(233)	2.842	R	—	—	—	RNP AR APCH
006	TF	MC808	—	—	236(233)	1.252	—	@1800	-165	—	RNP AR APCH
001	IF	ZUH	IAF	—	—		—	@5900	-250	—	RNP AR APCH
002	TF	MC512	—	—	035(032)	10.030	—	—	-190	—	RNP AR APCH
003	TF	MC511	—	—	093(090)	2.981	—	+3000	—	—	RNP AR APCH
004	TF	MC800	—	—	167(164)	2.500	—	—	—	—	RNP AR APCH
005	TF	MC802	—	—	167(164)	1.968	—	—	—	—	RNP AR APCH
006	RF Centre: MCC80 r = 2.360NM	MC806	—	—	236(233)	2.842	R	—	—	—	RNP AR APCH
007	TF	MC808	—	—	236(233)	1.252	—	@1800	-165	—	RNP AR APCH
001	IF	MC808	FAF	—	—		—	@1800	-165	—	RNP AR APCH
002	TF	MC810	—	—	236(233)	1.435	—	—	—	3.00	RNP AR APCH
003	RF Centre: MCC82 r = 1.600NM	MC812	—	—	164(161)	2.000	L	—	—	3.00	RNP AR APCH
004	TF	RW16	MAPT	Y	164(161)	2.000	—	+70	—	3.00	RNP AR APCH
005	TF	MC820	—	—	164(161)	2.559	—	—	—	—	RNP AR APCH
006	TF	MC822	—	—	164(161)	2.587	—	—	—	—	RNP AR APCH
007	RF Centre: MCC84 r = 7.179NM	MC513	—	—	193(190)	3.624	R	—	-185	—	RNP AR APCH
008	HM	MC513	—	Y	328(325)		L	+3000	-185	—	RNP AR APCH

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)		Waypoint Name	Coordinates (WGS84)	
NLG	22°31'54.0000"N	113°33'42.0000"E	MC808	22°14'12.4680"N	113°36'21.1390"E
ZUH	22°13'18.0000"N	113°28'00.0000"E	MC810	22°13'20.0870"N	113°35'07.3230"E
RW16	22°09'38.3100"N	113°35'14.1400"E	MC812	22°11'32.2130"N	113°34'32.1820"E
MC511	22°21'49.2300"N	113°36'58.3900"E	MC820	22°07'12.5500"N	113°36'07.8040"E
MC512	22°21'49.2500"N	113°33'45.4100"E	MC822	22°04'45.1840"N	113°37'02.0200"E
MC513	22°01'09.9500"N	113°37'20.0400"E			
MC800	22°19'24.7490"N	113°37'43.8130"E	MCC80	22°16'51.1470"N	113°35'53.0160"E
MC802	22°17'31.0330"N	113°38'19.5450"E	MCC82	22°12'03.4710"N	113°36'10.0330"E
MC806	22°14'58.1330"N	113°37'25.5250"E	MCC84	22°02'24.8370"N	113°29'43.4130"E

INSTRUMENT APPROACH CHART - ICAO

PROTECTED FOR A B C D CAT

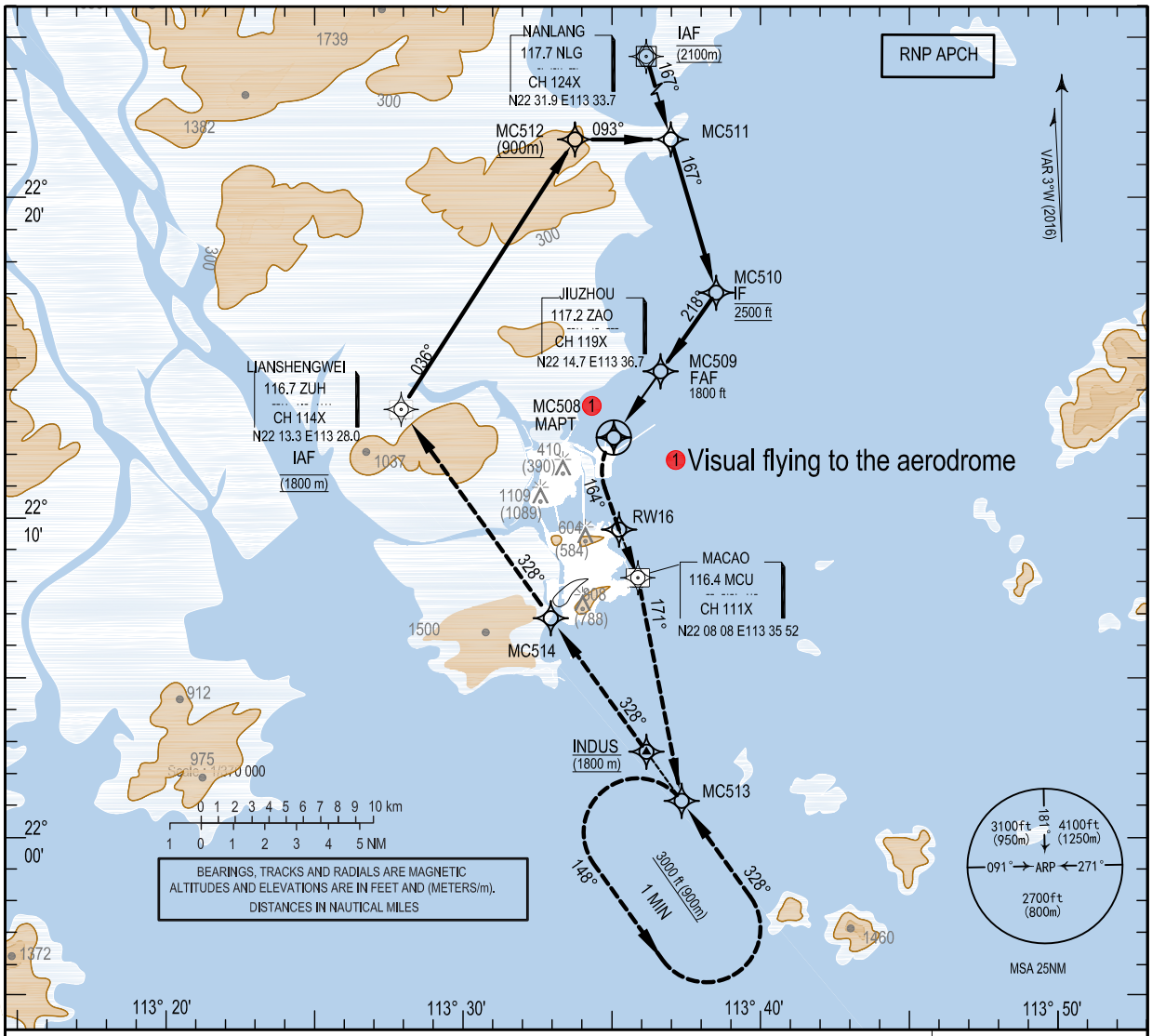
HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

ATIS MACAO : 126.4
APP : ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3 / 119.1(2)
TWR : MACAO Tower 118.0
MACAO Ground 121.725 / 121.975

07 AUG 2025

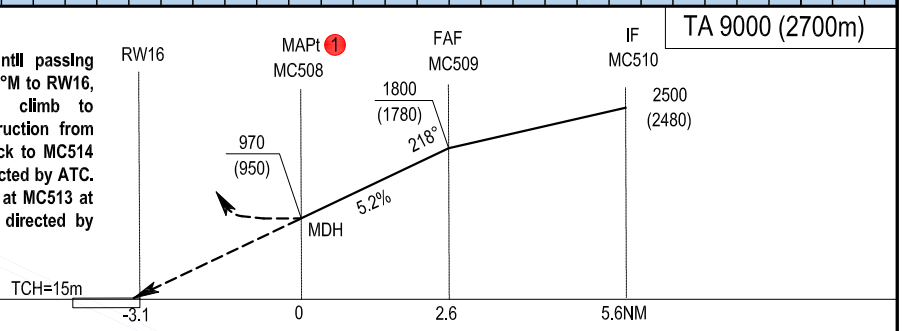
AD 2 - VMMC - 71 F
RNP y RWY 16 (LNAV only)

Only for LNAV
MAX APCH TURNING SPEED : 190 kt IAS
MAX MISSED APCH TURNING SPEED : 185 kt IAS



MISSED APPROACH
(MNM climb gradient 3.0% required until passing 5500 ft) Turn left and climb on track 164°M to RW16, track to MCU and MC513. Initial climb to 4000ft(1200m) and expect further instruction from Hong Kong Radar to cross INDUS. Track to MC514 and ZUH, cross ZUH at 1800m or as directed by ATC. When required, join the holding pattern at MC513 at or above 3000ft(900m), or proceed as directed by ATC.

TA 9000 (2700m)



Standard MNM:vertical distances in feet,horizontal visibility in meters.

CAT	LNAV MDA/MDH	LNAV HV	CIRCLING MDA/MDH	CIRCLING HV
A	970/950	5000	Not Applicable	
B	970/950	5000		
C	970/950	5000		
D	970/950	5000		

MAPT(MC508)		
NM	2	1
ALT	1602	1283
(HEIGHT)	(1582)	(1263)

1 On the approach final segment,and at pilot discretion,a visual left turn should be initiated in time to allow lining up with the runway, considering the aircraft type, approach speed before the MAPT. At MAPT(MC508),even visual, the missed approach procedure is mandatory.

FAF-MAPT 2.6NM	70kt	85kt	100kt	115kt	130kt	145kt	160kt	185kt
	2 min 14	1 min 50	1 min 34	1 min 21	1 min 12	1 min 05	0 min 59	0 min 51

FMC Database Coding Reference for RNP y RWY16 APCH

Sequence Number	Path Terminator	Waypoint	FAF MAP	Fly-over	Track °M (°T)	Distance (NM)	Turn Dir	Altitude (ft)	Speed (knot)	VPA/ TCH	Navigation Specification
001	IF	MC510	—	—	—	—	—	@2500	-190	—	RNP APCH
002	TF	MC509	F	—	218(215)	3.0	—	1800	-190	3.00	RNP APCH
003	TF	MC508	M	Y	218(215)	2.524	—	+1000	-185	3.00	RNP APCH
004	CF	RW16	—	—	164(160)	3.16	—	—	-185	—	RNP APCH
005	TF	MCU	—	—	162(159)	1.61	—	—	-185	—	RNP APCH
006	TF	MC513	—	—	171(168)	7.1	—	—	-185	—	RNP APCH
007	HM	MC513	—	Y	328(325)	—	L	+3000	-185	—	RNP APCH
008	TF	INDUS	-	-	328(325)	-	-	@5900	-	-	RNP APCH
009	TF	MC514	-	-	328(325)	-	-	@5900	-	-	RNP APCH
010	TF	ZUH	-	-	328(325)	-	-	@5900	-	-	RNP APCH
001	IF	ZUH	—	—	—	—	—	@5900	—	—	RNP APCH
002	TF	MC512	—	—	036(033)	10.0	—	+3000	-190	—	RNP APCH
003	TF	MC511	—	—	093(090)	3.0	—	—	-190	—	RNP APCH
004	TF	MC510	—	—	167(164)	5.0	—	@2500	-190	—	RNP APCH
001	IF	NLG	—	—	—	—		@6900		—	RNP APCH
002	TF	MC511	—	—	167(164)	10.4	—	—	—	—	RNP APCH
003	TF	MC510	—	—	167(164)	5.0	—	@2500	-190	—	RNP APCH

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)	
INDUS	22°02′41.0″N	113°36′01.0″E
MC508	22°12′25.79″N	113°34′59.76″E
MC509	22°14′34.78″N	113°36′37.67″E
MC510	22°17′02.13″N	113°38′29.61″E
MC511	22°21′49.23″N	113°36′58.39″E
MC512	22°21′49.25″N	113°33′45.41″E
MC513	22°01′09.95″N	113°37′20.04″E
MC514	22°06′52.19″N	113°32′56.82″E
MCU	22°08′08″N	113°35′52″E
NLG	22°31.9′N	113°33.7′E
RW16	22°09′38.31″N	113°35′14.14″E
ZUH	22°13.3′N	113°28.0′E

INSTRUMENT APPROACH CHART - ICAO

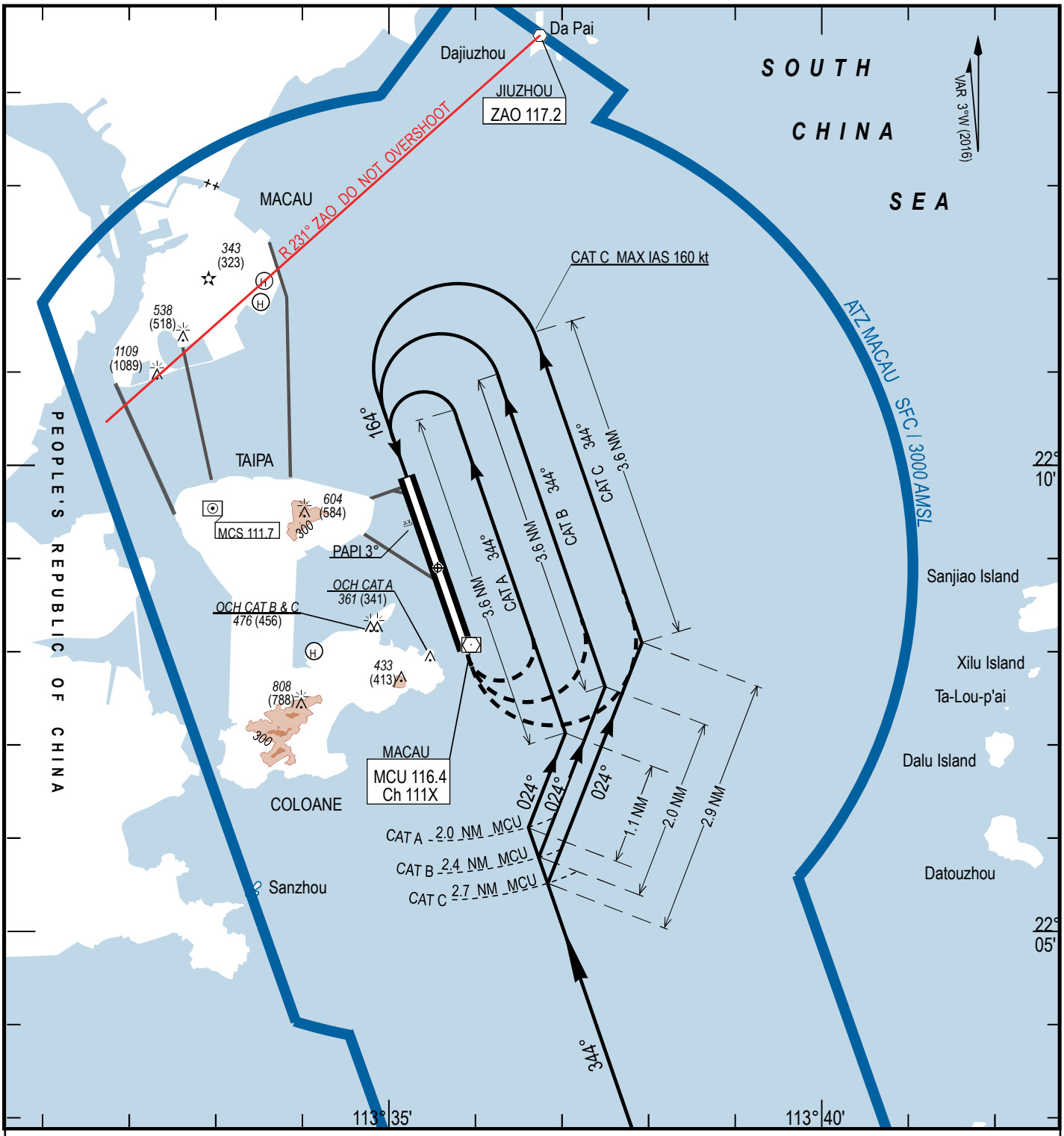
PROTECTED FOR A B C CAT

HEIGHTS RELATED TO AD. ELEV 20 (1 hPa)

ATIS MACAU : 126.4
APP :ZHUHAI Approach 119.025 / 125.525 (1)
HONG KONG Radar 126.3/ 119.1 (2)
TWR : MACAU Tower 118.0
MACAU Ground 121.725 121.975

07 AUG 2025

AD 2 - VMMC - 72
CIRCLING TO LAND RWY 16



Do not overshooting ZAO R231° which defines the northern limit for flights due to noise abatement for Zhuhai City

Standard MNM : vertical distances in feet, horizontal visibility in metres.

CAT	MAX. kt	After ILS, GP INOP or VOR/DME approach		
		MDA (MDH)	CEIL	HV
A	100	660 (640)	1500	6000
B	135	770 (750)	1500	6000
C	160	870 (850)	1500	6000

	Speed / Time						
Distance(NM)	100kt	110kt	120kt	130kt	140kt	150kt	160kt
1.1 (CAT A)	0 min 40						
2.0 (CAT B)	1 min 12	1 min 06	1 min 00	0 min 55			
2.9 (CAT C)	1 min 44	1 min 35	1 min 27	1 min 20	1 min 15	1 min 10	1 min 05
3.6 (CAT A,B,C)	2 min 10	1 min 58	1 min 48	1 min 40	1 min 33	1 min 26	1 min 21

INTENTIONALLY

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