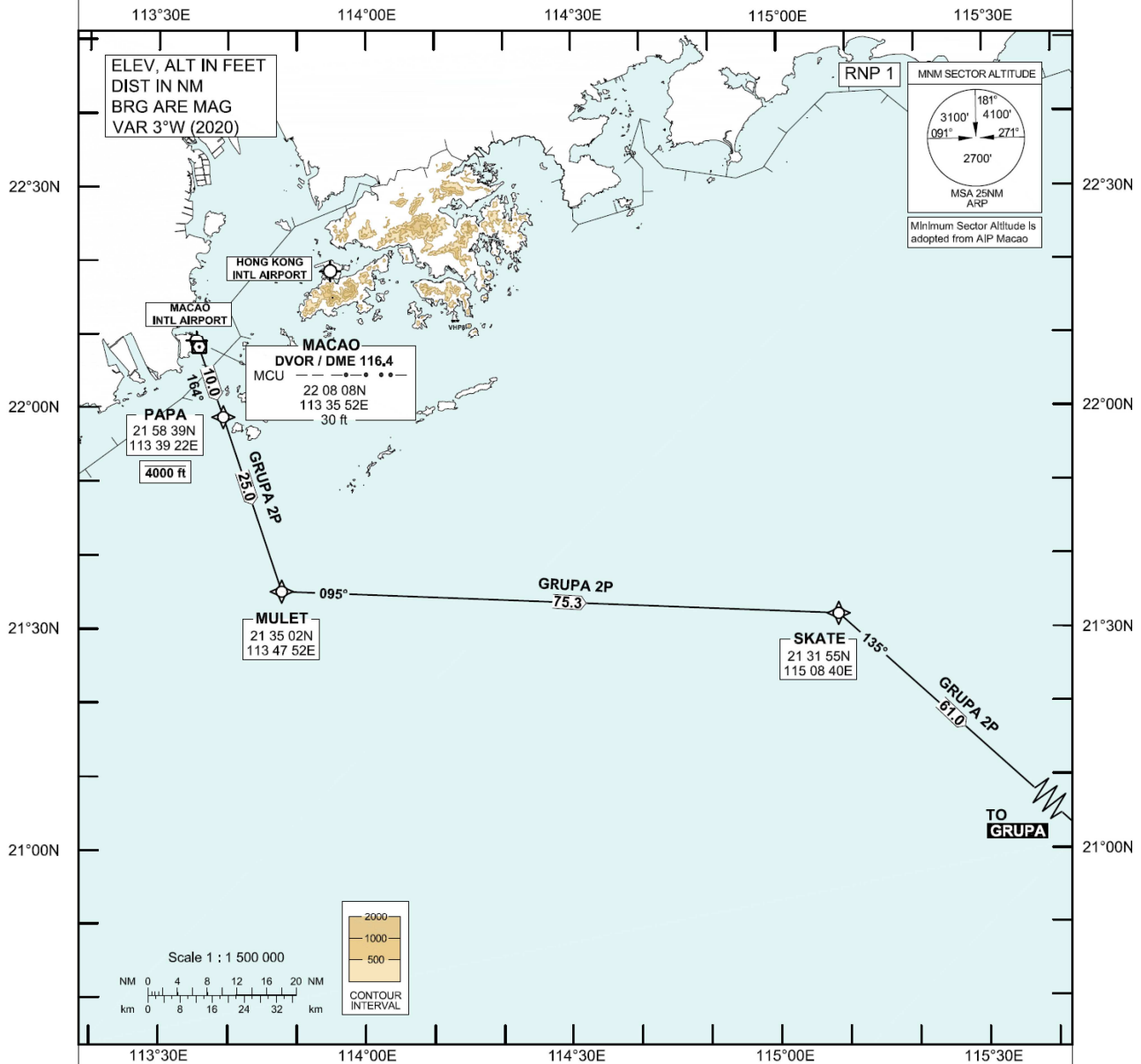


**STANDARD DEPARTURE CHART-
INSTRUMENT (SID) - ICAO**Transition Altitude 9 000 ft
HONG KONG RADAR 123.95**MACAO / Intl (VMMC)
RWY 16
RNAV (GNSS) GRUPA 2P SID**

1. Aircraft shall comply with the Macao RWY 16 SID procedure as published in the AIP Macao.
2. For RNAV (GNSS) SID, aircraft must be approved by State of Registry in accordance with ICAO RNP 1 standard or equivalent. Carriage of certified GNSS receiver is mandatory.
3. Aircraft that do not have approval or whose RNP 1 capability has been degraded shall use the Conventional Procedure described below.

**GRUPA 2P SID RWY 16****RNP 1 Procedure**

(Mandate procedure available to aircraft appropriately equipped and approved)

PAPA - MULET - SKATE - GRUPA

Conventional Procedure

Continue outbound on MCU RDL 164 to PAPA then MULET. From MULET turn left direct to SKATE then turn right direct to GRUPA.

If MCU DVOR is not available

Continue tracking 164°M to MULET, then continue on the track above.

CLIMB REQUIREMENT

Climb to 4 000 ft. Expect further climb when instructed by ATC.

SPEED RESTRICTION

Aircraft shall fly at 250 KIAS or less below FL 110.

CHANGE: Update of MSA.

FMC Database Coding Reference for Macao RNAV_(GNSS) SIDs**Designator: GRUPA 2P Runway 16**

<i>Serial Number</i>	<i>Path Descriptor</i>	<i>Waypoint Identifier</i>	<i>Fly-over</i>	<i>Track (°M)</i>	<i>Magnetic Variation</i>	<i>Distance (NM)</i>	<i>Turn Dir</i>	<i>Altitude</i>	<i>Speed (IAS)</i>	<i>Navigation Specification</i>
Aircraft shall comply with the Macao RWY16 SID procedure as published in the AIP Macao										
01	CF	PAPA	-	-	+3.0	-	-	-4000	-250	RNP 1
02	TF	MULET	-	163	+3.0	25.0	-	-	-	RNP 1
03	TF	SKATE	-	095	+3.0	75.3	L	-	-	RNP 1
04	TF	GRUPA	-	135	+3.0	61.0	R	-	-	RNP 1

Waypoint Coordinates

Waypoint Name	Coordinates (WGS84)
PAPA	21 58 39 N 113 39 22 E
MULET	21 35 01.95 N 113 47 51.87 E
SKATE	21 31 54.99 N 115 08 39.94 E
GRUPA	20 50 44.00 N 115 56 59.00 E