EHGG — GRONINGEN/Eelde

Note: the following sections in this chapter are intentionally left blank:
AD 2.16, AD 2.21.

EHGG AD 2.1 AERODROME LOCATION INDICATOR AND NAME

EHGG — GRONINGEN/Eelde

EHGG AD 2.2 AERODROME GEOGRAPHICAL AND ADMINISTRATIVE DATA

1	**ARP co-ordinates and site at AD**	530730N 0063500E 216 DEG GEO 499 M from TWR.
2	**Direction and distance from (city)**	4.8 NM S from Groningen.
3	**Elevation/reference temperature**	18 FT AMSL/20.9°C (JUL).
4	**Geoid undulation at AD ELEV PSN**	135 FT.
5	**MAG VAR/annual change**	2°E (2020)/10'E.
6	**AD operator, postal address, telephone, telefax, email, AFS, website**	Post: Groningen Airport Eelde P.O. Box 50 9765 ZH Paterswolde The Netherlands Tel: +31 (0)50 309 7070 +31 (0)50 309 7014 (airport authority) +31 (0)50 309 7016 (only outside OPR HR for emergencies and medical flights) Email: operations@gae.nl URL: https://www.groningenairport.nl
7	**Types of traffic permitted (IFR/VFR)**	IFR/VFR
8	**Remarks**	NIL

EHGG AD 2.3 OPERATIONAL HOURS

1	**AD operator**	MON-FRI: 0530-2200 (0430-2100); SAT, SUN and HOL: 0630-2100 (0530-2000)[1)]. For emergency and medical flights only: MON-FRI 2200-0530 (2100-0430) and SAT, SUN and HOL 2100-0630 (2000-0530).
2	**Customs and immigration**	Customs: limited AVBL; during AD OPR HR 3 HR PN, TEL +31 (0)88 622 3100. Immigration: AD OPR HR.
3	**Health and sanitation**	PN[2)]
4	**AIS briefing office**	H24 Tel: +31 (0)20 406 2315 URL: https://www.homebriefing.nl
5	**ATS reporting office (ARO)**	Competent ATS unit: ARO Schiphol, see EHAM AD 2.3.
6	**MET briefing office**	AD OPR HR, outside OPR HR: MWO De Bilt (see EHGG AD 2.11).
7	**ATS**	AD OPR HR.
8	**Fuelling**	AD OPR HR.
9	**Handling**	AD OPR HR. Compulsory for visiting ACFT MTOM >= 3000 KG, for details see EHGG AD 2.23.
10	**Security**	AD OPR HR.
11	**De-icing**	AD OPR HR.
12	**Remarks**	[1)] MIL flights PPR from airport authority. [2)] PN means permission from and/or in case of customs etc. notification other than by (VFR) flight plan to aerodrome authority as appropriate.

EHGG AD 2.4 HANDLING SERVICES AND FACILITIES

1	**Cargo-handling facilities**	For details see EHGG AD 2.23.

2	**Fuel/oil types**	AVGAS 100LL, Jet A-1/-.
3	**Fuelling facilities/capacity**	AVGAS 100LL: self-service; payment only via credit card or Shell carnet at fuel station terminal. Jet A-1: self-service; ACFT with wingspan < 15 M must use self-service; payment only via credit card or Shell carnet at fuel station terminal. 2 trucks.
4	**De-icing facilities**	Equipment AVBL, Type II de-icing fluid ABC-K Plus.
5	**Hangar space for visiting aircraft**	Light aircraft only.
6	**Repair facilities for visiting aircraft**	General Enterprises, TEL: +31 (0)50 309 6060
7	**Remarks**	NIL

EHGG AD 2.5 PASSENGER FACILITIES

1	**Hotels**	Hotels in Groningen, Eelde and Haren.
2	**Restaurants**	At the airport (116 seats) and unlimited in Groningen.
3	**Transportation**	Buses, taxis and rental cars.
4	**Medical facilities**	First aid treatment, hospitals in Groningen and Assen.
5	**Bank and post office**	Cashpoint in terminal building.
6	**Tourist office**	NIL
7	**Remarks**	NIL

EHGG AD 2.6 RESCUE AND FIRE FIGHTING SERVICES

1	**AD category for fire fighting**	CAT 5; CAT 6, 7, 8 and 9 AVBL O/R (24 HR PN). For emergency and medical flights outside operational hours CAT 3 is AVBL.
2	**Rescue equipment**	3 crash-tenders with portable hydraulic rescue tools and mobile lighting.
3	**Capability for removal of disabled aircraft**	Cranes AVBL via contractors.
4	**Remarks**	NIL

EHGG AD 2.7 SEASONAL AVAILABILITY - CLEARING

1	**Types of clearing equipment**	3 snowsweep combinations with ploughs, 1 snowblower, 1 spray vehicle.
2	**Clearance priorities**	RWY, TWY and apron simultaneously.
3	**Remarks**	1. Responsible authority: airport authority. 2. No specially prepared winter runways AVBL. 3. Methods of snow removal: snowploughs and sweeping machines. 4. Chemical treatment of runway surface by KFOR. NAAC only locally used at aprons. 5. Assessment and measuring of contamination: observation by own experienced staff. 6. Runway condition is determined and reported according to the global reporting format and broadcast via ATIS. 7. Information of the runway condition is published by: a. SNOWTAM via the international NOTAM office at Schiphol. b. RCR via ATIS and RTF on TWR frequency.

EHGG AD 2.8 APRONS, TAXIWAYS AND CHECK LOCATIONS/POSITIONS DATA

1	**Apron surface and strength**	A-apron:	Surface: CONC
			Strength: PCN 68/R/B/W/T
		J-apron:	Surface: ASPH
			Strength: PCN 36/F/B/W/T
		K-apron:	Surface: CONC
			Strength: PCN 98/R/B/W/T
		L-apron:	Surface: CONC
			Strength: PCN 37/R/B/W/T

2	**Taxiway width, surface and strength**	**TWY** / **Width** / **Surface** / **Strength (PCN)** A[1] / 23 M / Asphalt / 53.0/F/B/W/T B (NORTH OF W1)[2)3)4)] / 18 M / Asphalt / 51.0/F/B/W/T B (SOUTH OF W1) / 43.5 M / Asphalt / 59.0/F/B/W/T C[2)3)] / 18 M / Asphalt / 63.0/F/B/W/T G[5)6)] / 10.5 M / Asphalt / 33.0/F/A/W/T
3	**Altimeter checkpoint location and elevation**	Location: apron. Elevation: 13 FT AMSL.
4	**VOR checkpoints**	See AD 2.EHGG-APDC.
5	**INS checkpoints**	See AD 2.EHGG-APDC.
6	**Remarks**	1) Outer main gear wheel span up to but not including 15 M. 2) MAX wingspan 36 M. 3) Outer main gear wheel span up to but not including 9 M. 4) Use of TWY B limited north of W1. See AD 2.20 paragraph 8. 5) MAX wingspan 24 M. 6) Outer main gear wheel span up to but not including 6 M.

EHGG AD 2.9 SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM AND MARKINGS

1	**Use of aircraft stand ID signs, TWY guide lines and visual docking/parking guidance system at aircraft stands**	**Aircraft stand ID signs:** • A-apron: stand identification marking. **TWY guide lines:** • A-apron: lead-in, stop position and lead-out marking. • Yellow guide lines on TWY and aprons. • Taxi guidance signs illuminated. • Follow-me cars AVBL on request for guidance on aprons and TWYs. **Visual parking guidance system at aircraft stands:** • Marshaller. **General use of aprons:** • A-apron: commercial PAX ACFT, taxi-in/taxi-out (ACFT with wingspan > 36 M must use stand A11 and follow dashed lead-in and lead-out lines). • J-apron: general aviation ACFT MAX wingspan 24 M • K-apron: general aviation ACFT MAX wingspan 15 M. • L-apron: commercial PAX ACFT MAX wingspan 36 M.
2	**RWY and TWY markings and LGT**	**RWY:** THR, centre line, aiming point, RWY designations, edge, TDZ, turnpad. Edge lights, centre line lights, THR lights, RWY-end lights; blue turnpad edge lights, green turnpad centre line lights (at end of RWY 23 only). **TWY:** Holding positions, centre line and edge marking. Mandatory instruction signs at all RWY holding positions. Edge lights; runway guard lights at holding S2.
3	**Stop bars**	NIL
4	**Remarks**	NIL

EHGG AD 2.10 AERODROME OBSTACLES

All obstacles are day and night marked and lighted. For obstacles in take-off area see AD 2.EHGG-AOC-05-23.

EHGG AD 2.11 METEOROLOGICAL INFORMATION PROVIDED

1	**Associated MET office**	De Bilt
2	**Hours of service** **MET office outside hours**	H24 -
3	**Office responsible for TAF preparation** **Periods of validity**	De Bilt 30 HR

4	**Trend forecast** **Interval of issuance**	TREND MON-FRI: 0525-2155 (0425-2055); SAT, SUN and HOL: 0625-2025 (0525-1925).
5	**Briefing/consultation provided**	Self-briefing; briefing on request from MWO-De Bilt by telephone after self-briefing (see item 10).
6	**Flight documentation** **Language(s) used**	Reports, forecasts, charts. English, Dutch.
7	**Charts and other information available for briefing or consultation**	S, P, W, T
8	**Supplementary equipment available for providing information**	WXR, APT
9	**ATS units provided with information**	Eelde TWR, Eelde APP.
10	**Additional information (limitation of service, etc.)**	TEL: 0900 202 3341 Briefing low level flights (IFR/VFR). TEL: 0900 202 3343 Briefing IFR flights above FL 100. TEL: 0900 202 3340 Briefing balloon flights within Amsterdam FIR. **Note:** charge for TEL briefings and consultations is € 0,50/MIN. 1) Weather bulletin (Dutch language) and METARs via Dutch public TV 'Teletekst', page 707.

EHGG AD 2.12 RUNWAY PHYSICAL CHARACTERISTICS

Designations RWY NR	True BRG	Dimensions of RWY (M)	Strength (PCN) and surface of RWY and SWY	THR co-ordinates RWY end co-ordinates THR GUND	THR elevation and highest elevation of TDZ of precision APCH RWY
1	**2**	**3**	**4**	**5**	**6**
05	051.85°	2500 x 45	62/F/B/W/T ASPH	530639.90N 0063339.23E 530729.84N 0063524.96E 135 FT	13.4 FT NA
23	231.88°	2500 x 45	62/F/B/W/T ASPH	530729.84N 0063524.96E 530639.90N 0063339.23E 135 FT	12.5 FT 17.6 FT

Designations RWY NR	Slope of RWY-SWY	SWY dimensions (M)	CWY dimensions (M)	Strip dimensions (M)	RESA dimensions (M)	Location and type of arresting system	OFZ
1	**7**	**8**	**9**	**10**	**11**	**12**	**13**
05	0.01%	NIL	60 x 300	2620 x 300	230 x 150	NIL	NA
23	0.01%	NIL	60 x 300	2620 x 300	240 x 150	NIL	NA

Remarks
14
NIL

EHGG AD 2.13 DECLARED DISTANCES

RWY Designator	TORA (M)	TODA (M)	ASDA (M)	LDA (M)	Remarks
1	**2**	**3**	**4**	**5**	**6**
05	2500	2560	2500	2500	NIL
	1798	1858	1798	1798	HLDG PSN S3. LDA for short circuits.
	1119	1179	1119	NA	HLDG PSN S2.
23	2500	2560	2500	2500	NIL
	1487	1547	1487	NA	HLDG PSN S2.

EHGG AD 2.14 APPROACH AND RUNWAY LIGHTING

RWY Designator	APCH LGT type, length, INTST	THR LGT colour, WBAR	VASIS (MEHT) PAPI	TDZ LGT length	RWY centre line LGT length, spacing, colour, INTST	RWY edge LGT length, spacing, colour, INTST	RWY end LGT colour, WBAR	SWY LGT length, colour
1	2	3	4	5	6	7	8	9
05	SALS 420 M LIH	G -	PAPI left/3° (74 FT)	NIL	2500 M 30 M 1) LIH	2500 M 60 M 2) LIH	R -	NIL
23	CAT I 900 M LIH	G -	PAPI left/3° (66 FT)	NIL	2500 M 30 M 1) LIH	2500 M 60 M 2) LIH	R -	NIL

Remarks
10
1) White from THR to 900 M from RWY end; white/red from 900 M from RWY end to 300 M from RWY end; red from 300 M from RWY end to RWY end. 2) White; last 600 M yellow.

EHGG AD 2.15 OTHER LIGHTING, SECONDARY POWER SUPPLY

1	**ABN/IBN location, characteristics and hours of operation**	NIL
2	**LDI location and LGT** **Anemometer location and LGT**	LDI: NIL. Anemometer: see GEN 3.5 paragraph 3.
3	**TWY edge and centre line lighting**	TWY edge lights.
4	**Secondary power supply** **Switch-over time**	AVBL Within 7 seconds.
5	**Remarks**	NIL

EHGG AD 2.17 ATS AIRSPACE

1	**Designation and lateral limits**	**EELDE CTR:** 530228N 0061617E - 530618N 0062424E - along clockwise arc (radius 6.5 NM, centre 530730N 0063500E) - 531324N 0063929E - 531713N 0064740E - 531230N 0065349E - 530841N 0064537E - along clockwise arc (radius 6.5 NM, centre 530730N 0063500E) - 530136N 0063032E - 525745N 0062224E - 530228N 0061617E.
2	**Vertical limits**	GND to 3000 FT AMSL.
3	**Airspace classification**	C
4	**ATS unit call sign** **Language(s)**	Eelde Tower[1)] English
5	**Transition altitude**	IFR: 3000 FT AMSL; VFR: 3500 FT AMSL.
6	**Hours of applicability**	AD OPR HR
7	**Remarks**	1) Outside OPR HR contact Dutch MIL Info on 132.350.

EHGG AD 2.18 ATS COMMUNICATION FACILITIES

Service designation	Call sign	Channel(s)	SATVOICE NR	Logon address	Hours of operation	Remarks
1	2	3	4	5	6	7
APP	Eelde Approach	120.305	NIL	NIL	MON-FRI: 0800-1800 (0700-1700)	TAR. VDF.
		282.350	NIL	NIL		NIL
		119.705	NIL	NIL		Regional Guard. O/R or at ATC discretion. VDF.
TWR	Eelde Tower	118.705	NIL	NIL	AD OPR HR	Primary. VDF.
		362.875	NIL	NIL		NIL
		119.705	NIL	NIL		Regional Guard. O/R or at ATC discretion. VDF.
						Outside OPR HR contact Dutch MIL Info on 132.350.
	Eelde Delivery	121.705	NIL	NIL	AD OPR HR	Start-up control and clearance delivery. Pre-flight information. IFR/VFR-traffic (incl. training flights). VDF.
ATIS	Eelde Information	133.555	NIL	NIL	AD OPR HR	NIL
-	As appropriate.	121.500	NIL	NIL	As appropriate.	Emergency. VDF.

EHGG AD 2.19 RADIO NAVIGATION AND LANDING AIDS

Type of aid, MAG VAR, Type of supported OPS (VOR/ILS/MLS: declination)	ID	Frequency CH service provider and reference path identifier	Hours of operation	Position of transmitting antenna co-ordinates	Elevation of DME transmitting antenna or GBAS: elevation, ellipsoid height of reference point SBAS: ellipsoid height of LTP/FTP	Service volume radius from the GBAS reference point	Remarks
1	2	3	4	5	6	7	8
DVOR/DME (2°E/2020)	EEL	112.400 MHz CH71X	H24	530951.0N 0064000.3E	0 FT	NA	Designated operational coverage: BTN 165°-285° MAG 70 NM/FL 500; BTN 285°-165° MAG 150 NM/FL 500.
LOC 23 ILS CAT I/C/1 (2°E/2020)	GRO	109.900 MHz	H24	530635.1N 0063329.1E	NA	NA	NIL
DME 23	GRO	CH36X	H24	530720.2N 0063515.0E	0 FT	NA	NIL
GP 23	-	333.800 MHz	H24	530720.2N 0063515.0E	NA	NA	NIL
GPS	NA	L1 1575.42 MHz	H24	NA	NA	NA	NIL
EGNOS	NA	L1 1575.42 MHz[1)]	H24	NA	[1)]	NA	[1)] See EHGG AD 2.22 for FAS data block

EHGG AD 2.20 LOCAL AERODROME REGULATIONS

1 GENERAL

Monitoring the Eelde Tower channel is mandatory for all aircraft on the ground that have an engine running.

2 TRAINING FLIGHTS

1. Training flights are prohibited for jet aircraft and aircraft with a MTOM >= 6000 KG.
2. Training flights are prohibited during the following periods:
   - MON-SAT: before 0700 (0600) and after 2100 (2000).
   - SUN and HOL: before 0900 (0800) and after 1800 (1700).
3. IFR training flights outside operational hours Eelde Approach: PPR from ATC, TEL: +31 (0)50 309 9229.

3 TEST AND TECHNICAL FLIGHTS

Test or technical flights PPR from airport authority.

4 FORMATION TAKE-OFFS AND LANDINGS

Formation take-offs and landings are not allowed except with a pre-arranged operational agreement with ATC. Contact atmproceduresservices@lvnl.nl for such an agreement.

5 REDUCED RUNWAY SEPARATION

1. Reduced runway separation may be applied between CAT 1 and 2 aircraft in accordance with AD 1.1 paragraph 5.3.
2. Minimum separation applicable for RWY 05 and RWY 23:
   a. between a landing CAT 1 aircraft and a preceding CAT 1 or 2 aircraft: 600 M.
   b. between a landing CAT 2 aircraft and a preceding CAT 1 or 2 aircraft: 1500 M.
   c. between a departing CAT 1 aircraft and a preceding CAT 1 or 2 aircraft: 600 M.
   d. between a departing CAT 2 aircraft and a preceding CAT 1 or 2 aircraft: 1500 M.

6 GROUND HANDLING

Handling is compulsory for all visiting ACFT MTOM >= 3000 KG, for details see EHGG AD 2.23.

7 USE OF APU

Flight crew are urgently requested to limit the use of the auxiliary power unit (APU) as much as possible to reduce environmental and noise burden.
When it is necessary to use the APU to ensure safety on board, to diagnose and/or rectify defects or in case no ground power unit (GPU) is available, please inform the airport authority on TEL: +31 (0)50 309 7014 as soon as practicable.

8 USE OF TWY B (NORTH OF W1)

Usage of TWY B north of W1 limited: PPR by airport authority for all non-based jet aircraft, turboprop aircraft and helicopters.

9 USE OF ENGINE RUN-UP AREA

A public engine test and compass swing platform is available alongside TWY A, opposite the entry to the J-apron. The platform is intended for fixed wing non-turbine propellor aircraft with a MAX outer main gear wheel span of 4.5 M and a MAX wingspan of 15 M. Usage of this run-up area is possible MON-FRI 0600-1800 (0500-1700) and requires PPR by the airport authority.

EHGG AD 2.22 FLIGHT PROCEDURES

1 INSTRUMENT DEPARTURE PROCEDURES

1.1 Introduction

The instrument departure procedures are based on ICAO Annex 2 and on ICAO Documents 4444-ATM/501 (PANS-ATM), 7030 (SUPPS) and 8168-OPS/611 (PANS-OPS).

Note: in the Eelde TMA VFR flights without ATC clearance are permitted. For instrument training procedures see EHGG AD 2.22 paragraph 4.

Note: to avoid noise disturbances pilots shall adhere to the IFR departure procedures as depicted.

1.2 Instrument departure procedures

1.2.1 Start-up permission

Pilots of aircraft must have obtained permission for start-up from ATC before starting their engines and when applicable report a cross-bleed start. A request for start-up shall be made to Eelde Delivery after all preparations for departure have been made (doors closed etc.) and shall include:

- aircraft identification (e.g. PH-SPY).
- position (e.g. in front of terminal).
- ATIS information (e.g. information S).

- flight rules (e.g. IFR).
- destination (e.g. Amsterdam).
- request start-up.

Due to the short flying time to the FIR boundary, pilots of aircraft departing direction Germany/Denmark may request start-up permission before all preparations have been made, indicating the time at which they will be ready to start engines: ".....destination.....ready to start engines at.....".

Permission for start-up will either be issued immediately or at a specified time. The pilot shall be able to comply with start-up and taxi permission, since ATC planning of outbound traffic (involving en-route clearance and co-ordination with adjacent ACCs) is based on the start-up time. Any delay in start-up or taxiing shall be reported to ATC immediately.

In case of indefinite delay the probable duration of the delay will be given.

During the hours of the ATIS broadcast, no MET information will be issued to departing aircraft except RVR (see EHGG AD 2.18).

1.2.2 En-route clearance

1.2.2.1 Contents

The en-route clearance will be issued after start-up clearance has been given by Eelde Delivery. An en-route clearance contains:

a. Clearance limit: airport of destination.
b. Standard instrument departure (SID).
c. Level instructions if applicable.
d. SSR code.
e. Departure instructions if applicable.
f. CTOT if applicable.

Example of an en-route clearance: "PHCTG cleared to Paris, PAM 4C departure, FL 070, squawk 2136, slot 25".

1.2.2.2 Standard instrument departures

The instrument departure procedures are laid down in standard instrument departures (SIDs). SIDs are designated in accordance with ICAO Annex 11. SID designation is composed of the following elements:

- a basic indicator, i.e. a significant point.
- a validity indicator, i.e. a number from 1 to 9 indicating the valid version of a specific SID.
- a route indicator, i.e. a letter representing the runway where the SID begins.

SIDs are published for RWYs 05 and 23.

1.2.2.3 Departure instructions (paragraph 1.2.2.1 item d.)

Instructions containing deviations from the standard instrument departure may be added to the en-route or take-off clearance. These instructions may comprise an opposite turn after take-off, maintaining a specified heading or temporary altitude restrictions; they amend the relevant part of the SID only.

1.2.2.4 General instructions

a. Climb as rapidly as practicable to at least 2000 FT AMSL.
b. VOR radial interception angle: in principle 45°. If the indicated angle exceeds 45° initiate turn in due time in order not to overshoot the radial.

1.2.3 Taxi procedures

Aircraft shall request taxi clearance on the Tower frequency (see EHGG AD 2.18).

1.3 Communication failure

See ENR 1.3.

1.4 SID descriptions

1.4.1 General remarks

- Transition altitude: 3000 FT AMSL.
- SIDs are based on an average climb rate of 2000 FT/min.
- SIDs have to be considered as minimum noise routings.
- Turn radii based on a 25° bank angle.
- Radial interception angle: 45°.
- MAX 250 KIAS below FL 100 unless otherwise instructed.
- Additional departure instructions: especially propeller-driven aircraft can expect additional departure instructions. These instructions may be added to the en-route or take-off clearance and may comprise a specific heading or temporary altitude restriction. Such additives amend the relevant part of the SID only.
- **RNAV:** The Netherlands encourages the use of RNAV routes stored in a pre-programmed navigation database on board of aircraft. Although there may be differences between the RNAV and conventional description of a route (vertically: turn altitudes and/or laterally: turn anticipation effects), the resulting flight paths are considered identical by ATC. Therefore, flying the route using the RNAV coding from the navigation database will not result in route violations.
  Furthermore:
  - Connect FMS as early as possible.
  - Turn anticipation is mandatory for all waypoints except those which are underlined, these waypoints shall be overflown.
  - The navigation aid (e.g. VOR) mentioned in the column "Expected path terminator" is for selection of MAG station declination only.

1.4.2 Specific remarks

1. ENKOS departure only available for DEST EHRD.
2. NOVEN departure only available for DEST EHAM and intending to operate above FL 070.
3. ROLDU departure only available for DEST EHLE.
4. RUMER departure only available for flights operating MAX FL 095 to DEST EHEH, EHBD and EHBK.
5. TEBRO departure only available for DEST EDDL, EDLN and EDLV.
6. RNAV 1 required.
7. Initial turn: climb to 500 FT AMSL before turning, due to obstacles.

1.4.3 Continuous routings for SIDs with crossing conditions on ATS routes as applicable

Note: REF EHGG AD 2.22 paragraph 1.2.2 "En-route clearance"-: if not able to comply with the crossing conditions prescribed in the SIDs, inform Eelde Delivery before departure.

Note: Aircraft may only continue to climb above FL 060 or FL 070 after an ATC clearance has been received.

NAPRO Departures	
Z739	If the requested flight level is a level above FL 245, cross AMOSU at or above FL 250.

1.4.4 SIDs RWY 05

See chart AD 2.EHGG-SID-05.

DOBAK 2C	See paragraph 1.4.2 specific remark: 7. After departure climb to FL 060. MNM required climb gradient 4.0% to FL 060 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[DOBA2C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To DOBAK at or above FL 060	DOBAK [F060+]	TF	N
Conventional description	Lateral: Proceed to EEL VOR. Over EEL VOR intercept EEL 079 to DOBAK. Vertical: Cross 20.1 EEL at or above FL 060.			

ENKOS 4C	See paragraph 1.4.2 specific remark: 1, 6, 7. After departure climb to FL 070.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[ENKO4C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To GG516	GG516	TF	N
	To GG527	GG527	TF	N
	To OSTIR at or above FL 070	OSTIR [F070+]	TF	N
	To ENKOS	ENKOS	TF	N

NAPRO 3C	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 070.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[NAPR3C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To GG516	GG516	TF	N
	To GG527	GG527	TF	N
	To VEROR at or above FL 070	VEROR [F070+]	TF	N
	To GG521	GG521	TF	N
	To GG522 at or above FL 110	GG522 [F110+]	TF	N
	To TENLI	TENLI	TF	N
	To NAPRO	NAPRO	TF	N

NOVEN 3C	See paragraph 1.4.2 specific remark: 2, 6, 7. After departure climb to FL 070.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[NOVE3C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To GG516	GG516	TF	N
	To GG527	GG527	TF	N
	To OSTIR at or above FL 070	OSTIR [F070+]	TF	N
	To NOVEN	NOVEN	TF	N
	To ARTIP	ARTIP	TF	N

OLWOF 1C	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 060. MNM required climb gradient 4.3% to FL 060 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[OLWO1C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To OLWOF at or above FL 060	OLWOF [F060+]	TF	N

PAM 4C	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 070.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[PAM4C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To GG516	GG516	TF	N
	To GG527	GG527	TF	N
	To OSTIR at or above FL 070	OSTIR [F070+]	TF	N
	To GG528	GG528	TF	N
	To PAM	PAM	TF	N

ROLDU 4C	See paragraph 1.4.2 specific remark: 3, 6, 7. After departure climb to maintain FL 050.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[ROLD4C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To GG516	GG516	TF	N
	To GG527	GG527	TF	N
	To OSTIR	OSTIR	TF	N
	To ROLDU at FL 050	ROLDU [F050]	TF	N

RUMER 4C	See paragraph 1.4.2 specific remark: 4, 6, 7. After departure climb to FL 070.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[RUME4C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To GG516	GG516	TF	N
	To GG527	GG527	TF	N
	To VEROR at or above FL 070	VEROR [F070+]	TF	N
	To GG521	GG521	TF	N
	To TENLI	TENLI	TF	N
	To NIHOF	NIHOF	TF	N
	To BASGU	BASGU	TF	N
	To RUMER	RUMER	TF	N

SONEB 4C	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 070.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[SONE4C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To GG516	GG516	TF	N
	To GG527	GG527	TF	N
	To VEROR at or above FL 070	VEROR [F070+]	TF	N
	To GG521	GG521	TF	N
	To TENLI	TENLI	TF	N
	To SONEB	SONEB	TF	N

SPY 4C	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 070.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[SPY4C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To GG516	GG516	TF	N
	To GG527	GG527	TF	N
	To OSTIR at or above FL 070	OSTIR [F070+]	TF	N
	To SPY	SPY	TF	N

TEBRO 4C	See paragraph 1.4.2 specific remark: 5, 6, 7. After departure climb to FL 070.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[TEBR4C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To GG516	GG516	TF	N
	To GG527	GG527	TF	N
	To VEROR at or above FL 070	VEROR [F070+]	TF	N
	To GG521	GG521	TF	N
	To TENLI	TENLI	TF	N
	To TEBRO	TEBRO	TF	N

TEMLU 2C	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 060. MNM required climb gradient 4.0% to FL 060 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[TEML2C]	To EEL on course 050° MAG	EEL [M050]	CF (EEL)	N
	To TEMLU at or above FL 060	TEMLU [F060+]	TF	N

1.4.5 SIDs RWY 23

See chart AD 2.EHGG-SID-23.

DOBAK 3D	See paragraph 1.4.2 specific remark: 7. After departure climb to FL 060.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[DOBA3D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG533	GG533	TF	N
	To GG536	GG536	TF	N
	To DOBAK at or above FL 060	DOBAK [F060+]	TF	N
Conventional description	Lateral: Track 230° MAG. At 6.2 EEL turn left to 132° MAG. At EEL 189 turn left to 035° MAG to intercept EEL 079 to DOBAK. Vertical: Cross 20.1 EEL at or above FL 060.			

ENKOS 2D	See paragraph 1.4.2 specific remark: 1, 6, 7. After departure climb to FL 070. MNM required climb gradient 7.5% to FL 070 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[ENKO2D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG530	GG530	TF	N
	To DIVPA at or above FL 070	DIVPA [F070+]	TF	N
	To ENKOS	ENKOS	TF	N

NAPRO 2D	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 070. MNM required climb gradient 8.0% to FL 070 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[NAPR2D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG527	GG527	TF	N
	To VEROR at or above FL 070	VEROR [F070+]	TF	N
	To GG521	GG521	TF	N
	To GG522 at or above FL 110	GG522 [F110+]	TF	N
	To TENLI	TENLI	TF	N
	To NAPRO	NAPRO	TF	N

NOVEN 2D	See paragraph 1.4.2 specific remark: 2, 6, 7. After departure climb to FL 070. MNM required climb gradient 6.5% to FL 070 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[NOVE2D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG532	GG532	TF	N
	To OSTIR at or above FL 070	OSTIR [F070+]	TF	N
	To NOVEN	NOVEN	TF	N
	To ARTIP	ARTIP	TF	N

OLWOF 1D	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 060.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[OLWO1D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG533	GG533	TF	N
	To GG535	GG535	TF	N
	To EEL	EEL	TF	N
	To OLWOF at or above FL 060	OLWOF [F060+]	TF	N

PAM 3D	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 070. MNM required climb gradient 6.5% to FL 070 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[PAM3D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG532	GG532	TF	N
	To OSTIR at or above FL 070	OSTIR [F070+]	TF	N
	To GG528	GG528	TF	N
	To PAM	PAM	TF	N

ROLDU 2D	See paragraph 1.4.2 specific remark: 3, 6, 7. After departure climb to maintain FL 050. MNM required climb gradient 4.4% to FL 050 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[ROLD2D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG532	GG532	TF	N
	To OSTIR	OSTIR	TF	N
	To ROLDU at FL 050	ROLDU [F050]	TF	N

RUMER 3D	See paragraph 1.4.2 specific remark: 4, 6, 7. After departure climb to FL 070. MNM required climb gradient 8.0% to FL 070 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[RUME3D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG527	GG527	TF	N
	To VEROR at or above FL 070	VEROR [F070+]	TF	N
	To GG521	GG521	TF	N
	To TENLI	TENLI	TF	N
	To NIHOF	NIHOF	TF	N
	To BASGU	BASGU	TF	N
	To RUMER	RUMER	TF	N

SONEB 3D	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 070. MNM required climb gradient 8.0% to FL 070 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[SONE3D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG527	GG527	TF	N
	To VEROR at or above FL 070	VEROR [F070+]	TF	N
	To GG521	GG521	TF	N
	To TENLI	TENLI	TF	N
	To SONEB	SONEB	TF	N

SPY 2D	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 070. MNM required climb gradient 7.5% to FL 070 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[SPY2D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG530	GG530	TF	N
	To DIVPA at or above FL 070	DIVPA [F070+]	TF	N
	To SPY	SPY	TF	N

TEBRO 3D	See paragraph 1.4.2 specific remark: 5, 6, 7. After departure climb to FL 070. MNM required climb gradient 8.0% to FL 070 due to ATC restrictions.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[TEBR3D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG527	GG527	TF	N
	To VEROR at or above FL 070	VEROR [F070+]	TF	N
	To GG521	GG521	TF	N
	To TENLI	TENLI	TF	N
	To TEBRO	TEBRO	TF	N

TEMLU 3D	See paragraph 1.4.2 specific remark: 6, 7. After departure climb to FL 060.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[TEML3D]	To GG529 on course 230° MAG	GG529 [M230]	CF (EEL)	N
	To GG533	GG533	TF	N
	To GG535	GG535	TF	N
	To EEL	EEL	TF	N
	To TEMLU at or above FL 060	TEMLU [F060+]	TF	N

2 INSTRUMENT APPROACH PROCEDURES

2.1 Introduction

The arrival, instrument approach and holding procedures are based on ICAO Annex 2 and on ICAO Documents 4444-ATM/501 (PANS-ATM), 7030 (SUPPS) and 8168-OPS/611 (PANS-OPS). During initial and intermediate approach to Eelde Airport radar services may be provided by Eelde APP.

Note: in the Eelde TMA VFR flights without ATC clearance are permitted. For instrument training procedures see EHGG AD 2.22 paragraph 4.

Note: to avoid noise disturbances pilots shall adhere to the IFR approach procedures as depicted.

2.2 Arrival

2.2.1 Arrival clearance

At, or before, entering the Eelde TMA, an arrival clearance will be issued by Amsterdam ACC containing:

a. Standard arrival route[1)] or direct route.
b. Main landing runway[2)].
c. Level instructions (normally descent instructions).
d. Any other necessary instructions or information.

[1)] when cleared via a standard arrival route (STAR), the clearance limit is the initial approach fix (IAF).
[2)] issued by ATIS (see EHGG AD 2.18) or ATC.

2.2.2 Transfer from ACC to APP

Transfer to Eelde APP will normally take place when the flight is entering the Eelde TMA.

2.2.3 STARs

See chart AD 2.EHGG-STAR.

DOBAK 2G	RNAV 1 required.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[DOBA2G]	DOBAK	DOBAK	IF	N
	To HECTI	HECTI	TF	N

GRONY 2G	RNAV 1 required.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[GRON2G]	GRONY	GRONY	IF	N
	To EEL	EEL	TF	N
	To HECTI	HECTI	TF	N

KUBAT 2G	RNAV 1 required.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[KUBA2G]	KUBAT	KUBAT	IF	N
	To HECTI	HECTI	TF	N

OLWOF 1G	RNAV 1 required.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[OLWO1G]	OLWOF	OLWOF	IF	N
	To HECTI	HECTI	TF	N

OSTIR 2G	RNAV 1 required.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[OSTI2G]	OSTIR	OSTIR	IF	N
	To EEL	EEL	TF	N
	To HECTI	HECTI	TF	N

RKN 2G	RNAV 1 required.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[RKN2G]	RKN	RKN	IF	N
	To GG522	GG522	TF	N
	To GG521	GG521	TF	N
	To VEROR	VEROR	TF	N
	To EEL	EEL	TF	N
	To HECTI	HECTI	TF	N

TEMLU 2G	RNAV 1 required.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[TEML2G]	TEMLU	TEMLU	IF	N
	To HECTI	HECTI	TF	N

TENLI 2G	RNAV 1 required.			
ARINC designator	**Formal description**	**Abbreviated description**	**Expected path terminator**	**Fly-over required**
[TENL2G]	TENLI	TENLI	IF	N
	To GG522	GG522	TF	N
	To GG521	GG521	TF	N
	To VEROR	VEROR	TF	N
	To EEL	EEL	TF	N
	To HECTI	HECTI	TF	N

2.2.4 Holding

Procedure IDENT	WPT IDENT	Fly-over required	Direction MAG	Time (MIN)	Turn direction	Altitude (FT / FL)	MAX Speed (KIAS)	NAV specification
HECTI	HECTI	Y	232	1	R	2000	220	RNAV 1

2.3 Initial approach

2.3.1 General procedures

Holding and entry procedures and the calculations of the associated protected areas are in accordance with PANS-OPS Volume II, part 4. Since separation is based on the calculated areas, compliance with these in-flight procedures is essential.

2.3.2 Approach instructions

Approach instructions will contain as applicable:

a. Additional instructions with respect to clearance limit, route and level.
b. Approach procedure.
c. Runway in use[1)].
d. EAT, if holding procedures are applied.
e. QNH.
f. Transition level[1)].
g. MET information[1)].

h. Runway condition[1)].

[1)] during the hours of ATIS broadcast (see EHGG AD 2.18), item may be omitted as far as it is included in the ATIS broadcast.

2.3.3 RNAV to ILS approach procedure

An RNAV to ILS approach procedure can be initiated by ATC in order to reduce noise nuisance, fuel consumption, and to provide flexible and efficient ATC dispatch.

2.3.3.1 General

The RNAV to ILS approach procedure in the Eelde TMA is developed in accordance with ICAO PANS-OPS criteria with the following safeguards:

- The RNAV section of the inbound route is situated above MSA/MFA/MVA.
- The RNAV part is complete on entering the intermediate segment in which ILS-LOC interception takes place.
- If radar service is available the operations will be radar monitored by ATC.

2.3.3.2 Clearances and constraints

On initiative of ATC, pilots may be instructed to fly an RNAV approach procedure preceding the ILS instrument approach to RWY 23.

- This RNAV to ILS approach procedure starts at waypoint TOLKO.
- After receiving a clearance for the RNAV to ILS approach procedure the pilot is free to optimise the descent and speed within the constraints as laid down in the procedure description, with the objective to establish a low noise continuous descent approach.
- The clearance for the RNAV to ILS approach procedure includes clearance to execute the subsequent ILS instrument approach procedure.

Further details are published in paragraph 2.6.2 and on the relevant instrument approach chart AD 2.EHGG-IAC-23.2.

2.3.3.3 Aircraft requirements

For the use of the RNAV to ILS approach procedure the following requirements are applicable:

- The aircraft must be equipped with an FMS comprising a pre-loaded navigation database and a navigation display.
- The aircraft FMS must use GNSS as the primary navigation sensor.
- The operator must be approved for RNAV 1 operations by their state of registry.

2.3.3.4 Non-RNAV equipped aircraft

Pilots of aircraft that are not equipped or approved for TMA RNAV procedures, i.e. not meeting the requirements in paragraph 2.3.3.3, shall inform ATC by use of the phrase "UNABLE (designator) APPROACH DUE RNAV TYPE" if instructed to fly an RNAV approach procedure. These aircraft will be guided by vectors or will be rerouted via conventional navigation aids.

2.4 Intermediate and final approach

2.4.1 Final approach procedures

Note: an aircraft vectored to intercept final approach shall report to ATC when established on the final approach track (ICAO Doc 4444-ATM/501 (PANS-ATM) chapter 8.9.4.1).

2.4.1.1 General

In principle the final approach will be conducted on main landing RWY 23. An alternate runway can be offered in case of excessive crosswind or unserviceability of the ILS.

2.4.1.2 Instrument approaches

ILS approaches can be made to RWY 23 only. RNP approaches to LPV and LNAV minima are available for both RWY 05 and RWY 23. Instrument approaches to RWY 05 and RWY 23 can also be made with the assistance of VOR.

For the use of an RNP approach it is required that the operator holds an RNP APCH operations approval issued by their State of registry. The approval should be compliant with EASA CS-ACNS or equivalent.

2.4.1.3 Visual approach

To minimise noise nuisance, aircraft executing a visual approach shall intercept the final approach leg at an altitude of at least 1000 FT AMSL, unless residential areas can be avoided.

2.4.1.4 Circling approach

For each runway at Eelde Airport a circling approach may be allowed or offered. For OCA (OCH) see relevant instrument approach chart AD 2.EHGG-IAC-xx.x.

2.4.2 Missed approach procedure

2.4.2.1 General

All turns shall be the shortest turn and in case of a 180° turn that turn shall be to the left, unless otherwise specified below or instructed by ATC.

2.4.2.2 Missed approach procedure during instrument approach

See relevant instrument approach chart AD 2.EHGG-IAC-xx.x.

2.4.2.3 Missed approach procedure during visual approach

Turn to the intended landing runway, intercept the runway track MAG of that runway while:

a. When visual:
   - remain visual and inform ATC, or

b. When unable to remain visual:
   - climb to 2000 FT AMSL and inform ATC.

2.4.2.4 Missed approach while circling to land

Note: This procedure is different from ICAO Doc 8168 Volume I (PANS-OPS).

- Inform ATC immediately.
- Start climbing and complete the turn to the intended landing runway (see figure).
- Intercept the MAG track of that runway while climbing to 2000 FT AMSL.

Note: the indicated situation is applicable for an initial instrument approach to RWY 05. Circling approaches shall be executed south-east of the AD, unless otherwise instructed by ATC.

2.5 Communication failure

2.5.1 General

The pilot of an IFR flight shall follow the general procedures for IFR flights (see ENR 1.3 paragraph "Communication Failure"). In addition, for arriving flights, the following communication failure procedures apply.

2.5.2 Inbound clearance not received

- Proceed according the current flight plan route to the holding fix HECTI. Non-RNAV traffic proceed to HECTI via DCT EEL and EEL 052.
- Maintain the last cleared and acknowledged flight level.
- After arrival over HECTI, intercept the holding pattern.
- Commence descent to 2000 FT AMSL at or as near as possible to the ETO over HECTI.
- After reaching 2000 FT AMSL leave HECTI and carry out an instrument approach procedure to the most convenient runway (see pages AD 2.EHGG-IAC-xx.x).

2.5.3 Inbound clearance received

2.5.3.1 Traffic via standard arrival route, outside standard arrival route or vectored to final approach

- Proceed according the current flight plan route to the holding fix HECTI or OMFAR, if specified in the inbound clearance. Non-RNAV traffic proceed to HECTI via DCT EEL and EEL 052 and OMFAR via DCT EEL and EEL 229.
- Maintain the last cleared and acknowledged flight level.
- After arrival over the fix, intercept the holding pattern.
- Commence descent to 2000 FT AMSL at the EAT last received and acknowledged.
- When no EAT has been received and acknowledged, commence descent to 2000 FT AMSL at or as near as possible to the ETO over holding fix.
- After reaching 2000 FT AMSL leave the holding fix and carry out an instrument approach procedure to the appropriate runway (see AD 2.EHGG-IAC-xx.x).

2.5.3.2 Traffic inbound TOLKO or on RNAV to ILS approach

- Traffic inbound TOLKO or with clearance for the RNAV approach via TOLKO, shall proceed to TOLKO and execute the RNAV to ILS approach procedure.

2.5.3.3 Traffic inbound AMREG, IDAKA, SIPLO, TUVOX, VEXAR, XOMBI or on RNP approach

Traffic inbound an IAF or IF, or with clearance for the RNP approach to RWY 05 or RWY 23, shall proceed to this IAF or IF and execute the RNP approach procedure in accordance with the applicable instrument approach chart (see AD 2.EHGG-IAC-05.1 or AD 2.EHGG-IAC-23.3).

2.5.4 Missed approach procedure in case of communication failure

2.5.4.1 General

All turns shall be the shortest turn and in case of a 180° turn that turn shall be to the left, unless otherwise specified below or instructed by ATC.

2.5.4.2 Missed approach procedure during instrument approach

See relevant instrument approach chart AD 2.EHGG-IAC-xx.x.

2.5.4.3 Missed approach procedure during visual approach

Turn to the intended landing runway, intercept the runway track MAG of that runway while:

a. When visual:

- remain visual and execute another circuit for that runway, or

b. When unable to remain visual:

- climb to 3000 FT AMSL;
- in case a visual approach was made to RWY 05: when reaching 2000 FT AMSL turn left to intercept EEL 229 and proceed to OMFAR, or
- in case a visual approach was made to RWY 23: when reaching 2000 FT AMSL turn right to EEL. After passing EEL proceed to HECTI via EEL 052, and
- after arriving over the fix for the approach runway (OMFAR for RWY 05, HECTI for RWY 23) hold or descend to 2000 FT AMSL in an outbound turn, intercept final approach and execute the instrument approach procedure as depicted on the relevant approach chart AD 2.EHGG-IAC-xx.x.

2.5.4.4 Missed approach while circling to land

Note: This procedure is different from ICAO Doc 8168 Volume I (PANS-OPS).

- Start climbing and complete the turn to the intended landing runway (see figure).
- Intercept the MAG track of that runway while climbing to 3000 FT AMSL.
- In case a circling was made to RWY 05: when reaching 3000 FT AMSL turn left to intercept EEL 229 and proceed to OMFAR, hold or descend to 2000 FT AMSL in an outbound turn, intercept final approach and execute the instrument approach procedure again.
- In case a circling was made to RWY 23: when reaching 3000 FT AMSL turn right to EEL. After passing EEL proceed to HECTI via EEL 052, hold or descend to 2000 FT AMSL in an outbound turn, intercept final approach and execute the instrument approach procedure again.

Note: the indicated situation is applicable for an initial instrument approach to RWY 05. Circling approaches shall be executed south-east of the AD, unless otherwise instructed by ATC.

2.6 Instrument approach descriptions

2.6.1 General remarks

- Between the IAF and interception of final approach navigation is based on vectors provided by ATC, except in case of an RNAV procedure.
- The ILS RWY 23 is not equipped with markers.

2.6.2 RNAV procedures

Note: see also EHGG AD 2.22 paragraph 2.3.3.

Navigation in the initial and intermediate approach segment is primarily based on vectors provided by ATC. However, an RNAV approach procedure to RWY 23 is available. The use of the RNAV approach procedure is at ATC discretion. The procedure is only assigned in case the ILS is available. The vertical profile of the RNAV approach procedures is designed to enable a low noise continuous descent approach.

The ATC instruction "Cleared for TOLKO 2G approach RWY 23" is clearance to fly the published route and includes the clearance for the ILS instrument approach procedure to RWY 23. In this case the pilot is free to optimise the descent and speed within the constraints as laid down in the procedure description, with the objective to establish a low noise continuous descent approach.

2.6.3 Instrument approach segments

Note: recommended navaid for selection of MAG station declination only.

Note: for positions of GG-waypoints see relevant instrument approach charts.

2.6.3.1 RWY 05

2.6.3.1.1 RNP approach RWY 05

Serial number	Path descriptor	WPT IDENT	Fly-over	Course/Track °MAG / (°T)	Recom. navaid	DIST (NM)	Turn	Altitude (FT / FL)	Speed (KIAS)	VPA (°) / TCH (FT)	NAV specification
001	IF	AMREG	-	-	-	-	-	+ 3000	- 220	-	RNAV 1
002	TF	TUVOX	-	140 / (141.8)	-	4.0	-	+ 2000	- 190	-	RNAV 1
003	IF	VEXAR	-	-	-	-	-	+ 3000	- 220	-	RNAV 1
004	TF	TUVOX	-	320 / (321.8)	-	4.0	-	+ 2000	- 190	-	RNAV 1
005	IF	TUVOX	-	-	-	-	-	+ 2000	- 190	-	RNAV 1
006	TF	GG509	-	050 / (051.8)	-	4.0	-	@ 2000	-	-	RNP APCH
007	TF	THR 05	Y	050 / (051.7)	-	6.1	-	-	-	-3.00 / 50	RNP APCH
008	TF	GG751	-	050 / (051.8)	-	12.5	-	@ 2000	-	-	RNP APCH

FAS data block RWY 05

Input Data

Parameters	Values
Operation Type	0
SBAS Provider	1
Airport Identifier	EHGG
Runway	05
Runway Direction	0
Approach Performance Designator	0
Route Indicator	
Reference Path Data Selector	0
Reference Path Identifier	E05A
LTP/FTP Latitude	530639.9020N
LTP/FTP Longitude	0063339.2330E
LTP/FTP Ellipsoidal Height (metres)	45.0
FPAP Latitude	530729.8410N
Delta FPAP Latitude (seconds)	49.9390
FPAP Longitude	0063524.9590E
Delta FPAP Longitude (seconds)	105.7260
Threshold Crossing Height	50.0
TCH Units Selector	0
Glidepath Angle (degrees)	3.00
Course Width (metres)	105.00
Length Offset (metres)	0
HAL (metres)	40.0
VAL (metres)	50.0

Output Data

Data Block	10 07 07 08 05 05 00 00 01 35 30 05 3C F5 CA 16 42 CD D0 02 C2 15 26 86 01 FC 39 03 F4 01 2C 01 64 00 C8 FA 7A E6 BF 0E
Calculated CRC Value	7AE6BF0E

Additional Data	
Parameters	**Values**
ICAO Code	EH
LTP/FTP Orthometric Height (metres)	4.0

2.6.3.2 RWY 23

2.6.3.2.1 ILS approach RWY 23

Serial number	Path descriptor	WPT IDENT	Fly-over	Course/Track °MAG / (°T)	Recom. navaid	DIST (NM)	Turn	Altitude (FT / FL)	Speed (KIAS)	VPA (°) / TCH (FT)	NAV specification
001	IF	XOMBI	-	-	-	-	-	+ 3000	- 220	-	RNAV 1
002	TF	SIPLO	-	140 / (141.9)	-	4.0	-	-	- 190	-	RNAV 1
003	CF	GG512	-	230 / (231.8)	GRO	4.0	-	+ 2000	-	-	RNAV 1
004	IF	IDAKA	-	-	-	-	-	+ 3000	- 220	-	RNAV 1
005	TF	SIPLO	-	320 / (321.9)	-	4.0	-	-	- 190	-	RNAV 1
006	CF	GG512	-	230 / (231.8)	GRO	4.0	-	+ 2000	-	-	RNAV 1
007	IF	HECTI	-	-	-	-	-	-	-	-	-
008	CF	GG512	-	230 / (232.0)	GRO	2.8	-	+ 2000	-	-	-
009	CF	THR 23	Y	230 / (232.0)	GRO	6.1	-	-	-	-3.00 / 50	-
010	FM	THR 23	-	230 / (232.0)	GRO	-	-	@ 2000	-	-	-

2.6.3.2.2 RNP approach RWY 23

Serial number	Path descriptor	WPT IDENT	Fly-over	Course/Track °MAG / (°T)	Recom. navaid	DIST (NM)	Turn	Altitude (FT / FL)	Speed (KIAS)	VPA (°) / TCH (FT)	NAV specification
001	IF	XOMBI	-	-	-	-	-	+ 3000	- 220	-	RNAV 1
002	TF	SIPLO	-	140 / (141.9)	-	4.0	-	+ 2000	- 190	-	RNAV 1
003	IF	IDAKA	-	-	-	-	-	+ 3000	- 220	-	RNAV 1
004	TF	SIPLO	-	320 / (321.9)	-	4.0	-	+ 2000	- 190	-	RNAV 1
005	IF	SIPLO	-	-	-	-	-	+ 2000	- 190	-	RNAV 1
006	TF	GG512	-	230 / (231.8)	-	4.0	-	@ 2000	-	-	RNP APCH
007	TF	THR 23	Y	230 / (232.0)	-	6.1	-	-	-	-3.00 / 50	RNP APCH
008	TF	GG752	-	230 / (231.9)	-	12.5	-	@ 2000	-	-	RNP APCH

FAS data block RWY 23

Input Data

Parameters	Values
Operation Type	0
SBAS Provider	1
Airport Identifier	EHGG
Runway	23
Runway Direction	0
Approach Performance Designator	0
Route Indicator	
Reference Path Data Selector	0
Reference Path Identifier	E23A
LTP/FTP Latitude	530729.8410N
LTP/FTP Longitude	0063524.9590E
LTP/FTP Ellipsoidal Height (metres)	45.0
FPAP Latitude	530639.9020N
Delta FPAP Latitude (seconds)	-49.9390
FPAP Longitude	0063339.2330E
Delta FPAP Longitude (seconds)	-105.7260
Threshold Crossing Height	50.0
TCH Units Selector	0
Glidepath Angle (degrees)	3.00
Course Width (metres)	105.00
Length Offset (metres)	0
HAL (metres)	40.0
VAL (metres)	50.0

Output Data

Data Block	10 07 07 08 05 17 00 00 01 33 32 05 62 7B CC 16 3E 07 D4 02 C2 15 DA 79 FE 04 C6 FC F4 01 2C 01 64 00 C8 FA 7D 28 69 C8
Calculated CRC Value	7D2869C8

Additional Data	
Parameters	**Values**
ICAO Code	EH
LTP/FTP Orthometric Height (metres)	3.8

2.6.3.2.3 TOLKO 2G approach RWY 23

Serial number	Path descriptor	WPT IDENT	Fly-over	Course/Track °MAG / (°T)	Recom. navaid	DIST (NM)	Turn	Altitude (FT / FL)	Speed (KIAS)	VPA (°) / TCH (FT)	NAV specification
001	IF	TOLKO	-	-	-	-	-	+ FL 080	- 250	-	-
002	TF	GETSI	-	031 / (033.7)	-	8.5	-	-	-	-	RNAV 1

Serial number	Path descriptor	WPT IDENT	Fly-over	Course/Track °MAG / (°T)	Recom. navaid	DIST (NM)	Turn	Altitude (FT / FL)	Speed (KIAS)	VPA (°) / TCH (FT)	NAV specification
003	TF	GG740	-	062 / (063.9)	-	9.5	-	+ 3500	- 220	-	RNAV 1
004	TF	GG741	-	140 / (142.0)	-	4.0	-	-	-	-	RNAV 1
005	TF	GG742	-	200 / (202.0)	-	3.0	-	+ 2000	-	-	RNAV 1
006	CF	GG512	-	230 / (232.0)	GRO	2.0	-	@ 2000	-	-	RNAV 1
007	CF	THR 23	Y	230 / (232.0)	GRO	6.1	-	-	-	- 3.00 / 50	-
008	FM	THR 23	-	230 / (232.0)	EEL	-	-	@ 2000	-	-	-

3 LOW VISIBILITY PROCEDURES

During periods of low visibility the overall ATC capacity is reduced. To guarantee aircraft safety and optimal use of ATC capacity, Groningen Airport Eelde uses ATC low visibility procedures. These procedures are based on ICAO DOC 9476/1 (Surface Movement Guidance and Control Manual) and ECAC DOC 17 (Ground operations in limited visibility conditions).

The ATC low visibility procedures are categorised in four phases (A , B, C, and D), that are based on visibility or RVR values and ceiling. The ATC low visibility procedures become effective when the general visibility is equal to or below 2000 M, or the lowest RVR is equal to or below 1500 M.

Phase	Conditions	Procedure
A	550 M <= VIS <= 2000 M or lowest RVR <= 1500 M	No conditional clearances. No intersection departures. When RVR drops below 800 M no take-off clearance will be given.
B	Lowest RVR < 550 M and/or ceiling < 200 FT	ATC may give permission to taxi if no other aircraft is moving or expected to be moving in the manoeuvring area, unless both aircraft are continuously visible to TWR at all times.
C	Lowest RVR < 350 M	No landings allowed.
D	Lowest RVR < 200 M	Taxiing only allowed under guidance of a follow-me car.

4 TRAINING PROCEDURES

4.1 Introduction

4.1.1 General

To accommodate the conduct and to increase the amount of training flights to be handled by ATC, training areas have been established in the Eelde TMA. The upper boundary of the Eelde TMA can temporarily be changed to enlarge training areas. Assignment of the areas depends on circumstances as nature of training, aircraft performance, traffic load, pilots request etc.

Note: training and test flights including go-arounds PPR from airport manager.

Note: IFR-training flights outside operational hours Eelde Approach: PPR from ATC, TEL: +31 (0)50 309 9229.

Note: to avoid noise disturbances pilots shall adhere to the IFR and VFR approach and departure procedures and traffic circuits as depicted.

4.1.2 Training areas

Training areas are as follows:

a. *Eelde TMA area*
Within the lateral boundaries of the Eelde TMA.
b. *Training Area East*
532308.91N 0063314.06E -
along boundary of Eelde TMA -
525911.01N 0070530.46E -
532308.91N 0063314.06E.
c. *Training Area West*
525516.81N 0063236.77E -
along boundary of Eelde TMA -
531224.44N 0060933.07E -
525516.81N 0063236.77E.

4.2 Communication failure

4.2.1 General

The pilot of an IFR flight shall follow the general procedures for IFR flights (see ENR 1.3 paragraph "Communication Failure").
The instrument approach procedures from HECTI or OMFAR may be followed by a visual or circling approach to the main landing runway or if not acceptable to the most convenient runway.

4.2.2 In the Eelde TMA

In addition to the general procedures, the pilot shall:

- proceed to the fix of the main landing runway (HECTI for RWY 23, OMFAR for RWY 05).
- maintain the last cleared and acknowledged flight level or altitude.
- after arrival over the fix, intercept the holding pattern.
- commence descent to 2000 FT AMSL at the EAT last received and acknowledged.
- after reaching 2000 FT AMSL leave the holding fix and carry out an instrument approach procedure to the appropriate runway (see AD 2.EHGG-IAC-xx.x).

4.2.3 In Training Area East

In addition to the general procedures, the pilot shall:

- proceed to the holding fix HECTI.
- maintain the last cleared and acknowledged flight level or altitude.
- after arrival over HECTI, intercept the holding pattern.
- commence descent to 2000 FT AMSL at the EAT last received and acknowledged.
- after reaching 2000 FT AMSL leave HECTI and carry out an instrument approach procedure to RWY 23 (see AD 2.EHGG-IAC-xx.x).

4.2.4 In Training Area West

In addition to the general procedures, the pilot shall:

- proceed to the holding fix OMFAR.
- maintain the last cleared and acknowledged flight level or altitude.
- after arrival over OMFAR, intercept the holding pattern.
- commence descent to 2000 FT AMSL at the EAT last received and acknowledged.
- after reaching 2000 FT AMSL leave OMFAR and carry out an instrument approach procedure to RWY 05 (see AD 2.EHGG-IAC-xx.x).

4.2.5 Traffic vectored to final approach

In addition to the general procedures, the pilot shall:

- maintain the last cleared and acknowledged level or altitude.
- proceed to the fix of the assigned landing runway (HECTI for RWY 23 and OMFAR for RWY 05).
- after arrival over the fix, descend to 2000 FT AMSL, if applicable.
- after reaching 2000 FT, leave the fix and carry out an instrument approach procedure to the appropriate runway (see AD 2.EHGG-IAC-xx.x).

5 VFR FLIGHT PROCEDURES AND REGULATIONS

Note: for visual approach chart and visual traffic circuits see AD 2.EHGG-VAC.1 and AD 2.EHGG-VAC.2.

5.1 General

1. All VFR flights within the Eelde CTR shall submit a flight plan (see ENR 1.10).
2. Eelde CTR has been designated as controlled airspace (class C).
3. Flights within the Eelde CTR should maintain two-way radio communication with Eelde TWR, unless they have been exempted by ATS Eelde. This exemption will only be granted in extraordinary circumstances.
4. Prior permission is required from Eelde TWR for all VFR operations in the CTR.
5. All aircraft performing VFR flights in the Eelde CTR must show their landing lights.
6. All VFR flights conducted within the Eelde CTR shall be executed at or below 1500 FT AMSL.
7. VFR flights shall be carried out via the arrival/departure routes unless otherwise instructed by ATC or on pilots request.
8. To avoid noise disturbances pilots shall adhere to the VFR approach and departure procedures and traffic circuits as depicted.
9. Built-up areas shall be avoided as much as possible.
10. Marked areas shall be avoided.
11. IFR area: VFR flights within the CTR may be instructed by ATC to stay clear of this area. The IFR area is indicated on the chart (see AD 2.EHGG-VAC.1).
12. Pilots are urgently requested not to execute VFR flights in the vicinity of the published instrument arrival and departure routes within the Eelde TMA, which are published in EHGG AD 2.24.
13. Training and test flights including missed approaches PPR from airport manager.
14. VFR reporting points positions:

VFR reporting point	Position
NOVEMBER	531003N 0063523E
PAPA	530927N 0063213E
ROMEO	530034N 0063608E
TANGO	530446N 0063745E
UNIFORM	530108N 0063248E
VICTOR	530449N 0063610E
X-RAY	531235N 0062736E
YANKEE	531414N 0063905E

Note: all VFR flights transiting the Eelde TMA are urgently requested to contact Eelde APP; MON-FRI on 120.305 and SAT-SUN on 118.705.

5.2 Visual departure procedures

1. Pilots must have obtained start-up clearance from ATC before starting engines. A request for start-up shall be made to Eelde Delivery, clearance for start-up will either be issued immediately or at a specified time depending on traffic. A request for start-up includes:
   - aircraft identification and type (e.g. PHJUR Cessna 172).
   - position (e.g. in front of tower).
   - flight rules (e.g. VFR).
   - destination (e.g. Rotterdam).
   - ATIS information (e.g. information E).
   - request start-up (request start-up).
2. Taxiing on taxiways: pilots of aircraft intending to taxi on the taxiways shall obtain a clearance from Eelde TWR.

3. Unless otherwise instructed or approved climb after take-off to 1000 FT AMSL.
4. Make the shortest turn to join the instructed departure at or before PAPA or VICTOR.
5. Cross PAPA or VICTOR at 1000 FT AMSL and maintain 1000 FT AMSL until outside CTR.
6. Report PAPA and VICTOR on ATC request.
7. Report leaving the CTR over the designated reporting point.

Note: when joining UNIFORM Departure, the railway Groningen/Assen via Haren, Glimmen and Tynaarlo shall not be crossed (see also Caution in chart AD 2.EHGG-VAC.1).

5.3 Visual approach procedures

1. Contact Eelde TWR 2 minutes before reaching the CTR boundary for permission to enter the CTR.
2. Unless otherwise instructed, enter the CTR at 1500 FT AMSL and maintain.
3. Descend to circuit altitude and join the circuit as instructed by ATC.

   Note: unless otherwise instructed the circuit altitude is 1000 FT for light propeller aircraft (no turboprop) with MAX AUW of 6000 KG, and 1500 FT for jet, turboprop and other aircraft (with MAX AUW > 6000 KG).

4. In case of missed approach climb straight ahead to MAX 1000 FT AMSL and inform ATC.

5.4 VFR traffic circuits

5.4.1 General

1. Report downwind and intentions (e.g. ‘touch-and-go’, ‘full-stop’ or ‘practice go-around’).
2. ATC will issue a sequence number and traffic to follow. Do not turn base before the traffic to follow or before receiving a sequence number.
3. After receiving your sequence number, turn base and final at own discretion.
4. Reporting final is compulsory when no landing clearance is received.
5. In case of missed approach: inform ATC immediately while climbing to the published circuit altitude.

Note: the circuit may be extended at ATC discretion and/or altitudes of 500 FT or 1500 FT AMSL may be issued.

5.4.2 RWY 05

For light propeller aircraft (no turboprop, MAX AUW 6000 KG):

- Righthand circuit at 1000 FT AMSL.
- Aim for landing abeam or beyond intersection S3, unless an extended downwind is flown.
- Pilots should not vacate via TWY C.

For other aircraft:

- Righthand circuit at 1500 FT AMSL.
- At 500 FT AMSL turn left to track 048° MAG.
- When abeam orange circuitmarker turn right to join the circuit.

Traffic inbound via Y and N should expect a lefthand circuit.

5.4.3 RWY 23

For light propeller aircraft (no turboprop, MAX AUW 6000 KG):

- Lefthand circuit at 1000 FT AMSL.

For other aircraft:

- Lefthand circuit at 1500 FT AMSL.
- Turn to final beyond the orange circuitmarker.

Traffic shall not execute a threshold baseleg for the righthand circuit.

5.5 Communication failure procedures

5.5.1 General

Select SSR code 7600.

5.5.2 VFR outbound

In case of communication failure adhere to the departure instructions. If the departure instructions contain a clearance limit in the CTR, act in accordance with paragraph 5.5.4.

5.5.3 VFR inbound

5.5.3.1 Via ROMEO Arrival

a. In case of communication failure before joining the circuit leave the CTR according to the UNIFORM Departure and divert to an appropriate aerodrome.
b. In case of communication failure over or after a position from where to join the circuit (this is past the compulsory reporting point TANGO or OVERHEAD) execute a circuit for the last received and acknowledged runway as short as practicable. Make a full stop landing and vacate as soon as possible. In case of go-around execute a similar circuit (be aware of the fact that your flightpath could interfere with the flightpath of other aerodrome traffic).

5.5.3.2 Via YANKEE Arrival

a. In case of communication failure before joining the circuit leave the CTR according to the X-RAY Departure and divert to an appropriate aerodrome.
b. In case of communication failure over or after a position from where to join the circuit (this is past compulsory reporting point NOVEMBER or OVERHEAD) act in accordance with paragraph 5.5.3.1 item b.

5.5.3.3 Via a different route to the field

a. In case of communication failure before joining the circuit act in accordance with paragraph 5.5.4.
b. In case of communication failure over or after a position from where to join the circuit act in accordance with paragraph 5.5.3.1 item b.

5.5.4 VFR crossing the CTR

In case of communication failure leave the CTR via the shortest route, maintain altitude until outside the CTR, do not cross runway centre line 05/23 or IFR area and proceed to an appropriate aerodrome.

EHGG AD 2.23 ADDITIONAL INFORMATION

1 CAUTIONS AND ADDITIONAL INFORMATION

1. For details of the low flying areas see ENR 5.1 and ENR 5.2.
2. Parachute jumping may take place as stated in ENR 5.5 and/or as promulgated by NOTAM.
3. When approaching RWY 23 possible sun reflection and glare caused by solar panels right of the runway; especially in the period MAR-APR and SEP-OCT during the evening.
4. Pilots shall be aware that in the vicinity of the aerodrome ATC gives priority to:
   - aircraft in state of an emergency;
   - hospital and police aircraft with the status priority or scramble;
   - aircraft engaged in SAR operations.
5. Grass cutting will take place at irregular times.

2 RUNWAY TURNPAD

A runway turnpad is situated at the end of RWY 23. This turnpad shall be used by aircraft with wingspan > 24 M in case of:

- full-length take-off RWY 05;
- landing RWY 23 and missing exit TWY C;
- rejected take-off RWY 23 and missing exit TWY C.

Note: the runway turnpad centre line marking and lighting is not fully compliant to EASA regulation. Aircraft using the turnpad shall disregard the turnpad centre line marking and lighting. Turning on the turnpad is at own discretion.

3 GROUND HANDLING COMPANIES

- **Full service handling agent** (all ACFT types). Handling passengers, cargo and general aviation; cargo facilities AVBL O/R.
  Post: Groningen Airport Eelde Handling
  Tel: +31 (0)50 309 5433
  Email: dispatch@gae.nl
  SITA: GRQAPXH

  Note: Groningen Handling 131.580
- **Fixed base operator** (handling general aviation aircraft MAX wingspan 24 M):
  Post: Ground Ace
  Tel: +31 (0)50 308 0075
  Fax: +31 (0)50 308 0076
  Email: info@groundace.eu

EHGG AD 2.24 CHARTS RELATED TO AN AERODROME

PHYSICAL CHARACTERISTICS				
RWY	DIRECTION	BEARING STRENGTH	SURFACE	THR COORDINATES
05	050°	PCN 62/F/B/W/T	ASPH	530640N 0063339E
23	230°	PCN 62/F/B/W/T	ASPH	530730N 0063525E

AD ELEV 18

TWR	118.705	Eelde
	119.705	Tower
	121.705	Eelde Delivery
ATIS	133.555	Eelde Information

VAR 2° E (2020)

ANNUAL RATE OF CHANGE 10' E

DIRECTIONS ARE MAGNETIC
ELEVATIONS IN FEET AMSL
DIMENSIONS IN METRES

LEGEND

- ATC SERVICE BDRY
- SAFETY LINE IN CASE OF CODE E ACFT
- RWY HOLDING POSITION MARKING PATTERN A
- S1 RWY HOLDING POSITION NAME
- RWY GUARD LIGHTS
- 36 MAX WING SPAN
- HOLDING POINT

SCALE 1 : 12 500

metres 0 100 200 300 400 500
feet 0 500 1000 1500

Inset

PRECISION APPROACH LIGHTING SYSTEM CAT I

HANGARS
L-APRON
ACL: APRON 13
HANGAR
TWR 103
FIRE STATION
K-APRON
A-APRON
J-APRON
HANGARS
SOLAR FARM
SOLAR FARM
RWY 05/23
A11 A12 A13 A14 A15
See Inset
PRECISION APPROACH LIGHTING SYSTEM CAT I
See Inset
Engine test platform
ARP 530730N 0063500E
VDF
CWY
THR ELEV 13 FT
GUND 135 FT
Anemometer
SOLAR FARM
GP 333.800
PAPI
2500 x 45 M
RWY 05/23
2620 x 300 M
EELDE / GRO (109.900) / CH36X 530720N 0063515E 0

Inset

K APRON
J APRON

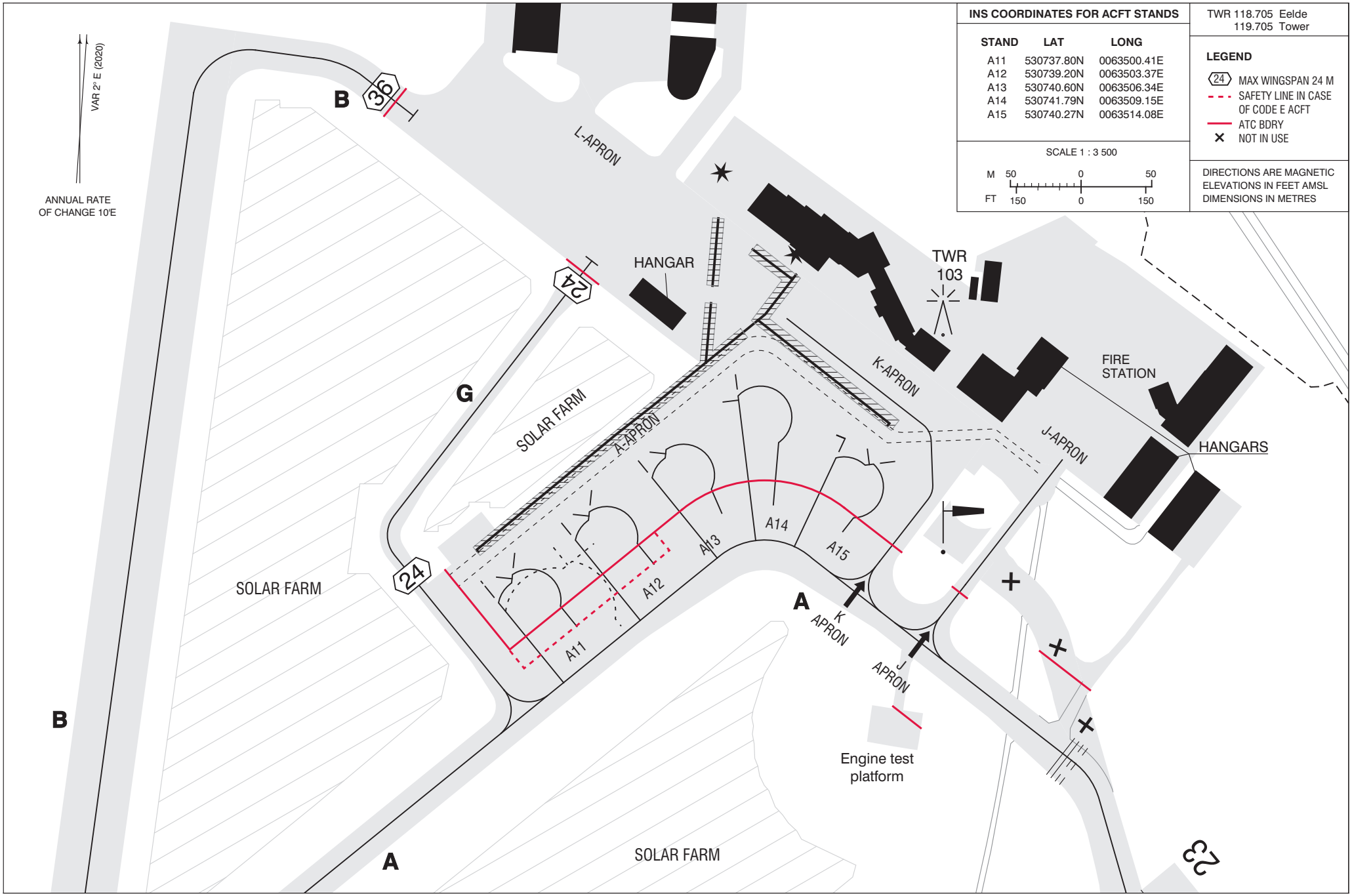
HOTSPOT
CAUTION:
DO NOT CROSS
THE HOLDING POSITION
MARKING WITHOUT
A CLEARANCE

Inset

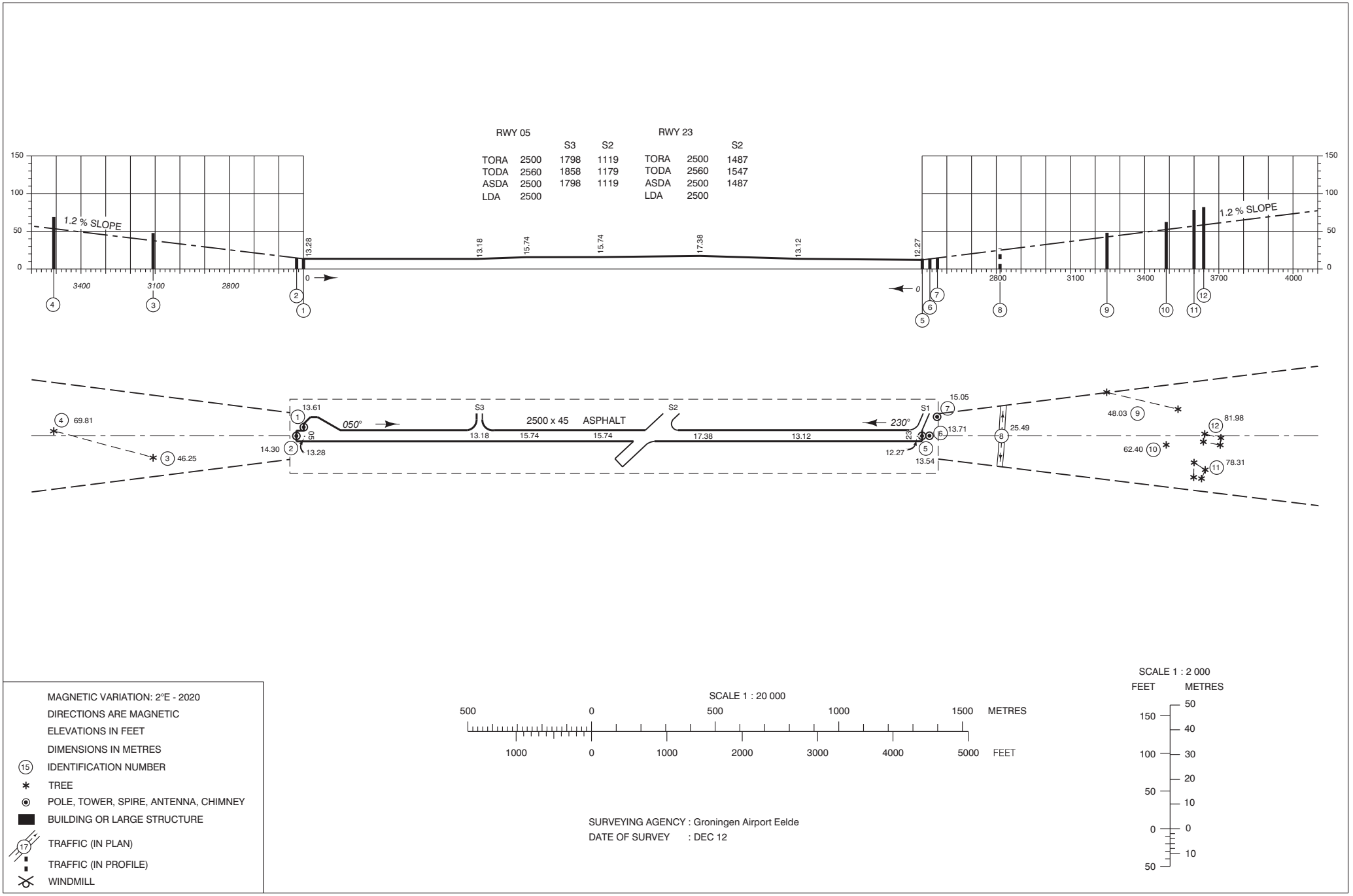
SIMPLE APPROACH LIGHTING SYSTEM
CWY
LOC GRO 109.900

Anemometer
PAPI
See Inset
THR ELEV 13 FT
GUND 135 FT

CHANGE: Firestation and hangars; editorial.

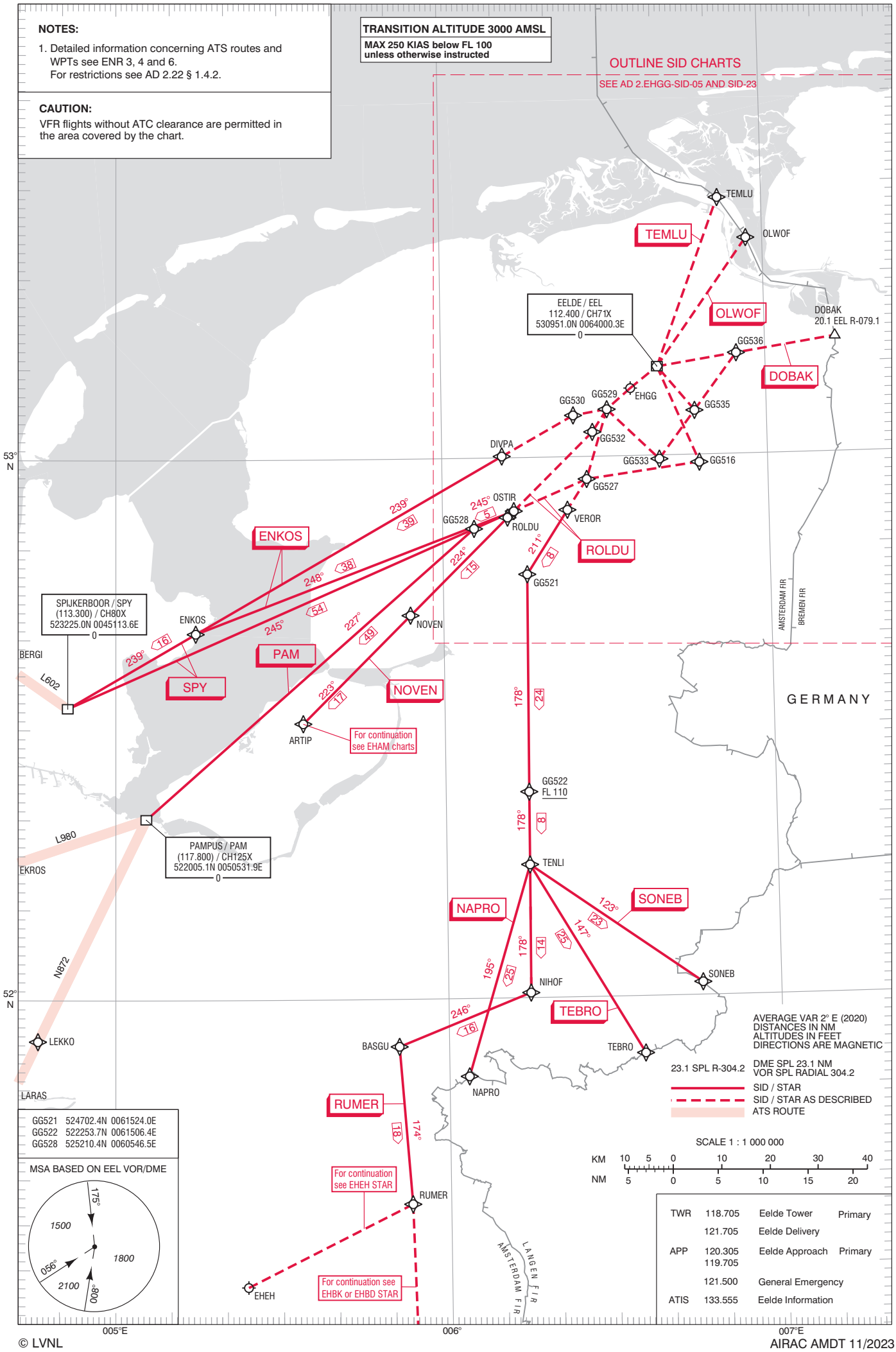


CHANGE: Firestation and hangars;editorial.

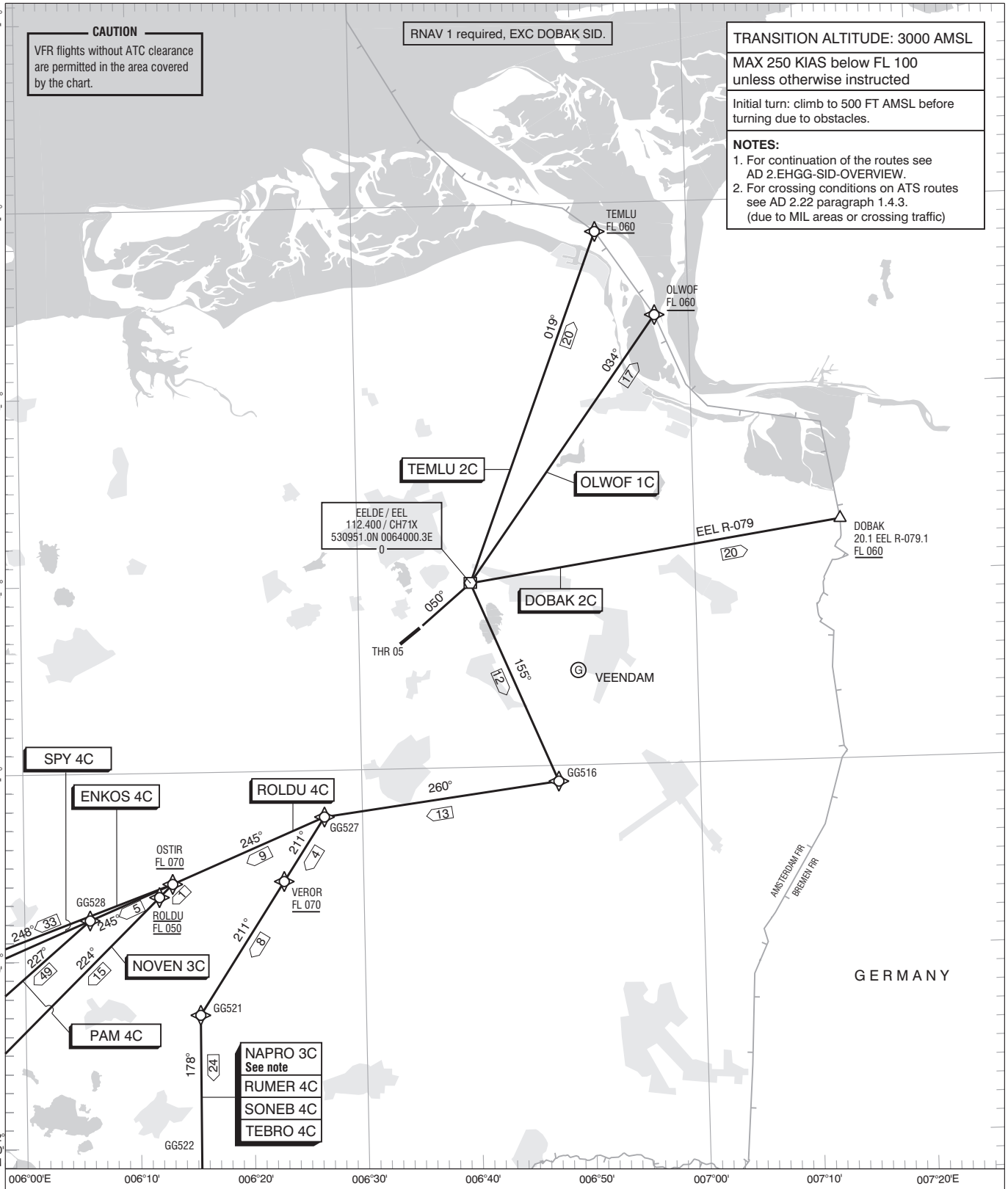


MAGNETIC VARIATION: 2°E - 2020
DIRECTIONS ARE MAGNETIC
ELEVATIONS IN FEET
DIMENSIONS IN METRES
(15) IDENTIFICATION NUMBER
TREE
POLE, TOWER, SPIRE, ANTENNA, CHIMNEY
BUILDING OR LARGE STRUCTURE
TRAFFIC (IN PLAN)
TRAFFIC (IN PROFILE)
WINDMILL

CHANGE: editorial.



CHANGE: coordinate DME PAM; editorial.



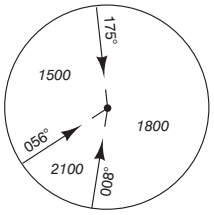
SCALE 1 : 550 000

KM 5 0 5 10 15 20
NM 2 1 0 2 4 6 8 10

THR 05	530639.9N	0063339.2E
GG516	525909.2N	0064726.5E
GG521	524702.4N	0061524.0E
GG522	522253.7N	0061506.3E
GG527	525730.6N	0062638.1E
GG528	525210.4N	0060546.5E

TWR	118.705	Eelde Tower	Primary
	121.705	Eelde Delivery	
APP	120.305	Eelde	Primary
	119.705	Approach	
	121.500	General Emergency	
ATIS	133.555	Eelde Information	

MSA BASED ON EEL VOR/DME

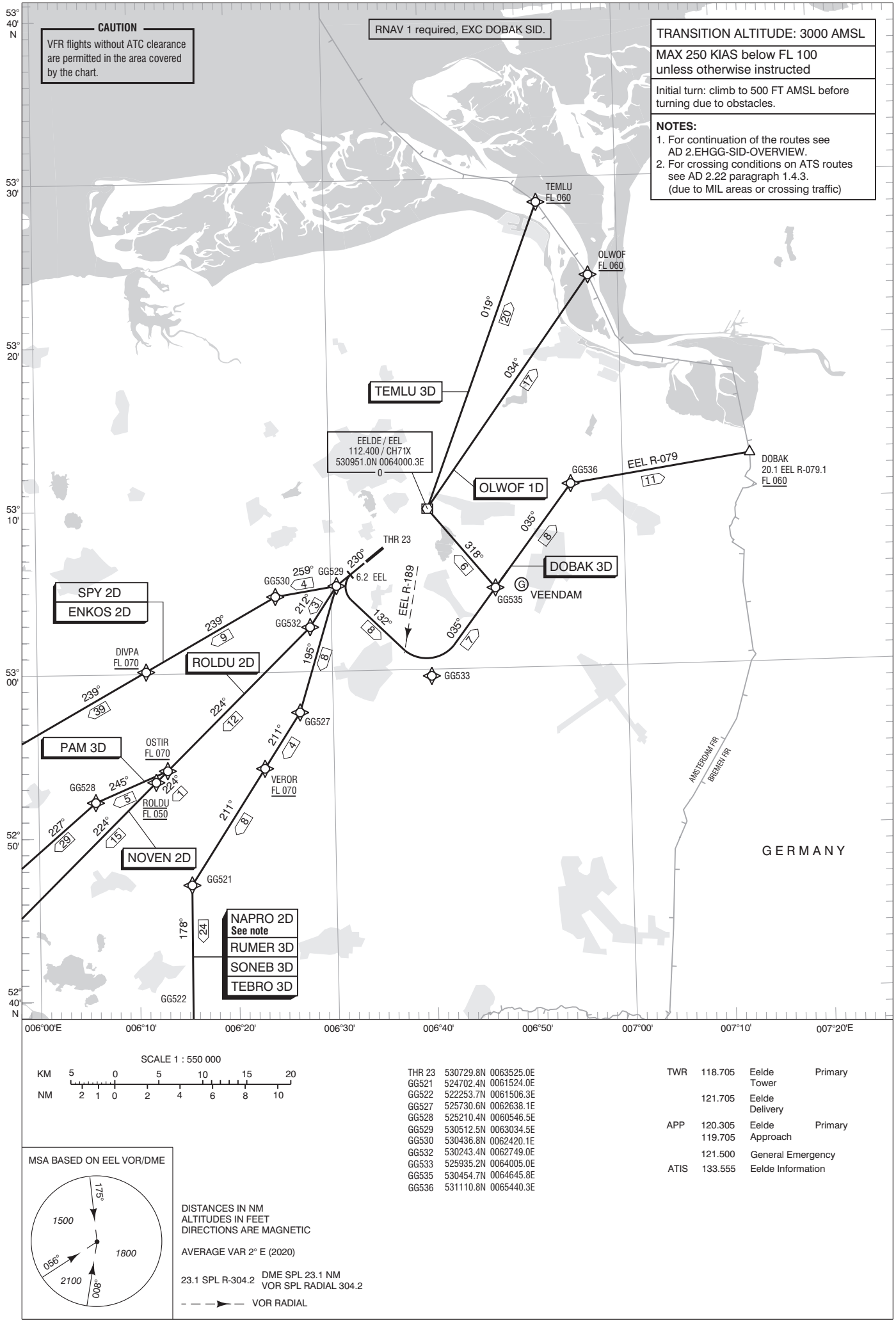


DISTANCES IN NM
ALTITUDES IN FEET
DIRECTIONS ARE MAGNETIC

AVERAGE VAR 2° E (2020)

23.1 SPL R-304.2 DME SPL 23.1 NM
VOR SPL RADIAL 304.2

CHANGE: SID designators; editorial.



THR 23	530729.8N	0063525.0E
GG521	524702.4N	0061524.0E
GG522	522253.7N	0061506.3E
GG527	525730.6N	0062638.1E
GG528	525210.4N	0060546.5E
GG529	530512.5N	0063034.5E
GG530	530436.8N	0062420.1E
GG532	530243.4N	0062749.0E
GG533	525935.2N	0064005.0E
GG535	530454.7N	0064645.8E
GG536	531110.8N	0065440.3E

TWR	118.705	Eelde Tower	Primary
	121.705	Eelde Delivery	
APP	120.305	Eelde	Primary
	119.705	Approach	
	121.500	General Emergency	
ATIS	133.555	Eelde Information	

CHANGE: SID designators; editorial.

NOTES:
1. Detailed information concerning ATS routes and WPTs see ENR 3, 4 and 6.
2. When TOLKO approach is used, expect DCT TOLKO.

3. COMMUNICATION FAILURE:
See EHGG AD 2.22 and the information given on the relevant instrument approach chart.

CAUTION:
VFR flights without ATC clearance are permitted in the area covered by the chart.

TRANSITION LEVEL BY ATC
TRANSITION ALTITUDE 3000 AMSL
MAX 250 KIAS below FL 100 unless otherwise instructed

RNAV 1 required

APP	120.305	Eelde Approach	Primary
TWR	118.705	Eelde	Primary
	119.705	Tower	
	121.500	General Emergency	
ATIS	133.555	Eelde Information	

TEMLU
TEMLU 2G
OLWOF
OLWOF 1G
KUBAT
KUBAT 2G
DOBAK 2G
DOBAK
20.1 EEL R-079.1
EELDE / EEL
112.400 / CH71X
530951.0N 0064000.3E
0
IAF
HECTI
5.3 EEL R-052.0
656
GRONY 2G
GRONY
IAF
TOLKO
ATC DISCRETION
N873
SPYKERBOOR
DME
OMFAR
12.6 EEL
R-228.8
EHGG
ATC DISCRETION
2000
1 MIN
MAX 175 KIAS
ATC DISCRETION
MAX 220 KIAS
OSTIR
OSTIR 2G
VEROR
1036
GG521
RKN 2G
TENLI 2G
GG522
TENLI
REKKEN
DME
AMSTERDAM FIR
BREMEN FIR
GERMANY
EHTRA15
FL 195
FL 065
EHTRA15A
FL 315
FL 195
EHTRA15A
EHTRA15

MSA BASED ON EEL VOR/DME
175°
1500
1800
056°
2100
308°

SCALE 1 : 500 000
KM 5 0 5 10 15 20
NM 2 1 0 2 4 6 8 10

AVERAGE VAR 2° E (2020)
DISTANCES IN NM
ALTITUDES IN FEET
DIRECTIONS ARE MAGNETIC
23.1 SPL R-304.2
DME SPL 23.1 NM
VOR SPL RADIAL 304.2
SID / STAR
SID / STAR AS DESCRIBED
ATS ROUTE

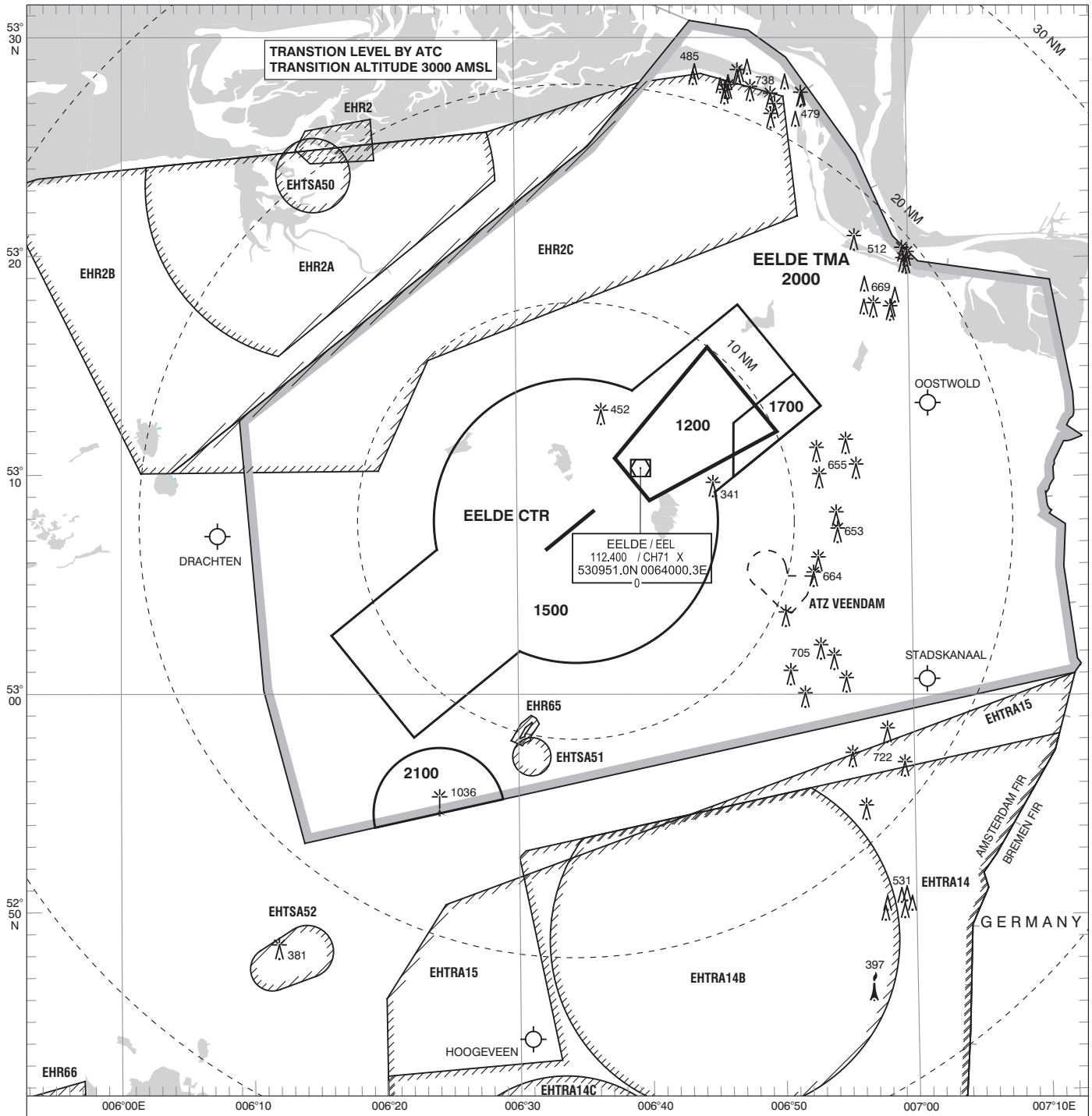
GG521 524702.4N 0061524.0E
GG522 522253.7N 0061506.4E

CHANGE: EHTRA15; EHTRA15A added; editorial.

53° 30' N
53° 20'
53° 10'
53° 00'
52° 50'
52° 40'
52° 30' N
52° 20'
006°00'E
006°10'
006°20'
006°30'
006°40'
006°50'
007°00'
007°10'E

GRONINGEN/Eelde
ATC SURVEILLANCE MINIMUM ALTITUDE CHART

AD ELEV 18



SCALE 1 : 500 000

KM 5 0 5 10 15 20
NM 2 1 0 2 4 6 8 10

APP	120.305	Eelde Approach
TWR	118.705	Eelde Tower
	119.705	
	121.500	General Emergency
ATIS	133.555	Eelde Information

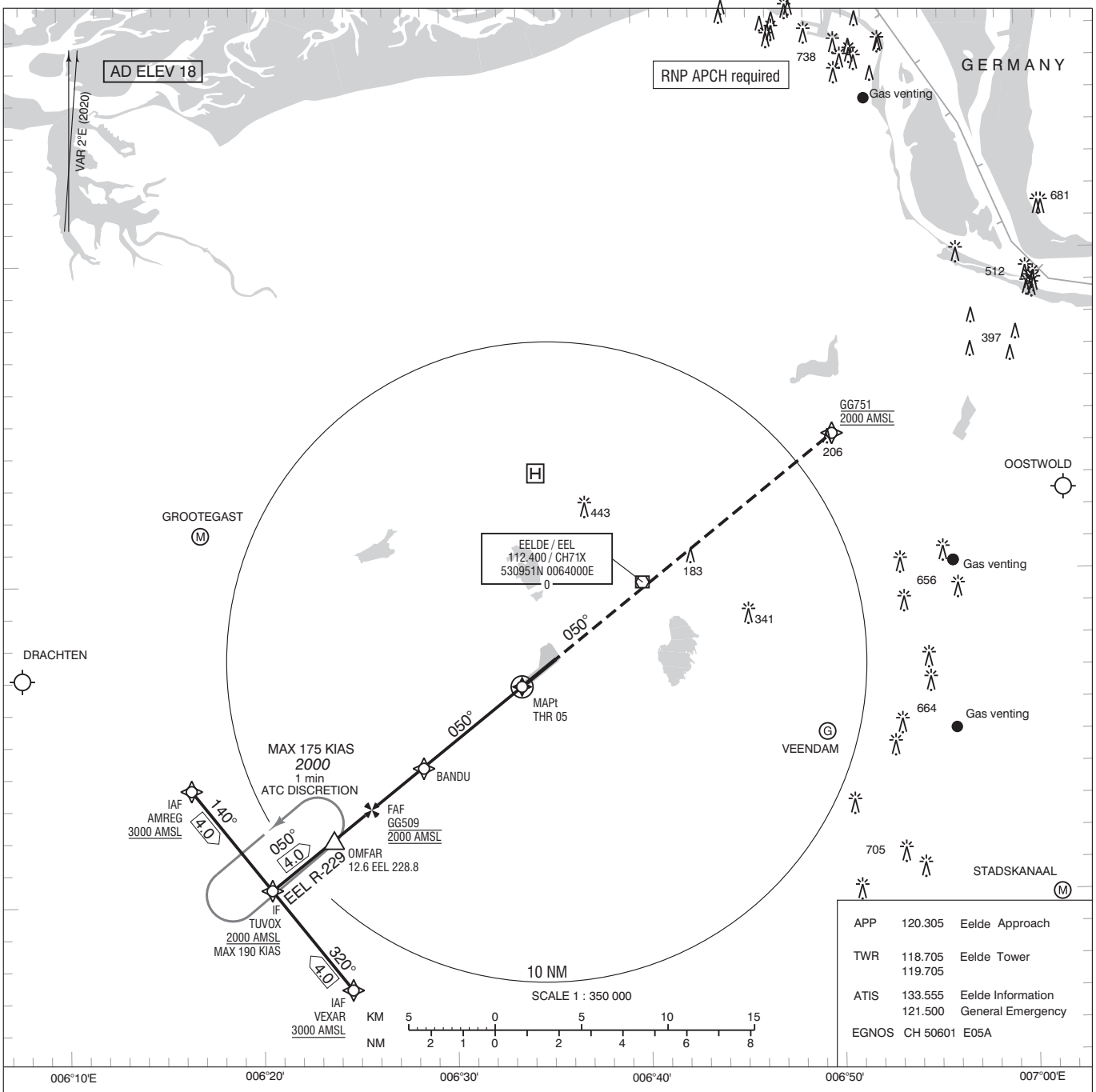
AVERAGE VAR 2°E (2020)
ALTITUDES IN FEET AMSL
DISTANCES IN NM
DIRECTIONS ARE MAGNETIC

Final approach vectoring area (FAVA)
Minimum vectoring altitude sector (MVA)

NOTES:

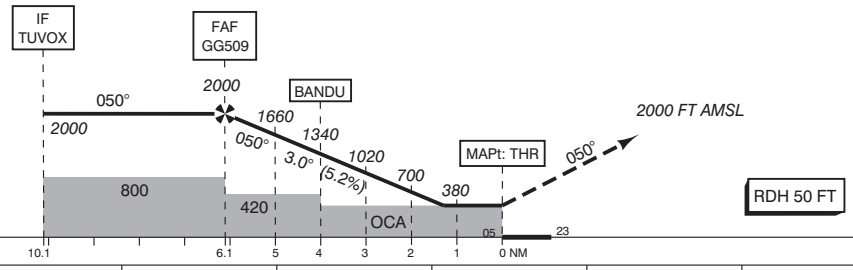
1. This chart may only be used for cross-checking of altitudes, assigned while the aircraft is identified by the responsible ATC unit.
2. Aeronautical data and minimum vectoring altitudes are provided only within the relevant CTR and TMA.
3. Only significant obstacles, aerodromes and prohibited, restricted and danger areas in the Amsterdam FIR are shown.
4. Temperature correction: when TEMP below -10°C add 200 FT, at or below -19°C add 300 FT to published altitudes.
5. A descent clearance to the FAVA will only be issued when the aircraft is established on the ILS final approach track, or on an intercept of 30 degrees or less.
6. In case of a communication failure, execute the COM failure procedure of the last assigned approach.

CHANGE: EHTRA15; editorial



1. Missed Approach:
   - Track 050° MAG and climb to 2000 FT AMSL. Inform ATC.
2. Missed Approach in case of communication failure:
   - Track 050° MAG and climb to 3000 FT AMSL;
   - When reaching 3000 FT AMSL turn left to intercept EEL R-229 and proceed to OMFAR;
   - After arriving over OMFAR hold or descend to 2000 FT AMSL in an outbound turn, intercept final approach and execute the instrument approach procedure again.

TRANSITION LEVEL BY ATC
TRANSITON ALTITUDE 3000 FT AMSL



GS IN KT	60	80	100	120	140	160	180
VERTICAL SPEED	320 FT/MIN	425 FT/MIN	530 FT/MIN	635 FT/MIN	745 FT/MIN	850 FT/MIN	955 FT/MIN

OCA *(OCH)* ELEV THR 05: 13.3 FT

ACFT CAT	LPV	LNAV/VNAV MNM TEMP -15°C	LNAV	CIRCLING*
A	313 *(300)*	320 *(307)*	440 *(422)*	450 *(432)*
B	313 *(300)*	320 *(307)*		520 *(502)*
C	313 *(300)*	320 *(307)*		620 *(602)*
D	313 *(300)*	320 *(307)*		850 *(832)*

THR 05 530639.9N 0063339.2E
GG509 530254.5N 0062543.8E
GG751 531421.5N 0065000.6E

CEILING AND VISIBILITY MINIMA

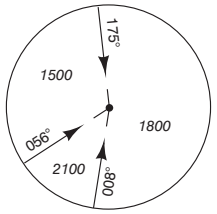
TAKE-OFF	DAY:	NIGHT:	
LANDING	DAY:	NIGHT:	NA

NA

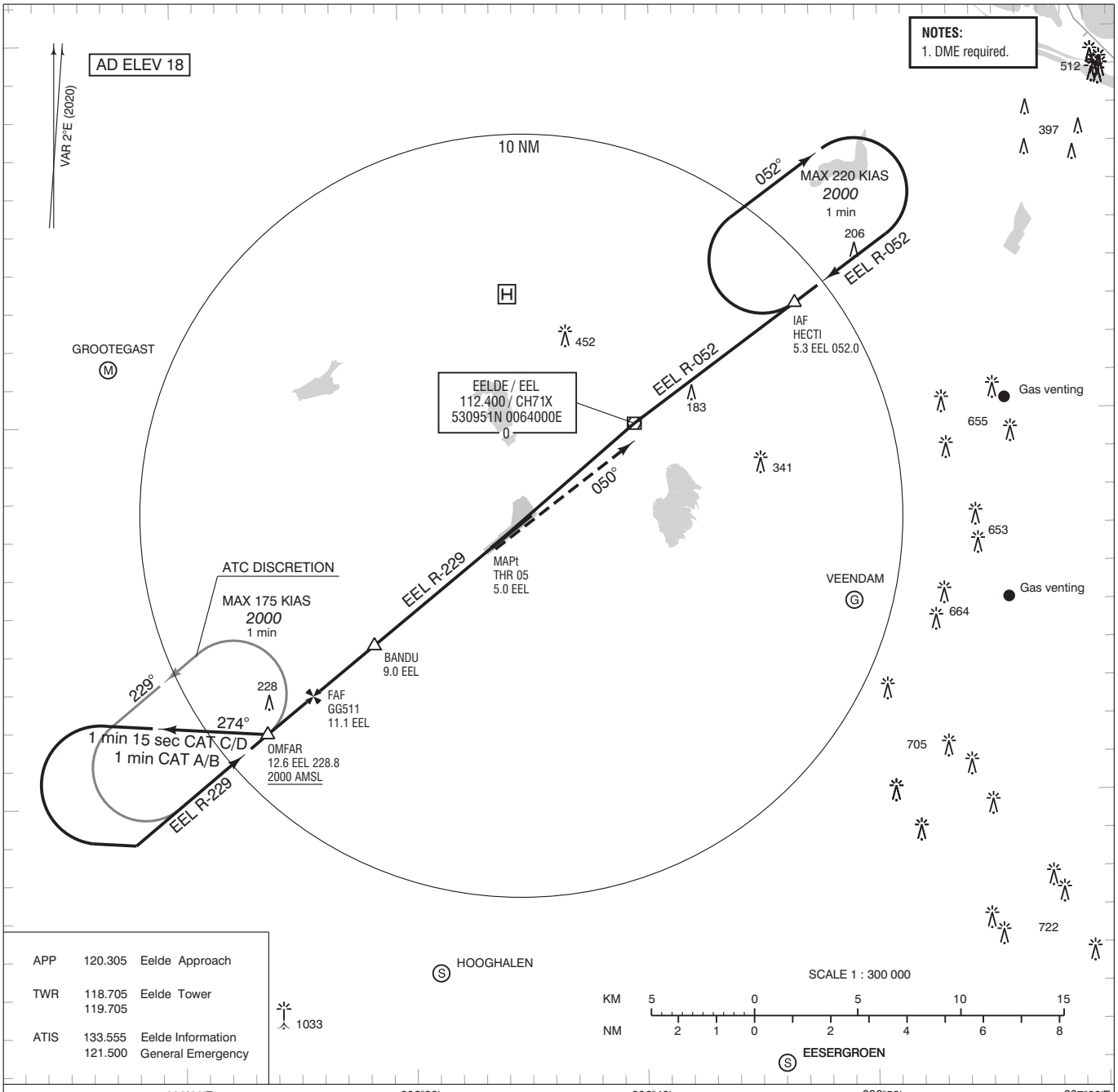
* Circling approaches shall be executed south-east of the AD, unless otherwise instructed by ATC.

DIRECTIONS ARE MAGNETIC
DISTANCES IN NM
ALTITUDES AND ELEVATIONS IN FEET

MSA BASED ON EEL VOR/DME

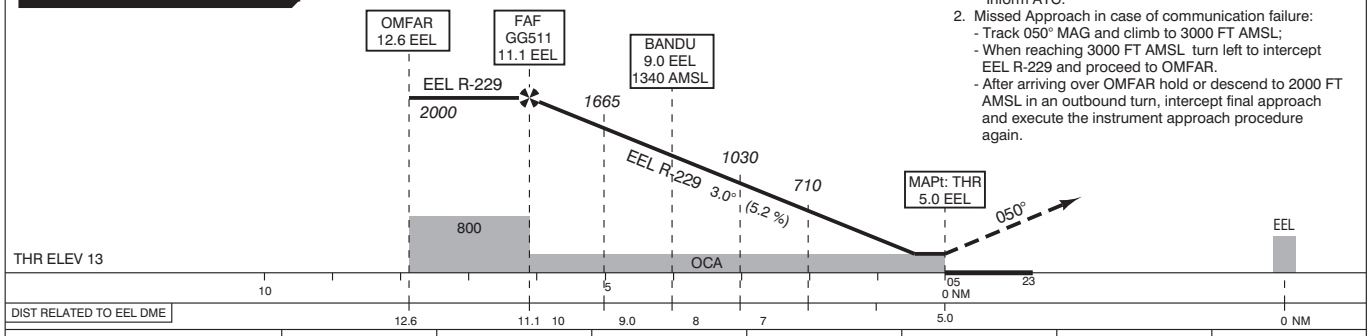


CHANGE: editorial.



APP	120.305	Eelde Approach
TWR	118.705 119.705	Eelde Tower
ATIS	133.555 121.500	Eelde Information General Emergency

TRANSITION LEVEL BY ATC
TRANSITION ALTITUDE 3000 FT AMSL



1. Missed Approach:
   - Track 050° MAG and climb to 2000 FT AMSL. Inform ATC.
2. Missed Approach in case of communication failure:
   - Track 050° MAG and climb to 3000 FT AMSL;
   - When reaching 3000 FT AMSL turn left to intercept EEL R-229 and proceed to OMFAR.
   - After arriving over OMFAR hold or descend to 2000 FT AMSL in an outbound turn, intercept final approach and execute the instrument approach procedure again.

GS IN KT	60	80	100	120	140	160	180
VERTICAL SPEED	320 FT/MIN	425 FT/MIN	530 FT/MIN	635 FT/MIN	745 FT/MIN	850 FT/MIN	955 FT/MIN

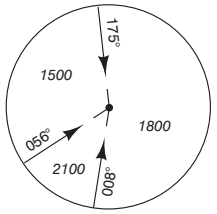
OCA *(OCH)* ELEV THR 05: 13.3 FT

ACFT CAT	VOR MAPt: THR	CIRCLING*
A	440 *(422)*	450 *(432)*
B		520 *(502)*
C		620 *(602)*
D		850 *(832)*

* Circling approaches shall be executed south-east of the AD, unless otherwise instructed by ATC.

THR 05	530639.9N	0063339.2E
GG511	530252.1N	0062546.7E

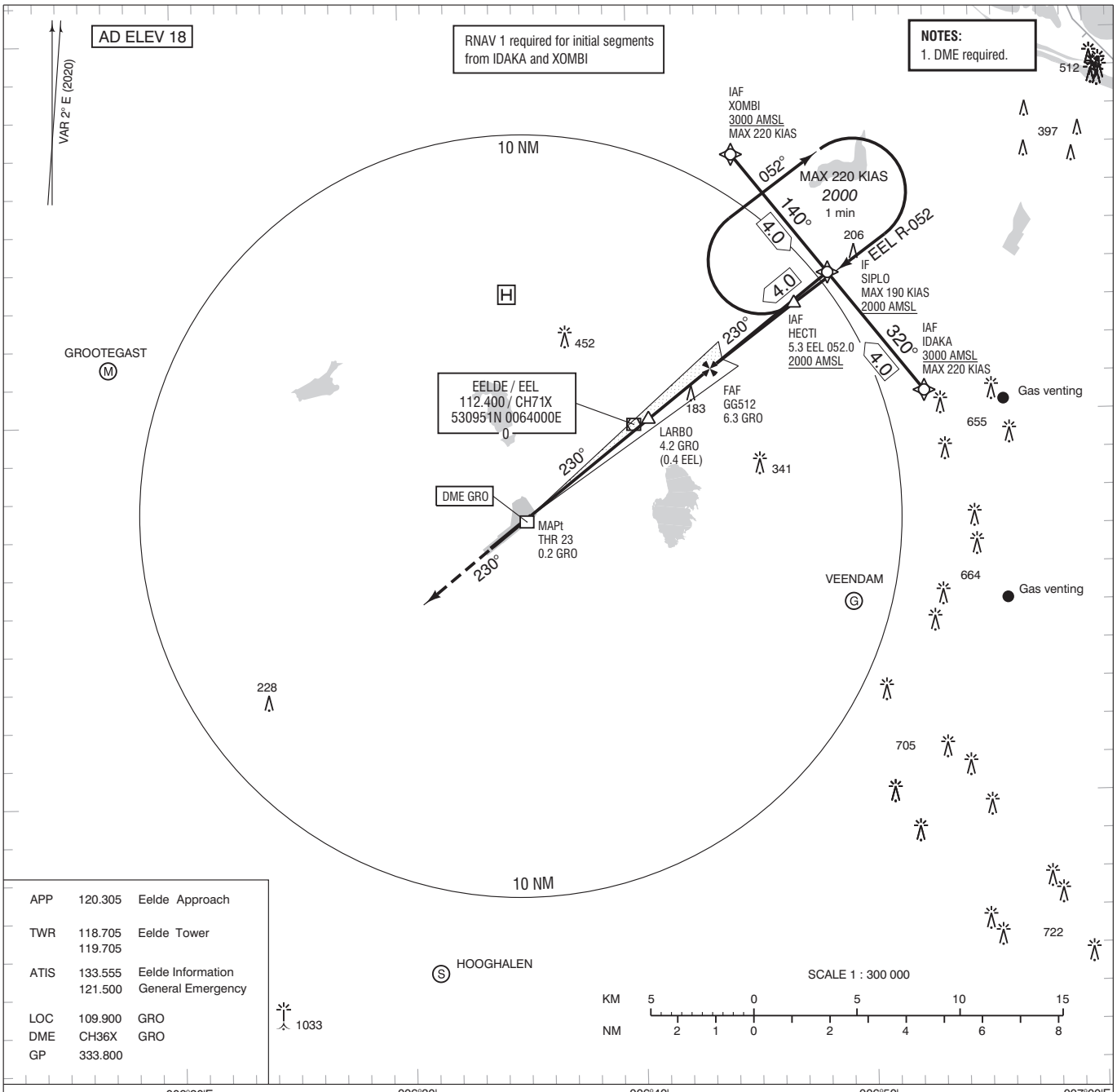
MSA BASED ON EEL VOR/DME



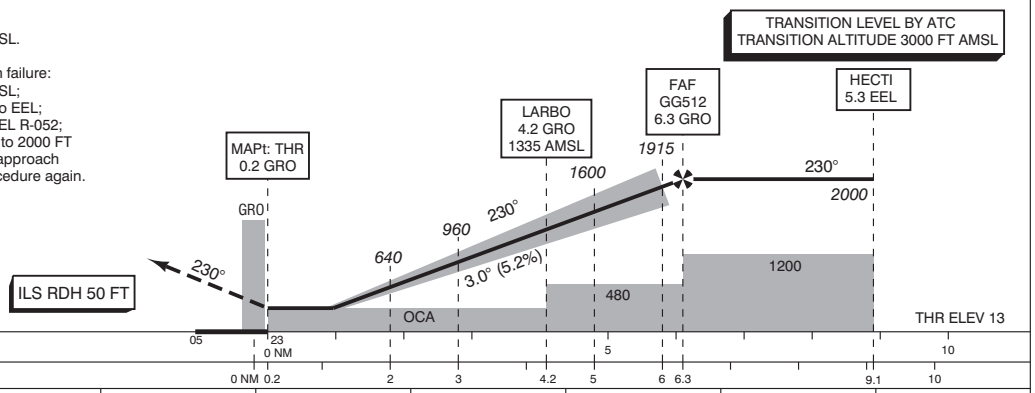
CEILING AND VISIBILITY MINIMA			
TAKE-OFF	DAY:	NIGHT:	
LANDING	DAY: NA	NIGHT: NA	

DIRECTIONS ARE MAGNETIC
DISTANCES IN NM
ALTITUDES AND ELEVATIONS IN FEET

CHANGE: editorial.



1. Missed Approach:
   - Track 230° MAG and climb to 2000 FT AMSL. Inform ATC.
2. Missed Approach in case of communication failure:
   - Track 230° MAG and climb to 3000 FT AMSL;
   - When reaching 3000 FT AMSL turn right to EEL;
   - After passing EEL proceed to HECTI via EEL R-052;
   - After arriving over HECTI hold or descend to 2000 FT AMSL in an outbound turn, intercept final approach and execute the instrument approach procedure again.



GS IN KT	60	80	100	120	140	160	180
VERTICAL SPEED	320 FT/MIN	425 FT/MIN	530 FT/MIN	635 FT/MIN	745 FT/MIN	850 FT/MIN	955 FT/MIN

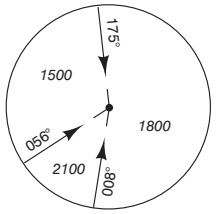
OCA *(OCH)* ELEV THR 23: 12.5 FT

ACFT CAT	CAT I	LOC MAPt: THR	CIRCLING*
A	161 *(149)*	460 *(442)*	450 *(432)*
B	174 *(162)*		520 *(502)*
C	184 *(172)*		620 *(602)*
D	197 *(185)*		850 *(832)*

* Circling approaches shall be executed south-east of the AD, unless otherwise instructed by ATC.

THR 23 530729.8N 0063525.0E
GG512 531114.8N 0064322.6E

MSA BASED ON EEL VOR/DME

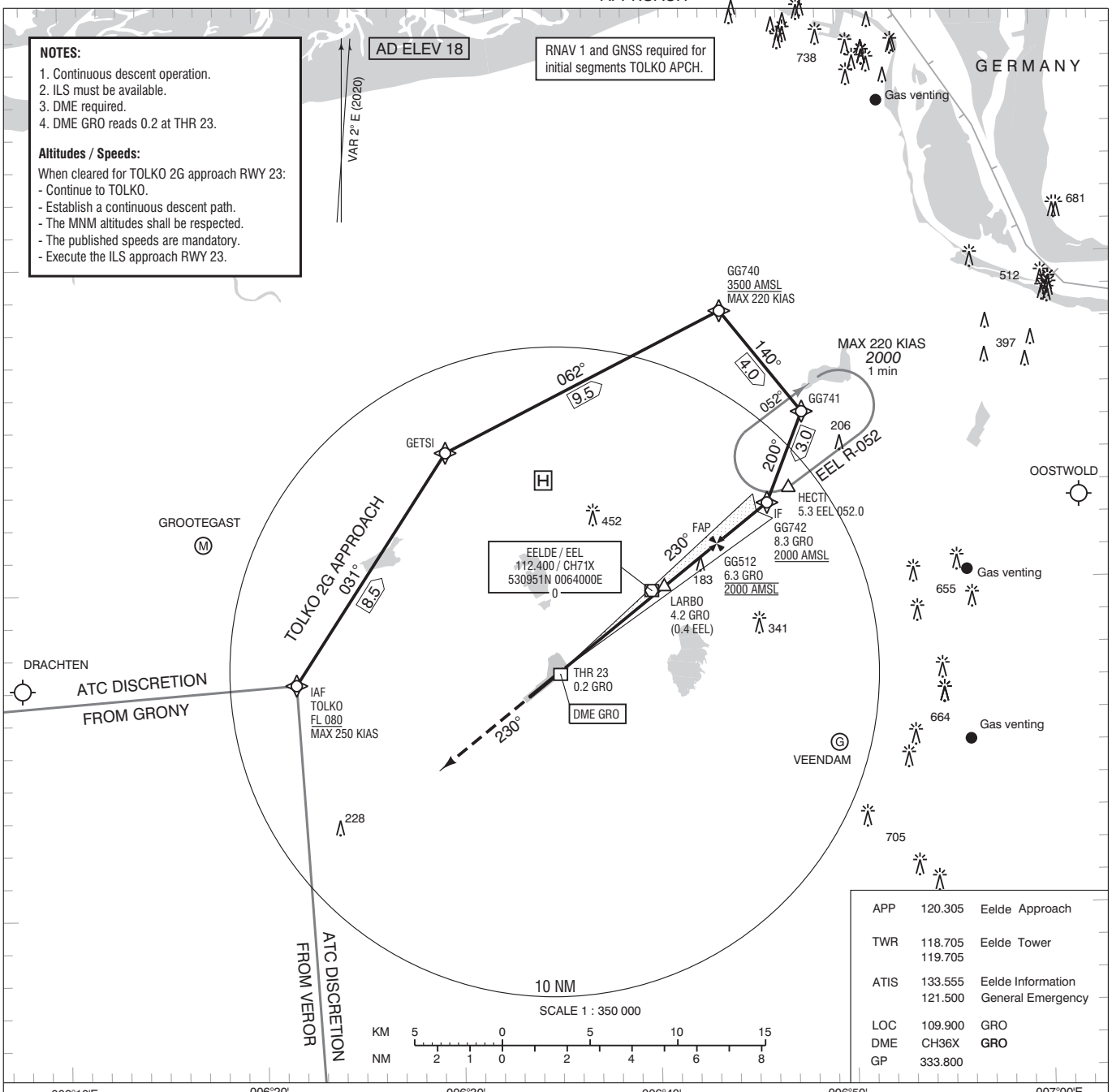


CEILING AND VISIBILITY MINIMA

TAKE-OFF	DAY: NA	NIGHT: NA	
LANDING	DAY:	NIGHT:	

DIRECTIONS ARE MAGNETIC
DISTANCES IN NM
ALTITUDES AND ELEVATIONS IN FEET

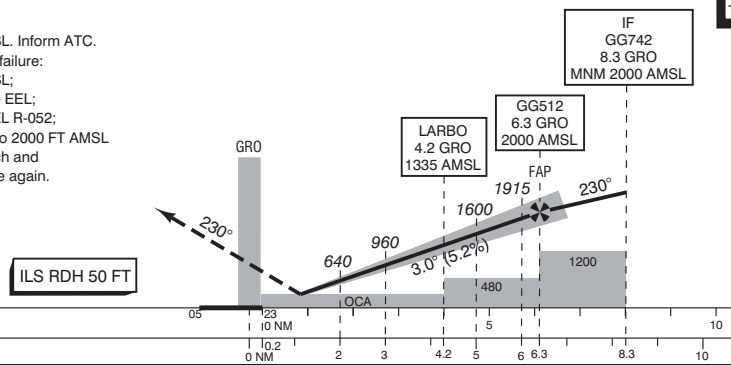
CHANGE: editorial.



APP	120.305	Eelde Approach
TWR	118.705 119.705	Eelde Tower
ATIS	133.555 121.500	Eelde Information General Emergency
LOC	109.900	GRO
DME	CH36X	**GRO**
GP	333.800	

TRANSITION LEVEL BY ATC
TRANSITON ALTITUDE 3000 FT AMSL

1. Missed approach:
   - Track 230° MAG and climb to 2000 FT AMSL. Inform ATC.
2. Missed approach in case of communication failure:
   - Track 230° MAG and climb to 3000 FT AMSL;
   - When reaching 3000 FT AMSL turn right to EEL;
   - After passing EEL proceed to HECTI via EEL R-052;
   - After arriving over HECTI hold or descend to 2000 FT AMSL in an outbound turn, intercept final approach and execute the instrument approach procedure again.



DIST RELATED TO GRO DME

GS IN KT	60	80	100	120	140	160	180
VERTICAL SPEED	320 FT/MIN	425 FT/MIN	530 FT/MIN	635 FT/MIN	745 FT/MIN	850 FT/MIN	955 FT/MIN

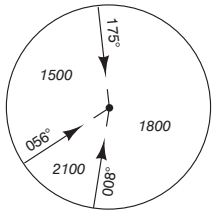
OCA *(OCH)* ELEV THR 23: 12.5 FT

ACFT CAT	CAT I	CIRCLING*
A	161 *(149)*	450 *(432)*
B	174 *(162)*	520 *(502)*
C	184 *(172)*	620 *(602)*
D	197 *(185)*	850 *(832)*

* Circling approaches shall be executed south-east of the AD, unless otherwise instructed by ATC.

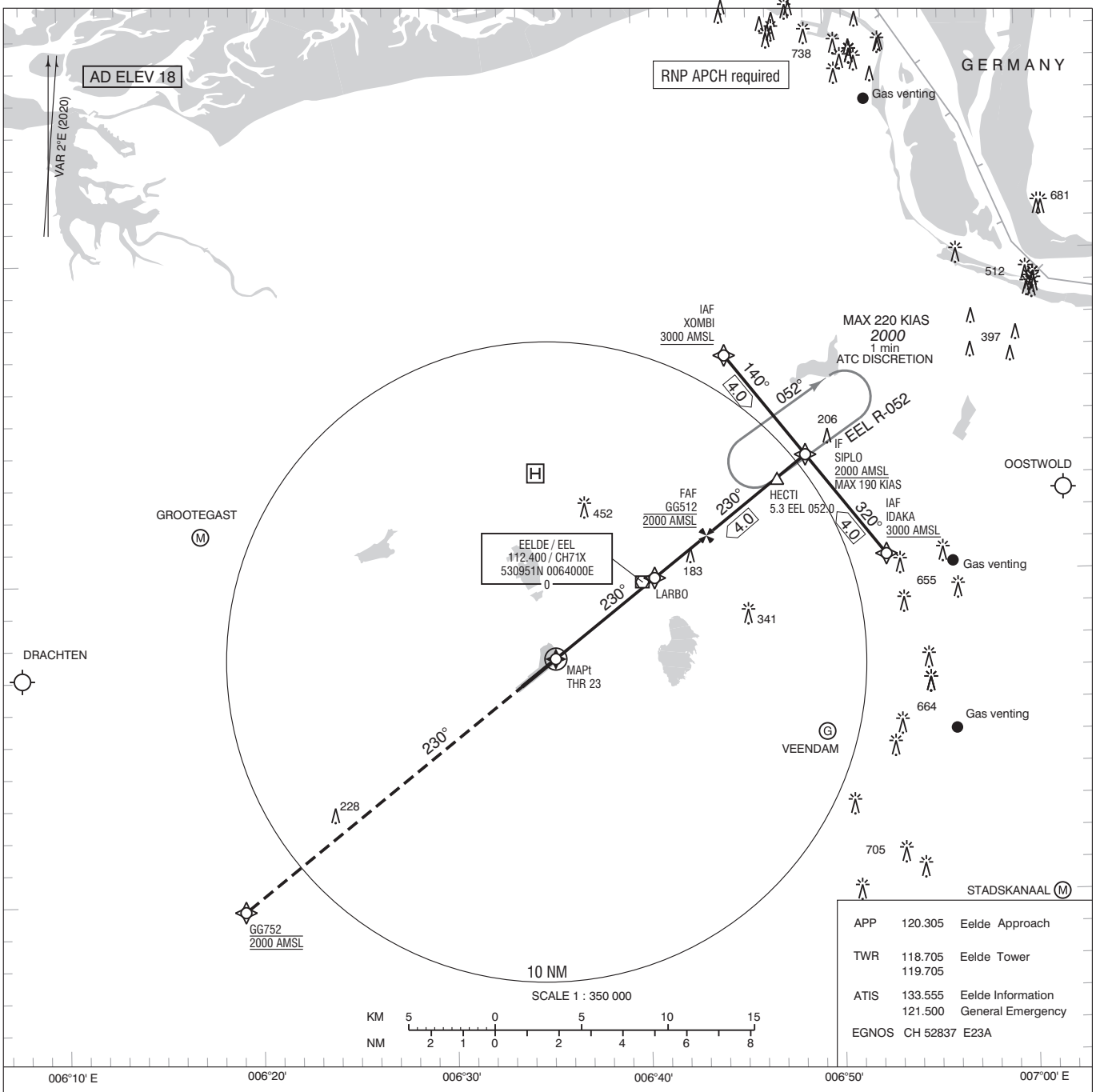
THR 23	530729.8N	0063525.0E
GG512	531114.8N	0064322.6E
GG740	531824.0N	0064345.8E
GG741	531515.2N	0064752.0E
GG742	531228.6N	0064559.8E

MSA BASED ON EEL VOR/DME



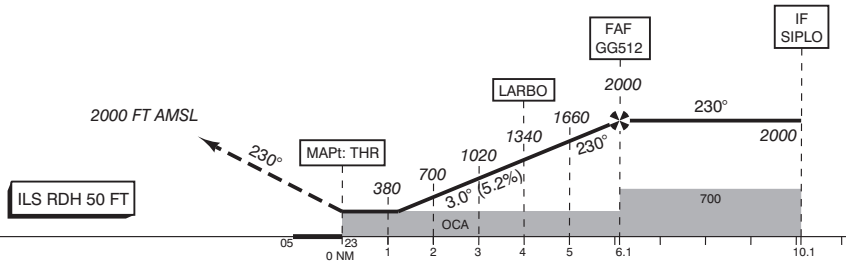
CEILING AND VISIBILITY MINIMA			
TAKE-OFF	DAY: NA	NIGHT: NA	DIRECTIONS ARE MAGNETIC DISTANCES IN NM ALTITUDES AND ELEVATIONS IN FEET
LANDING	DAY:	NIGHT:	

CHANGE: editorial.



APP	120.305	Eelde Approach
TWR	118.705 119.705	Eelde Tower
ATIS	133.555 121.500	Eelde Information General Emergency
EGNOS	CH 52837 E23A	

TRANSITION LEVEL BY ATC
TRANSITON ALTITUDE 3000 FT AMSL



ILS RDH 50 FT

THR ELEV 13

1. Missed Approach:
   - Track 230° MAG and climb to 2000 FT AMSL. Inform ATC.
2. Missed Approach in case of communication failure:
   - Track 230° MAG and climb to 3000 FT AMSL;
   - When reaching 3000 FT AMSL turn right to EEL;
   - After passing EEL proceed to HECTI via EEL R-052;
   - After arriving over HECTI hold or descend to 2000 FT AMSL in an outbound turn, intercept final approach and execute the instrument approach procedure again.

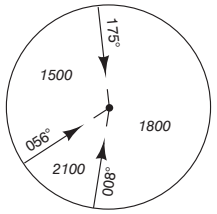
GS IN KT	60	80	100	120	140	160	180
VERTICAL SPEED	320 FT/MIN	425 FT/MIN	530 FT/MIN	635 FT/MIN	745 FT/MIN	850 FT/MIN	955 FT/MIN

OCA *(OCH)* ELEV THR 23: 12.5 FT

ACFT CAT	LPV	LNAV/VNAV MNM TEMP -15°C	LNAV	CIRCLING*
A	263 (251)	280 *(268)*	440 *(422)*	450 *(432)*
B	263 *(251)*	290 *(278)*		520 *(502)*
C	263 (251)	300 *(288)*		620 *(602)*
D	263 (251)	310 *(298)*		850 *(832)*

THR 23	530729.8N	0063525.0E	
GG512	531114.8N	0064322.6E	
GG752	525946.2N	0061908.7E	

MSA BASED ON EEL VOR/DME



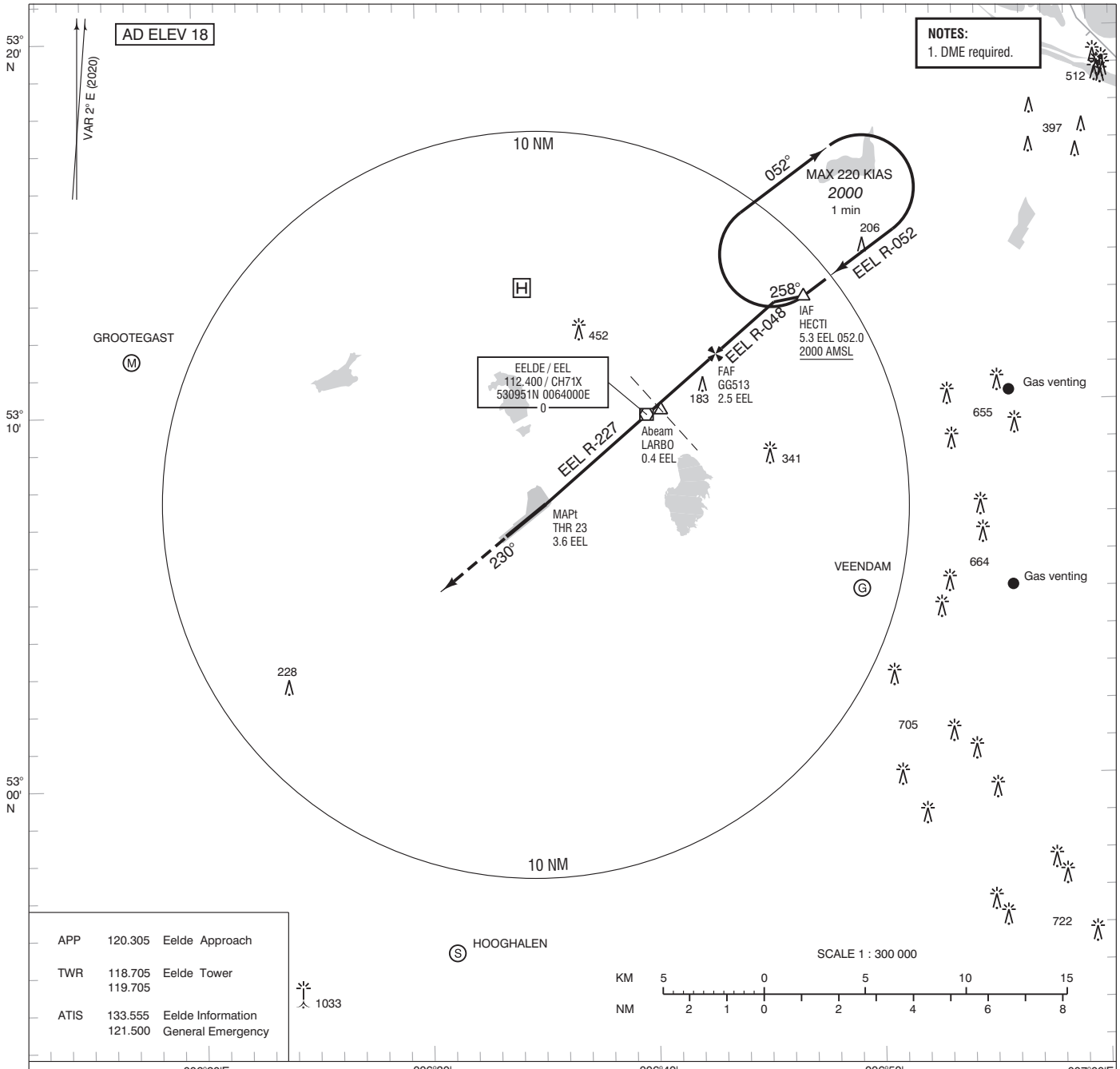
CEILING AND VISIBILITY MINIMA			
TAKE-OFF	DAY:	NIGHT:	
LANDING	DAY:	NIGHT:	

NA NA

* Circling approaches shall be executed south-east of the AD, unless otherwise instructed by ATC.

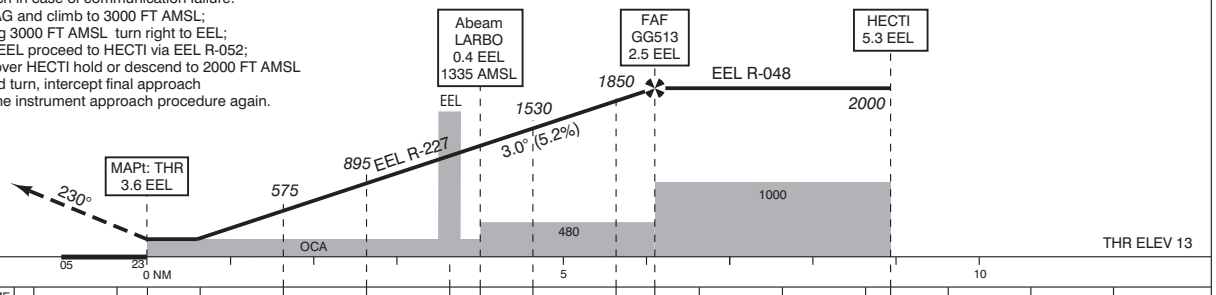
DIRECTIONS ARE MAGNETIC
DISTANCES IN NM
ALTITUDES AND ELEVATIONS IN FEET

CHANGE: editorial.



1. Missed approach:
   - Track 230° MAG and climb to 2000 FT AMSL.
     Inform ATC.
2. Missed approach in case of communication failure:
   - Track 230° MAG and climb to 3000 FT AMSL;
   - When reaching 3000 FT AMSL turn right to EEL;
   - After passing EEL proceed to HECTI via EEL R-052;
   - After arriving over HECTI hold or descend to 2000 FT AMSL in an outbound turn, intercept final approach and execute the instrument approach procedure again.

TRANSITION LEVEL BY ATC
TRANSITION ALTITUDE 3000 FT AMSL



GS IN KT	60	80	100	120	140	160	180
VERTICAL SPEED	320 FT/MIN	425 FT/MIN	530 FT/MIN	635 FT/MIN	745 FT/MIN	850 FT/MIN	955 FT/MIN

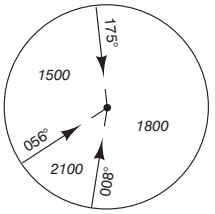
OCA *(OCH)* ELEV THR 23: 12.5 FT

ACFT CAT	VOR MAPt: THR	CIRCLING*
A	460 *(442)*	460 *(442)*
B		520 *(502)*
C		620 *(602)*
D		850 *(832)*

* Circling approaches shall be executed south-east of the AD, unless otherwise instructed by ATC.

THR 23 530729.8N 0063525.0E
GG513 531125.6N 0064307.9E

MSA BASED ON EEL VOR/DME



CEILING AND VISIBILITY MINIMA

TAKE-OFF	DAY: NA	NIGHT: NA	
LANDING	DAY:	NIGHT:	

BEARINGS ARE MAGNETIC
DISTANCES IN NM
ALTITUDES AND ELEVATIONS IN FEET

CHANGE: editorial.

For description VFR - procedures see EHGG AD 2.22.

Area to be avoided

TMZ EELDE :

①MON-FRI before 0800 (0700) and after 1600 (1500), SAT, SUN, and HOL.

②MON-FRI 0800-1600 (0700-1500), EXCL HOL: lower limit for non-motorised hanggliders and paragliders.

③MON-FRI 0800-1600 (0700-1500), EXCL HOL: lower limit 1200 FT AMSL.

CAUTION:
The railway shall not be crossed when joining UNIFORM DEPARTURE.

APP	120.305	Eelde Approach
TWR	118.705	Eelde Tower
	119.705	
	121.705	Eelde Delivery
FIC (MIL)	132.350	Dutch MIL Info
ATIS	133.555	Eelde Information

DIRECTIONS ARE MAGNETIC
DISTANCES IN NM
ALTITUDES AND ELEVATIONS IN FEET AMSL

HIGHEST KNOWN ELEVATION ON THIS CHART: 705

SCALE 1 : 200 000

KM 5 0 5

NM 2 1 0 2

VAR 2° E (2020)

EHR2C
2500 AMSL
1200 AMSL

YANKEE ARR
1500 AMSL

YANKEE

X-RAY

X-RAY DEP
1000 AMSL

EELDE / EEL
112.400 / CH71X
530951.0N 0064000.3E
0

EELDE
CTR
3000 AMSL
GND

RMZ
EELDE
(outside OPR HR CTR)
3000 AMSL
1500 AMSL

PAPA

NOVEMBER

FL 130

PAPI 3°
MEHT 74 FT

PAPI 3°
MEHT 66 FT

See CAUTION

TANGO

VICTOR

UNIFORM DEP
1000 AMSL

UNIFORM

ROMEO

ROMEO ARR
1500 AMSL

EHR65
2500 AMSL
GND

EELDE TMA
FL 065
1500 AMSL

TMZ
EELDE
FL 065
1500 AMSL ①②
1200 AMSL ③

TMZ
EELDE
FL 065
1200 AMSL

ATZ
VEENDAM
1500 AMSL (Up to)
GND

GLV I (MIL)
150 AGL
GND

GLV II (MIL)
150 AGL
GND

EELDE TMA/TMZ
NW MILLIGEN CTA
TMA/TMZ

IFR AREA RWY 23

IFR AREA RWY 05

AD ELEV 18

Ten Boer
Siddeburen
Wagenborgen
Aduard
GRONINGEN
Zuidhorn
Schildwolde
Harkstede
UMC GRONINGEN
Haren
Hoogezand
Leek
Roden
Peize
Zuidlaren
Zuid laarder meer
Muntendam
Meeden
Deurkenakker
Veendam
VEENDAM
Haulerwijk
Waskermeer
Norg
Vries
ASSEN
Gieten
Gasselternijveen
Stadskanaal
Rolde
Oosterwolde
Drentsche Hoofdvaart

443
656
341
653
664
705
1010 AMSL
370 AMSL
2 NM
4 NM
6 NM
8 NM

53° 10'
53° 00' N
006°20'E
006°30'
006°40'
006°50'E

CHANGE: IFR AREA added; editorial.

For description VFR - procedures see EHGG AD 2.22.

- Area to be avoided
- Circuit
- Circuit at ATC discretion
- Arrival / Departure route
- Visual circuit marker (orange coloured)

SCALE 1: 70.000

M 1000 500 0 1000 2000

FT 2000 0 2000 4000 6000

DIRECTIONS ARE MAGNETIC
DISTANCES IN NM
ALTITUDES AND ELEVATIONS
IN FEET AMSL

HIGHEST KNOWN ELEVATION
ON THIS CHART: 443

TWR	118.705	Eelde Tower
	119.705	
	121.705	Eelde Delivery
APP	120.305	Eelde Approach
ATIS	133.555	Eelde Information

CHANGE: PJA Eelde deleted; editorial.

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