APPENDIX 1
IFR TAKEOFF MINIMUMS, (OBSTACLE) DEPARTURE PROCEDURES, AND DIVERSE VECTOR AREA (RADAR VECTORS)

10pt

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L1

TAKEOFF MINIMUMS, (OBSTACLE) DEPARTURE PROCEDURES, AND DIVERSE VECTOR AREA (RADAR VECTORS)

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INSTRUMENT APPROACH PROCEDURE CHARTS

IFR TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

Civil Airports and Selected Military Airports

ALL USERS: Airports that have Departure Procedures (DPs) designed specifically to assist pilots in avoiding obstacles during the climb to the minimum enroute altitude, and/or airports that have civil IFR takeoff minimums other than standard, are listed below. Takeoff Minimums and Departure Procedures apply to all runways unless otherwise specified. An entry may also be listed that contains only Takeoff Obstacle Notes. Altitudes, unless otherwise indicated, are minimum altitudes in MSL.

DPs specifically designed for obstacle avoidance are referred to as Obstacle Departure Procedures (ODPs) and are textually described below, or published separately as a graphic procedure. If the ODP is published as a graphic procedure, its name will be listed below, and it can be found in either this volume (civil), or the applicable military volume, as appropriate. Users will recognize graphic obstacle DPs by the term "(OBSTACLE)" included in the procedure title; e.g., TETON TWO (OBSTACLE). If not specifically assigned an ODP, SID, or radar vector as part of an IFR clearance, an ODP may be required to be flown for obstacle clearance, even though not specifically stated in the IFR clearance. When doing so in this manner, ATC should be informed when the ODP being used contains a specified route to be flown, restrictions before turning, and/or altitude restrictions.

Some ODPs, which are established solely for obstacle avoidance, require a climb in visual conditions to cross the airport, a fix, or a NAVAID in a specified direction, at or above a specified altitude. These procedures are called Visual Climb Over Airport (VCOA). To ensure safe and efficient operations, the pilot must verbally request approval from ATC to fly the VCOA when requesting their IFR clearance.

At some locations where an ODP has been established, a diverse vector area (DVA) may be created to allow radar vectors to be used in lieu of an ODP. DVA information will state that headings will be as assigned by ATC and climb gradients, when applicable, will be published immediately following the specified departure procedure.

Graphic DPs designed by ATC to standardize traffic flows, ensure aircraft separation and enhance capacity are referred to as "Standard Instrument Departures (SIDs)". SIDs also provide obstacle clearance and are published under the appropriate airport section. ATC clearance must be received prior to flying a SID.

CIVIL USERS NOTE: Title 14 Code of Federal Regulations Part 91 prescribes standard takeoff rules and establishes takeoff minimums for certain operators as follows: (1) For aircraft, other than helicopters, having two engines or less – one statute mile visibility. (2) For aircraft having more than two engines – one-half statute mile visibility. (3) For helicopters – one-half statute mile visibility. These standard minima apply in the absence of any different minima listed below.

MILITARY USERS NOTE: Civil (nonstandard) takeoff minima are published below. For military takeoff minima, refer to appropriate service directives.

6pt

AFTON, WY Arial 8 pt
AFTON MUNI (AFO) Arial 8 pt
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES Arial 7 pt
AMDT 1 28SEP06 (06271) (FAA) Arial 7 pt
DEPARTURE PROCEDURE: Arial 6 pt
Rwy 16, Use LUNDI DEPARTURE. Arial 6pt
Rwy 34, Use AFTON DEPARTURE. Arial 6 pt

ALBANY, OR
ALBANY MUNI (S12)
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES
AMDT 2B 10DEC15 (15344) (FAA)
DEPARTURE PROCEDURE:
Rwy 16, turn right.
Rwy 34, turn left. All aircraft climb direct CVO VOR/DME and continue climb in CVO VOR/DME holding pattern, (East, right turns, 261° inbound) to cross CVO VOR/DME at or above 3400.
TAKEOFF OBSTACLE NOTES:
Rwy 16, pole 1391' from DER, 277' right of centerline, 30' AGL/265" MSL.
Rwy 34, light poles 860' from DER, 69' right of centerline, 40' AGL/262' MSL.
Light poles 906' from DER, 15' left of centerline, 41' AGL/262' MSL.

ANACONDA, MT
BOWMAN FLD (3U3)
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES
AMDT 1 05JUL07 (07186) (FAA)
TAKEOFF MINIMUMS:
Rwy 4, std. w/min. climb of 417' per NM to 9000, or 2800-3 for climb in visual conditions.

TAKEOFF MINIMUMS, (OBSTACLE) DEPARTURE PROCEDURES, AND DIVERSE VECTOR AREA (RADAR VECTORS)

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NW-1

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All text is Arial 7pt if not labelled

APPENDIX 2
DIVERSE VECTOR AREA (RADAR VECTORS) EXAMPLE

L4

TAKEOFF MINIMUMS, (OBSTACLE) DEPARTURE PROCEDURES, AND DIVERSE VECTOR AREA (RADAR VECTORS)

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AUBURN, WA
AUBURN MUNI (S50)
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES
AMDT 1 31MAR16 (16091) (FAA)
TAKEOFF MINIMUMS:
Use BLAKO (RNAV) DEPARTURE.

DIVERSE VECTOR AREA (RADAR VECTORS)
AMDT 1 10NOV16 (16315) (FAA)
Rwy 16, heading as assigned by ATC; requires min. climb of 270' per NM to 1000.
Rwy 34, heading as assigned by ATC; requires min. climb of 390' per NM to 800.

AURORA, OR
AURORA STATE (UAO)
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES
AMDT 3 15DEC11 (11349) (FAA)
TAKEOFF MINIMUMS:
Rwy 17, std. w/min. climb of 292' per NM to 2100 or 1500-2½ for climb in visual conditions.
Rwy 35, std. w/min. climb of 312' per NM to 2100 or 1500-2½ for climb in visual conditions.
DEPARTURE PROCEDURE:
Rwy 17, climbing right turn, thence ... Or for climb in visual conditions cross Aurora State airport at or above 1500 thence...
Rwy 35, climbing left turn, thence ... Or for climb in visual conditions cross Aurora State airport at or above 1500 thence ...
... Aircraft departing on V23 intercept BTG R-175 and climb on course. All others proceed direct UBG VOR/DME and Hold (hold South, left turns, 003° Inbound) continue climb in hold to cross UBG VOR/DME at or above MEA for direction of flight before proceeding on course.
TAKEOFF OBSTACLE NOTES:
Rwy 17, trees beginning 31' from DER, 246' right of centerline, up to 87' AGL/316' MSL.
Tree 2270' from DER, 836' left of centerline, 87' AGL/303' MSL.
Vehicle on road 254' from DER, 349' left of centerline, 16' AGL/209' MSL.
Rwy 35, trees beginning 30' from DER, 163' left of centerline, up to 65' AGL/329' MSL.
Vehicle on road 212' from DER, 390' left of centerline, 16' AGL/212' MSL.
Trees 973' from DER, 281' right of centerline, up to 65' AGL/253' MSL.

DIVERSE VECTOR AREA (RADAR VECTORS)
ORIG 05MAR15 (15064) (FAA)
Rwy 17, heading as assigned by ATC; requires min. climb of 375' per NM to 2000.
Rwy 35, heading as assigned by ATC; requires min. climb of 350' per NM to 2000.

BAKER, MT
BAKER MUNI (BHK)
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES
AMDT 1 13NOV14 (14317) (FAA)
TAKEOFF MINIMUMS:
Rwy 13, NA-Environmental.
DEPARTURE PROCEDURE:
Rwy 31, climbing right turn heading 010° to 9000 on 343° bearing from BKU NDB to UMWEL INT and hold, continue climb in hold (hold north, right turns, 163° inbound) to 9000. Expect further instructions from ATC.
TAKEOFF OBSTACLE NOTES:
Rwy 31, fence 168' from DER, 498' left of centerline, 6' AGL/2967' MSL.
Structure 173' from DER, 499' left of centerline, 10' AGL/2974' MSL.
Windsock on building 1015' from DER, 727' left of centerline, 37' AGL/2998' MSL.
Rod on antenna 3832' from DER, 136' left of centerline, 112' AGL/3073' MSL.

BAKER CITY, OR
BAKER CITY MUNI (BKE)
TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES
AMDT 2 18NOV10 (10322) (FAA)
TAKEOFF MINIMUMS:
Rwy 8, std. w/min climb of 460' per NM to 6900, or 3700-3 for climb in visual conditions.
Rwy 13, std. w/min climb of 470' per NM to 6900, or 3700-3 for climb in visual conditions.
Rwy 17, N/A-Environmental.
Rwy 26, std. w/min climb of 400' per NM to 7200, or 3700-3 for climb in visual conditions.
Rwys 31, 35, std. w/min climb of 400' per NM to 6900, or 3700-3 for climb in visual conditions.
DEPARTURE PROCEDURE:
Rwy 8, climb heading 081° to 6900, then climbing left turn to BKE VOR/DME R-066 to BKE VOR/DME and hold, continue climb in BKE VOR/DME holding pattern (hold S, right turns, 338° inbound) to cross BKE VOR/DME at or above MEA/MCA for route of flight, or for climb in visual conditions, cross BKE VOR/DME at or above 6900, then climb-in-hold to at or above MEA/MCA for route of flight. **CON'T**

APPENDIX 3
IFR ALTERNATE AIRPORT MINIMUMS

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ALTERNATE MINS

M1

13066

INSTRUMENT APPROACH PROCEDURE CHARTS

IFR ALTERNATE AIRPORT MINIMUMS

Standard alternate minimums for non-precision approaches and approaches with vertical guidance [NDB, VOR, LOC, TACAN, LDA, SDF, VOR/DME, ASR, RNAV (GPS) or RNAV (RNP)] are 800-2. Standard alternate minimums for precision approaches (ILS, PAR, or GLS) are 600-2. Airports within this geographical area that require alternate minimums other than standard or alternate minimums with restrictions are listed below. NA - means alternate minimums are not authorized due to unmonitored facility, absence of weather reporting service, or lack of adequate navigation coverage. Civil pilots see FAR 91. IFR Alternate Minimums: Ceiling and Visibility Minimums not applicable to USA/USN/USAF. Pilots must review the IFR Alternate Minimums Notes for alternate airfield suitability.

NAME ALTERNATE MINIMUMS

AUBURN-LEWISTON, ME

AUBURN-LEWISTON MUNI (LEW)..... **ILS or LOC Rwy 4[1]**
RNAV (GPS) Rwy 4[23]
RNAV (GPS) Rwy 22[23]

[1]ILS, Categories A, B, 800-2; Category C, 800-2¼; Category D, 800-2½. LOC, NA.
[2]Category D, 800-2½.
[3]NA when local weather not available.

AUGUSTA, ME

AUGUSTA STATE (AUG) .. **ILS or LOC Rwy 17[12]**
RNAV (GPS)-B[2]
RNAV (GPS) Rwy 8[2]
RNAV (GPS) Rwy 17[2]
RNAV (GPS) Rwy 35[2]
VOR Rwy 35[23]
VOR/DME-A[2]
VOR/DME Rwy 8[2]
VOR/DME Rwy 17[2]

[1]ILS, Categories B, C, D, 700-2.
[2]NA when local weather not available.
[3]Category C, 800-2¼; Category D, 800-2½.

BANGOR, ME

BANGOR INTL (BGR).....**ILS or LOC Rwy 33**

ILS, LOC, Categories A, B, 1000-2; Categories C, D, E, 1000-3.

BAR HARBOR, ME

HANCOCK COUNTY-BAR HARBOR (BHB)..... **ILS or LOC Rwy 22[1]**
RNAV (GPS) Rwy 4
RNAV (GPS) Rwy 22

NA when local weather not available.
[1]ILS, Category C, D, 700-2.

NAME ALTERNATE MINIMUMS

BARRE-MONTPELIER, VT

EDWARD F. KNAPP STATE (MPV) .....**ILS or LOC Rwy 17[1]**
RNAV (GPS) Rwy 17[23]
RNAV (GPS) Rwy 35[36]
VOR/DME Rwy 35[4]
VOR Rwy 35[5]

[1]ILS, LOC, Categories A, B, 1900-2; Categories C, D, 1900-3.
[2]Category C, 800-2¼; Category D, 1400-3.
[3]NA when local weather not available.
[4]Categories A, B, 900-2; Category C, 900-2¼; Category D, 1400-3.
[5]Categories A, B, 1600-2; Categories C, D, 1600-3.
[6]Categories A, B, 900-2; Category C, 900-2½; Category D, 1400-3.

BEDFORD, MA

LAURENCE G. HANSCOM FLD (BED).....**ILS or LOC Rwy 11[123]**
ILS or LOC Rwy 29[134]
RNAV (GPS) Z Rwy 11[3]
RNAV (GPS) Rwy 23[3]
RNAV (GPS) Z Rwy 29[3]
VOR Rwy 23[3]

[1]NA when control tower closed.
[2]ILS, Categories A, B, C, 800-2; Category D, 800-2¼; LOC, Category D, 800-2¼.
[3]NA when local weather not available.
[4]ILS, Categories A, B, 800-2; Category C, D, 800-2½. LOC, Category C, D, 800-2½.

BEVERLY, MA

BEVERLY MUNI (BVY).....**LOC Rwy 16[1]**
RNAV (GPS) Rwy 16
RNAV (GPS) Rwy 27
RNAV (GPS) Rwy 34

NA when local weather not available.
[1]NA when control tower closed.

6pt

If not not labelled, text is 7pt

APPENDIX 3
IFR ALTERNATE AIRPORT MINIMUMS (CONTINUED)

M4

A ALTERNATE MINS A

21056

NAME ALTERNATE MINIMUMS

RENO, NV
RENO/TAHOE
INTL (RNO).....**ILS or LOC/DME Rwy 34L[1]**
ILS X or LOC X Rwy 16R[2]
ILS Y Rwy 16R[3]
ILS Z or LOC Z Rwy 16R[2]
LOC Y Rwy 16R[4]
RNAV (GPS) X Rwy 34L[5]
RNAV (GPS) X Rwy 34R[6]
RNAV (GPS) X Rwy 16L[7]
RNAV (GPS) X Rwy 16R[8]
RNAV (RNP) Y Rwy 16L[9]
RNAV (RNP) Y Rwy 16R[9]
RNAV (RNP) Z Rwy 16L[a]
RNAV (RNP) Z Rwy 16R[a]
TACAN-F[b]
VOR-D[c]
[1]ILS, LOC, Categories A, B, 1000-2;
Category C, 1000-2¾.
[2]Categories A, B, 1100-2; Categories C, D, 2100-3.
[3]Categories A, B, C, D, E, 1500-6.
[4]Categories A, B, 1600-2;
Categories C, D, 2100-3; Category E, 2300-3.
[5]Categories A, B, 1000-2; Category C, 1000-2¾;
Category D, 1000-3.
[6]Categories A, B, 1200-4;
Categories C, D, 2100-4.
[7]Categories A, B, 1000-2; Categories C, D, 2100-3.
[8]Categories A, B, 1800-2; Categories C, D, 1800-3.
[9]Categories A, B, C, D, 800-2½.
[a]Categories A, B, C, 800-2½.
[b]Categories A, B, 1600-2;
Categories C, D, 2000-3; Category E, 2100-3.
[c]Categories A, B, 1600-2;
Categories C, D, 1600-3.

SAFFORD, AZ
SAFFORD RGNL (SAD).....**RNAV (GPS) Rwy 12**
RNAV (GPS) Rwy 30
NA when local weather not available.

ST GEORGE, UT
ST GEORGE
RGNL (SGU).....**RNAV (GPS) Rwy 1[1]**
RNAV (GPS) Rwy 19[2]
[1]Categories A, B, 900-2; Categories C, 900-2¾.
[2]Categories A, B, 1100-2, Categories C, D, 1100-3.

ST JOHNS, AZ
ST JOHNS INDUSTRIAL
AIR PARK (SJN).....**RNAV (GPS) Rwy 14**
NA when local weather not available.

SCOTTSDALE, AZ
SCOTTSDALE (SDL).....**RNAV (GPS)-D**
RNAV (GPS)-E
VOR/DME-A[1]
NA when local weather not available.
[1]Categories A, B, 900-2, Category C, 900-2½,
Category D, 900-2¾.

NAME ALTERNATE MINIMUMS

SHOW LOW, AZ
SHOW LOW
RGNL (SOW).....**RNAV (GPS) Rwy 25**
NA when local weather not available.
Category C, 800-2¼, Category D, 1000-3.

TONOPAH, NV
TONOPAH (TPH).....**VOR or GPS-A**
Category D, 800-2¼.

TOOELE, UT
BOLINDER FIELD-TOOELE
VALLEY (TVY).....**ILS or LOC Rwy 17[1]**
RNAV (GPS) Rwy 17[2]
[1]ILS, Category C, 800-2; Category D, 1100-3;
LOC, Category D, 1100-3.
[2]Category D, 1100-3.

TUCSON, AZ
RYAN
FLD (RYN).....**RNAV (GPS) Rwy 6R**
Category D, 1000-3.

TUCSON
INTL (TUS).....**ILS or LOC Rwy 11L[1]**
LOC BC Rwy 29R[2]
RNAV (GPS) Rwy 29L[3]
RNAV (GPS) Z Rwy 11L[4]
RNAV (GPS) Z Rwy 29R[2]
VOR or TACAN Rwy 29R[2]
VOR or TACAN Rwy 11L[2]
[1]LOC, Categories A, B, 900-2;
Category C, 900-2½; Category D, 900-2¾;
Category E, 1200-3.
[2]Category E, 1200-3.
[3]Category D, 800-2¼.
[4]Category D, 800-2¼; Category E, 1200-3.

VERNAL, UT
VERNAL
RGNL (VEL).....**RNAV (GPS) Y Rwy 35[12]**
RNAV (GPS) Z Rwy 35[3]
VOR Rwy 35[14]
[1]NA when local weather not available.
[2]Categories A, B, 1100-2; Category C, 1100-3;
Category D, 1200-3.
[3]Categories A, B, C, D, 900-3.
[4]Categories A, B, 900-2; Category C, 900-2¾;
Category D, 1200-3.

APPENDIX 4
RADAR INSTRUMENT APPROACH MINIMUMS

12pt 7pt 7pt

RADAR MINS **14009** N1

RADAR INSTRUMENT APPROACH MINIMUMS 10pt

10pt

9pt

ASHEVILLE, NC Amdt 5A, 18NOV98 (14009) (FAA) ELEV **2165**
ASHEVILLE RGNL (AVL)
RADAR-1 124.65 269.575

	RWY	GP/TCH/RPI	CAT	DA/ MDA-VIS	HAT/ HAA	CEIL-VIS	CAT	DA/ MDA-VIS	HAT/ HAA	CEIL-VIS
ASR	34		AB	**2800**/24	660	(700-½)	C	**2800**/60	660	(700-1¼)
			D	**2800**-1½	660	(700-1½)				
	16		A	**3000**/50	835	(900-1)	B	**3000**/60	835	(900-1¼)
			C	**3000**-2½	835	(900-2½)	D	**3000**-2¾	835	(900-2¾)
C CIR	ALL RWY		A	**3000**-1	835	(900-1)	B	**3000**-1¼	835	(900-1¼)
				3000-2½	835	(900-2½)	D	**3000**-2¾	835	(900-2¾)

Circling not authorized west of Rwy 16-34. Night circling not authorized.

SIMMONS AAF (KFBG), NC (Fort Bragg) (1-Amdt 12, 2-Orig 11097 USA) ELEV **244**
RADAR[1] **- (E)** 120.8 124.2 257.65 284.675

	RWY	GP/TCH/RPI	CAT	DH/ MDA-VIS	HAT/ HAA	CEIL-VIS
RADAR-1						
PAR	27	3.0°/36/628	ABC	**428**-¾	200	(200-¾)
			D	**NA**	NA	NA
PAR W/O GS	27		AB	**640**-1	412	(500-1)
			C	**640**-1¼	412	(500-1¼)
			D	**NA**	NA	NA
CIR			AB	**780**-1	536	(600-1)
			C	**780**-1½	536	(600-1½)
			D	**NA**	NA	NA
RADAR-2						
PAR	9	3.9°/33/487	COPTER	**491**-½	250	(300-½)

[1]Opr 1200-0400Z++ Mon-Fri, clsd hol. No-NOTAM preventive maint 1800-1900Z++ Fri.

All text is ARIAL
If not labelled, text is 7pt (header and footer text size are same).

RADAR MINS, jdate and volume in the header/footer are bold.

FAA city, state, airport, ICAO/ident are bold. Military installation, ICAO/ident are bold.

Elevation is bold. RADAR - header is bold. Column headers are bold. DA/DH/MDA is bold.

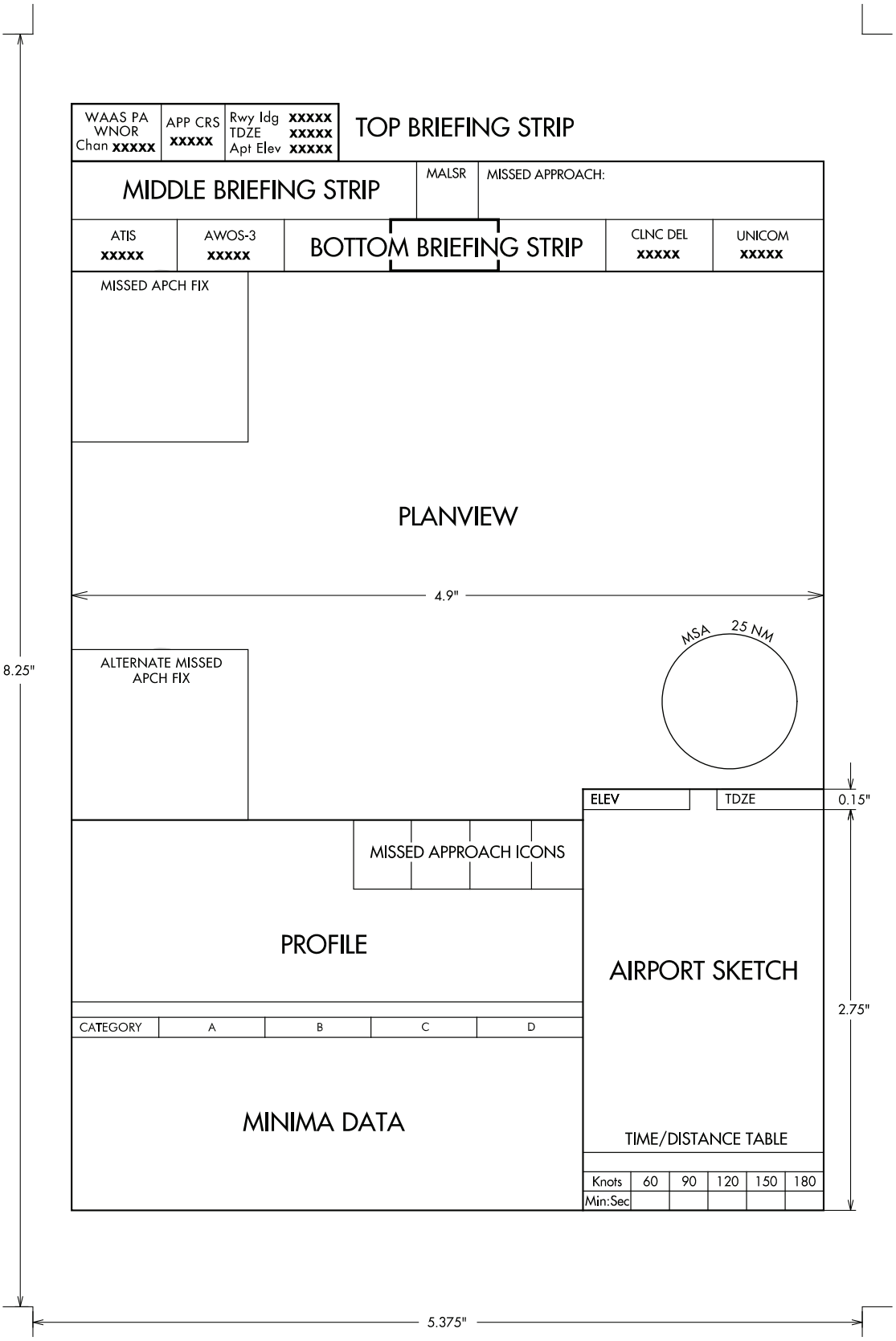
SE-2

RADAR INSTRUMENT APPROACH MINIMUMS

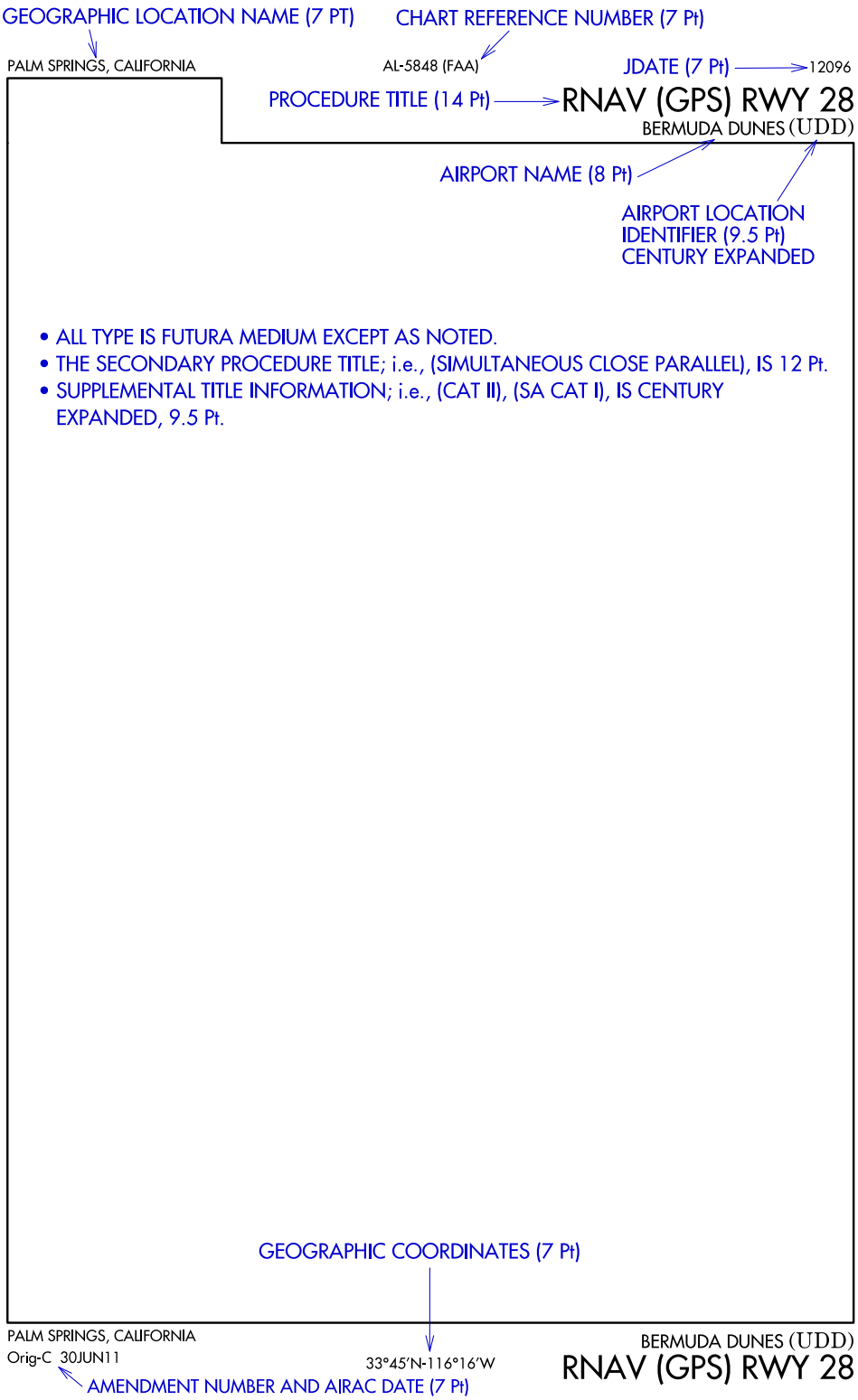
RADAR MINS N1
14009

APPENDIX 5
IAP CHART FORMAT AND DIMENSIONS

IAP CHART FORMAT AND DIMENSIONS



APPENDIX 6
MARGIN DATA



APPENDIX 7
BRIEFING STRIPS

CARLSBAD, CALIFORNIA — AL-5310 (FAA)

RNAV (GPS) RWY 24
MC CLELLAN-PALOMAR (CRQ)

WAAS CH 65603 W24A	APP CRS 245°	Rwy ldg 4897 TDZE 326 Apt Elev 331

T DME/DME RNP-0.3 NA.
A For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -15°C (5°F) or above 54°C (130°F).

MALSR

MISSED APPROACH: Climb to 2000 direct IBUGE WP and hold.

ATIS	SOCAL APP CON	PALOMAR TOWER ★	GND CON	CLNC DEL
120.15	127.3 323.0	118.6 (CTAF) L 276.4	121.8	134.85

SAN FRANCISCO, CALIFORNIA — AL-375 (FAA)

RNAV (GPS) Z RWY 10R
SAN FRANCISCO INTL (SFO)

APP CRS 101°	Rwy ldg 10602 TDZE 9 Apt Elev 13

T GPS or RNP-0.3 required. DME/DME RNP-0.3 NA.
A NA Baro-VNAV NA below -15°C (5°F).
W LNAV/VNAV: Fly visual to airport 101°- 3.1 NM.

MISSED APPROACH: Climb to 4000 direct OKDUE WP and left turn via 100° track to DUMBA WP and hold.

ATIS	NORCAL APP CON	SAN FRANCISCO TOWER	GND CON	CLNC DEL
113.7 115.8 118.85 135.45	134.5 338.2	120.5 269.1	121.8	118.2

SACRAMENTO, CALIFORNIA — AL-5490 (FAA)

RNAV (GPS) RWY 34L
SACRAMENTO INTL (SMF)

WAAS CH 86602 W34A	APP CRS 344°	Rwy ldg 8600 TDZE 24 Apt Elev 27

T DME/DME RNP- 0.3 NA. Circling NA east of Rwy 16R-34L.
A For inoperative MALSR, increase LNAV/VNAV Cat. D visibility to RVR 5000 and LNAV Cat. D visibility to RVR 6000.
For inoperative MALSR, increase LPV all Cats. visibility to RVR 4000.
Baro-VNAV NA when using Sacramento Executive altimeter setting.
If local altimeter setting not received, use Sacramento Executive altimeter setting and increase all DAs/MDAs 40 feet.
For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -15°C (5°F) or above 48°C (119°F).
VDP NA with Sacramento Executive altimeter setting.

MALSR

MISSED APPROACH: Climb to 2000 direct RATBE and via 323° track to GRIME and hold.

ATIS	NORCAL APP CON	CAPITAL TOWER	GND CON	CLNC DEL
126.75	(W-N) 134.8 270.25 (NE) 125.4 259.1 (S-SW) 125.25 257.9 (E-SE) 127.4 317.5	125.7 256.7	121.7	121.1 256.7

NEWARK, NEW JERSEY — AL-285 (FAA) — 17341

GLS RWY 11
NEWARK LIBERTY INTL (EWR)

GBAS CH 21905 G11A	APP CRS 108°	Rwy ldg 6726 TDZE 18 Apt Elev 18

T DME/DME RNP-0.3 NA. GPS required.
A NA Visibility reduction by helicopters NA.
Autopilot coupled approach NA below 308.

MISSED APPROACH: Climb to 3000 direct FOVEX and on track 193° to COGSU and right turn on track 285° to DIRMY and hold.

NEWARK D-ATIS	NEW YORK APP CON	NEWARK TOWER	GND CON	CLNC DEL	CPDLC
115.7 134.825	128.55 379.9	118.3 257.6	121.8	118.85	

CAMBRIDGE, MARYLAND — AL-5571 (FAA)

NDB or GPS RWY 34
CAMBRIDGE-DORCHESTER (CGE)

NDB CGE 355	APP CRS 335°	Rwy ldg 4477 TDZE 20 Apt Elev 20

T
A NA When Cambridge altimeter not received, use Salisbury altimeter.

MISSED APPROACH: Climbing right turn to 1600 in CGE NDB holding pattern.

ASOS	PATUXENT APP CON ★	UNICOM	
120.675	121.0 250.3	122.7 (CTAF)	121.9 L

APPENDIX 7
BRIEFING STRIPS (CONTINUED)

SAN FRANCISCO, CALIFORNIA — AL-375 (FAA)

ILS PRM RWY 28L (SIMULTANEOUS CLOSE PARALLEL)
SAN FRANCISCO INTL (SFO)

LOC/DME I-SFO	APP CRS	Rwy ldg	10602
109.55	281°	TDZE	13
Chan 32 (Y)		Apt Elev	13

T A NA — Simultaneous close parallel approach authorized with LDA PRM Rwy 28R. Localizer only not authorized during close-parallel operations. Dual VHF comm required. Disregard IM and MM indications. See additional requirements on AAUP. Runway 28L and 28R separated by 750′ centerline to centerline.

SSALR (A3)

MISSED APPROACH: Climb to 600 then climbing right turn to 3000 via heading 285° and SFO VOR/DME R-280 to OLYMM INT/SFO VOR/DME 15 DME and hold.

ATIS	NORCAL APP CON	SAN FRANCISCO TOWER	GND CON	CLNC DEL
113.7 115.8 118.85 135.45	134.5 338.2	120.5 269.1 PRM 125.15	121.8	118.2

EASTON, MARYLAND — AL-5596 (FAA)

ILS or LOC/DME RWY 4
NEWNAM FLD (ESN)

LOC/DME I-FGH	APP CRS	Rwy ldg	4775
109.35	041°	TDZE	58
Chan 30 (Y)		Apt Elev	72

T A — If local altimeter setting not received, use Baltimore-Washington Intl Thurgood Marshall altimeter setting and increase DA to 358 feet and all MDAs 100 feet. VDP NA when using Baltimore-Washington Intl Thurgood Marshall altimeter setting.

MISSED APPROACH: Climb to 2000 via heading 041° and ATR VOR/DME R-283 to ORETE INT/ATR 31.6 DME and hold.

ATIS	POTOMAC APP CON	EASTON TOWER★	GND CON	CLNC DEL	CLNC DEL	UNICOM
124.475	124.55 317.425	118.525 (CTAF) L	119.075	119.075	126.9 (When twr closed)	122.95

WASHINGTON, DC — AL-443 (FAA)

LDA/DME RWY 19
RONALD REAGAN WASHINGTON NTL (DCA)

LOC/DME I-VWH	APP CRS	Rwy ldg	6869
108.5	145°	TDZE	14
Chan 22		Apt Elev	16

T A — Inoperative table does not apply. Circling Cats C and D not authorized northeast of Rwy 15-33.

MALSF (A4)

MISSED APPROACH: Climbing right turn to 1800 via DCA R-185 to OXONN NDB/Int/DCA 5.6 DME and hold.

ATIS	POTOMAC APP CON	WASHINGTON TOWER	GND CON	CLNC DEL
132.65	124.7 338.2	119.1 257.6	121.7 257.6	128.25

SOUTH BOSTON, VIRGINIA — AL-5112 (FAA)

VOR-A
WILLIAM M. TUCK (W78)

VOR SBV	APP CRS	Rwy ldg	N/A
110.4	081°	TDZE	N/A
Chan 41		Apt Elev	420

T A NA — Use Danville Rgnl altimeter setting, when not received, use Lynchburg Rgnl/Preston Glenn Field altimeter setting and increase all MDA 100 feet, and increase all Cat C visibility ¼ mile.

MISSED APPROACH: Climbing left turn to 3000 direct SBV VORTAC and hold.

WASHINGTON CENTER	UNICOM
124.05 307.0	122.8 (CTAF) L

ROANOKE, VIRGINIA — AL-349 (FAA)

12096

VOR/DME-A
ROANOKE RGNL/WOODRUM FLD (ROA)

VOR ODR	APP CRS	Rwy ldg	N/A
114.9	236°	TDZE	N/A
		Apt Elev	1175

T — Circling NA NW of Rwy 6-24. Visibility reduction by helicopters NA. Circling to Rwy 16 NA. DME from I-SZK LDA. Simultaneous reception of ODR VOR and I-SZK DME required.

MISSED APPROACH: Climbing left turn to 4000 on ODR VOR R-164 and LYH VORTAC R-258 to MONAT/LYH 19.8 DME and hold.

ATIS	ROANOKE APP CON	ROANOKE TOWER	GND CON	CLNC DEL
132.375	126.9 339.8	118.3 257.8	121.9 257.8	119.7

GAMBELL, ALASKA — AL-6687 (FAA)

NDB/DME RWY 34
GAMBELL (GAM) (PAGM)

NDB/DME GAM	APP CRS	Rwy ldg	4500
369	341°	TDZE	26
Chan 92 (114.5)		Apt Elev	27

T A — Circling NA northeast of Rwy 16-34.

ODALS

MISSED APPROACH: Climb to 3000 direct GAM NDB/DME and in GAM NDB/DME holding pattern.

AWOS-3	ANCHORAGE CENTER	NOME RADIO	CTAF
125.9	132.2 281.4	122.0	122.7 L ★

APPENDIX 7
BRIEFING STRIPS (CONTINUED)

DUNKIRK, NEW YORK — AL-880 (FAA)

APP CRS	Rwy ldg	TDZE	Apt Elev
236°	5000	676	693

GPS RWY 24
CHAUTAUQUA COUNTY/DUNKIRK (DKK)

T
A NA
IAF ARM APPROACH MODE PRIOR TO IAF.

MISSED APPROACH: Climb to 1500, then climbing right turn to 3800 direct TRUNT WP and hold.

ASOS	BUFFALO APP CON	UNICOM
119.275	126.5 317.6	123.075 (CTAF) L

BATTLE CREEK, MICHIGAN — AL-41 (FAA)

VORTAC BTL	APP CRS	Rwy ldg	TDZE	Apt Elev
109.4 Chan 31	231°	10003	929	952

VOR RWY 23
W.K. KELLOGG (BTL)

T
A
ASR

For inoperative MALSR, increase S-23 Cats A/B visibility to RVR 5000. Visibility reduction by helicopters NA. When local altimeter setting not received, use Grand Rapids altimeter setting and increase all MDA 120 feet, increase Cat C visibility to RVR 5000, Cat D visibility to RVR 6000, and Circling Cat C and D visibility ¼ mile. VDP NA when using Grand Rapids altimeter setting.

MALSR A5

MISSED APPROACH: Climbing left turn to 3000 via BTL VORTAC R-177 to REIMN INT/6 DME and hold, continue climb-in-hold to 3000.

ATIS	KALAMAZOO APP CON *	BATTLE CREEK TOWER *	GND CON	UNICOM	CTAF
128.325	119.2 340.9	126.825 239.025	121.7 256.875	122.95	126.825 L

CHEYENNE, WYOMING — AL-80 (FAA)

LOC I-CYS	APP CRS	Rwy ldg	TDZE	Apt Elev
110.1	265°	7985	6121	6160

ILS or LOC RWY 27
CHEYENNE RGNL/JERRY OLSON FLD (CYS)

T
A
ASR/PAR

For inoperative MALSR, increase S-LOC 27 Cat D visibility to RVR 5000.
* RVR 1800 authorized with the use of FD or AP or HUD to DA.

MALSR A5

MISSED APPROACH: Climb to 6700, then climbing right turn to 8000 direct CYS VORTAC and hold. (TACAN aircraft continue via CYS R-016 to MARKL/10 DME and hold N, RT, 196° inbound.)

ATIS	CHEYENNE APP CON	CHEYENNE TOWER *	GND CON	UNICOM
134.425 278.3	124.55 263.075	118.7 (CTAF) L 257.8	121.9 254.275	122.95

MILWAUKEE, WISCONSIN — AL-262 (FAA) — 19283

APP CRS	Rwy ldg	TDZE	Apt Elev
256°	7867	683	729

RNAV (RNP) Y RWY 25L
GENERAL MITCHELL INTL (MKE)

RF required. RNP AR APCH.

T For uncompensated Baro-VNAV systems, procedure NA below -20°C or above 54°C.

MISSED APPROACH: Climb to 3700 on the RNAV missed approach route to PROOT and hold.

D-ATIS	MILWAUKEE APP CON	MILWAUKEE TOWER	GND CON	CLNC DEL	CPDLC
126.4	126.5 307.0	124.575 269.05	121.8 263.125	120.8	

KWETHLUK, ALASKA — AL-10325 (FAA)

WAAS	APP CRS	Rwy ldg	TDZE	Apt Elev
CH 97508 W36A	002°	3199	25	25

RNAV (GPS) RWY 36
KWETHLUK (KWT) (PFKW)

T
A NA
W
-38°C

Baro-VNAV NA. DME/DME RNP-0.3 NA.
Use Bethel altimeter setting; when not received, procedure NA.
Night landing: Rwy 36 Cat C and D NA.

MISSED APPROACH: Climb to 2200 direct FONUS and right turn via 115° track to ZALOS and via 197° track to WODIL and hold.

AWOS-3P	BETHEL ASOS	ANCHORAGE CENTER	CTAF
120.0	119.8	125.2 372.0	122.9 L

WINTER HAVEN, FLORIDA — AL-5953 (FAA) — 20030

VORTAC LAL	APP CRS	Rwy ldg	TDZE	Apt Elev
116.0 Chan 107	071°	N/A	N/A	145

VOR-A
WINTER HAVEN RGNL (GIF)

DME required.

T
A When local altimeter setting not received, use Bartow altimeter setting and increase all MDA 20 feet.

MISSED APPROACH: Climbing left turn to 2000 direct LAL VORTAC and hold.

ASOS	TAMPA APP CON	CLNC DEL (GCO)	UNICOM
133.675	120.65 290.3	121.725	123.05 (CTAF) L

APPENDIX 7
BRIEFING STRIPS (CONTINUED)

HOUSTON, TEXAS — AL-5461 (FAA) — 15120

ILS or LOC RWY 8L
GEORGE BUSH INTCNTL/HOUSTON (IAH)

LOC/DME I-BZU	APP CRS	Rwy ldg	9000
111.55	087°	TDZE	95
Chan 52 (Y)		Apt Elev	96

For inop ALSF, increase S-ILS 8L Cat E visibility to RVR 4000 and S-LOC 8L Cat C/D/E visibility to 1⅜ mile. Simultaneous approach authorized with Rwy 8R and Rwy 9.

ALSF-2

MISSED APPROACH: Climb to 600 then climbing left turn to 4000 on IAH VORTAC R-019 to CLEEP INT/IAH 22.1 DME and hold.

ATIS	HOUSTON APP CON	HOUSTON TOWER	GND CON	CLNC DEL	CPDLC
124.05	120.05 379.1 EAST 124.35 316.15 WEST	120.725 290.2	121.7	128.1	

CARLSBAD, CALIFORNIA — AL-5310 (FAA) — 00000

RNAV (GPS) X RWY 24
MC CLELLAN-PALOMAR (CRQ)

WAAS	APP CRS	Rwy ldg	4897
CH 45831	245°	TDZE	326
W24B		Apt Elev	331

RNP APCH - GPS required, RF required

For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -4°C (25°F) or above 54°C (130°F). For inoperative MALSR, increase LNAV Cats A/B visibility to RVR 5000. Helicopter visibility reduction below RVR 4000 not authorized. Inoperative table does not apply to LPV.

MALSR

MISSED APPROACH: Climb to 2000 direct IBUGE and hold.

ATIS	SOCAL APP CON	PALOMAR TOWER★	GND CON	CLNC DEL
120.15	127.3 323.0	118.6 (CTAF) L 276.4	121.8	134.85

DETROIT, MICHIGAN — AL-119 (FAA) — 00000

ILS or LOC RWY 22L
DETROIT METRO WAYNE COUNTY (DTW)

LOC/DME I-DWC	APP CRS	Rwy ldg	12003
110.7	215°	TDZE	637
Chan 44		Apt Elev	645

RADAR required for procedure entry.

Simultaneous approach authorized with Rwy 21L.
RVR 1800 authorized with use of FD or AP or HUD to DA.

MALSR

MISSED APPROACH: Climb to 3000 on heading 215° and CRL R-025 to CRL VORTAC and hold.

ATIS	DETROIT APP CON	METRO TOWER	GND CON	CLNC DEL
133.675	124.05 363.2 (WEST) 125.15 363.2 (EAST)	135.0 317.725 (WEST) 118.4 317.725 (EAST)	121.8 (NW) 119.45 (NE) 132.72 (SW) 119.25 (SE)	120.65

DETROIT, MICHIGAN — AL-119 (FAA) — 00000

ILS or LOC RWY 21L
DETROIT METRO WAYNE COUNTY (DTW)

LOC/DME I-EJR	APP CRS	Rwy ldg	10001
111.5	216°	TDZE	632
Chan 52		Apt Elev	645

RNAV 1.
From RYEDR and CPBBO: RNAV-1-DME/DME/IRU or GPS required. Aircraft not DME/DME/IRU or GPS equipped - RADAR required for procedure entry.

Simultaneous approach authorized. DME or RADAR required.
**RVR 1800 authorized with use of FD or AP or HUD to DA.

MALSR

MISSED APPROACH: Climb to 1100 then climbing left turn to 4000 on DXO R-122 to GAAGE/DXO 16 DME and hold.

D-ATIS	DETROIT APP CON	METRO TOWER	GND CON	CLNC DEL	CPDLC
133.675	124.05 363.2 (WEST) 125.15 363.2 (EAST)	118.4 317.725	121.8 (NW) 119.45 (NE) 132.72 (SW) 119.25 (SE)	120.65	

BRAWLEY, CALIFORNIA — AL-6932 (FAA) — 19227

RNAV (GPS) RWY 26
BRAWLEY MUNI (BWC)

APP CRS	Rwy ldg	4006
272°	TDZE	-135
	Apt Elev	-129

NA

GPS or RNP- 0.3 required. DME/DME RNP- 0.3 NA.
Use Imperial County altimeter setting.
Circling Rwy 8 NA at night.

MISSED APPROACH: Climbing left turn to 3600 direct IPL VORTAC and hold.

IPL ASOS	LOS ANGELES CENTER	CTAF
132.175	128.6 291.7	122.9 L

TOK, ALASKA — AL-10059 (FAA) — 19339

RNAV (GPS) RWY 7
TOK JUNCTION (6K8) (PFTO)

APP CRS	Rwy ldg	2509
070°	TDZE	1643
	Apt Elev	1643

NA

DME/DME RNP-0.3 NA.
Use Northway altimeter setting.

MISSED APPROACH: Climb to 8000 direct NUNIC and via 119° track to CIMGO and hold, continue climb-in-hold to 8000.

ORT/PAOR ASOS	ANCHORAGE CENTER	NORTHWAY RADIO	UNICOM
135.4	126.55 323.0	122.4	122.8 (CTAF) L

APPENDIX 8
BRIEFING STRIPS - COPTER

INDIANAPOLIS, INDIANA — AL-6835 (FAA)

COPTER RNAV (GPS) 291°
INDIANAPOLIS DOWNTOWN (8A4)

APP CRS	Rwy ldg	N/A
291°	TDZE	N/A
	Apt Elev	732

NA When local altimeter setting not received, use Indianapolis Intl altimeter setting and increase MDA 40 feet. Limit final and missed approach airspeed to 70 KIAS. DME/DME RNP-0.3 NA. ACTIVATE High Intensity Pad Lights-CTAF.

MISSED APPROACH: Climb to 1500 then climbing right turn to 3000 direct VHP VORTAC and hold.

AWOS-3	INDIANAPOLIS APP CON	UNICOM
118.250	125.275 317.8	123.05 (CTAF)

WASHINGTON, DC — AL-443 (FAA) — 19283

COPTER ILS or LOC/DME RWY 1
RONALD REAGAN WASHINGTON NTL (DCA)

LOC/DME I-DCA	APP CRS	Rwy ldg	6869
109.9	006°	TDZE	14
Chan 36		Apt Elev	15

NA

ALSF-2

MISSED APPROACH: Climb to 420 then climbing left turn to 2100 on DCA VOR/DME R-325 to GTN NDB/INT/DCA 5.9 DME and hold.

D-ATIS	POTOMAC APP CON	WASHINGTON TOWER	GND CON	CLNC DEL	CPDLC
132.65	119.85 239.25 (WEST/SOUTH) 124.2 360.8 (EAST)	119.1 257.6	121.7 257.6	128.25	

NEW YORK, NEW YORK — AL-289 (FAA) — 12348

COPTER ILS or LOC/DME RWY 22
LA GUARDIA (LGA)

LOC I-URD	APP CRS	Rwy ldg	7001
110.5	224°	TDZE	12
		Apt Elev	21

ALSF-1

MISSED APPROACH: Climb to 2700 via LGA VOR/DME R-225 to PROUD INT/LGA 11 DME and hold.

ATIS ARR / ATIS DEP	NEW YORK APP CON	LA GUARDIA TOWER	GND CON	CLNC DEL
125.95 127.05	120.8 263.0	118.7 263.0	121.7 263.0	135.2

APPENDIX 9
LEGEND - IAP PLANVIEW

LEGEND 20086 INSTRUMENT APPROACH PROCEDURES (CHARTS)

PLANVIEW SYMBOLS

TERMINAL ROUTES

Procedure Track

Missed Approach

Visual Flight Path

165°
345°
Procedure Turn
(Type degree and point of turn optional)

3100 NoPT 5.6 NM to GS Intcpt
045°
(14.2 to LOM)
Minimum Route Altitude
2000
155°
Feeder Route
(15.1)
Mileage

HOLDING PATTERNS

Missed Approach
090°
270°

Hold-in-lieu of Procedure Turn
090°
1 min
270°
090°
(IAS)
270°
4 NM

HOLD 8000
Arrival
090°
270°

Holding pattern with max. restricted airspeed:
(175K) applies to all altitudes.
(210K) applies to altitudes above 6000′ to and including 14000′.
Arrival Holding Pattern altitude restrictions will be indicated when they deviate from the adjacent leg.
Timing or distance limits for Hold-in-lieu of Procedure Turn Holding Patterns will be shown.
DME fixes may be shown.

FIXES/ATC REPORTING REQUIREMENTS

Reporting Point
▲ Name (Compulsory)
△ Name (Non-Compulsory)

Intersection

WAYPOINT (Compulsory)

WAYPOINT (Non-Compulsory)

FLYOVER POINT

MAP WP (Flyover)

Computer Navigation Fix (CNF) - No ATC Function
x (NAME) ("x" omitted when it conflicts with runway pattern)

15 DME Distance From Facility

AUSTN INT
ARC/DME/RNAV Fix

R-198 → Radial line and value

LR-198 → Lead Radial

LB-198 → Lead Bearing

ALTITUDES

5500 Mandatory Altitude
2500 Minimum Altitude
4300 Maximum Altitude
3000 Recommended Altitude
5000 Mandatory Block
3000 Altitude

INDICATED AIRSPEED

175K	120K	250K	180K
Mandatory Airspeed	Minimum Airspeed	Maximum Airspeed	Recommended Airspeed

RADIO AIDS TO NAVIGATION

110.1 Underline indicates No Voice transmitted on this frequency

Compulsory:
VOR, VORTAC, DME, NDB/DME, VOR/DME, TACAN, NDB

Non-Compulsory:
VOR, VORTAC, DME, NDB/DME, VOR/DME, TACAN, NDB

LOM/LMM (Compass locator at Outer Marker/Middle Marker)

Marker Beacon

Marker beacons that are not specifically part of the procedure.

Localizer (LOC/LDA) Course
Right side shading- Front course; Left side shading- Back Course

SDF Course

LOC/DME

LOC/LDA/SDF Transmitter
(shown when installation is offset from its normal postion off the end of the runway.)

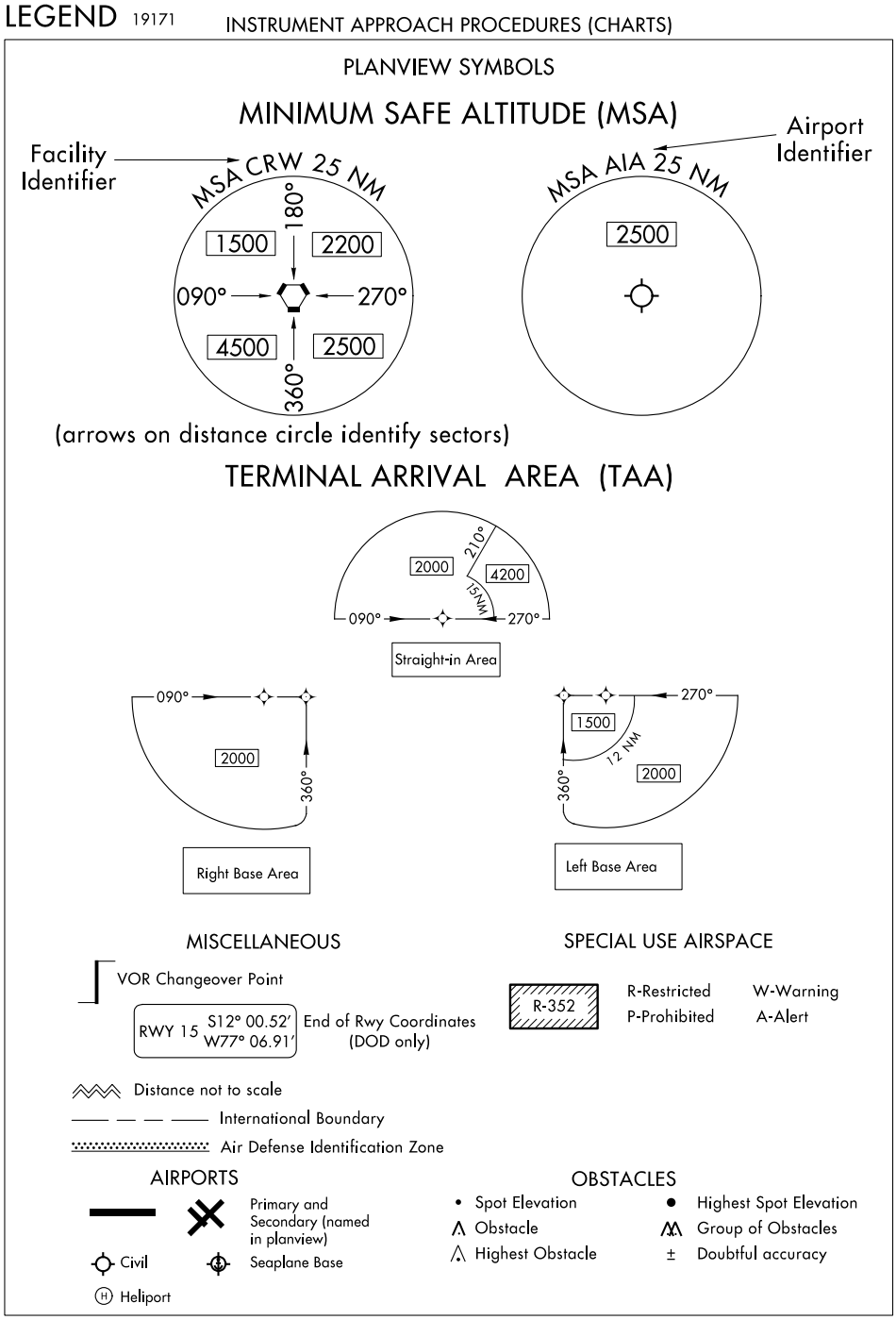
Primary Navaid with Coordinate Values
LIMA
114.5 LIM
Chan 92
S12°00.80′
W77°07.00′

Secondary Navaid
LMM
LIMA
248 NT

SCOTT
Chan 59
SKE
(112.2)
VHF Paired Frequency

LEGEND 20086

APPENDIX 9
LEGEND - IAP PLANVIEW (CONTINUED)



APPENDIX 10
LEGEND - IAP PROFILE

LEGEND 00000 INSTRUMENT APPROACH PROCEDURES (CHARTS)

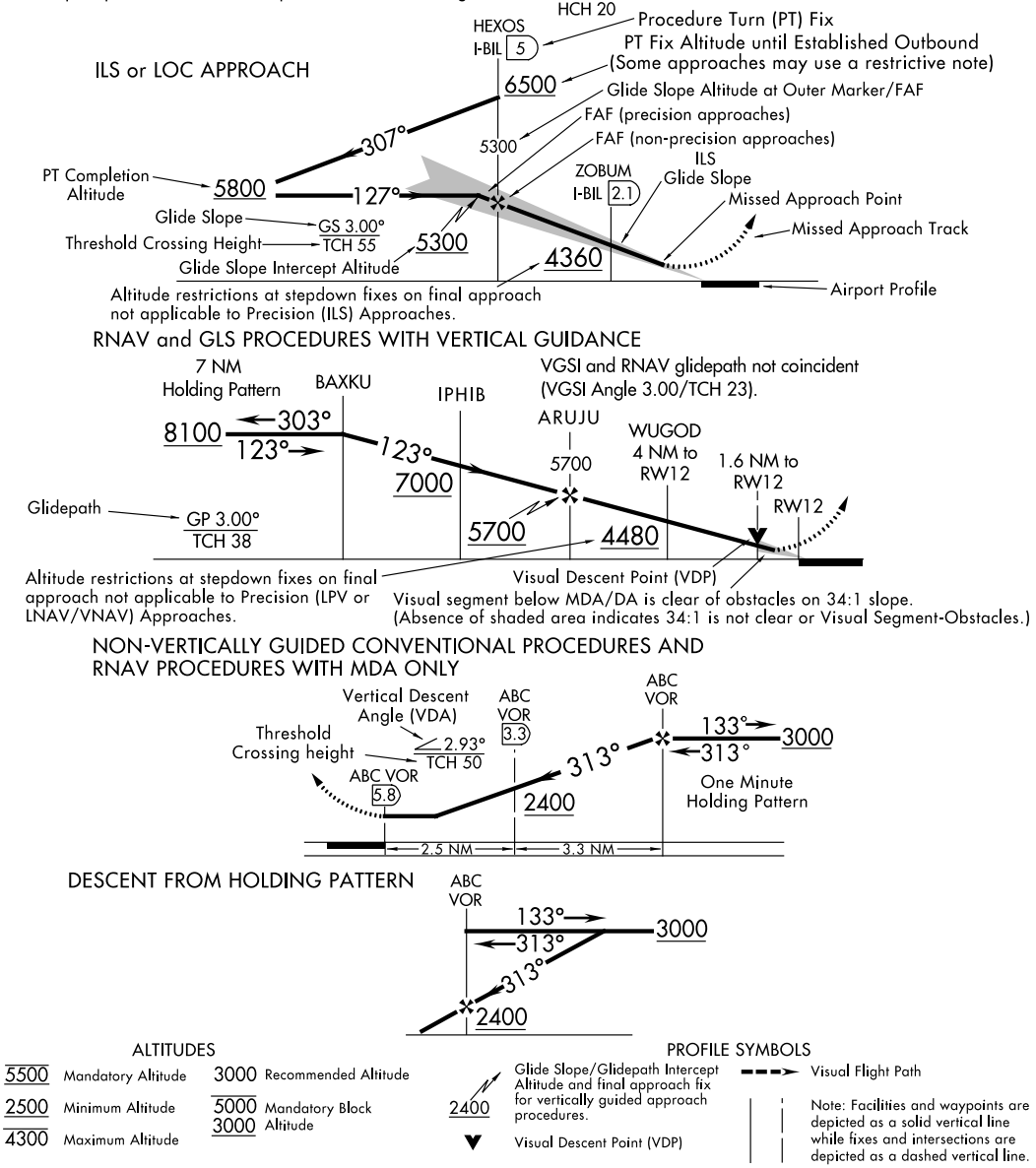
PROFILE VIEW

Three different methods are used to depict either electronic or vertical guidance: "GS", "GP", or "VDA".

1. "GS" indicates that an Instrument Landing System (ILS) electronic glide slope (a ground antenna) provides vertical guidance. The profile section of ILS procedures depict a GS angle and TCH in the following format: GS 3.00°/TCH 55.

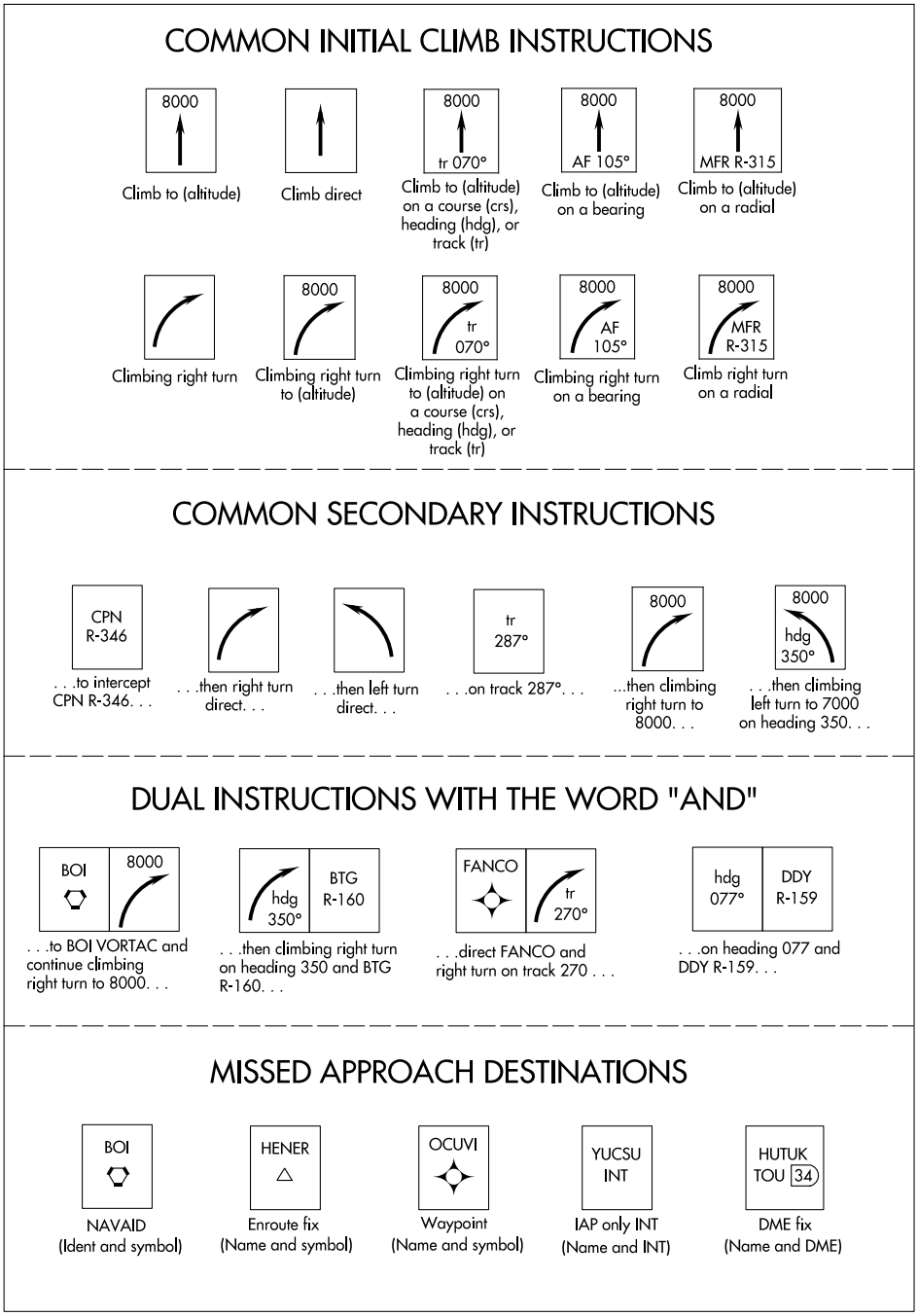
2. "GP" on GLS and RNAV procedures indicates that either electronic vertical guidance (via Wide Area Augmentation System - WAAS or Ground Based Augmentation System - GBAS) or barometric vertical guidance is provided. GLS and RNAV procedures with a published decision altitude (DA/H) depict a GP angle and TCH in the following format: GP 3.00°/TCH 50.

3. An advisory vertical descent angle (VDA) is provided on non-vertically guided conventional procedures and RNAV procedures with only a minimum descent altitude (MDA) to assist in preventing controlled flight into terrain. On Civil (FAA) procedures, this information is placed above or below the procedure track following the fix it is based on. Absence of a VDA or a note that the VDA is not authorized indicates that the prescribed obstacle clearance surface is not clear and the VDA must not be used below MDA. VDA is depicted in the following format: ∠3.00°/TCH 55. On Copter procedures this is depicted in the following format: ∠7.30°/HCH 20



LEGEND 00000

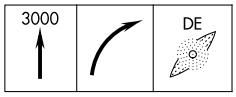
APPENDIX 11
MISSED APPROACH ICONS (VOLPE)



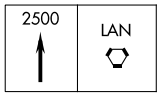
APPENDIX 12
MISSED APPROACH EXAMPLES

EXAMPLES

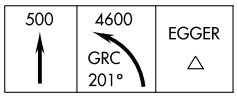
MISSED APPROACH: Climb to 3000 then right turn direct MADDS LOM and hold.
EX from: 00119_IL4R



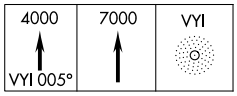
MISSED APPROACH: Climb to 2500 direct LAN VORTAC and hold.
EX from: 00224_VG24



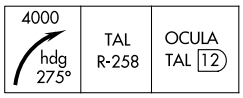
MISSED APPROACH: Climb to 500 then climbing left turn to 4600 via 201° bearing from GCR NDB to EGGER INT/I-CDV 11.1 DME and hold.
EX from: 01195_ILD27



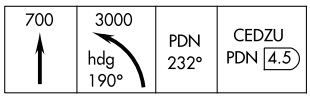
MISSED APPROACH: Climb to 4000 via 005° bearing from VYI NDB then climb to 7000 direct VYI NDB and hold.
EX from: 00762_ND2



MISSED APPROACH: Climbing right turn to 4000 via heading 275° and TAL VOR/DME R-258 to OCULA 12 DME and hold, continue climb-in-hold to 4000.
EX from: 01227_VD7

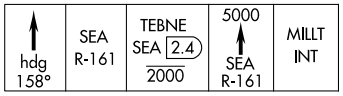


MISSED APPROACH: Climb to 700 then climbing left turn to 3000 via heading 190° and PDN NDB bearing 232° to CEDZU/4.5 DME and hold, continue climb-in-hold to 3000. EX from: 01240_ND5

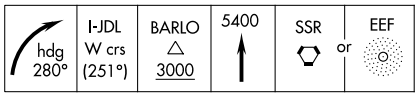


MISSED APPROACH: Climb to 3000 direct PARNE and via track 304° to GICEY and via track 353° to SVM VORTAC and hold. EX from: 00119_R22R

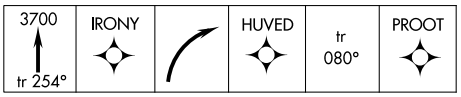
MISSED APPROACH: Climb heading 158° and SEA VORTAC R-161 to cross TEBNE/SEA 2.4 DME/RADAR at or below 2000, then climb to 5000 via SEA VORTAC R-161 to MILLT INT/SEA 11 DME/RADAR and hold, continue climb-in-hold to 5000. EX from: 00582_IL16R



MISSED APPROACH: Immediate climbing right turn via heading 280° and I-JDL west course (251°) to cross BARLO INT/I-JDL 8 DME at or above 3000. Continue climb to 5400 direct SSR VORTAC or EEF NDB and hold.
EX from: 01191_LX8



*MISSED APPROACH: Climb to 3700 on the RNAV missed approach route to PROOT and hold.
EX from: 00262_RRY25L



* For RNPs that do not have the entire missed approach written out in the textual description, the entire missed approach track must still be shown in the icon boxes. Use the points as depicted on the procedure source document.

NOTES

-After the words "then", "direct", "and" are stated, the following instuctions belong in a new box.
-If space is an issue, you only have to show the first 4 missed approach icon boxes. (per specs)
-Do not put "RADAR" in the missed approach icon boxes unless the fix is a RADAR fix only.
-Do not chart frequencies.
-Never show the word "bearing" or the abbreviation "BRG" or "brg". Only show the navaid ident with the bearing value.
-Keep all the boxes the same height. Width can vary.
-DME boats belong with a DME fix only. Do not put DME boats with enroute fixes, or IAP only INTs.

APPENDIX 13
LEGEND - AIRPORT DIAGRAM/SKETCH

19171
LEGEND

INSTRUMENT APPROACH PROCEDURES (CHARTS)

AIRPORT DIAGRAM/AIRPORT SKETCH

Runways

Hard Surface | Other Than Hard Surface | Stopways,Taxiways, Parking Areas | Metal Surface

Closed Runway | Closed Surface | Under Construction | Water Runway

ARRESTING GEAR: Specific arresting gear systems; e.g., BAK12, MA-1A etc., shown on airport diagrams, not applicable to Civil Pilots. Military Pilots refer to appropriate DOD publications.

uni-directional | bi-directional | Jet Barrier

ARRESTING SYSTEM (EMAS)

REFERENCE FEATURES

Displaced Threshold.....
Hot Spot .....
Runway Holding Position Markings.....
Buildings.....
24-Hour Self-Serve Fuel ##.....
Tanks.....
Obstructions.....
Airport Beacon #.....
Runway
Radar Reflectors.....
Control Tower #..... TWR

When Control Tower and Rotating Beacon are co-located, Beacon symbol will be used and further identified as TWR.

A fuel symbol is shown to indicate 24-hour self-serve fuel available, see appropriate Chart Supplement for information.

NOTE:
All new and revised airport diagrams are shown referenced to the World Geodetic System (WGS) (noted on appropriate diagram), and may not be compatible with local coordinates published in FLIP. (Foreign Only)

Helicopter Alighting Areas

Negative Symbols used to identify Copter Procedures

landing point.....

Runway TDZ elevation.....TDZE 123

←0.3% DOWN

Runway Slope.....0.8% UP→
(shown when runway slope is greater than or equal to 0.3%)

NOTE:
Runway Slope measured to midpoint on runways 8000 feet or longer.

U.S. Navy Optical Landing System (OLS) "OLS" location is shown because of its height of approximately 7 feet and proximity to edge of runway may create an obstruction for some types of aircraft.

Approach light symbols are shown in the Flight Information Handbook.

Airport diagram scales are variable.

True/magnetic North orientation may vary from diagram to diagram

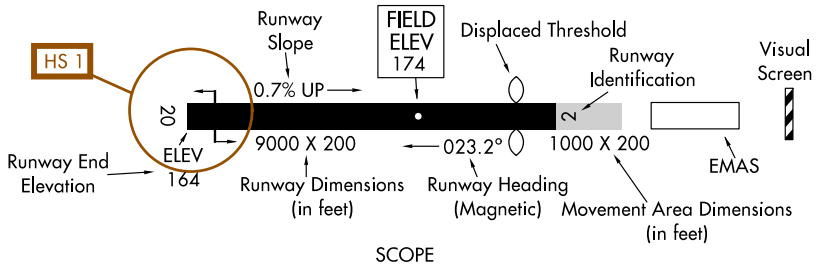
Coordinate values are shown in 1 or ½ minute increments. They are further broken down into 6 second ticks, within each 1 minute increments.

Positional accuracy within ±600 feet unless otherwise noted on the chart.

Runway length depicted is the physical length of the runway (end-to-end, including displaced thresholds if any) but excluding areas designated as stopways.

A D symbol is shown to indicate runway declared distance information available, see appropriate Chart Supplement for distance information.

Runway Weight Bearing Capacity/or PCN Pavement Classification Number is shown as a codified expression.
Refer to the appropriate Supplement/Directory for applicable codes e.g., RWY 14-32 PCN 80 F/D/X/U S-75, D-185, 2S-175, 2D-325



SCOPE

Airport diagrams are specifically designed to assist in the movement of ground traffic at locations with complex runway/taxiway configurations. Airport diagrams are not intended to be used for approach and landing or departure operations. For revisions to Airport Diagrams: Consult FAA Order 7910.4.

LEGEND

APPENDIX 14
LEGEND - AIRPORT SKETCH LIGHTING SYSTEMS

00000
LEGEND

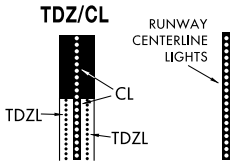
INSTRUMENT APPROACH PROCEDURES (CHARTS)
APPROACH LIGHTING SYSTEM - UNITED STATES

Approach lighting and visual glide slope systems are indicated on the airport sketch by an identifier, e.g., A2, V, etc.

A dot " • " portrayed with approach lighting letter identifier indicates sequenced flashing lights (F) installed with the approach lighting system e.g., A1. Negative symbology, e.g., A1, V indicates Pilot Controlled Lighting (PCL).

RUNWAY TOUCHDOWN ZONE AND CENTERLINE LIGHTING SYSTEMS

TDZ/CL

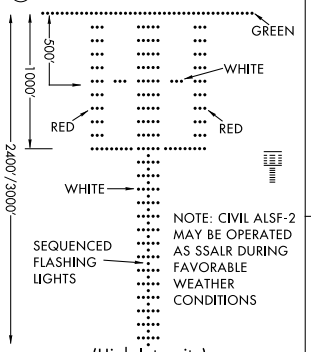


AVAILABILITY of TDZ/CL will be shown by NOTE in SKETCH e.g. "TDZ/CL Rwy 15"

APPROACH LIGHTING SYSTEM

A

ALSF-2

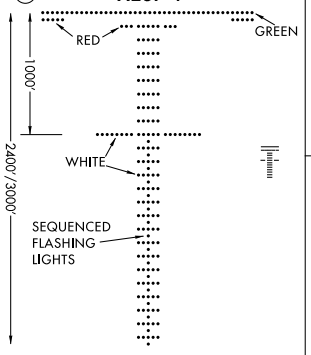


(High Intensity)
LENGTH 2400/3000 FEET

APPROACH LIGHTING SYSTEM

A1

ALSF-1



(High Intensity)
LENGTH 2400/3000 FEET

SHORT APPROACH LIGHTING SYSTEM

A2

SALS/SALSF
(High Intensity)

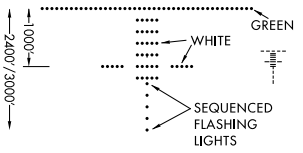
SAME AS INNER 1500' OF ALSF-1

SIMPLIFIED SHORT APPROACH LIGHTING SYSTEM

with Runway Alignment Indicator Lights

A3

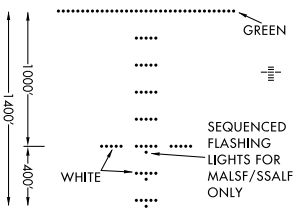
SSALR



(High Intensity)
LENGTH 2400/3000 FEET

MEDIUM INTENSITY (**MALS** and **MALSF**) OR SIMPLIFIED SHORT (**SSALS** and **SSALF**) APPROACH LIGHTING SYSTEMS

A4



LENGTH 1400 FEET

MEDIUM INTENSITY APPROACH LIGHTING SYSTEM

with Runway Alignment Indicator Lights

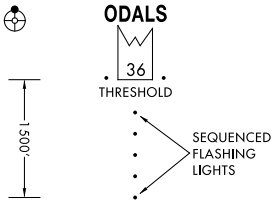
A5

MALSR

SAME LIGHT CONFIGURATION AS SSALR.

OMNIDIRECTIONAL APPROACH LIGHTING SYSTEM

ODALS



LENGTH 1500 FEET

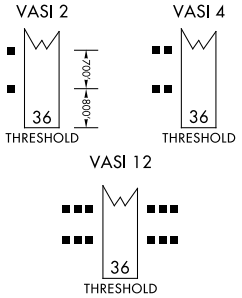
VISUAL APPROACH SLOPE INDICATOR

V

VASI

VISUAL APPROACH SLOPE INDICATOR WITH STANDARD THRESHOLD CLEARANCE PROVIDED.

ALL LIGHTS WHITE — TOO HIGH
FAR LIGHTS RED, NEAR LIGHTS WHITE — ON GLIDE SLOPE
ALL LIGHTS RED — TOO LOW

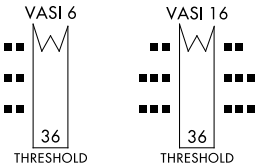


VISUAL APPROACH SLOPE INDICATOR

V3

VASI

3-BAR, 6 OR 16 BOX, VISUAL APPROACH SLOPE INDICATOR THAT PROVIDES 2 GLIDE ANGLES AND 2 THRESHOLD CROSSING HEIGHTS.



LEGEND

APPENDIX 14
LEGEND - AIRPORT SKETCH LIGHTING SYSTEMS (CONTINUED)

LEGEND 00000

INSTRUMENT APPROACH PROCEDURES (CHARTS)
APPROACH LIGHTING SYSTEM - UNITED STATES

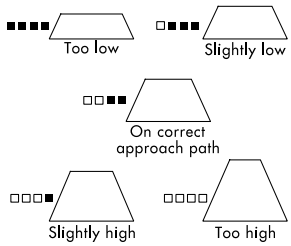
Approach lighting and visual glide slope systems are indicated on the airport sketch by an identifier, (A2), (V) etc.

A dot " • " portrayed with approach lighting letter identifier indicates sequenced flashing lights (F) installed with the approach lighting system e.g., (A1). Negative symbology, e.g., (A1), (V) indicates Pilot Controlled Lighting (PCL).

06 DEC 2018 to 03 JAN 2019

(P) PRECISION APPROACH PATH INDICATOR

PAPI



Legend: □ White ■ Red

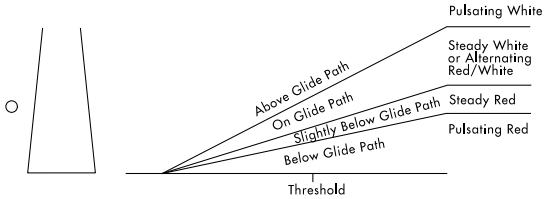
(V1) "T"-VISUAL APPROACH SLOPE INDICATOR

"T"-VASI

"T" ON BOTH SIDES OF RWY
ALL LIGHTS VARIABLE WHITE.
CORRECT APPROACH SLOPE-
ONLY CROSS BAR VISIBLE.
UPRIGHT "T"- FLY UP.
INVERTED "T"- FLY DOWN.
RED "T"- GROSS
UNDERSHOOT.

(V2) PULSATING VISUAL APPROACH SLOPE INDICATOR

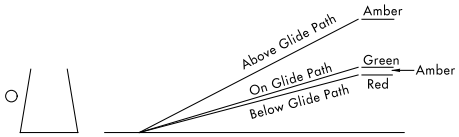
PVASI



CAUTION: When viewing the pulsating visual approach slope indicators in the pulsating white or pulsating red sectors, it is possible to mistake this lighting aid for another aircraft or a ground vehicle. Pilots should exercise caution when using this type of system.

(V4) TRI-COLOR VISUAL APPROACH SLOPE INDICATOR

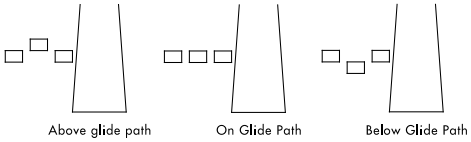
TRCV



CAUTION: When the aircraft descends from green to red, the pilot may see a dark amber color during the transition from green to red.

(V5) ALIGNMENT OF ELEMENTS SYSTEMS

APAP



Painted panels which may be lighted at night.
To use the system the pilot positions the aircraft so the elements are in alignment.

06 DEC 2018 to 03 JAN 2019

LEGEND 00000

APPENDIX 15
LANDING MINIMA

TERMS/LANDING MINIMA DATA 00000

IFR LANDING MINIMA

The United States Standard for Terminal Instrument Procedures (TERPS) is the approved criteria for formulating instrument approach procedures. Landing minima are established for six aircraft approach categories (ABCDE and COPTER). In the absence of COPTER MINIMA, helicopters may use the CAT A minimums of other procedures.

LANDING MINIMA FORMAT

In this example airport elevation is 1179, and runway touchdown zone elevation is 1152.

Visibility (RVR 100's of feet) — DA — Aircraft Approach Category — HAT

CATEGORY	A	B	C	D
S-ILS 27	1352/24		200 (200-½)	
S-LOC 27	1440/24 288		(300-½)	1440/50 288 (300-1)
CIRCLING	1540-1 361 (400-1)	1640-1 461 (500-1)	1640-1½ 461 (500-1½)	1740-2 561 (600-2)

Straight-in ILS to Runway 27

Straight-in with Glide Slope Inoperative or not used to Runway 27

All **weather** minimums in parentheses not applicable to Civil Pilots. Military Pilots refer to appropriate regulations.

MDA — HAA — Visibility in Statute Miles

COPTER MINIMA ONLY

CATEGORY	COPTER
H-176°	680-½ 363 (400-½)

Copter Approach Direction — Height of MDA/DA Above Landing Area (HAL) — No circling minimums are provided

NOTE: The W symbol indicates outages of the WAAS vertical guidance may occur daily at this location due to initial system limitations. WAAS NOTAMS for vertical outages are not provided for this approach. Use LNAV minima for flight planning at these locations, whether as a destination or alternate. For flight operations at these locations, when the WAAS avionics indicate that LNAV/VNAV or LPV service is available, then vertical guidance may be used to complete the approach using the displayed level of service. Should an outage occur during the procedure, reversion to LNAV minima may be required. As the WAAS coverage is expanded, the W will be removed.

RNAV minimums are dependent on navigation equipment capability, as stated in the applicable AFM, AFMS, or other FAA approved document. See AIM paragraph 5-4-5, AC 90-105 and AC 90-107 for detailed requirements for each line of minima.

COLD TEMPERATURE AIRPORTS

NOTE: A ❄-12°C symbol indicates a cold temperature altitude correction is required at this airport when reported temperature is at or below the published temperature. See the following Cold Temperature Error Table to make manual corrections. Advise ATC with altitude correction. Advising ATC with altitude corrections is not required in the final segment. See Aeronautical Information Manual (AIM), Chapter 7, for guidance and additional information. For a complete list, see the "Cold Temperature Airports" link under the Additional Resources heading at the bottom of the following page: http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dtpp/search/

COLD TEMPERATURE ERROR TABLE

HEIGHT ABOVE AIRPORT IN FEET

REPORTED TEMP °C	200	300	400	500	600	700	800	900	1000	1500	2000	3000	4000	5000
+10	10	10	10	10	20	20	20	20	20	30	40	60	80	90
0	20	20	30	30	40	40	50	50	60	90	120	170	230	280
-10	20	30	40	50	60	70	80	90	100	150	200	290	390	490
-20	30	50	60	70	90	100	120	130	140	210	280	420	570	710
-30	40	60	80	100	120	140	150	170	190	280	380	570	760	950
-40	50	80	100	120	150	170	190	220	240	360	480	720	970	1210
-50	60	90	120	150	180	210	240	270	300	450	590	890	1190	1500

AIRCRAFT APPROACH CATEGORIES

Aircraft approach category indicates a grouping of aircraft based on a speed of VREF, if specified, or if VREF not specified, 1.3 VSO at the maximum certificated landing weight. VREF, VSO, and the maximum certificated landing weight are those values as established for the aircraft by the certification authority of the country of registry. Helicopters are Category A aircraft. An aircraft shall fit in only one category. When necessary to operate the aircraft at an airspeed in excess of the maximum airspeed of its certified aircraft approach category, pilots should use the applicable higher category minima. For additional options and to ensure the aircraft remains within protected airspace, consult the AIM. See following category limits:

MANEUVERING TABLE

Approach Category	A	B	C	D	E
Speed (Knots)	0-90	91-120	121-140	141-165	Abv 165

TERMS/LANDING MINIMA DATA 00000

APPENDIX 15
LANDING MINIMA (CONTINUED)

TERMS/LANDING MINIMA DATA 00000

CIRCLING APPROACH OBSTACLE PROTECTED AIRSPACE

The circling MDA provides vertical obstacle clearance during a circle-to-land maneuver. The circling MDA protected area extends from the threshold of each runway authorized for landing following a circle-to-land maneuver for a distance as shown in the tables below. The resultant arcs are then connected tangentially to define the protected area.

STANDARD CIRCLING APPROACH MANEUVERING RADIUS

Circling approach protected areas developed prior to late 2012 used the radius distances shown in the following table, expressed in nautical miles (NM), dependent on aircraft approach category. The approaches using standard circling approach areas can be identified by the absence of the C symbol on the circling line of minima.

Circling MDA in feet MSL	Approach Category and Circling Radius (NM)				
	CAT A	CAT B	CAT C	CAT D	CAT E
All Altitudes	1.3	1.5	1.7	2.3	4.5

C EXPANDED CIRCLING APPROACH MANEUVERING AIRSPACE RADIUS

Circling approach protected areas developed after late 2012 use the radius distance shown in the following table, expressed in nautical miles (NM), dependent on aircraft approach category, and the altitude of the circling MDA, which accounts for true airspeed increase with altitude. The approaches using expanded circling approach areas can be identified by the presence of the C symbol on the circling line of minima.

Circling MDA in feet MSL	Approach Category and Circling Radius (NM)				
	CAT A	CAT B	CAT C	CAT D	CAT E
1000 or less	1.3	1.7	2.7	3.6	4.5
1001-3000	1.3	1.8	2.8	3.7	4.6
3001-5000	1.3	1.8	2.9	3.8	4.8
5001-7000	1.3	1.9	3.0	4.0	5.0
7001-9000	1.4	2.0	3.2	4.2	5.3
9001 and above	1.4	2.1	3.3	4.4	5.5

Comparable Values of RVR and Visibility

The following table shall be used for converting RVR to ground or flight visibility. For converting RVR values that fall between listed values, use the next higher RVR value; do not interpolate. For example, when converting 4800 RVR, use 5000 RVR with the resultant visibility of 1 mile.

RVR (feet)	Visibility (SM)	RVR (feet)	Visibility (SM)	RVR (feet)	Visibility (SM)	RVR (feet)	Visibility (SM)
1600	¼	2400	½	3500	⅝	5500	1
1800	½	2600	½	4000	¾	6000	1¼
2000	½	3000	⅝	4500	⅞		
2200	½	3200	⅝	5000	1		

RADAR MINIMA

	RWY	GP/TCH/RPI	CAT	DA/ MDA-VIS	HAT/ HAA	CEIL-VIS	CAT	DA/ MDA-VIS	HAT/ HAA	CEIL-VIS
PAR	10	2.5°/42/1000	ABCDE	**195**/16	100	(100-¼)				
	28	2.5°/48/1068	ABCDE	**187**/16	100	(100-¼)				
ASR	10		ABC	**560**/40	463	(500-¾)	DE	**560**/50	463	(500-1)
	28		AB	**600**/50	513	(600-1)	CDE	**600**/60	513	(600-1¼)
CIR	10		AB	**560**-1¼	463	(500-1¼)	CDE	**560**-1½	463	(500-1½)
	28		AB	**600**-1¼	503	(600-1¼)	CDE	**600**-1½	503	(600-1½)

Visibility (RVR 100's of feet)

Visibility in Statute Miles

All minimums in parentheses not applicable to Civil Pilots. Military Pilots refer to appropriate regulations.

Radar Minima:

1. Minima shown are the lowest permitted by established criteria. Pilots should consult applicable directives for their category of aircraft.
2. The circling MDA and weather minima to be used are those for the runway to which the final approach is flown- not the landing runway. In the above RADAR MINIMA example, a category C aircraft flying a radar approach to runway 10, circling to land on runway 28, must use an MDA of 560 feet with weather minima of 500-1½.

NOTE: Military RADAR MINIMA may be shown with communications symbology that indicates emergency frequency monitoring capability by the radar facility as follows: (E) VHF and UHF emergency frequencies monitored
(V) VHF emergency frequency (121.5) monitored
(U) UHF emergency frequency (243.0) monitored

Additionally, unmonitored frequencies which are available on request from the controlling agency may be annotated with an "x".

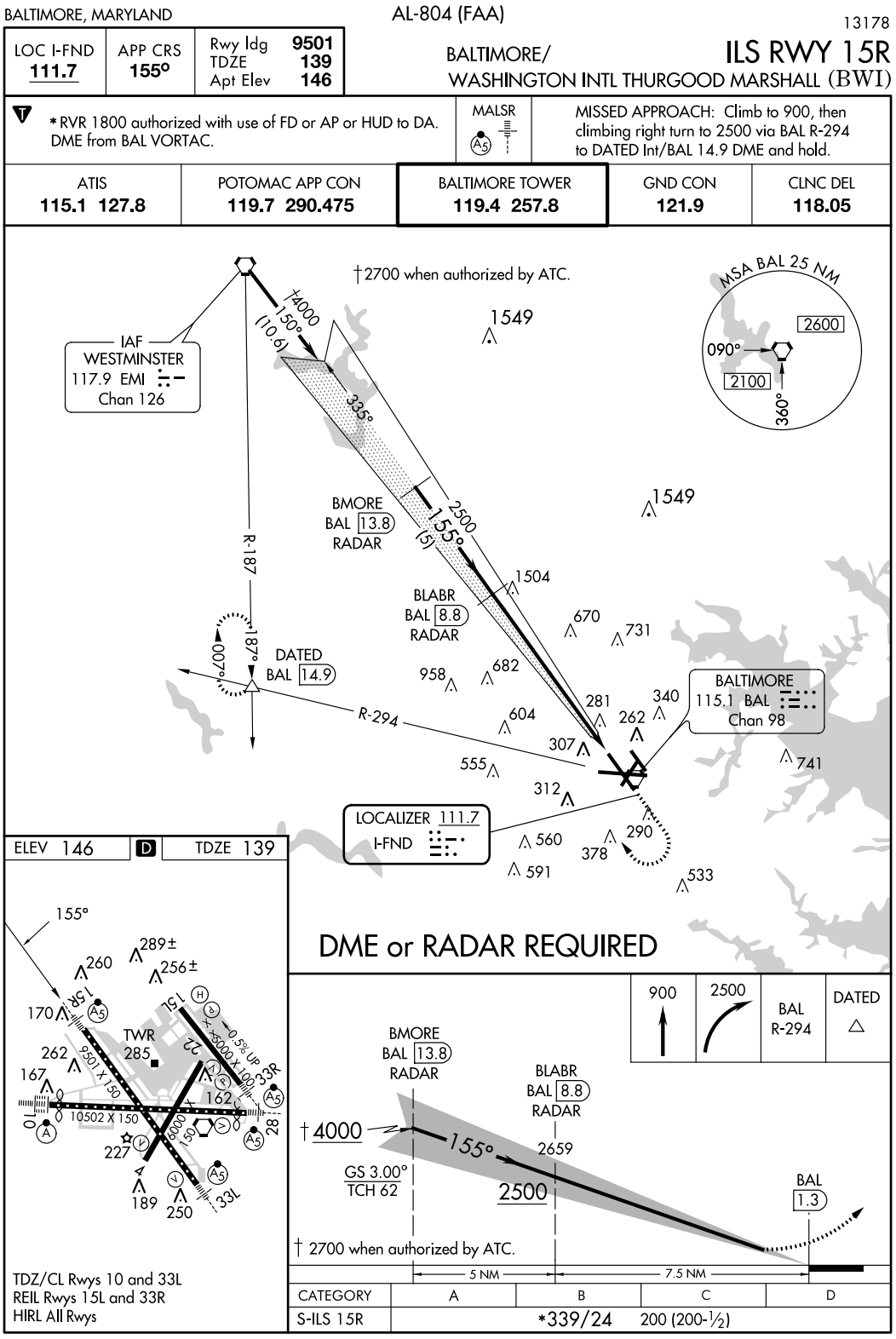
A Alternate Minimums not standard. Civil users refer to tabulation. USA/USN/USAF pilots refer to appropriate regulations.

A NA Alternate minimums are Not Authorized due to unmonitored facility or absence of weather reporting service.

T Airport is published in the Takeoff Minimums, (Obstacle) Departure Procedures, and Diverse Vector Area (Radar Vectors) tabulation.

TERMS/LANDING MINIMA DATA 00000

APPENDIX 16
ILS



APPENDIX 17
ILS OR LOC

BALTIMORE, MARYLAND — AL-804 (FAA) — 19283

LOC I-BAL	APP CRS	Rwy ldg	9953
109.7	105°	TDZE	143
		Apt Elev	143

BALTIMORE/ WASHINGTON INTL THURGOOD MARSHALL (BWI)
ILS or LOC RWY 10

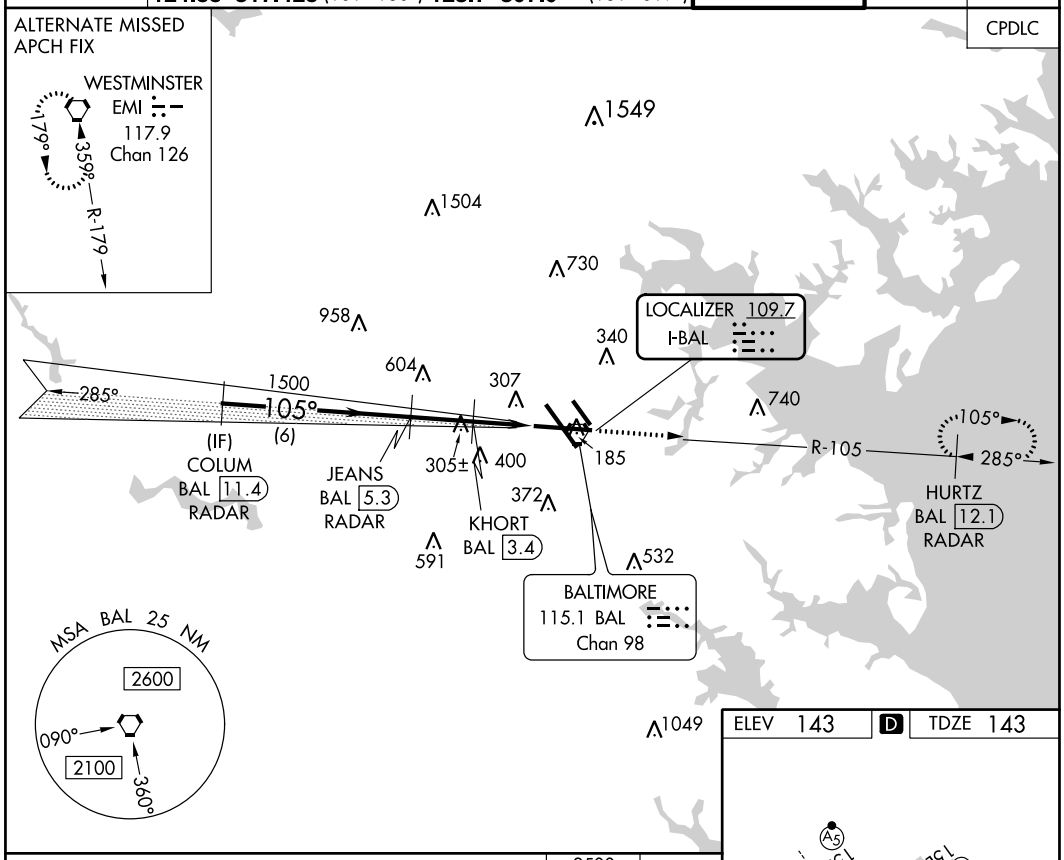
RADAR required for procedure entry.
DME required.

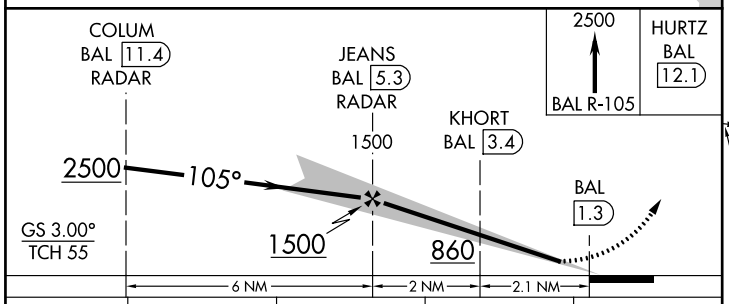
ALSF-2

MISSED APPROACH: Climb to 2500 on BAL VORTAC R-105 to HURTZ/BAL 12.1 DME/RADAR and hold.

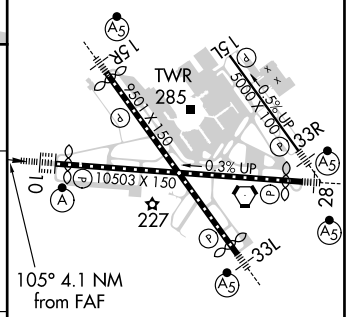
D-ATIS	POTOMAC APP CON	BALTIMORE TOWER	GND CON	CLNC DEL
115.1 127.8	119.0 282.275 (020°-100°) 119.7 290.475 (131°-180°) 124.55 317.425 (101°-130°) 128.7 307.9 (181°-019°)	119.4 257.8	121.9	118.05

CPDLC





ELEV 143 | D | TDZE 143



TDZ/CL Rwys 10 and 33L
REIL Rwys 15L and 33R
HIRL All Rwys

CATEGORY	A	B	C	D
S-ILS 10	343/18 200 (200-½)			
S-LOC 10	580/24 437 (500-½)		580/40 437 (500-¾)	
C CIRCLING	640-1 497 (500-1)	660-1 517 (600-1)	700-1½ 557 (600-1½)	860-2¼ 717 (800-2¼)

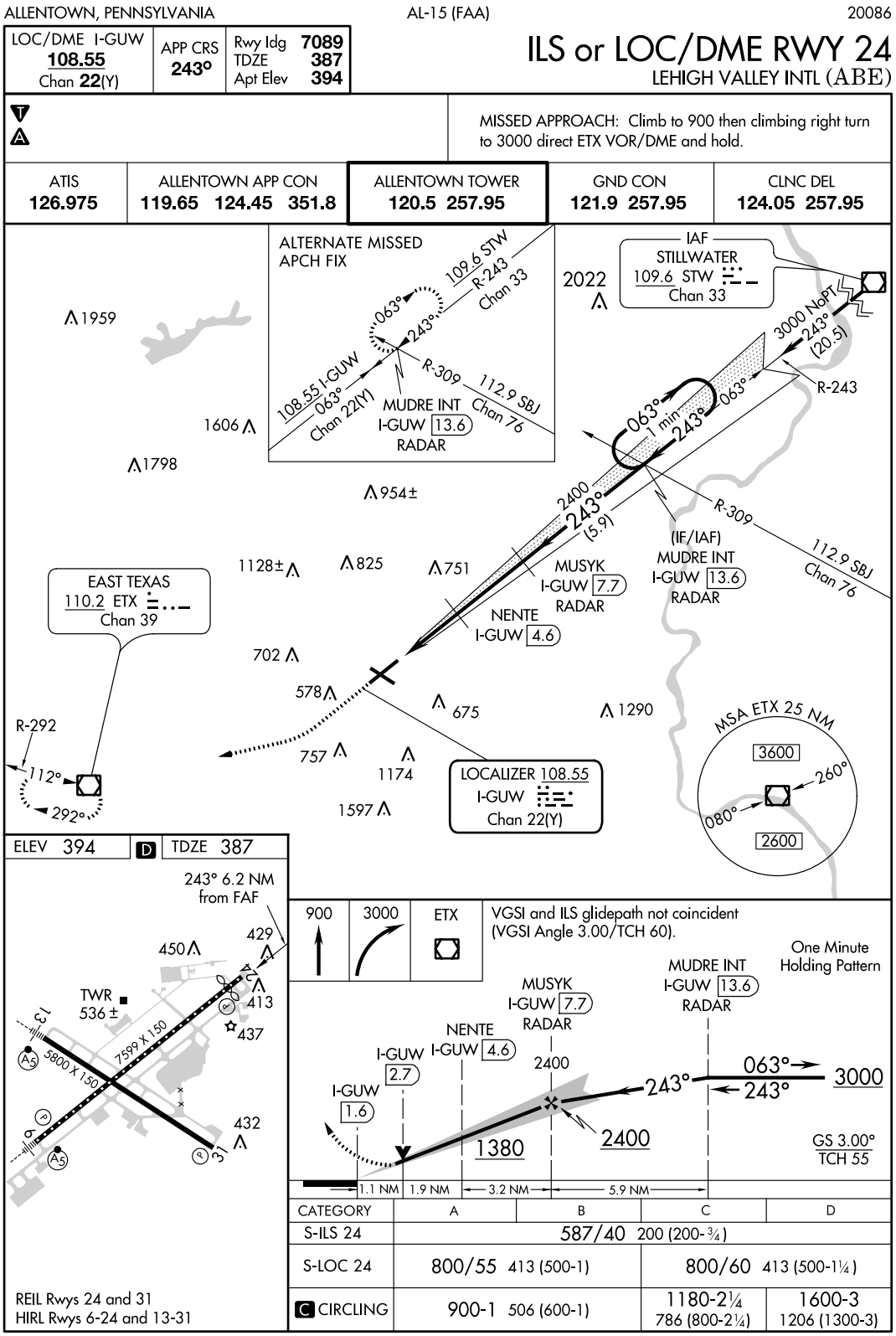
FAF to MAP 4.1 NM

Knots	60	90	120	150	180
Min:Sec	4:06	2:44	2:03	1:38	1:22

BALTIMORE, MARYLAND
Amdt 21C 19JUL18

BALTIMORE/WASHINGTON INTL THURGOOD MARSHALL (BWI)
39°11′N-76°40′W
ILS or LOC RWY 10

APPENDIX 18
ILS OR LOC/DME W/ALTERNATE MISSED APPROACH



APPENDIX 19
ILS/DME

KIRKSVILLE, MISSOURI — AL-217 (FAA) — 19115

LOC/DME I-IRK 111.5 Chan 52	APP CRS 357°	Rwy ldg 6005 / TDZE 965 / Apt Elev 966

ILS or LOC/DME RWY 36
KIRKSVILLE RGNL (IRK)

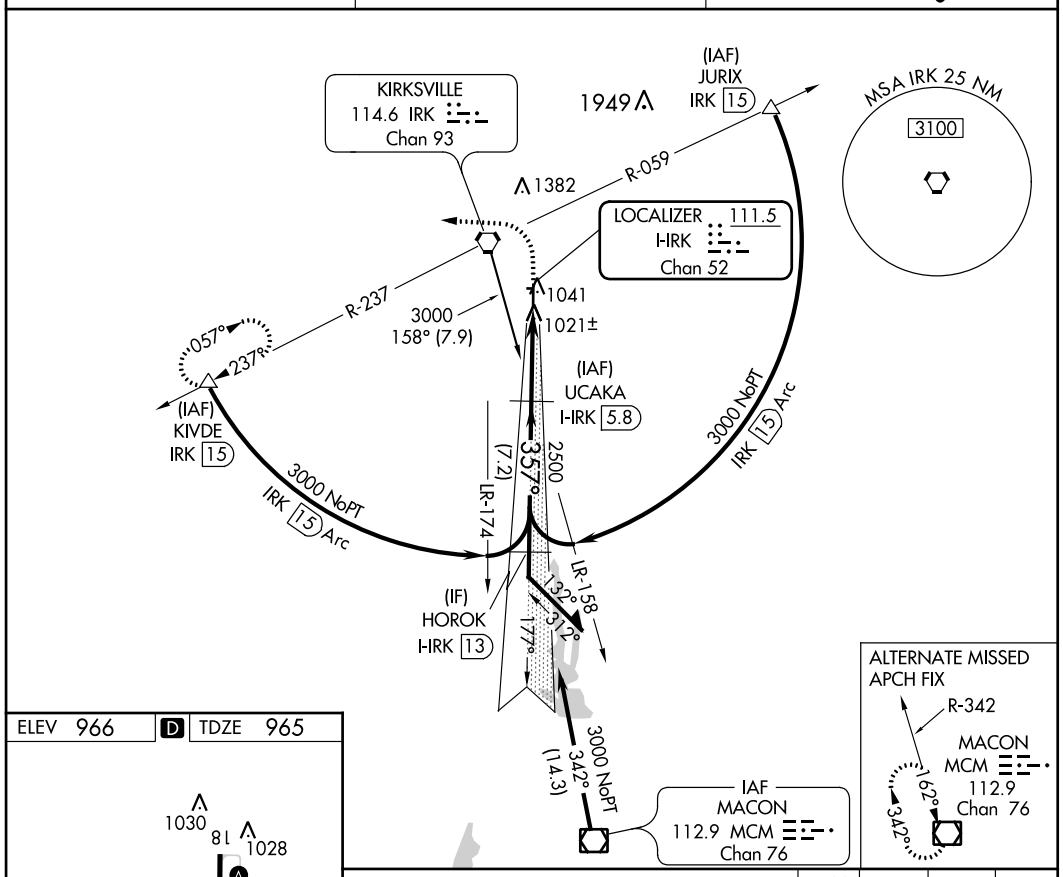
DME required.

Circling NA to Rwys 9 and 27.
For inop ALS, increase S-LOC 36 Cat D visibility ¼ SM.

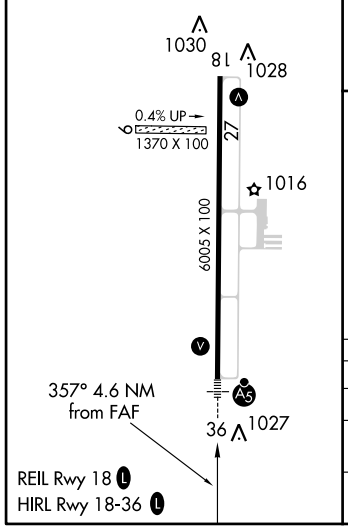
MALSR

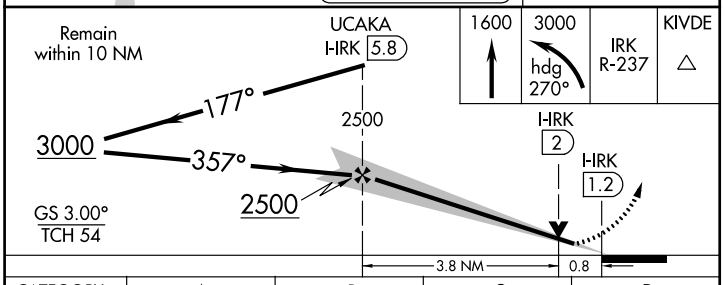
MISSED APPROACH: Climb to 1600 then climbing left turn to 3000 via heading 270° and IRK VORTAC R-237 to KIVDE/IRK 15 DME and hold.

ASOS	KANSAS CITY CENTER	UNICOM
121.125	132.6 370.9	122.8 (CTAF) L



ELEV 966 | D | TDZE 965





CATEGORY	A	B	C	D
S-ILS 36	1165-½ 200 (200-½)			
S-LOC 36	1300-½ 335 (400-½)			1300-¾ 335 (400-¾)
CIRCLING	1400-1 434 (500-1)	1420-1 454 (500-1)	1420-1½ 454 (500-1½)	1520-2 554 (600-2)

KIRKSVILLE, MISSOURI
Amdt 1A 03JAN19

40°06′N-92°33′W

KIRKSVILLE RGNL (IRK)
ILS or LOC/DME RWY 36

APPENDIX 20
ILS WITH RNAV ELEMENTS

MEMPHIS, TENNESSEE AL-253 (FAA) 14205

ILS or LOC RWY 27
MEMPHIS INTL (MEM)

LOC I-JIM	APP CRS	Rwy ldg	8946
108.7	271°	TDZE	292
		Apt Elev	341

For inop MALSR, increase S-ILS Cat E visibility to RVR 4000, and S-LOC Cat E visibility to 2 mile, IPEPE Fix minimums S-LOC Cat E visibility to 1¼ mile.

MALSR

MISSED APPROACH: Climb to 5000 and intercept MEM VORTAC R-285 to GOWRI INT/17 DME and hold, continue climb-in-hold to 5000.

MEMPHIS APP CON		
119.1 291.6	(176°-355°)	
125.8 338.3	(356°-175°)	

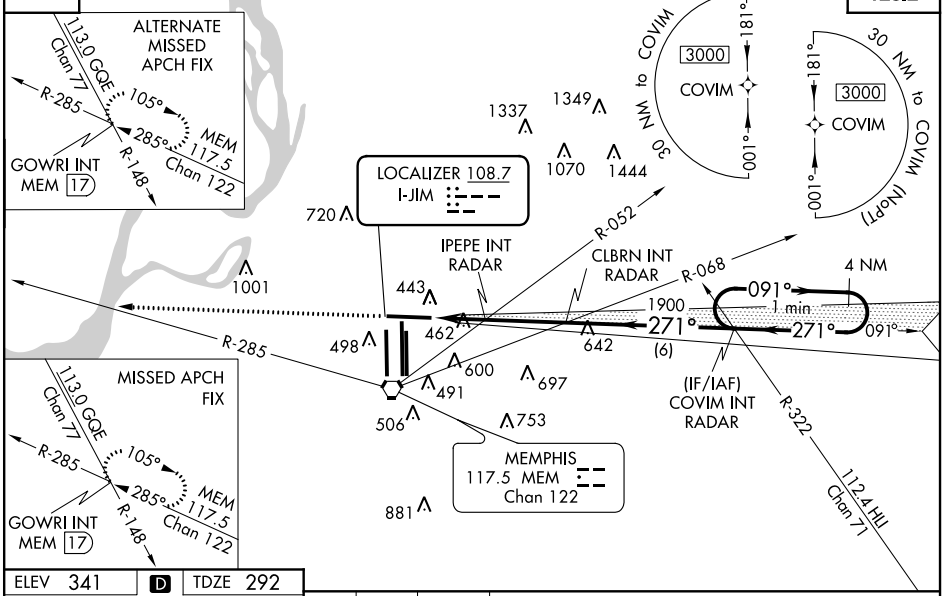
MEMPHIS TOWER		
(Rwy 9-27)	118.3	257.8
(Rwys 18C-36C, 18L-36R)	119.7	257.8
(Rwy 18R-36L)	128.425	257.8

GND CON		
(Rwy 9-27)	121.0	379.2
(Rwys 18C-36C, 18L-36R)	121.9	379.2
(Rwy 18R-36L)	121.65	379.2

ATIS 127.75

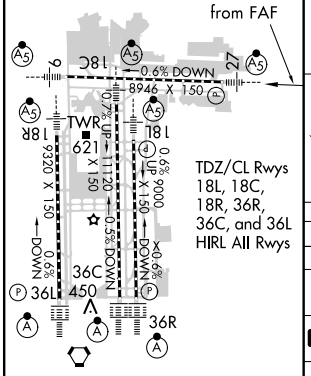
GPS or RADAR REQUIRED for TAA

CLNC DEL 125.2

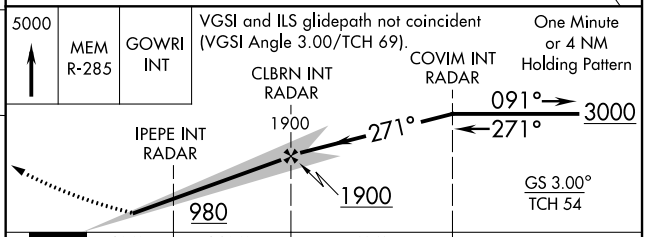


ELEV 341 D TDZE 292

271° 4.9 NM from FAF



FAF to MAP 4.9 NM					
Knots	60	90	120	150	180
Min:Sec	4:54	3:16	2:27	1:58	1:38



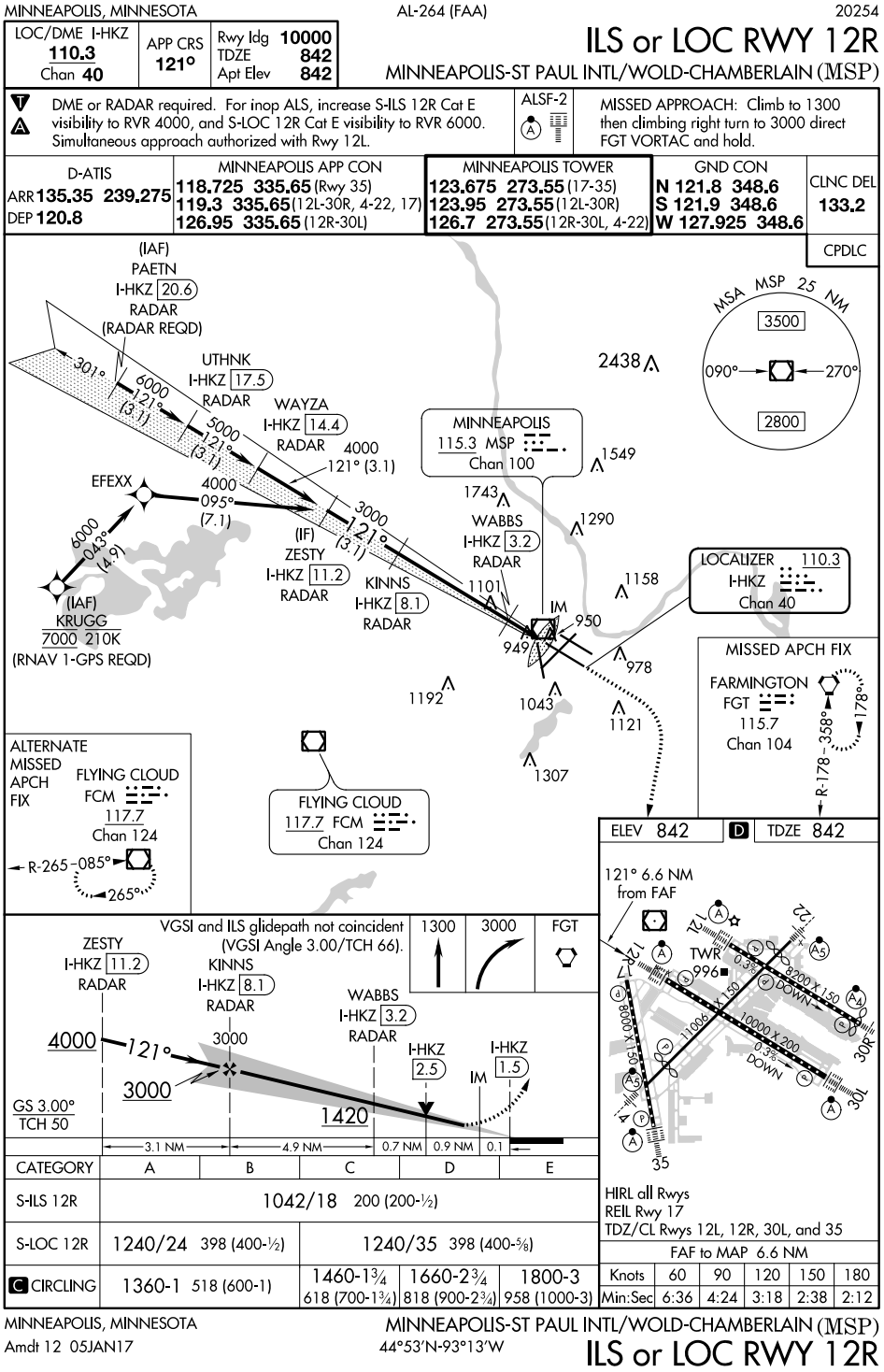
CATEGORY	A	B	C	D	E
S-ILS 27	492/24 200 (200-½)				
S-LOC 27	980/24 688 (700-½)		980-1½ 688 (700-1½)		
C CIRCLING	980-1 639 (700-1)		980-2 639 (700-2)	1020-2¼ 679 (700-2¼)	1140-2¾ 799 (800-2¾)
IPEPE FIX MINIMUMS (DUAL VOR RECEIVERS OR RADAR REQUIRED)					
S-LOC 27	720/24 428 (400-½)		720/40 428 (400-¾)		
C CIRCLING	920-1 579 (600-1)		920-1½ 579 (600-1½)	1020-2¼ 679 (700-2¼)	1140-2¾ 799 (800-2¾)

MEMPHIS, TENNESSEE
Amdt 4B 24JUL14

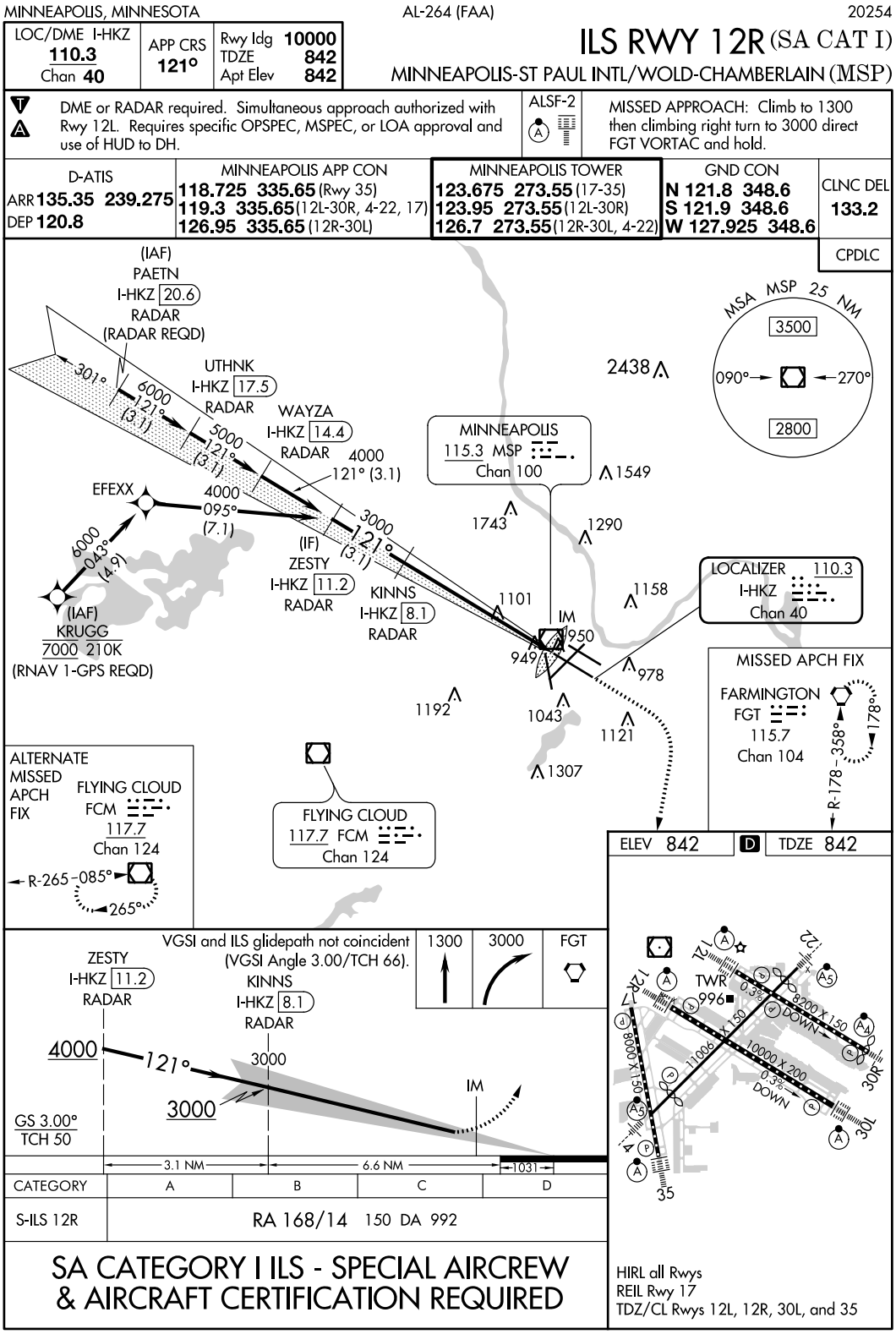
35°03′N-89°59′W

MEMPHIS INTL (MEM)
ILS or LOC RWY 27

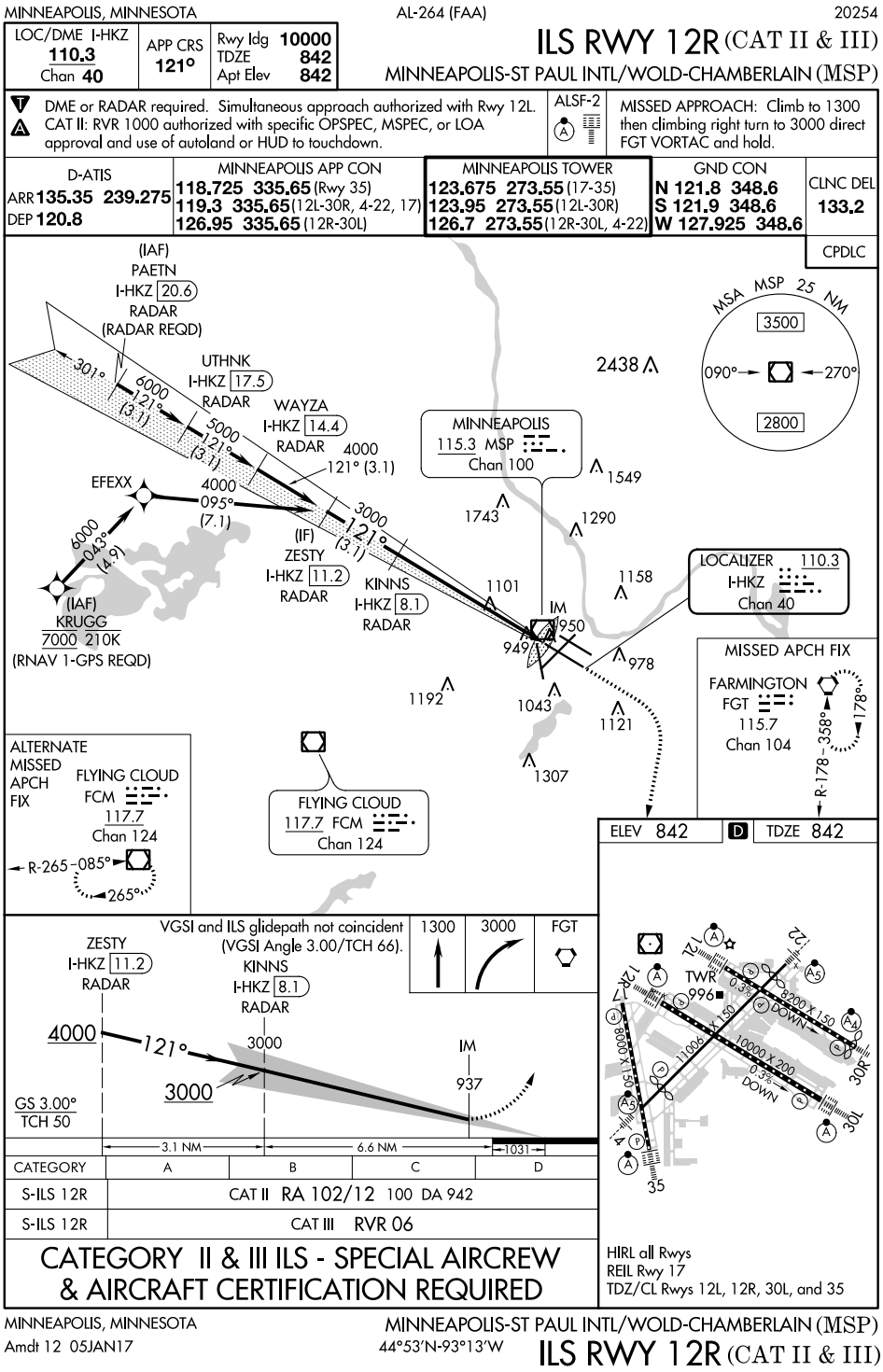
APPENDIX 21
ILS OR LOC - PARENT CHART 1



APPENDIX 22
SA ILS APPROACH - CAT I



APPENDIX 23
ILS CAT II & III



APPENDIX 24
ILS OR LOC - PARENT CHART 2

SEATTLE, WASHINGTON AL-582 (FAA) 20366

LOC/DME I-TUC	APP CRS		34C	34R
111.7	344°	Rwy ldg	9426	11901
Chan 54		TDZE	387	372
		Apt Elev	432	432

ILS or LOC RWY 34C
SEATTLE-TACOMA INTL (SEA)

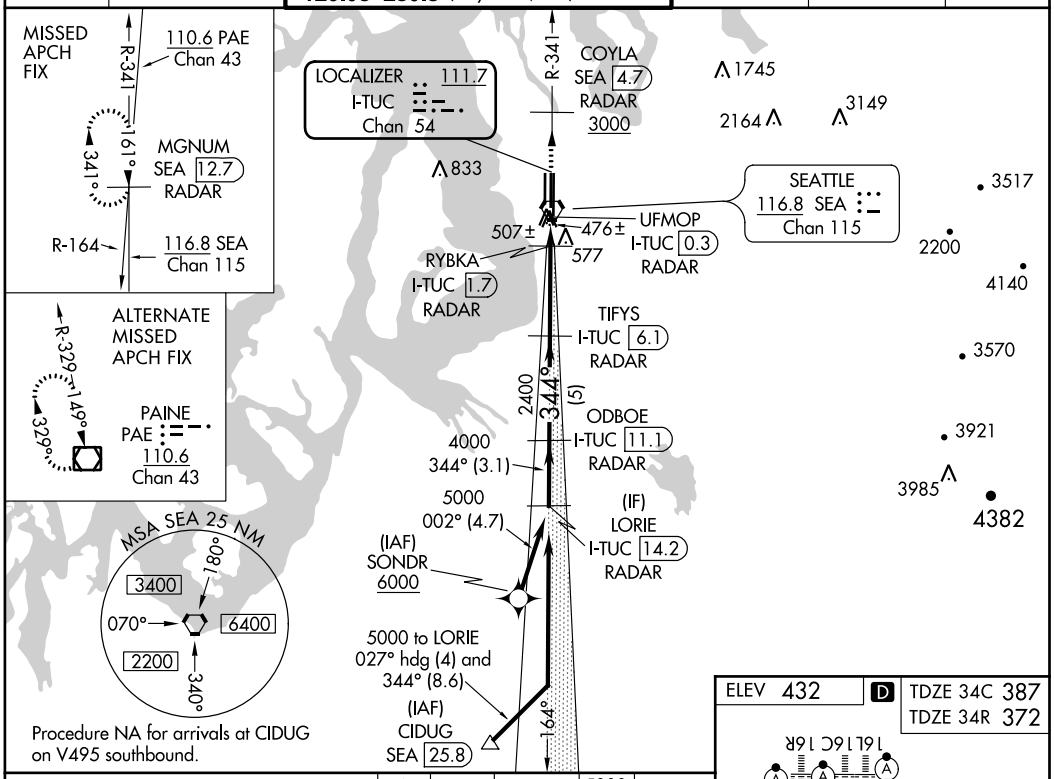
DME or RADAR required.
From SONDR: RNAV 1-GPS required.

Inop table does not apply to ALS Rwy 34R.
Simultaneous approach authorized with Rwy 34L.

MALSR Rwy 34C/R

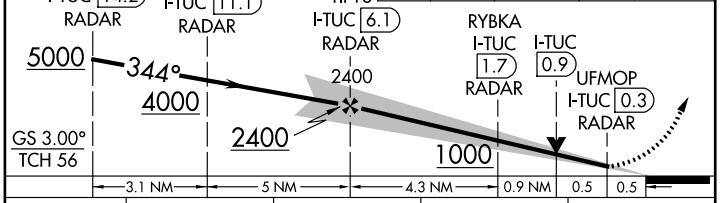
MISSED APPROACH: Climb on heading 345° and outbound on SEA VORTAC R-341 to cross COYLA/SEA 4.7 DME/RADAR at or above 3000 then climb to 5000 on SEA VORTAC R-341 to MGNUM/SEA 12.7 DME/RADAR and hold, continue climb-in-hold to 5000.

D-ATIS	SEATTLE APP CON	SEATTLE TOWER	GND CON	CLNC DEL	CPDLC
118.0	133.65 273.45	119.9 239.3 (Rwys 16L, 16C, 34C, 34R) 120.95 239.3 (Rwys 16R, 34L)	121.7	128.0	

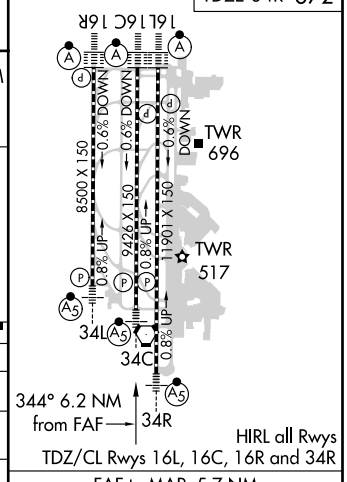


VGSI and ILS glidepath not coincident (VGSI Angle 3.00/TCH 73).

hdg 345°	SEA R-341	COYLA SEA 4.7 3000	5000 SEA R-341	MGNUM SEA 12.7



ELEV 432 D TDZE 34C 387 TDZE 34R 372



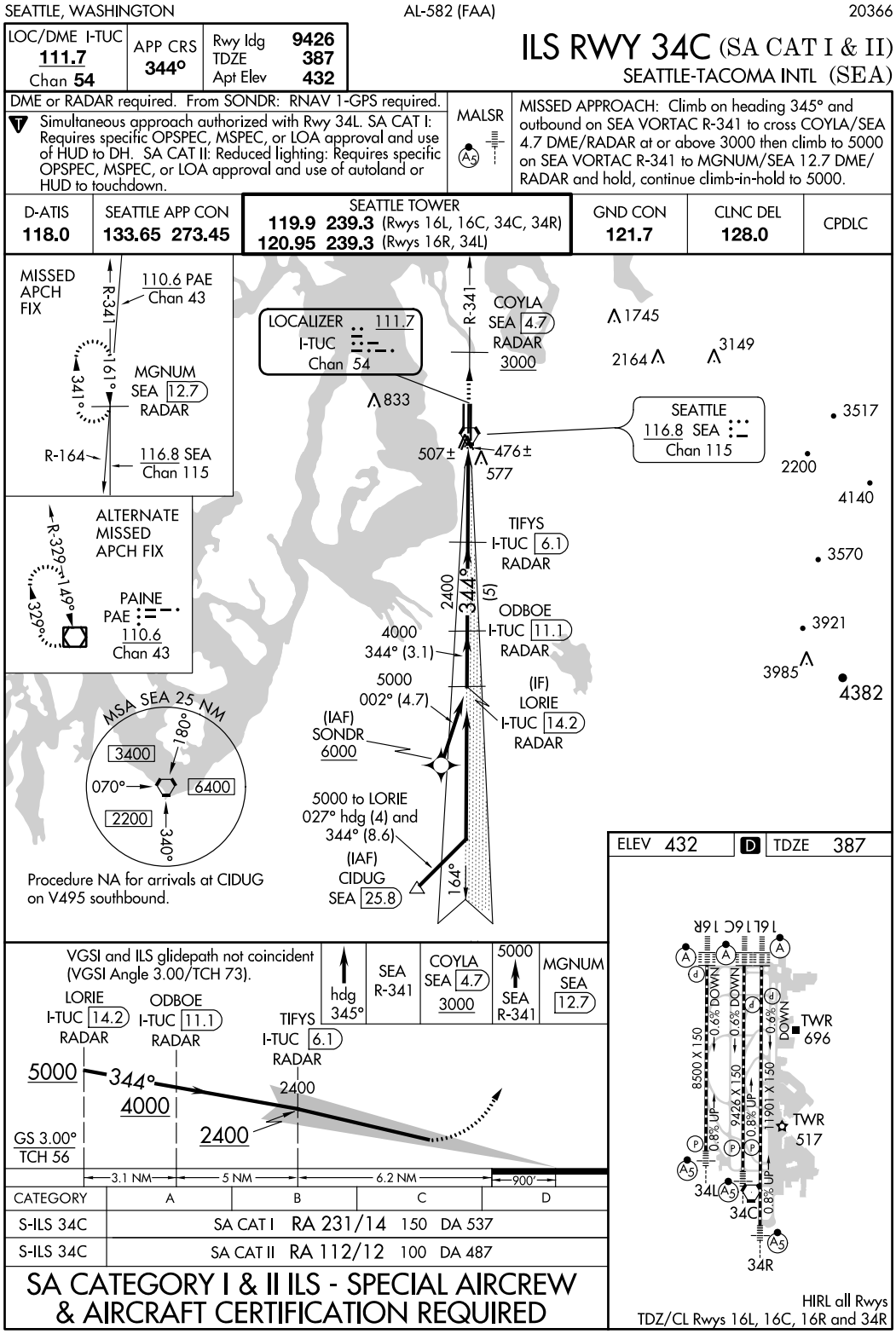
CATEGORY	A	B	C	D
S-ILS 34C	604/24 217 (200-½)			
S-LOC 34C	760/24 373 (400-½)		760/35 373 (400-⅝)	
SIDESTEP 34R	760/50 388 (400-1)		760/60 388 (400-1¼)	
CIRCLING	1000-1 568 (600-1)		1000-1½ 568 (600-1½)	1000-2 568 (600-2)

FAF to MAP 5.7 NM

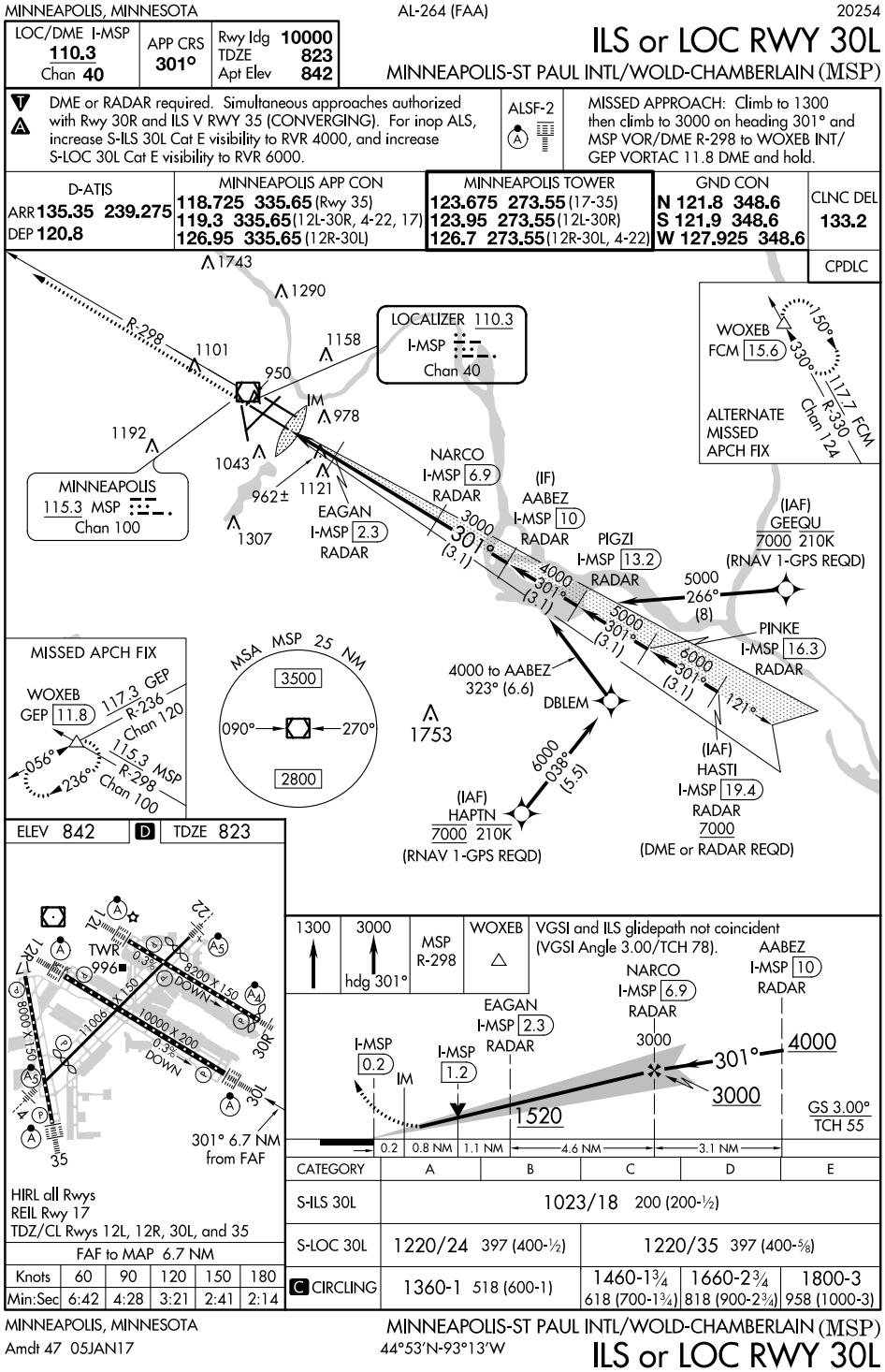
Knots	60	90	120	150	180
Min:Sec	5:42	3:48	2:51	2:17	1:54

SEATTLE, WASHINGTON 47°27′N-122°19′W SEATTLE-TACOMA INTL (SEA)
Amdt 3E 21JUN18 ILS or LOC RWY 34C

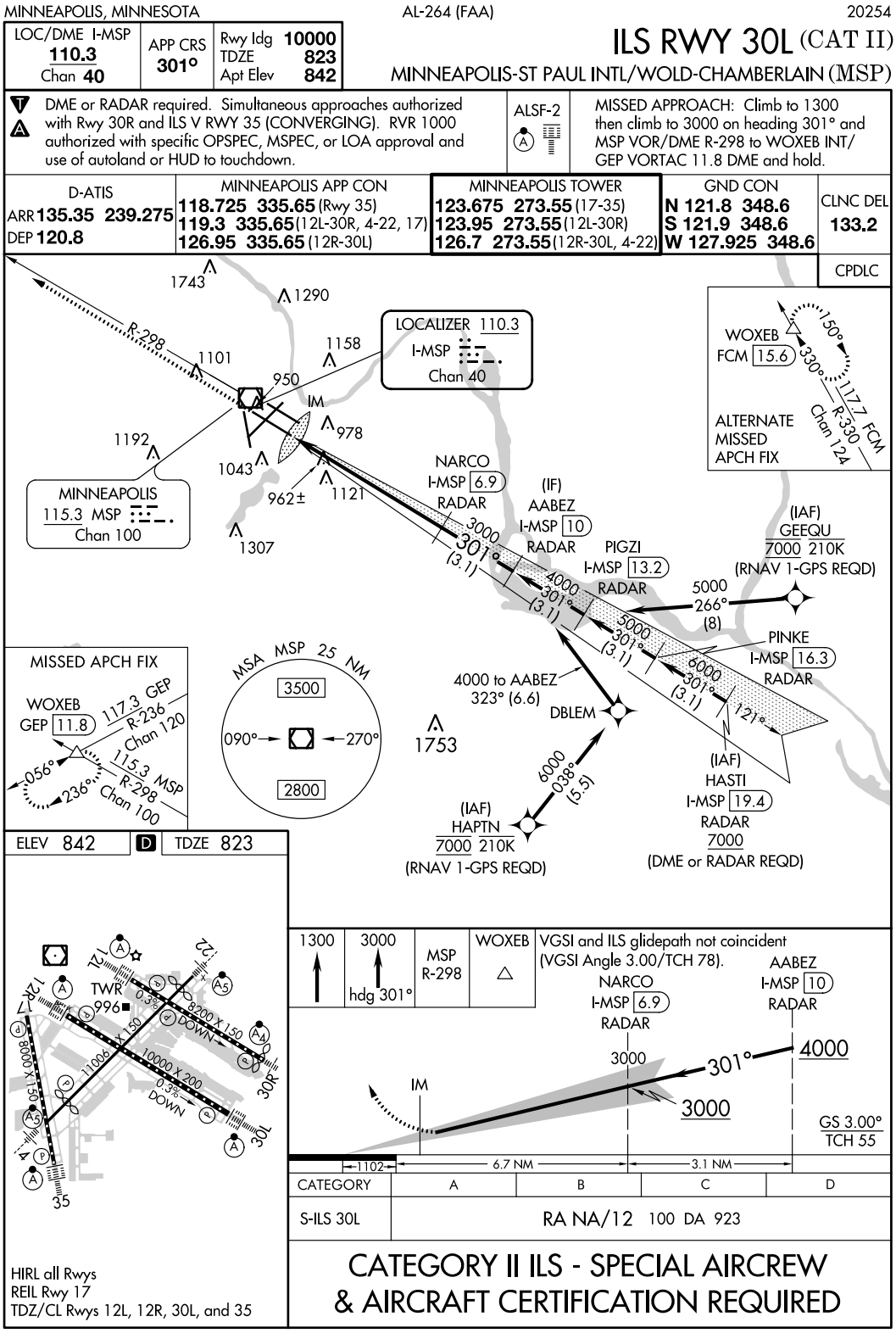
APPENDIX 25
SA ILS APPROACH - CAT I & II



APPENDIX 26
ILS OR LOC - PARENT CHART 3



APPENDIX 27
ILS CAT II



APPENDIX 28
ILS OR LOC - PARENT CHART 4

SAN FRANCISCO, CALIFORNIA AL-375 (FAA) 20310

LOC/DME I-SFO 109.55 Chan 32 (Y)	APP CRS 284°	Rwy ldg 10275 TDZE 13 Apt Elev 13

ILS or LOC RWY 28L
SAN FRANCISCO INTL (SFO)

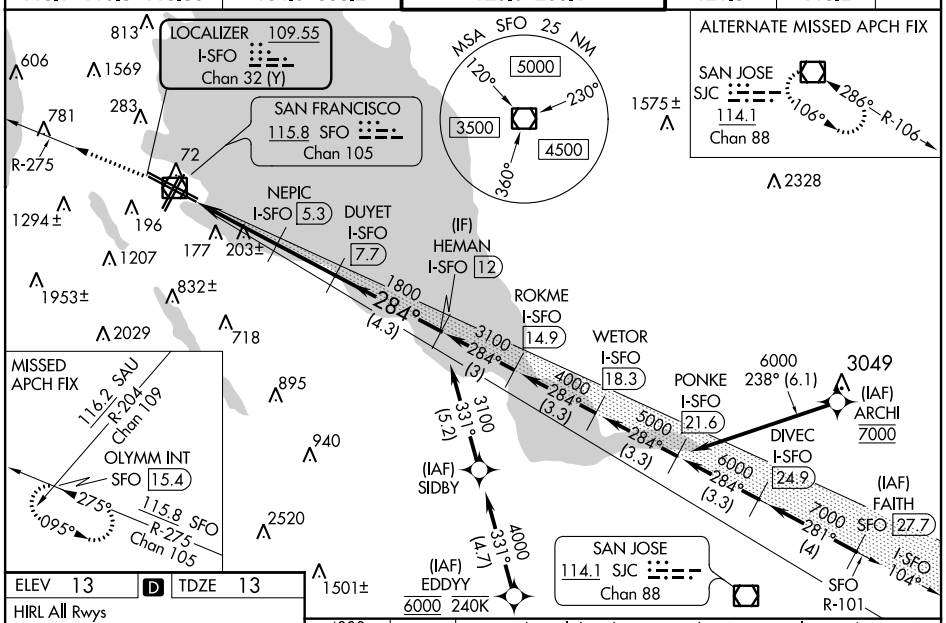
RNAV 1- GPS or RADAR required for procedure entry. DME required.

Circling NA to Rwys 10L, 10R, 19L, and 19R. Circling Rwy 1L, 1R NA at night. LOC procedure NA during simultaneous operations. Simultaneous approach authorized. Simultaneous operations require use of vertical guidance; maintain last assigned altitude until established on glideslope.
RVR 1800 authorized with use of FD or AP or HUD to DA.
For inop ALS, increase S-ILS 28L all Cats visibility to 2½ SM.
** For inop ALS increase S-LOC 28L Cat C/D visibility to 2½ SM.

MALSR

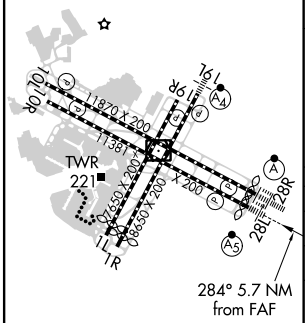
MISSED APPROACH: Climb to 4000 on SFO VOR/DME R-275 to OLYMM INT/SFO 15.4 DME and hold, continue climb-hold to 4000.
† Missed approach requires minimum climb of 330 feet per NM to 1600.

D-ATIS	NORCAL APP CON	SAN FRANCISCO TOWER	GND CON	CLNC DEL	CPDLC
113.7 115.8 118.85	134.5 338.2	120.5 269.1	121.8	118.2	



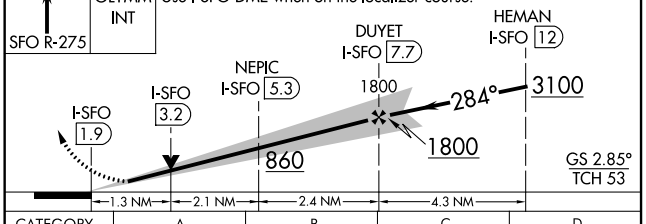
ELEV 13	D	TDZE 13

HIRL All Rwys
TDZ/CL Rwys 19L and 28R
REIL Rwys 1L, 1R and 10L



4000 SFO R-275 | OLYMM INT

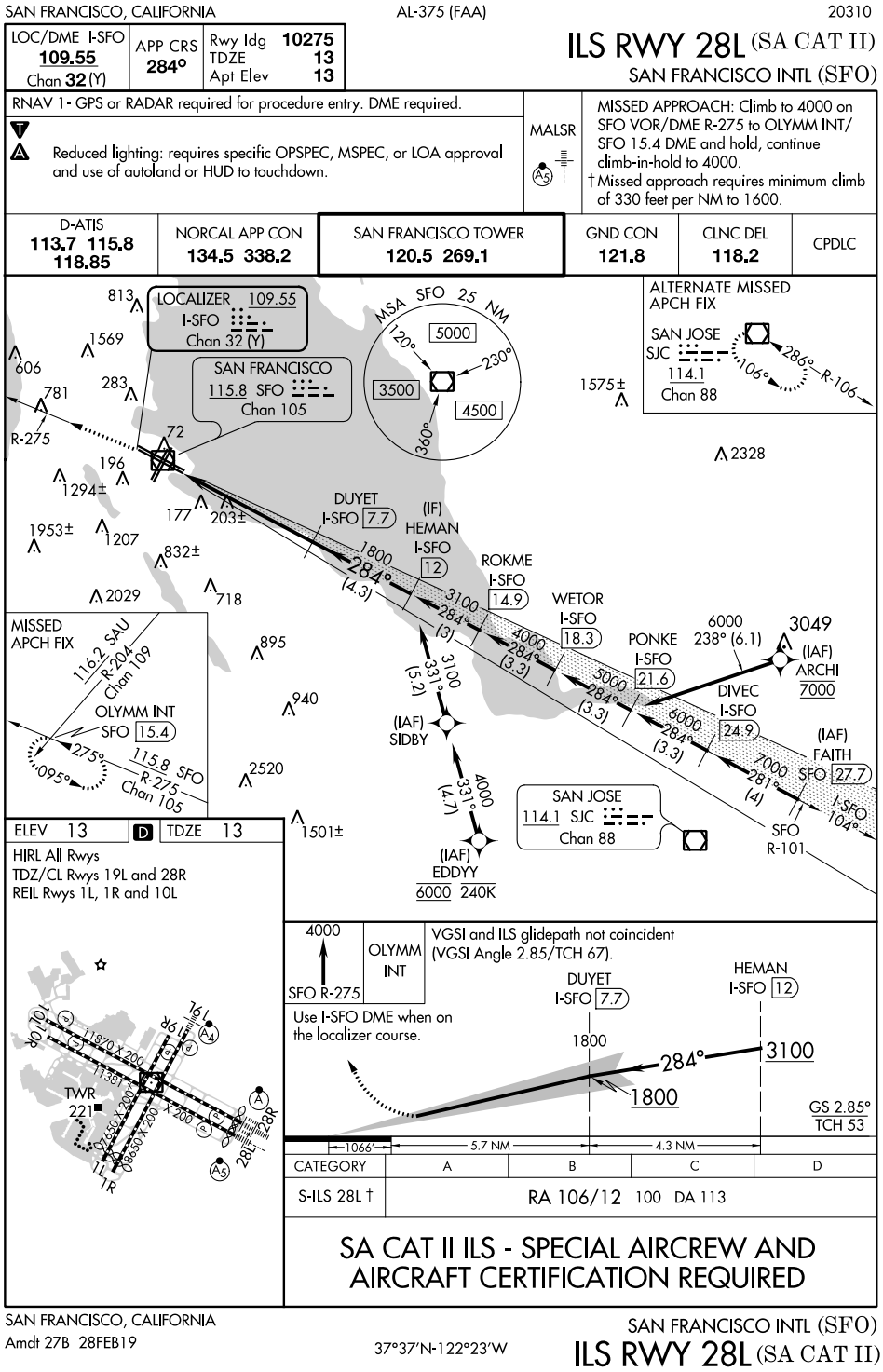
VGSI and ILS glidepath not coincident (VGSI Angle 2.85/TCH 67).
Use I-SFO DME when on the localizer course.



CATEGORY	A	B	C	D
S-ILS 28L#†	213/24 200 (200-½)			
S-ILS 28L##	789-1¾ 776 (800-1¾)			
S-LOC 28L†	460/24 447 (500-½)		460/45 447 (500-⅞)	
S-LOC 28L**	860/24 847 (900-½)	860/40 847 (900-¾)	860-1⅞ 847 (900-1⅞)	
C CIRCLING	860-1¼ 847 (900-1¼)	960-1¼ 947 (1000-1¼)	1560-3 1547 (1600-3)	NA

SAN FRANCISCO, CALIFORNIA
Amdt 27B 28FEB19
37°37'N-122°23'W
SAN FRANCISCO INTL (SFO)
ILS or LOC RWY 28L

APPENDIX 29
SA ILS APPROACH - CAT II



APPENDIX 30
PRM APPROACH AAUP

17341 AL-375 (FAA)

PRM APPROACH AAUP

SAN FRANCISCO INTL (SFO)
SAN FRANCISCO, CALIFORNIA

ATTENTION ALL USERS PAGE (AAUP)

Pilots who are unable to participate will be afforded appropriate arrival services as operational conditions permit and must notify the controlling ATC facility as soon as practical, but at least 100 miles from destination.

Simultaneous PRM approaches will only be offered/conducted when the weather is at least 1600 feet (ceiling) and 4 miles (visibility).

ILS PRM Rwy 28L
RNAV (GPS) PRM Rwy 28L
LDA PRM Rwy 28R
RNAV (GPS) PRM X Rwy 28R

General

Review procedure for executing a climbing and descending PRM breakout

Breakout phraseology: "TRAFFIC ALERT (call sign) TURN (left/right) IMMEDIATELY HEADING (degrees) CLIMB/DESCEND AND MAINTAIN (altitude)."

All breakouts: Hand flown, initiate immediately.

Descending on the glideslope/glidepath ensures compliance with any charted crossing restrictions.

Dual VHF Comm.: When assigned or planning a specific PRM approach, tune a second receiver to the PRM monitor frequency or, if silent, another active frequency (i.e. ATIS), set the volume, retune the PRM frequency if necessary, then deselect the audio. When directed by ATC, switch to the appropriate approach control frequency and select the second receiver audio to ON.
Runway 28R: NORCAL approach 120.35
Runway 28L: NORCAL approach 135.65

If later assigned the same runway, non-PRM approach, consider it briefed provided the same minimums are utilized. PRM related chart notes and PRM frequency no longer apply.

TCAS during breakout: Follow TCAS climb/descend if it differs from ATC, while executing the breakout turn.

Runway Specific

ILS PRM Rwy 28L: Straight-in Approach

Briefing Points: (Note: Identify NEPIC WP as 3.3 NM from Rwy 28L WP if not in the FMC approach coding.)

- Inside NEPIC, descending on (not above) the glidepath benefits the trailing 28R aircraft to avoid wake turbulence.
- Other aircraft may be conducting the PRM approach to runway 28R. These aircraft will approach from the right-rear and will re-align with runway 28R after making visual contact with the runway 28L landing traffic.
- Expect to be switched to SFO tower at NEPIC.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the tower frequency.

CONTINUED ON FOLLOWING PAGE

PRM APPROACH AAUP

SAN FRANCISCO, CALIFORNIA
SAN FRANCISCO INTL (SFO)

17341 37°37′N-122°23′W

SW-2, 01 FEB 2018 to 01 MAR 2018

SW-2, 01 FEB 2018 to 01 MAR 2018

APPENDIX 30
PRM APPROACH AAUP (CONTINUED)

17341 AL-375 (FAA)

PRM APPROACH AAUP

SAN FRANCISCO INTL (SFO)
SAN FRANCISCO, CALIFORNIA

ATTENTION ALL USERS PAGE (AAUP) (CON'T)

CONTINUED FROM PREVIOUS PAGE

LDA PRM Rwy 28R: Offset Approach with glideslope

Briefing Points: (Note: Identify DARNE as I-FNP LOC/DME 4 NM if not in the FMC approach coding.)

- If required, develop a wake mitigation strategy as soon as practical. Inside DARNE pilots will be operating visually in close proximity to the 28L aircraft and will be responsible for wake turbulence and collision avoidance.
- Descending on the glideslope ensures compliance with any charted crossing restrictions.
- Continuing past DARNE requires reporting the 28L traffic in sight (ATC need not respond), and seeing the runway.
- Remain on the LDA until passing DARNE so as not to penetrate the NTZ.
- Expect to be switched to SFO tower at DARNE.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the tower frequency.
- After passing DARNE, DO NOT PASS.
- Glideslope valid to the runway threshold.
- If executing a go-around between DARNE and runway 28R threshold, initially establish a climbing right turn heading 030° unless otherwise instructed by ATC. Missed approach leg from airport to OAK VOR/DME, if depicted on a map display, is for reference only. Follow IAP published missed approach procedure unless otherwise instructed by ATC.

RNAV (GPS) PRM Rwy 28L: Straight-in Approach

Briefing Points: (Note: Identify NEPIC WP as 3.3 NM from Rwy 28L WP if not in the FMC approach coding.)

- Monitor descent path to ensure that fix crossing requirements are adhered to.
- VDA is 2.85° between all waypoints on the final approach course.
- Inside NEPIC, descending on (not above) the vertical path benefits the trailing 28R aircraft to avoid wake turbulence.
- Other aircraft may be conducting the PRM approach to runway 28R. These aircraft will approach from the right-rear and will re-align with runway 28R after making visual contact with the runway 28L traffic.
- Expect to be switched to SFO tower at NEPIC.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the tower frequency.

RNAV (GPS) PRM X Rwy 28R: Offset Approach

Briefing Points: (Notes: Non-standard RNAV Missed Approach coding initially requires use of heading mode.
Identify DARNE WP as 3.4 NM from CFFKC WP if not in the FMC approach coding.)

- If required, develop a wake mitigation strategy as soon as practical. After passing DARNE WP, pilots will be operating visually in close proximity to the 28L aircraft and will be responsible for wake turbulence and collision avoidance.
- VDA is 3° between all waypoints on the final approach course.
- Continuing past DARNE requires reporting the 28L traffic in sight (ATC need not respond), and seeing the runway.
- Remain on the RNAV track until passing DARNE WP so as not to penetrate the NTZ.
- Expect to be switched to SFO tower at DARNE WP.
- After passing DARNE, DO NOT PASS.
- The VNAV path is valid to the runway threshold.
- PRM monitor frequency may be de-selected after determining that the aircraft is on the tower frequency.
- If executing a missed approach or go-around, initially establish a climbing right turn heading 030°. CAUTION: Missed approach leg from airport to OAK VOR/DME, if depicted on a map display, is for reference only. Follow IAP published missed approach procedure unless otherwise instructed by ATC.

SW-2, 01 FEB 2018 to 01 MAR 2018

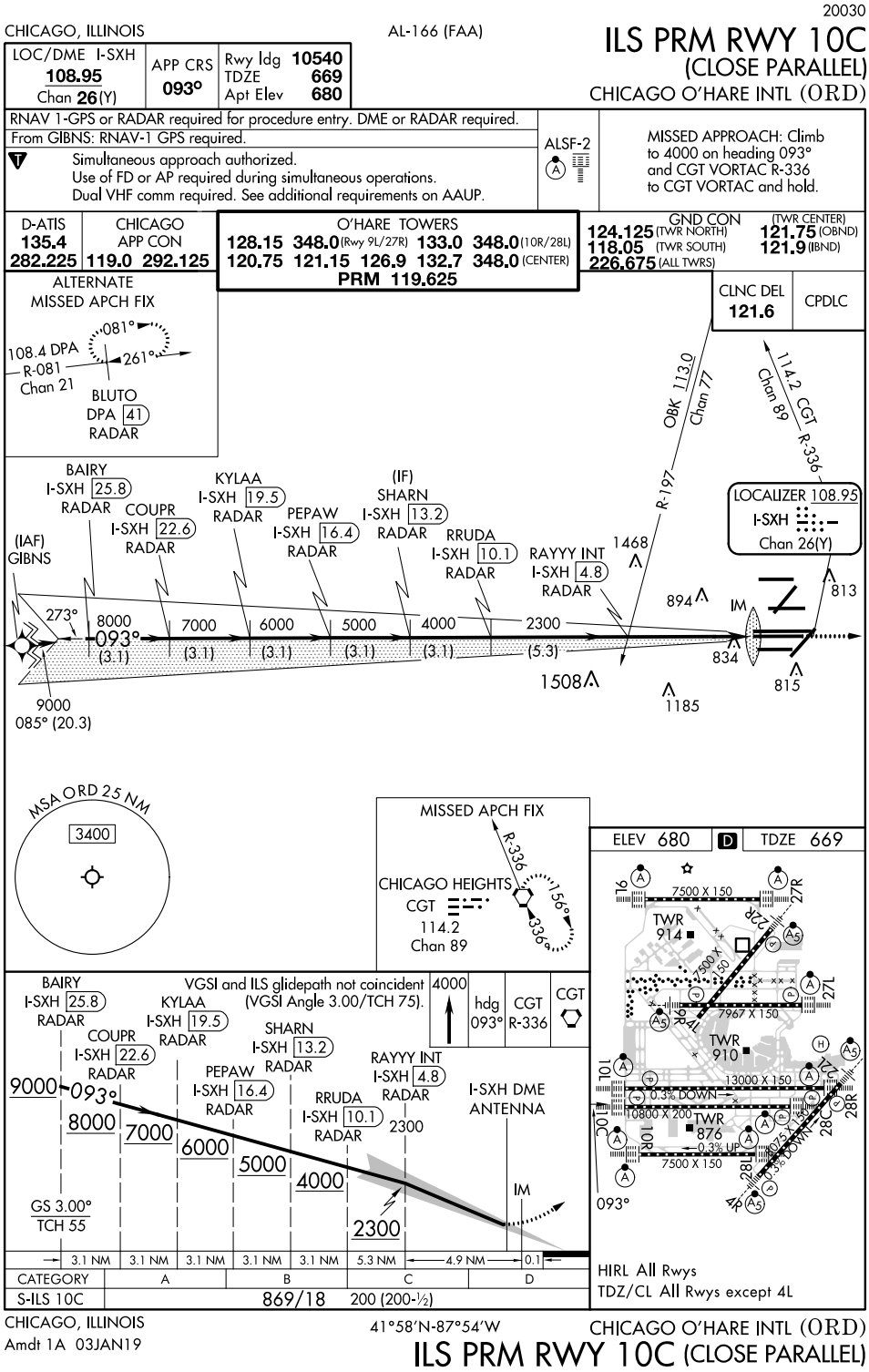
SW-2, 01 FEB 2018 to 01 MAR 2018

PRM APPROACH AAUP

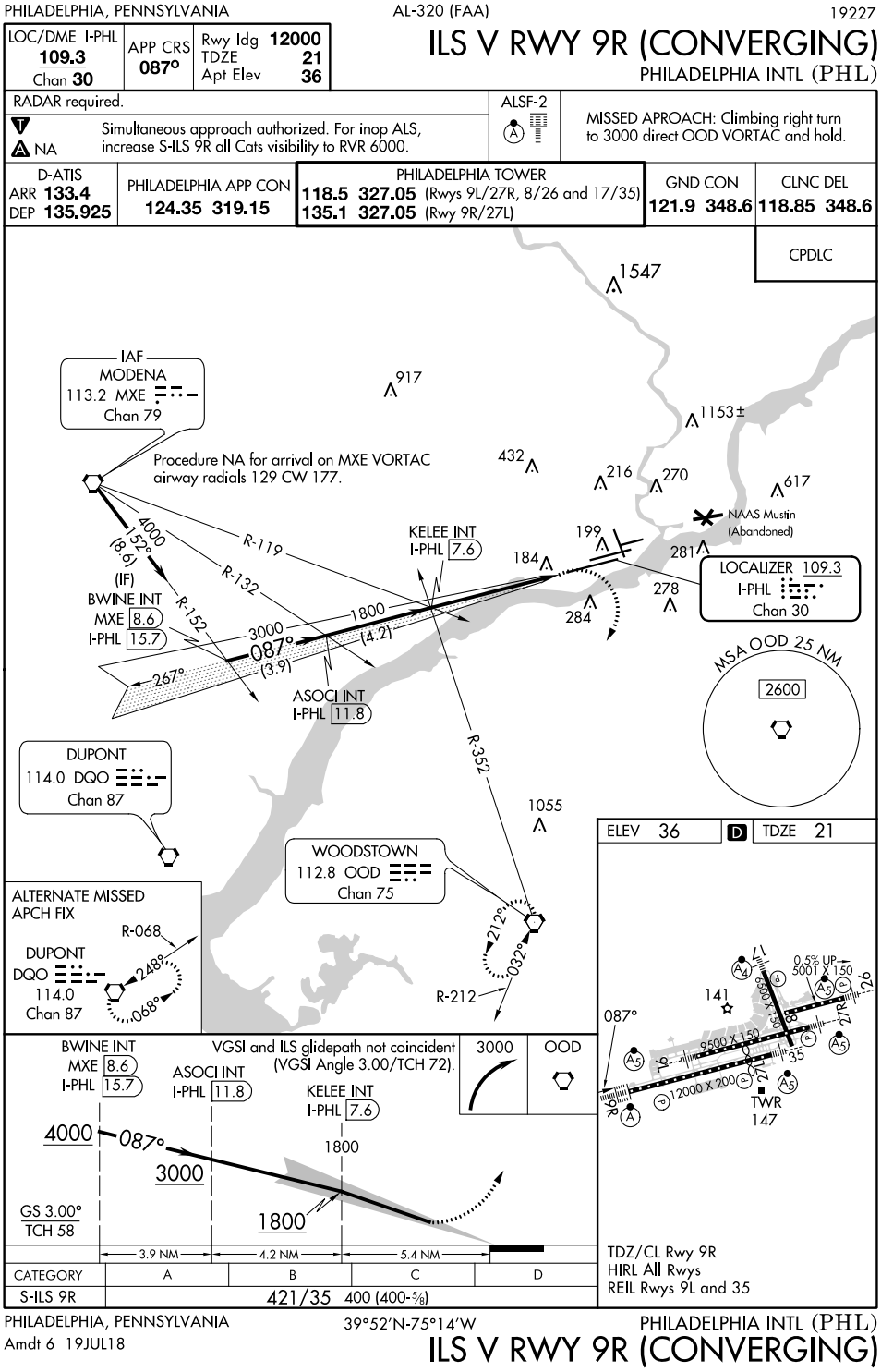
SAN FRANCISCO, CALIFORNIA
SAN FRANCISCO INTL (SFO)

17341 37°37'N-122°23'W

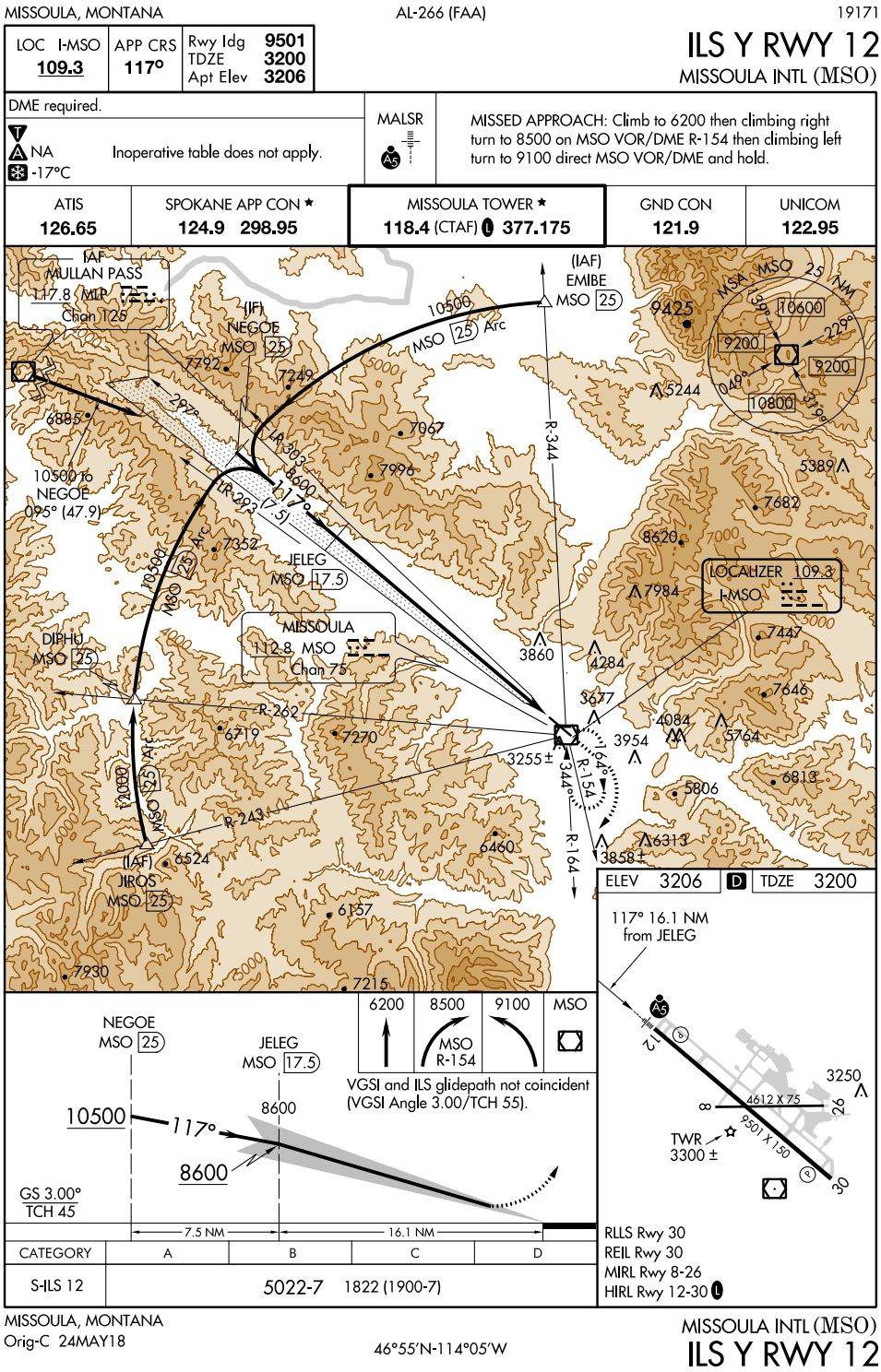
APPENDIX 31
ILS PRM (CLOSE PARALLEL)



APPENDIX 32
ILS V (CONVERGING)



APPENDIX 33
ILS WITH TERRAIN ELEVATIONS DEPICTED



APPENDIX 34
TEARDROP TURN

LINCOLN, NEBRASKA — AL-232 (FAA) — 18312

LOC I-OCZ	APP CRS	Rwy ldg	12901
111.1	177°	TDZE	1195
		Apt Elev	1219

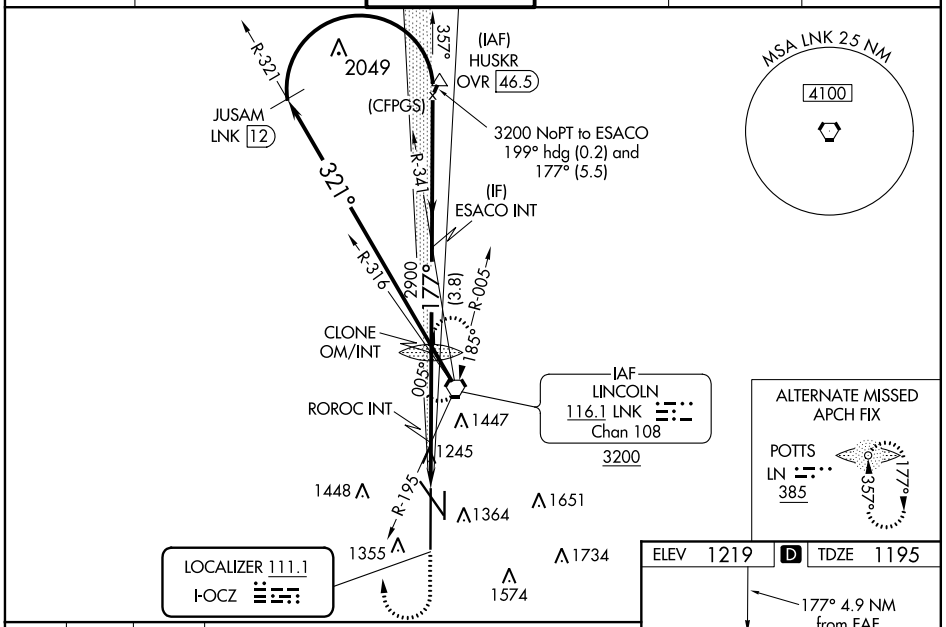
ILS or LOC RWY 18
LINCOLN (LNK)

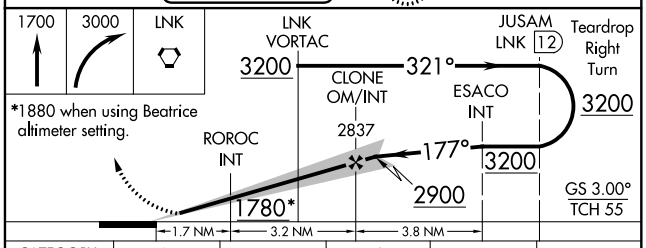
When local altimeter setting not received use Beatrice altimeter setting and increase all DA 91 feet and all MDA 100 feet, increase S-LOC 18 Cat C/D/E visibility to 1½, Circling Cat C visibility to 2 and Cat D visibility to 2¼; increase ROROC fix minimums S-LOC 18 Cat C/D/E visibility to 1⅜, Circling Cat C visibility to 1¾ and Cat D visibility to 2¼. For inop MALSR, increase S-ILS 18 Cat E visibility to RVR 4000, S-LOC 18 Cat E visibility to 1¾, and ROROC fix minimums S-LOC 18 Cat E visibility to 1½. For inop MALSR when using Beatrice altimeter setting, increase S-ILS 18 all Cats visibility to RVR 4500, S-LOC 18 Cat E visibility to 2, and ROROC fix minimums S-LOC 18 Cat C visibility to 1¾. Cat D and E Straight-in minimums NA when using Beatrice altimeter setting. #RVR 1800 authorized with use of FD or AP or HUD to DA.

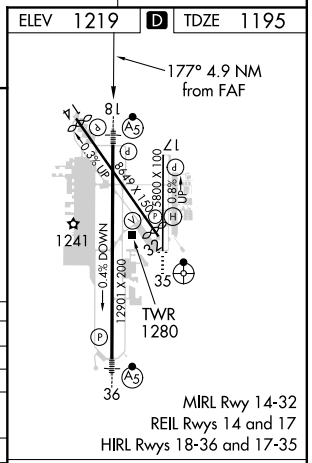
MALSR

MISSED APPROACH: Climb to 1700 then climbing right turn to 3000 direct LNK VORTAC and hold.

ATIS	OMAHA APP CON	LINCOLN TOWER★	GND CON	CLNC DEL	UNICOM
118.05 290.9	124.0 270.3	118.5 (CTAF) 253.5	121.9 275.8	120.7 225.4	122.95







CATEGORY	A	B	C	D	E
S-ILS 18#	1395/24 200 (200-½)				
S-LOC 18	1780/24 585 (600-½)		1780-1¼ 585 (600-1¼)		
CIRCLING	1780-1 561 (600-1)		1780-1¾ 561 (600-1¾)	1820-2 601 (700-2)	2040-3 821 (900-3)
ROROC FIX MINIMUMS (DUAL VOR RECEIVERS REQUIRED)					
S-LOC 18	1720/24 525 (600-½)		1720/55 525 (600-1)		
CIRCLING	1720-1 501 (600-1)	1760-1 541 (600-1)	1760-1½ 541 (600-1½)	1820-2 601 (700-2)	2040-3 821 (900-3)

FAF to MAP 4.9 NM

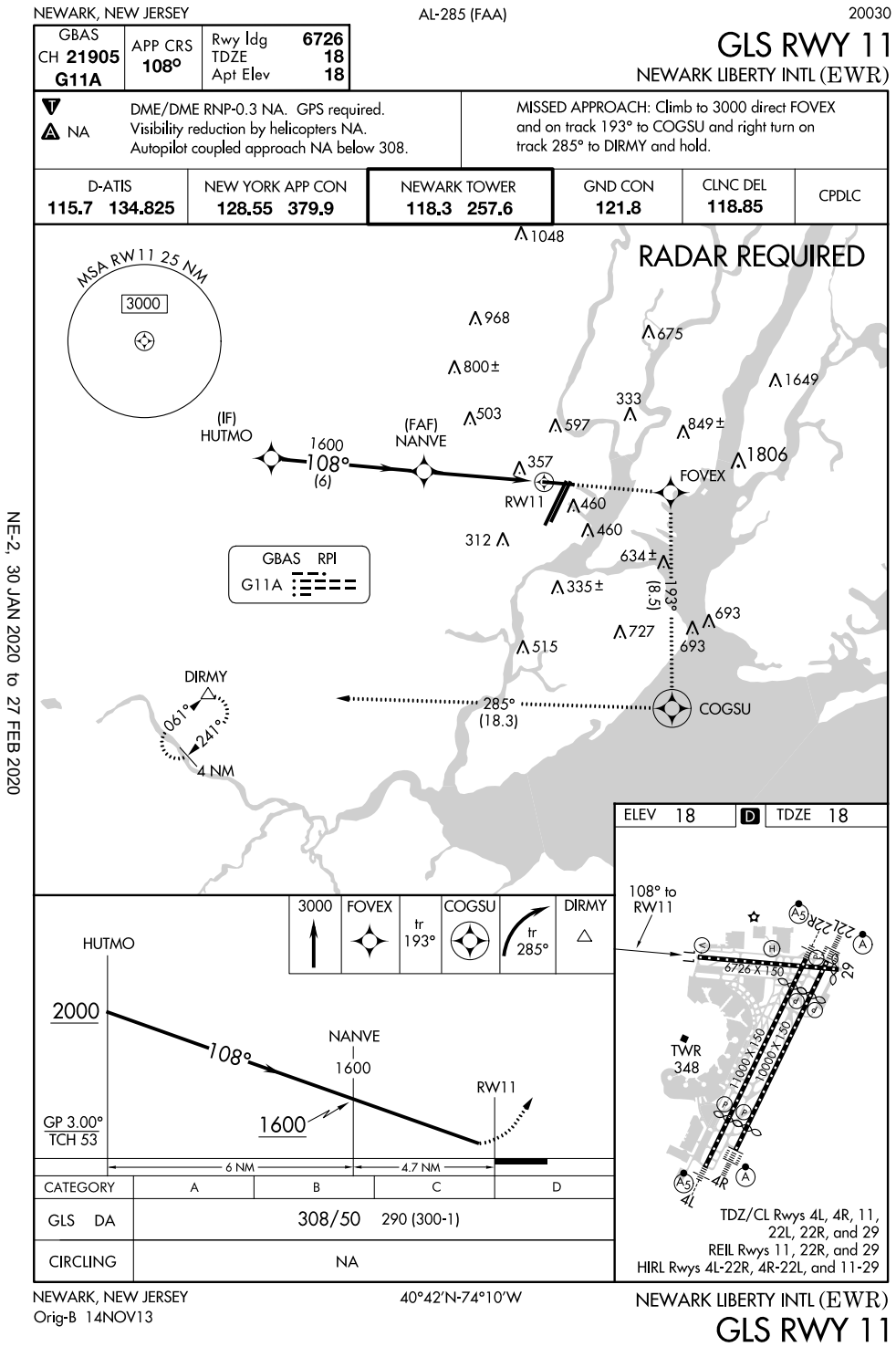
Knots	60	90	120	150	180
Min:Sec	4:54	3:16	2:27	1:58	1:38

LINCOLN, NEBRASKA
Amdt 7B 10DEC15

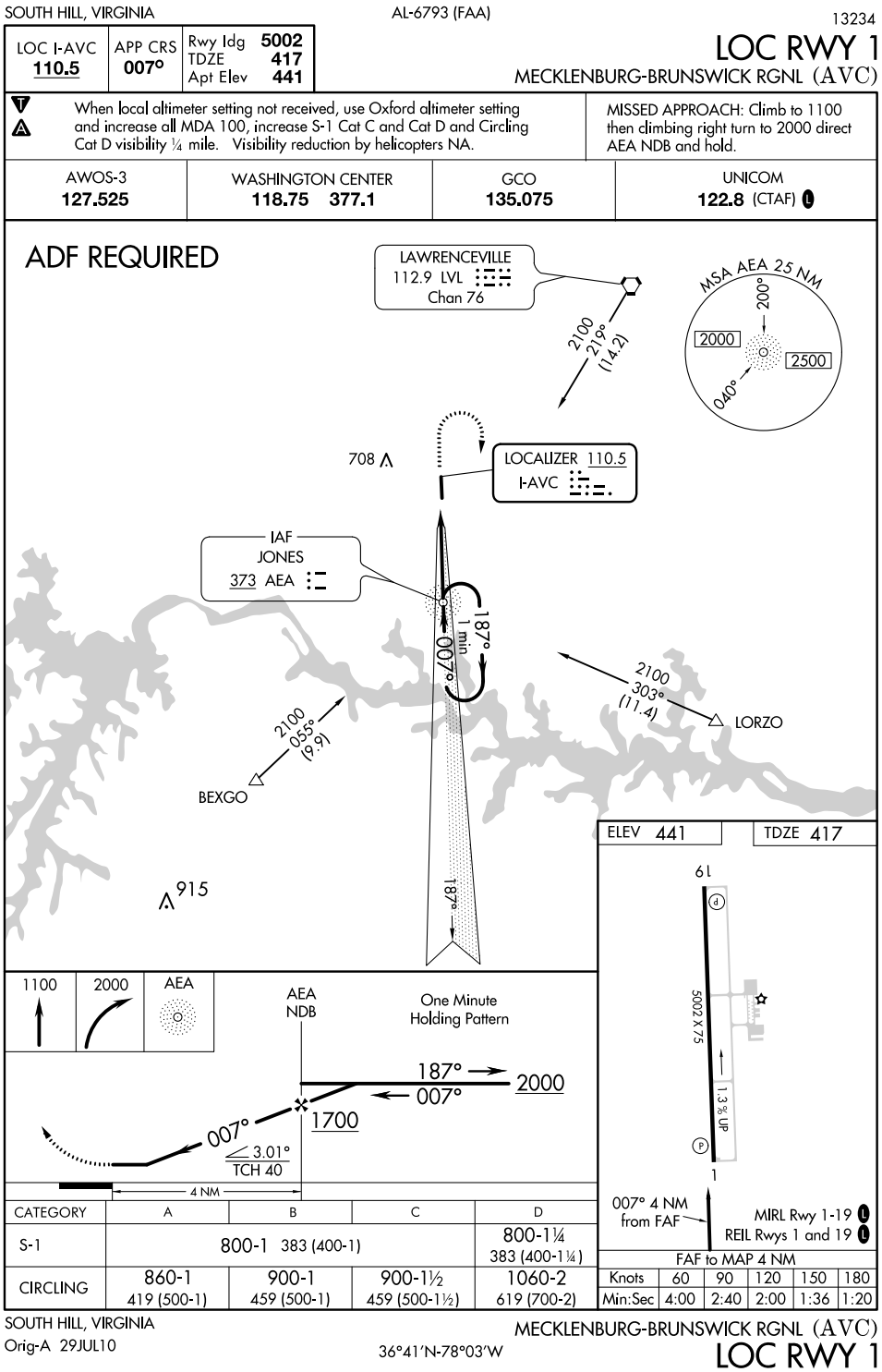
40°51′N-96°46′W

LINCOLN (LNK)
ILS or LOC RWY 18

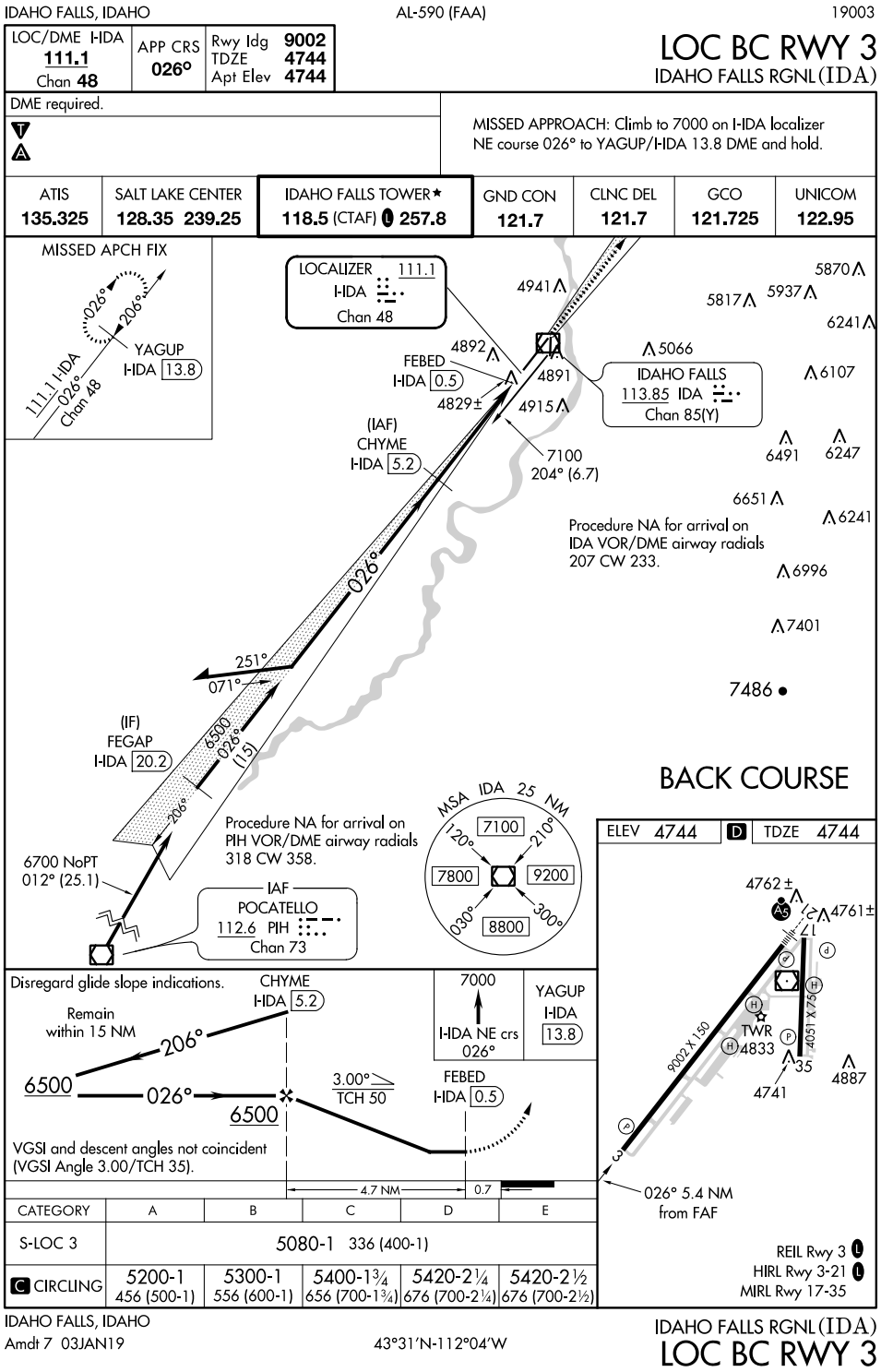
APPENDIX 35
GLS



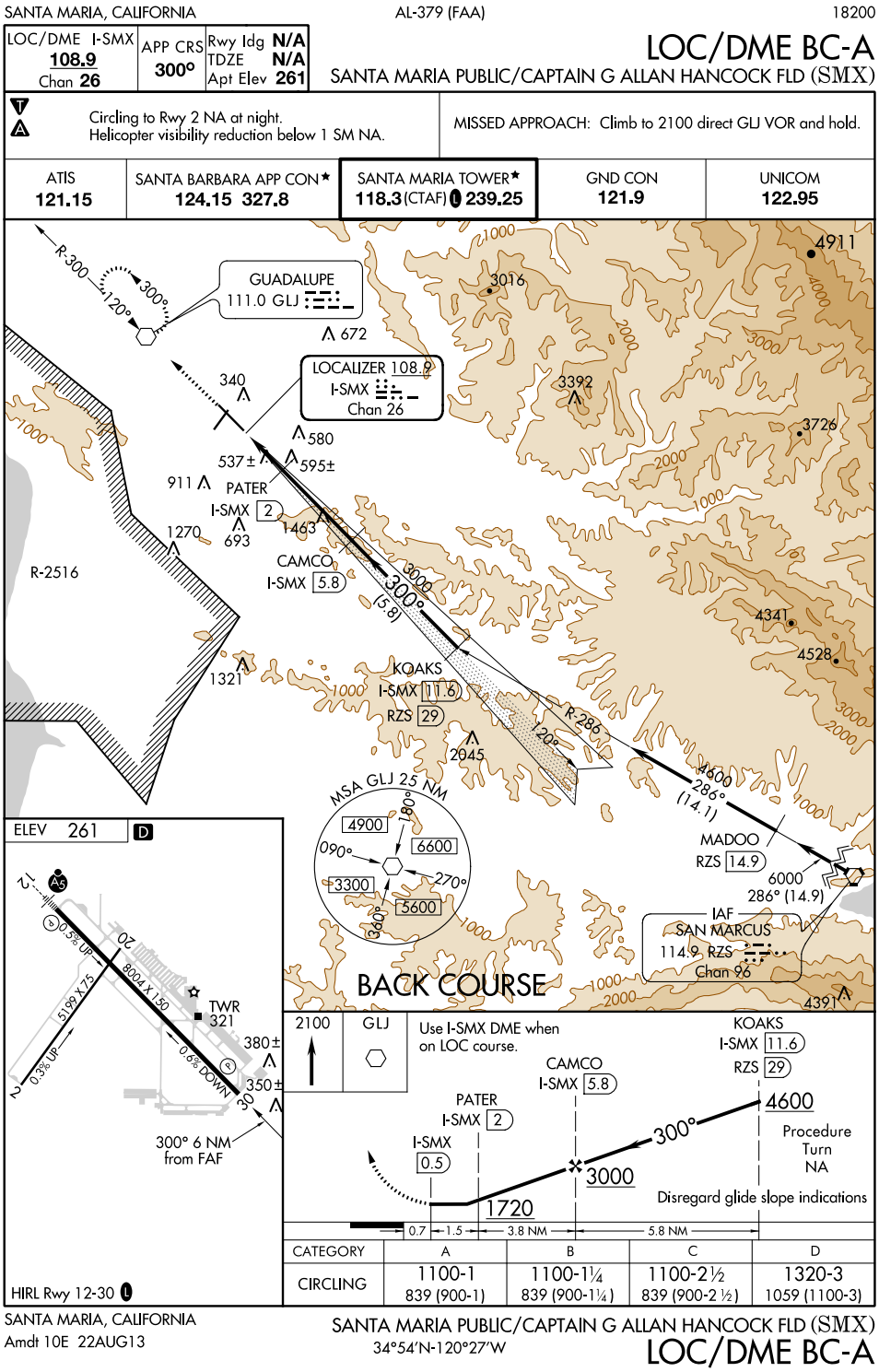
APPENDIX 36
LOC



APPENDIX 37
LOC - BACK COURSE



APPENDIX 38
LOC/DME - BACK COURSE



APPENDIX 39
LDA/DME

THE DALLES, OREGON — AL-530 (FAA) — 20142

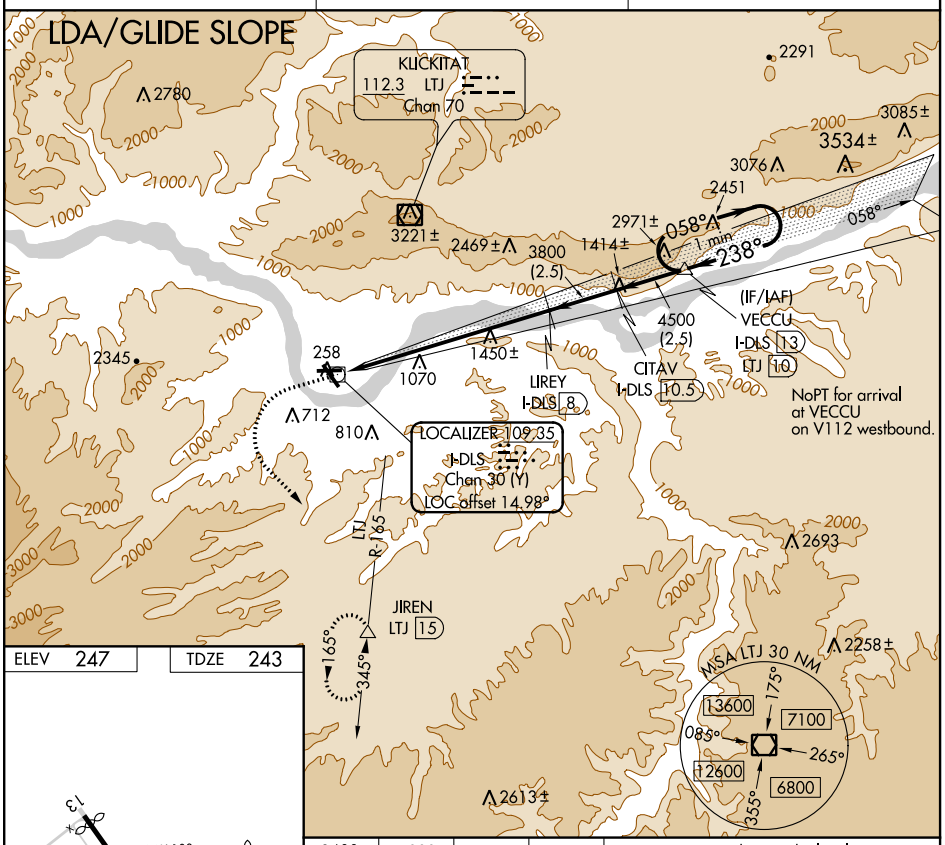
LOC/DME I-DLS	APP CRS	Rwy ldg	4451
109.35	238°	TDZE	243
Chan 30 (Y)		Apt Elev	247

LDA/DME RWY 25
COLUMBIA GORGE RGNL/THE DALLES MUNI (DLS)

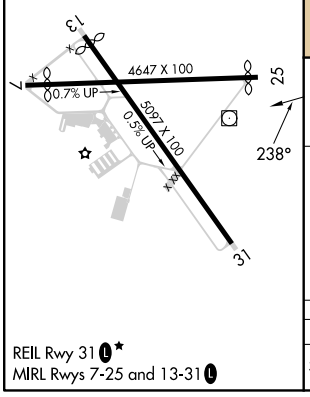
NA — When local altimeter setting not received, procedure NA. Glide slope provided by standard glide slope equipment.

MISSED APPROACH: Climb to 1600 then climbing left turn to 7000 on heading 120° and LTJ VOR/DME R-165 to JIREN/LTJ 15 DME and hold, continue climb-in-hold to 7000.

ASOS	SEATTLE CENTER	UNICOM
135.175	119.65 257.6	123.0 (CTAF) L



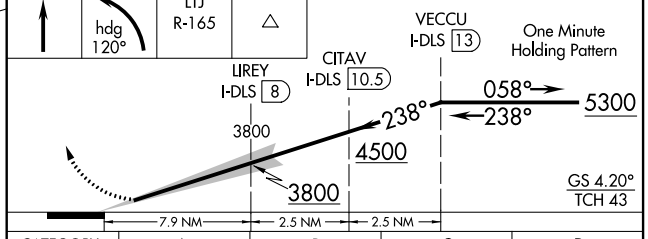
ELEV 247 | TDZE 243



REIL Rwy 31 L★
MIRL Rwys 7-25 and 13-31 L

1600	7000 hdg 120°	LTJ R-165	JIREN

Use I-DLS DME when on the localizer course.

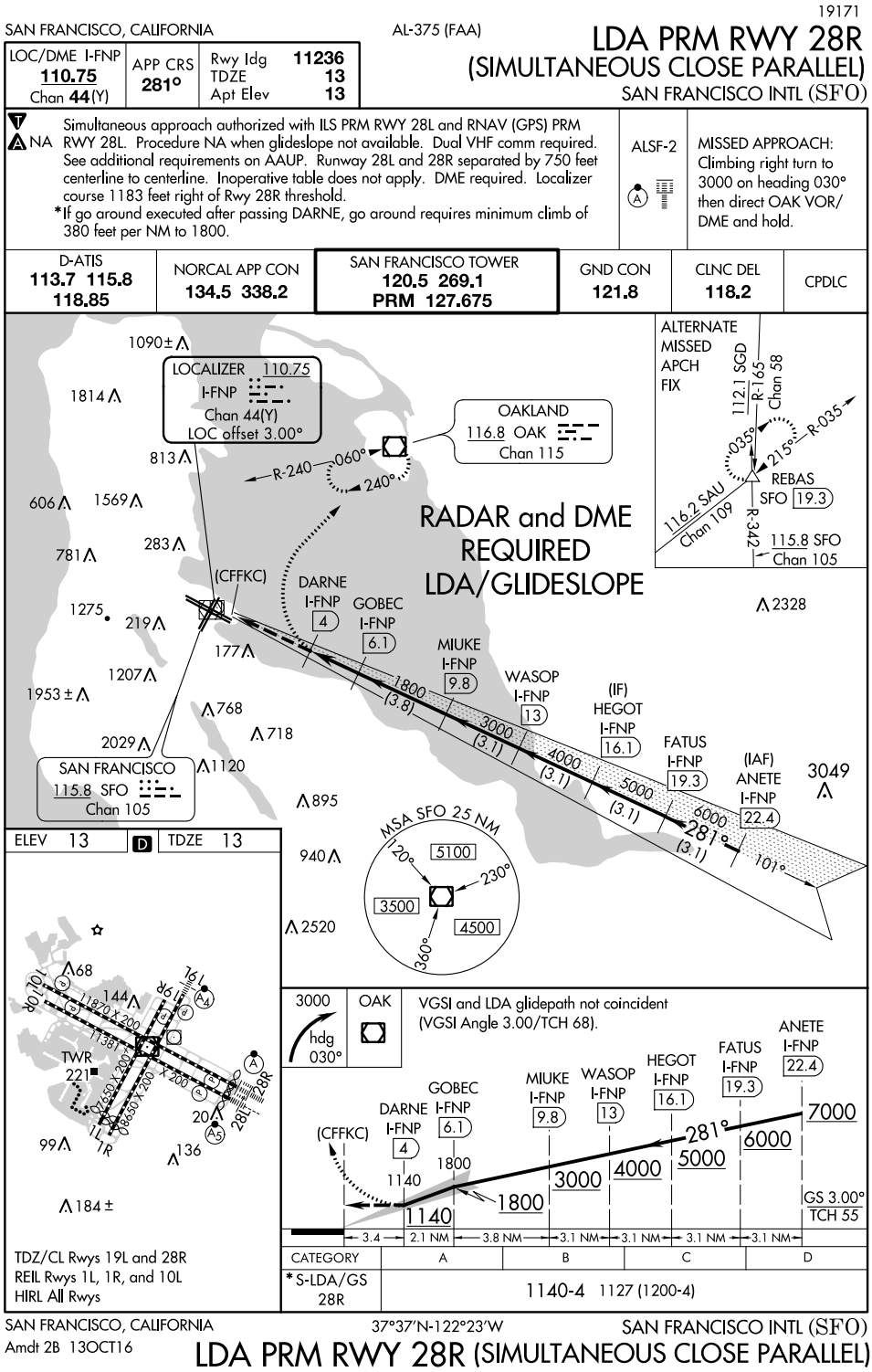


CATEGORY	A	B	C	D
S-LDA/GS 25	1368-3 1125 (1200-3)		NA	

THE DALLES, OREGON
Amdt 1A 28APR16

COLUMBIA GORGE RGNL/THE DALLES MUNI (DLS)
45°37′N-121°10′W
LDA/DME RWY 25

APPENDIX 40
LDA PRM



APPENDIX 41
SDF

MARSHFIELD, WISCONSIN AL-5368 (FAA) 19115

SDF DUS	APP CRS	Rwy ldg	5002
109.9	339°	TDZE	1258
		Apt Elev	1278

SDF RWY 34
MARSHFIELD MUNI (MFI)

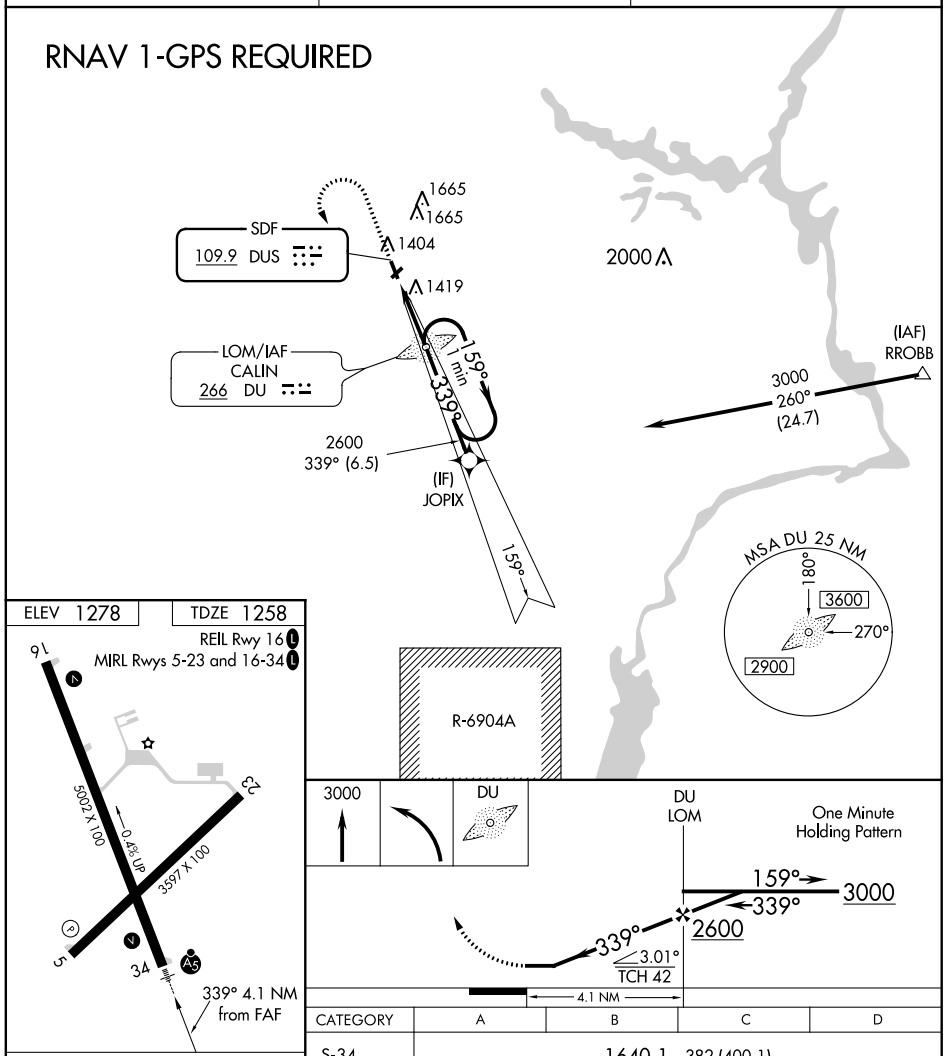
NA ADF Required. When local altimeter setting not received, use Central Wisconsin altimeter setting and increase all MDA 60 feet. Inop table does not apply to Cats A/B. Inop table does not apply to Cat A/B when using Central Wisconsin altimeter setting.

MALSR

MISSED APPROACH: Climb to 3000 then left turn direct CALIN LOM and hold.

ASOS	MINNEAPOLIS CENTER	UNICOM
121.575	124.4 317.7	123.0 (CTAF)

RNAV 1-GPS REQUIRED



ELEV 1278 TDZE 1258

REIL Rwy 16

MIRL Rwys 5-23 and 16-34

FAF to MAP 4.1 NM

Knots	60	90	120	150	180
Min:Sec	4:06	2:44	2:03	1:38	1:22

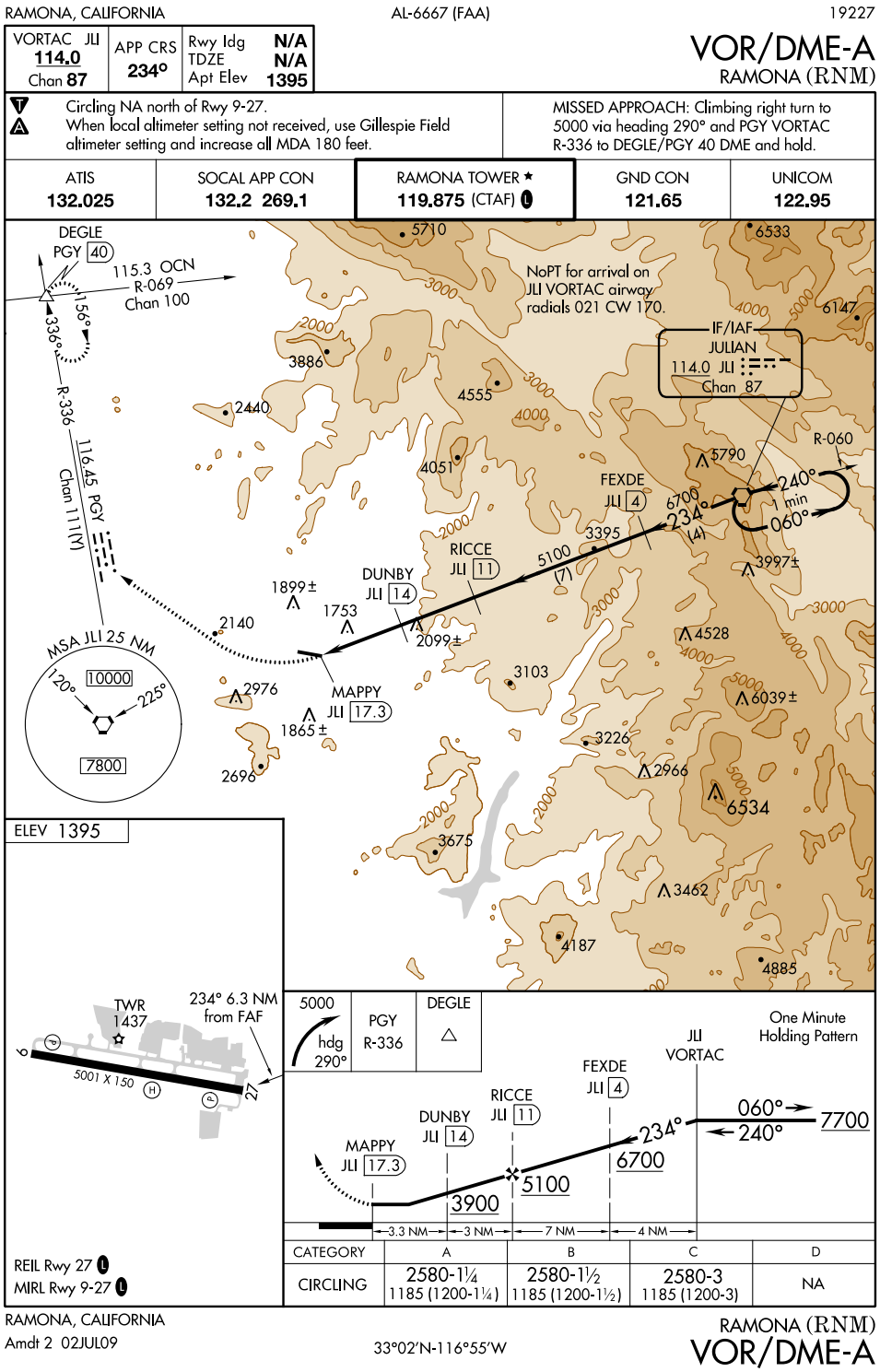
CATEGORY	A	B	C	D
S-34	1640-1 382 (400-1)			
CIRCLING	1760-1 482 (500-1)		2020-2¼ 742 (800-2¼)	2020-2½ 742 (800-2½)

MARSHFIELD, WISCONSIN
Amdt 7 22JUN17

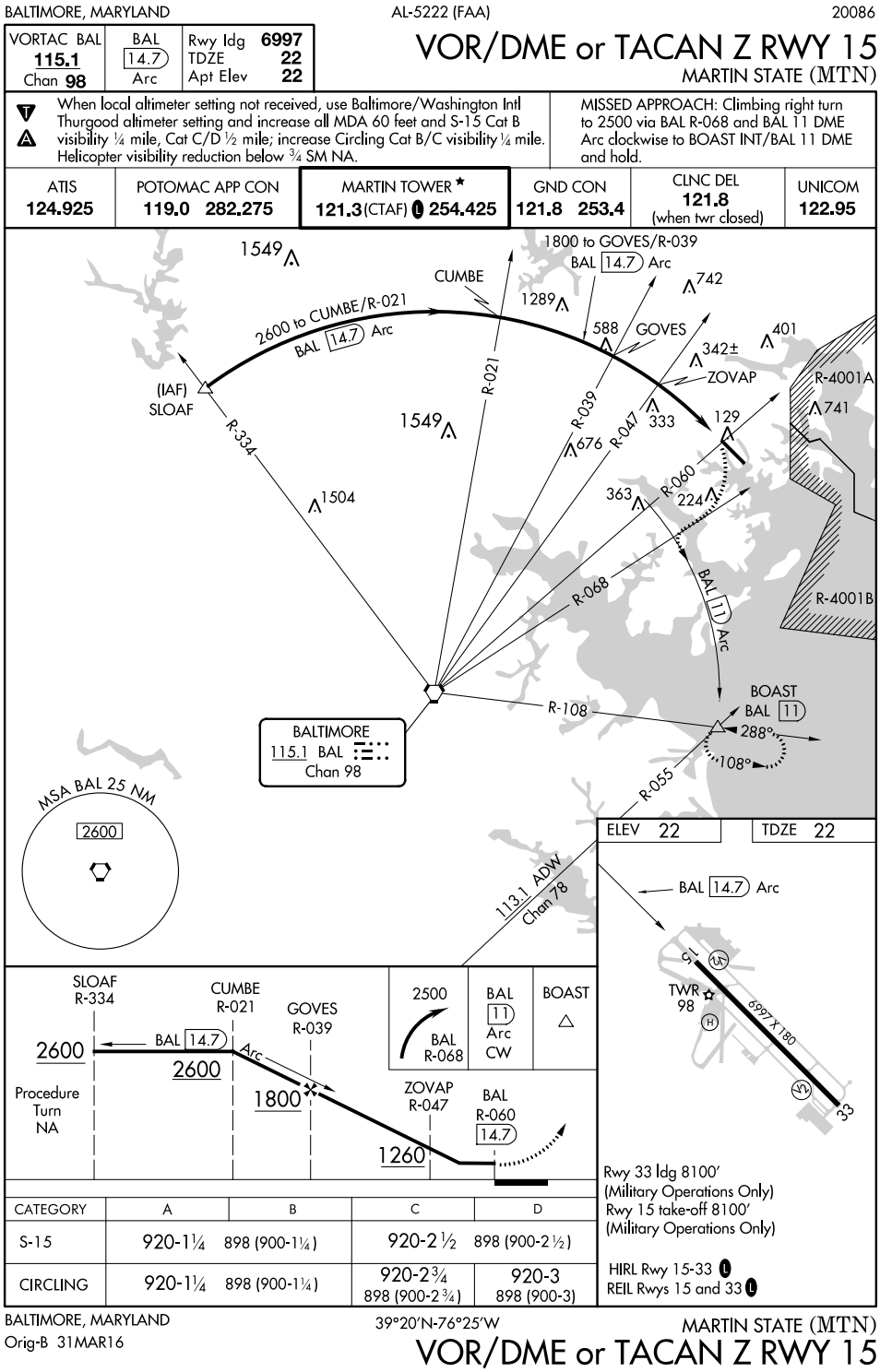
44°38'N-90°11'W

MARSHFIELD MUNI (MFI)
SDF RWY 34

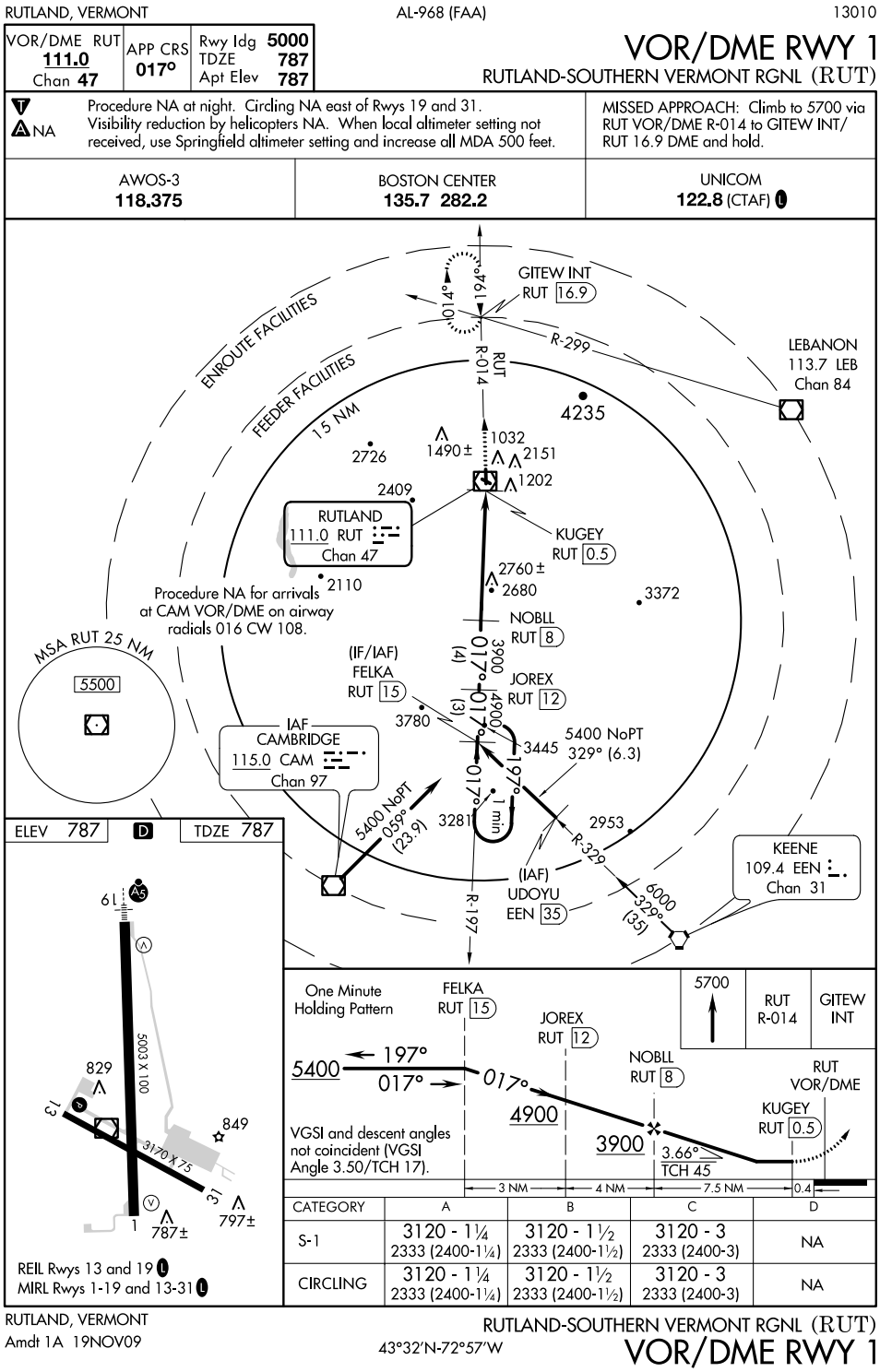
APPENDIX 42
VOR/DME



APPENDIX 43
VOR/DME ARC



APPENDIX 44
VOR - CONCENTRIC RING DEPICTION



APPENDIX 45
VOR OR TACAN

SAN LUIS OBISPO, CALIFORNIA AL-989 (FAA) 19227

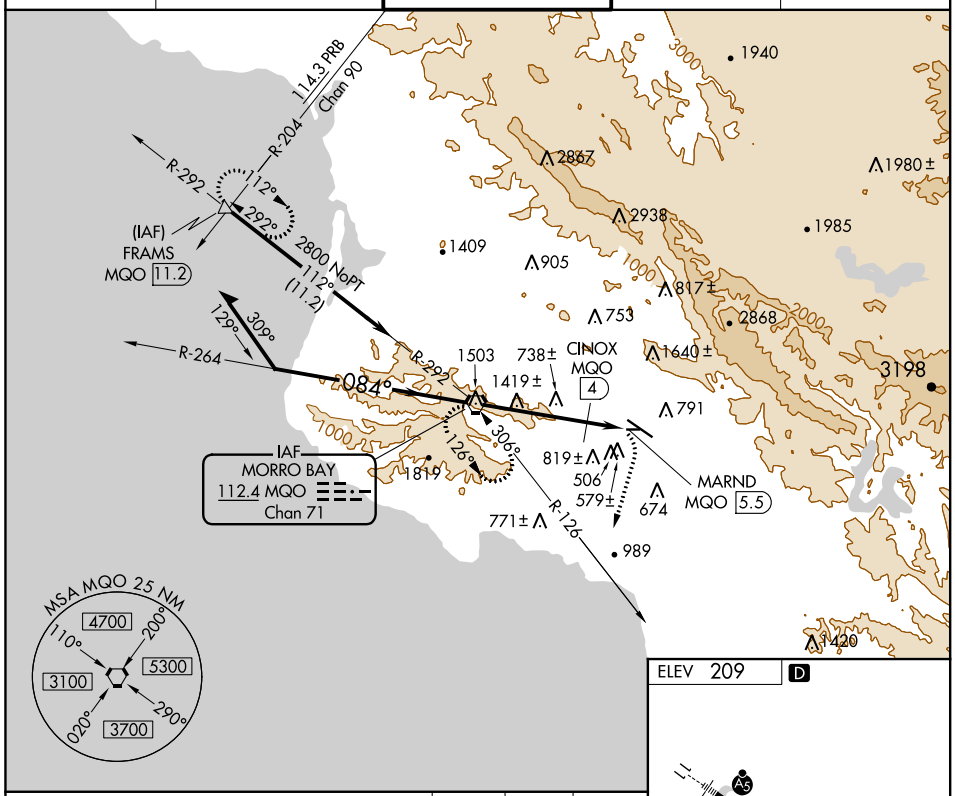
VOR or TACAN-A
SAN LUIS COUNTY RGNL (SBP)

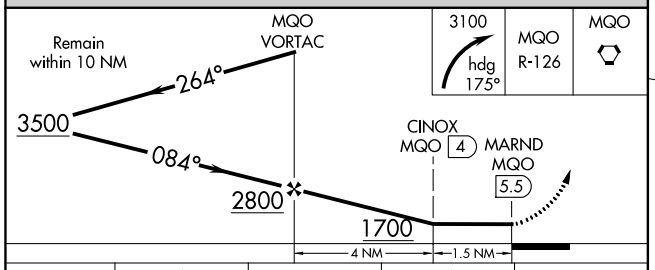
VORTAC MQO 112.4 Chan 71	APP CRS 084°	Rwy ldg N/A TDZE N/A Apt Elev 209

T A Circling NA north of Rwy 11-29.

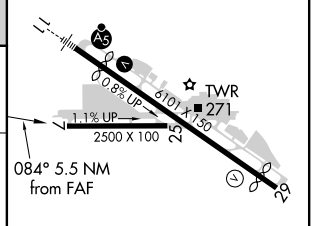
MISSED APPROACH: Climbing right turn to 3100 via heading 175° and MQO R-126 to MQO VORTAC and hold. (TACAN Aircraft continue climb to 4000 via MQO R-292 to FRAMS 11.2 DME and hold east, right turns, 292° inbound.)

ATIS	SANTA BARBARA APP CON★	SAN LUIS TOWER★	GND CON	UNICOM
120.6	127.725 244.575	124.0 (CTAF) L 379.9	121.6	122.95





ELEV 209 D



HIRL Rwy 11-29 L
REIL Rwy 29 L

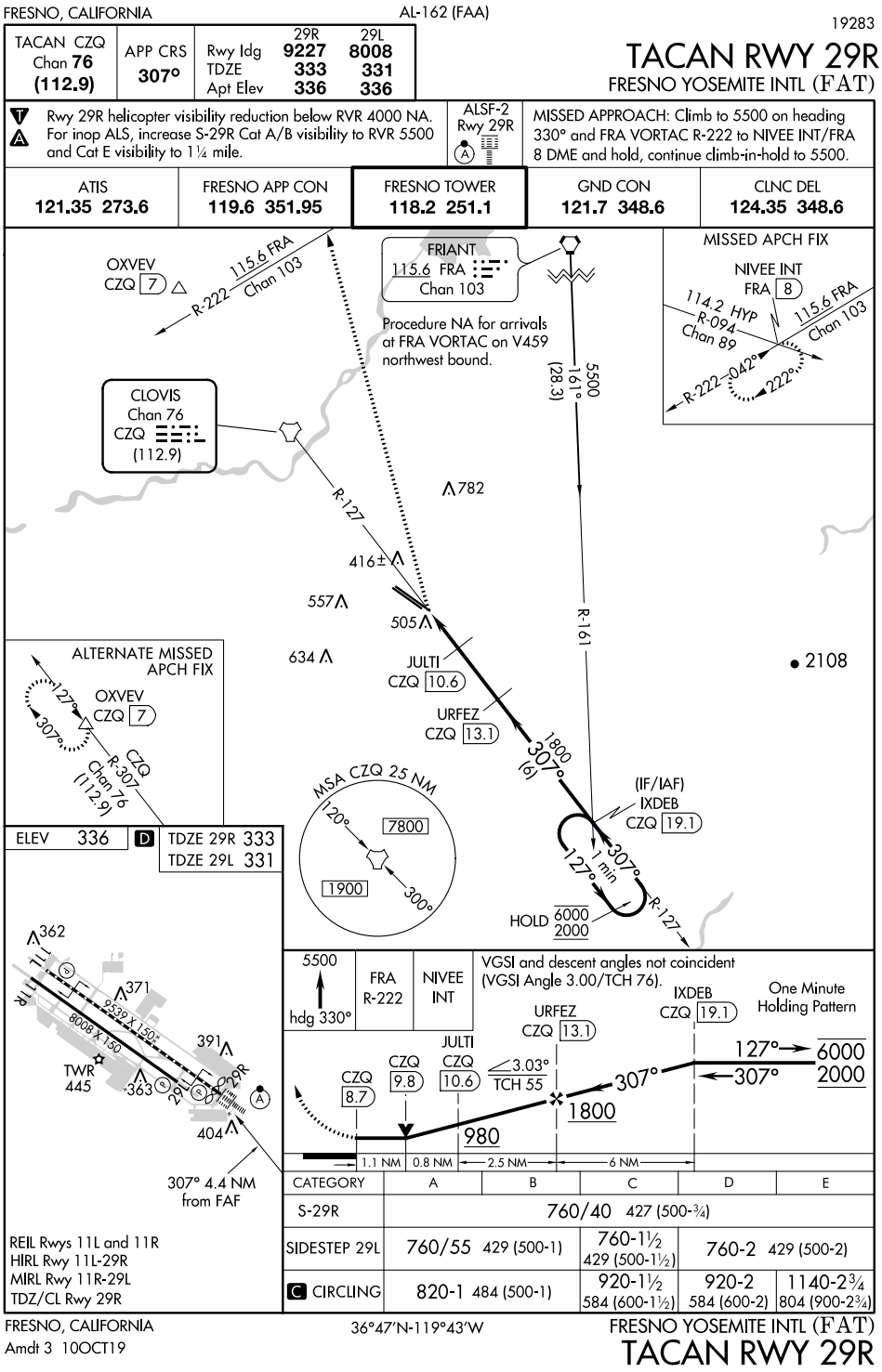
CATEGORY	A	B	C	D
CIRCLING	1700-1¼ 1491 (1500-1¼)	1700-1½ 1491 (1500-1½)	1700-3 1491 (1500-3)	
TACAN OR DME MINIMA				
CIRCLING	1120-1¼ 911 (1000-1¼)		1160-2¾ 951 (1000-2¾)	1280-3 1071 (1100-3)

FAF to MAP 5.5 NM

Knots	60	90	120	150	180
Min:Sec	5:30	3:40	2:45	2:12	1:50

SAN LUIS OBISPO, CALIFORNIA
Amdt 6B 30SEP04
35°14′N-120°39′W
SAN LUIS COUNTY RGNL (SBP)
VOR or TACAN-A

APPENDIX 46
TACAN



APPENDIX 47
NDB

CAMBRIDGE, MARYLAND AL-5571 (FAA) 13234

NDB CGE	APP CRS	Rwy ldg	4477
355	335°	TDZE	20
		Apt Elev	20

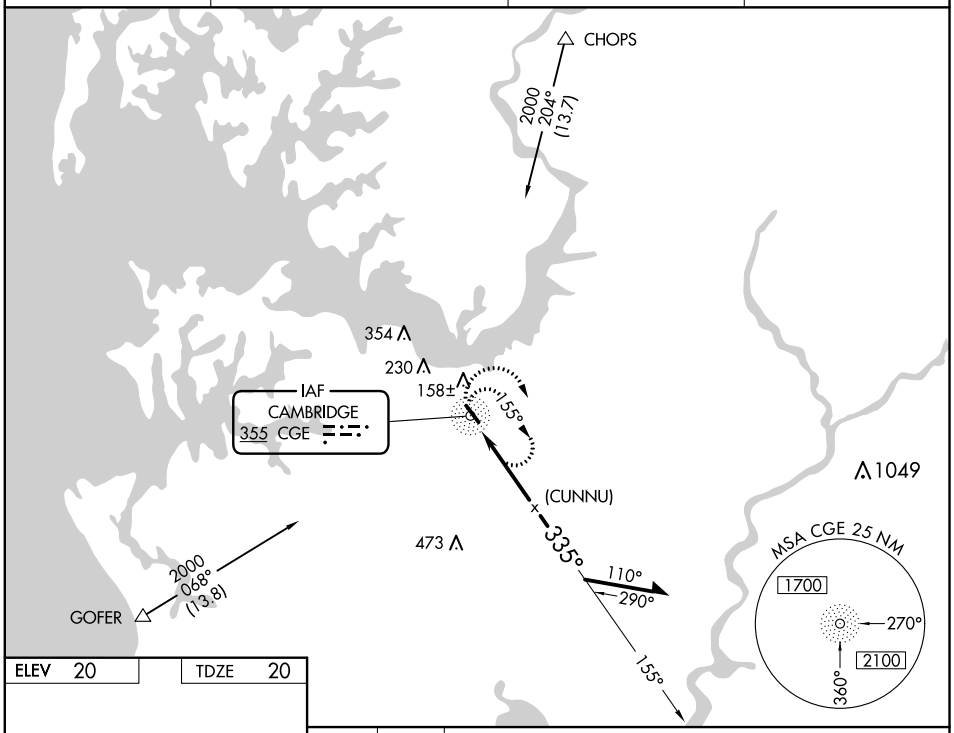
NDB or GPS RWY 34
CAMBRIDGE-DORCHESTER (CGE)

T A NA

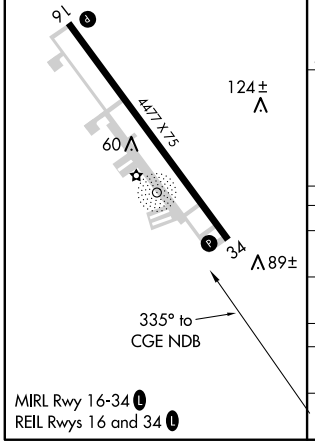
When Cambridge altimeter not received, use Salisbury altimeter. Procedure NA at night. Helicopter visibility reduction below 1 SM NA.

MISSED APPROACH: Climbing right turn to 1600 in CGE NDB holding pattern.

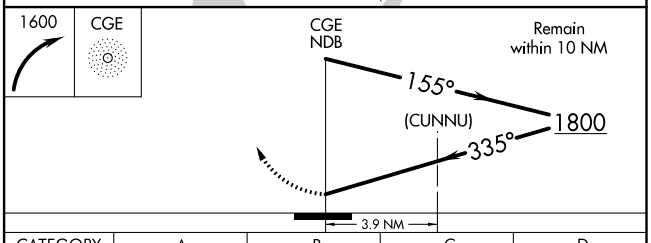
AWOS-3	PATUXENT APP CON ★	UNICOM	
120.675	121.0 250.3	122.7 (CTAF)	121.9 L



ELEV 20 TDZE 20



MIRL Rwy 16-34 L
REIL Rwys 16 and 34 L



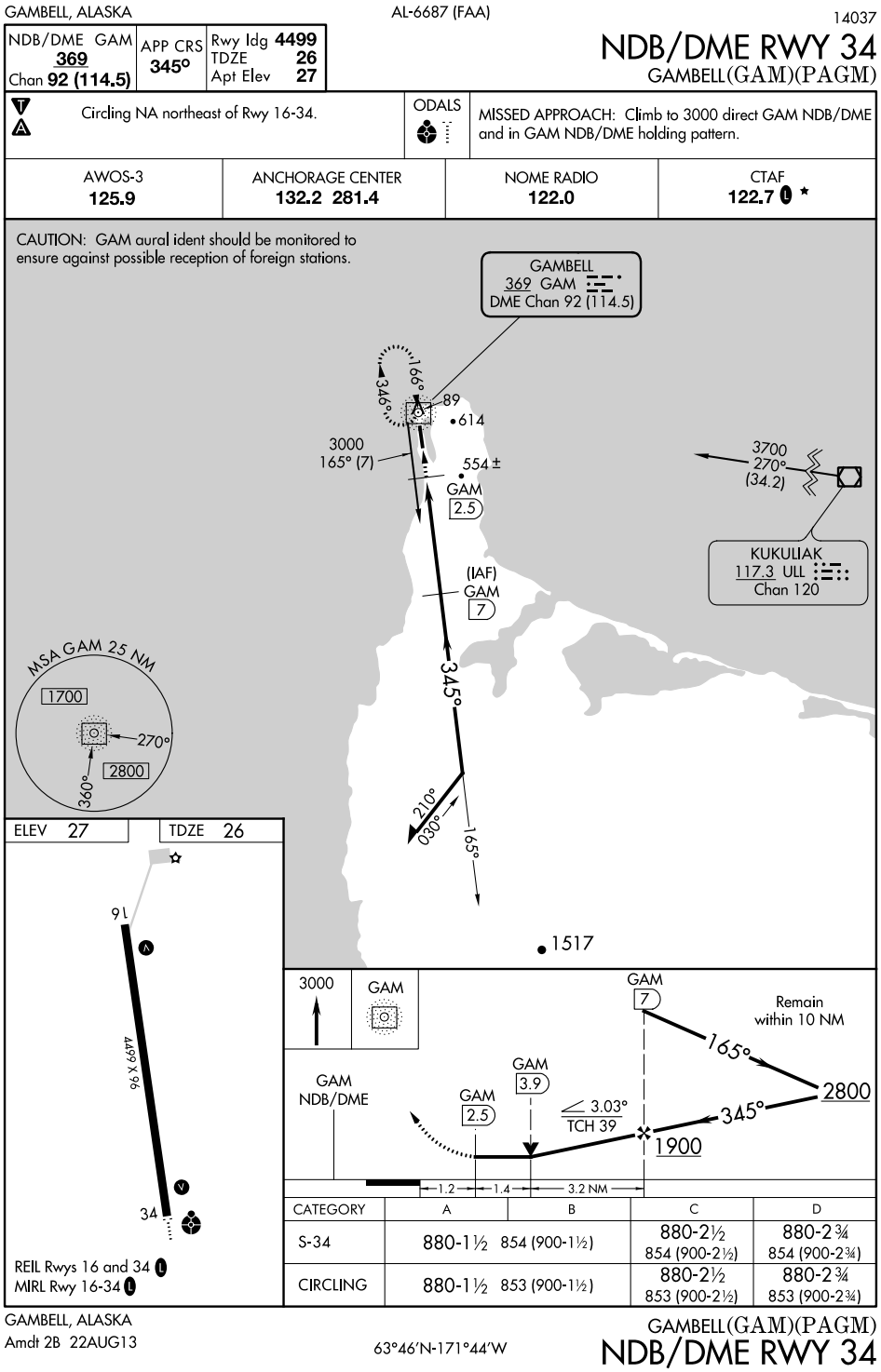
CATEGORY	A	B	C	D
S-34	480-1 460 (500-1)		480-1¼ 460 (500-1¼)	480-1½ 460 (500-1½)
CIRCLING	480-1 460 (500-1)	480-1 460 (500-1)	480-1½ 460 (500-1½)	580-2 560 (600-2)
SALISBURY ALTIMETER MINIMUMS				
S-34	560-1 540 (600-1)		560-1½ 540 (600-1½)	560-1¾ 540 (600-1¾)
CIRCLING	580-1 560 (600-1)		580-1½ 560 (600-1½)	680-2 660 (700-2)

CAMBRIDGE, MARYLAND
Amdt 7B 02MAY13

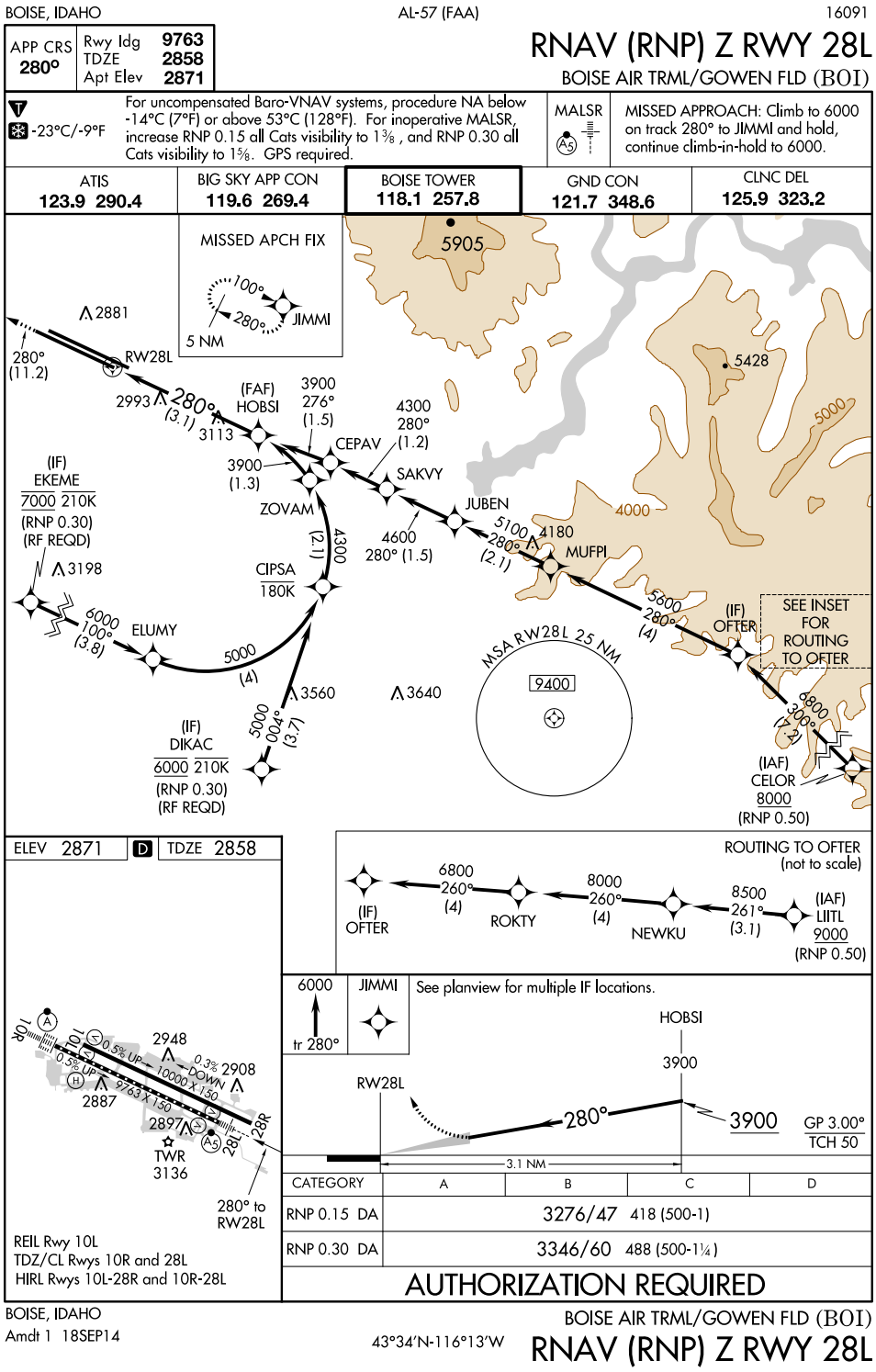
38°32′N-76°02′W

CAMBRIDGE-DORCHESTER (CGE)
NDB or GPS RWY 34

APPENDIX 48
NDB WITH DME



APPENDIX 49
RNAV (RNP)



APPENDIX 50
RNAV (GPS)

PITTSBURGH, PENNSYLVANIA AL-570 (FAA) 15064

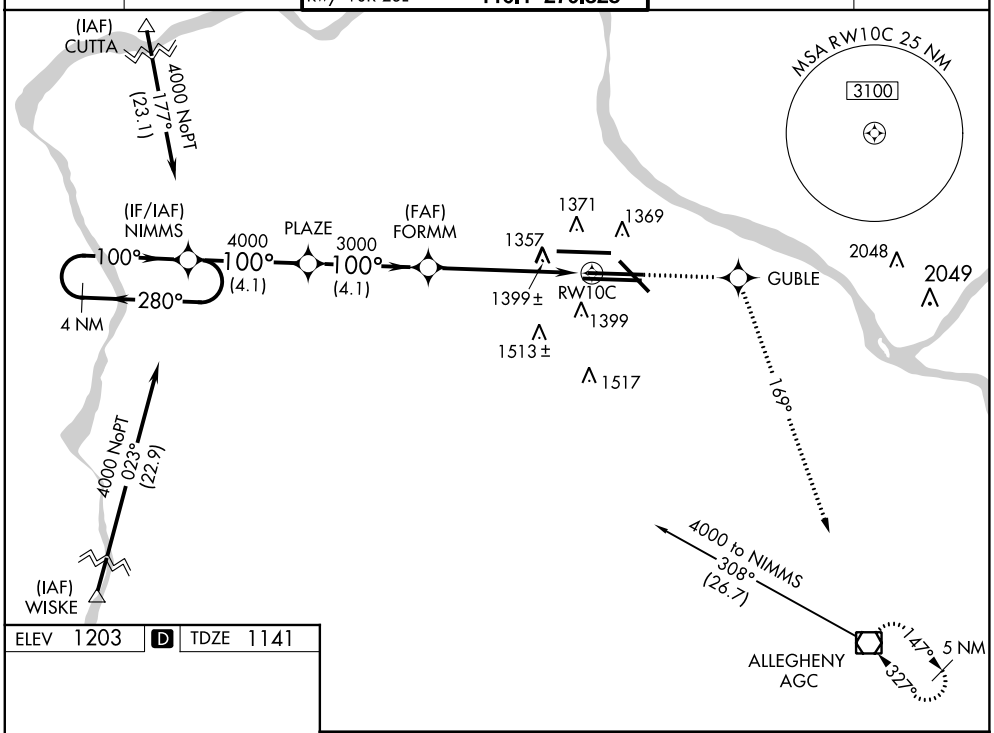
WAAS CH 90126 W10A	APP CRS 100°	Rwy ldg 9708 TDZE 1141 Apt Elev 1203

RNAV (GPS) Y RWY 10C
PITTSBURGH INTL (PIT)

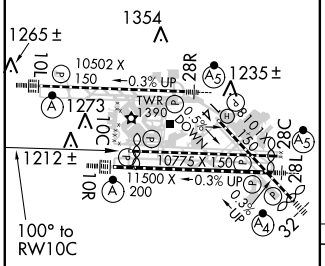
For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -17°C (2°F) or above 46°C (114°F). DME/DME RNP-0.3 NA. Simultaneous approach authorized with ILS or LOC Rwy 10L, ILS Rwy 10L (Cat II), ILS Rwy 10L (Cat III). LNAV procedure NA during simultaneous operations. Use of FD or AP providing RNAV track guidance required during simultaneous operations.

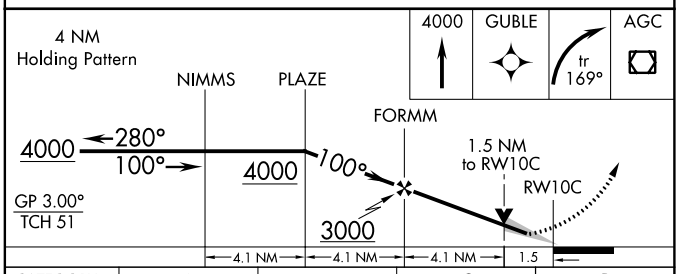
MISSED APPROACH: Climb to 4000 direct GUBLE and right turn via 169° track to AGC VOR/DME and hold.

ATIS	PITTSBURGH APP CON	PITTSBURGH TOWER	GND CON	CLNC DEL
ARR 127.25 DEP 135.9	123.95 360.8	Rwys 10L-28R 128.3 291.7 Rwys 10C-28C, 14-32 135.025 270.325 Rwy 10R-28L 119.1 270.325	SOUTH 121.9 348.6 NORTH 127.8 348.6	126.75 353.7



ELEV 1203 D TDZE 1141





CATEGORY	A	B	C	D
LPV DA	1438/50 297 (300-1)			
LNAV/VNAV DA	1634-1¾ 493 (500-1¾)			
LNAV MDA	1660/50 519 (500-1)		1660-1½ 519 (500-1½)	1660-1¾ 519 (500-1¾)
CIRCLING	1700-1 497 (500-1)		1700-1½ 497 (500-1½)	1760-2 557 (600-2)

REIL Rwy 10C
HIRL All Rwys
TDZ/CL Rwys 10L, 10R, 28L, 28R, 28C, and 32

PITTSBURGH, PENNSYLVANIA
Amdt 4A 05APR12

40°29′N-80°14′W

PITTSBURGH INTL (PIT)
RNAV (GPS) Y RWY 10C

APPENDIX 51
GPS

INDIANA, PENNSYLVANIA AL-5277 (FAA)

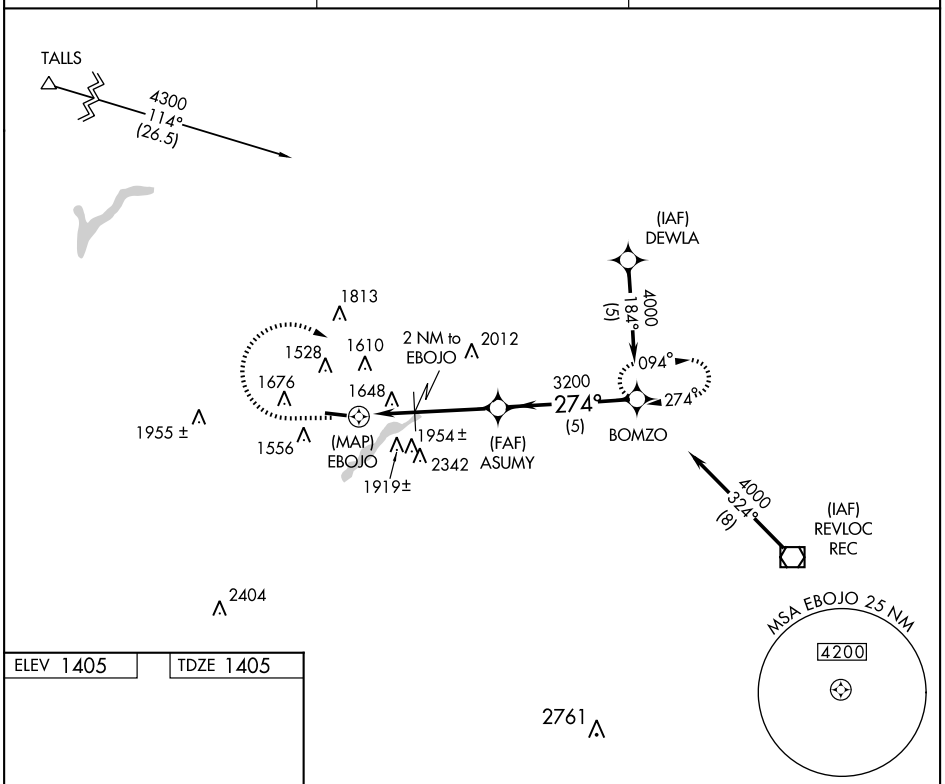
APP CRS	Rwy ldg	4000
274°	TDZE	1405
	Apt Elev	1405

GPS RWY 28
INDIANA COUNTY/JIMMY STEWART FLD (IDI)

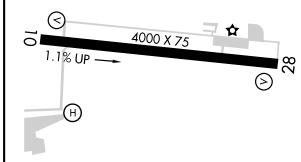
NA

MISSED APPROACH: Climb to 3000, then climbing right turn to 4000 direct BOMZO WP and hold.

AWOS-3	CLEVELAND CENTER	UNICOM
126.625	121.2 299.2	122.8 (CTAF)

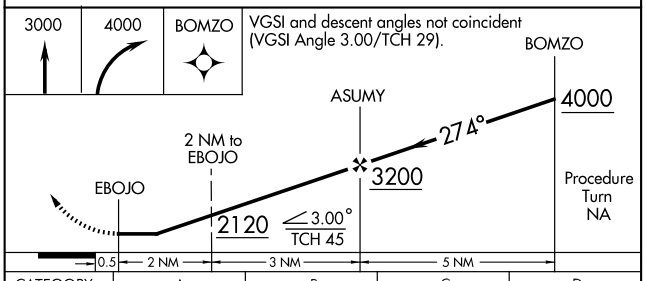


ELEV 1405 TDZE 1405



1640 ±

MIRL Rwy 10-28
REIL Rwys 10 and 28



CATEGORY	A	B	C	D
S-28	1940-1 535 (600-1)		1940-1½ 535 (600-1½)	1940-1¾ 535 (600-1¾)
CIRCLING	1960-1 555 (600-1)	1980-1 575 (600-1)	2100-2 695 (700-2)	2220-2¾ 815 (900-2¾)

INDIANA, PENNSYLVANIA
Amdt 1 09183

40°38′N - 79°06′W

INDIANA COUNTY/ JIMMY STEWART FLD (IDI)
GPS RWY 28

APPENDIX 52
GPS WITH ARMED APPROACH

DUNKIRK, NEW YORK

AL-880 (FAA)

10322

GPS RWY 24
CHAUTAUQUA COUNTY/DUNKIRK (DKK)

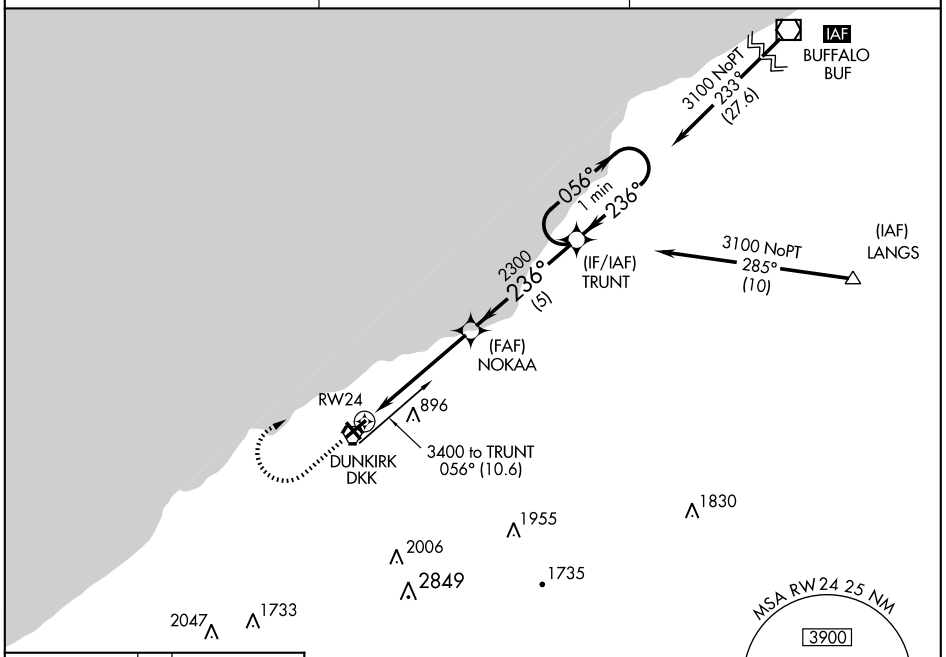
APP CRS	Rwy ldg	5000
236°	TDZE	676
	Apt Elev	693

T
A NA

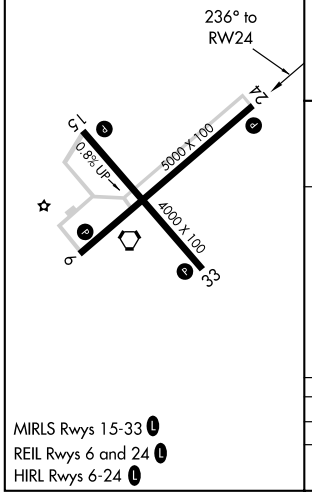
IAF ARM APPROACH MODE PRIOR TO IAF.

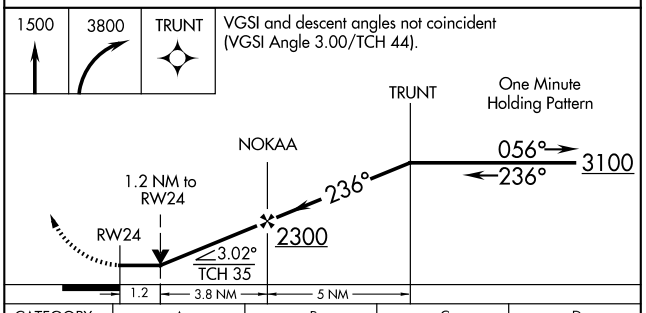
MISSED APPROACH: Climb to 1500, then climbing right turn to 3800 direct TRUNT WP and hold.

ASOS	BUFFALO APP CON	UNICOM
119.275	126.5 317.6	123.075 (CTAF) L



ELEV 693 TDZE 676





CATEGORY	A	B	C	D
S-24	1080-1	404 (400-1)	1080-1¼	404 (400-1¼)
CIRCLING	1220-1 527 (600-1)	1240-1 547 (600-1)	1280-1½ 587 (600-1½)	1540-2¾ 847 (900-2¾)

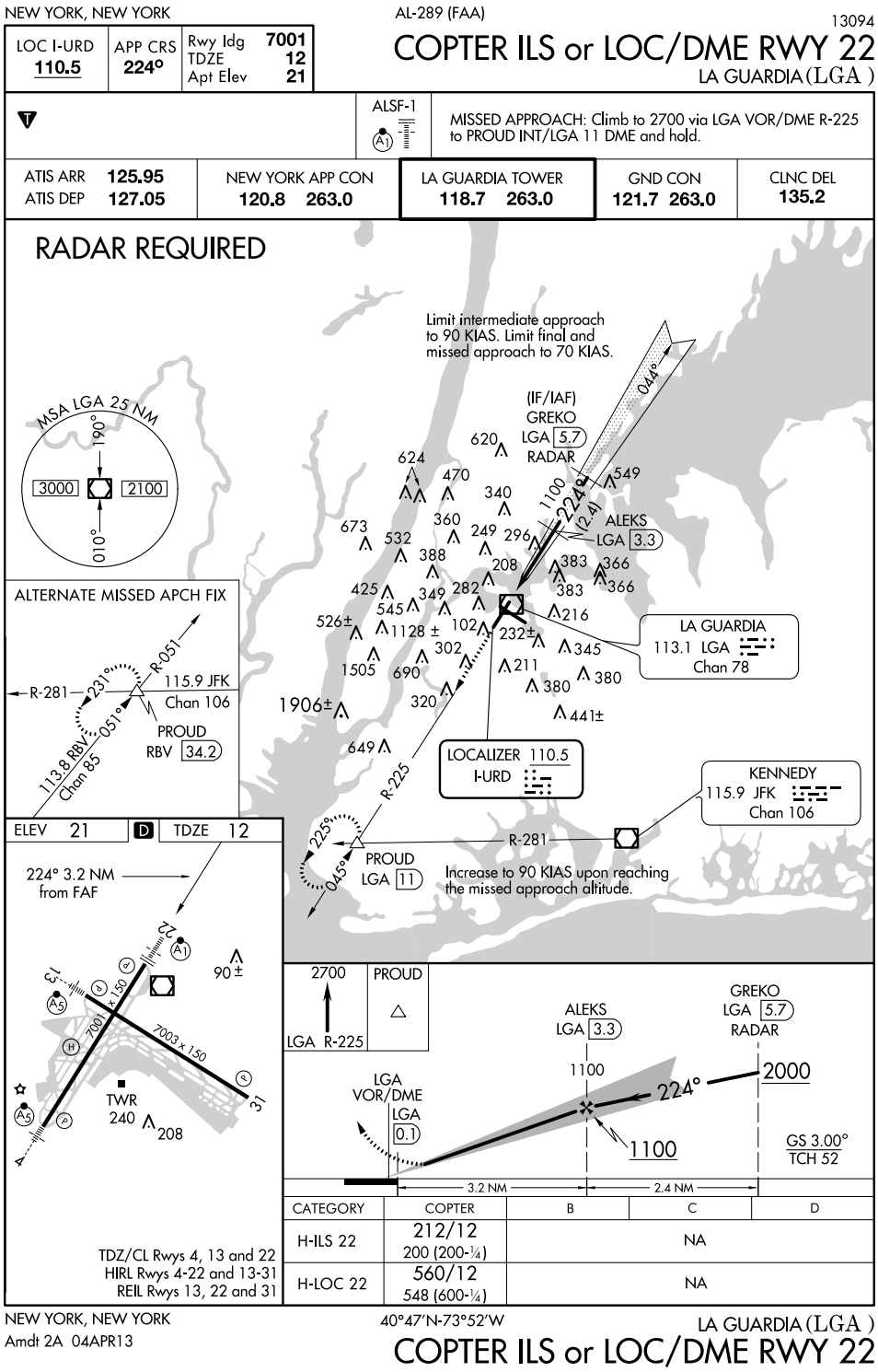
MIRLS Rwys 15-33 L
REIL Rwys 6 and 24 L
HIRL Rwys 6-24 L

DUNKIRK, NEW YORK
Orig-A 18NOV10

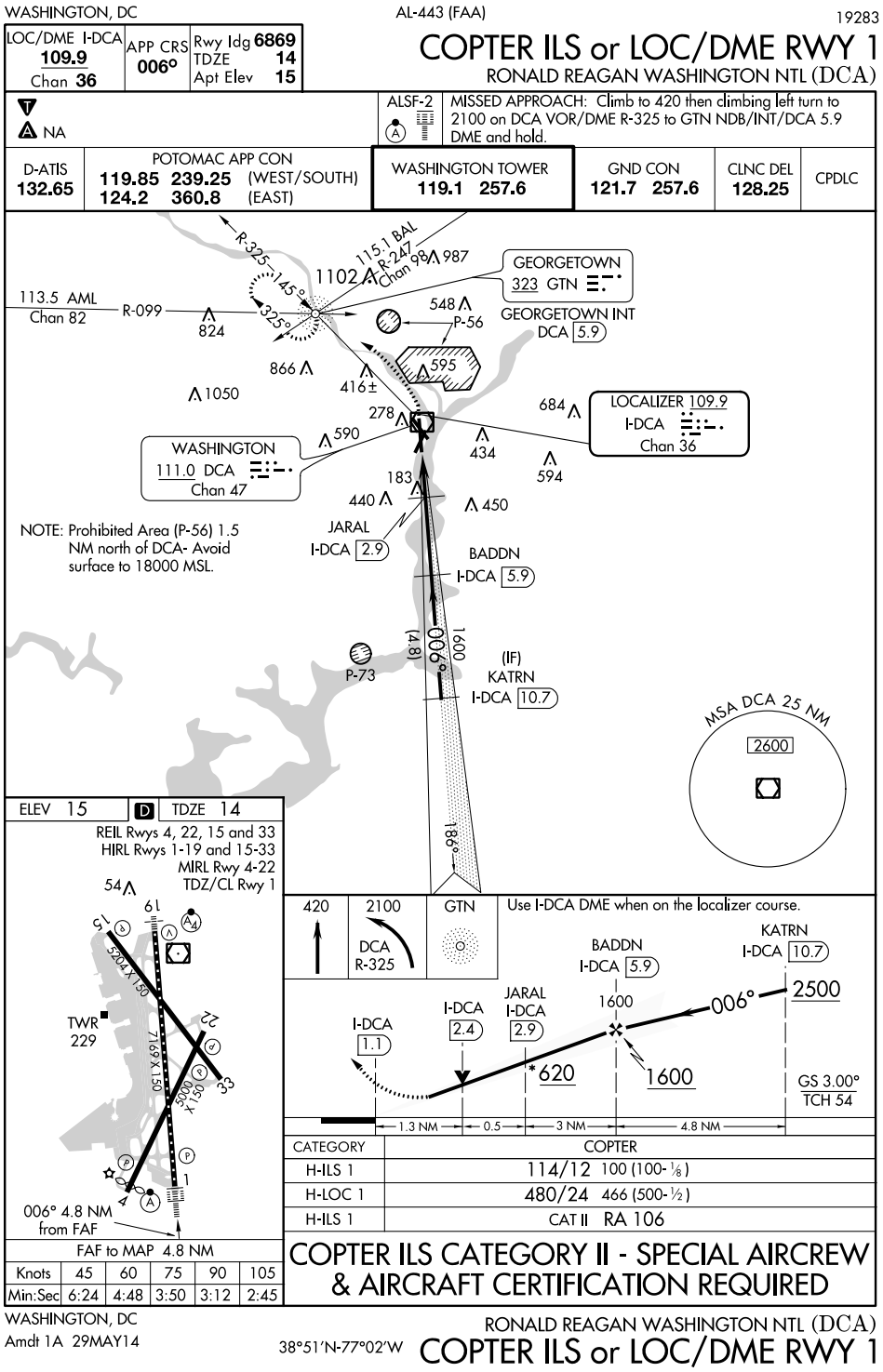
42°30'N-79°16'W

CHAUTAUQUA COUNTY/DUNKIRK (DKK)
GPS RWY 24

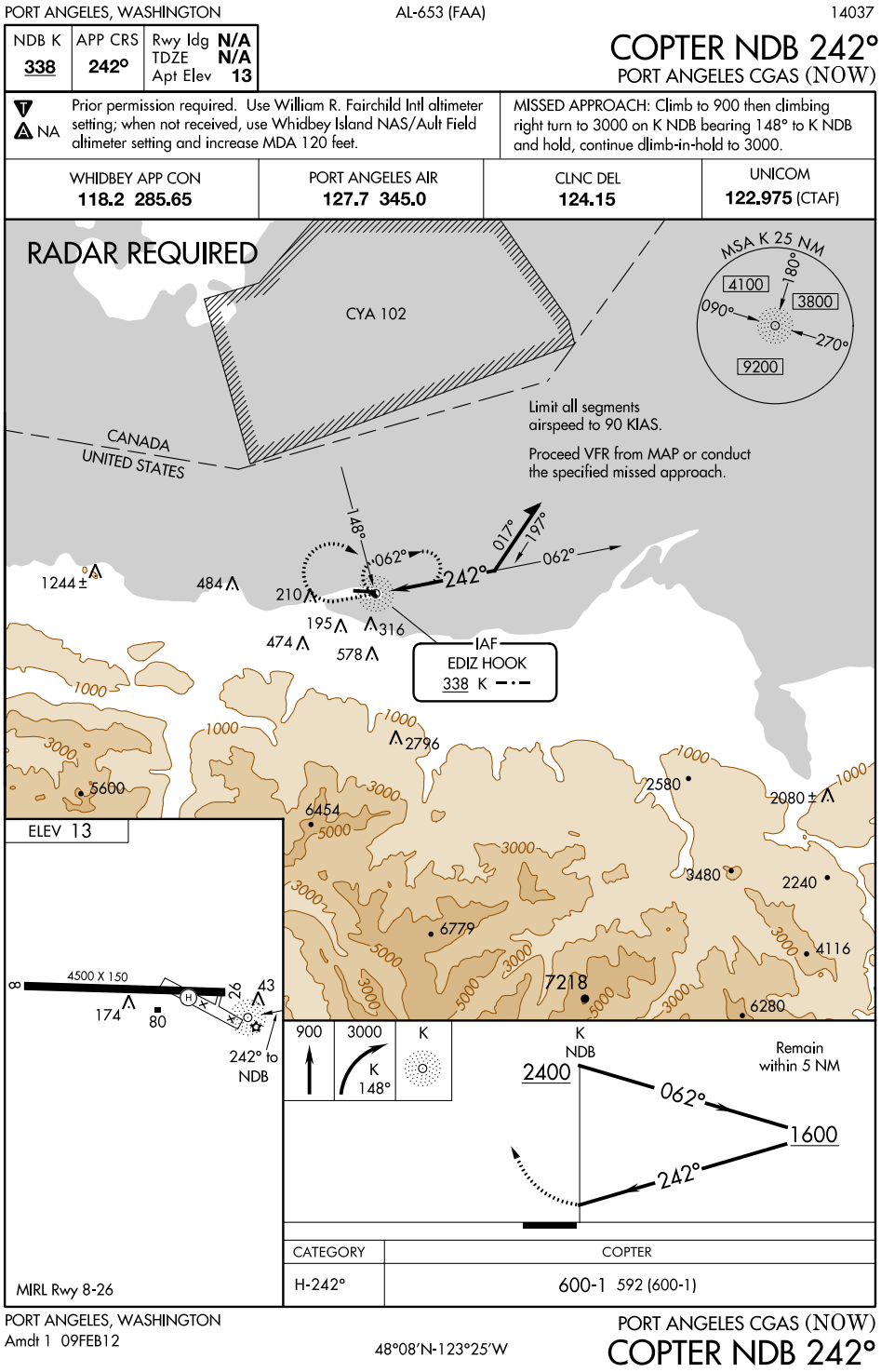
APPENDIX 53
COPTER - ILS



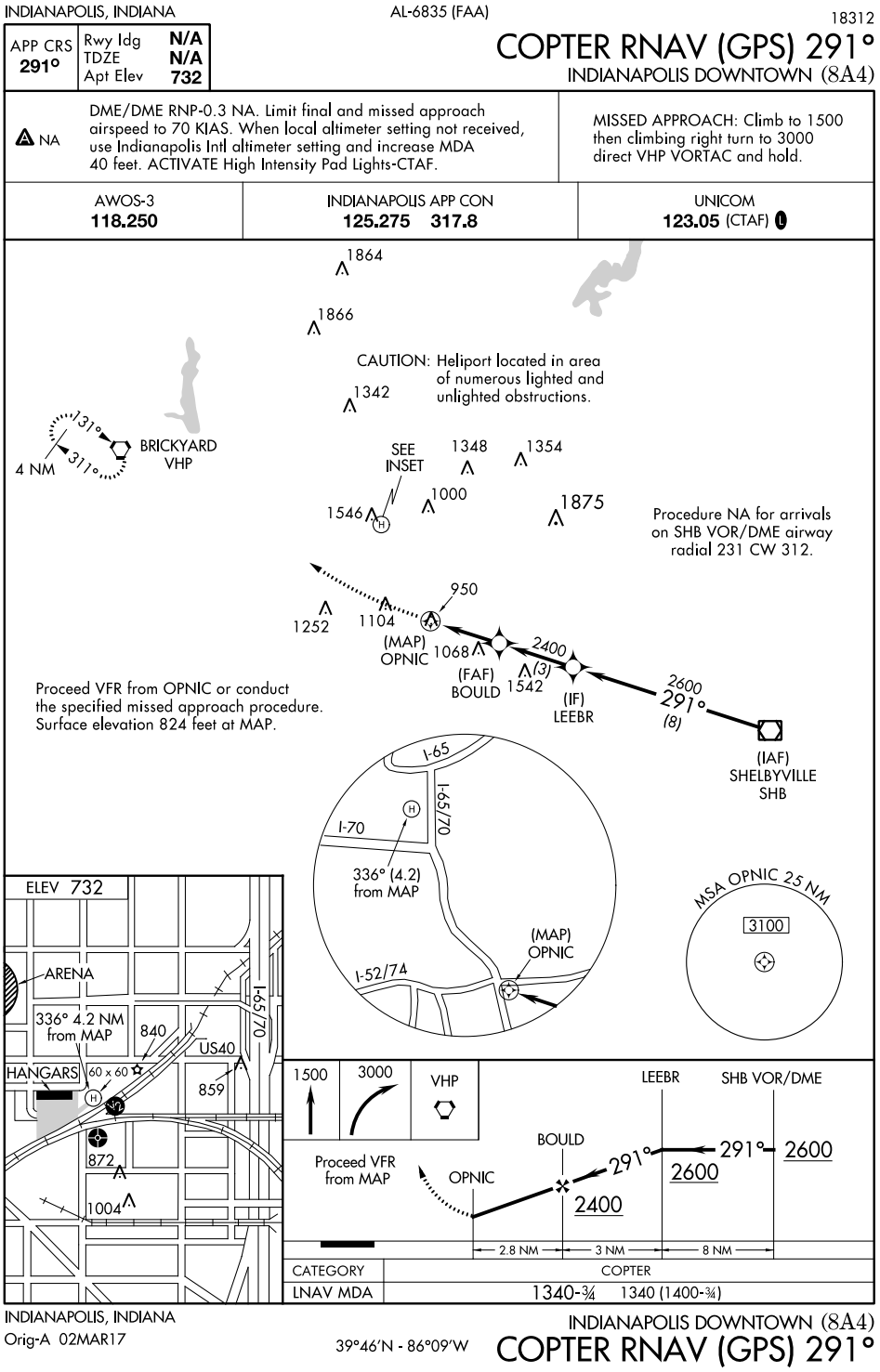
APPENDIX 54
COPTER - ILS CAT II



APPENDIX 55
COPTER - NDB



APPENDIX 56
COPTER - RNAV (GPS)



APPENDIX 57
COPTER - RNAV (GPS) - MULTI HELIPORTS WITHOUT AIRPORT DIAGRAM

NEW YORK, NEW YORK AL-610 (FAA) 18200

APP CRS	Rwy ldg	N/A
027°	TDZE	N/A
	Apt Elev	N/A

COPTER RNAV (GPS) 027°
JOHN F KENNEDY INTL (JFK)

RNP APCH.

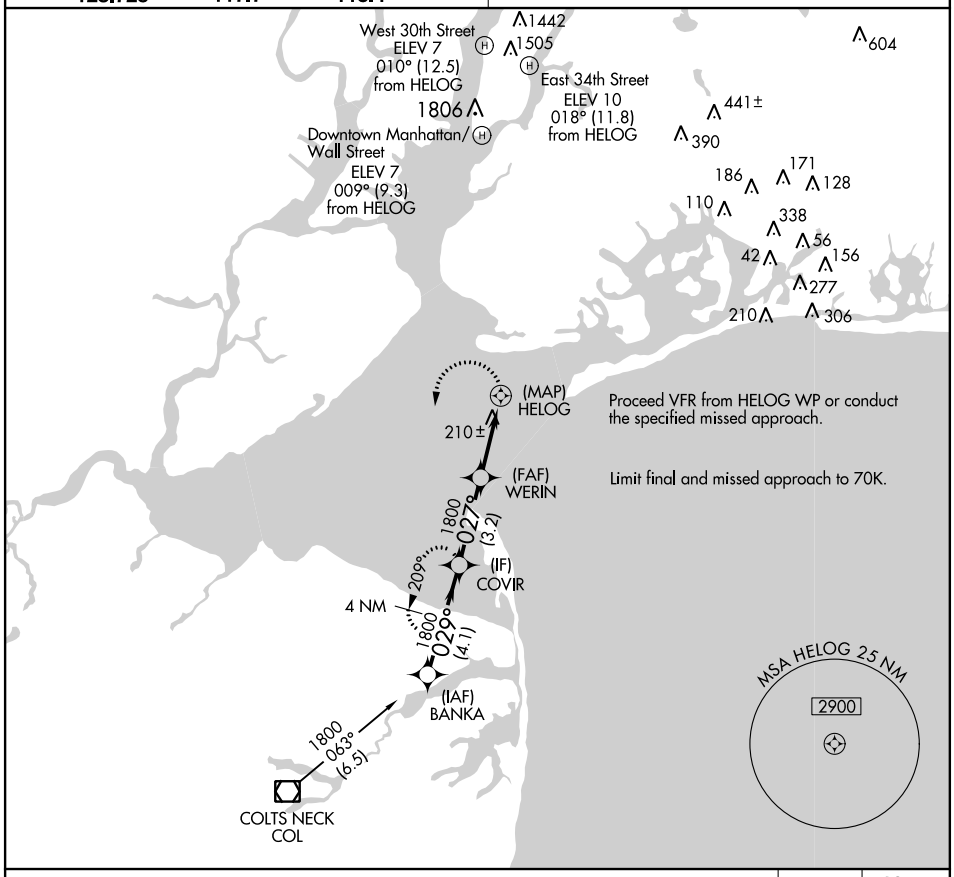
T
A NA

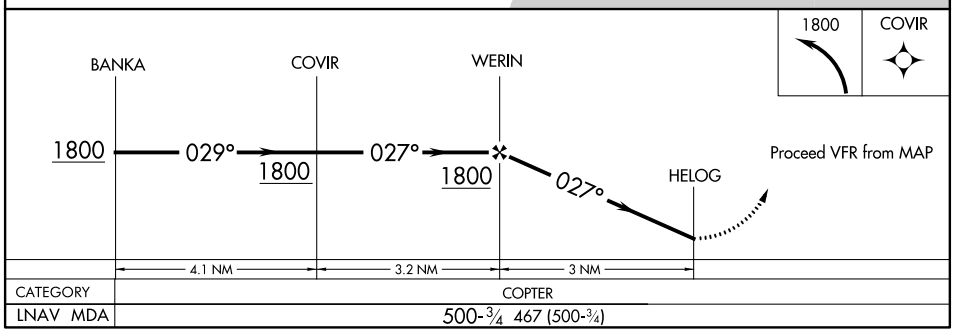
Use John F Kennedy Intl altimeter setting.

MISSED APPROACH: Climbing left turn to 1800 direct COVIR and hold.

D-ATIS (ARR/DEP)	(ARR-NE)	(ARR-SW)
128.725	117.7	115.4

NEW YORK APP CON
128.125 269.0





CATEGORY	COPTER
LNAV MDA	500-¾ 467 (500-¾)

NEW YORK, NEW YORK
Orig-C 19JUL18

40°38′N - 73°47′W

JOHN F KENNEDY INTL (JFK)
COPTER RNAV (GPS) 027°

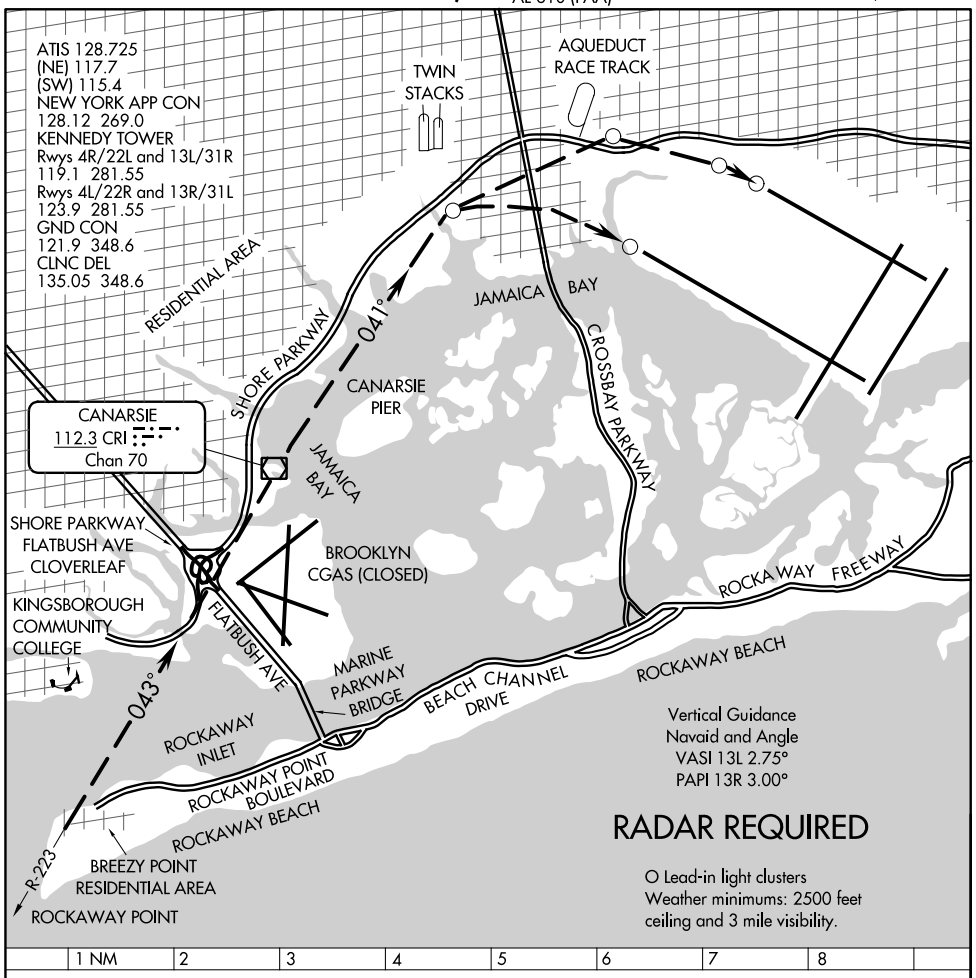
APPENDIX 58
VISUAL (CVFP)

14149

PARKWAY VISUAL RWY 13L/R

AL-610 (FAA)

JOHN F. KENNEDY INTL (JFK)
NEW YORK, NEW YORK



PARKWAY VISUAL RUNWAY 13L/R

When cleared for Parkway Visual to Runway 13L/R maintain at or above 2000′ until abeam Rockaway Point. Remain west of Rockaway Point, thence east of Kingsborough Community College. Remain east of the Shore Parkway. Cross Brooklyn Coast Guard Air Station at or above 1500′. Remain east of the Shore Parkway until Canarsie Pier.

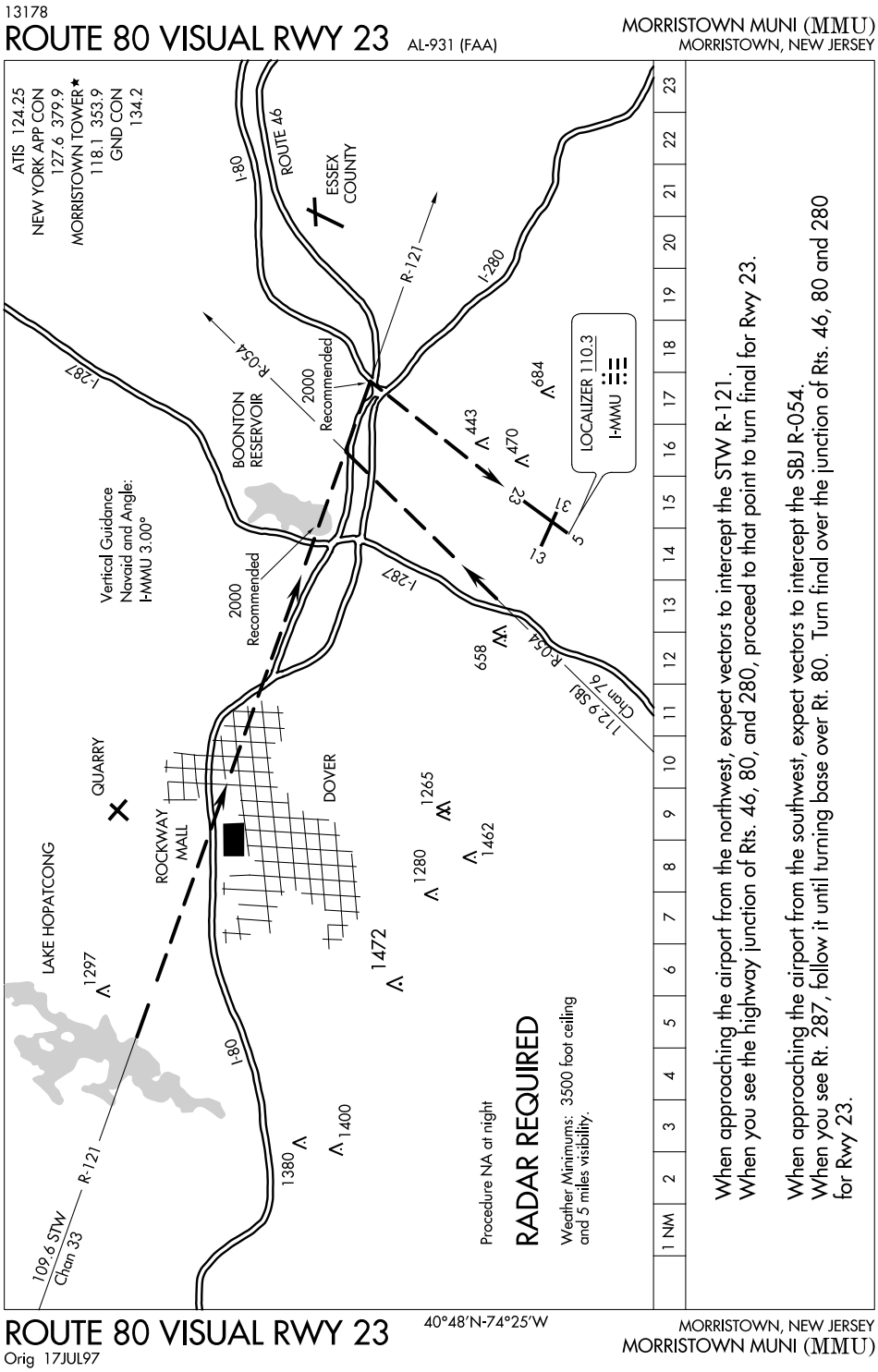
Runway 13R continue descent between the Canarsie Pier and Twin Stacks.
Runway 13L continue descent after passing the Twin Stacks.

PARKWAY VISUAL RWY 13L/R

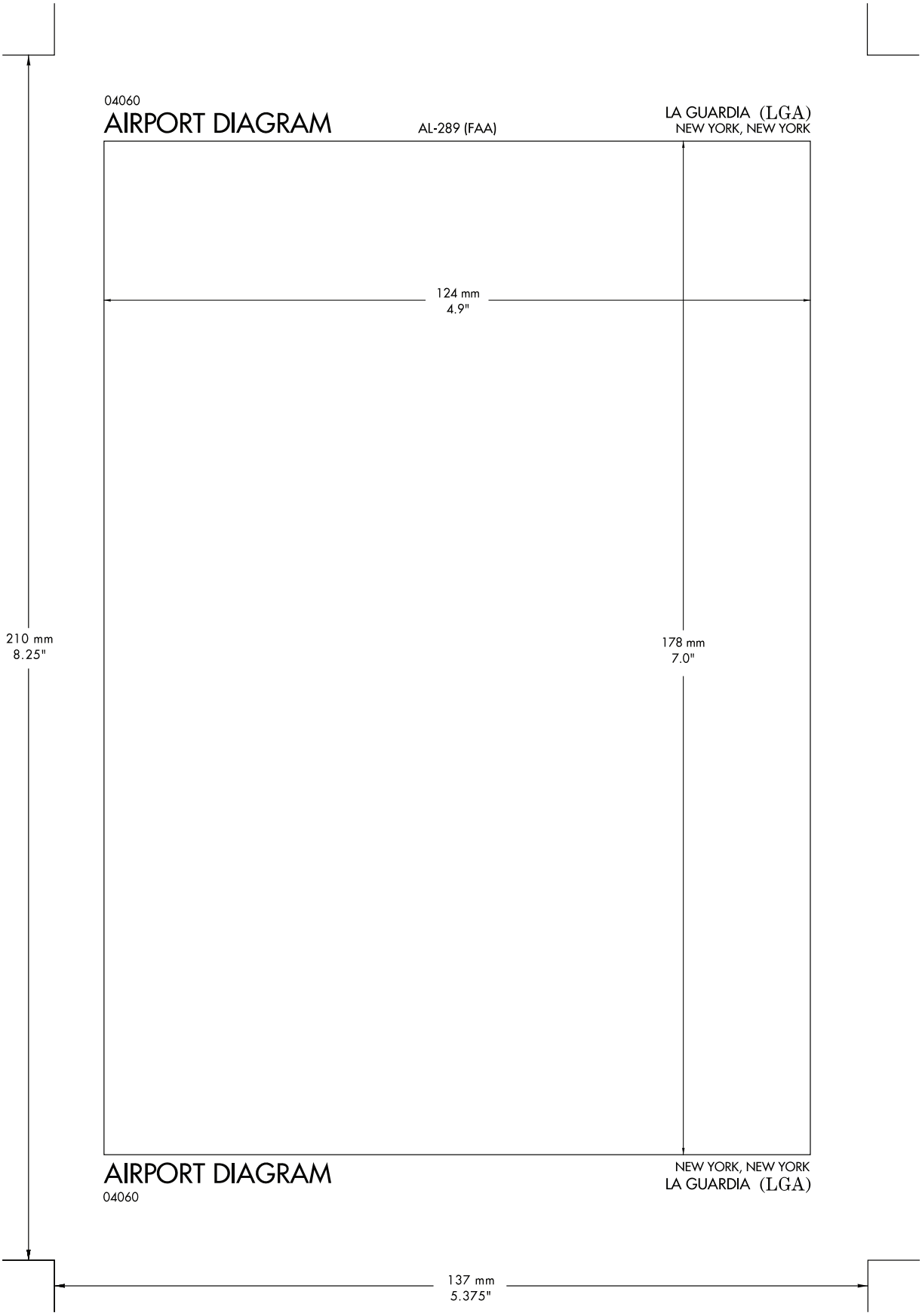
Amdt 1 29MAY14

NEW YORK, NEW YORK
JOHN F. KENNEDY INTL (JFK)

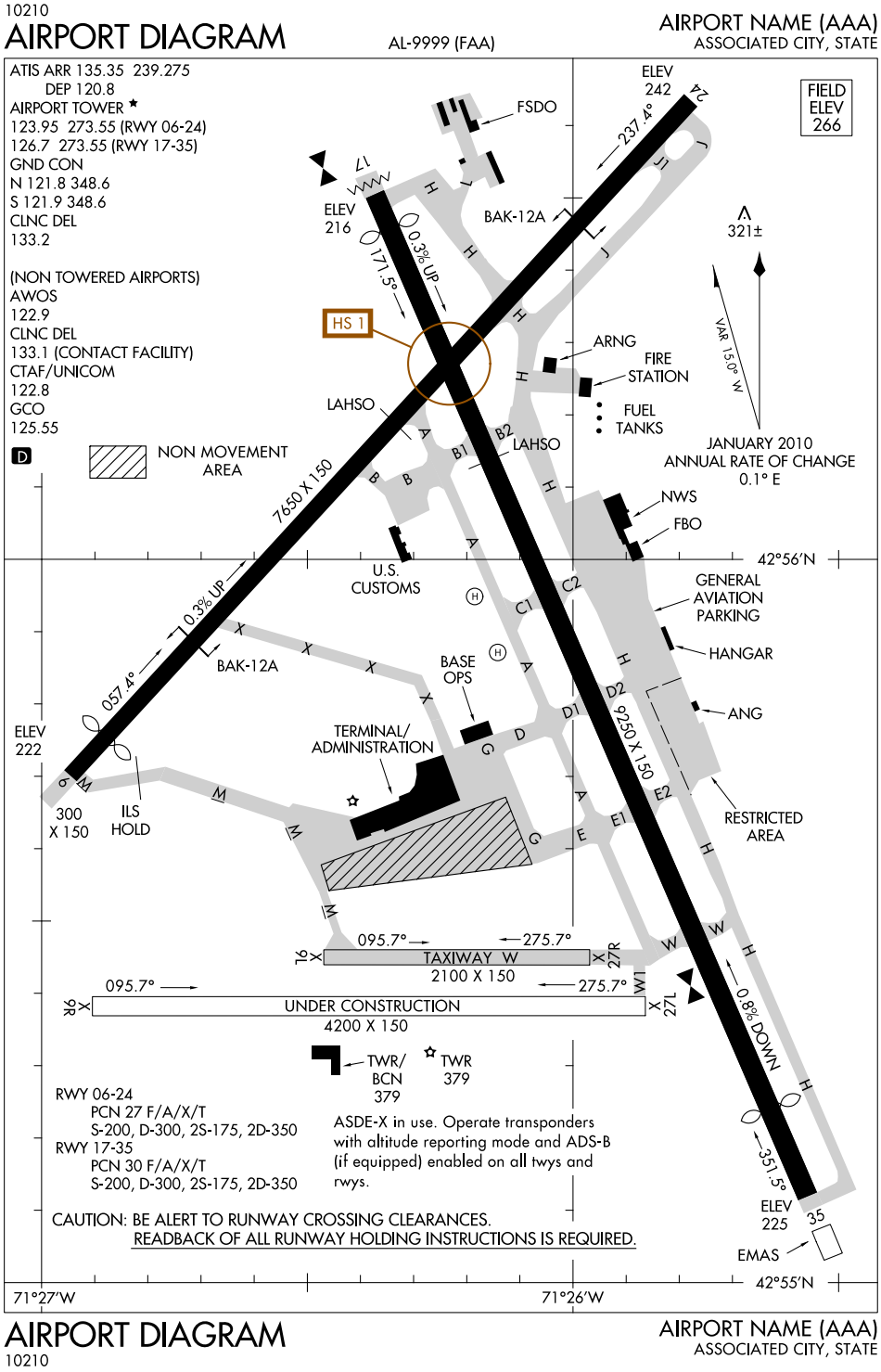
APPENDIX 58
VISUAL (CVFP) (CONTINUED)



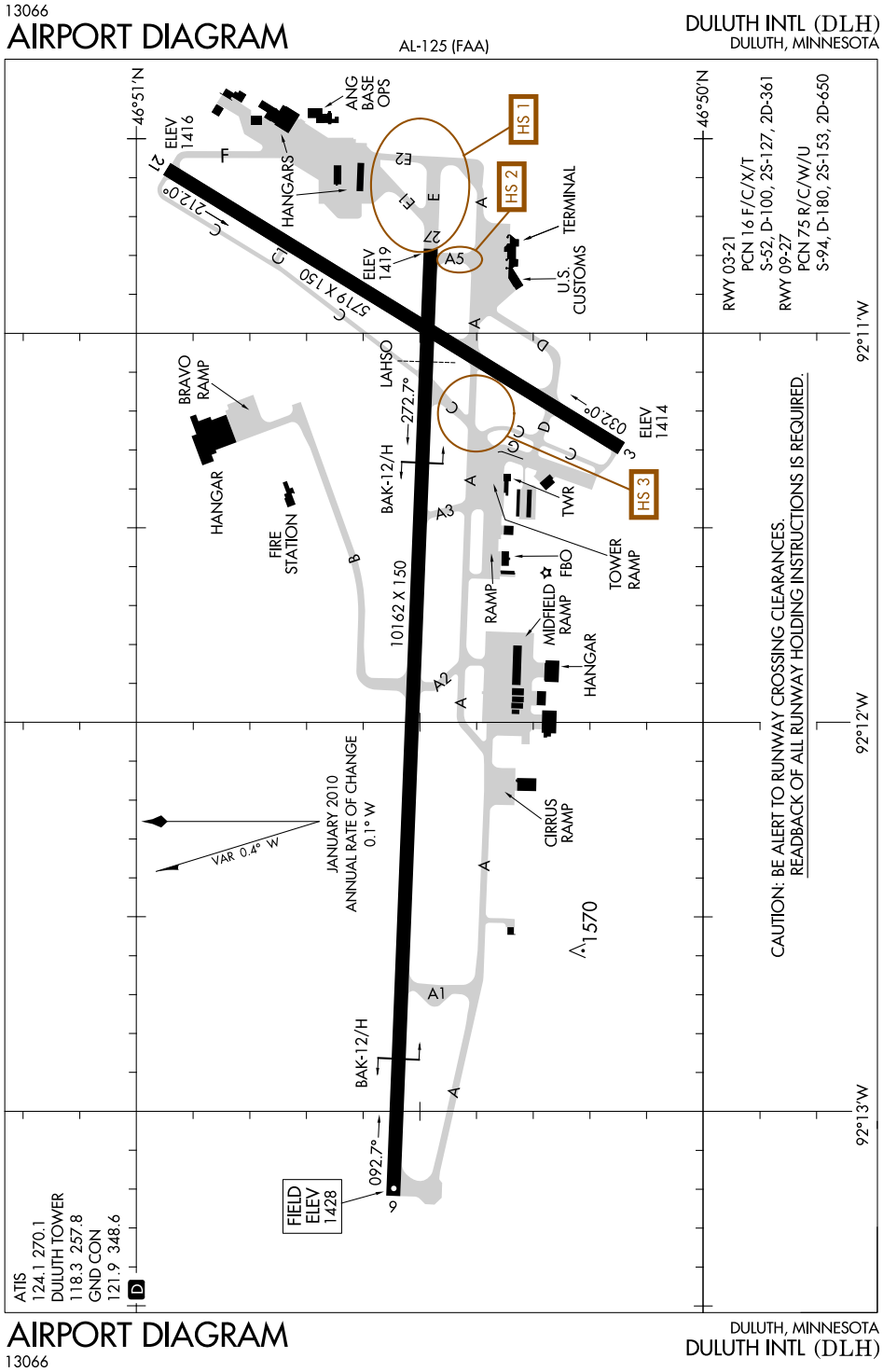
APPENDIX 59
AIRPORT DIAGRAM CHART (TPP) - FORMAT



APPENDIX 60
AIRPORT DIAGRAM



APPENDIX 61
AIRPORT DIAGRAM WITH HOT SPOTS & ARRESTING GEAR



APPENDIX 61
AIRPORT DIAGRAM WITH HOT SPOTS & ARRESTING GEAR (CONTINUED)

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HOT SPOTS

An "airport surface hot spot" is a location on an aerodrome movement area with a history or potential risk of collision or runway incursion, and where heightened attention by pilots/drivers is necessary.

A "hot spot" is a runway safety related problem area on an airport that presents increased risk during surface operations. Typically it is a complex or confusing taxiway/taxiway or taxiway/runway intersection. The area of increased risk has either a history of or potential for runway incursions or surface incidents, due to a variety of causes, such as but not limited to: airport layout, traffic flow, airport marking, signage and lighting, situational awareness, and training. Hot spots are depicted on airport diagrams as open circles or polygons designated as "HS 1", "HS 2", etc. and tabulated in the list below with a brief description of each hot spot. Hot spots will remain charted on airport diagrams until such time the increased risk has been reduced or eliminated.

CITY/AIRPORT	HOT SPOT	DESCRIPTION*
DULUTH, MN		
DULUTH INTL (DLH)	HS 1	Rwy 27 apch area.
	HS 2	Apch end of Rwy 27 located at Twy A5.
	HS 3	Rwy 21 via Twy A and Twy C complex int.
GRAND FORKS, ND		
GRAND FORKS INTL (GFK)	HS 1	Rwy 09L and Twy A int.
	HS 2	Rwy 17R and Twy B int.
MINNEAPOLIS, MN		
CRYSTAL (MIC)	HS 1	Short distance between rwys.
	HS 2	Short distance between rwys.
	HS 3	Short distance between rwys.
	HS 4	Int of Rwy 06R (sod) on Twy F.
	HS 5	Int of Rwy 24L (sod) on Twy D.
	HS 6	Multiple vehicle/pedestrian deviations occurrence.
	HS 7	Close proximity of Rwy 14R and Rwy 06R.
	HS 8	Rwy 24R proximity to Twy E and Twy B int.
MINNEAPOLIS, MN		
FLYING CLOUD (FCM)	HS 1	Hold position markings/sign proximity to Twy A.
	HS 2	Hold position markings/sign proximity to Twy A.
	HS 3	Hold position markings/sign proximity to Twy A.
	HS 4	Hold position markings/sign proximity to Twy A.
	HS 5	Hold position markings/sign proximity to Twy A.
	HS 6	Hold position markings/sign proximity to Twy A.
	HS 7	Hold position markings/sign proximity to Twy A.
	HS 8	Hold position markings/sign proximity to Twy A.
	HS 9	Rwy 18 apch area along Twy A.
	HS 10	Proximty of parallel rwys and holding positions.
	HS 11	Short distance between rwy hold short lines.
MINNEAPOLIS, MN		
MINNEAPOLIS-ST PAUL INTL/ WOLD-CHAMBERLAIN (MSP)	HS 1	Complex int of Twy A, Twy B, Twy C, Twy D, and Twy H in near proximity to Rwy 12R-30L and Rwy 04-22.
	HS 2	Complex twy/rwy geometry.
	HS 3	Complex int of Twy C, Twy D, Twy P, and Twy Q in near proximity to Rwy 12L-30R and Rwy 04-22.
	HS 4	Complex geometry at Rwy 04 apch end.
ROCHESTER, MN		
ROCHESTER INTL (RST)	HS 1	Rwy 20 hold short line set back on Twy G.
	HS 2	Rwy 20 hold short line on Twy A.
	HS 3	Complex twy/rwy/twy int.
SIOUX FALLS, SD		
JOE FOSS FLD (FSD)	HS 1	Complex twy int in close proximity of rwys.

*See Chart Supplement HOT SPOT table for additional information.

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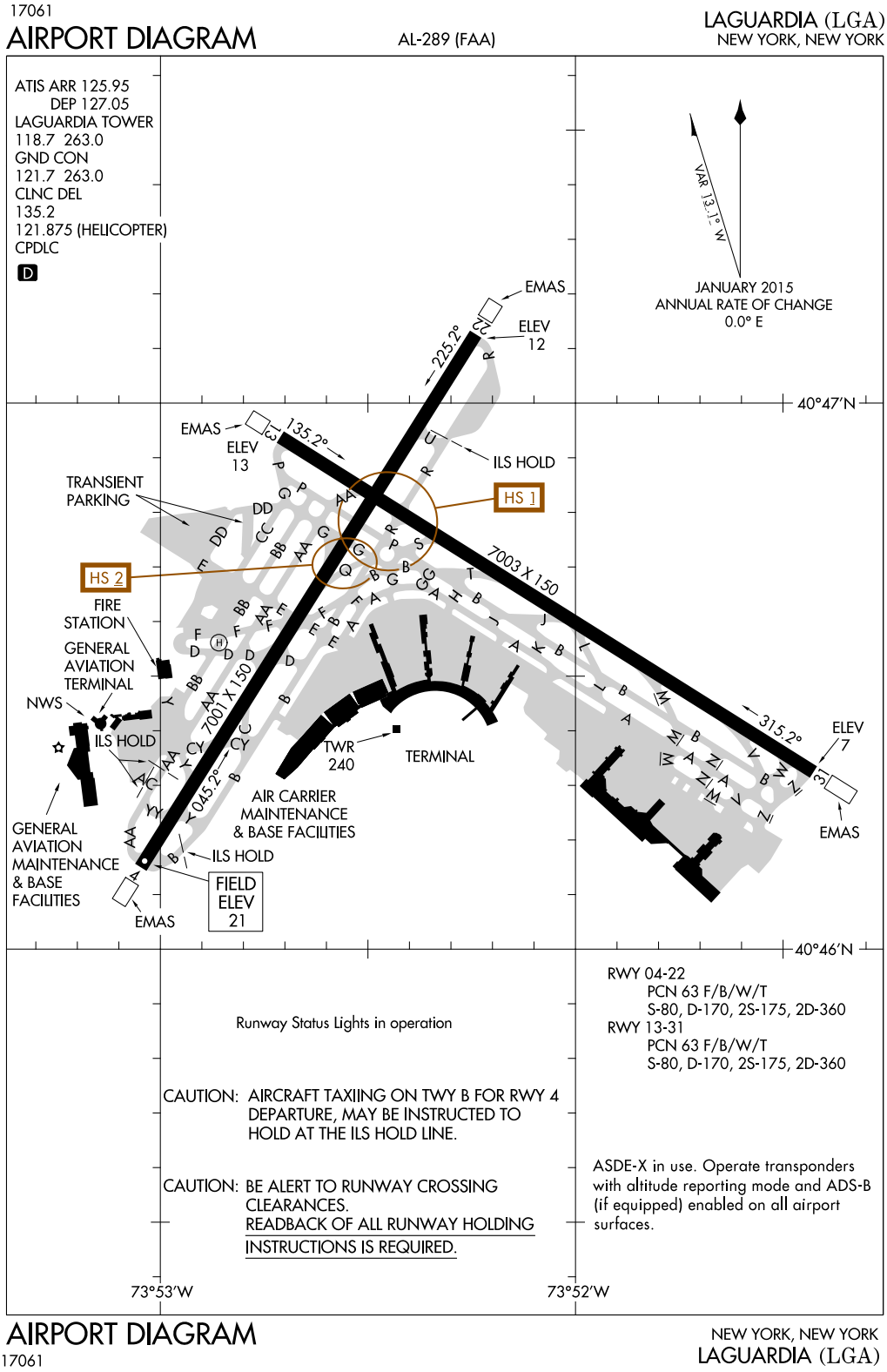
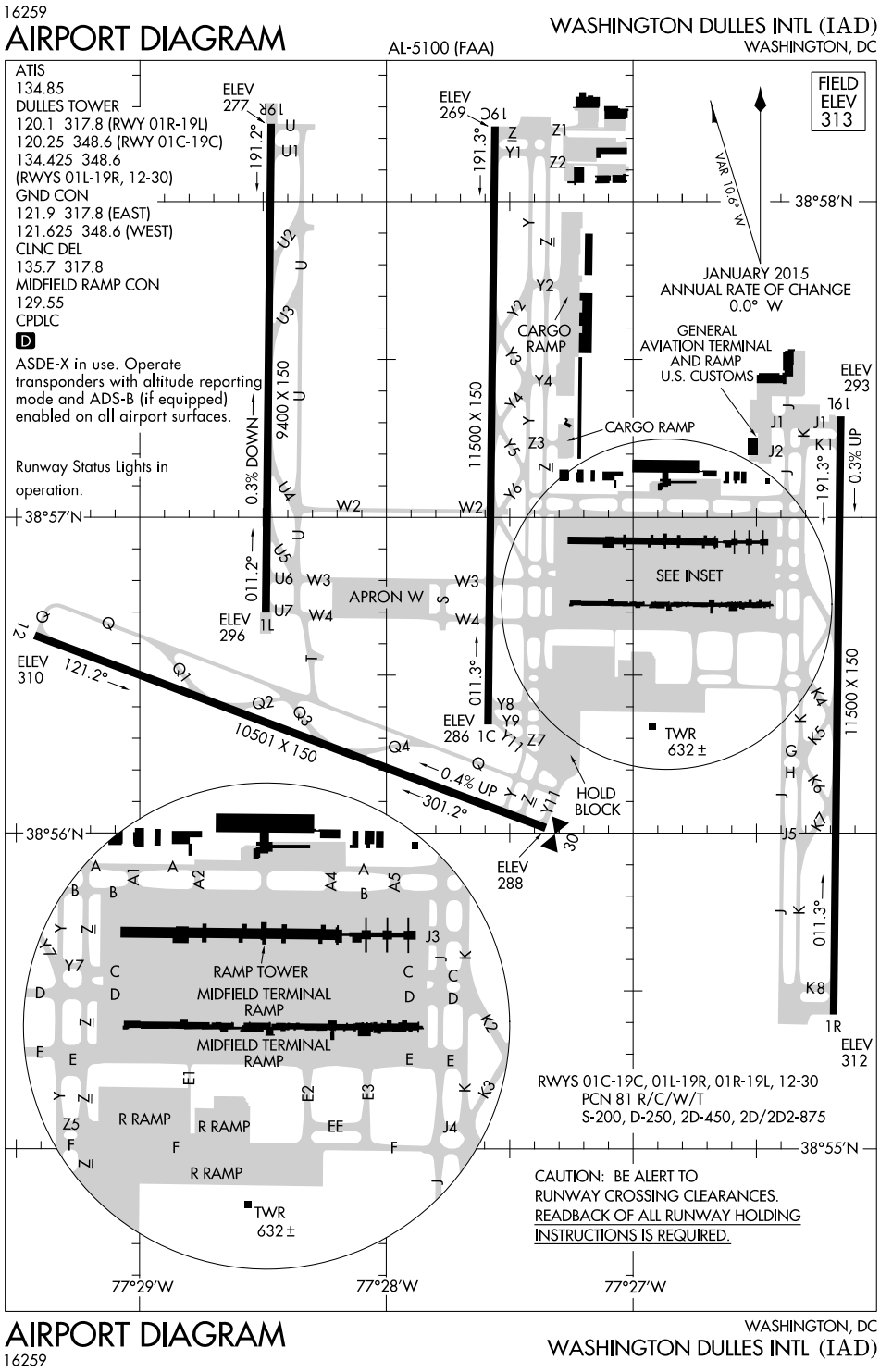
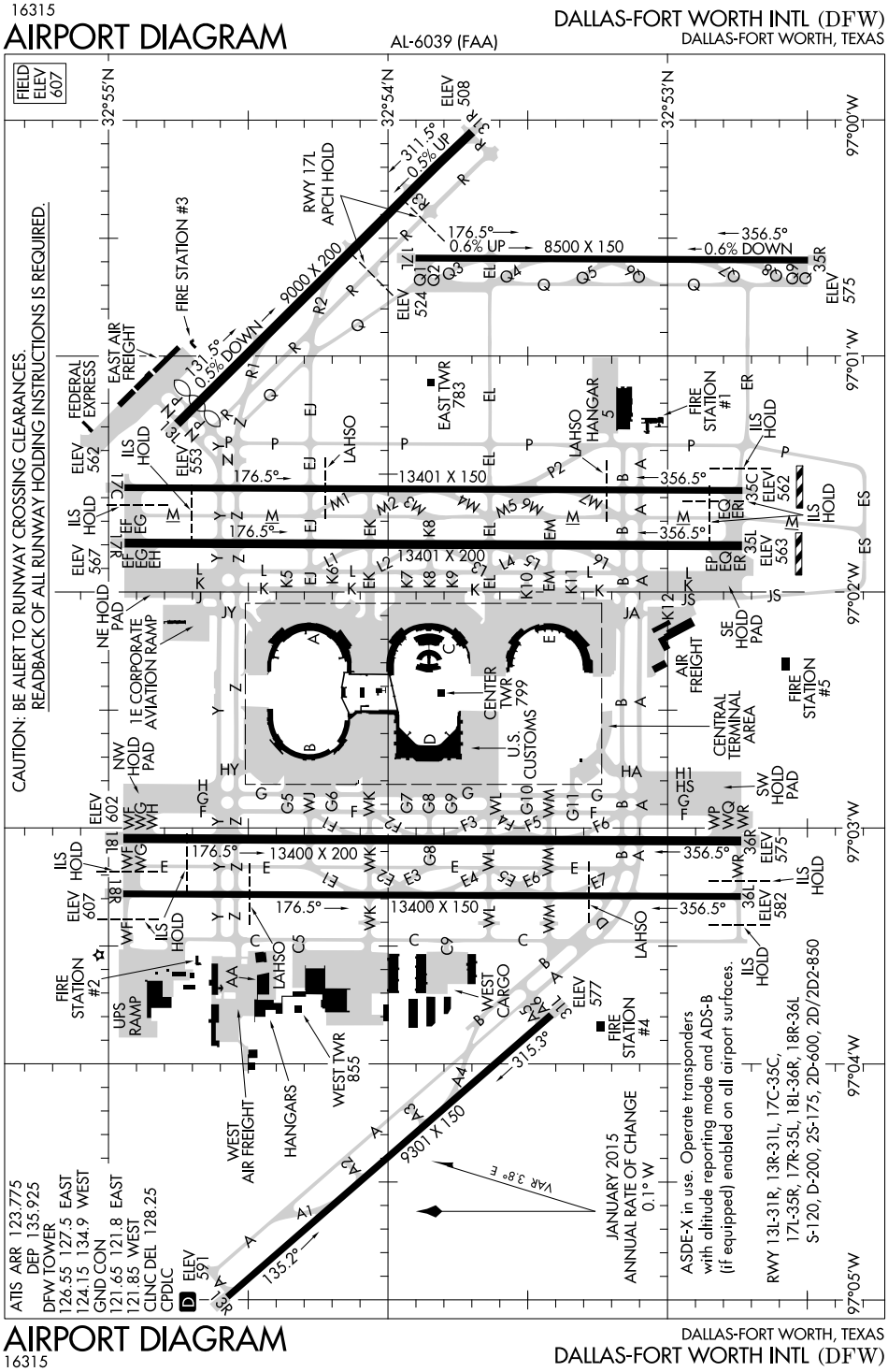
APPENDIX 62
AIRPORT DIAGRAM WITH EMAS



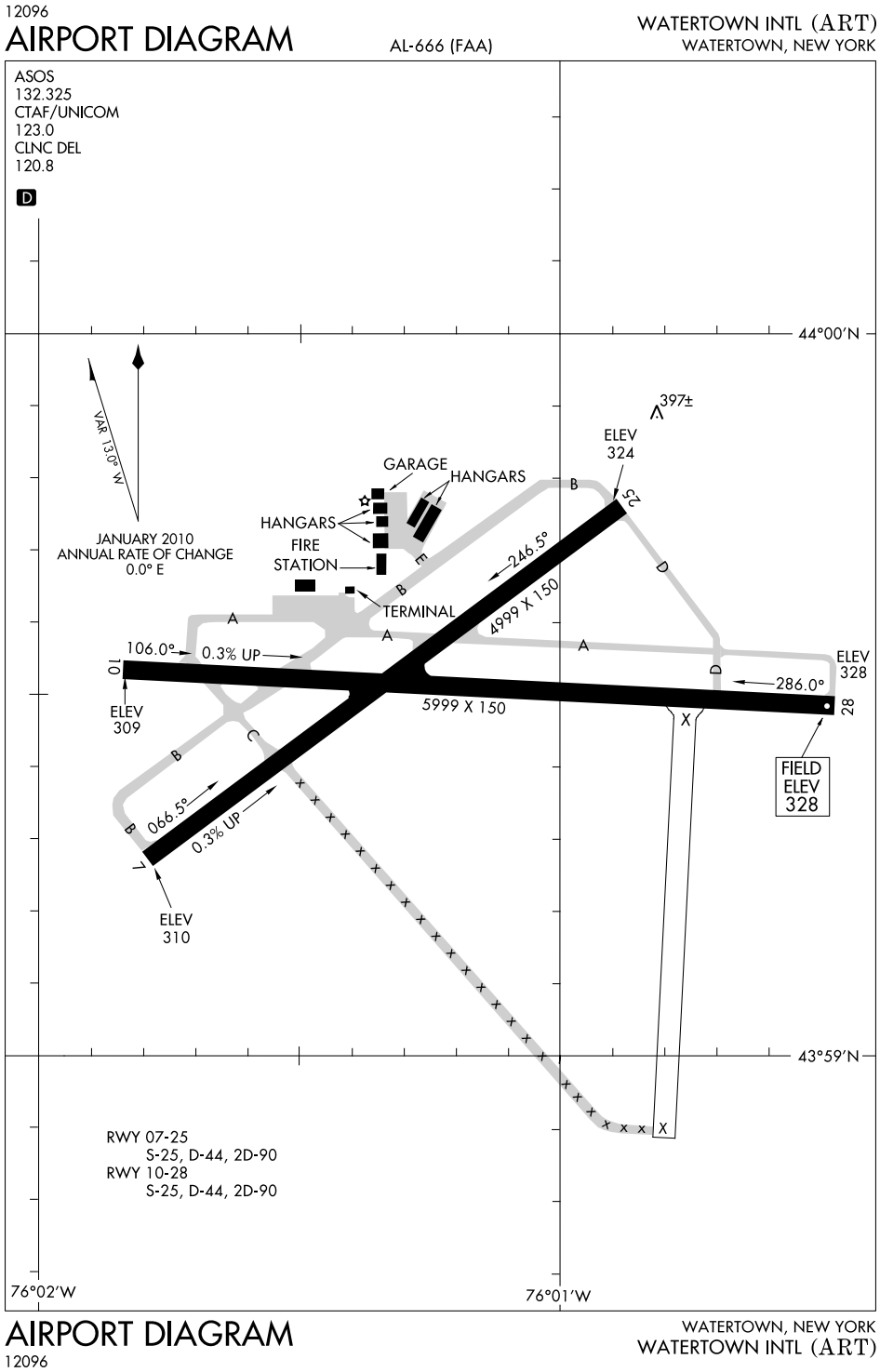
APPENDIX 63
AIRPORT DIAGRAM WITH INSET



APPENDIX 64
CONGESTED AIRPORT DIAGRAM



APPENDIX 65
AIRPORT DIAGRAM - NON TOWERED AIRPORT COMMUNICATIONS



APPENDIX 66
SINGLE TOUCHDOWN ZONE ELEVATION

SYRACUSE, NEW YORK AL-411 (FAA) 14317

WAAS CH 40017 W10A	APP CRS 100°	Rwy ldg 9003 TDZE 421 Apt Elev 421

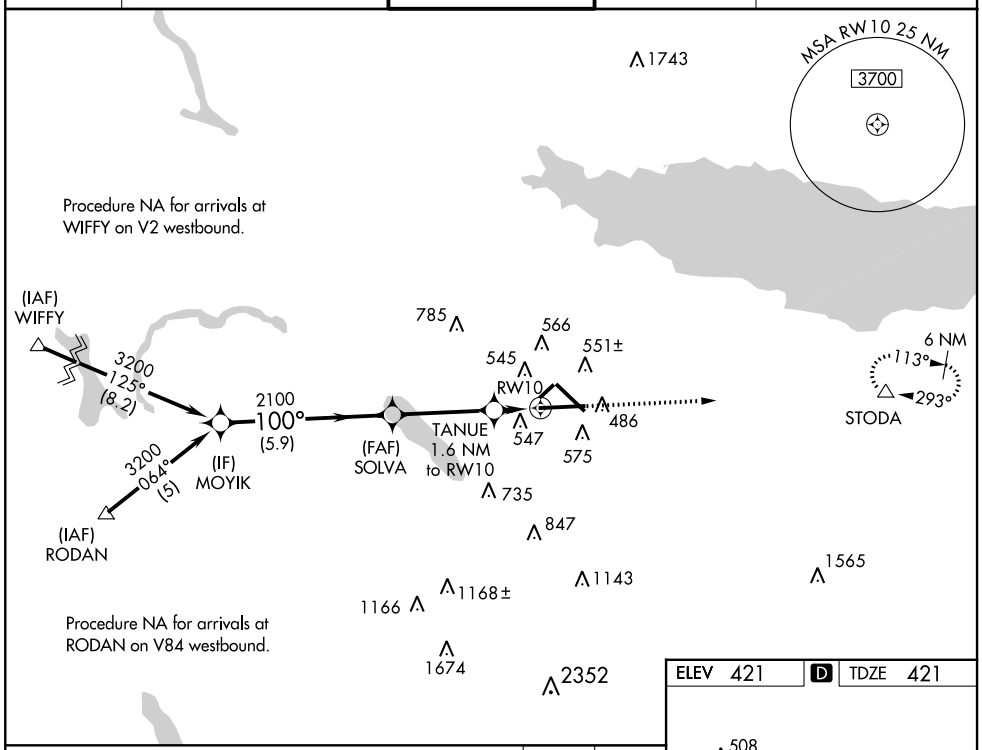
RNAV (GPS) Z RWY 10
SYRACUSE HANCOCK INTL (SYR)

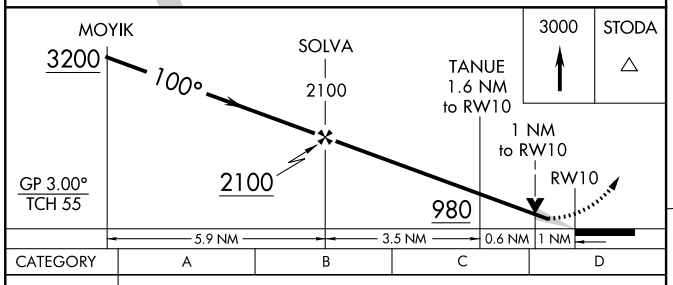
For uncompensated Baro-VNAV systems, LNAV/ VNAV NA below -21°C (-6°F) or above 54°C (130°F).
DME/DME RNP-0.3 NA.
For inop MALSR, increase LNAV/VNAV all Cats visibility to RVR 4500.

MALSR

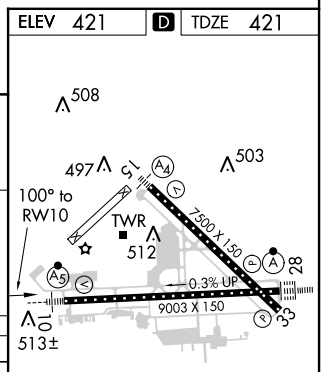
MISSED APPROACH: Climb to 3000 direct STODA and hold.

ATIS	SYRACUSE APP CON	SYRACUSE TOWER	GND CON	CLNC DEL
124.225	134.275 279.6	120.3 239.0	121.7 348.6	125.05 257.775





CATEGORY	A	B	C	D
LPV DA	621/24 200 (200- ½)			
LNAV/ VNAV DA	720/24 299 (300- ½)			
LNAV MDA	800/24 379 (400-½)		800/35 379 (400-¾)	
CIRCLING	880-1 459 (500-1)	900-1 479 (500-1)	900-1½ 479 (500-1½)	980-2 559 (600-2)



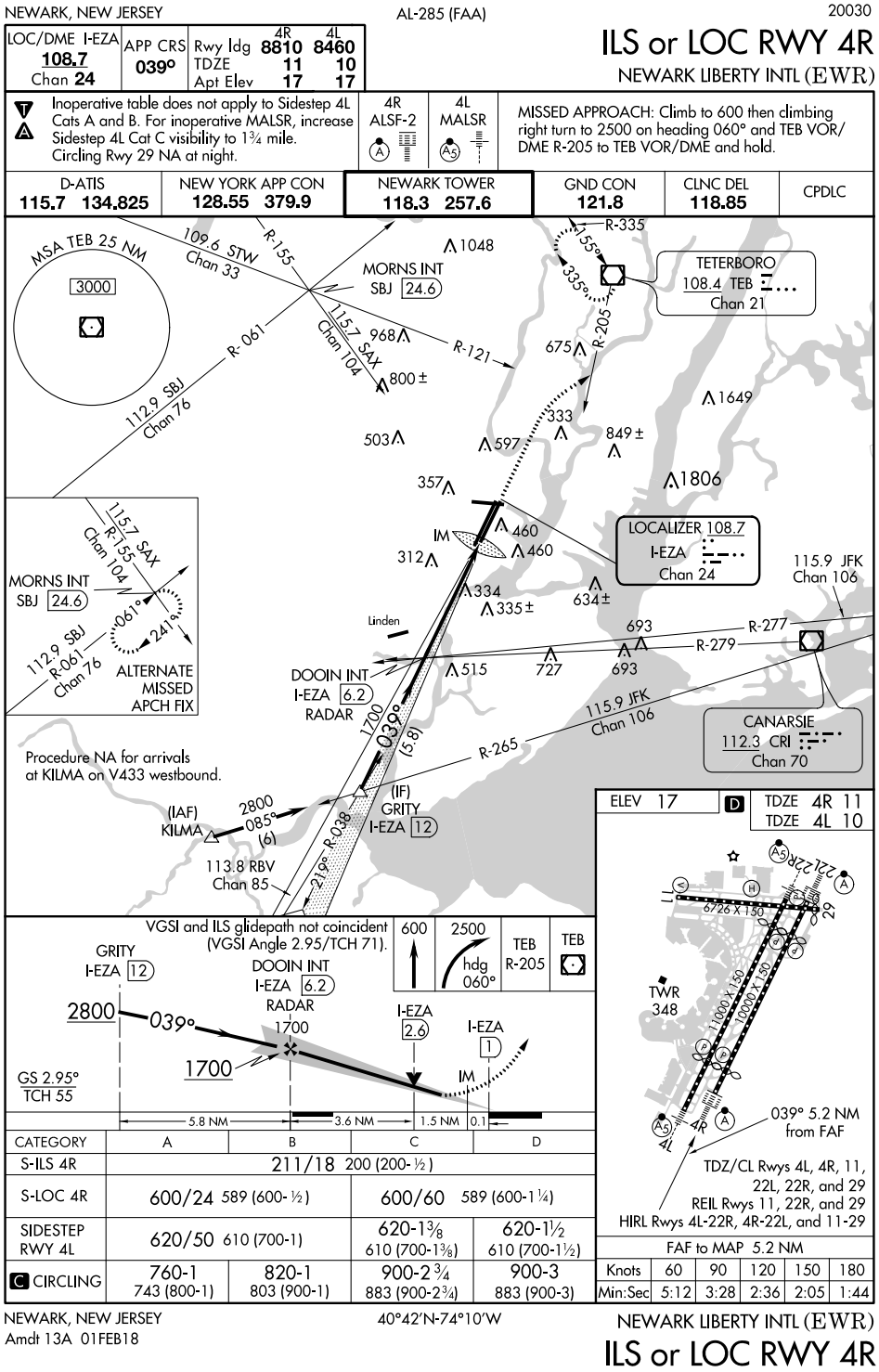
TDZ/CL Rwy 28
HIRL Rwys 10-28 and 15-33

SYRACUSE, NEW YORK
Amdt 2C 29MAY14

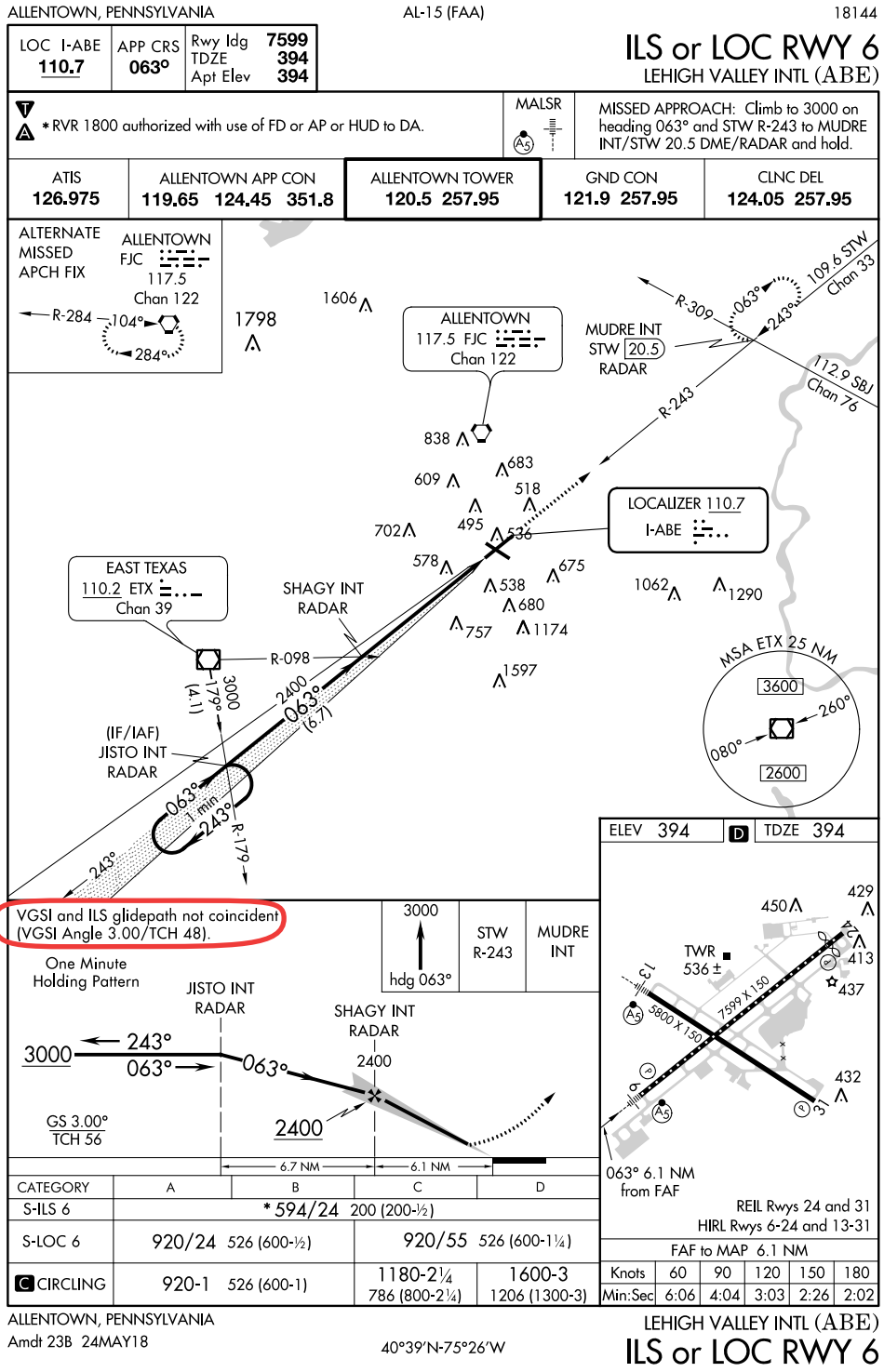
43°07′N-76°06′W

SYRACUSE HANCOCK INTL (SYR)
RNAV (GPS) Z RWY 10

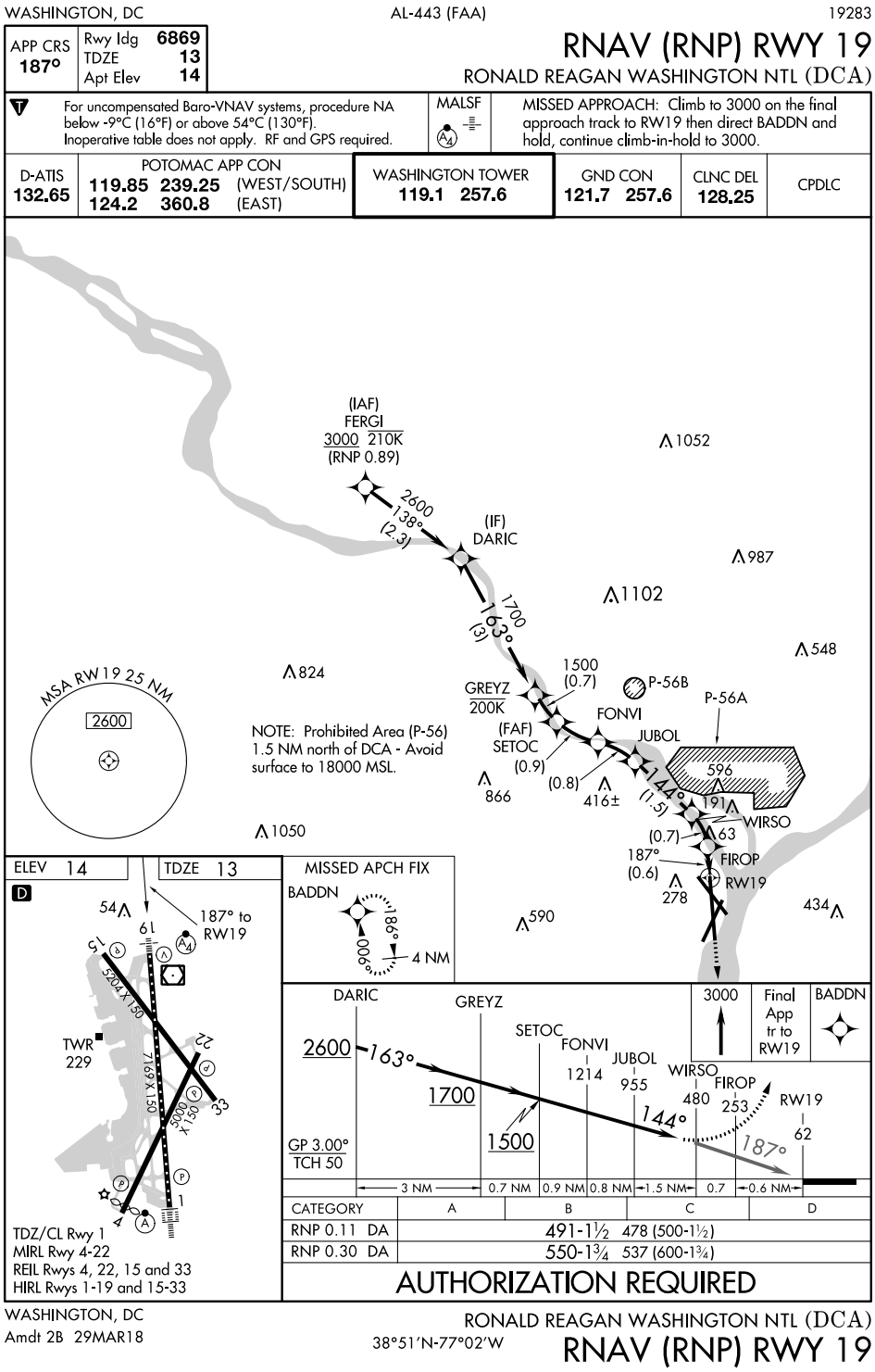
APPENDIX 67
MULTIPLE TOUCHDOWN ZONES ELEVATIONS



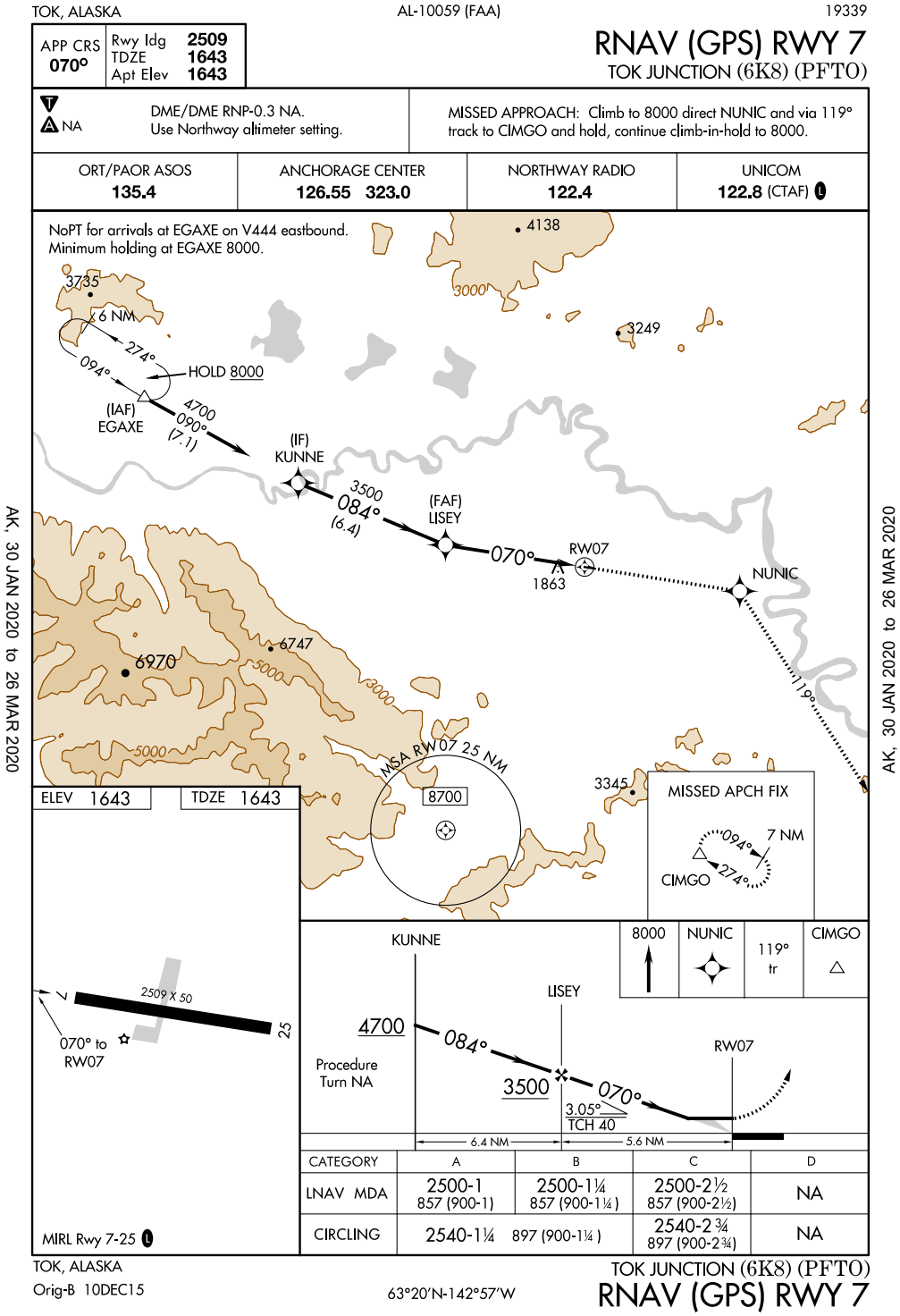
APPENDIX 68
NON-COINCIDENT PROFILE NOTE



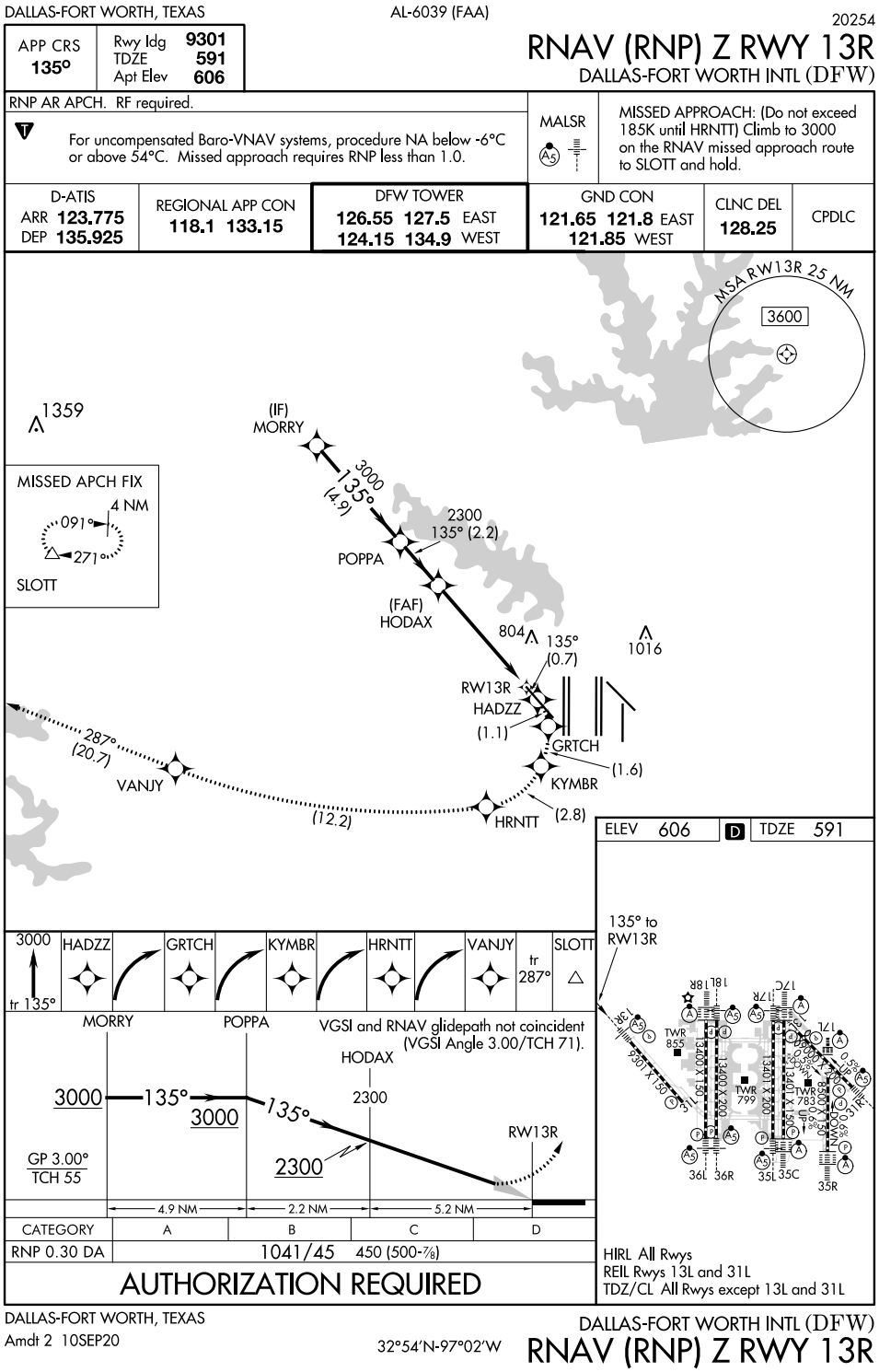
APPENDIX 69
RNAV (RNP) PROFILE DEPICTION



APPENDIX 70
APPROACH WITH HOLDING PATTERN WITH ALTITUDE



APPENDIX 71
COMPLEX MISSED APPROACH ICONS



APPENDIX 72
SEAPLANE BASE - RNAV APPROACH PLATE

GREENVILLE, MAINE AL-5935 (FAA) 16315

APP CRS	Rwy ldg	N/A
163°	TDZE	N/A
	Apt Elev	1028

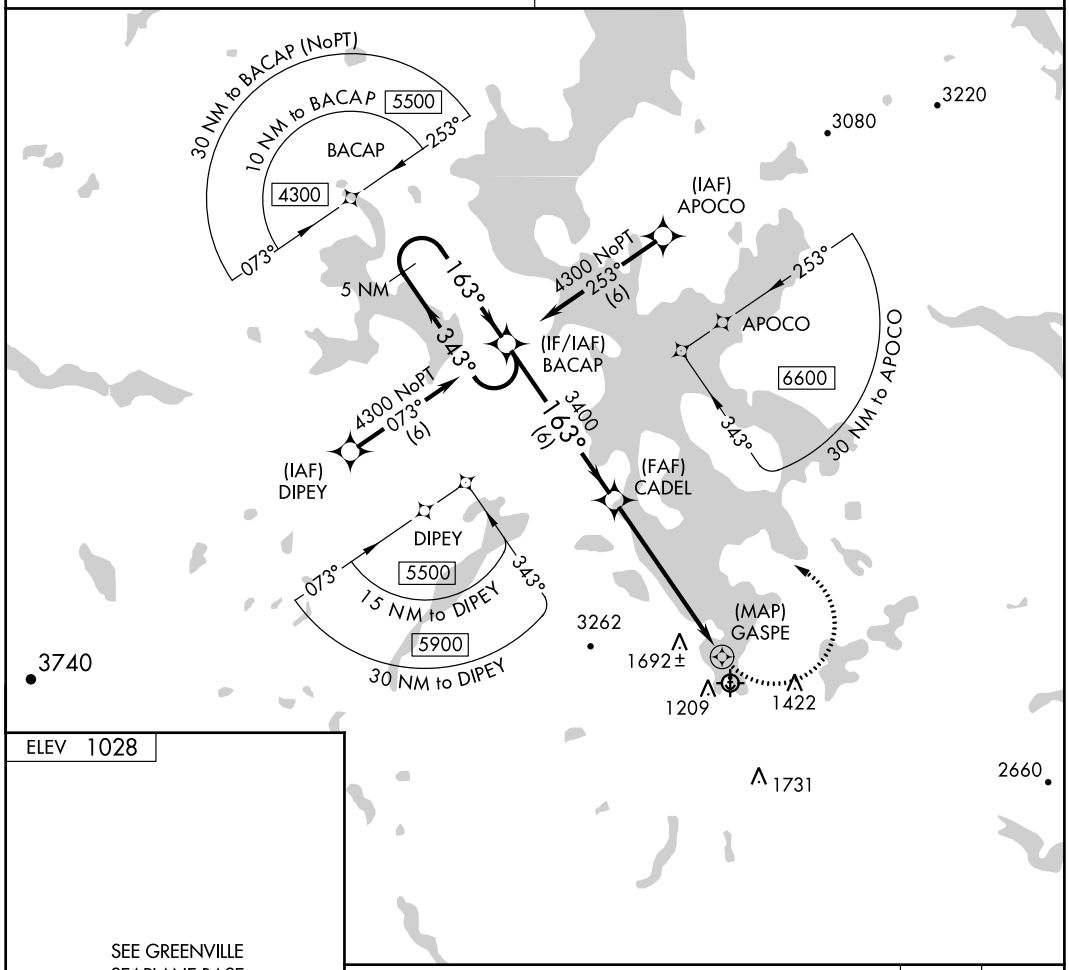
RNAV (GPS)-B
GREENVILLE (52B)

NA

DME/DME RNP-0.3 NA. Procedure NA at night.
Use Greenville Muni altimeter setting; when not received, use Bangor altimeter setting and increase all MDA 240 feet.

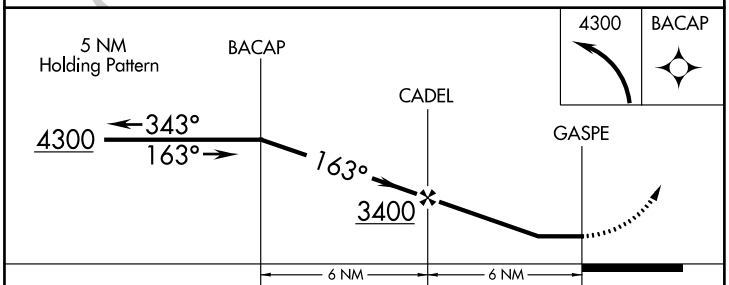
MISSED APPROACH: Climbing left turn to 4300 direct BACAP and hold.

BOSTON CENTER	CTAF
120.25 346.4	122.9



ELEV 1028

SEE GREENVILLE SEAPLANE BASE LANDING CHART



CATEGORY	A	B	C	D
CIRCLING	2140-1¼ 1112 (1200-1¼)	2280-1½ 1252 (1300-1½)	2300-3 1272 (1300-3)	NA

GREENVILLE, MAINE
Orig-A 26MAY16

45°28′N - 69°36′W

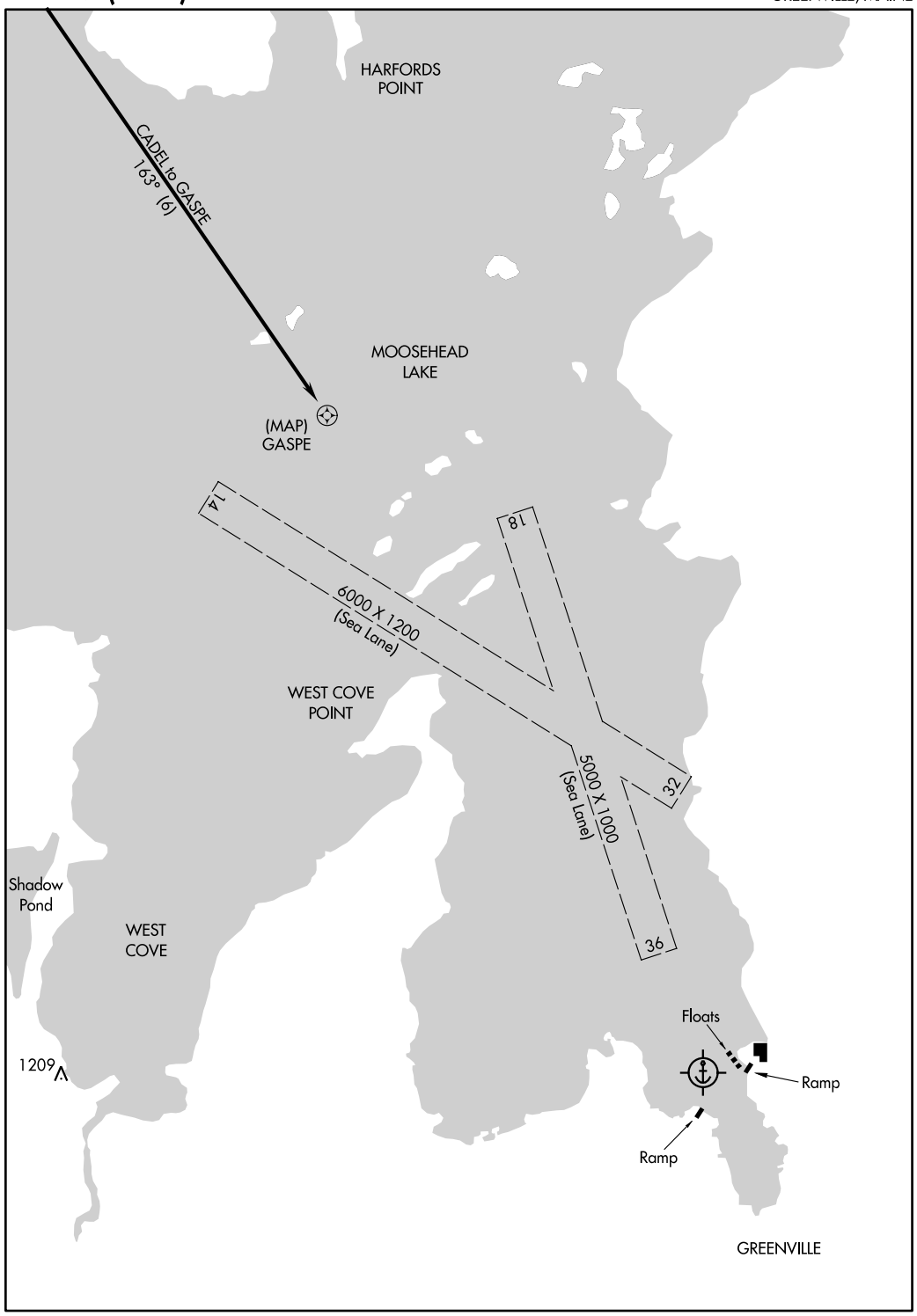
GREENVILLE (52B)
RNAV (GPS)-B

APPENDIX 73
SEAPLANE BASE - RNAV LANDING PLATE

16147

RNAV (GPS)-B LANDING AL-5935 (FAA)

GREENVILLE (52B)
GREENVILLE, MAINE

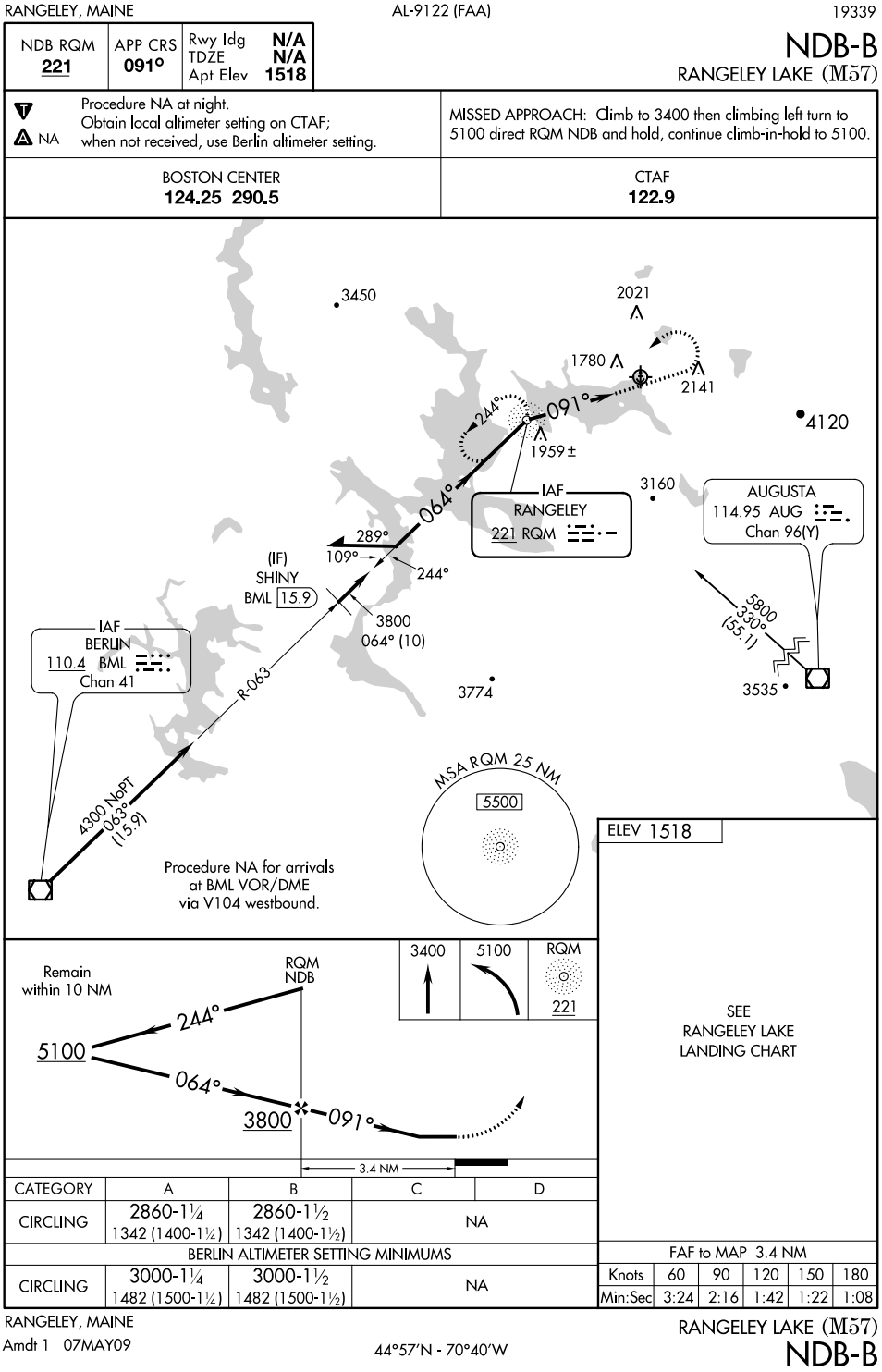


RNAV (GPS)-B LANDING 45°28'N-69°36'W

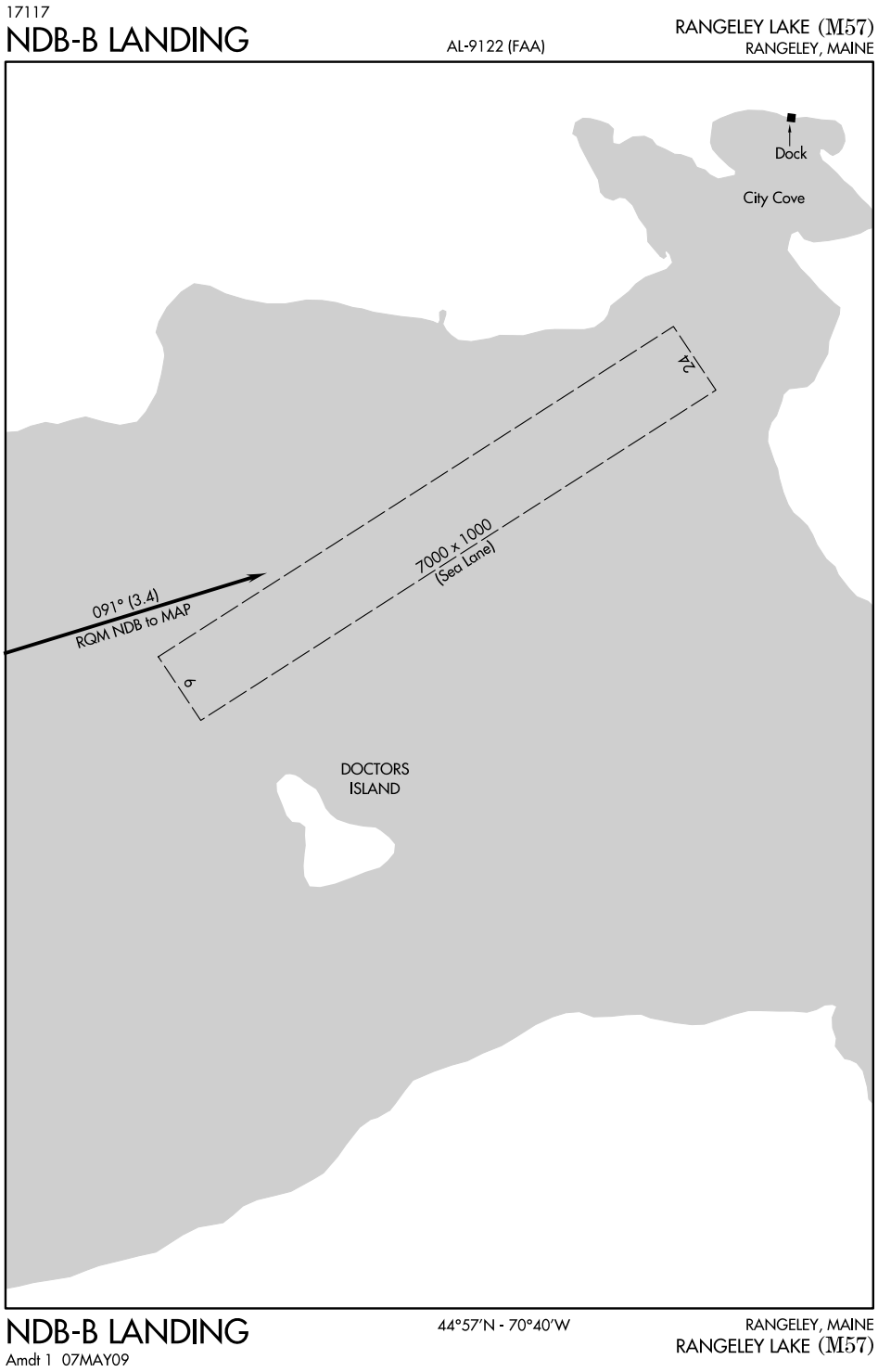
GREENVILLE, MAINE
GREENVILLE (52B)

Orig-A 26MAY16

APPENDIX 74
SEAPLANE BASE - NDB APPROACH PLATE



APPENDIX 75
SEAPLANE BASE - NDB LANDING PLATE



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