

# APPENDIX 1 OUTSIDE FRONT COVER

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## U.S. Terminal Procedures Publication

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Northeast (NE) Vol 3 of 4

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**APPENDIX 2  
INSIDE FRONT COVER**

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**CORRECTIONS, COMMENTS AND/OR PROCUREMENT**

FOR CHARTING ERRORS, OR FOR CHANGES, ADDITIONS, RECOMMENDATIONS  
ON PROCEDURAL ASPECTS CONTACT:

Point of Contact Address

For inquiries regarding military charts, please contact [Current NGA email Address](#)

FOR PROCUREMENT:  
For digital products, visit our website at:

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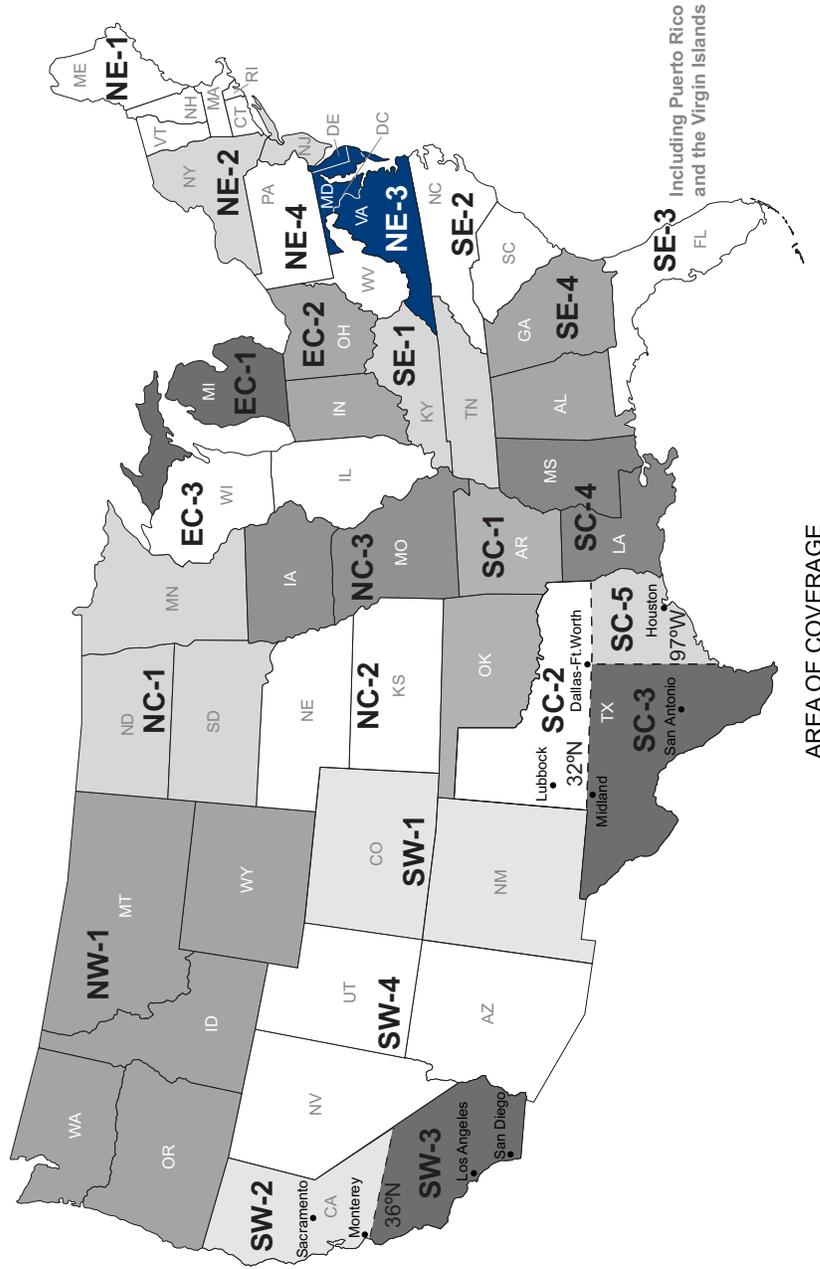
Frequently asked questions (FAQ) are answered on our website at [Current FAQ URL](#)  
See the FAQs prior to contact via toll free number or email.

Request for the creation or revisions to Airport Diagrams should be in accordance with  
FAA Order 7910.4.

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### APPENDIX 3 OUTSIDE BACK COVER (U.S.)

### U.S. TERMINAL PUBLICATION VOLUMES



AREA OF COVERAGE

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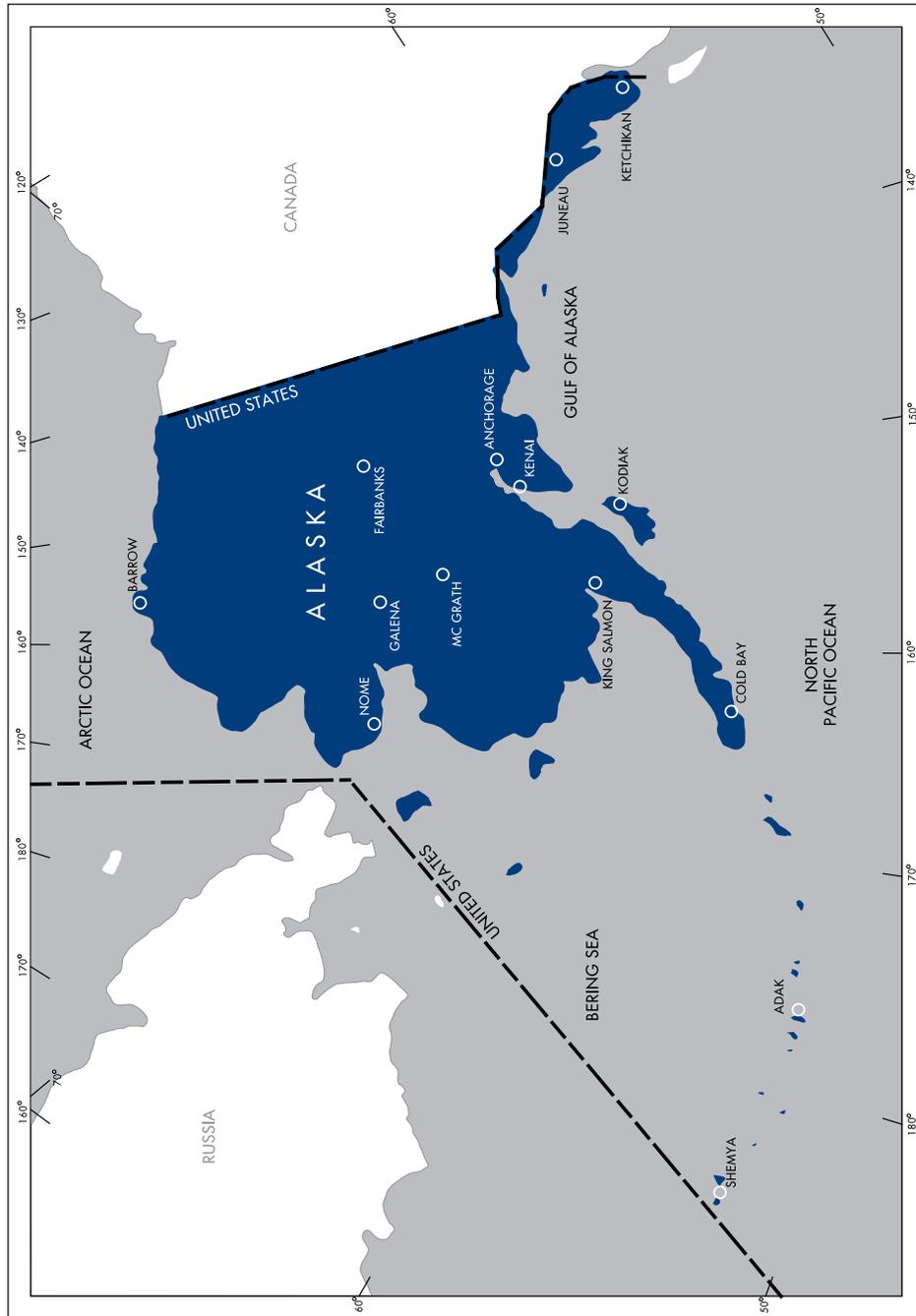
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### APPENDIX 4 OUTSIDE BACK COVER (ALASKA)



ALASKA COVERAGE

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OK-09-3959

## APPENDIX 5 INOPERATIVE COMPONENTS OR VISUAL AIDS TABLE

### INOP COMPONENTS 00000

#### INOPERATIVE COMPONENTS OR VISUAL AIDS TABLE (For Civil Use Only)

Straight-in and Sidestep landing minimums published on instrument approach procedure charts are based on full operation of all components and visual aids (see exception below for ALSF 1 & 2) associated with the particular approach chart being used. Higher minimums are required with inoperative components or visual aids as indicated below. If more than one component is inoperative, each minimum is raised to the highest minimum required by any single component that is inoperative. ILS glideslope inoperative minimums are published on the instrument approach charts as localizer minimums. This table applies to approach categories A thru D and is to be used unless amended by notes on the approach chart. Such notes apply only to the particular approach category(ies) as stated. Category E inoperative notes will be specified when published on civil charts. The inoperative table does not apply to Circling minimums. See legend page for description of components indicated below.

Full Operation Exception: For ALSF 1 & 2 operated as SSALR, or when the sequenced flashing lights are inoperative, there is no effect on visibility for ILS lines of minima.

(1) ILS, PAR, LPV, GLS minima

Inoperative Component or Visual Aid	Increase Visibility
All ALS types (except ODALS)	¼ mile

(2) ILS, LPV, GLS with visibility minima of RVR 1800†/2000\*/2200\*

Inoperative Component or Visual Aid	Increase Visibility
ALSF 1 & 2, MALSR, SSALR	To RVR 4000† To RVR 4500*
TDZL or RCLS	To RVR 2400#
RVR	To ½ mile

#For ILS, LPV, GLS procedures with a 200 foot HAT, RVR 1800 authorized with use of FD or AP or HUD to DA.

(3) All Approach Types and all lines of minima other than (1) & (2) above

Inoperative Component or Visual Aid	Increase Visibility
ALSF 1 & 2, MALSR, SSALR	½ mile
MALSF, MALS, SSALF, SSALS, SALSF, SALS	¼ mile

(4) Sidestep minima (CAT C-D)

Inoperative Component or Visual Aid to Sidestep Runway	Increase Visibility
ALSF 1 & 2, MALSR, SSALR	½ mile

(5) All Approach Types, All lines of minima

Inoperative Component or Visual Aid	Increase Visibility
ODALS (CAT A-B)	¼ mile
ODALS (CAT C-D)	⅛ mile

### INOP COMPONENTS 00000

## APPENDIX 6 EXPLANATION OF TERMS/LANDING MINIMA DATA

### 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 minima of other procedures.

**LANDING MINIMA FORMAT**

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

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)

**COPTER MINIMA ONLY**

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

No circling minima 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 minima 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/](http://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/dtpp/search/)

**COLD TEMPERATURE ERROR TABLE**

HEIGHT ABOVE AIRPORT IN FEET

	200	300	400	500	600	700	800	900	1000	1500	2000	3000	4000	5000
REPORTED TEMP °C	+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	280
	-10	20	30	40	50	60	70	80	90	100	150	200	290	490
	-20	30	50	60	70	90	100	120	130	140	210	280	420	710
	-30	40	60	80	100	120	140	150	170	190	280	380	570	950
	-40	50	80	100	120	150	170	190	220	240	360	480	720	1210
	-50	60	90	120	150	180	210	240	270	300	450	590	890	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 6 EXPLANATION OF TERMS/LANDING MINIMA DATA (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)						
1600	¼	2400	½	3500	¾	5500	1
1800	½	2600	½	4000	¾	6000	1¼
2000	½	3000	¾	4500	¾		
2200	½	3200	¾	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 in Statute Miles
↘ All minimums in parentheses not applicable to Civil Pilots. Military Pilots refer to appropriate regulations.

**Radar Minima:**

- Minima shown are the lowest permitted by established criteria. Pilots should consult applicable directives for their category of aircraft.
- 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".

- ▲ Alternate Minimums not standard. Civil users refer to tabulation. USA/USN/USAF pilots refer to appropriate regulations.
- ▲ NA Alternate minimums are Not Authorized due to unmonitored facility or absence of weather reporting service.
- ▼ Airport is published in the Takeoff Minimums, (Obstacle) Departure Procedures, and Diverse Vector Area (Radar Vectors) tabulation.

### TERMS/LANDING MINIMA DATA 00000

## APPENDIX 7 GENERAL INFORMATION

GENERAL INFO 00000

**GENERAL INFORMATION**

This publication is issued every 56 days and includes Standard Instrument Approach Procedures (SIAPS), Standard Instrument Departures (SIDs), Standard Terminal Arrivals (STARs), IFR Takeoff Minimums and (Obstacle) Departure Procedures (ODPs), IFR Alternate Minimums, and Radar Instrument Approach Minimums for use by civil and military aviation. The organization responsible for SIAPs, Radar Minimums, SIDs, STARs and graphic ODPs is identified in parentheses in the top margin of the procedure; e.g., (FAA), (FAA-O), (USA), (USAF), (USN). SIAPS with the (FAA) and (FAA-O) designation are regulated under 14 CFR, Part 97. SIAPs with the (FAA-O) designation have been developed under Other Transaction Agreement (OTA) by private providers and have been certified by the FAA. See 14 CFR, Part 91.175 (a) and the AIM for further details. 14 CFR, Part 91.175 (g) and the Special Notices section of the Chart Supplement contain information on civil operations at military airports.

The FAA uses an internal numbering system on all charts in the TPP. This Approach and Landing (AL) number is located on the top center margin of the chart followed by the organization responsible for the procedure in parentheses, e.g., AL-18 (FAA), AL-227 (USAF).

CHART CURRENCY INFORMATION

Date of Latest Revision	09365
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The Date of Latest Revision identifies the Julian date the chart was added or last revised for any reason. The first two digits indicate the year, the last three digits indicate the day of the year (001 to 365/6) in which the latest revision of any kind has been made to the chart.

FAA Procedure Amendment Number	← Orig 31DEC09 → Amdt 2B 12MAR09	← Procedure Amendment Effective Date
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The FAA Procedure Amendment Number represents the most current amendment of a given procedure. The Procedure Amendment Effective Date represents the AIRAC cycle date on which the procedure amendment was incorporated into the chart. Updates to the amendment number & effective date represent procedural/criteria revisions to the charted procedure, e.g., course, fix, altitude, minima, etc. On Departure Procedures and Standard Terminal Arrivals, procedural revisions to the current chart are indicated by an upnumber to the procedure title with the procedure amendment effective date following. On Radar Minima, Takeoff Minimums and (Obstacle) Departure Procedures and Diverse Vector Areas, the FAA Procedure Amendment Number, Procedure Effective Date, and the Julian Date of Last Revision will be shown on the same line, e.g., AMDT 2 10DEC15 (15344).

MISCELLANEOUS

★ Indicates a non-continuously operating facility, see Chart Supplement.

For Civil (FAA) instrument procedures, "RADAR REQUIRED" in the planview of the chart indicates that ATC radar must be available to assist the pilot when transitioning from the en route environment. "Radar required" in the pilot briefing portion of the chart indicates that ATC radar is required on portions of the procedure outside the final approach segment, including the missed approach. Some military procedures also have equipment requirements such as "Radar Required", but do not conform to the same charting application standards used by the FAA.

Distances are in nautical miles (except visibility in statute miles and Runway Visual Range in hundreds of feet). Runway dimensions are in feet. Elevations are in feet, Mean Sea Level (MSL). Ceilings are in feet above airport elevation. Radials/bearings/headings/courses are magnetic. Horizontal Datum: Unless otherwise noted on the chart, all coordinates are referenced to North American Datum 1983 (NAD 83), which for charting purposes is considered equivalent to World Geodetic System 1984 (WGS 84).

Terrain is scaled within the neat lines (planview boundaries) and does not accurately underlie not-to-scale distance depictions or symbols.

GENERAL INFO 00000

## APPENDIX 7 GENERAL INFORMATION (CONTINUED)

GENERAL INFO 00000

STANDARD TERMINAL ARRIVALS AND DEPARTURE PROCEDURES

The use of the associated codified STAR/DP and transition identifiers are requested of users when filing flight plans via teletype and are required for users filing flight plans via computer interface. It must be noted that when filing a STAR/DP with a transition, the first three coded characters of the STAR and the last three coded characters of the DP are replaced by the transition code. Examples: ACTON SIX ARRIVAL, file (AGN.AQN6); ACTON SIX ARRIVAL, EDNAS TRANSITION, file (EDNAS.AQN6). FREEHOLD THREE DEPARTURE, file (FREH3.RBV), FREEHOLD THREE DEPARTURE, ELWOOD CITY TRANSITION, file (FREH3.EWC).

PROCEDURE PBN/EQUIPMENT REQUIREMENTS

Users will begin to see Performance-Based Navigation (PBN) Requirements and Equipment Requirements on Instrument Approach Procedures (IAPs), RNAV STARS and RNAV DPs prominently displayed in separate, standardized notes boxes. For procedures with PBN elements, the PBN box will contain the procedure's navigation specification(s); and, if required: specific sensors or infrastructure needed for the navigation solution; any additional or advanced functional requirements; the minimum Required Navigation Performance (RNP) value and any amplifying remarks. Items listed in this PBN box are REQUIRED for the procedure's PBN elements. The Equipment Requirements Box will list non-PBN requirements. On charts with both PBN elements and equipment requirements, the PBN requirements box will be listed first. The publication of these notes will continue incrementally until all charts have been amended to comply with the new standard.

IAP PBN/Equipment Requirements Notes Box

PBN Requirements Box	From WINRZ, LIBGE: RNAV-1 GPS, RNAV-1GPS from MAP to YARKU.
Equipment Requirements Box	DME required for LOC only.
Standard Procedure Notes Box	<div style="display: flex; align-items: center;"> <div style="font-size: 1.2em; margin-right: 5px;">▼</div> <div>                     Circling to Rwy 25 NA at night.                      #For inop MALSR increase S-ILS 16R all cats visibility to 2½ SM.                 </div> </div>

RNAV STAR and DP PBN/Equipment Requirements Notes Box

PBN Requirements Box	RNAV 1 - DME/DME/IRU or GPS
Equipment Requirements Box	RADAR required

PILOT CONTROLLED AIRPORT LIGHTING SYSTEMS

Available pilot controlled lighting (PCL) systems are indicated as follows:

1. Approach lighting systems that bear a system identification are symbolized using negative symbology, e.g.,
2. Approach lighting systems that do not bear a system identification are indicated with a negative "0" beside the name. A star (\*) indicates non-standard PCL, consult Chart Supplement, e.g.,

To activate lights, use frequency indicated in the communication section of the chart with a or the appropriate lighting system identification e.g., UNICOM 122.8

KEY MIKE	FUNCTION
7 times within 5 seconds	Highest intensity available
5 times within 5 seconds	Medium or lower intensity (Lower REIL or REIL-off)
3 times within 5 seconds	Lowest intensity available (Lower REIL or REIL-off)

GENERAL INFO 00000

## APPENDIX 8 ABBREVIATIONS

GENERAL INFO 20030

ABBREVIATIONS

AAUP.....	Attention All Users Page	GLS.....	Ground Based Augmentation System Landing System
ADF.....	Automatic Direction Finder	GP.....	Glidepath
ADIZ.....	Air Defense Identification Zone	GPI.....	Ground Point of Interception
AFIS.....	Automatic Flight Information Service	GPS.....	Global Positioning System
ALS.....	Approach Light System	GS.....	Glide Slope
ALSF.....	Approach Light System with Sequenced Flashing Lights	HAA.....	Height above Airport
AOB.....	At Or Below	HAL.....	Height above Landing
AP.....	Autopilot System	HAT.....	Height above Touchdown
APCH.....	Approach	HATh.....	Height Above Threshold
APP CON.....	Approach Control	HCH.....	Helipoint Crossing Height
ARR.....	Arrival	HGS.....	Head-up Guidance System
ASOS.....	Automated Surface Observing System	HIRL.....	High Intensity Runway Lights
ASR/PAR.....	Published Radar Minimums at this Airport	HUD.....	Head-up Display
ASSC.....	Airport Surface Surveillance Systems	IAF.....	Initial Approach Fix
ATIS.....	Automatic Terminal Information Service	ICAO.....	International Civil Aviation Organization
AUNICOM.....	Automated UNICOM	IF.....	Intermediate Fix
AWOS.....	Automated Weather Observing System	IM.....	Inner Marker
AZ.....	Azimuth	INOP.....	Inoperative
BC.....	Back Course	INT.....	Intersection
BND.....	Bound	K.....	Knots
C.....	Circling	KIAS.....	Knots Indicated Airspeed
CAT.....	Category	LAAS.....	Local Area Augmentation System
CCW.....	Counter Clockwise	LDA.....	Localizer Type Directional Aid
CDI.....	Course Deviation Indicator Channel	Ldg.....	Landing
CIFP.....	Coded Instrument Flight Procedures	LRL.....	Low Intensity Runway Lights
CIR.....	Circling	LNAV.....	Lateral Navigation
CLNC DEL.....	Clearance Delivery	LOC.....	Localizer
CNF.....	Computer Navigation Fix	LP.....	Localizer Performance
CPDLC.....	Controller Pilot Data Link Communication	LPV.....	Localizer Performance with Vertical Guidance
CTAF.....	Common Traffic Advisory Frequency	LR.....	Lead Radial. Provides at least 2 NM (Copter 1 NM) of lead to assist in turning onto the intermediate/final course.
CW.....	Clockwise	MAA.....	Maximum Authorized Altitude
D-ATIS.....	Digital-Automatic Terminal Information Service	MALS.....	Medium Intensity Approach Light System
DA.....	Decision Altitude	MALSF.....	Medium Approach Lighting System with Sequenced Flashers
DER.....	Departure End of Runway	MALSR.....	Medium Intensity Approach Light System with RAIL
DH.....	Decision Height	MAP.....	Missed Approach Point
DME.....	Distance Measuring Equipment	MDA.....	Minimum Descent Altitude
DTHR.....	Displaced Threshold	MIRL.....	Medium Intensity Runway Lights
DVA.....	Diverse Vector Area	MM.....	Middle Marker
ELEV.....	Elevation	MRA.....	Minimum Reception Altitude
EMAS.....	Engineered Material Arresting System	N/A.....	Not Applicable
FAF.....	Final Approach Fix	NA.....	Not Authorized
FD.....	Flight Director System	NDB.....	Non-directional Radio Beacon
FM.....	Fan Marker	NM.....	Nautical Mile
FMS.....	Flight Management System	NoPT.....	No Procedure Turn Required (Procedure Turn shall not be executed without ATC clearance)
GBAS.....	Ground Based Augmentation System		
GCO.....	Ground Communications Outlet		

GENERAL INFO 20030

## APPENDIX 8

### ABBREVIATIONS (CONTINUED)

#### GENERAL INFO 20198 ABBREVIATIONS

ODALS.....	Omnidirectional Approach Light System
ODP.....	Obstacle Departure Procedure
OM.....	Outer Marker
PAR.....	Precision Approach Radar
PDC.....	Pre-Departure Clearance
PRM.....	Precision Runway Monitor
R.....	Radial
RA.....	Radio Altimeter setting height
RAIL.....	Runway Alignment Indicator Lights
RCLS.....	Runway Centerline Light System
REIL.....	Runway End Identifier Lights
RF.....	Radius-to-Fix
RLLS.....	Runway Lead-in Light System
RNAV.....	Area Navigation
RNP.....	Required Navigation Performance
RPI.....	Runway Point of Intercept(ion)
RRL.....	Runway Remaining Lights
Rwy.....	Runway
RVR.....	Runway Visual Range
S.....	Straight-in
SALS.....	Short Approach Light System
SALSF.....	Short Approach Lighting System with Sequenced Flashing Lights
SSALF.....	Simplified Short Approach Lighting System with Sequenced Flashers
SSALR.....	Simplified Short Approach Light System with RAIL
SSALS.....	Simplified Short Approach Lighting System
SDF.....	Simplified Directional Facility
SM.....	Statute Mile
SOIA.....	Simultaneous Offset Instrument Approach
SR-SS.....	Sunrise-Sunset
TAA.....	Terminal Arrival Area
TAC.....	TACAN
TCH.....	Threshold Crossing Height (height in feet Above Ground level)
TDZ.....	Touchdown Zone
TDZE.....	Touchdown Zone Elevation
TDZ/CL.....	Touchdown Zone and Runway Centerline Lighting
TDZL.....	Touchdown Zone Lights
THR.....	Threshold
TODA.....	Takeoff Distance Available
TORA.....	Takeoff Run Available
TR.....	Track
VASI.....	Visual Approach Slope Indicator
VCOA.....	Visual Climb Over Airport
VDP.....	Visual Descent Point
VGSI.....	Visual Glide Slope Indicator
VNAV.....	Vertical Navigation
WAAS.....	Wide Area Augmentation System
WP/WPT.....	Waypoint (RNAV)

#### GENERAL INFO 20198

## APPENDIX 9 FREQUENCY PAIRING

### FREQ PAIRING <sup>20198</sup>

#### FREQUENCY PAIRING TABLE

TACAN CHANNEL	VHF FREQUENCY	TACAN CHANNEL	VHF FREQUENCY	TACAN CHANNEL	VHF FREQUENCY
17Y	108.05	40X	110.30	88Y	114.15
18X	108.10	40Y	110.35	89Y	114.25
18Y	108.15	41Y	110.45	90Y	114.35
19Y	108.25	42X	110.50	91Y	114.45
20X	108.30	42Y	110.55	92Y	114.55
20Y	108.35	43Y	110.65	93Y	114.65
21Y	108.45	44X	110.70	94Y	114.75
22X	108.50	44Y	110.75	95Y	114.85
22Y	108.55	45Y	110.85	96Y	114.95
23Y	108.65	46X	110.90	97Y	115.05
24X	108.70	46Y	110.95	98Y	115.15
24Y	108.75	47Y	111.05	99Y	115.25
25Y	108.85	48X	111.10	100Y	115.35
26X	108.90	48Y	111.15	101Y	115.45
26Y	108.95	49Y	111.25	102Y	115.55
27Y	109.05	50X	111.30	103Y	115.65
28X	109.10	50Y	111.35	104Y	115.75
28Y	109.15	51Y	111.45	105Y	115.85
29Y	109.25	52X	111.50	106Y	115.95
30X	109.30	52Y	111.55	107Y	116.05
30Y	109.35	53Y	111.65	108Y	116.15
31Y	109.45	54X	111.70	109Y	116.25
32X	109.50	54Y	111.75	110Y	116.35
32Y	109.55	55Y	111.85	111Y	116.45
33Y	109.65	56X	111.90	112Y	116.55
34X	109.70	56Y	111.95	113Y	116.65
34Y	109.75	80Y	113.35	114Y	116.75
35Y	109.85	81Y	113.45	115Y	116.85
36X	109.90	82Y	113.55	116Y	116.95
36Y	109.95	83Y	113.65	117Y	117.05
37Y	110.05	84Y	113.75	118Y	117.15
38X	110.10	85Y	113.85	119Y	117.25
38Y	110.15	86Y	113.95		
39Y	110.25	87Y	114.05		

See the Chart Supplement for a complete listing.

### FREQ PAIRING <sup>20198</sup>

## APPENDIX 10 INDEX OF TERMINAL CHARTS AND MINIMUMS

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### INDEX OF TERMINAL CHARTS AND MINIMUMS

NAME	PROC	SECT PG	NAME	PROC	SECT PG
<b>ADEL, GA</b>			<b>ALMA, GA</b>		
<b>COOK COUNTY(15J)</b>			<b>BACON COUNTY(AMG)</b>		
TAKEOFF MINIMUMS .....	L		TAKEOFF MINIMUMS.....	L	
IAPS ..... RNAV (GPS) RWY 5 .....	1		ALTERNATE MINIMUMS.....	M	
RNAV (GPS) RWY 23 .....	2		IAPS ..... RNAV (GPS) RWY 15 .....	21	
			RNAV (GPS) RWY 33 .....	22	
<b>ALABASTER, AL</b>			<b>AMERICUS, GA</b>		
<b>SHELBY COUNTY(EET)</b>			<b>JIMMY CARTER RGNL(ACJ)</b>		
TAKEOFF MINIMUMS .....	L		TAKEOFF MINIMUMS.....	L	
ALTERNATE MINIMUMS.....	M		IAPS ..... ILS OR LOC/NDB RWY 23.....	23	
IAPS ..... RNAV (GPS) RWY 16 .....	3		RNAV (GPS) RWY 5 .....	24	
RNAV (GPS) RWY 34 .....	4		RNAV (GPS) RWY 23 .....	25	
VOR-A .....	5				
<b>ALBANY, GA</b>			<b>ANDALUSIA-OPP, AL</b>		
<b>SOUTHWEST GA. RGNL(ABY)</b>			<b>SOUTH ALABAMA RGNL AT BILL BENTON</b>		
TAKEOFF MINIMUMS.....	L		<b>FLD(79J)</b>		
ALTERNATE MINIMUMS.....	M		TAKEOFF MINIMUMS.....	L	
IAPS ..... ILS OR LOC RWY 4 .....	6		ALTERNATE MINIMUMS.....	M	
RNAV (GPS) RWY 4 .....	7		IAPS ..... RNAV (GPS) RWY 11 .....	26	
RNAV (GPS) RWY 16 .....	8		RNAV (GPS) RWY 29 .....	27	
RNAV (GPS) RWY 22 .....	9		NDB-A .....	28	
RNAV (GPS) RWY 34 .....	10		COPTER NDB RWY 29 .....	29	
LOC BC RWY 22 .....	11				
VOR OR TACAN RWY 16 .....	12				
NDB RWY 4 .....	13				
AIRPORT DIAGRAM.....	14				
<b>ALBERTVILLE, AL</b>			<b>ANNISTON, AL</b>		
<b>ALBERTVILLE RGNL-THOMAS J. BRUMLIK</b>			<b>ANNISTON RGNL(ANB)</b>		
<b>FLD(8A0)</b>			TAKEOFF MINIMUMS.....	L	
TAKEOFF MINIMUMS.....	L		ALTERNATE MINIMUMS.....	M	
ALTERNATE MINIMUMS.....	M		IAPS ..... ILS OR LOC RWY 5 .....	30	
IAPS ..... RNAV (GPS) RWY 5 .....	15		RNAV (GPS) RWY 5 .....	31	
RNAV (GPS) RWY 23 .....	16		RNAV (GPS) Y RWY 23 .....	32	
NDB-A .....	17		RNAV (GPS) Z RWY 23 .....	33	
			NDB RWY 5 .....	34	
<b>ALEXANDER CITY, AL</b>			<b>ATHENS, GA</b>		
<b>THOMAS C. RUSSELL FLD(ALX)</b>			<b>ATHENS/BEN EPPS(AHN)</b>		
TAKEOFF MINIMUMS .....	L		TAKEOFF MINIMUMS.....	L	
ALTERNATE MINIMUMS.....	M		ALTERNATE MINIMUMS.....	M	
IAPS ..... RNAV (GPS) RWY 18 .....	18		IAPS ..... ILS OR LOC/DME RWY 27.....	35	
RNAV (GPS) RWY 36 .....	19		RNAV (GPS) RWY 2 .....	36	
NDB-A .....	20		RNAV (GPS) RWY 9 .....	37	
			RNAV (GPS) RWY 20 .....	38	
			RNAV (GPS) RWY 27 .....	39	
			VOR RWY 2 .....	40	
			VOR RWY 27 .....	41	
			NDB RWY 27 .....	42	
			AIRPORT DIAGRAM.....	43	

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## APPENDIX 11

### INDEX OF TERMINAL CHARTS AND MINIMUMS - COMPLEX

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#### INDEX OF TERMINAL CHARTS AND MINIMUMS

NAME	PROC	SECT PG	NAME	PROC	SECT PG
<b>ATLANTA, GA(CON'T)</b>			<b>HARTSFIELD-JACKSON ATLANTA INTL(ATL)</b>		
<b>HARTSFIELD-JACKSON ATLANTA INTL(ATL)</b>			<b>(CON'T)</b>		
TAKEOFF MINIMUMS .....		L	PRM AAUP .....		109
LAHSO .....		O	ILS PRM RWY 8L .....		112
HOT SPOT .....		P	ILS PRM RWY 8R .....		113
STARS...CANUK TWO (RNAV) .....		Z4	ILS PRM RWY 9L .....		114
ERLIN ONE (RNAV) .....		Z6	ILS PRM RWY 9R .....		115
FLCON EIGHT (RNAV) .....		Z7	ILS PRM RWY 10 .....		116
HERKO SEVEN (RNAV) .....		Z8	ILS PRM RWY 26L .....		117
HONIE NINE (RNAV) .....		Z9	ILS PRM RWY 26R .....		118
LAGRANGE THREE .....		Z12	ILS PRM RWY 27L .....		119
PECHY EIGHT (RNAV) .....		Z14	ILS PRM RWY 27R .....		120
ROME FIVE .....		Z15	ILS PRM RWY 28 .....		121
RPTOR TWO (RNAV) .....		Z16	ILS PRM RWY 26R (SA CAT I - II) .....		122
SINCA SIX .....		Z18	ILS PRM RWY 27L(CAT II) .....		123
WHINZ TWO .....		Z22	ILS PRM RWY 28(CAT II) .....		124
IAPS .....			ILS PRM RWY 8L (CAT II - III) .....		125
ILS OR LOC RWY 8L .....		71	ILS PRM RWY 9R (CAT II - III) .....		126
ILS OR LOC RWY 8R .....		72	ILS PRM RWY 10 (CAT II - III) .....		127
ILS OR LOC RWY 9L .....		73	AIRPORT DIAGRAM .....		128
ILS OR LOC RWY 9R .....		74	DPS .....		
ILS OR LOC RWY 10 .....		75	BRAVS SEVEN (RNAV) .....		129
ILS OR LOC RWY 26L .....		76	DAWGS SIX (RNAV) .....		131
ILS OR LOC RWY 26R .....		77	DOOLY SIX (RNAV) .....		133
ILS OR LOC RWY 27L .....		78	GEETK SEVEN (RNAV) .....		135
ILS OR LOC RWY 27R .....		79	JCKTS SEVEN (RNAV) .....		137
ILS OR LOC RWY 28 .....		80	JOGOR FIVE (RNAV) .....		139
ILS RWY 10 (SA CAT I) .....		81	MUNSN SIX (RNAV) .....		141
ILS RWY 28 (SA CAT I) .....		82	NOVSS FIVE (RNAV) .....		143
ILS RWY 26R (SA CAT I - II) .....		83	PNUTT SEVEN (RNAV) .....		145
ILS RWY 27L(CAT II) .....		84	RMBLN SEVEN (RNAV) .....		147
ILS RWY 28(CAT II) .....		85	THRSR SEVEN (RNAV) .....		149
ILS RWY 8L (CAT II - III) .....		86	UGAAA FOUR (RNAV) .....		151
ILS RWY 9R (CAT II - III) .....		87	ATLANTA SIX .....		153
ILS RWY 10 (CAT II - III) .....		88	CADIT SEVEN (RNAV) .....		155
RNAV (RNP) Z RWY 8L .....		89	COKEM SIX (RNAV) .....		157
RNAV (RNP) Z RWY 8R .....		90	NUGGT SIX (RNAV) .....		159
RNAV (RNP) Z RWY 9L .....		91	SUMMT SIX (RNAV) .....		161
RNAV (RNP) Z RWY 9R .....		92			
RNAV (RNP) Z RWY 10 .....		93			
RNAV (RNP) Z RWY 26L .....		94			
RNAV (RNP) Z RWY 26R .....		95			
RNAV (RNP) Z RWY 27L .....		96			
RNAV (RNP) Z RWY 27R .....		97			
RNAV (RNP) Z RWY 28 .....		98			
RNAV (GPS) Y RWY 8L .....		99			
RNAV (GPS) Y RWY 8R .....		100			
RNAV (GPS) Y RWY 9L .....		101			
RNAV (GPS) Y RWY 9R .....		102			
RNAV (GPS) Y RWY 10 .....		103			
RNAV (GPS) Y RWY 26L .....		104			
RNAV (GPS) Y RWY 26R .....		105			
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**APPENDIX 12**  
**LAND AND HOLD SHORT OPERATIONS (LAHSO)**

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LAND AND HOLD-SHORT OPERATIONS (LAHSO)			
<p>LAHSO is an acronym for "Land and Hold-Short Operations." These operations include landing and holding short of an intersection runway, an intersecting taxiway, or other predetermined points on the runway other than a runway or taxiway. Measured distance represents the available landing distance on the landing runway, in feet.</p> <p>Specific questions regarding these distances should be referred to the air traffic manager of the facility concerned. The Aeronautical Information Manual contains specific details on hold-short operations and markings.</p>			
CITY/AIRPORT	LDG RWY	HOLD-SHORT POINT	AVBL LDG DIST
BATTLE CREEK, MI W.K. KELLOGG (BTL)	05L	13-31	7,000 feet
DETROIT, MI COLEMAN A. YOUNG MUNI (DET)	15	07-25	4,900 feet
FLINT, MI BISHOP INTL (FNT)	09 36	18-36 09-27	4,100 feet 6,300 feet
TRAVERSE CITY, MI CHERRY CAPITAL (TVC)	18 28	10-28 18-36	2,850 feet 5,500 feet

12264

## APPENDIX 13 HOT SPOTS

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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*
ATWATER, CA		
CASTLE (MER)	HS 1	Twy A, Twy A1, Twy B, and Twy G complex int.
	HS 2	Twy A and southeast ramp, traffic congestion.
CONCORD, CA		
BUCHANAN FLD (CCR)	HS 1	Rwy 01L-19R, Twy E and Twy J.
	HS 2	Rwy 32L and run-up area, Twy J.
	HS 3	Complex int at Rwy 01R-19L, Twy J, Twy A, Twy C, and Twy K.
	HS 4	Rwy 32L apch, Twy A.
HAYWARD, CA		
HAYWARD EXECUTIVE (HWD)	HS 1	Rwy 10L-28R, Twy E and Twy A.
	HS 2	Area not visible from ATCT.
	HS 3	Area not visible from ATCT.
LIVERMORE, CA		
LIVERMORE MUNI (LVK)	HS 1	Rwy 25R, Twy B.
	HS 2	Rwy 25L, Twy C.
	HS 3	Rwy 07L, Twy H.
	HS 4	Rwy 07R, Twy G.
	HS 5	Rwy 25R, Twy G.
	HS 6	Ints of Twy J, Twy A, and Twy G.
NAPA, CA		
NAPA COUNTY (APC)	HS 1	Twy A, Twy C, Twy E and the ramp.
	HS 2	Rwy 24, Twy A.
	HS 3	Rwy 24 and Rwy 36L.
OAKLAND, CA		
METROPOLITAN OAKLAND INTL (OAK)	HS 1	Rwy 27R, Twy A and Twy B.
	HS 2	Rwy 09L-27R, Twy H, Twy G, Twy C and Twy D.
	HS 3	Rwy 09L and Rwy 33, Twy J, Twy P, and Twy C, complex int.
	HS 4	Area not visible from the South Twr.
SACRAMENTO, CA		
SACRAMENTO EXECUTIVE (SAC)	HS 1	Rwy 16-34 and Rwy 12-30 at Twy M.
	HS 2	Inbound Twy A and outbound Twy B.
	HS 3	Portion of Twy E not visible from twr.
SACRAMENTO, CA		
SACRAMENTO INTL (SMF)	HS 1	Rwy 16R-34L and Twy A10
SALINAS, CA		
SALINAS MUNI (SNS)	HS 1	Twy A and Twy C int in close proximity of Rwy 08-26.

(SEE CONTINUATION PAGE FOR MORE LISTINGS)

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## APPENDIX 14 RATE OF CLIMB/DESCENT TABLE

CLIMB/DESCENT TABLE 10042

INSTRUMENT TAKEOFF OR APPROACH PROCEDURE CHARTS RATE OF CLIMB/DESCENT TABLE (ft. per min)												
A rate of climb/descent table is provided for use in planning and executing climbs or descents under known or approximate ground speed conditions. It will be especially useful for approaches when the localizer only is used for course guidance. A best speed, power, altitude combination can be programmed which will result in a stable glide rate and altitude favorable for executing a landing if minimums exist upon breakout. Care should always be exercised so that minimum descent altitude and missed approach point are not exceeded.												
CLIMB/ DESCENT ANGLE (degrees and tenths)	ft/NM	GROUND SPEED (knots)										
		60	90	120	150	180	210	240	270	300	330	360
2.0	210	210	320	425	530	635	743	850	955	1060	1165	1275
2.5	265	265	400	530	665	795	930	1060	1195	1325	1460	1590
2.7	287	287	430	574	717	860	1003	1147	1290	1433	1576	1720
2.8	297	297	446	595	743	892	1041	1189	1338	1486	1635	1783
2.9	308	308	462	616	770	924	1078	1232	1386	1539	1693	1847
3.0	318	318	478	637	797	956	1115	1274	1433	1593	1752	1911
3.1	329	329	494	659	823	988	1152	1317	1481	1646	1810	1975
3.2	340	340	510	680	850	1020	1189	1359	1529	1699	1869	2039
3.3	350	350	526	701	876	1052	1227	1402	1577	1752	1927	2103
3.4	361	361	542	722	903	1083	1264	1444	1625	1805	1986	2166
3.5	370	370	555	745	930	1115	1300	1485	1670	1860	2045	2230
4.0	425	425	640	850	1065	1275	1490	1700	1915	2125	2340	2550
4.5	480	480	715	955	1195	1435	1675	1915	2150	2390	2630	2870
5.0	530	530	795	1065	1330	1595	1860	2125	2390	2660	2925	3190
5.5	585	585	880	1170	1465	1755	2050	2340	2635	2925	3220	3510
6.0	640	640	960	1275	1595	1915	2235	2555	2875	3195	3510	3830
6.5	690	690	1040	1385	1730	2075	2425	2770	3115	3460	3805	4155
7.0	745	745	1120	1490	1865	2240	2610	2985	3355	3730	4105	4475
7.5	800	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800
8.0	855	855	1280	1710	2135	2560	2990	3415	3845	4270	4695	5125
8.5	910	910	1360	1815	2270	2725	3180	3630	4085	4540	4995	5450
9.0	960	960	1445	1925	2405	2885	3370	3850	4330	4810	5295	5775
9.5	1015	1015	1525	2035	2540	3050	3560	4065	4575	5085	5590	6100
10.0	1070	1070	1605	2145	2680	3215	3750	4285	4820	5355	5890	6430

CLIMB/DESCENT TABLE 10042

# APPENDIX 15 CN FRONT COVER

All type on cover must be Arial font - no centering.



Top of Logo must be .5" from top of printed page

.1875" bleed

## U.S. Terminal Procedures Publication Change Notice (CN)

24 pt Bold

Effective: 0901Z

12 pt Regular

**23 JUN 2016**

18 pt Bold

to: 0901Z

12 pt Regular

**21 JUL 2016**

14 pt Bold



4.25"

7.125"

Area designated for graphic

Consult NOTAMs for latest information  
 Consult/Subscribe to FAA Safety Alerts and Charting Notices at:  
[http://www.faa.gov/air\\_traffic/flight\\_info/aeronav/safety\\_alerts/](http://www.faa.gov/air_traffic/flight_info/aeronav/safety_alerts/)  
 Published from digital files compiled in accordance with Interagency Air  
 Committee specifications and agreements approved by:  
 Department of Defense • Federal Aviation Administration

8 pt Regular

.5 " Margin

5.38"

**APPENDIX 16**  
**CN INSIDE FRONT COVER**

GENERAL INFORMATION/INSTRUCTIONS

CHANGE NOTICE (CN) FOR UNITED STATES GOVERNMENT

TERMINAL PROCEDURES PUBLICATION

GENERAL : The United States Terminal Procedures are published in 25 Bound Volumes on a 56-day cycle. This CN is published at the mid 28-day point and contains revisions, additions and deletions to the last complete issue of the 24 volumes covering the conterminous U.S. There is no CN published for airports in the states of Alaska, Hawaii, or Pacific Islands.

OPERATIONAL USE OF THE CHANGE NOTICE : During flight planning or in the case of an in-flight diversion, it is imperative that the pilot first consult this CN before making any decision as to which procedures are current at the airport of intended landing. If the airport of intended landing is not listed in the supplementary information or Index of Charts then the airport information in the basic 24 volumes has not changed.

INDEX OF TERMINAL PROCEDURES : All civil airports which have revised, added or deleted procedures are listed alphabetically by city in the Index. In addition to the airport name, the Index includes the CN page number, the current procedure designation, the affected page and volume number in the last issue of the 24 conterminous US volumes and an indicator whether the procedure is new, has been deleted, or replaces an existing procedure.

EFFECTIVE DATES: All procedures in this CN are effective on the dates shown on the front cover unless indicated otherwise in the Index, i.e., if the procedure revision is effective on a date other than the CN publication date, this will be noted in the Index instructions by "Effective (date)". This will also be shown on the planview of the affected Chart(s)

CONSULT CURRENT NOTAMS.

## APPENDIX 17

### CN INDEX OF TERMINAL CHARTS AND MINIMUMS

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DIVERSE VECTOR AREAS .....	B1
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RADAR MINIMUMS .....	D1
STARS .....	E1
AREA OF COVERAGE .....	BACK COVER

#### INDEX OF TERMINAL CHARTS AND MINIMUMS

NAME	PROC	SECT PG	ACTION
<b>ALBUQUERQUE, NM</b>			
<b>ALBUQUERQUE INTL SUNPORT</b>			
IAPS .....	RNAV (RNP) Y RWY 21 .....	1	REPLACE PG. 16 VOL SW-1
	RNAV (RNP) Y RWY 26 .....	2	REPLACE PG. 17 VOL SW-1
	RNAV (RNP) Z RWY 21 .....	3	REPLACE PG. 20 VOL SW-1
	RNAV (RNP) Z RWY 26 .....	4	REPLACE PG. 21 VOL SW-1
	RNAV (GPS) Y RWY 08 .....	5	REPLACE PG. 23 VOL SW-1
<b>ALFRED C BUBBA THOMAS</b>			
---SEE SINTON, TX			
<b>ASTORIA, OR</b>			
<b>ASTORIA RGNL</b>			
IAPS .....	ILS RWY 26 .....	6	REPLACE PG. 13 VOL NW-1
<b>ATKINSON, NE</b>			
<b>STUART-ATKINSON MUNI</b>			
IAPS .....	RNAV (GPS) RWY 29 .....	7	REPLACE PG. 26 VOL NC-2
	VOR/DME RWY 29 .....	8	REPLACE PG. 27 VOL NC-2
<b>ATKINSON MUNI</b>			
---SEE PITTSBURG, KS			
<b>ATLANTA, GA</b>			
<b>ATLANTA RGNL FALCON FLD</b>			
IAPS .....	ILS OR LOC RWY 31 .....	9	REPLACE PG. 46 VOL SE-4
	RNAV (GPS) RWY 13 .....	10	REPLACE PG. 47 VOL SE-4
	RNAV (GPS) RWY 31 .....	11	REPLACE PG. 48 VOL SE-4
	NDB RWY 31 .....	12	REPLACE PG. 49 VOL SE-4
<b>HARTSFIELD-JACKSON ATLANTA INTL</b>			
IAPS .....	RNAV (GPS) PRM RWY 09L .....	13	REPLACE PG. 100 VOL SE-4
	RNAV (GPS) RWY 09L .....	14	REPLACE PG. 102 VOL SE-4
	RNAV (GPS) PRM RWY 09R .....	15	REPLACE PG. 134 VOL SE-4
<b>AURORA, MO</b>			
<b>JERRY SUMNERS SR AURORA MUNI</b>			
IAPS .....	RNAV (GPS) RWY 18 .....	16	REPLACE PG. 21 VOL NC-3
<b>BATAVIA, OH</b>			
<b>CLERMONT COUNTY</b>			
IAPS .....	RNAV (GPS) RWY 22 .....	17	REPLACE PG. 44 VOL EC-2
<b>BEATRICE, NE</b>			
<b>BEATRICE MUNI</b>			
IAPS .....	RNAV (GPS) RWY 14 .....	18	REPLACE PG. 36 VOL NC-2
	VOR RWY 36 .....	19	REPLACE PG. 42 VOL NC-2
<b>BELLEVILLE, KS</b>			
<b>BELLEVILLE MUNI</b>			
IAPS .....	RNAV (GPS) RWY 36 .....	20	REPLACE PG. 44 VOL NC-2

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# APPENDIX 18

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

B1

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

00000

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.

## EAST CENTRAL VOL. 2

### FINDLAY, OH

#### FINDLAY (FDY)

#### TAKEOFF MINIMUMS AND (OBSTACLE) DEPARTURE PROCEDURES

AMDT 1 06DEC18 (18340) (FAA)

#### TAKEOFF MINIMUMS:

**Rwy 25**, 300-1% or std. w/min. climb of 210' per NM to 1100, or alternatively with std. takeoff minimums and a normal 200' per NM climb gradient, takeoff must occur no later than 1400' prior to DER.

#### TAKEOFF OBSTACLE NOTES:

**Rwy 7**, road with vehicles beginning 55' from DER, 308' right of centerline, up to 15' AGL/821' MSL.  
Wall, pole beginning 121' from DER, 48' left of centerline, up to 10' AGL/816' MSL.  
Tree, road with vehicles, pole beginning 154' from DER, 69' right of centerline, up to 32' AGL/838' MSL.  
Road with vehicles beginning 210' from DER, 1' left of centerline, up to 15' AGL/821' MSL.  
Trees beginning 279' from DER, 45' right of centerline, up to 33' AGL/839' MSL.  
Tree, pole, building beginning 338' from DER, 33' left of centerline, up to 26' AGL/832' MSL.  
Tree 1715' from DER, 959' right of centerline, 54' AGL/860' MSL.  
Trees beginning 1846' from DER, 407' right of centerline, up to 64' AGL/870' MSL.  
Building 2374' from DER, 1054' right of centerline, 110' AGL/916' MSL.  
Building, tree, wind indicator beginning 2417' from DER, 109' right of centerline, up to 121' AGL/927' MSL.  
**Rwy 18**, tree 2786' from DER, 150' left of centerline, 876' MSL.  
**Rwy 25**, fence, vegetation beginning 26' from DER, 141' left of centerline, up to 6' AGL/799' MSL.  
Road with vehicles beginning 133' from DER, 108' right of centerline, up to 15' AGL/803' MSL.  
Sign, tree, pole beginning 473' from DER, 421' right of centerline, up to 64' AGL/852' MSL.  
Tree, pole, road with vehicles beginning 785' from DER, 397' right of centerline, up to 15' AGL/802' MSL.  
Elevator, tree beginning 1824' from DER, 295' right of centerline, up to 78' AGL/869' MSL.  
Trees beginning 2207' from DER, 454' right of centerline, up to 88' AGL/876' MSL.  
Elevator 1.2 NM from DER, 1040' right of centerline, 206' AGL/999' MSL.  
Elevator 1.3 NM from DER, 1114' right of centerline, 207' AGL/1000' MSL.  
**Rwy 36**, pole 1191' from DER, 742' right of centerline, 39' AGL/835' MSL.  
Tree 1559' from DER, 498' left of centerline, 51' AGL/847' MSL.

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

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CN



**APPENDIX 20  
CN RADAR INSTRUMENT APPROACH MINIMUMS**

**RADAR MINS**

D1

15036

**RADAR INSTRUMENT APPROACH MINIMUMS**

**EAST CENTRAL VOL 1**

**BATTLE CREEK, MI  
W. K. KELLOGG (BTL)**

Amdt 2, 13DEC90 (15036) (FAA)

ELEV **952**

RADAR-1 119.2 239.25 ▽ ▲

CIRCLING	RWY	GP/TCH/RPI	DA/ HAT/			DA/ HAT/			
			CAT	MDA-VIS	HAA	CEIL-VIS	CAT	MDA-VIS	HAA
	A		1420-1	468	(500-1)	B	1440-1	488	(500-1)
	C		1480-1½	528	(600-1½)	D	1520-2	568	(600-2)
	E		1740-2¾	788	(800-2¾)				

When Kalamazoo control tower closed, procedure not authorized.  
When Battle Creek control tower closed, use Kalamazoo altimeter setting and increase all MDA's 60 feet and Category E visibility ¼ mile.

**EAST CENTRAL VOL 3**

**GREEN BAY, WI  
AUSTIN STRAUBEL INTL (GRB)**

Amdt 9C, 06JUL06 (15036) (FAA)

ELEV **695**

RADAR-1 119.4 338.2 ▽ ▲

ASR	RWY	GP/TCH/RPI	DA/ HAT/			DA/ HAT/				
			CAT	MDA-VIS	HAA	CEIL-VIS	CAT	MDA-VIS	HAA	CEIL-VIS
36			AB	1100/24	418	(500-½)	C	1100/40	418	(500-¾)
			D	1100/50	418	(500-1)				
24			AB	1120-1	438	(500-1)	C	1120-1¼	438	(500-1¼)
			D	1120-1½	438	(500-1½)				
6			AB	1220/24	528	(600-½)	C	1220/50	528	(600-1)
			D	1220/60	528	(600-1¼)				
18			AB	1220-1	525	(600-1)	C	1220-1½	525	(600-1½)
			D	1220-1¾	525	(600-1¾)				
CIRCLING ALL RWY			AB	1220-1	525	(600-1)	C	1220-1½	525	(600-1½)
			D	1260-2	565	(600-2)				

For inoperative MALSR, increase ASR S-36 Category D visibility to RVR 6000.  
When control tower closed, ASR not authorized.

**RADAR INSTRUMENT APPROACH MINIMUMS**

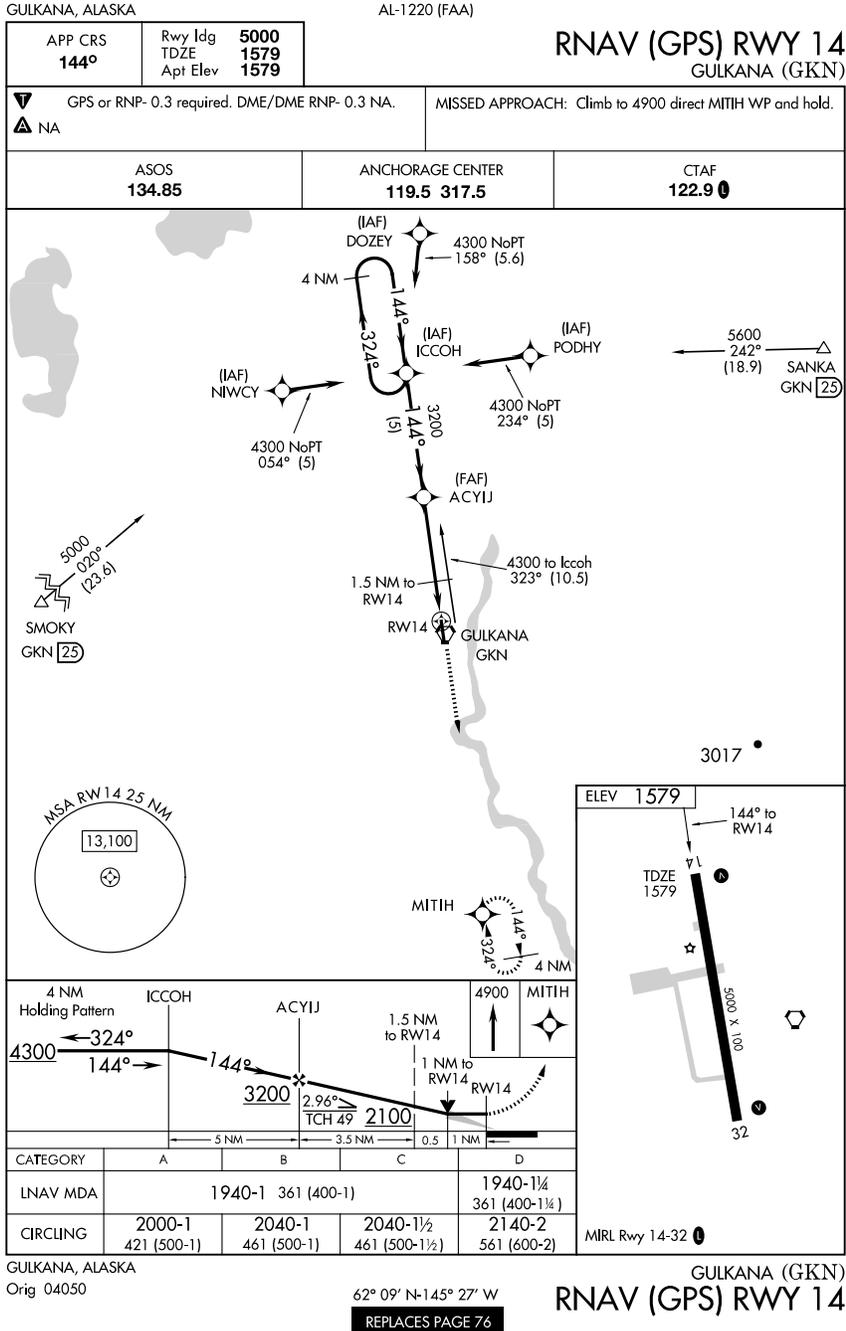
**RADAR MINS**

15036

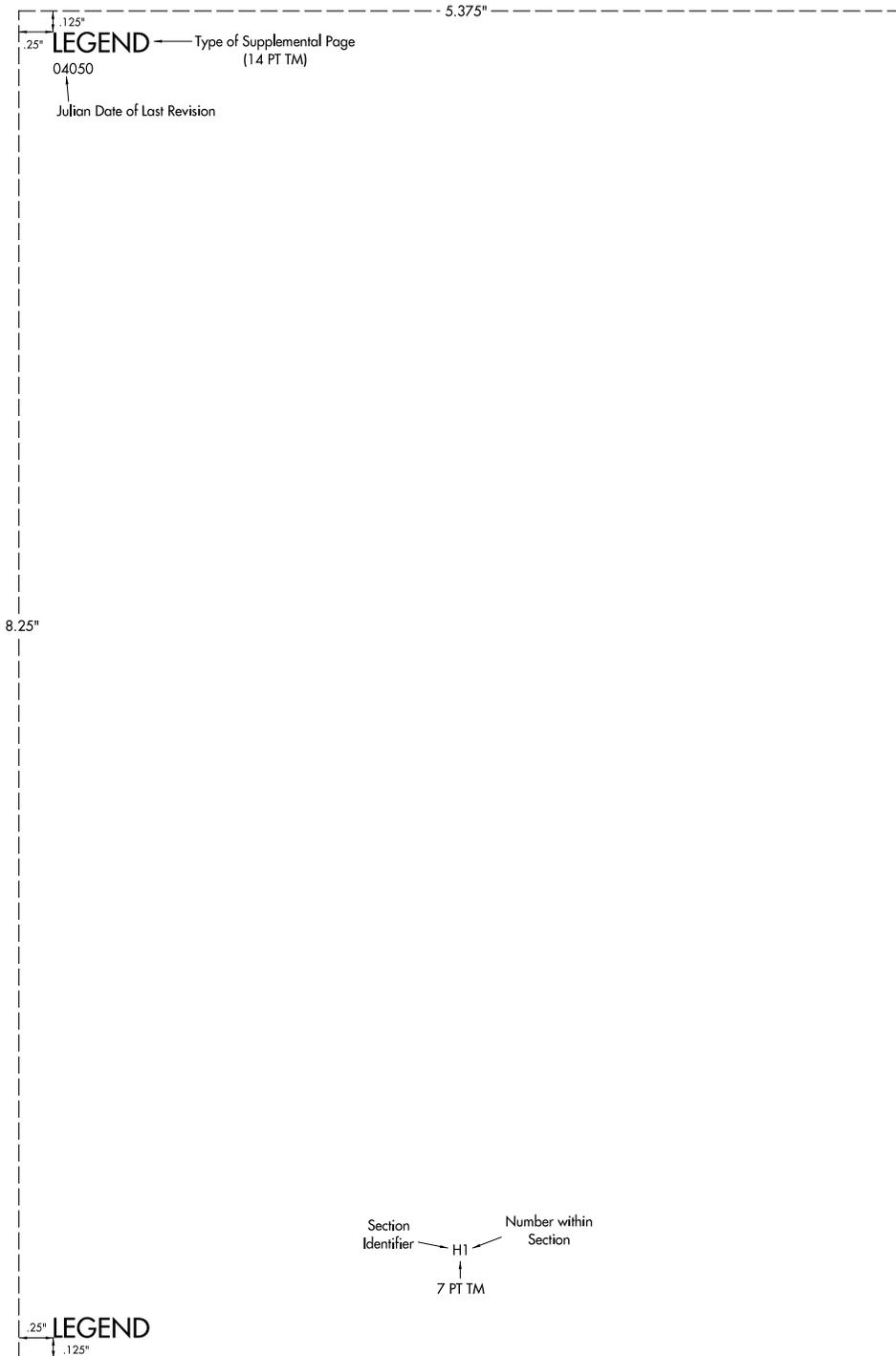
D1

APPENDIX 21  
CN ALASKA

**ALASKA TERMINAL CHANGE**



# APPENDIX 22 SUPPLEMENTAL PAGE FORMAT



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