

FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
RNAV (GPS) STANDARD INSTRUMENT APPROACH PROCEDURE
TITLE 14 CFR PART 97.33

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated.
 Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or feet RVR.

<u>AIRPORT</u> WATERLOO RGNL	<u>AIRPORT ID</u> KALO	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 30	<u>ORIGINAL/AMENDMENT</u> 1	<u>CITY</u> WATERLOO	<u>STATE</u> IA
<u>AIRPORT ELEVATION</u> 873	<u>TDZE</u> 868	<u>SUPERSEDED</u> RNAV (GPS) RWY 30	<u>ORIGINAL/AMENDMENT</u> ORIG	<u>DATED</u> 09/28/2006	<u>MAG VAR</u> 0E
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u> 13 SEPTEMBER 2018	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<u>CANCEL/SUSPEND</u>	<u>EPOCH YEAR</u> 2020

TAA

<u>FROM</u>	<u>FIX TYPE</u>	<u>TO</u>	<u>FIX TYPE</u>	<u>ALTITUDE</u>
1. 218/30 CW 038/30	NOPT	218/10 CW 038/10		4000
2. 218/10 CW 038/10		KUCTE	IF/IAF	3400
3. 038/30 CW 128/30		NICIK	IAF	3400
4. 128/30 CW 218/30		LALIY	IAF	3400

TERMINAL ROUTES

<u>FROM</u>	<u>FIX TYPE</u>	<u>TO</u>	<u>FIX TYPE</u>	<u>LEG TYPE</u>	<u>FO/FB</u>	<u>RNP</u>	<u>COURSE</u>	<u>DISTANCE</u>	<u>ALTITUDE</u>
NICIK	IAF	KUCTE	NOPT	TF	FB	1.00	037.87	7.00	3400
LALIY	IAF	KUCTE	NOPT	TF	FB	1.00	218.00	7.00	3400
KUCTE	IF/IAF	IVOCE		TF	FB	1.00	307.94	6.44	2500
IVOCE	FAF	JEGIM/1.90 NM TO RW30		TF	FB	0.30	307.86	3.06	
JEGIM/1.90 NM TO RW30		RW30	MAP	TF	FO	0.30	307.86	1.90	
RW30	MAP	1068 MSL		CA			307.86		
1068 MSL		EYUCE		DF	FO	1.00			3400

QUALITY
25
CHECKED

MISSED APPROACH

MAP:
LPV: DA
LNAV/VNAV: DA
LNAV: RW30

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 3400 DIRECT EYUCE AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:

PROFILE:

1. PT	SIDE OF COURSE	OUTBOUND	FT WITHIN	MILES OF (IAF)				
2.	HOLD SE KUCTE, RT, 307.94 INBOUND, 3400 FT. IN LIEU OF PT (IAF), MAX 6000.							
3. FAC:	307.86	FAF: IVOCE	DIST FAF TO MAP: 4.96	DIST FAF TO THLD: 4.96				
4. MIN ALT:	KUCTE 3400, IVOCE 2500, JEGIM/1.90 NM TO RW30 1520*							
5. DIST TO THLD FROM OM:	MM:	IM:	150 HAT:	200 HAT: 0.47	GS ANT:			
6. MIN GP INCPT: 2500	GP ALT AT FAF : IVOCE 2500		OM:	MM:	IM:			
7. GP ANGLE: 3.00	34:1: IS CLEAR	20:1: IS CLEAR	TCH: 52.0					
8. MSA FROM:								

PBN REQUIREMENTS NOTE:

RNP APCH.

NOTES:

CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -20C OR ABOVE 54C.
CHART NOTE: INOPERATIVE TABLE DOES NOT APPLY LPV ALL CATS.
CHART NOTE: FOR INOPERATIVE ALS, INCREASE LNAV/VNAV ALL CATS VISIBILITY TO 7/8 SM.

ADDITIONAL FLIGHT DATA:

CHART 1017 TOWER 423208N/0922032W
CHART CIRCLING ICON.
CHART VDP AT 1.07 NM TO RW30*
*LNAV ONLY
WAAS CHANNEL #78201
REFERENCE PATH ID: W30A
CHART FAS OBST: 996 POLE 423231N/0922126W.
HOLD NW, RT, 127.63 INBOUND
LTP HAE: 232.9 M

MINIMUMS:

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT

ALTERNATE: NA ☐ STANDARD - CAT D 800-2 1/4



CATEGORY:	A			B			C			D			E		
FINAL TYPE	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA
LPV DA	1068	3/4	200	1068	3/4	200	1068	3/4	200	1068	3/4	200			
LNAV/VNAV DA	1145	3/4	277	1145	3/4	277	1145	3/4	277	1145	3/4	277			
LNAV MDA	1260	3/4	392	1260	3/4	392	1260	7/8	392	1260	7/8	392			
CIRCLING	1360	1	487	1400	1	527	1480	1 3/4	607	1600	2 1/4	727			

CHANGES - REASONS

1. TERMINAL ROUTES: NICKI - KUCTE UPDATED COURSE/DISTANCE FROM 034.88/5.00 TO 037.87/7.00 - SEGMENT RECALCULATION WITH MAG VAR UPDATE AND PBN SEGMENT LENGTH CALC.
2. TERMINAL ROUTES: LALIY - KUCTE UPDATED COURSE/DISTANCE FROM 214.98/5.00 TO 218.00/7.00 - SEGMENT RECALCULATION WITH MAG VAR UPDATE AND PBN SEGMENT LENGTH CALC.
3. TERMINAL ROUTES: KUCTE - IVOCE UPDATED COURSE/DISTANCE FROM 304.93/6.50 TO 307.94/6.44 - SEGMENT RECALCULATION WITH MAG VAR UPDATE AND UPDATED FAF LOCATION.
4. TERMINAL ROUTES: IVOCE - JEGIM ADDED DESCRIBING FIX INFORMATION FOR JEGIM/1.90 NM TO RW30, UPDATED COURSE/DISTANCE FROM 304.85/3.10 TO 307.86/3.06 - SEGMENT RECALCULATION WITH OPTIMUM PFAF LOCATION USING GS 3.00/52 TCH AND MAGVAR UPDATE.
5. TERMINAL ROUTES: JEGIM - RW30 ADDED DESCRIBING FIX INFORMATION FOR JEGIM/1.90 NM TO RW30, UPDATED COURSE/DISTANCE FROM 304.85/1.80 TO 307.86/1.90 - SEGMENT RECALCULATION ON GS AND MAGVAR UPDATE.
6. TAA UPDATED ALL SEGMENTS COURSE - MAG VAR FROM 3E TO 0E.
7. UPDATED HOLD IN LIEU COURSE FROM 304.93 TO 307.94 INBOUND - SEGMENT RECALCULATION/MAG VAR UPDATE.
8. UPDATED FAC FROM 304.85 TO 307.86 - MAG VAR UPDATED.
9. UPDATED MIN ALT AT JEGIM FROM 1480 TO 1520 - OPTIMUM DESCENT ANGLE.
10. ADDED GS ALT AT: IVOCE 2500 - IAW 8260.19H CH 8.
11. UPDATED TCH FROM 50.0 TO 52.0 - USING COMMISSIONED VGSI DATA.
12. ADDED 20:1 IS CLEAR - 8260.19H CH 8.
13. UPDATED ADDITIONAL FLIGHT DATA HOLD FROM 124.63 TO 127.63 - MAG VAR
14. UPDATED FAS OBS FROM 965 ELEVATOR TO 996 POLE - OBS EVALUATION.
15. UPDATED VDP FROM 1.20 MILES TO 1.07 NM FROM RW 30 - VDP RECALCULATED.
16. ADDED CHART CIRCLING ICON - APPLIED NEW CIRCLING RADIUS.
17. UPDATED APT MAG VAR FROM 3E/1985 TO 0E/2020 - OUT OF TOLERANCE
18. MINIMUMS UPDATED LPV DA FROM 1117 TO 1068 - OBSTACLE EVALUATION, ASC.
19. UPDATED LNAV/VNAV DA/HAT FROM 1299/432 TO 1145/277 - OBSTACLE EVALUATION/NEW SURVEY DATA
20. UPDATED LNAV MDA/HAT FROM 1300/433 TO 1260/392 - OBSTACLE EVALUATION/NEW SURVEY DATA
21. UPDATED LNAV/VNAV VIS ALL CATS FROM 1 1/2 TO 3/4 - VISCK RESULTS.
22. UPDATED LNAV VIS CAT C FROM 1 1/4 TO 7/8 CAT D FROM 1 1/2 TO 7/8.
23. UPDATED CIRCLING MDA CAT A FROM 1380/507 TO 1360/487; CAT B FROM 1380/507 TO 1400/527; CAT C FROM 1380/507 TO 1480/607; CAT D FROM 1480/607 TO 1600/727 - NEW CONTROLLING OBSTRUCTION FROM EXPANDED CIRCLING RADIUS.
24. UPDATED CIRCLING VISIBILITY CAT A/B FROM 1 1/4 TO 1, CAT C FROM 1 1/2 TO 1 3/4, CAT D FROM 2 TO 2 1/4 - VIS CK CALCULATION.
25. UPDATED BARO-VNAV RESTRICTION NA BELOW -16C (4F) ABOVE FROM 47C (116F) TO BELOW -20C OR ABOVE 54C - HISTORICAL WEATHER DATA AVAILABLE/NEW NOTE FORMAT.
26. ADDED EQUIPMENT REQUIREMENTS NOTE; RNP APCH- IAW 8260.19H 8-6-8
27. UPDATED INOP LIGHTING NOTE FROM INOPERALLVE TABLE DOES NOT APPLY TO LPV, LNAVNAV AND LNAV CAT C TO FOR INOPERATIVE ALS, INCREASE LNAV/VNAV ALL CATS VISIBILITY TO 7/8 SM. - VIS CK RESULTS.

COORDINATED WITH:

A4A ☒ ALPA ☒ AOPA ☒ APA ☒ HAI ☐ NBAA ☒ OTHER: ZAU, ALO APP CON, ALO ATCT, AMGR

FLIGHT CHECKED BY

PENDING

DEVELOPED BY

HEIDI SNIDER

APPROVED BY

JULIE MORGAN

Digitally signed by
HEIDI SNIDER
Jul 02, 2018

Digitally signed by
ROBERT G HAMILTON
Jul 31, 2018

Digitally signed by
ROBERT G HAMILTON
Jul 31, 2018

OFFICE

OFFICE

AJV-5423

OFFICE

AJV-5420

DATE

DATE

04/16/2018

DATE

TITLE

MANAGER



FAS DATA BLOCK INFORMATION

DATA FIELD	DATA
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KALO
RUNWAY	RW30
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W30A
LTP/FTP LATITUDE	423306.8925N
LTP/FTP LONGITUDE	0922314.3310W
LTP/FTP ELLIPSOIDAL HEIGHT	+02329
FPAP LATITUDE	423401.5090N
FPAP LONGITUDE	0922449.6060W
THRESHOLD CROSSING HEIGHT (TCH)	00052.0
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0192
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	35.0
CRC REMAINDER	E56575B4
ADDITIONAL PATH POINT RECORD INFORMATION	
ICAO CODE	K3
LTP ORTHOMETRIC HEIGHT	+02643
FPAP ORTHOMETRIC HEIGHT	+02643

