

**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 ID</u> CFE	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 36	<u>ORIGINAL/AMENDMENT</u> 1A	<u>CITY</u> BUFFALO	<u>STATE</u> MN
<u>AIRPORT ELEVATION</u> 968	<u>TDZE</u> 968	<u>SUPERSEDED</u> RNAV (GPS) RWY 36	<u>DATED</u> 06/22/2017	<u>MAG VAR</u> 1E
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<u>EPOCH YEAR</u> 2010
			<u>CANCEL/SUSPEND</u>	

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>
DRAIL	IAF	HUBEV	NOPT	TF	FB	1.00	019.80	9.25	3000
MAYER	IAF	HUBEV	NOPT	TF	FB	1.00	059.72	6.25	3000
JONNA	IAF	HUBEV	NOPT	TF	FB	1.00	324.60	10.76	3000
HUBEV	IF/IAF	YABFE		TF	FB	1.00	359.78	6.10	2600
YABFE	FAF	RW36	MAP	TF	FO	0.30	359.74	5.04	
RW36	MAP	1368 MSL		CA			359.74		
1368 MSL		ZIKPO		DF	FB	1.00			
ZIKPO		SODIE		TF	FO	1.00	346.70	6.00	3400

MISSED APPROACH

MAP:

LNAV: RW36

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 3400 DIRECT ZIKPO AND ON TRACK 346.70 TO SODIE AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:

PROFILE:

- | | | | | | |
|--|--------------------|----------------|-----------------------|------------------------|-------|
| 1. PT | SIDE OF COURSE | OUTBOUND | FT WITHIN | MILES OF | (IAF) |
| 2. HOLD S HUBEV, RT, 359.78 INBOUND, 3000 FT. IN LIEU OF PT (IAF), MAX 6000. | | | | | |
| 3. FAC: 359.74 | FAF: YABFE | | DIST FAF TO MAP: 5.04 | DIST FAF TO THLD: 5.04 | |
| 4. MIN ALT: HUBEV 3000, YABFE 2600 | | | | | |
| 5. DIST TO THLD FROM OM: | MM: | IM: | 150 HAT: | GS ANT: | |
| 6. MIN GP INCPT: | GP ALT AT FAF: | | | OM: | MM: |
| 7. GP ANGLE: | 34:1: IS NOT CLEAR | 20:1: IS CLEAR | TCH: | | IM: |
| 8. MSA FROM: RW36 3500 | | | | | |

QUALITY
10
CHECKED

PBN REQUIREMENTS NOTE:

RNP APCH - GPS.

NOTES:

CHART NOTE: RWY 36 HELICOPTER VISIBILITY REDUCTION BELOW 3/4 SM NOT AUTHORIZED.
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT DRAIL ON V412 WESTBOUND.
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT MAYER ON V148 SOUTHWEST BOUND.

ADDITIONAL FLIGHT DATA:

YABFE TO RW36: 3.00/40
HOLD NW, RT, 117.00 INBOUND.
FAS OBST: 1191 AAO 450648N/0935051W.
CHART VDP AT 1.40 NM TO RW36.
CHART CIRCLING ICON.

MINIMUMS:

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

ALTERNATE: NA ☐ STANDARD - NA WHEN LOCAL WEATHER NOT AVAILABLE.

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
LNAV MDA	1460	1	492	1460	1	492	1460	1 3/8	492		NA				
CIRCLING	1460	1	492	1540	1	572	1580	1 1/2	612		NA				

CHANGES - REASONS

- PBN REQUIREMENTS CHANGED FROM "DME/DME RNP-0.3 NA" TO "RNP APCH - GPS" - IAW 8260.19J 8-6-8 (MEMO)
- ADJUSTED MISSED APPROACH CA ALTITUDE FROM "1280" TO "1368" - LNAV ONLY APPROACH AVAILABLE
- AMENDED MISSED APPROACH INSTRUCTIONS FROM "CLIMB TO 3400 DIRECT ZIKPO AND TRACK 346.70 TO SODIE AND HOLD" TO "CLIMB TO 3400 DIRECT ZIKPO AND ON TRACK 346.70 TO SODIE AND HOLD" - IAW 8260.19J 8-8-6
- ADDED "20:1 IS CLEAR" - IAW 8260.19J 8-6-79(G)(3)(A)
- DELETED CHART NOTE "CHART NOTE: CIRCLING RWY 18 NA AT NIGHT" - NO 20:1 PENETRATIONS
- DELETED LPV & LNAV/VNAV APPROACHES AND ALL ASSOCIATED DATA - DUE TO VGS PENETRATIONS AND FPT AIS VALIDATION CHECKLIST
- AMENDED FAS OBSTACLE FROM "1159 AAO 450554N/0935108W" TO "1191 AAO 450648N/0935051W" - IAW 8260.19J 8-6-11(C)(NOTE)
- AMENDED CHART VDP FROM "VDP AT 1.46 NM TO RWY 36" TO "VDP AT 1.40 NM TO RWY 36" - IAW 8260.19J 8-6-11(M)(2)
- ADDED VDA IN ADDITIONAL FLIGHT DATA "YABFE TO RW36: 3.00/40" - IAW 8260.19J 8-6-11(O)(1)
- ADDED "NA WHEN LOCAL WEATHER NOT AVAILABLE" TO ALTERNATE MINIMUMS - IAW 8260.19J 8-6-12(B)(4)
- AMENDED CIRCLING MINIMUMS FROM "CAT B MDA 1460/HAA 492" TO "CAT B MDA 1540/HAA 572", FROM "CAT C MDA 1540/572" TO "CAT C MDA 1580/HAA 612" - REVISED TARGETS EVALUATION



COORDINATED WITH:

A4A

ALPA

X

AOPA

X

APA

HAI

NBAA

X

OTHER:

MSP ATCT, AMGR, WESTERN FPT

FLIGHT CHECKED BY JAMES MICHAEL HAWLEY	Digitally signed by DAVID DANNER Dec 02, 2024	Digitally signed by CHRIS MENDENHALL Nov 25, 2024	OFFICE FIOG	DATE 03/15/2017	
DEVELOPED BY CHRISTOPHER MENDENHALL			OFFICE AJV-A421	DATE 11/25/2024	
APPROVED BY BEV L BORDY	Digitally signed by DAVID DANNER Dec 02, 2024		OFFICE AJV-A420	DATE	TITLE MANAGER



**FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD**

<u>AIRPORT ID</u> CFE	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 36	<u>AMDT NO.</u> 1A	<u>CITY</u> BUFFALO	<u>STATE</u> MN	<u>AIRPORT ELEVATION</u> 968	<u>FACILITY</u> RNAV
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PART A: OBSTRUCTION DATA SEGMENTS

INITIAL

FROM DRAIL **TO** HUBEV

RNP 1.00 DISTANCE 9.25 PAT MAP HAT HMAS

<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
AAO	445009.00N/0935412.00W	1237	215	8	4B	1000				AT763	3000
TERRAIN	445009.00N/0935412.00W	1036 (1000)								AS1500	2500

COMPUTATIONS

ALT KIAS KTAS HAA VKTW TR BA DTA COURSE CHANGE DVEB VEB OCS RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

INITIAL

FROM MAYER **TO** HUBEV

RNP 1.00 DISTANCE 6.25 PAT MAP HAT HMAS

<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
TOWER (27-001784)	445625.00N/0935544.00W	1310	500	50	5D	1000				AT690	3000
TERRAIN	445648.00N/0935912.00W	1023 (1000)								AS1500	2500

COMPUTATIONS

ALT KIAS KTAS HAA VKTW TR BA DTA COURSE CHANGE DVEB VEB OCS RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

QUALITY
10
CHECKED

INITIAL

FROM

JONNA

TO

HUBEV

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>			<u>HAT</u>	<u>HMAS</u>				
1.00	10.76										
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
AAO	444833.00N/0934315.00W	1280	215	8	4B	1000				AT720	3000
TERRAIN	445457.00N/0934657.00W	1076 (1100)								AS1500	2600

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

INTERMEDIATE

FROM

HUBEV (IF/IAF)

TO

YABFE

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>			<u>HAT</u>	<u>HMAS</u>				
1.00	6.10										
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
TOWER (27-001111)	450310.25N/0934950.06W	1427	250	50	4D	500				AT673	2600
TERRAIN	445915.00N/0935209.00W	1020 (1000)								AS1500	2500

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



FINAL: LNAV

FROM

YABFE

TO

RW36

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>		<u>HAT</u>		<u>HMAS</u>				
0.30	5.04		RW36		492						
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
AAO	450648.00N/0935051.00W	1191	215	8	4B	250					1460

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

HOLD-IN-LIEU OF PT

FROM

HUBEV

TO

P-5

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>		<u>HAT</u>		<u>HMAS</u>				
		P-5									
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
TOWER (27-001784)	445625.00N/0935544.00W	1310	500	50	5D	1000				AT690	3000
TERRAIN	445612.00N/0934527.00W	1082 (1100)								AS1500	2600

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



MISSSED APPROACH: LNAV

FROM

RW36

TO

SODIE

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>			<u>HAT</u>	<u>HMAS</u>				
0.30-1.00										1360	
<u>OBSTRUCTION</u>	<u>COORDINATES</u>	<u>ELEV MSL</u>	<u>HORZ</u>	<u>VERT</u>	<u>AC</u>	<u>ROC</u>	<u>OCS</u>	<u>CG</u>	<u>CGTA</u>	<u>ADJUSTMENTS</u>	<u>MIN ALT</u>
							ASC				3400
STACK (27-000477)	452245.00N/0935345.00W	1620	100	20	3C	1000					2700
TERRAIN	451315.00N/0935224.00W	1062 (1100)								AS1500	2600

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

CIRCLING

☐ ALL CATS

☒ CAT A

☒ CAT B

☒ CAT C

☐ CAT D

☐ CAT E

☐ NOT AUTHORIZED

OBSTRUCTION	COORDINATES	RADIUS	HAA	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
CATEGORY A											
TOWER (27-001586)	451007.85N/0935110.00W	1.30	492	1155	50	20	2C	300			1460
CATEGORY B											
AAO	451057.00N/0935215.00W	1.84	572	1224	215	8	4B	300			1540
CATEGORY C											
AAO	451115.00N/0935333.00W	2.89	612	1263	215	8	4B	300			1580

CIRCLING REMARKS:

MSA

CENTER

RW36

RADIUS

25

SECTOR	OBSTRUCTION	COORDINATES	BEARING	DISTANCE	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
360-360	TWR (27-000857)	452259.60N/0934230.90W	022	14.9	2454	20	3	1A	1000			3500

MSA REMARKS:

NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:

TAA NOT DEVELOPED PER FPT CHECKLIST.



PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH

ZMP ARTCC, MSP APP CON

<u>WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>WMSCR</u>	<u>ADJUSTMENTS</u>
AWOS-3PT	CFE	24	CFE	0	Y	0
<u>BACK-UP WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>WMSCR</u>	<u>ADJUSTMENTS</u>
AWOS-3	MGG	24	MGG	7.61	Y	26

WX REMARKS:

RASS PRESSURE PATTERNS THE SAME
KCFE 968, KMGG 1028
RA = 26.0.

<u>PRIMARY NAVAID</u>	<u>MONITOR POINT</u>	<u>HRS OPERATION</u>	<u>CAT</u>
<u>APPROACH AND RUNWAY LIGHTING SYSTEM</u>	<u>RUNWAY MARKINGS</u>	<u>RUNWAY VISUAL RANGE</u>	
RW18 - REIL (PCL), MIRL (PCL), PAPI-4L (PCL)	NPI-G		
RW36 - MIRL (PCL), REIL (PCL), PAPI-4L (PCL)	NPI-G		

<u>GLIDESLOPE ANGLE</u>	<u>ELEV RWY THRESHOLD</u>	<u>TCH</u>	<u>ELEV GS ANTENNA</u>	<u>DISTANCE FROM RWY</u>	<u>VGSI ANGLE</u>	<u>TCH</u>
					3.00	40.0

FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	X	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE
ON CENTERLINE	X	FT FROM CENTERLINE	

CRITICAL TEMPERATURES

<u>CRITICAL LOW</u>	<u>CRITICAL HIGH</u>	<u>ACT</u>	<u>APT ISA</u>
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CRITICAL TEMPERATURE REMARKS:

"VISUAL PORTION OF FINAL" PENETRATIONS

FINAL TYPE	NPA
34:1	
1071 TREE (27-046665) 450842.8700N/0935041.2100W (24.48)	1064 TREE (27-046012) 450843.1600N/0935038.3800W (18.42)
1024 TREE (27-046670) 450855.5800N/0935035.5700W (15.49)	1032 TREE (27-061331) 450852.8300N/0935030.3600W (15.44)
1026 TREE (27-047970) 450854.5400N/0935031.9700W (14.49)	986 TREE (27-043442) 450906.3400N/0935033.5700W (9.6)
1001 TREE (27-047151) 450900.0600N/0935038.4300W (5.76)	986 BUILDING (27-025967) 450905.0100N/0935031.7900W (5.68)
992 TRAVERSE_WAY (27-049157) 450902.7900N/0935040.7400W (4.83)	1047 TREE (27-043434) 450843.9400N/0935033.0100W (3.89)



<u>AIRPORT ID</u> CFE	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 36	<u>AMDT NO.</u> 1A	<u>CITY</u> BUFFALO	<u>STATE</u> MN	<u>AIRPORT ELEVATION</u> 968	<u>FACILITY</u> RNAV
1056 TREE (27-061430) 450840.5800N/0935039.9700W (2.69)			1022 TREE (27-046672) 450851.6500N/0935042.4900W (1.6)			
984 TREE (27-047946) 450904.2800N/0935036.2400W (1.39)			1031 TREE (27-043431) 450848.4200N/0935033.3400W (1.23)			
1023 TREE (27-046673) 450850.8600N/0935033.5900W (0.49)						
<u>PENETRATIONS REMARKS:</u>						

HELICOPTER 'VISUAL PORTION OF FINAL' PENETRATIONS

and/or

5280-FT "PROCEED VFR" SEGMENT LEVEL SURFACE AREA PENETRATIONS

<u>PENETRATIONS REMARKS:</u>

PART C: GENERAL REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

100 FT VEGETATION USED PER FPT.

BACKUP ALTIMETER SETTING CONTINGENCY NOTE:
WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE MGG ALTIMETER SETTING AND INCREASE ALL MDAS 40 FEET AND CIRCLING VISIBILITY CAT C 1/4 SM.

VDP NA WHEN USING MGG ALTIMETER SETTING.

NO ADDITIONAL AIRSPACE REQUIRED.

ORDER 8260.3, CHAPTER 2, NEW CIRCLING CRITERIA APPLIED.

PART D: AIRSPACE

DOCKET #

ALL DISTANCES TO 1/100NM; ELEVATION TO NEAREST 100 FEET; COORDINATES TO 1/100 SECOND; DEG TO 1/100 DEGREE

DISTANCE FROM	THLD	TO 1000FT POINT	3.04
WIDTH OF	FINAL	SEGMENT AT 1000FT POINT	1.20
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1000FT POINT	000.74
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1000FT POINT	1000
DISTANCE FROM	THLD	TO 1500FT POINT	4.84
WIDTH OF	INTERMEDIATE	SEGMENT AT 1500FT POINT	1.95
TRUE COURSE OF	INTERMEDIATE	SEGMENT CONTAINING 1500FT POINT	000.74
HIGH TERRAIN IN	INTERMEDIATE	SEGMENT CONTAINING 1500FT POINT	1000

THRESHOLD COORDINATES (IF STR-IN) 450915.99N/0935036.20W

ARP COORDINATES 450931.80N/0935035.90W

RUNWAY APCH END AND DIST FURTHEST FROM ARP RUNWAY 36 DISTANCE 0.26 NM

FAF COORDINATES 450413.40N/0935041.72W

FIX NAME COORDINATES

REMARKS



<u>AIRPORT ID</u>	<u>PROCEDURE NAME</u>	<u>AMDT NO.</u>	<u>CITY</u>	<u>STATE</u>	<u>AIRPORT ELEVATION</u>	<u>FACILITY</u>
CFE	RNAV (GPS) RWY 36	1A	BUFFALO	MN	968	RNAV
PART E: PREPARED BY						
<u>NAME</u>			<u>OFFICE</u>	<u>DATE</u>	<u>TITLE</u>	
CHRISTOPHER MENDENHALL			AJV-A421	11/25/2024	AERONAUTICAL INFORMATION SPECIALIST	

