

**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> BRAINERD LAKES RGNL	<u>AIRPORT ID</u> KBRD	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 34	<u>ORIGINAL/AMENDMENT</u> ORIG-B	<u>CITY</u> BRAINERD	<u>STATE</u> MN	
<u>AIRPORT ELEVATION</u> 1232	<u>TDZE</u> 1232	<u>SUPERSEDED</u> RNAV (GPS) RWY 34	<u>ORIGINAL/AMENDMENT</u> ORIG-A	<u>DATED</u> 03/29/2018	<u>MAG VAR</u> 3E	<u>EPOCH YEAR</u> 1995
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<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>
COMIN	IAF	AFUNI	NOPT	TF	FB	1.00	069.64	5.00	3000
DRAWG	IAF	AFUNI	NOPT	TF	FB	1.00	249.80	5.00	3000
AFUNI	IF/IAF	NUYBI		TF	FB	1.00	339.72	6.17	3000
NUYBI	FAF	RW34	MAP	TF	FO	0.30	339.69	5.33	
RW34	MAP	1432 MSL		CA			339.69		
1432 MSL		KRINK		DF	FB	1.00			
KRINK		CUCAC		TF	FO	1.00	293.54	12.46	3300

MISSED APPROACH

MAP:

LPV: DA
LNAV/VNAV: DA
LNAV: RW34

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 3300 DIRECT KRINK AND ON TRACK 293.54 TO CUCAC AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:



PROFILE:

1. PT

SIDE OF COURSE

OUTBOUND

FT WITHIN

MILES OF (IAF)

2. HOLD S AFUNI, RT, 339.72 INBOUND, 3000 FT. IN LIEU OF PT (IAF), MAX 6000.

3. FAC: 339.69

FAF: NUYBI

DIST FAF TO MAP: 5.33

DIST FAF TO THLD: 5.33

4. MIN ALT: AFUNI 3000, NUYBI 3000

5. DIST TO THLD FROM OM:

MM:

IM:

150 HAT:

200 HAT: 0.48

GS ANT:

6. MIN GP INCPT: 3000

GP ALT AT FAF : NUYBI

OM:

MM:

IM:

7. GP ANGLE: 3.00

34:1: IS CLEAR

20:1: IS CLEAR

TCH: 46.4

8. MSA FROM: RW34 3100

PBN REQUIREMENTS NOTE:

RNP APCH.

NOTES:

CHART NOTE: BARO-VNAV AND VDP NA WHEN USING AITKIN ALTIMETER SETTING.
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -17°C OR ABOVE 54°C.
CHART NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE AITKIN ALTIMETER SETTING: INCREASE LPV DA TO 1484, LNAV/VNAV DA TO 1636 AND LNAV/VNAV VISIBILITY TO 1/4 SM ALL CATS: INCREASE ALL MDAS 60 FEET AND LNAV CATS C AND D VISIBILITY 1/4 SM.
CHART NOTE: FOR INOPERATIVE ALS WHEN USING AITKIN ALTIMETER SETTING, INCREASE LNAV CAT D VISIBILITY TO 1 1/2 SM.

ADDITIONAL FLIGHT DATA:

CHART: R-4301.
CHART CIRCLING ICON
CHART VDP AT 1.01 NM TO RW34*
*LNAV ONLY
WAAS CHANNEL #70711
REFERENCE PATH ID: W34A
HOLD NW, RT, 124.75 INBOUND
LTP HAE: 348.2 M

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
LPV DA	1432	1/2	200	1432	1/2	200	1432	1/2	200	1432	1/2	200			
LNAV/VNAV DA	1584	3/4	352	1584	3/4	352	1584	3/4	352	1584	3/4	352			
LNAV MDA	1620	1/2	388	1620	1/2	388	1620	5/8	388	1620	1	388			
CIRCLING	1760	1	528	1760	1	528	1760	1 1/2	528	1860	2	628			



FAS DATA BLOCK INFORMATION

<u>DATA FIELD</u>	<u>DATA</u>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KBRD
RUNWAY	RW34
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W34A
LTP/FTP LATITUDE	462355.9115N
LTP/FTP LONGITUDE	0940739.4970W
LTP/FTP ELLIPSOIDAL HEIGHT	+03482
FPAP LATITUDE	462520.9300N
FPAP LONGITUDE	0940817.8835W
THRESHOLD CROSSING HEIGHT (TCH)	00046.4
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0584
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	35.0
CRC REMAINDER	9186300E

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K3
LTP ORTHOMETRIC HEIGHT	+03756
FPAP ORTHOMETRIC HEIGHT	+03756



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

AIRPORT	AIRPORT ID	PROCEDURE NAME	AMDT NO.	CITY	STATE	AIRPORT ELEVATION	FACILITY
BRAINERD LAKES RGNL	KBRD	RNAV (GPS) RWY 34	ORIG-B	BRAINERD	MN	1232	RNAV

PART A: OBSTRUCTION DATA SEGMENTS

INITIAL

FROM
COMIN

TO
AFUNI

<u>RNP</u>	<u>DISTANCE</u> 5.00	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>					
<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>
3.AAO	461427.00N/0940403.00W		1611	164	98	4E	1000				AT389	3000
4.TERRAIN	461427.00N/0940403.00W		1411 (1400)								AS1500	2900

COMPUTATIONS

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

SEGMENT REMARKS:

INITIAL

FROM
DRAWG

TO
AFUNI

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>				
	5.00										
<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>
5.AAO	461333.00N/0940227.00W	1611	164	98	4E	1000				AT389	3000
6.TERRAIN	461333.00N/0940227.00W	1411 (1400)								AS1500	2900

COMPUTATIONS

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

SEGMENT REMARKS:



INTERMEDIATE

FROM

AFUNI (IF/IAF)

TO

NUYBI

RNP	DISTANCE	PAT	MAP	HAT			HMAS					
	6.17											
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
3.AAO	461427.00N/0940403.00W		1611	164	98	4E	500				DG791 AC98	3000
4.TERRAIN	461427.00N/0940403.00W		1411 (1400)								AS1500	2900

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

FINAL: LPV

FROM

NUYBI

TO

RW34

RNP	DISTANCE	PAT	MAP	HAT			HMAS					
	5.32		DA	200								
OBSTRUCTION	COORDINATES		ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
								ASC				1432

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



FINAL: LNAV/VNAV

FROM

NUYBI

TO

RW34

<u>RNP</u>	<u>DISTANCE</u> 5.32	<u>PAT</u>	<u>MAP</u> DA	<u>HAT</u> 352			<u>HMAS</u>					
<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>
7.TREE (KBRDT003)	462339.41N/0940720.60W		1314	50	20	2C		PDA			AC20	1584

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

FINAL: LNAV

FROM

NUYBI

TO

RW34

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>	<u>HAT</u>			<u>HMAS</u>					
	5.33		RW34		388							
<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>
8.TREE (27-043833)	462139.95N/0940654.57W		1364	20	3	1A	250					1620

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



TO
P-5

HMAS

COMPUTATIONS

RF CENTER FIX/DISTANCE**SEGMENT REMARKS:**

MISSED APPROACH : LPV

TO
CUCAC

HMAS
1266

COMPUTATIONS

RF CENTER FIX/DISTANCE**SEGMENT REMARKS:**

HMAS
1423

RF CENTER FIX/DISTANCE

HMAS
1514

RF CENTER FIX/DISTANCE

QUALITY
30
CHECKED

AIRPORT

BRAINERD LAKES RGNL

AIRPORT ID

KBRD

PROCEDURE NAME

RNAV (GPS) RWY 34

AMDT NO.

ORIG-B

CITY

BRAINERD

STATE

MN

AIRPORT ELEVATION

1232

FACILITY

RNAV

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											
13.TREE (KBRD0007)	462324.64N/0941031.29W	1.31	528	1396	20	3	1A	300		XP64	1760
CATEGORY B											
13.TREE (KBRD0007)	462324.64N/0941031.29W	1.85	528	1396	50	20	2C	300		XP64	1760
CATEGORY C											
14.TOWER (27-002127)	462124.00N/0941056.00W	2.91	528	1410	50	20	2C	300		XP44	1760
CATEGORY D											
15.AAO	462548.00N/0940236.00W	3.80	628	1558	50	20	2C	300			1860

CIRCLING REMARKS:

NEW OBS
NEW OBS
NEW OBS

MSA

CENTER

RW34

RADIUS

25

SECTOR	OBSTRUCTION	COORDINATES	BEARING	DISTANCE	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
360-360	TOWER (27-001059)	462521.00N/0942742.00W	273	13.9	2050	500	50	5D	1000			3100

MSA REMARKS:

NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:

QUALITY

30

CHECKED

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Electronic Version

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PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH
ZMP ARTCC, PNM FSS

<u>WX SERVICE</u> ASOS	<u>LOCATION</u> KBRD	<u>HRS OPERATION</u> FULL-TIME	<u>ALTIMETER SOURCE</u> KBRD	<u>DISTANCE</u> 0	<u>SERVICE-A</u> Y	<u>ADJUSTMENTS</u> 0
<u>BACK-UP WX SERVICE</u> AWOS	<u>LOCATION</u> KAIT	<u>HRS OPERATION</u> FULL-TIME	<u>ALTIMETER SOURCE</u> KAIT	<u>DISTANCE</u> 20.79	<u>SERVICE-A</u> Y	<u>ADJUSTMENTS</u> 60

WX REMARKS:
RASS PRESSURE PATTERNS THE SAME KBRD 1232.2, KAIT 1205.0 RA = 60.

<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>
RW05 - HIRL (PCL), REIL (PCL), VASI-4L		PIR-G	
RW16 - HIRL (PCL), REIL (PCL), PAPI-4L		PIR-G	
RW23 - MALSR (PCL), HIRL (PCL), PAPI-4L		PIR-G	
RW34 - MALSR (PCL), HIRL (PCL), PAPI-4R		PIR-G	

<u>GLIDESLOPE ANGLE</u> 3.00	<u>ELEV RWY THRESHOLD</u> 1232.2	<u>TCH</u> 46.4	<u>ELEV GS ANTENNA</u>	<u>DISTANCE FROM RWY</u>	<u>VGSI ANGLE</u> 3.00	<u>TCH</u> 46.4
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FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	<input checked="" type="checkbox"/>	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE
ON CENTERLINE	<input checked="" type="checkbox"/>	FT FROM CENTERLINE	

CRITICAL TEMPERATURES

<u>CRITICAL LOW</u> -17C	<u>CRITICAL HIGH</u> +54C	<u>ACT</u> -17C	<u>APT ISA</u> +12.56C
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CRITICAL TEMPERATURE REMARKS:
AVERAGE COLD TEMPERATURE DERIVED FROM STANDARD -30C ISA DEVIATION. CRITICAL LOW TEMPERATURE BASED ON ACT. DESCENT RATE (FPM): STANDARD TEMP 985 HIGH TEMP 1282.

"VISUAL PORTION OF FINAL" PENETRATIONS

HELICOPTER 'VISUAL PORTION OF FINAL' PENETRATIONS



and/or

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

PART C: GENERAL REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

BACK-UP ALTIMETER MINS PUBLISHED AS NOTE.

LPV SLOPE: 34:1.
LNAV/VNAV: OUTER SLOPE 34:1, INNER SLOPE 23.4:1.

ALL INTERMEDIATES HAVE SAME CONTROLLING OBSTACLE.

ORDER 8260.3, VOLUME 1, CHAPTER 2, NEW CIRCLING CRITERIA APPLIED.



AIRPORT
BRainerd LAKES RGnL

AIRPORT ID
KBRD

PROCEDURE NAME
RNAV (GPS) RWY 34

AMDT NO.
ORIG-B

CITY
BRAINERD

STATE
MN

AIRPORT ELEVATION
1232

FACILITY
RNAV

PART E: PREPARED BY

NAME
TOMMY BYRNS

OFFICE
AJV-A423

DATE
07/11/2019

TITLE
AERONAUTICAL INFORMATION SPECIALIST

