

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> STC	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 31	<u>ORIGINAL/AMENDMENT</u> 2	<u>CITY</u> ST CLOUD	<u>STATE</u> MN
<u>AIRPORT ELEVATION</u> 1031	<u>TDZE</u> 1020	<u>SUPERSEDED</u> RNAV (GPS) RWY 31	<u>DATED</u> 08/10/2023	<u>EPOCH YEAR</u> 1995
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u> 21 MARCH 2024	<u>REQUIRED EFFECTIVE DATE</u> 03/21/2024	<u>CANCEL/SUSPEND</u>

TERMINAL ROUTES

FROM	FIX TYPE	TO	FIX TYPE	LEG TYPE	FO/FB	RNP	COURSE	DISTANCE	ALTITUDE
PLUGS		ROCOK		TF	FB	1.00	269.32	10.25	3000
TLBAT		LOVVI		TF	FB	1.00	126.53	21.30	3000
DAYLE		ROCOK		TF	FB	1.00	144.52	11.33	4000
LOVVI	IAF	ZUXAL	NOPT	TF	FB	1.00	043.08	5.00	3000
ROCOK	IAF	ZUXAL	NOPT	TF	FB	1.00	223.20	5.00	3000
ZUXAL	IF/IAF	POGOY		TF	FB	1.00	313.14	6.00	2700
POGOY	FAF	RW31	MAP	TF	FO	0.30	313.07	5.13	
RW31	MAP	1220 MSL		CA			313.07		
1220 MSL		WELOK		DF	FO	1.00			3000

MISSED APPROACH

MAP:

LPV: DA
LNAV/VNAV: DA
LNAV: RW31

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 3000 DIRECT WELOK AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:

PROFILE:

1. PT

SIDE OF COURSE

OUTBOUND

FT WITHIN

MILES OF (IAF)
2. HOLD SE ZUXAL, LT, 321.00 INBOUND, 3000 FT. IN LIEU OF PT (IAF), MAX 6000.
3. FAC: 313.07

FAF: POGOY

DIST FAF TO MAP: 5.13

DIST FAF TO THLD: 5.13
4. MIN ALT: ZUXAL 3000, POGOY 2700
5. DIST TO THLD FROM OM:

MM:

IM:

150 HAT:

200 HAT: 0.48

GS ANT:
6. MIN GP INCPT: 2700

GP ALT AT PFAF: POGOY 2700

OM:

MM:

IM:
7. GP ANGLE: 3.00

34:1: IS CLEAR

20:1: IS CLEAR

TCH: 50.0
8. MSA FROM: RW31 3500



PBN REQUIREMENTS NOTE:

RNP APCH - GPS.

NOTES:

CHART NOTE: BARO-VNAV AND VDP NA WHEN USING LITTLE FALLS ALTIMETER SETTING.

CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -21°C OR ABOVE 54°C.

CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT PLUGS ON T383 SOUTHBOUND.

CHART NOTE: FOR INOPERATIVE ALS WHEN USING LITTLE FALLS ALTIMETER SETTING, INCREASE LPV ALL CATS VISIBILITY TO 7/8 SM AND LNAV/VNAV ALL CATS VISIBILITY TO 1 3/8 SM AND LNAV CATS C AND D VISIBILITY TO 1 3/8 SM.

CHART NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE LITTLE FALLS ALTIMETER SETTING, INCREASE LPV DA TO 1296 FEET, INCREASE LNAV/VNAV DA TO 1503 FEET AND ALL VISIBILITIES 1/4 SM; INCREASE ALL MDAS 80 FEET AND LNAV VISIBILITY CAT C AND D 1/4 SM, AND CIRCLING VISIBILITY CAT C AND D 1/4 SM.

CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT DAYLE ON V510 AND T330 NORTHWEST BOUND.

CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT TLBAT ON V2 NORTHWEST BOUND.

CHART NOTE: FOR INOPERATIVE ALS, INCREASE LNAV/VNAV VISIBILITY ALL CATS TO 1 1/8 SM.

CHART SPEED ICON IN PLANVIEW AT LOVVI: MAX 210 KIAS.

CHART SPEED ICON IN PLANVIEW AT ROCOK: MAX 210 KIAS.

ADDITIONAL FLIGHT DATA:

HOLD NW, RT, 132.86 INBOUND.

FAS OBST: 1204 AAO 452930N/0935739W.

CHART VDP AT 1.23 NM TO RW31.

WAAS CHANNEL # 61213

REFERENCE PATH ID: W31A

LTP HAE: 282.6 M

MINIMUMS:**TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT****ALTERNATE:** NA ☐ STANDARD; STANDARD - CAT D 900-2 3/4, NA WHEN LOCAL WEATHER NOT AVAILABLE.

<u>CATEGORY:</u>	A			B			C			D			E		
<u>FINAL TYPE</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>	<u>DA/MDA</u>	<u>VIS</u>	<u>HAT/HAA</u>
LPV DA	1220	1/2	200	1220	1/2	200	1220	1/2	200	1220	1/2	200			
LNAV/VNAV DA	1427	3/4	407	1427	3/4	407	1427	3/4	407	1427	3/4	407			
LNAV MDA	1460	1/2	440	1460	1/2	440	1460	3/4	440	1460	3/4	440			
CIRCLING	1500	1	469	1500	1	469	1620	1 1/2	589	1860	2 3/4	829			



CHANGES - REASONS

1. TERMINAL ROUTES: REMOVED "DWN VORTAC TO LOVVI (TF) (FB) (RNP 2.00) 050.27 / 26.41 3000 " - DWN VOR MON..
2. TERMINAL ROUTES: UPDATED PLUGS TO ROCOK COURSE AND DISTANCE FROM "269.64 / 10.31" TO "269.32/10.25" AND RNP FROM "2.0" TO "1.0" - PFAF LOCATION ADJUSTED FOR 3.00 VDA.
3. TERMINAL ROUTES: UPDATED TLBAT TO LOVVI COURSE AND DISTANCE FROM "126.51 / 21.24" TO "126.53/21.30" AND RNP FROM "2.0" TO "1.0" - PFAF LOCATION ADJUSTED FOR 3.00 VDA.
4. TERMINAL ROUTES: UPDATED DAYLE TO ROCOK COURSE AND DISTANCE FROM "144.60 / 11.25" TO "114.52/11.33" AND RNP FROM "2.0" TO "1.0" - PFAF LOCATION ADJUSTED FOR 3.00 VDA.
5. TERMINAL ROUTES: UPDATED LOVVI TO ZUXAL COURSE FROM "043.77" TO "043.80" - PFAF LOCATION ADJUSTED 413FT SOUTHEAST FOR 3.00 VDA.
6. TERMINAL ROUTES: UPDATED ROCOK TO ZUXAL COURSE FROM "222.25" TO "223.20" - PFAF LOCATION ADJUSTED 413FT SOUTHEAST FOR 3.00 VDA.
7. TERMINAL ROUTES: UPDATED ZUXAL TO POGOY DISTANCE FROM "6.10" TO "6.00" - PFAF LOCATION ADJUSTED 413FT SOUTHEAST FOR 3.00 VDA.
8. TERMINAL ROUTES: UPDATED POGOY TO RW31 DISTANCE FROM "5.03" TO "5.13" - PFAF LOCATION ADJUSTED 413FT SOUTHEAST FOR 3.00 VDA.
9. PROFILE LINE 2: ADD "MAX 6000" - IAW 8260.19 8-6-7B.
10. PROFILE LINE 3: UPDATED DIST FAF TO MAP/THLD FROM "5.03" TO "5.13" – PFAF LOCATION ADJUSTED FOR 3.00 VDA.
11. PROFILE LINE 5: ADDED 200 HAT: 0.48 - IAW 8260.19I, PARA 8-6-7E(3).
12. PROFILE LINE 7: UPDATED TCH FROM "59.9" TO "50.0" AND ADDED 20:1 IS CLEAR - NEW OBSTACLE EVALUATION RESULTS/IAW 8260.19I 8-6-7G(2) AND (3).
13. NOTES: REMOVED "CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVAL ON DWN VORTAC AIRWAY RADIALS 078 CW 109" - DWN VOR MON.
14. NOTES: REMOVED "CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET})" - CHANGED TCH TO MATCH VGSI.
15. NOTES: UPDATED "FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -17C OR ABOVE 46C" TO "FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -21C OR ABOVE 54C" - 5 YEAR HISTORICAL DATA USED.
16. NOTES: UPDATED " WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE LITTLE FALLS ALTIMETER SETTING: INCREASE LPV DA TO 1296 FEET, LNAV/VNAV DA TO 1455 FEET AND VISIBILITY LNAV/VNAV 1/4 SM ALL CATS; INCREASE ALL MDA 80 FEET AND VISIBILITY LNAV CAT C AND D AND CIRCLING CAT C AND D 1/4 SM" TO "WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE LITTLE FALLS ALTIMETER SETTING, INCREASE LPV DA TO 1296 FEET; LNAV/VNAV DA TO 1503 FEET AND ALL VISIBILITIES 1/4 SM; INCREASE ALL MDAS 80 FEET AND LNAV VISIBILITY CAT C AND D 1/4 SM, AND CIRCLING VISIBILITY CAT C AND D 1/4 SM" - UPDATED VISIBILITY EVALUATION.
17. NOTES: UPDATED REMOTE ALTIMETER NOTES FROM "FOR INOP ALS WHEN USING LITTLE FALLS ALTIMETER SETTING, INCREAS LPV ALL CATS VISIBILITY TO 7/8 SM AND LNAV CAT C/D VISIBILITY TO 1 3/8 SM" TO "FOR INOPERATIVE ALS WHEN USING LITTLE FALLS ALTIMETER SETTING, INCREASE LPV ALL CATS VISIBILITY TO 7/8 SM AND LNAV/VNAV ALL CATS VISIBILITY TO 1 3/8 SM AND LNAV CATS C AND D VISIBILITY TO 1 3/8 SM" - UPDATED VISIBILITY EVALUATION AND IAW 8260.3 TABLE 3-3-1.
18. CHART NOTES: ADDED "CHART SPEED ICON IN PLANVIEW AT LOVVI: MAX 210 KIAS", AND "CHART SPEED ICON IN PLANVIEW AT ROCOK: MAX 210 KIAS" – PER FPT TO MEET LEG LENGTH REQUIREMENTS AND AVOID FIX MOVEMENTS.
19. CHART NOTES: SEPARATED "CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT TLBAT ON V2 NORTHWEST BOUND AND ARRIVALS AT DAYLE ON V510 AND T330 NORTHWEST BOUND" - SEPARATED FOR CHARTING.
20. CHART NTOES: ADDED "CHART NOTE: FOR INOPERATIVE ALS, INCREASE LNAV/VNAV VISIBILITY ALL CATS TO 1 1/8 SM" - IAW 8260.19I 8-6-9.
21. ADDITIONAL FLIGHT DATA: UPDATED FAS OBSTACLE FROM "1200 AAO 452944N/0935808W" TO "1204 AAO 452930N/0935739W" - NEW OBSTACLE EVALUATION.
22. ADDITIONAL FLIGHT DATA: REMOVED "DISTANCE TO THLD FROM 200 HAT: 0.45 NM" - PLACED ON PROFILE LINE 5
23. MINIMUMS: UPDATED LNAV/VNAV FROM "1379 DA" TO "1427 DA" - NEW CONTROLLING OBSTACLE.
24. FAS DATA BLOCK: CRC REMAINDER CHANGED FROM "0A24B1C6" TO "617E65D8" - THRESHOLD CROSSING HEIGHT (TCH) UPDATED FROM "00059.9" TO "00050.0" AND FPAP LAT/LONG FROM "453328.5505N/0940429.3580W" TO "453328.5440N/0940429.3670W".

COORDINATED WITH:

A4A

☒

ALPA

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AOPA

☒

APA

☐

HAI

☐

NBAA

☒

OTHER:

ZMP, AMGR

FLIGHT CHECKED BY

PENDING

Digitally signed by

DAVID DANNER

Jan 04, 2024

OFFICE

DATE

DEVELOPED BY

DAVID DANNER (MATTHEW W.TOWNSEND)

Digitally signed by

DAVID DANNER

Jan 04, 2024

OFFICE

AJV-A421

DATE

09/20/2023

APPROVED BY

DAVID DANNER

Digitally signed by

DAVID DANNER

Jan 04, 2024

OFFICE

AJV-A421

DATE

03/21/2024

TITLE

MANAGER



AIRPORT ID
STC

PROCEDURE NAME
RNAV (GPS) RWY 31

ORIGINAL/AMENDMENT
2

CITY
ST CLOUD

STATE
MN

FAS DATA BLOCK INFORMATION

<u>DATA FIELD</u>	<u>DATA</u>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KSTC
RUNWAY	RW31
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W31A
LTP/FTP LATITUDE	453224.4685N
LTP/FTP LONGITUDE	0940301.2880W
LTP/FTP ELLIPSOIDAL HEIGHT	+02826
FPAP LATITUDE	453328.5440N
FPAP LONGITUDE	0940429.3670W
THRESHOLD CROSSING HEIGHT (TCH)	00050.0
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0616
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	35.0

CRC REMAINDER	617E65D8
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ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K3
LTP ORTHOMETRIC HEIGHT	+03099
FPAP ORTHOMETRIC HEIGHT	+03099

