

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SUPERSEDED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>MAG VAR</u> 3E
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> 03/21/2024	<u>EPOCH YEAR</u> 1995
			<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: MM: IM:
6. MIN GP INCPT: 2700 GP ALT AT PFAF: POGOY 2700
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.

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	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

☒

AOPA

☒

APA

☐

HAI

☐

NBAA

☒

OTHER:

ZMP, AMGR

FLIGHT CHECKED BY

PENDING

Digitally signed by

DAVID DANNER

Jan 04, 2024

OFFICE

AJV-A421

DATE

09/20/2023

DEVELOPED BY

DAVID DANNER (MATTHEW W.TOWNSEND)

Digitally signed by

DAVID DANNER

Jan 04, 2024

OFFICE

AJV-A421

DATE

03/21/2024

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



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

<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>
STC	RNAV (GPS) RWY 31	2	ST CLOUD	MN	1031	RNAV

PART A: OBSTRUCTION DATA SEGMENTS

FEEDER

FROM TO
PLUGS ROCOK

RNP DISTANCE PAT MAP HAT HMAS
1.00 10.25

<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 (27-001767)	452535.03N/0933456.02W	1279	500	50	5D	1000				AT721	3000
TERRAIN	452530.00N/0933248.00W	1076 (1100)								AS1500	2600

COMPUTATIONS

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

SEGMENT REMARKS:

FEEDER

FROM TO
TLBAT LOVVI

RNP DISTANCE PAT MAP HAT HMAS
1.00 21.30

<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 (27-000334)	453100.00N/0941353.00W	1645	250	50	4D	1000				AT355	3000
TERRAIN	453206.00N/0942036.00W	1197 (1200)								AS1500	2700

COMPUTATIONS

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

SEGMENT REMARKS:



FEEDER

FROM

DAYLE

TO

ROCOK

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>			<u>HAT</u>	<u>HMAS</u>				
1.00	11.33										
<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 (27-020550)	453431.70N/0935525.06W	1418	250	50	4D	1000				AT1582	4000
TERRAIN	453509.00N/0935548.02W	1125 (1100)								AS1500	2600

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

INITIAL

FROM

LOVVI

TO

ZUXAL

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>			<u>HAT</u>	<u>HMAS</u>				
1.00	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>
STACK (27-000903)	452247.00N/0935354.00W	1620	100	20	3C	1000				AT380	3000
TERRAIN	452042.00N/0935521.00W	1066 (1100)								AS1500	2600

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



INITIAL

FROM

ROCK

TO

ZUXAL

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>			<u>HAT</u>	<u>HMAS</u>				
1.00	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>
TOWER (27-001054)	452544.50N/0935000.00W	1446	250	50	4D	1000				AT554	3000
TERRAIN	452548.00N/0935018.00W	1082 (1100)								AS1500	2600

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

INTERMEDIATE

FROM

ZUXAL

TO

POGOY

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>			<u>HAT</u>	<u>HMAS</u>				
1.00	6.00										
<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>
STACK (27-000477)	452245.00N/0935345.00W	1620	100	20	3C	500				SA-1 AT581	2700
TERRAIN	452548.00N/0935018.00W	1082 (1100)								AS1500	2600

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



FINAL: LPV

FROM

POGOY

TO

RW31

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>				<u>HAT</u>	<u>HMAS</u>			
0.30	5.13		DA				200				
<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				1220

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

FINAL: LNAV/VNAV

FROM

POGOY

TO

RW31

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>				<u>HAT</u>	<u>HMAS</u>			
0.30	5.13		DA				407				
<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>
TREE	453200.00N/0940124.00W	1134	215	8	4B		23.88:1			AC8	1427

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

FINAL: LNAV

FROM

POGOY

TO

RW31

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>				<u>HAT</u>	<u>HMAS</u>			
0.30	5.13		RW31				440				
<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	452930.00N/0935739.00W	1204	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

ZUXAL

TO

P-5

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u> P-5	<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>
TOWER (27-000857)	452259.60N/0934230.90W	2454	20	3	1A	1000				SA-713 AT259	3000
TERRAIN	452548.00N/0935018.00W	1082 (1100)								AS1500	2600

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

MISSED APPROACH: LPV

FROM

DA

TO

WELOK

<u>RNP</u> 0.30-1.00	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>				<u>HAT</u>	<u>HMAS</u> 1053			
<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				3000
TOWER (27-000135)	453548.00N/0940925.00W	1560	250	50	4D	1000					2600
TERRAIN	454054.00N/0941509.00W	1197 (1200)								AS1500	2700

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



MISSED APPROACH: LNAV/VNAV

FROM

DA

TO

WELOK

<u>RNP</u> 0.30-1.00	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>		<u>HAT</u>		<u>HMAS</u> 1266				
<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				3000
TOWER (27-000135)	453548.00N/0940925.00W	1560	250	50	4D	1000					2600
TERRAIN	454054.00N/0941509.00W	1197 (1200)								AS1500	2700

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:

MISSED APPROACH: LNAV

FROM

RW31

TO

WELOK

<u>RNP</u> 0.30-1.00	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>		<u>HAT</u>	<u>HMAS</u> 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				3000
TOWER (27-000135)	453548.00N/0940925.00W	1560	250	50	4D	1000					2600
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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											
TRANSMISSION_LINE (27-024745)	453320.21N/0940142.44W	1.30	469	1186	20	3	1A	300			1500
CATEGORY B											
TRANSMISSION_LINE (27-024745)	453320.21N/0940142.44W	1.84	469	1186	20	3	1A	300			1500
CATEGORY C											
TOWER (27-001019)	453509.00N/0940340.00W	2.90	589	1316	20	3	1A	300			1620
CATEGORY D											
TOWER (27-000250)	453336.00N/0940823.00W	3.79	829	1508	250	50	4D	300		AC50	1860

CIRCLING REMARKS:

MSA

CENTER	RADIUS
RW31	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	120	17.2	2454	20	3	1A	1000			3500

MSA REMARKS:

NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:



PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH

ZMP ARTCC, STC TOWER

<u>WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>SERVICE-A</u>	<u>ADJUSTMENTS</u>
ASOS	STC	24	STC	0	Y	0
<u>BACK-UP WX SERVICE</u>	<u>LOCATION</u>	<u>HRS OPERATION</u>	<u>ALTIMETER SOURCE</u>	<u>DISTANCE</u>	<u>SERVICE-A</u>	<u>ADJUSTMENTS</u>
AWOS-3	LXL	24	LXL	27.05	Y	76

WX REMARKS:

RASS PRESSURE PATTERNS THE SAME
KSTC 1013, KLXL 1123
RA = 75.1.

<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 - MIRL (PCL), PAPI-4R	BSC-G		
RW23 - MIRL (PCL), PAPI-4L	BSC-G		
RW13 - MALSR (PCL), HIRL (PCL), PAPI-4R (PCL)	PIR-F		
RW31 - MALSR (PCL), HIRL (PCL), PAPI-4L (PCL)	PIR-F		

<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	1016.7	50.0			3.00	50.0

FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	<input checked="" type="checkbox"/>	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE	500
ON CENTERLINE	<input checked="" type="checkbox"/>	FT FROM CENTERLINE		

CRITICAL TEMPERATURES

<u>CRITICAL LOW</u>	<u>CRITICAL HIGH</u>	<u>ACT</u>	<u>APT ISA</u>
-21C	+54C	-30C	+12.96C

CRITICAL TEMPERATURE REMARKS:

AVERAGE COLD TEMPERATURE DERIVED FROM 5-YEAR HISTORY (2018-2022).
CRITICAL LOW TEMPERATURE BASED ON EFFECTIVE GPA.
DESCENT RATE (FPM): STANDARD TEMP 968 HIGH TEMP 1278.



"VISUAL PORTION OF FINAL" PENETRATIONS

HELICOPTER 'VISUAL PORTION OF FINAL' PENETRATIONS

and/or

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

PENETRATIONS REMARKS:

PART C: GENERAL REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.
100 FT VEGETATION USED PER FPT.
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	2.93
WIDTH OF	FINAL	SEGMENT AT 1000FT POINT	1.20
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1000FT POINT	316.07
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1000FT POINT	1000
DISTANCE FROM	THLD	TO 1500FT POINT	4.73
WIDTH OF	FINAL	SEGMENT AT 1500FT POINT	1.76
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1500FT POINT	316.07
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1500FT POINT	1000

THRESHOLD COORDINATES (IF STR-IN)	453224.47N/0940301.29W
ARP COORDINATES	453246.40N/0940333.80W
RUNWAY APCH END AND DIST FURTHEST FROM ARP	RUNWAY 13 DISTANCE 0.62 NM
FAF COORDINATES	452843.03N/0935757.52W
FIX NAME COORDINATES	

REMARKS

THLD DISPLACED 500FT, ACTUAL COORDINATES: 453220.92N/0940256.41W

PART E: PREPARED BY

NAME	OFFICE	DATE	TITLE
DAVID DANNER (MATTHEW W.TOWNSEND)	AJV-A421	09/20/2023	AERONAUTICAL INFORMATION SPECIALIST

