

**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> CVX	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 27	<u>ORIGINAL/AMENDMENT</u> ORIG-D	<u>CITY</u> CHARLEVOIX	<u>STATE</u> MI
<u>AIRPORT ELEVATION</u> 669	<u>TDZE</u> 662	<u>SUPERSEDED</u> RNAV (GPS) RWY 27	<u>ORIGINAL/AMENDMENT</u> ORIG-C	<u>DATED</u> 10/06/2022
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<u>MAG VAR</u> 5W
				<u>EPOCH YEAR</u> 1985
				<u>CANCEL/SUSPEND</u>

TERMINAL ROUTES

FROM	FIX TYPE	TO	FIX TYPE	LEG TYPE	FO/FB	RNP	COURSE	DISTANCE	ALTITUDE
IROTO		COKOS		TF	FO	1.00	038.08	9.83	3000
PLN VORTAC	IAF	COKOS	NOPT	TF	FB	1.00	218.39	21.86	3000
COKOS	IF/IAF	HISUM		TF	FB	1.00	269.85	7.70	2600
HISUM	FAF	HOMVO/1.90 NM TO RW27		TF	FB	0.30	269.72	4.00	
HOMVO/1.90 NM TO RW27		RW27	MAP	TF	FO	0.30	269.72	1.90	
RW27	MAP	1069 MSL		CA			269.72		
1069 MSL		COKOS		DF	FO	1.00			3000

MISSED APPROACH

MAP:

LNAV: RW27

MISSED APPROACH INSTRUCTIONS:

CLIMBING LEFT TURN TO 3000 DIRECT COKOS AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:

PROFILE:

- | | | | | | |
|--|--------------------|----------------|-----------------------|------------------------|-------|
| 1. PT | SIDE OF COURSE | OUTBOUND | FT WITHIN | MILES OF | (IAF) |
| 2. HOLD E COKOS, RT, 269.85 INBOUND, 3000 FT. IN LIEU OF PT (IAF), MAX 6000. | | | | | |
| 3. FAC: 269.72 | FAF: HISUM | | DIST FAF TO MAP: 5.90 | DIST FAF TO THLD: 5.90 | |
| 4. MIN ALT: COKOS 3000, HISUM 2600, HOMVO/1.90 NM TO RW27 1300 | | | | | |
| 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: RW27 3200 | | | | | |

QUALITY
10
CHECKED

PBN REQUIREMENTS NOTE:

RNP APCH - GPS.

NOTES:

CHART NOTE: RWY 27 HELICOPTER VISIBILITY REDUCTION BELOW 3/4 SM NOT AUTHORIZED.
CHART PROFILE NOTE: VGSI AND DESCENT ANGLES NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}).
CHART NOTE: CIRCLING NA TO RWYS 4 AND 22.

ADDITIONAL FLIGHT DATA:

CHART FAS OBST: 791 TOWER (26-001868) 451857N/0851447W.
CHART VDP AT 1.33 NM TO RW27.
HOMVO TO RW27: 3.05/45.

MINIMUMS:

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

ALTERNATE: NA ☐ STANDARD - CAT D 800-2 1/4, 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
LNAV MDA	1100	1	438	1100	1	438	1100	1 1/4	438	1100	1 1/4	438			
CIRCLING	1280	1	611	1280	1	611	1280	1 3/4	611	1360	2 1/4	691			

CHANGES - REASONS

1. INCORPORATED P-NOTAM 2/3561.
2. TERMINAL ROUTES: REMOVED GLR VOR/DME TO COKOS - GLR VOR/DME FACILITY REMOVED DUE TO VOR MON.
3. UPDATED CHART FAS OBST ID FROM "791 POLE (23-1868)" TO "791 TOWER (26-001868)" - UPDATED TO NEW ID AND TYPE.
4. MINIMA: CHANGED LNAV CAT D VIS FROM "1 1/2" TO "1 1/4" - IAW 8260.3E TABLE 3-3-1

COORDINATED WITH:

A4A ☐ ALPA ☐ AOPA ☒ APA ☐ HAI ☐ NBAA ☒ OTHER: ZMP, CEN FPT, AMGR.

FLIGHT CHECKED BY

PROCESSED IAW TECHNICAL SUPPORT GROUP (AJF-17) MEMO DATED 07/07/2021 GUIDANCE
FOR PROCEDURAL CHANGES REQUIRING FLIGHT INSPECTION/VALIDATION

Digitally signed by

ROBERT G HAMILTON

Sep 18, 2024

OFFICE

AJV-A433

DATE

05/13/2024

DEVELOPED BY

ROBERT G HAMILTON (DANIEL R. JOHNSON)

Digitally signed by

ROBERT G HAMILTON

Sep 18, 2024

OFFICE

AJV-A433

DATE

APPROVED BY

ROBERT G HAMILTON

Digitally signed by

ROBERT G HAMILTON

Sep 18, 2024

TITLE
MANAGER



**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>
CVX	RNAV (GPS) RWY 27	ORIG-D	CHARLEVOIX	MI	669	RNAV

PART A: OBSTRUCTION DATA SEGMENTS

FEEDER

FROM IROTO **TO** COKOS

RNP 1.00 **DISTANCE** 9.83 **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 (26-001068)	451049.00N/0850550.20W	1676	50	20	2C	1000				AT324	3000
TERRAIN	450951.00N/0850109.00W	1109 (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 PLN VORTAC **TO** COKOS

RNP 1.00 **DISTANCE** 21.86 **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	452003.00N/0845315.00W	1450	164	98	4E	1000				AT550	3000
TERRAIN	452003.00N/0845315.00W	1250 (1300)								AS1500	2800

COMPUTATIONS

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

SEGMENT REMARKS:



INTERMEDIATE

FROM

COKOS (IF/IAF)

TO

HISUM

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>			<u>HAT</u>	<u>HMAS</u>				
1.00	7.70										
<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 (26-000192)	452049.00N/0845801.00W	1322	20	50	1D	500				AT778	2600
TERRAIN	451933.00N/0850742.00W	1037 (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

HISUM

TO

HOMVO/1.90 NM TO RW27

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>			<u>HAT</u>	<u>HMAS</u>				
0.30	4.00										
<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>
TREE	451808.90N/0850856.40W	1035	50	20	2C	250					1300

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



FINAL: LNAV STEPDOWN

FROM

HOMVO/1.90 NM TO RW27

TO

RW27

RNP	DISTANCE	PAT	MAP	HAT	HMAS
0.30	1.90		RW27	438	

OBSTRUCTION	COORDINATES	ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
TOWER (26-001868)	451857.00N/0851447.00W	791	250	50	4D	250				AC50	1100

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

COKOS

TO

P-5

RNP	DISTANCE	PAT	MAP	HAT	HMAS
		P-5			

OBSTRUCTION	COORDINATES	ELEV MSL	HORZ	VERT	AC	ROC	OCS	CG	CGTA	ADJUSTMENTS	MIN ALT
TOWER (26-001554)	451928.00N/0845258.00W	1853	500	50	5D	1000				AT147	3000
TERRAIN	451933.00N/0845248.00W	1283 (1300)								AS1500	2800

COMPUTATIONS

ALT

KIAS

KTAS

HAA

VKTW

TR

BA

DTA

COURSE CHANGE

DVEB

VEB OCS

RF CENTER FIX/DISTANCE

SEGMENT REMARKS:



MISSSED APPROACH: LNAV

FROM

RW27

TO

COKOS

<u>RNP</u>	<u>DISTANCE</u>	<u>PAT</u>	<u>MAP</u>				<u>HAT</u>	<u>HMAS</u>			
0.30-1.00										1000	
<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 (26-000192)	452049.00N/0845801.00W	1322	20	50	1D	1000					2400
TERRAIN	451451.00N/0850033.00W	1090 (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											
BUILDING (26-000861)	451901.06N/0851801.24W	1.30	611	918	20	10	1B	300		XP60	1280
CATEGORY B											
TREE	451628.00N/0851714.00W	1.83	611	919	50	20	2C	300		XP60	1280
CATEGORY C											
TREE	451548.50N/0851622.50W	2.87	611	939	50	20	2C	300		XP40	1280
CATEGORY D											
AAO	451440.00N/0851710.00W	3.76	691	1060	50	20	2C	300			1360

CIRCLING REMARKS:

XP=MATCH CURRENT MINS

MSA

CENTER

RW27

RADIUS

25

SECTOR	OBSTRUCTION	COORDINATES	BEARING	DISTANCE	ELEV MSL	HORZ	VERT	AC	ROC	OCS	ADJUSTMENTS	MIN ALT
360-360	TOWER (26-001587)	451012.04N/0844504.12W	115	23.4	2167	250	50	4D	1000			3200

MSA REMARKS:



NOTES/EXPLANATIONS FROM PROCEDURE SEGMENTS:

VNAV NOT DEVELOPED DUE TO SURVEY TYPE.

TAA NOT USED, ATC REQUEST.
PART B: SUPPLEMENTAL DATA

COMMUNICATIONS WITH

ZMP ARTCC, LAN FSS

WX SERVICE	LOCATION	HRS OPERATION	ALTIMETER SOURCE	DISTANCE	SERVICE-A	ADJUSTMENTS
AWOS-3P	CVX	24	CVX	0.28	Y	0
BACK-UP WX SERVICE	LOCATION	HRS OPERATION	ALTIMETER SOURCE	DISTANCE	SERVICE-A	ADJUSTMENTS
ASOS	PLN	24	PLN	25.76	Y	67

WX REMARKS:

RASS PRESSURE PATTERNS THE SAME
CVX 669, PLN 721
RA = 66.5.

PRIMARY NAVAID	MONITOR POINT	HRS OPERATION	CAT
APPROACH AND RUNWAY LIGHTING SYSTEM		RUNWAY MARKINGS	RUNWAY VISUAL RANGE
RW22			
RW04			
RW09 - REIL (PCL), MIRLNSTD (PCL), PAPI-4R (PCL)		NPI-G	
RW27 - REIL (PCL), MIRLNSTD (PCL), PAPI-4R (PCL)		NPI-G	

GLIDESLOPE ANGLE	ELEV RWY THRESHOLD	TCH	ELEV GS ANTENNA	DISTANCE FROM RWY	VGSI ANGLE	TCH
					3.00	31.0

FINAL APPROACH COURSE AIMING

RUNWAY THRESHOLD	<div>X</div>	FT FROM THRESHOLD	DISPLACED THRESHOLD DISTANCE
ON CENTERLINE	<div>X</div>	FT FROM CENTERLINE	

CRITICAL TEMPERATURES

CRITICAL LOW	CRITICAL HIGH	ACT	APT ISA
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CRITICAL TEMPERATURE REMARKS:



"VISUAL PORTION OF FINAL" PENETRATIONS

FINAL TYPE	LNAV
34:1	
688 TREE (26-062443) 451824.78N/0851549.88W (16.47).	710 TREE (26-063129) 451821.94N/0851537.90W (14.19).

<u>AIRPORT ID</u> CVX	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 27	<u>AMDT NO.</u> ORIG-D	<u>CITY</u> CHARLEVOIX	<u>STATE</u> MI	<u>AIRPORT ELEVATION</u> 669	<u>FACILITY</u> RNAV
700 TREE (26-063121) 451821.72N/0851541.29W (11.35).			688 TREE (26-099753) 451823.84N/0851546.99W (10.68).			
700 TREE (26-063123) 451822.91N/0851540.49W (9.34).			696 TREE (26-063031) 451825.09N/0851542.32W (8.56).			
695 TREE (26-063011) 451823.85N/0851542.52W (8.33).			677 TREE (26-062440) 451821.38N/0851550.44W (7.59).			
690 TREE (26-063009) 451823.86N/0851544.26W (6.96).			691 TREE (26-063010) 451826.38N/0851543.98W (6.67).			
705 TREE (26-063034) 451819.92N/0851536.15W (6.09).			678 TREE (26-062450) 451821.39N/0851548.73W (5.01).			
688 TREE (26-063030) 451826.60N/0851542.60W (0.72).			700 TREE (26-063035) 451822.74N/0851536.01W (0.01).			
<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:

CONTINGENCY INFORMATION:
CHART NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE PLN ALTIMETER SETTING AND INCREASE ALL MDAS 80 FEET, INCREASE LNAV CAT C AND D VISIBILITY 1/8 SM AND CIRCLING CAT C AND D VISIBILITY 1/4 SM.
CHART NOTE: VDP NA WHEN USING PLN ALTIMETER SETTING.
- MINIMUM ALTITUDE AT HOMVO 1380 WHEN USING PLN ALTIMETER SETTING.
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	3.90
WIDTH OF	FINAL	SEGMENT AT 1000FT POINT	1.71
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1000FT POINT	264.72
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1000FT POINT	1000
DISTANCE FROM	THLD	TO 1500FT POINT	5.70
WIDTH OF	FINAL	SEGMENT AT 1500FT POINT	2.00
TRUE COURSE OF	FINAL	SEGMENT CONTAINING 1500FT POINT	264.72
HIGH TERRAIN IN	FINAL	SEGMENT CONTAINING 1500FT POINT	1000

THRESHOLD COORDINATES (IF STR-IN)451819.25N/0851605.54W

ARP COORDINATES451817.50N/0851631.10W

RUNWAY APCH END AND DIST FURTHEST FROM ARP

FAF COORDINATESRUNWAY 9 DISTANCE 0.44 NM

FIX NAME COORDINATES451852.14N/0850745.94W

REMARKS

NO ADDITIONAL AIRSPACE REQUIRED.

PART E: PREPARED BY

NAME	OFFICE	DATE	TITLE
ROBERT G HAMILTON (DANIEL R. JOHNSON)	AJV-A433	05/13/2024	AERONAUTICAL INFORMATION SPECIALIST

