

**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> RENO/TAHOE INTL	<u>AIRPORT ID</u> KRNO	<u>PROCEDURE NAME</u> RNAV (GPS) X RWY 16L	<u>ORIGINAL/AMENDMENT</u> 2	<u>CITY</u> RENO	<u>STATE</u> NV	
<u>AIRPORT ELEVATION</u> 4415	<u>TDZE</u> 4415	<u>SUPERSEDED</u> RNAV (GPS) X RWY 16L	<u>ORIGINAL/AMENDMENT</u> 1D	<u>DATED</u> 02/01/2018	<u>MAG VAR</u> 16E	<u>EPOCH YEAR</u> 1985
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u> 26 MARCH 2020	<u>REQUIRED EFFECTIVE DATE</u> 03/26/2020	<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>
CAXIL		NUKOE		TF	FB	1.00	337.65	27.81	10000
FMG VORTAC		NUKOE		TF	FB	1.00	352.92	10.21	10000
NUKOE		ROXJO		TF	FB	1.00	337.60	7.00	10000
ROXJO	IAF	TEBOY		TF	FB	1.00	254.19	5.88	8600
TEBOY	IF	SEKAW		TF	FB	1.00	164.10	7.00	7800
SEKAW		BADPE		TF	FB	1.00	164.12	3.47	6900
BADPE	FAF	WARAX/5.24 NM TO RW16L		TF	FB	0.30	164.12	2.39	
WARAX/5.24 NM TO RW16L		RW16L	MAP	TF	FO	0.30	164.12	5.24	
RW16L	MAP	4815 MSL		CA			164.12		
4815 MSL		WEDMO		DF	FB	1.00			
WEDMO		MARRI		TF	FO	1.00	158.16	31.00	13000

MISSED APPROACH

MAP:

LPV: DA
LNAV/VNAV: DA
LNAV: RW16L

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 13000 DIRECT WEDMO AND ON TRACK 158.16 TO MARRI AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:



PROFILE:

1. PT	SIDE OF COURSE	OUTBOUND	FT WITHIN	MILES OF	(IAF)
2. PROFILE STARTS AT TEBOY					
3. FAC:	164.12	FAF: BADPE	DIST FAF TO MAP: 7.63	DIST FAF TO THLD: 7.63	
4. MIN ALT:	TEBOY 8600, SEKAW 7800, BADPE 6900, WARAX/5.24 NM TO RW16L 6140*				
5. DIST TO THLD FROM OM:	MM:	IM:	150 HAT:	683 HAT: 1.97	GS ANT:
6. MIN GP INCPT: 6900	GP ALT AT FAF : BADPE 6900		OM:	MM:	IM:
7. GP ANGLE: 3.00	34:1: IS NOT CLEAR	20:1: IS CLEAR	TCH: 55.0		
8. MSA FROM:	RW16L 12000				

PBN REQUIREMENTS NOTE:

RNP APCH.

NOTES:

CHART NOTE: CIRCLING RWY 7 NA AT NIGHT.
CHART NOTE: RWY 16L HELICOPTER VISIBILITY REDUCTION BELOW 3/4 SM NOT AUTHORIZED.
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -9°C OR ABOVE 54°C.
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}).
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS ON FMG VORTAC AIRWAY RADIALS 314 CW 075.
CHART SPEED ICON IN PLANVIEW AT ROXJO: MAX 220 KIAS.
CHART SPEED ICON IN PLANVIEW AT TEBOY: MAX 210 KIAS.

ADDITIONAL FLIGHT DATA:

CHART CIRCLING ICON.
CHART VDP AT 2.71 NM TO RW16L*
*LNAV ONLY
WAAS CHANNEL #72909
REFERENCE PATH ID: W16A
CHART FAS OBST: 5101 VEGETATION 393449N/1194532W.
CHART 5908 VEGETATION 393842N/1194554W.
HOLD S, RT, 351.00 INBOUND
LTP HAE: 1321.5 M



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

ALTERNATE: NA ☐ CAT A, B 1000-2, CAT C, D 2100-3

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	5149	2	734	5149	2	734	5149	2	734	5149	2	734			
LNAV/VNAV DA	5098	2	683	5098	2	683	5098	2	683	5098	2	683			
LNAV MDA	5360	1 1/4	945	5360	1 1/4	945	5360	2 1/2	945	5360	2 1/2	945			
CIRCLING	5360	1 1/4	945	5360	1 1/4	945	6460	3	2045	6460	3	2045			

CHANGES - REASONS

1. REMOVED SEGMENTS FROM TRUCK TO FITUN, FITUN TO TEBOY, PYRAM TO ERIDE, AND ERIDE TO TEBOY - ATC REQUEST, COMPLICATIONS WITH LEG LENGTHS.
2. ADDED FEEDER SDF NUKOE FROM MUSTANG VORTAC AND CAXIL - ATC REQUEST, ALLEVIATE LARGER THAN 90 DEGREE TURN FROM MUSTANG VORTAC AT ROXJO.
3. COURSE/DISTANCE/ALTITUDE FROM TEBOY TO SEKAW CHANGED FROM 164.11/9.00/7200 TO 164.10/7.00/7800 - SEKAW MOVED 2.00 NM NORTH, NEW CONTROLLING OBSTACLE IN SEGMENT.
4. COURSE/DISTANCE FROM SEKAW TO BADPE CHANGED FROM 164.11/1.86 TO 164.12/3.47 - SEKAW MOVED 2.00 NM NORTH, BADPE MOVED 0.39 NM NORTH.
5. ROUTE FROM BADPE TO FOBAX/5.30 NM TO RW16L CHANGED TO BADPE TO WARAX/5.24 NM TO RW16L - NEW SDF NAME AND LOCATION.
6. ADDED LNAV/VNAV MINIMUMS - ATC REQUEST.
7. DIST FAF TO MAP AND DIST FAF TO THLD CHANGED FROM 7.24 TO 7.63 ON LINE 3 - BADPE MOVED 0.39 NM NORTH.
8. LINE 4 CHANGED FROM "TEBOY 8600, SEKAW 7200, BADPE 6900, FOBAX/5.30 NM TO RW16L 6240*" TO "TEBOY 8600, SEKAW 7800, BADPE 6900, WARAX/5.24 NM TO RW16L 6140*" - NEW CONTROLLING OBSTACLE, NEW FINAL SDF NAME AND LOCATION.
9. CHANGED FAS OBSTACLE FROM "CHART FAS OBST: 5668 ANT ON TWR 393503N/1194755W" TO "5101 VEGETATION 393449N/1194532W" - NEW CONTROLLING OBSTACLE.
10. REMOVED "CHART 5941 TREE 393725N/1194755W, CHART 5642 TREE 392321N/1194749W" AND ADDED "CHART 5908 VEGETATION 393842N/1194554W" TO ADDITIONAL FLIGHT DATA - NEW 7:1 EXCLUDED OBSTACLE.
11. CHANGED "DISTANCE TO THLD FROM 805 HATH: 2.28 NM" TO "DISTANCE TO THLD FROM 683 HAT: 1.97 NM" - LOWEST HAT BASED ON NEWLY ADDED LNAV/VNAV MINIMA, 8260.19H 8-6-7.E.
12. CHANGED "CHART VDP AT 3.86 MILES TO RW16L*" TO "CHART VDP AT 2.71 NM TO RW16L*" IN ADDITIONAL FLIGHT DATA - LNAV MDA LOWERED.
13. LPV DA/HAT CHANGED FROM 5220/805 TO 5149/734 - NEW CONTROLLING OBSTACLE.
14. LPV VISIBILITY ALL CATS CHANGED FROM 2 3/4 SM TO 2 SM - LPV HAT LOWERED, 8260.3D TABLE 3-3-1.
15. LNAV MDA/HAT CHANGED FROM 5720/1305 TO 5360/945 - NEW CONTROLLING OBSTACLE.
16. LNAV VISIBILITY CAT B CHANGED FROM 1 1/2 SM TO 1 1/4 SM, CAT C/D FROM 3 SM TO 2 1/2 SM - LNAV HAT LOWERED, 8260.3D TABLES 3-3-1, 3-3-4.
17. CIRCLING MDA/HAA CAT A/B CHANGED FROM 5720/1305 TO 5360/945, CAT C/D CHANGED FROM 5720/1305 TO 6460/2045 - EXPANDED CIRCLING AREAS APPLIED, NEW CONTROLLING OBSTACLES.
18. CIRCLING VISIBILITY CAT B CHANGED FROM 1 1/2 SM TO 1 1/4 SM - CAT B HAA LOWERED, 8260.3D TABLE 3-3-7.
19. CHANGED "CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS ON FMG VORTAC AIRWAY RADIALS 332 CW 075" TO "CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS ON FMG VORTAC AIRWAY RADIALS 314 CW 075" - DISALLOW TURNS GREATER THAN 90 DEGREES.
20. ADDED NOTE "CHART SPEED ICON IN PLANVIEW AT ROXJO: MAX 220 KIAS" - ALLEVIATE LEG LENGTH ISSUES.
21. ADDED NOTE "CHART SPEED ICON IN PLANVIEW AT TEBOY: MAX 210 KIAS" - ALLEVIATE LEG LENGTH ISSUES.
22. P-NOTAMS FROM AMDTS 1C AND 1D INCORPORATED INTO FORMS - TO MATCH CURRENTLY PUBLISHED PROCEDURE.
23. REMOVED "CHART NOTE: DME/DME RNP-0.3 NA" AND ADDED PBN REQUIREMENTS NOTE "RNP APCH" - CURRENT NOTATION PER 8260.19H 8-6-8.B.
24. CHANGED ALTERNATE MINIMUMS FROM "CAT A, B 1400-2, CAT C, D 1400-3" TO "CAT A, B 1000-2, CAT C, D 2100-3" - CIRCLING MDAS/HAAS CHANGED BASED ON EVALUATION.
25. ADDED NOTE "CHART CIRCLING ICON" - EXPANDED CIRCLING AREAS APPLIED.
26. ADDED "CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -9 C OR ABOVE 54 C" - ADDED LNAV/VNAV MINIMUMS, 8260.19H 8-6-9.S.
27. GPA CHANGED FROM 3.10 TO 3.00 - 8260.3D 2-6-3, 3.00 GPA REQUIRED FOR LPV UNLESS FOR OBSTACLE CLEARANCE.
28. CHANGED FAC FROM 164.11 TO 164.12 ON LINE 7 - BADPE MOVED 0.37 NM NORTH.
29. CRC REMAINDER CHANGED FROM 053C9ACD TO 6A476F33 - CHANGED GPA, LTP COORDINATES CHANGED FROM 393049.8200N/1194600.2600W TO 393049.8255N/1194600.2660W, FPAP COORDINATES CHANGED FROM 392920.6400N/1194600.4800W TO 392920.6500N/1194600.4970W.



COORDINATED WITH:

A4A ☒ ALPA ☒ AOPA ☒ APA ☒ HAI ☐ NBAA ☒ OTHER: ZOA, RNO APP CON, RNO ATCT, AMGR, NV AERO

FLIGHT CHECKED BY

PENDING

OFFICE

DATE

Digitally signed by

ALLAN WILL

Jan 29, 2020

DEVELOPED BY

JOHN BORDY (ANTHONY CAPPABIANCO)

OFFICE

AJV-A422

DATE

12/12/2019

Digitally signed by

ALLAN WILL

Jan 29, 2020

APPROVED BY

MARLON ROBINSON

OFFICE

AJV-A420

DATE

Digitally signed by

ALLAN WILL

Jan 29, 2020

TITLE

MANAGER

QUALITY
21
CHECKED

FAS DATA BLOCK INFORMATION

<u>DATA FIELD</u>	<u>DATA</u>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KRNO
RUNWAY	RW16L
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	X
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W16A
LTP/FTP LATITUDE	393049.8255N
LTP/FTP LONGITUDE	1194600.2660W
LTP/FTP ELLIPSOIDAL HEIGHT	+13215
FPAP LATITUDE	392920.6500N
FPAP LONGITUDE	1194600.4970W
THRESHOLD CROSSING HEIGHT (TCH)	00055.0
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0008
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	50.0
CRC REMAINDER	6A476F33

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K2
LTP ORTHOMETRIC HEIGHT	+13456
FPAP ORTHOMETRIC HEIGHT	+13456

