

**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>		<u>AIRPORT ID</u>	<u>PROCEDURE NAME</u>	<u>ORIGINAL/AMENDMENT</u>	<u>CITY</u>	<u>STATE</u>
MODESTO CITY-CO-HARRY SHAM FLD		KMOD	RNAV (GPS) RWY 28R	1	MODESTO	CA
<u>AIRPORT ELEVATION</u>	<u>TDZE</u>	<u>SUPERSEDED</u>	<u>ORIGINAL/AMENDMENT</u>	<u>DATED</u>	<u>MAG VAR</u>	<u>EPOCH YEAR</u>
99	91	RNAV (GPS) RWY 28R	ORIG	09/25/2008	16E	1985
<u>FACILITY</u>	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u>	<u>REQUIRED EFFECTIVE DATE</u>	<u>CANCEL/SUSPEND</u>		
RNAV		21 MAY 2020	ROUTINE			

**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>
PXN VORTAC		KALEI		TF	FB	1.00	004.09	41.79	7500
FRA VORTAC		KALEI		TF	FB	1.00	274.88	45.21	7500
VOLTA		FABNA		TF	FB	1.00	048.56	12.53	3500
KALEI	IAF	DLRAY		TF	FB	1.00	287.98	9.99	3500
FABNA	IAF	DLRAY		TF	FB	1.00	018.25	7.20	3500
DLRAY	IF	ZELAT		TF	FB	1.00	288.29	11.57	1800
ZELAT	FAF	RW28R	MAP	TF	FO	0.30	288.19	5.23	
RW28R	MAP	500 MSL		CA			288.19		500
500 MSL		SHELI		DF	FO	1.00			3000

**MISSED APPROACH**

**MAP:**

LPV: DA  
LNAV/VNAV: DA  
LNAV: RW28R

**MISSED APPROACH INSTRUCTIONS:**

CLIMB TO 500 THEN CLIMBING LEFT TURN TO 3000 DIRECT SHELI AND HOLD, CONTINUE CLIMB-IN-HOLD TO 3000.

**ALTERNATE MISSED APPROACH INSTRUCTIONS:**



PROFILE:

1. PT

SIDE OF COURSE

OUTBOUND

FT WITHIN

MILES OF (IAF)
2. PROFILE STARTS AT DLRAY
3. FAC: 288.19

FAF: ZELAT

DIST FAF TO MAP: 5.23

DIST FAF TO THLD: 5.23
4. MIN ALT: DLRAY 3500, ZELAT 1800
5. DIST TO THLD FROM OM:

MM:

IM:

150 HAT:

200 HAT: 0.49

GS ANT:
6. MIN GP INCPT: 1800

GP ALT AT FAF : ZELAT 1800

OM:

MM:

IM:
7. GP ANGLE: 3.00

34:1: IS CLEAR

20:1: IS CLEAR

TCH: 52.7
8. MSA FROM: RW28R 5100

PBN REQUIREMENTS NOTE:

RNP APCH.

NOTES:

CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVAL ON PXN VORTAC AIRWAY RADIALS 296 CW 061.  
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVAL ON FRA VORTAC AIRWAY RADIALS 202 CW 314.  
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -1°C OR ABOVE 54°C.  
CHART NOTE: FOR INOPERATIVE ALS, INCREASE LNAV/VNAV ALL CATS VISIBILITY TO 7/8 SM.

ADDITIONAL FLIGHT DATA:

CHART 542 TOWER 373446N/1205054W  
CHART CIRCLING ICON.  
CHART VDP AT 1.99 NM TO RW28R\*  
\*LNAV ONLY  
WAAS CHANNEL #70609  
REFERENCE PATH ID: W28A  
CHART FAS OBST: 222 TRANSMISSION\_LINE 373631N/1205611W.  
HOLD NW, RT, 148.20 INBOUND  
LTP HAE: -7 M

MINIMUMS:

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

ALTERNATE: NA ☐ STANDARD - CAT D 800-2 1/4

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	291	1/2	200	291	1/2	200	291	1/2	200	291	1/2	200			
LNAV/VNAV DA	393	1/2	302	393	1/2	302	393	1/2	302	393	1/2	302			
LNAV MDA	480	1/2	389	480	1/2	389	480	5/8	389	480	5/8	389			
CIRCLING	540	1	441	600	1	501	700	1 3/4	601	820	2 1/4	721			



**CHANGES - REASONS**

1. CHANGED AIRPORT ELEVATION FROM 97 TO READ 99 AND TDZE FROM 88 TO READ 91 - NEW AIRPORT SURVEY.
2. REMOVED CZQ VORTAC TO HYP VOR/DME SEGMENT FROM TERMINAL ROUTES SECTION - VORMON PROJECT/FPT REQUEST PER IFPR.
3. CHANGED PXN VORTAC TO HYP VOR/DME TO READ PXN VORTAC TO KALEI IN TERMINAL ROUTES SECTION - VORMON PROJECT/FPT REQUEST PER IFPR.
4. ADDED FRA VORTAC TO KALEI SEGMENT TO TERMINAL ROUTES SECTION - VORMON PROJECT/FPT REQUEST PER IFPR.
5. CHANGED VOLTA TO FAXAP TO READ VOLTA TO FABNA IN TERMINAL ROUTES SECTION - FIX MOVED MORE THAN 1NM DUE TO TARGETS IDENTIFIED DISCREPANCY.
6. CHANGED FAXAP TO DLRAY TO READ FABNA TO DLRAY IN TERMINAL ROUTES SECTION - FIX MOVED MORE THAN 1NM DUE TO TARGETS IDENTIFIED DISCREPANCY.
7. CHANGED HYP VOR/DME TO DLRAY TO READ KALEI TO DLRAY IN TERMINAL ROUTES SECTION - VORMON PROJECT/FPT REQUEST PER IFPR.
8. CHANGED DLRAY TO ZELAT COURSE FROM 288.30 TO READ 288.29 AND DISTANCE FROM 11.63 TO READ 11.57 IN TERMINAL ROUTES SECTION - RNAV FAF COLLOCATED WITH ILS FAF/FACILITATES 3.0 GPA AT 52.7 FT TCH.
9. CHANGED ZELAT TO RW28R COURSE FROM 288.18 TO READ 288.19 AND DISTANCE FROM 5.16 TO READ 5.23 IN TERMINAL ROUTES SECTION - RNAV FAF COLLOCATED WITH ILS FAF/FACILITATES 3.0 GPA AT 52.7 FT TCH.
10. REMOVED RW28R TO COMKI AND COMKI TO SHELI SEGMENTS FROM TERMINAL ROUTES SECTION - TARGETS IDENTIFIED DISCREPANCY WITH TURN AT COMKI/FPT CONCURRED VIA EMAIL WITH 500 FT CTA AND DIRECT TO SHELI.
11. ADDED RW28R TO 500 MSL AND 500 MSL TO SHELI SEGMENTS TO TERMINAL ROUTES SECTION - FPT CONCURRED VIA EMAIL WITH 500 FT CTA AND DIRECT TO SHELI.
12. CHANGED MISSED APPROACH INSTRUCTION FROM CLIMB TO 3000 DIRECT COMKI AND LEFT TURN VIA 225.78 TRACK TO SHELI AND HOLD, CONTINUE CLIMB-IN-HOLD TO 3000 TO READ CLIMB TO 500 THEN CLIMBING LEFT TURN TO 3000 DIRECT SHELI AND HOLD, CONTINUE CLIMB-IN-HOLD TO 3000 IN MISSED APPROACH SECTION - TARGETS IDENTIFIED DISCREPANCY WITH TURN AT COMKI/FPT CONCURRED VIA EMAIL WITH 500 FT CTA AND DIRECT TO SHELI.
13. CHANGED FAC FROM 288.18 TO READ 288.19 AND DIST FAF TO MAP/DIST FAF TO THLD FROM 5.16 TO READ 5.23 ON LINE 3 IN PROFILE SECTION - RNAV FAF COLLOCATED WITH ILS FAF/FACILITATES 3.0 GPA AT 52.7 FT TCH.
14. CHANGED DLRAY MIN ALT FROM 3000 TO READ 3500 ON LINE 4 IN PROFILE SECTION - FPT REQUEST PER IFPR.
15. CHANGED DIST TO THLD FROM 297 HAT: 0.80 TO READ 200 HAT: 0.49 ON LINE 5 IN PROFILE SECTION - LPV CONTROLLING OBSTACLE REMOVED/LPV NOW ASC WITH 200 FT HAT.
16. ADDED IS CLEAR TO 20:1 ON LINE 7 IN PROFILE SECTION - REQUIRED DOCUMENTATION BY CRITERIA.
17. CHANGED TCH FROM 52.8 TO READ 52.7 ON LINE 7 IN PROFILE SECTION AND IN FAS DATA BLOCK INFORMATION SECTION - AIRNAV2 FACILITY DATA RECORD UPDATE.
18. ADDED RNP APCH TO PBN REQUIREMENTS NOTE SECTION - REQUIRED DOCUMENTATION BY CRITERIA.
19. REMOVED CHART NOTE: DME/DME RNP-0.3 NA FROM NOTES SECTION - DOCUMENTATION NO LONGER REQUIRED BY CRITERIA.
20. CHANGED CHART NOTE: FOR INOPERATIVE MALSR, INCREASE LPV VISIBILITY TO 1 MILE ALL CATS AND LNAV CAT D TO 1 1/4 MILE TO READ CHART NOTE: FOR INOPERATIVE ALS, INCREASE LNAV/VNAV ALL CATS VISIBILITY TO 7/8 SM IN NOTES SECTION - LPV CONTROLLING OBSTACLE REMOVED/VISCHECK CALCULATIONS.
21. CHANGED CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -15°C (5°F) OR ABOVE 48°C (118°F) TO READ CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -1°C OR ABOVE 54°C IN NOTES SECTION - TEMPERATURES BASED ON HISTORICAL DATA/FARENHEIT TEMPERATURES NO LONGER DOCUMENTED.
22. MOVED ALSTG CHART NOTE FROM NOTES SECTION TO 8260-9 GENERAL REMARKS SECTION - BOTH ALTIMETER SOURCES TRANSMIT ON WMSCR/CALCULATED FOR CONTINGENCY PURPOSES.
23. MOVED BARO-VNAV AND VDP NA CHART NOTE FROM NOTES SECTION TO 8260-9 GENERAL REMARKS SECTION - CHARTING NOT REQUIRED/BOTH ALTIMETER SOURCES TRANSMIT ON WMSCR.
24. MOVED INOPERATIVE MALSR CHART NOTE FROM NOTES SECTION TO 8260-9 GENERAL REMARKS SECTION - CHARTING NOT REQUIRED/BOTH ALTIMETER SOURCES TRANSMIT ON WMSCR.
25. REMOVED PROCEDURE NA FOR ARRIVALS ON CZQ VORTAC CHART PLANVIEW NOTE FROM NOTES SECTION - VORMON PROJECT/FPT REQUEST PER IFPR.
26. ADDED PROCEDURE NA FOR ARRIVALS ON PXN VORTAC AND FRA VORTAC CHART PLANVIEW NOTES TO NOTES SECTION - TURNS FROM AIRWAY SEGMENTS ONTO FEEDER SEGMENTS EXCEED 90 DEGREES.
27. CHANGED VDP LOCATION FROM 1.09 NM TO READ 1.99 NM IN ADDITIONAL FLIGHT DATA SECTION - TARGETS CALCULATION.
28. ADDED CHART CIRCLING ICON TO ADDITIONAL FLIGHT DATA SECTION - REQUIRED DOCUMENTATION BY CRITERIA.
29. REMOVED NA WHEN LOCAL WEATHER NOT AVAILABLE AND ADDED CAT D 800-2 1/4 TO ALTERNATE MINIMUMS IN MINIMUMS SECTION - BOTH ALTIMETER SOURCES TRANSMIT ON WMSCR/NEW CAT D CIRCLING CONTROLLING OBSTACLE.
30. CHANGED LPV ALL CATS DA/HAT FROM 385/297 TO READ 291/200 IN MINIMUMS SECTION - LPV CONTROLLING OBSTACLE REMOVED/LPV NOW ASC WITH 200 FT HAT.
31. CHANGED LNAV/VNAV ALL CATS DA/VIS/HAT FROM 495 / 1 / 407 TO READ 393 / 1/2 / 302 IN MINIMUMS SECTION - NEW LNAV/VNAV CONTROLLING OBSTACLE IN LEVEL SURFACE/NEW VISIBILITY TABLE APPLIED.
32. CHANGED LNAV ALL CATS HAT FROM 392 TO READ 389, LNAV CAT C VIS FROM 1/2 TO READ 5/8, AND LNAV CAT D VIS FROM 1 TO READ 5/8 IN MINIMUMS SECTION - NEW AIRPORT SURVEY/NEW VISIBILITY TABLE APPLIED.
33. CHANGED CIRCLING CATS A/B HAA FROM 443 TO READ 441, CIRCLING CAT B CMDA/HAA FROM 560/463 TO READ 600/501, CIRCLING CAT C CMDA/VIS/HAA FROM 560 / 1 1/2 / 463 TO READ 700 / 1 3/4 / 601, AND CIRCLING CAT D CMDA/VIS/HAA FROM 660 / 2 / 563 TO READ 820 / 2 1/4 / 721 IN MINIMUMS SECTION - NEW AIRPORT SURVEY/NEW CIRCLING CRITERIA APPLIED/NEW VISIBILITY TABLE APPLIED.
34. CHANGED CRC REMAINDER FROM 10FA5B67 TO READ 1867C3D0 IN FAS DATA BLOCK INFORMATION SECTION - LTP AND FPAP COORDINATES UPDATED, TCH CHANGED FROM 52.8 TO 52.7, LENGTH OFFSET CHANGED FROM 0064 TO 0952, VERTICAL ALERT LIMIT CHANGED FROM 50 TO 35, LTP/FPAP ORTHOMETRIC HEIGHTS CHANGED FROM +00241 TO +00249.



AIRPORT

MODESTO CITY-CO-HARRY SHAM FLD

AIRPORT ID

KMOD

PROCEDURE NAME

RNAV (GPS) RWY 28R

ORIGINAL/AMENDMENT

1

CITY

MODESTO

STATE

CA

COORDINATED WITH:

A4A ☐ ALPA ☒ AOPA ☒ APA ☐ HAI ☐ NBAA ☒ OTHER: ZOA, NORCAL APP CON, ST AV. DIR., AMGR, ATA

FLIGHT CHECKED BY

DANIEL C FAVORITE

OFFICE

FICO

DATE

4/1/19

*Digitally signed by*

**ALLAN WILL**

Dec 05, 2019

DEVELOPED BY

MICHAEL R. GARRITY JR.

*Digitally signed by*

**MICHAEL GARRITY**

Jan 07, 2019

OFFICE

AJV-5423

DATE

11/28/2018

APPROVED BY

JULIE MORGAN

OFFICE

AJV-5420

DATE

*Digitally signed by*

**ALLAN WILL**

Dec 05, 2019

TITLE

MANAGER



**FAS DATA BLOCK INFORMATION**

<b><u>DATA FIELD</u></b>	<b><u>DATA</u></b>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KMOD
RUNWAY	RW28R
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W28A
LTP/FTP LATITUDE	373714.3220N
LTP/FTP LONGITUDE	1205635.6160W
LTP/FTP ELLIPSOIDAL HEIGHT	-00070
FPAP LATITUDE	373804.3630N
FPAP LONGITUDE	1205808.4650W
THRESHOLD CROSSING HEIGHT (TCH)	00052.7
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0952
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	35.0
CRC REMAINDER	1867C3D0

**ADDITIONAL PATH POINT RECORD INFORMATION**

ICAO CODE	K2
LTP ORTHOMETRIC HEIGHT	+00249
FPAP ORTHOMETRIC HEIGHT	+00249

