

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> KSFO	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 19L	<u>ORIGINAL/AMENDMENT</u> 4	<u>CITY</u> SAN FRANCISCO	<u>STATE</u> CA		
<u>AIRPORT ELEVATION</u> 13	<u>TDZE</u> 11	<u>SUPERSEDED</u> RNAV (GPS) RWY 19L	<u>ORIGINAL/AMENDMENT</u> 3A	<u>DATED</u> 11/08/2018	<u>MAG VAR</u> 14E	<u>EPOCH YEAR</u> 2015
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u> 30 NOVEMBER 2023	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<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>
UPEND	IAF	BERKS		TF	FB	1.00	193.98	11.61	5000
BERKS	IF	SHAKE	PFAF	TF	FB	1.00	193.91	7.24	2800
SHAKE	FAF	ROGGE/5.50 NM TO RW19L		TF	FB	0.30	193.86	3.09	
ROGGE/5.50 NM TO RW19L		RW19L	MAP	TF	FO	0.30	193.86	5.50	
RW19L	MAP	1100 MSL		CA			193.86		1100
1100 MSL		PRTL A		DF	FO	1.00			4000

**MISSED APPROACH**

**MAP:**

LPV: DA  
LNAV/VNAV: DA  
LNAV: RW19L

**MISSED APPROACH INSTRUCTIONS:**

CLIMB TO 1100 THEN CLIMBING LEFT TURN TO 4000 DIRECT PRTL A AND HOLD.  
\*MISSED APPROACH REQUIRES MINIMUM CLIMB OF 357 FEET PER NM TO 2000.

**ALTERNATE MISSED APPROACH INSTRUCTIONS:**



PROFILE:

1. PT

SIDE OF COURSE

OUTBOUND

FT WITHIN

MILES OF

(IAF)

2. PROFILE STARTS AT BERKS

3. FAC:

193.86

PFAF: SHAKE

DIST PFAF TO MAP: 8.59

DIST PFAF TO THLD: 8.59

4. MIN ALT:   BERKS 5000, SHAKE 2800, ROGGE/5.50 NM TO RW19L 1800

5. DIST TO THLD FROM OM:

MM:

IM:

150 HAT:

282 HAT: 0.71

GS ANT:

6. MIN GP INCPT:

2800

GP ALT AT PFAF :

SHAKE

OM:

MM:

IM:

7. GP ANGLE:

3.00

34:1: IS CLEAR

20:1: IS CLEAR

TCH: 55.0

8. MSA FROM:   RW19L 5000

PBN REQUIREMENTS NOTE:

RNP APCH - GPS.

NOTES:

CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW 4°C OR ABOVE 54°C.  
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT (VGSI ANGLE {ANGLE}/TCH {FEET}).  
CHART NOTE: FOR INOPERATIVE ALS, INCREASE LPV DA\* (CG 357) ALL CATS VISIBILITY TO RVR 4500.  
CHART NOTE: FOR INOPERATIVE ALS, INCREASE LNAV/VNAV ALL CATS VISIBILITY TO 2 1/2 SM AND LNAV CATS C AND D VISIBILITY TO 3 SM.  
CHART SPEED ICON IN PLANVIEW AT BERKS: MAX 210 KIAS.

ADDITIONAL FLIGHT DATA:

HOLD NW, RT, 138.00 INBOUND.  
CHART FAS OBST: 150 SHIP 374028N/1222020W.  
CHART VDP AT 3.17 NM TO RW19L.  
WAAS CHANNEL # 58015  
REFERENCE PATH ID: W19A  
LTP HAE: -29.4 M

MINIMUMS:

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

ALTERNATE: NA ☐ CAT A, B 1100-2, CAT C, D 1100-2 1/2

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*	293	4000	282	293	4000	282	293	4000	282	293	4000	282			
LPV DA	656	1 5/8	645	656	1 5/8	645	656	1 5/8	645	656	1 5/8	645			
LNAV/VNAV DA*	350	4000	339	350	4000	339	350	4000	339	350	4000	339			
LNAV/VNAV DA	794	2	783	794	2	783	794	2	783	794	2	783			
LNAV MDA	1100	5500	1089	1100	1 1/4	1089	1100	2 1/2	1089	1100	2 1/2	1089		QUALITY 20 CHECKED	

**CHANGES - REASONS**

1. ADDED LPV AND LNAV/VNAV MINIMUMS WITH CLIMB GRADIENT AND CLIMB GRADIENT TERMINATION ALTITUDE ADDED TO THE MISSED APPROACH. - ATC REQUEST DUE TO NEW MISSED APPROACH AND TO DECONFLICT WITH DEPARTURES OFF RUNWAYS 10L/R
2. MISSED APPROACH INSTRUCTIONS CHANGED FROM "CLIMB TO 500 THEN CLIMBING LEFT TURN TO 3000 DIRECT DUMBA AND HOLD." TO "CLIMB TO 1100 THEN CLIMBING LEFT TURN 4000 DIRECT PRTLA AND HOLD" - ATC REQUEST TO DECONFLICT WITH DEPARTURES OFF RUNWAYS 10L/R.
3. UPDATED PBN REQUIREMENT NOTE FROM "RNP APCH" TO "RNP APCH - GPS". - UPDATED IAW 8260.19I PARA 8-6-8B2.
4. DELETED NOTE HELICOPTER VISIBILITY REDUCTION BELOW 1 SM NOT AUTHORIZED" - 20:1 AND 34:1 SURFACES ARE CLEAR.
5. UPDATED NOTE "FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW 3C OR ABOVE 54C." TO "FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW 4C OR ABOVE 54C." - AVERAGE COLD TEMPERATURE UPDATED PER CURRENT 5-YEAR HISTORY.
6. ADDED SPEED RESTRICTION OF 210 KIAS AT BERKS. - FOR CONTINUITY WITH ALWAYS STAR TERMINUS.
7. REMOVED \*LNAV ONLY FROM ADDITIONAL FLIGHT DATA - IAW 8260.19I PARA 8-6-10 M.
8. ALTERNATE MINIMUMS CHANGED FROM "STANDARD" TO "CAT A, B 1100-2, CAT C, D 1100-2 1/2" - UPDATED APPROACH MINIMUMS.
9. CRC REMAINDER CHANGED FROM "7AB5DB58" TO "31E233C3" - UPDATED AIRPORT DATA.
10. UPDATED CHART NOTE FROM "FOR INOPERATIVE ALS, INCREASE LPV CAT A/B VISIBILITY TO RVR 4500, LNAV/VNAV ALL CATS VISIBILITY TO RVR 6000 AND LNAV CAT A/B TO RVR 5500" TO "FOR INOPERATIVE ALS, INCREASE LPV DA\* (CG 357) ALL CATS VISIBILITY TO RVR 4500" AND ADDED CHART NOTE "FOR INOPERATIVE ALS, INCREASE LNAV/VNAV ALL CATS VISIBILITY TO 2 1/2 SM AND LNAV CATS C AND D VISIBILITY TO 3 SM" - UPDATED APPROACH MINIMUMS.
11. ADDED VDP DATA "CHART VDP AT 3.17 NM TO RW19L" - 34:1 AND 20:1 SURFACES ARE CLEAR.
12. UPDATED LPV MINIMUMS FROM DA/HAT "293/282 ALL CATS AND VISIBILITY CAT A/B RVR 4000 AND CAT C/D RVR 5000" TO "DA/HAT 656/645 VISIBILITY 1 5/8 ALL CATS" - MISSED APPROACH REDESIGN AND HIGH TERRAIN SOUTH OF THE AIRPORT.
13. UPDATED LNAV/VNAV MINIMUMS FROM DA/HAT "350/339 ALL CATS AND VISIBILITY CATS A/B RVR 4000 AND CATS C/D RVR 5000" TO DA/HAT "794/783 AND VISIBILITY 2 ALL CATS - MISSED APPROACH REDESIGN AND HIGH TERRAIN SOUTH OF THE AIRPORT.
14. UPDATED LNAV MINIMUMS FROM MDA/HAT "560/549 ALL CATS AND CAT A/B VISIBILITY RVR 4000 AND CATS C/D VISIBILITY 1 3/8" TO MDA/HAT "1100/1089 ALL CATS AND VISIBILITY CATS A RVR 5500, CAT B 1 1/4 SM AND CATS C/D VISIBILITY 2 1/2" - REDESIGN MISSED APPROACH AND MISSED APPROACH ADJUSTMENT.
15. CHANGED 34:1 AND 20:1 FROM "NOT CLEAR" TO "CLEAR" - UPDATED AIRPORT OBSTACLE SURVEY DATA.
16. CHANGED CA ALTITUDE FROM "500 MSL" TO "1100 MSL" - UPDATED MISSED APPROACH INSTRUCTIONS AND INCREASED MINIMUMS.
17. MSA ALTITUDE CHANGED FROM "5100" TO "5000" - NEW CONTROLLING OBSTACLE.

**COORDINATED WITH:**

**A4A** ☒ **ALPA** ☒ **AOPA** ☒ **APA** ☒ **HAI** ☐ **NBAA** ☒ **OTHER:** ZOA, NORCAL APP CON, SFO ATCT, CITY & COUNTY OF SAN FRANCISCO

*Digitally signed by***ERIC N SUSKI**

Aug 15, 2023

*Digitally signed by***FRANK JACKSON**

Apr 10, 2023

*Digitally signed by***ERIC N SUSKI**

Apr 19, 2023

**FLIGHT CHECKED BY**

BRANDON C EASTIN

**OFFICE**

FPO

**DATE**

08/09/2023

**DEVELOPED BY**

FRANK JACKSON JR

**OFFICE**

AJV-A431

**DATE**

04/10/2023

**APPROVED BY**

JOHNNIE BAKER

**OFFICE**

AJV-A430

**DATE****TITLE**  
MANAGERQUALITY  
20  
CHECKED

FAS DATA BLOCK INFORMATION

<u>DATA FIELD</u>	<u>DATA</u>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KSFO
RUNWAY	RW19L
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W19A
LTP/FTP LATITUDE	373738.4315N
LTP/FTP LONGITUDE	1222201.5990W
LTP/FTP ELLIPSOIDAL HEIGHT	-00294
FPAP LATITUDE	373619.5260N
FPAP LONGITUDE	1222253.9080W
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	0112
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	50.0
CRC REMAINDER	31E233C3

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K2
LTP ORTHOMETRIC HEIGHT	+00032
FPAP ORTHOMETRIC HEIGHT	+00032