

**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) Y RWY 19R	<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SUPERSEDED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 19R	<u>ORIGINAL/AMENDMENT</u> 3	<u>DATED</u> 09/13/2018	<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	HITOD		TF	FB	1.00	194.59	11.45	4000
HITOD	IF	ESUME		TF	FB	1.00	193.91	7.93	2800
ESUME	FAF	RW19R	MAP	TF	FO	0.30	193.86	8.18	
RW19R	MAP	1540 MSL		CA			193.86		1540
1540 MSL		THHEO		DF	FO	1.00			3000

**MISSED APPROACH**

**MAP:**

LPV: DA  
 LNAV/VNAV: DA  
 LNAV: RW19R

**MISSED APPROACH INSTRUCTIONS:**

CLIMB TO 1540 THEN CLIMBING RIGHT TURN TO 3000 DIRECT THHEO AND HOLD.

**ALTERNATE MISSED APPROACH INSTRUCTIONS:**



PROFILE:

1. PT                      SIDE OF COURSE                      OUTBOUND                      FT WITHIN                      MILES OF                      (IAF)

2. PROFILE STARTS AT HITOD

3. FAF: 193.86                      FAF: ESUME                      DIST FAF TO MAP: 8.18                      DIST FAF TO THLD: 8.18

4. MIN ALT:    HITOD 4000, ESUME 2800

5. DIST TO THLD FROM OM:                      MM:                      IM:                      150 HAT:                      867 HAT: 2.43                      GS ANT:

6. MIN GP INCPT: 2800                      GP ALT AT PFAF : ESUME 2800                      OM:                      MM:                      IM:

7. GP ANGLE: 3.15                      34:1: IS CLEAR                      20:1: IS CLEAR                      TCH: 55.0

8. MSA FROM:    RW19R 5000

PBN REQUIREMENTS NOTE:

RNP APCH - GPS.

NOTES:

CHART NOTE: LNAV PROCEDURE NA DURING SIMULTANEOUS OPERATIONS.  
CHART NOTE: USE OF FD OR AP REQUIRED DURING SIMULTANEOUS OPERATIONS.  
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW 4°C OR ABOVE 54°C.  
CHART NOTE: SIMULTANEOUS APPROACH AUTHORIZED. SIMULTANEOUS OPERATIONS REQUIRE USE OF VERTICAL GUIDANCE; MAINTAIN LAST ASSIGNED ALTITUDE UNTIL ESTABLISHED ON GLIDEPATH.  
CHART NOTE: SIMULTANEOUS APPROACH NA BELOW 12C (52F).

ADDITIONAL FLIGHT DATA:

HOLD SE, LT, 322.66 INBOUND.  
CHART FAS OBST: 150 SHIP 374028N/1222020W.  
CHART VDP AT 3.71 NM TO RW19R.  
WAAS CHANNEL # 53533  
REFERENCE PATH ID: W19B  
LTP HAE: -29.8 M

MINIMUMS:

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

ALTERNATE: NA    ☐    CAT A, B, C, D 1400-4

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	1005	4	994	1005	4	994	1005	4	994	1005	4	994			
LNAV/VNAV DA	878	2 1/2	867	878	2 1/2	867	878	2 1/2	867	878	2 1/2	867			
LNAV MDA	1320	1 1/4	1309	1320	1 1/2	1309	1320	3	1309	1320	3	1309			



CHANGES - REASONS

1. CHANGED MISSED APPROACH INSTRUCTIONS FROM "CLIMB TO 600 THEN CLIMBING LEFT TURN TO 3000 DIRECT KATFH AND HOLD" TO "CLIMB TO 1540 THEN CLIMBING RIGHT TURN TO 3000 DIRECT THHEO AND HOLD" - PER ATC REQUEST TO DECONFLICT DEPARTURES OFF OF OTHER RUNWAYS.
2. UPDATED LPV MINIMUMS FROM DA/HAT "382/371, VISIBILITY RVR 5500" TO DA/HAT "1005/994, VISIBILITY 4 SM ALL CATS" - INCREASED DUE TO MISSED PENTRATION FROM UPDATED MISSED APPROACH INSTRUCTION.
3. UPDATED LNAV/VNAV MINIMUMS FROM DA/HAT "449/438, VISIBILITY 1 1/4 ALL CATS" TO DA/HAT "878/867, VISIBILITY 2 1/2 ALL CATS" - INCREASED DUE TO MISSED PENTRATION FROM UPDATED MISSED APPROACH INSTRUCTION.
4. UPDATED LNAV MINIMUMS FROM MDA/HAT "660/649 ALL CATS, VISIBILITY CAT A/B RVR 5500, CAT C/D VISIBILITY 1 7/8 SM" TO "MDA/HAT 1320/1309 ALL CATS, VISIBILITY CAT A 1 1/4, CAT B 1 1/2, CAT C/D 3" - NEW MISSED APPROACH ADJUSTMENT DUE TO REDESIGN MISSED APPROACH.
5. PROCEDURE NAME CHANGED FROM "RNAV (GPS) RWY 19R" TO "RNAV (GPS) Y RWY 19R". - RNAV (GPS) Z RWY 19R PROCEDURE ADDED WITH CLIMB GRADIENT TO ACHIEVE LOWER MINIMUMS.
6. REMOVED STEP-DOWN FIX FOBOT AND ALL ASSOCIATED DATA FROM PROCEDURE. - FIX REMOVED DUE TO SIGNIFICANT INCREASE TO MDA AND STEPDOWN SEGMENT REDUNDANCY.
7. UPDATED NOTE "FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW 3C OR ABOVE 42C" TO "FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW 4°C OR ABOVE 54°C" - AVERAGE COLD TEMP UPDATED TO COINCIDE WITH CURRENT 5-YEAR WEATHER HISTORY.
8. UPDATED NOTE "SIMULTANEOUS APPROACH NA BELOW 28C (52F)" TO "SIMULTANEOUS APPROACH NA BELOW 12C (52F)" - AIR TRAFFIC REQUEST IAW 7110.308.
9. CHANGED HAT DISTANCE FROM "371 HAT: 0.95" TO "867 HAT: 2.43" - APPROACH MINIMUMS INCREASED DUE TO MISSED APPROACH PENETRATIONS.
10. UPDATED PBN EQUIPMENT NOTE FROM "RNP APCH" TO "RNP APCH-GPS" - IAW 8260.19I PARA 8-6-8 O B(2).
11. ADDED CHART NOTE "USE OF FD OR AP REQUIRED DURING SIMULTANEOUS OPERATIONS" - IAW 8260.19 PARA 8-6-11 8(D).
12. UPDATED ADDITIONAL FLIGHT DATA NOTE FROM "HOLD W, RT, 109.00 INBOUND" TO "HOLD SE, LT, 322.66 INBOUND" - NEW MISSED HOLDING FIX AND PATTERN.
13. FAS OBSTACLE CHANGED FROM "144 BLDG 373734N/1222236W" TO "150 SHIP 374028N/1222020W" - AVERAGE SHIP HEIGHT ADDED TO EVALUATION AND MAP STUDY.
14. UPDATED VDP FROM "CHART VDP AT 1.86 NM TO RW19R\*" TO "CHART VDP AT 3.71 NM TO RW19R" - MDA INCREASED FROM 660 TO 1320.
15. LTP HAE CHANGED FROM "-30 M" TO "-29.8 M" - UPDATED SURVEY DATA AND ROUNDING METHOD.
16. ALTERNATE MINIMUMS CHANGED FROM "STANDARD" TO "CAT A, B, C, D 1400-4" - IAW 8260.3 PARA 3-4-1.
17. FPAP LAT/LONG CHANGED FROM "373616.4235N/1222306.5030W" TO "373616.4260N/1222306.4990W" AND CRC FROM "FB6DA5F3" TO "288A5C12" - UPDATED AIRPORT DATA.
18. CHANGED MSA FROM "RW19R 5100" TO "RW19R 5000" - NEW CONTROLLING OBSTACLE DUE TO UPDATED OBSTACLE/MAP STUDY.

COORDINATED WITH:

A4A

ALPA

AOPA

APA

HAI

NBAA

OTHER:

ZOA, NORCAL APP CON, SFO ATCT, CITY & COUNTY OF SAN FRANCISCO

FLIGHT CHECKED BY

BRANDON C EASTIN

Digitally signed by

ERIC N SUSKI

Aug 15, 2023

OFFICE

FPO

DATE

08/09/2023

DEVELOPED BY

FRANK JACKSON JR

Digitally signed by

FRANK JACKSON

Apr 10, 2023

OFFICE

AJV-A431

DATE

04/10/2023

APPROVED BY

JOHNNIE BAKER

Digitally signed by

ERIC N SUSKI

Apr 19, 2023

OFFICE

AJV-A430

DATE

TITLE

MANAGER



FAS DATA BLOCK INFORMATION

<u>DATA FIELD</u>	<u>DATA</u>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KSFO
RUNWAY	RW19R
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	Y
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W19B
LTP/FTP LATITUDE	373735.3325N
LTP/FTP LONGITUDE	1222214.1935W
LTP/FTP ELLIPSOIDAL HEIGHT	-00298
FPAP LATITUDE	373616.4260N
FPAP LONGITUDE	1222306.4990W
THRESHOLD CROSSING HEIGHT (TCH)	00055.0
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.15
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0416
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	50.0
CRC REMAINDER	288A5C12

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K2
LTP ORTHOMETRIC HEIGHT	+00028
FPAP ORTHOMETRIC HEIGHT	+00028

