

Flight Procedures Cover Page	Task Action: FLIGHT CHECK	Task Type: IAP	Estimated Chart Date: 10/31/2024	APWS Task ID: BA56225BE7C54884B12C32A3D560C0F9	APWS Project ID: F6DFCCC4A88A427EBFA5525BADABF593
Procedure: RNAV (GPS) Z RWY 28R AMDT 8		Enroute: NO	Specialist: Hirst, Charles		Agreement Number:
Airport ID: KSFO			Airport City: SAN FRANCISCO		State: CA
Facility ID:	Facility Type:	Flight Inspection Remark Type: New FC Slot			
<p>Procedure Comments:</p> <p>REDESIGN RNAV (GPS) Z RWY 28R MISSED APPROACH TO BE CONGRUENT WITH ILS OR LOC RWY 28R MISSED APPROACH</p> <p>8260-1 (1): WAIVER FOR ATC CLIMB GRADIENTS</p> <p>FOR ADDITIONAL QUESTIONS CONTACT ERIC SUSKI, MANAGER 405-954-7331</p> <div><div><p>Digitally signed by</p><p>ERIC N SUSKI</p><p>Jun 21, 2024</p></div><div><div>QUALITY 41 CHECKED</div><div>QUALITY 29 CHECKED</div></div></div>					

FIPC BASIC FORM						
PROCEDURE: RNAV (GPS) Z RWY 28R AMDT 8			AIRPORT NAME: SAN FRANCISCO INTL		AIRPORT ID: KSFO	SPECIAL CONTROL NO: SG-08-004-24
FAC ID: KSFO28R.08Z		CITY: SAN FRANCISCO			ST: CA	ORIG CHART DATE: 10/31/2024
DFL TYPE: PROC/S	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 0.4	REIMB. NUMBER:	PTS TASK ID: BA56225BE7C54884B12C32A3D560C0F9		
PREFLIGHT NOTES						
REVIEWER:					DATE:	
COMMENTS:					CHECK ONE: <input type="checkbox"/> FLT CK REQ <input type="checkbox"/> NFCR <input type="checkbox"/> REJECT	
					YES	NO
					CPV COMPLETE? <input checked="" type="checkbox"/> X <input type="checkbox"/>	
PROCEDURE RESULTS						
INSPECTION DATE: 08/13/2024	CREW #: VN570	N #: N72	INSTRUMENT PROCEDURE STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT W/CHANGES <input type="checkbox"/> UNSAT		ARINC CODING: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT	
FLIGHT INSPECTOR SIGNATURE: kevin y cheng @ 08/13/2024 23:59			PRINTED NAME: CHENG, KEVIN YI			NOTAM INITIATED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
FLIGHT INSPECTOR REMARKS: KSFO28R.08Z PROC/S, SG-08-004-24: San Francisco International, San Francisco, CA, RNAV (GPS) Z RWY 28R Amdt 8 flown SAT. SIAP verified IAW Order 8200.1, USSFIM, Chapter 6. Periodic requirements met. Procedure SAT. Runway Survey UNSAT for Thres/RE UP error 94% - per policy, runway survey results will not be used. CAT B and CAT C obstacle survey for new controlling obstacles checked SAT.						
IN-FLIGHT OBSTACLE REPORT						
OBSTRUCTION ID #:	COORDINATES OR LOCATION:	GNSS ALTITUDE (MSL):	BAROMETRIC ALTITUDE (MSL):	HEIGHT ABOVE GROUND LEVEL:		

1. FLIGHT PROCEDURE IDENTIFICATION:

SAN FRANCISCO, CA
SAN FRANCISCO INTERNATIONAL (KSFO)
RNAV (GPS) Z RWY 28R

2. WAIVER REQUIRED AND APPLICABLE STANDARD:

8260.3F 2-1-4 b: Climbing on departure or missed approach. The concept of providing obstacle clearance in the climb segment of an IFP is based on the aircraft maintaining a minimum climb gradient. The climb gradient must be sufficient to increase obstacle clearance along the flight path so that the minimum ROC for the subsequent segment is achieved prior to leaving the climb segment. The minimum climb gradient that will provide adequate ROC in the climb segment is 200 ft/nautical mile (NM) (400 ft/NM for helicopters), unless a higher gradient is specified.

3. REASON FOR WAIVER (JUSTIFICATION FOR NONSTANDARD TREATMENT):

Northern California TRACON is requesting that the missed approach for the RNAV (GPS) Z RWY 28R be amended to match the altitude for all other procedures utilizing the fix VIKYU with a climb gradient of 350 feet per nautical mile to 1900 feet Mean Sea Level (MSL). Currently all other procedures climb to VIKYU at 3000 feet and hold, while the RNAV (GPS) Z RWY 28R procedure utilizes 3200 as the climb to altitude and hold. After evaluating the procedure in TARGETS a climb gradient of 217 feet per nautical mile to 1160 feet MSL was required to obtain the proper obstacle clearance for the missed approach segment. Additionally, with this climb gradient the aircraft would not meet the required altitude at VIKYU and would require a climb in hold at the fix which would require additional holding airspace to be evaluated. With the requested climb gradient of 350'/NM to 1900' MSL, this would match the other procedures that execute missed approach to fix VIKYU as well as alleviate the need for a climb in hold at the fix.

4. EQUIVALENT LEVEL OF SAFETY PROVIDED:

By standardizing the missed approach altitude at fix VIKYU, this will help to alleviate any complexity within the different missed approach altitudes utilized at VIKYU. This will standardize the utilized altitude and provide an level of safety for aircraft in holding. With current holding altitudes, an aircraft on the RNAV Z procedure at 3200' with an aircraft on the ILS procedure holding above at 4000' (the next given altitude) would only have 800' separation between aircraft. By standardizing missed approach altitudes for all runway 28R procedures, this eliminates this possibility. Additionally, by utilizing the 350'/NM to 1900 climb gradient, this removed the climb in hold required on the procedure at VIKYU and alleviates the need for evaluating additional holding airspace.

5. ALTERNATIVE ACTIONS DEEMED NOT FEASIBLE:

Utilizing the 217 ft per nautical mile to 1160 MSL climb gradient does not meet the need of KSFO ATC request to match the missed approach of the other procedures utilizing VIKYU. Additionally, without utilizing the 350 ft per nautical mile to 1900 MSL would require additional holding airspace be evaluated due to a climb in hold being required at VIKUYU.

6. COORDINATION WITH USER ORGANIZATIONS (SPECIFY):

Central Service Center PBN NATCA and FAA Leads
Northern California TRACON (NCT)
OAKLAND ARTCC (ZOA)
SAN FRANCISCO TOWER (KSFO)

7. SUBMITTED BY:

DATE OFFICE IDENTIFICATION TITLE

SIGNATURE

8. AFS ACTIONS:

☐ APPROVED ☐ DISAPPROVED ☐ NOT REQUIRED

COMMENTS:

Digitally signed by
ROBERT G HAMILTON
Jul 30, 2024

DATE ROUTING SYMBOL SIGNATURE

SAN FRANCISCO, CALIFORNIA

AL-375 (FAA)

FIG

WAAS CH 48803 W28A	APP CRS 284°	Rwy Idg TDZE Apt Elev	11236 13 13
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NEW

RNAV (GPS) Z RWY 28R

SAN FRANCISCO INTL (SFO)

RNP APCH - GPS.

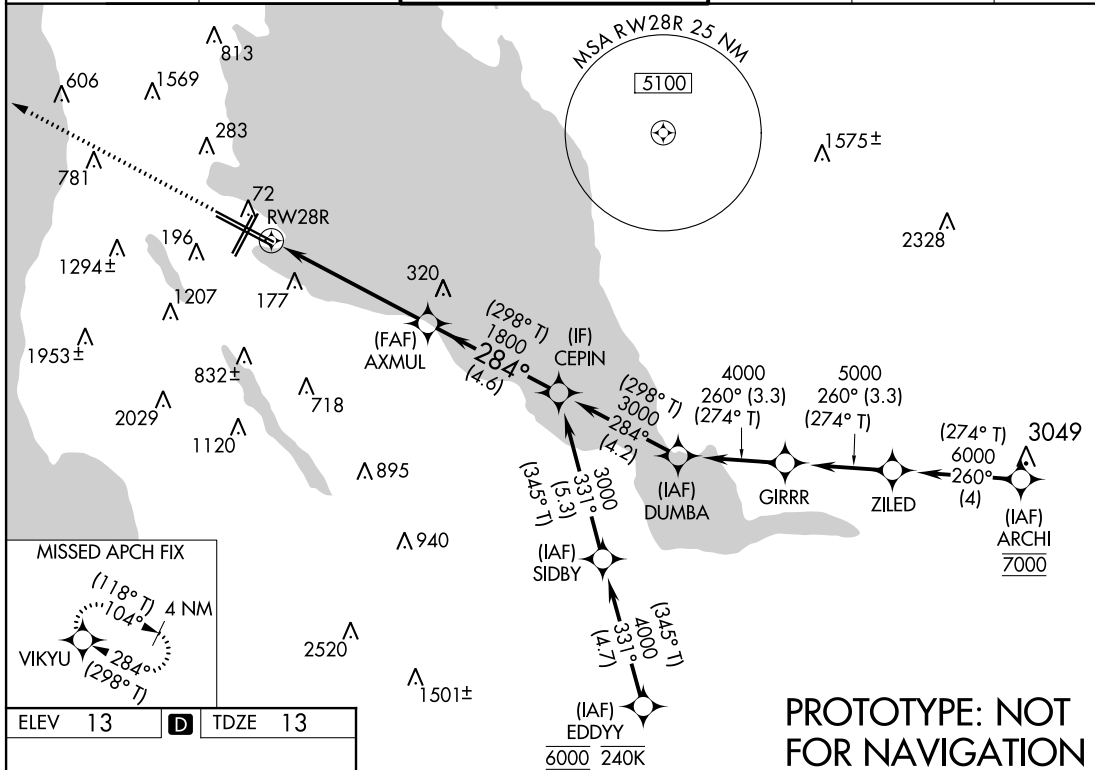
⚠ Circling NA to Rwy 10L, 10R, 19L, and 19R. Circling Rwy 1L, 1R NA at night. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below 4°C or above 54°C. For inop ALS, increase LNAV/VNAV all Cats visibility to 1¾ SM, increase LNAV Cat C/D visibility to 2 SM.

ALS-2

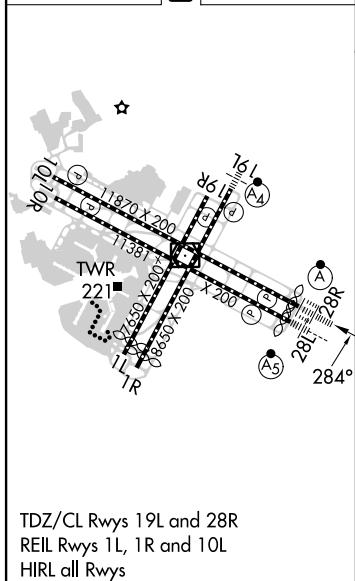


MISSED APPROACH: Climb to 3000 direct VIKYU and hold. *Missed Approach requires a minimum climb of 350 feet per NM to 1900; if unable to meet climb gradient, see RNAV (GPS) RWY 28L.

D-ATIS 113.7 115.8 118.85	NORCAL APP CON 134.5 338.2	SAN FRANCISCO TOWER 120.5 269.1	GND CON 121.8	CLNC DEL 118.2	CPDLC
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ELEV 13 TDZE 13



PROTOTYPE: NOT FOR NAVIGATION

3000	VIKYU	VGSI and RNAV glidepath not coincident (VGSI Angle 3.00/TCH 68).			
AXMUL	1800	2.1 NM to RWY 28R	3.3 NM	4.6 NM	CEPIN
284°	284°	284°	284°	284°	284°
1800	1800	1800	1800	1800	1800
GP 3.00°	GP 3.00°	GP 3.00°	GP 3.00°	GP 3.00°	GP 3.00°
TCH 55	TCH 55	TCH 55	TCH 55	TCH 55	TCH 55
CATEGORY	A	B	C	D	
LPV DA*	213/18	200 (200-1/2)			
LNAV/VNAV DA	642-1 3/8	629 (700-1 3/8)			
LNAV MDA	760/24 747 (800-1/2)	760/40 747 (800-3/4)	760-1 3/4 747 (800-1 3/4)		
CIRCLING	760-1 747 (800-1)	1020-1 1/2 1007 (1100-1 1/2)	1640-3 1627 (1600-3)	NA	

SAN FRANCISCO, CALIFORNIA

Amdt 8 FIG

37°37'N-122°23'W

SAN FRANCISCO INTL (SFO)

RNAV (GPS) Z RWY 28R

AUTOMATED AL-375 RNAV (GPS) Z RWY 28R

SW-2

18 JUNE 2024

COMPILER: CG

REVIEWER:

DBL CHKR:

EFF: FIG

ACTIVE PROCEDURE

SAN FRANCISCO, CALIFORNIA

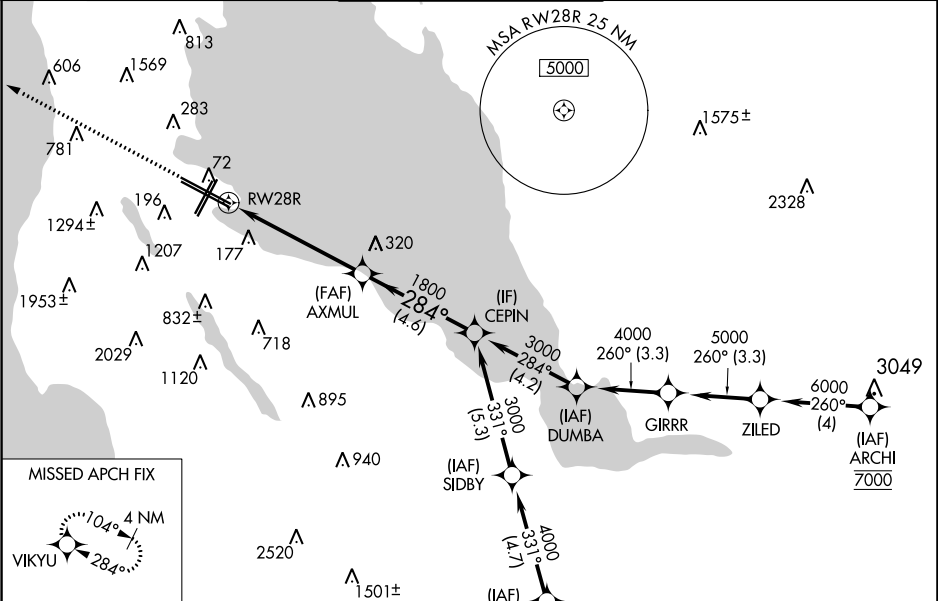
AL-375 (FAA)

21224

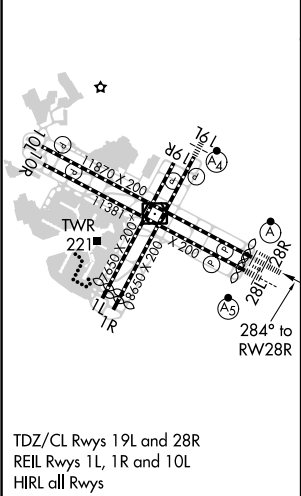
WAAS CH 48803 W28A	APP CRS 284°	Rwy Idg 11236 TDZE 13 Apt Elev 13
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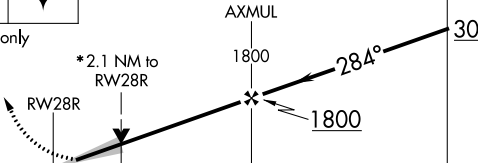
RNAV (GPS) Z RWY 28R
SAN FRANCISCO INTL (SFO)

RNP APCH. ⚠ Circling NA to Rwy 10L, 10R, 19L, and 19R. Circling Rwy 1L, 1R NA at night. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below 3°C or above 54°C. For inop ALS, increase LNAV/VNAV all Cats visibility to 1½ SM, increase LNAV Cat C/D visibility to 2 SM.			ALSF-2 Ⓜ	MISSED APPROACH: Climb to 3200 direct VIKYU and hold, continue climb-in-hold to 3200.		
D-ATIS 113.7 115.8 118.85	NORCAL APP CON 134.5 338.2	SAN FRANCISCO TOWER 120.5 269.1	GND CON 121.8	CLNC DEL 118.2	CPDLC	



ELEV 13	D	TDZE 13
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3200 ↑	VIKYU ✦	VGSI and RNAV glidepath not coincident (VGSI Angle 3.00/TCH 68).			CEPIN
*LNAV only					
RW28R		*2.1 NM to RW28R		1800	3000
2.1 NM		3.3 NM		4.6 NM	
GP 3.00° TCH 55					
CATEGORY	A	B	C	D	
LPV DA	213/18 200 (200-½)				
LNAV/VNAV DA	642-1⅓ 629 (700-1⅓)				
LNAV MDA	760/24 747 (800-½)	760/40 747 (800-¾)	760-1¾	747 (800-1¾)	
CIRCLING	760-1 747 (800-1)	960-1¼ 947 (1000-1¼)	1560-3 1547 (1600-3)	NA	

SAN FRANCISCO, CALIFORNIA

Amdt 7 13SEP18

37°37'N-122°23'W

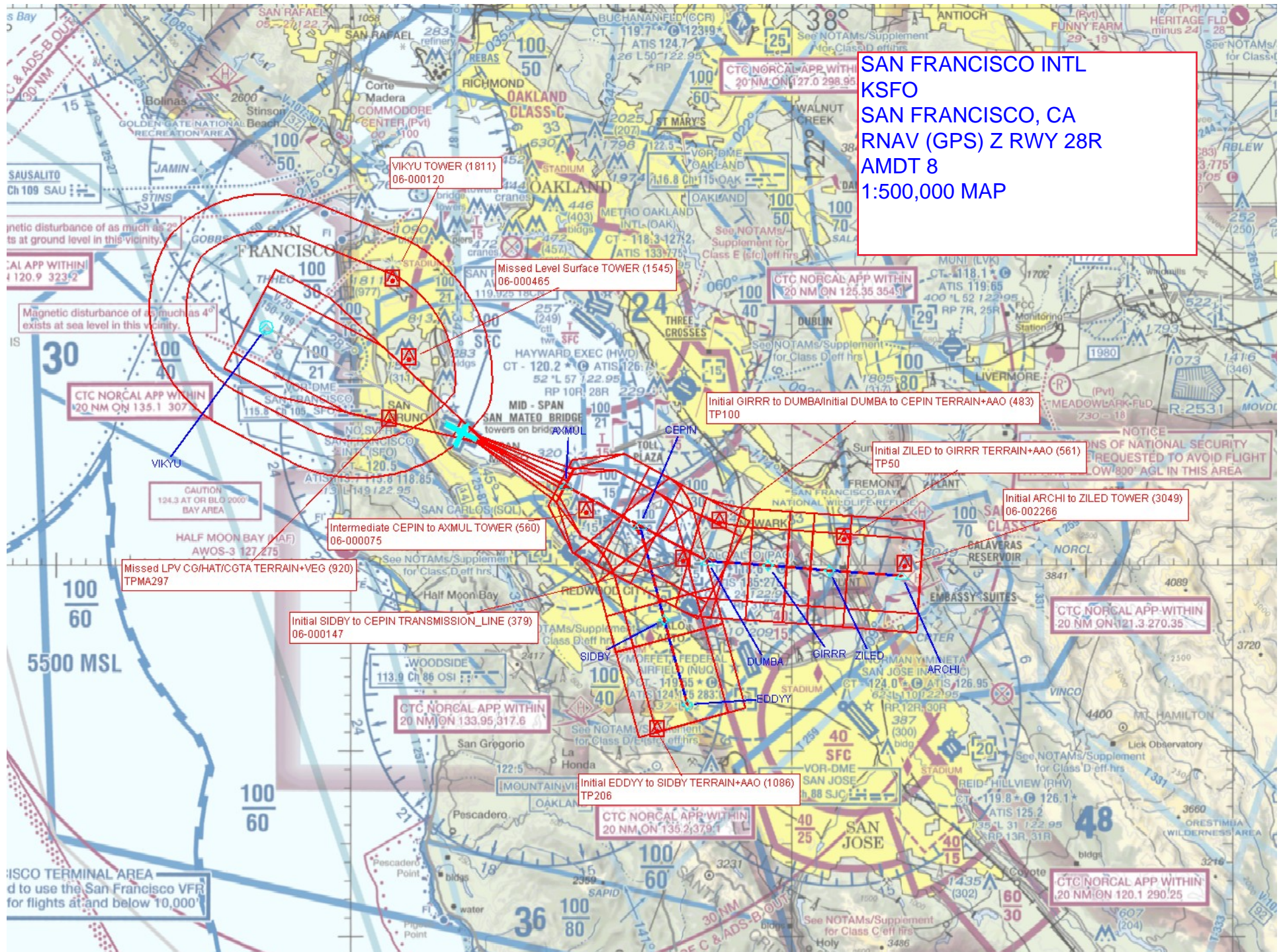
SAN FRANCISCO INTL (SFO)

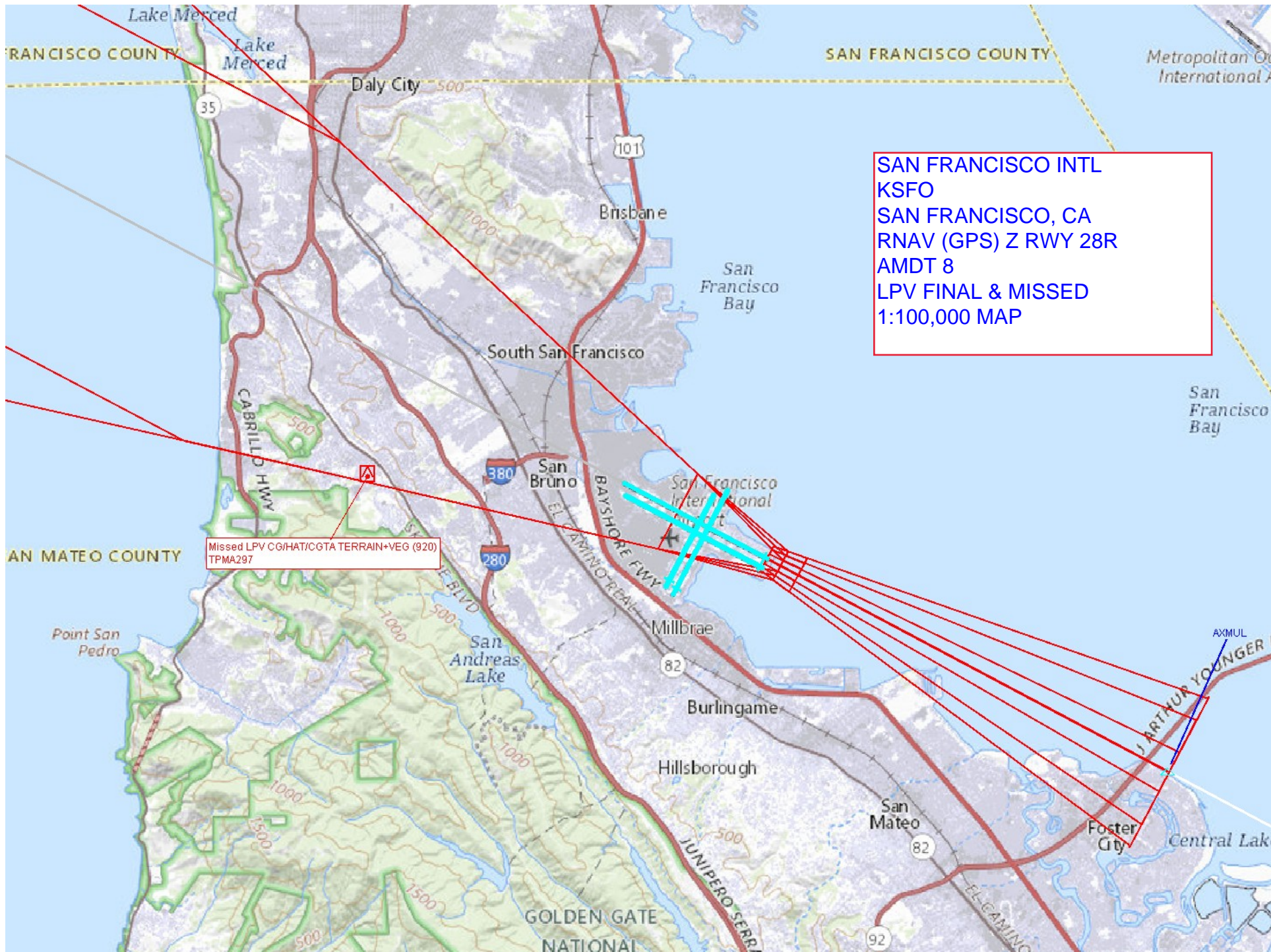
RNAV (GPS) Z RWY 28R

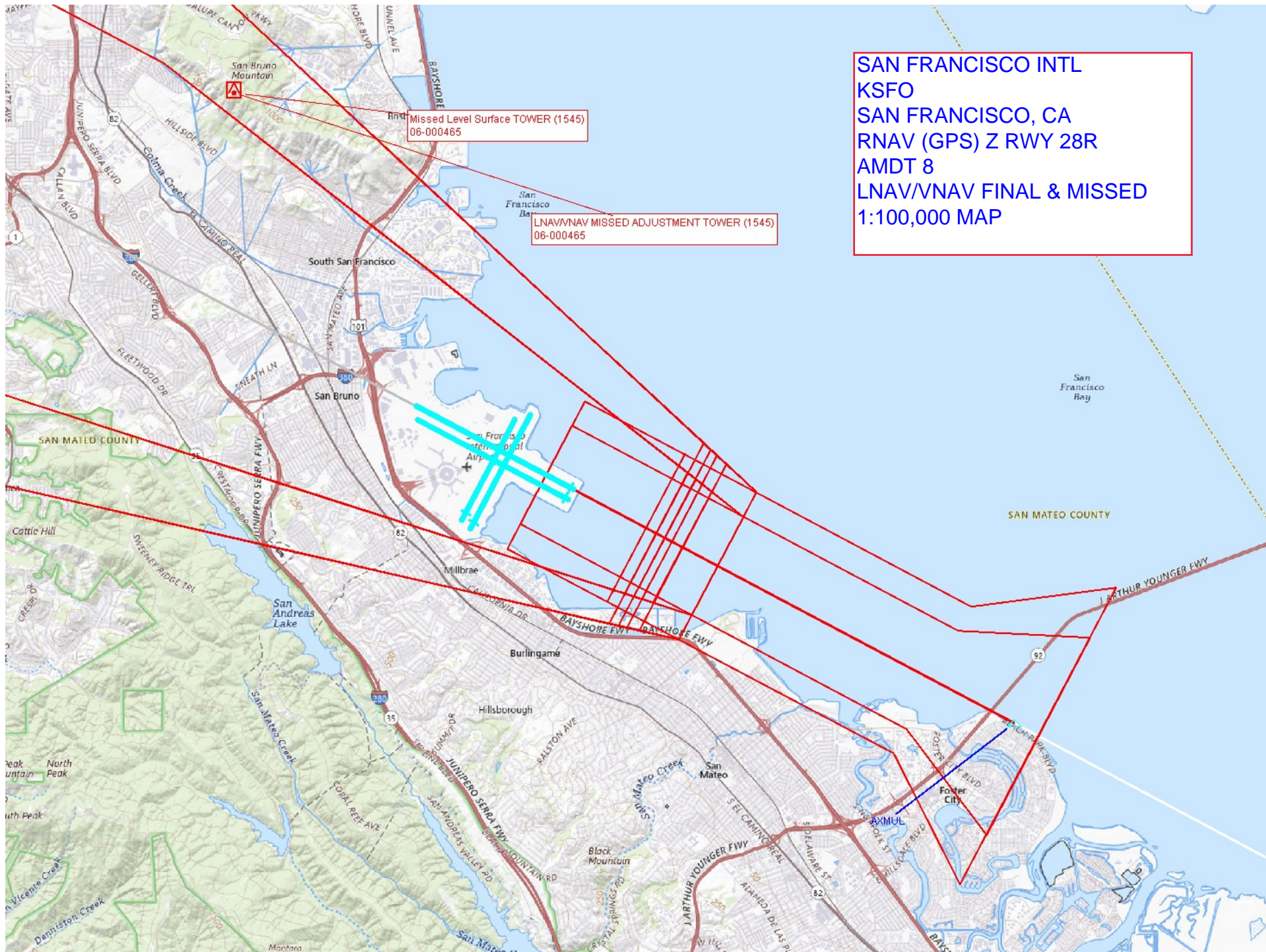
SW-2, 18 APR 2024 to 16 MAY 2024

SW-2, 18 APR 2024 to 16 MAY 2024

SAN FRANCISCO INTL
KSFO
SAN FRANCISCO, CA
RNAV (GPS) Z RWY 28R
AMDT 8
1:500,000 MAP



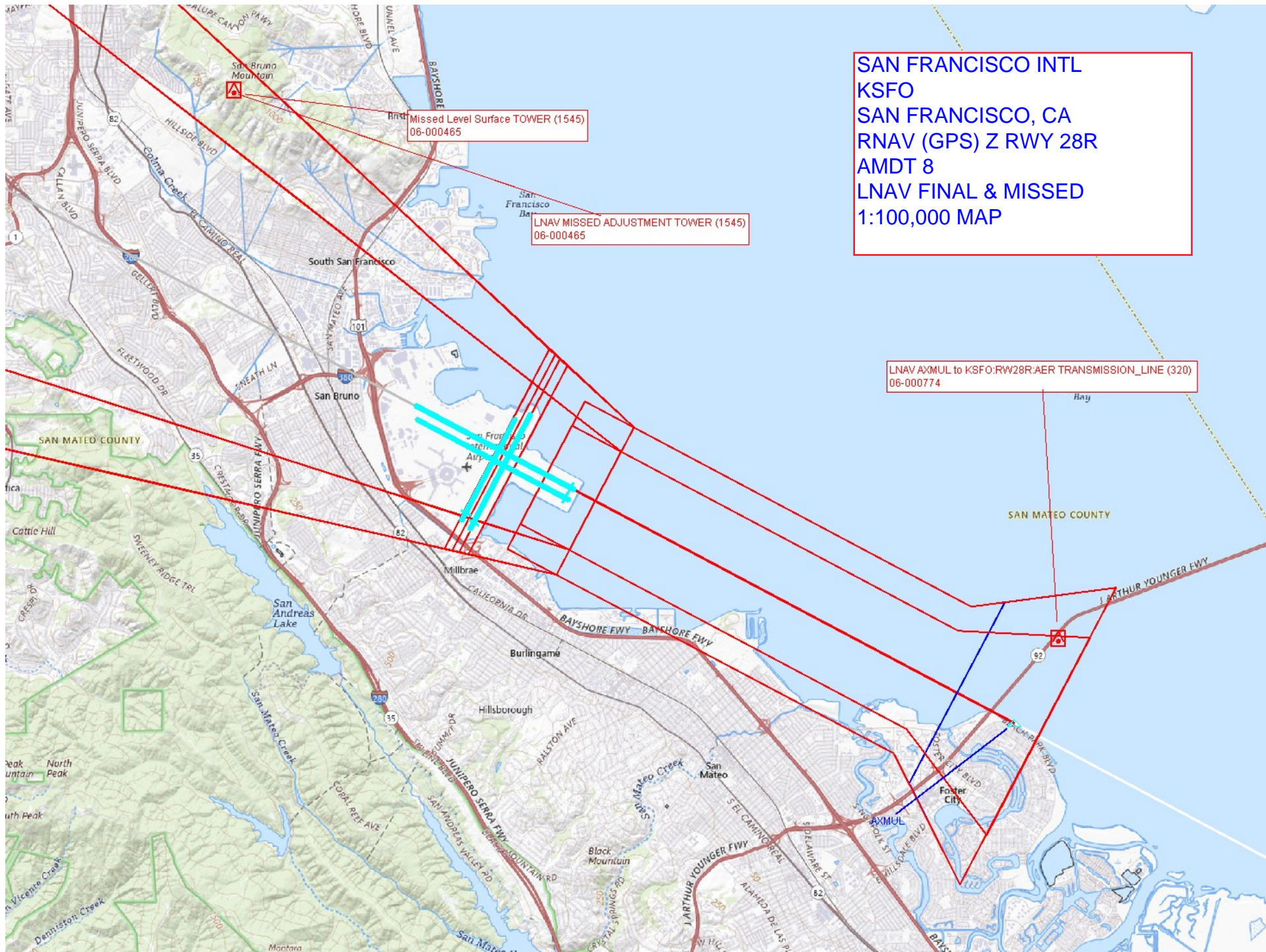




SAN FRANCISCO INTL
KSFO
SAN FRANCISCO, CA
RNAV (GPS) Z RWY 28R
AMDT 8
LNAV/VNAV FINAL & MISSED
1:100,000 MAP

Missed Level Surface TOWER (1545)
06-000465

LNAV/VNAV MISSED ADJUSTMENT TOWER (1545)
06-000465



SAN FRANCISCO INTL
KSFO
SAN FRANCISCO, CA
RNAV (GPS) Z RWY 28R
AMDT 8
LNAV FINAL & MISSED
1:100,000 MAP

LNAV AXMUL to KSFO:RWY28R:AER TRANSMISSION_LINE (320)
06-000774

Missed Level Surface TOWER (1545)
06-000465

LNAV MISSED ADJUSTMENT TOWER (1545)
06-000465

SAN FRANCISCO INTL
KSFO
SAN FRANCISCO, CA
RNAV (GPS) Z RWY 28R
AMDT 8
CIRCLING
1:100,000 MAP

