| Flight Procedure Tracking Form | Action: FLIGHT CHECK | Task Type: IAP | Date Open: 02/08/2012 | Task #: 2012012526228901004 | Request #: 20120125262289 |
|---|---|---|---|---|---|
| **Procedure:** RNAV (RNP) Z RWY 10R AMDT 1 | | **Airport ID:** KSFO | **Airport:** SAN FRANCISCO INTL | | **Reimbursable #:** |
| **City:** SAN FRANCISCO **ST:** CA | | **GPS #:** | | **Estimated Chart Date:** 09/20/2012 | **FICO #:** |
| **Fac ID:** **Fac. Type:** RNP | | **Specialist:** ROY CURRIE | | | |

## Procedure Review

PJ

| | Rec'd | Rel'd | Full Name | Comments |
|---|---|---|---|---|
| **Lead:** | 03/16/2012 | 06/12/2012 | LONNIE EVERHART | |
| **QA:** | 06/12/2012 | 06/22/2012 | SCOTT BEARD | |
| **Liaison:** | 06/22/2012 | | Alfonso | |

**Procedure Comments:** **Remark Type:** INFORMATION

Pkg 1 of 1

SAN FRANCISCO, CA SAN FRANCISCO INTL (KSFO) RNAV (RNP) Z RWY 10R, AMDT 1 (RNP) ENROUTE-NO FC: 8.7.12 PUB: 9.20.12

ATTACHED FORMS: 8260-3; 8260-10; 8260-9; 8260-2(S): DOTNE, REV 1; IGUKE, REV 1; JULOS, ORIG; STINS-INT, REV 9; (INFO ONLY) DUMBA-INT, REV 5.

CONTACT: ADOLFO URRUTIA, AJV-354 LEAD, 405.954.2079:

| APP CRS | Rwy Idg | 10608 |
|---|---|---|
| 101° | THRE | 7 |
| | Apt Elev | 13 |

# RNAV (RNP) Z RWY 10R

SAN FRANCISCO INTL (SFO)

For uncompensated Baro-VNAV systems, procedure NA below -15° C (5° F) or above 54° C (130° F). GPS required.

MISSED APPROACH: Climb to 3600 via 101° track to IGUKE and via 100° track to DUMBA and hold.

| ATIS | NORCAL APP CON | SAN FRANCISCO TOWER | GND CON | CLNC DEL |
|---|---|---|---|---|
| 113.7 115.8 118.85 135.45 | 134.5 338.2 | 120.5 269.1 | 121.8 | 118.2 |

Procedure NA for arrivals at STINS via V27 northwest bound and via V25-150-199 northwest bound.

PROTOTYPE-NOT FOR NAVIGATION

(IAF) STINS

(133T) 3500 116° (9.3)

(IF) DOTNE

(118T) 1900 101° (6.2)

(FAF) JULOS

RW10R

(118T) 101° (7.2)

IGUKE

(117T) 100° (8.7)

JULOS: 3740.261'N/12229.999'W
IGUKE: 3734.211'N/12215.539'W
DOTNE: 3743.120'N/12236.856'W
STINS: 3749.421'N/12245.401'W
DUMBA: 3730.211'N/12205.769'W
Rwy 10R: 3737.577'N/12223.586'W

MSA RW10R 25 NM

5100

MISSED APCH FIX

DUMBA (298T) 281° (118T) 101° 4 NM

ELEV 13 THRE 7

101° to RW10R

TWR 199

TDZ/CL Rwys 19L and 28R
REIL Rwys 1L, 1R and 10L
HIRL all Rwys

VGSI and RNAV glidepath not coincident (VGSI Angle 3.00/TCH 75).

| 3600 | IGUKE | 100° tr | DUMBA |
|---|---|---|---|
| 101° tr | | | |

Procedure Turn NA

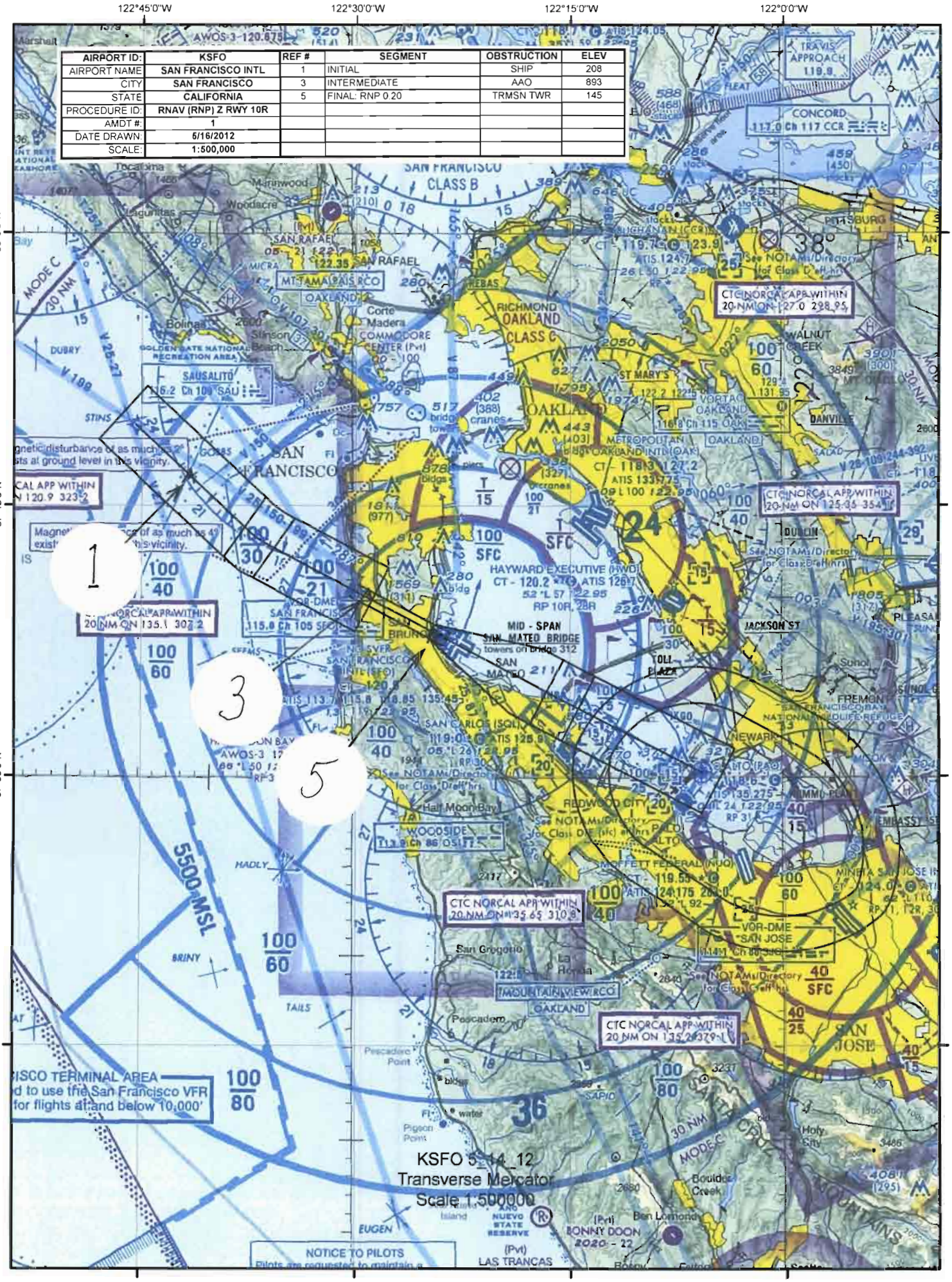
STINS 3500 (133T) 116° DOTNE 3500 (118T) 101° JULOS 1900 RW10R

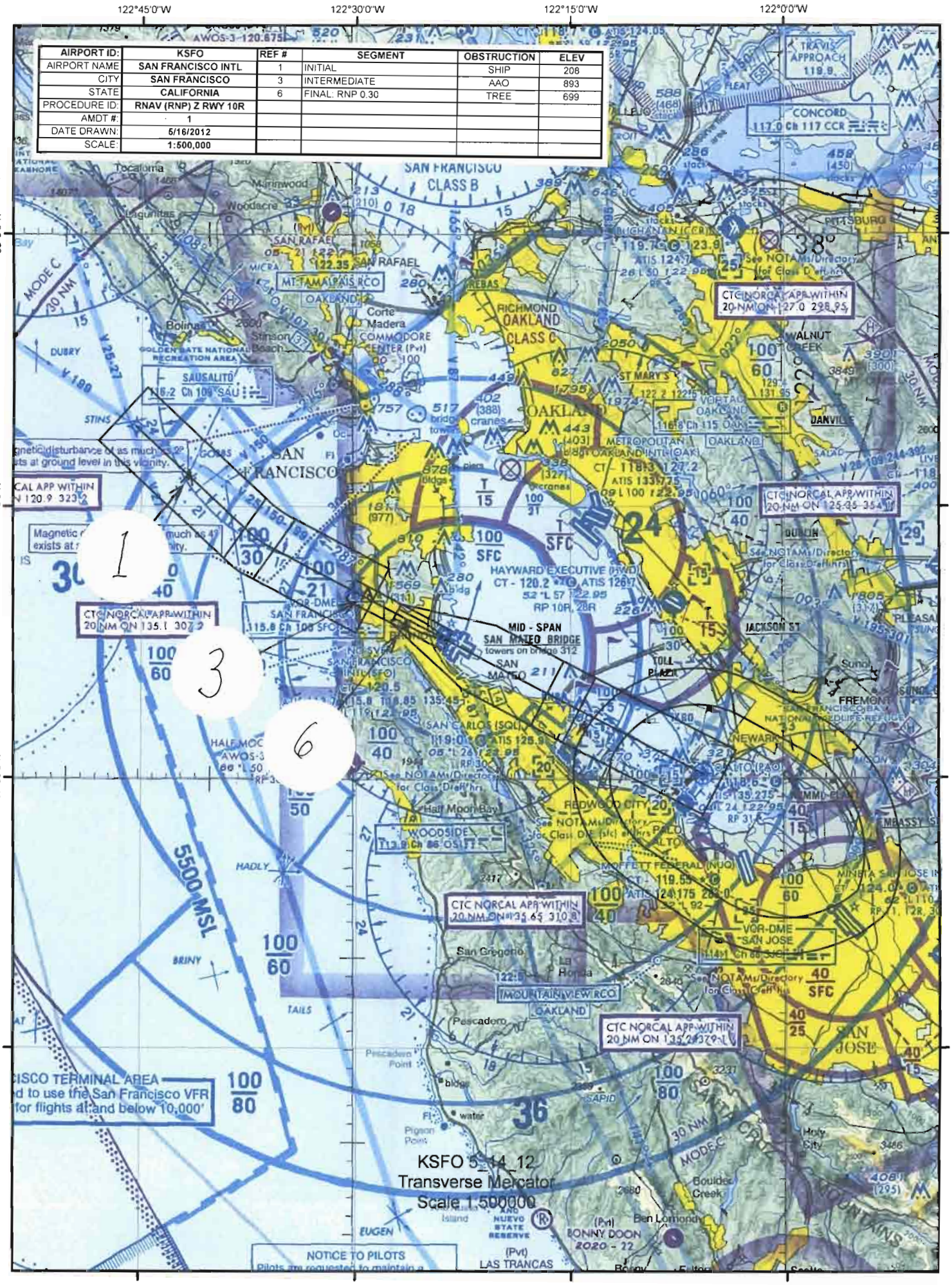
GP 3.00° TCH 60

9.3 NM 6.2 NM 5.8 NM

| CATEGORY | A | B | C | D |
|---|---|---|---|---|
| RNP 0.20 DA | 393-1¼ | 386 (400-1¼) | | |
| RNP 0.30 DA | 1105-4 | 1098(1100-4) | | |

## AUTHORIZATION REQUIRED

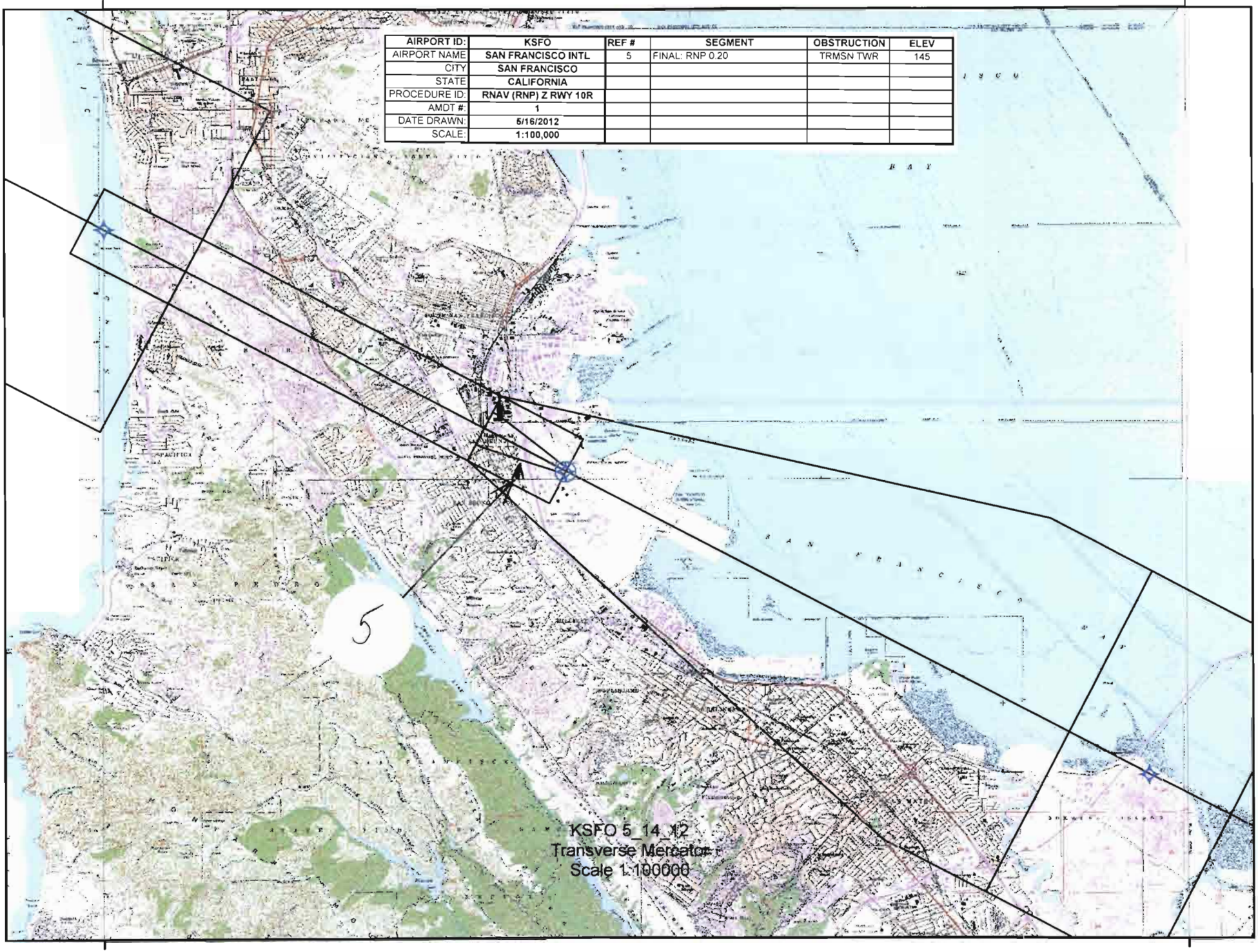

122°45'0"W
122°30'0"W
122°15'0"W
122°0'0"W
38°0'0"N
37°45'0"N
37°30'0"N
37°15'0"N
AIRPORT ID: KSFO
AIRPORT NAME: SAN FRANCISCO INTL
CITY: SAN FRANCISCO
STATE: CALIFORNIA
PROCEDURE ID: RNAV (RNP) Z RWY 10R
AMDT #: 1
DATE DRAWN: 5/16/2012
SCALE: 1:500,000
REF # | SEGMENT | OBSTRUCTION | ELEV
1 | INITIAL | SHIP | 208
3 | INTERMEDIATE | AAO | 893
5 | FINAL: RNP 0.20 | TRMSN TWR | 145
1
3
5
KSFO 5_14_12
Transverse Mercator
Scale 1:500000

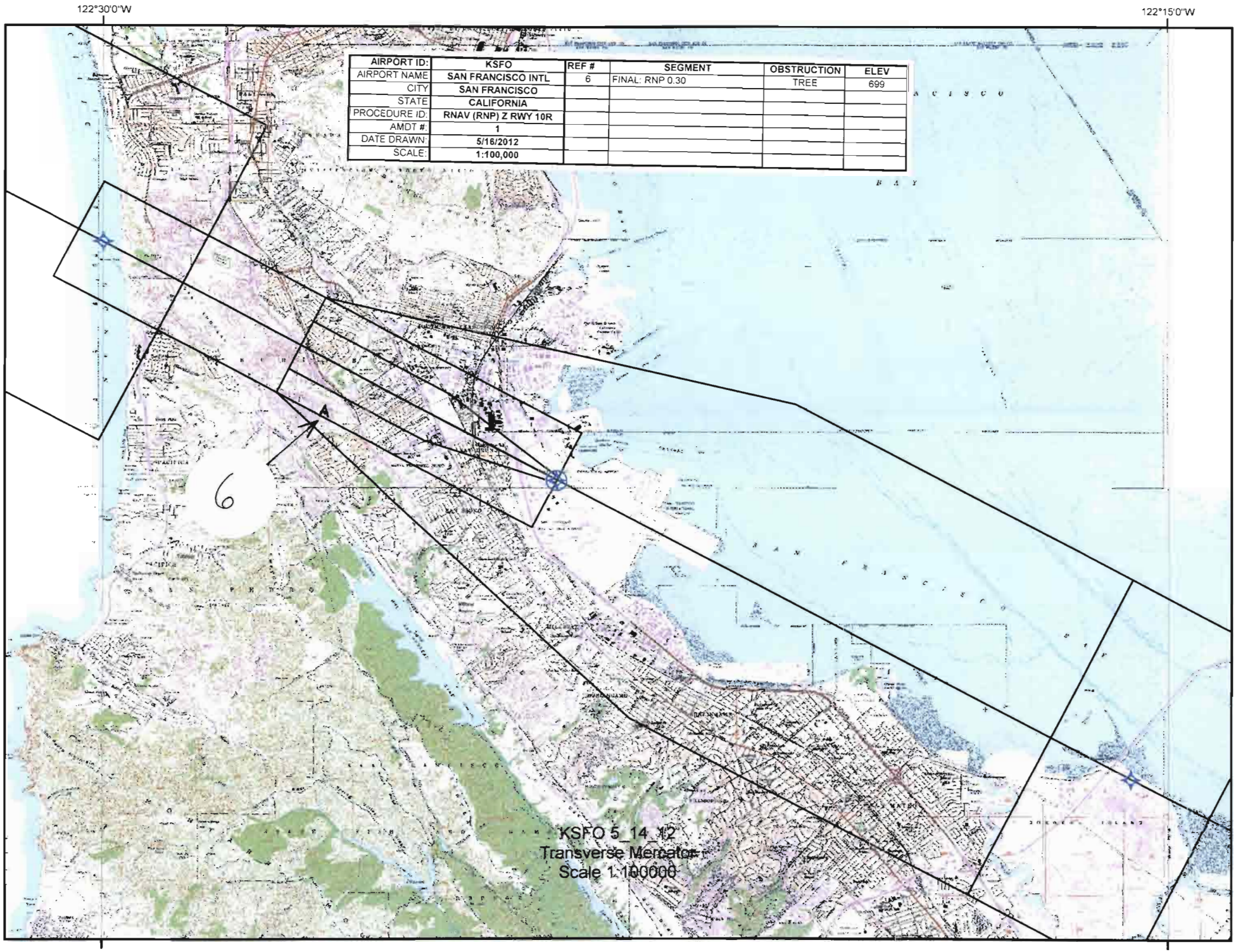

122°45'0"W
122°30'0"W
122°15'0"W
122°0'0"W
38°0'0"N
37°45'0"N
37°30'0"N
37°15'0"N
AIRPORT ID: KSFO
AIRPORT NAME: SAN FRANCISCO INTL
CITY: SAN FRANCISCO
STATE: CALIFORNIA
PROCEDURE ID: RNAV (RNP) Z RWY 10R
AMDT #: 1
DATE DRAWN: 5/16/2012
SCALE: 1:500,000
REF # | SEGMENT | OBSTRUCTION | ELEV
1 | INITIAL | SHIP | 208
3 | INTERMEDIATE | AAO | 893
6 | FINAL: RNP 0.30 | TREE | 699
SAN FRANCISCO CLASS B
OAKLAND CLASS C
HAYWARD EXECUTIVE (HWD)
MID - SPAN SAN MATEO BRIDGE
MOFFETT FEDERAL (NUQ)
MOUNTAIN VIEW RCO
WOODSIDE
SAUSALITO
MT TAMALPAIS RCO
CTC NORCAL APP WITHIN 20 NM ON 127.0 298 95
CTC NORCAL APP WITHIN 20 NM ON 125.35 354
CTC NORCAL APP WITHIN 20 NM ON 135.65 310 8
CTC NORCAL APP WITHIN 20 NM ON 135.2 279
5500 MSL
SAN FRANCISCO TERMINAL AREA
d to use the San Francisco VFR
for flights at and below 10,000'
NOTICE TO PILOTS
KSFO 5_14_12
Transverse Mercator
Scale 1:500000

122°30'0"W

122°15'0"W

| AIRPORT ID: | KSFO | REF # | SEGMENT | OBSTRUCTION | ELEV |
|---|---|---|---|---|---|
| AIRPORT NAME | SAN FRANCISCO INTL | 5 | FINAL: RNP 0.20 | TRMSN TWR | 145 |
| CITY | SAN FRANCISCO | | | | |
| STATE | CALIFORNIA | | | | |
| PROCEDURE ID: | RNAV (RNP) Z RWY 10R | | | | |
| AMDT #: | 1 | | | | |
| DATE DRAWN: | 5/16/2012 | | | | |
| SCALE: | 1:100,000 | | | | |




122°30'0"W
122°15'0"W
AIRPORT ID: KSFO
AIRPORT NAME: SAN FRANCISCO INTL
CITY: SAN FRANCISCO
STATE: CALIFORNIA
PROCEDURE ID: RNAV (RNP) Z RWY 10R
AMDT #: 1
DATE DRAWN: 5/16/2012
SCALE: 1:100,000
REF # 6
SEGMENT: FINAL: RNP 0.30
OBSTRUCTION: TREE
ELEV: 699
A
6
KSFO 5_14_12
Transverse Mercator
Scale 1:100000

US DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

# RNAV (RNP) - STANDARD, INSTRUMENT APPROACH PROCEDURE, TITLE 14 CFR PART 97.33

Bearings, headings, courses, 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 in feet RVR.

## TERMINAL ROUTES

| FROM | TO | COURSE AND DISTANCE | ALTITUDE |
|---|---|---|---|
| STINS (IAF) | DOTNE (TF) (FB) (RNP 1.00) | 115.85 / 9.25 | 3500 |
| DOTNE (IF) | JULOS (TF) (FB) (RNP 1.00) | 100.65 / 6.15 | 1900 |
| JULOS (FAF) | RW10R (MAP) (TF) (FO) | 100.72 / 5.76 | |
| RW10R (MAP) | IGUKE (TF) (FB) (RNP 1.00) | 100.69 / 7.23 | |
| IGUKE | DUMBA (TF) (FO) (RNP 1.00) | 100.16 / 8.74 | 3600 |

## MISSED APPROACH

RNP: DA

CLIMB TO 3600 ON TRACK 100.69 TO IGUKE AND ON TRACK 100.16 TO DUMBA AND HOLD.

ADDITIONAL FLIGHT DATA:
HOLD E, LT, 280.98 INBOUND.
DISTANCE TO THLD FROM 386 HATH: 1.02 NM.
ROUTE TYPE: A, H
ROUTE TYPE QUALIFIER 1: F
ROUTE TYPE QUALIFIER 2: S
#TCH 67.2 MSL (DO NOT CHART)

1. PT ____ SIDE OF COURSE ____ OUTBOUND ____ FT WITHIN ____ MILES OF ____ (IAF)
2. PROFILE STARTS AT STINS
3. FAC: 100.72 FAF: ____ DIST FAF TO MAP: 5.76 THLD: ____
4. MIN. ALT: STINS 3500, DOTNE 3500, JULOS 1900
5. DIST TO THLD FROM OM: 5.76 MM: ____ IM: ____ 150 HAT: ____ 100 HAT: ____ GS ANT: ____
6. MIN GS INCPT: 1900 GS ALT AT: JULOS 1900 OM: ____ MM: ____ IM: ____
7. GS ANGLE: 3.00 TCH: 60.0# 34:1 IS NOT CLEAR
8. MSA FROM: RW10R 5100

MAG VAR: 17E EPOCH YEAR: 1975

## MINIMUMS

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

| CATEGORY =====> | A | | | B | | | C | | | D | | | E | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DH/MDA | VIS | HAT/HAA | DH/MDA | VIS | HAT/HAA | DH/MDA | VIS | HAT/HAA | DH/MDA | VIS | HAT/HAA | DH/MDA | VIS | HAT/HAA |
| AUTHORIZATION REQUIRED | | | | | | | | | | | | | | | |
| RNP 0.20 DA | 393 | 1 1/4 | 386 | 393 | 1 1/4 | 386 | 393 | 1 1/4 | 386 | 393 | 1 1/4 | 386 | | | |
| RNP 0.30 DA | 1105 | 4 | 1098 | 1105 | 4 | 1098 | 1105 | 4 | 1098 | 1105 | 4 | 1098 | | | |

NOTES:
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -15C (5F) OR ABOVE 54C (130F).
CHART NOTE: GPS REQUIRED.
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT.
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT STINS VIA V27 NORTHWEST BOUND AND VIA V25-150-199 (SEE FORM 8260-10)

| CITY AND STATE | ELEVATION: 13 THRE: 7 AIRPORT NAME: | FACILITY IDENTIFIER: | PROCEDURE NO./AMDT NO./EFFECTIVE DATE: | SUP: RNAV (RNP) Y RWY 10R |
|---|---|---|---|---|
| SAN FRANCISCO, CA | SAN FRANCISCO INTL | RNAV | RNAV (RNP) Z RWY 10R, AMDT 1 | AMDT: ORIG-A |
| | | | | DATED 06/30/2011 |

| ALL AFFECTED PROCEDURES REVIEWED? | COORDINATES OF FACILITIES | REQUIRED EFFECTIVE DATE |
|---|---|---|
| [ ] YES [X] NO | | **ROUTINE** |

COORDINATED WITH:

| ATA | AAT | ALPA | APA | AOPA | NBAA | OTHER (specify) |
|---|---|---|---|---|---|---|
| [X] | [ ] | [X] | [X] | [X] | [X] | [X] **ZOA, SFO ATCT, SOCAL APP CON, AFLD MGR** |

FLIGHT CHECKED BY

| NAME: | FIFO | DATE: |
|---|---|---|
| | | |

DEVELOPED BY

| NAME: | FIFO | DATE: |
|---|---|---|
| **ROY E. CURRIE** | **AJV-354** | **05/11/2012** |

APPROVED BY

| NAME: | | FIFO | DATE: |
|---|---|---|---|
| **DEZ SILAGYI** | **MANAGER** | **AJV-354** | |

CHANGES:

**1. CHANGED PFAF FROM JABGO TO JULOS, MOVED 1300.85FT NW.**
**2. CHANGED RNP 0.20 DA FROM 368 TO 393, AND RNP 0.30 DA FROM 1040 TO 1105.**
**3. CHANGED BARO-VNAV NOTE FROM: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW 2C (36F) OR ABOVE 48C (120F); TO: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -15C (5F) OR ABOVE 54C (130F).**
**4. CHANGED PROCEDURE NAME FROM Y TO Z.**

REASONS:

**1. NEW PFAF LOCATION ASSOCIATED WITH APPROACH END RUNWAY EXTENTION OF 775FT. NEW FIX NAME JULOS DUE TO JABGO USED ON OTHER PROCEDURE NOT BEING AMENDED.**
**2. RUNWAY THLD LOCATION CHANGE, USE OF THLD FOR CALCULATIONS INSTEAD OF TDZE, AND PFAF CALCULATION FORMULA.**
**3. NOAA WEATHER HISTORY WEBSITE NOT AVAILABLE, NO OTHER RELIABLE SOURCE. USED -30 ISA.**
**4. FPT REQUESTED.**

US DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

**RNAV (RNP) - STANDARD,**
**INSTRUMENT APPROACH PROCEDURE, - TITLE 14 CFR PART 97.33**

Bearings, headings, courses, 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 aiport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

NOTES, (CONT.):
NORTHWEST BOUND.

| CITY AND STATE | ELEVATION: 13 THRE: 7<br>AIRPORT NAME: | FACILITY IDENTIFIER: | PROCEDURE NO./ AMDT NO./EFFECTIVE DATE: | SUP: RNAV (RNP) Y RWY 10R |
|---|---|---|---|---|
| SAN FRANCISCO, CA | SAN FRANCISCO INTL | RNAV | RNAV (RNP) Z RWY 10R, AMDT 1 | AMDT: ORIG-A |
| | | | | DATED: 06/30/2011 |

| ALL AFFECTED PROCEDURES REVIEWED? ☐ YES ☐ NO | COORDINATES OF FACILITIES | REQUIRED EFFECTIVE DATE |
|---|---|---|

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

| FLIGHT CHECKED BY | | |
|---|---|---|
| NAME: | FIFO | DATE: |
| **DEVELOPED BY** | | |
| NAME: | FIFO | DATE: |
| **APPROVED BY** | | |
| NAME: | FIFO | DATE: |

CHANGES:

REASONS:

Bearings, headings, courses, 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 in feet RVR.

ARINC PACKET - 424-18 - RNAV (RNP)

```
                1         2         3         4         5         6         7         8         9         0         1         2         3
WP      12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
        SUSAEAENRT   DOTNE K20    W     N37430718W122365136                    E0141     NAR           DOTNE
        SUSAEAENRT   DUMBA K20    C     N37301266W122054613                    E0140     NAR           DUMBA
        SUSAEAENRT   IGUKE K20    W     N37341266W122153233                    E0140     NAR           IGUKE
        SUSAEAENRT   JULOS K20    W     N37401566W122295996                    E0141     NAR           JULOS
        SUSAEAENRT   STINS K20    C   L N37492524W122452406                    E0141     NAR           STINS

                1         2         3         4         5         6         7         8         9         0         1         2         3
AIRPORT 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
        SUSAP KSFOK2ASFO     0     118YHN37370830W122222960E017000013          1800018000C    MNAR    SAN FRANCISCO INTL

                1         2         3         4         5         6         7         8         9         0         1         2         3
SEGMENT 12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
        SUSAP KSFOK2FH10RZ ASTINS 010STINSK2EA0E  A    IF                                + 03500     18000                A FS
        SUSAP KSFOK2FH10RZ ASTINS 020DOTNEK2EA0EE B 010TF                                + 03500                          A FS
        SUSAP KSFOK2FH10RZ H      010DOTNEK2EA0E  I    IF                                + 03500     18000                A FS
        SUSAP KSFOK2FH10RZ H      020JULOSK2EA1E  F 010TF                                + 01900                RW10R K2PGA FS
        SUSAP KSFOK2FH10RZ H      020JULOSK2EA2W                                              A031A021                     FS
        SUSAP KSFOK2FH10RZ H      030RW10RK2PG0GY M 031TF                                   00067          -300           A FS
        SUSAP KSFOK2FH10RZ H      040IGUKEK2EA0E M  010TF                                                                A FS
        SUSAP KSFOK2FH10RZ H      050DUMBAK2EA0EY   010TF                                + 03600                          A FS
        SUSAP KSFOK2FH10RZ H      060DUMBAK2EA0EE  L   HM                      28100040    + 03600                          A FS

                1         2         3         4         5         6         7         8         9         0         1         2         3
RUNWAY  12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
        SUSAP KSFOK2GRW10R   0113811008 N37373464W122233518+0000     -00304000070000602000R

                1         2         3         4         5         6         7         8         9         0         1         2         3
MSA     12345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------
        SUSAP KSFOK2SRW10RK2PG              0   18018005125                                                                    M
```

| CITY AND STATE | ELEVATION: 13 THRE: 7 / AIRPORT NAME: | FACILITY IDENTIFIER: | PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE: | SUP: |
|---|---|---|---|---|
| **SAN FRANCISCO, CA** | **SAN FRANCISCO INTL** | **RNAV** | **RNAV (RNP) Z RWY 10R, AMDT 1** | **RNAV (RNP) Y RWY 10R** |
| | | | | AMDT: **ORIG** |
| | | | | DATED: **06/30/2011** |

| ALL AFFECTED PROCEDURES REVIEWED? ☐ YES ☐ NO | COORDINATES OF FACILITIES | REQUIRED EFFECTIVE DATE |
|---|---|---|

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

| FLIGHT CHECKED BY | | |
|---|---|---|
| NAME: | FIFO | DATE: |
| **DEVELOPED BY** | | |
| NAME: | NFPG | DATE: |
| **APPROVED BY** | | |
| NAME: | NFPG | DATE: |

CHANGES:

REASONS:

Bearings, headings, courses, 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 in feet RVR.

ARINC SUMMARY - 424-18 - RNAV (RNP)

| ROUTES | TRANSITION | FIX | SEQ | USE | PATH | TURN | FO/FB | RNP | MAG(TRUE) | DISTANCE | ALTITUDE | SPEED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | STINS | STINS | 010 | IAF | IF | | FB | | | | AA 03500 | |
| | STINS | DOTNE | 020 | | TF | | FB | 1.0 | | | AA 03500 | |
| | | DOTNE | 010 | FACF | IF | | FB | | | | AA 03500 | |
| | | JULOS | 020 | FAF | TF | | FB | 1.0 | | | AA 01900 | |
| | | RW10R | 030 | MAP | TF | | FO | 0.3 | | | AT 00067 | |

| MISSED APPROACH | FIX | SEQ | USE | PATH | TURN | FO/FB | RNP | MAG(TRUE) | DISTANCE | ALTITUDE | SPEED |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | IGUKE | 040 | | TF | | FB | 1.0 | | | | |
| | DUMBA | 050 | | TF | | FO | 1.0 | | | AA 03600 | |
| | DUMBA | 060 | | HM | L | FO | | 281.0(298.0T) | 004.0 | AA 03600 | |

| POINT DATA | WAYPOINT | LAT IN SECS | LONG IN SECS | LAT IN MINS | LONG IN MINS |
|---|---|---|---|---|---|
| | DOTNE | N374307.18 | W1223651.36 | N3743.120 | W12236.856 |
| | DUMBA | N373012.66 | W1220546.13 | N3730.211 | W12205.769 |
| | IGUKE | N373412.66 | W1221532.33 | N3734.211 | W12215.539 |
| | JULOS | N374015.66 | W1222959.96 | N3740.261 | W12229.999 |
| | STINS | N374925.24 | W1224524.06 | N3749.421 | W12245.401 |
| | RW10R | N373734.64 | W1222335.18 | N3737.577 | W12223.586 |

| RUNWAY DATA | RWY | THRESHOLD ELEVATION | TCH |
|---|---|---|---|
| | RW10R | 00007 | 60 |

| CITY AND STATE | ELEVATION: 13 THRE: 7 / AIRPORT NAME: | FACILITY IDENTIFIER: | PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE: | |
|---|---|---|---|---|
| SAN FRANCISCO, CA | SAN FRANCISCO INTL | RNAV | RNAV (RNP) Z RWY 10R, AMDT 1 | SUP: RNAV (RNP) Y RWY 10R<br>AMDT: ORIG<br>DATED: 06/30/2011 |

| ALL AFFECTED PROCEDURES REVIEWED? ☐ YES ☐ NO | COORDINATES OF FACILITIES | REQUIRED EFFECTIVE DATE |
|---|---|---|

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

| FLIGHT CHECKED BY | | |
|---|---|---|
| NAME: | FIFO | DATE: |
| **DEVELOPED BY** | | |
| NAME: | NFPG | DATE: |
| **APPROVED BY** | | |
| NAME: | NFPG | DATE: |

CHANGES:

REASONS:

# STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

PART - A OBSTRUCTION DATA

| 1. APP SEGMENT | FROM | TO | OBSTRUCTION | COORDINATES | ELEV. MSL | ROC | ALT. ADJUSTMENTS | MIN. ALT. |
|---|---|---|---|---|---|---|---|---|
| INITIAL | STINS | DOTNE | 1. 208' SHIP* | 374640.62N/1224135.87W | 208 (4D) | 1000 | AC50 AT2242 | 3500 |
| | | | 2. OVER WATER | 374640.62N/1224135.87W | 0 (0) | | AS1500 | 1500 |
| INTERMEDIATE | DOTNE | JULOS | 3. AAO | 374006.00N/1222912.00W | 893 (4E) | 500 | AC66 DG441 | 1900 |
| | | | 4. TERRAIN | 374006.00N/1222912.00W | 693 (700) | | AS1000 | 1700 |
| FINAL: RNP 0.20 | JULOS | RW10R | 5. TRMSN TWR (KSFOT3648) | 373736.61N/1222414.70W | 145 (1A) | ASC | AC3 MA133 | 393/386 |
| FINAL: RNP 0.30 | JULOS | RW10R | 6. TREE | 373821.82N/1222651.88W | 699 (4D) | ASC | AC50 MA798 | 1105/1098 |
| MISSED APPROACH (RNP 0.20-1.00) | DA | RW10R (40:1) | | | | ASC | | |
| MISSED APPROACH (RNP 0.30-1.00) | DA | RW10R (40:1) | | | | ASC | | |
| MISSED APPROACH (RNP 0.20-1.00) | RW10R | IGUKE (40:1) | 7. POLE (KSFOT3460) | 373819.82N/1222406.51W | 135 (1A) | ASC | MA 133 | |
| MISSED APPROACH (RNP 0.30-1.00) | RW10R | IGUKE (40:1) | 6. TREE | 373821.82N/1222651.88W | 699 (4D) | ASC | MA 798 | |
| 2. PROCEDURE TURN | NA | | | | | | | |
| 3. MISSED APPROACH MAP: | DA (SEE ABOVE) | | | | | ASC | | 3600 |
| 3. MISSED APPROACH ELEV: | 116/705 | | | | | | | |

| 4. CIRCLING AREA | DISTANCE | HT. ABV. ARPT. REQUIRED | HT. ABV. ARPT. ACTUAL |
|---|---|---|---|
| CATEGORY A | 1.3 NM | 350 | NA |
| CATEGORY B | 1.5 NM | 450 | NA |
| CATEGORY C | 1.7 NM | 450 | NA |
| CATEGORY D | 2.3 NM | 550 | NA |
| CATEGORY E | 4.5 NM | 550 | |

5. MINIMUM SAFE ALTITUDES — PRIMARY NAVAID: **RW10R**

| SECTOR | OBSTRUCTION | BRG/DIST | ELEVATION (MSL) | M S A | SECTOR | OBSTRUCTION | BRG/DIST | ELEVATION (MSL) | M S A |
|---|---|---|---|---|---|---|---|---|---|
| 360-360 | AAO | 039/ 27.4 | 3888 (4E) | 5100 | | | | | |

| CITY AND STATE | | FACILITY | PROCEDURE AND AMENDMENT NO: | REGION |
|---|---|---|---|---|
| SAN FRANCISCO, CA | ELEVATION: 13<br>AIRPORT NAME: SAN FRANCISCO INTL | RNAV | RNAV (RNP) Z RWY 10R, AMDT 1 | AWP |

## PART B - SUPPLEMENTAL DATA

| 1. COMMUNICATIONS WITH: | 2. WEATHER SERVICE | | | 3. ALTIMETER SETTING |
|---|---|---|---|---|
| ZOA<br>BAY APCH<br>SFO ATCT | | N W S | OTHER:<br>ASOS-3 | SOURCE: KSFO |
| | X | F A A | | DISTANCE: |
| SATISFACTORY ON: | | A / C | | HOURS REMOTE OPERATION:<br>24 |
| X V H F  X U H F  H F | LOCATION: KSFO | | | ADJUSTMENT: 0 |

| | | |
|---|---|---|
| 4. MONITOR STATUS | PRIMARY NAVAID: | |
| | MONITOR POINT: | |
| | HRS OPTN: | CAT 1 |
| | | CAT 3 |
| 5. APPROACH & RUNWAY LIGHTING | X | ALSF-2 28R |
| | | (S) SALS |
| | X | MALSF 19L |
| | X | HIRL 01R, 19L, 01L, 10L, 10R, 19R, 28R, 28L |
| | | MIRL |
| | X | REIL 01R, 01L, 10L |
| | X | TDZ 19L, 28R |
| | X | C/L 01R, 19L, 01L, 10L, 10R, 19R, 28R, 28L |
| | X | OTHER (SPECIFY)<br>SSALR 28L PAPI-4L 19L, 10L, 10R, 19R, 28R, 28L |

| | | |
|---|---|---|
| 6. RUNWAY MARKINGS | BASIC | |
| | ALL WEATHER | PIR-G 01R, 19L, 10L, 10R, 28R, 28L |
| | INSTRUMENT | NPI-G 01L, 19R |
| 7. RUNWAY VISUAL RANGE | APPROACH | 01R, 19L, 01L, 10L, 10R, 19R, 28R, 28L |
| | MIDFIELD | 01R, 19L, 01L, 10L, 10R, 19R, 28R, 28L |
| | ROLL OUT | 01R, 19L, 01L, 10L, 10R, 19R, 28R, 28L |

| | | |
|---|---|---|
| 8. GLIDE PATH | GP ANGLE: 3.00 | ELEV RWY THRESHOLD: 7.2 |
| | DISTANCE FROM RWY: | ELEV GP ANTENNA: |
| | | THRESHOLD CROSSING HEIGHT: 60.0 |

| | | | |
|---|---|---|---|
| 9. FINAL APPROACH COURSE AIMING | X | RUNWAY THRESHOLD | FT. FROM THRESHOLD |
| | X | ON CENTERLINE | FT. FROM CENTERLINE |

10. WAIVERS: NONE

| | |
|---|---|
| PART D - PREPARED BY: ROY E. CURRIE | DATE: 05/11/2012 |
| TITLE: AERONAUTICAL INFORMATION SPECIALIST | OFFICE: AJV-354 |

## PART C - REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

BACK-UP ALTIMETER NOT PUBLISHED. REDUNDANT REPORTING ON AIRPORT.

VGSI DATA: 3.00/75

KSFO ASOS ON SERVICE A/24 HRS

SEE ATTACHED AIRSPACE LETTER.

*OBSTACLE MAY OCCUR THROUGHOUT SEGMENT.

VEB DATA: SEE ATTACHED SPREADSHEET.

BARO-VNAV NA BELOW -15C (5F) OR ABOVE 54C (130F)
ACT: -30 USED (NOAA WEATHER SITE INOP, NO OTHER SOURCE AVAILABLE)
DELTA ISA LOW: -44.94

| TF TURN FIX | ALT | KIAS | KTAS | HAA | VKTW | TR | BA |
|---|---|---|---|---|---|---|---|
| DOTNE | 3500 | 250 | 270.2 | 3486.8 | 55 | 4.74 | 18.00 |

GQS PENETRATORS IDENTIFIED, CHECKED "PERMITTED" IN IPDS:
29' DME 28L (KSFOT3287) 373734.57N/1222339.34W (1A)
28' OL ON DME (DSFO0060) 373733.93N/1222339.54W (1A)

OBSTACLES WITH NO ACCURACY CODE MODIFIED TO (4D):
2810 TOWER (06-006280)
2683 TOWER (06-006282)
292 TOWER (06-003226)
45 POLE (06-001015)
806 TOWER (06-006118)
390 T-L TWR (06-006267)
387 T-L TWR (06-006265)
630 TOWER (06-006184)
350 BLDG (06-002738)
3849 SPOT (SF-S-0211)
3231 TOWER (SF-T-0014)
139 T-L TWR (06-001450)
606 TOWER (06-021557)

OBSTACLES ADDED TO WORKFILE FROM PREVIOUS AMENDMENT:
208' SHIP 374640.62N/1224135.87W (4D)
699' TREE 373821.82N/1222651.88W (2C)

ORDER 8260.3, VOLUME 1, "VISUAL PORTION OF FINAL" PENETRATIONS:
20:1
26 DME 28L (KSFOT3287) (1A) 373734.57N/1222339.34W (18.17)
25 OL ON DME (KSFO0060) (1A) 373733.93N/1222339.54W (17.97)
17 OL ON DME (KSFO0059) (1A) 373735.65N/1222337.60W (12.80)
17 LOC (KSFOT3286) (1A) 373736.01N/1222338.19W (9.87)
39 POLE (KSFOT3636) (1A) 373734.73N/1222346.70W (4.60)
7 GRD (KSFOT3283) (1A) 373737.16N/1222336.70W (2.46)
10 GRD (KSFOT3288) (1A) 373736.01N/1222338.88W (0.41)
34:1
26 DME 28L (KSFOT3287) (1A) 373734.57N/1222339.34W (19.66)
25 OL ON DME (KSFO0060) (1A) 373733.93N/1222339.54W (19.13)
CONT.

# STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

PART - A OBSTRUCTION DATA

| 1. APP SEGMENT | FROM | TO | OBSTRUCTION | COORDINATES | ELEV. MSL | ROC | ALT. ADJUSTMENTS | MIN. ALT. |
|---|---|---|---|---|---|---|---|---|
| **MISSED APPROACH** | **IGUKE** | **DUMBA** | **6. TREE** | **373821.82N/1222651.88W** | **699 (4D)** | **1000** | | **3600** |
| **(RNP 1.00)** | | **(40:1)** | **8. TERRAIN** | **373821.82N/1222651.88W** | **599 (600)** | | **AS 1500** | **2100** |

| 3. MISSED APPROACH | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | MAP: | | | | | | | |
| | | | | | | | | |
| | ELEV: | | | | | | | |

| 4. CIRCLING AREA | DISTANCE | | HT. ABV. ARPT. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| CATEGORY A | 1.3 NM | REQUIRED | 350 | ACTUAL | | | | | | |
| CATEGORY B | 1.5 NM | | 450 | | | | | | | |
| CATEGORY C | 1.7 NM | | 450 | | | | | | | |
| CATEGORY D | 2.3 NM | | 550 | | | | | | | |
| CATEGORY E | 4.5 NM | | 550 | | | | | | | |

5. MINIMUM SAFE ALTITUDES — PRIMARY NAVAID:

| SECTOR | OBSTRUCTION | BRG/DIST | ELEVATION (MSL) | M S A | SECTOR | OBSTRUCTION | BRG/DIST | ELEVATION (MSL) | M S A |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |

| CITY AND STATE | | FACILITY | PROCEDURE AND AMENDMENT NO: | REGION |
|---|---|---|---|---|
| **SAN FRANCISCO, CA** | **ELEVATION: 13**<br>AIRPORT NAME: **SAN FRANCISCO INTL** | **RNAV** | **RNAV (RNP) Z RWY 10R, AMDT 1** | **AWP** |

## PART B - SUPPLEMENTAL DATA

| 1. COMMUNICATIONS WITH: | 2. WEATHER SERVICE | 3. ALTIMETER SETTING |
|---|---|---|
| SATISFACTORY ON: | ☐ N W S OTHER: | SOURCE: |
| | ☐ F A A | DISTANCE: |
| | ☐ A / C | HOURS REMOTE OPERATION: |
| ☐ V H F ☐ U H F ☐ H F | LOCATION: | ADJUSTMENT: |

| | | |
|---|---|---|
| 4. MONITOR STATUS | PRIMARY NAVAID: | |
| | MONITOR POINT: | |
| | HRS OPTN: CAT 1 | |
| | HRS OPTN: CAT 3 | |

| | | |
|---|---|---|
| 5. APPROACH & RUNWAY LIGHTING | ☐ | ALS |
| | ☐ | (S) SALS |
| | ☐ | MALS |
| | ☐ | HIRL |
| | ☐ | MIRL |
| | ☐ | REIL |
| | ☐ | TDZ |
| | ☐ | C/LINE |
| | ☐ | OTHER (SPECIFY) |

| | | |
|---|---|---|
| 6. RUNWAY MARKINGS | BASIC | |
| | ALL WEATHER | |
| | INSTRUMENT | |
| 7. RUNWAY VISUAL RANGE | APPROACH | |
| | MIDFIELD | |
| | ROLL OUT | |
| 8. GLIDE PATH | GP ANGLE: | ELEV RWY THRESHOLD: |
| | DISTANCE FROM RWY: | ELEV GP ANTENNA: |
| | | THRESHOLD CROSSING HEIGHT: |

| | | | |
|---|---|---|---|
| 9. FINAL APPROACH COURSE AIMING | ☐ | RUNWAY THRESHOLD | FT. FROM THRESHOLD |
| | ☐ | ON CENTERLINE | FT. FROM CENTERLINE |

10. WAIVERS:

| | |
|---|---|
| PART D - PREPARED BY: | DATE: |
| TITLE: | OFFICE: |

## PART C - REMARKS:

CONTINUED.

39 POLE (KSFOT3636) (1A) 373734.73N/1222346.70W (17.04)
17 OL ON DME (KSFO0059) (1A) 373735.65N/1222337.60W (12.80)
17 LOC (KSFOT3286) (1A) 373736.01N/1222338.19W (11.07)
35 POLE (KSFOT3305) (1A) 373735.88N/1222347.44W (9.89)
36 POLE (KSFOT3307) (1A) 373736.85N/1222348.44W (7.45)
36 POLE (KSFOT3308) (1A) 373737.84N/1222349.44W (3.99)
103 TRMSN TWR (KSFOT3429) (1A) 373746.46N/1222416.17W (3.08)
97 TRMSN TWR (KSFOT3423) (1A) 373743.97N/1222415.16W (2.65)

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** DOTNE **STATE:** CA **COUNTRY:** US

**LATITUDE/LONGITUDE:** 374307.18N/1223651.36W **TYPE:** WP

**AIRSPACE DOCKET:** **FIX TYPE OF ACTION:** MODIFY

**HOLDING:** **HOLDING TYPE OF ACTION:** MODIFY

**PATTERNS:**

| PAT | DIR | IDENT | TYPE | RAD/CRS/BRG | CRS INBOUND | TURN (L OR R) | LEG LENGTH TIME | LEG LENGTH DME | HOLDING ALTITUDES MIN | HOLDING ALTITUDES MAX | TEMPLATES MIN | TEMPLATES MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | W | | WP | 280.65 | 100.65 | R | | 4 | 3500 | 6000 | 5 | 6 |

**CONTROLLING OBSTRUCTIONS:**

| PAT | AIRSPEED | OBSTRUCTION | COORDINATES | ELEVATION | ACCURACY CODE |
|---|---|---|---|---|---|
| 1 | 200 | SHIP MAST | 374107.00N/1223249.00W | 208 | 2C |

**HOLDING RESTRICTIONS:**
HOLDING LIMITED TO ESTABLISHED PATTERN.

**REMARKS:**
PRECIPTIOUS TERRAIN EVALUATION COMPLETE.

**FIX USE:**

| USE TYPE | USE TITLE | FAC | PAT | AIRPORT IDENT | CITY | STATE |
|---|---|---|---|---|---|---|
| IAP | RNAV (GPS) Y RWY 10R | | 1 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (RNP) Z RWY 10R | | | KSFO | SAN FRANCISCO | CA (US) |

**REQUIRED CHARTING:** IAP

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 1 **DATE OF REVISION:** 09/20/2012

**REASON FOR REVISION:**
REMOVE FAC1, KSFO R10R.
UPDATED HOLDING PAT1 MAX TEMPLATE FROM 5 TO 6.
UPDATED FIX USE AND FIX USE FORMAT.
ADDED REMARK "PRECIPITOUS TERRAIN EVALUATION COMPLETE".
MOVED "HOLDING LIMITED TO ESTABLISHED PATTERN" FROM REMARK TO HOLDING RESTRICTIONS.

**DEVELOPED BY:** **DATE:** 05/14/2012 **OFFICE:** AJV-354 **NAME:** ROY CURRIE

**APPROVED BY:** **DATE:** **OFFICE:** AJV-354 **NAME:** DEZ SILAGYI

**SIGNATURE:**

**DISTRIBUTION:**
**NFDC**
**FPO:** WST
**ARTCC:** ZOA
**ATC FACILITY:** NORCAL APP CON
**OTHER:** SFO ATCT

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** IGUKE **STATE:** CA **COUNTRY:** US

**LATITUDE/LONGITUDE:** 373412.66N/1221532.33W **TYPE:** WP

**AIRSPACE DOCKET:** **FIX TYPE OF ACTION:** MODIFY

**HOLDING:** **HOLDING TYPE OF ACTION:** NO CHANGE

**FIX USE:**

| USE TYPE | USE TITLE | FAC | PAT | AIRPORT IDENT | CITY | STATE |
|---|---|---|---|---|---|---|
| IAP | RNAV (RNP) Z RWY 10R | | | KSFO | SAN FRANCISCO | CA (US) |

**REQUIRED CHARTING:** IAP

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 1 **DATE OF REVISION:** 09/20/2012

**REASON FOR REVISION:**
1. DELETED FAC 1 (KSFOR10R)
2. UPDATED FIX USE.

**DEVELOPED BY:** **DATE:** 05/16/2012 **OFFICE:** AJV-354 **NAME:** ROY CURRIE

**APPROVED BY:** **DATE:** **OFFICE:** AJV-354 **NAME:** DEZ SILAGYI

**SIGNATURE:**

**DISTRIBUTION:**
**NFDC**
**FPO:** WST
**ARTCC:** ZOA
**ATC FACILITY:** NORCAL APP CON
**OTHER:** SFO ATCT

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** JULOS **STATE:** CA **COUNTRY:** US

**LATITUDE/LONGITUDE:** 374015.66N/1222959.96W **TYPE:** WP

**AIRSPACE DOCKET:** **FIX TYPE OF ACTION:** ESTABLISH

**FIX USE:**

| USE TYPE | USE TITLE | FAC | PAT | AIRPORT IDENT | CITY | STATE |
|---|---|---|---|---|---|---|
| IAP | RNAV (RNP) Z RWY 10R | | | KSFO | SAN FRANCISCO | CA (US) |

**REQUIRED CHARTING:** IAP

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** ORIG **DATE OF REVISION:** 09/20/2012

**DEVELOPED BY:** **DATE:** 05/11/2012 **OFFICE:** AJV-354 **NAME:** ROY CURRIE

**APPROVED BY:** **DATE:** **OFFICE:** AJV-354 **NAME:** DEZ SILAGYI

**SIGNATURE:**

**DISTRIBUTION:**
**NFDC**
**FPO:** WST
**ARTCC:** ZOA
**ATC FACILITY:** NORCAL APP CON
**OTHER:** SFO ATCT

# RADIO FIX AND HOLDING DATA RECORD

**NAME:** STINS **STATE:** CA **COUNTRY:** US

**LATITUDE/LONGITUDE:** 374925.24N/1224524.06W **TYPE:** WP, INT, DME

**AIRSPACE DOCKET:** **FIX TYPE OF ACTION:** MODIFY

**FIX MAKE-UP FACILITIES:**

| FAC | NAME | IDENT | TYPE | CLASS | MAG BRG | TRUE BRG | DME | DIST FROM FAC NM | DIST FROM FAC FEET | MRA | MAA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | POINT REYES | PYE | VORTAC | H | 144.00 | 161.00 | 16.23 | 16.23 | | 3500 | 17500 |
| 2 | SAUSALITO | SAU | VORTAC | L | 243.39 | 260.39 | | 11.28 | | 3500 | 17500 |
| 3 | SAN FRANCISCO | SFO | VOR/DME | L | 287.00 | 304.00 | 21.95 | 21.95 | | 3500 | 17500 |

**HOLDING:** **HOLDING TYPE OF ACTION:** NO CHANGE

**PATTERNS:**

| PAT | DIR | IDENT | TYPE | RAD/CRS/BRG | CRS INBOUND | TURN (L OR R) | LEG LENGTH TIME | LEG LENGTH DME | HOLDING ALTITUDES MIN | HOLDING ALTITUDES MAX | TEMPLATES MIN | TEMPLATES MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | NW | PYE | VORTAC | 144.00 | 144.00 | R | 1-1 1/2 | | 3500 | 17500 | 5 | 17 |

**CONTROLLING OBSTRUCTIONS:**

| PAT | AIRSPEED | OBSTRUCTION | COORDINATES | ELEVATION | ACCURACY CODE |
|---|---|---|---|---|---|
| 1 | 200 | AAO | 375736.00N/1224521.00W | 1401 | 4E |

**HOLDING RESTRICTIONS:**
HOLDING LIMITED TO ESTABLISHED PATTERN.

**REMARKS:**
SAUSALITO (FAC 2) AND POINT REYES (FAC 1) USED TO ESTABLISH FIX COORDINATES
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

**FIX USE:**

| USE TYPE | USE TITLE | FAC | PAT | AIRPORT IDENT | CITY | STATE |
|---|---|---|---|---|---|---|
| DP | MOLEN | 1, 2, 3 | | KSFO | SAN FRANCISCO | CA (US) |
| EN ROUTE | V199 | 1, 2, 3 | | | | (US) |
| EN ROUTE | V25 | 1, 2, 3 | | | | (US) |
| EN ROUTE | V27 | 1, 2, 3 | | | | (US) |
| IAP | RNAV (GPS) RWY 10L | | | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (GPS) Y RWY 10R | | | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (RNP) Z RWY 10R | | | KSFO | SAN FRANCISCO | CA (US) |
| STAR | POINT REYES | 1, 2, 3 | 1 | KSFO | SAN FRANCISCO | CA (US) |
| STAR | STINS | 1, 2 | 1 | KSFO | SAN FRANCISCO | CA (US) |

**REQUIRED CHARTING:** DP, STAR, IAP, AREA, CONTROLLER, EN ROUTE LOW

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 9 **DATE OF REVISION:** 09/20/2012

**REASON FOR REVISION:**
FAC3 IN HISTORY, AMENDMENT REQUIRED TO PUT IN ACTIVE STATUS.
UPDATED FIX USE.

**DEVELOPED BY:** **DATE:** 05/14/2012 **OFFICE:** AJV-354 **NAME:** ROY CURRIE

**APPROVED BY:** **DATE:** **OFFICE:** AJV-354 **NAME:** DEZ SILAGYI

**SIGNATURE:**

**DISTRIBUTION:**
**NFDC**
**FPO:** WST
**ARTCC:** ZOA
**ATC FACILITY:** SFO ATCT
**OTHER:** NORCAL APP CON

# RADIO FIX AND HOLDING DATA RECORD INFO ONLY

**NAME:** DUMBA **STATE:** CA **COUNTRY:** US

**LATITUDE/LONGITUDE:** 373012.66N/1220546.13W **TYPE:** WP, INT, DME

**AIRSPACE DOCKET:** **FIX TYPE OF ACTION:** NO CHANGE

**FIX MAKE-UP FACILITIES:**

| FAC | NAME | IDENT | TYPE | CLASS | MAG BRG | TRUE BRG | DME | DIST FROM FAC NM | DIST FROM FAC FEET | MRA | MAA |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SAN FRANCISCO | I-GWQ | LOC/DME | | 102.82 | 117.82 | 16.13 | 16.15 | | 4000 | 4500 |
| 2 | WOODSIDE | OSI | VORTAC | L | 036.00 | 053.00 | | 11.07 | | 4000 | 17500 |
| 3 | OAKLAND | OAK | VORTAC | H | 138.46 | 155.46 | 14.65 | 14.65 | | 4000 | 17500 |
| 4 | SAN FRANCISCO | SFO | VOR/DME | L | 100.59 | 117.59 | 14.96 | 14.96 | | 4000 | 17500 |

**EXPANDED SERVICE VOLUME (ESV):**

| FAC IDENT | FAC TYPE | RADIAL/BEARING | DISTANCE | MIN ALTITUDE | MAX ALTITUDE |
|---|---|---|---|---|---|
| I-GWQ | LOC/DME | R-103 | 25 | 4000 | 4500 |

**FIX RESTRICTIONS:**

**HOLDING:** **HOLDING TYPE OF ACTION:** MODIFY

**PATTERNS:**

| PAT | DIR | IDENT | TYPE | RAD/CRS/BRG | CRS INBOUND | TURN (L OR R) | LEG LENGTH TIME | LEG LENGTH DME | HOLDING ALTITUDES MIN | HOLDING ALTITUDES MAX | TEMPLATES MIN | TEMPLATES MAX |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | E | I-GWQ | LOC/DME | 102.82 | 282.82 | L | 1 | | 4000 | 4100 | 5 | 6 |
| 2 | E | | WP | 100.98 | 280.98 | L | | 4 | 3600 | 10000 | 5 | 10 |
| 3 | E | SFO | VOR/DME | 100.59 | 280.59 | L | 1 | | 4000 | 10000 | 5 | 10 |

**CONTROLLING OBSTRUCTIONS:**

| PAT | AIRSPEED | OBSTRUCTION | COORDINATES | ELEVATION | ACCURACY CODE |
|---|---|---|---|---|---|
| 1 | 200 | AAO | 372924.00N/1215257.00W | 1969 | 4E |
| 2 | 200 | AAO | 372921.00N/1215257.00W | 1933 | 4E |
| 2 | 310 | AAO | 372551.00N/1214506.00W | 3071 | 4E |
| 3 | 200 | AAO | 372921.00N/1215254.00W | 1992 | 4E |

**REASON FOR NONSTANDARD HOLDING:**
PAT 2 ATC REQUEST
PAT 1 ATC REQUEST
PAT 3 ATC REQUEST

**HOLDING RESTRICTIONS:**
HOLDING LIMITED TO ESTABLISHED PATTERN(S).

**PROCEDURES REQUIRING CLIMB-IN-HOLD:**

| PAT | PROCEDURE TITLE | AIRPORT IDENT | CITY | STATE |
|---|---|---|---|---|
| 2 | RNAV (GPS) Z RWY 19L | KSFO | SAN FRANCISCO | CA (US) |

**REMARKS:**
NOTE: WHEN OSI VORTAC OTS DME IS REQUIRED FOR HOLDING. OAK VORTAC AND SFO VOR/DME DO NOT MEET 45 DEGREE DIVERGENCE.
PRECIPITOUS TERRAIN EVALUATED.

**FIX USE:**

| USE TYPE | USE TITLE | FAC | PAT | AIRPORT IDENT | CITY | STATE |
|---|---|---|---|---|---|---|
| IAP | ILS OR LOC RWY 19L | 1, 2, 3 | 3 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | ILS OR LOC RWY 28R | 1, 2, 3 | 1 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (GPS) RWY 10L | | 2 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (GPS) Y RWY 10R | | 2 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (GPS) Y RWY 19L | | 2 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (GPS) Y RWY 19R | | 2 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (GPS) Z RWY 19L | | 2 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (GPS) Z RWY 19R | | 2 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (GPS) Z RWY 28R | | 2 | KSFO | SAN FRANCISCO | CA (US) |
| IAP | RNAV (RNP) Z RWY 10R | | 2 | KSFO | SAN FRANCISCO | CA (US) |
| STAR | MODESTO | 1, 2, 3 | | KSFO | SAN FRANCISCO | CA (US) |

**REQUIRED CHARTING:** STAR, IAP

**COMPULSORY REPORTING POINT:** NO

**RECORD REVISION NUMBER:** 5 **DATE OF REVISION:** 05/31/2012

**REASON FOR REVISION:**
1. CHANGED PAT 1 MAX HOLDING ALTITUDE FROM 4000 TO 4100.
2. CHANGED PAT 1 MAX HOLDING TEMPLATE FROM 5 TO 6.
3. ADDED ESV FOR GWQ LOC/DME.

| | | | |
|---|---|---|---|
| **DEVELOPED BY:** | **DATE:** 02/14/2012 | **OFFICE:** AJV-354 | **NAME:** DAVID DOWLING |
| **APPROVED BY:** | **DATE:** 02/21/2012 | **OFFICE:** AJV-354 | **NAME:** DEZ SILAGYI |
| | **SIGNATURE:** | | |

**DISTRIBUTION:**
**NFDC**
**FPO:** WST
**ARTCC:** ZOA
**ATC FACILITY:** NORCAL APP CON
**OTHER:**

QUALITY CHECKED 1

# TERMINAL AIRSPACE DATA REQUIREMENTS

CITY: **SAN FRANCISCO** STATE: **CA**

AIRPORT NAME: **SAN FRANCISCO INTL** ID: **KSFO**

PROCEDURE: **RNAV (RNP) Z RWY 10R** AMDT: **1**

DOCKET # :
(96-AXX-X/Required/Not Required)

**ALL DIST TO 1/100 NM; ELEV TO NEAREST FT; COORD TO 1/100 SEC; DEG TO 1/100 DG.**

1. Distance from **THLD** to 1000' point **4.82**
   (Enter THLD, FAF, ARP, FACILITY, as appropriate)
2. Width of **FINAL** segment at 1000' point **1.20**
   (Enter appropriate segment , final, intermediate, etc.)
3. True Course of **FINAL** segment containing 1000' point **117.79**
4. High Terrain in **FINAL** segment containing 1000' point **601**
5. Distance from **THLD** to 1500' point **6.68**
   (If 1500' point in PT maneuvering area or holding pattern note in remarks)
6. Width of **INTERMEDIATE** segment at 1500' point **4.00**
7. True Course of **INTERMEDIATE** segment containing 1500' point **117.65**
8. High Terrain in **INTERMEDIATE** segment containing 1500' point **693**
9. Threshold Coordinates (if straight-in) ... **373734.64N** / **1222335.18W**
10. ARP Coordinates ..... **373708.30N** / **1222229.60W**
11. Runway Approach End and distance furthest from ARP.....RWY **10L**
    Distance **1.06** NM
12. FAF Coordinates ..... **374015.66N** / **1222959.96W**
    (Click to Select)

**REMARKS: Approach/Drawing attached.**

DO NOT REMOVE
FROM PACKAGE

## PFAF Calculations

| | |
|---|---|
| Min Intermediate Segment Alt (a): | |
| LTP MSL Elevation (b): | |
| TCH: | |
| Glidepath Angle (Θ): | |
| **Distance from LTP to PFAF (D):** | 0.00 |
| | 0.00 NM |
| LTP/FTP Latitude: | |
| LTP/FTP Longitude: | |
| True RWY Bearing/True Course: | |
| **PFAF Latitude:** | 000° 00' 00.00" |
| **PFAF Longitude:** | 000° 00' 00.00" |

Latitude/Longitude valid for straight segment only

## VEB

| | |
|---|---|
| Intermediate Segment Altitude: | 1900 |
| LTP Elevation: | 7.2 |
| Glidepath Angle: | 3 |
| TCH: | 60 |
| RNP Value: | 0.20 |
| Δ ISA: | -15.25 |
| **Straight In Segment** | |
| (*Wingspan =<262*) **LTP to Origin:** | 2,633.49' |
| (*Wingspan =<136*) **LTP to Origin:** | 2,430.43' |
| **OCS Slope Ratio:** | 20.31 : 1 |
| **RF Turn Segment \| Bank angle:** | 0.00° |
| (*Wingspan =<262*) **LTP to Origin:** | NA |
| (*Wingspan =<136*) **LTP to Origin:** | NA |
| **OCS Slope Ratio:** | NA |

Version 2.0

## VEB Temperature Limits

| | | |
|---|---|---|
| Glidepath Angle: | 3.00° | |
| Max Glidepath Angle: | 3.50° | |
| PFAF Elevation: | 1900 | |
| LTP Elevation: | 7.2 | |
| ACT: | -30.00°C | |
| **Min Glidepath Angle** | 2.75° | |
| **NA Below** | -15.20°C | 4.65°F |
| **NA Above** | 48.95°C | 120.11°F |

## Intermediate Segment VEB ROC

| | |
|---|---|
| Glidepath Angle | 3.00° |
| LTP MSL Elevation | 7.20 |
| TCH (ft) | 60.00 |
| OCS Slope | 21.71 |
| OCS Origin Distance (ft) *(measured along-track from LTP)* | 2,893.00 |
| Obstacle Distance (ft) *(measured along-track from LTP)* | 31,102.71 |
| **VEB ROC** *(at obstacle)* | **395** |
| Glidepath MSL altitude at Obstacle | 1,720.40 |
| OCS MSL altitude at Obstacle | 1,325.66 |

**DO NOT REMOVE FROM PACKAGE**

## PFAF Calculations

| | |
|---|---|
| Min Intermediate Segment Alt (a): | |
| LTP MSL Elevation (b): | |
| TCH: | |
| Glidepath Angle (Θ): | |
| **Distance from LTP to PFAF (D):** | 0.00 |
| | 0.00 NM |
| LTP/FTP Latitude: | |
| LTP/FTP Longitude: | |
| True RWY Bearing/True Course: | |
| **PFAF Latitude:** | 000° 00' 00.00" |
| **PFAF Longitude:** | 000° 00' 00.00" |

Latitude/Longitude valid for straight segment only

## VEB

| | |
|---|---|
| Intermediate Segment Altitude: | 1900 |
| LTP Elevation: | 7.2 |
| Glidepath Angle: | 3 |
| TCH: | 60 |
| RNP Value: | 0.30 |
| Δ ISA: | -15.25 |
| **Straight In Segment** | |
| **(*Wingspan =<262*) LTP to Origin:** | 3,392.99' |
| **(*Wingspan =<136*) LTP to Origin:** | 3,190.09' |
| **OCS Slope Ratio:** | 20.29 : 1 |
| **RF Turn Segment \| Bank angle:** | 0.00° |
| **(*Wingspan =<262*) LTP to Origin:** | NA |
| **(*Wingspan =<136*) LTP to Origin:** | NA |
| **OCS Slope Ratio:** | NA |

*Version 2.0*

## VEB Temperature Limits

| | | |
|---|---|---|
| Glidepath Angle: | 3.00° | |
| Max Glidepath Angle: | 3.50° | |
| PFAF Elevation: | 1900 | |
| LTP Elevation: | 7.2 | |
| ACT: | -30.00°C | |
| **Min Glidepath Angle** | 2.75° | |
| **NA Below** | -15.20°C | 4.65°F |
| **NA Above** | 48.95°C | 120.11°F |

## Intermediate Segment VEB ROC

| | |
|---|---|
| Glidepath Angle | 3.00° |
| LTP MSL Elevation | 7.20 |
| TCH (ft) | 60.00 |
| OCS Slope | 21.70 |
| OCS Origin Distance (ft) *(measured along-track from LTP)* | 3,705.00 |
| Obstacle Distance (ft) *(measured along-track from LTP)* | 31,102.71 |
| **VEB ROC** *(at obstacle)* | **433** |
| Glidepath MSL altitude at Obstacle | 1,720.40 |
| OCS MSL altitude at Obstacle | 1,287.75 |