Flight Procedure Tracking Form	Action: FLIGHT CHECK	Task Type: IAP	Date Open: 03/09/2011	Task #: 2011030931512301001	Request #: 20110309315123
Procedure: RNAV (RNP) Z RWY 34 L ORIG		Airport ID: KSEA	Airport: SEATTLE-TACOMA INTL		Reimbursable #:
City: SEATTLE	ST: WA	GPS #:		Estimated Chart Date: 03/07/2013	FICO #:
Fac ID:	Fac. Type: RNP	Specialist: ROY CURRIE			

Procedure Review

	Rec'd	Rel'd	Full Name	Comments
Lead:	08/17/2012	11/20/2012	STEVEN SZUKALA	
QA:	11/20/2012	11/20/2012	STEVEN SZUKALA	
Liaison:	11/20/2012		Spurlin	REPLACEMENT 12/5/12 - APPROVAL REQUEST

P1

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

pk 3/2/05

SEATTLE, WA SEATTLE-TACOMA INTL (KSEA) RNAV (RNP) Z RWY 34L, ORIG (RNP) ENROUTE-NO FC: 1.22.13 PUB: 3.7.13

ATTACHED FORMS: 8260-3; 8260-10; 8260-9; 8260-2(S): BELNE, REV 1; CFBRP, ORIG; HIPRO-INT, REV 1; JALON-INT, REV 1; LANGL, REV 1; LOFAL-INT, REV 24; SHIPZ, REV 1; SOMDE, REV 1; SONDR, REV 1.

CONTACT: PETE GETZ/LONNIE EVERHART-AVN-130 LEADS, 405.954.2079/ 405.954.4576.

APP CRS	Rwy ldg	8500
343°	THRE	356
	Apt Elev	433

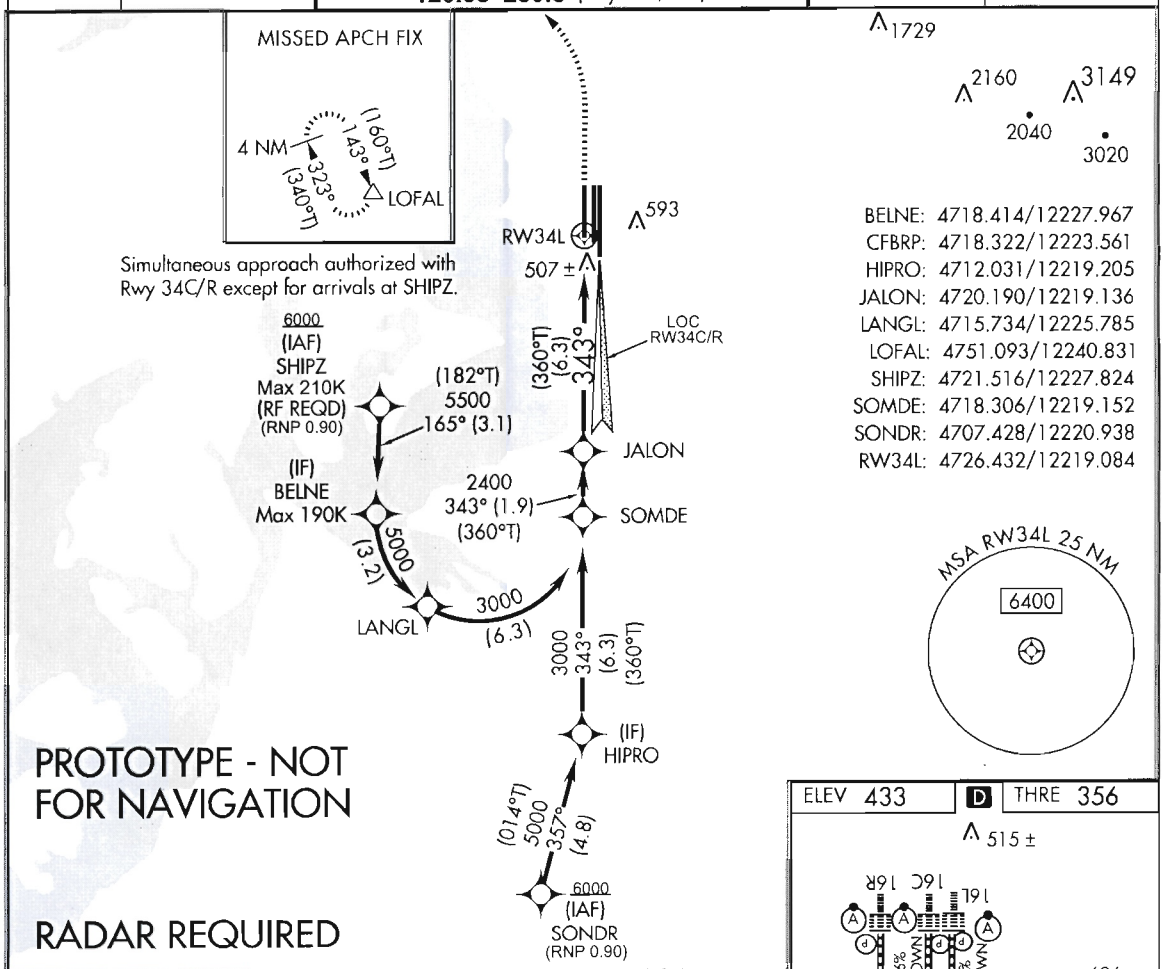
RNAV (RNP) Z RWY 34L
SEATTLE-TACOMA INTL (SEA)

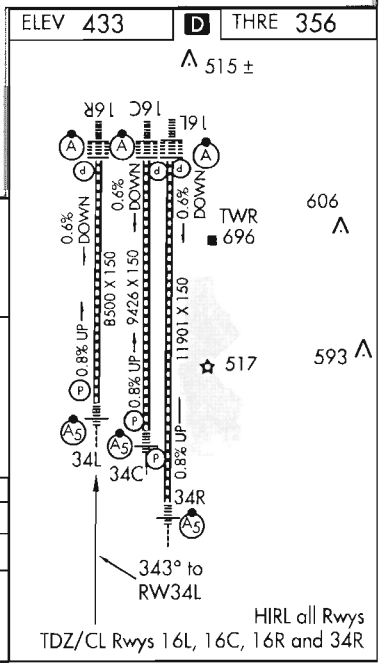
GPS required. For uncompensated Baro-VNAV systems, procedure NA below -8°C (18°F) or above 54°C (130°F). For inop MALSR, increase RNP 0.30 all Cats visibility to 1⅜. Use of FD or AP providing RNAV track guidance required during simultaneous operations.

MALSR

MISSED APPROACH: Climb to 900 then climbing left turn to 5000 direct LOFAL and hold.

ATIS	SEATTLE APP CON	SEATTLE TOWER	GND CON	CLNC DEL
118.0	133.65 273.45	119.9 239.3 (Rwys 16C/34C, 16L/34R) 120.95 239.3 (Rwy 16R/34L)	121.7	128.0

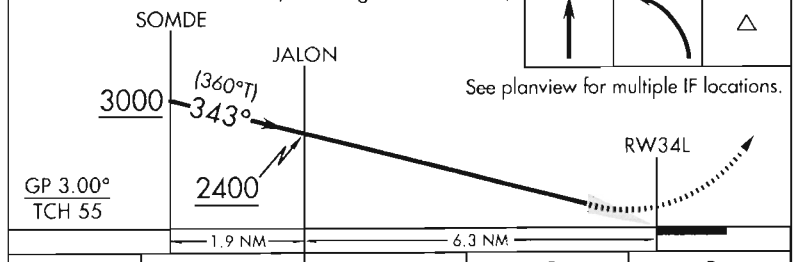




VGSI and RNAV glidepath not coincident (VGSI Angle 3.00/TCH 75).

900	5000	LOFAL
↑	↖	△

See planview for multiple IF locations.



CATEGORY	A	B	C	D
RNP 0.3 DA	771/45 415 (400-⅞)			

AUTHORIZATION REQUIRED

US DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

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

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TERMINAL ROUTES

FROM	TO	COURSE AND DISTANCE	ALTITUDE
SONDR (IAF)	HIPRO (TF) (FB) (RNP 1.00)	357.39 / 4.75	5000
SHIPZ (IF)	BELNE (TF) (FB) (RNP 1.00)	164.80 / 3.11	5500
BELNE	LANGL (RF) (FB) (RNP 1.00)	(3.00 NM RADIUS CCW (CFBRP))/3.22	5000
LANGL	SOMDE (RF) (FB) (RNP 1.00)	(3.00 NM RADIUS CCW (CFBRP))/6.29	3000
HIPRO (IF)	SOMDE (TF) (FB) (RNP 1.00)	343.33 / 6.28	3000
(SEE FORM 8260-10)			

MISSED APPROACH

RNP: DA

CLIMB TO 900 THEN CLIMBING LEFT TURN TO 5000 DIRECT LOFAL AND HOLD.

1. PT ____ SIDE OF COURSE ____ OUTBOUND ____ FT WITHIN ____ MILES OF ____ (IAF)
2. PROFILE STARTS AT SOMDE
3. FAC: 343.33 FAF: ____ DIST FAF TO MAP: ____ THLD: ____
4. MIN. ALT: SOMDE 3000, JALON 2400
5. DIST TO THLD FROM OM: 6.25 MM: ____ IM: ____ 150 HAT: ____ 100 HAT: ____ GS ANT: ____
6. MIN GS INCPT: 2400 GS ALT AT: JALON 2400 OM: ____ MM: ____ IM: ____
7. GS ANGLE: 3.00 TCH: 54.9# 34:1 IS CLEAR
8. MSA FROM: RW34L 6400

ADDITIONAL FLIGHT DATA:
HOLD NW, RT, 142.59 INBOUND.
CHART FAS OBST: 507 TREE 472529N/1221857W
CHART 492 TREE 472530N/1221848W
CHART 476 TREE 472533N/1221849W
CHART AT OR ABOVE 6000 AT SONDR.
CHART AT OR ABOVE 6000 AT SHIPZ.
ROUTE TYPE: A, H
ROUTE TYPE QUALIFIER 1: F
ROUTE TYPE QUALIFIER 2: S
#TCH 411.2 MSL (DO NOT CHART)
CHART LOC RWY 34C/R.
DISTANCE TO THLD FROM 415 HATH: 1.13NM.

MAG VAR: 17E EPOCH YEAR: 2010

MINIMUMS

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

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 0.30 DA	771	4500	415	771	4500	415	771	4500	415	771	4500	415			

NOTES:
CHART NOTE: GPS REQUIRED.
CHART PLANVIEW NOTE: SIMULTANEOUS APPROACH AUTHORIZED WITH RWY 34C/R EXCEPT FOR ARRIVALS AT SHIPZ.
CHART PLANVIEW NOTE: RADAR REQUIRED.
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT.
(SEE FORM 8260-10)

QUALITY CHECKED A

CITY AND STATE	ELEVATION: 433 THRE: 356	FACILITY IDENTIFIER:	PROCEDURE NO./AMDT NO./EFFECTIVE DATE:	SUP:
SEATTLE, WA	AIRPORT NAME: SEATTLE-TACOMA INTL	RNAV	RNAV (RNP) Z RWY 34L, ORIG	AMDT: NONE
				DATED

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 ZSE, SEA APP CON, APT MGR

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:

DEVELOPED BY		
NAME: ROY E. CURRIE	FIFO AJV-354	DATE: 10/03/2012

APPROVED BY		
NAME: DEZ SILAGYI MANAGER	FIFO AJV-354	DATE:

CHANGES:

1. ORIGINAL PROCEDURE

REASONS:

1. FPT REQUEST

12/04/2012: THIS IS A UPDATED COPY OF THE FORM DEVELOPED ON 10/03/2012.
1. REMOVED "CHART PLANVIEW NOTE AT SOMDE : MAX 190 KIAS."

QUALITY CHECKED

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TERMINAL ROUTES, (CONT.):

FROM	TO	COURSE AND DISTANCE	ALTITUDE
SOMDE	JALON (TF) (FB) (RNP 0.90)	343.33 / 1.89	2400
JALON (FAF)	RW34L (MAP) (TF) (FO)	343.33 / 6.25	
RW34L (MAP)	900 MSL (CA)	343.33	900
900 MSL	LOFAL (DF) (FO) (RNP 1.00)		5000

NOTES, (CONT.):

CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -8C (18F) OR ABOVE 54C (130F).
CHART PLANVIEW NOTE ADJACENT TO SHIPZ IAF: RF REQUIRED.
CHART NOTE: FOR INOPERATIVE MALSR, INCREASE RNP 0.30 ALL CATS VISIBILITY TO 1 3/8.
CHART PROFILE NOTE: SEE PLANVIEW FOR MULTIPLE IF LOCATIONS.
CHART PLANVIEW NOTE AT BELNE: MAX 190 KIAS.
CHART NOTE: USE OF FD OR AP PROVIDING RNAV TRACK GUIDANCE REQUIRED DURING SIMULTANEOUS OPERATIONS.
CHART PLANVIEW NOTE AT SONDR, SHIPZ (RNP 0.90).

QUALITY CHECKED

CITY AND STATE	ELEVATION: 433 THRE: 356	FACILITY IDENTIFIER:	PROCEDURE NO./ AMDT NO./EFFECTIVE DATE:	SUP:
SEATTLE, WA	AIRPORT NAME: SEATTLE-TACOMA INTL	RNAV	RNAV (RNP) Z RWY 34L, ORIG	AMDT: NONE
				DATED:

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

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:

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

RNAV (RNP) STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.33**

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ARINC PACKET - 424-18 - RNAV (RNP)

```
                 1         2         3         4         5         6         7         8         9         0         1         2         3
WP      123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        --------------------------------------------------------------------------------------------------------------------------------
        SUSAEAENRT   BELNE K10    W     N47182482W122275801                      E0164     NAR           BELNE
        SUSAEAENRT   CFBRP K10    W     N47181932W122233363                      E0164     NAR           CNF(CFBRP)
        SUSAEAENRT   HIPRO K10    C     N47120187W122191231                      E0164     NAR           HIPRO
        SUSAEAENRT   JALON K10    C     N47201142W122190818                      E0164     NAR           JALON
        SUSAEAENRT   LANGL K10    W     N47154401W122254709                      E0164     NAR           LANGL
        SUSAEAENRT   LOFAL K10    C   L N47510559W122404986                      E0166     NAR           LOFAL
        SUSAEAENRT   SHIPZ K10    W     N47213094W122274943                      E0164     NAR           SHIPZ
        SUSAEAENRT   SOMDE K10    W     N47181837W122190914                      E0164     NAR           SOMDE
        SUSAEAENRT   SONDR K10    W     N47072569W122205630                      E0163     NAR           SONDR

                 1         2         3         4         5         6         7         8         9         0         1         2         3
AIRPORT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        --------------------------------------------------------------------------------------------------------------------------------
        SUSAP KSEAK1ASEA     0     119YHN47265960W122184240E017000433         1800018000C    MNAR    SEATTLE-TACOMA INTL

                 1         2         3         4         5         6         7         8         9         0         1         2         3
SEGMENT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        --------------------------------------------------------------------------------------------------------------------------------
        SUSAP KSEAK1FH34LZ ASHIPZ 010SHIPZK1EA0E  B    IF                                  + 06000     18000                A FS
        SUSAP KSEAK1FH34LZ ASHIPZ 020BELNEK1EA0E    010TF                                  + 05500         190              A-FS
        SUSAP KSEAK1FH34LZ ASHIPZ 030LANGLK1EA0E   L010RF       0030001648    10330032    + 05000                CFBRP K1EAA FS
        SUSAP KSEAK1FH34LZ ASHIPZ 040SOMDEK1EA0E   L010RF       0030001033    34330063    + 03000                CFBRP K1EAA FS
        SUSAP KSEAK1FH34LZ ASHIPZ 050JALONK1EA0EE   091TF                                  + 02400                         A FS
        SUSAP KSEAK1FH34LZ ASONDR 010SONDRK1EA0E  A    IF                                  + 06000     18000               A FS
        SUSAP KSEAK1FH34LZ ASONDR 020HIPROK1EA0E  B 010TF                                  + 05000                         A FS
        SUSAP KSEAK1FH34LZ ASONDR 030SOMDEK1EA0E    010TF                                  + 03000                         A FS
        SUSAP KSEAK1FH34LZ ASONDR 040JALONK1EA0EE   091TF                                  + 02400                         A FS
        SUSAP KSEAK1FH34LZ H      020JALONK1EA1E  F    IF                                  + 02400     18000       RW34L K1PGA FS
        SUSAP KSEAK1FH34LZ H      020JALONK1EA2W                                               A031                          FS
        SUSAP KSEAK1FH34LZ H      030RW34LK1PG0GY M 031TF                                    00411             -300          A FS
        SUSAP KSEAK1FH34LZ H      040         0  M     CA                          3433    + 00900                         A FS
        SUSAP KSEAK1FH34LZ H      050LOFALK1EA0EY      DF                                  + 05000                         A FS
        SUSAP KSEAK1FH34LZ H      060LOFALK1EA0EE  R   HM                       14260040    + 05000                         A FS

                 1         2         3         4         5         6         7         8         9         0         1         2         3
RUNWAY  123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        --------------------------------------------------------------------------------------------------------------------------------
        SUSAP KSEAK1GRW34L   0085003433 N47262592W122190501+0700    +00857003560000551501IBEJ1

                 1         2         3         4         5         6         7         8         9         0         1         2         3
MSA     123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
```

QUALITY CHECKED

CITY AND STATE	ELEVATION: 433 THRE: 356	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
SEATTLE, WA	AIRPORT NAME: **SEATTLE-TACOMA INTL**	**RNAV**	**RNAV (RNP) Z RWY 34L, ORIG**	AMDT: **NONE**
				DATED:

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

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:

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION
RNAV (RNP) STANDARD INSTRUMENT APPROACH PROCEDURE
FLIGHT STANDARDS SERVICES - FAR PART 97.33

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SUSAP KSEAK1SRW34LK1PG          0   18018006425                                                    M
```

QUALITY 4 CHECKED

CITY AND STATE	ELEVATION: 433 THRE: 356	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
SEATTLE, WA	AIRPORT NAME: SEATTLE-TACOMA INTL	RNAV	RNAV (RNP) Z RWY 34L, ORIG	AMDT: NONE
				DATED:

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

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:

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

RNAV (RNP) STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.33**

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ARINC SUMMARY - 424-18 - RNAV (RNP)

ROUTES	TRANSITION	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
	SHIPZ	SHIPZ	010		IF		FB				AA 06000	
	SHIPZ	BELNE	020		TF		FB	1.0			AA 05500	AB 190
	SHIPZ	LANGL	030		RF	L	FB	1.0		003.2	AA 05000	
	SHIPZ	SOMDE	040		RF	L	FB	1.0		006.3	AA 03000	
	SHIPZ	JALON	050		TF		FB	0.9			AA 02400	
	SONDR	SONDR	010	IAF	IF		FB				AA 06000	
	SONDR	HIPRO	020		TF		FB	1.0			AA 05000	
	SONDR	SOMDE	030		TF		FB	1.0			AA 03000	
	SONDR	JALON	040		TF		FB	0.9			AA 02400	
		JALON	020	FAF	IF		FB				AA 02400	
		RW34L	030	MAP	TF		FO	0.3			AT 00411	

MISSED APPROACH	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
		040		CA		FB		343.3(000.3T)		AA 00900	
	LOFAL	050		DF		FO				AA 05000	
	LOFAL	060		HM	R	FO		142.6(159.6T)	004.0	AA 05000	

POINT DATA	WAYPOINT	LAT IN SECS	LONG IN SECS	LAT IN MINS	LONG IN MINS
	BELNE	N471824.82	W1222758.01	N4718.414	W12227.967
	CFBRP	N471819.32	W1222333.63	N4718.322	W12223.561
	HIPRO	N471201.87	W1221912.31	N4712.031	W12219.205
	JALON	N472011.42	W1221908.18	N4720.190	W12219.136
	LANGL	N471544.01	W1222547.09	N4715.734	W12225.785
	LOFAL	N475105.59	W1224049.86	N4751.093	W12240.831
	SHIPZ	N472130.94	W1222749.43	N4721.516	W12227.824
	SOMDE	N471818.37	W1221909.14	N4718.306	W12219.152
	SONDR	N470725.69	W1222056.30	N4707.428	W12220.938
	RW34L	N472625.92	W1221905.01	N4726.432	W12219.084

RUNWAY DATA	RWY	THRESHOLD ELEVATION	TCH
	RW34L	00356	55

QUALITY CHECKED

CITY AND STATE	ELEVATION: 433 THRE: 356	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
SEATTLE, WA	AIRPORT NAME: SEATTLE-TACOMA INTL	RNAV	RNAV (RNP) Z RWY 34L, ORIG	AMDT: NONE
				DATED:

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

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	SONDR	HIPRO	1. AAO	470906.00N/1221715.00W	695 (4E)	1000	AC98 AT3207	5000
(RNP 1.00)			2. TERRAIN	470906.00N/1221715.00W	495 (500)		AS1500	2000
INTERMEDIATE	SHIPZ	BELNE	3. AAO	471821.00N/1222500.00W	706 (4E)	500	AC98 AT4196	5500
(RNP 1.00)			4. TERRAIN	471821.00N/1222500.00W	506 (500)		AS1500	2000
INTERMEDIATE STEPDOWN:	BELNE	LANGL	3. AAO	471821.00N/1222500.00W	706 (4E)	500	AC98 AT3696	5000
(RNP 1.00)			4. TERRAIN	471821.00N/1222500.00W	506 (500)		AS1500	2000
INTERMEDIATE: STEPDOWN	LANGL	BAKMN	5. TOWER (53-000786)	471640.00N/1221729.00W	690 (5E)	500	AC125 AT1685	3000
(RNP 1.00)			6. TERRAIN	471724.00N/1221624.00W	463 (500)		AS1500	2000
INTERMEDIATE:	HIPRO	BAKMN	5. TOWER (53-000786)	471640.00N/1221729.00W	690 (5E)	500	AC125 AT1685	3000
(RNP 1.00)			7. TERRAIN	471303.00N/1221618.00W	480 (500)		AS1500	2000
INTERMEDIATE: STEPDOWN	BAKMN	JALON	8. AAO	471930.00N/1221751.00W	699 (4E)	500	AC98 AT1103	2400
(RNP 0.90)			9. TERRAIN	471930.00N/1221751.00W	499 (500)		AS1500	2000
FINAL: RNP 0.30	JALON	RW34L	10. TREE (KSEA0038)	472529.18N/1221857.48W	507 (1A)	20.91:1	AC3	771/415
MISSED APPROACH	DA	RW34L				ASC		5000
(RNP 0.30-1.00)		(40:1)						

2. PROCEDURE TURN		NA
3. MISSED APPROACH	MAP:	SEE ABOVE
	ELEV:	610

4. CIRCLING AREA	DISTANCE	HT. ABV. ARPT. REQUIRED	HT. ABV. ARPT. ACTUAL
CATEGORY A	1.3 NM	350	
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: RW34L

SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A	SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A
360-360	AAO (SEA-S-0450)	077/ 28.5	5362 (6C)	6400					

CITY AND STATE		FACILITY	PROCEDURE AND AMENDMENT NO:	REGION
SEATTLE, WA	ELEVATION: 433 AIRPORT NAME: SEATTLE-TACOMA INTL	RNAV	RNAV (RNP) Z RWY 34L, ORIG	ANM

PART B - SUPPLEMENTAL DATA

1. COMMUNICATIONS WITH:	2. WEATHER SERVICE			3. ALTIMETER SETTING
ZSE ARTCC SEA APP CON SEA TOWER	X	N W S	OTHER: ASOS	SOURCE: KSEA
		F A A		DISTANCE:
SATISFACTORY ON:		A / C		HOURS REMOTE OPERATION:
X V H F X U H F H F	LOCATION: KSEA			ADJUSTMENT: 0

4. MONITOR STATUS	PRIMARY NAVAID:	
	MONITOR POINT:	
	HRS OPTN: CAT 1	
	HRS OPTN: CAT 3	
5. APPROACH & RUNWAY LIGHTING	X	ALSF-2 16C, 16L, 16R
		(S) SALS
	X	MALSR 34L, 34C, 34R
	X	HIRL 16C, 16L, 34L, 34C, 16R, 34R
		MIRL
		REIL
	X	TDZ 16C, 16L, 16R, 34R
	X	C/L 16C, 16L, 34L, 34C, 16R, 34R
	X	OTHER (SPECIFY) PAPI-4R 16R PAPI-4L 16C, 16L, 34L, 34C, 34R

6. RUNWAY MARKINGS	BASIC	
	ALL WEATHER	PIR-G 16C, 16L, 34L, 34C, 16R, 34R
	INSTRUMENT	
7. RUNWAY VISUAL RANGE	APPROACH	16C, 16L, 34L, 34C, 16R, 34R
	MIDFIELD	16C, 16L, 34L, 34C, 16R, 34R
	ROLL OUT	16C, 16L, 34L, 34C, 16R, 34R

8. GLIDE PATH	GP ANGLE: 3.00	ELEV RWY THRESHOLD: 356.3
	DISTANCE FROM RWY:	ELEV GP ANTENNA:
		THRESHOLD CROSSING HEIGHT: 54.9

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: 10/03/2012
TITLE: AERONAUTICAL INFORMATION SPECIALIST	OFFICE: AJV-354

PART C - REMARKS:

VDP NOT ESTABLISHED - VERTICAL GUIDANCE ONLY PROCEDURE.

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

SEE ATTACHED AIRSPACE LETTER.

MISSED APPROACH IAW 8260.54A (IPDS BUILT MISSED APPROACH) CLIMB TO ALTITUDE USED IN MISSED APPROACH TO ALLOW FOR IMMEDIATE DIVERGENCE OF SIMULTANEOUS APPROACHES ON RWY 34C/R.

BARO-VNAV LOW TEMP DERIVED FROM 420 SPEADSHEET.
BARO-VNAV NA BELOW -8C(18F) OR ABOVE 54C (130F).
ACT: -8
DELTA ISA LOW: 14.132
AVERAGE COLD TEMPERATURE BASED ON 5 YEAR HISTORY (2007-2011).

VEB ROC APPLIED.
VEB DATA: SEE ATTACHED SPREADSHEET.

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

SPECIAL AIRCRAFT AND AIRCREW AUTHORIZATION REQUIRED (SAAAR) FAAO 8260.52 CRITERIA USED.

VGSI DATA: 3.00/75.1

MAXIMUM TREE HEIGHT WITHIN 5NM OF KSEA IS 100FT AGL, PER FPT.

RF SEGMENT RADIUS/BANK ANGLE COMPUTATIONS:

SEGMENT	ALT	KIAS	KTAS	HAA	VKTW	TR	BA
BELNE-LANGL	5000	190	206.88	4567.5	60.1	3.00	19.12
LANGL-BAKMN	3000	190	200.91	2567.5	50.0	3.00	17.02

MAX SPEED BELNE TO BAKMN - 190 KIAS

REDUCED RNP LEVEL (0.9) BETWEEN BAKMN AND JALON REQUIRED TO SUPPORT MINIMUM LEG LENGTH.
MAX SPEED 190 FOR RF TURN REQUESTED BY ATC.

INITIAL, INTERMEDIATES AND INTERMEDIATE STEPDOWN FIX ALTITUDES AND LOCATIONS PER ATC REQUEST FOR SEPARATION AND AIRSPACE PURPOSES. SEA WILL BE TESTING SIMULTANEOUS PARALLEL RNP OPERATIONS.

PROCEDURE CONNECTED TO RNAV STARS, RADAR REQUIRED NOTE PER ATC REQUEST.

ORDER 8260.52, PAR 3.6, RNP VISUAL SEGMENT PENETRATIONS:
492 TREE (KSEA 0037) (20/3) 472529.82N/1221847.81W (42.67)
476 TREE (KSEA 0033) (20/3) 472532.54N/1221848.75W (39.83)

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	**DA**	**LOFAL (40:1)**				**ASC**		
		(40:1)						
MISSED APPROACH	**RW34L**	**LOFAL**				**ASC**		**5000**
(RNP 1.00)		**LEVEL SURFACE**	**11. TOWER (53-001007)**	**474535.10N/1223103.60W**	**725 (5E)**	**1000**	**AC125**	**1800**
			12. TERRAIN	**474800.00N/1223654.00W**	**519 (500)**		**AS1500**	**2000**
2. PROCEDURE TURN								
3. MISSED APPROACH — MAP:								
ELEV:								

4. CIRCLING AREA	DISTANCE	HT. ABV. ARPT. REQUIRED	HT. ABV. ARPT. ACTUAL
CATEGORY A	1.3 NM	350	
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: **RW34L**

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

QUALITY CHECKED

CITY AND STATE	ELEVATION: 433 / AIRPORT NAME:	FACILITY	PROCEDURE AND AMENDMENT NO:	REGION
SEATTLE, WA	**SEATTLE-TACOMA INTL**	**RNAV**	**RNAV (RNP) Z RWY 34L, ORIG**	**ANM**

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
		CAT 3
5. APPROACH & RUNWAY LIGHTING		
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: ROY E. CURRIE	DATE: 10/03/2012
TITLE: AERONAUTICAL INFORMATION SPECIALIST	OFFICE: AJV-354

PART C - REMARKS:

RADIO FIX AND HOLDING DATA RECORD

NAME: BELNE **STATE:** WA **COUNTRY:** US

LATITUDE/LONGITUDE: 471824.82N/1222758.01W **TYPE:** WP

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

FIX RESTRICTIONS:
SPECIAL RNAV (RNP) M RWY 34L, KSEA, SEATTLE, WA

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) M RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34C			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34R			KSEA	SEATTLE	WA (US)

REQUIRED CHARTING: IAP, SPECIAL IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
MOVED FIX 15.20FT SOUTH FROM 471824.97N/1222758.01W NECESSARY FOR RF TURN ALIGNMENT.
ADDED FIX USE.

DEVELOPED BY: **DATE:** 09/25/2012 **OFFICE:** AJV-354 **NAME:** ROY CURRIE

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

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: WST
ARTCC: ZSE
ATC FACILITY: SEA ATCT
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: CFBRP **STATE:** WA **COUNTRY:** US

LATITUDE/LONGITUDE: 471819.32N/1222333.63W **TYPE:** CNF

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

FIX RESTRICTIONS:
SPECIAL RNAV (RNP) M RWY 34L, KSEA, SEATTLE, WA

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) M RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34C			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34R			KSEA	SEATTLE	WA (US)

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 03/07/2013

DEVELOPED BY: **DATE:** 10/10/2012 **OFFICE:** AJV-354 **NAME:** ROY CURRIE

APPROVED BY: **DATE:** **OFFICE:** AJV-354 **NAME:** DEBORAH COPELAND

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: WST
ARTCC: ZSE
ATC FACILITY: SEA APP CON, SEA ATCT
OTHER:

QUALITY 4 CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: HIPRO **STATE:** WA **COUNTRY:** US

LATITUDE/LONGITUDE: 471201.87N/1221912.31W **TYPE:** WP, RADAR, 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	SEATTLE	I-BEJ	LOC/DME		163.33	180.33	14.24	15.97		5000	5000

EXPANDED SERVICE VOLUME (ESV):

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
I-BEJ	LOC/DME	R-163	15	5000	5000

FIX RESTRICTIONS:
SPECIAL RNAV (RNP) M RWY 34L, KSEA, SEATTLE, WA

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

REMARKS:
SEATTLE (FAC 1) USED TO ESTABLISH FIX COORDINATES
DME ANTENNA COORDINATES: 472615.62N/1221859.94W
8260.54A RNP FORMULA 1-16B APPLIED

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 34L	1		KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34L (SA CAT I)	1		KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34L (SA CAT II)	1		KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) M RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34L			KSEA	SEATTLE	WA (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
UPDATED FIX USE
UPDATED FAC 1 DME FROM 13.70 TO 14.24.
ADDED FAC 1 14.24 TO DIST FROM FAC AND UPDATED MAG COURSE
UPDATED ESV INFORMATION
FIX MOVED .54NM SOUTH
REMOVED NOTE "FIX PLACED 84296.36' FROM R34L THRESHOLD, USED RNP PFAF FORMULA" FROM REMARKS.
ADDED NOTE TO REMARKS "8260.54A RNP FORMULA 1-16B APPLIED"

DEVELOPED BY: **DATE:** 08/29/2012 **OFFICE:** AJV-354 **NAME:** BRYAN BLUE

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

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: WST
ARTCC: ZSE
ATC FACILITY: SEA APP CON, SEA ATCT
OTHER:

QUALITY 4 CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: JALON **STATE:** WA **COUNTRY:** US

LATITUDE/LONGITUDE: 472011.42N/1221908.18W **TYPE:** WP, RADAR, 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	SEATTLE	I-BEJ	LOC/DME		163.33	180.33	6.07	7.81	47456	2400	4800

FIX RESTRICTIONS:
SPECIAL RNAV (RNP) M RWY 34L, KSEA, SEATTLE, WA

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

REMARKS:
DME ANTENNA COORDINATES: 472615.62N/1221859.94W
8260.54A FORMULA 1-16B APPLIED (IPDS & IAPA)

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 34L	1		KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34L (SA CAT I)	1		KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34L (SA CAT II)	1		KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) M RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34L			KSEA	SEATTLE	WA (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
FIX MOVED 635FT SOUTH
UPDATED FIX COORDINATES
REMOVED NOTE "RNP PFAF FORUMLA USED"
ADDED NOTE "8260.54A FORMULA 1-16B APPLIED (IPDS & IAPA)
REMOVED FAC 2
FAC 1 UPDATED DME DISTANCE FROM 5.97 TO 6.07 AND ADDED 7.81 TO DIST FROM FAC

DEVELOPED BY: **DATE:** 08/28/2012 **OFFICE:** AJV-36 **NAME:** BRYAN BLUE

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

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: WST
ARTCC: ZSE
ATC FACILITY: SEA APP CON, SEA ATCT
OTHER:

QUALITY 4 CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: LANGL **STATE:** WA **COUNTRY:** US

LATITUDE/LONGITUDE: 471544.01N/1222547.09W **TYPE:** WP

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

FIX RESTRICTIONS:
SPECIAL RNAV (RNP) M RWY 34L, KSEA, SEATTLE, WA

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) M RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34C			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34R			KSEA	SEATTLE	WA (US)

REQUIRED CHARTING: IAP, SPECIAL IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
FIX MOVED 44.40FT WEST FROM 471543.87N/1222546.48W FOR RF TURN ALIGNMENT.
ADDED FIX USE.

DEVELOPED BY: **DATE:** 09/25/2012 **OFFICE:** AJV-354 **NAME:** ROY CURRIE

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

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: WST
ARTCC: ZSE
ATC FACILITY: SEA ATCT
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: LOFAL **STATE:** WA **COUNTRY:** US

LATITUDE/LONGITUDE: 475105.59N/1224049.86W **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	SEATTLE	SEA	VORTAC	H	310.08	329.08	29.17	29.17		3000	17500
2	PAINE	PAE	VOR/DME	L	236.00	256.00	16.77	16.77		3000	17500

FIX RESTRICTIONS:
MCA V287 5000 SOUTHWEST BOUND
SPECIAL RNAV (RNP) M RWY 34L, KSEA, SEATTLE, WA

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	NW	SEA	VORTAC	310.08	130.08	L	1-1 1/2		5000	17500	6	17
2	SE	SEA	VORTAC	310.08	310.08	R	1-1 1/2		6000	17500	6	17
3	SE		WP	129.08	309.08	R		5	5000	17500	6	17
4	NW		WP	322.59	142.59	R		4	3400	10000	5	6

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	475933.00N/1224933.00W	994	4E
2	200	AAO	475106.00N/1224639.00W	847	4E
2	310	AAO	474724.00N/1225345.00W	2254	4E
3	200	AAO	475106.00N/1224639.00W	847	4E
4	200	AAO	475933.00N/1224933.00W	994	4E

REASON FOR NONSTANDARD HOLDING:
PAT 1 TERRAIN AVOIDANCE

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERNS.
HOLDING PATTERNS 1 AND 3 FOR ATC USE.

PROCEDURES REQUIRING CLIMB-IN-HOLD:

PAT	PROCEDURE TITLE	AIRPORT IDENT	CITY	STATE
2	ILS OR LOC RWY 31L	KBFI	SEATTLE	WA (US)

REMARKS:
SEATTLE (FAC 1) AND PAINE (FAC 2) USED TO ESTABLISH FIX COORDINATES
PRECIPITOUS TERRAIN EVALUATION COMPLETED
FIX IS NOT ON CENTERLINE; DID NOT MOVE 3.6 FEET SW PER TERMINAL REQUEST.
PAT 2: 310K CONT. OBS. LOCATED 12099' INTO SECONDARY AREA, PRIMARY EQUIV 1257'

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
EN ROUTE	V287	1, 2				(US)
EN ROUTE	V4	1, 2				(US)
EN ROUTE	V495	1, 2				(US)
IAP	NDB RWY 01			KPWT	BREMERTON	WA (US)
IAP	RNAV (GPS) RWY 19		4	KPWT	BREMERTON	WA (US)
IAP	ILS OR LOC RWY 31L	1	2	KBFI	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 13R			KBFI	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 13R			KBFI	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 34L	1, 2	1	KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34L (SA CAT I)	1, 2		KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34L (SA CAT II)	1, 2	1	KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 34L		3	KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) M RWY 34L		4	KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34L		4	KSEA	SEATTLE	WA (US)

REQUIRED CHARTING: IAP, CONTROLLER, EN ROUTE LOW

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 24 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:

QUALITY 4 CHECKED

UPDATED FIX USE
UPDATED PAT 1 MINIMUM HOLDING AND PATTERN SIZE FROM 6000 TO 5000
REMOVED NOTE FROM REMARKS "PAT 1, 2, 3, 4, NO ADJUSTMENT"
ADDED NOTE TO REMARKS "SEATTLE (FAC 1) AND PAINE (FAC 2) USED TO ESTABLISH FIX COORDINATES"
CHANGED HOLDING PAT 3 MINIMUM FROM 6000 TO 5000
UPDATED PAT 3 HOLDING OBS

DEVELOPED BY:	**DATE:** 09/13/2012	**OFFICE:** AJV-354	**NAME:** BRYAN BLUE
APPROVED BY:	**DATE:**	**OFFICE:** AJV-354	**NAME:** DEZ SILAGYI
	SIGNATURE:		

DISTRIBUTION:
NFDC
FPO: WST
ARTCC: ZSE
ATC FACILITY: SEA APP CON
OTHER:

QUALITY 4 CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: SHIPZ **STATE:** WA **COUNTRY:** US

LATITUDE/LONGITUDE: 472130.94N/1222749.43W **TYPE:** WP

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

FIX RESTRICTIONS:
SPECIAL RNAV (RNP) M RWY 34L, KSEA, SEATTLE, WA

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) M RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34C			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34R			KSEA	SEATTLE	WA (US)
STAR	MARNR (RNAV)			KSEA	SEATTLE	WA (US)

REQUIRED CHARTING: STAR, IAP, SPECIAL IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
MOVED FIX 1.97 NM NORTH, NAME RETAINED PER ATC REQUEST FOR OPERATIONAL ADVANTAGE.
CHANGED SPECIAL FIX RESTRICTION TO RNAV (RNP) M RWY 34L VICE MARNR RNAV STAR.
UPDATED FIX USE, CONVERTED MARNR STAR FROM SPECIAL TO PUBLIC USE, ADDED RNAV (RNP) Z RWY'S 34L/C/R AND RNAV (RNP) M RWY 34L SPECIAL.
ADDED IAP TO REQUIRED CHARTING.

DEVELOPED BY: **DATE:** 09/13/2012 **OFFICE:** AJV-354 **NAME:** DION LANCIA

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

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: WST
ARTCC: ZSE
ATC FACILITY: SEA APP CON
OTHER:

QUALITY 4 CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: SOMDE **STATE:** WA **COUNTRY:** US

LATITUDE/LONGITUDE: 471818.37N/1221909.14W **TYPE:** WP

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

FIX RESTRICTIONS:
SPECIAL RNAV (RNP) M RWY 34L, KSEA, SEATTLE, WA

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) M RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34L			KSEA	SEATTLE	WA (US)

REQUIRED CHARTING: IAP, SPECIAL IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
FIX MOVED 9.12FT SOUTH FROM 471818.46N/1221909.14W FOR RF TURN ALIGNMENT WITH FINAL.
ADDED FIX USE.

DEVELOPED BY: **DATE:** 09/25/2012 **OFFICE:** AJV-354 **NAME:** ROY CURRIE

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

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: WST
ARTCC: ZSE
ATC FACILITY: SEA ATCT
OTHER:

QUALITY 4 CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: SONDR **STATE:** WA **COUNTRY:** US

LATITUDE/LONGITUDE: 470725.69N/1222056.30W **TYPE:** WP

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

FIX RESTRICTIONS:
SPECIAL RNAV (RNP) M RWY 34L, KSEA, SEATTLE, WA

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 34C			KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 34L			KSEA	SEATTLE	WA (US)
IAP	ILS OR LOC RWY 34R			KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34C (SA CAT I, SA CAT II)			KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34L (SA CAT I, SA CAT II)			KSEA	SEATTLE	WA (US)
IAP	ILS RWY 34R (SA CAT I, SA CAT II)			KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 34C			KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (GPS) Y RWY 34R			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) M RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34C			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34L			KSEA	SEATTLE	WA (US)
IAP	RNAV (RNP) Z RWY 34R			KSEA	SEATTLE	WA (US)
STAR	HAWKZ (RNAV)			KSEA	SEATTLE	WA (US)

REQUIRED CHARTING: STAR, IAP, SPECIAL IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
CHANGED SPECIAL FIX RESTRICTION TO RNAV (RNP) M RWY 34L VICE MARNR RNAV STAR.
MOVED FIX 1.27 NM SOUTH AND UPDATED COORDINATES, NAME RETAINED PER ATC REQUEST - OPPERATIONAL ADVANTAGE.
UPDATED FIX USE, CONVERTED HAWKZ FROM SPECIAL TO PUBLIC USE.

DEVELOPED BY: **DATE:** 10/10/2012 **OFFICE:** AJV-354 **NAME:** DION LANCIA

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

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: WST
ARTCC: ZSE
ATC FACILITY: SEA APP CON
OTHER:

QUALITY 4 CHECKED

TERMINAL AIRSPACE DATA REQUIREMENTS

CITY: **SEATTLE** STATE: **WA**

AIRPORT NAME: **SEATTLE-TACOMA INTL** ID: **KSEA**

PROCEDURE: **RNAV (RNP) Z RWY 34L** AMDT: **ORIG**

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 **3.42**
   (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 **000.33**
4. High Terrain in **FINAL** segment containing 1000' point **499**
5. Distance from **THLD** to 1500' point **4.99**
   (If 1500' point in PT maneuvering area or holding pattern note in remarks)
6. Width of **FINAL** segment at 1500' point **1.20**
7. True Course of **FINAL** segment containing 1500' point **000.33**
8. High Terrain in **FINAL** segment containing 1500' point **499**
9. Threshold Coordinates (if straight-in) ... **472625.92N** / **1221905.01W**
10. ARP Coordinates ..... **472659.60N** / **1221842.40W**
11. Runway Approach End and distance furthest from ARP.....RWY **34R**
    Distance **1.13** NM
12. FAF Coordinates ..... **472011.42N** / **1221908.18W**
    (Click to Select)

REMARKS: Approach/Drawing attached.

Subject: ACTION: Approval Request

RNAV (RNP) Z RWY 34L, Orig, Seattle – Tacoma Intl, Seattle, WA (KSEA)

RNP Visual Segment penetrated, Order 8260.52, Para 3.6.

Obstacle KSEA0037, 492' MSL Tree 472529.82N/1221847.81W (AC: 1A) penetrates the RNP Visual Segment by 42.67 ft.

Obstacle KSEA0033, 476' MSL Tree 472532.54N/1221848.75W (AC: 1A) penetrates the RNP Visual Segment by 39.83 ft.

Request approval to publish procedure with visual penetration.

Please direct any questions to Brad Rush, 4-3027.

DO NOT REMOVE FROM PACKAGE

RWY 34L -
SEGMENT/S: SOMDE - JALON

PFAF

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:	3000
LTP Elevation:	356.3
Glidepath Angle:	3
TCH:	54.85
RNP Value:	0.30
Δ ISA:	-22.135

Straight In Segment

***(Wingspan =<262)* LTP to Origin:**	3,649.80'
***(Wingspan =<136)* LTP to Origin:**	3,440.64'
OCS Slope Ratio:	20.92 : 1

RF Turn Segment | Bank angle:

***(Wingspan =<262)* LTP to Origin:**	NA
***(Wingspan =<136)* LTP to Origin:**	NA
OCS Slope Ratio:	NA

VEB

Glidepath Angle:		
Max Glidepath Angle:		
PFAF Elevation:		
LTP Elevation:		
ACT:		
Min Glidepath Angle	#DIV/0!	
NA Below	#DIV/0!	#DIV/0!
NA Above	#DIV/0!	#DIV/0!

Intermediate Segment

Glidepath Angle	3.00°
LTP MSL Elevation	356.30
TCH (ft)	54.85
OCS Slope	20.92
OCS Origin Distance (ft) *(measured along-track from LTP)*	3,649.80
Obstacle Distance (ft) *(measured along-track from LTP)*	42,111.28
VEB ROC *(at obstacle)*	**430**
Glidepath MSL altitude at Obstacle	2,660.60
OCS MSL altitude at Obstacle	2,230.64

KEEP WITH PACKAGE

DO NOT REMOVE FROM PACKAGE

RWY 34L
SEGMENT/S: SOMDE-JALON

PFAF

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:	~~2400~~ 3000
LTP Elevation:	356.3
Glidepath Angle:	3
TCH:	54.85
RNP Value:	0.30
Δ ISA:	-22.135

Straight In Segment

***(Wingspan =<262)* LTP to Origin:**	3,649.82'
***(Wingspan =<136)* LTP to Origin:**	3,440.73'
OCS Slope Ratio:	20.91 : 1

RF Turn Segment | Bank angle:

***(Wingspan =<262)* LTP to Origin:**	NA
***(Wingspan =<136)* LTP to Origin:**	NA
OCS Slope Ratio:	NA

VEB

Glidepath Angle:		
Max Glidepath Angle:		
PFAF Elevation:		
LTP Elevation:		
ACT:		
Min Glidepath Angle	#DIV/0!	
NA Below	#DIV/0!	#DIV/0!
NA Above	#DIV/0!	#DIV/0!

Intermediate Segment

Glidepath Angle	3.00°
LTP MSL Elevation	356.30
TCH (ft)	54.85
OCS Slope	20.91
OCS Origin Distance (ft) *(measured along-track from LTP)*	3,649.82
Obstacle Distance (ft) *(measured along-track from LTP)*	~~41,946.99~~ 42111.28
VEB ROC *(at obstacle)*	**429** - 430
Glidepath MSL altitude at Obstacle	2,651.66
OCS MSL altitude at Obstacle	2,223.02

KEEP WITH PACKAGE

PFAF To Rwy 3946
AAO To PFAF 4165.28
42111.28

See ATTACH

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 OCS Origin & Slope

Intermediate Segment Altitude:	3000
LTP Elevation:	356.3
Glidepath Angle:	3
TCH:	54.85
RNP Value:	0.30
Δ ISA:	-22.135

Straight In Segment

(*Wingspan =<262*) **LTP to Origin:**	**3,649.80'**
(*Wingspan =<136*) **LTP to Origin:**	**3,440.64'**
OCS Slope Ratio:	**20.92 : 1**

RF Turn Segment | Bank angle:	**19.12°**
(*Wingspan =<262*) **LTP to Origin:**	**4,024.37'**
(*Wingspan =<136*) **LTP to Origin:**	**3,592.77'**
OCS Slope Ratio:	**20.92 : 1**

Version 2.0

VEB Temperature Limits

Glidepath Angle:		
Max Glidepath Angle:		
PFAF Elevation:		
LTP Elevation:		
ACT:		
Min Glidepath Angle	#DIV/0!	
NA Below	#DIV/0!	#DIV/0!
NA Above	#DIV/0!	#DIV/0!

Intermediate Segment VEB ROC

Glidepath Angle	3.00°
LTP MSL Elevation	363.00
TCH (ft)	55.67
OCS Slope	20.92
OCS Origin Distance (ft) *(measured along-track from LTP)*	3,634.80
Obstacle Distance (ft) *(measured along-track from LTP)*	42,111.28
VEB ROC *(at obstacle)*	**430**
Glidepath MSL altitude at Obstacle	2,668.12
OCS MSL altitude at Obstacle	2,237.69