




Flight Procedure Tracking Form		Action: FLIGHT CHECK	Task Type: SID	Date Open: 07/01/2016	Task #: 2014080614561401002	Request #: 20140806145614
Procedure: SID NRVNA (RNAV) ONE SEATTLE WA KBFI			Airport ID: KBFI	Airport: BOEING FIELD/KING COUNTY INTL		Reimbursable #: NO
City: SEATTLE	ST: WA	GPS #:	Estimated Chart Date: 10/12/2017		FICO #: 1187827	
Fac ID: N/A		Fac. Type:			Specialist: ROBERT GRIM	
Procedure Review						
	Rec'd	Rel'd	Full Name	Comments		
Lead:	01/27/2017	07/28/2017	TRACEY STILES	 <i>Digitally signed by</i>		
QA:	05/31/2017	06/07/2017	CASIMIR TABAKA	 DONALD H LANIER		
Liaison:	06/07/2017	06/08/2017	MARY MCDONALD	 Sep 06, 2017		
Procedure Comments:			Remark Type: INFORMATION			
AFS APPROVAL LETTER: CLIMB GRADIENT CONTACT INFO: DON LANIER AJV-5431 MANAGER, 405.954.8242 09/06/17: THIS IS A CORRECTED COPY OF THE FORM APPROVED ON 07/25/17. 1. ADDED CONTROLLER, ENROUTE HIGH, ENROUTE LOW TO REQUIRED CHARTING ON 8260-2 (ALPSE).						

FIPC DME/DME FORM

PROCEDURE: SID,NRVNA (RNAV),ONE,SEATTLE,WA,KBFI,!		AIRPORT NAME: BOEING FIELD/KING COUNTY INTL		AIRPORT ID: KBFI	SPECIAL CONTROL NO: SG-06-146-17
FAC ID: NRVNA1		CITY: SEATTLE		ST: WA	ORIG CHART DATE: 08/17/2017
DFL TYPE: PROC/D	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER:	PTS TASK ID: 2014080614561401002	

PREFLIGHT NOTES

REVIEWER: charles d cunningham	DATE: 07/14/2017			
COMMENTS:	CHECK ONE: <input checked="" type="checkbox"/> FLT CK REQ <input type="checkbox"/> NFCR <input type="checkbox"/> REJECT			
	<table><tr><td></td><td>YES</td><td>NO</td></tr></table>		YES	NO
		YES	NO	
CPV COMPLETE?	<table><tr><td><input checked="" type="checkbox"/> X</td><td></td></tr></table>	<input checked="" type="checkbox"/> X		
<input checked="" type="checkbox"/> X				

PROCEDURE RESULTS

INSPECTION DATE: 07/14/2017	CREW #: VN346	N #: N57	INSTRUMENT PROCEDURE STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT W/CHANGES <input type="checkbox"/> UNSAT	ARINC CODING: <input type="checkbox"/> SAT <input checked="" type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT
FLIGHT INSPECTOR SIGNATURE: charles d cunningham @ 07/14/2017 17:23			PRINTED NAME: CUNNINGHAM, CHARLES DAVID	NOTAM INITIATED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

FLIGHT INSPECTOR REMARKS:		
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DME/DME STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> UNSAT	SPECIALIST SIGNATURE: jeanette ctr roller @ 07/27/2017 16:17	PRINTED NAME: Jeanette Roller
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SPECIALIST REMARKS: DME received as modeled.
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IN-FLIGHT OBSTACLE REPORT

OBSTRUCTION ID #:	COORDINATES OR LOCATION:	GNSS ALTITUDE (MSL):	BAROMETRIC ALTITUDE (MSL):	HEIGHT ABOVE GROUND LEVEL:
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FIPC DME/DME FORM

PROCEDURE: SID,NRVNA (RNAV),ONE,SEATTLE,WA,KBFI,!		AIRPORT NAME: BOEING FIELD/KING COUNTY INTL		AIRPORT ID: KBFI	SPECIAL CONTROL NO: SG-06-146-17
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DFL TYPE: PROC/D	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER:	PTS TASK ID: 2014080614561401002	

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FLIGHT INSPECTOR SIGNATURE: charles d cunningham @ 07/14/2017 17:23			PRINTED NAME: CUNNINGHAM, CHARLES DAVID	NOTAM INITIATED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

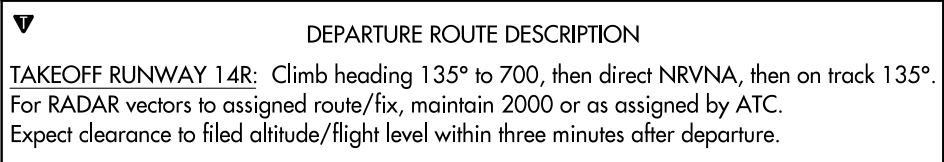
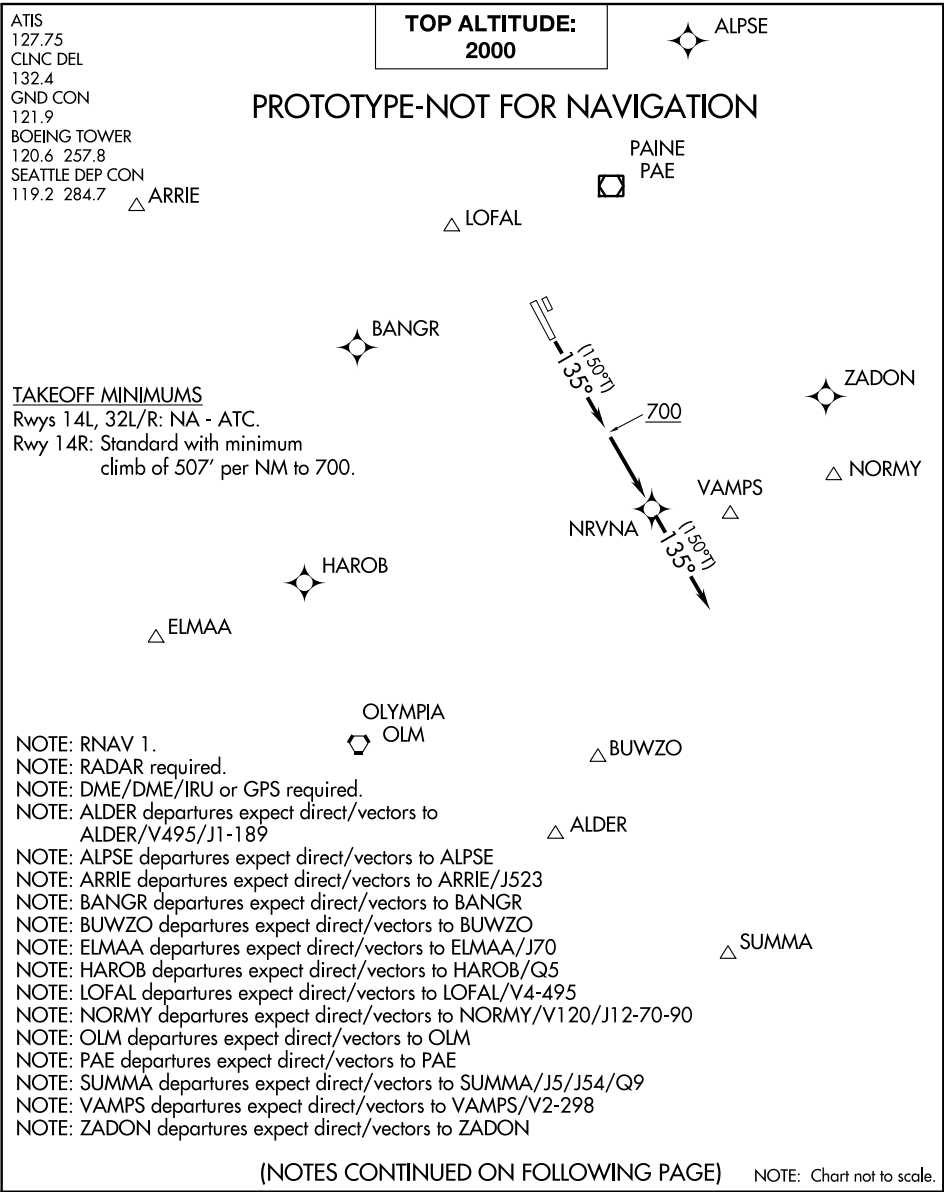
FLIGHT INSPECTOR REMARKS:		
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DME/DME STATUS: <input type="checkbox"/> SAT <input type="checkbox"/> UNSAT	SPECIALIST SIGNATURE:	PRINTED NAME:
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SPECIALIST REMARKS:

IN-FLIGHT OBSTACLE REPORT

OBSTRUCTION ID #:	COORDINATES OR LOCATION:	GNSS ALTITUDE (MSL):	BAROMETRIC ALTITUDE (MSL):	HEIGHT ABOVE GROUND LEVEL:
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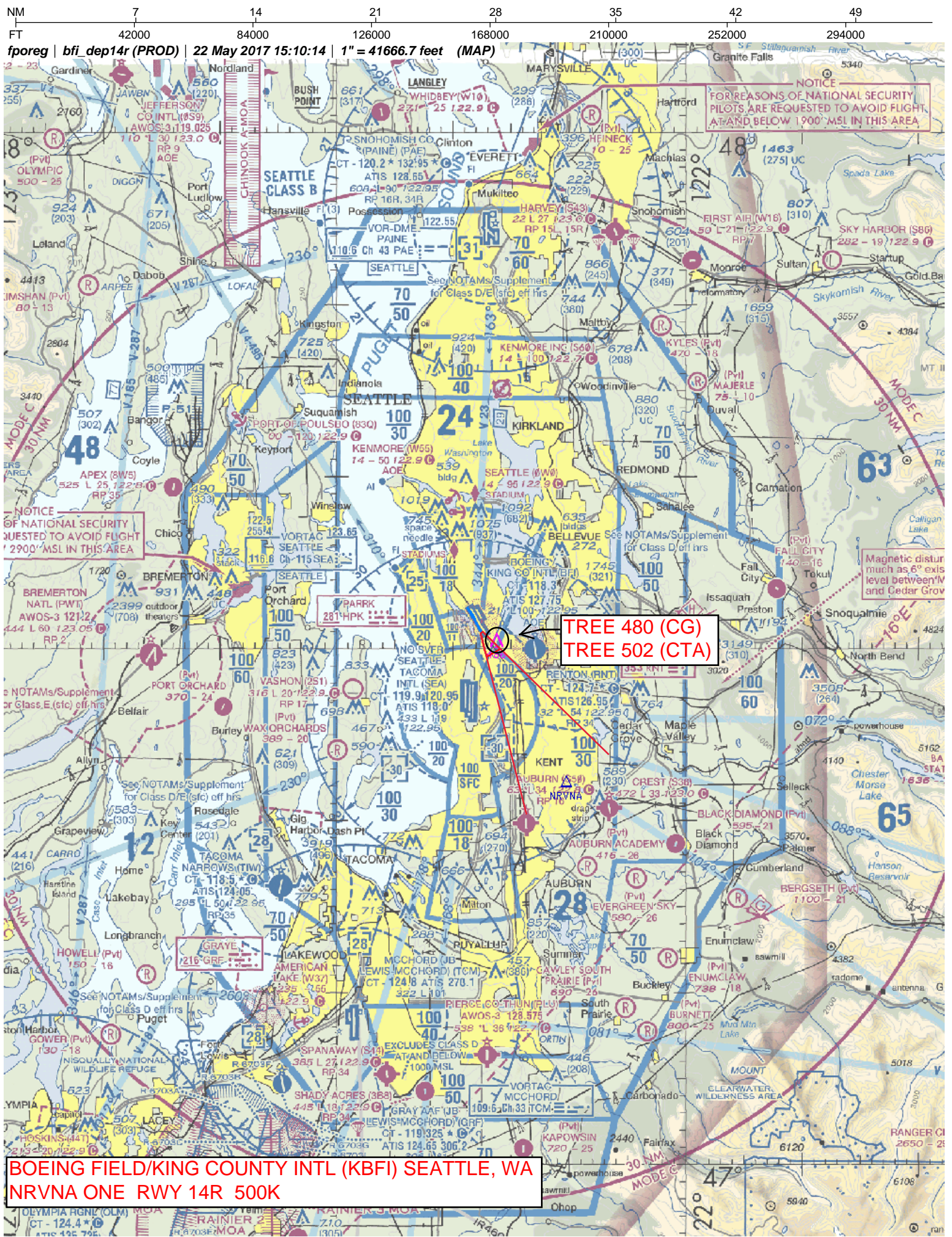


NRVNA ONE DEPARTURE (RNAV)

TAKEOFF OBSTACLE NOTES

Rwy 14R: Railroad 50' from DER, 453' left of centerline, 46' MSL. Railroad, tree and road beginning 128' from DER, 277' left of centerline, up to 47' MSL. Light pole 202' from DER, 539' right of centerline, 64' MSL. Signs, railroads, roads and trees beginning 263' from DER, 280' left of centerline, up to 98' MSL. Poles, OL DME, Navaid and trees beginning 411' from DER, 283' right of centerline, up to 66' MSL. Trees, railroads and road beginning 793' from DER, 240' left of centerline, up to 61' AGL/116' MSL. Trees, roads, railroads, poles, sign, electric system, towers and electric transmission lines beginning 891' from DER, 142' left of centerline, up to 113' AGL/129' MSL. Trees, building and poles beginning 1123' from DER, 2' right of centerline, up to 87' MSL. Transmission towers beginning 2880' from DER, 90' right of centerline, up to 74' AGL/94' MSL. Transmission tower 3138' from DER, 1305' right of centerline, 100' MSL. Trees beginning 3181' from DER, 344' right of centerline, up to 91' AGL/106' MSL. Pole 3278' from DER, 1292' right of centerline, 111' MSL. Electric transmission line 3363' from DER, 1389' right of centerline, 121' MSL. Electric transmission lines and trees beginning 3373' from DER, 597' right of centerline, up to 124' MSL. Electric transmission line and trees beginning 3511' from DER, 278' right of centerline, up to 125' MSL. Trees beginning 3574' from DER, 710' right of centerline, up to 132' MSL. Tree 3658' from DER, 486' right of centerline, 139' MSL. Trees beginning 3680' from DER, 724' right of centerline, up to 146' MSL. Trees and transmission tower beginning 3710' from DER, 270' right of centerline, up to 155' MSL. Trees and poles beginning 3894' from DER, 773' right of centerline, up to 183' MSL. Trees, electric transmission lines, antenna and towers beginning 4017' from DER, 16' right of centerline, up to 88' AGL/195' MSL. Trees beginning 4142' from DER, 11' left of centerline, up to 137' MSL. Trees beginning 4429' from DER, 4' left of centerline, up to 130' AGL/149' MSL. Tree 4671' from DER, 31' left of centerline, 130' AGL/153' MSL. Trees beginning 4694' from DER, 1172' left of centerline, up to 167' MSL. Trees beginning 4807' from DER, 1051' left of centerline, up to 193' MSL. Trees beginning 4978' from DER, 828' left of centerline, up to 202' MSL. Trees beginning 5257' from DER, 825' left of centerline, up to 212' MSL. Trees beginning 5405' from DER, 773' left of centerline, up to 221' MSL. Trees beginning 5519' from DER, 684' left of centerline, up to 229' MSL. Trees and electric transmission line beginning 5636' from DER, 75' left of centerline, up to 234' MSL. Trees, towers and electric transmission lines beginning 5685' from DER, 168' left of centerline, up to 247' MSL. Trees beginning 5697' from DER, 477' right of centerline, up to 95' AGL/217' MSL. Electric transmission lines, trees and towers beginning 5832' from DER, 421' left of centerline, up to 360' MSL. Trees and transmission tower beginning 1 NM from DER, 719' left of centerline, up to 399' MSL. Trees, ground, buildings, electric transmission line, transmission towers, roads and fence beginning 1.1 NM from DER, 970' left of centerline, up to 437' MSL. Trees, transmission towers, roads, buildings, fences, ground, parking lots, electric transmission line, poles and antenna beginning 1.3 NM from DER, 948' left of centerline, up to 116' AGL/506' MSL. Trees beginning 2 NM from DER, 2647' left of centerline, up to 523' MSL. Trees beginning 2.1 NM from DER, 2225' left of centerline, up to 543' MSL. Trees beginning 2.3 NM from DER, 2603' left of centerline, up to 553' MSL.

PROTOTYPE-NOT FOR NAVIGATION



fporeg | bfi_dep14r (PROD) | 22 May 2017 15:10:14 | 1" = 41666.7 feet (MAP)

NOTICE
FOR REASONS OF NATIONAL SECURITY
PILOTS ARE REQUESTED TO AVOID FLIGHT
AT AND BELOW 1900' MSL IN THIS AREA

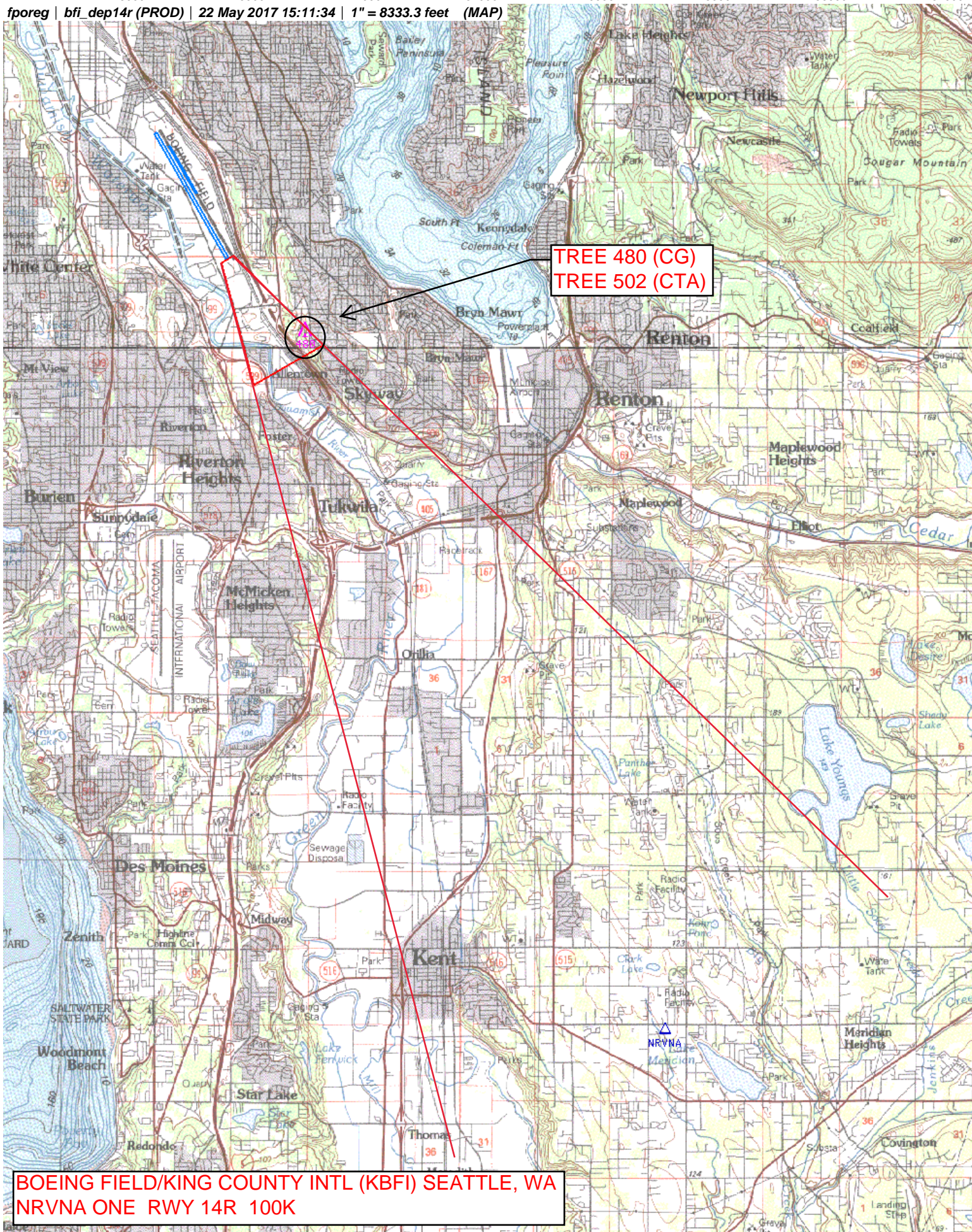
NOTICE
OF NATIONAL SECURITY
REQUESTED TO AVOID FLIGHT
' 2900' MSL IN THIS AREA

TREE 480 (CG)
TREE 502 (CTA)

BOEING FIELD/KING COUNTY INTL (KBFI) SEATTLE, WA
NRVNA ONE RWY 14R 500K

NM 1 2 3 4 5 6 7 8 9 10
FT 8000 16000 24000 32000 40000 48000 56000 64000

fporeg | bfi_dep14r (PROD) | 22 May 2017 15:11:34 | 1" = 8333.3 feet (MAP)



BOEING FIELD/KING COUNTY INTL (KBFI) SEATTLE, WA
NRVNA ONE RWY 14R 100K

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Instrument Flight Procedures Environmental Processing Form**

**This form is intended to streamline the environmental processing for
ONLY the Instrument Flight Procedure actions listed below**

• Section A is to be completed by the Requestor who provides all the relevant information and attachments for environmental analysis

• Section B is to be completed by the Operations Support Group (OSG) Environmental Specialist.

Airport Name and State/ICAO: KBFI

Instrument Flight Procedure(s): CBAIN ONE and NRVNA ONE Standard Instrument Departures

Requestor Name and Phone Number: Kurtis J. Proctor, SM Airspace Seattle TRACON (206) 214-4620

Additional Procedures: (List additional IFPs below or insert list as an additional page in this file)

SECTION A – FOR REQUESTOR USE ONLY

Does the requested procedure include the following? (check all that apply):

Advisory Actions (FAA Order 1050.1F, Paragraph 2-1.2)

- ☐ Diverse Vectoring Areas (DVA) without a prescribed heading
- ☐ Terminal Arrival Areas (excluding Initial Segments)

If the requested procedure change is limited to ONLY the Advisory Actions listed above, no further environmental review/documentation is required. Please forward package to Environmental Specialist.

New or Revised Air Traffic Control Procedures (Paragraph 5-6.5i)

- ☐ Changes to and/or additional Lines of Minimum
- ☒ Altitude increases
- ☐ IFR Takeoff Minimums and (Obstacle) Departure Procedure:
 - Only close in obstacle notes
- ☐ Minimum Safe Altitudes

Emergency Actions (Paragraph 5-6.5j)

- ☐ Missed approaches and/or Missed approach holding patterns
- ☐ Changes to circling areas

**DEPARTMENT OF TRANSPORTATION
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☐ Arrival holding patterns, not including Hold in Lieu of a Procedure Turn

Publication Actions (Paragraph 5-6.5k)

- ☐ Name changes (Airport, Fix, Procedure, etc.)
- ☐ Adding, amending, removing notes to procedures
- ☐ Magnetic Variation (MagVar) adjustments
- ☐ Visual Climb Over Airport (VCOA) without a route
- ☐ Coding changes with no track/altitude changes
- ☐ Cancellation of IFPs not currently being flown

Note: Please include any airspace modeling output and charts, drawings, etc that will help explain the actions being taken. **THE FAA is proposing to implement an RNAV SID to support airport operations at Boeing Field/King County International Airport (KBFI). Development of the RNAV SID has been requested WITH A WAY POINT OTHER THAN THE SEA VOR TO ENSURE THAT THE AIRCRAFT NOT DEPART AND TURN DIRECT TO THE VOR AND INTO TRAFFIC AT SEA.**

Boeing Field is located 4 miles north of Seattle-Tacoma International. Because of the interaction between these two airports, Air Traffic and users will benefit from increased safety by protecting BF/ departures from turning towards SEA inadvertently. Air Traffic will also benefit from repeatable and predictable flows from the airport within a very complex terminal airspace.

SECTION B - FOR OSG ENVIRONMENTAL PROTECTION SPECIALIST USE ONLY

FAA Order 1050.1F categorical exclusions that apply to the instrument flight procedure actions listed in Section A:

☒ 5-6.5 i. Establishment of new or revised air traffic control procedures conducted at 3,000 feet or more above ground level (AGL); procedures conducted below 3,000 feet AGL that do not cause traffic to be routinely routed over noise sensitive areas; modifications to currently approved procedures conducted below 3,000 feet AGL that do not significantly increase noise over noise sensitive areas; and increases in minimum altitudes and landing minima. For modifications to air traffic procedures at or above 3,000 feet AGL, the Noise Screening Tool (NST) or other FAA-approved environmental screening methodology should be applied.

☐ 5-6.5 j. Implementation of procedures to respond to emergency air or ground safety needs, accidents, or natural events with no reasonably foreseeable long-term adverse impacts.

☒ 5-6.5 k. Publication of existing air traffic control procedures that do not essentially change existing tracks, create new tracks, change altitude, or change concentration of aircraft on these tracks.

CATEGORICAL EXCLUSION DETERMINATION:

The applicability of Categorical Exclusion 5-6.5 i and k for the proposed FAA procedure described above provides the appropriate exclusion from further environmental review based on the following determination as outlined in FAA Order 1050.1F regarding a Categorical Exclusions' conditions and Extraordinary Circumstances:

1. The procedure action clearly fits within the definition of one or more of the categories of excludable actions listed in FAA Order 1050.1F, Chapter 5-6.5 (Categorical Exclusions for Procedural Actions).

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Instrument Flight Procedures Environmental Processing Form**

2. The action is not a smaller subset of a larger action.

3. No extraordinary circumstances exist based on the absence of the extraordinary circumstances listed in FAA Order 1050.1F, Paragraph 5-2.

STATEMENT OF DETERMINATION: The FAA has reviewed the above described proposed action and it has been determined, by the undersigned, to be excluded from further environmental review in accordance with the provisions of FAA Order 1050.1, "Environmental Impacts: Policies and Procedures." The above-described proposed action is not expected to involve or result in any extraordinary circumstances as defined by FAA Order 1050.1F

BASIS OF DETERMINATION: This review was conducted in accordance with policies and procedures in Department of Transportation Order 5610.1, "Procedures for Considering Environmental Impacts" and FAA Order 1050.1.

Environmental Specialist Concurrence/Reviewed By:

Signed:  Date: 8/4/2016



Federal Aviation Administration

Memorandum

Date: 17 April 2017

To: Bruce DeCleene, Manager, Flight Technologies and Procedures Division
THRU: Douglas Rodzon, Manager, Flight Procedure Implementation & Oversight Branch

From: Lonnie Everhart, Manager, Instrument Flight Procedures Coordination Team, AJV-5310

Subject: **ACTION:** Approval Request

BOEING FIELD/KING COUNTY INTL (KBFI) NRVNA ONE RNAV SID RWY 14L

FAAO 8260.3B, VOL 4, PARA 1.4.1. Climb gradient exceeds 500 feet per NM.
FAAO 8260.46F Para 2-1-1 d (2), Departure Procedure (DP) Guidelines, Design constraints.

The computed climb gradient for Runway 14R is 507 feet per NM.

The obstacle driving this climb gradient is a 480 MSL tree located 7253 feet from Runway 14R DER and 2030 feet left of runway centerline.

Request approval to publish a minimum climb gradient of 507 FT per NM to 700 FT with STANDARD minimums.

This departure procedure is critical to maintaining the IFR capability of the airport. Approval will allow IFR flight operations to continue without disruption.