

Flight Procedures Cover Page	Task Action: FLIGHT CHECK	Task Type: IAP	Estimated Chart Date: 10/31/2024	APWS Task ID: 366EBA0052BE4610AA26E20F0016C17D	APWS Project ID: E16E91373DAF46CF8EC7A6AF118C1BC3
Procedure: RNAV (GPS) Z RWY 33 AMDT 1		Enroute: NO	Specialist: Sarmiento, April		Agreement Number:
Airport ID: KBTV			Airport City: BURLINGTON		State: VT
Facility ID:	Facility Type:	Flight Inspection Remark Type: Hold FC Slot			
Procedure Comments: USED ACTIVE DATA FOR KBTV APPROVED WAIVER ON FILE FOR 0 FT AAO ON CAMELS HUMP MOUNTAIN; RESUBMITTED WAIVER WAIVER SUBMITTED FOR LENGTH OF FINAL IN EXCESS OF 10 NM WAIVER SUBMITTED FOR 100 AAO OUTSIDE AAO EXEMPT AREA ON FINAL APPROVAL REQUEST SUBMITTED FOR USE OF PPV IN LIEU FULL PR VALUES CONTACT CASIMIR TABAKA (405) 954-7931 Digitally signed by JOSEPH L ZEDER Sep 06, 2024					



1. FLIGHT PROCEDURE IDENTIFICATION:

BURLINGTON, VT
BURLINGTON INT'L (KBTV)
RNAV (GPS) Z RWY 33

2. WAIVER REQUIRED AND APPLICABLE STANDARD:

8260.19J, 2-11-5. Controlling Obstacles. Pursuant to the provisions of 14 CFR part 77.9, an Adverse Assumption Obstacle (AAO) of 200 feet AGL is assumed to exist at and beyond a specified distance (radius) from the nearest landing surface at a given airport/helipad.

Request to use 0 foot AAO on Camels Hump mountain top.

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

Procedure is developed using a 3.2 degree glideslope to clear unlighted obstacles beyond the airport authority control. Procedure has high terrain at Camels Hump in the Intermediate segment which requires precipitous terrain adjustment. Placing precipitous terrain adjustment on top of a 200 ft AAO would exceed 3.5 degree glideslope for CAT E USAF and cause excessive descent gradient.

4. EQUIVALENT LEVEL OF SAFETY PROVIDED:

Per the State of Vermont Agency of Transportation, Operations Division, Aviation Program Office; due to Act 250, no towers (i.e. cell phone, radio, etc towers) will be built on top of Camels Hump mountain top. The Aviation Program Office has personnel oversight of any proposed construction on Camels Hump and will immediately inform Burlington Air Traffic Control prior to any construction of any type.

5. ALTERNATIVE ACTIONS DEEMED NOT FEASIBLE:

Because this IAP overlays the ILS RWY 33 procedure and shares the GPA the cost to raise the GPA on the ILS limits the feasibility of this option. Alternative actions deemed not feasible.

6. COORDINATION WITH USER ORGANIZATIONS (SPECIFY):

7. SUBMITTED BY:

DATE	OFFICE IDENTIFICATION	TITLE
05/10/2024	AJV-A432	MANAGER

SIGNATURE
Digitally signed by
JOSEPH L ZEDER
Jul 18, 2024

8. AFS ACTIONS:

☐ APPROVED ☐ DISAPPROVED ☐ NOT REQUIRED

COMMENTS:

DATE	ROUTING SYMBOL	SIGNATURE
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Federal Aviation Administration

Memorandum

Date: 05/20/2024
To: Wade Terrell, Manager, Flight Technologies and Procedures Division THRU:
Wayne Radicke, Manager, Flight Procedures and Airspace Group
From: Casimir Tabaka, Manager, Team 3, AJV-A432
Subject: Approval Request: BURLINGTON INTL (KBTU), RNAV (GPS) Z RWY 33

BURLINGTON, VT
BURLINGTON INT'L (KBTU)
RNAV (GPS) Z RWY 33

FAAO 8260.3F, 3-2-2.B(3) Where operationally advantageous, results from the Precipitous Point Value (PPV) algorithms in Appendix C paragraph 2 may be used with approval.

8260.3F, Appendix C. 2. Precipitous Point Value Methodology. A digital terrain data base (100 m or 3 arcsecond separation density or better) must be used for the determination of precipitous terrain. Four parameters are calculated from all terrain points within 1 NM of the geographic location being evaluated (see Table C-1).

Request approval for use of the PPV algorithm for the above procedure (see data below). The adjustment provided by the legacy precipitous terrain evaluation prevents achieving the requested segment altitudes.

Beginning Point: BOBOH – 441803.62N/0725236.34W
End Point: PAKOY – 441930.22N/0725455.08W
Segment type: Intermediate
Per PPV evaluation, PPV Max = 78

Adjustment value (from 8260.3F Appendix C para 2.b.3 Table C-2): $0.5 \times 155 = 78$ ft. PR

Beginning Point: PAKOY – 441930.22N/0725455.08W
End Point: EHIKO – 442125.66N/0725800.32W
Segment type: Intermediate
Per PPV evaluation, PPV Max = 78

Adjustment value (from 8260.3F Appendix C para 2.b.3 Table C-2): $0.5 \times 155 = 78$ ft. PR



Federal Aviation Administration

Request PPV values to be used in segments BOBOH to EHIKO to maintain current altitudes and to reduce excessive DG if actual PR values applied.

This procedure has been flown at these altitudes since 2011 and TARGETS evaluation permits continued use of published altitudes utilizing PPV.

1. FLIGHT PROCEDURE IDENTIFICATION:

Burlington, VT
Burlington Int'l, (KBTV)
RNAV (GPS) Z RWY 33

2. WAIVER REQUIRED AND APPLICABLE STANDARD:

8260.3E, paragraph 9-1-3 b (4). Final Approach Segment length. A distance in excess of 10 NM should not be used unless a special operational requirement exists.

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

Due to the nature of the rolling terrain we extended the final to 10.04 NM to accommodate the designed GPA and comply with the obstacle clearance requirements.

4. EQUIVALENT LEVEL OF SAFETY PROVIDED:

- The final descent profile is aligned with the visual glide slope indicator (VGSI).
- Excessive length adjustments were applied to affected final crossing minimums, providing additional required obstacle clearance (ROC) below the final profiles.
- The current RWY 33 approaches were designed with 9.78 NM final segments, implemented, and used by the DoD, commercial, and general aviation without issue. Moving the FAF 0.26 nm (or 1570 ft) SE is not expected to introduce any hazards.
- Targets instrument procedure automation did not reveal the need for precipitous terrain adjustments for affected final segments.

5. ALTERNATIVE ACTIONS DEEMED NOT FEASIBLE:

Removing the procedure from inventory will eliminate an alternative procedures for aircraft without conventional capability. Alternative actions deemed not feasible.

6. COORDINATION WITH USER ORGANIZATIONS (SPECIFY):

SUBMITTED BY:

DATE	OFFICE IDENTIFICATION	TITLE
08/05/24	AJV-A432	MANAGER

SIGNATURE

Digitally signed by
JOSEPH L ZEDER
Aug 05, 2024

8. FLIGHT STANDARDS ACTIONS:

☐ APPROVED ☐ DISAPPROVED ☐ NOT REQUIRED

COMMENTS:

DATE	ROUTING SYMBOL	SIGNATURE
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1. FLIGHT PROCEDURE IDENTIFICATION:

**BURLINGTON, VT
BURLINGTON INT'L (KBTV)
RNAV (GPS) Z RWY 33**

2. WAIVER REQUIRED AND APPLICABLE STANDARD:

8260.19J, 2-11-5. Controlling Obstacles. Pursuant to the provisions of 14 CFR part 77.9, an Adverse Assumption Obstacle (AAO) of 200 feet AGL is assumed to exist at and beyond a specified distance (radius) from the nearest landing surface at a given airport/helipad.

Request to use 100 foot AAO in areas outside of the exempt area in the final segment.

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

Due to the extended final segment and utilizing the existing ILS GPA of 3.2, use of the higher AAO would make the designed GPA unusable.

4. EQUIVALENT LEVEL OF SAFETY PROVIDED:

The airport in conjunction with the Townships that underline the final segment agreed to limit the building request to below 100'. The Townships have worked with their constituents to approve an ordinance to limit building heights where as there will no building over the height of 45'.

5. ALTERNATIVE ACTIONS DEEMED NOT FEASIBLE:

Removing the procedure from inventory will eliminate an alternative procedures for aircraft without conventional capability. Alternative actions deemed not feasible.

6. COORDINATION WITH USER ORGANIZATIONS (SPECIFY):

7. SUBMITTED BY:

DATE	OFFICE IDENTIFICATION	TITLE	SIGNATURE
05/10/2024	AJV-A432	MANAGER	<i>Digitally signed by</i> JOSEPH L ZEDER Aug 28, 2024

8. FLIGHT STANDARDS ACTIONS:

☐ APPROVED ☐ DISAPPROVED ☐ NOT REQUIRED

COMMENTS:

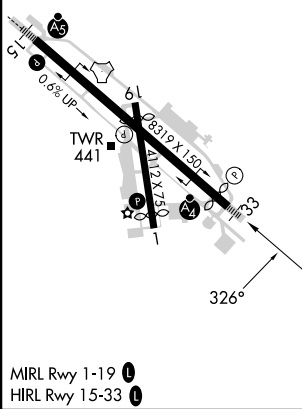
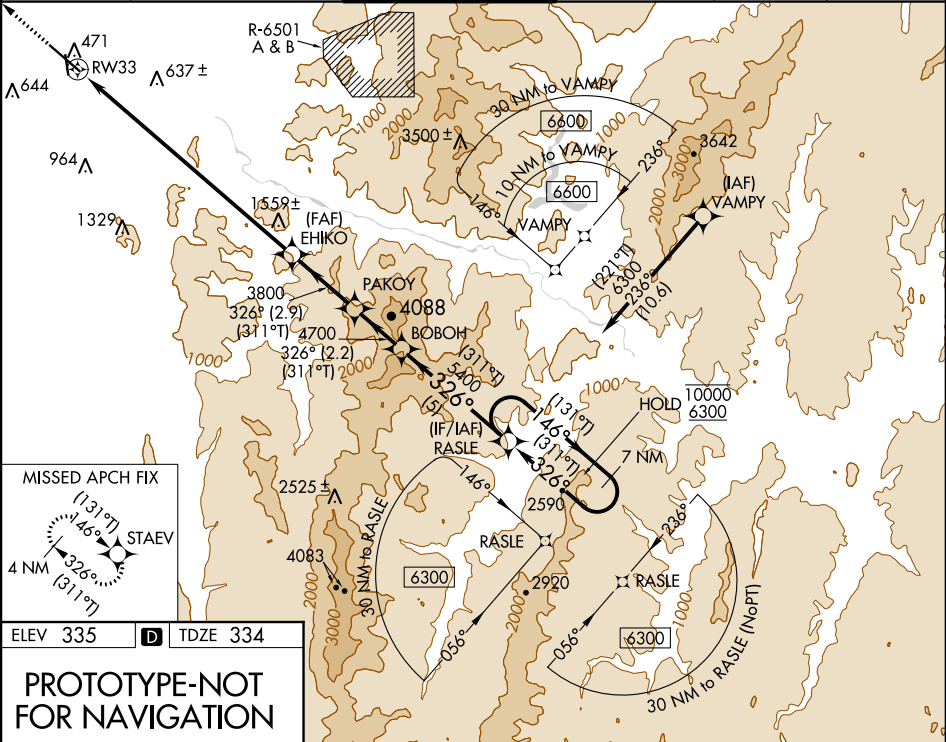
DATE	ROUTING SYMBOL	SIGNATURE
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WAAS CH 65812 W33A	APP CRS 326°	Rwy Idg TDZE Apt Elev	7819 334 335
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RNAV (GPS) Z RWY 33

PATRICK LEAHY BURLINGTON INTL (BTV)

RNP APCH - GPS.		MALSF	MISSED APPROACH: Climb to 3000 direct STAEV and hold.		
▼ ▲ ❄ -10°C		Rwy 33 helicopter visibility reduction below RVR 4000 NA. Inop table does not apply. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -25°C or above 37°C.			
ATIS 123.8 269.9	BURLINGTON APP CON ★ 121.1 278.8	BURLINGTON TOWER ★ 118.3 (CTAF) 0 257.8	GND CON 126.3 348.6	CLNC DEL 119.15	UNICOM 122.95



3000		STAEV									
											
RW33		4.7 NM to RW33		EHICO 3800		PAKOY 4700		BOBOH 5400		RASLE 10000 6300	
											
4.7 NM		5.3 NM		2.9 NM		2.2 NM		5 NM		7 NM Holding Pattern	
CATEGORY		A		B		C		D		E	
LPV	DA			584/40		250 (300-¾)					
LNAV/ VNAV	DA			1782-5		1448 (1500-5)					
LNAV	MDA	2000-1¼		1666 (1700-1¼)				2000-3		1666 (1700-3)	

CURRENT

BURLINGTON, VERMONT

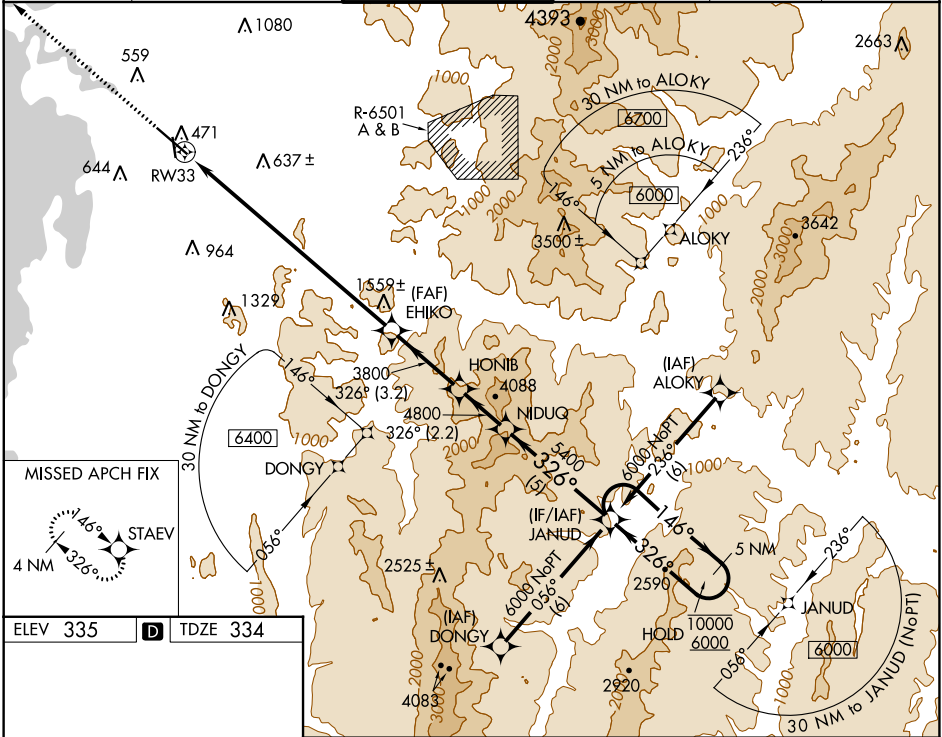
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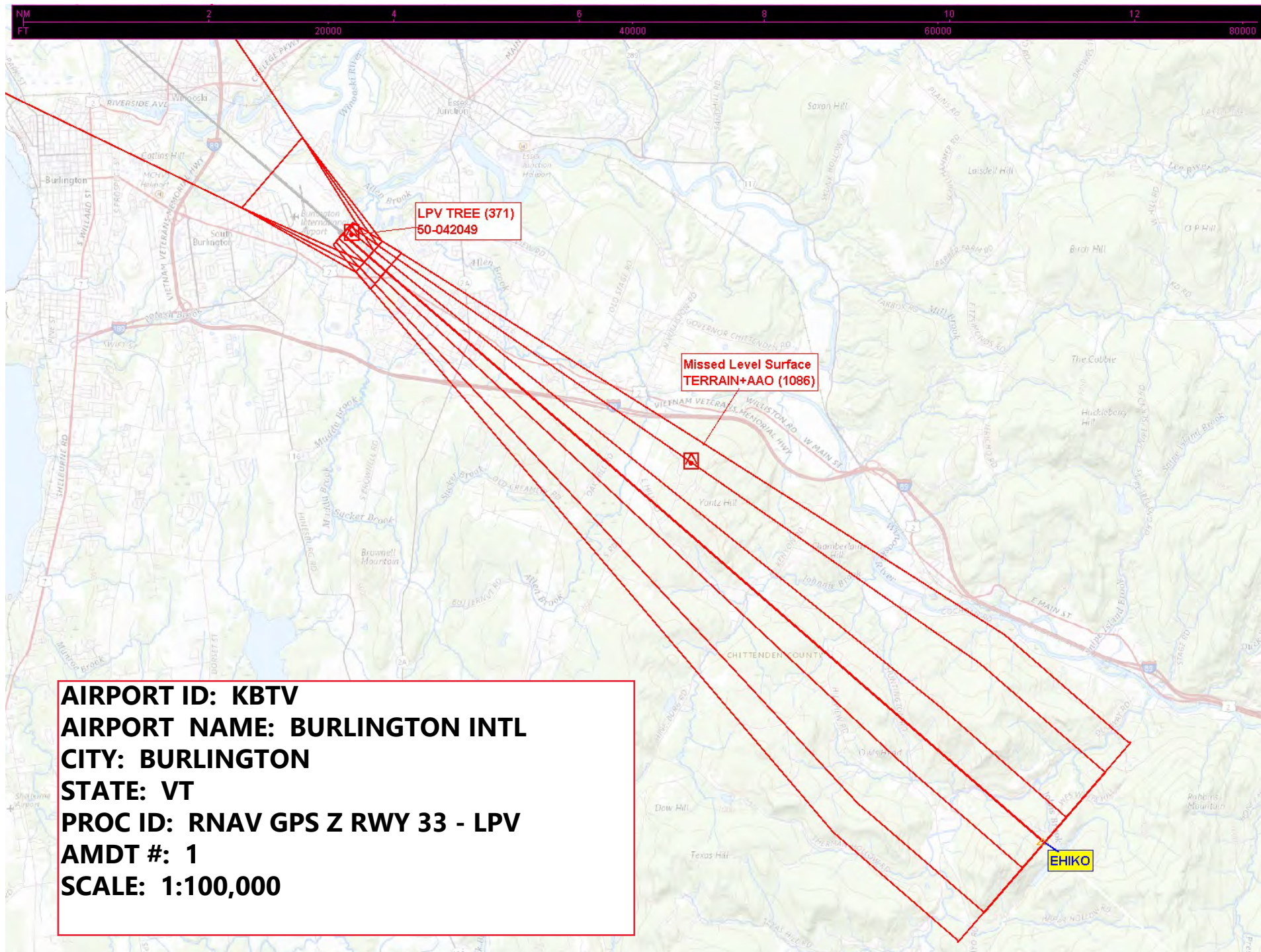
WAAS CH 65812 W33A	APP CRS 326°	Rwy ldg TDZE 334 Apt Elev 335
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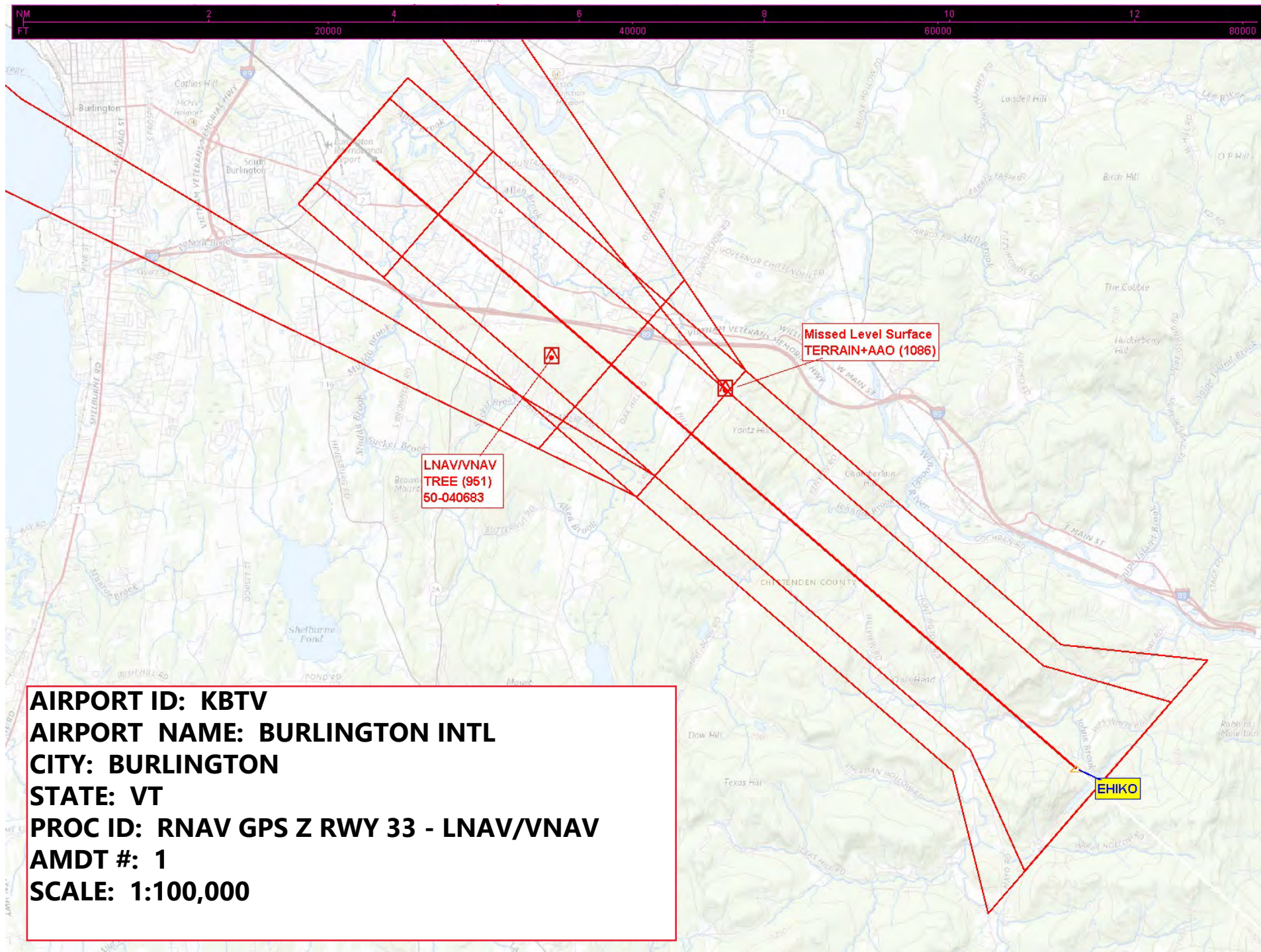
RNAV (GPS) Z RWY 33
BURLINGTON INTL (BTV)

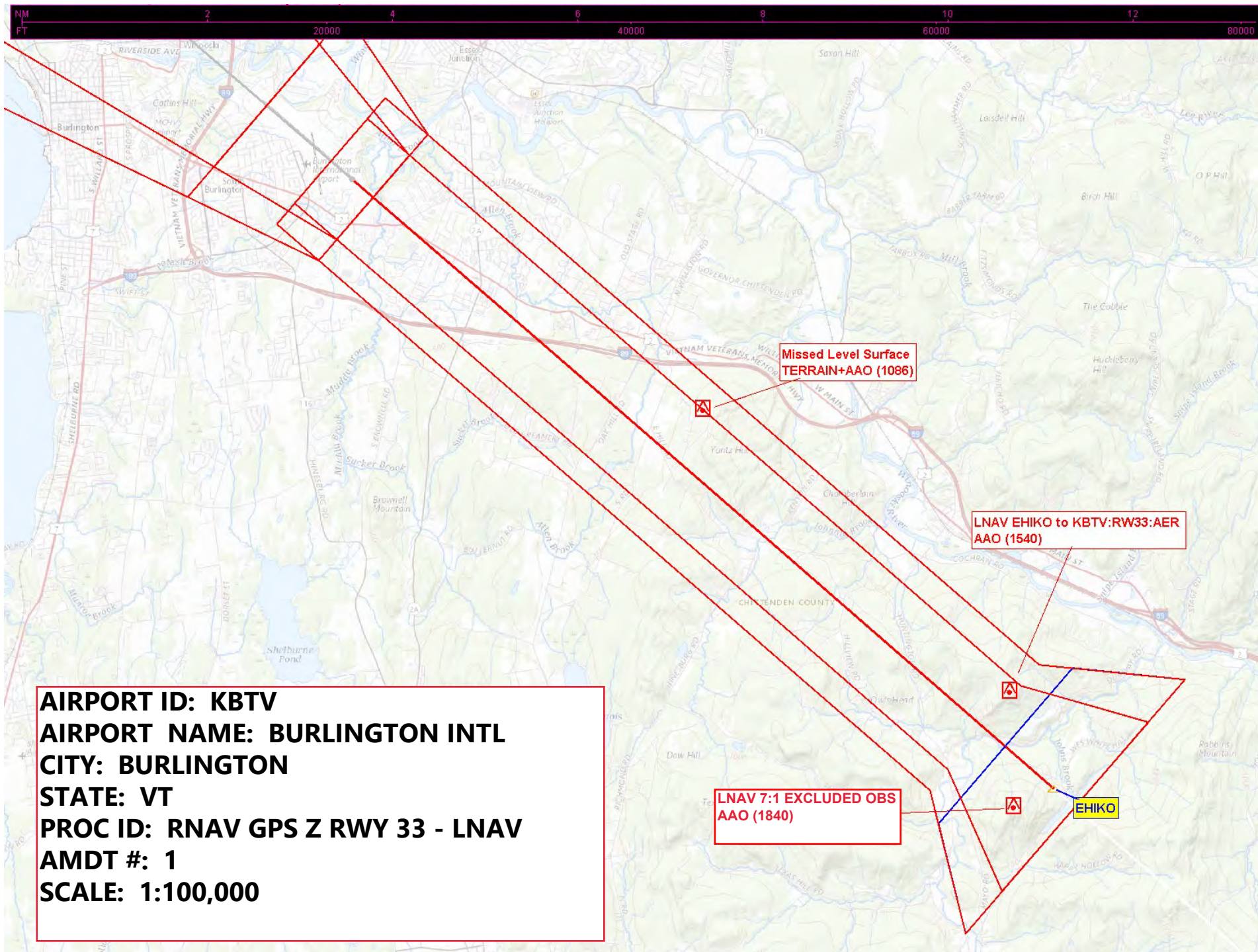
RNP APCH - GPS. -10°C Inop table does not apply. For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -15°C or above 54°C. Rwy 33 helicopter visibility reduction below ¾ SM NA.	MALSF MISSED APPROACH: Climb to 3000 direct STEAV and hold.
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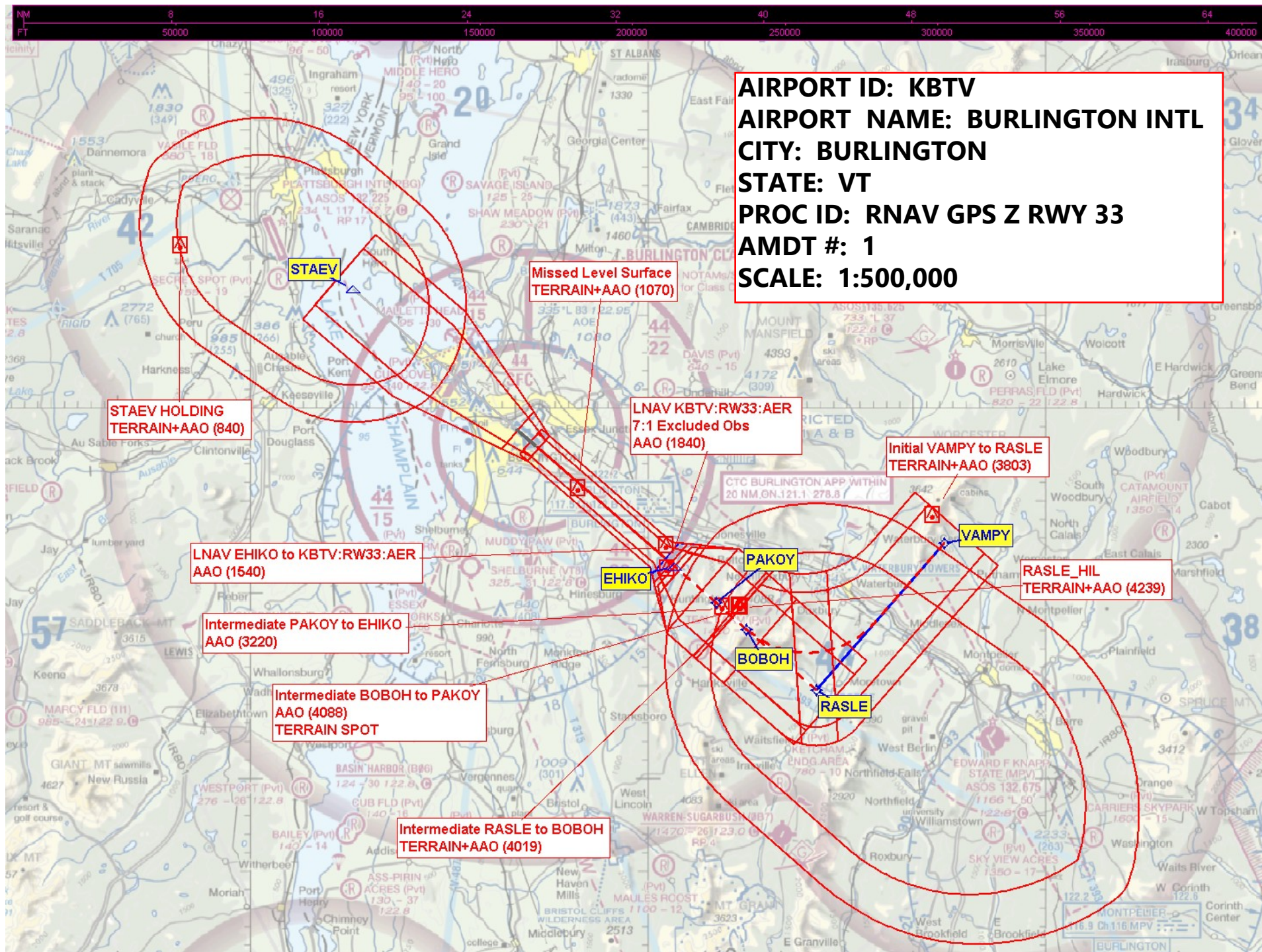
ATIS 123.8 269.9	BURLINGTON APP CON * 121.1 278.8	BURLINGTON TOWER * 118.3 (CTAF) 0 257.8	GND CON 126.3 348.6	CLNC DEL 119.15	UNICOM 122.95
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AIRPORT ID: KBTV
AIRPORT NAME: BURLINGTON INTL
CITY: BURLINGTON
STATE: VT
PROC ID: RNAV GPS Z RWY 33
AMDT #: 1
SCALE: 1:500,000

Missed Level Surface
TERRAIN+AAO (1070)

LNAB KBTV:RW33:AER
7:1 Excluded Obs
AAO (1840)

Initial VAMPY to RASLE
TERRAIN+AAO (3803)

RASLE_HIL
TERRAIN+AAO (4239)

Intermediate RASLE to BOBOH
TERRAIN+AAO (4019)

Intermediate BOBOH to PAKOY
AAO (4088)
TERRAIN SPOT

Intermediate PAKOY to EHIKO
AAO (3220)

LNAB EHIKO to KBTV:RW33:AER
AAO (1540)

STAEV HOLDING
TERRAIN+AAO (840)

AIRPORT ID: KBTV

AIRPORT NAME: BURLINGTON INTL

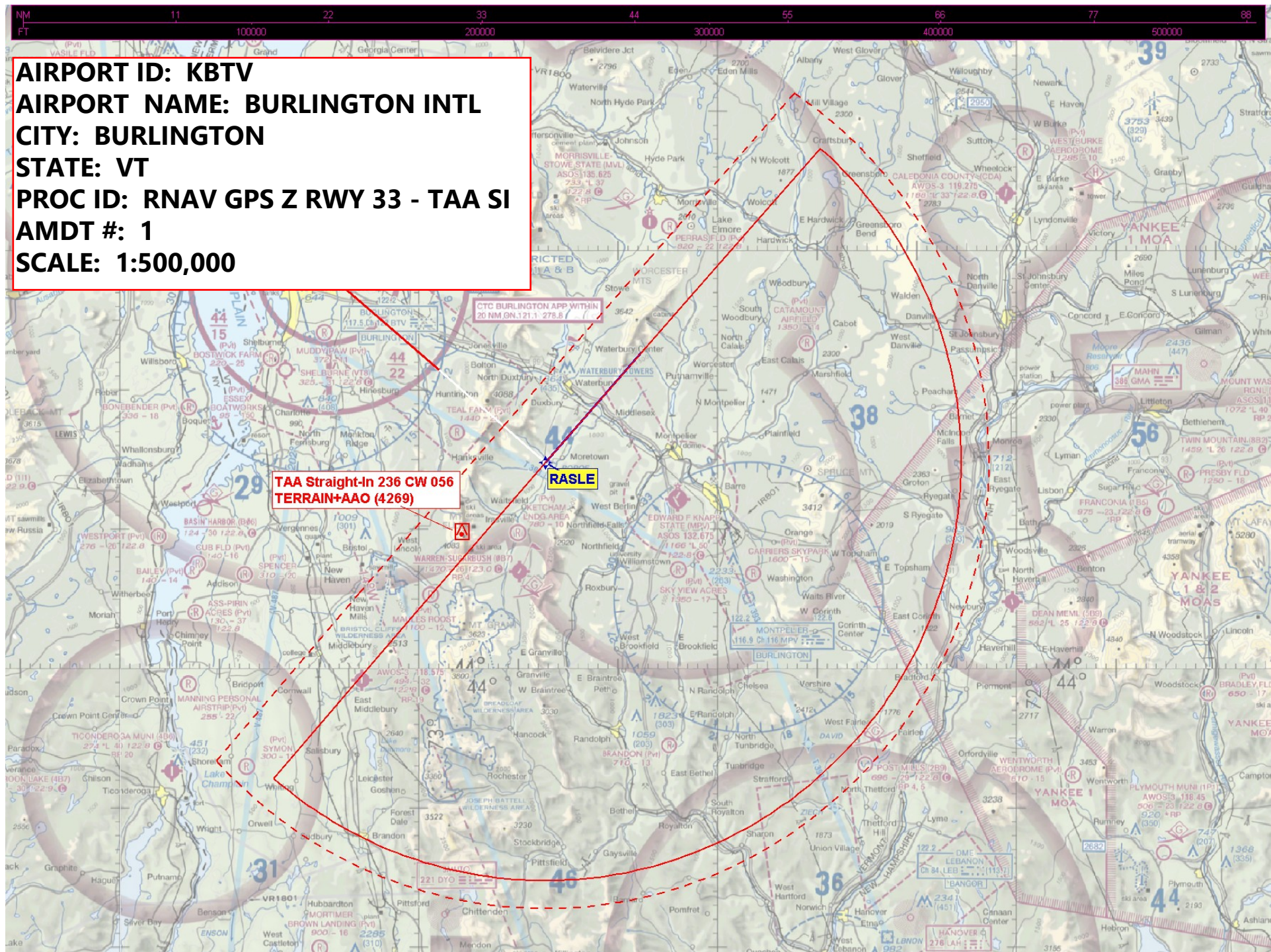
CITY: BURLINGTON

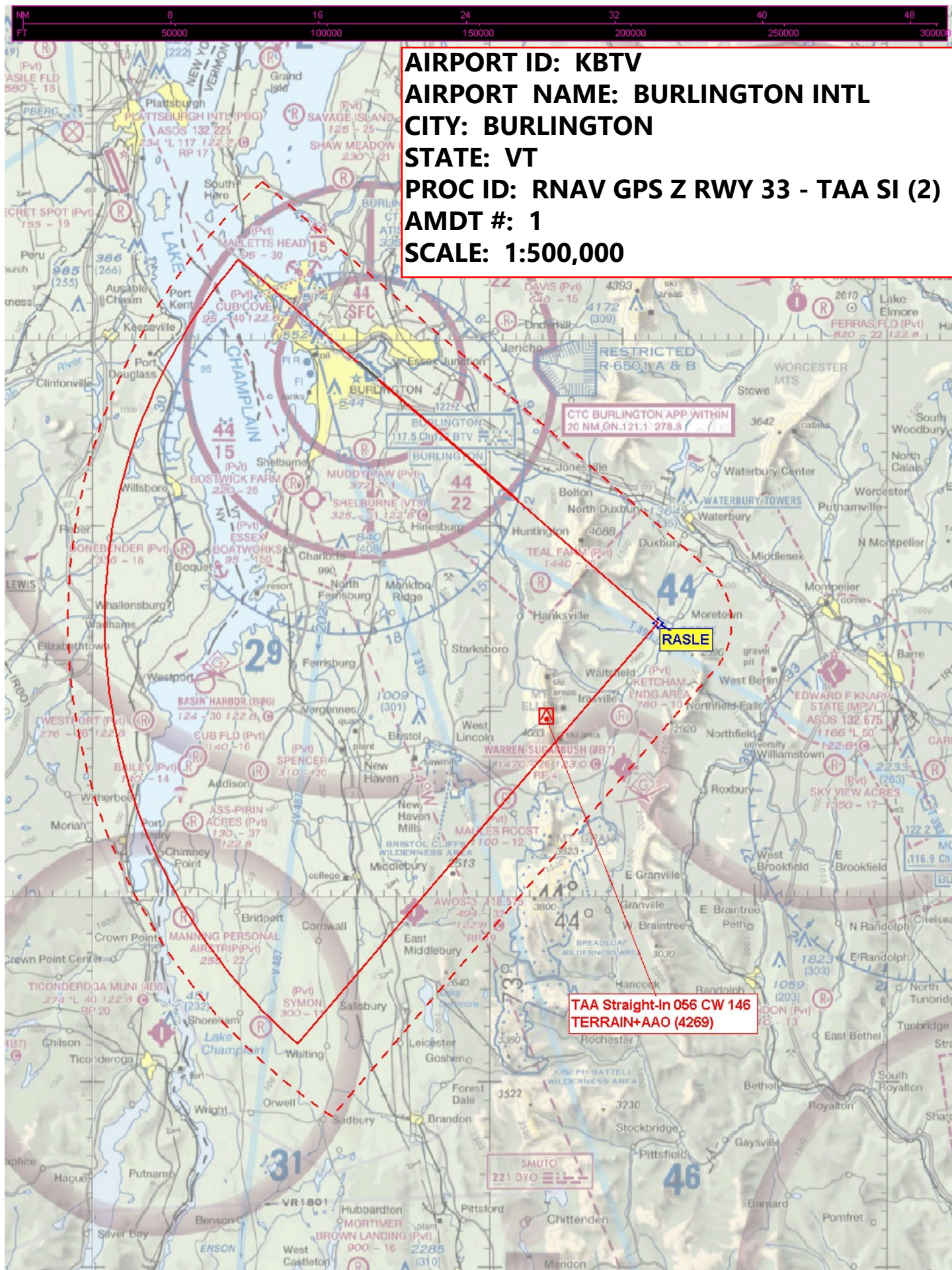
STATE: VT

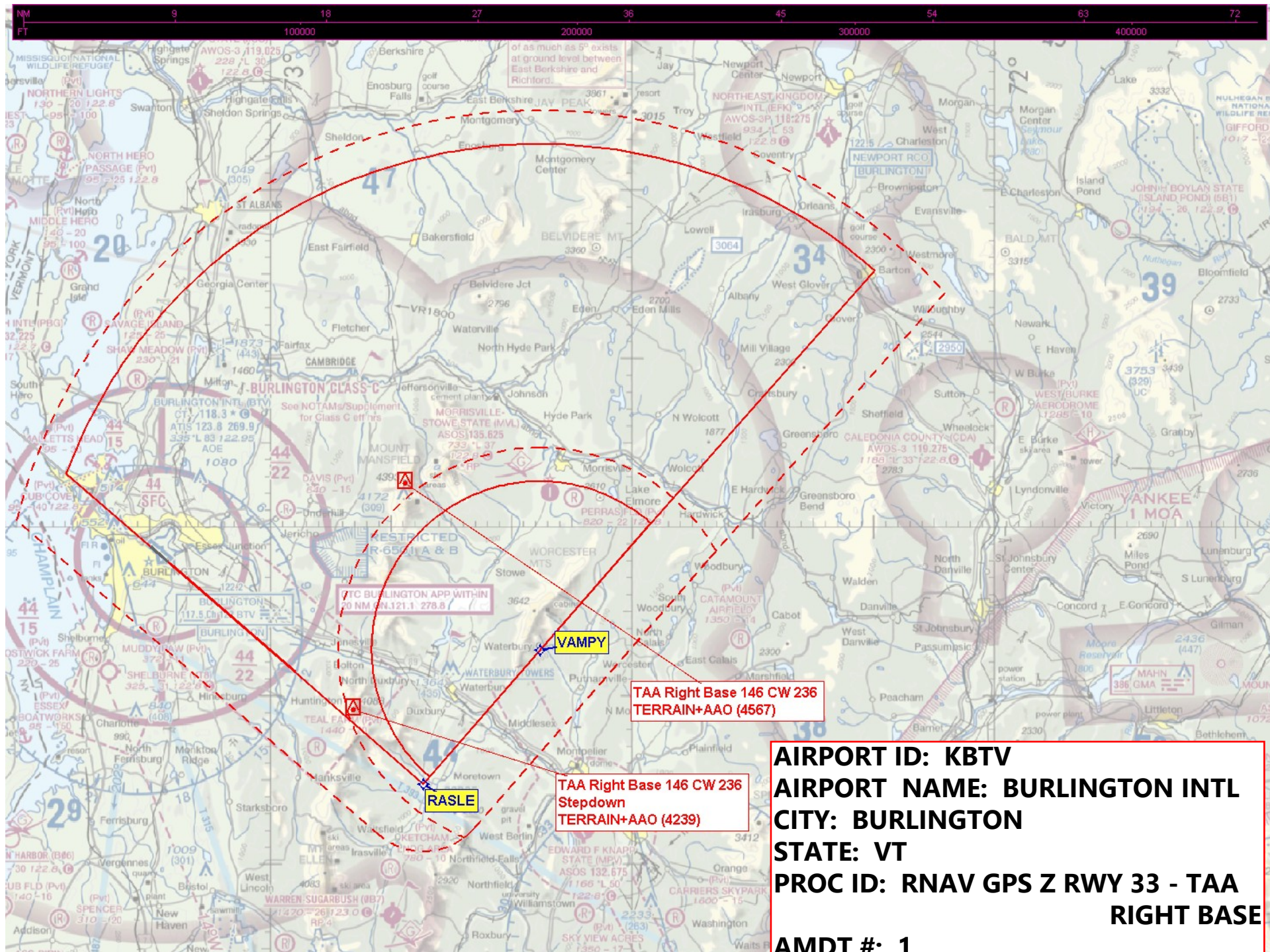
PROC ID: RNAV GPS Z RWY 33 - TAA SI

AMDT #: 1

SCALE: 1:500,000







AIRPORT ID: KBTV
AIRPORT NAME: BURLINGTON INTL
CITY: BURLINGTON
STATE: VT
PROC ID: RNAV GPS Z RWY 33 - TAA
RIGHT BASE
AMDT #: 1
SCALE: 1:500,000