

Flight Procedures Cover Page	Task Action: FLIGHT CHECK	Task Type: STAR	Estimated Chart Date: 03/21/2024	APWS Task ID: 2C8C35518129418AA9D1647CC9749E00	APWS Project ID: 8C62ED1D35114386A630C74CD06139B3
Procedure: CAVLR FIVE RNAV		Enroute: YES	Specialist: Mitchell, Tyler		Agreement Number:
Airport ID: KIAD			Airport City: WASHINGTON		State: DC
Facility ID:	Facility Type:	Flight Inspection Remark Type: New FC Slot			
<div>Procedure Comments: AMENDMENT FOR NOISE ABAITMENT.</div> <div>APPROVAL LETTERS: KIAD CAVLR STAR Letter of Approval Deceleration KASDY-COINZ KIAD CAVLR STAR Letter of Approval Deceleration MEEGO-CAVLR KIAD CAVLR STAR Letter of Approval DG PERKN-KHOOD</div> <div>CONTACT CASIMIR TABAKA: 405-954-7931</div> <div>12/13/2023</div> <div>QUALITY 9 CHECKED BEGUE</div> <div>QUALITY 14 CHECKED</div>					

FIPC DME/DME FORM						
PROCEDURE: CAVLR FIVE RNAV			AIRPORT NAME: WASHINGTON DULLES INTL		AIRPORT ID: KIAD	SPECIAL CONTROL NO: YG-12-161-23
FAC ID: CALVR5		CITY: WASHINGTON			ST: DC	ORIG CHART DATE: 03/21/2024
DFL TYPE: PROC/D	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER:	PTS TASK ID: 2C8C35518129418AA9D1647CC9749E00		
PREFLIGHT NOTES						
REVIEWER:					DATE:	
COMMENTS:					CHECK ONE:	
					<input type="checkbox"/> FLT CK REQ <input type="checkbox"/> NFCR <input type="checkbox"/> REJECT	
						YES
					CPV COMPLETE?	X
PROCEDURE RESULTS						
INSPECTION DATE: 01/08/2024	CREW #: VN137	N #:	INSTRUMENT PROCEDURE STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT W/CHANGES <input type="checkbox"/> UNSAT		ARINC CODING: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT	
FLIGHT INSPECTOR SIGNATURE: bob s pressler @ 01/08/2024 08:40			PRINTED NAME: PRESSLER, ROBERT STEPHEN			NOTAM INITIATED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
FLIGHT INSPECTOR REMARKS: Table Top -SAT.						
DME/DME STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> UNSAT	SPECIALIST SIGNATURE: david c-ctr cook @ 01/09/2024 05:00			PRINTED NAME: Dave Cook		
SPECIALIST REMARKS: Table Top, ESV's certified by TARGETS						
IN-FLIGHT OBSTACLE REPORT						
OBSTRUCTION ID #:	COORDINATES OR LOCATION:	GNSS ALTITUDE (MSL):	BAROMETRIC ALTITUDE (MSL):		HEIGHT ABOVE GROUND LEVEL:	

FIPC DME/DME FORM									
PROCEDURE: CAVLR FIVE RNAV				AIRPORT NAME: WASHINGTON DULLES INTL		AIRPORT ID: KIAD		SPECIAL CONTROL NO: YG-12-161-23	
FAC ID: CALVR5			CITY: WASHINGTON			ST: DC		ORIG CHART DATE: 03/21/2024	
DFL TYPE: PROC/D	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER:		PTS TASK ID: 2C8C35518129418AA9D1647CC9749E00				
PREFLIGHT NOTES									
REVIEWER:						DATE:			
COMMENTS:						CHECK ONE: <input type="checkbox"/> FLT CK REQ <input type="checkbox"/> NFCR <input type="checkbox"/> REJECT			
								YES	NO
						CPV COMPLETE?		X	
PROCEDURE RESULTS									
INSPECTION DATE: 01/08/2024		CREW #: VN137	N #:	INSTRUMENT PROCEDURE STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT W/CHANGES <input type="checkbox"/> UNSAT			ARINC CODING: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT		
FLIGHT INSPECTOR SIGNATURE: bob s pressler @ 01/08/2024 08:40			PRINTED NAME: PRESSLER, ROBERT STEPHEN					NOTAM INITIATED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
FLIGHT INSPECTOR REMARKS: Table Top -SAT.									
DME/DME STATUS: <input type="checkbox"/> SAT <input type="checkbox"/> UNSAT		SPECIALIST SIGNATURE:				PRINTED NAME:			
SPECIALIST REMARKS:									
IN-FLIGHT OBSTACLE REPORT									
OBSTRUCTION ID #:	COORDINATES OR LOCATION:		GNSS ALTITUDE (MSL):		BAROMETRIC ALTITUDE (MSL):		HEIGHT ABOVE GROUND LEVEL:		

FIPC DME/DME FORM						
PROCEDURE: CAVLR FIVE RNAV			AIRPORT NAME: WASHINGTON DULLES INTL		AIRPORT ID: KIAD	SPECIAL CONTROL NO: YG-12-161-23
FAC ID: CALVR5		CITY: WASHINGTON			ST: DC	ORIG CHART DATE: 03/21/2024
DFL TYPE: PROC/D	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER:	PTS TASK ID: 2C8C35518129418AA9D1647CC9749E00		
PREFLIGHT NOTES						
REVIEWER:					DATE:	
COMMENTS:					CHECK ONE: <input type="checkbox"/> FLT CK REQ <input type="checkbox"/> NFCR <input type="checkbox"/> REJECT	
						YES   NO
					CPV COMPLETE?	X
PROCEDURE RESULTS						
INSPECTION DATE: 01/04/2024	CREW #: VN137	N #: N73	INSTRUMENT PROCEDURE STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT W/CHANGES <input type="checkbox"/> UNSAT		ARINC CODING: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT	
FLIGHT INSPECTOR SIGNATURE: bob s pressler @ 01/04/2024 15:06			PRINTED NAME: PRESSLER, ROBERT STEPHEN			NOTAM INITIATED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
FLIGHT INSPECTOR REMARKS: Table Top -SAT.						
DME/DME STATUS: <input type="checkbox"/> SAT <input type="checkbox"/> UNSAT	SPECIALIST SIGNATURE:			PRINTED NAME:		
SPECIALIST REMARKS:						
IN-FLIGHT OBSTACLE REPORT						
OBSTRUCTION ID #:	COORDINATES OR LOCATION:	GNSS ALTITUDE (MSL):	BAROMETRIC ALTITUDE (MSL):	HEIGHT ABOVE GROUND LEVEL:		





# Federal Aviation Administration

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## Memorandum

Date: June 14, 2022

To: Christopher Hope, Manager, Flight Technologies and  
Procedures Division

THRU: Romana Wolf, Manager, Flight Procedures and Airspace Group

From: Bev Bordy, Manager, Instrument Flight Procedures (IFP) Coordination Team, AJV-A45

Prepared by: Dave Cook, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Washington, DC DULLES (KIAD) CAVLR  
RNAV STAR Deceleration

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### KASDY to COINZ Segment

The requirements stated in Order 8260.3E, (United States Standard for Terminal Instrument Procedures (TERPS), paragraph 2-2-10.a. are:

**“2-2-10. Deceleration.** Sufficient distance and a reduced descent gradient are required prior to any fix with a speed restriction. STARs not meeting the requirements of this paragraph may be authorized with Flight Standards approval (see paragraph 1-4-2).

**a.** Where deceleration is required but descent is not permitted (for example, between two fixes with the same mandatory altitudes) or is not required (for example, between two fixes with the same minimum altitudes), provide a minimum distance of at least 4 NM prior to a fix with a speed reduction of 40 KIAS or less. For deceleration greater than 40 KIAS, allow 1 NM between fixes for every 10 knots of deceleration required. For example, a deceleration of 10, 20, 30, or 40 KIAS requires a minimum length of 4 NM; a deceleration of 50 KIAS requires a minimum length of 5 NM; a deceleration of 60 KIAS requires 6 NM.

Paragraph 1-4-2. ...states in part:

**“Nonstandard IFP.** ...obstacles, navigation information, or traffic congestion may require special consideration where justified by operational requirements. In such cases, nonstandard IFPs that deviate from these criteria may be approved, provided they are documented and an equivalent level of safety exists...”

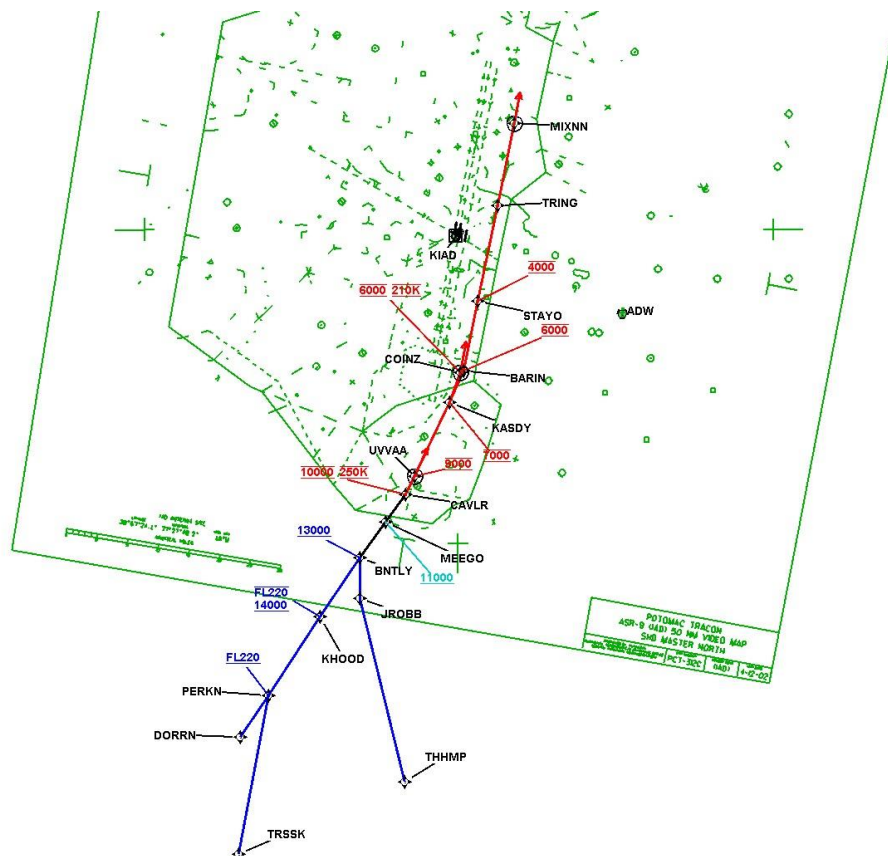
“RSO179: [Approval Required] The length of the leg from KASDY to COINZ is 5.0000133154376245 NM. This leg must be at least 8.0 NM long due to deceleration from 250.0 KIAS to 210 KIAS between 7000.0 ft. MSL to 6000.0 ft. MSL. Flight Standards approval is required.

The segment with the restrictions of at 7000 250KIAS at KASDY followed by at 6000 210K IAS at COINZ requires a 8 NM length, per the 8260.3E paragraph 2-2-10 a, for a reduction of 10-40Kts. The deceleration required by the KASDY-COINZ segment is 40 Kts. The reduction from 250Kts to 210Kts from KASDY to COINZ is 5.00 NM. The KIAD CALVR STAR has been in publication for several years and there have been no instances where aircraft could not make this restriction reported.

Consideration was given to removing and or changing the restrictions at KASDY and or COINZ. However, to allow aircraft to be configured for the segments following COINZ the restrictions remained unchanged since there has never been a reported difficulty and was not an impediment to the safety or profile of the procedure.

Manager Plans and Procedures, POTOMAC TRACON

### KIAD CALVR STAR





# Federal Aviation Administration

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## Memorandum

Date: June 14, 2022

To: Christopher Hope, Manager, Flight Technologies and  
Procedures Division

THRU: Romana Wolf, Manager, Flight Procedures and Airspace Group

From: Bev Bordy, Manager, Instrument Flight Procedures (IFP) Coordination Team, AJV-A45

Prepared by: Dave Cook, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Washington, DC DULLES (KIAD) CAVLR  
  
RNAV STAR Deceleration

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### MEEGO to CAVLR Segment

The requirements stated in Order 8260.3E, (United States Standard for Terminal Instrument Procedures (TERPS) ), paragraph 2-2-10.a. are:

**“2-2-10. Deceleration.** Sufficient distance and a reduced descent gradient are required prior to any fix with a speed restriction. STARs not meeting the requirements of this paragraph may be authorized with Flight Standards approval (see paragraph 1-4-2).

**a.** Where deceleration is required but descent is not permitted (for example, between two fixes with the same mandatory altitudes) or is not required (for example, between two fixes with the same minimum altitudes), provide a minimum distance of at least 4 NM prior to a fix with a speed reduction of 40 KIAS or less. For deceleration greater than 40 KIAS, allow 1 NM between fixes for every 10 knots of deceleration required. For example, a deceleration of 10, 20, 30, or 40 KIAS requires a minimum length of 4 NM; a deceleration of 50 KIAS requires a minimum length of 5 NM; a deceleration of 60 KIAS requires 6 NM.

Paragraph 1-4-2. ...states in part:

**“Nonstandard IFP.** ...obstacles, navigation information, or traffic congestion may require special consideration where justified by operational requirements. In such cases, nonstandard IFPs that deviate from these criteria may be approved, provided they are documented and an equivalent level of safety exists...”

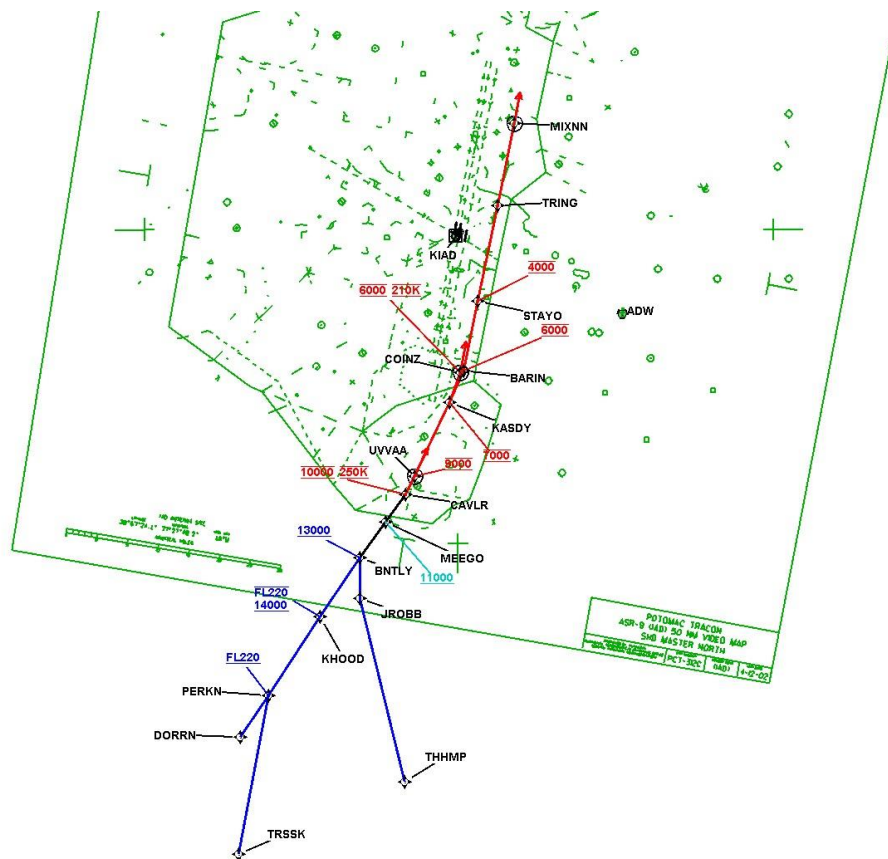
RSO179: [Approval Required] The length of the leg from MEEGO to CAVLR is 5.414213592798158 NM. This leg must be at least 9.030303030303031 NM long due to deceleration from 310.0 KIAS to 250 KIAS between 11000.0 ft. MSL to 10000.0 ft. MSL. Flight Standards

The segment with the restrictions of at 11000 at MEEGO followed by at 10000 250K IAS at CAVLR requires a 9.3 NM length, per the 8260.3E paragraph 2-2-10 a, for a reduction of 10-40Kts. The deceleration required by the MEEGO-CAVLR segment is 60Kts. The reduction from 310Kts to 250Kts from MEEGO to CAVLR is 5.00 NM. The KIAD CALVR STAR has been in publication for several years and there have been no instances where aircraft could not make this restriction reported.

Consideration was given to removing and or changing the restrictions at MEEGO and or CAVLR. However, to allow aircraft to be configured for the segments following CAVLR the restrictions remained unchanged since there has never been a reported difficulty and was not an impediment to the safety or profile of the procedure.

Manager Plans and Procedures, Potomac TRACON

### KIAD CAVLR STAR





# Federal Aviation Administration

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## Memorandum

Date: June 14, 2022

To: Christopher Hope, Manager, Flight Technologies and  
Procedures Division

THRU: Romana Wolf, Manager, Flight Procedures and Airspace Group

From: Bev Bordy, Manager, Instrument Flight Procedures (IFP) Coordination Team, AJV-A45

Prepared by: Dave Cook, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Washington, DC DULLES International (KIAD) CAVLR RNAV STAR  
Descent Gradient

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### PERKN to KHOOD Segment

The requirements stated in Order 8260.3E, (United States Standard for Terminal Instrument Procedures (TERPS), paragraph 2-2-8.a. are:

“(1) the maximum permissible gradient 10000 MSL and above is 330 ft/NM (approximately 3.11 degrees).

“(2) The maximum permissible DG below 10000 feet MSL is 318 ft. /NM (approximately 3.0 degrees).

“(3) When a STAR contains a descent between fixes that passes through 10000 feet MSL, the maximum permissible DG is between 318 ft. /NM and 330 ft. /NM and is in proportion to the amount of the altitude change that is below/above 10000 feet MSL. Use formula 2-2-1 to determine the maximum DG (DG<sub>max</sub>) between fixes that contain a descent that passes through 10000 feet MSL.”

“Formula 2-2-1. Maximum DG Passing through 10000 Feet MSL  
(ft/NM)

$$DG_{max} = (Alt_1 - 10000) \times 12 / (Alt_1 - Alt_2) + 318$$

“Where:

“Alt<sub>1</sub> = Altitude at the fix prior to crossing 10000 feet MSL

“Alt<sub>2</sub> = Altitude at the fix after crossing 10000 feet MSL”

Paragraph 2-2-8.b states:

“When a gradient exceeds the maximum DG allowed in paragraph 2-2-8a, the STAR requires approval.”

Paragraph 1-4-2. ...states in part:

“Nonstandard IFP. ...obstacles, navigation information, or traffic congestion may require special consideration where justified by operational requirements. In such cases, nonstandard IFPs that deviate from these criteria may be approved, provided they are documented and an equivalent level of safety exists...”

RSO144: [Approval Required] The Descent Gradient (533.62) from PERKN to KHOOD is greater than the Maximum Permissible Descent Gradient (330.0).

A computed descent gradient value from PERKN to KHOOD of 533.62 ft./NM resulted from the descent gradient being calculated from descending from the restriction of At or Above (AOA) FL210 at PERKN (FL210 used) to cross KHOOD AOB FL210 and At or ABOVE 14000 (FL210B14000) over a distance of 14.98 NM. The restriction after KHOOD is at BNTLY, a restriction of AOA 13000. The restriction after BNTLY is 11000 at MEEGO then 10000 at CAVLR and 9000 at UVVAA. The distance required to descend from PERKN at FL210 to HUTOO at 9000 is 41.87 NM. Calculating a descent gradient from PERKN to HUTOO 41.87 NM resulted in a descent gradient of 286.60 ft./NM.

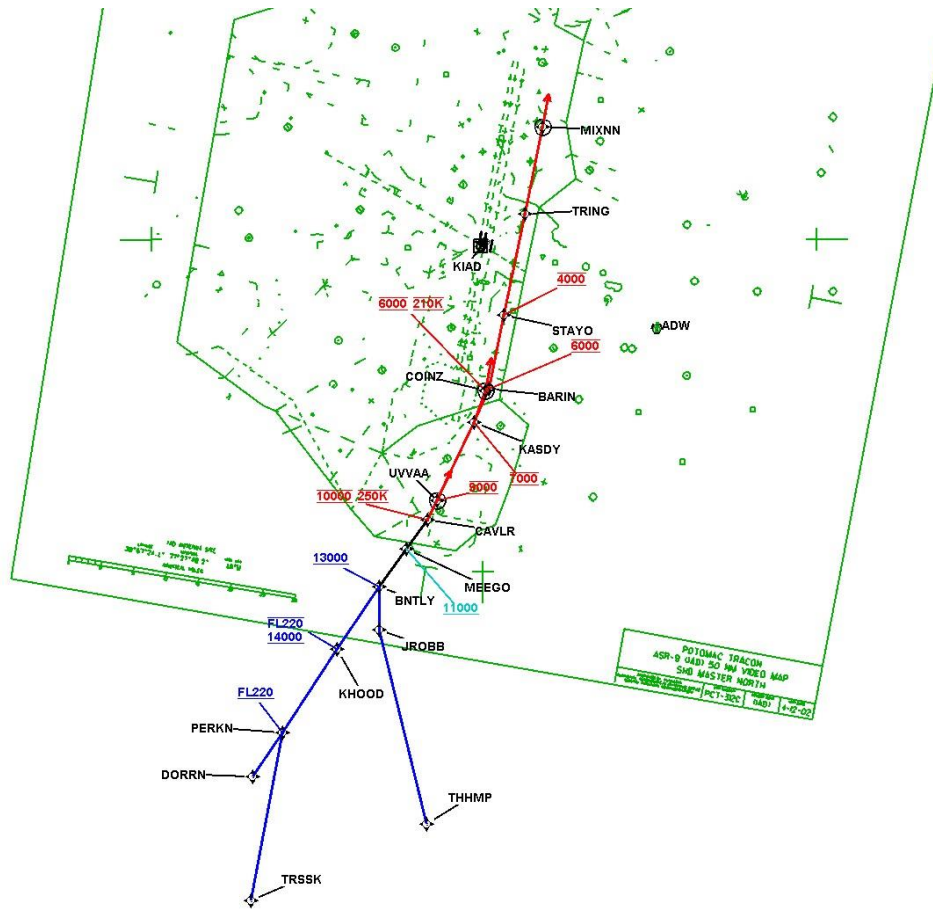
Segment	Termination Fix	Type	Alt Conformance	Spd Conformance	Lateral Conformance	Alt Restriction1 (ft MSL)	Alt Restriction2 (ft MSL)	Speed Restriction (KIAS)	End Alt (ft MSL)	ΔAlt (ft)	Descent Gr... (ft/nm)	End Mach	End Speed (KIAS)	ΔSpeed (KIAS)
1	DORRN	IF	-	-	-	-	-	-	22,000	0	--		295	0
2	PERKN	TF	✓	✓	✓	+22,000	-	-	21,917	-83	10.4		295	0
3	KHOOD	TF	✓	✓	✓	14,000	22,000	-	17,821	-4,096	273.4		295	0
4	BNTLY	TF	✓	✓	✓	+13,000	-	-	14,850	-2,971	263.3		292	-3
5	MEEGO	TF	✓	✓	✓	+11,000	-	-	12,967	-1,883	269.0		267	-25
6	CAVLR	TF	X	✓	✓	10,000	-	250	11,444	-1,523	281.2		250	-17
7	UVVAA	TF	X	✓	✓	9,000	-	-	10,514	-930	290.6		250	0
8		FM	✓	✓	✓	-	-	-	9,049	-1,466	--		236	-14

Consideration was given to removing and or changing the restrictions at KHOOD, BNTLY, MEEGO, CAVLR and UVVAA. However, due to airspace constraints and traffic flows it was decided that the restrictions are necessary to prevent aircraft from entering adjacent airspace, prevent conflict from other traffic and procedures, and reduce ATC workload due to required coordination, (point outs).

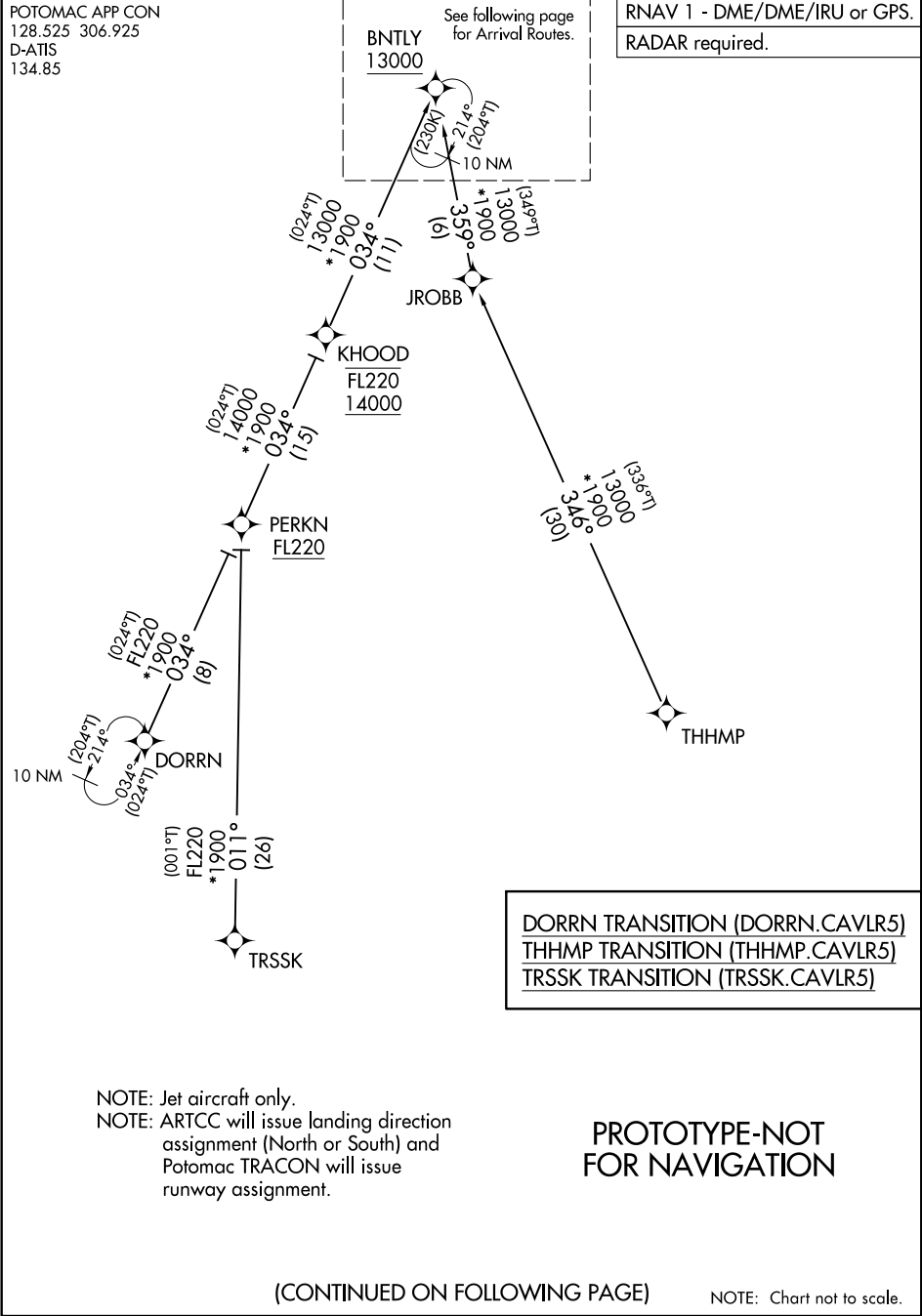
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Manager Plans and Procedures, Potomac TRACON

# KIAD CAVLR STAR

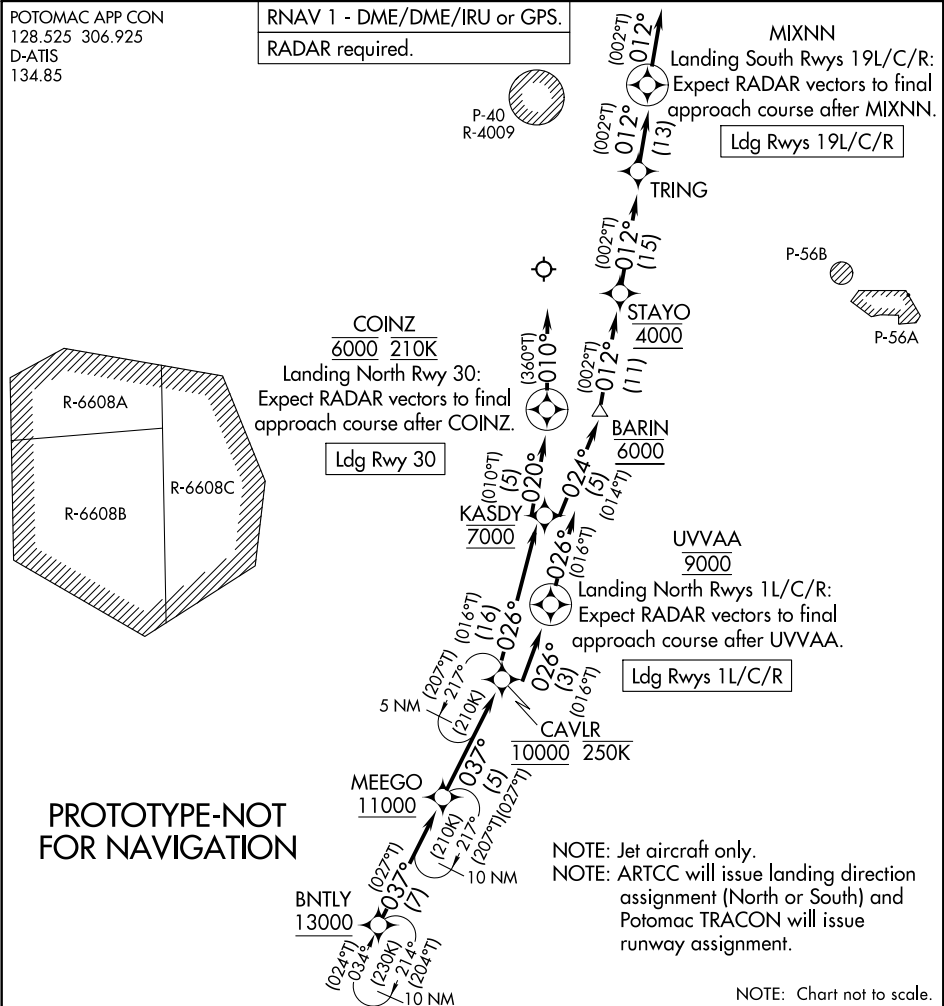


POTOMAC APP CON  
128.525 306.925  
D-ATIS  
134.85





CAVLR FIVE ARRIVAL (RNAV) Arrival Routes



ARRIVAL ROUTE DESCRIPTION

From BNTLY on track 037° to cross MEEGO at or above 11000, then on track 037° to cross CAVLR at 10000 and at or below 250K.

**LANDING RUNWAY 1L/C/R:** From CAVLR on track 026° to cross UVVAA at 9000, then on track 026°. Expect RADAR vectors to final approach course.

**LANDING RUNWAY 19L/C/R:** From CAVLR on track 026° to cross KASDY at 7000, then on track 024° to cross BARIN at 6000, then on track 012° to cross STAYO at 4000, then on track 012° to TRING, then on track 012° to MIXNN, then on track 012°. Expect RADAR vectors to final approach course.

**LANDING RUNWAY 30:** From CAVLR on track 026° to cross KASDY at 7000, then on track 020° to cross COINZ at 6000 and at 210K, then on track 010°. Expect RADAR vectors to final approach course.

OLD

(BNTLY.CAVLR4) 20366

# CAVLR FOUR ARRIVAL (RNAV)

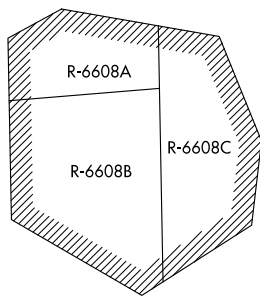
AL-5100 (FAA)

WASHINGTON DULLES INTL (IAD)

WASHINGTON, DC

POTOMAC APP CON  
128.525 306.925  
D-ATIS  
134.85

COINZ  
Landing North Rwys 1L/C/R, 30:  
Expect RADAR vectors to final  
approach course after COINZ.  
6000



MIXNN  
Landing South Rwys 19L/C/R:  
Expect RADAR vectors to final  
approach course after MIXNN.

- NOTE: RADAR required.  
NOTE: RNAV 1.  
NOTE: DME/DME/IRU or GPS required.  
NOTE: Turbojet aircraft only.  
NOTE: ARTCC will issue landing  
direction assignment (North or  
South) and Potomac TRACON  
will issue runway assignments.

TRING

STAYO  
4000

BARIN  
6000

KASDY  
7000

CAVLR  
10000 250K

NOTE: Chart not to scale.

## ARRIVAL ROUTE DESCRIPTION

DORRN TRANSITION (DORRN.CAVLR4)

THHMP TRANSITION (THHMP.CAVLR4)

TRSSK TRANSITION (TRSSK.CAVLR4)

From BNTLY on track 037° to cross MEEGO  
at or above 11000, then on track 037° to  
cross CAVLR at 10000 and at 250K.

### LANDING RUNWAYS 1L/C/R, 30:

From CAVLR on track 026° to cross KASDY  
at 7000, then on track 020° to cross COINZ  
at 6000, then on track 010°. Expect RADAR  
vectors to final approach course.

### LANDING RUNWAYS 19L/C/R:

From CAVLR on track 026° to cross KASDY  
at 7000, then on track 024° to cross BARIN  
at 6000, then on track 012° to cross STAYO  
at 4000, then on track 012° to TRING, then  
on track 012° to MIXNN, then on track 012°.  
Expect RADAR vectors to final approach  
course.

# CAVLR FOUR ARRIVAL (RNAV)

(BNTLY.CAVLR4) 31DEC20

WASHINGTON, DC  
WASHINGTON DULLES INTL (IAD)

NE-3, 05 OCT 2023 to 02 NOV 2023



CAVLR 5  
(RNAV) STAR  
HP BNTLY  
PAT 15

BNTLY\_TERRAIN+AAO (624)  
TerrainPoint T15P6656?

CTC POTOMAC APP WITH  
20 NM ON 126.4, 282.375



CAVLR 5  
(RNAV) STAR  
HP CAVLR  
PAT 8





CAVLR 5  
(RNAV) STAR  
HP DORRN  
PAT 19



CAVLR 5  
(RNAV) STAR  
HP MEEGO  
PAT 15



CAVLR 5  
(RNAV) STAR  
DORRN TRANSITION  
DORRN.CAVLR5

KASDY TOWER (799)  
51-001570

UJVA TOWER (799)  
51-001570

MEEGO TOWER (819)  
51-000740

CAVLR TOWER (819)  
51-000740

BNTLY TOWER (655)  
51-020253

KHOD TOWER (719)  
51-000093

CTC POTOMAC APP WITHIN  
20 NM ON 120.75 307.2



CAVLR 5  
(RNAV) STAR  
DORRN TRANSITION  
DORRN.CAVLR5





CAVLR 5  
(RNAV) STAR  
DORRN TRANSITION  
DORRN.CAVLR5





CAVLR 5  
(RNAV) STAR  
THHMP  
TRANSITION  
THHMP.CAVLR5

KASDY TOWER (799)  
51-001570

UVVAA TOWER (799)  
51-001570

OMAX (UD)

CAVLR

MEEGO

MEEGO TOWER (819)  
51-000740

CAVLR TOWER (819)  
51-000740

BNTLY

BNTLY TOWER (655)  
51-020253

PERKIN

JROBB TOWER (660)  
51-020239

DORRN

THHMP

CTC POTOMAC APP WITHIN  
20 NM ON 126.75 307.2

CTC POTOMAC APP WITHIN  
20 NM ON 126.4 282.375



CAVLR 5  
(RNAV) STAR  
THHMP  
TRANSITION  
THHMP.CAVLR5

STAYO TOWER (1048)  
51-000337

BARIN TERRAIN+AAO (594)  
TP5934\_KASDY

COINZ TERRAIN+AAO (588)  
TP6145\_KASDY

KASDY TOWER (799)  
51-001570

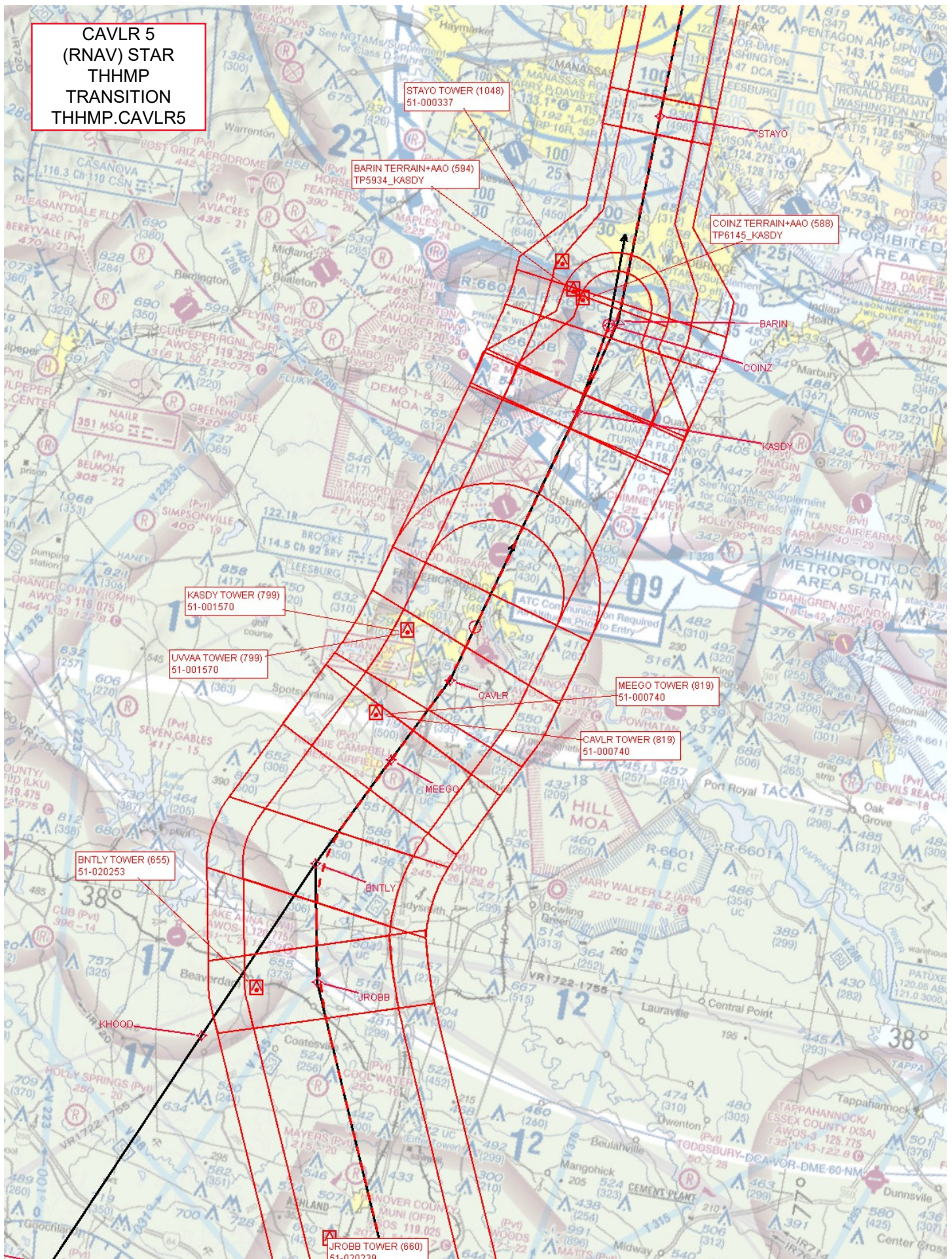
UWAA TOWER (799)  
51-001570

MEEGO TOWER (819)  
51-000740

CAVLR TOWER (819)  
51-000740

BNTLY TOWER (655)  
51-020253

JROBB TOWER (660)  
51-020239





CAVLR 5  
(RNAV) STAR  
THHMP  
TRANSITION  
THHMP.CAVLR5

MIXNN TERRAIN+AAO (1106)  
TP39201\_TRING

TRING TERRAIN+AAO (601)  
TP2453\_STAYO

STAYO TOWER (1048)  
51-000337

BARIN TERRAIN+AAO (594)  
TP5934\_KASDY

COINZ TERRAIN+AAO (588)  
TP6145\_KASDY

DAVEE 223 DAA

CAVLR 5  
(RNAV) STAR  
THHMP  
TRANSITION  
THHMP.CAVLR5

MIXNN TERRAIN+AAO (1106)  
TP39201\_TRING

TRING TERRAIN+AAO (601)  
TP2453\_STAYO

STAYO TOWER (1048)  
51-000337

BARIN TERRAIN+AAO (594)  
TP5934\_KASDY

COINZ TERRAIN+AAO (588)  
TP6145\_KASDY

DAVEE 223 DAA

CAVLR 5  
(RNAV) STAR  
THHMP  
TRANSITION  
THHMP.CAVLR5

MIXNN TERRAIN+AAO (1106)  
TP39201\_TRING

TRING TERRAIN+AAO (601)  
TP2453\_STAYO

STAYO TOWER (1048)  
51-000337

BARIN TERRAIN+AAO (594)  
TP5934\_KASDY

COINZ TERRAIN+AAO (588)  
TP6145\_KASDY

DAVEE 223 DAA

CAVLR 5  
(RNAV) STAR  
THHMP  
TRANSITION  
THHMP.CAVLR5

MIXNN TERRAIN+AAO (1106)  
TP39201\_TRING

TRING TERRAIN+AAO (601)  
TP2453\_STAYO

STAYO TOWER (1048)  
51-000337

BARIN TERRAIN+AAO (594)  
TP5934\_KASDY

COINZ TERRAIN+AAO (588)  
TP6145\_KASDY

DAVEE 223 DAA

CAVLR 5  
(RNAV) STAR  
THHMP  
TRANSITION  
THHMP.CAVLR5

MIXNN TERRAIN+AAO (1106)  
TP39201\_TRING

TRING TERRAIN+AAO (601)  
TP2453\_STAYO

STAYO TOWER (1048)  
51-000337

BARIN TERRAIN+AAO (594)  
TP5934\_KASDY

COINZ TERRAIN+AAO (588)  
TP6145\_KASDY

CAVLR 5  
(RNAV) STAR  
THHMP  
TRANSITION  
THHMP.CAVLR5

MIXNN TERRAIN+AAO (1106)  
TP39201\_TRING

TRING TERRAIN+AAO (601)  
TP2453\_STAYO

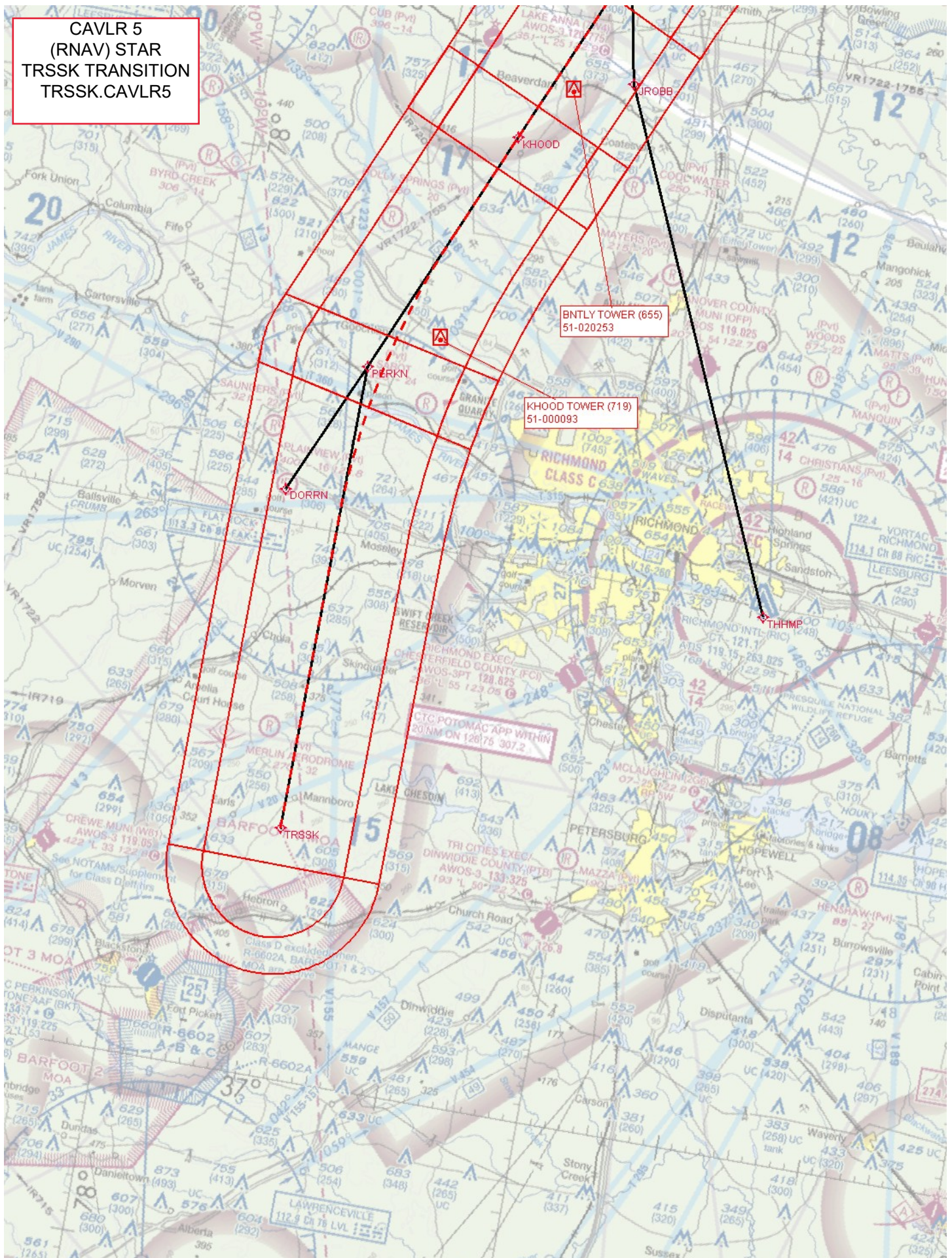
STAYO TOWER (1048)  
51-000337

BARIN TERRAIN+AAO (594)  
TP5934\_KASDY

COINZ TERRAIN+AAO (588)  
TP6145\_KASDY

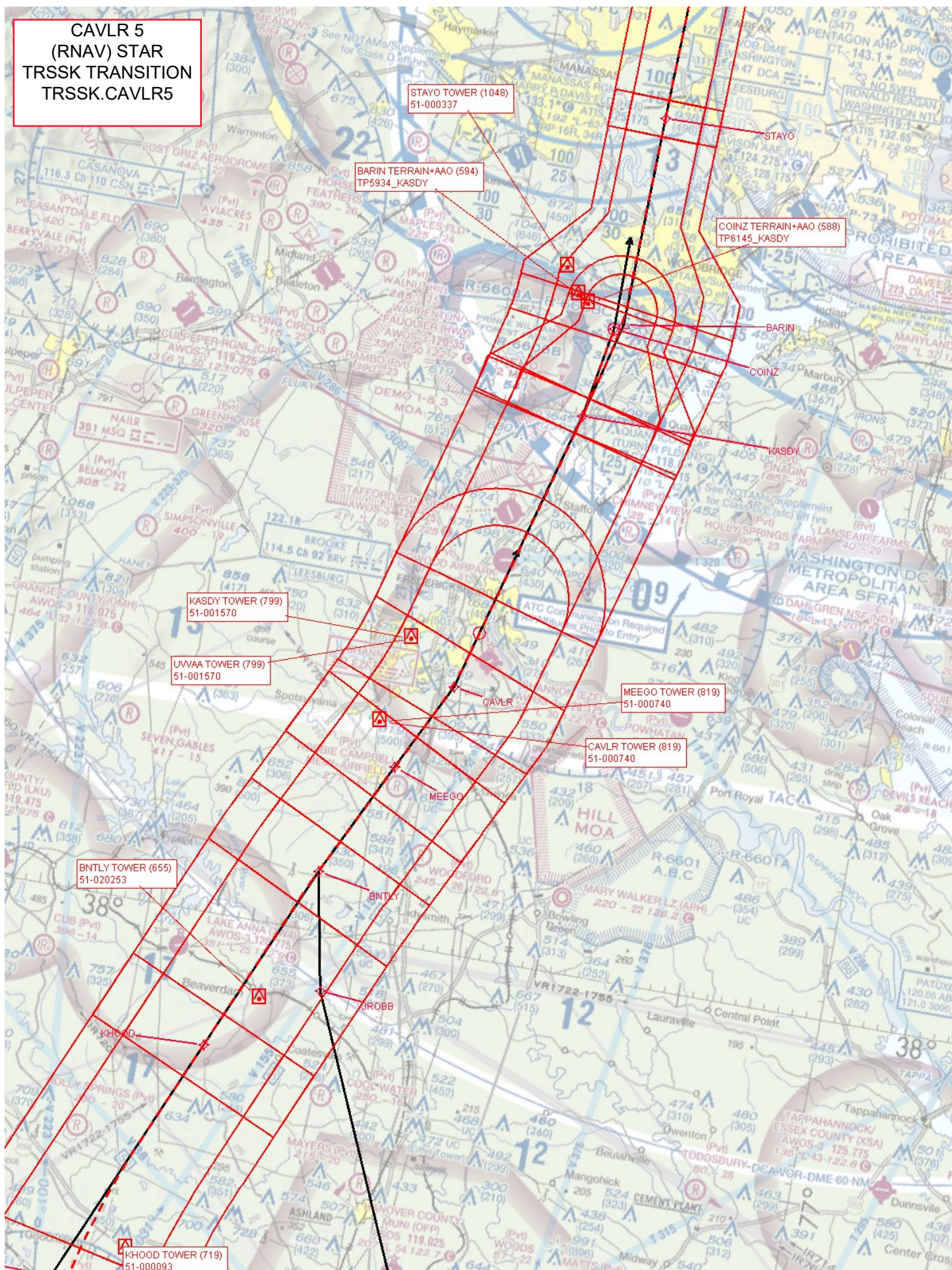


CAVLR 5  
(RNAV) STAR  
TRSSK TRANSITION  
TRSSK.CAVLR5





CAVLR 5  
(RNAV) STAR  
TRSSK TRANSITION  
TRSSK.CAVLR5





CAVLR 5  
(RNAV) STAR  
TRSSK TRANSITION  
TRSSK.CAVLR5

MIXNN TERRAIN+AAO (1106)  
TP39201\_TRING

TRING TERRAIN+AAO (601)  
TP2453\_STAYO

STAYO TOWER (1048)  
51-000337

BARIN TERRAIN+AAO (594)  
TP5934\_KASDY

COINZ TERRAIN+AAO (588)  
TP6145\_KASDY

GEORGETOWN 323 GTN E.

MIXNN TERRAIN+AAO (1106)  
TP39201\_TRING

TRING TERRAIN+AAO (601)  
TP2453\_STAYO

STAYO TOWER (1048)  
51-000337

BARIN TERRAIN+AAO (594)  
TP5934 KASDY

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TP6145 KASDY