Flight Procedures Cover Page	Task Action: FLIGHT CHECK	Task Type: STAR	Estimated Chart Date: 12/26/2024	APWS Task ID: F8DC04155D804FCFB22ABC7BCDD257F0	APWS Project ID: 0E4ACAE2B739482D91782B4339B4657C
Procedure: STAR ANTHM (RNAV) FIVE BALTIMORE MD KBWI		Enroute: YES	Specialist: Smart, Phillip		Agreement Number:
Airport ID: KBWI			Airport City: BALTIMORE		State: MD
Facility ID:	Facility Type:	Flight Inspection Remark Type: New FC Slot			

Procedure Comments:

PROCEDURE REDESIGNED PER PBN

DECENT GRADIENT APPROVAL LETTER FOR SECTION FINNZ TO ASHOR

CONTACT MR. ROBERT HAMILTON, MANAGER AJV-A433 AT 405-954-4608

08/19/2024

Data as of: 08/05/2024 12:37:00 CDT

FIPC DME/DME FORM

PROCEDURE:	AIRPORT NAME:	AIRPORT ID:	SPECIAL CONTROL NO:
STAR ANTHM (RNAV) FIVE BALTIMORE MD KBWI	BALTIMORE/WASHINGTON INTL	KBWI	YG-08-173-24

FAC ID: ANTHM5	CITY: BALTIMORE	ST: MD	ORIG CHART DATE: 12/26/2024

DFL TYPE:	THIRD PARTY:	EST. TIME ON SITE:	REIMB. NUMBER:	PTS TASK ID:
PROC/D	☐ YES	1.0		F8DC04155D804FCFB22ABC7BCDD257F0

PREFLIGHT NOTES

REVIEWER: elizabeth whaley

DATE: 09/16/2024

COMMENTS:
TARGETS DmeDmePlugin version 7.3.X generated, CSV file is corrupted.

CHECK ONE:
☐ FLT CK REQ ☐ NFCR ☒ REJECT

	YES	NO
CPV COMPLETE?	X	

PROCEDURE RESULTS

INSPECTION DATE:	CREW #:	N #:	INSTRUMENT PROCEDURE STATUS:	ARINC CODING:
09/16/2024	VN888		☐ SAT ☐ SAT W/CHANGES ☒ UNSAT	☐ SAT ☐ SAT/GOLD ☐ UNSAT

FLIGHT INSPECTOR SIGNATURE:	PRINTED NAME:	NOTAM INITIATED?
elizabeth whaley @ 09/16/2024 13:46	AVN, CREWMEMBER 2	☐ YES ☒ NO

FLIGHT INSPECTOR REMARKS:
TARGETS DmeDmePlugin version 7.3.X generated, CSV file is corrupted.

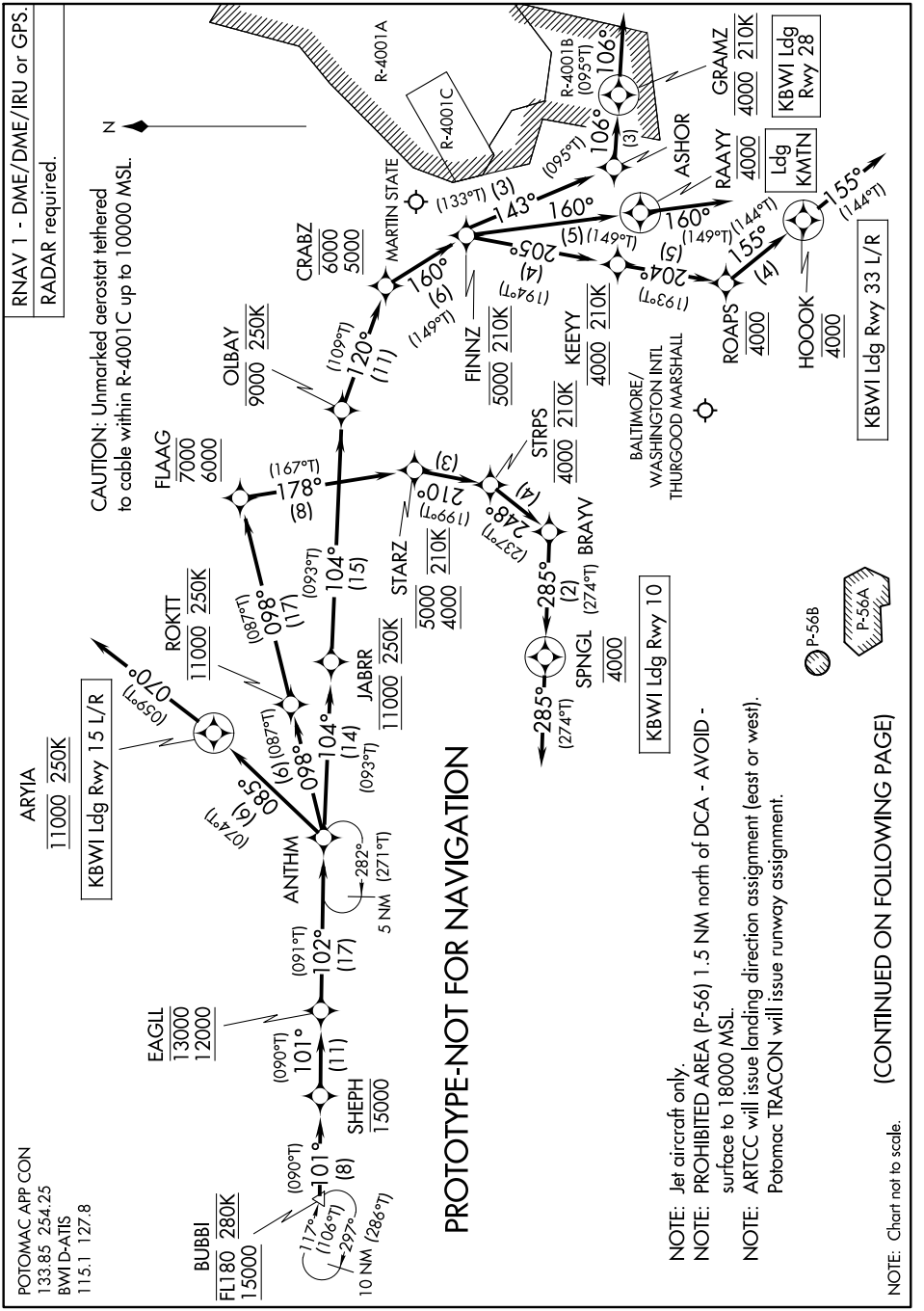
DME/DME STATUS:	SPECIALIST SIGNATURE:	PRINTED NAME:
☐ SAT ☐ UNSAT		

SPECIALIST REMARKS:

IN-FLIGHT OBSTACLE REPORT

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

ANTHM FOUR
Prototype



ARRIVAL ROUTE DESCRIPTION

Landing KBWI:

From BUBBI on track 101° to cross SHEPH at or below 15000, then on track 101° to cross EAGLL between 12000 and 13000, then on track 102° to cross ANTHM.

LANDING KBWI RWY 10: From ANTHM on track 098° to cross ROKTT at 11000 and at 250K, then on track 098° to cross FLAAG between 6000 and 7000, then on track 178° to cross STARZ between 4000 and 5000 and at 210K, then on track 210° to cross STRPS at 4000 and at 210K, then on track 248° to BRAYV, then on track 285° to cross SPNGL at 4000, then on heading 285° or as assigned by ATC.
Expect RADAR vectors to final approach course.

LANDING KBWI RWYS 15L/R: From ANTHM on track 085° to cross ARYIA at 11000 and at 250K, then on heading 070° or as assigned by ATC.
Expect RADAR vectors to final approach course.

LANDING KBWI RWY 28: From ANTHM on track 104° to cross JABRR at 11000 and at 250K, then on track 104° to cross OLBAY at or below 9000 and at 250K, then on track 120° to cross CRABZ between 5000 and 6000, then on track 160° to cross FINNZ at 5000 and at 210K, then on track 143° to ASHOR, then on track 106° to cross GRAMZ at 4000 and at 210K, then on track 106°.
Expect RADAR vectors to final approach course.

LANDING KBWI RWYS 33L/R: From ANTHM on track 104° to cross JABRR at 11000 and at 250K, then on track 104° to cross OLBAY at or below 9000 and at 250K, then on track 120° to cross CRABZ between 5000 and 6000, then on track 160° to cross FINNZ at 5000 and at 210K, then on track 205° to cross KEEYY at 4000 and at 210K, then on track 204° to cross ROAPS at 4000, then on track 155° to cross HOOOK at 4000, then on track 155°.
Expect RADAR vectors to final approach course.

LANDING KMTN: From BUBBI on track 101° to cross SHEPH at or below 15000, then on track 101° to cross EAGLL between 12000 and 13000, then on track 102° to ANTHM, then on track 104° to cross JABRR at 11000 and at 250K, then on track 104° to cross OLBAY at or below 9000 and at 250K, then on track 120° to cross CRABZ between 5000 and 6000, then on track 160° to cross FINNZ at 5000 and at 210K, then on track 160° to cross RAAYY at 4000, then on track 160°.
Expect RADAR vectors to final approach course.

Federal Aviation Administration

Memorandum

Date: May 22, 2024

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 Coordination Team, AJV-A45

Prepared by: Miles H. Carpenter, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Baltimore, MD (KBWI), ANTHM (RNAV) STAR Descent Gradient

The purpose of this memo is to request Flight Standards approval to publish the Baltimore, MD ANTHM ARRIVAL (RNAV) Procedure with a descent gradient higher than 250 FT/NM as stated in Order 8260.3F, paragraph(s) 2-2-8.a.(4) and 2-2-8.b.

RSO144: [Approval Required] The Descent Gradient (296.99) from FINNZ to ASHOR is greater than the Maximum Permissible Descent Gradient (250.0). Flight Standards approval is required.

TARGETS Reference Software generated a computed descent gradient value from FINNZ to ASHOR of 296.99 ft./NM. This resulted from the descent gradient being calculated from FINNZ "AT 5000/210 KIAS" to cross ASHOR "AT 4000" over a distance of 3.37 NM.

The distance from JABBR to ASHOR is 35.44 NM. When calculating the descent gradient from JABBR (AT 11000/250 KIAS) to ASHOR (AT 4000) this resulted in a descent gradient of 222.6 ft./NM. Users have evaluated the KBWI TRISH4 (RNAV) STAR which is coded exactly the same from FINNZ to GRAMZ as this procedure in the simulator without any negative comments on Descent Gradient or Deceleration issues.

Consideration was given to removing and or changing the constraints/restrictions at JABBR, OLBAY, CRABZ, FINNZ and ASHOR. However, due to the high density of air traffic, airspace constraints and traffic flows within the KBWI Terminal Airspace, it was determined that the restrictions are necessary to prevent aircraft from entering adjacent airspace, prevent conflictions from other traffic and procedures, disruption of traffic flow and additional controller workload was too great and introduced unnecessary safety risk into the system.

Request Flight Standards approval to publish the KBWI ANTHM (RNAV) STAR with the non-standard descent gradient.

INFO ONLY

Federal Aviation Administration

Memorandum

Date: November 8, 2023

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 Coordination Team, AJV-A45

Prepared by: Jeff Rutledge, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Baltimore, MD (KBWI) ANTHM (RNAV) STAR

DECLERATION LEG LENGTH FAILURE

FLAAG to STARZ SEGEMNT

The requirements stated in Order 8260.3F, (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 FLAAG to STARZ is 7.76NM. This leg must be at least 12.0 NM long due to deceleration from 250.0 KIAS to 210 KIAS between 6000.0 ft. MSL to 4000.0 ft. MSL. Flight Standards approval is required.

INFO ONLY

The segment with the restrictions of at 11000 at ROKTT 250KIAS followed by cross STARZ between 4000/5000 and 210KIAS requires a 12 NM length, per the 8260.3F paragraph 2-2-10 a, for a reduction of 10- 40Kts. The deceleration required by the ROKTT-STARZ segment is 40 Kts. The reduction from 250 Kts to 210 Kts from ROKTT to STARZ is 5.86 NM. The previous fix ANTHM has no restrictions therefore the aircraft will be at or below 250 KIAS 17.65 NM prior to reaching STARZ. The distance from ANTHM to STARZ is 30.66 NM allowing ample distance to reduce speed to 210 KIAS. The KBWI ANTHM STAR has been in publication for several years and there have been no instances where aircraft could not make this restriction reported.

Route Evaluation for NUSMM:BUBBI:KBWI:RW10

NUSMM:BUBBI:KBWI:RW10 Evaluation Results Part 1/2

Leg Tp	End Pt	Turn Tp	Alt Restr	Alt Restr 2	Spd Restr	Turn Ang	Leg Length	Min Seg Length	Descent Gradient	Max Descent Grad	Min Decel Dist
IF	NUSMM [IFPA r1 07-19-18 TO UNK]						0.0	0.0	0.0	0.0	0.0
TF	KEMAN [IFPA r4 02-01-18 TO UNK]	FLY_BY				2.34	37.26	1.0	0.0	0.0	0.0
TF	BYNER [IFPA r0 11-13-14 TO UNK]	FLY_BY				1.61	21.43	1.0	0.0	0.0	0.0
TF	LUNDY [IFPA r3 11-05-20 TO UNK]	FLY_BY	29000.00			0.63	24.07	1.0	0.0	0.0	0.0
TF	CURBY [IFPA r1 11-05-20 TO UNK]	FLY_BY	+21000.00	-24000.0		0.64	23.28	1.0	343.22	330.0	0.0
TF	KEESH [IFPA r2 11-05-20 TO UNK]	FLY_BY				0.66	10.0	1.0	262.77	330.0	0.0
TF	BUBBI [IFPA r3 11-13-14 TO UNK]	FLY_BY	+15000.00	-18000.0	280.0	16.37	12.81	3.19	262.77	330.0	0.0
TF	SHEPH [IFPA r0 10-15-15 TO UNK]	FLY_BY	-15000.00			0.02	8.0	3.19	0.0	330.0	0.0
TF	EAGLL [IFPA r0 11-13-14 TO UNK]	FLY_BY	+12000.00	-13000.0		0.5	10.68	1.0	280.69	330.0	0.0
TF	ANTHM [IFPA r0 11-13-14 TO UNK]	FLY_BY				3.89	17.3	1.0	42.17	330.0	0.0
TF	ROKTT [IFPA r1 03-31-16 TO UNK]	FLY_BY	11000.00		250.0	0.12	6.4	1.0	42.17	330.0	0.0
TF	FLAAG [IFPA r1 03-31-16 TO UNK]	FLY_BY	+6000.00	-7000.0		79.52	16.5	2.83	302.91	320.4	0.0
TF	STARZ	FLY_BY	+4000.00	-5000.0	210.0	31.86	7.76	3.9	257.78	318.0	12.0
TF	STRPS	FLY_BY	4000.00		210.0	38.44	3.08	2.05	0.0	250.0	0.0
TF	BRAYV [IFPA r1 03-31-16 TO UNK]	FLY_BY				36.93	3.98	2.03	0.0	250.0	0.0
TF	SPNGL	FLY_OVER	4000.00				2.09	1.05	0.0	250.0	0.0
VM							0.0	0.0	0.0	0.0	0.0

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

INFO ONLY

Federal Aviation Administration

Memorandum

Date: November 8, 2023

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 Coordination Team, AJV-A45

Prepared by: Jeff Rutledge, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Baltimore, MD (KBWI) ANTHM (RNAV) STAR

Descent Gradient

LUNDY to CURBY Segment

The requirements stated in Order 8260.3F, (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, themaximum permissible DG is between 318 ft. /NM and 330 ft. /NM and is in proportion to theamount of the altitude change that is below/above 10000 feet MSL. Use formula 2-2-1 to determine the maximum DG (DGmax) between fixes that contain a descent that passes through 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."

INFO ONLY

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 (343.21) from LUNDY to CURBY is greater than the Maximum Permissible Descent Gradient (330.0).

A computed descent gradient value from LUNDY to CURBY of 343.21 ft./NM resulted from the descent gradient being calculated from descending from the restriction of At FL290 at LUNDY (FL290 used) to cross CURBY AOB FL240 and At or ABOVE FL210 (FL240 B FL210) over 46.09 NM. The restriction after CURBY is at BUBBI, a restriction of AOB FL180 and AOA 15000 (FL180N15000). The restriction after BIBBI is AOB 15000 at SHEPH then AOB13000 and AOA12000 (13000B12000) at EAGLL and 11000 at JABRR then AOB 9000 at OLBAY. The distance required to descend from LUNDY at FL290 to OLBAY at 9000 is 111.26 NM. Calculating a descent gradient from LUNDY to OLBAY 111.26 NM resulted in a descent gradient of 329.4 ft./NM.

TF	LUNDY [IFPA r2 11-13-14 TO UNK]	FLY_BY	29000.00			0.63	24.07	1.0	0.0	0.0	0.0
TF	CURBY [IFPA r0 11-13-14 TO UNK]	FLY_BY	+21000.00	-24000.0		0.64	23.28	1.0	343.22	330.0	0.0
TF	KEESH [IFPA r1 10-15-15 TO UNK]	FLY_BY				0.66	10.0	1.0	262.77	330.0	0.0
TF	BUBBI [IFPA r3 11-13-14 TO UNK]	FLY_BY	+15000.00	-18000.0	280.0	16.37	12.81	3.19	262.77	330.0	0.0
TF	SHEPH [IFPA r0 10-15-15 TO UNK]	FLY_BY	-15000.00			0.02	8.0	3.19	0.0	330.0	0.0
TF	EAGLL [IFPA r0 11-13-14 TO UNK]	FLY_BY	+12000.00	-13000.0		0.5	10.68	1.0	280.69	330.0	0.0
TF	ANTHM [IFPA r0 11-13-14 TO UNK]	FLY_BY				1.96	17.3	1.0	32.1	330.0	0.0
TF	JABRR [IFPA r1 10-15-15 TO UNK]	FLY_BY	11000.00		250.0	0.0	13.84	1.0	32.1	330.0	0.0
TF	OLBAY [IFPA r0 10-15-15 TO UNK]	FLY_BY	-9000.00		250.0	16.0	15.39	1.78	129.9	324.0	0.0
TF	CRABZ [IFPA r1 10-15-15 TO UNK]	FLY_BY	+5000.00	-6000.0		39.1	10.99	3.35	364.0	318.0	0.0

Consideration was given to removing and or changing the restrictions at LUNDY, CURBY, SHEPH, EAGLL, JABRR and OLBAY. However, due to airspace constraints and traffic flows it was decided that the restrictions are necessary to prevent aircraft from entering adjacent airspace, prevent conflictions from other traffic and procedures, and reduce ATC workload due to required coordination, (point outs).

INFO ONLY

Federal Aviation Administration

Memorandum

Date: November 8, 2023

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 Coordination Team, AJV-A45

Prepared by: Jeff Rutledge, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Baltimore, MD (KBWI) ANTHM (RNAV) STAR

Descent Gradient

OLBAY to CRABZ Segment

The requirements stated in Order 8260.3F, (United States Standard for Terminal InstrumentProcedures (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).

Paragraph 2-2-8.b states:
"When a gradient exceeds the maximum DG allowed in paragraph 2-2-8a, the STARrequires 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, nonstandardIFPs that deviate from these criteria may be approved, provided they are documented, and an equivalent level of safety exist.

INFO ONLY

RSO144: [Approval Required] The Descent Gradient (363.99) from OLBAY to CRABZ is greater than the Maximum Permissible Descent Gradient (318.0)

A computed descent gradient value from OLBAY to CRABZ of 363.99 ft./NM resulted from the descent gradient being calculated from descending from the restriction of AOB 9000 at OLBAY to cross CRABZ AOB 6000 and AOA 5000 (6000 B 5000) over 10.99 NM. The restriction after CRABZ is at FINNZ, a restriction of AT 5000. The distance required to descend from OLBAY at 9000 to FINNZ at 5000 is 16.68 NM. Calculating a descent gradient from OLBAY to FINNZ resulted in a descent gradient of 239.80 ft./NM.

TF	CRABZ [IFPA r1 10-15-15 TO UNK]	FLY_BY	1.78	12.67	8747.33	250.0	8.0	56.47	293.07	349.54	1.57	4.42	6000.0	250.0	19.55	47.3	280.77	328.08
TF	FINNZ [IFPA r0 10-15-15 TO UNK]	FLY_BY	1.57	4.42	6000.0	250.0	19.55	47.3	280.77	328.08	1.12	7.87	5000.0	210.0	8.09	44.8	232.25	277.05

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

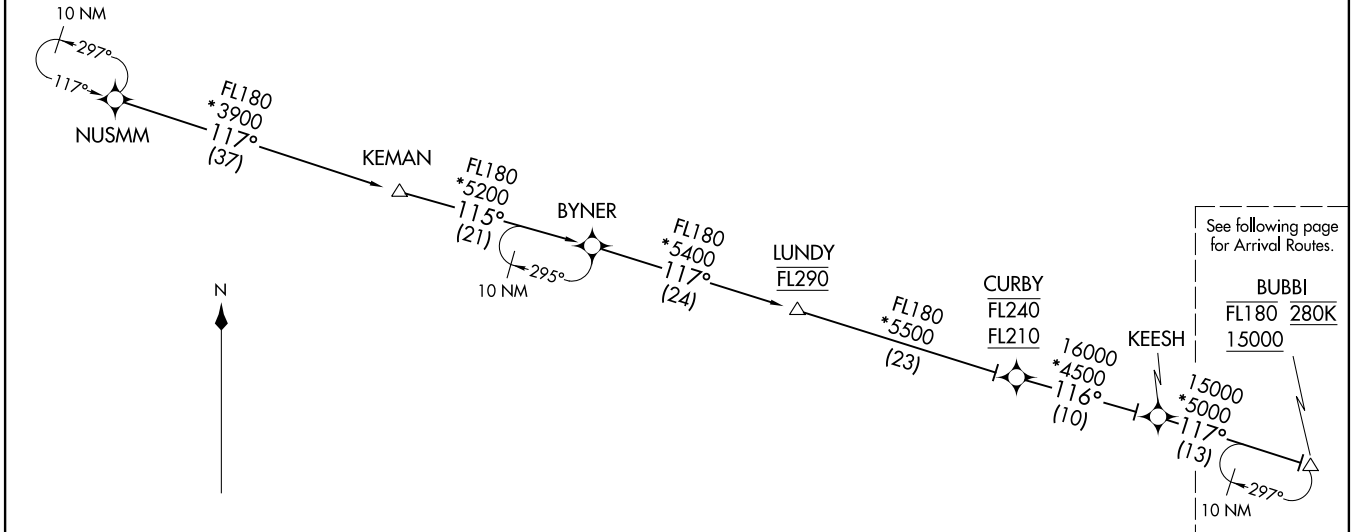
ANTHM THREE ARRIVAL (RNAV) Transition Routes

(BUBBI.ANTHM3) 31MAR16

BALTIMORE, MARYLAND

POTOMAC APP CON
133.85 254.25
BWI D-ATIS
115.1 127.8

NOTE: RADAR required
NOTE: RNAV 1.
NOTE: DME/DME/IRU or GPS required.
NOTE: Turbojet aircraft only.
NOTE: Prohibited area (P56) 1.5 NM north of DCA avoid surface to 18000 MSL.
NOTE: ARTCC will issue landing direction assignment (east or west). Potomac TRACON will issue runway assignments.



KEESH TRANSITION (KEESH.ANTHM3)
KEMAN TRANSITION (KEMAN.ANTHM3)
NUSMM TRANSITION (NUSMM.ANTHM3)

(CONTINUED ON FOLLOWING PAGES)

NOTE: Chart not to scale.

ANTHM THREE ARRIVAL (RNAV) Transition Routes

(BUBBI.ANTHM3) 20198

BALTIMORE, MARYLAND

AL-804 (FAA)

OLD

ANTHM THREE ARRIVAL (RNAV) Arrival Routes

BALTIMORE, MARYLAND

NE-3, 28 DEC 2023 to 25 JAN 2024

ANTHM THREE ARRIVAL (RNAV) Arrival Routes
BALTIMORE, MARYLAND

ARRIVAL ROUTE DESCRIPTION

Landing BWI:

From BUBBI on track 101° to cross SHEPH at or below 15000, then on track 101° to cross EAGLL between 12000 and 13000, then on track 102° to cross ANTHM.

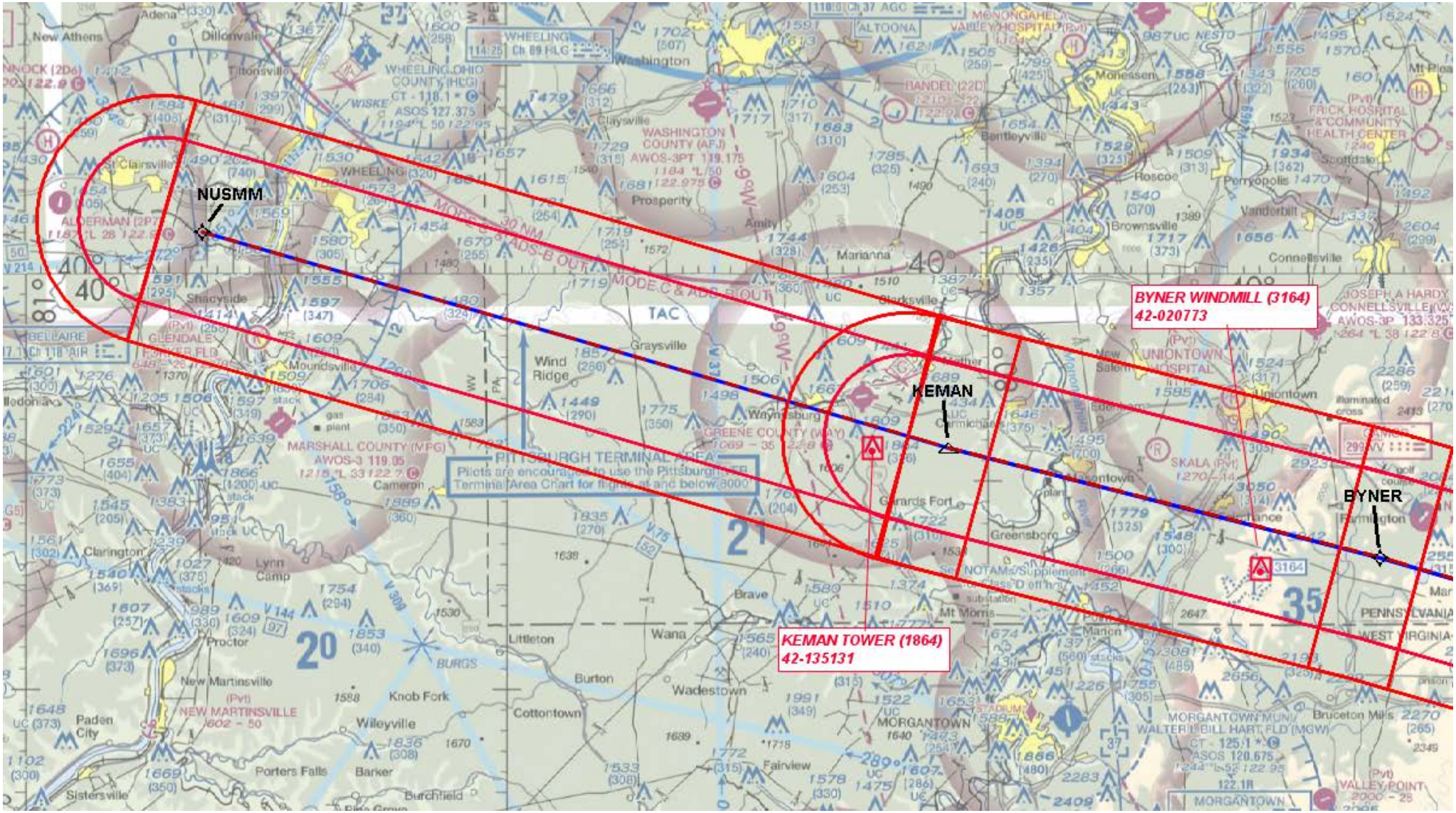
LANDING EAST: RWYS 10 and 15L/R: From ANTHM on track 098° to cross ROKTT at 11000 and at 250K, then on track 098° to cross FLAAG between 6000 and 7000, then on track 180° to cross STARZ at 4000, then on track 220° to cross STRPS at 4000 and at 210K, then on track 248° to BRAYV, then on track 285° to HOIST, then on heading 285° or as assigned by ATC.
Expect RADAR vectors to final approach course.

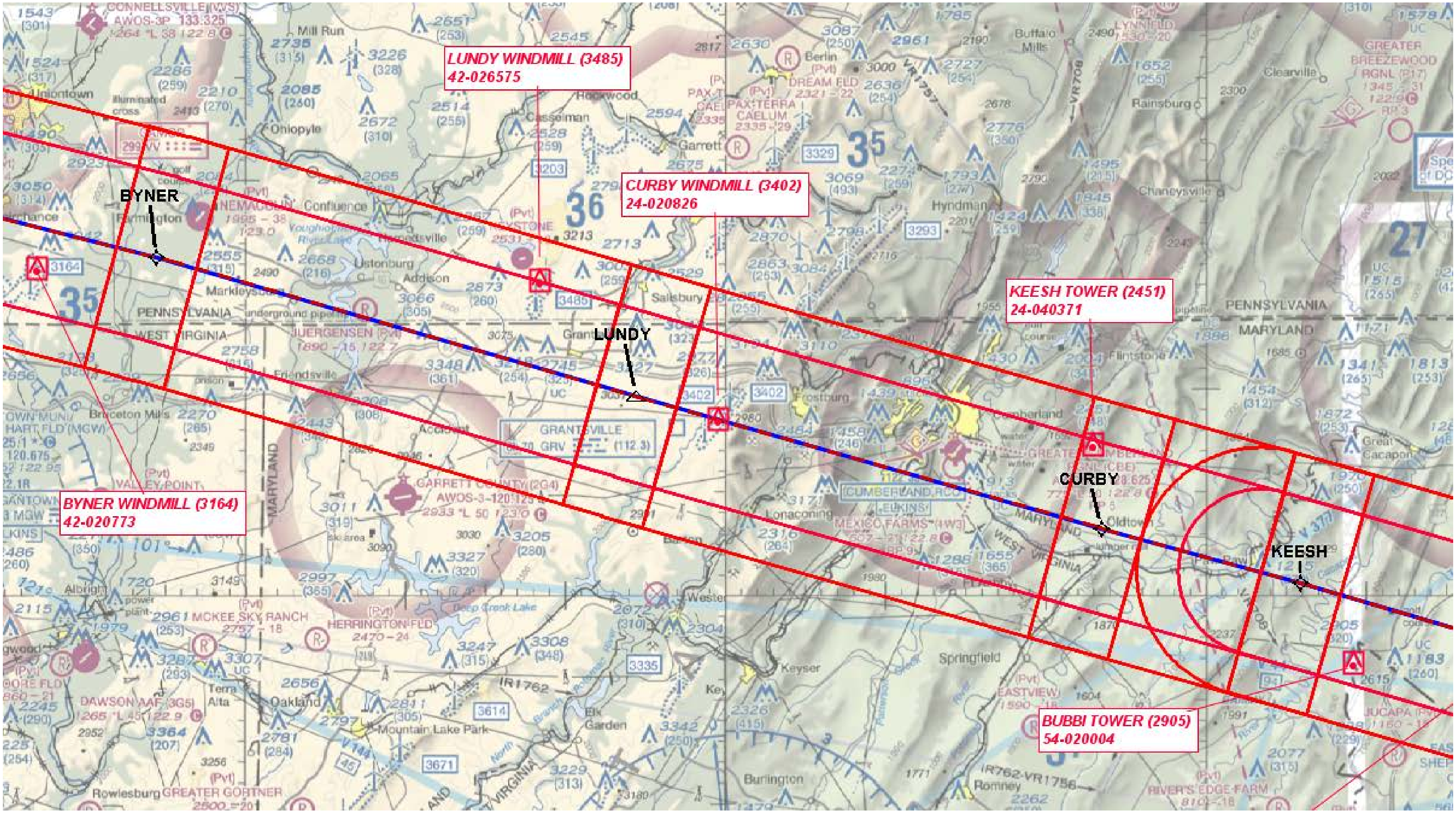
LANDING WEST: RWY 28: From ANTHM on track 104° to cross JABRR at 11000 and at 250K, then on track 104° to cross OLBAY at or below 9000 and at 250K, then on track 120° to cross CRABZ between 5000 and 6000, then on track 160° to cross FINNZ at 5000, then on track 158° to cross ASHOR at 4000, then on track 105° to GRAMZ, then on heading 105°.
Expect RADAR vectors to final approach course.

LANDING WEST: RWYS 33L/R: From ANTHM on track 104° to cross JABRR at 11000 and at 250K, then on track 104° to cross OLBAY at or below 9000 and at 250K, then on track 120° to cross CRABZ between 5000 and 6000, then on track 160° to cross FINNZ at 5000, then on track 205° to cross KEEYY at 4000 and at 210K, then on track 204° to ROAPS, then on track 155° to HOOOK, then on heading 155°.
Expect RADAR vectors to final approach course.

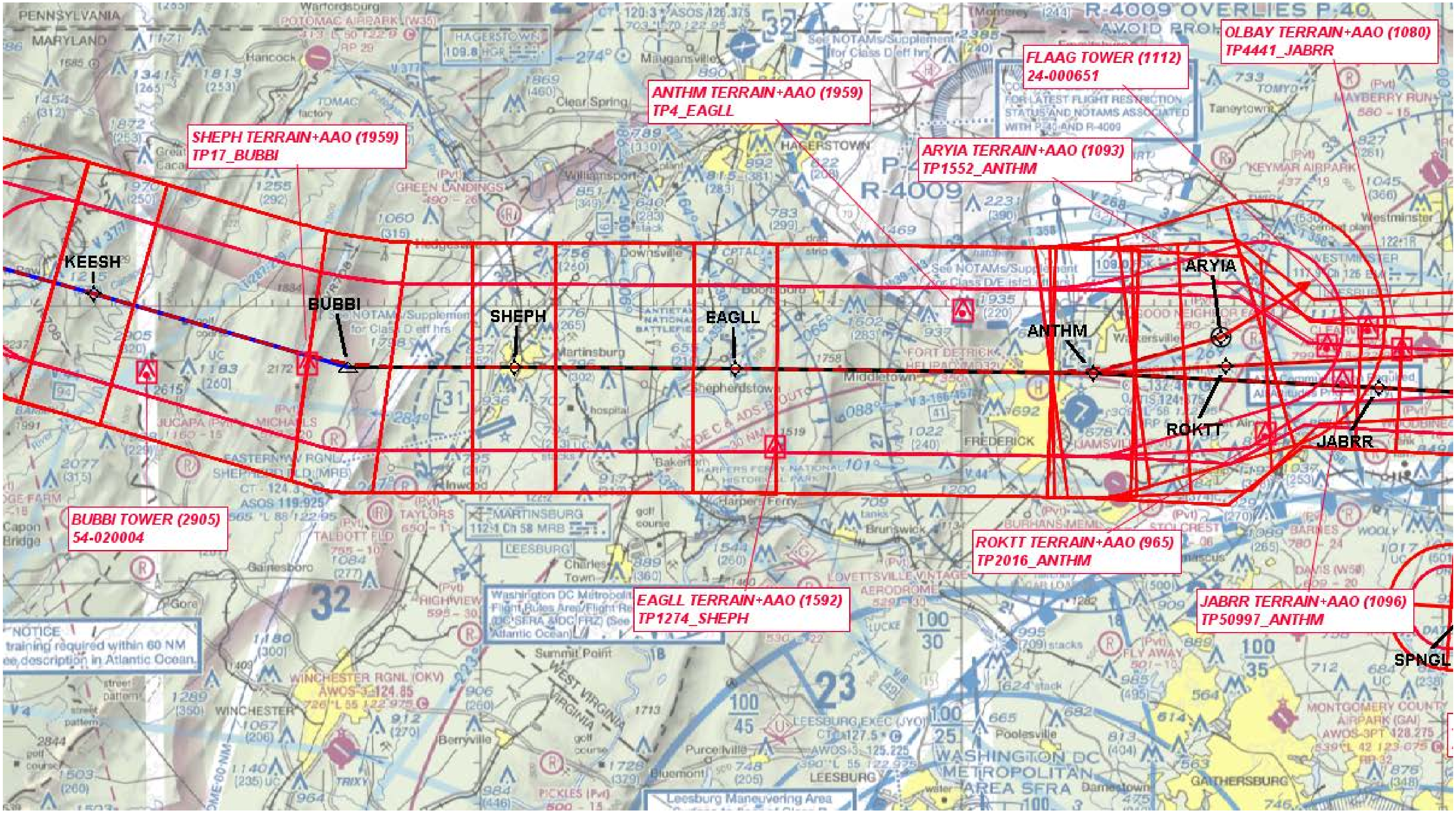
LANDING MTN: From BUBBI on track 101° to cross SHEPH at or below 15000, then on track 101° to cross EAGLL between 12000 and 13000, then on track 102° to ANTHM, then on track 104° to cross JABRR at 11000 and at 250K, then on track 104° to cross OLBAY at or below 9000 and at 250K, then on track 120° to cross CRABZ between 5000 and 6000, then on track 160° to cross FINNZ at 5000, then on track 160° to cross RAAYY at 4000, then on heading 160°.
Expect RADAR vectors to final approach course.

NE-3, 28 DEC 2023 to 25 JAN 2024


NUSMM
KEMAN
BYNER
BYNER WINDMILL (3164)
42-020773
KEMAN TOWER (1864)
42-135131
TAC
PITTSBURGH TERMINAL AREA
Pilots are encouraged to use the Pittsburgh TRSB Terminal Area Chart for flights at and below 8000'
MODE C & ADS-B OUT
30 NM
WASHINGTON COUNTY (AFJ)
AWOS-3PT 119.175
MARSHALL COUNTY (MPG)
AWOS-3 119.05
GREENE COUNTY (WAY)
WHEELING OHIO COUNTY (HLG)
ASOS 127.375
MORGANTOWN MUNI WALTER L BILL HART FLD (MGW)
ASOS 120.675
NEW MARTINSVILLE
ALDERMAN (2P7)
GLENDALE MARKER FLD
Washington
Claysville
Prosperity
Amity
Marianna
Wind Ridge
Waynesburg
Graysville
Mt Morris
Brave
Wana
Littleton
Burton
Wadestown
Cottontown
Fairview
MORGANTOWN
Gerards Fort
Greensboro
Clarksville
Brownsville
Roscoe
Bentleyville
Monessen
Connellsville
Vanderbilt
Perryopolis
Scottdale
Uniontown
Mt Pleasant
Bruceton Mills
Proctor
New Martinsville
Paden City
Wileyville
Knob Fork
Porters Falls
Barker
Sistersville
Burchfield
Clarington
Lynn Camp
Cameron
Moundsville
Shadyside
St Clairsville
Dillonvale
Adena
New Athens
Tiltonsville
WHEELING
ALTOONA
BANDEL (22D)
FRICK HOSPITAL & COMMUNITY HEALTH CENTER
UNIONTOWN HOSPITAL
MONONGAHELA VALLEY HOSPITAL
JOSEPH A HARDY CONNELLSVILLE
SKALA (PVT)
VALLEY POINT
PENNSYLVANIA
WEST VIRGINIA
20
21
35
40°
81°


LUNDY WINDMILL (3485)
42-026575
CURBY WINDMILL (3402)
24-020826
KEESH TOWER (2451)
24-040371
BYNER WINDMILL (3164)
42-020773
BUBBI TOWER (2905)
54-020004
BYNER
LUNDY
CURBY
KEESH

ANTHM (RNAV)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SHEPH TERRAIN+AAO (1959)
TP17_BUBBI
ARYIA TERRAIN+AAO (1093)
TP1552_ANTHM
KEESH
BUBBI
SHEPH
EAGLL
ANTHM
ARYIA
ROKTT
JABRR
SPNGL
BUBBI TOWER (2905)
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ROKTT TERRAIN+AAO (965)
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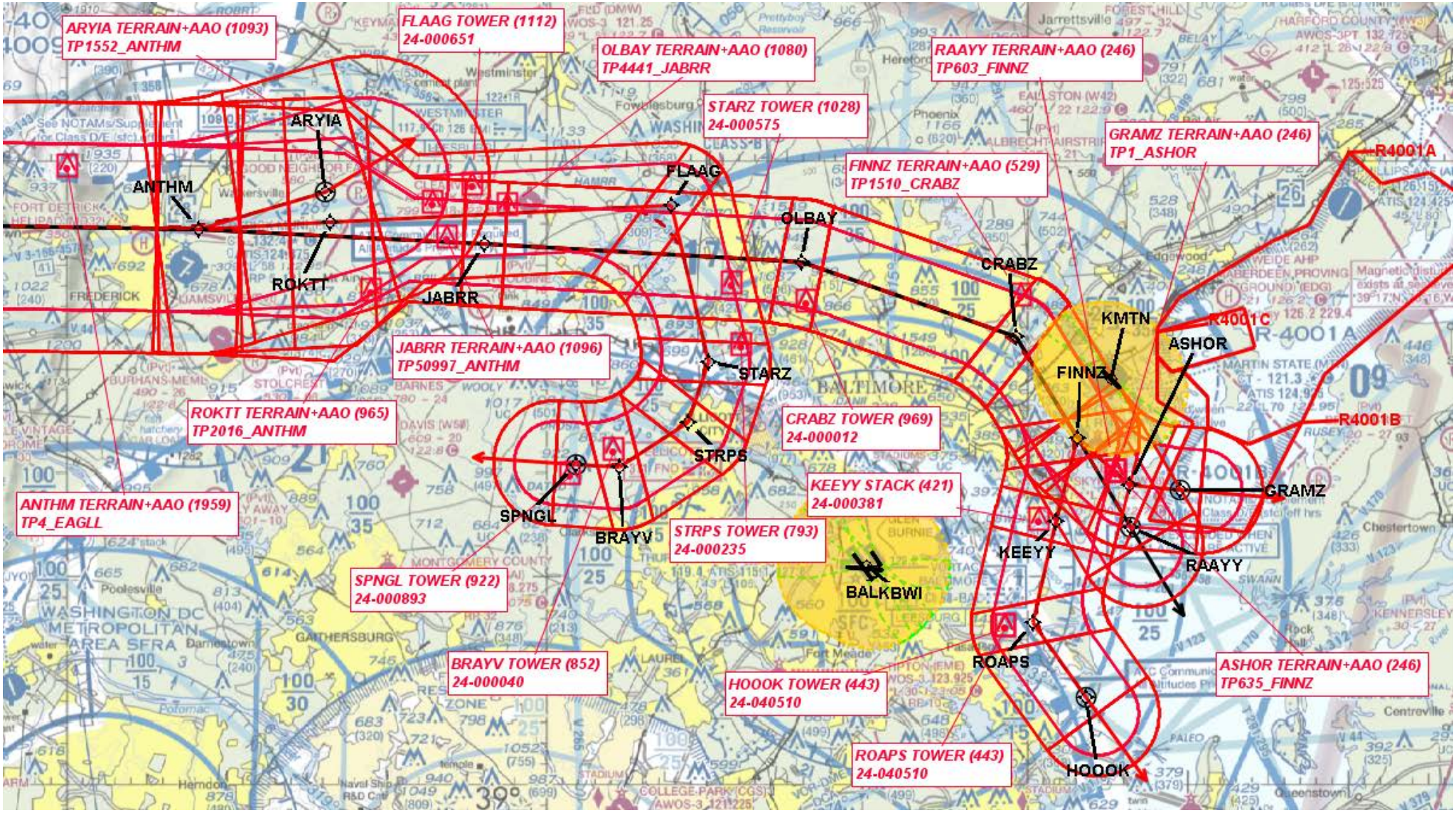
JABRR TERRAIN+AAO (1096)
TP50997_ANTHM

ANTHM (RNAV)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FLAAG TOWER (1112)
24-000651
OLBAY TERRAIN+AAO (1080)
TP4441_JABRR
RAAYY TERRAIN+AAO (246)
TP603_FINNZ
STARZ TOWER (1028)
24-000575
GRAMZ TERRAIN+AAO (246)
TP1_ASHOR
FINNZ TERRAIN+AAO (529)
TP1510_CRABZ
R4001A
ARYIA
ANTHM
FLAAG
OLBAY
CRABZ
ROKTT
JABRR
KMTN
R4001C
ASHOR
JABRR TERRAIN+AAO (1096)
TP50997_ANTHM
STARZ
FINNZ
ROKTT TERRAIN+AAO (965)
TP2016_ANTHM
CRABZ TOWER (969)
24-000012
R4001B
STRPS
GRAMZ
KEEYY STACK (421)
24-000381
ANTHM TERRAIN+AAO (1959)
TP4_EAGLL
SPNGL
BRAYV
STRPS TOWER (793)
24-000235
KEEYY
RAAYY
SPNGL TOWER (922)
24-000893
BALKBWI
ROAPS
BRAYV TOWER (852)
24-000040
HOOOK TOWER (443)
24-040510
ASHOR TERRAIN+AAO (246)
TP635_FINNZ
ROAPS TOWER (443)
24-040510
HOOOK