Flight Procedure Tracking Form	Action: FLIGHT CHECK	Task Type: SID	Date Open: 09/21/2010	Task #: 2010092125714102001	Request #: 20100921257141
Procedure: SID HGGRD (RNAV) ONE NASHVILLE TN KBNA		Airport ID: KBNA	Airport: NASHVILLE INTL		Reimbursable #:
City: NASHVILLE	ST: TN	GPS #:		Estimated Chart Date: 11/15/2012	FICO #: 1090938
Fac ID: BNA	Fac. Type: Proc-D	Specialist: DAVID SAUER			

P1

Procedure Review

DME / DME

	Rec'd	Rel'd	Full Name	Comments
Lead:	05/04/2012	07/20/2012	DONALD SMITH	
QA:	07/20/2012	07/20/2012	STEVEN SZUKALA	
Liaison:	07/20/2012		H. Spurlin	P1; DME/DME; ESV; REPLACEMENT 8/6/12

ESV REQUEST INCLUDED

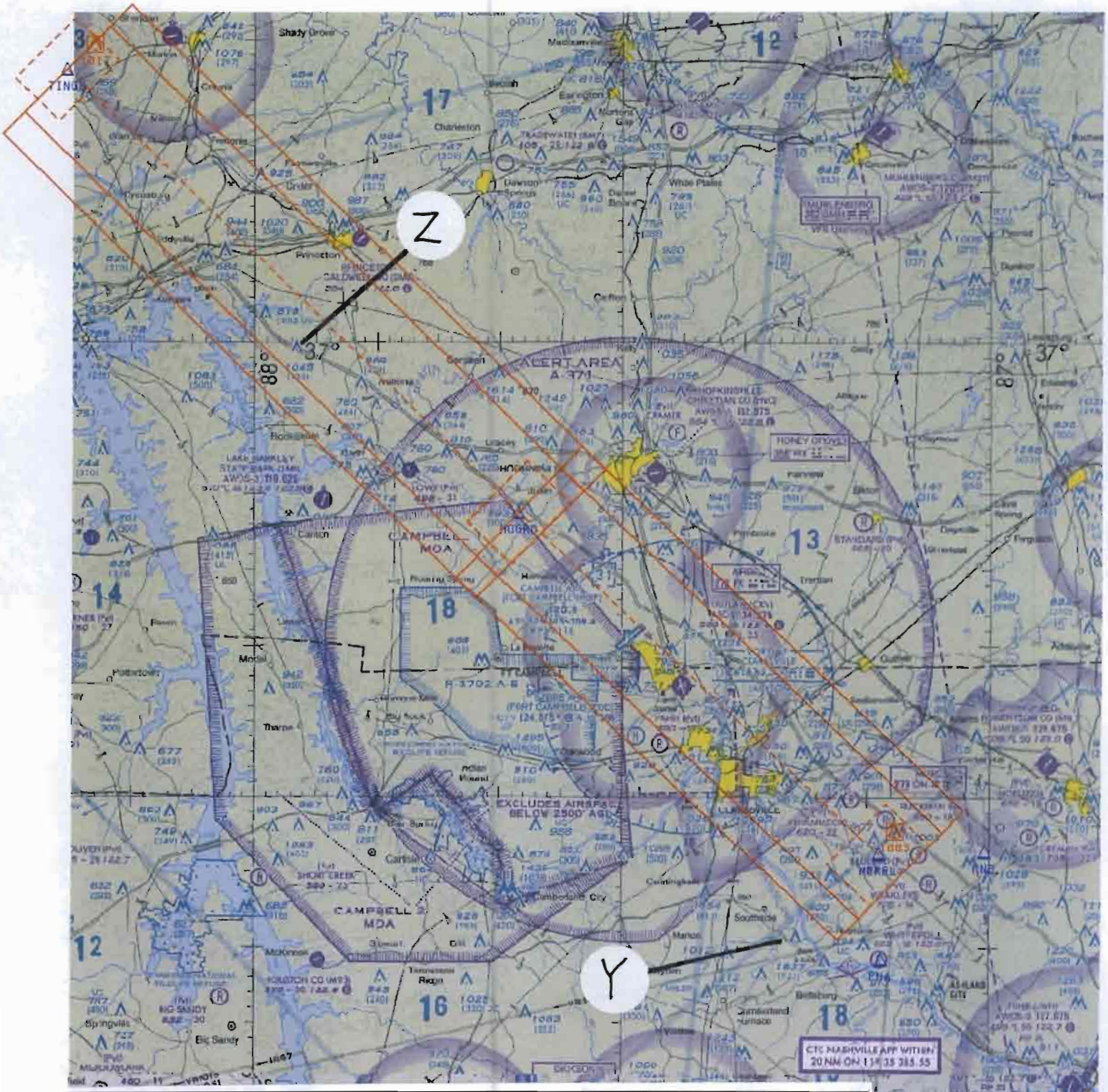
Procedure Comments: ENROUTE **Remark Type:** INFORMATION PKG 1 of 14

NASHVILLE, TN; NASHVILLE INTL (KBNA); SID HGGRD (RNAV) ONE; ENROUTE-YES; FC BY 9/18/12; PUB 11/15/12
ESV(S): (5): NASHVILLE (BNA) VTAC (1); BOWLING GREEN (BWG) VTAC (1); CENTRAL CITY (CCT) VTAC (1); CUNNINGHAM (CNG) VTAC (1); GRAHAM (GHM) VTAC (1).
ATTACHED FORMS: 8260-15B, 8260-15B
8260-2(S): BOGAA, ORIG; FOOFY, ORIG; HGGRD, ORIG; JOOON, ORIG; KLSTR, ORIG; MERRL, ORIG; MIJOM, ORIG; PWERS, ORIG; TINGS INT, REV 5 (INFO); YAHYA, ORIG.

NM 9 18 27 36 45 54 63

FT 56000 112000 168000 224000 280000 336000 392000

fpodws | bna_hggrd (PROD) | 22 May 2012 13:30:18 | 1" = 55666.7 feet (MAP)



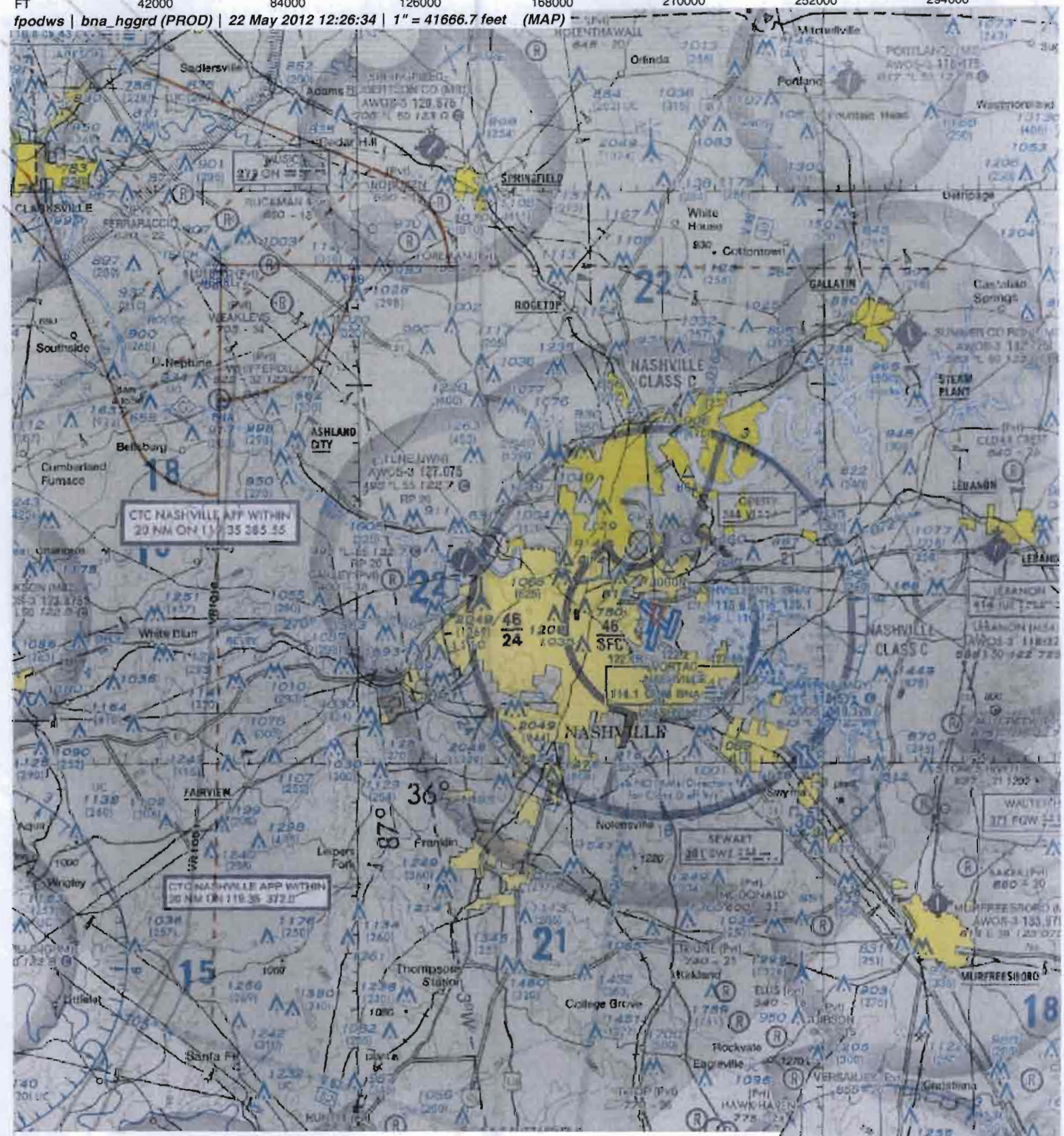
Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL	Y	MERRL – HGGRD MOCA	TOWER	1637
State:	TENNESSEE	Z	HGGRD - TINGS MOCA	TOWER	1003
Proc ID:	HGGRD (RNAV)				
Amdt #:	ONE				
Scale:	1: 500,000				

HGGRD 2C

NM 7 14 21 28 35 42 49

FT 42000 84000 126000 168000 210000 252000 294000

fpodws | bna_hggrd (PROD) | 22 May 2012 12:26:34 | 1" = 41666.7 feet (MAP)



Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL		RWY 02C PNA		ASC
State:	TENNESSEE				
Proc ID:	HGGRD (RNAV)				
Amdt #:	ONE				
Scale:	1: 500,000				

HGGRD

ESV Details

Originating Office :	Airspace Docket Number :	Request Type : Establish	
Facility Data			
Chart Name : NASHVILLE	City : NASHVILLE	Ident : BNA	State : TN
Type/Class : TACR	Frequency : M1175	Reference No.: 12031171	

Expanded Service Volume Data: (Requesting Officer)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude
FAA 698156-038	307	320	58	80	160

Requirement: ESTABLISH ESV FOR KBNA RNAV SIDS

Signature: Osterhage Dennis	Routing Symbol: AJV-E2	Date: 03/22/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 698156-038	307	320	58	80	160	APPROVE

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Cassella Charles	Routing Symbol:	Date: 03/27/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 698156-038	307	320	58	80	160	APPROVE

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: CHRISTEIN THOMAS	Routing Symbol:	Date: 03/28/2012

Expanded Service Volume Data: (FIFO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 698156-038	307	320				

Requirement/Remarks

Signature:	Routing Symbol:	Date:

HGGRL

ESV Details

Originating Office :	Airspace Docket Number :	Request Type : Establish	
Facility Data			
Chart Name : BOWLING GREEN	City : BOWLING GREEN	Ident : BWG	State : KY
Type/Class : TACR	Frequency : M1213	Reference No.: 12031167	

Expanded Service Volume Data: (Requesting Officer)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude
FAA 704282-030	209	258	55	58	160

Requirement: ESTABLISH ESV FOR KBNA RNAV SIDS

Signature: Osterhage Dennis | Routing Symbol: AJV-E2 | Date: 03/22/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 704282-030	209	258	55	58	160	APPROVE

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Cassella Charles | Routing Symbol: | Date: 03/26/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 704282-030	209	258	55	58	160	APPROVE

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: CHRISTEIN THOMAS | Routing Symbol: | Date: 03/26/2012

Expanded Service Volume Data: (FIFO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 704282-030	209	258				

Requirement/Remarks:

Signature: | Routing Symbol: | Date:

HGGRD

ESV Details

Originating Office :	Airspace Docket Number :	Request Type : Establish

Facility Data

Chart Name : CENTRAL CITY	City : CENTRAL CITY	Ident : CCT	State : KY
Type/Class : TACR	Frequency : M996	Reference No. 12031168	

Expanded Service Volume Data: (Requesting Officer)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude
FAA 703978-013	191	233	45	95	240

Requirement: ESTABLISH ESV FOR KBNA RNAV SIDS

Signature: Osterhage Dennis	Routing Symbol: AJV-E2	Date: 03/22/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 703978-013	191	233	45	95	240	APPROVE

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST AND MIN ALT.

Signature: CHRISTEIN THOMAS	Routing Symbol:	Date: 03/29/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 703978-013	191	233	45	95	240	APPROVE

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST AND MIN ALT.

Signature: CHRISTEIN THOMAS	Routing Symbol:	Date: 03/29/2012

Expanded Service Volume Data: (FIFO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 703978-013	191	233				

Requirement/Remarks:

Signature:	Routing Symbol:	Date:

HGG RD

ESV Details

Originating Office :	Airspace Docket Number :	Request Type : Establish	
Facility Data			
Chart Name : CUNNINGHAM	City : PADUCAH	Ident : CNG	State : KY
Type/Class : TACR	Frequency : M1165	Reference No.: 12031169	

Expanded Service Volume Data: (Requesting Officer)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude
FAA 861945-007	87	105	70	80	240

Requirement: ESTABLISH ESV FOR KBNA RNAV SIDS

Signature: Osterhage Dennis	Routing Symbol: AJV-E2	Date: 03/22/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 861945-007	87	105	70	80	240	APPROVE

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Cassella Charles	Routing Symbol:	Date: 03/27/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 861945-007	87	105	70	80	240	APPROVE

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST AND MIN ALT.

Signature: CHRISTEIN THOMAS	Routing Symbol:	Date: 03/28/2012

Expanded Service Volume Data: (FIFO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 861945-007	87	105				

Requirement/Remarks:

Signature:	Routing Symbol:	Date:

HGGRD

ESV Details

Originating Office :	Airspace Docket Number :	Request Type : Establish	
Facility Data			
Chart Name : GRAHAM	City : GRAHAM	Ident : GHM	State : TN
Type/Class : TACR	Frequency : M1014	Reference No.: 12031170	

Expanded Service Volume Data: (Requesting Officer)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude
FAA 755483-012	350	4	58	70	240

Requirement: ESTABLISH ESV FOR KBNA RNAV SIDS

Signature: Osterhage Dennis | Routing Symbol: AJV-E2 | Date: 03/22/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 755483-012	350	4	58	120	240	RESTRICT

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSRESTRICTED MIN ALT 12,000 FEET DUE TO ADJ CHANNEL INTERFERENCE

Signature: Cassella Charles | Routing Symbol: | Date: 03/27/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 755483-012	350	4	58	120	240	RESTRICT

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSRESTRICTED MIN ALT 12,000 FEET DUE TO ADJ CHANNEL INTERFERENCE

Signature: Cassella Charles | Routing Symbol: | Date: 03/27/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 755483-012	350	4	58	70	240	RESTRICT

Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: CHRISTEIN THOMAS | Routing Symbol: | Date: 03/28/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 755483-012	350	4	58	70	240	RESTRICT

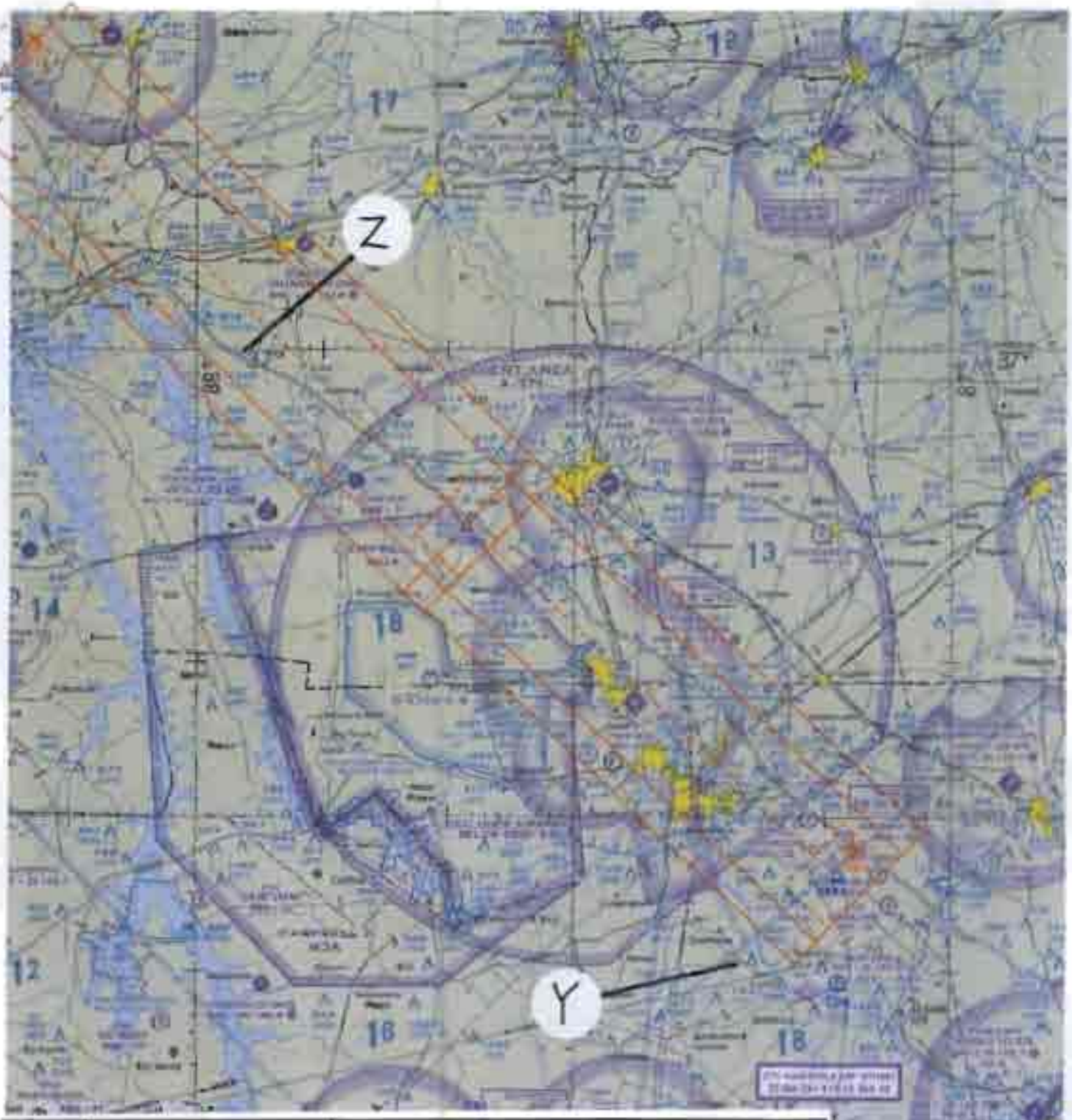
Requirement/Remarks: ESTABLISH ESV FOR KBNA RNAV SIDSAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: CHRISTEIN THOMAS | Routing Symbol: | Date: 03/28/2012

NM 9 18 27 36 45 54 63

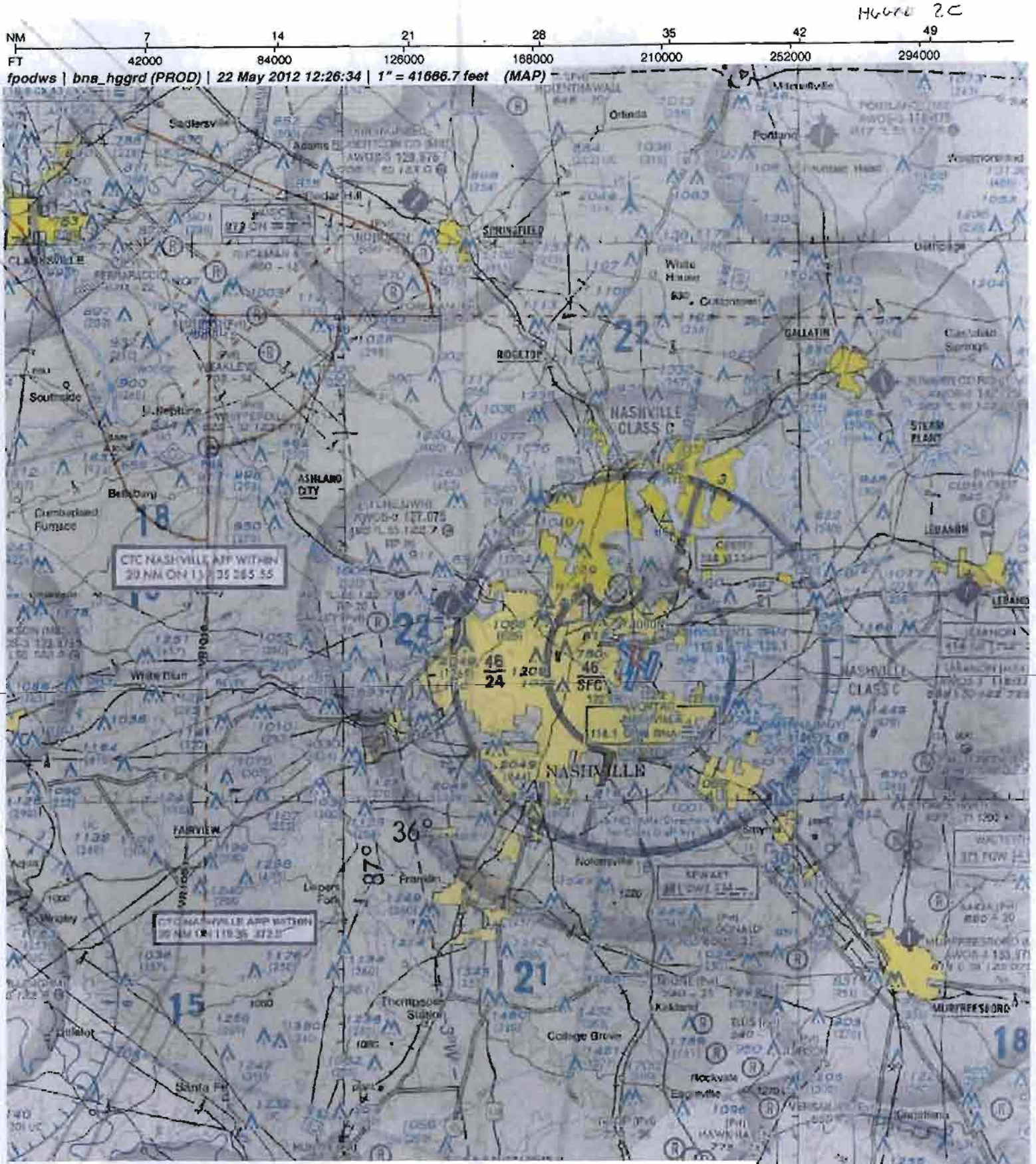
FT 56000 112000 168000 224000 280000 336000 392000

fpodws | bna_hggrd (PROD) | 22 May 2012 13:30:18 | 1" = 55666.7 feet (MAP)



Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL	Y	MERRL – HGGRD MOCA	TOWER	1637
State:	TENNESSEE	Z	HGGRD - TINGS MOCA	TOWER	1003
Proc ID:	HGGRD (RNAV)				
Audit #:	ONE				
Scale:	1: 500,000				

HGGRD 2C



Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL		RWY 02C PNA		ASC
State:	TENNESSEE				
Proc ID:	HGGRD (RNAV)				
Amdt #:	ONE				
Scale:	1: 500,000				

7.L

FT 42000 84000 126000 168000 210000 252000 294000

fpodwa | bna_hggrd (PROD) | 22 May 2012 12:30:23 | 1" = 41666.7 feet (MAP)

Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL		RWY 02L PNA		ASC
State:	TENNESSEE				
Proc ID:	HGGRD (RNAV)				
Amdt #:	ONE				
Scale:	1: 500,000				

Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL		RWY 02R PNA		ASC
State:	TENNESSEE				
Proc ID:	HGGRD (RNAV)				
Amdt #:	ONE				
Scale:	1: 500,000				

NM 7 14 21 29 35 42 49

FT 42000 84000 126000 168000 210000 252000 294000

fpoehre | bna_hggrd (PROD) | 22 May 2012-12:35:29 | 1" = 41666.7 feet (MAP)

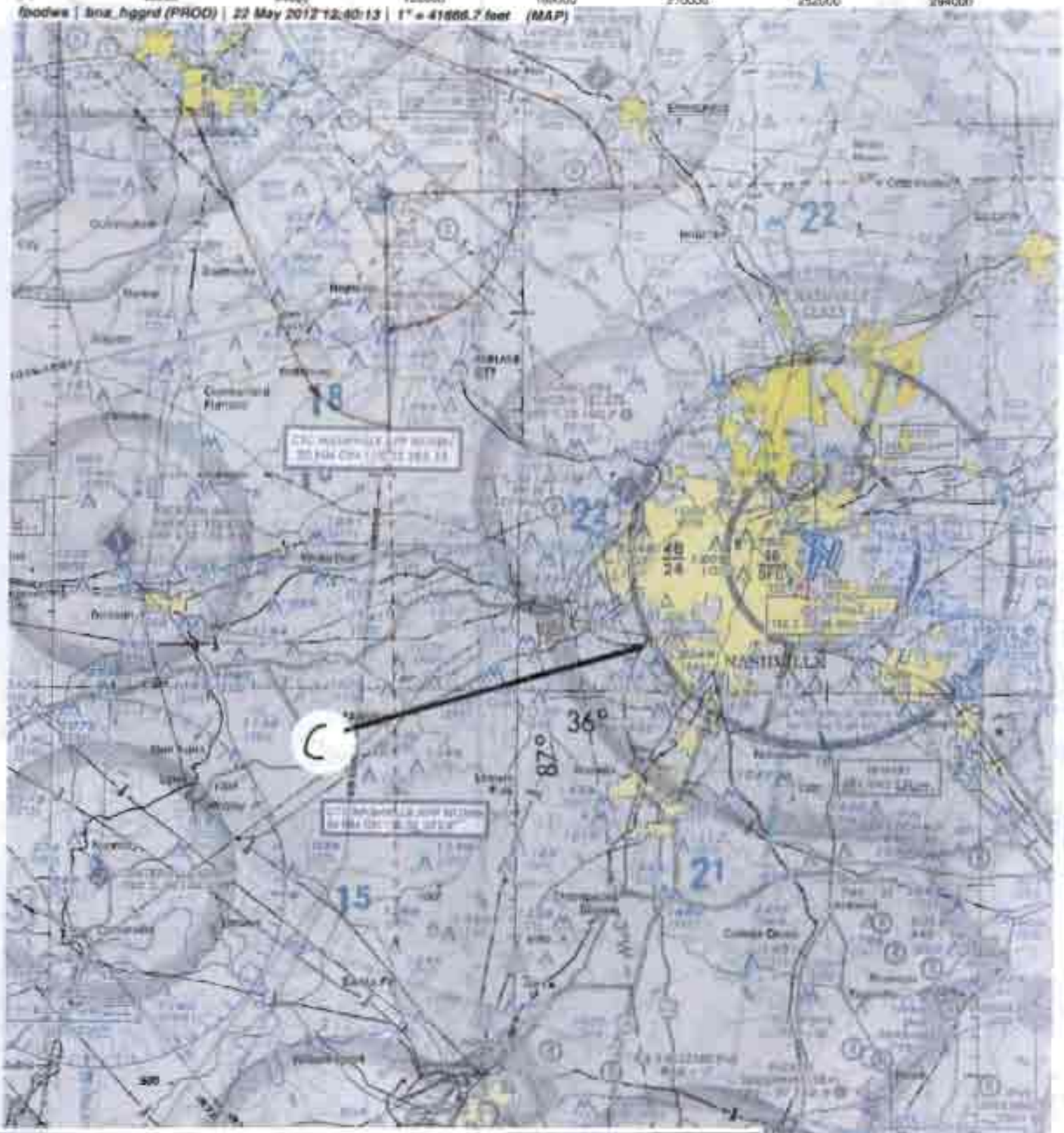
Airport ID	KBNA				
Apt Name	NASHVILLE INTL	No	SEGMENT	OBSTRUCTION	ELEV
City	NASHVILL		RWY 13 PNA		ASC
State	TENNESSEE				
Proc ID	HGGRD (RNAV)				
Amdt #	ONE				
Scale	1: 500,000				

20C

NM 0 7 14 21 28 35 42 49

FT 42000 84000 126000 168000 210000 252000 294000

fbodwa | bna_hggrd (PROD) | 22 May 2012 12:40:13 | 1" = 41666.7 feet (MAP)



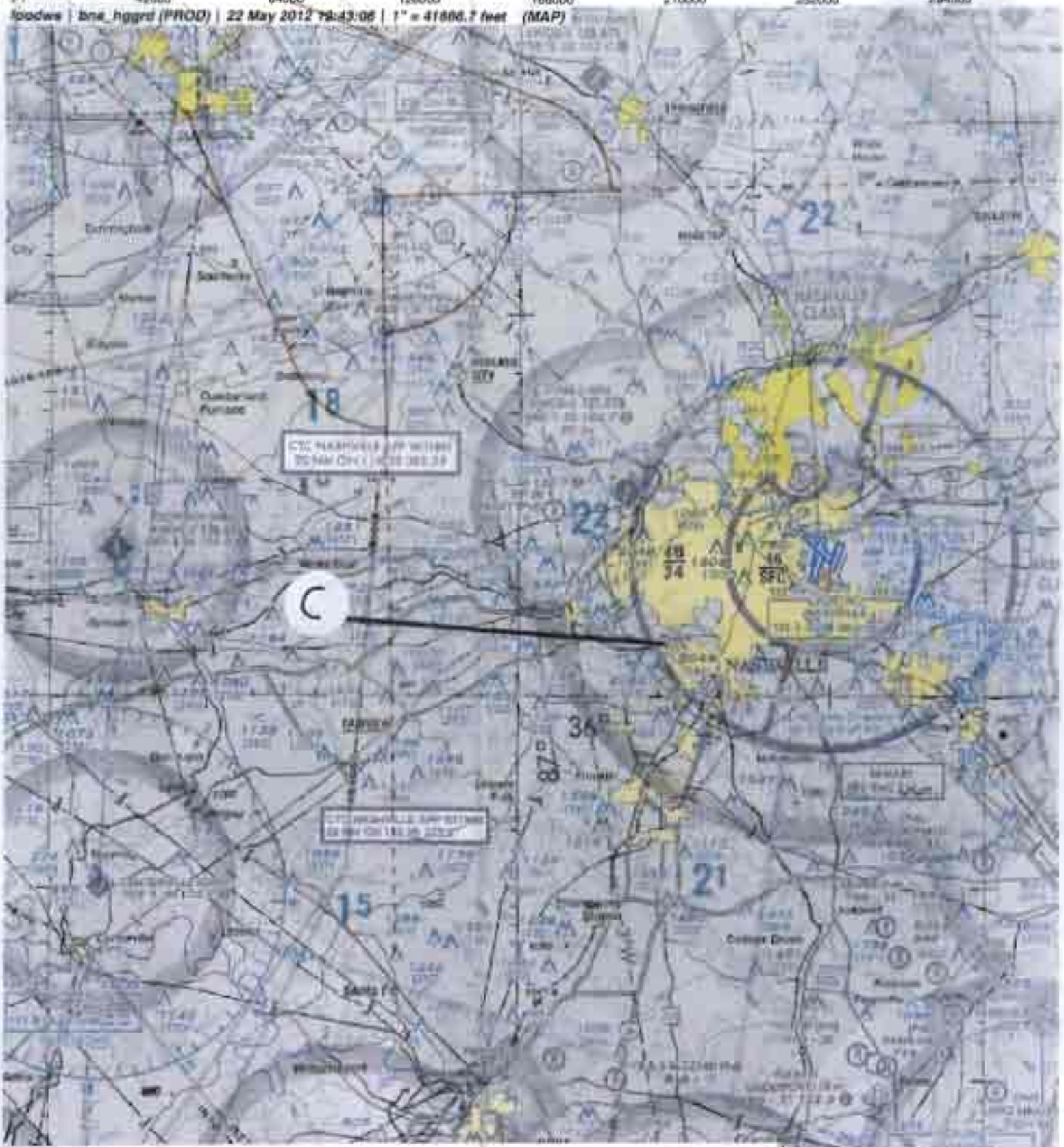
Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL	C	RWY 20C PEN	TOWER	2049
State:	TENNESSEE				
Proc ID:	HGGRD (RNAV)				
Amdt #:	ONE				
Scale:	1: 500,000				

RWY 20L

NM 7 14 21 28 35 42 49

FT 42000 84000 126000 168000 210000 252000 294000

tjoodws | bna_hggrd (PROD) | 22 May 2012 19:43:06 | 1" = 41666.7 feet (MAP)



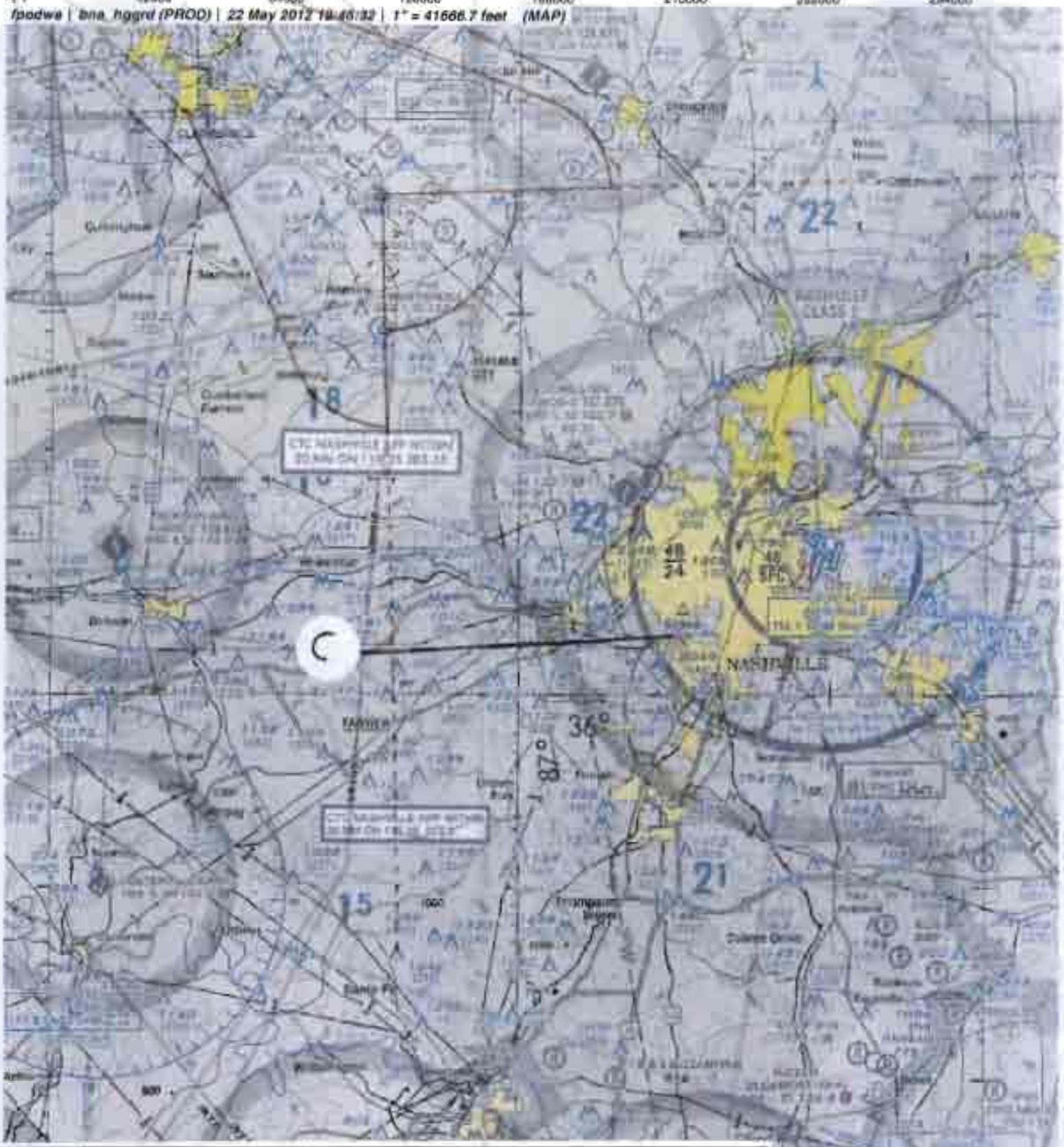
Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL	C	RWY 20L PEN	TOWER	2049
State:	TENNESSEE				
Proc ID:	HGGRD (RNAV)				
Amdt #:	ONE				
Scale:	1: 500,000				

RWY 20R

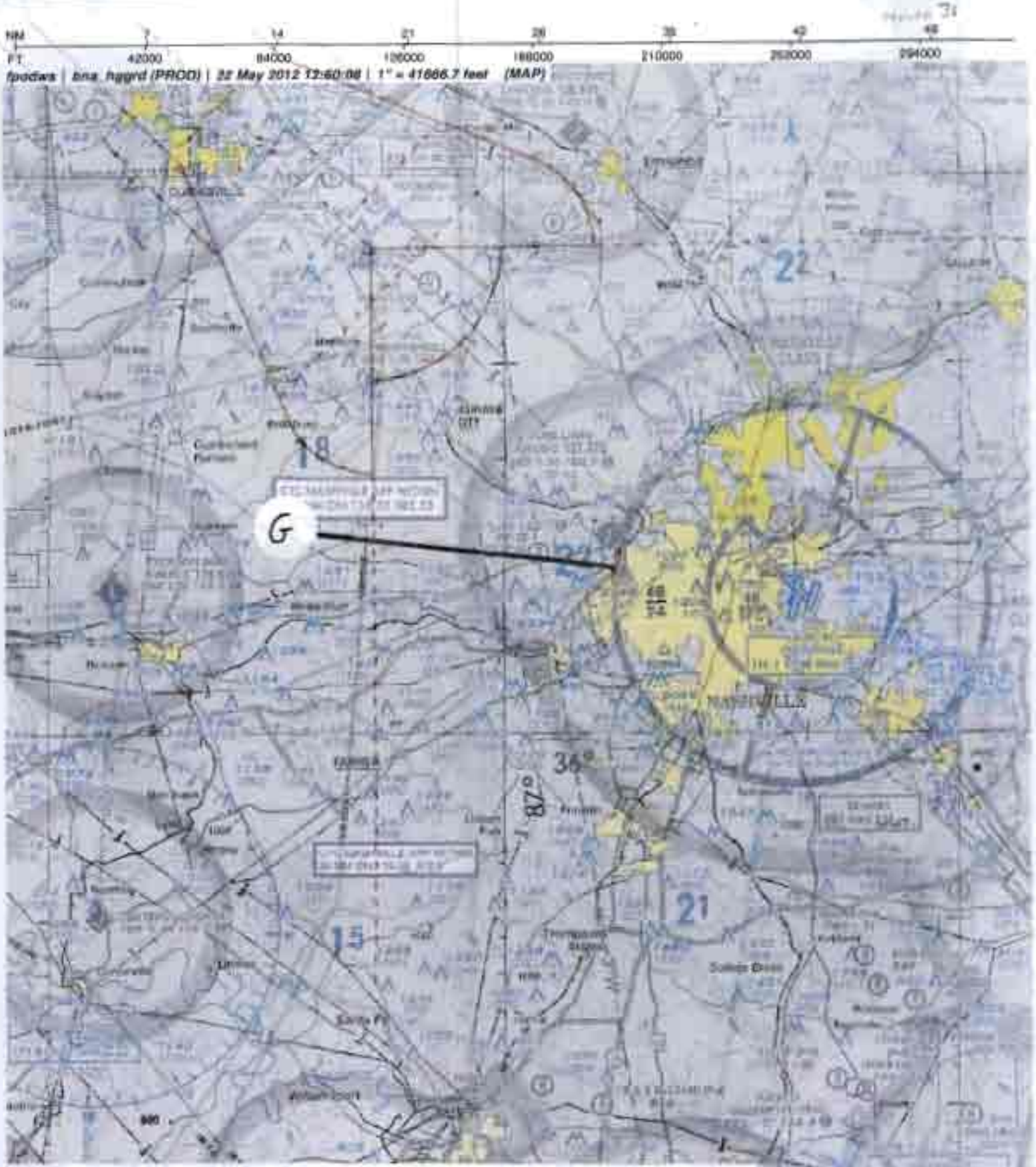
NM 7 14 21 28 35 42 49

FT 42000 84000 126000 168000 210000 252000 294000

fpodwe | bna_hggrd (PROD) | 22 May 2012 19:46:32 | 1" = 41666.7 feet (MAP)



Airport ID	KBNA				
Apt Name	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City	NASHVILL	C	RWY 20R PEN	TOWER	2049
State	TENNESSEE				
Proc ID	HGGRD (RNAV)				
Amdt #	ONE				
Scale	1: 500,000				

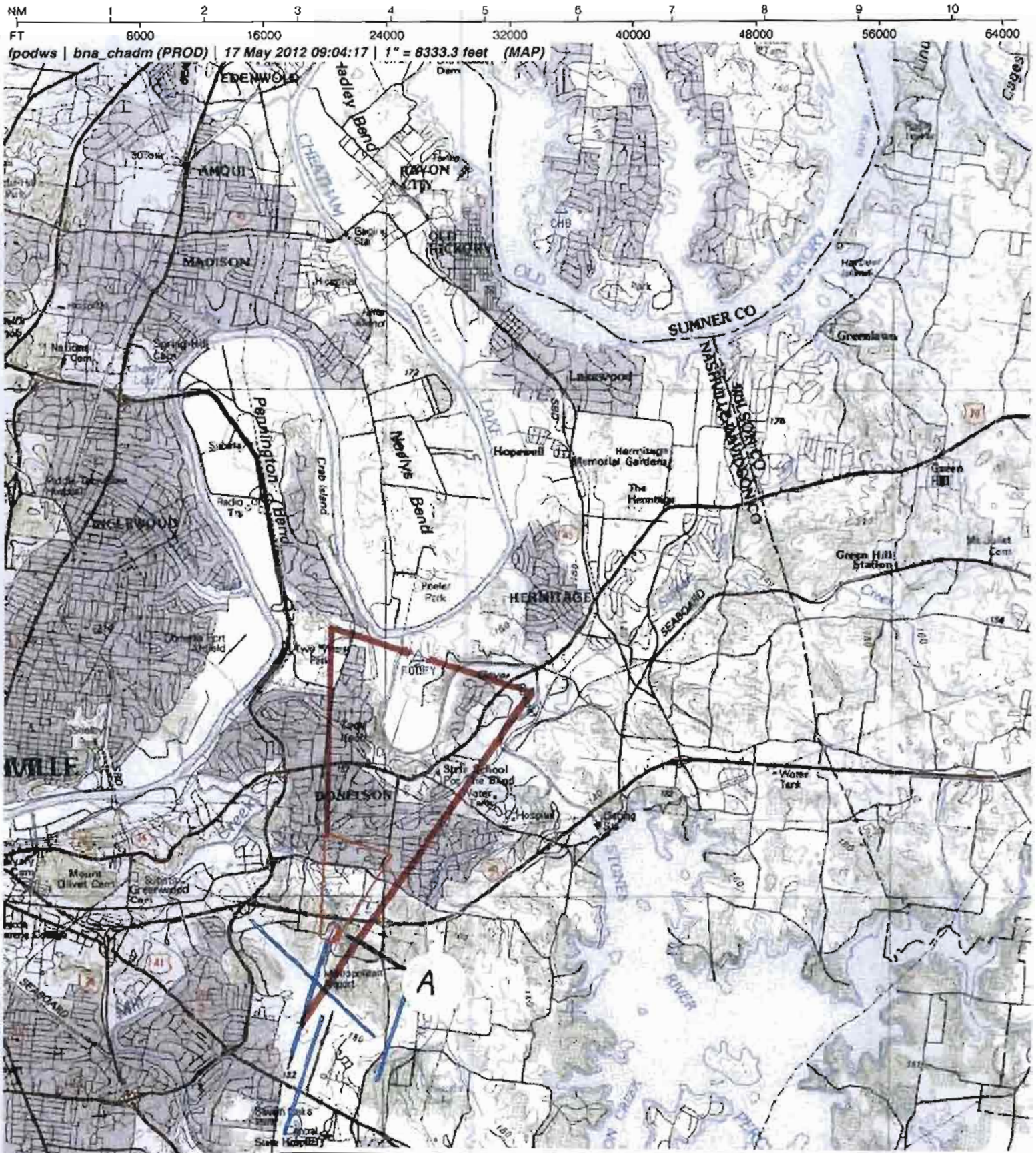


Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL	G	RWY 31 PEN	ANT	2049
State:	TENNESSEE				
Proc ID:	HGGRD (RNAV)				
Audit #:	ONE				
Scale:	1: 500,000				

Airport ID	KBNA
Apt Name	NASHVILLE INTL
City	NASHVILL
State	TENNESSEE
Proc ID	HGGRD (RNAV)
Amdt #	ONE
Scale	1: 100,000

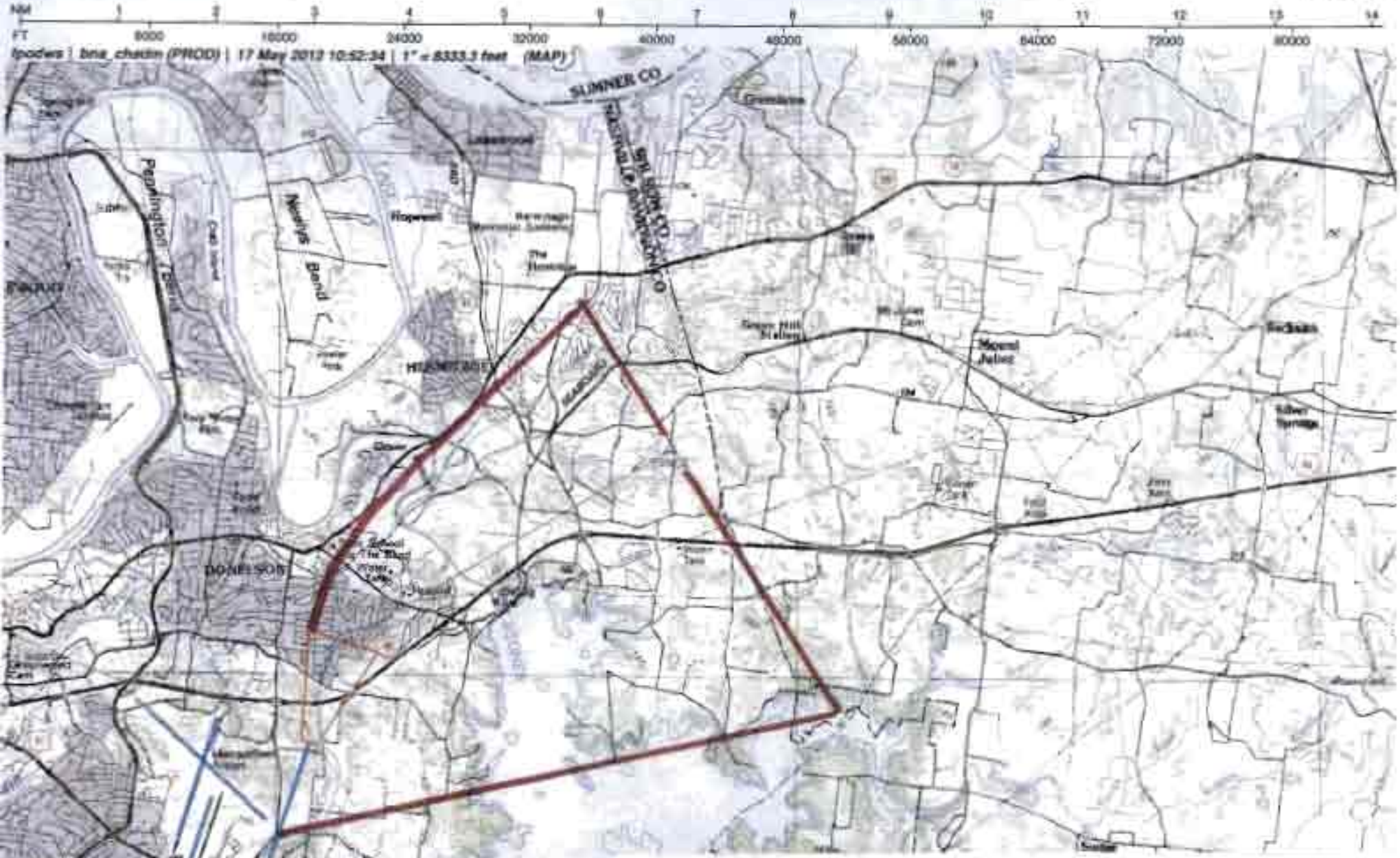
No.	SEGMENT	OBSTRUCTION	ELEV
	RWY 02C ICA		ASC

HGGRD 2C



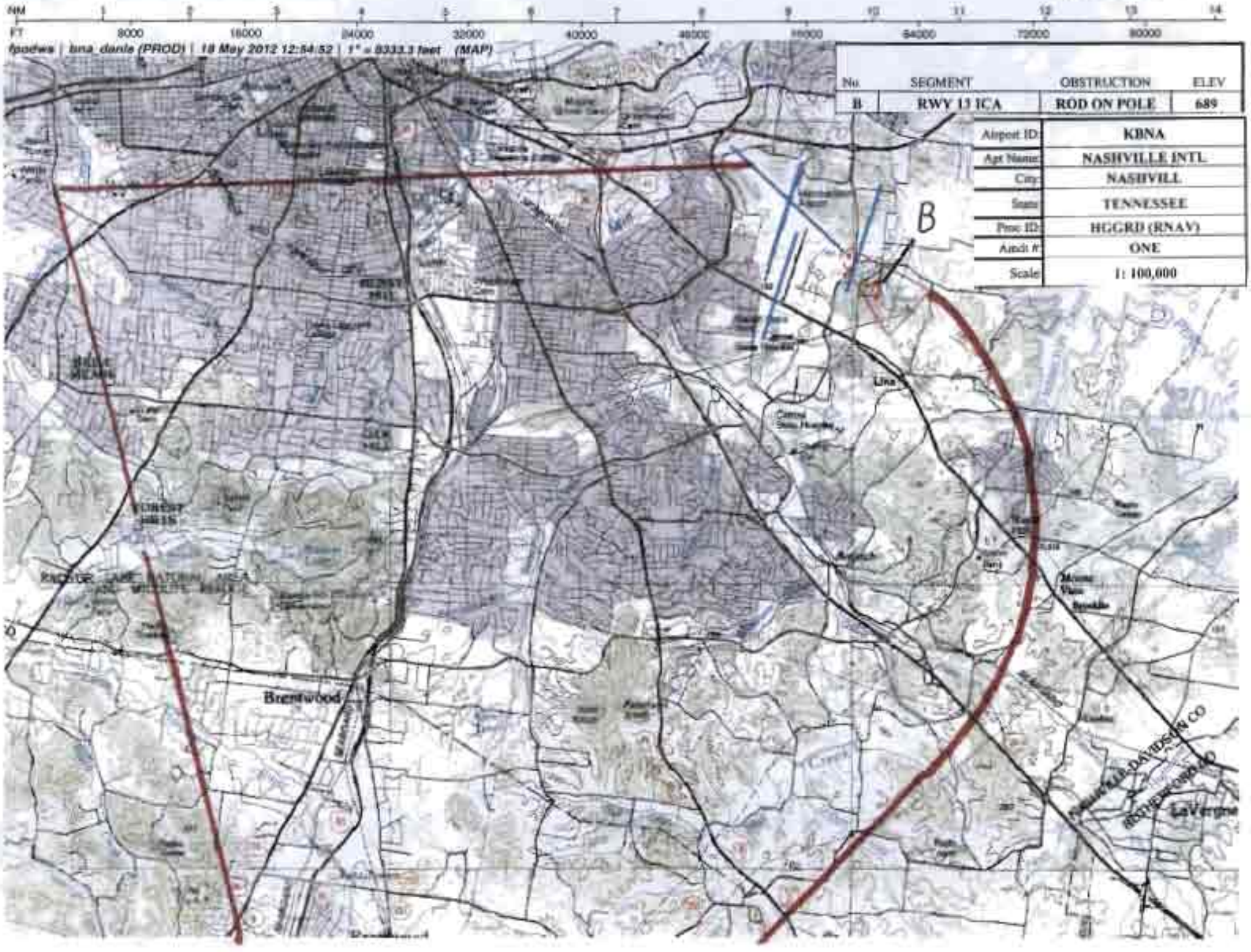
Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL	A	R02L ICA	TREE	576
State:	TENNESSEE				
Proc ID:	HGGRD (RNAV)				
Amdt #:	ONE				
Scale:	1: 100,000				

HGGRD 7F



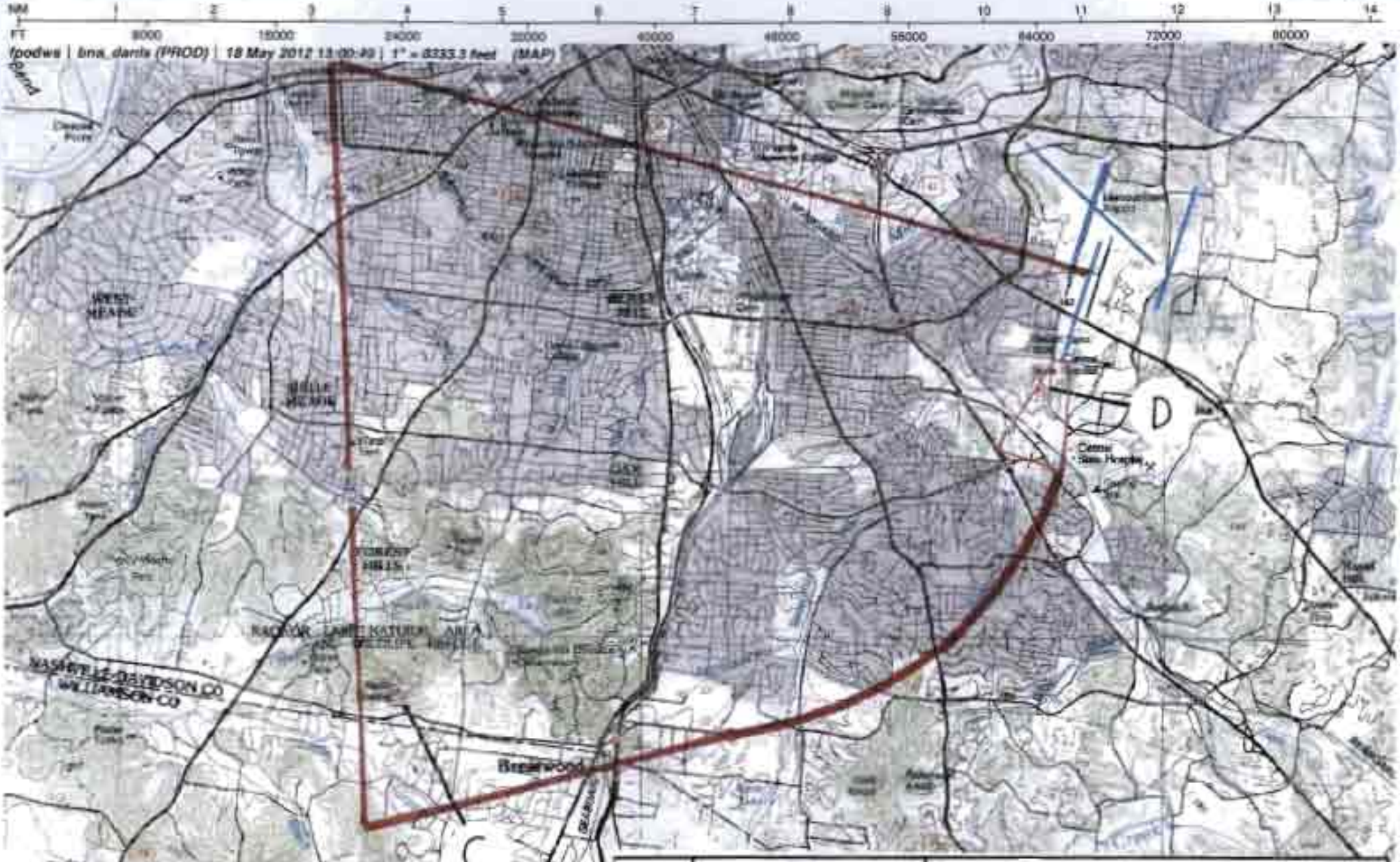
Airport ID:	KBNA
Apt Name:	NASHVILLE INTL
City:	NASHVILL
State:	TENNESSEE
Proc ID:	HGGRD (RNAV)
Amdt #:	ONE
Scale:	1: 100,000

No.	SEGMENT	OBSTRUCTION	ELEV
	RWY 02R ICA		ASC



No.	SEGMENT	OBSTRUCTION	ELEV
B	RWY 13 ICA	ROD ON POLE	689

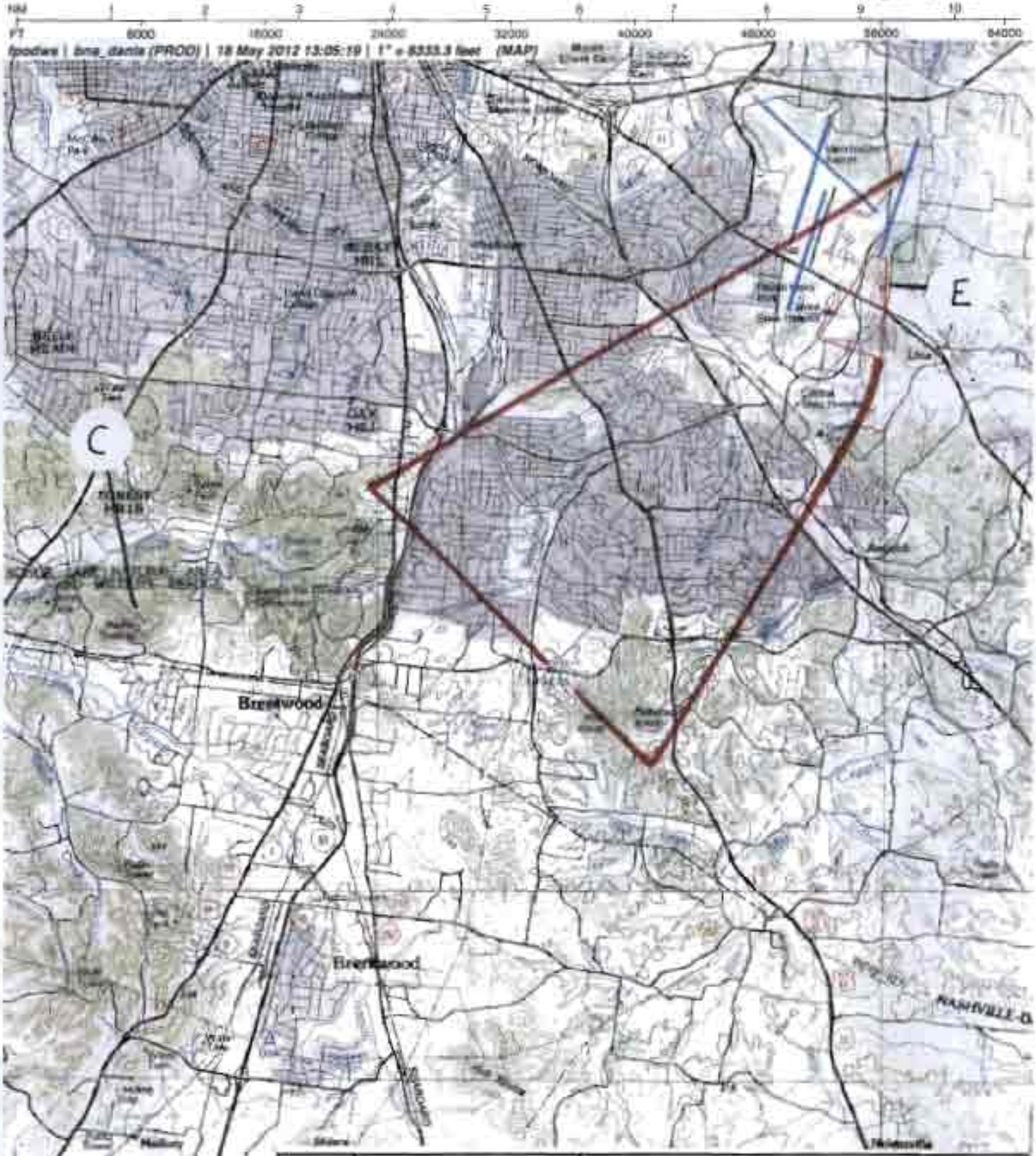
Airport ID:	KBNA
Apt Name:	NASHVILLE INTL
City:	NASHVILL
State:	TENNESSEE
Proc ID:	HGGRD (RNAV)
Amdt #:	ONE
Scale:	1: 100,000



Airport ID:	KBNA
Apt Name:	NASHVILLE INTL
City:	NASHVILL
State:	TENNESSEE
Proc ID:	HGGRD (RNAV)
Attch #:	ONE
Scale:	1: 100,000

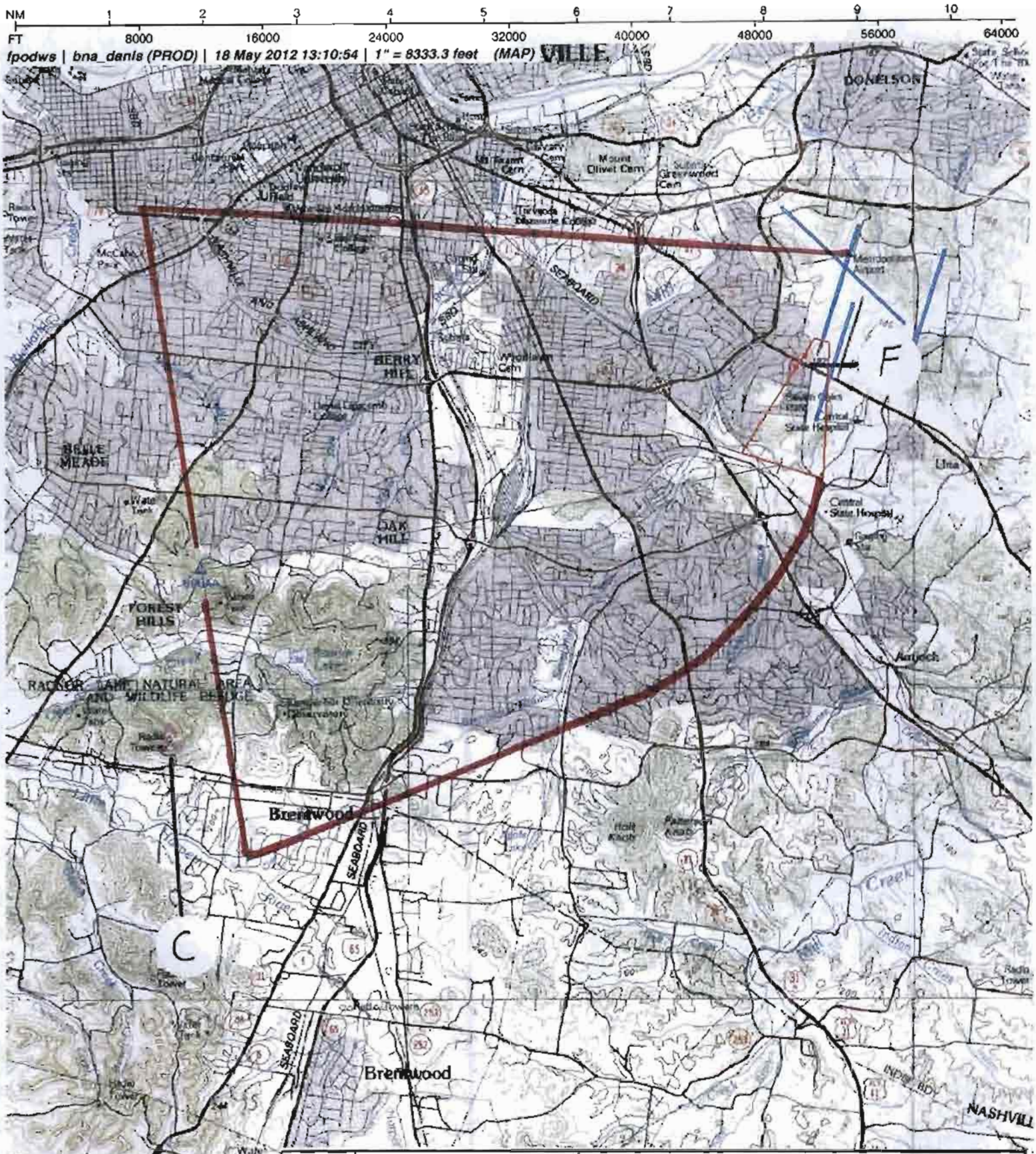
No.	SEGMENT	OBSTRUCTION	ELEV
D	RWY 20C ICA	TREE	623
C	RWY 20C PEN	TOWER	2049

HGGRD 20L
LNAV/VNAV



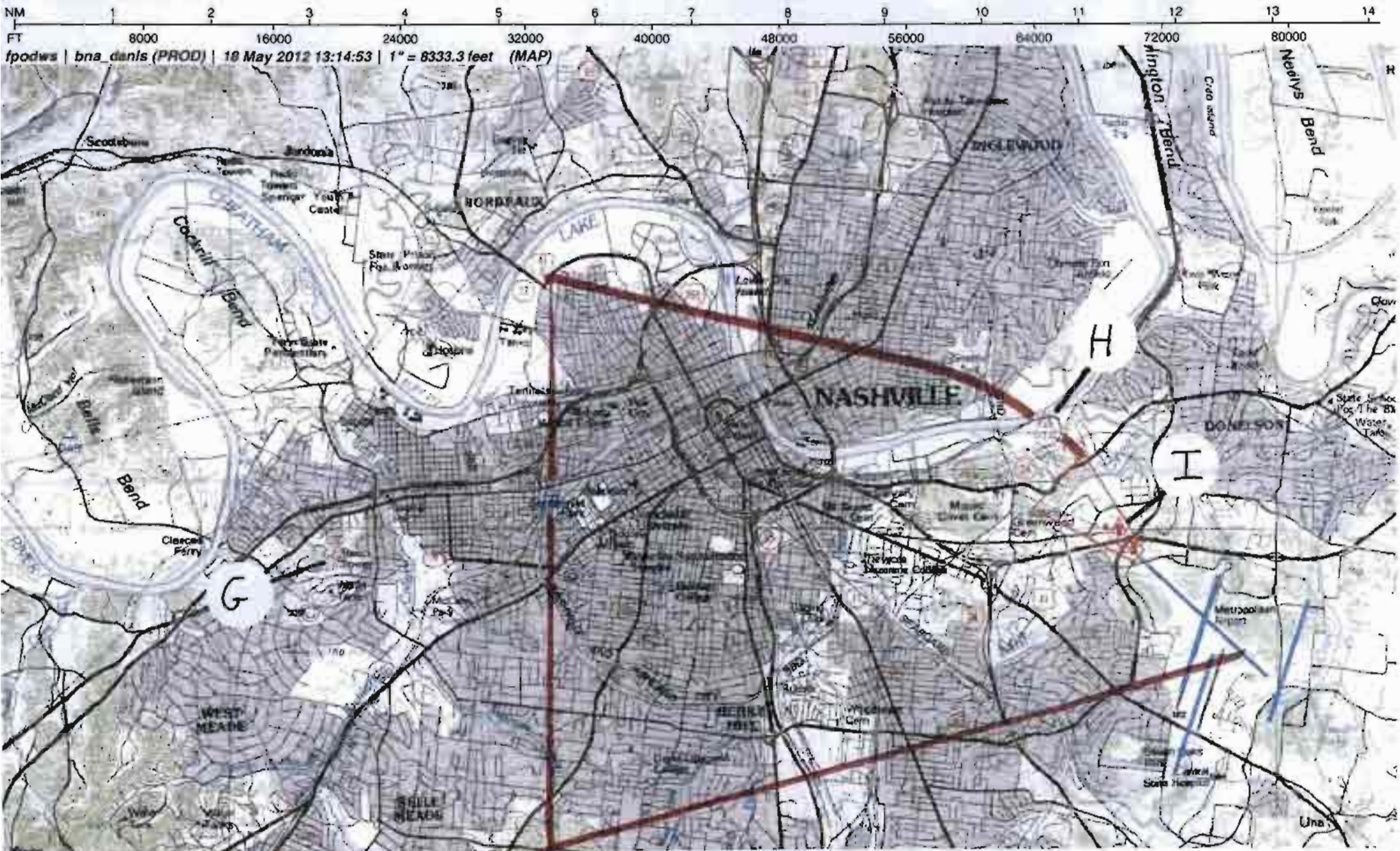
Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL	E	RWY 20L ICA	TREE	639
State:	TENNESSEE	C	RWY 20L PEN	TOWER	2049
Proc ID:	HGGRD (RNAV)				
Amdt #:	ONE				
Scale:	1: 100,000				

HGGRD 20R



Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL	F	RWY 20R ICA	BLDG	680
State	TENNESSEE	C	RWY 20R PEN	TOWER	2049
Proc ID:	HGGRD (RNAV)				
Amdt #.	ONE				
Scale:	1: 100,000				

HGGRD 31



Airport ID:	KBNA				
Apt Name:	NASHVILLE INTL	No.	SEGMENT	OBSTRUCTION	ELEV
City:	NASHVILL	H	RWY 31 PEN	TOWER	816
State:	TENNESSEE	I	RWY 31 ICA	T-L TWR	610
Proc ID:	HGGRD (RNAV)	G	RWY 31 PEN	ANT	2049
Amdt #:	ONE				
Scale:	1: 100,000				

U.S. DEPARTMENT of TRANSPORTATION – FEDERAL AVIATION ADMINISTRATION

GRAPHIC DEPARTURE PROCEDURE (DP)

Bearings, headings, courses, tracks, and radials are magnetic. Elevation and altitudes are in feet MSL. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles. Visibilities are in statue miles or feet RVR unless otherwise indicated. Graphic depictions attached.

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD (RNAV)	ONE	HGGRD1.HGGRD	NONE		

TYPE: RNAV SID

DP ROUTE DESCRIPTION:

TAKEOFF RWY 02C: CLIMB HEADING 020.98 TO 1100, THEN DIRECT JOOON, THEN ON HEADING 015.00 THENCE...
TAKEOFF RWY 02L: CLIMB HEADING 020.65 TO 1100, THEN DIRECT FOOFY, THEN ON HEADING 020.65 THENCE...
TAKEOFF RWY 02R: CLIMB HEADING 020.99 TO 1100, THEN RIGHT TURN DIRECT KDNCE, THEN ON HEADING 055.00 THENCE...
TAKEOFF RWY 13: CLIMB HEADING 136.30 TO 1100, THEN RIGHT TURN DIRECT KLSTR, THEN ON HEADING 260.00 THENCE...
TAKEOFF RWY 20C: CLIMB HEADING 200.99 TO 1100, THEN RIGHT TURN DIRECT MIJOM, THEN ON HEADING 275.00 THENCE...
TAKEOFF RWY 20L: CLIMB HEADING 201.00 TO 1100, THEN RIGHT TURN DIRECT PWERS, THEN ON HEADING 220.00 THENCE...
TAKEOFF RWY 20R: CLIMB HEADING 200.65 TO 1300, THEN RIGHT TURN DIRECT BOGAA, THEN ON HEADING 260.00 THENCE...
TAKEOFF RWY 31: CLIMB HEADING 316.32 TO 1100, THEN LEFT TURN DIRECT YAHYA, THEN ON HEADING 280.00 THENCE...

...EXPECT RADAR VECTORS TO MERRL, THEN ON TRACK 316.76 TO HGGRD (MEA 12600/MOCA 2700), MAINTAIN 4000. EXPECT CLEARANCE TO FILED ALTITUDE WITHIN 5 MINUTES AFTER DEPARTURE.

TRANSITION ROUTES (GRAPHIC DEPICTION ONLY):

Transition Name	Transition Computer Codes	From FIX/NAVAID	To FIX/NAVAID	Course	Distance	MEA	MOCA	Crossing Altitudes/Fixes
TINGS	HGGRD1.TINGS	HGGRD	TINGS	317.81	41.67	18000	2100	

PROCEDURAL DATA NOTES/TAKEOFF MINIMUMS:

NOTE: TRANSPONDER CODE WILL BE ISSUED VIA PDC OR NASHVILLE CLEARANCE DELIVERY.
NOTE: IF UNABLE TO ACCEPT CLIMB RATES, ADVISE ATC ON INITIAL CONTACT.
NOTE: RNAV-1.
NOTE: DME/DME/IRU OR GPS REQUIRED.
NOTE: RADAR REQUIRED.

TAKEOFF MINIMUMS:
RWY 02C, 02L, 02R, 13, 20L, 31, STANDARD WITH MINIMUM CLIMB OF 500 FT PER NM TO 1100.
RWY 20C, 20R, STANDARD WITH MINIMUM CLIMB OF 500 FT PER NM TO 1300.

TAKEOFF OBSTACLES NOTES:

RWY 02L, TREES BEGINNING 203 FT FROM DER, 489 FT RIGHT OF CENTERLINE, UP TO 60 FT AGL/576 FT MSL.
RWY 13, BLAST FENCE OBSTRUCTION LIGHT 335 FT FROM DER, 64 FT LEFT OF CENTERLINE, 6 FT AGL/595 FT MSL. TREES BEGINNING 2852 FT FROM DER, 28 FT RIGHT OF CENTERLINE, UP TO 60 FT AGL/685 FT MSL. POLE 3761 FT FROM DER, 726 FT RIGHT OF CENTERLINE, 60 FT AGL/689 FT MSL.
RWY 20C, TREES BEGINNING 2089 FT FROM DER, 934 FT RIGHT OF CENTERLINE, UP TO 60 FT AGL/623 FT MSL.
RWY 20L, TREES BEGINNING 1844 FT FROM DER, 720 LEFT OF CENTERLINE, UP TO 60 FT AGL/639 FT MSL.
RWY 20R, FLAGPOLE 1298 FT FROM DER, 777 FT RIGHT OF CENTERLINE, 37 FT AGL/636 FT MSL. BLDG 2183 FT FROM DER, 1083 FT RIGHT OF CENTERLINE, 91 FT AGL/680 FT MSL.

GRAPHIC DEPARTURE PROCEDURE (DP)

Bearings, headings, courses, tracks, and radials are magnetic. Elevation and altitudes are in feet MSL. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles. Visibilities are in statue miles or feet RVR unless otherwise indicated. Graphic depictions attached.

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD (RNAV)	ONE	HGGRD1.HGGRD	NONE		

RWY 31, GROUND 2 FT FROM DER, 498 FT LEFT OF CENTERLINE, 541 FT MSL. LOC OBSTRUCTION LIGHT 303 FT FROM DER, ON CENTERLINE, 48 FT AGL/547 FT MSL. BLAST FENCE OBSTRUCTION LIGHT 382 FT FROM DER, 50 FT LEFT OF CENTERLINE, 30 FT AGL/569 FT MSL. TREES BEGINNING 789 FT FROM DER, 331 FT RIGHT OF CENTERLINE, UP TO 60 FT AGL/602 FT MSL. POLE 1012 FT FROM DER, 429 FT LEFT OF CENTERLINE, 29 FT AGL/578 FT MSL. TRANSMISSION TOWER 1882 FT FROM DER, 219 FT RIGHT OF CENTERLINE, 61 FT AGL/610 FT MSL. POLE 2037 FT FROM DER, 422 FT RIGHT OF CENTERLINE, 47 FT AGL/596 FT MSL. TRANSMISSION TOWER 2778 FT FROM DER, 83 FT LEFT OF CENTERLINE, 91 FT AGL/630 FT MSL.

CONTROLLING OBSTACLES:

RWY 31, 816 FT MSL TOWER (47-000499) 360949.00N/0864254.00W.

OBSTACLES MANDATING ODP ROUTE DEVELOPMENT: RWY 20C, RWY 20L, RWY 20R – 2049 FT MSL TOWER (47-002263) 360250.42N/0864948.93W. RWY 31 – 2049 FT MSL ANT (KJWNT0151) 360827.45N/0865156.48W,

LOST COMMUNICATIONS PROCEDURES:

ADDITIONAL FLIGHT DATA:

REFERENCE MAG VAR: KBNA 3W EPOCH YEAR: 2010.
DME/DME ASSESSMENT: SAT (RNP 2.0).

CHART R-3702A/B.

PILOT NAVIGATION AREA:
7NM ARC CENTERED ON MERRL (IF), CW
FROM: POINT A (BEARING 271.76 TO MERRL)
TO: POINT B (BEARING 001.76 TO MERRL)
MINIMUM ALTITUDE - 6000

AIRPORTS SERVED:

NASHVILLE INTL – NASHVILLE, TN.

COMMUNICATIONS:

ATIS CLEARANCE DELIVERY, GROUND CONTROL, TOWER, DEPARTURE CONTROL.

FIXES AND/OR NAVAIDS:

U.S. DEPARTMENT of TRANSPORTATION – FEDERAL AVIATION ADMINISTRATION

GRAPHIC DEPARTURE PROCEDURE (DP)

Bearings, headings, courses, tracks, and radials are magnetic. Elevation and altitudes are in feet MSL. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles. Visibilities are in statue miles or feet RVR unless otherwise indicated. Graphic depictions attached.

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD (RNAV)	ONE	HGGRD1.HGGRD	NONE		

REMARKS:

FLIGHT INSPECTED BY:

Thomas Page 8/23/12

REQUIRED EFFECTIVE DATE:

ROUTINE

DEVELOPED BY:

DAVID SAUER AJV-352 5/22/12

APPROVED BY:

DARRYEL ADAMS AJV-352

COORDINATED WITH:

ALPA, AOPA, ATA, NBAA, ZME, ZID, BNA ATCT, BNA APP CON, BNA AMGR.

CHANGES:

REASONS:

8/3/12: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 5/22/12.

1. CHANGED DP ROUTE DESCRIPTION ALTITUDES FROM "...TURBOJETS MAINTAIN 4000, PROPELLER AIRCRAFT MAINTAIN 3000" TO "...TURBOJETS MAINTAIN 5000, PROPELLER AIRCRAFT MAINTAIN 4000"

8/28/12: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 5/22/12.

1. CHANGED DP ROUTE DESCRIPTION ALTITUDES FROM "...TURBOJETS MAINTAIN 5000, PROPELLER AIRCRAFT MAINTAIN 4000" TO "MAINTAIN 4000".

DEPARTURE (DATA RECORD)

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD RNAV	ONE	HGGRD1.HGGRD	NONE		

FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
RW02C (AER)	360611.99N/0864116.66W	N	-	-	-	-			
1100 MSL	-	-	-	VA	017.98	-			CG 500 FT/NM TO 1100
JOOON	361030.30N/0863950.22W	Y	FO	DF	-	-			
	-	-	-	VM	012.00	-			
MERRL	362610.73N/0870845.83W	Y	FB	DF	-	-			
HGGRD	364852.31N/0873818.79W	Y	FB	TF	313.76	32.85			
RW02L (AER)	360703.64N/0864111.31W	N	-	-	-	-			
1100 MSL	-	-	-	VA	017.65	-			CG 500 FT/NM TO 1100
FOOFY	361120.01N/0863930.71W	Y	FO	DF	-	-			
	-	-	-	VM	017.65	-			
MERRL	362610.73N/0870845.83W	Y	FB	DF	-	-			
HGGRD	364852.31N/0873818.79W	Y	FB	TF	313.76	32.85			
RW02R (AER)	360645.77N/0864003.52W	N	-	-	-	-			
1100 MSL	-	-	-	VA	017.99	-			CG 500 FT/NM TO 1100
KDNCE	361107.30N/0863455.24W	Y	FO	DF	-	-			RIGHT TURN
	-	-	-	VM	052.00	-			
MERRL	362610.73N/0870845.83W	Y	FB	DF	-	-			
HGGRD	364852.31N/0873818.79W	Y	FB	TF	313.76	32.85			

QUALITY 3 CHECKED

DEPARTURE (DATA RECORD)

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD RNAV	ONE	HGGRD1.HGGRD	NONE		

FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
RW13 (AER)*	360823.16N/0864136.17W*	N	-	-	-	-			*DISPL THLD (801 FT)
1100 MSL	-	-	-	VA	133.30	-			CG 500 FT/NM TO 1100
KLSTR	360401.80N/0865016.36W	Y	FO	DF	-	-			RIGHT TURN
	-	-	-	VM	257.00	-			
MERRL	362610.73N/0870845.83W	Y	FB	DF	-	-			
HGGRD	364852.31N/0873818.79W	Y	FB	TF	313.76	32.85			
RW20C (AER)	360727.24N/0864046.55W	N	-	-	-	-			
1100 MSL	-	-	-	VA	197.99	-			CG 500 FT/NM TO 1300
MIJOM	360456.58N/0865023.82W	Y	FO	DF	-	-			RIGHT TURN
	-	-	-	VM	272.00	-			
MERRL	362610.73N/0870845.83W	Y	FB	DF	-	-			
HGGRD	364852.31N/0873818.79W	Y	FB	TF	313.76	32.85			
RW20L (AER)	360801.01N/0863933.40W	N	-	-	-	-			
1100 MSL	-	-	-	VA	198.00	-			CG 500 FT/NM TO 1100
PWERS	360224.47N/0864421.88W	Y	FO	DF	-	-			RIGHT TURN
	-	-	-	VM	217.00	-			
MERRL	362610.73N/0870845.83W	Y	FB	DF	-	-			
HGGRD	364852.31N/0873818.79W	Y	FB	TF	313.76	32.85			

QUALITY 3 CHECKED

DEPARTURE (DATA RECORD)

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD RNAV	ONE	HGGRD1.HGGRD	NONE		

FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE	SPEED	REMARKS
RW20R (AER)	360816.23N/0864042.84W	N	-	-	-	-			
1300 MSL	-	-	-	VA	197.65	-			CG 500 FT/NM TO 1300
BOGAA	360440.70N/0864923.38W	Y	FO	DF	-	-			RIGHT TURN
	-	-	-	VM	257.00	-			
MERRL	362610.73N/0870845.83W	Y	FB	DF	-	-			
HGGRD	364852.31N/0873818.79W	Y	FB	TF	313.76	32.85			
RW31 (AER)*	360718.81N/0864012.01W*	N	-	-	-	-			*DISPL THLD (741 FT)
1100 MSL	-	-	-	VA	313.32	-			CG 500 FT/NM TO 1100
YAHYA	360910.44N/0864911.86W	Y	FO	DF	-	-			LEFT TURN
	-	-	-	VM	277.00	-			
MERRL	362610.73N/0870845.83W	Y	FB	DF	-	-			
HGGRD	364852.31N/0873818.79W	Y	FB	TF	313.76	32.85			
HGGRD	364852.31N/0873818.79W	Y	-	IF	-	-			HGGRD1.TINGS
TINGS	371810.87N/0881522.30W	Y	FB	TF	314.81	41.67			

QUALITY 3 CHECKED

DEPARTURE (DATA RECORD)

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD RNAV	ONE	HGGRD1.HGGRD	NONE		

ARINC PACKET - 424-18 - SID

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                 1         2         3         4         5         6         7         8         9         0         1         2         3
WP      123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAEAENRT   BOGAA K70    W     N36044070W086492338                      W0033     NAR           BOGAA
        SUSAEAENRT   FOOFY K70    W     N36112001W086393071                      W0035     NAR           FOOFY
        SUSAEAENRT   HGGRD K50    W     N36485231W087381879                      W0028     NAR           HGGRD
        SUSAEAENRT   JOOON K70    W     N36103030W086395022                      W0035     NAR           JOOON
        SUSAEAENRT   KDNCE K70    W     N36110730W086345524                      W0035     NAR           KDNCE
        SUSAEAENRT   KLSTR K70    W     N36040180W086501636                      W0033     NAR           KLSTR
        SUSAEAENRT   MERRL K70    W     N36261073W087084583                      W0031     NAR           MERRL
        SUSAEAENRT   MIJOM K70    W     N36045658W086502382                      W0033     NAR           MIJOM
        SUSAEAENRT   PWERS K70    W     N36022447W086442188                      W0034     NAR           PWERS
        SUSAEAENRT   TINGS K50    C   H N37181087W088152230                      W0024     NAR           TINGS
        SUSAEAENRT   YAHYA K70    W     N36091044W086491186                      W0033     NAR           YAHYA

                 1         2         3         4         5         6         7         8         9         0         1         2         3
AIRPORT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KBNAK7ABNA     0     110YHN36072810W086404150W003000599         1800018000C    MNAR    NASHVILLE INTL

                 1         2         3         4         5         6         7         8         9         0         1         2         3
SEGMENT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KBNAK7DHGGRD14RW02C 010         0        VA                       0210        + 01100     18000
        SUSAP KBNAK7DHGGRD14RW02C 020JOOONK7EA0EY   010DF
        SUSAP KBNAK7DHGGRD14RW02C 030         0        VM                       0150
        SUSAP KBNAK7DHGGRD14RW02C 040MERRLK7EA0E    010DF
        SUSAP KBNAK7DHGGRD14RW02C 050HGGRDK5EA0EE   010TF                       31680329
        SUSAP KBNAK7DHGGRD14RW02L 010         0        VA                       0207        + 01100     18000
        SUSAP KBNAK7DHGGRD14RW02L 020FOOFYK7EA0EY   010DF
        SUSAP KBNAK7DHGGRD14RW02L 030         0        VM                       0207
        SUSAP KBNAK7DHGGRD14RW02L 040MERRLK7EA0E    010DF
        SUSAP KBNAK7DHGGRD14RW02L 050HGGRDK5EA0EE   010TF                       31680329
        SUSAP KBNAK7DHGGRD14RW02R 010         0        VA                       0210        + 01100     18000
        SUSAP KBNAK7DHGGRD14RW02R 020KDNCEK7EA0EY   010DF
        SUSAP KBNAK7DHGGRD14RW02R 030         0        VM                       0550
        SUSAP KBNAK7DHGGRD14RW02R 040MERRLK7EA0E    010DF
        SUSAP KBNAK7DHGGRD14RW02R 050HGGRDK5EA0EE   010TF                       31680329
        SUSAP KBNAK7DHGGRD14RW13  010         0        VA                       1363        + 01100     18000
        SUSAP KBNAK7DHGGRD14RW13  020KLSTRK7EA0EY  R010DF
        SUSAP KBNAK7DHGGRD14RW13  030         0        VM                       2600
        SUSAP KBNAK7DHGGRD14RW13  040MERRLK7EA0E    010DF
        SUSAP KBNAK7DHGGRD14RW13  050HGGRDK5EA0EE   010TF                       31680329
        SUSAP KBNAK7DHGGRD14RW20C 010         0        VA                       2010        + 01100     18000
```

DEPARTURE (DATA RECORD)

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD RNAV	ONE	HGGRD1.HGGRD	NONE		

```
SUSAP KBNAK7DHGGRD14RW20C 020MIJOMK7EA0EY   010DF
SUSAP KBNAK7DHGGRD14RW20C 030         0       VM                    2750
SUSAP KBNAK7DHGGRD14RW20C 040MERRLK7EA0E    010DF
SUSAP KBNAK7DHGGRD14RW20C 050HGGRDK5EA0EE   010TF                    31680329
SUSAP KBNAK7DHGGRD14RW20L 010         0       VA                    2010        + 01100     18000
SUSAP KBNAK7DHGGRD14RW20L 020PWERSK7EA0EY   010DF
SUSAP KBNAK7DHGGRD14RW20L 030         0       VM                    2200
SUSAP KBNAK7DHGGRD14RW20L 040MERRLK7EA0E    010DF
SUSAP KBNAK7DHGGRD14RW20L 050HGGRDK5EA0EE   010TF                    31680329
SUSAP KBNAK7DHGGRD14RW20R 010         0       VA                    2007        + 01300     18000
SUSAP KBNAK7DHGGRD14RW20R 020BOGAAK7EA0EY   010DF
SUSAP KBNAK7DHGGRD14RW20R 030         0       VM                    2600
SUSAP KBNAK7DHGGRD14RW20R 040MERRLK7EA0E    010DF
SUSAP KBNAK7DHGGRD14RW20R 050HGGRDK5EA0EE   010TF                    31680329
SUSAP KBNAK7DHGGRD14RW31  010         0       VA                    3163        + 01100     18000
SUSAP KBNAK7DHGGRD14RW31  020YAHYAK7EA0EY   010DF
SUSAP KBNAK7DHGGRD14RW31  030         0       VM                    2800
SUSAP KBNAK7DHGGRD14RW31  040MERRLK7EA0E    010DF
SUSAP KBNAK7DHGGRD14RW31  050HGGRDK5EA0EE   010TF                    31680329
SUSAP KBNAK7DHGGRD16TINGS 010HGGRDK5EA0E      IF                                                18000
SUSAP KBNAK7DHGGRD16TINGS 020TINGSK5EA0EE   010TF                    31780417
```

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                 1         2         3         4         5         6         7         8         9         0         1         2         3
RUNWAY  123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ---------------------------------------------------------------------------------------------------------------------------------
SUSAP KBNAK7GRW02C   0080010210 N36061199W086411666+0000    +014430056900006015 0IIEZN1
SUSAP KBNAK7GRW02L   0077030207 N36070364W086411131-0600    +015320059900005515 0IIBNA3
SUSAP KBNAK7GRW02R   0080000210 N36064577W086400352-0600    +015060059000005915 0IIUQU3
SUSAP KBNAK7GRW13    0110301363 N36082316W086413617+0400    +013640054308015515 0R
SUSAP KBNAK7GRW20C   0080012010 N36072724W086404655+0000    +014510057200005015 0R
SUSAP KBNAK7GRW20L   0080002010 N36080101W086393340+0600    +013530054000004715 0IISSX1
SUSAP KBNAK7GRW20R   0077032007 N36081623W086404284+0600    +014010055500005915 0IIVIY1
SUSAP KBNAK7GRW31    0110303163 N36071881W086401201-0400    +014680057707415215 0IIPNO1
```

QUALITY CHECKED 1

DEPARTURE (DATA RECORD)

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD RNAV	ONE	HGGRD1.HGGRD	NONE		

ARINC SUMMARY - 424-18 - SID

ROUTES	TRANSITION	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
	RW02C		010		VA		FB		021.0()		AA 01100	
	RW02C	JOOON	020		DF		FO	1.0				
	RW02C		030		VM		FB		015.0()			
	RW02C	MERRL	040		DF		FB	1.0				
	RW02C	HGGRD	050		TF		FB	1.0	316.8()	032.9		
	RW02L		010		VA		FB		020.7()		AA 01100	
	RW02L	FOOFY	020		DF		FO	1.0				
	RW02L		030		VM		FB		020.7()			
	RW02L	MERRL	040		DF		FB	1.0				
	RW02L	HGGRD	050		TF		FB	1.0	316.8()	032.9		
	RW02R		010		VA		FB		021.0()		AA 01100	
	RW02R	KDNCE	020		DF		FO	1.0				
	RW02R		030		VM		FB		055.0()			
	RW02R	MERRL	040		DF		FB	1.0				
	RW02R	HGGRD	050		TF		FB	1.0	316.8()	032.9		
	RW13		010		VA		FB		136.3()		AA 01100	
	RW13	KLSTR	020		DF	R	FO	1.0				
	RW13		030		VM		FB		260.0()			
	RW13	MERRL	040		DF		FB	1.0				
	RW13	HGGRD	050		TF		FB	1.0	316.8()	032.9		
	RW20C		010		VA		FB		201.0()		AA 01100	
	RW20C	MIJOM	020		DF		FO	1.0				
	RW20C		030		VM		FB		275.0()			
	RW20C	MERRL	040		DF		FB	1.0				
	RW20C	HGGRD	050		TF		FB	1.0	316.8()	032.9		
	RW20L		010		VA		FB		201.0()		AA 01100	
	RW20L	PWERS	020		DF		FO	1.0				
	RW20L		030		VM		FB		220.0()			
	RW20L	MERRL	040		DF		FB	1.0				
	RW20L	HGGRD	050		TF		FB	1.0	316.8()	032.9		
	RW20R		010		VA		FB		200.7()		AA 01300	
	RW20R	BOGAA	020		DF		FO	1.0				
	RW20R		030		VM		FB		260.0()			
	RW20R	MERRL	040		DF		FB	1.0				
	RW20R	HGGRD	050		TF		FB	1.0	316.8()	032.9		
	RW31		010		VA		FB		316.3()		AA 01100	
	RW31	YAHYA	020		DF		FO	1.0				
	RW31		030		VM		FB		280.0()			
	RW31	MERRL	040		DF		FB	1.0				
	RW31	HGGRD	050		TF		FB	1.0	316.8()	032.9		
	TINGS	HGGRD	010		IF		FB					
	TINGS	TINGS	020		TF		FB	1.0	317.8()	041.7		

QUALITY CHECKED

DEPARTURE (DATA RECORD)

DP Name	Number	DP Computer Code	Superseded Number	Dated	Effective Date
HGGRD RNAV	ONE	HGGRD1.HGGRD	NONE		

POINT DATA

WAYPOINT	LAT IN SECS	LONG IN SECS	LAT IN MINS	LONG IN MINS
BOGAA	N360440.70	W0864923.38	N3604.678	W08649.390
FOOFY	N361120.01	W0863930.71	N3611.334	W08639.512
HGGRD	N364852.31	W0873818.79	N3648.872	W08738.313
JOOON	N361030.30	W0863950.22	N3610.505	W08639.837
KDNCE	N361107.30	W0863455.24	N3611.122	W08634.921
KLSTR	N360401.80	W0865016.36	N3604.030	W08650.273
MERRL	N362610.73	W0870845.83	N3626.179	W08708.764
MIJOM	N360456.58	W0865023.82	N3604.943	W08650.397
PWERS	N360224.47	W0864421.88	N3602.408	W08644.365
TINGS	N371810.87	W0881522.30	N3718.181	W08815.372
YAHYA	N360910.44	W0864911.86	N3609.174	W08649.198
RW02C	N360611.99	W0864116.66	N3606.200	W08641.278
RW02L	N360703.64	W0864111.31	N3607.061	W08641.189
RW02R	N360645.77	W0864003.52	N3606.763	W08640.059
RW13	N360823.16	W0864136.17	N3608.386	W08641.603
RW20C	N360727.24	W0864046.55	N3607.454	W08640.776
RW20L	N360801.01	W0863933.40	N3608.017	W08639.557
RW20R	N360816.23	W0864042.84	N3608.271	W08640.714
RW31	N360718.81	W0864012.01	N3607.314	W08640.200

RUNWAY DATA

RWY	THRESHOLD ELEVATION	TCH
RW02C	00569	60
RW02L	00599	55
RW02R	00590	59
RW13	00543	55
RW20C	00572	50
RW20L	00540	47
RW20R	00555	59
RW31	00577	52

RADIO FIX AND HOLDING DATA RECORD

NAME: BOGAA **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 360440.70N/0864923.38W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	DANLS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	GDOGG (RNAV)			KBNA	NASHVILLE	TN (US)
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)
DP	KRSTA (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PARDN (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/14/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

QUALITY CHECKED 3

RADIO FIX AND HOLDING DATA RECORD

NAME: FOOFY **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 361120.01N/0863930.71W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	CHADM (RNAV)			KBNA	NASHVILLE	TN (US)
DP	DANLS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	DRURY (RNAV)			KBNA	NASHVILLE	TN (US)
DP	EVVAN (RNAV)			KBNA	NASHVILLE	TN (US)
DP	FLAME (RNAV)			KBNA	NASHVILLE	TN (US)
DP	GDOGG (RNAV)			KBNA	NASHVILLE	TN (US)
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)
DP	KRSTA (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PARDN (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PREDS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	TAZMO (RNAV)			KBNA	NASHVILLE	TN (US)
DP	TIPPN (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/11/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

QUALITY CHECKED 3

RADIO FIX AND HOLDING DATA RECORD

NAME: HGGRD **STATE:** KY **COUNTRY:** US

LATITUDE/LONGITUDE: 364852.31N/0873818.79W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/14/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: JOOON **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 361030.30N/0863950.22W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	CHADM (RNAV)			KBNA	NASHVILLE	TN (US)
DP	DANLS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	DRURY (RNAV)			KBNA	NASHVILLE	TN (US)
DP	EVVAN (RNAV)			KBNA	NASHVILLE	TN (US)
DP	FLAME (RNAV)			KBNA	NASHVILLE	TN (US)
DP	GDOGG (RNAV)			KBNA	NASHVILLE	TN (US)
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)
DP	KRSTA (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PARDN (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PREDS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	TAZMO (RNAV)			KBNA	NASHVILLE	TN (US)
DP	TIPPN (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/11/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

QUALITY CHECK

RADIO FIX AND HOLDING DATA RECORD

NAME: KDNCE **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 361107.30N/0863455.24W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	CHADM (RNAV)			KBNA	NASHVILLE	TN (US)
DP	DANLS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	DRURY (RNAV)			KBNA	NASHVILLE	TN (US)
DP	EVVAN (RNAV)			KBNA	NASHVILLE	TN (US)
DP	FLAME (RNAV)			KBNA	NASHVILLE	TN (US)
DP	GDOGG (RNAV)			KBNA	NASHVILLE	TN (US)
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)
DP	KRSTA (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PARDN (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PREDS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	TAZMO (RNAV)			KBNA	NASHVILLE	TN (US)
DP	TIPPN (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/11/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

QUALITY CHECK 3

RADIO FIX AND HOLDING DATA RECORD

NAME: KLSTR **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 360401.80N/0865016.36W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	DANLS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	GDOGG (RNAV)			KBNA	NASHVILLE	TN (US)
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)
DP	KRSTA (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PARDN (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/14/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: MERRL **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 362610.73N/0870845.83W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/14/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: MIJOM **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 360456.58N/0865023.82W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	DANLS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	GDOGG (RNAV)			KBNA	NASHVILLE	TN (US)
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)
DP	KRSTA (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PARDN (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/14/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: PWERS **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 360224.47N/0864421.88W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	DANLS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	DRURY (RNAV)			KBNA	NASHVILLE	TN (US)
DP	GDOGG (RNAV)			KBNA	NASHVILLE	TN (US)
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PARDN (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/14/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

INFO ONLY

RADIO FIX AND HOLDING DATA RECORD

NAME: TINGS **STATE:** KY **COUNTRY:** US

LATITUDE/LONGITUDE: 371810.87N/0881522.30W **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	POCKET CITY	PXV	VORTAC	H	209.29	212.29	44.25	44.25		18000	45000
2	NASHVILLE	BNA	VORTAC	H	315.14	313.14	103.09	103.09		18000	45000
3	BOWLING GREEN	BWG	VORTAC	H	283.00	285.00		89.84		18000	24000
4	FARMINGTON	FAM	VORTAC	H	101.62	102.62		97.02		18000	24000

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

REMARKS:
POCKET CITY (FAC 1) AND NASHVILLE (FAC 2) USED TO ESTABLISH FIX COORDINATES

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	DRUSE (RNAV)			KSTL	ST LOUIS	MO (US)
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)
EN ROUTE	J29	1, 2				(US)
EN ROUTE	J45	1, 2				(US)
EN ROUTE	Q19					(US)
STAR	HEHAW	1, 2, 3, 4		KMBT	MURFREESBORO	TN (US)
STAR	HEHAW	1, 2, 3, 4		KBNA	NASHVILLE	TN (US)
STAR	HEHAW	1, 2, 3, 4		KJWN	NASHVILLE	TN (US)
STAR	HEHAW	1, 2, 3, 4		KMQY	SMYRNA	TN (US)

REQUIRED CHARTING: DP, STAR, CONTROLLER, EN ROUTE HIGH

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 5 **DATE OF REVISION:** 09/20/2012

REASON FOR REVISION:
1. ADDED FIX TYPE WP.
2. ADDED DIST FROM FAC NM TO FAC 3.
3. ADDED FAC 4.
4. ADDED FACILITIES USED TO ESTABLISH FIX COORDINATES REMARK.
5. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 04/06/2012 **OFFICE:** AJV-353 **NAME:** JILL OLSON (STEVE NELSON)

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: EST
ARTCC: ZME, ZKC, ZID
ATC FACILITY:
OTHER:

QUALITY CHECK

RADIO FIX AND HOLDING DATA RECORD

NAME: YAHYA **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 360910.44N/0864911.86W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	DANLS (RNAV)			KBNA	NASHVILLE	TN (US)
DP	DRURY (RNAV)			KBNA	NASHVILLE	TN (US)
DP	GDOGG (RNAV)			KBNA	NASHVILLE	TN (US)
DP	HGGRD (RNAV)			KBNA	NASHVILLE	TN (US)
DP	KRSTA (RNAV)			KBNA	NASHVILLE	TN (US)
DP	PARDN (RNAV)			KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 11/15/2012

DEVELOPED BY: **DATE:** 05/14/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZME
ATC FACILITY: BNA APP CON
OTHER:

Name:	Dennis Osterhage
Project Name:	KBNA RNAV SIDS
Output File:	KBNA HGGRD1 SID MERRL TINGS 20120510_1259
Procedure Name:	HGGRD1
Software:	RNAV-Pro™
Version:	2.36
Date/Time:	5/10/2012 12:59:49 PM
Input File:	KBNA_PNA_MERRL_HGGRD_CCW.txt
Databases:	AVNIS Date: 02/07/2012 Obstacle Date: 08/26/2011 NFD Date: 09/30/2010 DTED® (MAX) Date: 2002

Results Summary:

Flyability	✔
DME/DME	✔
Radars	?
Comms	?
TERPS	?

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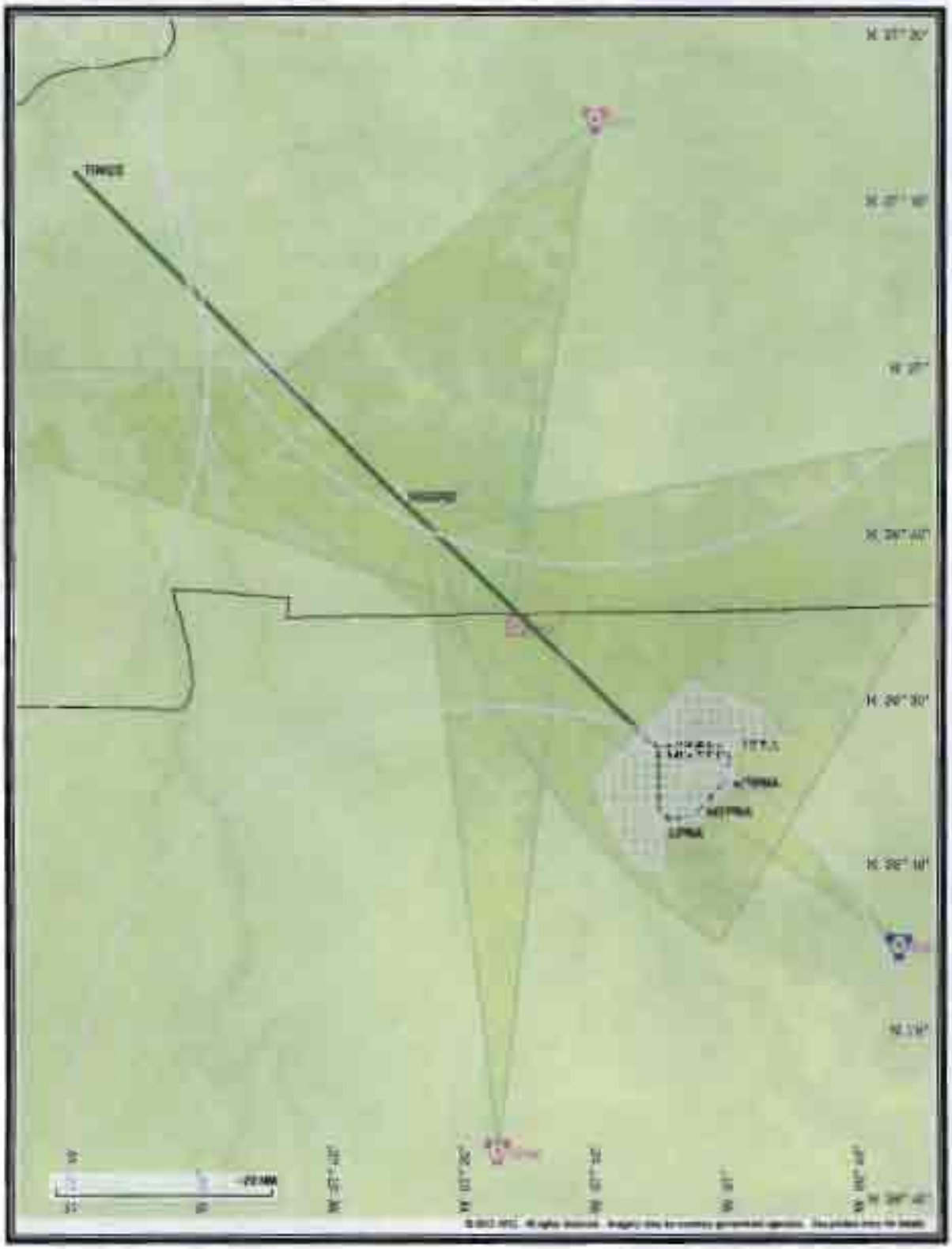

TINGS

Flight Plan

Return To Summary

Name	Type	Lat/Lon	Alt [Ft]	VNAV Mode	IAS [Kts]	Turn Type	Leg Type
MERRL	WP	N 36° 26' 10.73" W 87° 6' 45.83"	6000.0	VNAV	180.0	Fly Over	TF
LPNA	WP	N 36° 19' 10.30" W 87° 8' 31.93"	6000.0	VNAV	180.0	Fly By	TF
M1PNA	WP	N 36° 20' 12.16" W 87° 4' 13.96"	6000.0	VNAV	180.0	Fly By	TF
M2PNA	WP	N 36° 22' 50.01" W 87° 1' 8.59"	6000.0	VNAV	180.0	Fly By	TF
RPNA	WP	N 36° 26' 21.66" W 87° 0' 5.49"	6000.0	VNAV	180.0	Fly By	TF
MERRL1	WP	N 36° 26' 10.73" W 87° 6' 45.83"	6000.0	VNAV	180.0	Fly By	TF
HGGRD	WP	N 36° 48' 52.31" W 87° 38' 18.79"	12570.7	VNAV	210.0	Fly By	TF
TINGS	WP	N 37° 18' 10.87" W 86° 15' 22.30"	18000.0	VNAV	240.0	Fly Over	TF

Flyability

Return To Summary

Settings:

Flight Type: Departure with PNA
Selected Airport: KBNA
Aircraft Category: Cat D
Climb Gradient: *None assigned*
Ground Speeds:

Table:
200.0 Kts up to **29000.0 Ft.**
280.0 Kts up to **99900.0 Ft.**

Wind Settings: *None assigned*
Descent During a Turn: Allowed
VNAV Mode: Flight Plan

Entire track is fly-able

DME/DME

Return To Summary

Settings:

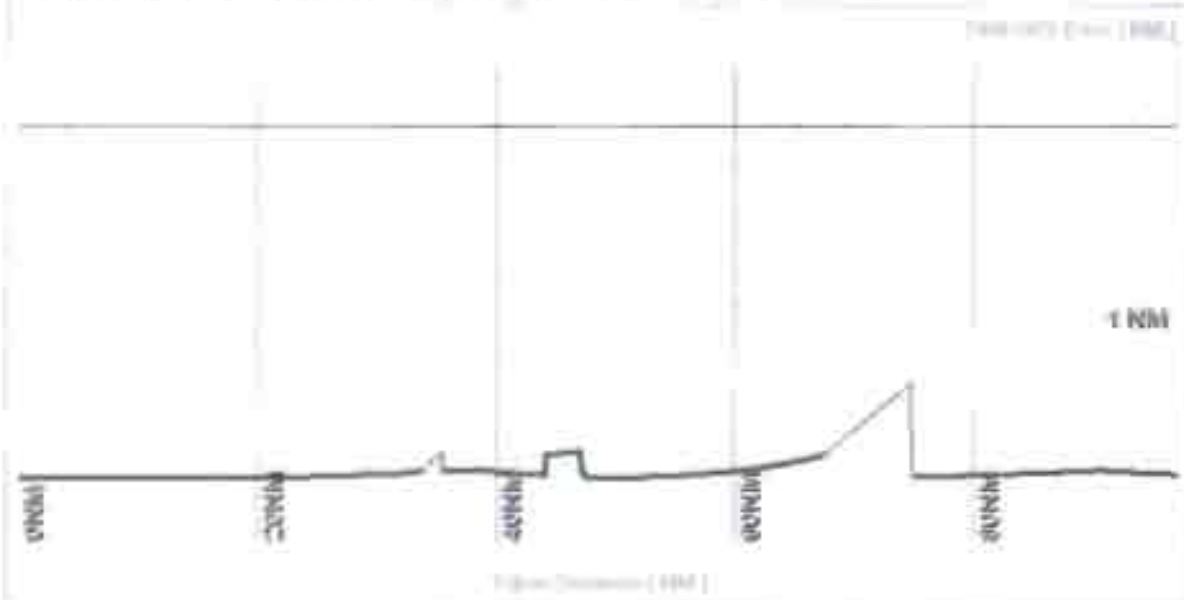
RNP: 2.0
Flight Mode: Manual
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Inertial Drift: Enabled
Initial Drift: 0.558 NM
INS Drift Rate: 8.000 NM/Hour
Range Mode: OSV
Co-Frequencies: Evaluated
RNP Edges: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME , VORTAC , TACAN , and User
DME Include Angles: 30 to 150
Critical DMEs: Allowed
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Flight Check DMEs: Selected
Higher Altitudes: Evaluated
Near Maximum Altitude: Evaluated
PNA Import from RDVA-Pro: KBNA PNA MERRL HGGRD

Total Number of DMEs Used: 8

Maximum DME Error: 0.668 NM

No Critical DMEs were found.

Available DMEs: BWG, BNA, CKV, GHM, CNG, CCT, PXV, ENL, FAM



DME/DME (Continued.)

Return To Summary

DMEs Used

#	Name	Lat/Lon/MAGVAR	Range	Source	Critical	Err. [NM]	Status	Time	Distance
1	BWG	N 36° 55' 43.47" W 86° 26' 36.36" E 2	H + ESV	User	NO	1.289	Enabled	52.8 %	52.8 %
2	CKV	N 36° 37' 19.14" W 87° 24' 45.59" W 1	T	Database	NO	0.668	Enabled	11.4 %	11.3 %
3	GHM	N 35° 50' 2.12" W 87° 27' 6.35" E 3	L + ESV	User	NO	0.668	Enabled	16.0 %	16.0 %
4	BNA	N 36° 8' 13.06" W 86° 41' 5.16" W 2	H + ESV	User	NO	0.668	Enabled	29.4 %	29.5 %
5	CNG	N 37° 0' 31.00" W 88° 50' 12.87" E 3	L + ESV	User	NO	1.081	Enabled	28.1 %	28.1 %
6	CCT	N 37° 22' 56.71" W 87° 15' 49.32" W 1	L + ESV	User	NO	1.377	Enabled	20.7 %	20.7 %
7	PXV	N 37° 55' 41.95" W 87° 45' 44.56" E 3	H	Database	NO	0.668	Enabled	15.9 %	15.9 %
8	ENL	N 38° 25' 12.00" W 89° 9' 32.39" E 4	H	Database	NO	0.668	Enabled	7.0 %	7.0 %

Flight Check DME Selection

Distance [NM]	Selected DMEs					Alternate
0.0	BWG	CKV	BNA	GHM		
5.1	BWG	CKV	BNA	GHM		
8.9	BWG	GHM	BNA			
12.6	BWG	GHM	BNA			
14.8	BWG	CKV	BNA			
21.9	BWG	CKV	BNA			
38.3	BWG	GHM	BNA	CNG	CCT	CKV
55.4	CNG	CCT	CKV			
71.7	CNG	PXV	BNA	ENL	BWG	FAM

DME/DME (Continued.)

Return To Summary

Inertial Drift Segments

#	Start Location	End Location	Length [NM]
1	N 36° 33' 55.17" W 87° 18' 47.71"	N 36° 35' 4.31" W 87° 20' 17.52"	1.7
	VOR: BNA	Available from N 36° 33' 55.17" W 87° 18' 47.71" to N 36° 34' 2.09" W 87° 18' 56.69"	
	VOR: CKV	Available from N 36° 33' 55.17" W 87° 18' 47.71" to N 36° 35' 4.31" W 87° 20' 17.52"	
2	N 36° 57' 24.47" W 87° 49' 2.17"	N 37° 2' 31.91" W 87° 55' 29.77"	7.3
	VOR: CCT	Available from N 36° 57' 24.47" W 87° 49' 2.17" to N 37° 2' 31.91" W 87° 55' 29.77"	
	VOR: CKV	Available from N 36° 57' 24.47" W 87° 49' 2.17" to N 37° 2' 31.91" W 87° 55' 29.77"	

User DMEs

#	Name	Lat/Lon/MAGVAR	Range	Elevation [Ft]	Frequency	Replaces:	Status
1	BWG	N 36° 55' 43.47" W 86° 26' 36.36" E 2	H	565.0	117.90	BWG	Used
		ESV: Bearing [True]: 211.0° to 260.0° Bearing [Mag]: 209.0° to 258.0°			Arc Distance: Out to 55.0 NM Altitude: 5800.0 to 16000.0 Ft.		
2	CCT	N 37° 22' 56.71" W 87° 15' 49.32" W 1	L	450.0	109.80	CCT	Used
		ESV: Bearing [True]: 190.0° to 232.0° Bearing [Mag]: 191.0° to 233.0°			Arc Distance: Out to 45.0 NM Altitude: 9500.0 to 24000.0 Ft.		
3	CNG	N 37° 0' 31.00" W 88° 50' 12.87" E 3	L	480.1	113.10	CNG	Used
		ESV: Bearing [True]: 90.0° to 108.0° Bearing [Mag]: 87.0° to 105.0°			Arc Distance: Out to 70.0 NM Altitude: 8000.0 to 24000.0 Ft.		
4	GHM	N 35° 50' 2.12" W 87° 27' 6.35" E 3	L	774.7	111.60	GHM	Used
		ESV: Bearing [True]: 353.0° to 7.0° Bearing [Mag]: 350.0° to 4.0°			Arc Distance: Out to 58.0 NM Altitude: 7000.0 to 24000.0 Ft.		
5	BNA	N 36° 8' 13.06" W 86° 41' 5.18" W 2	H	565.8	114.10	BNA	Used
		ESV: Bearing [True]: 305.0° to 318.0° Bearing [Mag]: 307.0° to 320.0°			Arc Distance: Out to 58.0 NM Altitude: 8000.0 to 16000.0 Ft.		

Name:	Dennis Osterhage
Project Name:	KBNA HGGRD1 SID PNA GRID EVALUATION 20120321
Software:	RNAV-Pro™
Version:	2.35
Date/Time:	3/21/2012 2:29:08 PM
Input File:	Grid Area Assessment
Databases:	AVNIS Date: 08/26/2011
	NFD Date: 07/02/2009
	DTED® (MAX) Date: 2002

Results Summary:

Grid	✔	DME/DME Grid Analysis

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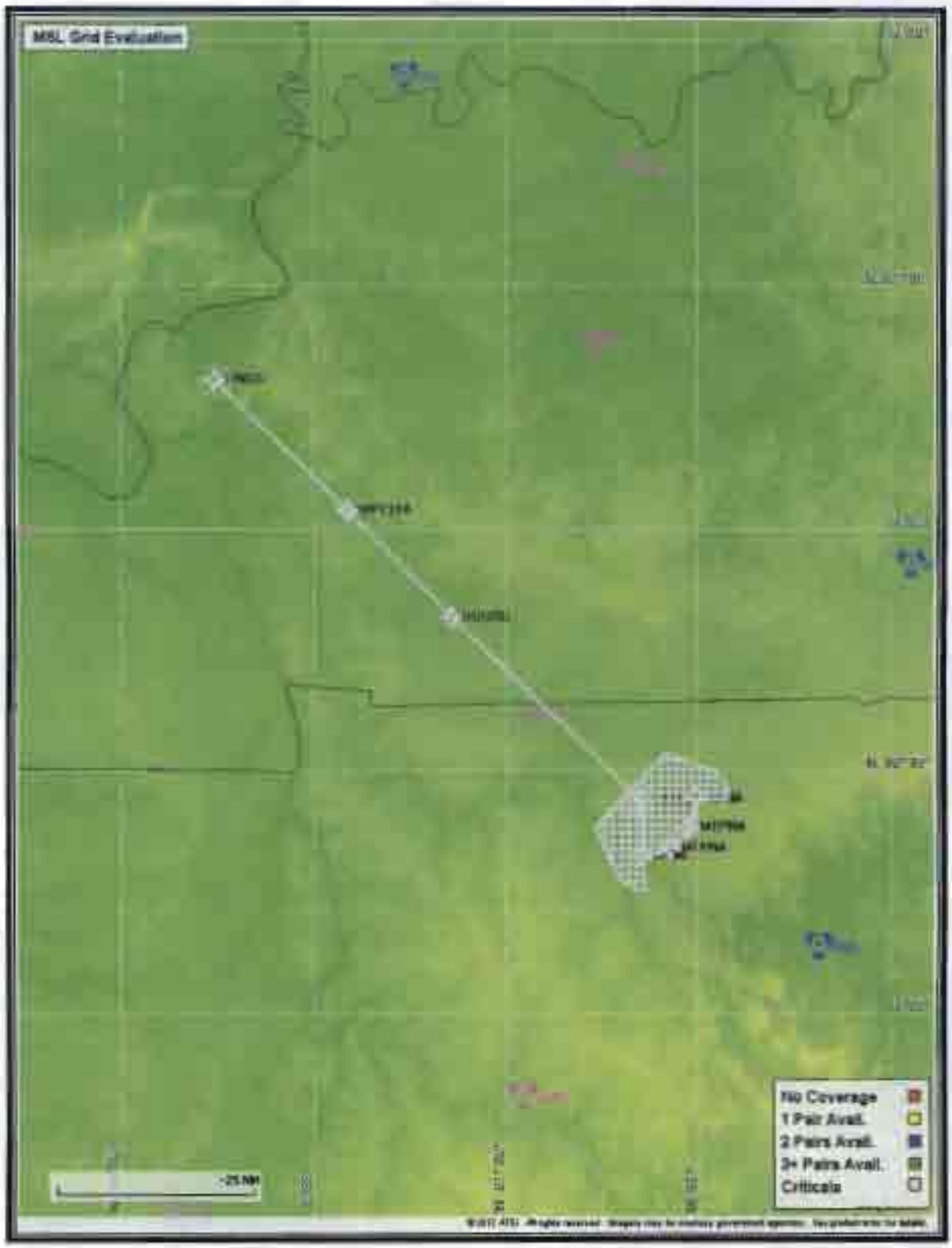
MSL Grid Evaluation
No Coverage
1 Pair Avail.
2 Pairs Avail.
3+ Pairs Avail.
Criticals
25 NM

DME/DME Grid Analysis

Return To Summary

Coverage Exists

Settings:

Polygon Grid Definition:

1	Lat: N 36° 19' 10.30" Lon: W 87° 8' 31.77"	21	Lat: N 36° 28' 11.01" Lon: W 86° 55' 40.49"
2	Lat: N 36° 15' 10.05" Lon: W 87° 8' 23.74"	22	Lat: N 36° 27' 44.10" Lon: W 86° 55' 26.00"
3	Lat: N 36° 15' 11.05" Lon: W 87° 8' 59.95"	23	Lat: N 36° 27' 15.97" Lon: W 86° 55' 15.69"
4	Lat: N 36° 15' 15.61" Lon: W 87° 9' 35.74"	24	Lat: N 36° 26' 47.03" Lon: W 86° 55' 9.69"
5	Lat: N 36° 15' 23.67" Lon: W 87° 10' 10.57"	25	Lat: N 36° 26' 28.20" Lon: W 86° 55' 8.16"
6	Lat: N 36° 15' 35.10" Lon: W 87° 10' 43.94"	26	Lat: N 36° 26' 21.80" Lon: W 87° 0' 5.50"
7	Lat: N 36° 15' 49.74" Lon: W 87° 11' 15.35"	27	Lat: N 36° 26' 21.80" Lon: W 87° 0' 5.50"
8	Lat: N 36° 16' 7.37" Lon: W 87° 11' 44.32"	28	Lat: N 36° 25' 30.48" Lon: W 87° 0' 7.76"
9	Lat: N 36° 16' 27.72" Lon: W 87° 12' 10.42"	29	Lat: N 36° 24' 39.76" Lon: W 87° 0' 17.73"
10	Lat: N 36° 16' 50.50" Lon: W 87° 12' 33.27"	30	Lat: N 36° 23' 50.41" Lon: W 87° 0' 35.28"
11	Lat: N 36° 17' 15.36" Lon: W 87° 12' 52.53"	31	Lat: N 36° 23' 3.15" Lon: W 87° 1' 0.12"
12	Lat: N 36° 17' 32.27" Lon: W 87° 13' 2.87"	32	Lat: N 36° 22' 18.69" Lon: W 87° 1' 31.90"
13	Lat: N 36° 22' 57.86" Lon: W 87° 15' 59.97"	33	Lat: N 36° 21' 37.69" Lon: W 87° 2' 10.13"
14	Lat: N 36° 32' 12.63" Lon: W 87° 5' 2.25"	34	Lat: N 36° 21' 0.75" Lon: W 87° 2' 54.24"
15	Lat: N 36° 30' 6.22" Lon: W 86° 58' 19.07"	35	Lat: N 36° 20' 28.44" Lon: W 87° 3' 43.57"
16	Lat: N 36° 29' 54.07" Lon: W 86° 57' 45.99"	36	Lat: N 36° 20' 1.22" Lon: W 87° 4' 37.39"
17	Lat: N 36° 29' 38.75" Lon: W 86° 57' 14.99"	37	Lat: N 36° 19' 39.51" Lon: W 87° 5' 34.90"

DME/DME Grid Analysis (Continued.)

Return To Summary

Coverage Exists

Settings:

Polygon Grid Definition:

18	Lat: N 36° 29' 20.49" Lon: W 86° 56' 46.54"	**38**	Lat: N 36° 19' 23.62" Lon: W 87° 6' 35.25"
19	Lat: N 36° 28' 59.57" Lon: W 86° 56' 21.06"	**39**	Lat: N 36° 19' 13.79" Lon: W 87° 7' 37.54"
20	Lat: N 36° 28' 36.29" Lon: W 86° 55' 58.94"	**40**	Lat: N 36° 19' 10.30" Lon: W 87° 8' 31.77"

Lat Step: 1 NM
Lon Step: 1 NM
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Co-Frequencies: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME and VORTAC
DME Include Angles: 30 to 150
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Maximum Possible ESVs Used
Altitude: 6000.0 Ft. MSL
PNA Import from RDVA-Pro: KBNA PNA MERLE HGGRD

DME/DME Grid Analysis (Continued.)

Return To Summary

Maximum Gap: 0.0 NM

Maximum Critical Gap: 0.0 NM

	AGL Altitudes
Min Cell Altitude	5,189.6 Ft.
Max Cell Altitude	5,478.3 Ft.
Mean Cell Altitude	5,317.2 Ft.
Std. Dev. Cell Altitude	53.4 Ft.

Statistics based only on passing cells

Most Used DMEs: SYI (168), JKS (168), HCH (168), GHM (168), CKV (168), CCT (168), BWG (168), BNA (168), CNG (159), and RQZ (150).

Name:	Dennis Osterhage
Project Name:	KBNA HGGRD1 SID ALL RWYS FIRST WP 20120405
Software:	RNAV-Pro™
Version:	2.35
Date/Time:	4/5/2012 9:17:07 AM
Input File:	KBNA HGGRD1 SID RW22
Databases:	AVNIS Date: 08/26/2011
	NFD Date: 07/02/2009
	DTED® (MAX) Date: 2002

Results Summary:

Flyability	✔ **Please Check Flyability Results**
DME/DME	✔
Radars	?
Comms	?
TERPS	?

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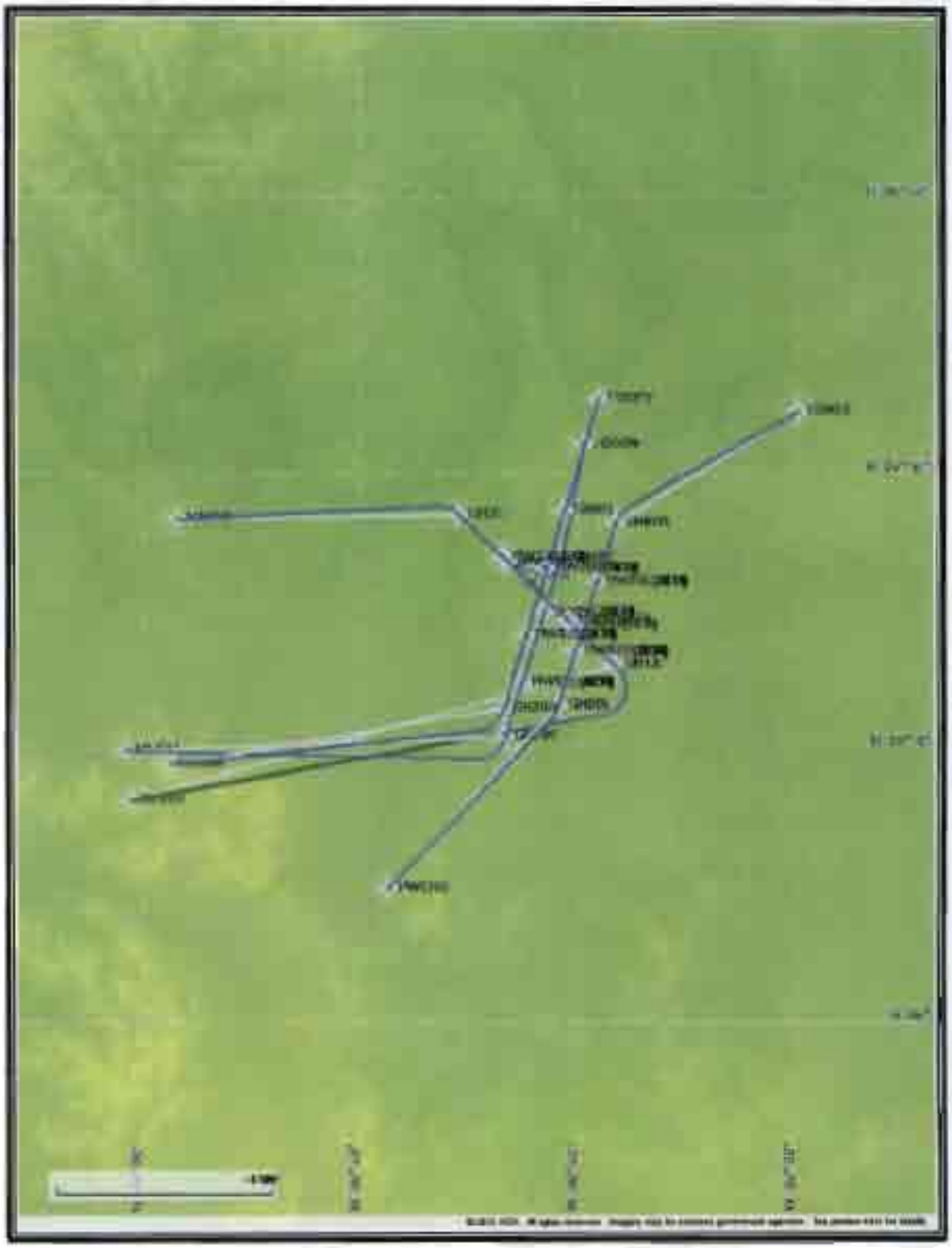


Flight Plan

Return To Summary

Name	Type	Lat/Lon	Alt [Ft]	VNAV Mode	IAS [Kts]	Turn Type	Leg Type
RW20C(...	WP	N 36° 7' 27.24" W 86° 40' 46.55"	571.8	VNAV	0.0	Fly Over	TF
RW02C(...	WP	N 36° 6' 11.99" W 86° 41' 16.66"	604.0	VNAV	130.0	Fly Over	VA
GH20C	WP	N 36° 5' 11.30" W 86° 41' 40.93"	1100.0	VNAV	145.0	Fly Over	DF
MIJOM	WP	N 36° 4' 56.58" W 86° 50' 23.82"	2513.6	VNAV	180.0	Fly Over	DF

Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL

Flyability

Return To Summary

Settings:

Flight Type: Departure
Selected Airport: KBNA
Aircraft Category: Cat D
Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL
Ground Speeds:
Departure: **120.0 Kts** out to **10.0 NM**
Table:
200.0 Kts up to **29000.0 Ft**
280.0 Kts up to **99900.0 Ft**
Wind Settings: *None assigned*
Descent During a Turn: Allowed
VNAV Mode: Flight Plan

Flight Track comes into contact with terrain. Minimum AGL along route was -39.02 Ft.
Flight Track contacted terrain (DTED lvl 0 max) between AER and DER or within 2/3 NM of DER.

DME/DME

Return To Summary

Settings:

RNP: 2.0
Flight Mode: Manual
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Inertial Drift: Enabled
Initial Drift: 0.165 NM
INS Drift Rate: 8.000 NM/Hour
Range Mode: OSV
Co-Frequencies: Evaluated
RNP Edges: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME , VORTAC , TACAN , and User
DME Include Angles: 30 to 150
Critical DMEs: Allowed
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Flight Check DMEs: Selected
Higher Altitudes: Evaluated
Near Maximum Altitude: Evaluated

Total Number of DMEs Used: 0

Maximum DME Error Could not be Derived with < 2 DMEs.

No Critical DMEs were found.

Available DMEs: BNA, GHM

DME/DME (Continued.)

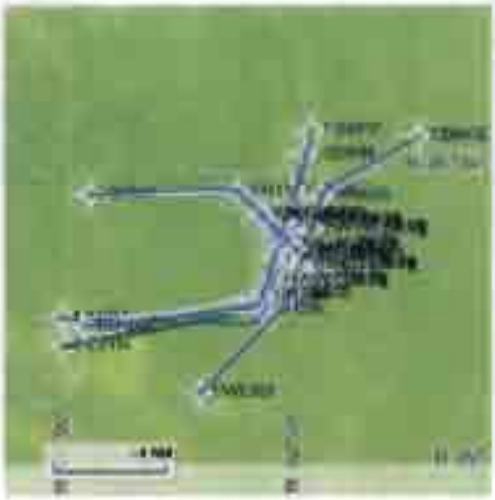
Return To Summary

Flight Check DME Selection

Distance [NM]	Selected DMEs		Alternate
0.0			
1.3			
2.4	BNA	GHM	

Inertial Drift Segments

#	Start Location	End Location	Length [NM]
1	N 36° 7' 27.24" W 86° 40' 46.55"	N 36° 4' 56.56" W 86° 50' 22.92"	9.6
	VOR: BNA	Available from N 36° 7' 27.24" W 86° 40' 46.55" to N 36° 4' 56.56" W 86° 50' 22.92"	
	VOR: SYI	Available from N 36° 7' 27.24" W 86° 40' 46.55" to N 36° 4' 56.56" W 86° 50' 22.92"	
	VOR: GHM	Available from N 36° 5' 22.19" W 86° 41' 36.56" to N 36° 4' 56.56" W 86° 50' 22.92"	



Name:	Dennis Osterhage
Project Name:	KBNA HGGRD1 SID ALL RWYS FIRST WP 20120405
Software:	RNAV-Pro™
Version:	2.35
Date/Time:	4/5/2012 9:18:38 AM
Input File:	KBNA HGGRD1 SID RW31...
Databases:	AVNIS Date: 08/26/2011
	NFD Date: 07/02/2009
	DTED® (MAX) Date: 2002

Results Summary:

Flyability	✔ **Please Check Flyability Results**
DME/DME	✔
Radars	?
Comms	?
TERPS	?

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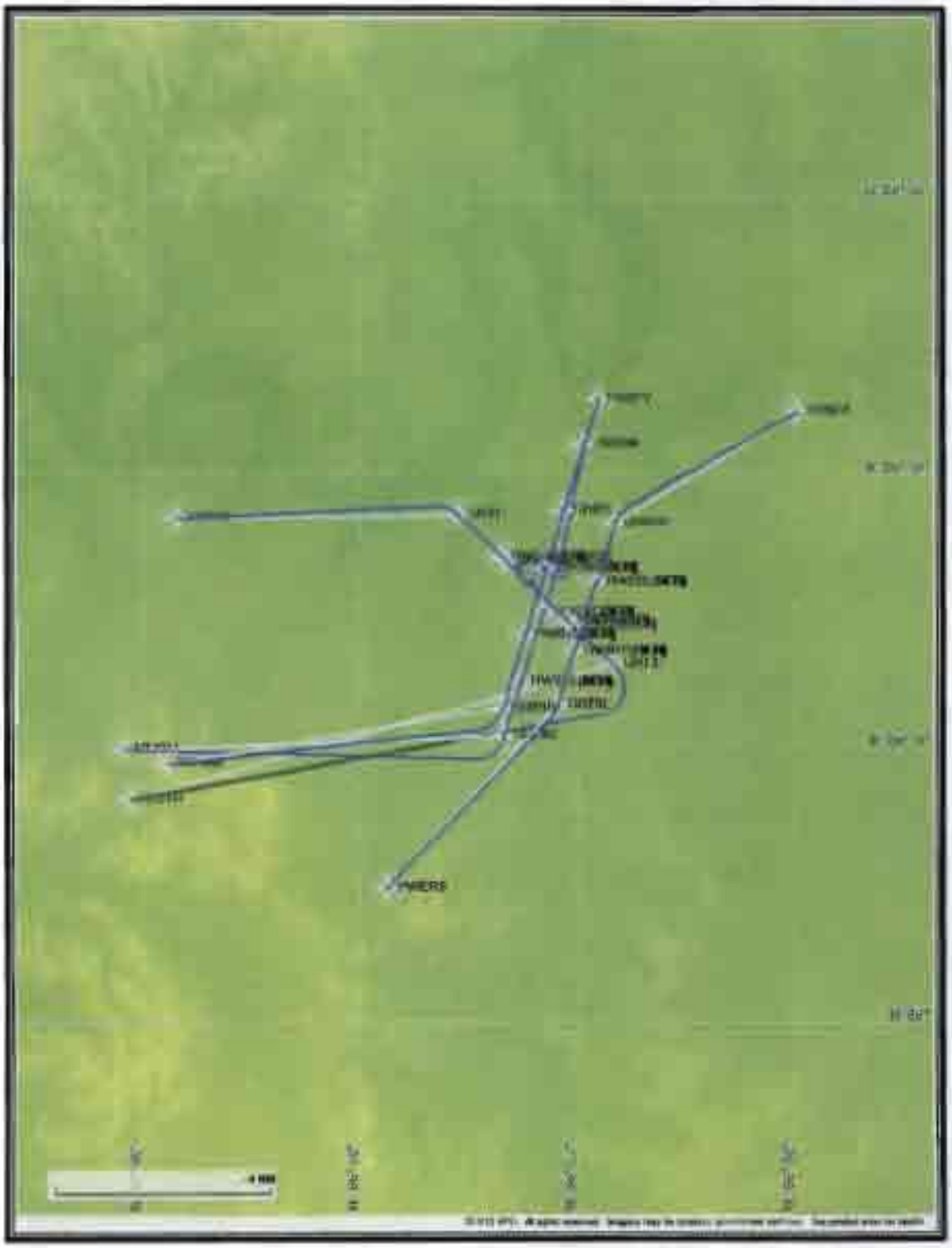


Flight Plan

Return To Summary

Name	Type	Lat/Lon	Alt [Ft]	VNAV Mode	IAS [Kts]	Turn Type	Leg Type
RW31(A...	WP	N 36° 7' 18.81" W 86° 40' 12.01"	582.2	VNAV	0.0	Fly Over	TF
RW13(D...	WP	N 36° 8' 28.60" W 86° 41' 43.28"	570.8	VNAV	130.0	Fly Over	VA
GH31:	WP	N 36° 9' 15.09" W 86° 42' 44.12"	1100.0	VNAV	145.0	Fly Over	DF
YAHYA	WP	N 36° 9' 10.44" W 86° 49' 11.86"	2146.8	VNAV	180.0	Fly Over	DF

Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL

Flyability

Return To Summary

Settings:

Flight Type: Departure
Selected Airport: KBNA
Aircraft Category: Cat D
Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL
Ground Speeds:
Departure: **120.0 Kts** out to **10.0 NM**
Table
200.0 Kts up to **29000.0 Ft.**
280.0 Kts up to **99900.0 Ft.**
Wind Settings: *None assigned*
Descent During a Turn: Allowed
VNAV Mode: Flight Plan

Flight Track comes into contact with terrain. Minimum AGL along route was -23.28 Ft.
Flight Track contacted terrain (DTED lvl 0 max) between AER and DER or within 2/3 NM of DER.

DME/DME

Return To Summary

Settings:

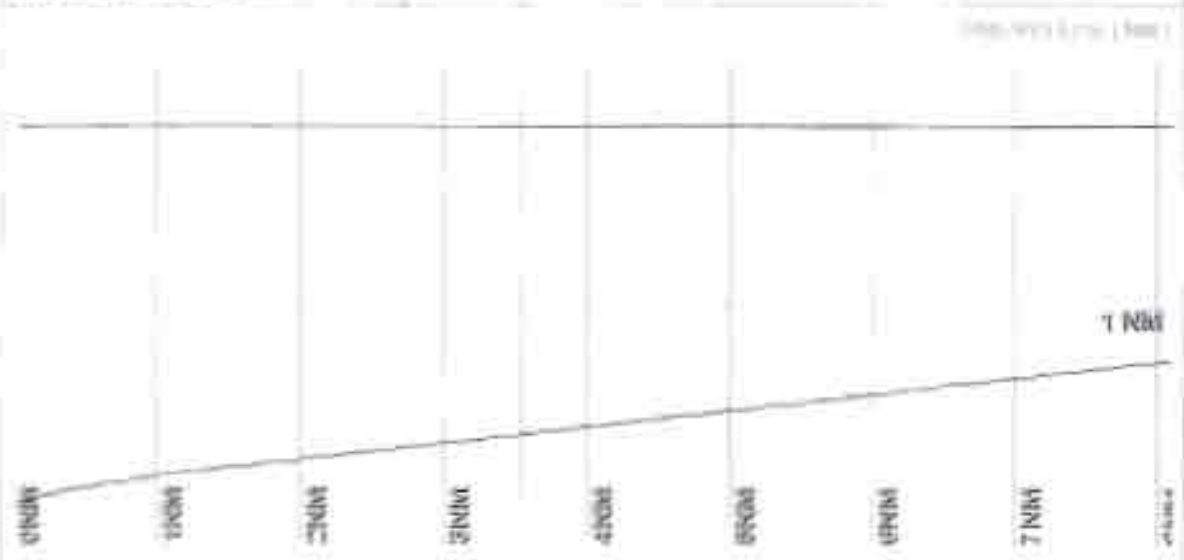
RNP: 2.0
Flight Mode: Manual
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Inertial Drift: Enabled
Initial Drift: 0.165 NM
INS Drift Rate: 8.000 NM/Hour
Range Mode: OSV
Co-Frequencies: Evaluated
RNP Edges: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME , VORTAC , TACAN , and User
DME Include Angles: 30 to 150
Critical DMEs: Allowed
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Flight Check DMEs: Selected
Higher Altitudes: Evaluated
Near Maximum Altitude: Evaluated

Total Number of DMEs Used: 0

Maximum DME Error Could not be Derived with < 2 DMEs.

No Critical DMEs were found.

Available DMEs: BNA



DME/DME (Continued.)

Return To Summary

Flight Check DME Selection

Distance [NM]	Selected DMEs	Alternate
0.0		
1.7		
2.8	BNA	

Inertial Drift Segments

#	Start Location	End Location	Length [NM]
1	N 36° 7' 18.81" W 86° 40' 12.01"	N 36° 9' 10.47" W 86° 49' 11.12"	6.1
	VOR: BNA	Available from N 36° 7' 18.81" W 86° 40' 12.01" to N 36° 9' 10.47" W 86° 49' 11.12"	
	VOR: SYI	Available from N 36° 7' 18.81" W 86° 40' 12.01" to N 36° 9' 10.47" W 86° 49' 11.12"	
	VOR: GHM	Available from N 36° 9' 22.67" W 86° 45' 57.83" to N 36° 9' 10.47" W 86° 49' 11.12"	

Name:	Dennis Osterhage
Project Name:	KBNA HGGRD1 SID ALL RWYS FIRST WP 20120405
Software:	RNAV-Pro™
Version:	2.35
Date/Time:	4/5/2012 9:17:35 AM
Input File:	KBNA HGGRD1 SID RW20
Databases:	AVNIS Date: 08/26/2011
	NFD Date: 07/02/2009
	DTED® (MAX) Date: 2002

Results Summary:

Flyability	✔ **Please Check Flyability Results**
DME/DME	✔
Radars	?
Comms	?
TERPS	?

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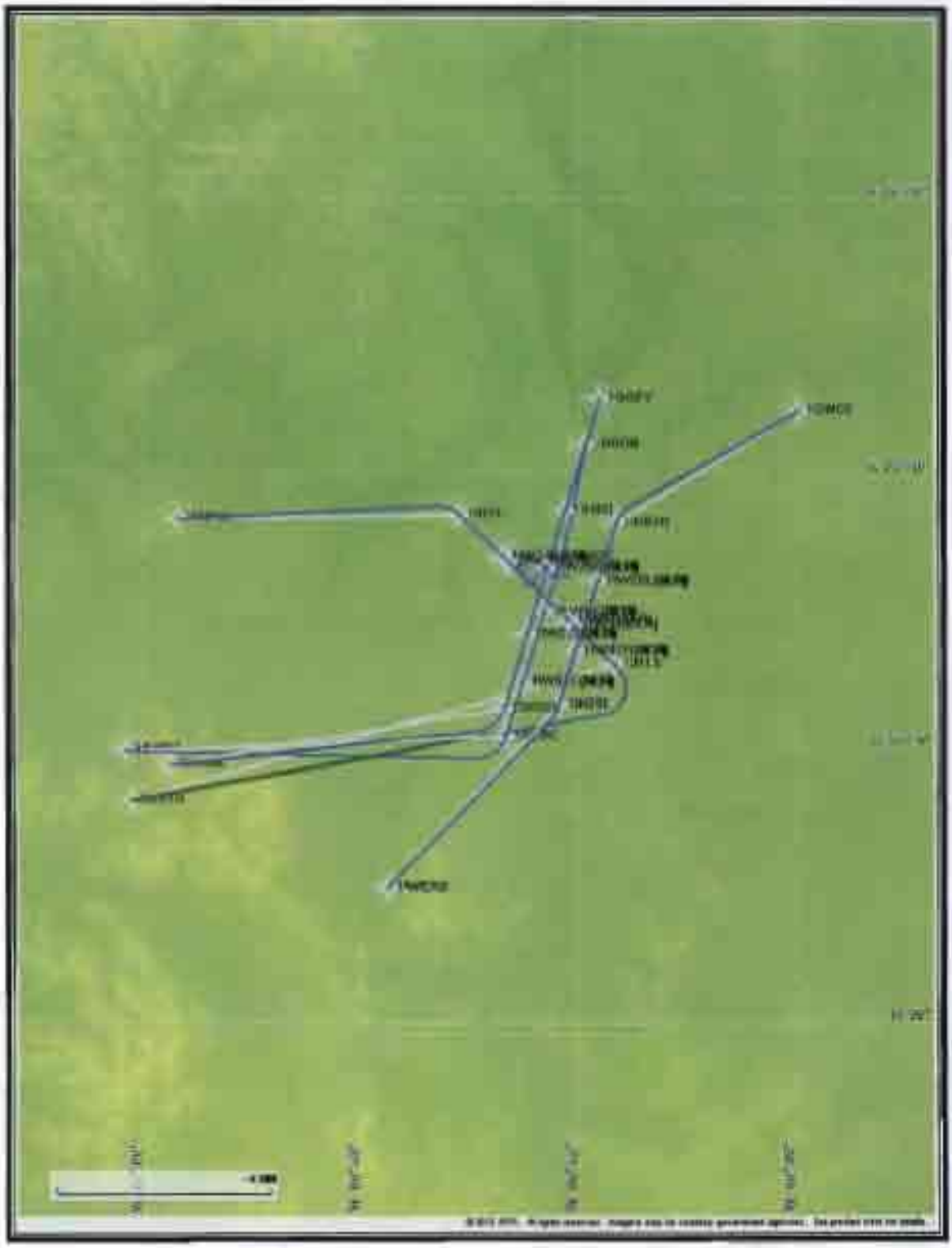


Flight Plan

Return To Summary

Name	Type	Lat/Lon	Alt [Ft]	VNAV Mode	IAS [Kts]	Turn Type	Leg Type
RW20L(	WP	N 36° 8' 1.01" W 86° 39' 33.40"	539.9	VNAV	0.0	Fly Over	TF
RW02R(	WP	N 36° 6' 45.77" W 86° 40' 3.52"	624.7	VNAV	130.0	Fly Over	VA
GH20L	WP	N 36° 5' 47.44" W 86° 40' 26.85"	1100.0	VNAV	145.0	Fly Over	DF
PWERS	WP	N 36° 2' 24.47" W 86° 44' 21.88"	2027.3	VNAV	180.0	Fly Over	DF

Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL

Flyability

Return To Summary

Settings:

Flight Type: Departure
Selected Airport: KBNA
Aircraft Category: Cat D
Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL
Ground Speeds:
Departure: **120.0 Kts** out to **10.0 NM**
Table
200.0 Kts up to **29000.0 Ft.**
280.0 Kts up to **99900.0 Ft.**
Wind Settings: None assigned
Descent During a Turn: Allowed
VNAV Mode: Flight Plan

Flight Track comes into contact with terrain. Minimum AGL along route was -60.22 Ft.
Flight Track contacted terrain (DTED lvl 0 max) between AER and DER or within 2/3 NM of DER.

DME/DME

Return To Summary

Settings:

RNP: 2.0
Flight Mode: Manual
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Inertial Drift: Enabled
  Initial Drift: 0.165 NM
  INS Drift Rate: 8.000 NM/Hour
Range Mode: OSV
Co-Frequencies: Evaluated
RNP Edges: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME , VORTAC , TACAN , and User
DME Include Angles: 30 to 150
Critical DMEs: Allowed
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Flight Check DMEs: Selected
Higher Altitudes: Evaluated
Near Maximum Altitude: Evaluated

Total Number of DMEs Used: 0

Maximum DME Error Could not be Derived with < 2 DMEs

No Critical DMEs were found

Available DMEs: BNA

DME/DME (Continued.)

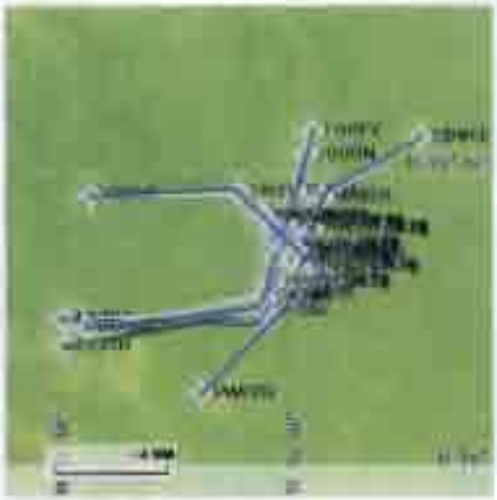
Return To Summary

Flight Check DME Selection

Distance [NM]	Selected DMEs	Alternate
0.0		
1.3		
2.3	BNA	

Inertial Drift Segments

#	Start Location	End Location	Length [NM]
1	N 36° 8' 1.01" W 86° 39' 33.40"	N 36° 2' 24.52" W 86° 44' 21.82"	7.0
	VOR: BNA	Available from N 36° 8' 1.01" W 86° 39' 33.40" to N 36° 2' 24.52" W 86° 44' 21.82"	
	VOR: SYI	Available from N 36° 8' 1.01" W 86° 39' 33.40" to N 36° 2' 24.52" W 86° 44' 21.82"	
	VOR: GHM	Available from N 36° 4' 53.10" W 86° 41' 22.01" to N 36° 2' 24.52" W 86° 44' 21.82"	



Name:	Dennis Osterhage
Project Name:	KBNA HGGRD1 SID ALL RWYS FIRST WP 20120405
Software:	RNAV-Pro™
Version:	2.35
Date/Time:	4/5/2012 9:18:08 AM
Input File:	KBNA HGGRD1 SID RW20
Databases:	AVNIS Date: 08/25/2011 NFD Date: 07/02/2009 DTED® (MAX) Date: 2002

Results Summary:

Flyability	✔	**Please Check Flyability Results**
DME/DME	✔	
Radars	?	
Comms	?	
TERPS	?	

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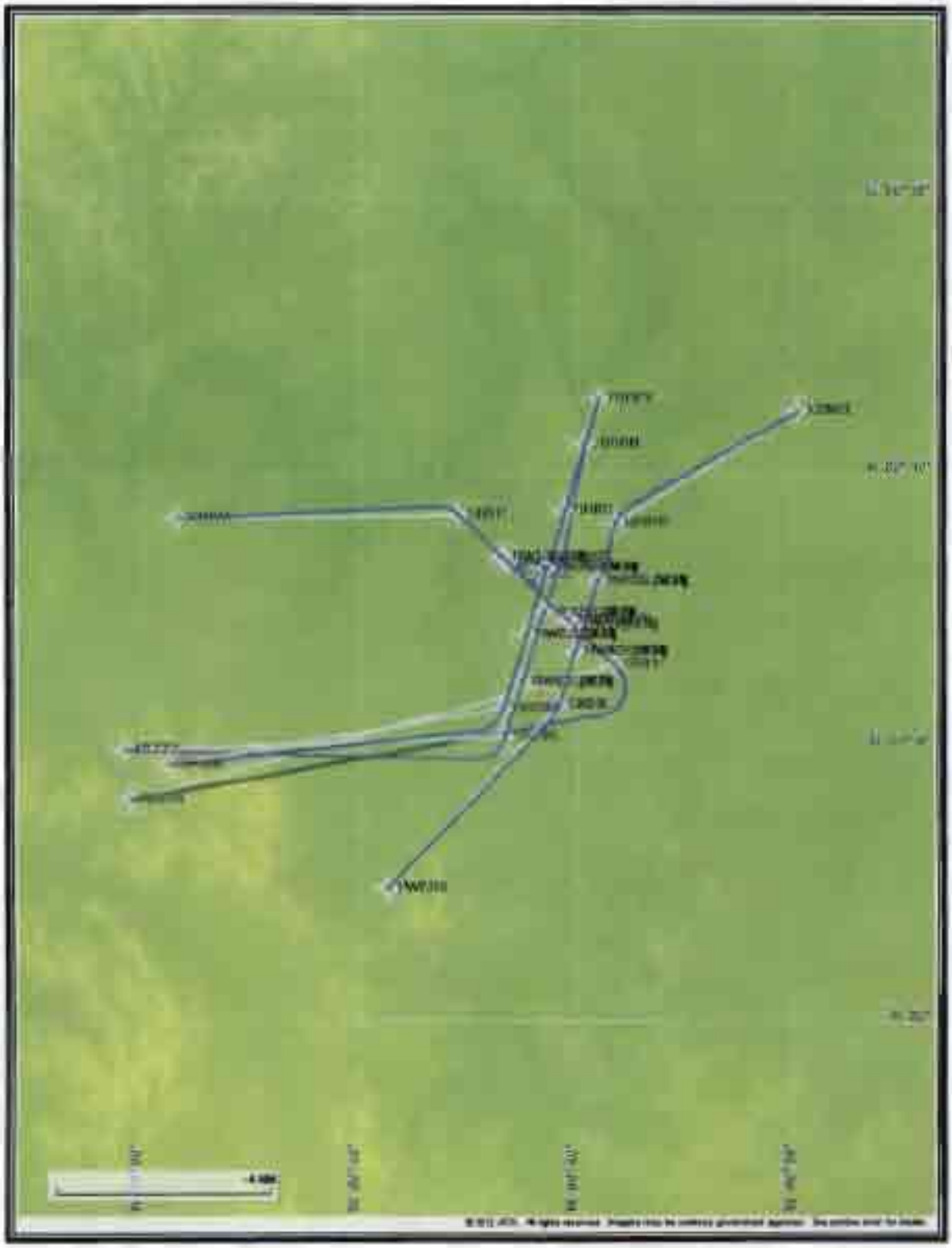


Flight Plan

Return To Summary

Name	Type	Lat/Lon	Alt [Ft]	VNAV Mode	IAS [Kts]	Turn Type	Leg Type
RW20R(...	WP	N 36° 8' 16.23" W 86° 40' 42.84"	555.4	VNAV	0.0	Fly Over	TF
RW02L(...	WP	N 36° 7' 3.64" W 86° 41' 11.31"	633.5	VNAV	130.0	Fly Over	VA
GH20R	WP	N 36° 5' 43.31" W 86° 41' 42.80"	1300.0	VNAV	145.0	Fly Over	DF
BOGAA	WP	N 36° 4' 40.70" W 86° 49' 23.38"	2561.7	VNAV	180.0	Fly Over	DF

Climb Gradient: 500.0 Ft/NM up to 1300.0 Ft MSL

Flyability

Return To Summary

Settings:

Flight Type: Departure
Selected Airport: KBNA
Aircraft Category: Cat D
Climb Gradient: 500.0 Ft/NM up to 1300.0 Ft MSL
Ground Speeds:
Departure: **120.0 Kts** out to **10.0 NM**
Table:
200.0 Kts up to **29000.0 Ft.**
280.0 Kts up to **99900.0 Ft.**
Wind Settings: *None assigned*
Descent During a Turn: Allowed
VNAV Mode: Flight Plan

Flight Track comes into contact with terrain. Minimum AGL along route was -25.32 Ft.
Flight Track contacted terrain (DTED lvl 0 max) between AER and DER or within 2/3 NM of DER.

DME/DME

Return To Summary

Settings:

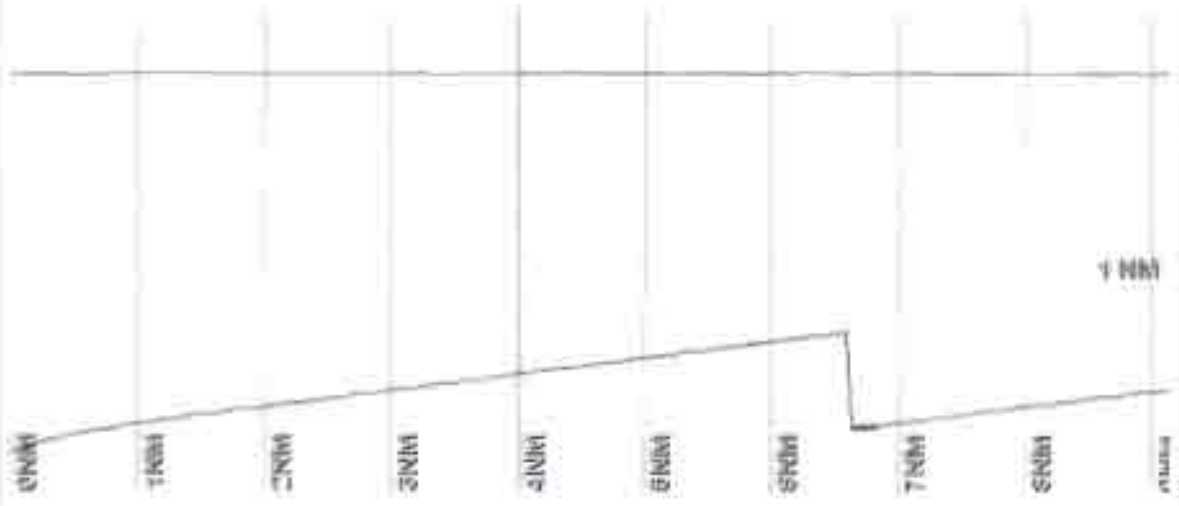
RNP: 2.0
Flight Mode: Manual
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Inertial Drift: Enabled
Initial Drift: 0.165 NM
INS Drift Rate: 8.000 NM/Hour
Range Mode: OSV
Co-Frequencies: Evaluated
RNP Edges: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME , VORTAC , TACAN , and User
DME Include Angles: 30 to 150
Critical DMEs: Allowed
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Flight Check DMEs: Selected
Higher Altitudes: Evaluated
Near Maximum Altitude: Evaluated
Minimum MSL DMEs Avail: 2562 Ft

Total Number of DMEs Used: 2

Maximum DME Error: 0.669 NM

No Critical DMEs were found

Available DMEs: BNA, SYI, GHM



DME/DME (Continued.)

Return To Summary

DMEs Used

#	Name	Lat/Lon	Range	Source	Critical	Err. [NM]	Status	Time	Distance
1	BNA	N 36° 8' 13.08" W 86° 41' 5.18"	H	Database	NO	0.838	Enabled	2.0 %	2.2 %
2	SYI	N 35° 33' 43.12" W 86° 28' 20.95"	L	Database	NO	0.838	Enabled	2.0 %	2.2 %

Flight Check DME Selection

Distance [NM]	Selected DMEs			Alternate
0.0				
1.3				
2.7	BNA	SYI	GHM	

Inertial Drift Segments

#	Start Location	End Location	Length [NM]
1	N 36° 8' 16.23" W 86° 40' 42.84"	N 36° 4' 57.24" W 86° 46' 16.63"	6.6
	VOR: BNA	Available from N 36° 8' 16.23" W 86° 40' 42.84" to N 36° 4' 57.24" W 86° 46' 16.63"	
	VOR: SYI	Available from N 36° 8' 16.23" W 86° 40' 42.84" to N 36° 4' 57.24" W 86° 46' 16.63"	
	VOR: GHM	Available from N 36° 5' 38.53" W 86° 41' 44.86" to N 36° 4' 57.24" W 86° 46' 16.63"	
2	N 36° 4' 55.73" W 86° 46' 33.80"	N 36° 4' 40.72" W 86° 49' 23.11"	2.3
	VOR: BNA	Available from N 36° 4' 55.73" W 86° 46' 33.80" to N 36° 4' 40.72" W 86° 49' 23.11"	
	VOR: GHM	Available from N 36° 4' 55.73" W 86° 46' 33.80" to N 36° 4' 40.72" W 86° 49' 23.11"	
	VOR: SYI	Available from N 36° 4' 55.73" W 86° 46' 33.80" to N 36° 4' 40.72" W 86° 49' 23.11"	

Name:	Dennis Osterhage
Project Name:	KBNA HGGRD1 SID ALL RWYS FIRST WP 20120405
Software:	RNAV-Pro™
Version:	2.35
Date/Time:	4/5/2012 9:15:43 AM
Input File:	KBNA HGGRD1 SID RW02...
Databases:	AVNIS Date: 08/26/2011
	NFD Date: 07/02/2009
	DTED® (MAX) Date: 2002

Results Summary:

Flyability	✔	**Please Check Flyability Results**
DME/DME	✔	
Radars	?	
Comms	?	
TERPS	?	

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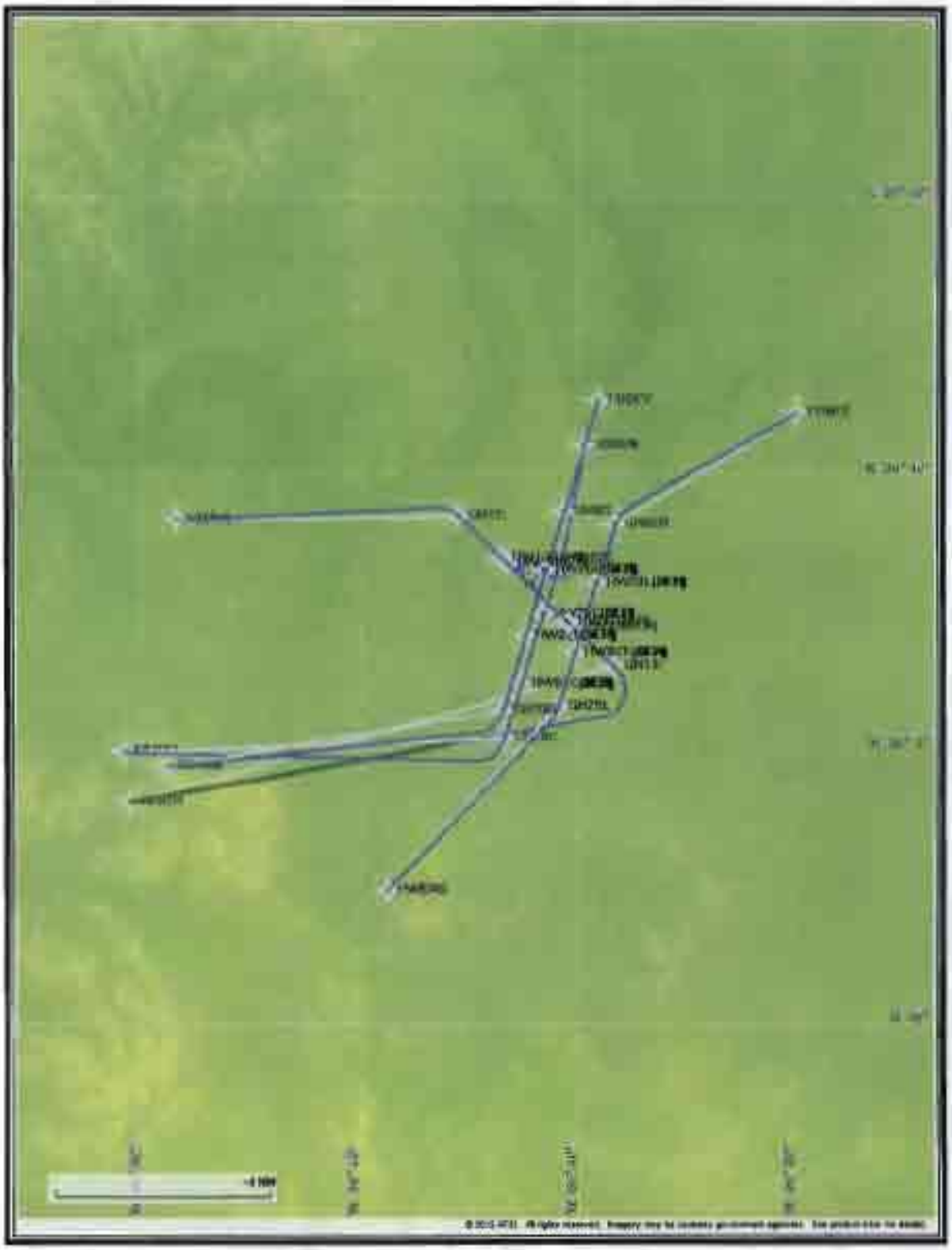


Flight Plan

Return To Summary

Name	Type	Lat/Lon	Alt [Ft]	VNAV Mode	IAS [Kts]	Turn Type	Leg Type
RW02L(...	WP	N 36° 7' 3.64" W 86° 41' 11.31"	598.5	VNAV	0.0	Fly Over	TF
RW20R(...	WP	N 36° 8' 16.23" W 86° 40' 42.84"	590.4	VNAV	130.0	Fly Over	VA
GH02L	WP	N 36° 9' 18.59" W 86° 40' 18.36"	1100.0	VNAV	145.0	Fly Over	DF
FOOFY	WP	N 36° 11' 20.01" W 86° 39' 30.71"	1524.1	VNAV	180.0	Fly Over	DF

Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL

Flyability

Return To Summary

Settings:

Flight Type: Departure
Selected Airport: KBNA
Aircraft Category: Cat D
Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL
Ground Speeds:
Departure: **120.0 Kts** out to **10.0 NM**
Table:
200.0 Kts up to **29000.0 Ft.**
280.0 Kts up to **99900.0 Ft.**
Wind Settings: *None assigned*
Descent During a Turn: Allowed
VNAV Mode: Flight Plan

Flight Track comes into contact with terrain. Minimum AGL along route was -16.08 Ft.
Flight Track contacted terrain (DTED lvl 0 max) between AER and DER or within 2/3 NM of DER.

DME/DME

Return To Summary

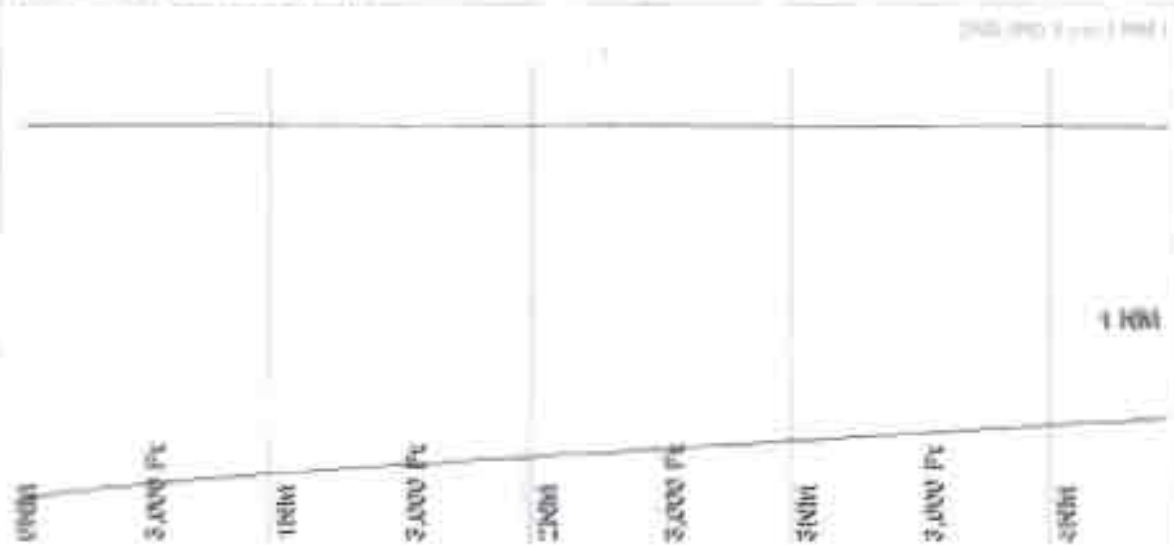
Settings:

RNP: 2.0
Flight Mode: Manual
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Inertial Drift: Enabled
Initial Drift: 0.165 NM
INS Drift Rate: 6.000 NM/Hour
Range Mode: OSV
Co-Frequencies: Evaluated
RNP Edges: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME , VORTAC , TACAN , and User
DME Include Angles: 30 to 150
Critical DMEs: Allowed
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Flight Check DMEs: Selected
Higher Altitudes: Evaluated
Near Maximum Altitude: Evaluated

Total Number of DMEs Used: 0

Maximum DME Error Could not be Derived with < 2 DMEs.

No Critical DMEs were found.



DME/DME (Continued.)

Return To Summary

Flight Check DME Selection

Distance [NM]	Selected DMEs	Alternate
0.0		
1.3		
2.3		

Inertial Drift Segments

#	Start Location	End Location	Length [NM]
1	N 36° 7' 3.64" W 86° 41' 11.31"	N 36° 11' 18.73" W 86° 39' 31.21"	4.5
	VOR: BNA	Available from N 36° 7' 3.64" W 86° 41' 11.31" to N 36° 11' 18.73" W 86° 39' 31.21"	
	VOR: SYI	Available from N 36° 7' 3.64" W 86° 41' 11.31" to N 36° 11' 18.73" W 86° 39' 31.21"	

Name:	Dennis Osterhage
Project Name:	KBNA HGGRD1 SID ALL RWYS FIRST WP 20120405
Software:	RNAV-Pro™
Version:	2.35
Date/Time:	4/5/2012 9:16:11 AM
Input File:	KBNA HGGRD1 SID RW02
Databases:	AVNIS Date: 08/26/2011 NFD Date: 07/02/2009 DTED® (MAX) Date: 2002

Results Summary:

Flyability	✔ **Please Check Flyability Results**
DME/DME	✔
Radars	?
Comms	?
TERPS	?

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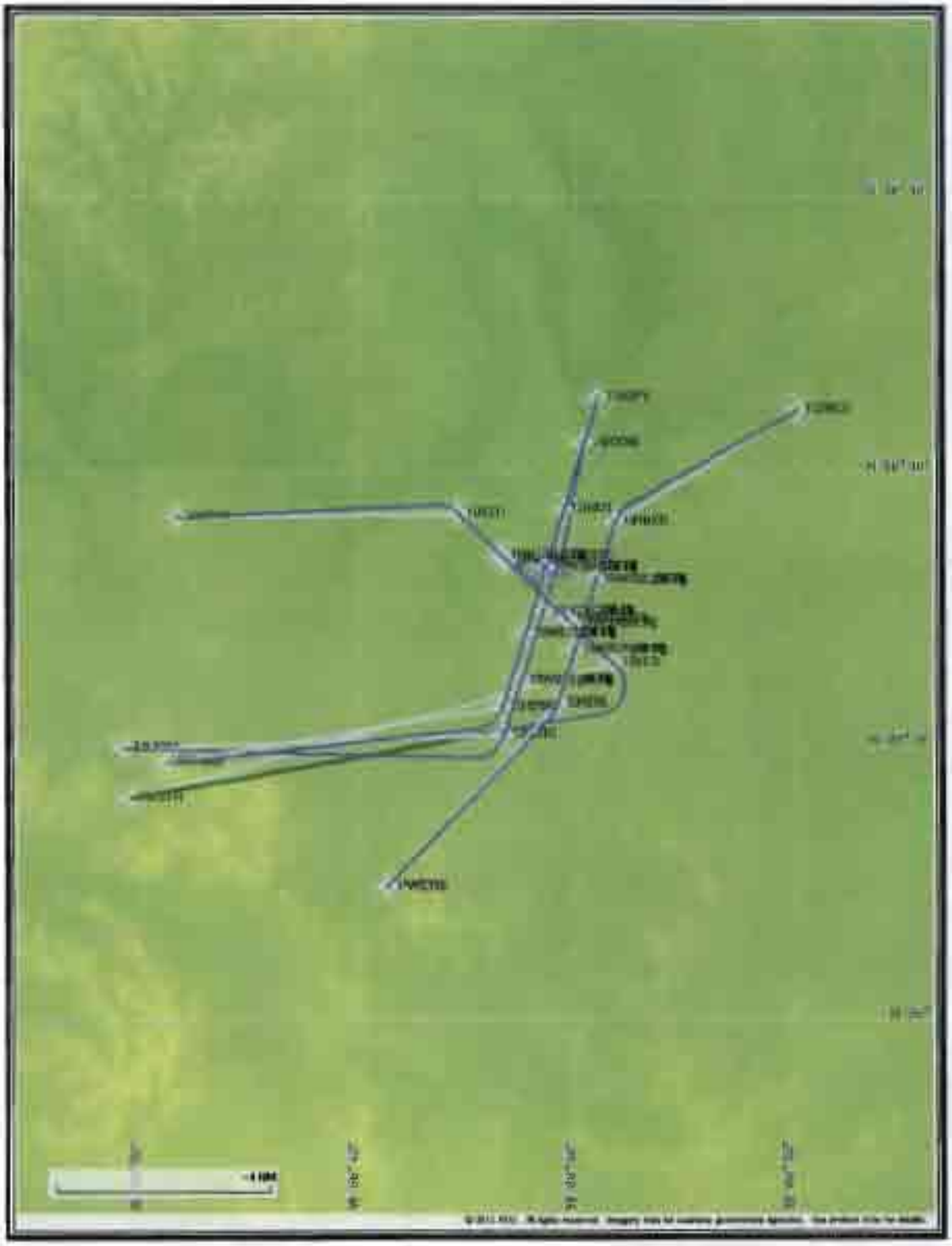


Flight Plan

Return To Summary

Name	Type	Lat/Lon	Alt [Ft]	VNAV Mode	IAS [Kts]	Turn Type	Leg Type
RW02R(...	WP	N 36° 6' 45.77" W 86° 40' 3.52"	589.7	VNAV	0.0	Fly Over	TF
RW20L(...	WP	N 36° 8' 1.01" W 86° 39' 33.40"	574.9	VNAV	130.0	Fly Over	VA
GH02R	WP	N 36° 9' 5.03" W 86° 39' 7.77"	1100.0	VNAV	145.0	Fly Over	DF
KDNCE	WP	N 36° 11' 7.30" W 86° 34' 55.24"	1893.8	VNAV	180.0	Fly Over	DF

Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL

Flyability

Return To Summary

Settings:

Flight Type: Departure
Selected Airport: KBNA
Aircraft Category: Cat D
Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL
Ground Speeds:
Departure: **120.0 Kts** out to **10.0 NM**
Table:
200.0 Kts up to **29000.0 Ft.**
280.0 Kts up to **99900.0 Ft.**
Wind Settings: *None assigned*
Descent During a Turn: Allowed
VNAV Mode: Flight Plan

Flight Track comes into contact with terrain. Minimum AGL along route was -34.40 Ft.
Flight Track contacted terrain (DTED lvl 0 max) between AER and DER or within 2/3 NM of DER.

DME/DME

Return To Summary

Settings:

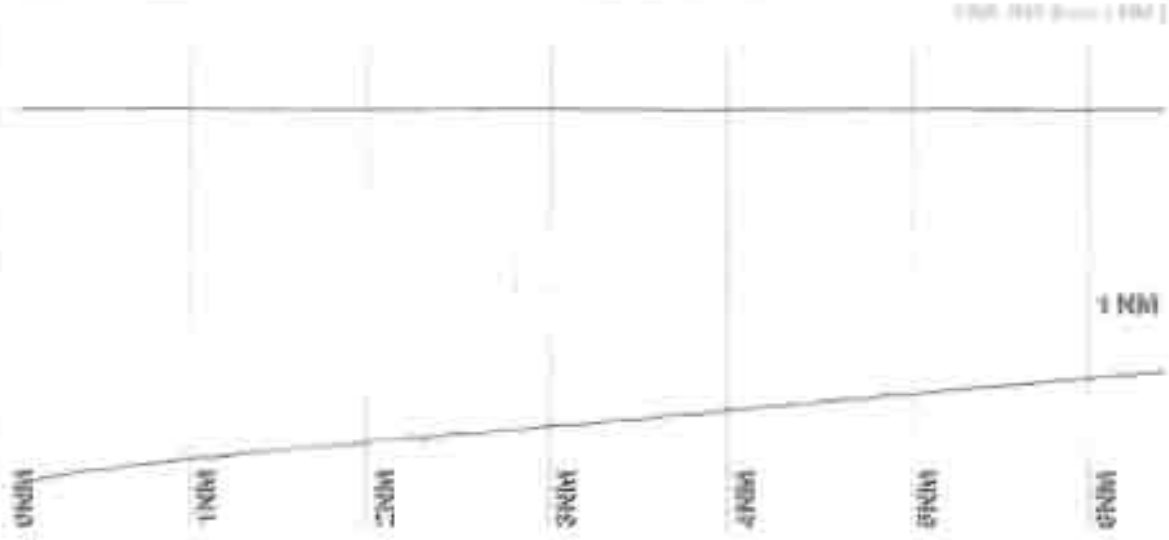
RNP: 2.0
Flight Mode: Manual
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Inertial Drift: Enabled
Initial Drift: 0.165 NM
INS Drift Rate: 8.000 NM/Hour
Range Mode: OSV
Co-Frequencies: Evaluated
RNP Edges: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME , VORTAC , TACAN , and User
DME Include Angles: 30 to 150
Critical DMEs: Allowed
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Flight Check DMEs: Selected
Higher Altitudes: Evaluated
Near Maximum Altitude: Evaluated

Total Number of DMEs Used: 0

Maximum DME Error Could not be Derived with < 2 DMEs

No Critical DMEs were found

Available DMEs: BNA



DME/DME (Continued.)

Return To Summary

Flight Check DME Selection

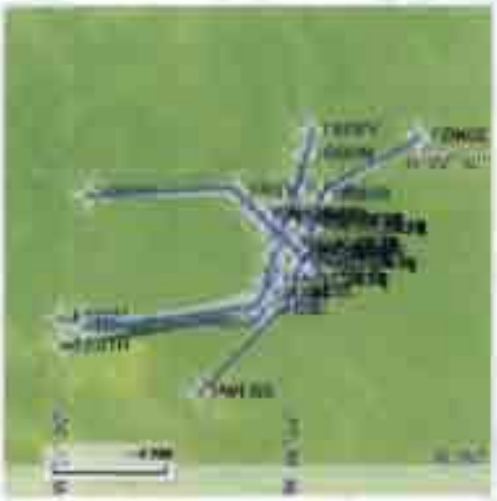
Distance [NM]	Selected DMEs	Alternate
0.0		
1.3		
2.4	BNA	

Inertial Drift Segments

#	Start Location	End Location	Length [NM]
1	N 36° 6' 45.77" W 86° 40' 3.52"	N 36° 11' 6.75" W 86° 34' 56.50"	6.4

VOR: BNA — Available from N 36° 6' 45.77" W 86° 40' 3.52" to N 36° 11' 6.75" W 86° 34' 56.50"

VOR: SYI — Available from N 36° 6' 45.77" W 86° 40' 3.52" to N 36° 11' 6.75" W 86° 34' 56.50"



Name:	Dennis Osterhage
Project Name:	KBNA HGGRD1 SID ALL RWYS FIRST WP 20120405
Software:	RNAV-Pro™
Version:	2.35
Date/Time:	4/5/2012 9:16:39 AM
Input File:	KBNA HGGRD1 SID RW13
Databases:	AVNIS Date: 08/26/2011
	NFD Date: 07/02/2009
	DTED® (MAX) Date: 2002

Results Summary:

Flyability	✔ **Please Check Flyability Results**
DME/DME	✔
Radars	?
Comms	?
TERPS	?

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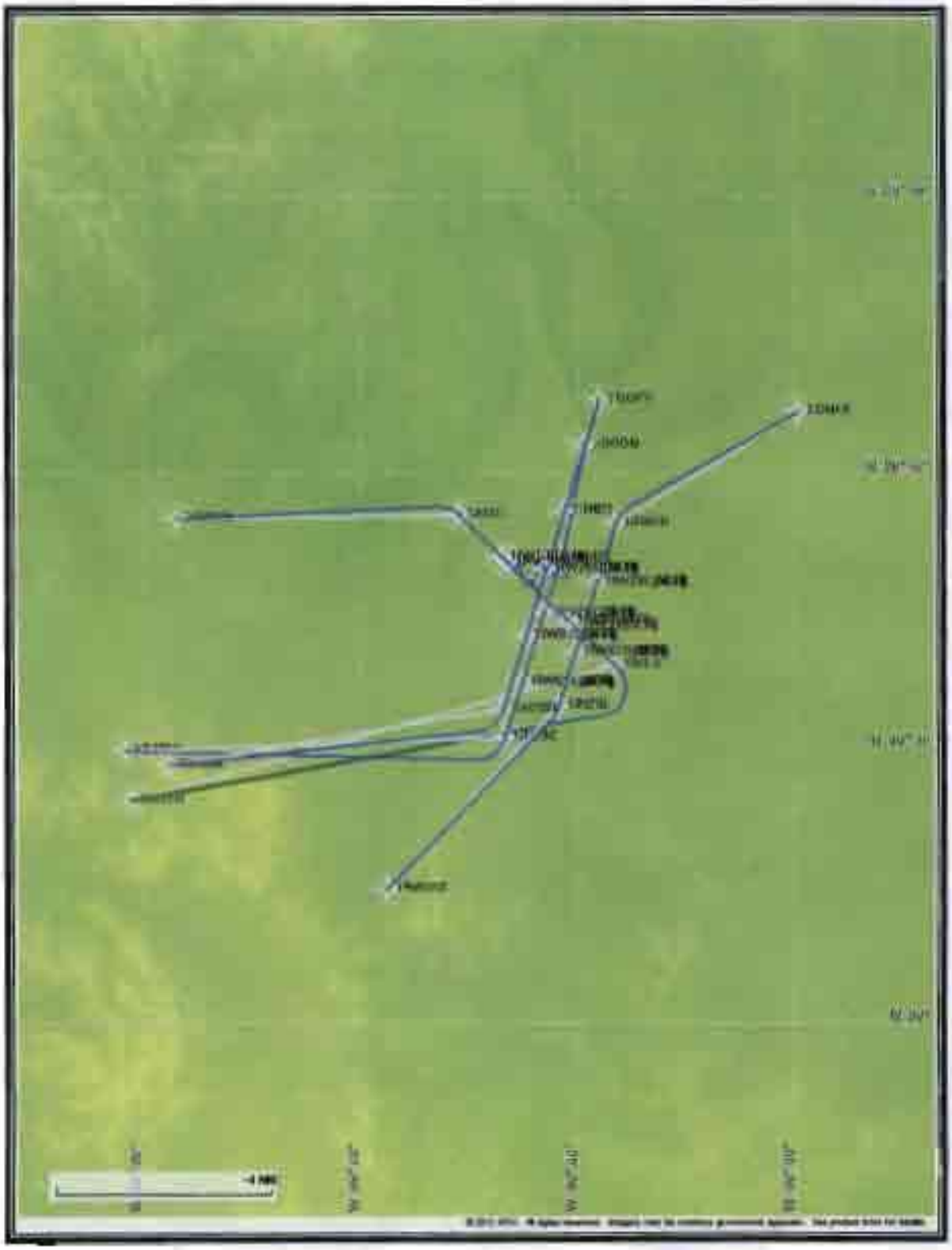


Flight Plan

Return To Summary

Name	Type	Lat/Lon	Alt [Ft]	VNAV Mode	IAS [Kts]	Turn Type	Leg Type
RW13(A...	WP	N 36° 8' 23.16" W 86° 41' 36.17"	535.8	VNAV	0.0	Fly Over	TF
RW31(D...	WP	N 36° 7' 13.79" W 86° 40' 5.44"	617.2	VNAV	130.0	Fly Over	VA
GH13:	WP	N 36° 6' 31.09" W 86° 39' 9.65"	1100.0	VNAV	145.0	Fly Over	DF
KLSTR	WP	N 36° 4' 1.80" W 86° 50' 16.36"	2968.5	VNAV	180.0	Fly Over	DF

Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL

Flyability

Return To Summary

Settings:

Flight Type: Departure
Selected Airport: KBNA
Aircraft Category: Cat D
Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL
Ground Speeds:
Departure: **120.0 Kts** out to **10.0 NM**
Table:
200.0 Kts up to **29000.0 Ft**
280.0 Kts up to **99900.0 Ft**
Wind Settings: *None assigned*
Descent During a Turn: Allowed
VNAV Mode: Flight Plan

Flight Track comes into contact with terrain. Minimum AGL along route was -55.12 Ft.
Flight Track contacted terrain (DTED lvl 0 max) between AER and DER or within 2/3 NM of DER.

DME/DME

Return To Summary

Settings:

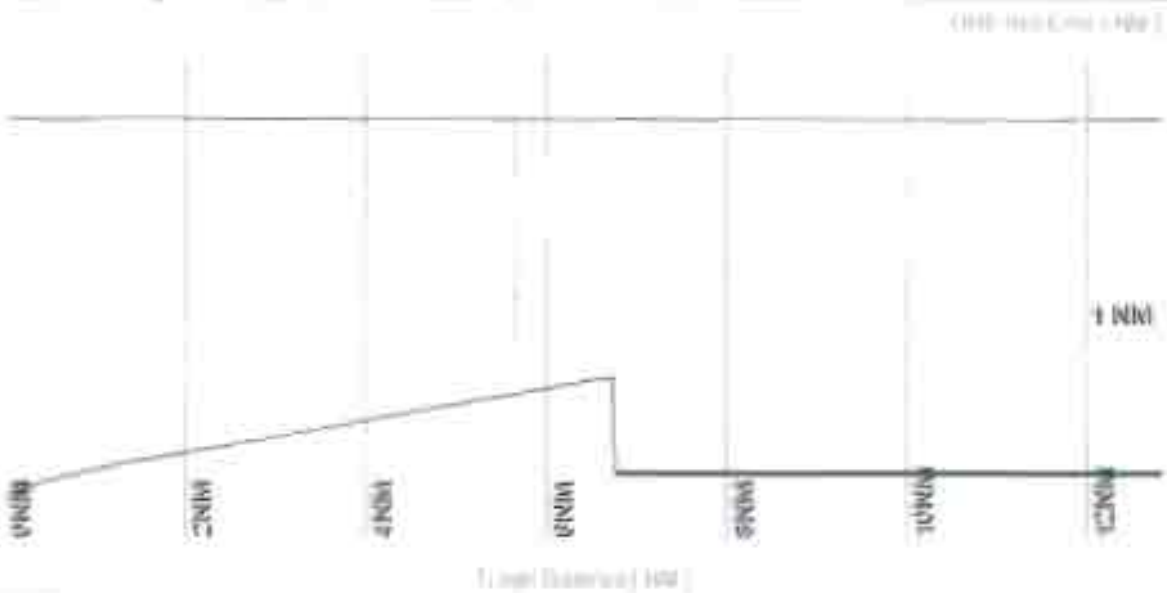
RNP: 2.0
Flight Mode: Manual
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Inertial Drift: Enabled
Initial Drift: 0.165 NM
INS Drift Rate: 8.000 NM/Hour
Range Mode: OSV
Co-Frequencies: Evaluated
RNP Edges: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME , VORTAC , TACAN , and User
DME Include Angles: 30 to 150
Critical DMEs: Allowed
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Flight Check DMEs: Selected
Higher Altitudes: Evaluated
Near Maximum Altitude: Evaluated
Minimum MSL DMEs Avail: 2969 Ft.

Total Number of DMEs Used: 3

Maximum DME Error: 0.678 NM

No Critical DMEs were found.

Available DMEs: SYI, GHM, BNA



DME/DME (Continued.)

Return To Summary

DMEs Used

#	Name	Lat/Lon	Range	Source	Critical	Err. [NM]	Status	Time	Distance
1	GHM	N 35° 50' 2.12" W 87° 27' 6.35"	L	Database	NO	0.732	Enabled	29.3 %	31.3 %
2	SYI	N 35° 33' 43.12" W 86° 26' 20.95"	L	Database	NO	0.880	Enabled	43.4 %	47.5 %
3	BNA	N 36° 8' 13.06" W 86° 41' 5.18"	H	Database	NO	0.678	Enabled	14.1 %	16.2 %

Flight Check DME Selection

Distance [NM]	Selected DMEs					Alternate
0.0						
1.7						
2.7	GHM	SYI	BNA			

Inertial Drift Segments

#	Start Location	End Location	Length [NM]
1	N 36° 8' 23.16" W 86° 41' 36.17"	N 36° 5' 6.37" W 86° 42' 51.13"	5.7
	VOR: BNA	Available from N 36° 8' 23.16" W 86° 41' 36.17" to N 36° 5' 6.37" W 86° 42' 51.13"	
	VOR: SYI	Available from N 36° 8' 23.16" W 86° 41' 36.17" to N 36° 5' 6.37" W 86° 42' 51.13"	
	VOR: GHM	Available from N 36° 5' 17.59" W 86° 41' 33.39" to N 36° 5' 6.37" W 86° 42' 51.13"	

Name:	Dennis Osterhage
Project Name:	KBNA HGGRD1 SID ALL RWYS FIRST WP 20120405
Software:	RNAV-Pro™
Version:	2.35
Date/Time:	4/5/2012 9:15:14 AM
Input File:	KBNA HGGRD1 SID RW02
Databases:	AVNIS Date: 08/26/2011
	NFD Date: 07/02/2009
	DTED® (MAX) Date: 2002

Results Summary:

Flyability	✔ **Please Check Flyability Results**
DME/DME	✔
Radars	?
Comms	?
TERPS	?

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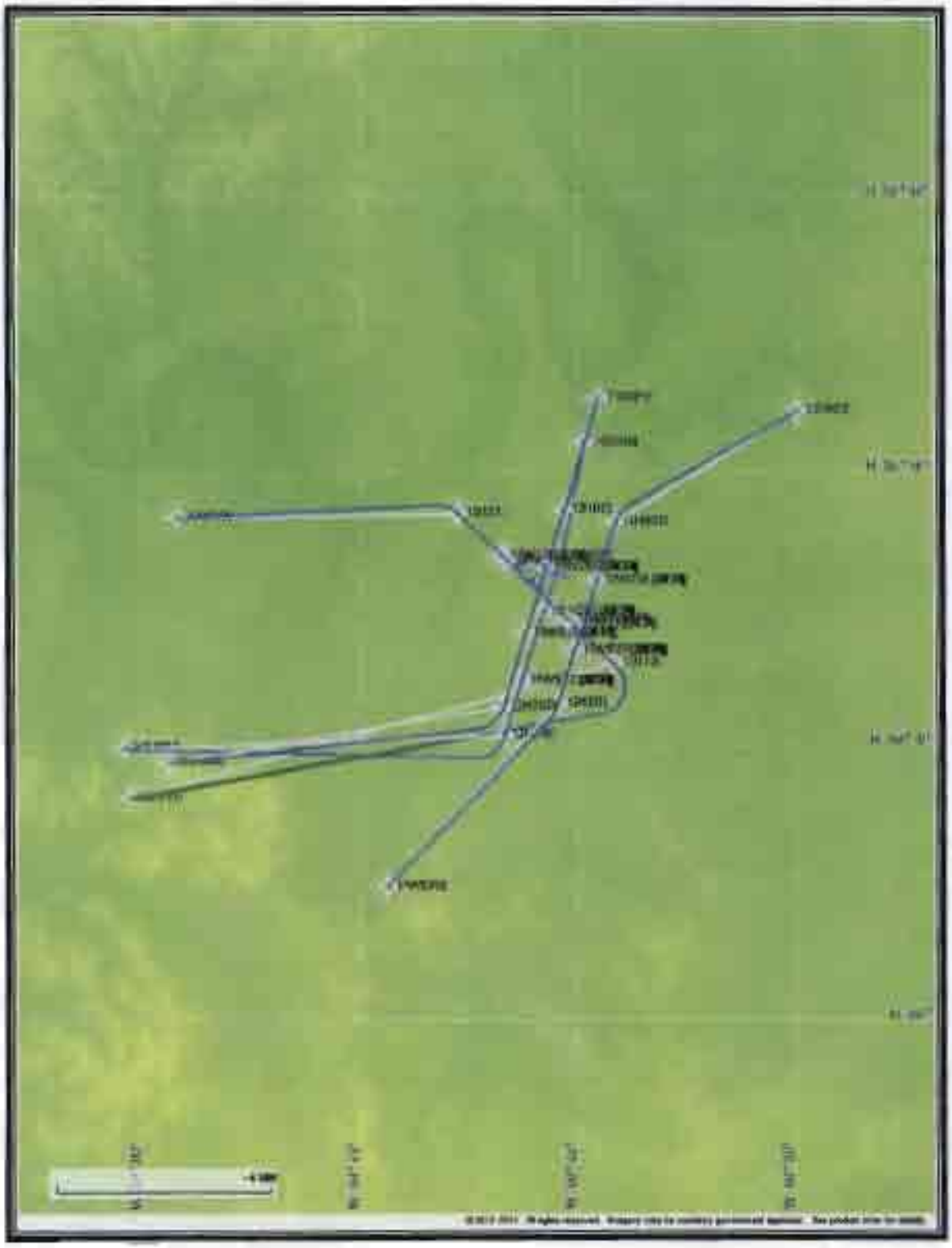


Flight Plan

Return To Summary

Name	Type	Lat/Lon	Alt [Ft]	VNAV Mode	IAS [Kts]	Turn Type	Leg Type
RW02C(...	WP	N 36° 6' 11.99" W 86° 41' 16.66"	569.0	VNAV	0.0	Fly Over	TF
RW20C(...	WP	N 36° 7' 27.24" W 86° 40' 46.55"	606.8	VNAV	130.0	Fly Over	VA
GH02C	WP	N 36° 8' 27.61" W 86° 40' 22.38"	1100.0	VNAV	145.0	Fly Over	DF
JOOON	WP	N 36° 10' 30.30" W 86° 39' 50.22"	1517.5	VNAV	180.0	Fly Over	DF

Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL

Flyability

Return To Summary

Settings:

Flight Type: Departure
Selected Airport: KBNA
Aircraft Category: Cat D
Climb Gradient: 500.0 Ft/NM up to 1100.0 Ft MSL
Ground Speeds:
Departure: **120.0 Kts** out to **10.0 NM**
Table:
200.0 Kts up to **29000.0 Ft.**
280.0 Kts up to **99900.0 Ft.**
Wind Settings: *None assigned*
Descent During a Turn: Allowed
VNAV Mode: Flight Plan

Flight Track comes into contact with terrain. Minimum AGL along route was -43.35 Ft.
Flight Track contacted terrain (DTED lvl 0 max) between AER and DER or within 2/3 NM of DER.

DME/DME

Return To Summary

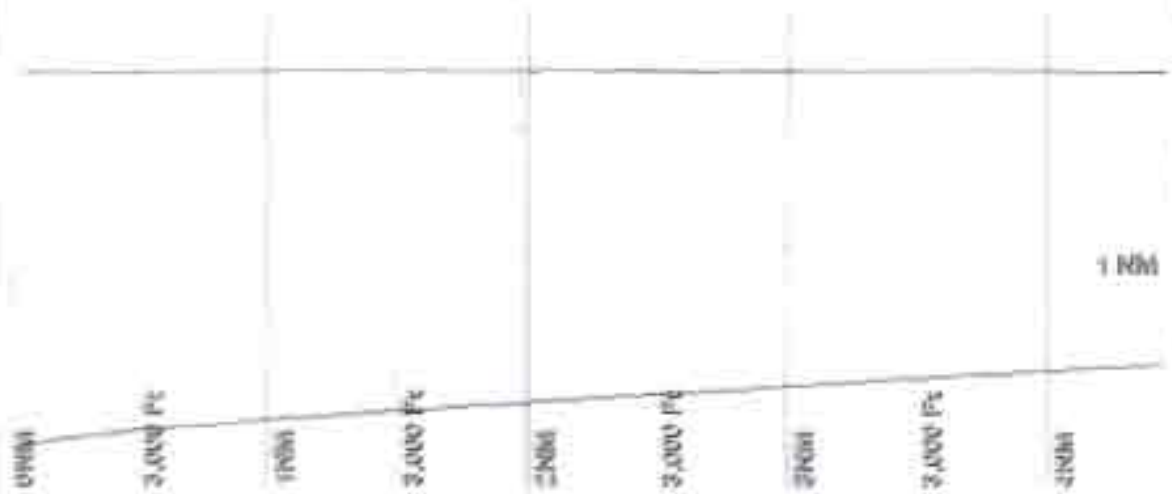
Settings:

RNP: 2.0
Flight Mode: Manual
Line of Sight (DTED Level 0 Max): Evaluated
DME Restrictions: Evaluated
Inertial Drift: Enabled
  Initial Drift: 0.165 NM
  INS Drift Rate: 8.000 NM/Hour
Range Mode: OSV
Co-Frequencies: Evaluated
RNP Edges: Evaluated
Min DME Range: 3.0 NM
Allowed Gap Length: 4.0 NM
DME Types: VOR/DME , VORTAC , TACAN , and User
DME Include Angles: 30 to 150
Critical DMEs: Allowed
DoD Facilities: Not included
Foreign Facilities: Not included
Low & Terminal DMEs: Included
Flight Check DMEs: Selected
Higher Altitudes: Evaluated
Near Maximum Altitude: Evaluated

Total Number of DMEs Used: 0

Maximum DME Error Could not be Derived with < 2 DMEs

No Critical DMEs were found.



DME/DME (Continued.)

Return To Summary

Flight Check DME Selection

Distance [NM]	Selected DMEs			Alternate
0.0				
1.3				
2.4				

Inertial Drift Segments

#	Start Location	End Location	Length [NM]
1	N 36° 6' 11.99" W 86° 41' 16.66"	N 36° 10' 29.93" W 86° 39' 50.31"	4.5
	VOR: BNA	Available from N 36° 6' 11.99" W 86° 41' 16.66" to N 36° 10' 29.93" W 86° 39' 50.31"	
	VOR: SYI	Available from N 36° 6' 11.99" W 86° 41' 16.66" to N 36° 10' 29.93" W 86° 39' 50.31"	