Flight Procedure Tracking Form	Action: FLIGHT CHECK	Task Type: IAP	Date Open: 01/04/2012	Task #: 2011061026522201008	Request #: 20110610265222
Procedure: VOR RWY 23 AMDT 9		Airport ID: KBED	Airport: LAURENCE G HANSCOM FLD		Reimbursable #:
City: BEDFORD	ST: MA	GPS #:		Estimated Chart Date: 09/20/2012	FICO #:
Fac ID: LWM	Fac. Type: VDME Proc - A	Specialist: DAVID SAUER			

Procedure Review

	Rec'd	Rel'd	Full Name	Comments
Lead:	12/21/2011	06/21/2012	DAVID PUGLISI	
QA:	06/21/2012	06/21/2012	DAVID PUGLISI	
Liaison:	06/21/2012		Spurin	P1

P1

Procedure Comments:

Remark Type: INFORMATION

Pkg 6 of 9

BEDFORD, MA LAURENCE G HANSCOM FLD (KBED) VOR RWY 23, AMDT 9 ENROUTE-NO FC BY: 8.7.12 PUB: 9.20.12
ATTACHED FORMS: 8260-5. 8260-10. 8260-9; 8260-2(S): BEDDS (BE) LOM, REV 11; HOWDI INT, REV 4; LAWRENCE (LWM) VDME, REV 10 (INFO); MANCHESTER (MHT) VDME, REV 17 (INFO); ZIMOT INT, ORIG.
THIS CANCELS FDC NOTAM 2/8581.
CONTACT: DONALD W. SMITH, AJV-352 LEAD, 405.954.1036

VOR/DME LWM	APP CRS	Rwy ldg	5107
112.5	223°	THRE	128
Chan 72		Apt Elev	132

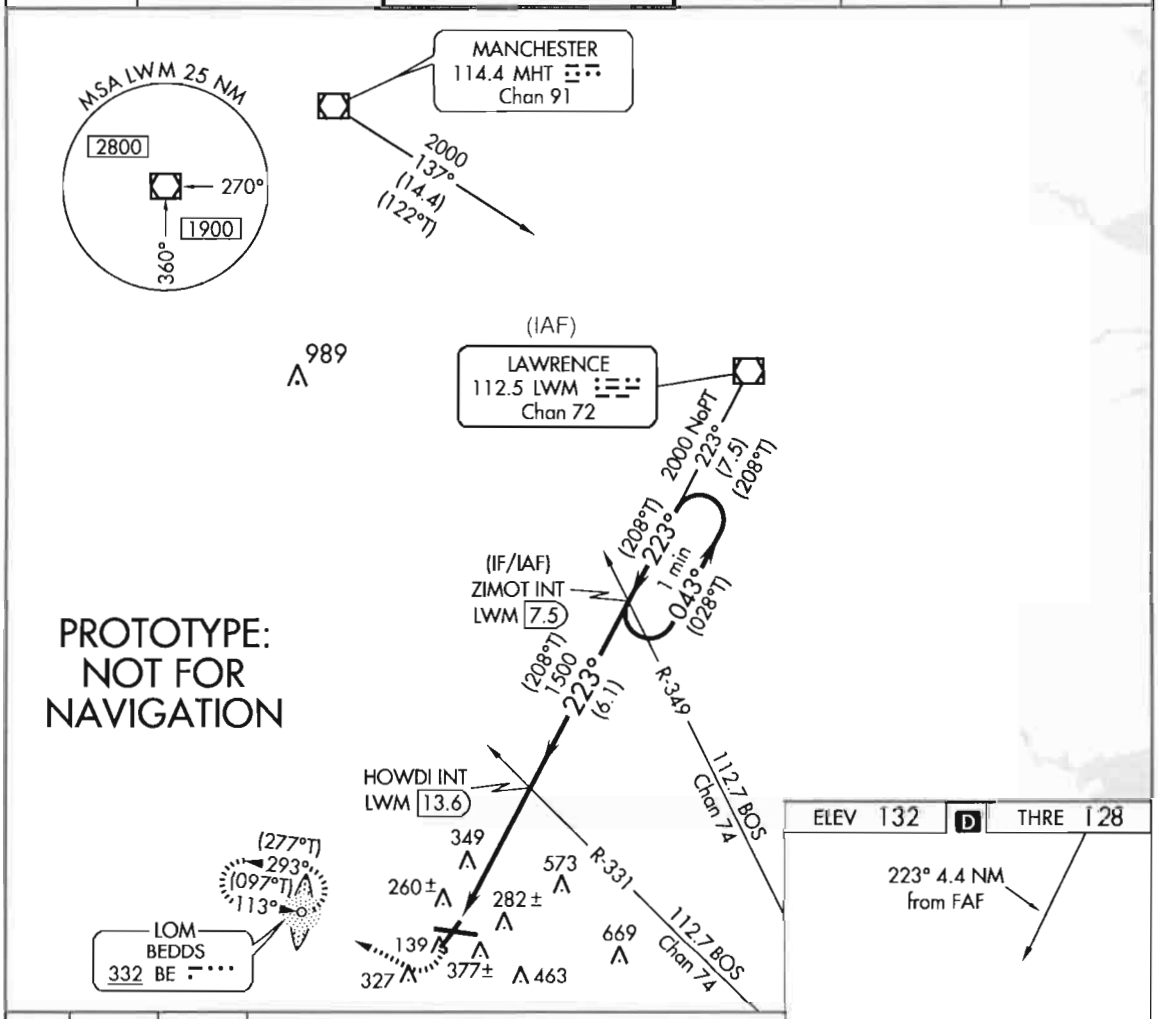
VOR RWY 23

BEDFORD/LAURENCE G. HANSCOM FIELD (BED)

Visibility reduction by helicopters NA. When VGSI inop, Straight-in/Circling Rwy 23 procedure NA at night. When local altimeter setting not received, use Boston altimeter setting and increase all MDA 60 feet; increase S-23 Cats C and D and Circling Cat C visibility ⅛ mile and Circling Cat D visibility ¼ mile. ADF Required

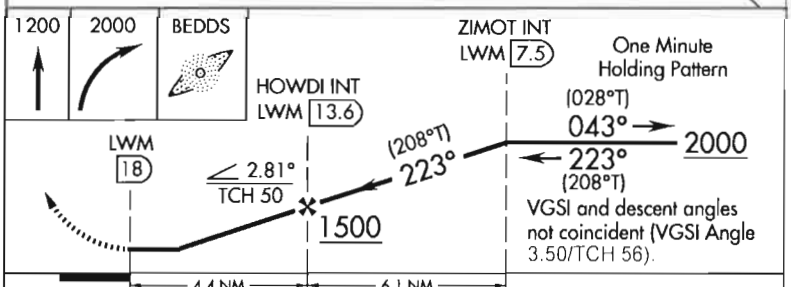
MISSED APPROACH: Climb to 1200 then climbing right turn to 2000 direct BEDDS LOM and hold.

ATIS	BOSTON APP CON	HANSCOM TOWER★	GND CON	CLNC DEL	UNICOM
124.6	124.4 279.6	118.5 (CTAF) L 257.2	121.7	121.85	122.95



ELEV 132 D THRE 128

223° 4.4 NM from FAF

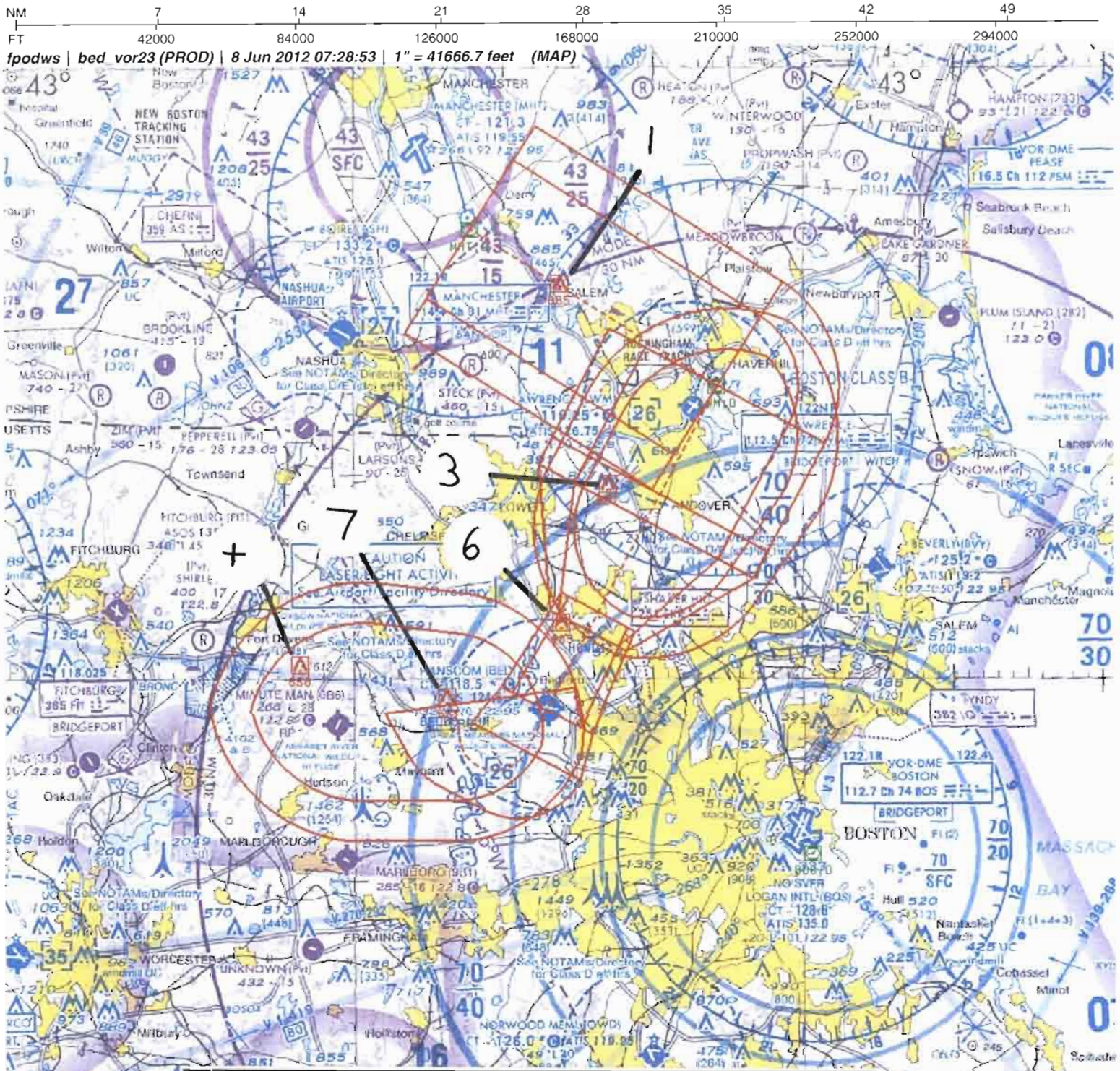


MIRL Rwy 5-23 L
HIRL Rwy 11-29 L
REIL Rwys 5 and 23

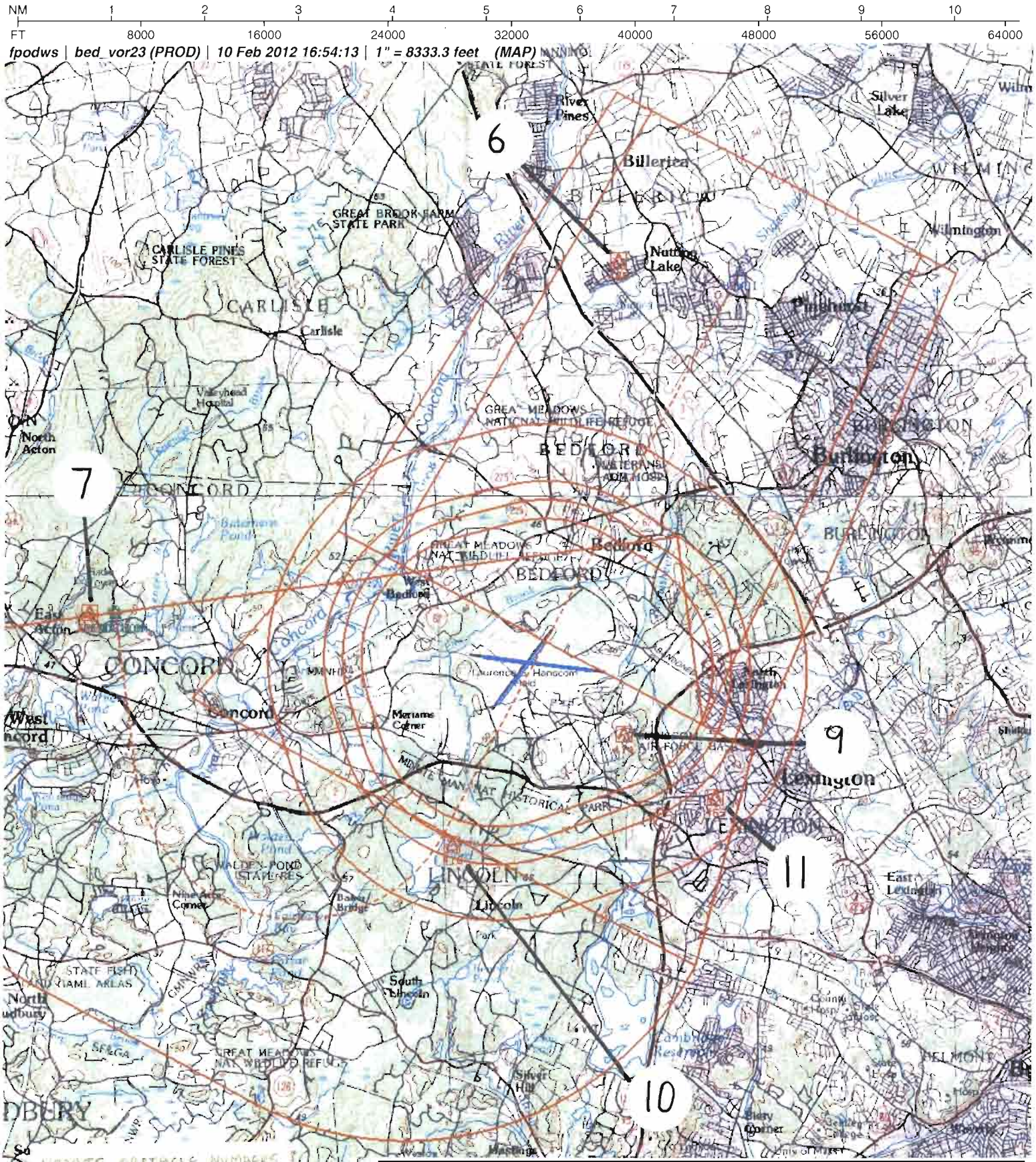
CATEGORY	A	B	C	D
S-23	740-1	612 (700-1)	740-1¾	612 (700-1¾)
CIRCLING	740-1	608 (700-1)	740-1¾ 608 (700-1¾)	780-2 648 (700-2)

FAF to MAP 4.4 NM

Knots	60	90	120	150	180
Min:Sec	4:24	2:56	2:12	1:46	1:28



Airport ID:	KBED	FM 9			
Apt Name:	BEDFORD/LAURENCE G. HANSCOM FIELD	No	SEGMENT	OBSTRUCTION	ELEV
City:	BEDFORD	6	FINAL	AAO	485
State:	MA	3	INTERMEDIATE	TOWER	807
Proc ID:	VOR RWY 23	3	INITIAL – H-I-L	TOWER	807
Amdt #:	9	3	FEEDER – LWM	TOWER	807
Scale	1:500,000	1	FEEDER - MHT	TOWER	885
		7	MISSED APPROACH	AAO	607
		+	HOLDING	AAO	850



Airport ID:	KBED	FM 9			
Apt Name:	BEDFORD/LAURENCE G. HANSCOM FIELD	No	SEGMENT	OBSTRUCTION	ELEV
City:	BEDFORD	6	FINAL	AAO	485
State:	MA	9	CIRCLING CAT A/B	COMM TWR	414
Proc ID:	VOR RWY 23	10	CIRCLING CAT C	TREE	416
Amdt #:	9	11	CIRCLING CAT D	TANK	463
Scale	1:100,000	7	MISSED APPROACH	AAO	607

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION
VOR STANDARD INSTRUMENT APPROACH PROCEDURE
FLIGHT STANDARDS SERVICE - TITLE 14 CFR PART 97.23

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

TERMINAL ROUTES

FROM	TO	COURSE AND DISTANCE	ALTITUDE
MHT VOR/DME	LWM VOR/DME	137.26 / 14.36	2000
LWM VOR/DME (IAF)	ZIMOT INT/LWM 7.50 DME (NOPT)	222.97 / 7.50	2000
ZIMOT INT/LWM 7.50 DME (IF/IAF)	HOWDI INT/LWM 13.60 DME	222.97 / 6.10 (LWM R-223)	1500

MISSED APPROACH

MAP: 4.44 MILES AFTER HOWDI INT/LWM 13.60 DME OR AT LWM 18.04 DME FIX

CLIMB TO 1200 THEN CLIMBING RIGHT TURN TO 2000 DIRECT BEDDS LOM AND HOLD.

ADDITIONAL FLIGHT DATA:

HOLD NW, LT, 113.00 INBOUND.
FAS OBST: 485 AAO 423225N/0711605W
CHART R-4102 A/B.
HOWDI TO RW23: 2.81/50.

1. PT ____ SIDE OF COURSE ____ OUTBOUND ____ FT WITHIN ____ MILES OF ____ (IAF)
2. HOLD NE ZIMOT, LT, 222.97 INBOUND, 2000 FT. IN LIEU OF PT (IAF)
3. FAC 222.97 FAF HOWDI INT/LWM 13.60 DME DIST FAF TO MAP 4.44 THLD 4.44
4. MIN. ALT ZIMOT 2000, HOWDI 1500
8. MSA FROM: LWM VOR/DME 090-180 1900, 180-090 2800

MAG VAR: 15W EPOCH YEAR: 1980

MINIMUMS

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT ALTERNATE: N A STANDARD @

CATEGORY =====>	A			B			C			D			E		
	MDA	VIS	HAT/HAA	MDA	VIS	HAT/HAA	MDA	VIS	HAT/HAA	MDA	VIS	HAT/HAA	MDA	VIS	HAT/HAA
S-23	740	1	612	740	1	612	740	1 3/4	612	740	1 3/4	612			
CIRCLING	740	1	608	740	1	608	740	1 3/4	608	780	2	648			

NOTES:

CHART NOTE: ADF REQUIRED.
CHART NOTE: VISIBILITY REDUCTION BY HELICOPTERS NA.
CHART PROFILE NOTE: VGSI AND DESCENT ANGLES NOT COINCIDENT.
CHART NOTE: WHEN VGSI INOP, STRAIGHT-IN/CIRCLING RWY 23 PROCEDURE NA AT NIGHT.
(SEE FORM 8260-10)

@ NA WHEN LOCAL WEATHER NOT AVAILABLE.

CITY AND STATE	ELEVATION: 132 THRE: 128	FACILITY IDENTIFIER:	PROCEDURE NO./AMDT NO./EFFECTIVE DATE:	SUP
BEDFORD, MA	AIRPORT NAME: LAURENCE G HANSCOM FLD	LWM	VOR RWY 23, AMDT 9	AMDT 8D
				DATE 12/22/2005

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
[ ] YES [X] NO		ROUTINE

COORDINATED WITH:

ATA	AAT	ALPA	APA	AOPA	NBAA	OTHER (specify)
X		X		X	X	X ZBW, BOS APP CON, BED ATCT, BED AMGR.

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:

DEVELOPED BY		
NAME: DAVID SAUER	FIFO AJV-352	DATE: 01/05/2012

APPROVED BY		
NAME: DARRYEL ADAMS MANAGER	FIFO AJV-352	DATE:

CHANGES:

1. DELETED PROCEDURE TURN AT LWM VOR/DME.
2. MOVED IF/IAF FROM LWM VOR/DME TO ZIMOT INT/7.5 DME, ROUTE FROM LWM TO ZIMOT BECAME INITIAL ROUTE.
3. ADDED H-I-L OF PROCEDURE TURN AT ZIMOT.
4. CHANGED ROUTE FROM MHT VOR/DME TO LWM VOR/DME FROM AN INITIAL TO A FEEDER ROUTE, MOVED NOPT NOTE TO LWM TO ZIMOT.
5. SHORTENED INTERMEDIATE LENGTH FROM 13.6 TO 6.10 NM.
6. CHANGED S-23 680 MDA/ 551 HAT TO 740 MDA/612 HATH.
7. INCREASED S-23 CAT C VISIBILITY FROM 1 1/2 TO 1 3/4.
8. CHANGED CIRCLING CAT A 700 MDA/ 567 HAA AND CAT B/C MDA 720/ 587 HAA TO MDA 740/ 608 HAA, AND CAT D HAA FROM 647 TO 648.
9. ADDED "CLIMB TO 1200 THEN..." TO MISSED APPROACH.
10. CHANGED MISSED APPROACH HOLDING FROM 112 TO 113 INBOUND.
11. INCREASED CIRCLING CAT C VISIBILITY FROM 1 1/2 TO 1 3/4 MILE.
12. ADDED CHART NOTE: VISIBILITY REDUCTION BY HELICOPTERS NA.
13. ADDED CHART NOTE: WHEN VGSI INOP, STRAIGHT-IN/CIRCLING RWY 23 PROCEDURE NA AT NIGHT.
14. ADDED CHART NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE BOSTON ALTIMETER SETTING AND INCREASE ALL MDA 60 FEET; INCREASE S-23 CAT C AND D

SEE 8260-10

REASONS:

1. SHORTEN PROCEDURE DISTANCE AND MOVE PROCEDURE AWAY FROM KPSM AIRSPACE.
2. ATC WANTED TO MAINTAIN 2000 UNTIL AN IAF SOUTH OF KLWM TO IMPROVE PROCEDURAL SEPARATION.
3. SHORTEN PROCEDURE, ATC REQUEST.
4. DUE TO NEW IAF WITH A H-I-L.
5. DUE TO NEW IAF.
6. ADDED AAO IAW 8260.19D PARA 274.
7. MDA RAISED AND IAW 8260.3B VOL 1, CHAP 3 ALONG WITH NEW RWY SURVEY.
8. MATCH STRAIGHT-IN MDA AND NEW AIRPORT SURVEY CHANGING AIRPORT ELEVATION.
9. TO AVOID A CLIMB-IN-HOLD SITUATION WHICH WOULD HAVE REQUIRED A 2500 HOLDING ALTITUDE.
10. MATCH THE NDB RWY 29 HOLDING PATTERN.
11. MDA RAISED AND IAW 8260.3B VOL 1, CHAP 3.
12. 34:1 PENETRATIONS EXIST.
13. 20:1 PENETRATIONS EXIST, REQUESTED FLIGHT INSPECTION TO VERIFY VGSI SURFACE CLEAR.
14. ENABLE BACKUP ALTIMETER OPERATIONS IAW 8260.19D PARA 854M(4).

SEE 8260-10

QUALITY CHECKED 4

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above aiport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

NOTES, (CONT.):

CHART NOTE: WHEN LOCAL ALTIMETER SETTING NOT RECEIVED, USE BOSTON ALTIMETER SETTING AND INCREASE ALL MDA 60 FEET; INCREASE S-23 CAT C AND D AND CIRCLING CAT C VISIBILITY 1/8 MILE AND CIRCLING CAT D VISIBILITY 1/4 MILE.

CITY AND STATE	ELEVATION: 132 THRE: 128	FACILITY IDENTIFIER:	PROCEDURE NO./ AMDT NO./EFFECTIVE DATE:	SUP:
BEDFORD, MA	AIRPORT NAME: LAURENCE G HANSCOM FLD	LWM	VOR RWY 23, AMDT 9	AMDT: 8D
				DATED: 12/22/2005

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
☐ YES ☐ NO		

COORDINATED WITH:

ATA	AAT	ALPA	APA	AOPA	NBAA	OTHER (specify)
☐	☐	☐	☐	☐	☐	☐ _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	FIFO	DATE:
APPROVED BY		
NAME:	FIFO	DATE:

CHANGES:

CHANGES CONT.
AND CIRCLING CAT C VISIBILITY 1/8 MILE AND CIRCLING CAT D VISIBILITY 1/4 MILE.

REASONS:

REASONS CONT.

PDF EDITS:
1. 8260-9, BACK PAGE, BLOCK 3: CHANGED "0/0" TO 0/49".

STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

PART - A OBSTRUCTION DATA

1. APP SEGMENT	FROM	TO	OBSTRUCTION	COORDINATES	ELEV. MSL	ROC	ALT. ADJUSTMENTS	MIN. ALT.
FEEDER	MHT VOR/DME	LWM VOR/DME	1. TOWER (33-000046)	424901.00N/0711610.00W	885 (5E)	1000	AT115	2000
			2. TERRAIN	425309.00N/0711600.00W	604 (600)		AS1000	1600
INITIAL	LWM VOR/DME	ZIMOT INT/LWM	3. TOWER (25-000611)	423914.00N/0711300.00W	807 (5D)	1000	AT193	2000
		7.50 DME	4. TERRAIN	423827.00N/0710624.00W	420 (400)		AS1500	1900
INTERMEDIATE	ZIMOT INT/LWM	HOWDI INT/LWM	3. TOWER (25-000611)	423914.00N/0711300.00W	807 (5D)	500	AT193	1500
	7.50 DME	13.60 DME	5. TERRAIN	423803.00N/0711342.00W	361 (400)		AS1000	1400
	(IF/IAF)							
FINAL	HOWDI INT/LWM	4.44 MILES AFTER	6. AAO	423225.16N/0711604.56W	485 (2C)	250		740
	13.60 DME	HOWDI INT/LWM						
		13.60 DME OR AT						
		LWM 18.04 DME						
		FIX						
2. HOLD-IN-LIEU-OF-PT	ZIMOT	P-4	3. TOWER (25-000611)	423914.00N/0711300.00W	807 (5D)	1000	AT193	2000
			4. TERRAIN	423827.00N/0710624.00W	420 (400)		AS1500	1900
3. MISSED APPROACH — MAP:	4.44 MILES AFTER	BE NDB				ASC		2000
	HOWDI INT/LWM		7. AAO	422842.00N/0712342.00W	607 (4E)	1000		1700
ELEV:	490		8. TERRAIN	422842.00N/0712342.00W	407 (400)		AS1500	1900

4. CIRCLING AREA	DISTANCE	HT. ABV. ARPT. REQUIRED	HT. ABV. ARPT. ACTUAL							
CATEGORY A	1.3 NM	350	608	9. TWR (KBEDT2153)	422724.08N/0711559.43W	414 (1B)	300	SI	740
CATEGORY B	1.5 NM	450	608	9. TWR (KBEDT2153)	422724.08N/0711559.43W	414 (1B)	300	SI	740
CATEGORY C	1.7 NM	450	608	10. TREE (KBEDT0802)	422613.88N/0711827.31W	416 (1A)	300	SI	740
CATEGORY D	2.3 NM	550	648	11. TANK (25-000535)	422644.29N/0711439.89W	463 (1A)	300		780
CATEGORY E	4.5 NM	550							

5. MINIMUM SAFE ALTITUDES — PRIMARY NAVAID: LWM VOR/DME

SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A	SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A
090-180	TWR (25-000052)	008/ 02.0	869 (5D)	1900					
180-090	TWR (33-000091)	355/ 28.4	1709 (2C)	2800					

CITY AND STATE	ELEVATION: 132 AIRPORT NAME:	FACILITY	PROCEDURE AND AMENDMENT NO:	REGION
BEDFORD, MA	LAURENCE G HANSCOM FLD	LWM	VOR RWY 23, AMDT 9	ANE

PART B - SUPPLEMENTAL DATA

1. COMMUNICATIONS WITH:	2. WEATHER SERVICE		3. ALTIMETER SETTING
BED TOWER BOS APP CON ZBW ARTCC	N W S	OTHER: ASOS	SOURCE: KBED / KBOS
	F A A		DISTANCE: 0 / 14.10
SATISFACTORY ON:	A / C		HOURS REMOTE OPERATION: 24 / BACKUP
X V H F X U H F H F	LOCATION: KBED		ADJUSTMENT: 0 / 49

4. MONITOR STATUS		
PRIMARY NAVAID: LWM VOR/DME		
MONITOR POINT:		
HRS OPTN:	CAT 1	
	CAT 3	

5. APPROACH & RUNWAY LIGHTING	
	ALS
	(S) SALS
X	MALSR 11 (PCL), 29 (PCL)
X	HIRL 11 (PCL), 29 (PCL)
X	MIRL 05 (PCL), 23 (PCL)
X	REIL 05, 23
	TDZ
	C/LINE
X	OTHER (SPECIFY) VASI-4R 23 PAPI-4L 11, 29 VASI-4L 05

6. RUNWAY MARKINGS	
BASIC	
ALL WEATHER	PIR-G 11, 29
INSTRUMENT	NPI-G 05, 23

7. RUNWAY VISUAL RANGE	
APPROACH	11
MIDFIELD	
ROLL OUT	

8. GLIDE PATH		
GP ANGLE:		ELEV RWY THRESHOLD:
DISTANCE FROM RWY:		ELEV GP ANTENNA:
		THRESHOLD CROSSING HEIGHT:

9. FINAL APPROACH COURSE AIMING			
	X	RUNWAY THRESHOLD	FT. FROM THRESHOLD
	X	ON CENTERLINE	FT. FROM CENTERLINE

10. WAIVERS: NONE

PART D - PREPARED BY: DAVID SAUER	DATE: 01/05/2012
TITLE: AERONAUTICAL INFORMATION SPECIALIST	OFFICE: AJV-352

PART C - REMARKS:

VDP NOT ESTABLISHED - OBSTACLES PENETRATE 20:1.

PARA 251, 20:1 PENETRATION.

PARA 251, 34:1 PENETRATION.

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

KBED AND KBOS ASOS ON SERVICE A
VGSI DATA: 3.50/56

SEE ATTACHED AIRSPACE LETTER.

RASS PRESSURE PATTERNS SAME
KBED 132.0 KBOS 20.0
RA=48.2

ORDER 8260.3, VOLUME 1, "VISUAL PORTION OF FINAL" PENETRATIONS
20:1
220 TREE (KBEDT1074) 422849.02N/0711700.09W (2.84)

34:1
229 TREE (KBEDT1097) 422850.08N/0711647.04W (28.76)
202 TREE (KBEDT1062) 422845.87N/0711659.48W (28.30)
228 TREE (KBEDT1096) 422845.16N/0711638.43W (27.98)
ADDITIONALLY THE FOLLOWING ARE ALSO 34:1 PENETRATIONS:
KBEDT1138, 1132, 1127, 1125, 1124, 1120, 1117, 1116, 1115, 1114, 1110, 1109, 1107, 1105, 1104, 1103, 1100, 1099, 1098, 1094, 1092, 1091, 1089, 1087, 1086, 1084, 1083, 1082, 1078, 1072, 1068, 1067, 1056, 1055, 1052, 1051, 1047, 1045, 1043, 0052, 0032, 0026, 0024, 0023, 0011, 0006, 25-020182, 25-020181, 25-020178, 25-020176, 25-020170, 25-020169, 25-020167.

FPT NOTIFIED.

RADIO FIX AND HOLDING DATA RECORD

NAME: BEDDS LOM **STATE:** MA **COUNTRY:** US

LATITUDE/LONGITUDE: 422847.50N/0712319.20W **TYPE:**

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** NO CHANGE

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	BEDDS	BE	LOM								17500

HOLDING: **HOLDING TYPE OF ACTION:** MODIFY

PATTERNS:

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	LEG LENGTH DME	HOLDING ALTITUDES MIN	HOLDING ALTITUDES MAX	TEMPLATES MIN	TEMPLATES MAX
1	NW	BE	LOM	293.00	113.00	L	1		2000	6000	4	5
2	E	BE	LOM	095.05	275.05	R	1		1900	6000	4	5

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	423018.00N/0713330.00W	850	4E
2	200	AAO	423057.00N/0712839.00W	676	4E

REASON FOR NONSTANDARD HOLDING:
PAT 1 OBSTACLE AVOIDANCE

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERNS.

REMARKS:
PRECIPITOUS TERRAIN EVALUATION COMPLETE.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	MANCHESTER			KMHT	MANCHESTER	NH (US)
IAP	ILS OR LOC RWY 29		1	KBED	BEDFORD	MA (US)
IAP	NDB RWY 29		1	KBED	BEDFORD	MA (US)
IAP	VOR RWY 23		1	KBED	BEDFORD	MA (US)
IAP	ILS OR LOC Y RWY 05			KLWM	LAWRENCE	MA (US)
IAP	ILS OR LOC Z RWY 05			KLWM	LAWRENCE	MA (US)
IAP	NDB RWY 05			KLWM	LAWRENCE	MA (US)
IAP	VOR RWY 23			KLWM	LAWRENCE	MA (US)
IAP	NDB-A		2	K6B6	STOW	MA (US)
IAP	VOR RWY 35			KMHT	MANCHESTER	NH (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 11 **DATE OF REVISION:** 06/03/2010

REASON FOR REVISION:
HOLDING PAT 1 MIN ALT RAISED FROM 1900 TO 2000.
HOLDING PAT 2 BRG/CRS INBOUND CHANGED FROM 095.00/275.00 TO 095.05/275.05; MIN ALTITUDE RAISED FROM 1800 TO 1900.
UPDATED FIX USE.

DEVELOPED BY: **DATE:** 01/14/2010 **OFFICE:** AVN-110 **NAME:** PETER GETZ (ROSE BOONE)

APPROVED BY: **DATE:** 03/30/2010 **OFFICE:** AVN-110 **NAME:** GEORGE DAVIS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZBW
ATC FACILITY: BOS APP CON/BED ATCT
OTHER:

CHECK

RADIO FIX AND HOLDING DATA RECORD

NAME: HOWDI **STATE:** MA **COUNTRY:** US

LATITUDE/LONGITUDE: 423224.30N/0711419.10W **TYPE:** 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	LAWRENCE	LWM	VOR/DME	L	222.97	207.97	13.60	13.60		1500	2000
2	BOSTON	BOS	VOR/DME	H	330.80	314.80		15.57		1500	2000

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

REMARKS:
BOSTON (FAC 2) AND LAWRENCE (FAC 1) USED TO ESTABLISH FIX COORDINATES

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	VOR RWY 23	1, 2		KBED	BEDFORD	MA (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 4 **DATE OF REVISION:** 09/20/2012

REASON FOR REVISION:
1. MOVED FIX 13.43 FT SOUTHEAST.
2. CHANGED FAC 2 FROM VORTAC TO VOR/DME.
3. CHANGED FAC 1 DME FROM 14.20 TO 13.60.
4. DELETED FAC 2 DME.
5. ADDED FAC 1 AND 2 DIST FROM FAC.
6. CHANGED FAC 1 AND 2 MRA FROM 1000 TO 1500.
7. CHANGED FAC 1 TRUE BRG FROM 207.98 TO 207.97.
8. CHANGED FAC 2 TRUE BRG FROM 314.79 TO 314.80.
9. DELETED REMARK, MAGNETIC VARIATION: LWM 15°W, BOS 16°W.
10. ADDED REMARK, BOSTON (FAC 2) AND LAWRENCE (FAC 1) USED TO ESTABLISH FIX COORDINATES.

DEVELOPED BY: **DATE:** 01/06/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

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

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZBW
ATC FACILITY: BOS APP CON, BED ATCT
OTHER:

INFO ONLY

RADIO FIX AND HOLDING DATA RECORD

NAME: LAWRENCE VOR/DME **STATE:** MA **COUNTRY:** US

LATITUDE/LONGITUDE: 424425.50N/0710541.43W **TYPE:**

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** NO CHANGE

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	FAC FEET	MRA	MAA
1	LAWRENCE	LWM	VOR/DME	L							17500

HOLDING: **HOLDING TYPE OF ACTION:** MODIFY

PATTERNS:

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	LEG LENGTH DME	HOLDING ALTITUDES MIN	HOLDING ALTITUDES MAX	TEMPLATES MIN	TEMPLATES MAX
1	NE	LWM	VOR/DME	056.61	236.61	R	1		2000	6000	4	13
2	NE		WP	056.61	236.61	R		4	2000	6000	4	14

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	TOWER (25-000052)	424622.00N/0710601.00W	869	5D
1	310	TOWER (25-000052)	424622.00N/0710601.00W	869	5D
2	200	TOWER (25-000052)	424622.00N/0710601.00W	869	5D
2	310	TOWER (25-000052)	424622.00N/0710601.00W	869	5D

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERNS.

PROCEDURES REQUIRING CLIMB-IN-HOLD:

PAT	PROCEDURE TITLE	AIRPORT IDENT	CITY	STATE
1	ILS OR LOC Z RWY 05	KLWM	LAWRENCE	MA (US)
1	VOR RWY 23 (ALT MISS)	KLWM	LAWRENCE	MA (US)
1	ILS OR LOC Y RWY 05	KLWM	LAWRENCE	MA (US)
1	NDB RWY 05	KLWM	LAWRENCE	MA (US)
2	RNAV (GPS) RWY 05	KLWM	LAWRENCE	MA (US)

REMARKS:
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	MANCHESTER			KMHT	MANCHESTER	NH (US)
DP	PEASE			KPSM	PORTSMOUTH	NH (US)
DP	TANKER			KPSM	PORTSMOUTH	NH (US)
IAP	ILS OR LOC RWY 11			KBED	BEDFORD	MA (US)
IAP	RNAV (GPS) RWY 23			KBED	BEDFORD	MA (US)
IAP	RNAV (GPS) Z RWY 11			KBED	BEDFORD	MA (US)
IAP	RNAV (RNP) Y RWY 29			KBED	BEDFORD	MA (US)
IAP	VOR RWY 23			KBED	BEDFORD	MA (US)
IAP	LOC RWY 16			KBVY	BEVERLY	MA (US)
IAP	VOR RWY 16			KBVY	BEVERLY	MA (US)
IAP	ILS OR LOC RWY 22L			KBOS	BOSTON	MA (US)
IAP	ILS RWY 15R			KBOS	BOSTON	MA (US)
IAP	ILS OR LOC Y RWY 05		1	KLWM	LAWRENCE	MA (US)
IAP	ILS OR LOC Z RWY 05		1	KLWM	LAWRENCE	MA (US)
IAP	NDB RWY 05		1	KLWM	LAWRENCE	MA (US)
IAP	RNAV (GPS) RWY 05		2	KLWM	LAWRENCE	MA (US)
IAP	VOR RWY 23 (ALT MISS)		1	KLWM	LAWRENCE	MA (US)
IAP	NDB-A			K6B6	STOW	MA (US)
IAP	ILS OR LOC RWY 06			KMHT	MANCHESTER	NH (US)
IAP	ILS OR LOC RWY 35			KMHT	MANCHESTER	NH (US)
IAP	ILS RWY 35 (CAT II)			KMHT	MANCHESTER	NH (US)
IAP	ILS RWY 35 (CAT III)			KMHT	MANCHESTER	NH (US)
IAP	RNAV (GPS) RWY 24			KMHT	MANCHESTER	NH (US)
IAP	VOR/DME OR GPS RWY 17			KMHT	MANCHESTER	NH (US)
IAP	ILS OR LOC RWY 14			KASH	NASHUA	NH (US)
IAP	RNAV (GPS) RWY 32			KASH	NASHUA	NH (US)
IAP	VOR RWY 32			KASH	NASHUA	NH (US)
IAP	ILS OR LOC RWY 16			KPSM	PORTSMOUTH	NH (US)
IAP	ILS OR LOC RWY 34			KPSM	PORTSMOUTH	NH (US)
IAP	VOR RWY 16			KPSM	PORTSMOUTH	NH (US)
IAP	VOR RWY 34			KPSM	PORTSMOUTH	NH (US)

REQUIRED CHARTING: SECTIONAL, DP, IAP, CONTROLLER, EN ROUTE LOW, EN ROUTE HIGH

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 10 **DATE OF REVISION:** 06/30/2011

REASON FOR REVISION:
UPDATE PATT1 COURSE AND TEMPLATES.
ADD HOLDING PATTERN 2.
UPDATE HOLDING OBSTRUCTION FOR CIH PATT 1, PATT2 AND CIH PATT2.
ADD CIH PATT 1 AND 2.
UPDATE FIX USE.

DEVELOPED BY:	**DATE:** 01/05/2011	**OFFICE:** AVN-110	**NAME:** DARRYEL ADAMS (ALLAN WILL)
APPROVED BY:	**DATE:** 05/11/2011	**OFFICE:** AVN-110	**NAME:** DARRYEL ADAMS
	SIGNATURE:		

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZBW
ATC FACILITY: BOS APP CON, KBED ATCT, KLWM ATCT
OTHER:

QUALITY CHECKED

INFO ONLY

RADIO FIX AND HOLDING DATA RECORD

NAME: MANCHESTER VOR/DME **STATE:** NH **COUNTRY:** US

LATITUDE/LONGITUDE: 425206.70N/0712210.31W **TYPE:**

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	MANCHESTER	MHT	VOR/DME	L							17500

FIX RESTRICTIONS:
SPECIAL COPTER RNAV-093, KBED, BEDFORD, MA
SPECIAL COPTER RNAV-066, KBED, BEDFORD, MA

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

PATTERNS:

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	LEG LENGTH DME	HOLDING ALTITUDES MIN	HOLDING ALTITUDES MAX	TEMPLATES MIN	TEMPLATES MAX
1	SE	MHT	VOR/DME	157.00	337.00	L	1	-	2000	6000	4	5
2	NE	MHT	VOR/DME	066.00	246.00	R	1	-	2000	6000	4	12
3	NE		WP	039.00	219.00	R		4	2000	6000	5	6

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	TOWER (33-000046)	424901.00N/0711610.00W	885	5E
2	200	TOWER (33-000099)	425705.00N/0711605.00W	983	3C
2	310	200' AAO	430712.00N/0711154.00W	1181	4E
3	200	TOWER (33-000099)	425705.00N/0711605.00W	983	3C

REASON FOR NONSTANDARD HOLDING:
PAT 1 ATC REQUEST

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERNS.

PROCEDURES REQUIRING CLIMB-IN-HOLD:

PAT	PROCEDURE TITLE	AIRPORT IDENT	CITY	STATE
2	ILS OR LOC RWY 6	KMHT	MANCHESTER	NH (US)

REMARKS:
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	HANSCOM			KBED	BEDFORD	MA (US)
DP	BEVERLY			KBVY	BEVERLY	MA (US)
DP	HYLND (RNAV)			KBOS	BOSTON	MA (US)
DP	LOGAN			KBOS	BOSTON	MA (US)
DP	WYLYY (RNAV)			KBOS	BOSTON	MA (US)
DP	LAWRENCE			KLWM	LAWRENCE	MA (US)
DP	NORWOOD			KOWD	NORWOOD	MA (US)
DP	CASCO			KPWM	PORTLAND	ME (US)
DP	PORTLAND			KPWM	PORTLAND	ME (US)
DP	MANCHESTER			KMHT	MANCHESTER	NH (US)
DP	PEASE			KPSM	PORTSMOUTH	NH (US)
DP	TANKR			KPSM	PORTSMOUTH	NH (US)
EN ROUTE	V106					(US)
EN ROUTE	V141					(US)
EN ROUTE	V490					(US)
IAP	COPTER RNAV-066			KBED	BEDFORD	MA (US)
IAP	COPTER RNAV-093			KBED	BEDFORD	MA (US)
IAP	ILS OR LOC RWY 11		2	KBED	BEDFORD	MA (US)
IAP	RNAV (GPS) Z RWY 11		3	KBED	BEDFORD	MA (US)
IAP	VOR RWY 23			KBED	BEDFORD	MA (US)
IAP	LOC RWY 16			KBVY	BEVERLY	MA (US)
IAP	RNAV (GPS) RWY 16			KBVY	BEVERLY	MA (US)
IAP	VOR RWY 16			KBVY	BEVERLY	MA (US)
IAP	ILS OR LOC RWY 33L			KBOS	BOSTON	MA (US)
IAP	ILS RWY 15R			KBOS	BOSTON	MA (US)
IAP	ILS RWY 33L (CAT II)			KBOS	BOSTON	MA (US)
IAP	ILS RWY 4R			KBOS	BOSTON	MA (US)
IAP	ILS RWY 4R (CAT II)			KBOS	BOSTON	MA (US)
IAP	ILS RWY 4R (CAT III)			KBOS	BOSTON	MA (US)
IAP	VOR/DME OR GPS-A			KBOS	BOSTON	MA (US)
IAP	VOR/DME RWY 33L			KBOS	BOSTON	MA (US)
IAP	NDB RWY 20			KFIT	FITCHBURG	MA (US)
IAP	NDB-A			KFIT	FITCHBURG	MA (US)

IAP	RNAV (GPS) RWY 20		KFIT	FITCHBURG	MA (US)
IAP	RNAV (GPS) RWY 32		KFIT	FITCHBURG	MA (US)
IAP	ILS OR LOC Y RWY 05		KLWM	LAWRENCE	MA (US)
IAP	ILS OR LOC Z RWY 05		KLWM	LAWRENCE	MA (US)
IAP	NDB RWY 05		KLWM	LAWRENCE	MA (US)
IAP	RNAV (GPS) RWY 05		KLWM	LAWRENCE	MA (US)
IAP	RNAV (GPS) RWY 23		KLWM	LAWRENCE	MA (US)
IAP	VOR RWY 23		KLWM	LAWRENCE	MA (US)
IAP	RNAV (GPS) RWY 21		K6B6	STOW	MA (US)
IAP	VOR/DME RWY 21		K6B6	STOW	MA (US)
IAP	ILS OR LOC RWY 7		KSFM	SANFORD	ME (US)
IAP	RNAV (GPS) RWY 25		KSFM	SANFORD	ME (US)
IAP	RNAV (GPS) RWY 7		KSFM	SANFORD	ME (US)
IAP	VOR RWY 7		KSFM	SANFORD	ME (US)
IAP	ILS RWY 35		KCON	CONCORD	NH (US)
IAP	RNAV (GPS) RWY 35		KCON	CONCORD	NH (US)
IAP	VOR-A		KCON	CONCORD	NH (US)
IAP	ILS OR LOC RWY 35		KMHT	MANCHESTER	NH (US)
IAP	ILS OR LOC RWY 6	2	KMHT	MANCHESTER	NH (US)
IAP	ILS OR LOC/DME RWY 17	1	KMHT	MANCHESTER	NH (US)
IAP	ILS RWY 35 (CAT II)		KMHT	MANCHESTER	NH (US)
IAP	ILS RWY 35 (CAT III)		KMHT	MANCHESTER	NH (US)
IAP	RNAV (GPS) Y RWY 17		KMHT	MANCHESTER	NH (US)
IAP	VOR RWY 35		KMHT	MANCHESTER	NH (US)
IAP	VOR/DME RWY 17	1	KMHT	MANCHESTER	NH (US)
IAP	ILS OR LOC RWY 14		KASH	NASHUA	NH (US)
IAP	NDB OR GPS RWY 14		KASH	NASHUA	NH (US)
IAP	RNAV (GPS) RWY 32		KASH	NASHUA	NH (US)
IAP	VOR OR GPS-A	2	KASH	NASHUA	NH (US)
IAP	VOR RWY 32		KASH	NASHUA	NH (US)
IAP	ILS OR LOC RWY 16		KPSM	PORTSMOUTH	NH (US)
IAP	ILS OR LOC RWY 34		KPSM	PORTSMOUTH	NH (US)
IAP	RNAV (GPS) RWY 16		KPSM	PORTSMOUTH	NH (US)
IAP	VOR RWY 16		KPSM	PORTSMOUTH	NH (US)
IAP	NDB RWY 33		KDAW	ROCHESTER	NH (US)
IAP	VOR/DME -A		KDAW	ROCHESTER	NH (US)
STAR	GARDNER		KBOS	BOSTON	MA (US)
STAR	POPPP		KMHT	MANCHESTER	NH (US)

REQUIRED CHARTING: DP, STAR, MILITARY IAP, IAP, CONTROLLER, EN ROUTE LOW

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 17 **DATE OF REVISION:** 05/05/2011

REASON FOR REVISION:
1. FIX MOVED 3.86 FEET TO MATCH PENDING AVNIS DATA COORDINATES.
2. FIX USE UPDATED.

DEVELOPED BY: **DATE:** 11/23/2010 **OFFICE:** AVN-110 **NAME:** PETER GUIMOND

APPROVED BY: **DATE:** 03/28/2011 **OFFICE:** AVN-110 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: EST
ARTCC: ZBW
ATC FACILITY: MHT APP CON
OTHER:

RADIO FIX AND HOLDING DATA RECORD

NAME: ZIMOT **STATE:** MA **COUNTRY:** US

LATITUDE/LONGITUDE: 423747.84N/0711027.33W **TYPE:** WP, INT, DME

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

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	LAWRENCE	LWM	VOR/DME	L	222.97	207.97	7.50	7.50		2000	17500
2	BOSTON	BOS	VOR/DME	H	349.42	333.42		18.29		2000	17500

HOLDING: **HOLDING TYPE OF ACTION:** ESTABLISH

PATTERNS:

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	LEG LENGTH DME	HOLDING ALTITUDES MIN	HOLDING ALTITUDES MAX	TEMPLATES MIN	TEMPLATES MAX
1	NE	LWM	VOR/DME	222.97	222.97	L	1		2000	6000	4	6
2	NE		WP	043.97	223.97	L		4	2000	6000	4	6

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	TOWER (25-000611)	423914.00N/0711300.00W	807	5D
2	200	TOWER (25-000611)	423914.00N/0711300.00W	807	5D

REASON FOR NONSTANDARD HOLDING:
PAT 1 ATC REQUEST.
PAT 2 ATC REQUEST.

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERNS.

REMARKS:
LAWRENCE (FAC 1) USED TO ESTABLISH FIX COORDINATES
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 11	1, 2	1	KBED	BEDFORD	MA (US)
IAP	RNAV (GPS) Z RWY 11		2	KBED	BEDFORD	MA (US)
IAP	RNAV (RNP) Y RWY 11		2	KBED	BEDFORD	MA (US)
IAP	VOR RWY 23	1, 2	1	KBED	BEDFORD	MA (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

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

DEVELOPED BY: **DATE:** 01/25/2012 **OFFICE:** AJV-352 **NAME:** DAVID SAUER

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

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: EST
ARTCC: ZBW
ATC FACILITY: BOS APP CON, BED ATCT
OTHER:

TERMINAL AIRSPACE DATA REQUIREMENTS

CITY: **BEDFORD** STATE: **MA**

AIRPORT NAME: **LAURENCE G HANSCOM FLD** ID: **KBED**

PROCEDURE: **VOR RWY 23** AMDT: **9**

DOCKET # :
(96-AXX-X/Required/Not Required)

ALL DIST TO 1/100 NM; ELEV TO NEAREST FT; COORD TO 1/100 SEC; DEG TO 1/100 DG.

1. Distance from **LWM VOR/DME** to 1000' point **14.27**
   (Enter THLD, FAF, ARP, FACILITY, as appropriate)
2. Width of **FINAL** segment at 1000' point **3.43**
   (Enter appropriate segment , final, intermediate, etc.)
3. True Course of **FINAL** segment containing 1000' point **207.97**
4. High Terrain in **FINAL** segment containing 1000' point **348**
5. Distance from **LWM VOR/DME** to 1500' point **7.70**
   (If 1500' point in PT maneuvering area or holding pattern note in remarks)
6. Width of **INTERMEDIATE** segment at 1500' point **7.85**
7. True Course of **INTERMEDIATE** segment containing 1500' point **207.97**
8. High Terrain in **INTERMEDIATE** segment containing 1500' point **361**
9. Threshold Coordinates (if straight-in) ... **422828.59N** / **0711707.59W**
10. ARP Coordinates ..... **422811.80N** / **0711720.40W**
11. Runway Approach End and distance furthest from ARP.....RWY **29**
    Distance **0.64** NM
12. FAF Coordinates ..... **423224.30N** / **0711419.10W**
    (Click to Select)

REMARKS: Approach/Drawing attached. PROCEDURE ALSO USES 1000' CONTROLLED AIRSPACE IN FEEDER BETWEEN MHT VOR/DME AND LWM VOR/DME. COURSE 122.26T, WIDTH 8NM, HIGH TERRAIN 604.