

FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
RNAV (GPS) STANDARD INSTRUMENT APPROACH PROCEDURE
TITLE 14 CFR PART 97.33

Bearings, headings, courses, tracks 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 feet RVR.

<u>AIRPORT</u> PLYMOUTH MUNI	<u>AIRPORT ID</u> KPYM	<u>PROCEDURE NAME</u> RNAV (GPS) RWY 33	<u>ORIGINAL/AMENDMENT</u> 1	<u>CITY</u> PLYMOUTH	<u>STATE</u> MA
<u>AIRPORT ELEVATION</u> 148	<u>TDZE</u> 142	<u>SUPERSEDED</u> RNAV (GPS) RWY 33	<u>ORIGINAL/AMENDMENT</u> ORIG	<u>DATED</u> 07/19/2018	<u>MAG VAR</u> 16W
<u>FACILITY</u> RNAV	<u>COORDINATES OF FACILITIES</u>	<u>ACTUAL EFFECTIVE DATE</u> 10 OCTOBER 2019	<u>REQUIRED EFFECTIVE DATE</u> ROUTINE	<u>CANCEL/SUSPEND</u>	<u>EPOCH YEAR</u> 1995

TERMINAL ROUTES

<u>FROM</u>	<u>FIX TYPE</u>	<u>TO</u>	<u>FIX TYPE</u>	<u>LEG TYPE</u>	<u>FO/FB</u>	<u>RNP</u>	<u>COURSE</u>	<u>DISTANCE</u>	<u>ALTITUDE</u>
LFV VOR/DME		FLUOR		TF	FB	1.00	240.18	15.65	3000
MVY VOR/DME		MASKY		TF	FB	1.00	045.90	20.48	3000
FLUOR	IAF	CALED		TF	FB	1.00	275.78	7.40	3000
MASKY	IAF	CALED		TF	FB	1.00	355.71	7.40	3000
CALED	IF	HAREK		TF	FB	1.00	295.75	5.20	2000
HAREK		DORPY		TF	FB	1.00	310.82	3.12	2000
DORPY	FAF	RW33	MAP	TF	FO	0.30	325.67	5.68	
RW33	MAP	700 MSL		CA			325.67		700
700 MSL		GAILS		DF	FO	1.00			3000

MISSED APPROACH

MAP:

LPV: DA
 LNAV/VNAV: DA
 LNAV: RW33

MISSED APPROACH INSTRUCTIONS:

CLIMB TO 700 THEN CLIMBING RIGHT TURN TO 3000 DIRECT GAILS AND HOLD.

ALTERNATE MISSED APPROACH INSTRUCTIONS:



PROFILE:

1. PT

SIDE OF COURSE

OUTBOUND

FT WITHIN

MILES OF (IAF)

2. PROFILE STARTS AT CALED

3. FAC:

325.67

FAF: DORPY

DIST FAF TO MAP: 5.68

DIST FAF TO THLD: 5.68

4. MIN ALT: CALED 3000, HAREK 2000, DORPY 2000

5. DIST TO THLD FROM OM:

MM:

IM:

150 HAT:

251 HAT: 0.68

GS ANT:

6. MIN GP INCPT:

2000

GP ALT AT FAF : DORPY 2000

OM:

MM:

IM:

7. GP ANGLE:

3.03

34:1: IS NOT CLEAR

20:1: IS CLEAR

TCH: 40.0

8. MSA FROM: RW33 2200

PBN REQUIREMENTS NOTE:

RNP APCH.

NOTES:

CHART NOTE: CIRCLING RWY 15 NA AT NIGHT.
CHART NOTE: RWY 33 HELICOPTER VISIBILITY REDUCTION BELOW 3/4 SM NOT AUTHORIZED.
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -18°C OR ABOVE 54°C.
CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT MVY VOR/DME ON V146 NORTHWEST BOUND.

ADDITIONAL FLIGHT DATA:

CHART CIRCLING ICON.
CHART R-4101
CHART VDP AT 1.52 NM TO RW33*
*LNAV ONLY
WAAS CHANNEL #63241
REFERENCE PATH ID: W33A
FAS OBST: 400 AAO 415212N/0703917W.
HOLD S, RT, 350.23 INBOUND
LTP HAE: 12.1 M

MINIMUMS:

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT

ALTERNATE: NA ☐ STANDARD - NA WHEN LOCAL WEATHER NOT AVAILABLE.

CATEGORY:	A			B			C			D			E		
FINAL TYPE	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA	DA/MDA	VIS	HAT/HAA
LPV DA	393	3/4	251	393	3/4	251	393	3/4	251		NA				
LNAV/VNAV DA	486	1	344	486	1	344	486	1	344		NA				
LNAV MDA	660	1	518	660	1	518	660	1 3/8	518		NA				
CIRCLING	660	1	512	660	1	512	760	1 3/4	612		NA				



CHANGES - REASONS

1. REMOVED HILPT AT CALED, MOVED CALED 3.54 NM NORTHEAST, AND MADE CALED AN IF - PT EVALUATION AREA VIOLATED R-4101 AIRSPACE.
2. MOVED MASKY 10.25 NM EAST AND DORPY 135.87 FT NORTHWEST - PER FPT REQUEST, ORIGINAL MASKY IAF SEGMENT VIOLATED R-4101 AIRSPACE.
3. REMOVED FEEDER SEGMENT FROM PVD VOR/DME TO MASKY AND IAF SEGMENT FROM PEAKE TO CALED - PER FPT REQUEST, PREVIOUS ROUTING VOILATED R-4101 AIRSPACE.
4. ADDED NEW FEEDER SEGMENT FROM MVY VOR/DME TO MASKY AND CHANGED COURSE OF IAF SEGMENT FROM MASKY TO CALED FROM 055.67 DEG TO 355.71 DEG AND SEGMENT ALTITUDE FROM 2600 FT TO 3000 FT - PER FPT REQUEST, NEW ROUTING AVOIDS VIOLATION OF R-4101 AIRSPACE AND PROVIDES NORTHBOUND IAP ACCESS FROM ENROUTE STRUCTURE.
5. CREATED NEW FIXES: IAF FLUOR AND INTERMEDIATE STEPDOWN FIX HAREK - OPERATIONAL DESIGN REQUIREMENTS NEEDED TO AVOID VIOLATION OF R-4101 AIRSPACE.
6. REMOVED FEEDER SEGMENT FROM LFB VOR/DME TO GAILS AND IAF SEGMENT FROM GAILS TO CALED; REPLACED WITH FEEDER SEGMENT FROM LFB VOR/DME TO FLUOR AND IAF SEGMENT FROM FLUOR TO CALED - PROVIDES SOUTHBOUND IAP ACCESS FROM ENROUTE STRUCTURE THAT MEETS DESIGN CRITERIA IAW 8260.58A PARA 1-2-5 AND 8260.19H PARA 4-6-2.A.
7. CREATED NEW IF SEGMENT ROUTING FROM CALED TO HAREK AND HAREK TO DORPY - PER FPT REQUEST, NEW ROUTING AVOIDS VIOLATION OF R-4101 AIRSPACE; DESIGN DEVELOPED IAW 8260.58A PARA 3-1-4.B.
8. INCREASED LFB FEEDER, ALL IAF, AND ALL IF SEGMENT ALTITUDES AND MISSED APPROACH HOLDING ALTITUDE FROM 2600 FT TO 3000 FT - PER FPT, ATC REQUESTED HIGHER CROSSING ALTITUDE AT CALED.
9. REMOVED "CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVAL ON PVD VOR/DME AIRWAY RADIALS 093 CW 165" AND "CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT PEAKE ON V167 SOUTHEAST BOUND AND V167 SOUTHWEST BOUND" - NOT REQUIRED, PVD VOR/DME AND PEAKE REMOVED FROM PROCEDURE.
10. ADDED "CHART PLANVIEW NOTE: PROCEDURE NA FOR ARRIVALS AT MVY VOR/DME ON V146 NORTHWEST BOUND" - NEW FEEDER SEGMENT FROM MVY VOR/DME; IAW 8260.19H PARA 8-2-5.E.
11. CHANGED PROFILE LINE 2 FROM "HOLD SE CALED, RT, 325.74 INBOUND, 2600 FT. IN LIEU OF PT (IAF), MAX 6000" TO "PROFILE STARTS AT CALED" - REMOVED PT AT CALED TO AVOID VIOLATION OF R-4101 AIRSPACE; IAW 8260.19H PARA 8-6-7.B.(3).
12. CHANGED PROFILE LINE 3 DISTANCES FROM FAF TO MAP AND FAF TO THLD FROM 5.70 NM TO 5.68 NM - NEW IAP DESIGN PRODUCED NEW FAF TO MAP AND FAF TO THLD DISTANCES; IAW 8260.19H PARA 8-6-7.C.
13. ADDED "HAREK 2000" TO PROFILE LINE 4 MIN ALT AND CHANGED "CALED 2600" TO "CALED 3000" - NEW IAP DESIGN PRODUCED NEW MIN ALT VALUES; HAREK ADDED IAW 8260.19H PARA 8-6-7.D.(4).
14. CHANGED PROFILE LINE 5 DIST TO THLD FROM "264 HAT: 0.70" TO "251 HAT: 0.68" - NEW IAP DESIGN PRODUCED LOWER DA AND NEW THRESHOLD DISTANCE; IAW 8260.19H PARA 8-6-7.E.(3).
15. CHANGED ADDITIONAL FLIGHT DATA VDP FROM "CHART VDP AT 1.56 NM TO RW33" TO "CHART VDP AT 1.52 NM TO RW33" - NEW IAP DESIGN PRODUCED NEW VGS1 TCH AND VDP LOCATION; IAW 8260.3D PARA 2-6-5.
16. ADDED "NA WHEN LOCAL WEATHER NOT AVAILABLE" TO ALTERNATE MINIMUMS - REQUIRED IAW FAA MEMO 266, ATTACHMENT 4 "IMPLEMENTATION OF FAA ORDER 8260.19H CHANGE 1".
17. REMOVED FAHRENHEIT TEMPERATURES FROM UNCOMPENSATED BARO-VNAV SYSTEMS CHART NOTE AND UPDATED MIN TEMPERATURE FROM -17 DEG C TO -18 DEG C - NEW CRITICAL TEMPERATURE SURVEY COMPLETED FROM 5-YEAR HISTORY; IAW 8260.19H PARA 8-6-9.S.
18. DECREASED LPV MINIMUMS FROM 406 DA/264 HAT AND 7/8 SM VISIBILITY TO 393 DA/251 HAT AND 3/4 SM FOR ALL CATS; DECREASED LNAV/VNAV MINIMUMS FROM 623 DA/481 HAT AND 1 3/8 SM VISIBILITY TO 486 DA/344 HAT AND 1 SM VISIBILITY FOR ALL CATS - NEW PROCEDURE BUILD AND NEW VIS CHECK YIELDED LOWER MINIMUMS.
19. CHANGED GPA FROM 3.00 DEG TO 3.03 DEG - USED TO CLEAR BOTH VGS AND LPV PENETRATIONS IAW 8260.58A PARA 3-3-6.
20. CHANGED TCH FROM 51.0 FT TO 40.0 FT - NEW TCH ALLOWS VGS1 AND GPA TO BE COINCIDENT.
21. REMOVED "CHART PROFILE NOTE: VGS1 AND RNAV GLIDEPATH NOT COINCIDENT" - VGS1 AND GPA ARE COINCIDENT PER 8260.19H PARA 8-6-9.M.
22. FAS OBSTACLE ELEVATION CHANGED FROM 409 FT TO 400 FT - NEW MAP STUDY CONDUCTED.
23. FAS DATA CRC REMAINDER CHANGED FROM 5EFF87B TO 5BE9B055 - GPA AND TCH CHANGED; NEW GPA AND TCH USED TO MITIGATE LPV VGS PENETRATING OBSTACLES.

COORDINATED WITH:

A4A

ALPA

☒

AOPA

☒

APA

HAI

NBAA

☒

OTHER:

ZBW, BOS APP CON, AMGR

FLIGHT CHECKED BY

DURLEY J FELDER

Digitally signed by

ALLAN WILL

Aug 27, 2019

OFFICE

FICO

DATE

8/20/19

DEVELOPED BY

CASIMIR L. TABAKA (MADELINE CLARK)

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Jul 10, 2019

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AJV-A422

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04/30/2019

APPROVED BY

MARLON ROBINSON

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CASIMIR L TABAKA

Jul 10, 2019

OFFICE

AJV-A420

DATE

TITLE

MANAGER



FAS DATA BLOCK INFORMATION

<u>DATA FIELD</u>	<u>DATA</u>
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KPYM
RUNWAY	RW33
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W33A
LTP/FTP LATITUDE	415416.5355N
LTP/FTP LONGITUDE	0704304.0185W
LTP/FTP ELLIPSOIDAL HEIGHT	+00121
FPAP LATITUDE	415513.3455N
FPAP LONGITUDE	0704435.9800W
THRESHOLD CROSSING HEIGHT (TCH)	00040.0
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.03
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	1424
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	50.0
CRC REMAINDER	5BE9B055

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K6
LTP ORTHOMETRIC HEIGHT	+00406
FPAP ORTHOMETRIC HEIGHT	+00406

