Flight Procedure Tracking Form	Action: FLIGHT CHECK	Task Type: IAP	Date Open: 09/02/2011	Task #: 2011061321613106003	Request #: 20110613216131
Procedure: RNAV (GPS) RWY 22 AMDT 2		Airport ID: KEFD	Airport: ELLINGTON FIELD		Reimbursable #:
City: HOUSTON	ST: TX	GPS #:		Estimated Chart Date: 07/26/2012	FICO #:
Fac ID:	Fac. Type: OV-200 HAT	Specialist: GRACE NOWAK			

Procedure Review

	Rec'd	Rel'd	Full Name	Comments
Lead:	01/30/2012	03/23/2012	JILL OLSON	
QA:	03/23/2012	04/02/2012	STEVEN SZUKALA	
Liaison:	04/02/2012		Alfonso	

Procedure Comments: **Remark Type:** INFORMATION

pkg 1 of 2

HOUSTON, TX ELLINGTON FIELD (KEFD) RNAV (GPS) RWY 22, AMDT 2 (LPV) ENROUTE-NO FC: 6.12.12 PUB: 7.26.12

ATTACHED FORMS: 8260-3; 8260-10; 8260-9; 8260-2(S): OPTOC, ORIG; WITZI, REV 3; (INFO ONLY) SEVSY-INT, REV 3; WATFO-INT, REV 7; YAKUD, REV 1.
FLCK NOTE: REQUEST FLIGHT CHECK VERIFICATION 4D ACCURACY CODE ON OBSTACLE ID# 48-013442, T-L TOWER, 294142.00N-0950427.00W, 213 FT AGL/ 242 FT MSL

CONTACT: JILL OLSON, AJV-353 LEAD, 405 954.9568:

WAAS CH 61111 W22A	APP CRS 219°	Rwy ldg 8001 THRE 30 Apt Elev 32

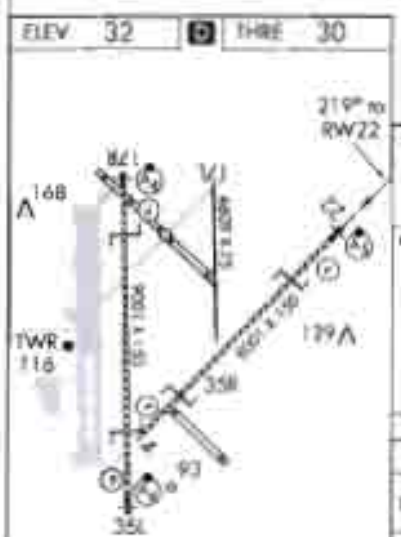
RNAV (GPS) RWY 22
HOUSTON/ ELLINGTON FIELD (EFD)

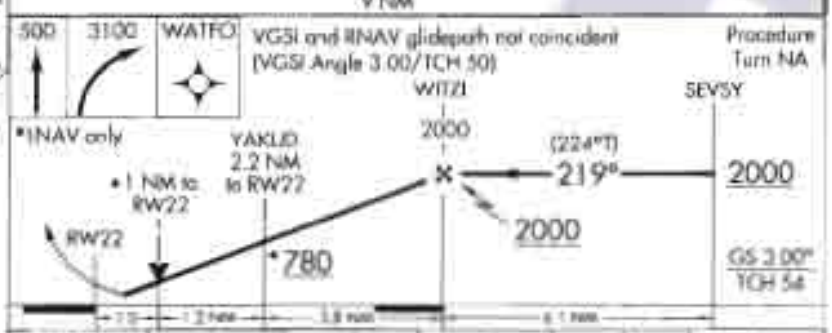
For uncompensated Baro-VNAV systems, LNAV/VNAV NA below -15°C (5°F) or above 43°C (109°F). DME/DME RNP-0.3 NA. Circling NA west of Rwy 17R-35L. For inoperative MALSR, increase LPV CAT E visibility to RVR 4000, LNAV/VNAV CAT E visibility to RVR 5000 and LNAV Cats C, D and E visibility to RVR 5000.

MALSR

MISSED APPROACH: Climb to 500 then climbing left turn to 3100 to WATFO and hold.

ATIS*	HOUSTON APP CON	ELLINGTON TOWER	GND CON
135.575 269.9	134.45 284.0	126.05 253.5	121.6 275.8



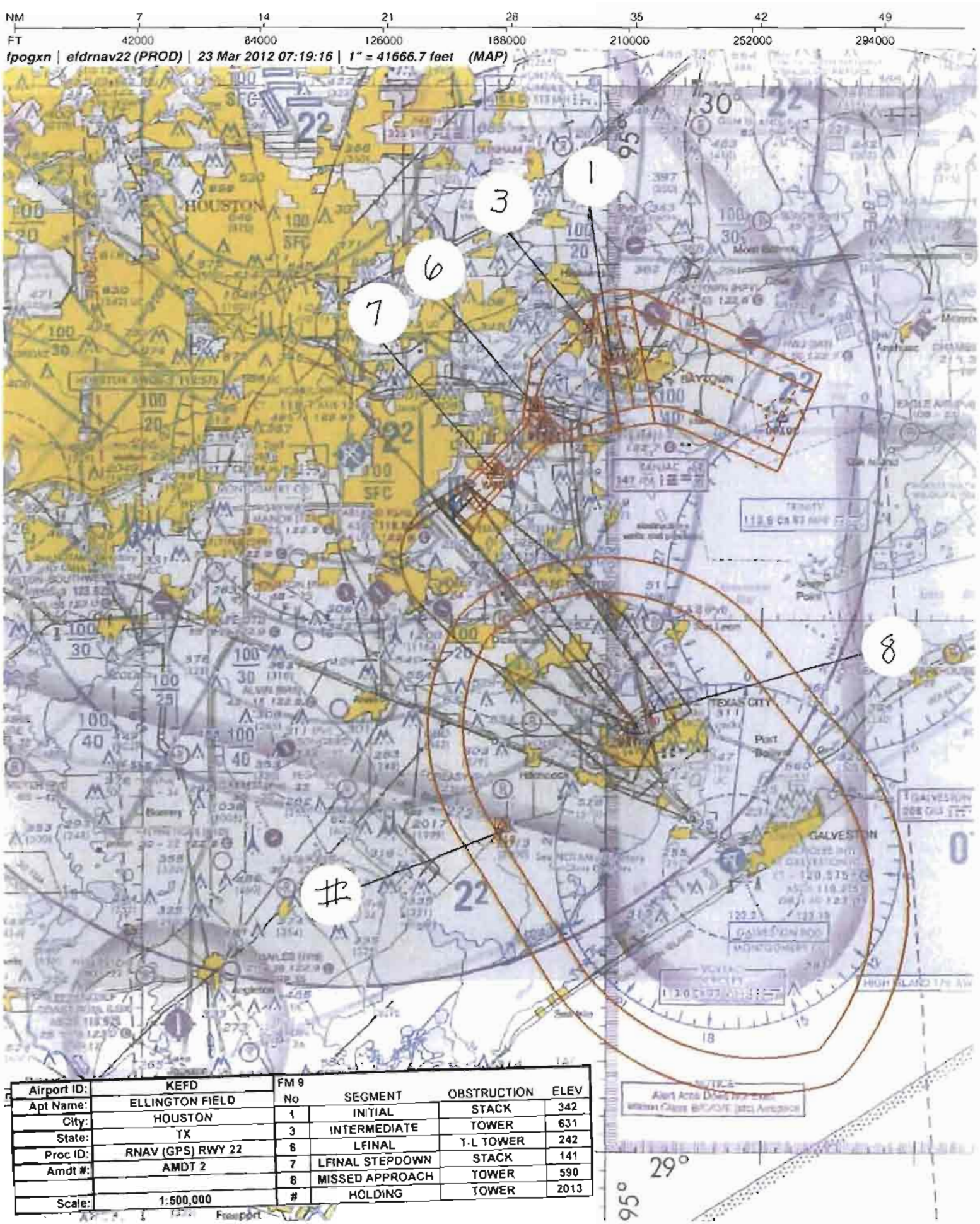


CATEGORY	A	B	C	D	E
LPV DA	230/24 200 (200-½)			230/24 200 (200-½)	230/24 200 (200-½)
LNAV/VNAV DA	340/24 310 (400-½)				
LNAV MDA	400/24 370 (400-½)		400/35 370 (400-¾)		
CIRCLING	500-1 468 (500-1)		500-1½ 468 (500-1½)	600-2 568 (600-2)	660-2¼ 628 (700-2¼)

HIRL Rwys 4-22 and 17R-35L
TDZ/CL Rwys 17R, 22 and 35L

SC-5
13 FEB 2012
COMPILER: CW
REVIEWER:
DBL CHECKER:
EFF DATE: FIG

AUTOMATED AL-197 RNAV (GPS) RWY 22



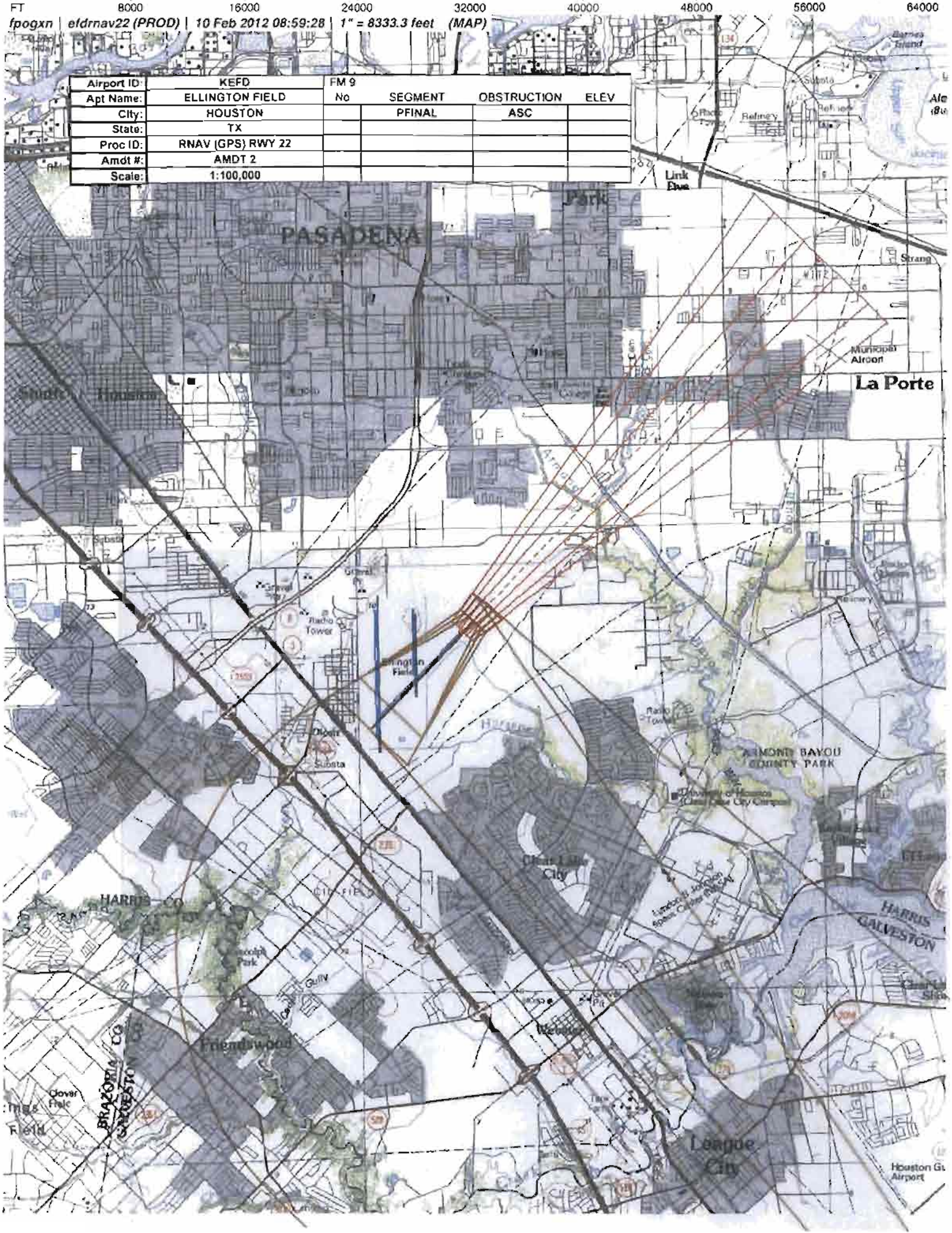
		FM 9			
Airport ID:	KEFD	No	SEGMENT	OBSTRUCTION	ELEV
Apt Name:	ELLINGTON FIELD	1	INITIAL	STACK	342
City:	HOUSTON	3	INTERMEDIATE	TOWER	631
State:	TX	6	LFINAL	T-L TOWER	242
Proc ID:	RNAV (GPS) RWY 22	7	LFINAL STEPDOWN	STACK	141
Amdt #:	AMDT 2	8	MISSED APPROACH	TOWER	590
		#	HOLDING	TOWER	2013
Scale:	1:500,000				

NM 1 2 3 4 5 6 7 8 9 10

FT 8000 16000 24000 32000 40000 48000 56000 64000

fpogxn | efdrnav22 (PROD) | 10 Feb 2012 08:59:28 | 1" = 8333.3 feet (MAP)

		FM 9			
Airport ID:	KEFD	No	SEGMENT	OBSTRUCTION	ELEV
Apt Name:	ELLINGTON FIELD		PFINAL	ASC	
City:	HOUSTON				
State:	TX				
Proc ID:	RNAV (GPS) RWY 22				
Amdt #:	AMDT 2				
Scale:	1:100,000				

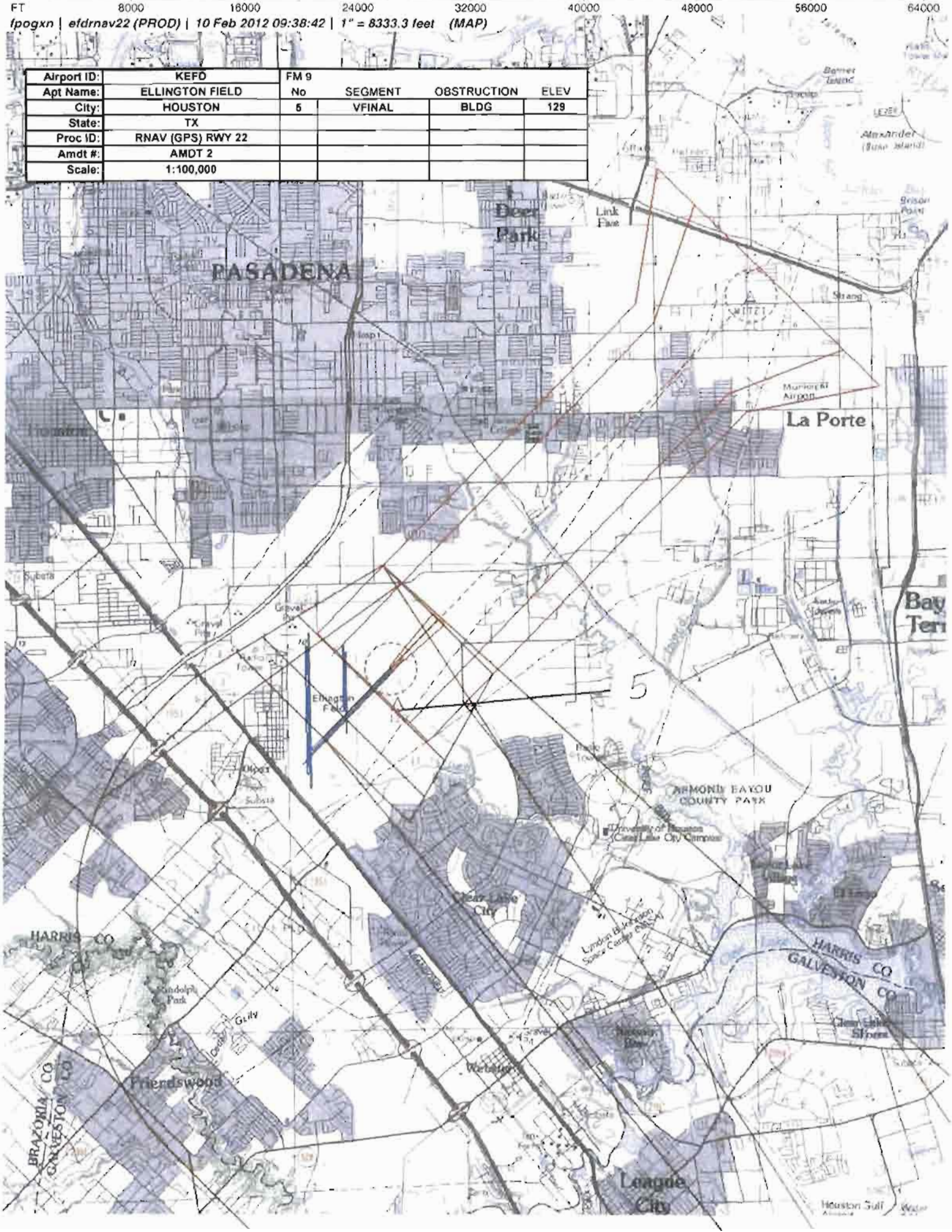


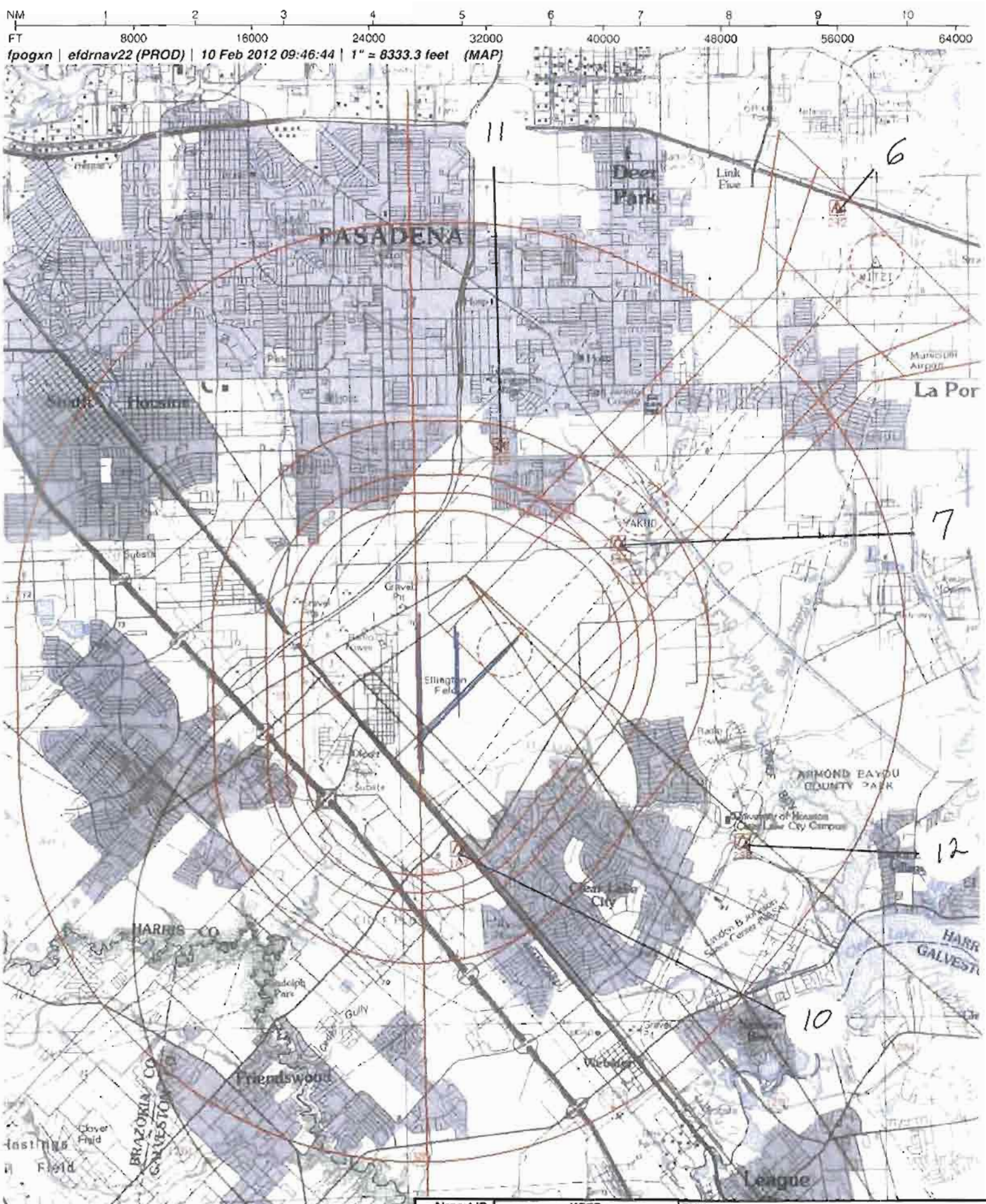
NM 1 2 3 4 5 6 7 8 9 10

FT 8000 16000 24000 32000 40000 48000 56000 64000

fpogxn | efdrnav22 (PROD) | 10 Feb 2012 09:38:42 | 1" = 8333.3 feet (MAP)

Airport ID:	KEFD	FM 9			
Apt Name:	ELLINGTON FIELD	No	SEGMENT	OBSTRUCTION	ELEV
City:	HOUSTON	5	VFINAL	BLDG	129
State:	TX				
Proc ID:	RNAV (GPS) RWY 22				
Amdt #:	AMDT 2				
Scale:	1:100,000				





Airport ID:	KEFD	FM 9			
Apt Name:	ELLINGTON FIELD	No	SEGMENT	OBSTRUCTION	ELEV
City:	HOUSTON	6	LFINAL	TOWER	242
State.	TX	7	LFINAL STEPDOWN	STACK	141
Proc ID:	RNAV (GPS) RWY 22	10	CIRC A-C	TOWER	187
Amdt #:	AMDT 2	11	CIRC D	TOWER	213
Scale:	1:100,000	12	CIRC E	TOWER	288

US DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

RNAV - STANDARD INSTRUMENT APPROACH PROCEDURE TITLE 14 CFR PART 97.33

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
OPTOC (IAF)	SEVSY (FB)	289.16 / 5.00	2000
SEVSY (IF)	WITZI (FB)	218.93 / 6.12	2000
WITZI (FAF)	YAKUD/2.20 NM TO RW22 (FB)	218.90 / 3.82	
YAKUD/2.20 NM TO RW22	RW22 (MAP) (FO)	218.87 / 2.20	
RW22 (MAP)	500 MSL	218.87	500
500 MSL	WATFO (FO)		3100

MISSED APPROACH

LPV: DA
LNAV/VNAV: DA
LNAV: RW22

CLIMB TO 500 THEN CLIMBING LEFT TURN TO 3100 TO WATFO AND HOLD.

1. PT ____ SIDE OF COURSE ____ OUTBOUND ____ FT WITHIN ____ MILES OF ____ (IAF)
2. PROFILE STARTS AT SEVSY
3. FAC: 218.90 FAF: WITZI DIST FAF TO MAP: 6.02 THLD: 6.02
4. MIN. ALT: SEVSY 2000, WITZI 2000, YAKUD/2.20 NM TO RW22 780*
5. DIST TO THLD FROM OM: ____ MM: ____ IM: ____ 150 HAT: ____ 100 HAT: ____ GS ANT: ____
6. MIN GS INCPT: 2000 GS ALT AT: WITZI 2000 OM: ____ MM: ____ IM: ____
7. GS ANGLE: 3.00 TCH: 53.6 34:1 IS CLEAR
8. MSA FROM: RW22 3100

ADDITIONAL FLIGHT DATA:
HOLD SE, LT, 316.00 INBOUND.
CHART FAS OBST: 141 STACK 293758N/0950716W
DISTANCE TO THLD FROM 200 HATH: 0.46 NM.
CHART VDP AT 1.00 MILES TO RW22*
*LNAV ONLY.
WAAS CHANNEL # 61111
REFERENCE PATH ID: W22A
LTP HAE: -17.9 M
CHART: LA PORTE MUNI

MAG VAR: 5E EPOCH YEAR: 2000

MINIMUMS

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

CATEGORY =====>	A			B			C			D			E		
	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA
LPV DA	230	2400	200	230	2400	200	230	2400	200	230	2400	200	230	2400	200
LNAV/VNAV DA	340	2400	310	340	2400	310	340	2400	310	340	2400	310	340	2400	310
LNAV MDA	400	2400	370	400	2400	370	400	3500	370	400	3500	370	400	3500	370
CIRCLING	500	1	468	500	1	468	500	1 1/2	468	600	2	568	660	2 1/4	628

NOTES:
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV/VNAV NA BELOW -15C (5F) OR ABOVE 43C (109F). @ CAT E 800-2 1/4
CHART NOTE: DME/DME RNP-0.3 NA.
CHART PLANVIEW NOTE: RADAR REQUIRED.
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT.
(SEE FORM 8260-10)

CITY AND STATE	ELEVATION: 32 THRE: 30	FACILITY IDENTIFIER:	PROCEDURE NO./AMDT NO./EFFECTIVE DATE:	SUP:
HOUSTON, TX	AIRPORT NAME: ELLINGTON FIELD	RNAV	RNAV (GPS) RWY 22, AMDT 2	AMDT: 1A
				DATED 04/05/2012

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

COORDINATED WITH:

ATA	AAT	ALPA	APA	AOPA	NBAA	OTHER (specify)
[X]	[ ]	[X]	[X]	[X]	[X]	[X] ZHU, HOU APP, EFD ATCT, AMGR

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:

DEVELOPED BY		
NAME: JILL OLSON (GRACE NOWAK)	FIFO AJV-353	DATE: 02/09/2012

APPROVED BY		
NAME: LARRY H STROUT MANAGER	FIFO AJV-353	DATE:

CHANGES:

1. MISSED APPROACH INSTRUCTIONS CHANGED FROM CLIMB TO 3100 DIRECT UYATI AND ON TRACK 110.60 TO WATFO AND HOLD TO CLIMB TO 500 THEN CLIMBING LEFT TURN TO 3100 DIRECT WATFO AND HOLD.
2. ADDED IAF (OPTOC TO SEVSY) SEGMENT.
3. INTERMEDIATE TO FAF DISTANCE CHANGED FROM 6.22 TO 6.12.
4. PFAF DISTANCE CHANGED FROM 5.92 TO 6.02.
5. FAF TO SDF DISTANCE CHANGED FROM 3.72 TO 3.82.
6. DA/HATH AND DISTANCE FROM THLD TO HATH CHANGED FROM 290/260/0.65 NM TO 230/200/0.46 NM.
7. LNAV/VNAV DA/VIS/HATH CHANGED FROM 368/4000/338 TO 340/2400/310.
8. LNAV CAT C VISIBILITY CHANGED FROM 2400 TO 3500 AND CATS D AND E VISIBILITY CHANGED FROM 5000 TO 3500.
9. VDP CHANGED FROM 1.03 TO 1.00 MILES TO RWY 22.
10. UNCOMPENSATED BARO-VNAV SYSTEMS, LNAV-VNAV NOTE CHANGED FROM ABOVE 49C (120F) TO ABOVE 43C (109F).
11. INOPERATIVE MALSR NOTE CHANGED FROM INCREASE LNAV/VNAV ALL CATS AND LNAV CATS D AND E VISIBILITY TO RVR 6000 TO INCREASE LPV CAT E VISIBILITY TO RVR 4000, LNAV/VNAV CAT E VISIBILITY TO RVR 5000 AND LNAV CATS C, D AND E VISIBILITY TO RVR 5000.

SEE 8260-10

REASONS:

1. FPT REQUEST FOR CLIMBING LEFT TURN MISSED APPRAOCH.
2. FPT REQUEST.
3. FAF DISTANCE CHANGED.
4. PFAF LOCATION IAW 8260.54A, CHAP 2, PARA 2.13.
5. SDF LOCATION IAW WITH 8260.54A, CHAP 3, PARA 3.5.
6. ALL SURFACES CLEAR IN PFINAL SEGMENT.
7. NEW CONTROLLING OBSTACLE AND VISIBILITY CRITERIA IAW 8260.3B, CHANGE 20, CHAP 3.
8, 11. VISIBILITY CRITERIA IAW 8260.3B, CHANGE 20, CHAP 3.
9. MDA CHANGED FROM 440 TO 400.
10. IAPA CALCULATIONS BASED ON STANDARD AIRPORT ISA IAW WITH 8260.54A.

PDF EDITS:
8260-3. TERMINAL ROUTES: ADDED (FAF) NEXT TO WITZI, DELETED 780* FOR SDF, DELETED CTA 500.
8260-10. ARINC: DELETED 020 FROM SEGMENTS HM LEG.
8260-10. FLIGHT INSPECTION SUMMARY: DELETED 020 FROM MISSED APPROACH RNP.

06/14/2012: THIS IS A CORRECTED COPY OF THE FORM APPROVED ON 06/05/2012.
IN ADDITIONAL FLIGHT DATA, ADDED CHART: LA PORTE MUNI

QUALITY CHECKED

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NOTES, (CONT.):
CHART NOTE: CIRCLING NA WEST OF RWY 17R-35L.
CHART NOTE: FOR INOPERATIVE MALSR, INCREASE LPV CAT E VISIBILITY TO RVR 4000, LNAV/VNAV CAT E VISIBILITY TO RVR 5000 AND LNAV CATS C, D AND E VISIBILITY TO RVR 5000.

QUALITY 2 CHECKED

CITY AND STATE	ELEVATION: 32 THRE: 30	FACILITY IDENTIFIER:	PROCEDURE NO./ AMDT NO./EFFECTIVE DATE:	SUP:
HOUSTON, TX	AIRPORT NAME: ELLINGTON FIELD	RNAV	RNAV (GPS) RWY 22, AMDT 2	AMDT: 1A
				DATED: 04/05/2012

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.

REASONS:

QUALITY 2 CHECKED

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.

FAS DATA BLOCK INFORMATION

DATA FIELD	DATA
OPERATION TYPE	0
SBAS SERVICE PROVIDER IDENTIFIER	0
AIRPORT IDENTIFIER	KEFD
RUNWAY	RW22
APPROACH PERFORMANCE DESIGNATOR	0
ROUTE INDICATOR	
REFERENCE PATH DATA SELECTOR	0
REFERENCE PATH IDENTIFIER (APPROACH ID)	W22A
LTP/FTP LATITUDE	293650.5400N
LTP/FTP LONGITUDE	0950843.9700W
LTP/FTP ELLIPSOIDAL HEIGHT	-00179
FPAP LATITUDE	293546.1300N
FPAP LONGITUDE	0950954.7900W
THRESHOLD CROSSING HEIGHT (TCH)	00053.6
TCH UNITS SELECTOR (METERS OR FEET USED)	F
GLIDEPATH ANGLE (GPA)	03.00
COURSE WIDTH AT THRESHOLD	106.75
LENGTH OFFSET	0312
HORIZONTAL ALERT LIMIT (HAL)	40.0
VERTICAL ALERT LIMIT (VAL)	35.0
CRC REMAINDER	87FC4DAE

ADDITIONAL PATH POINT RECORD INFORMATION

ICAO CODE	K4
LTP ORTHOMETRIC HEIGHT	+00092
FPAP ORTHOMETRIC HEIGHT	+00092

QUALITY 2 CHECKED

CITY AND STATE	ELEVATION: 32 THRE: 30	FACILITY IDENTIFIER:	PROCEDURE NO./ AMDT NO./EFFECTIVE DATE:	SUP:
HOUSTON, TX	AIRPORT NAME: ELLINGTON FIELD	RNAV	RNAV (GPS) RWY 22, AMDT 2	AMDT: 1A
				DATED: 04/05/2012

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:

REASONS:

QUALITY 2 CHECKED

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION
RNAV (GPS) STANDARD INSTRUMENT APPROACH PROCEDURE
FLIGHT STANDARDS SERVICES - FAR PART 97.33

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ARINC PACKET - 424-18 - RNAV (GPS)

```
                 1         2         3         4         5         6         7         8         9         0         1         2         3
WP      123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAEAENRT   OPTOC K40    W     N29413045W094483547                      E0028     NAR           OPTOC
        SUSAEAENRT   SEVSY K40    C     N29453666W094590421                      E0029     NAR           SEVSY
        SUSAEAENRT   WATFO K40    C     N29235391W094580402                      E0029     NAR           WATFO
        SUSAEAENRT   WITZI K40    W     N29411140W095035678                      E0029     NAR           WITZI
        SUSAEAENRT   YAKUD K40    W     N29382594W095065901                      E0029     NAR           YAKUD

                 1         2         3         4         5         6         7         8         9         0         1         2         3
AIRPORT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KEFDK4AEFD     0     090YHN29362640W095093150E005000032         1800018000C    MNAR    ELLINGTON FIELD

                 1         2         3         4         5         6         7         8         9         0         1         2         3
SEGMENT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KEFDK4FR22   AOPTOC 010OPTOCK4EA0E  A    IF                                                18000                 A JS
        SUSAP KEFDK4FR22   AOPTOC 020SEVSYK4EA0EE B 010TF                     28920100    + 02000                            A JS
        SUSAP KEFDK4FR22   R      010SEVSYK4EA0E  I    IF                                + 02000     18000                  A JS
        SUSAP KEFDK4FR22   R      020WITZIK4EA1E  F 051TF                     21890061    + 02000                  RW22  K4PGA JS
        SUSAP KEFDK4FR22   R      020WITZIK4EA2WALPV       ALNAV/VNAV ALNAV                                                     JS
        SUSAP KEFDK4FR22   R      021YAKUDK4EA0E S  031TF                     21890038    V 0078000784        -300           A JS
        SUSAP KEFDK4FR22   R      030RW22 K4PG0GY M 031TF                     21890022      00084             -300           A JS
        SUSAP KEFDK4FR22   R      040          0  M     CA                    2189        + 00500                            A JS
        SUSAP KEFDK4FR22   R      050WATFOK4EA0EY  L   DF                                + 03100                            A JS
        SUSAP KEFDK4FR22   R      060WATFOK4EA0EE  L   HM                     31600090    + 03100                            A JS

                 1         2         3         4         5         6         7         8         9         0         1         2         3
RUNWAY  123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KEFDK4GRW22    0080012189 N29365054W095084397-0100    -0017900030000054150I

                 1         2         3         4         5         6         7         8         9         0         1         2         3
PP      123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KEFDK4PR22   RW22 001 0000W22A0N2936505400W09508439700-001790300N2935461300W0950954790010675031200053 6F40035087FC4DAE
        SUSAP KEFDK4PR22   RW22 002E      +00092+00092LPV       61111

                 1         2         3         4         5         6         7         8         9         0         1         2         3
MSA     123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KEFDK4SRW22 K4PG                0   18018003125                                                                    M
```

QUALITY 1 CHECKED

CITY AND STATE	ELEVATION: 32 THRE: 30	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
HOUSTON, TX	AIRPORT NAME: ELLINGTON FIELD	RNAV	RNAV (GPS) RWY 22, AMDT 2	AMDT: 1A
				DATED: 04/05/2012

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:	NFPG	DATE:
APPROVED BY		
NAME:	NFPG	DATE:

CHANGES:

REASONS:

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

RNAV (GPS) STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.33**

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ARINC SUMMARY - 424-18 - RNAV (GPS)

ROUTES	TRANSITION	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
	OPTOC	OPTOC	010	IAF	IF		FB					
	OPTOC	SEVSY	020		TF		FB	1.0	289.2(294.2T)	010.0	AA 02000	
		SEVSY	010	FACF	IF		FB				AA 02000	
		WITZI	020	FAF	TF		FB	0.5	218.9(223.9T)	006.1	AA 02000	
		YAKUD	021	SDF	TF		FB	0.3	218.9(223.9T)	003.8	AA 00780 GS 00784	
		RW22	030	MAP	TF		FO	0.3	218.9(223.9T)	002.2	AT 00084	

MISSED APPROACH	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
		040		CA		FB		218.9(223.9T)		AA 00500	
	WATFO	050		DF	L	FO				AA 03100	
	WATFO	060		HM	L	FO		316.0(321.0T)	009.0	AA 03100	

POINT DATA	WAYPOINT	LAT IN SECS	LONG IN SECS	LAT IN MINS	LONG IN MINS
	OPTOC	N294130.45	W0944835.47	N2941.508	W09448.591
	SEVSY	N294536.66	W0945904.21	N2945.611	W09459.070
	WATFO	N292353.91	W0945804.02	N2923.899	W09458.067
	WITZI	N294111.40	W0950356.78	N2941.190	W09503.946
	YAKUD	N293825.94	W0950659.01	N2938.432	W09506.984
	RW22	N293650.54	W0950843.97	N2936.842	W09508.733

RUNWAY DATA	RWY	THRESHOLD ELEVATION	TCH
	RW22	00030	54

QUALITY CHECKED

CITY AND STATE	ELEVATION: 32 THRE: 30	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
HOUSTON, TX	AIRPORT NAME: ELLINGTON FIELD	RNAV	RNAV (GPS) RWY 22, AMDT 2	AMDT: 1A
				DATED: 04/05/2012

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:	NFPG	DATE:
APPROVED BY		
NAME:	NFPG	DATE:

CHANGES:

REASONS:

STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

PART - A OBSTRUCTION DATA

1. APP SEGMENT	FROM	TO	OBSTRUCTION	COORDINATES	ELEV. MSL	ROC	ALT. ADJUSTMENTS	MIN. ALT.
INITIAL	OPTOC	SEVSY	1. STACK (48-001716)	294423.00N/0945950.00W	342 (4D)	1000	AT658	2000
			2. TERRAIN	294509.00N/0945433.00W	39 (0)		AS1500	1500
INTERMEDIATE	SEVSY	WITZI	3. TOWER (48-014549)	294606.90N/0950104.62W	631 (1A)	500	AT869	2000
			4. TERRAIN	294151.00N/0950239.00W	56 (100)		AS1500	1600
FINAL: LPV	WITZI	RW22				ASC		230/200
FINAL: LNAV/VNAV	WITZI	RW22	5. BLDG (48-008207)	293621.00N/0950838.00W	129 (5D)	23.4:1	AC50	340/310
FINAL: LNAV	WITZI	YAKUD/2.20 NM TO RW22	6. T-L TWR (48-013442)	294142.00N/0950427.00W	242 (4D)	250	AC50 DG220 XL1	780
FINAL: LNAV STEPDOWN	YAKUD/2.20 NM TO RW22	RW22	7. STACK (48-007158)	293758.00N/0950716.00W	141 (2C)	250		400
2. PROCEDURE TURN	NA							
3. MISSED APPROACH MAP:	DA / DA / RW22	WATFO				ASC		3100
			8. TOWER (48-004625)	292443.62N/0945708.58W	590 (4D)	1000		1600
ELEV:	63/179/300		9. TERRAIN	293227.00N/0950357.00W	43 (0)		AS1500	1500

4. CIRCLING AREA	DISTANCE	HT. ABV. ARPT. REQUIRED	HT. ABV. ARPT. ACTUAL							
CATEGORY A	1.3 NM	350	468	10. TOWER (48-009792)	293431.84N/0950919.22W	187 (2C)	300		500
CATEGORY B	1.5 NM	450	468	10. TOWER (48-009792)	293431.84N/0950919.22W	187 (2C)	300		500
CATEGORY C	1.7 NM	450	468	10. TOWER (48-009792)	293431.84N/0950919.22W	187 (2C)	300		500
CATEGORY D	2.3 NM	550	568	11. TOWER (48-008595)	293903.00N/0950847.00W	213 (5D)	300	HAA	600
CATEGORY E	4.5 NM	550	628	12. TOWER (48-024657)	293437.36N/0950539.97W	288 (5D)	300	XP20 AC50	660

5. MINIMUM SAFE ALTITUDES — PRIMARY NAVAID: RW22

SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A	SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A
360-360	TWR (48-004048)	258/ 18.4	2049 (5D)	3100					

QUALITY 2 CHECKED

CITY AND STATE		FACILITY	PROCEDURE AND AMENDMENT NO:	REGION
HOUSTON, TX	ELEVATION: 32 AIRPORT NAME: ELLINGTON FIELD	RNAV	RNAV (GPS) RWY 22, AMDT 2	ASW

PART B - SUPPLEMENTAL DATA

1. COMMUNICATIONS WITH:	2. WEATHER SERVICE	3. ALTIMETER SETTING
EFD TOWER HOU APP CON	N W S / F A A / A / C — OTHER: FSS	SOURCE: KEFD DISTANCE: HOURS REMOTE OPERATION:
SATISFACTORY ON: X V H F, X U H F, H F	LOCATION: KEFD	ADJUSTMENT: 0

4. MONITOR STATUS	PRIMARY NAVAID:	
	MONITOR POINT:	
	HRS OPTN: CAT 1	
	HRS OPTN: CAT 3	
5. APPROACH & RUNWAY LIGHTING		ALS
		(S) SALS
	X	MALSR 22 MALSF 17R, 35L
	X	HIRL 22, 17R, 35L, 04
		MIRL
		REIL
	X	TDZ 22, 17R, 35L
	X	C/L 22, 17R, 35L, 04
	X	OTHER (SPECIFY) PAPI-4L 22, 17R, 35L, 04
6. RUNWAY MARKINGS	BASIC	BSC-G 35R, 17L
	ALL WEATHER	PIR-G 22, 17R, 35L
	INSTRUMENT	NPI-G 04
7. RUNWAY VISUAL RANGE	APPROACH	22, 35L
	MIDFIELD	
	ROLL OUT	22, 35L
8. GLIDE PATH	GP ANGLE: 3.00	ELEV RWY THRESHOLD: 30.3
	DISTANCE FROM RWY:	ELEV GP ANTENNA:
		THRESHOLD CROSSING HEIGHT: 53.6
9. FINAL APPROACH COURSE AIMING	X	RUNWAY THRESHOLD — FT. FROM THRESHOLD
	X	ON CENTERLINE — FT. FROM CENTERLINE

10. WAIVERS: NONE

PART D - PREPARED BY: JILL OLSON (GRACE NOWAK)	DATE: 02/09/2012
TITLE: AERONAUTICAL INFORMATION SPECIALIST	OFFICE: AJV-353

PART C - REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

SEE ATTACHED AIRSPACE LETTER.

TAA NOT DEVELOPED PER FPT.
AVERAGE COLD TEMPERATURE BASED ON STANDARD-30C ISA DEVIATION.
NO HISTORICAL WEATHER DATA AVAILABLE.
KEFD ON SERVICE A.
BACKUP ALTIMETER SOURCE NOT REQUIRED, REDUNDANT SOURCES.
VGSI DATA: 3:00/49.80

LPV SLOPE 34:1.
LNAV/VNAV SLOPE 23.4:1.

OBSTACLE THE SAME FOR ALL INTERMEDIATE SEGMENTS.
30 FT VEGETATION USED PER FPT.
25 DEGREES BANK ANGLE USED IN MISSED APPROACH TO HAVE SUFFICIENT LEG LENGTH.
USED GS ANGLE/RDH: 53.58

XP - TO MAINTAIN CURRENT MDA

QUALITY 2 CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: OPTOC **STATE:** TX **COUNTRY:** US

LATITUDE/LONGITUDE: 294130.45N/0944835.47W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (GPS) RWY 22			KEFD	HOUSTON	TX (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 07/26/2012

DEVELOPED BY: **DATE:** 02/08/2012 **OFFICE:** AJV-353 **NAME:** JILL OLSON (GRACE NOWAK)

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

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZHU
ATC FACILITY: HOU APP CON
OTHER: EFD ATCT

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: WITZI **STATE:** TX **COUNTRY:** US

LATITUDE/LONGITUDE: 294111.40N/0950356.78W **TYPE:** WP

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

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (GPS) RWY 22			KEFD	HOUSTON	TX (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 3 **DATE OF REVISION:** 07/26/2012

REASON FOR REVISION:
MOVED FIX 592.20 FT NORTHEAST TO PFAF LOCATION.
UPDATED FIX LAT/LONG COORDINATES.

DEVELOPED BY: **DATE:** 02/08/2012 **OFFICE:** AJV-353 **NAME:** JILL OLSON (GRACE NOWAK)

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

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZHU
ATC FACILITY: HOU APP CON
OTHER: EFD ATCT

QUALITY CHECKED 2

INFO ONLY

RADIO FIX AND HOLDING DATA RECORD

NAME: SEVSY **STATE:** TX **COUNTRY:** US

LATITUDE/LONGITUDE: 294536.66N/0945904.21W **TYPE:** WP, RADAR, 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	HOUSTON	I-FNF	LOC		038.86	043.86		13.74		2000	4500
2	HUMBLE	IAH	VORTAC	H	116.91	121.91		22.22		2000	17500
3	ELLINGTON	EFD	TACAN	L			13.00	13.00		2000	17500

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	HI-ILS OR LOC/DME RWY 22	3		KEFD	HOUSTON	TX (US)
IAP	ILS OR LOC RWY 22	1, 2, 3		KEFD	HOUSTON	TX (US)
IAP	RNAV (GPS) RWY 22			KEFD	HOUSTON	TX (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 3 **DATE OF REVISION:** 02/09/2012

REASON FOR REVISION:
1. REMOVED FAC 4.
2. ADDED DIST FROM FAC TO FAC 1, 2, 3 AND FAC 1 BEARING.
3. ADDED MILITARY IAP TO REQUIRED CHARTING.
4. REVISED FIX USE.
5. ADDED RADAR TO FIX TYPE.

DEVELOPED BY: **DATE:** 03/22/2011 **OFFICE:** AJV-353 **NAME:** JOSE ALFONSO (ROSS BARTO)

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** GREGORY YAMAMOTO

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZHU
ATC FACILITY: HOU APP CON
OTHER: EFD ATCT

QUALITY 2 CHECKED

INFO ONLY

RADIO FIX AND HOLDING DATA RECORD

NAME: WATFO **STATE:** TX **COUNTRY:** US

LATITUDE/LONGITUDE: 292353.91N/0945804.02W **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	HOBBY	HUB	VOR/DME	H	128.53	133.53	22.33	22.33		3100	17500
2	TRINITY	MHF	VOR/DME	L	225.53	232.53		14.55		3100	17500
3	ELLINGTON	EFD	TACAN	L	136.00	141.00	15.98	15.98		3100	17500
4	SCHOLES	VUH	VORTAC	L	319.82	325.82	9.33	9.33		3100	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	SE	EFD	TACAN	136.00	316.00	L		6	3100	17500	13	21
2	SE		WP	136.00	316.00	L		9	3100	14000	13	19
3	SE	HUB	VOR/DME	128.53	308.53	L	1		3100	14000	13	19
4	SE	VUH	VORTAC	319.82	319.82	L	1		3100	14000	13	18

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	310	TOWER (48-023422)	291800.65N/0950640.27W	2013	5D
2	310	TOWER (48-023422)	291800.65N/0950640.27W	2013	5D
3	310	TOWER (48-023422)	291800.65N/0950640.27W	2013	5D
4	310	TOWER (48-023422)	291800.65N/0950640.27W	2013	5D

REASON FOR NONSTANDARD HOLDING:
PAT 4 AIR TRAFFIC REQUIREMENT
PAT 1 AIR TRAFFIC REQUIREMENT
PAT 2 AIR TRAFFIC REQUIREMENT
PAT 3 AIR TRAFFIC REQUIREMENT

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERNS.

REMARKS:
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	HI-ILS OR LOC/DME RWY 17R	3	1	KEFD	HOUSTON	TX (US)
IAP	HI-ILS OR LOC/DME RWY 22	3	1	KEFD	HOUSTON	TX (US)
IAP	HI-ILS OR LOC/DME RWY 35L	1	1	KEFD	HOUSTON	TX (US)
IAP	HI-TACAN RWY 17R	3	1	KEFD	HOUSTON	TX (US)
IAP	HI-TACAN RWY 35L	1	1	KEFD	HOUSTON	TX (US)
IAP	ILS OR LOC RWY 17R	1, 2	3	KEFD	HOUSTON	TX (US)
IAP	ILS OR LOC RWY 22	1, 2	3	KEFD	HOUSTON	TX (US)
IAP	ILS OR LOC RWY 22 (ALTERNATE MISSED APPROACH)	2, 4	4	KEFD	HOUSTON	TX (US)
IAP	ILS OR LOC RWY 35L	1, 2	3	KEFD	HOUSTON	TX (US)
IAP	ILS OR LOC RWY 35L (ALTERNATE MISSED APPROACH)	2, 4	4	KEFD	HOUSTON	TX (US)
IAP	RNAV (GPS) RWY 17R		2	KEFD	HOUSTON	TX (US)
IAP	RNAV (GPS) RWY 22		2	KEFD	HOUSTON	TX (US)
IAP	RNAV (GPS) RWY 35L		2	KEFD	HOUSTON	TX (US)
IAP	RNAV (GPS) RWY 4		2	KEFD	HOUSTON	TX (US)
IAP	TACAN RWY 17R	3	1	KEFD	HOUSTON	TX (US)
IAP	TACAN RWY 22	3	1	KEFD	HOUSTON	TX (US)
IAP	TACAN RWY 35L	1	1	KEFD	HOUSTON	TX (US)
IAP	TACAN RWY 4	3	1	KEFD	HOUSTON	TX (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 7 **DATE OF REVISION:** 02/09/2012

REASON FOR REVISION:

QUALITY 2 CHECKED

1. CHANGED FAC 4 FROM KEFD R22 TO VUH VORTAC.
2. ADDED DIST FROM FAC FOR FAC 1,2,3 AND RAISED MRA FROM 2500 TO 3100.
3. RAISED MINIMUM HOLDING FROM 2500 TO 3100.
4. REVISED HOLDING CONTROLLING OBSTACLE.
5. ADDED PRECIPITOUS TERRAIN EVALUATION.
6. MOVED HOLDING LIMITED...TO HOLDING RESTRICTIONS.
7. REMOVED MINIMUM TEMPLATE SIZE PER ATC REQUEST NOTE.
8. REVISED FIX USE.
9. ADDED PAT 4 (ALTERNATE MISSED APPROACH).
11. PAT 2, RAISED MINIMUM DME LEG LENGTH FROM 4NM TO 9NM.

DEVELOPED BY:	**DATE:** 03/22/2011	**OFFICE:** AJV-353	**NAME:** JOSE ALFONSO (ROSS BARTO)
APPROVED BY:	**DATE:**	**OFFICE:** AJV-353	**NAME:** GREGORY YAMAMOTO
	SIGNATURE:		

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZHU
ATC FACILITY: HOU APP CON
OTHER: EFD ATCT

QUALITY CHECKED 2

INFO ONLY

RADIO FIX AND HOLDING DATA RECORD

NAME: YAKUD **STATE:** TX **COUNTRY:** US

LATITUDE/LONGITUDE: 293825.94N/0950659.01W **TYPE:** WP

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

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (GPS) RWY 22			KEFD	HOUSTON	TX (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 04/05/2012

REASON FOR REVISION:
1. REMOVE FAC 1.
2. REVISE FIX USE.

DEVELOPED BY: **DATE:** 03/22/2011 **OFFICE:** AJV-353 **NAME:** JOSE ALFONSO (ROSS BARTO)

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** GREGORY YAMAMOTO

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZHU
ATC FACILITY: HOU APP CON
OTHER: EFD ATCT

QUALITY 2 CHECKED

TERMINAL AIRSPACE DATA REQUIREMENTS

CITY: **HOUSTON** STATE: **TX**

AIRPORT NAME: **ELLINGTON FIELD** ID: **KEFD**

PROCEDURE: **RNAV (GPS) RWY 22** AMDT: **2**

DOCKET#: **NOT REQUIRED**
(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 **THLD** to 1000' point **2.69**
   (Enter THLD, FAF, ARP, FACILITY, as appropriate)
2. Width of **FINAL** segment at 1000' point **1.20**
   (Enter appropriate segment, final, intermediate, etc.)
3. True Course of **FINAL** segment containing 1000' point **223.90**
4. High Terrain in **FINAL** segment containing 1000' point **33**
5. Distance from **THLD** to 1500' point **5.02**
   (If 1500' point in PT maneuvering area or holding pattern note in remarks)
6. Width of **FINAL** segment at 1500' point **1.20**
7. True Course of **FINAL** segment containing 1500' point **223.90**
8. High Terrain in **FINAL** segment containing 1500' point **33**
9. Threshold Coordinates (if straight-in) ... **293650.54N** / **0950843.97W**
10. ARP Coordinates ..... **293626.40N** / **0950931.50W**
11. Runway Approach End and distance furthest from ARP ..... RWY **35L**
    Distance **0.86** NM
12. FAF Coordinates ..... **294111.40N** / **0950356.78W**

REMARKS: Approach/Drawing attached.

RADIO FIX AND HOLDING DATA RECORD

NAME: UYATI **STATE:** TX **COUNTRY:** US

LATITUDE/LONGITUDE: 293103.43N/0951505.17W **TYPE:** WP

CANCEL

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

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (GPS) RWY 22			KEFD	HOUSTON	TX (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:**

REASON FOR REVISION:
1. REMOVE FAC 1.
2. REVISE FIX USE.

DEVELOPED BY: **DATE:** **OFFICE:** **NAME:**

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

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZHU
ATC FACILITY: HOU APP CON
OTHER: EFD ATCT

QUALITY 2 CHECKED