

Flight Procedures Cover Page	Task Action: FLIGHT CHECK	Task Type: SID	Estimated Chart Date: 04/22/2021	APWS Task ID: F37A53CE82CE4D97B8A6A94FE413981C	APWS Project ID: 428664E1518E4550B11889D27D5FB815
Procedure: KMCO FATHE ONE RNAV DP		Enroute: YES	Specialist: Brandenburg, Phillip		Agreement Number:
Airport ID: KMCO			Airport City: ORLANDO		State: FL
Facility ID:	Facility Type:	Flight Inspection Remark Type: New FC Slot			
<p>Procedure Comments: KMCO ACTIVE DATA USED.</p> <p>KMCO MAGVAR W06/2015.</p> <p>WAIVER LETTER REQUIRED TO NOT CHART MCA AT THE IF FOR RADAR VECTORS (RV) FOR ALL APPLICABLE RUNWAYS AT KMCO.</p> <p>CONTACT ALLAN WILL 405.954.6103</p> <p>3/5/21. THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 12/16/20. 8260-2, BKENI.</p> <p>1. ADDED ENROUTE HIGH, CONTROLLER HIGH TO REQUIRED CHARTING.</p>					



FIPC DME/DME FORM

PROCEDURE: KMCO FATHE ONE RNAV DP		AIRPORT NAME: ORLANDO INTL		AIRPORT ID: KMCO	SPECIAL CONTROL NO: AG-01-047-21
FAC ID: FATHE1		CITY: ORLANDO		ST: FL	ORIG CHART DATE: 04/22/2021
DFL TYPE: PROC/D	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER: AC0683	PTS TASK ID:	

PREFLIGHT NOTES

REVIEWER:	DATE:
COMMENTS:	CHECK ONE: <input type="checkbox"/> FLT CK REQ <input type="checkbox"/> NFCR <input type="checkbox"/> REJECT
	YES NO
	CPV COMPLETE? X

PROCEDURE RESULTS

INSPECTION DATE: 02/24/2021	CREW #: VN258	N #: N85	INSTRUMENT PROCEDURE STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT W/CHANGES <input type="checkbox"/> UNSAT	ARINC CODING: <input type="checkbox"/> SAT <input checked="" type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT
FLIGHT INSPECTOR SIGNATURE: james hawley @ 02/24/2021 19:08		PRINTED NAME: HAWLEY, JAMES MICHAEL		NOTAM INITIATED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO

FLIGHT INSPECTOR REMARKS:		

DME/DME STATUS: <input type="checkbox"/> SAT <input type="checkbox"/> UNSAT	SPECIALIST SIGNATURE:	PRINTED NAME:
---	------------------------------	----------------------

SPECIALIST REMARKS:

IN-FLIGHT OBSTACLE REPORT

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

FIPC DME/DME FORM						
PROCEDURE: KMCO FATHE ONE RNAV DP			AIRPORT NAME: ORLANDO INTL		AIRPORT ID: KMCO	SPECIAL CONTROL NO: AG-01-047-21
FAC ID: FATHE1		CITY: ORLANDO			ST: FL	ORIG CHART DATE: 04/22/2021
DFL TYPE: PROC/D	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER: AC0683	PTS TASK ID:		
PREFLIGHT NOTES						
REVIEWER:					DATE:	
COMMENTS:					CHECK ONE: <input type="checkbox"/> FLT CK REQ <input type="checkbox"/> NFCR <input type="checkbox"/> REJECT	
					YES	NO
					CPV COMPLETE? <input checked="" type="checkbox"/> X <input type="checkbox"/>	
PROCEDURE RESULTS						
INSPECTION DATE: 02/24/2021	CREW #: VN258	N #: N85	INSTRUMENT PROCEDURE STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT W/CHANGES <input type="checkbox"/> UNSAT		ARINC CODING: <input type="checkbox"/> SAT <input checked="" type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT	
FLIGHT INSPECTOR SIGNATURE: james hawley @ 02/24/2021 19:08			PRINTED NAME: HAWLEY, JAMES MICHAEL			NOTAM INITIATED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
FLIGHT INSPECTOR REMARKS:						
DME/DME STATUS: <input checked="" type="checkbox"/> SAT <input type="checkbox"/> UNSAT	SPECIALIST SIGNATURE: steven s-ctr rager @ 03/04/2021 08:47				PRINTED NAME: Steven Rager	
SPECIALIST REMARKS: Segments recorded by Flight Inspection or verified by TARGETS DME prediction-modeling tool under the KMCO FATHE1 SID received ESV's and DME's as modeled and are suitable for navigation using DME/DME/IRU. Segment(s) flown were: Partial segment(s)(FATHE - BKENI. Full segment(s) BIGSE - FATHE, EARRS - BUFFI, HANDD - BUFFI.						
IN-FLIGHT OBSTACLE REPORT						
OBSTRUCTION ID #:	COORDINATES OR LOCATION:	GNSS ALTITUDE (MSL):	BAROMETRIC ALTITUDE (MSL):	HEIGHT ABOVE GROUND LEVEL:		

PROCEDURE REVIEW BOARD (PRB) Results

March 11, 2021

PRB recommendations do not constitute approval

1. Waiver: ORLANDO INTL, ORLANDO, FLORIDA (MCO) - FATHE ONE (RNAV) DEPARTURE,
<https://swims.faa.gov/Procedure/Edit/6725>

Requested By: AJV-A

PRB Results: Return for Rework

- (1) FAA Order 8260.3, para 13-1-3: Evaluate the 40:1 departure OCS originating at the departure end of runway (DER) at DER elevation. Departure operations are unrestricted if the OCS is clear.
 - (a) 40:1 ASC: add attached (DivDep_KMCO_RW17L, DivDep_KMCO_RW17R, DivDep_KMCO_RW18L, DivDep_KMCO_RW18R) diverse assessment to package.
- (2) MCO North Only: 8260.3, Section 13-6, evaluations. Temporarily Waived until December 2, 2021.
 - (a) Provide completed Hold down altitude evaluations for December 2, 2021 post-implementation as agreed. Temporary Waiver to criteria is only valid until December 2, 2021.
- (3) MCO North Only: 8260.46, Para 2-1-1 e (2)(c): Manual ATC crossing altitude evaluations for climb gradients. Approval is required for climb gradients over 500ft/NM and Waiver is required to publish ATC climb gradient.
 - (a) Complete attached (W_A_FL_FLORIIDA_FATHE_ONE_RNAV_DEPARTURE_CG_APPROVAL) approval and resubmit package. Add attached (CG KMCO Calc, KMCO CG) assessment to package, both pdf calculations and xls.
 - (b) Complete attached (FATHE ATC CG Waiver) waiver and resubmit package.
- (4) NOTAM Required: "NOTE: ATC CLIMB GRADIENT: RWY 35R: 566 FT/NM to 2600, 36L: 637 FT/NM to 2300, 36R: 621 FT/NM to 2300, IF UNABLE TO ACCEPT CLIMB RATE ADVISE ATC PRIOR TO TAXI" This temporary NOTAM allows sufficient time to amend the procedure. As agreed with the Metroplex Team, all post-implementation amendments shall be completed by December 2, 2021.
- (5) PBN/Equipment Box Notes. Correct for December 2, 2021 post-implementation to match upcoming 8260.46H. Move RNAV 1, DME/DME/IRU or GPS to PBN box and remove "required" so it reads "RNAV 1 – DME/DME/IRU OR GPS". Move "RADAR REQUIRED" to the Equipment Box.
- (6) Waiver Required to FAA Order 8260.46G, Appendix E, Section 1, paragraph 10c, specifically, the requirement to document the minimum crossing altitude at the IF on RNAV Radar departure procedures. Temporarily Waived until December 2, 2021.
 - (a) Temporary waiver allows sufficient time to amend the procedure waiver as needed for no altitude at the IDF. As agreed with the Metroplex Team, all post-implementation amendments shall be completed by December 2, 2021.

Required NOTAM:

FATHE ONE DEPARTURE (RNAV)

CHART NOTE: ATC CLIMB GRADIENT: RWY 35R: 566 FT/NM to 2600, 36L: 637 FT/NM to 2300, 36R: 621 FT/NM to 2300, IF UNABLE TO ACCEPT CLIMB RATE ADVISE ATC PRIOR TO TAXI

AIRPORT	PROCEDURE	RWY	WAYPOINT	RESTRICTION	ATC CG
KMCO	FATHE	35R	JWOLF	↑2600	565.22'NM
		36L	KYOTE	↑2300	636.70'NM
		36R	FACTS	↑2300	620.48'NM
KMCO	JEEMY	35R	JWOLF	↑2600	565.22'NM
		36L	KYOTE	↑2300	636.70'NM
		36R	FACTS	↑2300	620.48'NM
KMCO	EPCOT	35R	SAWZZ	↑2300	565.22'NM
		36L	KYOTE	↑2300	636.70'NM
		36R	FACTS	↑2300	620.48'NM
KMCO	LEWRD	35R	SAWZZ	↑2300	565.22'NM
		36L	KYOTE	↑2300	636.70'NM
		36R	FACTS	↑2300	620.48'NM
KMCO	FSHUN	35R	SAWZZ	↑2300	565.22'NM
		36L	KYOTE	↑2300	636.70'NM
		36R	FACTS	↑2300	620.48'NM

	DAM	+2600	-5000	+7000
	35L - GOTHOM	380.12/NM	35 GOTHOM	MIEGS 476.19 M-LAPOU -476.19
	35R -	442.92	385.95'	" "
	36L	361.11	@ 3914.28	" "
	36R	369.84	"	"
	MZULD-35L - GOTHOM	380.12	455.96	455.96
	35R - GOTHOM	442.92	GOTHOM MIEGS	" MIEGS-ASKUE -
	36L -	361.11 442.92	@ 3558.15	" "
	36R -	369.84	"	"
	FATHE 35L - JWELE	485.98/NM	3000 JIRAN 191.38/NM	I-BIGSE 11000 B-BUFFI -455.58
565.22	35R - KASE	565.22	191.38	3933.94'
623.31	36L - KYOTE	623.34	3000 EARS 319.63	11000 BUFFI 451.47/
613.33	36R - FACTS	613.33	3000 HAND 312.5	11000 BUFFI 435.06/NM
	JEEMY 35L -	"	"	+11600 MDUSA 372.39'
ME	35R -	"	"	MDUSA 339.32/NM
	36L -	"	"	MDUSA 372.39
	36R -	"	"	MDUSA 388.52
				MDUSA 389.22
ME NO	EPOT 35L -	+2300 SOW22 466.53	+3000 HAND 344.83	+4000 LEFT 299.40
TR	35R -	493.56	344.83	299.40
	36L -	2300 KYOTE 623.31	+3000 EARS 319.63	4000 LEFT 300.30
	36R -	2300 FACTS 613.33	+3000 EARS 327.10	4000 LEFT 300.30
	LEWIS 35L -	"	"	+14000 SARRIL 328.3
	35R -	"	"	"
	36L -	"	"	"
	36R -	"	"	"
	FSHUN 35L -	"	"	+12000 TVAPPY -200
	35R -	"	"	"
	36L -	"	"	"
	36R -	"	"	"



Federal Aviation Administration

Memorandum

To: Wade Terrell, Manager, Flight Technologies and Procedures Division
THRU: Wayne Radicke, Manager, Flight Procedures and Airspace Group

From: Julie Morgan, Manager, Instrument Flight Procedures (IFP) Coordination
Team, AJV-A410

Subject: Approval Request: Orlando INTL, Orlando, FL (KMCO)

The purpose of this memo is to request Flight Standards approval to publish the Orlando FATHE ONE Departure (RNAV) with a climb gradient higher than 500 ft/NM as stated in Order 8260.46G Paragraph 2-1-1.d.(2): "The Flight Procedures and Airspace Group (or appropriate military authority) must approve DPs and DVAs requiring a CG in excess of 500 ft/NM (600 ft/NM for helicopters)..." and Paragraph 2-1-1.d.(2)(a) "Requests for approval of CGs in excess of 500 ft/NM (600 ft/NM for helicopters) must include documentation showing the calculations used to derive the climb gradient values."

The KMCO FATHEONE Departure was intended to overlay the initial climb of the Conventional SIDs to protect the arriving aircraft into Executive Airport (KORL) on the ILS RWY 25 IAP. This crossing restriction is needed to ensure separation and optimal traffic flow for a very congested airspace. The crossing restrictions result in ATC climb gradients of: RWY 35R: 566 FT/NM to 2600, 36L: 637 FT/NM to 2300, 36R: 621 FT/NM to 2300. This ensures traffic flow for both airports and if the aircraft cannot accept the climb gradient ATC can coordinate for traffic into KORL RWY 25 to stop until the departure is airborne and past the final approach. Historically all aircraft have been able to make the crossing altitudes.

1. FLIGHT PROCEDURE IDENTIFICATION:

Orlando, FL
Orlando INTL (KMCO)
FATHE DEPARTURE (RNAV)

2. WAIVER REQUIRED AND APPLICABLE STANDARD:

Publish ATC Climb Gradients (CG). FAA Order 8260.46 Para 2-1-1 e (2) (a) Establish a single CG exceeding 200 ft/NM whenever required for obstruction clearance and include the altitude to which the gradient is required in the takeoff minimums note. FAA Order 8260.46 Para 2-1-1 e (2)(c) Do not chart CG's that may be needed to support airspace, Navigation solution, environmental, or ATC operations limitations.

3. REASON FOR WAIVER (JUSTIFICATION FOR NONSTANDARD TREATMENT):

The ATC CG's of RWY 35R: 566 FT/NM, 36L: 637 FT/NM, 36R: 621 FT/NM allow for the departures to be clear of arriving traffic to Executive Airport (KORL) RWY 25 ILS final approach. This ensures traffic flow for both airports and if the aircraft cannot accept the climb gradient ATC can provide an alternate option. Historically all aircraft have been able to make the crossing altitudes.

4. EQUIVALENT LEVEL OF SAFETY PROVIDED:

The procedure will have a Chart Note added stating: "NOTE: ATC CLIMB GRADIENT: RWY 35R: 566 FT/NM to 2600, 36L: 637 FT/NM to 2300, 36R: 621 FT/NM to 2300, IF UNABLE TO ACCEPT CLIMB RATE ADVISE ATC PRIOR TO TAXI". This allows controllers time to coordinate with the controller in the adjacent airspace or assign a different departure.

5. ALTERNATIVE ACTIONS DEEMED NOT FEASIBLE:

Discarding the crossing altitude in favor of a standard climb was considered, but due to the high density air traffic in the FL MCO airspace, the risk of essential controller transmissions and the loss of traffic flow was regarded as being too great and a safety issue.

6. COORDINATION WITH USER ORGANIZATIONS (SPECIFY):

Eastern Service Area PBN FAA and NATCA leads.
FL TRACON (F11)
ZMA/ZJX ARTCC
Orlando Tower
American and Southwest Airlines

7. SUBMITTED BY:

DATE	OFFICE IDENTIFICATION	TITLE
03/11/21	AJV-A423	Manager

SIGNATURE
Digitally signed by
ALLAN WILL
Mar 29, 2021

8. AFS ACTIONS:

☐ APPROVED ☐ DISAPPROVED ☐ NOT REQUIRED

COMMENTS:

DATE	ROUTING SYMBOL	SIGNATURE
------	----------------	-----------

ORLANDO INTL (MCO)
ORLANDO, FLORIDA

ORLANDO, FLORIDA

124.8 307.0

ORLANDO INTL (MCO)



DEPARTURE ROUTE DESCRIPTION

TAKEOFF RWYS 17L/R: Climb on heading 185° to 600, then on heading 176°, or as assigned by ATC, for vectors to BUFFI, thence

TAKEOFF RWYS 18L/R: Climb on heading 185° to 600, then on heading 141°, or as assigned by ATC, for vectors to BUFFI, thence

TAKEOFF RWY 35L: Climb on heading 005° to intercept course 037° to cross JWOLF at or above 2600, then on track 010° to cross JIRAN at or above 3000, then on track 004° to BIGSE, then on track 359° to BUFFI, thence

TAKEOFF RWY 35R: Climb on heading 005° to intercept course 033° to cross JWOLF at or above 2600, then on track 010° to cross JIRAN at or above 3000, then on track 004° to BIGSE, then on track 359° to BUFFI, thence

TAKEOFF RWY 36L: Climb on heading 005° to 600, then direct to cross KYOTE at or above 2300 and at or below 230K, then on track 006° to cross EARRS at or above 3000 and at 230K, then on track 013° to BUFFI, thence

TAKEOFF RWY 36R: Climb on heading 005° to 600, then direct to cross FACTS at or above 2300 and at or below 230K, then on track 006° to cross HANDD at or above 3000 and at 230K, then on track 012° to BUFFI, thence

. . . . on track 002° to cross FATHE at or above 14000. Maintain ATC assigned altitude. Expect filed altitude 10 minutes after departure.

VIYAP TRANSITION (FATHE1.VIYAP)

PROTOTYPE-NOT FOR NAVIGATION

DivDep - KMCO RW17L

Project: KMCO LEWRD 20201026
Last Evaluation: 09-Mar-2021 15:15:24
Reference Software Version: 2.8.0
Project Chart Date: 04/22/2021

Evaluation Settings

Evaluated obstacles?:	true
Obstacle Database:	IFPA (50.0nm query)
Evaluated terrain?:	true
Terrain point result limit:	50
Worst Case Vegetation Height (ft) AGL:	100
ICA Turn Altitude (ft):	489.70
Input Climb Gradient (ft/NM):	500.00
Input CG Termination Altitude (ft):	600.00
Counter-clockwise Limiting Magnetic Heading (deg):	-
Clockwise Limiting Magnetic Heading (deg):	-
Speed Restriction (kts):	-
Inhibit controlling obstacles within ICA Extended 3SM Area:	false

Airport

Name:	ORLANDO INTL
Location:	N28° 25' 45.80",W081° 18' 32.40"
Elevation (ft):	96.40
Magnetic Variation (degs):	-6.00 ()

Approach End of Runway

Name:	KMCO:RW17L [IFPA r12 08-22-13 TO UNK]
Landing Threshold Point:	N28° 26' 37.31",W081° 16' 57.29"
Elevation (ft):	89.70
DER Location:	N28° 25' 08.20",W081° 16' 56.38"
DER Elevation (ft):	89.70
True Course (degs):	179.48
Width (ft):	150

Departure End of Runway

Name:	KMCO:RW35R [IFPA r12 08-22-13 TO UNK]
Landing Threshold Point:	N28° 25' 08.20",W081° 16' 56.38"
Elevation (ft):	89.70
DER Location:	N28° 26' 37.31",W081° 16' 57.29"
DER Elevation (ft):	89.70
True Course (degs):	359.48
Width (ft):	150

Runways with Vertically Guided Survey

KMCO: RW18R: VGAS, KMCO: RW17L: VGAS, KMCO: RW17R: VGAS, KMCO: RW35L: VGAS, KMCO: RW36R: VGAS, KMCO: RW18L: VGAS, KMCO: RW35R: VGAS, KMCO: RW36L: VGAS

Terrain Information

Terrain Extractor Name	Extractor Location	Extractor Type	Resolution
AJV A DTED	C:\Program Files (x86)\TARGETS\data\DTED-3Sec-2019\DTED-AJVA	org.mitre.caasd.terrain.DTEExtractor	3.0

Database Effective Dates

Database	Date
UddfObstacle	07/13/2017
Tiled IFPA	N/A
OEAAA	N/A
DOF	02/25/2021
NFDC	02/25/2021
IFP_OFFLINE	N/A
AVNII_OFFLINE	N/A
IFPA	03/09/2021
CIFP	02/25/2021

Procedure Results

ICA Start Point:	N28° 25' 08.20",W081° 16' 56.38"
ICA Start Height (ft):	89.70
ICA Length (NM):	0.80
ICA Length (ft):	4860.89
Area Radius (NM):	25.00
ICAE OCS Height (ft) AMSL:	393.51
Diverse B OCS Start Height (ft) AMSL:	496.40
DRP:	N28° 26' 17.51",W081° 16' 57.09"
ICA Corner Points:	N28° 25' 08.24",W081° 16' 50.78" to N28° 25' 08.15",W081° 17' 01.98", N28° 24' 19.91",W081° 17' 16.07" to N28° 24' 20.23",W081° 16' 35.70"

Criteria Failures and Warnings

No failures.

Software Evaluation Failures, Warnings, and Notes

No failures.

Failure/Warning Justifications

None.

Obstacles Requiring Accuracy Code Verification

[12-000471 [IFPA r2], 12-000862 [IFPA r2], 12-001416 [IFPA r1], 12-001543 [IFPA r1], 12-003598 [IFPA r1], 12-006164 [IFPA r1], 12-006168 [IFPA r1], 12-006170 [IFPA r1], 12-006171 [IFPA r1], 12-006173 [IFPA r1], 12-006181 [IFPA r1], 12-006182 [IFPA r1], 12-006184 [IFPA r1], 12-006185 [IFPA r1], 12-006188 [IFPA r1], 12-006266 [IFPA r1], 12-006267 [IFPA r1], 12-006268 [IFPA r1], 12-006367 [IFPA r2], 12-026945 [IFPA r1], 12-027131 [IFPA r1], 12-027341 [IFPA r1]]

Ignored Obstacles

None.

Procedure Notes

None.

No CG obstacles for area ICA

No CGTA obstacles for area ICA

LOW CLOSE IN Obstacle Evaluation

Obstacle	Source	Type	Lat	Lon	Height (ft)	Ht (ft) AMSL	Ht (ft) AGL	AC (H/V (ft))	Eff Ht (ft) AMSL	Ctrln Msrmt Dist (ft)	Surf Ht (ft) AMSL	Amt of Pen (ft)	Req CG (ft/NM)	Req CGTA (ft)	CGTA For Input CG (ft)	Side Ctrln	Dist to Ctrln (ft)
12-055394	IFPA	POLE	N28° 25' 08.11"	W081° 16' 55.03"	91.0	91.0	3.0	1A (+20/+3)	91.0	9.92	89.95	1.05	1048.27	91.41		LEFT	120.48
12-079592	IFPA	TREE	N28° 24' 53.09"	W081° 16' 46.12"	152.0	152.0	74.0	1A (+20/+3)	152.0	1534.1	128.05	23.95	324.88	171.73	142.25	LEFT	902.31
12-079622	IFPA	NAVAID	N28° 25' 08.10"	W081° 16' 56.38"	90.0	90.0	1.0	1A (+20/+3)	90.0	9.84	89.95	0.05	243.97	90.09	89.82	ON	0.07

No CG obstacles for area DIV A

No CGTA obstacles for area DIV A

No CG obstacles for area DIV B

No CGTA obstacles for area DIV B

No obstacles for area SEE AND AVOID

DivDep - KMCO RW17R

Project: KMCO LEWRD 20201026
Last Evaluation: 09-Mar-2021 15:19:30
Reference Software Version: 2.8.0
Project Chart Date: 04/22/2021

Evaluation Settings

Evaluated obstacles?:	true
Obstacle Database:	IFPA (50.0nm query)
Evaluated terrain?:	true
Terrain point result limit:	50
Worst Case Vegetation Height (ft) AGL:	100
ICA Turn Altitude (ft):	486.70
Input Climb Gradient (ft/NM):	500.00
Input CG Termination Altitude (ft):	600.00
Counter-clockwise Limiting Magnetic Heading (deg):	-
Clockwise Limiting Magnetic Heading (deg):	-
Speed Restriction (kts):	-
Inhibit controlling obstacles within ICA Extended 3SM Area:	false

Airport

Name:	ORLANDO INTL
Location:	N28° 25' 45.80",W081° 18' 32.40"
Elevation (ft):	96.40
Magnetic Variation (degs):	-6.00 ()

Approach End of Runway

Name:	KMCO:RW17R [IFPA r16 03-29-18 TO UNK]
Landing Threshold Point:	N28° 26' 08.20",W081° 17' 45.17"
Elevation (ft):	90.10
DER Location:	N28° 24' 29.20",W081° 17' 44.13"
DER Elevation (ft):	86.70
True Course (degs):	179.47
Width (ft):	150

Departure End of Runway

Name:	KMCO:RW35L [IFPA r16 03-29-18 TO UNK]
Landing Threshold Point:	N28° 24' 29.20",W081° 17' 44.13"
Elevation (ft):	86.70
DER Location:	N28° 26' 08.20",W081° 17' 45.17"
DER Elevation (ft):	90.10
True Course (degs):	359.47
Width (ft):	150

Runways with Vertically Guided Survey

KMCO: RW17L: VGAS, KMCO: RW35L: VGAS, KMCO: RW18R: VGAS, KMCO: RW36R: VGAS, KMCO: RW35R: VGAS, KMCO: RW36L: VGAS, KMCO: RW18L: VGAS, KMCO: RW17R: VGAS

Terrain Information

Terrain Extractor Name	Extractor Location	Extractor Type	Resolution
AJV A DTED	C:\Program Files (x86)\TARGETS\data\DTED-3Sec-2019\DTED-AJVA	org.mitre.caasd.terrain.DTEExtractor	3.0

Database Effective Dates

Database	Date
UddfObstacle	07/13/2017
Tiled IFPA	N/A
OEAAA	N/A
DOF	02/25/2021
NFDC	02/25/2021
IFP_OFFLINE	N/A
AVNII_OFFLINE	N/A
IFPA	03/09/2021
CIFP	02/25/2021

Procedure Results

ICA Start Point:	N28° 24' 29.20",W081° 17' 44.13"
ICA Start Height (ft):	86.70
ICA Length (NM):	0.80
ICA Length (ft):	4860.89
Area Radius (NM):	25.00
ICAE OCS Height (ft) AMSL:	390.51
Diverse B OCS Start Height (ft) AMSL:	496.40
DRP:	N28° 25' 48.40",W081° 17' 44.96"
ICA Corner Points:	N28° 24' 29.24",W081° 17' 38.53" to N28° 24' 29.15",W081° 17' 49.73", N28° 23' 40.90",W081° 18' 03.81" to N28° 23' 41.23",W081° 17' 23.45"

Criteria Failures and Warnings

No failures.

Software Evaluation Failures, Warnings, and Notes

No failures.

Failure/Warning Justifications

None.

Obstacles Requiring Accuracy Code Verification

[12-000471 [IFPA r2], 12-000862 [IFPA r2], 12-001416 [IFPA r1], 12-001543 [IFPA r1], 12-003598 [IFPA r1], 12-006164 [IFPA r1], 12-006167 [IFPA r1], 12-006168 [IFPA r1], 12-006170 [IFPA r1], 12-006171 [IFPA r1], 12-006173 [IFPA r1], 12-006181 [IFPA r1], 12-006184 [IFPA r1], 12-006185 [IFPA r1], 12-006188 [IFPA r1], 12-006266 [IFPA r1], 12-006267 [IFPA r1], 12-006268 [IFPA r1], 12-006367 [IFPA r2], 12-026945 [IFPA r1], 12-027131 [IFPA r1], 12-027341 [IFPA r1]]

Ignored Obstacles

None.

Procedure Notes

None.

No CG obstacles for area ICA

No CGTA obstacles for area ICA

LOW CLOSE IN Obstacle Evaluation

Obstacle	Source	Type	Lat	Lon	Height (ft)	Ht (ft) AMSL	Ht (ft) AGL	AC (H/V (ft))	Eff Ht (ft) AMSL	Ctrln Msrmt Dist (ft)	Surf Ht (ft) AMSL	Amt of Pen (ft)	Req CG (ft/NM)	Req CGTA (ft)	CGTA For Input CG (ft)	Side Ctrln	Dist to Ctrln (ft)
12-079106	IFPA	TREE	N28° 24' 15.52"	W081° 17' 53.57"	133.0	133.0	58.0	1A (+20/+3)	133.0	1373.34	121.03	11.97	269.71	147.66	112.96	RIGHT	855.46
12-074916	IFPA	TREE	N28° 24' 14.53"	W081° 17' 53.76"	136.0	136.0	60.0	1A (+20/+3)	136.0	1473.17	123.53	12.47	267.72	151.61	114.07	RIGHT	873.36
12-055922	IFPA	TREE	N28° 24' 13.13"	W081° 17' 54.40"	136.0	136.0	60.0	1A (+20/+3)	136.0	1614.03	127.05	8.95	244.36	151.61	106.34	RIGHT	931.82
12-079623	IFPA	TREE	N28° 24' 12.14"	W081° 17' 54.24"	135.0	135.0	59.0	1A (+20/+3)	135.0	1714.15	129.55	5.45	225.42	150.29	98.65	RIGHT	918.46

No CG obstacles for area DIV A

No CGTA obstacles for area DIV A

No CG obstacles for area DIV B

No CGTA obstacles for area DIV B

No obstacles for area SEE AND AVOID

DivDep - KMCO RW18L

Project: KMCO LEWRD 20201026
Last Evaluation: 09-Mar-2021 15:22:26
Reference Software Version: 2.8.0
Project Chart Date: 04/22/2021

Evaluation Settings

Evaluated obstacles?:	true
Obstacle Database:	IFPA (50.0nm query)
Evaluated terrain?:	true
Terrain point result limit:	50
Worst Case Vegetation Height (ft) AGL:	100
ICA Turn Altitude (ft):	491.00
Input Climb Gradient (ft/NM):	500.00
Input CG Termination Altitude (ft):	600.00
Counter-clockwise Limiting Magnetic Heading (deg):	-
Clockwise Limiting Magnetic Heading (deg):	-
Speed Restriction (kts):	-
Inhibit controlling obstacles within ICA Extended 3SM Area:	false

Airport

Name:	ORLANDO INTL
Location:	N28° 25' 45.80",W081° 18' 32.40"
Elevation (ft):	96.40
Magnetic Variation (degs):	-6.00 ()

Approach End of Runway

Name:	KMCO:RW18L [IFPA r15 04-27-17 TO UNK]
Landing Threshold Point:	N28° 26' 54.00",W081° 19' 20.30"
Elevation (ft):	92.40
DER Location:	N28° 24' 55.15",W081° 19' 19.04"
DER Elevation (ft):	91.00
True Course (degs):	179.46
Width (ft):	200

Departure End of Runway

Name:	KMCO:RW36R [IFPA r15 04-27-17 TO UNK]
Landing Threshold Point:	N28° 24' 55.15",W081° 19' 19.04"
Elevation (ft):	91.00
DER Location:	N28° 26' 54.00",W081° 19' 20.30"
DER Elevation (ft):	92.40
True Course (degs):	359.46
Width (ft):	200

Runways with Vertically Guided Survey

KMCO: RW36R: VGAS, KMCO: RW17R: VGAS, KMCO: RW18L: VGAS, KMCO: RW17L: VGAS, KMCO: RW35L: VGAS, KMCO: RW35R: VGAS, KMCO: RW18R: VGAS, KMCO: RW36L: VGAS

Terrain Information

Terrain Extractor Name	Extractor Location	Extractor Type	Resolution
AJV A DTED	C:\Program Files (x86)\TARGETS\data\DTED-3Sec-2019\DTED-AJVA	org.mitre.caasd.terrain.DTEExtractor	3.0

Database Effective Dates

Database	Date
UddfObstacle	07/13/2017
Tiled IFPA	N/A
OEAAA	N/A
DOF	02/25/2021
NFDC	02/25/2021
IFP_OFFLINE	N/A
AVNII_OFFLINE	N/A
IFPA	03/09/2021
CIFP	02/25/2021

Procedure Results

ICA Start Point:	N28° 24' 55.15",W081° 19' 19.04"
ICA Start Height (ft):	91.00
ICA Length (NM):	0.80
ICA Length (ft):	4860.89
Area Radius (NM):	25.00
ICAE OCS Height (ft) AMSL:	394.81
Diverse B OCS Start Height (ft) AMSL:	496.40
DRP:	N28° 26' 34.20",W081° 19' 20.09"
ICA Corner Points:	N28° 24' 55.19",W081° 19' 13.44" to N28° 24' 55.10",W081° 19' 24.63", N28° 24' 06.85",W081° 19' 38.70" to N28° 24' 07.19",W081° 18' 58.34"

Criteria Failures and Warnings

No failures.

Software Evaluation Failures, Warnings, and Notes

No failures.

Failure/Warning Justifications

None.

Obstacles Requiring Accuracy Code Verification

[12-000471 [IFPA r2], 12-000862 [IFPA r2], 12-001416 [IFPA r1], 12-001543 [IFPA r1], 12-003598 [IFPA r1], 12-006164 [IFPA r1], 12-006167 [IFPA r1], 12-006168 [IFPA r1], 12-006170 [IFPA r1], 12-006171 [IFPA r1], 12-006173 [IFPA r1], 12-006175 [IFPA r1], 12-006181 [IFPA r1], 12-006184 [IFPA r1], 12-006185 [IFPA r1], 12-006188 [IFPA r1], 12-006266 [IFPA r1], 12-006267 [IFPA r1], 12-006268 [IFPA r1], 12-006367 [IFPA r2], 12-027131 [IFPA r1], 12-027341 [IFPA r1]]

Ignored Obstacles

None.

Procedure Notes

None.

No CG obstacles for area ICA

No CGTA obstacles for area ICA

LOW CLOSE IN Obstacle Evaluation

Obstacle	Source	Type	Lat	Lon	Height (ft)	Ht (ft) AMSL	Ht (ft) AGL	AC (H/V (ft))	Eff Ht (ft) AMSL	Ctrln Msrmt Dist (ft)	Surf Ht (ft) AMSL	Amt of Pen (ft)	Req CG (ft/NM)	Req CGTA (ft)	CGTA For Input CG (ft)	Side Ctrln	Dist to Ctrln (ft)
12-055965	IFPA	POLE	N28° 24' 54.99"	W081° 19' 22.21"	94.0	94.0	3.0	1A (+20/+3)	94.0	13.17	91.33	2.67	1821.78	94.95		RIGHT	283.58
12-055944	IFPA	TREE	N28° 24' 26.24"	W081° 19' 05.67"	171.0	171.0	95.0	1A (+20/+3)	171.0	2930.72	164.27	6.73	218.38	196.33	105.77	LEFT	1166.03
12-078751	IFPA	TREE	N28° 24' 26.90"	W081° 19' 06.65"	169.0	169.0	89.0	1A (+20/+3)	169.0	2863.24	162.58	6.42	217.93	193.7	105.09	LEFT	1079.14
12-079560	IFPA	TREE	N28° 24' 25.43"	W081° 19' 04.62"	170.0	170.0	94.0	1A (+20/+3)	170.0	3013.41	166.34	3.66	209.73	195.01	99.04	LEFT	1259.02

No CG obstacles for area DIV A

No CGTA obstacles for area DIV A

No CG obstacles for area DIV B

No CGTA obstacles for area DIV B

No obstacles for area SEE AND AVOID

DivDep - KMCO RW18R

Project: KMCO LEWRD 20201026
Last Evaluation: 09-Mar-2021 15:26:23
Reference Software Version: 2.8.0
Project Chart Date: 04/22/2021

Evaluation Settings

Evaluated obstacles?:	true
Obstacle Database:	IFPA (50.0nm query)
Evaluated terrain?:	true
Terrain point result limit:	50
Worst Case Vegetation Height (ft) AGL:	100
ICA Turn Altitude (ft):	491.10
Input Climb Gradient (ft/NM):	500.00
Input CG Termination Altitude (ft):	600.00
Counter-clockwise Limiting Magnetic Heading (deg):	-
Clockwise Limiting Magnetic Heading (deg):	-
Speed Restriction (kts):	-
Inhibit controlling obstacles within ICA Extended 3SM Area:	false

Airport

Name:	ORLANDO INTL
Location:	N28° 25' 45.80",W081° 18' 32.40"
Elevation (ft):	96.40
Magnetic Variation (degs):	-6.00 ()

Approach End of Runway

Name:	KMCO:RW18R [IFPA r20 03-29-18 TO UNK]
Landing Threshold Point:	N28° 26' 53.86",W081° 19' 37.11"
Elevation (ft):	92.50
DER Location:	N28° 24' 55.01",W081° 19' 35.83"
DER Elevation (ft):	91.10
True Course (degs):	179.46
Width (ft):	200

Departure End of Runway

Name:	KMCO:RW36L [IFPA r22 03-29-18 TO UNK]
Landing Threshold Point:	N28° 24' 55.01",W081° 19' 35.83"
Elevation (ft):	91.10
DER Location:	N28° 26' 53.86",W081° 19' 37.11"
DER Elevation (ft):	92.50
True Course (degs):	359.45
Width (ft):	200

Runways with Vertically Guided Survey

KMCO: RW36L: VGAS, KMCO: RW18R: VGAS, KMCO: RW35R: VGAS, KMCO: RW36R: VGAS, KMCO: RW18L: VGAS, KMCO: RW17L: VGAS, KMCO: RW35L: VGAS, KMCO: RW17R: VGAS

Terrain Information

Terrain Extractor Name	Extractor Location	Extractor Type	Resolution
AJV A DTED	C:\Program Files (x86)\TARGETS\data\DTED-3Sec-2019\DTED-AJVA	org.mitre.caasd.terrain.DTEExtractor	3.0

Database Effective Dates

Database	Date
UddfObstacle	07/13/2017
Tiled IFPA	N/A
OEAAA	N/A
DOF	02/25/2021
NFDC	02/25/2021
IFP_OFFLINE	N/A
AVNII_OFFLINE	N/A
IFPA	03/09/2021
CIFP	02/25/2021

Procedure Results

ICA Start Point:	N28° 24' 55.01",W081° 19' 35.83"
ICA Start Height (ft):	91.10
ICA Length (NM):	0.80
ICA Length (ft):	4860.89
Area Radius (NM):	25.00
ICAE OCS Height (ft) AMSL:	394.91
Diverse B OCS Start Height (ft) AMSL:	496.40
DRP:	N28° 26' 34.05",W081° 19' 36.90"
ICA Corner Points:	N28° 24' 55.05",W081° 19' 30.23" to N28° 24' 54.96",W081° 19' 41.43", N28° 24' 06.71",W081° 19' 55.49" to N28° 24' 07.05",W081° 19' 15.13"

Criteria Failures and Warnings

No failures.

Software Evaluation Failures, Warnings, and Notes

No failures.

Failure/Warning Justifications

None.

Obstacles Requiring Accuracy Code Verification

[12-000471 [IFPA r2], 12-000862 [IFPA r2], 12-001416 [IFPA r1], 12-001543 [IFPA r1], 12-003598 [IFPA r1], 12-006164 [IFPA r1], 12-006167 [IFPA r1], 12-006168 [IFPA r1], 12-006170 [IFPA r1], 12-006171 [IFPA r1], 12-006173 [IFPA r1], 12-006175 [IFPA r1], 12-006181 [IFPA r1], 12-006184 [IFPA r1], 12-006185 [IFPA r1], 12-006188 [IFPA r1], 12-006266 [IFPA r1], 12-006267 [IFPA r1], 12-006268 [IFPA r1], 12-006367 [IFPA r2], 12-027131 [IFPA r1], 12-027341 [IFPA r1]]

Ignored Obstacles

None.

Procedure Notes

None.

No CG obstacles for area ICA

No CGTA obstacles for area ICA

LOW CLOSE IN Obstacle Evaluation

Obstacle	Source	Type	Lat	Lon	Height (ft)	Ht (ft) AMSL	Ht (ft) AGL	AC (H/V (ft))	Eff Ht (ft) AMSL	Ctrln Msrmt Dist (ft)	Surf Ht (ft) AMSL	Amt of Pen (ft)	Req CG (ft/NM)	Req CGTA (ft)	CGTA For Input CG (ft)	Side Ctrln	Dist to Ctrln (ft)
12-061647	IFPA	POLE	N28° 24' 54.89"	W081° 19' 32.66"	92.0	92.0	3.0	1A (+20/+3)	92.0	14.51	91.46	0.54	496.29	92.28	92.28	LEFT	282.89

No CG obstacles for area DIV A

No CGTA obstacles for area DIV A

No CG obstacles for area DIV B

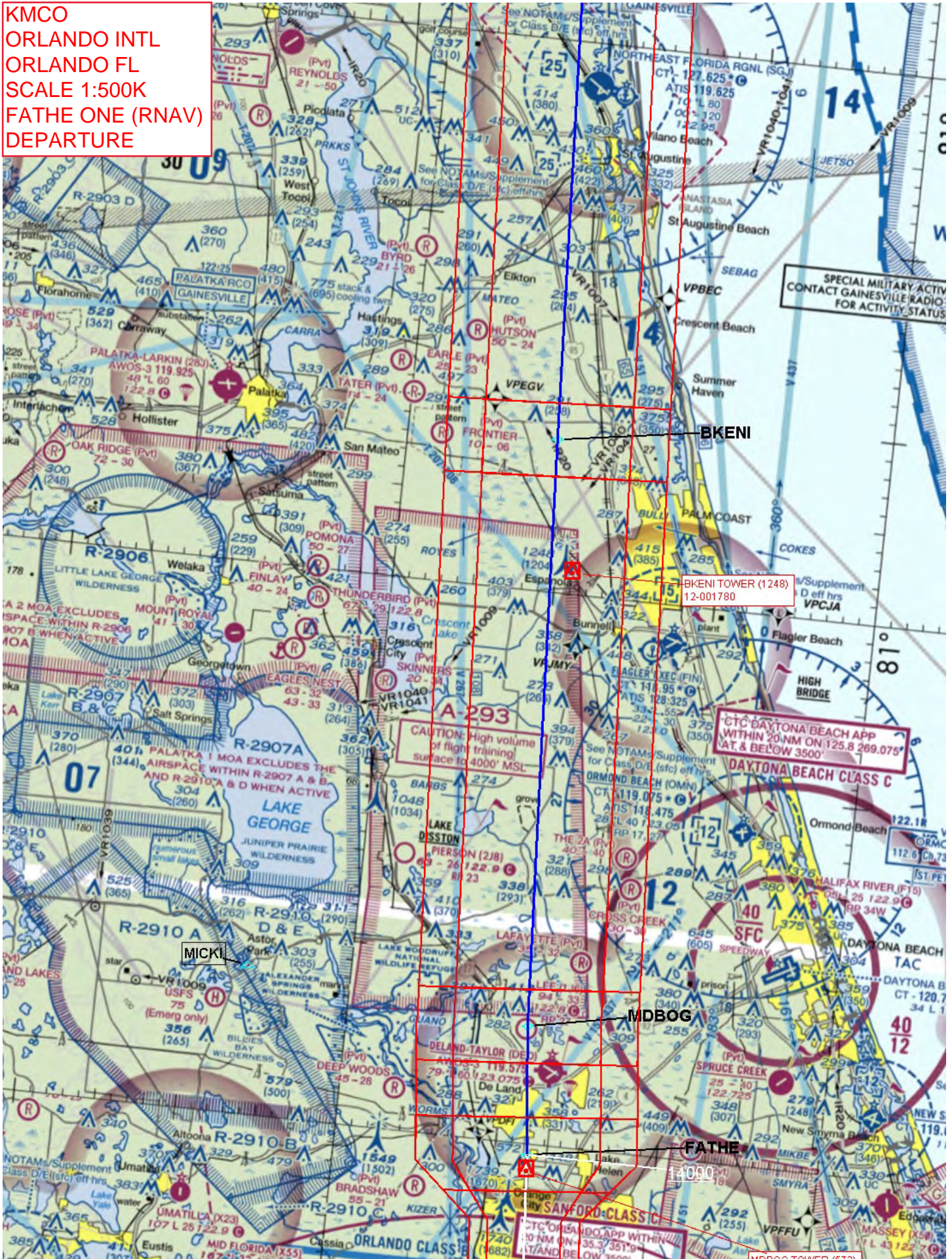
No CGTA obstacles for area DIV B

No obstacles for area SEE AND AVOID

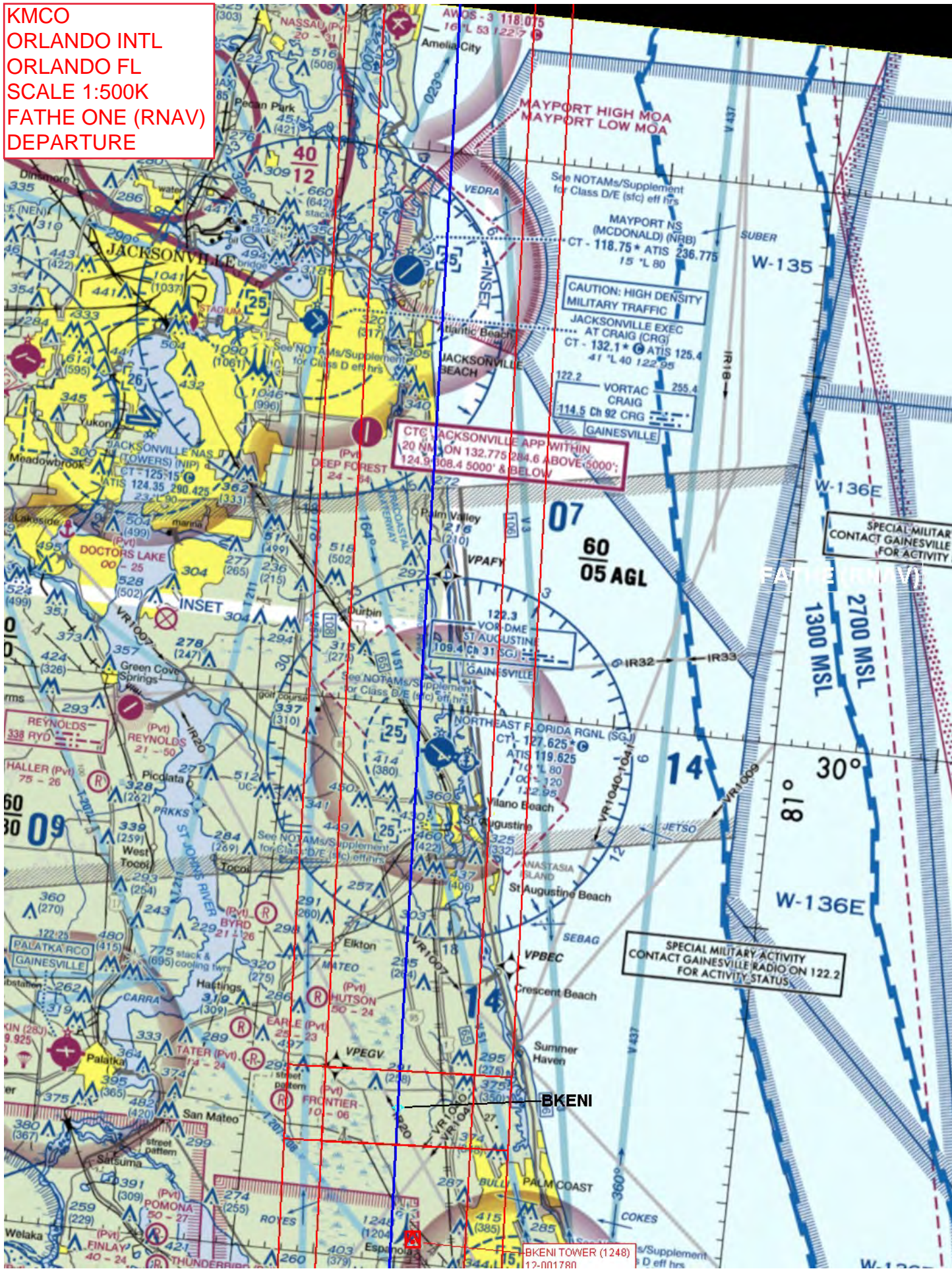
KMCO
ORLANDO INTL
ORLANDO FL
SCALE 1:500K
FATHE ONE (RNAV)
DEPARTURE



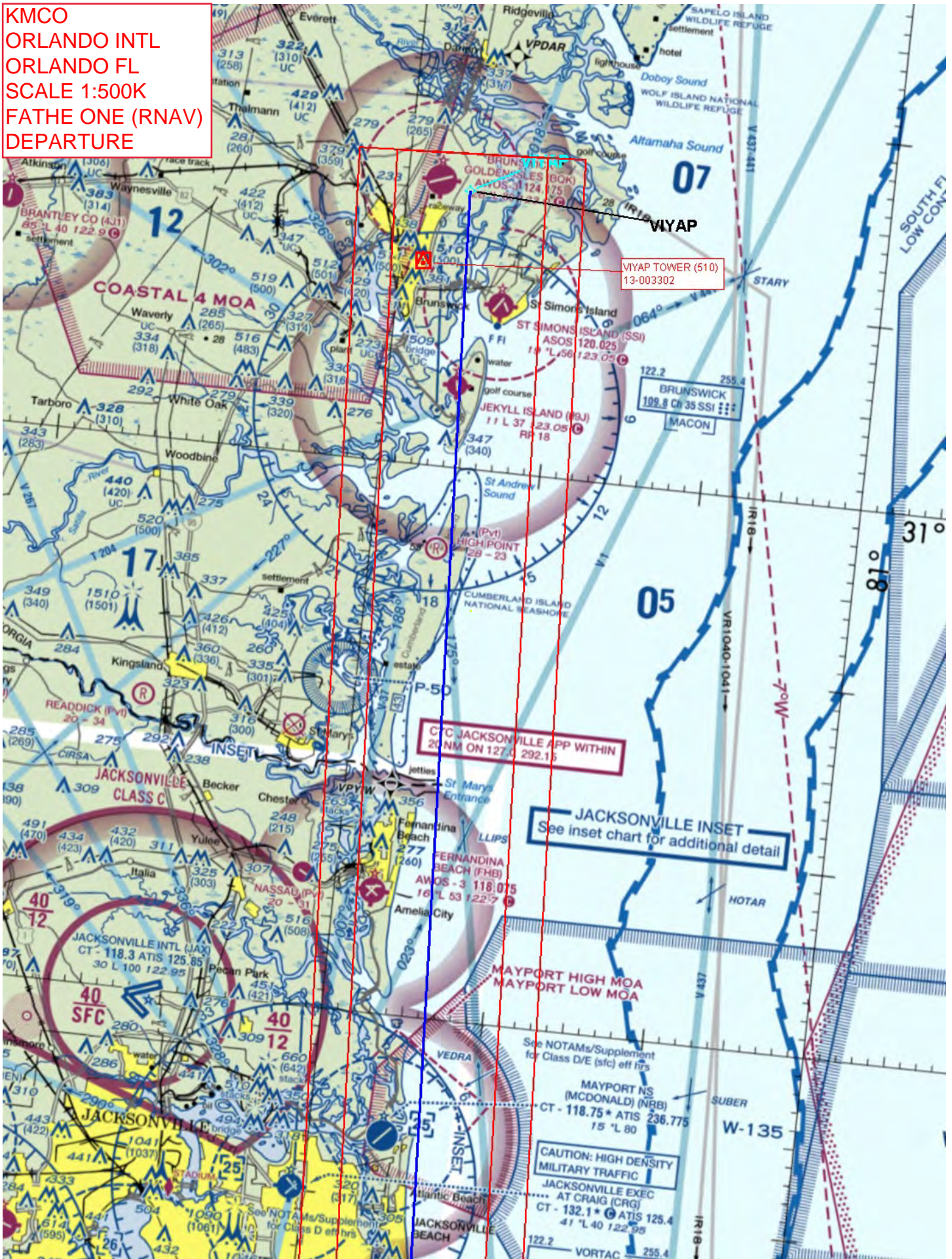
KMCO
ORLANDO INTL
ORLANDO FL
SCALE 1:500K
FATHE ONE (RNAV)
DEPARTURE



KMCO
ORLANDO INTL
ORLANDO FL
SCALE 1:500K
FATHE ONE (RNAV)
DEPARTURE

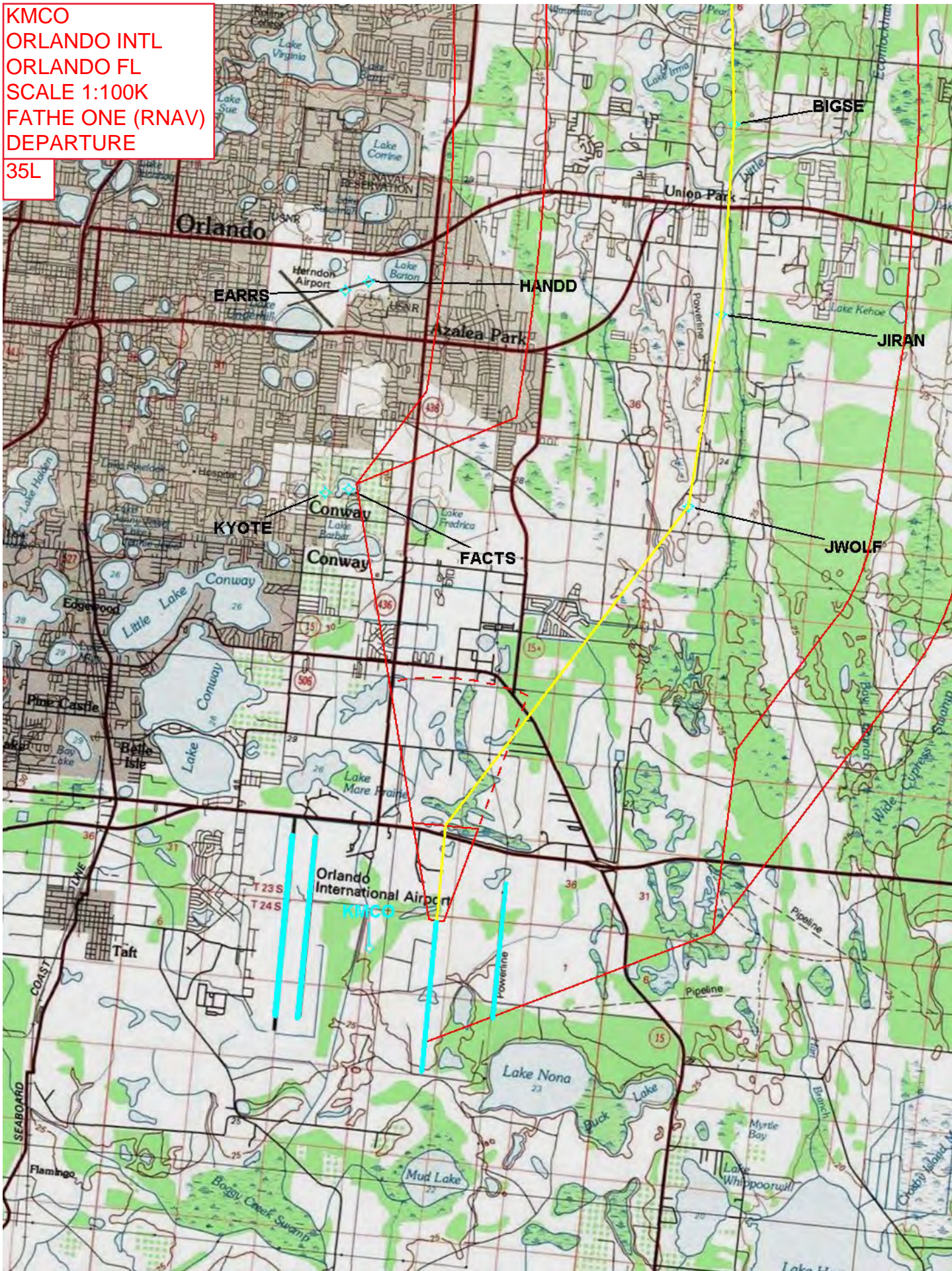


KMCO
ORLANDO INTL
ORLANDO FL
SCALE 1:500K
FATHE ONE (RNAV)
DEPARTURE



KMCO
ORLANDO INTL
ORLANDO FL
SCALE 1:100K
FATHE ONE (RNAV)
DEPARTURE

35L



KMCO
ORLANDO INTL
ORLANDO FL
SCALE 1:100K
FATHE ONE (RNAV)
DEPARTURE

35R

