

FL MIA FROGZ TWO (RNAV) STAR

4-13-22 PRB Results: Returned for Rework

V3 IS BEING RETURNED FOR THE FOLLOWING:

1. IAW 8260.3E, PARA 2-2-7F(1) AND (3): REQUIRE THE FIX FOR THE STAR AND APPROACH TO HAVE THE SAME ALTITUDE.

THE NEW ILS OR LOC RWY 9 HAS AT OR ABOVE 3000 AND THE STAR HAS 4000. THE RNAV DOESN'T CONNECT TO THE STAR. THIS WOULD REQUIRE A WAIVER.

A. RESPONSE: RESPONSE: FLMP CONCURRED WITH RECOMMENDATION. NOTAM ISSUED FOR DELAY OF PROCEDURE PUBLICATION DATES.

B. FS: APPROVED PROVIDED NOTAM IS ISSUE FOR DELAY OF PROCEDURE PUBLISH DATES.

[NOTAM will issue on 05-19-2022 until 07-14-2022](#)

2. DELETE REMARK: MEAS AT OR ABOVE FL180 FOR COMM AND DME/DME/IRU SOLUTIONS

[UNABLE to remove remark. Beyond final NFDC charting cutoff.](#)

3. ALL OTHER CORRECTIONS COMPLETED.

FL MIA FROGZ TWO (RNAV) STAR

4-8-2022 PRB Results: Returned for Rework


REQUESTED BY: AJV-A

PRB RESULTS: RETURN FOR REWORK

1. IAW 8260.3E, PARA 2-2-7B. THE RNAV DOESN'T CONNECT TO THE STAR. THIS WOULD REQUIRE A WAIVER.
- B. PER THE CRITERIA WHEN NOT USING THE SAME FIX IT DOESN'T CONNECT TO THE PROCEDURE. REMOVE RNAV RWY 9 OR PROVIDE WAIVER.

RESPONSE: FLMP CONCURRED with recommendation. NOTAM issued for delay of procedure publication dates.

Flight Procedures Cover Page	Task Action: FLIGHT CHECK	Task Type: STAR	Estimated Chart Date: 05/19/2022	APWS Task ID: 90B9369C10084993BCDEA160C158A581	APWS Project ID: 3D66AD54F8AA4996B7AD4BCC059274AE
Procedure: FLMP MIA FROGZ2 RNAV STAR		Enroute: YES	Specialist: Barnes, Kellie		Agreement Number:
Airport ID: KMIA			Airport City: MIAMI		State: FL
Facility ID:	Facility Type:	Flight Inspection Remark Type: New FC Slot			
<p>Procedure Comments: ACTIVE DATA USED</p> <p>APPROVAL LETTER: ASPPN - PBJAY DESCENT GRADIENT GREATER THAN MAXIMUM ALLOWED</p> <p>CONTACT ALLAN WILL 405-954-6103</p> <p>03/23/22: THIS IS A CORRECTED COPY OF THE FORM APPROVED ON 03/21/22.</p> <ol style="list-style-type: none"> 1. DELETED "NOTE: EXPECT "DESCEND VIA" CLEARANCE AND LANDING DIRECTION (EAST OR WEST) BY ARTCC. FOR VERTICAL NAVIGATION PLANNING, LANDING EAST, SELECT RWY 9, LANDING WEST, SELECT RWY 30" FROM PROCEDURAL DATA NOTES 2. DELETED "NOTE: MIA APPROACH WILL ISSUE LANDING RUNWAY" FROM PROCEDUARL DATA NOTES 3. ADDED "NOTE: LANDING EAST USE RUNWAY 9 TRANSITION, LANDING WEST USE RUNWAY 30 TRANSITION. EXPECT RUNWAY ASSIGNMENT FROM MIA APPROACH PRIOR TO FROGZ" TO PROCEDURAL DATA NOTES 4. REMOVED NOTE: DESCEND VIA MACH NUMBER UNTIL INTERCEPTING 280K. MAINTAIN 280K UNTIL SLOWED BY THE STAR OR ASSIGNED BY ATC" FROM PROCEDURAL DATA NOTES 5. CHANGED "NOTE: BROMO, SCURF ATC ASSIGNED ONLY" TO "CHART NOTE: DO NOT FILE BROMO OR SCURF TRANSITION - TO BE ASSIGNED BY ATC" IN PROCEDURAL DATA NOTES 6. REMOVED ALL LOST COMMUNICATIONS PROCEDURES 7. REMOVED "OR AS ASSIGNED BY ATC" FROM LANDING 07FA/X51/KHST/KTMB AND LANDING KOPF ARRIVAL ROUTE DESCRIPTION 8. CHANGED "REFERENCE MAGNETIC VARIATION = KMIA 05W/2000" TO "MAG VAR: KMIA 05W/2000" IN ADDITIONAL FLIGHT DATA 9. CHANGED "CHART AT LLEGG TERMINUS: LDG KMIA RWY 12, 8L/R, 9" TO "CHART AT LLEGG TERMINUS: KMIA LDG RWY 12, 8L/R, 9" IN ADDITIONAL FLIGHT DATA 10. CHANGED "CHART AT WNNER TERMINUS: LDG KMIA RWY 26L/R, 27, 30" TO "CHART AT WNNER TERMINUS: KMIA LDG RWY 26L/R, 27, 30" IN ADDITIONAL FLIGHT DATA 11. REMOVED AIRPORT NAMES FROM AIRPORTS SERVED LIST 					

04/01/2022


FIPC DME/DME FORM						
PROCEDURE: FLMP MIA FROGZ2 RNAV STAR			AIRPORT NAME: MIAMI INTL		AIRPORT ID: KMIA	SPECIAL CONTROL NO: AG-02-252-22
FAC ID: FROGZ2		CITY: MIAMI			ST: FL	ORIG CHART DATE: 05/19/2022
DFL TYPE: PROC/D	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER:	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	
PROCEDURE RESULTS						
INSPECTION DATE: 03/19/2022	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 checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT	
FLIGHT INSPECTOR SIGNATURE: james hawley @ 03/19/2022 14:31			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 @ 04/06/2022 05:52				PRINTED NAME: Steven Rager	
SPECIALIST REMARKS: Procedure SAT for DME/DME/IRU NAV. All DME ESV's for legs flown recorded by Inspection Aircraft all other ESV's certified by TARGETS.						
IN-FLIGHT OBSTACLE REPORT						
OBSTRUCTION ID #:	COORDINATES OR LOCATION:	GNSS ALTITUDE (MSL):	BAROMETRIC ALTITUDE (MSL):	HEIGHT ABOVE GROUND LEVEL:		

FIPC DME/DME FORM						
PROCEDURE: FLMP MIA FROGZ2 RNAV STAR			AIRPORT NAME: MIAMI INTL		AIRPORT ID: KMIA	SPECIAL CONTROL NO: AG-02-252-22
FAC ID: FROGZ2		CITY: MIAMI			ST: FL	ORIG CHART DATE: 05/19/2022
DFL TYPE: PROC/D	THIRD PARTY: <input type="checkbox"/> YES	EST. TIME ON SITE: 1.0	REIMB. NUMBER:	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: 03/19/2022	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 checked="" type="checkbox"/> SAT <input type="checkbox"/> SAT/GOLD <input type="checkbox"/> UNSAT	
FLIGHT INSPECTOR SIGNATURE: james hawley @ 03/19/2022 14:31			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:		

Procedure Review Board (PRB) Results
Florida Metroplex
March 11, 2022

PRB Recommendations do not constitute approval
IAW the current Work Instruction please ensure Environmental Documentation and Flight Inspection
PC has been added to the package and noted in SWIMS.

1. **Approval Request:** MIAMI INTL, MIAMI, FLORIDA (MIA) - FROGZ TWO (RNAV) STAR, <https://swims.faa.gov/Procedure/Edit/7372>

Requested By: AJV-A

PRB Results: Return for Rework

1. IAW FS Memo (Dated 07/20/2020 Waiver to FAA Order 8260.19 and FAA Order 8260.46, to Remove Airport/Heliport Name(s) from Select FAA Forms): Delete Airport Name from Subject line of the Approval request and the 8260-17.1.

- a. Change 8260-17.1 AIRPORTS SERVED to:

MIAMI, FL (KMIA),
HOMESTEAD, FL (KHST)
MIAMI, FL (KTMB)
HOMESTEAD, FL (X51)
MIAMI, FL (KOPF)
KEY LARGO, FL (07FA)

RESPONSE: Airports Served, Administrative

RESPONSE: CONCUR with removing the airport name from Approval Request. COMPLETED.

2. IAW 8260.19, para 4-5-2h(3): Combine and change 8260-17.1 PROCEDURAL DATA NOTES:

- a. FROM: NOTE: EXPECT "DESCEND VIA" CLEARANCE AND LANDING DIRECTION (EAST OR WEST) BY ARTCC. FOR VERTICAL NAVIGATION PLANNING, LANDING EAST, SELECT RWY 9, LANDING WEST, SELECT RWY 30. , NOTE: MIA APPROACH WILL ISSUE LANDING RUNWAY.

- b. TO: NOTE: LANDING EAST USE RUNWAY 9 TRANSITION, LANDING WEST USE RUNWAY30 TRANSITION. EXPECT RUNWAY ASSIGNMENT FROM MIA APPROACH PRIOR TO FROGZ.

RESPONSE: CONCURRED. FLMP will make necessary changes.COMPLETED

3. IAW 8260.19, para 4-5-2f: change 8260-17.1 PROCEDURAL DATA NOTES:

- a. FROM: NOTE: DESCEND VIA MACH NUMBER UNTIL INTERCEPTING 280K. MAINTAIN 280K UNTIL SLOWED BY THE STAR OR ASSIGNED BY ATC.

- b. TO: CHART NOTE: JET AIRCRAFT DESCEND VIA MACH NUMBER UNTIL 280K, IF UNABLE, ADVISE ATC.

- i. If a speed restriction is needed request via FS approval.

RESPONSE: Delete NOTE from procedure. COMPLETED

Procedure Review Board (PRB) Results
Florida Metroplex
March 11, 2022

PRB Recommendations do not constitute approval
IAW the current Work Instruction please ensure Environmental Documentation and Flight Inspection
PC has been added to the package and noted in SWIMS.

4. IAW 8260.19, para 4-5-2w: Delete 8260-17.1 PROCEDURAL DATA NOTES:
- a. NOTE: BROMO, SCURF ATC ASSIGNED ONLY.
 - i. If needed request via FS approval.

RESPONSE: Approval Request COMPLETED. CHART NOTE: Updated.

5. IAW 8260.19, para 4-5-12h(1): Do not use verbiage that could be mistaken for a coded route. Change 8260-17.1 Lost Communications Procedure. Recommend changing to:
- a. LANDING KMIA RWY 9 AT LLEGG, PROCEED TO GRITT, EXECUTE ILS OR LOC RWY 9 APPROACH.
 - i. IAW 8260.3, para 2-2-7 f (1) and (3) require the fix for the STAR and approach to have the same altitude. The new ILS or LOC Rwy 9 has an at or above 3000 and the STAR has at 4000. This would require a waiver.
 - b. LANDING KMIA RWY 27 AT WNNER, PROCEED TO IBILL, THEN PROCEED TO HENDN, EXECUTE ILS OR LOC RWY 27 APPROACH.
 - i. The published ILS or LOC Rwy 27 doesn't have an at or above altitude published on the Plan View. This needs to be fixed.
 - ii. This route appears to have a turn greater than 90 degrees from WNNER to IBIS and HENDN to Final this would require a waiver.

RESPONSE: FLMP determined the "Lost Communications Procedure" should be deleted from the STAR. COMPLETED

6. IAW 8260.19, para 2-12-1 and 4-5-11c(3): Provide obstacle evaluation AIS used to determine lost communication instructions ensured obstacle clearance. It will be used for PRB evaluation.

RESPONSE: FLMP determined the "Lost Communications Procedure" should be deleted from the STAR. COMPLETED

7. IAW 8260.3, para 2-2-7 f (1) and (3) require the fix for the STAR and approach to have the same altitude. The new ILS or LOC Rwy 9 has at or above 3000 and the STAR has at 4000. This would require a waiver.

RESPONSE: The STAR terminates at the IAF (LLEGG) for the ILS or LOC RWY 9 Approach. The altitude at LLEGG on both procedures scheduled for publication on 5/19/2022 is 4000. Waiver not required.

8. IAW 8260.3, para 2-2-2c: The LANDING 07FA/X51/KHST/KTMB and LANDING KOPF arrival routed descriptions do not match what was evaluated. Multiple headings are not allowed. Change 8260-

17.1 ARRIVAL ROUTE DESCRIPTION:

LANDING 07FA/X51/KHST/KTMB: "... THEN ON HEADING 140.00."

LANDING KOPF: "...THEN ON HEADING 085.00."

Procedure Review Board (PRB) Results
Florida Metroplex
March 11, 2022

PRB Recommendations do not constitute approval

**IAW the current Work Instruction please ensure Environmental Documentation and Flight Inspection
PC has been added to the package and noted in SWIMS.**

RESPONSE: CONCUR. FLMP will make necessary changes. COMPLETED

9. IAW 8260.19, para 4-5-13c(2): Change 8260-17.1 ADDITIONAL FLIGHT DATA:

a. REFERENCE MAGNETIC VARIATION = KMIA 05W/2000 to MAG VAR: KMIA 05W/2000

b. CHART AT LLEGG TERMINUS: KMIA LDG RWY 12, 8L/R, 9

CHART AT WNNER TERMINUS: KMIA LDG RWY 26L/R, 27, 30

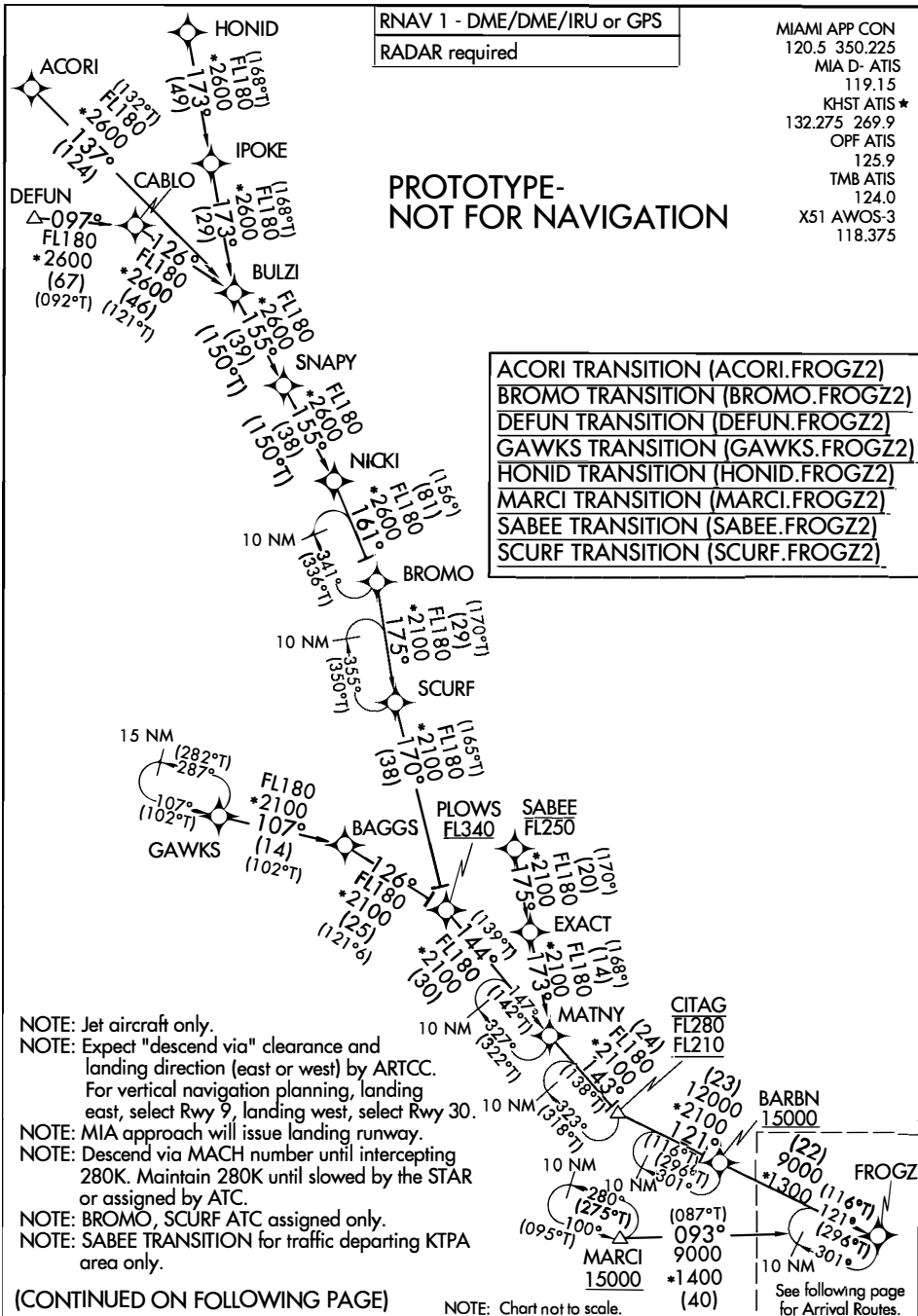
RESPONSE: CONCUR. FLMP will make necessary changes.

10. IAW 8260.19, para 2-12-2: Add flight inspection report to the package.

AJV-A Requirement

FROGZ TWO ARRIVAL (RNAV) Transition Routes

MIAMI, FLORIDA

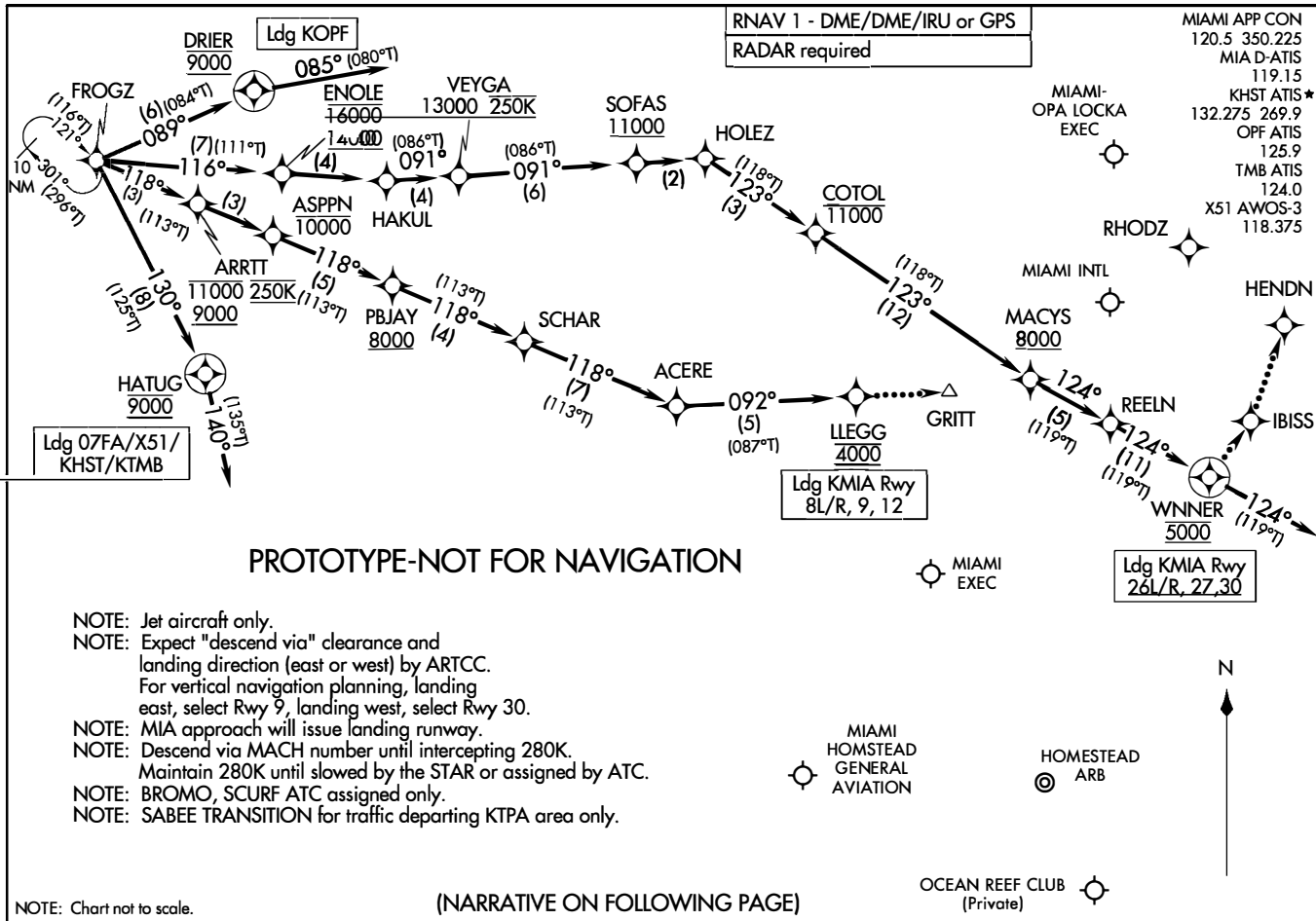


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NOTE: Chart not to scale.

FROGZ TWO ARRIVAL (RNAV) Transition Routes

MIAMI, FLORIDA



ARRIVAL ROUTE DESCRIPTION

LANDING KMIA RWY 12, 8L/R, 9: From FROGZ on track 118° to cross ARRT between 9000 and 11000 and at 250K, then on track 118° to cross ASPPN at or below 10000, then on track 118° to cross PBJAY at or above 8000, then on track 118° to SCHAR, then on track 118° to ACERE, then on track 092° to cross LLEGG at 4000. Expect ILS or RNAV Rwy 9 approach or RADAR vectors to final approach course.

LANDING KMIA RWY 26L/R, 27, 30: From FROGZ on track 116° to cross ENOLE between 14000 and 16000, then on track 116° to HAKUL, then on track 091° to cross VEYGA at or above 13000 and at 250K, then on track 091° to cross SOFAS at or above 11000, then on track 091° to HOLEZ, then on track 123° to cross COTOL at or below 11000, then on track 123° to cross MACYS at or above 8000, then on track 124° to REELN, then on track 124° to cross WNNER at 5000, then on track 124°. Expect RADAR vectors to final approach course.

LANDING 07FA/X51/KHST/KTMB: From FROGZ on track 130° to cross HATUG at 9000, then on heading 140° or as assigned by ATC. Expect RADAR vectors to final approach course.

LANDING KOPF: From FROGZ on track 089° to cross DRIER at 9000, then on heading 085° or as assigned by ATC. Expect RADAR vectors to final approach course.

LOST COMMUNICATIONS

KMIA LANDING EAST: Continue to LLEGG, then direct GRITT, intercept the Rwy 9 final approach, conduct approach.

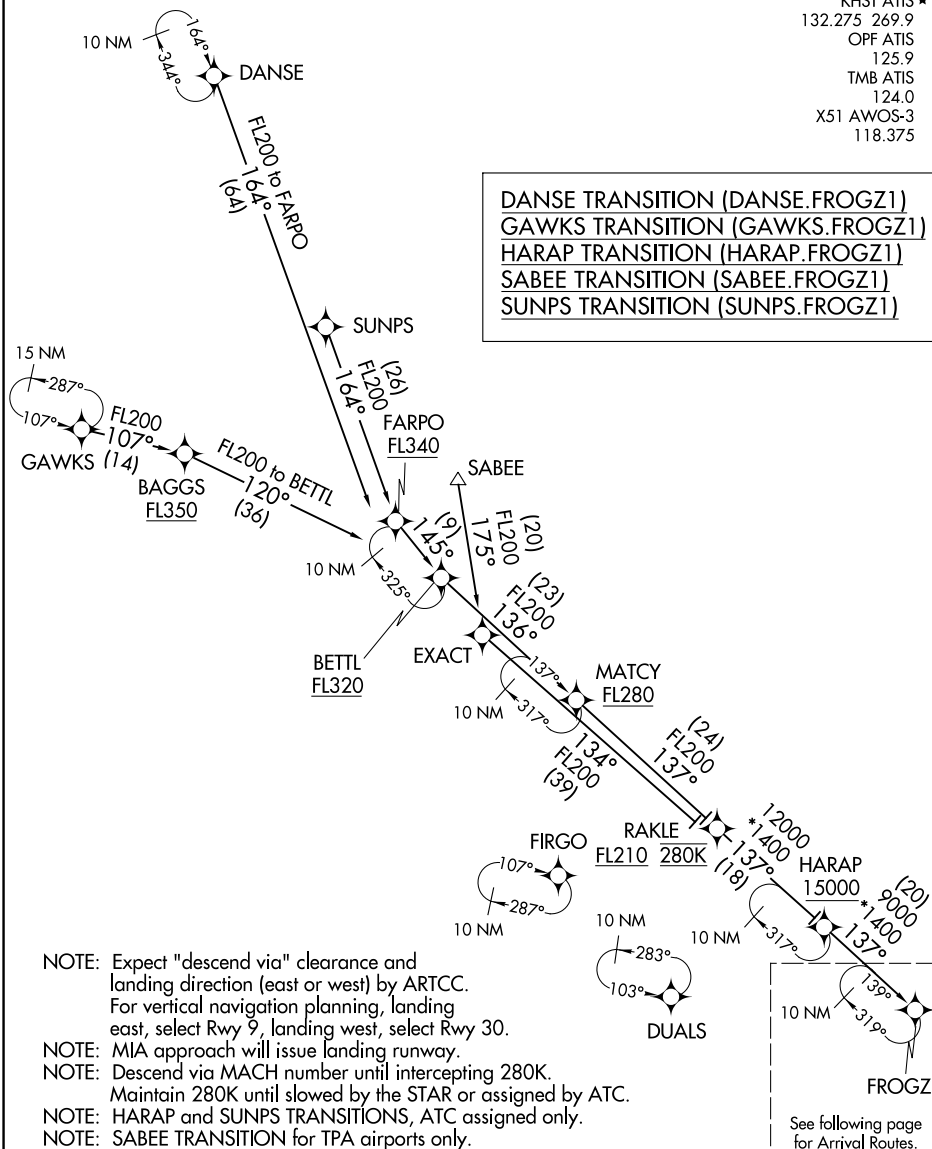
KMIA LANDING WEST: Continue to WNNER, then direct IBISS, then direct HENDN intercept Rwy 27 final approach course, conduct approach.

PROTOTYPE-NOT FOR NAVIGATION

MIAMI, FLORIDA

MIAMI APP CON
120.5 350.225
MIA D-ATIS
119.15
KHST ATIS
132.275 269.9
OPF ATIS
125.9
TMB ATIS
124.0
X51 AWOS-3
118.375

DANSE TRANSITION (DANSE.FROGZ1)
 GAWKS TRANSITION (GAWKS.FROGZ1)
 HARAP TRANSITION (HARAP.FROGZ1)
 SABEE TRANSITION (SABEE.FROGZ1)
 SUNPS TRANSITION (SUNPS.FROGZ1)



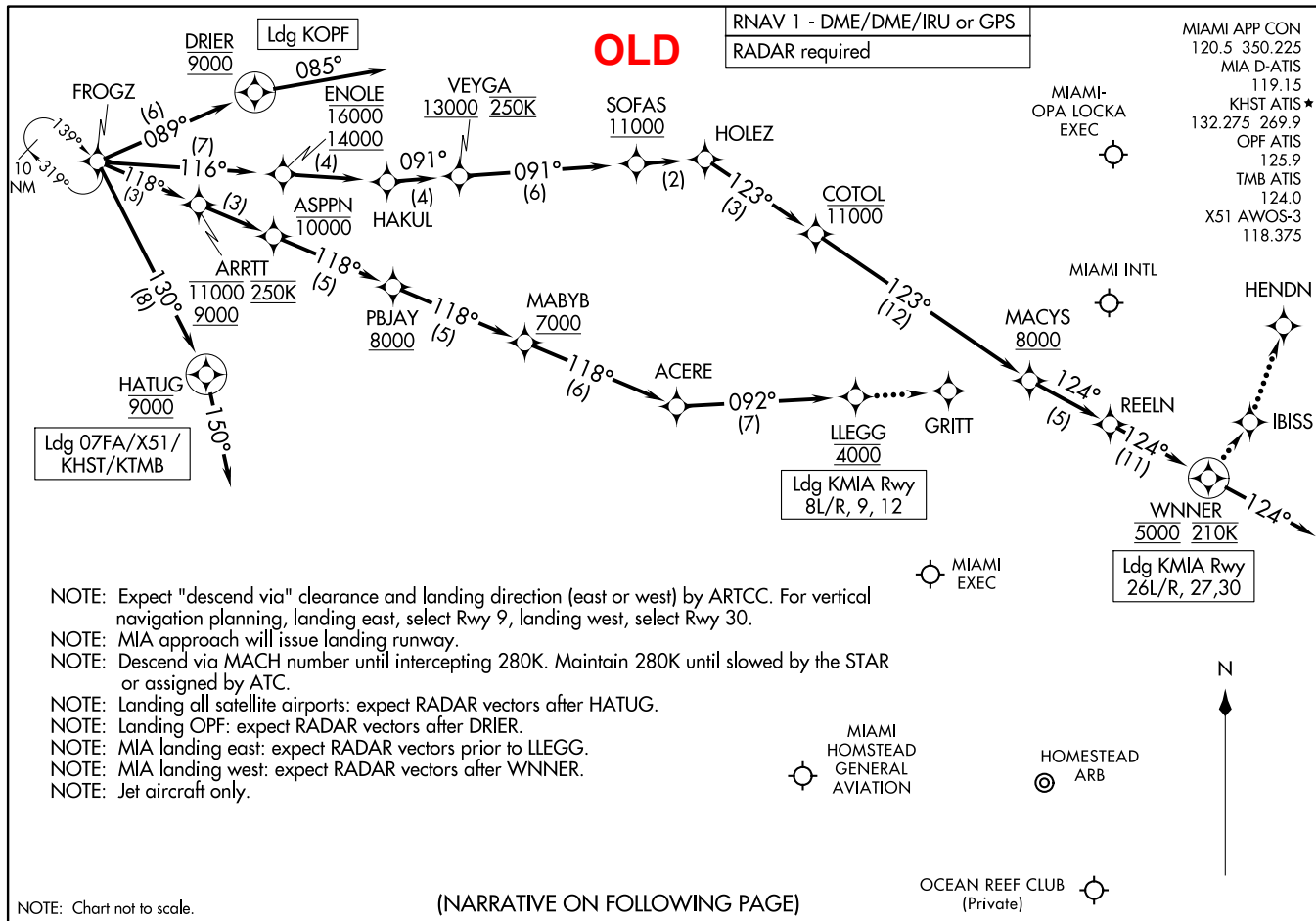
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NOTE: Chart not to scale.

(FROGZ.FROGZ1) 12AUG21

FROG ONE ARRIVAL (RNAV) Arrival Routes

MIAMI, FLORIDA

(FROGZ.FROGZ1) 21224
FROG ONE ARRIVAL (RNAV) Arrival Routes

AL-257 (FAA)

MIAMI, FLORIDA

ARRIVAL ROUTE DESCRIPTION

LANDING KMIA RWY 8L/R, 9, 12: From FROGZ on track 118° to cross ARRTT between 9000 and 11000 and at 250K, then on track 118° to cross ASPPN at or below 10000, then on track 118° to cross PBJAY at or above 8000, then on track 118° to cross MABYB at or above 7000, then on track 118° to ACERE, then on track 092° to cross LLEGG at 4000. Expect ILS or LOC RWY 8R, RWY 9, RWY 12 approach.

LANDING KMIA RWY 26L/R, 27, 30: From FROGZ on track 116° to cross ENOLE between 14000 and 16000, then on track 116° to HAKUL, then on track 091° to cross VEYGA at or above 13000 and at 250K, then on track 091° to cross SOFAS at or above 11000, then on track 091° to HOLEZ, then on track 123° to cross COTOL at or below 11000, then on track 123° to cross MACYS at or above 8000, then on track 124° to REELN, then on track 124° to cross WNNER at 5000 and at 210K, then on track 124°. Expect RADAR vectors to final approach course.

LANDING 07FA/X51/KHST/KTMB: From FROGZ on track 130° to cross HATUG at 9000, then on heading 150° or as assigned by ATC. Expect RADAR vectors to final approach course.

LANDING KOPF: From FROGZ on track 089° to cross DRIER at 9000, then on heading 085° or as assigned by ATC. Expect RADAR vectors to final approach course.

LOST COMMUNICATIONS

KMIA LANDING EAST: Continue track to LLEGG, then proceed direct GRITT, conduct the ILS or LOC RWY 9 approach.

KMIA LANDING WEST: Track to WNNER, then proceed direct IBISS, then proceed direct HENDN intercept Rwy 27 final approach course, conduct approach.



Federal Aviation Administration

Memorandum

Date: March 28, 2022

To: Christopher Hope, Manager, Flight Technologies and
Procedures Division
THRU: Romana Wolf, Manager, Flight Procedures and Airspace Group

From: Bev Bordy, Manager, Instrument Flight Procedures (IFP) Coordination Team, AJV-A45

Prepared by: Jefferson Rutledge, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Approval Request: Miami, FL (KMIA) FROGZ (RNAV) STAR
Non- standard Chart Notes

Digitally signed by
ALLAN WILL
Apr 04, 2022

FAAO 8260.19I para 4-5-2 w. When ATC has determined that they do not want pilots to "Flight Plan" or file a particular STAR (i.e., use will be determined by ATC), ATC will request that a chart note be placed on the STAR. In the "Procedural Data Notes" section of Form 8260-17.1, use: "Chart Note: Do Not File – To Be Assigned by ATC."

ATC request to use the following Procedural Data Note: "Chart Note: Do Not File BROMO, SCURF Transitions – To Be Assigned by ATC." This is to support ATC assigned transitions which are required to prevent users from filing Flight Plans that are non- standard routing for arrivals into the South Florida Metroplex area. These ATC assigned transitions will be Data Comm, ERAM, and FMC compliant to allow users to utilize these routes when necessary.



Federal Aviation Administration

Memorandum

Date: December 9, 2021

To: Mark Steinbicker, Manager, Flight Technologies and Procedures
Division
THRU: Wade Terrell, Manager, Flight Procedures and Airspace Group

From: Eddie Perez Manager Plans and Procedures, Miami ARTCC.

Prepared by: Jefferson Rutledge, Sr. ATC Specialist, NAVTAC CTR Support

Subject: Descent Gradient Approval Request: FROGZ RNAV STAR, KMIA

The requirements stated in Order 8260.3E, (United States Standard for Terminal Instrument Procedures (TERPS)), paragraph 2-2-8.a. are:

“(1) the maximum permissible gradient 10000 MSL and above is 330 ft/NM (approximately 3.11 degrees).

“(2) **The maximum permissible DG below 10000 feet MSL is 318 ft. /NM (approximately 3.0 degrees).**

“(3) When a STAR contains a descent between fixes that passes through 10000 feet MSL, the maximum permissible DG is between 318 ft. /NM and 330 ft. /NM and is in proportion to the amount of the altitude change that is below/above 10000 feet MSL. Use formula 2-2-1 to determine the maximum DG (DGmax) between fixes that contain a descent that passes through 10000 feet MSL.”

“**Formula 2-2-1. Maximum DG Passing through 10000 Feet MSL (ft/NM)**

$$DBmax = (Alt_1 - 10000) \times 12 / (Alt_1 - Alt_2) + 318$$

“Where:

“**Alt₁** = Altitude at the fix prior to crossing 10000 feet MSL

“**Alt₂** = Altitude at the fix after crossing 10000 feet MSL”

Paragraph 2-2-8.b states:

“**When a gradient exceeds the maximum DG allowed in paragraph 2-2-8a, the STAR requires approval.**”

Paragraph 1-4-2. ...states in part:

“**Nonstandard IFP.** ...obstacles, navigation information, or traffic congestion may require special consideration where justified by operational requirements. In such cases, nonstandard IFPs that deviate from these criteria may be approved, provided they are documented and an equivalent level of safety exists...”

RSO144: [Approval Required] The Descent Gradient (430.22) from ASPPN to PBJAY is greater than the Maximum Permissible Descent Gradient (318.0).

A computed descent gradient value from ASPPN to PBJAY of 430.23 ft./NM resulted from the descent gradient being calculated from descending from the restriction of At or Below, 10000 at ASPPN to cross PBJAY At or Above 8000 over a distance of 4.65 NM. The next restrictions after PBJAY are at MABYB, AOA 7000 and LLEGG at 4000. The distance from ASPPN to LLEGG is 22.96NM and using a descent gradient of 318ft/NM a total distance of 18.87NM is required. Descending at 318 ft. per NM places an aircraft descending from 10000 at ASPPN to cross the restriction at PBJAY of AOA 8000 at 8520, and to cross over MABYB AOA 7000 at 7000 and to cross over LLEGG at 4000. Calculating a descent from ASSPN at 10000 to LLEGG at 4000 distance 23.88nm resulted in a descent gradient of 209.4 ft per NM.

Runway Transition Data - KMIA:RW08L,RW08R,RW09,RW12														
DB	End Point	Latitude (D° M' S.ss")	Longitude (D° M' S.ss")	FO/ FB	Leg	TC	MC	Dist.	Altitude	Speed	MEA	MOCA	Turn Dir	Arc Center I (D° M' S.ss")
IFPA r0 08-12-21 TO UNK	FROGZ WP	N25 54 47.44	W081 02 13.20		IF						9000			
IFPA r0 08-12-21 TO UNK	ARRTT WP	N25 53 32.27	W080 58 56.99	FB	TF	112.94	117.94	3.20	+9000 -11000	250		1300		
IFPA r0 08-12-21 TO UNK	ASPPN WP	N25 52 23.77	W080 55 58.42	FB	TF	112.97	117.97	2.92	-10000			1300		
IFPA r0 08-12-21 TO UNK	PBJAY WP	N25 50 34.47	W080 51 13.93	FB	TF	112.99	117.99	4.65	+8000			1300		
	SCHAR WP	N25 48 52.70	W080 46 49.54	FB	TF	113.03	118.03	4.32				1300		
IFPA r0 08-12-21 TO UNK	ACERE WP	N25 46 14.84	W080 40 00.36	FB	TF	113.06	118.06	6.69				1300		
	LLEGG_ WP	N25 46 31.10	W080 34 08.58	FB	TF	87.06	92.06	5.30	4000			1300		

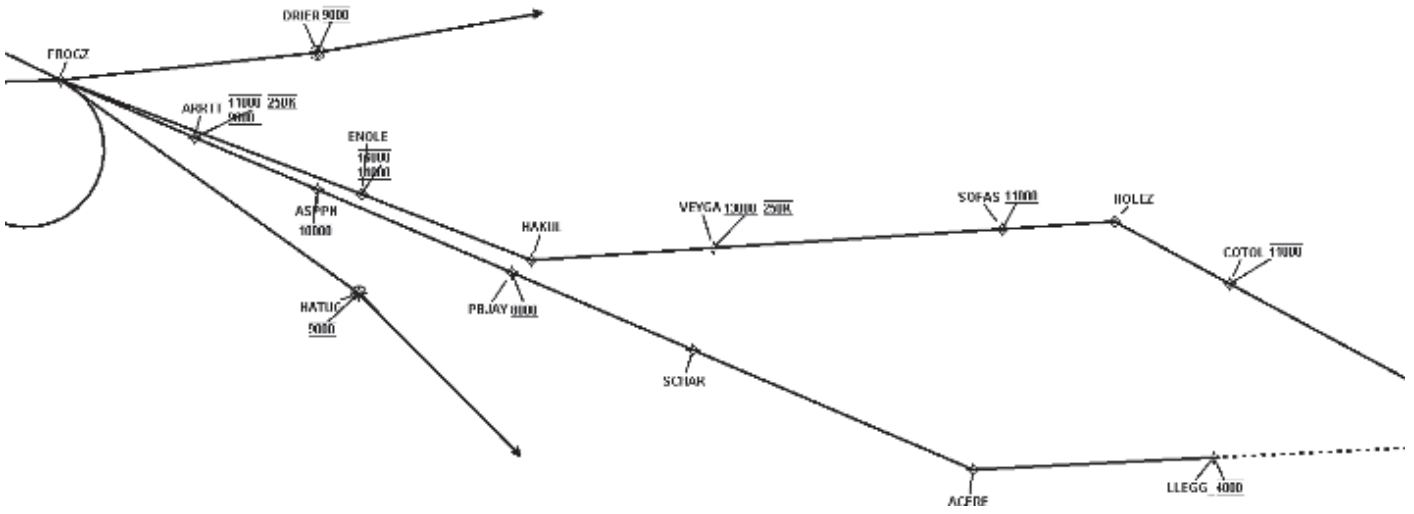
Consideration was given to removing and or changing the restrictions at ASPPN and PBJAY. However, to prevent aircraft from entering adjacent airspace above the FROGZ STAR, the requirement to provide de-confliction from the KFLB BHHIA STAR below the FROGX STAR, and to reduce ATC workload due to required coordination, (point outs) it was decided that the restrictions are necessary.

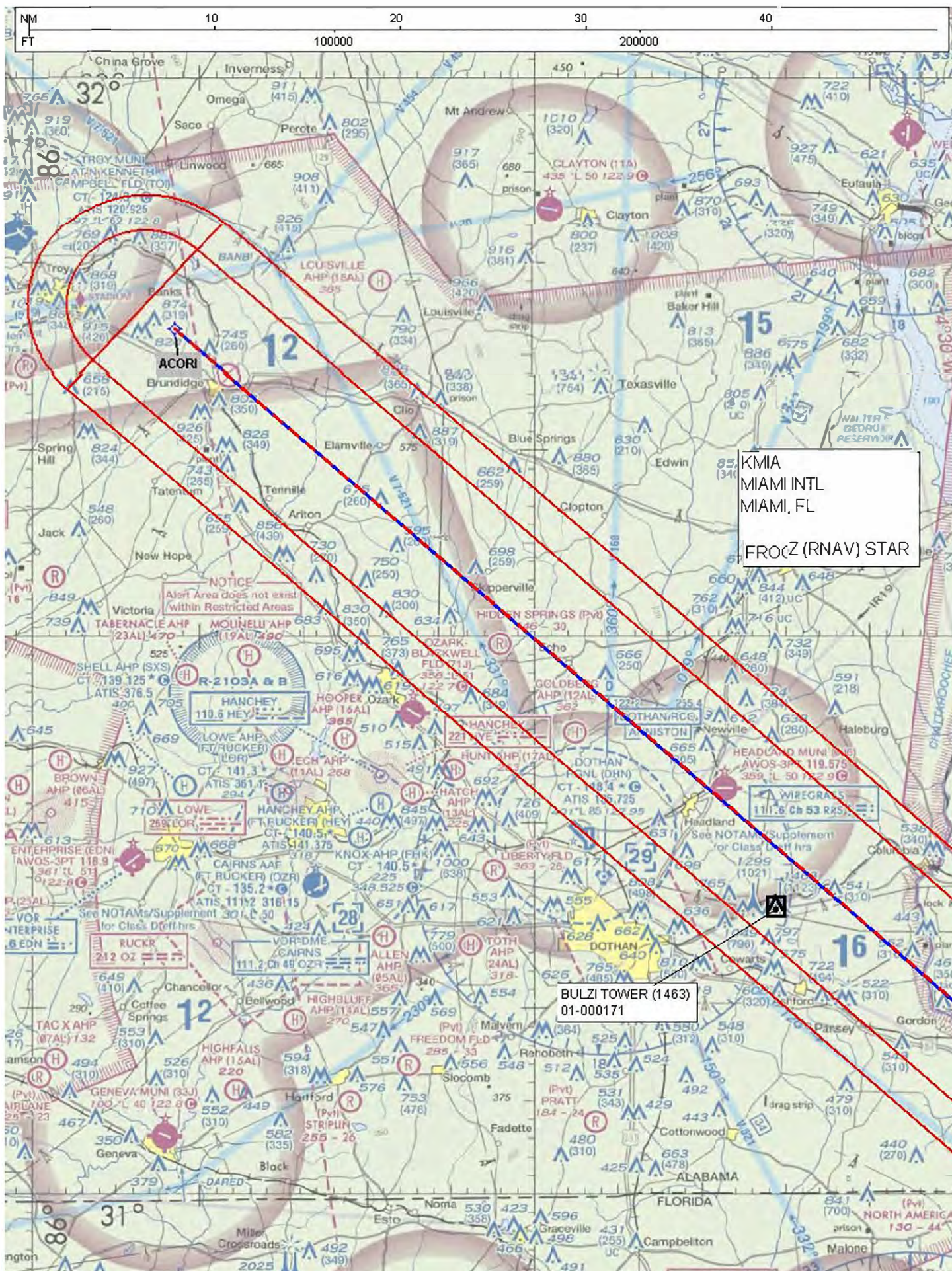
EDDIE PEREZ-
COLON

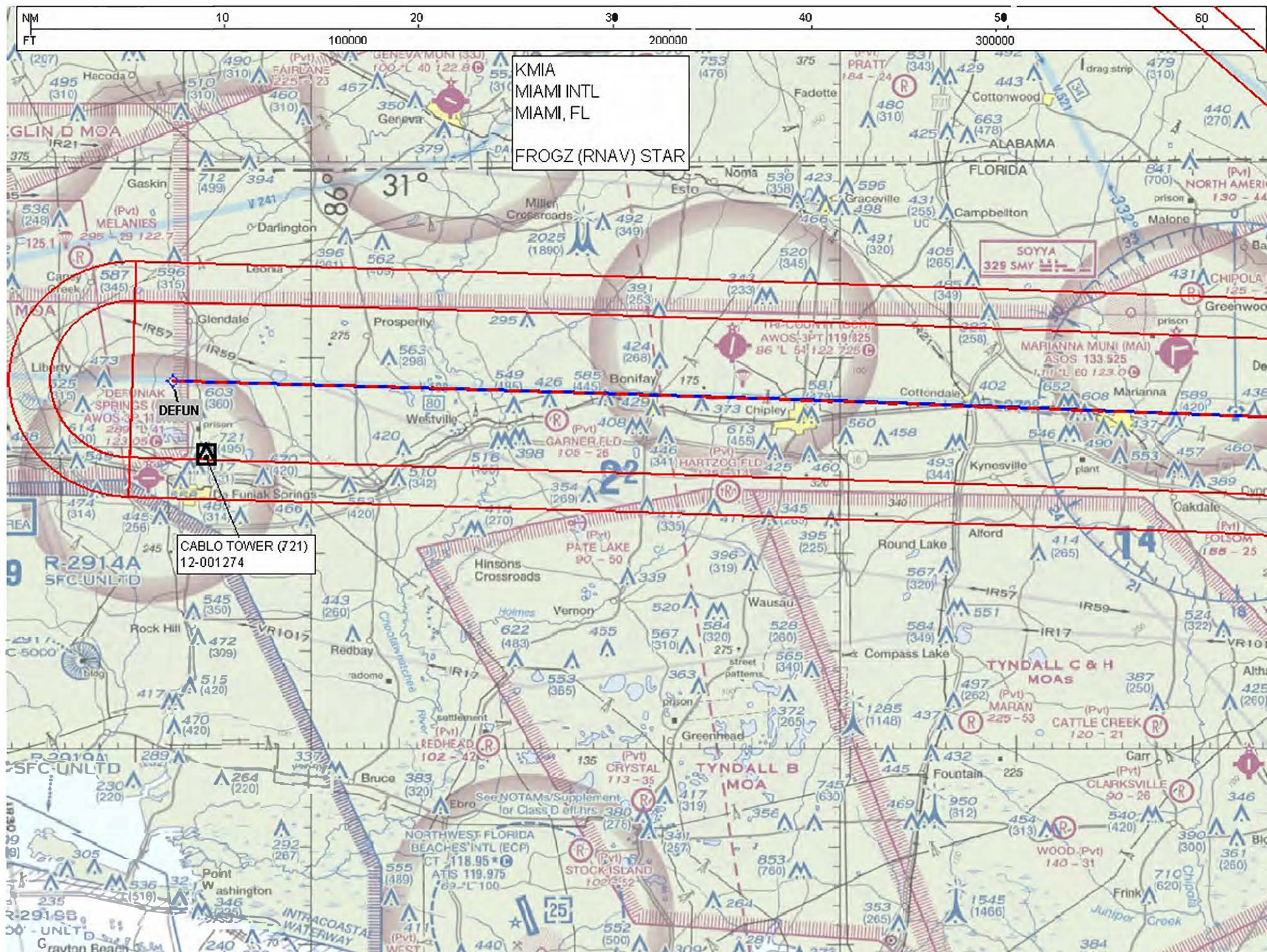
Digitally signed by EDDIE
PEREZ-COLON
Date: 2022.01.14
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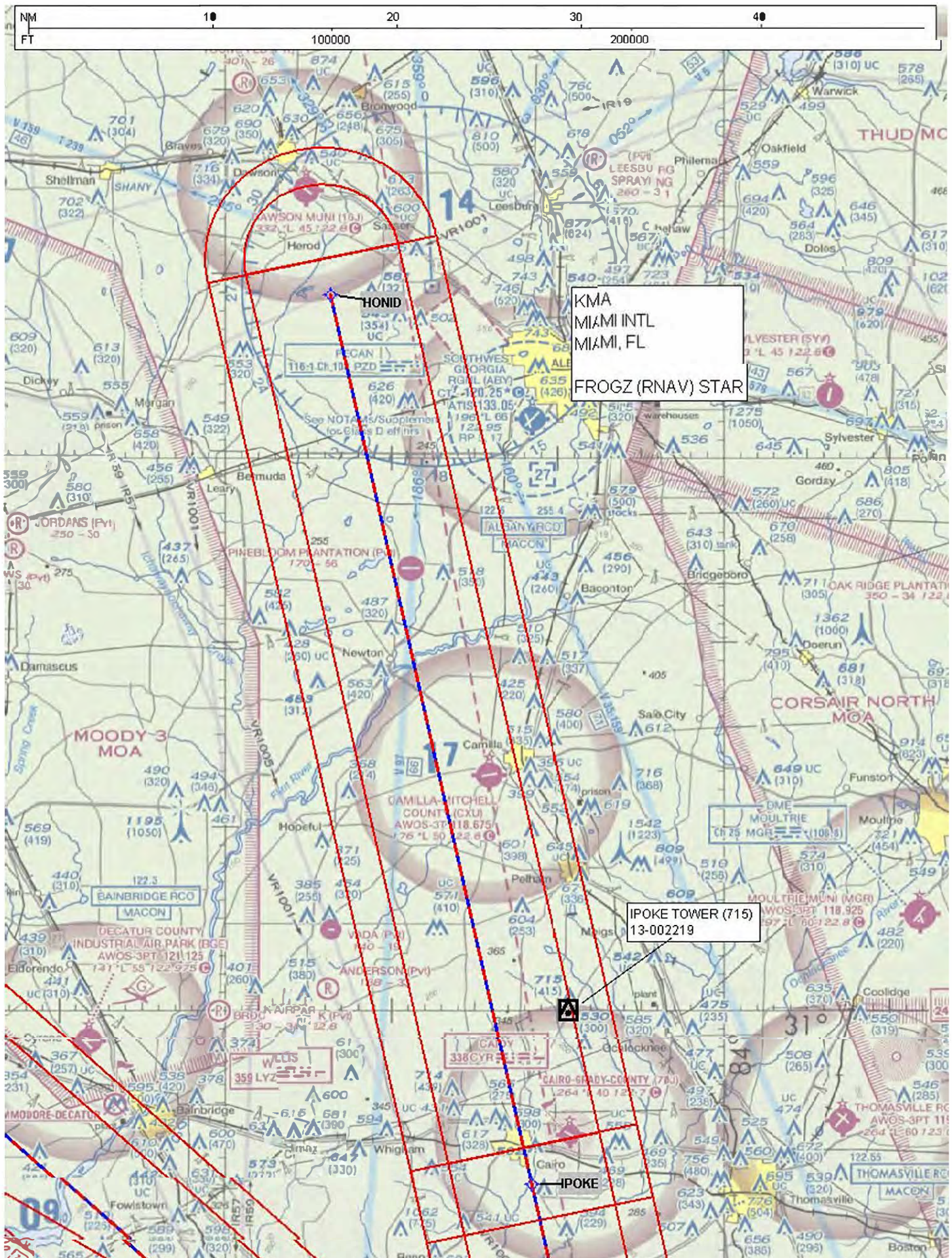
Manager Plans and Procedures, Miami ARTCC.

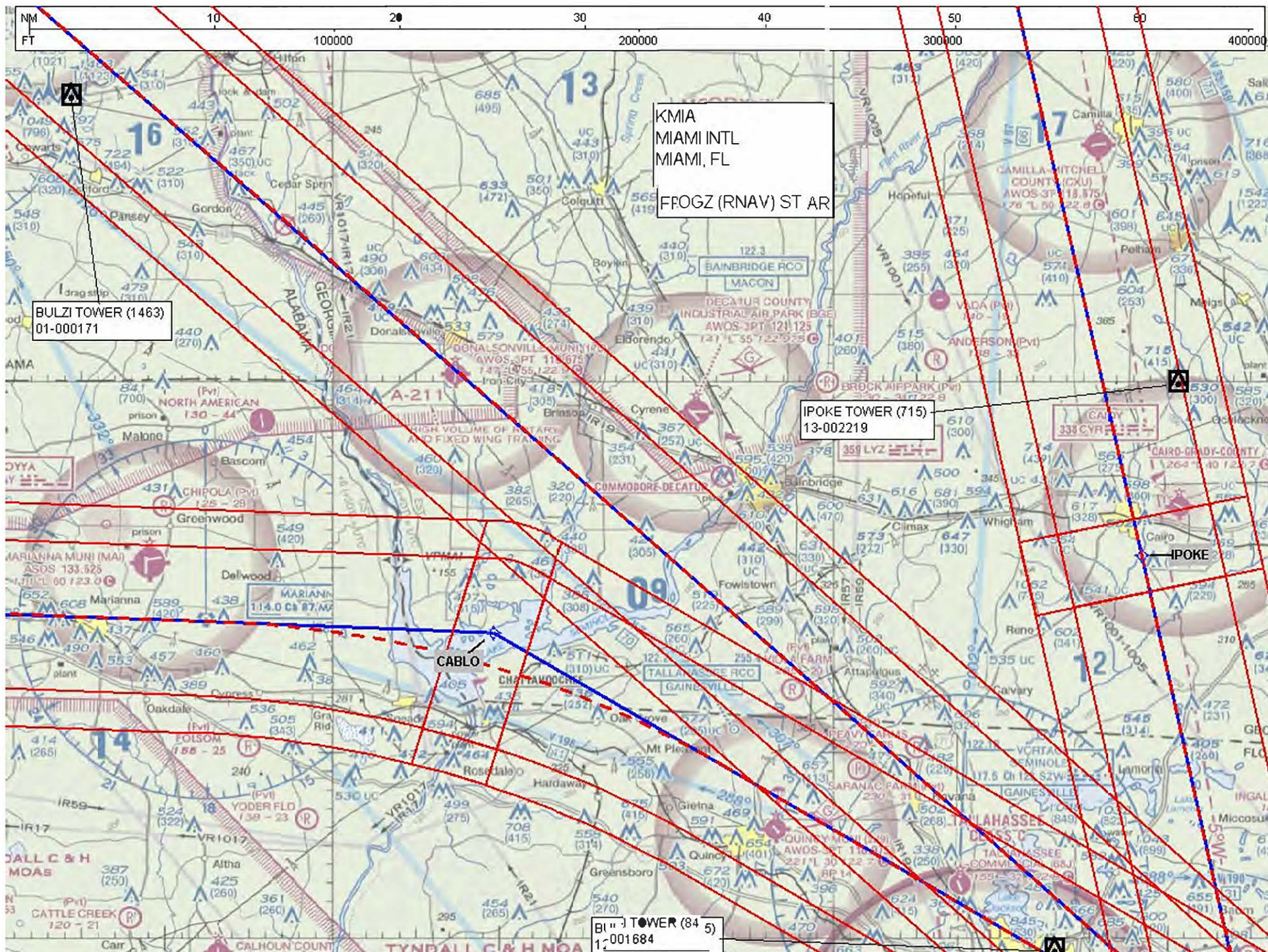
KMIA FROGZ STAR

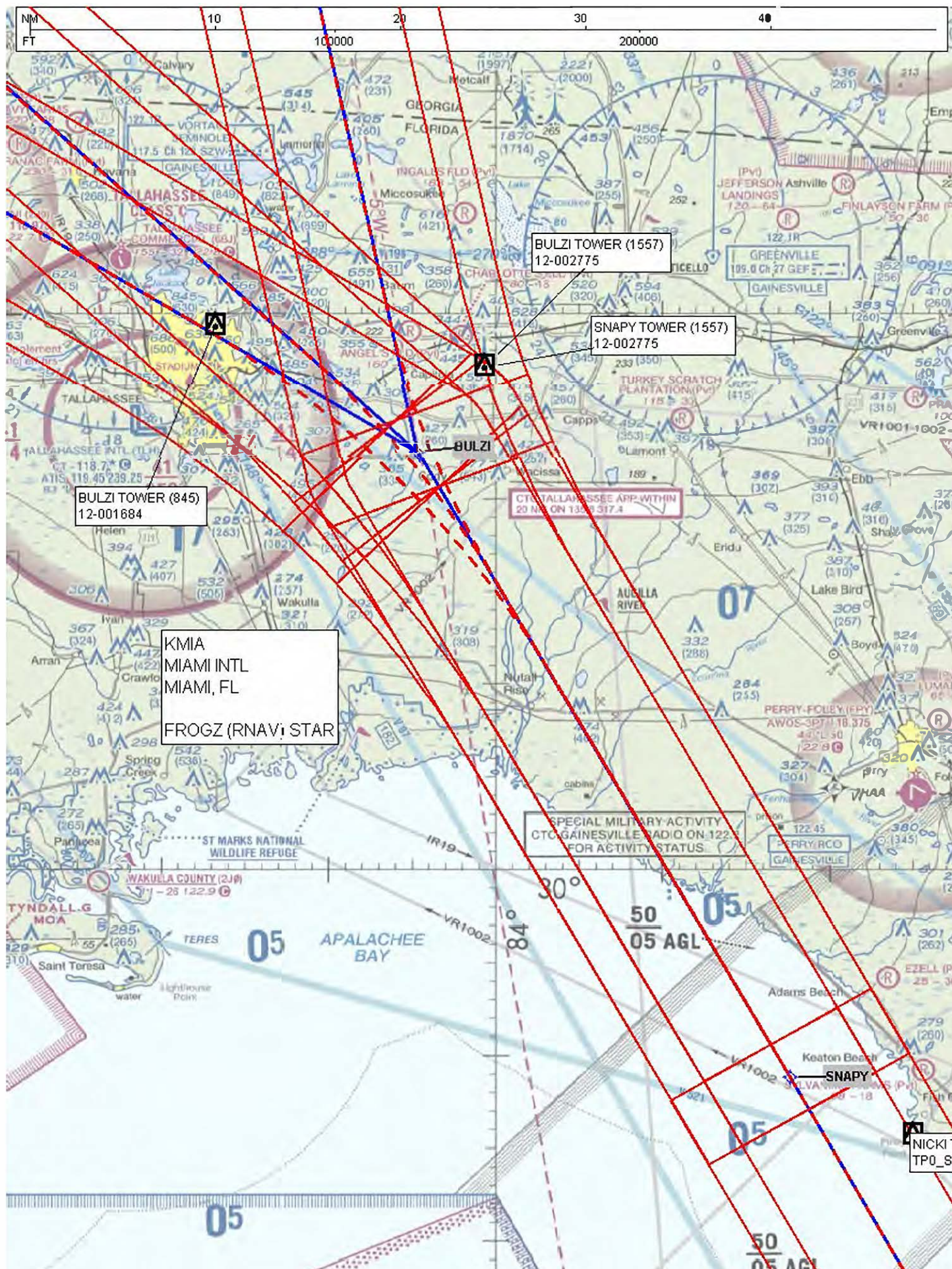
















KMIA
MIAMI INTL
MIAMI, FL
FROGZ (RNAV) STAR

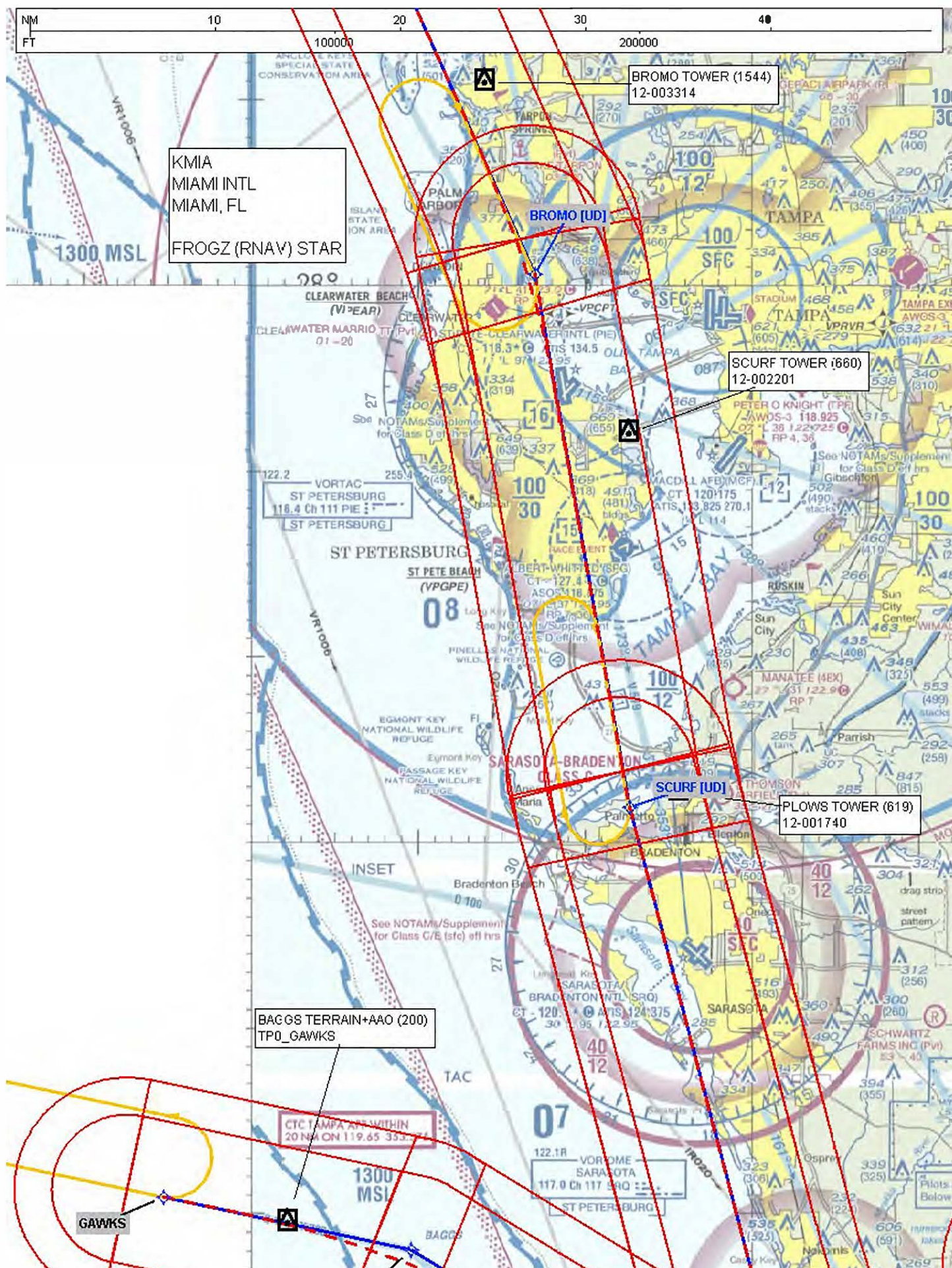
TAMPA TERMINAL AREA
Pilots are encouraged to use the Tampa VFR
Terminal Area Chart for flights at or below 10,000'

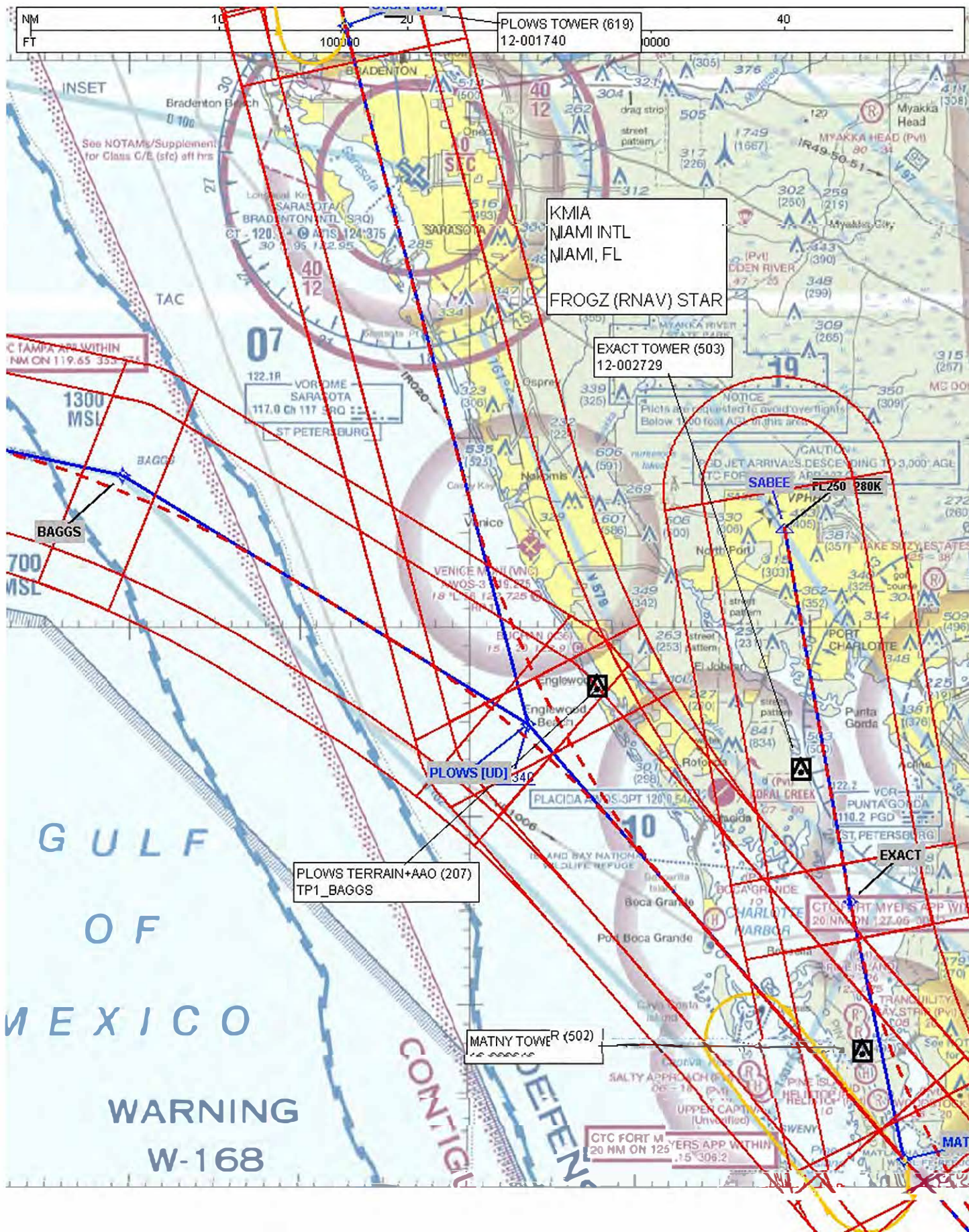
EXAMPLES OF CLASS B ALTITUDES TAMPA CLASS B
7000 --- Ceiling in hundreds of feet MSL
3000 --- Floor in hundreds of feet MSL

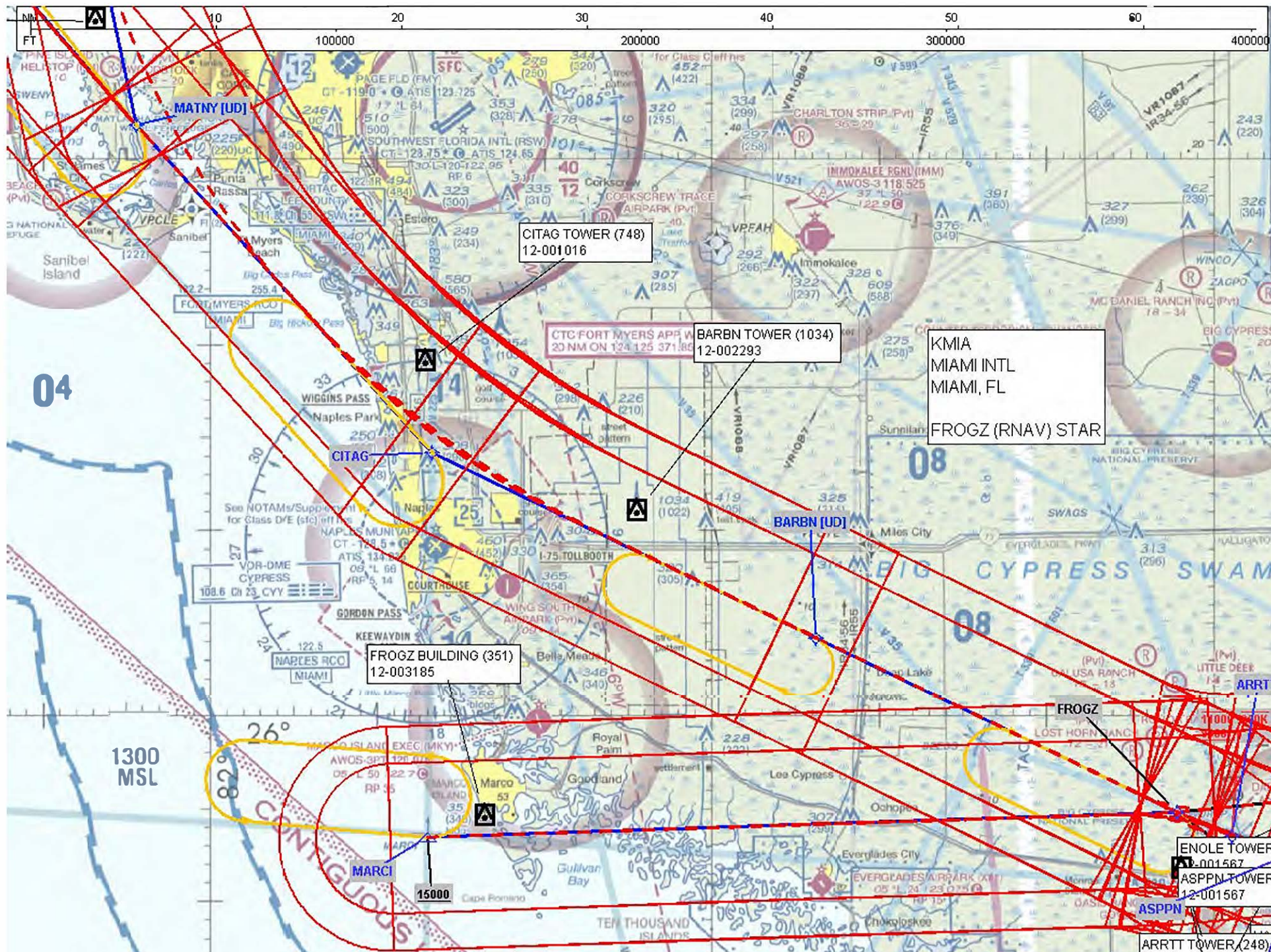
TAMPA INSET
See inset chart for additional detail

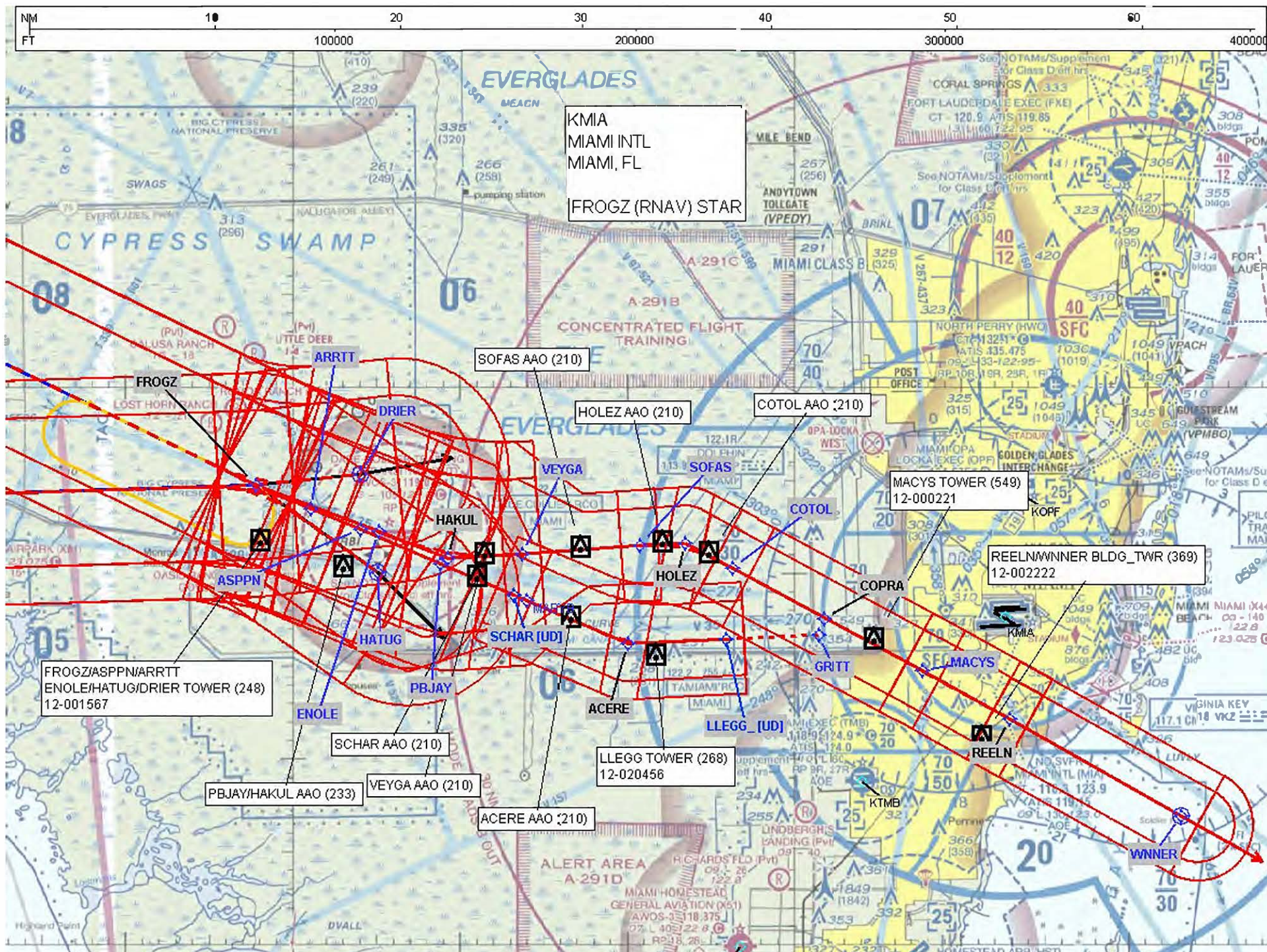
2700 MSL

BROMO TOWN
12-003314











Federal Aviation Administration

Finding of No Significant Impact (FONSI) and Record of Decision (ROD)

For the South-Central Florida (FL) Metroplex

October 2020

I. INTRODUCTION

This document serves as the Federal Aviation Administration's (FAA) Finding of No Significant Impact and Record of Decision (FONSI/ROD) for the South-Central Florida Metroplex (FL Metroplex) Project, October 2020. This FONSI/ROD relies on the information and analysis described in the Final Environmental Assessment for the FL Metroplex Project, attached hereto and incorporated by reference. The FONSI/ROD has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code (U.S.C.) Section 4321 *et seq.*); implementing regulations issued by the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations (CFR), parts 1500-1508); and FAA Order 1050.1F, Environmental Impacts: Policies and Procedures (FAA Order 1050.1F). This FONSI/ROD is also used by the FAA to demonstrate and document its compliance with the several procedural and substantive requirements of aeronautical, environmental, programmatic, and other statutes and regulations that apply to FAA decisions on proposed actions.

Furthermore, this FONSI/ROD

- documents the FAA's finding that the FL Metroplex Project will not "significantly affect the human environment," 42 U.S.C. § 4332(C), and explains the basis for that finding; and
- approves certain Federal actions associated with the implementation of the Project. Implementation of the Project will not result in airport-related development, land acquisition, construction, or other ground disturbance activities.

In approving the FL Metroplex Project, the FAA has considered 49 U.S.C. § 40101(d)(4), which gives the FAA various responsibilities and holds it accountable for controlling the use of navigable airspace and regulating civil and military operations in that airspace in the interest of safety and efficiency. Additionally, consideration has been given to 49 U.S.C. §§ 40103(b)(1) and 40103(b)(2), which authorize and direct the FAA Administrator to develop plans and policy for the use of the navigable airspace; assign by regulation or order the use of the airspace necessary to ensure the safety of aircraft and the efficient use of airspace; and prescribe air-traffic rules and regulations governing the flight of aircraft for the navigation, protection, and identification of aircraft and the protection of persons and property on the ground. These regulations also provide for the efficient utilization of the navigable airspace, including rules as to safe altitudes of flight and rules for the prevention of collisions between aircraft, between aircraft and land or water vehicles, and between aircraft and airborne objects.

Furthermore, the FAA has given careful consideration to the aviation safety and operational objectives of the FL Metroplex Project in light of the various aeronautical factors and judgments presented, the need to enhance efficiency of the national air transportation system, and the potential environmental impacts of the FL Metroplex Project.

II. BACKGROUND

The FAA is in the process of implementing the Next Generation Air Transportation System (NextGen), the FAA's plan to modernize the National Airspace System (NAS) through 2025. NextGen is a complex program intended to develop and implement new technologies, while integrating existing technologies and adapting the air traffic management system to a new way of operating. NextGen represents an evolution from an air traffic control system that is primarily ground-based to a system that is satellite-based, thus enabling greater efficiency. To achieve NextGen goals, the FAA is implementing new Area Navigation (RNAV) and Required Navigation Performance (RNP) air traffic routes and instrument procedures (RNAV Standard Instrument Departures [SIDs], Standard Terminal Arrivals [STARs], T-routes, and Standard Instrument Approach Procedures [SIAPs]) around the country that use emerging technologies and aircraft navigation capabilities. The implementation of RNAV and RNP procedures enables the use of other Performance Based Navigation (PBN) technology in the NAS and facilitates more efficient procedures such as an Optimized Profile Descent (OPD).

The Metroplex Initiative is considered a mid-term implementation step in the overall process of transitioning to the NextGen system. The FAA intends to design and implement RNAV procedures that will take advantage of the technology readily available in the majority of aircraft as part of the Metroplex initiative. A "Metroplex" is a geographic area that includes several commercial and general aviation airports in close proximity serving a large metropolitan area. The Metroplex initiative specifically addresses airspace congestion, airports in close geographical proximity, and other limiting factors that reduce efficiency in

busy Metroplex airspace. The Metroplex initiative improves the operational efficiency of the airspace by expanding the implementation of RNAV-based standard instrument procedures and connecting the routes defined by the standard instrument procedures to high and low altitude RNAV routes. Using RNAV procedures to maximize the efficient use of the limited airspace in congested Metroplex environments will also increase the ability of the FAA to safely manage any future increases in operations in that environment.

The FL Metroplex Project is intended to address specific issues related to the efficient flow of traffic in and out of the FL Metroplex.

III. PROPOSED ACTION

The Proposed Action evaluated in the Final EA would implement optimized RNAV SID and STAR Air Traffic Control (ATC) flight procedures and RNP approaches, where feasible, in the FL Metroplex. In addition, the Proposed Action includes conventional STARs, conventional SIDs, ILS approaches, RNAV approaches, and T-routes. The Proposed Action would improve the predictability and segregation of routes, as well as increase flexibility in providing air traffic services. For a more detailed summary of the Proposed Action, see Section VI below and Chapter 3 of the Final EA.

The Proposed Action is a combined package of interrelated ATC flight procedures. These proposed ATC procedures were considered and evaluated in combination with one another to determine whether they would meet the project's Purpose and Need. The FAA considered multiple versions of preliminary designs before developing final designs of the proposed procedures. Several versions of preliminary designs were eliminated from further consideration because they failed to meet the project's Purpose and Need.

Implementation of the Proposed Action is not expected to increase the number of aircraft operations at the Study Airports. Furthermore, the Proposed Action does not involve physical construction of any facilities such as additional runways or taxiways, and does not require permitting or other approvals or actions on a state or local level. Therefore, the implementation of the proposed changes to ATC procedures in the FL Metroplex would not require any physical alterations to environmental resources identified in FAA Order 1050.1F.

IV. PURPOSE AND NEED FOR THE PROPOSED ACTION

The FL Metroplex Project began with a Study Team phase, which analyzed the operational challenges in the Study Area and explored opportunities to optimize air traffic procedures therein. Although RNAV-based SIDs and STARs have been in effect in the FL Metroplex for the last two decades, the Study Team concluded that these procedures could be improved to increase efficient use of the airspace. The Study Team issued its final report in September 2012, and the Study Team's materials identified three key causes of inefficiencies in the FL Metroplex airspace:

- Lack of predictable standard routes defined by procedures to/from airport runways to/from en route airspace
- Complex converging and dependent route procedure interactions
- Lack of flexibility in the efficient transfer of traffic between the en route and terminal area airspace

These three factors demonstrate the need for the Proposed Action.

The purpose of the Proposed Action is to take advantage of the benefits of PBN by optimizing RNAV procedures that will help improve the efficiency of the airspace in the FL Metroplex. The Proposed Action would address the three key factors causing the inefficiencies in the airspace and improve the efficiency of air traffic operations through improved flexibility in transitioning aircraft, enhanced segregation between aircraft, and improving the predictability of air traffic flow. Optimizing RNAV procedures will also comply with direction issued by Congress in the Modernization and Reform Act of 2012, P.L. 112-95 § 213 (Feb. 14, 2012).

V. FAA AGENCY ACTIONS AND APPROVALS

Implementing the Proposed Action requires the FAA to publish new or revised STARs, SIDs, T-Routes, final approach procedures, and transitions, and to undertake controller training.

VI. ALTERNATIVES

The following provides a summary of the alternatives development process and alternatives considered. Further details are available in Chapter 3 of the Final EA.

Identification and Evaluation of Potential Alternatives – In May 2012, the FL Metroplex Study Team began work to define operational problems in the FL Metroplex and to identify potential solutions. The Study Team included experts on the Air Traffic Control (ATC) system for the FL Metroplex. The work completed was intended to provide a guide for later design efforts by the Design and Implementation (D&I) Team. The Study Team held several meetings with local air-traffic control facilities, airspace users (e.g., pilots), and aviation-industry representatives to learn more about the challenges of operating in the FL Metroplex. These meetings helped identify operational challenges associated with existing procedures and potential solutions that would increase efficiency in the FL Metroplex airspace. Initially, the Study Team identified 69 potential issues related to existing procedures in the FL Metroplex. Ultimately, 65 issues were addressed via recommended conceptual solutions that were carried forward to the Design Phase. Four of the 69 identified issues were not addressed by the Study Team because of geographic study area constraints or because the issue ultimately fell outside the scope of the Metroplex process. For the remaining issues, the Study Team identified several PBN solutions that resulted in increased efficiency in the FL Metroplex. The solutions proposed were conceptual in nature and did not include a detailed technical assessment, which was reserved for the D&I Team to conduct.

The D&I Team began work on the procedure designs in October, 2014. First, the Study Team proposals were prioritized based on complexity, interdependencies with other procedures, and degree of potential benefit to the Metroplex. Second, the D&I Team divided into workgroups to further develop and refine the Study Team proposals into preliminary designs. Finally, the preliminary designs were brought to the whole D&I Team for review and modification, if necessary. In developing the proposed procedures, the D&I Team was responsible for following regulatory and technical guidance, as well as meeting criteria and standards in four general categories: RNAV design criteria, Air Traffic Control regulatory requirements, operational criteria, and safety factors.

To ensure that procedures included in the Proposed Action were viable, the D&I team undertook validation exercises that further refined the procedures. The D&I Team relied on stakeholder input, design solution tools (e.g., design and testing software), and the criteria described above to meet several final design milestones. For each individual Study Team concept, the D&I Team went through an iterative design process, considering alternative

lateral and vertical flight paths, various speed and altitude restrictions, alternative leg types, different de-confliction options, and various charting considerations. The D&I Team considered the efficiency gains associated with each proposal, the potential impact to controller task complexity, and the implementation challenges, among other considerations. The combined final procedure designs have been brought forward in the Final EA as the Proposed Action alternative.

The Proposed Action includes the Proposed Final Designs for all procedures the D&I Team developed, plus existing procedures that would continue to be used. This alternative will increase efficiency in the FL Metroplex airspace by improving flexibility in transitioning aircraft, segregating arrivals and departures, and improving the predictability of air traffic flows.

The Proposed Action includes 106 SIDs and STARs with 11 T-routes:

- 2 new conventional SIDs
- 11 new conventional STARs
- 37 new RNAV SIDs
- 33 new RNAV STARs
- 12 existing conventional SIDs
- 7 existing conventional STARs
- 4 existing RNAV SIDs
- 11 new RNAV T-Routes

The Proposed Action maintains 19 existing conventional procedures. In order to accommodate non-RNAV aircraft operations, the D&I Team proposed two new conventional SIDs and 11 new conventional STARs. The Proposed Action presents 67 new procedures, 17 procedures changed from the No Action alternative to the Proposed Action, and 22 procedures staying the same from the No Action alternative (described following) to the Proposed Action.

In addition to SIDs, STARs, and T-routes; the FL Metroplex incorporates 42 new and existing satellite based RNAV or ground based Instrument Landing System (ILS) derived final approach procedures. Additionally, the Proposed Action includes 455 runway transitions and 245 en route transitions.

Alternatives Analyzed in the Final EA – In addition to the Proposed Action (described above), the Final EA also analyzed the No Action alternative. Under the No Action alternative, the FAA would maintain 85 existing arrival and departure procedures for the FL Metroplex. The 85 currently published SIDs and STARs in the FL Metroplex serving the FL Metroplex Study Airports that comprise the No Action alternative:

- 22 RNAV STARs
- 30 RNAV SIDs
- 18 conventional (i.e., non-RNAV) STARs
- 15 conventional (i.e., non-RNAV) SIDs

The existing conventional and RNAV arrival and departure procedures would remain as is, subject to minor periodic reviews and revisions in response to changes in the operational environment (i.e., magnetic variation changes, obstruction surveys, and changes in FAA Air Traffic Control regulations). The No Action alternative would not implement the specific procedures designed as part of the FL Metroplex Project.

The No Action alternative would not meet the purpose and need for the FL Metroplex Project. It would not improve the efficiency of the airspace nor address any of the three key causal factors for airspace inefficiency. Furthermore, the No Action alternative would not meet the congressional mandate to implement additional RNAV procedures.

VII. AFFECTED ENVIRONMENT

The General Study Area for this Project includes the geographic area in which natural resources and the human environment are potentially affected by the Proposed Action and its reasonable alternative. Paragraph B-1.3 of Appendix B to FAA Order 1050.1F requires consideration of impacts of airspace actions from the surface to 10,000 feet AGL if the study area is larger than the immediate area around an airport or involves more than one airport, as this one is. Furthermore, policy guidance issued by the FAA Program Director for Air Traffic Airspace Management states that for air traffic project environmental analyses, noise impacts should be evaluated for proposed changes in arrival procedures between 3,000 and 7,000 feet AGL and departure procedures between 3,000 and 10,000 feet AGL for large civil jet aircraft weighing over 75,000 pounds.

In developing the General Study Area, the FAA collected radar data from flight paths in the FL Metroplex. The General Study Area was designed to capture all flight paths identified in the radar data collected for the preparation of the Final EA as well as the designed Proposed Action routes out to the point at which 95 percent of aircraft are at or above 10,000 feet AGL for departures and at or above 7,000 feet AGL for arrivals, accounting for the terrain in and around the FL Metroplex. The lateral extent of the General Study Area was precisely defined to focus on areas of traffic flow.

The resulting General Study Area is depicted on Exhibits 4-1 and 4-2 in the Final EA and includes all or portions of 36 counties in the state of Florida. Detailed information regarding the affected environment with respect to each relevant impact category is presented in Chapter 4 of the Final EA.

The FL Metroplex General Study Area encompasses five major airports:

- Fort Lauderdale/Hollywood International Airport – FLL
- Orlando International Airport – MCO
- Miami International Airport – MIA
- Palm Beach International Airport – PBI
- Tampa International Airport – TPA

The FL Metroplex General Study Area also includes the following 16 satellite airports:

- Ocean Reef Club Airport – 07FA
- Boca Raton Airport – BCT
- Fort Lauderdale Executive Airport – FXE
- Kissimmee Gateway Airport – ISM
- Lakeland Linder Regional – LAL
- Leesburg International Airport – LEE
- Melbourne International Airport – MLB
- Miami-Opa Locka Executive Airport – OPF
- Orlando Executive Airport – ORL

- Punta Gorda Airport – PGD
- St Pete-Clearwater International Airport – PIE
- Orlando Sanford International Airport – SFB
- Sarasota/Bradenton International Airport – SRQ
- Witham Field Airport – SUA
- Miami Executive Airport – TMB
- Venice Municipal Airport – VNC

The Final EA refers to the five major and 16 satellite airports collectively as the Study Airports.

VIII. ENVIRONMENTAL CONSEQUENCES

The FAA analyzed the potential environmental impacts that could result from implementation of the Proposed Action, as well as the impacts associated with the No Action alternative on all relevant environmental impact categories specified in FAA Order 1050.1F. The FAA evaluated both alternatives for conditions in 2021, the first year of implementation of the optimized air traffic procedures under the Proposed Action, and 2026, five years after expected implementation of the Proposed Action.

The Proposed Action would not involve land acquisition, physical disturbance, or construction activities and, therefore, would not affect certain environmental impact categories. The following environmental resource categories would remain unaffected because either the resource does not exist within the General Study Area or it would not be affected by the activities associated with the Proposed Action. The unaffected resource categories or sub-categories include:

- Biological Resources (including fish and plants only)
- Coastal Resources
- Farmlands
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Historical, Architectural, Archeological, and Cultural Resources –Archeological and Architectural sub-category only
- Land Use
- Natural Resources and Energy Supply – Natural resources sub-category only (aircraft Fuel only)
- Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks (Socioeconomic Impacts sub-category; Children's Environmental Health and Safety Risks sub-categories)
- Visual Effects – Light Emissions Only
- Water Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)

The Proposed Action would not cause changes in patterns of population movement or growth, public service demands, or business and economic activity. In addition, the Proposed Action does not involve construction or other ground disturbing activities that would involve the relocation of people or businesses. Furthermore, the Proposed Action does not include the construction of airport facilities that would result in or induce an increase in operational capacity. Thus, the Proposed Action would not result in Secondary or Induced impacts.

Those environmental impact categories that could potentially be affected by the Proposed Action are discussed further below.

Noise and Noise-Compatible Land Use

As required by FAA Order 1050.1F, the Aviation Environmental Design Tool (AEDT) was used to model the noise impacts for the FL Metroplex Project because the Project involves a study area larger than the immediate vicinity of an airport, incorporates more than one airport, and includes actions above 3,000 feet above ground level (AGL). FAA also applied its criteria of significance, an increase of 1.5 dB DNL¹ or more over any noise sensitive area within areas exposed to 65 dB DNL or higher, to determine whether the Project would result in a noise impact “significantly affecting the human environment” under the National Environmental Policy Act, 42 U.S.C. § 4332(C). Noise was analyzed for both the Proposed Action and the No Action alternative during the year in which implementation of the Proposed Action would be initiated (2021) and a five-year look-ahead (2026).

The AEDT model computed DNL exposure values at three sets of data points throughout the General Study Area:

1. United States Census Bureau population census block centroids (center point of a census block);
2. Unique points representing certain specific cultural resources and areas potentially protected under Section 4(f) of the Department of Transportation Act (DOT Act) (49 U.S.C. § 303(c)), and historic properties protected under Section 106 of the National Historic Preservation Act (NHPA) (16 U.S.C. § 470 *et seq.*);
3. A uniform grid covering the General Study Area (using 0.5 nautical mile spacing) to document aircraft DNL exposure levels at potential noise sensitive locations that were not otherwise identified.

The results identified the differences in DNL noise exposure between the two alternatives (Proposed Action compared to the No Action alternative) to determine if implementing the Proposed Action would result in significant noise impacts. The analysis also identified any DNL increase of 3 dB or higher in areas exposed to noise between DNL 60 dB and 65 dB and any DNL increase of 5 dB or higher in areas exposed to noise between DNL 45 dB and 60 dB. While the Final EA refers to such increases as a “reportable noise increase,” they are not considered significant impacts for purposes of the National Environmental Policy Act. The results of the AEDT modeling indicated that:

1. The Proposed Action would not result in a DNL 1.5 dB or higher increase in noise-sensitive areas exposed to aircraft noise at or above DNL 65 dB
2. The Proposed Action would not result in DNL increases of 3 dB or higher in areas exposed to noise between DNL 60 dB and 65 dB
3. The Proposed Action would not result in a DNL increase of 5 dB or higher in areas exposed to noise between DNL 45 dB and 60 dB.

¹ DNL is the Day Night Average Sound Level. It is a single value representing the aircraft sound level averaged over a 24-hour period. To represent the greater annoyance caused by noise at night, the DNL metric includes a 10-decibel penalty weighting for noise occurring between 10:00 pm and 7:00 am.

Thus, the Proposed Action would not result in significant noise impacts. Accordingly, no mitigation is required per FAA Order 1050.1F, Appendix B-1.13.

FAA Order 1050.1F requires that Final EA documents discuss possible conflicts between the proposed action and the objectives of federal, regional, state, local and tribal land use plans, policies and controls for the area concerned. Potential impacts to noise-compatible land use were focused on changes in aircraft noise exposure resulting from implementing the Proposed Action. FAA Order 1050.1F states, “The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport’s noise impact. If the noise analysis concludes that there is no significant impact, a similar conclusion usually may be drawn with respect to compatible land use.” Air traffic actions like the FL Metroplex Project do not result in direct impacts to land due to a lack of ground disturbance. Accordingly, the compatible land use analysis relies on changes in aircraft noise exposure between the Proposed Action and the No Action alternative as the basis for determining noise-compatible land use impacts within the General Study Area.

The Proposed Action, when compared with the No Action alternative, would not result in changes in aircraft noise exposure in 2021 or 2026 that would exceed the FAA’s significance thresholds described in FAA Order 1050.1F. Likewise, there are no conflicts with federal, regional, state, local land use plans, policies and controls. Therefore, the Proposed Action would not result in significant noise-compatible land use impacts.

Under the No Action alternative, there would be no changes to air traffic routing in the General Study Area and no changes in aircraft noise exposure expected to occur in either 2021 or 2026. Therefore, the No Action alternative would not result in significant noise-compatible land use impacts.

Air Quality

The Proposed Action would result in a slight increase in emissions when compared to the No Action alternative. However, operational changes likely to result in a change in emissions under the Proposed Action would occur at or above 3,000 feet AGL and are presumed to conform to the applicable state implementation plan (SIP) for Florida. Federal Aviation Administration, *Federal Presumed to Conform Actions under General Conformity*, 72 Fed. Reg. 41565, 41577 (Jul. 30, 2007). For any changes to flight paths below that mixing height, they are also presumed to conform to the SIP because they are modifications to air-traffic procedures that are designed to enhance operational airspace efficiency. *Id.* The slight increase in emissions is expected to have little if any effect on emissions or ground concentrations. Therefore, no significant impacts to air quality would be anticipated in 2021 or 2026.

The No Action alternative would not result in a change in the number of aircraft operations or air traffic routes; therefore, no impacts to air quality would be anticipated in 2021 or 2026.

Biological Resources – Wildlife (Avian and Bat Species) and Migratory Birds Sub-Categories only

The greatest potential for impacts to wildlife species related to air traffic procedure changes would result from wildlife strikes on avian and bat species at altitudes below 3,000 feet AGL. The FAA’s Wildlife Strike Database provides strike information that is reportable by airport, including species struck, height of strike, and type and extent of aircraft damage. Since 1990, the FAA has compiled pilot and airport reports of wildlife strikes with aircraft. Between the

most recent comprehensive reporting period of 1990 and 2018, 209,950 wildlife strikes were reported nationally and in 2018, birds were involved in 94.7 percent of the reported strikes while bats were involved in 3.2 percent. From 1990–2018, about 41 percent of bird strikes with commercial aircraft occurred when the aircraft was at ground level, 71 percent occurred at less than 500 feet AGL, and 92 percent occurred at or below 3,500 feet AGL. About one percent of bird strikes occurred above 9,500 feet AGL. Above 500 feet AGL, the number of reported strikes declined consistently by 34 percent for each 1,000-foot gain in height. The Wildlife Strike Database reports that of identified species, waterfowl, gulls, and raptors are the species groups of birds with the most damaging strikes.

A summary of wildlife strikes reported for the Study Airports between January 1, 1990 and March 1, 2020 is reported in Tables 5-3 and 5-4 of the Final EA. In total, 9,415 reported strikes (96.33 percent of all strike records) occurred at altitudes below 3,000 feet AGL, which is slightly higher than the US average 1990-2020.

The number of aircraft operations under the Proposed Action and No Action alternative would be the same. Therefore, the assessment of the potential impacts focuses on changes to flight paths and the potential for impact due to wildlife strikes. The substantial decline in the number of strikes reported above 3,000 feet AGL indicates that there is less likelihood of bird/bat strikes at these altitudes. Under the Proposed Action, changes to proposed flight paths would primarily occur at or above 3,000 feet AGL, and no significant changes to arrival and departure corridors below 3,000 feet AGL would be expected. Therefore, no significant impacts to bird or bat species would be anticipated in 2021 or 2026.

The No Action alternative would not involve changes to air traffic flows, land acquisition, construction, or other ground-disturbing activities. Therefore, no impacts to avian and bat species would occur in 2021 or 2026.

Climate

In accordance with FAA guidance, estimated CO₂ emissions were calculated from the amount of fuel burned under the No Action alternative and the Proposed Action in 2021 and 2026. The resulting CO₂ emissions were then reported as CO₂e. Greenhouse gas emissions were quantified in terms of carbon dioxide equivalent (CO₂e), which was calculated by multiplying the number of gallons of fuel projected to be burned under both the Proposed Action and the No Action alternatives by the CO₂e associated with each gallon of fuel burned (9.7438 kg of CO₂e). Based on the fuel burn values reported in the Final EA, CO₂e emissions would increase slightly with implementation of the Proposed Action compared with the No Action alternative (54.52 MT or 0.46 percent more in the first year of implementation (2021) and 57.30 MT or 0.43 percent more in the five-year look-ahead year (2026)).

Department of Transportation Act, Section 4(f)

The FAA identified resources within the General Study Area that had the potential to qualify for protection under Section 4(f) of the DOT Act. No land acquisition, construction, or other ground-disturbing activities would occur under the Proposed Action; therefore, the Proposed Action would not physically use any potential Section 4(f) resources. Consequently, the focus of the evaluation of potential Section 4(f) resources was adverse impacts that have the potential to result in a constructive use. This could occur as a result of noise impacts. With regard to aircraft noise, a constructive use would occur should noise levels substantially diminish the activities, features, or attributes of the resource, to the extent that the value of the property is substantially reduced or lost. See FAA Order 1050.1F ¶ B-2.2.2.

As noted under “Noise” above, the FAA’s noise modeling included areas potentially protected under Section 4(f). However, no potential Section 4(f) resources located in areas exposed to DNL 65 dB or higher would experience a significant increase of DNL 1.5 dB or higher. Furthermore, the Proposed Action would not cause reportable increases of DNL 3 dB or higher in areas exposed to noise between DNL 60 dB and 65 dB or DNL 5 dB or higher in areas exposed to noise between DNL 45 dB and DNL 60 dB.

Under FAA Order 1050.1F, a significant impact would occur when a proposed action either involves more than a minimal physical use of a Section 4(f) resource or would result in a “constructive use” substantially impairing the 4(f) property. Because the Proposed Action would result in neither a physical nor constructive use of Section 4(f) resources, there would be no significant impacts on those resources in 2021 or 2026.

Historic, Architectural, Archeological, and Cultural Resources – Historic and Cultural Resources Sub-Categories only

The National Historic Preservation Act of 1966 requires the FAA to consider the effects of its undertakings on properties listed or eligible for listing in the National Register of Historic Places (i.e., National Register). In assessing whether an undertaking, such as the Proposed Action, affects a property listed or eligible for listing on the National Register, the FAA must consider both direct and indirect effects. An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.

Federal regulations define an area of potential effect (APE) as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking. Direct effects generally occur at the time and place of the proposed action. An APE coterminous with the General Study Area boundary has been defined for the FL Metroplex Project to assess the potential direct and indirect effects of the Proposed Action on historic properties.

The FAA determined that under the meaning of 36 CFR, Parks, Forests, and Public Property, section 800.5(a), Protection of Historic Properties, the Proposed Action would not have an “adverse effect” on historic resources. Additionally, in accordance with the Section 106 of the NHPA, written concurrence of FAA’s determination was obtained from the Florida State Historic Preservation Officer (SHPO) with the finding of no adverse effects for the proposed undertaking. The concurrence letter can be found in Appendix A of the Final EA.

When compared with the No Action alternative, the Proposed Action would not result in changes in aircraft noise exposure in 2021 or 2026 that would exceed FAA’s significance threshold for noise. Therefore, the Proposed Action would not result in an adverse effect to historic properties or cultural resources. Noise analysis results for historic properties or cultural resources located within the General Study Area.

Under the No Action alternative no changes to air traffic routes in the South-Central Florida Metroplex would occur in either 2021 or 2026, and no adverse effects related to changes in aircraft noise exposure would be anticipated. Therefore, the No Action alternative would not result in impacts to historic or cultural resources.

Natural Resources and Energy Supply – Energy Supply sub-category only (aircraft fuel only)

The Proposed Action would not change the number of aircraft operations relative to the No Action alternative, but it would involve changes to air traffic flows during the departure, descent, and approach phases of flight. These changes affect both the route an aircraft may follow and its climb-out and descent profiles. This in turn may directly affect aircraft fuel burn (or fuel expended). Aircraft fuel burn is considered a proxy for determining whether the Proposed Action would have a measurable effect on local energy supplies when compared with the No Action alternative.

In comparison to the No Action alternative, the Proposed Action would result in approximately 17.28 metric tons (MT) more fuel burned in 2021 (0.46% percent increase) and approximately 18.16 MT more fuel burned in 2026 (0.43% percent increase). Given these relatively small increases, the FAA expects that when compared with the No Action alternative, the Proposed Action would not adversely affect local fuel supplies. Therefore, no significant impacts to energy supply would be anticipated in 2021 or 2026.

Socioeconomics, Environmental Justice, and Children's Environmental Health and Safety Risks – Environmental Justice sub-category only

Under the Proposed Action, no census block centroids in the General Study Area would experience a change in noise exposure in 2021 or 2026 that exceeds any of the FAA's significance thresholds for noise impacts on people. Therefore, no adverse direct or indirect effects would occur to any environmental justice populations within the General Study Area under the Proposed Action for 2021 and 2026.

Under the No Action alternative, neither people nor businesses would be displaced. Furthermore, air traffic routes would not change, and there would be no change in aircraft noise exposure in 2016 or 2021 that could result in an indirect impact. Therefore, the No Action alternative would not result in disproportionately high and adverse human health or environmental effects on minority and low-income populations.

Neither the Proposed Action nor the No Action alternative would displace people or businesses; therefore, implementing the Proposed Action or No Action alternative would not result in direct impacts in this category. No areas within the General Study Area would experience significant impacts to air quality or noise. Therefore, no disproportionately high and adverse effects to minority populations or low-income populations would occur under either the Proposed Action or the No Action alternative in 2021 or 2026.

Visual Effects (Visual Resources / Visual Character Only)

Aesthetic impacts deal more broadly with the extent that the project contrasts with the existing environment and whether the difference is considered objectionable by the agency responsible for the location in which the project is set. Visual impacts are normally related to the disturbance of the aesthetic integrity of an area caused by development, construction, or demolition, and thus do not typically apply to airspace changes.

To evaluate the potential for indirect impacts resulting from changes in aircraft routings and visual intrusion, the general altitudes at which aircraft route changes occur beyond the immediate airport environs, which experience overflights on a routine basis, are considered to evaluate the potential for visual impacts. Implementation of the Proposed Action would not increase the number of aircraft operations at the Study Airports compared with the No Action

alternative. Changes in aircraft traffic patterns under the Proposed Action are expected to be at altitudes and distances sufficiently removed from viewers that visual impacts would not be anticipated.

Under the No Action alternative, no changes in air traffic routes would occur and no changes in aircraft overflight patterns would be expected. Therefore, the No Action alternative would not result in visual effects to visual resources or visual character of any resource in 2021 or 2026.

Cumulative Impacts

Prior to the date of this decision, the Council on Environmental Quality published new regulations implementing NEPA. Council on Environmental Quality, *Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act*, 85 Fed. Reg. 43,304 (Jul. 16, 2020). Prior regulations required that federal agencies consider “cumulative impacts,” defined as the incremental impact of the action when added to the impacts of other past, present, and reasonably foreseeable future actions regardless of the agency, federal or nonfederal, undertaking such actions. See 40 C.F.R. § 1508.25(a)(2) (2019). Before this Record of Decision was published, the Council on Environmental Quality changed its position “to state that analysis of cumulative effects, as defined in the 1978 regulations, is not required under NEPA.” 85 Fed. Reg. at 43,344. Nevertheless, the draft EA contains an analysis of present or reasonably foreseeable actions (past actions are reflected in the environmental baselines described in Chapter 4), including airport improvement projects at the Study Airports or FAA actions relating to airspace, flight procedures, or air traffic routes that would have the potential for such effects. FAA reviewed capital improvement program (CIP) projects at the Study Airports that directly affect or involve runway surfaces having the potential to affect local or regional flight patterns. The FAA has retained that discussion in the Final EA.

The FAA is aware that Runway 04/22 at Punta Gorda Airport (PGD) will be temporarily closed due to construction to rehabilitate the airport, and that during this closure Runway 15/33 will be used. Due to the distance from the airport, altitude, and nature of the Proposed Action procedure changes, the forecast environmental impacts for 2021 and 2026 are not expected to change. The FAA is aware of a need for potential operational changes to departures at MIA, but at the time of the Final EA, the timing and frequency of these changes remains unknown. This research did not reveal any other present, or reasonably foreseeable actions with the potential for direct or indirect effects on aircraft flight patterns within the General Study Area. Therefore, no cumulative impacts would be anticipated for the Proposed Action when compared to the No Action alternative for either 2021 or 2026.

Mitigation

Thresholds of significance for any environmental impact category would not be exceeded due to the Proposed Action; therefore, no mitigation is being proposed as part of this Project.

Other Considerations

The Proposed Action involves air traffic control routing changes for airborne aircraft only. The United States Government has exclusive sovereignty of airspace in the United States [49 U.S.C. Section 40103(a)]. Congress has provided extensive and plenary authority to the FAA concerning the efficient use and management of the navigable airspace, air traffic control, air navigation facilities, and the safety of aircraft and persons and property on the ground [49

U.S.C. Sections 40103(b)(1) and (2)]. To the extent applicable, and as there are no significant impacts under noise or compatible land use, the Proposed Action is consistent with the plans, goals, and policies for the area and with the applicable regulations and policies of federal, state, and local agencies.

IX. AGENCY AND PUBLIC INVOLVEMENT

FAA Community engagement and early consultation process within the overall Environmental Assessment (EA) process began with a notice the FAA was initiating preparation of an EA for the Project. On July 25, 2019, the FAA distributed a letter containing the notice of intent to prepare an EA for the FL Metroplex Project to 590 federal, state, regional, and local officials.

On July 28, 2019, a notice of intent to prepare an EA was published in the Miami Herald (English), El Nuevo Herald (Spanish), The News-Press (English and Spanish), The Orlando Sentinel (English and Spanish), the Sun Sentinel (English and Spanish), and The Tampa Bay Times (English and Spanish). On August 16, 2019, the FAA distributed a letter clarifying a FL Metroplex Project scope statement in the July 25, 2019 notice of intent letter. 15 responses were received acknowledging and/or commenting on the notice of intent. On May 6, 2020 the FAA initiated Section 106 consultation with the Florida SHPO office. There are no federally recognized tribes in the Area of Potential Effect, however, the FAA initiated government-to-government consultations with the Miccosukee Tribe of Florida, Mississippi Band of Choctaw Indians, Seminole Nation of Oklahoma, Seminole Tribe of Florida, Poarch Band of Creek Indians, and the Muscogee (Creek) Nation tribes on April 8, 2019. Tribal Historic Preservation Officers did not request further consultation.

Throughout the post-Study Team recommendations, and in the Project period spanning from Preliminary Design to Proposed Final Designs, the Design and Implementation Team undertook a Community Engagement process that encompassed 47 select official briefings, aviation stakeholder briefings, and public workshops. These Community Engagement activities occurred between April, 2019 and April, 2020. As a result of the 19 public workshops held; email comments, FAA website comments, and written comments were received and considered in the procedure design process. Design changes were reviewed as a result of the comments received and changes to the preliminary designs were attempted to address the public comments.

On May 11, 2020 the FAA released a Draft EA for the proposed FL Metroplex Project for an initial 61 day public review and comment period. On May 12, 2020 the FAA subsequently identified certain inadvertent errors in the Draft EA for the South-Central Florida Metroplex project, posted the information on the FL Metroplex Project website, and released a revised Draft EA. The Google Earth-based files that are supplemental materials to the Draft EA documents were also revised. The “FL Metroplex Draft EA Procedures – South” was updated on Wednesday, May 20 to include the runway transitions for the SIDs and the “FL Metroplex Draft EA Procedures – North” was updated on Thursday, May 21 to include the runway transitions for the SIDs. On July 8, 2020, the FAA extended the public comment period ending date from July 10, 2020 to July 24, 2020 yielding a total 75 day public comment period on the Draft EA. No further extensions were made to the public comment period.

The FAA appreciates and acknowledges receipt of the thoughtful responses to its requests to comment on the Draft EA. The FAA considered all comments received during the May 11, 2020 through July 24, 2020 public review period before issuing the Final EA. The comments received on the Draft EA were submitted through the FAA website comment form, regular

mail, and six designated FAA FL Metroplex Project email addresses. The FAA received 3,239 comments by private citizens and groups, elected officials, municipalities, local, State, and Federal agencies. Consistent with FAA Order 1050.1F, the text of all substantive comments to the Draft EA and the FAA's responses were included in Appendix J of the Final EA.

On October 26, 2020, the FAA released the Final EA for the proposed FL Metroplex Project consistent with this FONSI/ROD. The Final EA included minor errata, agency coordination and consultation outcomes, and corrections. The FAA carefully considered the public comments and some changes were made to the Proposed Action as reflected in the Final EA. These changes did not affect the Final EA's conclusion that the Proposed Action would not cause any significant environmental impacts.

X. THE AGENCY'S FINDINGS

A. The Proposed Action will ensure the safety of aircraft and the efficient use of airspace. (49 U.S.C. § 40103(b)).

The Federal Aviation Act of 1958 gives the Administrator the authority and responsibility to assign by order or regulation the use of the navigable airspace in order to ensure the safety of aircraft and the efficient use of the airspace. In its continuous effort to ensure safety of aircraft and improve the efficiency of transit through the navigable airspace, the FAA will create or modify SIDs, STARs, T-routes, and instrument approaches in the FL Metroplex. The Project will enhance the efficiency of the airspace in the FL Metroplex by creating shorter, more predictable ground and vertical paths through the limited airspace in the FL Metroplex. Additionally, this Project will allow the FAA to begin to achieve its NextGen goals.

In deciding to implement the Proposed Action, the FAA carefully evaluated both the Proposed Action and the No Action alternatives. The No Action alternative will do nothing to improve the efficiency of the airspace or address any of the three key causal factors for airspace efficiency. The No Action alternative would not further the Agency's goal in transitioning to NextGen.

B. The Proposed Action does not involve the direct or constructive use of any resources protected under Department of Transportation Act Section 303(c), also known as Section 4(f).

The Proposed Action does not involve any physical development or modification of facilities and therefore no actual, physical use of resources protected under Section 4(f) of the Department of Transportation Act or Section 106 of the National Historic Preservation Act would result. The Proposed Action will not result in a constructive use of any protected property because it will not cause increases in noise sufficient to impair the value of those resources. None of the protected properties in the General Study Area have a quiet setting as a generally recognized purpose and attribute.

C. The Proposed Action does not adversely affect historic resources protected under Section 106 of the National Historic Preservation Act that are listed on the National Register of Historic Places or eligible for listing.

The Proposed Action will not cause an adverse effect under Section 106 of the National Historic Preservation Act on historic resources listed on or eligible for listing on the National

Register of Historic Places located within the Area of Potential Effect. This determination is based on consultation under Section 106 of the National Historic Preservation Act with the Florida State Historic Preservation Officer.

D. The Proposed Action will not have a disproportionately high and adverse impact on minority or low income populations (Executive Order 12898).

The FAA has determined that no disproportionately high and adverse impacts to environmental justice communities will occur from the Proposed Action, based upon findings that there are no noise impacts on residential communities, no community disruptions or divisions, no surface transportation impacts, no human health impacts and no essential services disruptions or other impacts that could potentially disproportionately impact any minority or low-income community.

E. The Proposed Action does not require a conformity determination under Section 176 (c)(1) of the Clean Air Act (42 U.S.C. § 7506(c)(1)).

The Proposed Action is an air traffic control activity that adopts air traffic procedures for air operations. It is presumed to conform to all applicable State Implementation Plans using criteria identified in Category 14 of the FAA's list of presumed-to-conform actions. 72 Fed. Reg. 41565 (July 30, 2007). The Proposed Action would not result in the development of physical facilities nor would it result in or induce an increase in operational capacity in the General Study Area. Detailed analysis was not necessary to conclude that the Proposed Action conforms to the purposes of the State Implementation Plan for the State of Florida. The Proposed Action will not cause a new violation of the National Ambient Air Quality Standards (NAAQS), worsen an existing violation, or delay meeting the standards of the NAAQS in the General Study Area.

XI. DECISIONS AND ORDERS

After careful and thorough consideration of the Final EA and the facts contained herein, I find that the Proposed Action is consistent with existing national environmental policies and objectives as set forth in Section 101 of the National Environmental Policy Act and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(C) of the National Environmental Policy Act. Therefore, an environmental impact statement will not be prepared.

I, the undersigned, have reviewed the Final EA including the evaluation of the purpose and need that this Project would serve, the alternative means of achieving the purpose and need, and the environmental impacts associated with these alternatives. I find the Proposed Action described in the Final EA is reasonably supported, and issuance of a FONSI is appropriate.

I have carefully considered the FAA's statutory mandate under 49 U.S.C. § 40103 to ensure the safe and efficient use of the national airspace system as well as the other aeronautical goals and objectives discussed in the Final EA.

Accordingly, under the authority delegated to me by the Administrator of the FAA, I approve the operational changes as described in the Proposed Action and direct that actions be taken that will enable implementation of that alternative.

Approved:	ANGELA RENEE MCCULLOUGH	Digitally signed by ANGELA RENEE MCCULLOUGH Date: 2020.10.15 09:13:14 -04'00'	October 15, 2020
	Angela McCullough Vice President, Mission Support Services Air Traffic Organization Federal Aviation Administration		Date

RIGHT OF APPEAL

This FONSI/ROD constitutes a final order of the FAA Administrator and is subject to exclusive judicial review under 49 U.S.C. § 46110 by the U.S. Circuit Court of Appeals for the District of Columbia or the U.S. Circuit Court of Appeals for the circuit in which the person contesting the decision resides or has its principal place of business. Any party having substantial interest in this order may apply for review of the decision by filing a petition for review in the appropriate U.S. Court of Appeals no later than 60 days after the order is issued in accordance with the provisions of 49 U.S.C. § 46110. Any party seeking to stay implementation of the ROD must file an application with the FAA prior to seeking judicial relief as provided in Rule 18(a) of the Federal Rules of Appellate Procedure.