

ORDER  
CLT ATCT 7110.65G

## Charlotte ATCT (CLT)



## Standard Operating Procedures

January 1, 2021

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# **Chapter 1. Introduction**

## **Section 1. Introduction**

### **1-1-1. Purpose**

This Order establishes standard operating procedures for use by persons providing air traffic control services at the Charlotte-Douglas (CLT) Airport Traffic Control Tower (ATCT) on the VATSIM network. This Order is designed to supplement VATUSA and ZTL directives.

### **1-1-2. Audience**

This order applies to all vZTL Air Traffic Control Specialists and vZTL Visiting Air Traffic Control Specialists manning the Charlotte (CLT) Airport Traffic Control Tower (ATCT) and Terminal Radar Approach Control (TRACON positions).

### **1-1-3. Distribution**

This Order is available in the ZTL Files Library located at <https://www.ztlartcc.org/controllers/files>, under SOPs.

### **1-1-4. Cancellation**

This Order cancels CLT ATCT 7110.65F dated November 19, 2019.

### **1-1-5. Effective Date**

This Order is effective as of December 22, 2020.

Max Maude  
ZTL Air Traffic Manager

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VATUSA Southeast Region Manager

# Chapter 2. General

## Section 1. Equipment Overview

### 2-1-1. Operational Positions and Associated Frequencies

Bold positions indicate the base position.

Position	Frequency	STARS ID
ATIS	132.100	
Clearance Delivery	127.150	CD
Ground East	121.900	GE
Ground West	121.800	GW
Local East	118.100	K
Local Center	126.400	T
Local West	133.350	O
Departure	120.500	W
Satellite	134.750	N
Arrival Radar East	126.150	H
Arrival Radar NW	125.350	U
Arrival Radar SW	135.600	D
Final Radar East	127.700	A
Final Radar Center	119.000	M
Final Radar West	132.700	F
Traffic Management	199.997	TC

## Section 2. Scratchpad Overview

### 2-2-1. Approved Abbreviations

Entry	Definition
L	Approach Advertised in ATIS, Runway 18L / 36L
X	Approach Advertised in ATIS, Runway 5 / 23
C	Approach Advertised in ATIS, Runway 18C / 36C
R	Approach Advertised in ATIS, Runway 18R / 36R
N#	Visual approach, preceding traffic not in sight, Runway #



## Section 3. General

### 2-3-1. Transfer of Control

- (a) After completion of a radar handoff and once communications have been transferred, all aircraft are released for turns, climb or descent (on course, to the traffic pattern, or approach course), as well as speed control, in the transferring controller's airspace.

#### EXCEPTIONS:

1. Final radar must not descend any aircraft into that satellite airspace that underlies the final radar airspace without individual coordination,
  2. Final Radar Center must not descend an aircraft assigned by the arrival controller to the center runway below 8,000 feet without coordination with the appropriate arrival controller(s) except an aircraft on left base or left downwind to RWY 18C when RWY 23 is active).
- (b) Transfer of control from the arrival radar positions to the final radar positions must include an assumed point-out on traffic re-entering the arrival radar controller's airspace. This applies only to traffic proceeding inbound toward the airport after exiting the final airspace located at the back of the final airspace corridor.
  - (c) Transfer of control from Local Control East/Center/West to the departure/satellite control positions must be:
    1. **Turbojets:** two miles from the departure end of the runway, for climb and/or turns toward the assigned Departure Transition Area or destination airport. The departure/satellite control positions must protect for the initial turbojet and propeller aircraft departure courses.
    2. **Propeller aircraft:** once established on the Tower assigned heading, for climbs and/or turns toward the assigned Departure Transition Area or destination airport. The departure/satellite control positions must protect for the initial turbojet and propeller aircraft departure courses.
  - (d) The transferring controller must advise the receiving controller if two transferred aircraft have each other in sight and are maintaining visual separation. This requirement must also apply to local control, who must advise departure control or satellite control if this situation exists.
  - (e) Final must transfer control to Local at the final approach fix for instrument approaches and at the five mile range mark, or the FAF for visual approaches.

### 2-3-2. Use of Quick-Look for Data Transfer between TRACON and Tower

Coordination between the Final Radar and/or Arrival Radar control positions, and the Local Control positions concerning arrival aircraft, must be considered to have been effected when the following actions have been accomplished:

- (a) The Local Control positions must quick-look the control positions working traffic on final.
- (b) There are no hours or conditions under which facility policy prohibits the use of the QUICK-LOOK function for data transfer. At all times, the Local Control positions is/are responsible for determining whether the use of the QUICK-LOOK function is satisfactory or if some other mode of transfer is to be used; e.g., voice call or radar hand-off.

### 2-3-3. Airspace Jurisdiction

Airspace jurisdiction is 500 feet below the depicted base cardinal altitude. This is primarily for use with VFR aircraft only.

### 2-3-4. RECAT

Controllers are authorized to utilize the RECAT minima standards listed in [Appendix R](#), in lieu of standard wake turbulence minima. The use of RECAT instead of standard wake turbulence, while recommended, is not required.

## Section 4. Arrival / Departure Window Operations

### 2-4-1. General

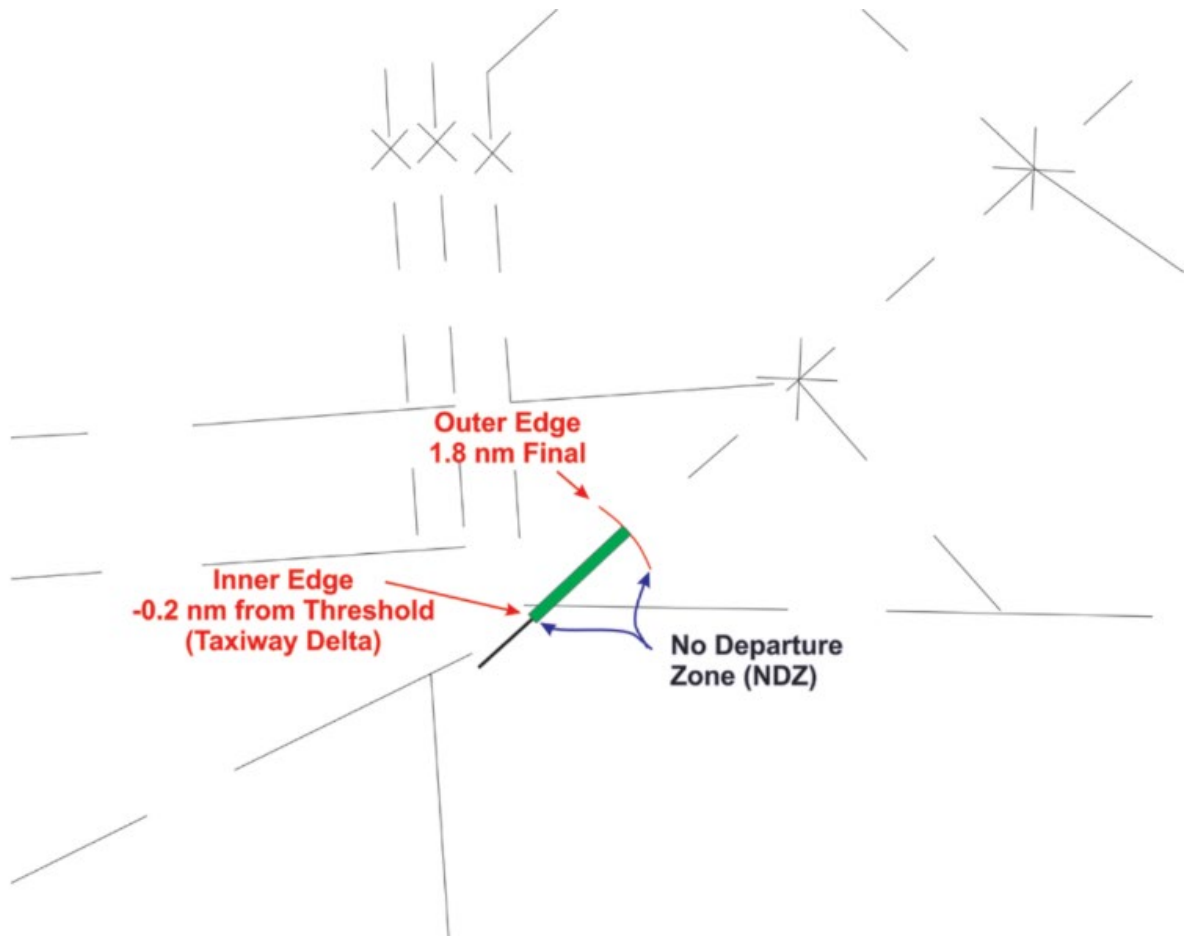
Arrival / Departure Window (ADW) procedures allow CLT to conduct operations for Runway 18C full length departures and Runway 23 arrivals utilizing the ADW.

- (a) This procedure is only applicable during events at the application of the Tower/TRACON CIC.
- (b) Local must display ADW cutoff points
- (c) When using the ADW, aircraft must enter the ADW from the outer end only established on centerline. The ADW procedure must not be used when any aircraft enters the side of the ADW.
- (d) Aircraft must be at a ground speed of 170 or less prior to entering the ADW.
- (e) Visual observation of 2 miles or greater must be applied to arrivals on 18C/18R and 23.
- (f) Weather minimums must be no less than 1000-foot ceiling and 3 miles visibility.
- (g) No intersection departure from Runway 18C.
- (h) The statement “Converging Runway Operations in Effect” must be included in the ATIS.

### 2-4-2. Responsibilities

- (a) Local Control
  - a. Must ensure aircraft are established on departure roll prior to the aircraft entering the No Departure Zone (NDZ).
  - b. Must cancel takeoff clearance of any departing aircraft that does not begin takeoff roll before the arriving aircraft enters the NDZ.
  - c. Local control east must advise local control center/west when the possibilities of a RWY 23 go around exists. Upon notification, local control center/west will advise local control east of any potentially conflicting traffic. Traffic must be exchanged.
- (b) Final
  - a. Ensure the Runway 23 interval set by Local Control East / Traffic Management (normally 3 miles) is provided at the runway threshold.

### 2-4-3. Arrival / Departure Window for Runway 23



### 2-4-4. Coordination

- (a) The Tower CIC must coordinate with the TRACON CIC when the tower can accept arrivals to runway 18C.

Note: This does not include volume offloads by the TRACON TMC during pushes.

- (b) The Tower CIC must coordinate with the TRACON CIC when the Runway 23 interval is inadequate and requires adjustment.

## **Section 5. Runway Information**

### **2-5-1. Runway Utilization**

- a. The tower CIC (or Local Control East, if CIC is not staffed) must determine the departure / landing direction. Departure / landing direction must determine the “active runways”.
- b. A southerly operation is the preferred calm wind operation.
- c. Standard runway configuration:
  - a. North Operation: three runways – arrive 36L, arrive and depart 36C and 36R.
  - b. South Operation: three runways – arrive 18R, arrive and depart 18C and 18L.
  - c. South Operation: four runways – arrive 18R, 18C, 18L and 23; depart 18C and 18L

### **2-5-2. Converging Instrument Approaches**

The tower CIC (or Local Control East, if CIC is not staffed) must determine if converging approaches can be conducted.

# Chapter 3. Tower Cab

## Section 1. Equipment

### 3-1-1. Operational Positions and Associated Frequencies

Bold positions indicate the base position.

Position	Frequency
ATIS	132.100
Clearance Delivery	127.150
<b>Ground Control East</b>	<b>121.900</b>
Ground Control West	121.800
<b>Local Control East</b>	<b>118.100</b>
Local Control Center	126.400
Local Control West	133.350

## Section 2. Position Combination

### 3-2-1. Ground Control

Ground West shall combine to / decombine from Ground East.

### 3-2-2. Local Control

Local Control West shall combine to / decombine from Local Control Center. Local Control Center shall combine to / decombine from Local Control East. Local Control Center may not be opened unless Ground is online.

## **Section 3. Clearance Delivery**

### **3-3-1. ATIS**

During events, Clearance Delivery shall have the responsibility of maintaining the ATIS, considered a first duty priority. Runways in use shall be selected by the Tower CIC. Type of approach in use shall be selected by the TRACON CIC.

### **3-3-2. Traffic Management Initiatives**

Ensure aircraft are routed to be in compliance with Traffic Management Initiatives. Amend flight plan remarks or flight strips to ensure that other controllers are aware of assigned Expect Departure Clearance Times, as required.

### **3-3-3. VFR Departures**

Enter a flight plan for VFR aircraft, as required, noting any known relevant information. At a minimum, this must include:

- (a) Departure Airport
- (b) Direction/Route of Flight
- (c) Aircraft Type
- (d) Requested Altitude, ending in a 5 if not below 3,000'
- (e) Discrete Beacon Code

Issue a clearance into the Charlotte Class Bravo airspace with the appropriate departure frequency, altitude restrictions, and assigned beacon code.

### **3-3-4. VFR Altitude Restrictions**

VFR Prop Aircraft requesting 3500' or higher shall be told to "*Maintain VFR at 3500*". All other VFR Prop aircraft shall be told "*Maintain VFR at or below 3500*".

VFR Jet Aircraft requesting 7500' or higher shall be told to "*Maintain VFR at 7500*". All other VFR Jet aircraft shall be told "*Maintain VFR at or below 7500*".

### **3-3-5. IFR Clearances**

Clearance Delivery shall issue IFR Departure Clearances. Ensure aircraft are assigned an initial altitude, and an "Expect Final Altitude", if appropriate.

IFR Turbojet Aircraft shall be assigned an initial altitude of 8000', unless their requested final altitude is lower. In such events, issue the lower requested final altitude as the initial altitude. Ensure that the requested altitude is valid for direction of flight.

IFR Turboprop Aircraft shall be routed via the appropriate propeller only departure, with an initial altitude of 4000', unless their requested final altitude is lower. In such events, issue the lower requested final altitude as the initial altitude.

Assign IFR departures advising “NO SID” the following specific information plus the appropriate clearance items:

- 1) Turboprop & Prop: tower assigned heading, and an initial altitude of 4,000’.
- 2) Turbojet: noise abatement heading, and initial altitude of 8,000’, accelerate speed to 250 knots, and if unable advise ATC. Upon reaching 10,000 MSL accelerate to 280 knots, and if unable advise ATC.

Assign all turbojets requesting 11,000 or above the KERMIT SID or the appropriate RNAV SID. Tower enroute turbojets requesting 10,000 or below should be assigned the CHARLOTTE SID. Aircraft on the KERMIT/CHARLOTTE SIDs may be cleared as filed.

### **3-3-6. Aircraft APREQ**

Upon being advised by the Traffic Management Unit (TMU) to APREQ departures to a certain destination, complete the following items for aircraft destined to the aforementioned location:

- (a) Issue the clearance and advise the aircraft to contact clearance delivery upon engine start.
- (b) When the aircraft advises ready for engine start, call Atlanta ARTC Center Traffic Management and advise them of an assumed departure time (or “wheels up” time).
- (c) Atlanta ARTC Center Traffic Management will advise of departure release time and, if necessary, route amendments.
- (d) After coordination has been completed, advise the aircraft of the release time.

## **Section 4. Ground Control**

### **3-4-1. Area of Jurisdiction**

Charlotte Ground shall have control of all taxiways. When split, each ground shall be allocated the taxiways, as depicted in [Appendix A](#).

### **3-4-2. Clearances**

Upon being advised by Clearance Delivery or Traffic Management Coordinator that an aircraft requires an amendment to their clearance, position the aircraft in a manner to maximize taxiway usage for non-affected aircraft, and advise the pilot to return to the Clearance Delivery frequency.

### **3-4-3. Sequencing**

To assist Atlanta Center, ground should put forth effort to sequence departing aircraft by alternating departure, unless operationally disadvantageous. When departure demand dictates, assign runways in accordance with [Appendix O](#) to maximize departure flow, unless operationally disadvantageous.

### **3-4-4. Airport Surface Detection Equipment Model X**

Charlotte-Douglas International Airport is equipped with ASDE-X. While no radar client currently supports ASDE-X safety logic systems, Controllers are expected to operate as though they are utilizing an ASDE-X. Therefore, Ground must ensure that all aircraft taxiing on the ramps, taxiways, and runways are operating with their transponder squawking altitude and assigned beacon code.

### **3-4-5. Other Responsibilities**

- (a) Ground Control shall ensure that departures are in receipt of the current ATIS code.
- (b) Ground Control shall obtain approval from the appropriate LC prior to taxiing a departure to a location other than the approach end of the runway for departure. This request shall include the call sign of the aircraft and the specific intersection requested.
- (c) During a push, Ground Control East/West will advise the event CIC prior to taxiing a departure to a runway not associated with the current Runway Use Plan. This request shall include callsign, DTA/SID, departure runway. Example “Request Bluestreak 123, BOBZY, Runway 18L”. The standard Runway Use Plan is listed in [Appendix O](#).
- (d) Ensure that sufficient ramp area is available for an aircraft to taxi clear of Runway 5/23 prior to issuing a clearance to cross that runway.
- (e) When a runway crossing has been initiated or directed by the event Controller-In-Charge, Ground Controller must advise the CIC when the crossing operation is complete.
- (f) When requested, release all taxiways west of runway 36C / 18C to Local Control West.

### **3-4-6. Known Scenery Discrepancies**

Due to the rapid expansion of the Charlotte-Douglas International Airport, there may be users



that are utilizing outdated sceneries. Controllers should be advised of scenery discrepancies, as listed in [Appendix B](#).

## **Section 5. Local Control**

### **3-5-1. Area of Jurisdiction**

- (a) Local Control East must be responsible for arrivals and departures on Runway 18L, Runway 36R, Runway 5, and Runway 23.
- (b) Local Control Center must be responsible for arrivals and departures on Runway 18C and Runway 36C.
- (c) Local Control West must be responsible for arrivals and departures on Runway 18R and Runway 36L.

Charlotte Local is designated the airspace within 7 miles of the Charlotte VOR, from Surface to 4000'. Reference [Appendix D](#) for a diagram displaying the airspace of Local between East/Center/West.

### **3-5-2. Coordination**

- (a) If conditional phrases are used when approving a clearance to cross an active runway, the condition shall be stated first. Only one condition may be issued when authorizing a runway crossing.
- (b) An example of an appropriate clearance to cross an active runway is: "Behind AAL123, cross Runway 23 at taxiway golf twice and taxiway alpha-four twice."
- (c) All aircraft departing a runway not consistent with the Runway Use Plan must be coordinated with the event CIC, if staffed, or appropriate Local Control and Departure Control positions if there is no event CIC.
- (d) Local Control East and Local Control Center must advise Local Control West of all westbound prop departures. Local Control East / Center must retain westbound prop departures on their respective frequencies until these aircraft are clear of all potential conflicts for runway 36L / 18R. During periods when there is an increased likelihood of go-arounds from runways 36L / 18R, Local Control East / Center must delay the westbound turn of westbound prop aircraft to reduce the potential for conflict with possible go-around traffic from runways 36L / 18R.

### **3-5-3. Go-Around and Missed Approach Procedures**

Local Control must establish and provide appropriate separation with other aircraft in the event of a go around or missed approach. Issue climb-out instructions to an aircraft on approach if the pilot executes a missed approach or go-around. If climb out does not ensure required separation, issue alternate instructions and coordinate with the appropriate radar sector.

Typical instructions for a go around would be to assign jets a climb to 4,000. Once in tower airspace and clear of potential conflicts, assign a heading of 270 or 090. Then, coordinate with the appropriate radar sector prior to issuing a frequency change.

### 3-5-4. Automatic Releases

Automatic Departure Releases are authorized for all runways designated as departure runways by Local Control and advertised as such in the ATIS, except when a runway change is in progress.

### 3-5-5. Operations Change

Upon determination by the event CIC, or local east if there is no CIC, that a runway change is required, Automatic Releases for the old configuration shall remain in effect until the last arrival for the old runway exits the runway. After the last arrival for the old configuration exits the runway, Automatic Releases shall become effective for the new departure runways.

### 3-5-6. RESERVED

This paragraph is reserved.

### 3-5-7. Departure Headings

Assign all **turboprop** aircraft departing a heading of 100 or 270. Be alert to the possibility of high-performance props overtaking low-performance props.

Assign all **turbojet** aircraft the following pre-arranged headings **after** they have flown the appropriate noise abatement track in [3-5-6](#) until 2 miles from the departure end of the runway:

Runway	Departure	Heading	Runway	Departure	Heading
18C	BARMY KILNS LILLS	120	18L	BARMY KILNS LILLS KRITR WEAZL	140
	BEAVY ICONS KWEEN	200		ICONS KWEEN	RWY HDG
				BEAVY	200
	BOBZY ESTRR JOJJO KRITR WEAZL	240		BOBZY ESTRR JOJJO	240
36C	BEAVY BOBZY ESTRR ICONS JOJJO KRITR KWEEN WEAZL	330	36R	BARMY KILNS LILLS ICONS KWEEN	025
	BARMY KILNS LILLS	070		KRITR WEAZL	360
				BEAVY	330

				JOJJO	310
				BOBZY ESTRR	290

Runway 5 / 23 departures should remain on runway heading.

### **3-5-8. Departure Procedure**

Provide a rolling call to the appropriate departure radar controller as required. This may be done through verbal coordination or through the use of flight progress strips.

If track is not observed to have been acquired within 3 miles of the departure end of the runway, coordinate with the appropriate departure controller.

### **3-5-9. Simultaneous Departures**

- (a) All turbojet departures shall be advised of simultaneous departures. This requirement may be met through use of the ATIS.
- (b) Local Control East/Center shall ensure that separation is not less than runway centerline, with no overlapping or touching of primary radar targets.
- (c) Local Control positions shall be responsible for separation of a missed approach and a simultaneous departure.
- (d) Do not instruct aircraft to contact departure until you visibly note them turning on course.
- (e) During South Operations, aircraft must be turned onto the Departure Headings listed in [3-5-7](#) within 4 miles of the departure end of the runway.

### **3-5-10. Line Up And Wait Procedures**

LUAW operations are authorized on all runways, pursuant to FAA JO 7110.65, 3-9-4 Line Up And Wait (LUAW), except when the ceiling is less than 800 feet or visibility is less than 2 miles.

### **3-5-11. Airport Surface Detection Equipment Model X**

Charlotte-Douglas International Airport is equipped with ASDE-X. While no radar client currently supports ASDEX Safety Logic, controllers are expected to operate as though they are utilizing an ASDE-X using Safety Logic System in the Full Core Alert Mode. Simply speaking, controllers are authorized to issue a landing clearance as well as a LUAW instruction in accordance with FAA JO 7110.65, 3-9-4, Line Up and Wait (LUAW).

# Chapter 4. TRACON

## Section 1. Positions

### 4-1-1. Positions

Name	Frequency	Position ID	Combines/Decombines
Arrival Radar East	126.150	H	
Arrival Radar NW	125.350	U	Arrival Radar East (H)
Arrival Radar SW	135.600	D	Arrival Radar East (H)
Final East	127.700	A	Arrival Radar East (H)
Final Center	119.000	M	Final Radar East (A)
Final West	132.700	F	Final Radar East (A)
Departure	120.500	W	Arrival Radar East (H)
Satellite	134.750	N	Departure Radar (W)

## Section 2. Departure/Satellite Radar

### 4-2-1. Callsigns and Frequencies

Bold positions indicate the base position.

Position	Frequency
<b>Departure</b>	<b>120.500</b>
Satellite	134.750

### 4-2-2. Position Combination/Decombination

Satellite Radar shall combine to / decombine from Departure Radar. Departure Radar shall combine to / decombine from Arrival Radar East.

### 4-2-3. Departure Radar Responsibilities

Provide standard separation and radar service to all aircraft within Departure Radar's delegated airspace.

Departure Radar must ensure that, during south ops while Simultaneous Departures are being conducted, aircraft are given a minimum of 15° of course divergence within 4 miles of the departure end of the runway. This duty primarily falls to the tower through use of the [pre-coordinated departure headings](#).

Departure must ensure that aircraft on the KERMIT and CHARLOTTE SIDs are vectored through the closest appropriate DTA as listed in [Appendix Q](#).

#### **4-2-4. Satellite Radar Responsibilities**

- (a) Provide standard separation and radar service to all aircraft within Satellite Radar's delegated airspace.
- (b) When simultaneous instrument approaches are in use, vector IFR satellite arrivals landing at Charlotte at 5000' from the west and from the east.
- (c) Vector VFR satellite arrivals landing Charlotte at an appropriate VFR altitude.
- (d) Satellite Radar shall assign VFR aircraft over-flying Charlotte airspace via the satellite airspace corridor east to west at 4,500, unless otherwise coordinated.
- (e) Satellite Radar shall assign aircraft over-flying Charlotte airspace via the satellite corridor west to east at 5,000, unless otherwise coordinated.
- (f) When triple simultaneous instrument operations or Duals 23 (18R/18C/23) are in use no overflight traffic must be permitted in the 5,000-foot satellite overflight corridor. When these operations are NOT in use, the following procedures apply:
  - (i) VFR aircraft overflying Charlotte airspace via the satellite airspace corridor east to west must cross at 4,500', unless otherwise coordinated.
  - (ii) Aircraft overflying Charlotte airspace via the satellite corridor west to east must cross at 5,000', unless otherwise coordinated.

#### **4-2-5. Area of Jurisdiction**

Review the diagrams located under:

- (a) Departure Radar: [Appendix E](#).
- (b) Satellite Radar: [Appendix G](#).

### **Section 3. Pre-Arranged Coordination (DR/AR)**

#### **4-3-1. Pre-Arranged Coordination Area**

A prearranged coordination area is established for traffic departing airports from within the Charlotte terminal area. The following procedures apply in this area:

- (a) Departure Radar may penetrate Arrival Radar airspace without individual coordination utilizing the pre-arranged coordination area.
- (b) Departure Radar shall provide radar separation, including appropriate wake turbulence separation, from all arrival radar traffic when utilizing this prearranged coordination area.
- (c) Arrival Radar Responsibilities:
  - (i) Arrival Radar shall point out all untagged targets, point-outs, and IFR pick-ups to departure radar.

- (ii) Arrival Radar shall have the authority to suspend this pre-arranged coordination procedure when operational conditions require.
- (d) Automatic altitude readout of an aircraft under another controller's jurisdiction may be used for separation purposes when the aircraft are within pre-arranged coordination airspace.
- (e) Reference [Appendix F](#) for the location of the Pre-Arranged Coordination Area.

## Section 4. Arrival Radar

### 4-4-1. Callsigns and Frequencies

Bold positions indicate the base position.

Position	Frequency
<b>Arrival East</b>	<b>126.150</b>
Arrival Northwest	125.350
Arrival Southwest	135.600

### 4-4-2. Area of Jurisdiction

Review the diagrams located under:

- (a) [Appendix H - Arrival Radar](#)

### 4-4-3. Position Combination/Decombination

Arrival Southwest (Feeder SW) shall combine to/decombine from Arrival Northwest (Feeder NW). Arrival Northwest shall combine to/decombine from Arrival East (Feeder East)

### 4-4-4. Arrival Radar Responsibilities

- (a) Provide standard separation and radar service to all aircraft within Arrival Radar's delegated airspace.
- (b) As soon as practical, place the assigned runway information into the scratch-pad.
- (i) When aircraft are assigned the approach advertised in the ATIS:

Scratchpad	Assigned
L	18L / 36L
C	18C / 36C
R	18R / 36R
X	5 / 23

- (ii) When aircraft are assigned an approach other than that in the ATIS:
- (1) First character shall be approach type; "I" for ILS, "R" for RNAV, "V" for VISUAL, "L" for LOCALIZER.
  - (2) For RNAV/GPS approaches, the second character shall be the identifying letter (e.g. RNAV **Z** 18C), followed by the runway assignment as stated in 4-4-4.b.i.
  - (3) For non-RNAV/GPS approaches, The second character should be L, C, R, or X, as stated in 4-4-4.b.i.
- (iii) A sample list of combinations – this is not a complete list of possibilities.
- a) ILS RWY 23 = IX
  - b) RNAV RNP (Z) RWY 18C = RZC
  - c) VISUAL RWY 18L = VL
  - d) ILS RWY 18C = IC

e) Advertised Approach for 23 = X

#### 4-4-5. Approach Information

It shall be the responsibility of the first radar controller to establish communication with a satellite airport IFR arrival to advise that arrival of the approach information (ATIS code, weather information, type of approach to expect, etc) referenced in FAAO 7110.65 paragraph 4-7-10 (Approach Information).

#### 4-4-6. Pre-Arranged Coordination Areas

Controllers are advised to review [Section 4-3-1, Pre-Arranged Coordination Area](#), as well [4-5-1, Pre-Arranged Coordination Area](#).

#### 4-4-7. Arrival Flows

Arrival Radar shall manage arrival routes, speeds, and altitudes so that traffic enters the final controller's airspace at the appropriate point and speed, not to exceed 210 knots, to establish an orderly and efficient traffic flow. Unless otherwise coordinated, assign altitudes as follows:

1. North Operations
  - a. Utilizing less than 3 runways for arrival (36L & 36C, 36C & 36R, 36L & 36R, only 36C, etc.)
    - i. Base leg from west – 7,000 feet
    - ii. Base leg from east – 6,000 feet
    - iii. Downwinds – 6,000 feet
  - b. Trips - Runways 36L/36C/36R
    - i. Base leg from east (36R) – 6,000 feet
    - ii. Base leg from east (36C) – 8,000 feet into “M” final box
    - iii. Base leg from west (36L) – 7,000 feet
    - iv. Base leg from west (36C) – 9,000 feet into “M” final box
    - v. Downwinds (36L/36R) – 6,000 feet
    - vi. Right downwind (36C) – 8,000 feet
    - vii. Left downwind (36C) – 9,000 feet
2. South Operation
  - a. 23 - (18C/23 or 18R/23)
    - i. Straight-in (23) – 6,000 feet
    - ii. Left downwind (23) – 6,000 feet
    - iii. Right downwind (23) – 7,000 feet
    - iv. Right downwind (18R/18C) – 6,000 feet
    - v. Base leg from west (18R/18C) – 7,000 feet
    - vi. Base leg from east (18C) – 6,000 feet
    - vii. Left downwind (18C) – 8,000 feet
  - b. Duals 23 - (18R/18C/23)
    - i. Feed to runway 23 – same as above (23)
    - ii. Base leg from west (18R) – 7,000 feet
    - iii. Base leg from east (18C) – 6,000 feet
    - iv. Base leg from west (18C) – 9,000 feet into “M” final box
    - v. Right downwind (18R) – 6,000 feet



- vi. Right downwind (18C) – 9,000 feet
- vii. Left downwind (18C) – 8,000 feet
- c. Duals - Runways 18C/18R
  - i. Base leg from west – 7,000 feet
  - ii. Base leg from east – 6,000 feet
  - iii. Downwinds – 6,000 feet
- d. Duals - Runways 18L/18R
  - i. Base leg from west – 7,000 feet
  - ii. Base leg from east – 6,000 feet
  - iii. Downwinds – 6,000 feet
- e. Duals - Runways 18L/18C
  - i. Base leg from west – 7,000 feet
  - ii. Base leg from east – 6,000 feet
  - iii. Downwinds – 6,000 feet
- f. Trips (18R/18C/18L)
  - i. Base leg from east (18L) – 6,000 feet
  - ii. Base leg from east (18C) – 8,000 feet into “M” final box
  - iii. Base leg from west (18R) – 7,000 feet
  - iv. Base leg from west (18C) – 9,000 feet into “M” final box
  - v. Left downwind (18L) – 6,000 feet
  - vi. Left downwind (18C) – 8,000 feet
  - vii. Right downwind (18R) – 6,000 feet
  - viii. Right downwind (18C) – 9,000 feet

## **Section 5. Pre-Arranged Coordination (AR/FR)**

### **4-5-1. Pre-Arranged Coordination Area**

A prearranged coordination area is established for traffic landing at the Charlotte airport. The following procedures apply in this area:

- (a) Arrival Radar East only may penetrate Final Radar Center airspace without individual coordination utilizing the east final pre-arranged coordination area.
- (b) Arrival Radar NW/SW only may penetrate Final Radar Center airspace without individual coordination utilizing the west final pre-arranged coordination area.
- (c) Arrival Radar must provide radar separation, including appropriate wake turbulence separation, from all final radar center traffic when utilizing this prearranged coordination area.
- (d) Final Radar Center must have the option to suspend this prearranged coordination procedure when traffic and/or weather conditions dictate.
- (e) Reference [Appendix I](#) for the location of the Pre-Arranged Coordination Area.

## Section 6. Final Radar

### 4-6-1. Callsigns and Frequencies

Bold positions indicate the base position.

Position	Frequency
<b>Final East</b>	<b>127.700</b>
Final Center	119.000
Final West	132.700

NOTE: Controllers should not utilize the callsign “M” when working the center final position. Alternatives include “CLT\_C\_APP” if not using numeric callsigns (e.g. “CLT\_2\_APP”).

### 4-6-2. Area of Jurisdiction

Review the diagrams located under:

- (a) [Appendix J - Final Radar](#)

### 4-6-3. Position Combination/Decombination

Final Radar West shall combine to / decombine from Final Radar Center. Final Radar Center shall combine to / decombine from Final Radar East.

### 4-6-4. Final Radar West/East Responsibilities

- (a) Provide standard separation and radar service to all aircraft within Final Radar’s delegated airspace.
- (b) Ensure that all arrivals have the assigned runway displayed in the Scratchpad in accordance with [4-4-4 Arrival Radar Responsibilities, Subpart \(b\)](#).
- (c) Final Radar Center will determine the approach sequence when both Final Radar positions are vectoring for instrument approaches, other than simultaneous ILS approaches.
- (d) Final radar controllers shall ensure that traffic on opposing base legs to the same, or parallel runways are vertically separated until such time as the required lateral/longitudinal separation clearly exists.
  - (i) NOTE - The intent of this requirement is to eliminate the practice whereby a final controller will attempt to turn in front of, behind, or between two arrivals without having vertical separation. Once required spacing is established then the use of vertical separation may be discontinued.
- (e) All traffic shall be vectored so as to intercept the final approach course of the runway at an angle of 30 degrees or less unless triple ILS approaches are in use. During triple ILS approaches, traffic shall be vectored so as to intercept the final approach course of the runway at an angle of 20 degrees or less.
- (f) Aircraft assigned runway 18C/36C shall exit the “M” box established on the localizer at

or above 8,000 feet when conducting triple operations (or when conducting a Dual w/ 23 operation with aircraft being fed on a right base leg).

- (g) Final radar positions are authorized to utilize the automatic altitude readout (Mode C) of traffic being worked by the adjacent final radar position for vertical separation purposes when conducting Parallel/Simultaneous/Visual Approaches. Any erroneous altitude report received by any final radar position shall immediately be coordinated with the adjacent final position and vertical separation shall not be applied.
- (h) All final radar positions shall quicklook all final radar positions.

#### **4-6-5. Final Radar Altitude Assignment**

Altitude assignments by final radar shall normally be:

##### **(A) North Operation**

- (1) Duals - (36L/36R, 36L/36C, or 36C/36R)
  - (a) A – at or below 4,000 feet
  - (b) M/F – 5,000 feet or above
  - (c) 36L/36C operation
    - a) 36C – 7,000 feet or above
    - b) 36L – at or below 5,000 feet
- (2) Trips - (36L/36C/36R) (Visual approaches or ILS/RNAV approaches).
  - (a) A – 4,000 feet
  - (b) M – 8,000 feet
  - (c) F – 5,000 or 6,000 feet.

##### **(B) South Operation**

- (1) Duals - (18L/18R, 18L/18C, or 18C/18R)
  - (a) A – at or below 4,000 feet
  - (b) M/F – 5,000 feet or above
  - (c) 18R/18C operation
    - a) 18C - 7,000 or above
    - b) 18R – at or below 5,000 feet
- (2) IS23 – (18C/23 or 18R/23)
  - (a) A,M,F – At controller's discretion.
- (3) Duals 23 - (18R/18C/23) (ILS/RNAV approaches)
  - (a) A – At controller's discretion.
  - (b) M – traffic from east: 7,000 to 8,000 feet
  - (c) F – 4,000 to 6,000 feet at carat
  - (d) Visuals Approaches – Altitude at controller's discretion

NOTE: *18L arrivals are to be individually coordinated.*

- (4) Trips - 18R/18C/18L.
  - (a) A – 4,000 feet
  - (b) M – 8,000 feet
  - (c) F – 5,000 or 6,000 feet.

#### **4-6-6. Final Radar Position Procedures**

- (a) Breakout procedures:
  - (1) Runway 36R:

- (i) Issue a turn 30° right of the final approach course heading.
- (2) Runway 36C: track final approach course and climb to appropriate altitude. If necessary, coordinate with local controller for heading assignment. If able, coordinate with appropriate final radar controller and assign a heading of 270° or 090°, and climb to 4000'.
- (3) Runway 36L:
  - (i) Issue a turn 30° left of the final approach course heading.
- (4) Runway 18L:
  - (i) Outside FAF: Issue a turn 30° left of the final approach course heading.
- (5) Runway 18C: Track final approach course and climb to appropriate altitude. If necessary, coordinate with Local Control for heading assignment. If able, coordinate with appropriate final radar controller and assign a heading of 270° or 090°, and climb to 4000'.
- (6) Runway 18R:
  - (i) Outside FAF: Issue a turn 30° right of the final approach course heading.
- (b) When running simultaneous ILS approaches, FR shall ensure aircraft are turned onto the Localizer prior to the following points.
  - (1) Duals:
    - (i) North Ops: 36L & 36R
      - a) LONIA @ 5000
      - b) HEKAM @ 4000
    - (ii) North Ops: 36C & 36R
      - a) DENNE @ 5000
      - b) HEKAM @ 4000
    - (iii) North Ops: 36L & 36C
      - a) KRISL @ 7000
      - b) NUXXY @ 4000
    - (iv) South Ops: 18L & 18R
      - a) CAVVI @ 4000
      - b) WOVEN @ 5000
    - (v) South Ops: 18L & 18C
      - a) CAVVI @ 4000
      - b) TOMME @ 5000
    - (vi) South Ops: 18C & 18R and Duals 23 (18R/18C/23)
      - a) NELLA @ 4000
      - b) LERDY @ 7000
  - (2) Trips:
    - (i) North Operation:
      - a) HEKAM @ 4000
      - b) SOLMN @ 8000
      - c) WELET @ 5000 (or > @ 6000)
    - (ii) South Operation:
      - a) CAVVI @ 4000
      - b) JEDKO @ 8000
      - c) RUDKY @ 5000 (or > @ 6000)

#### **4-6-7. Reduced Longitudinal Separation**

Reduced longitudinal separation (2.5 miles inside of a 10-mile final) is authorized between aircraft established on the final approach course in accordance with FAA Order 7110.65 for runways 18C/36C, 18L/36R, 18R/36L and runways 5/23.

#### **4-6-8. TAR/AR Pre-Arranged Coordination Area**

See [4-5-1, Pre-Arranged Coordination Area](#), for more information.

#### **4-6-9. Altitude Assignments During Simultaneous Approaches**

It is recommended that the final radar west controller keep runway 36C/18C traffic at an altitude higher than the adjacent outboard final radar controllers. The purpose of this is to assist the outboard final radar controllers in obtaining visual approach clearances.

#### **4-6-10. Aircraft Jurisdiction**

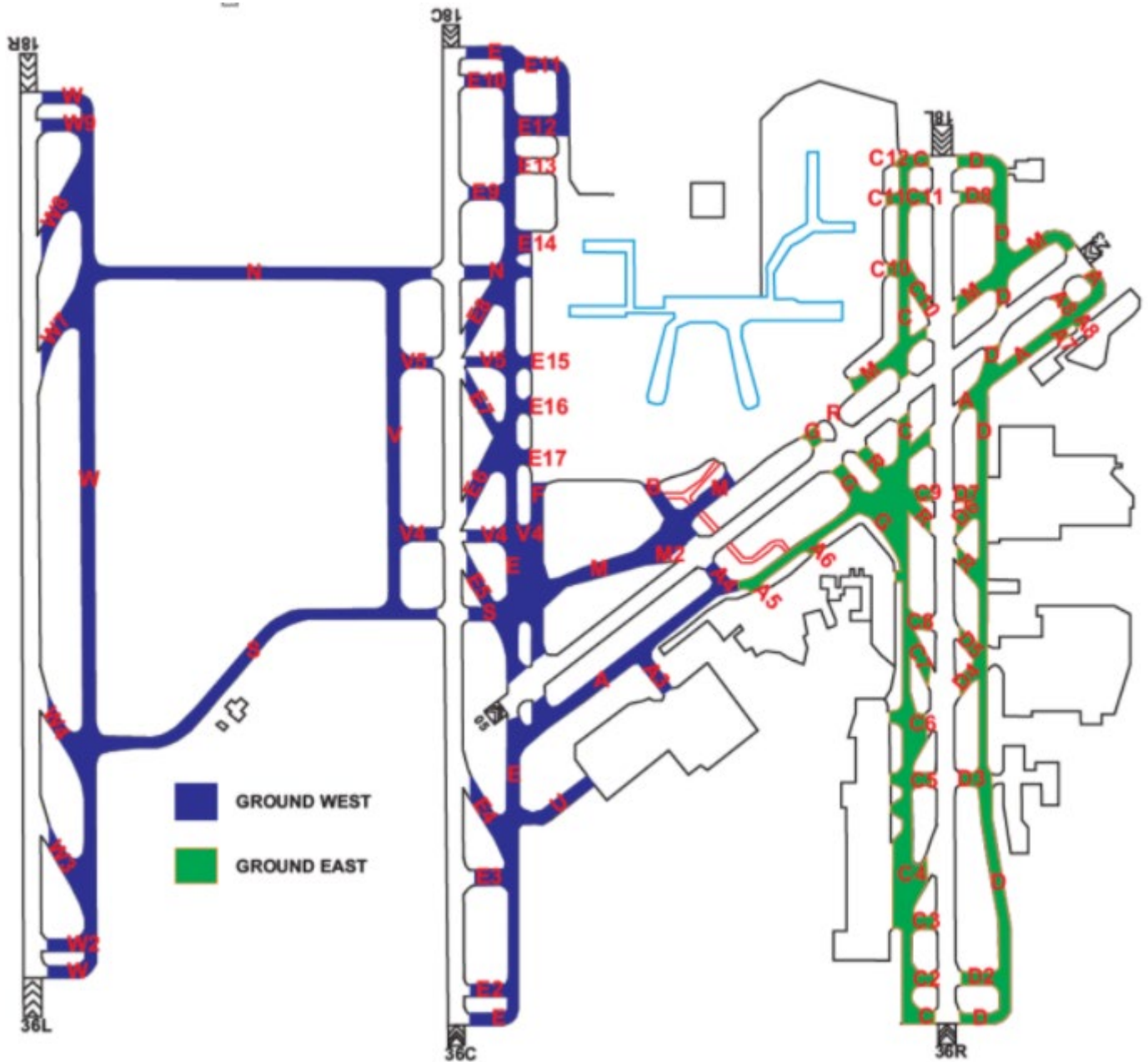
Final controllers should work the aircraft that have been assigned landing runways that are within their area of jurisdiction.

#### **4-6-11. Potential Problem Areas**

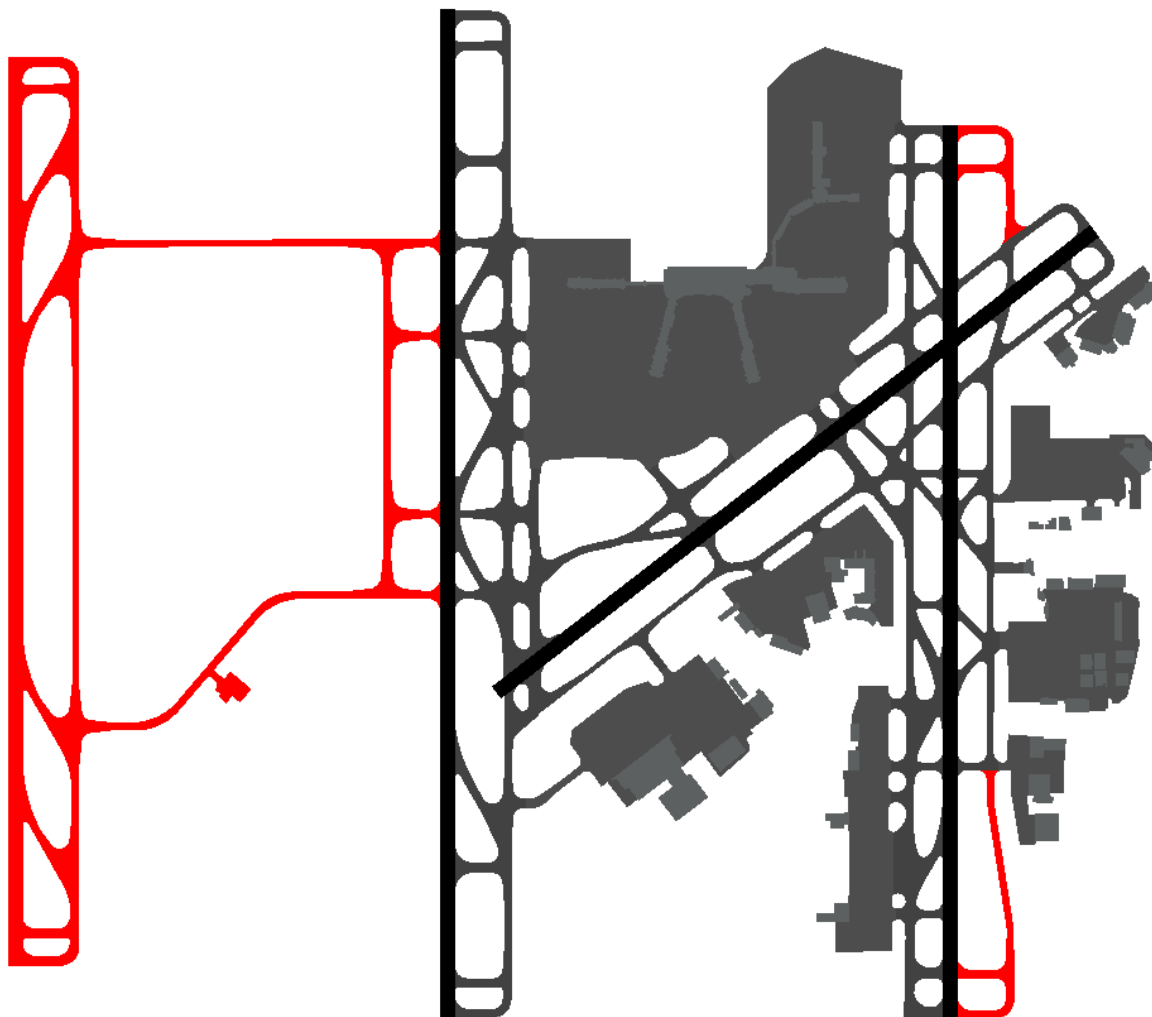
Controllers must be aware of potential conflicts whenever non-standard altitude assignments are employed. In all cases where non-standard altitudes are used, coordination must be complete and timely.

# Attachments

## Appendix A - Charlotte Ground Taxiway Allocation

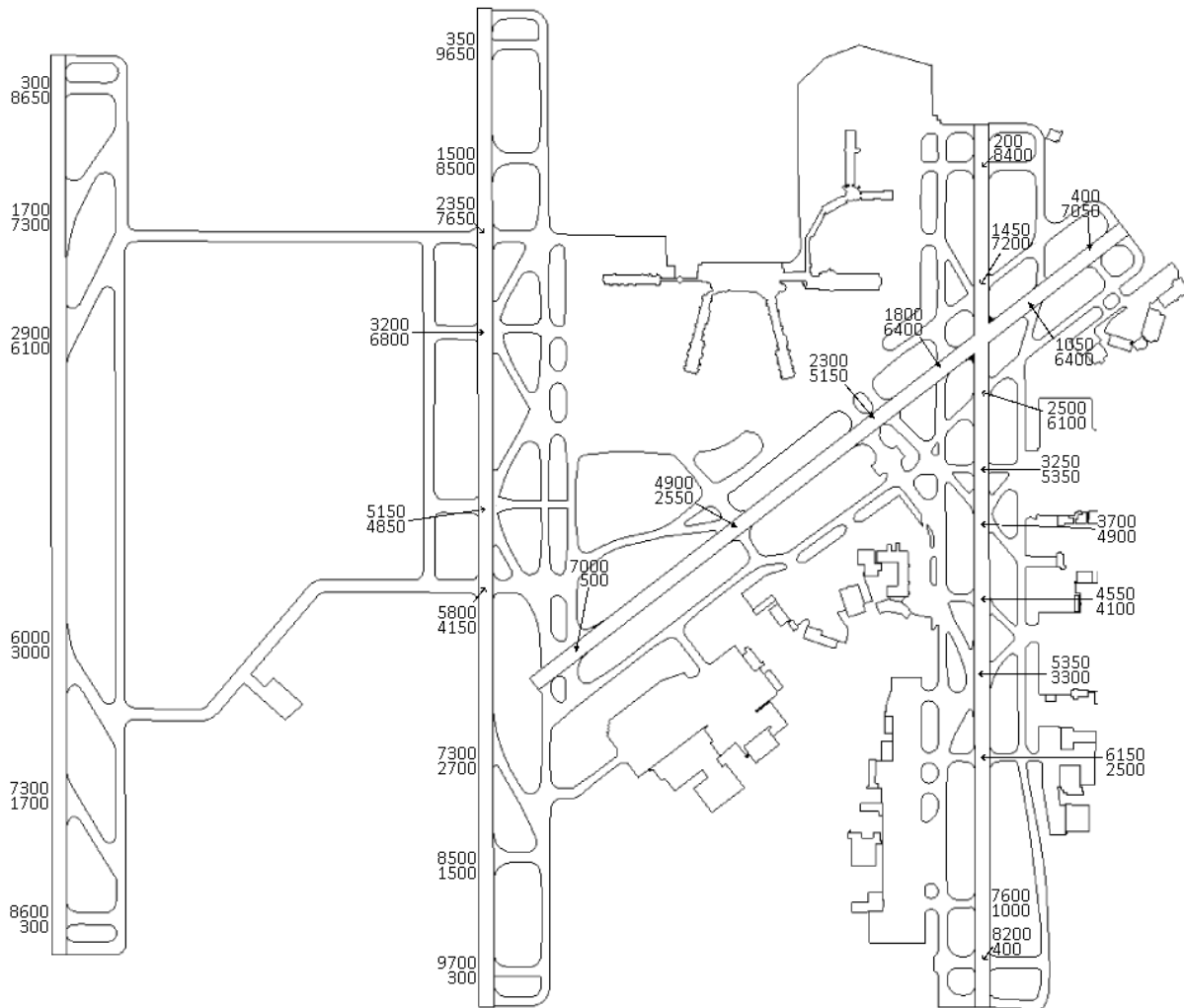


## Appendix B - Discrepancies Between Sceneries



- (a) On Old Scenery, Runway 36L/18R is non-existent. It is suggested that controllers advise pilots of the discrepancy, and inform them that their 36L/18R is now runway 36C/18C.
- (b) On Old Scenery, Taxiway D does not exist south of taxiway D3.
- (c) On Old Scenery, Taxiway D does not exist north of taxiway M.
- (d) On Old Scenery, All taxiways west of Runway 36C/18C are non-existent. These taxiways are as follows:
  - (i) W, W2, W3, W4, W7, W8, 29, V
  - (ii) N west of runway 36C/18C
  - (iii) S west of runway 36C/18C
  - (iv) V4 west of runway 36C/18C
  - (v) V5 west of runway 36C/18C
- (e) On Old Scenery, Ramp entrance E17 is referred to as E14.
- (f) On Old Scenery, Ramp entrance E16 is referred to as E13.
- (g) On Old Scenery, Ramp entrance E15 is referred to as E12.
- (h) On Old Scenery, Ramp entrance E14 is referred to as E11.
- (i) On Old Scenery, No ramp exists north of E14.

## Appendix C - Available Takeoff Distances



### Additional Distances Information:

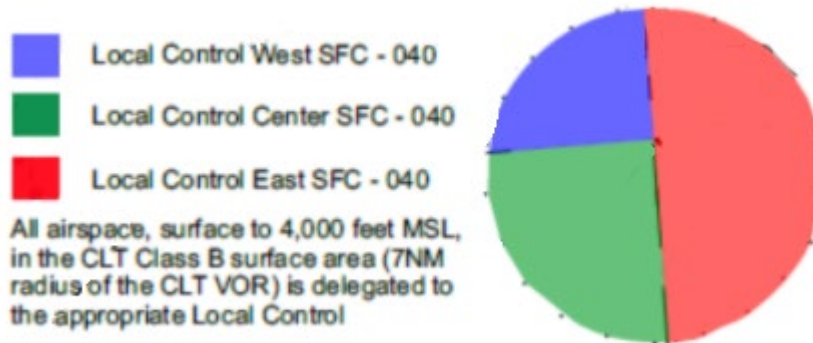
The distance between centerlines for Runway 36L / 18R and Runway 36C / 18C is 4,300 feet.

The distance between centerlines for Runway 36C / 18C and Runway 36R / 18L is 5,000 feet.

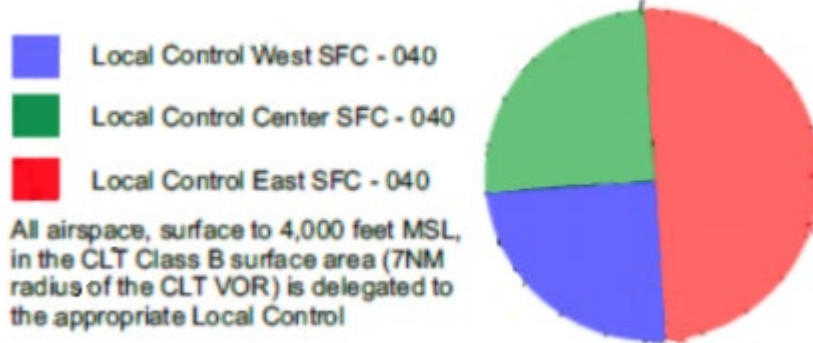


## Appendix D - Local Airspace Delegation

### Appendix D-1. Charlotte Landing South

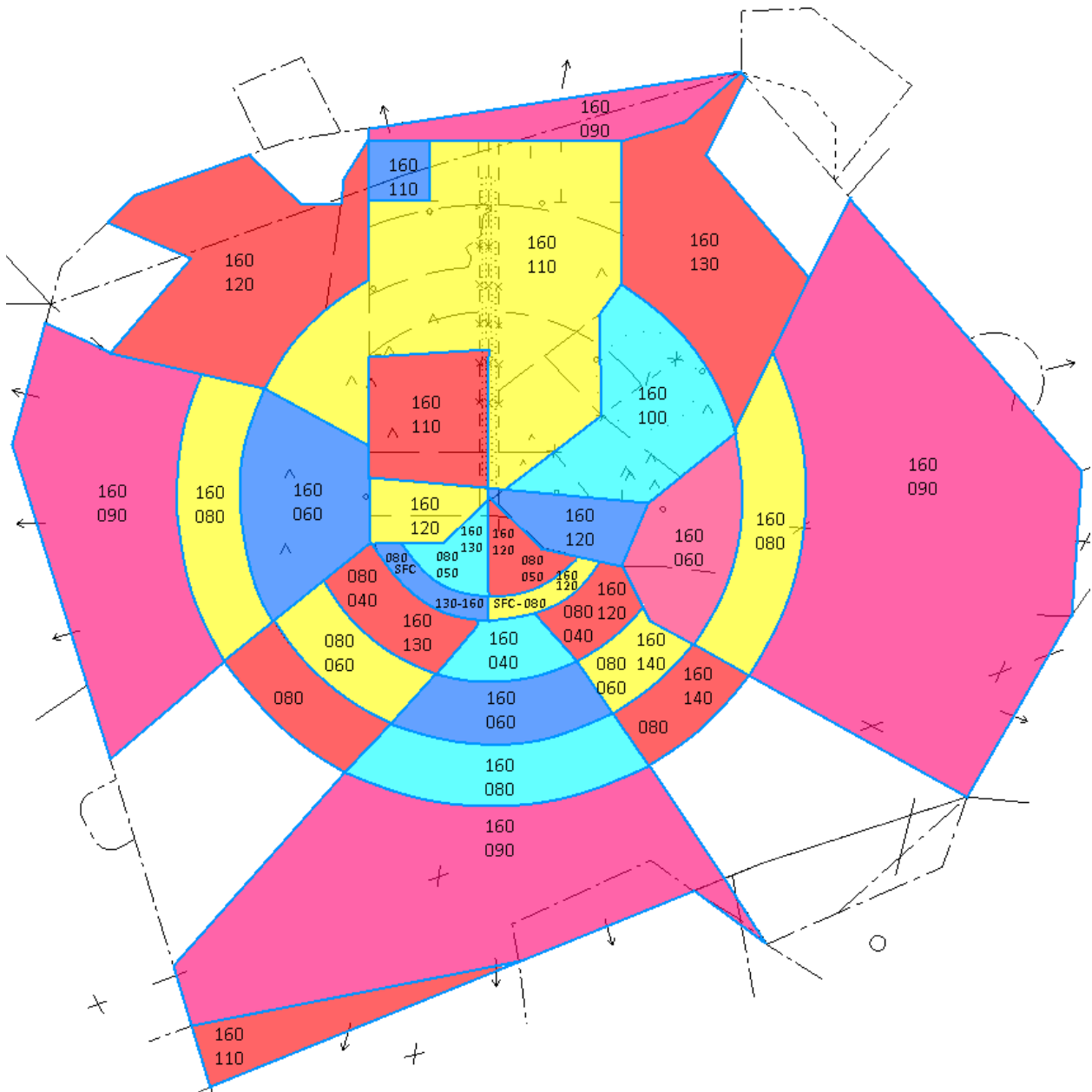


### Appendix D-2. Charlotte Landing North

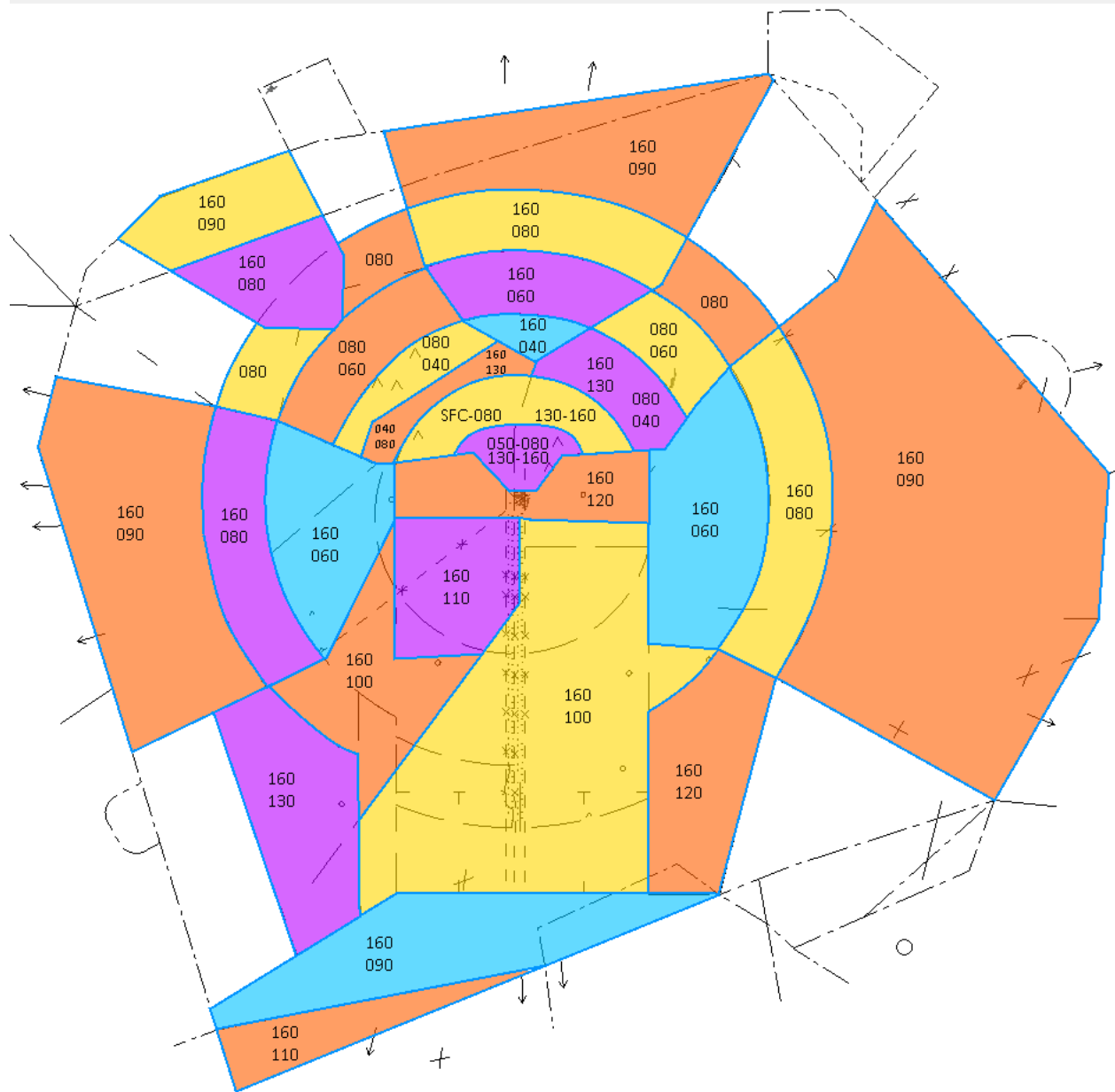


## Appendix E - Departure Radar Airspace

### Appendix E-1. Charlotte Landing South



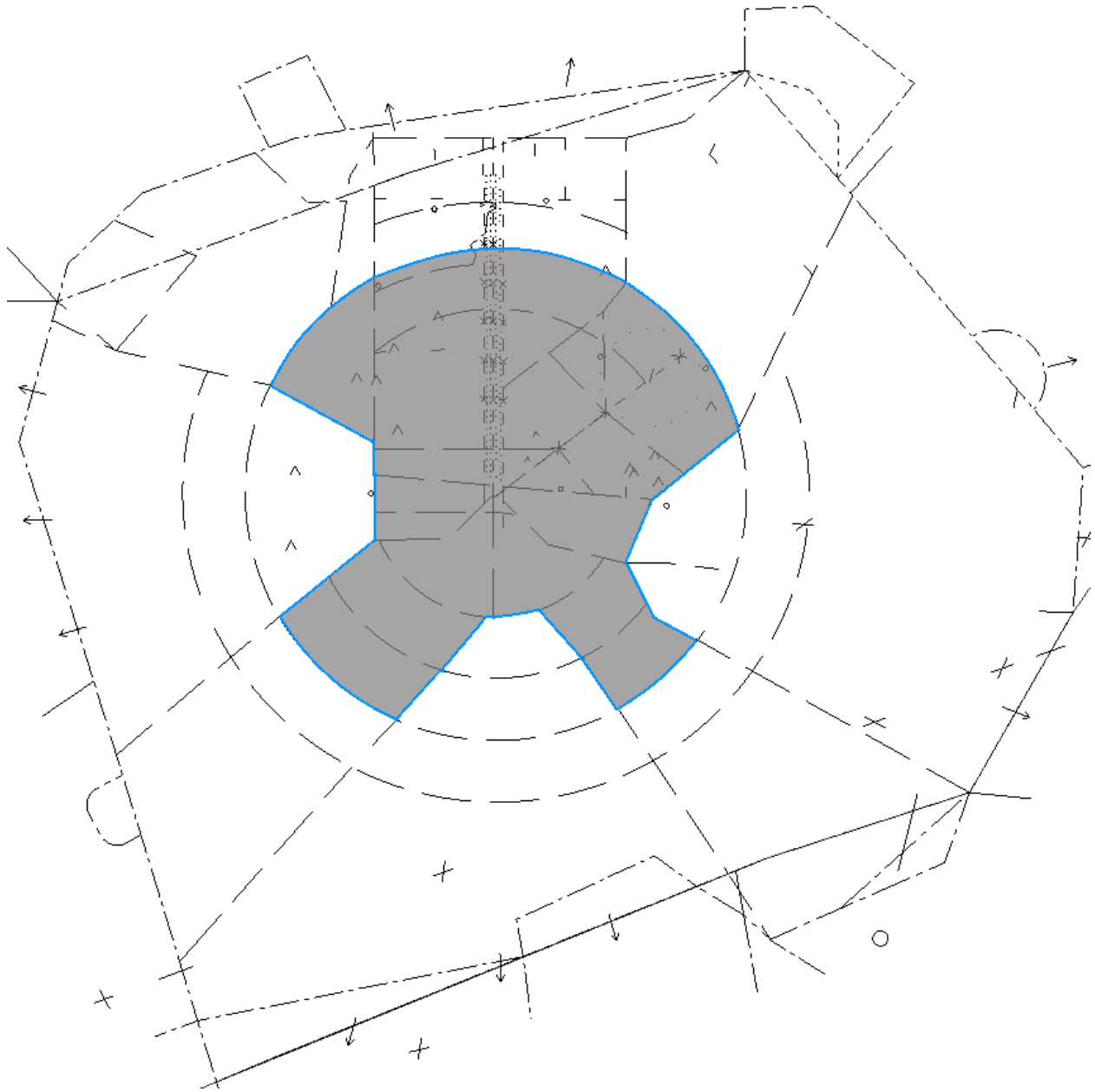
**NOTE:** Color bears no relevance and is only utilized to highlight airspace controlled by Charlotte Departure.



**NOTE: Color bears no relevance and is only utilized to highlight airspace controlled by Charlotte Departure.**

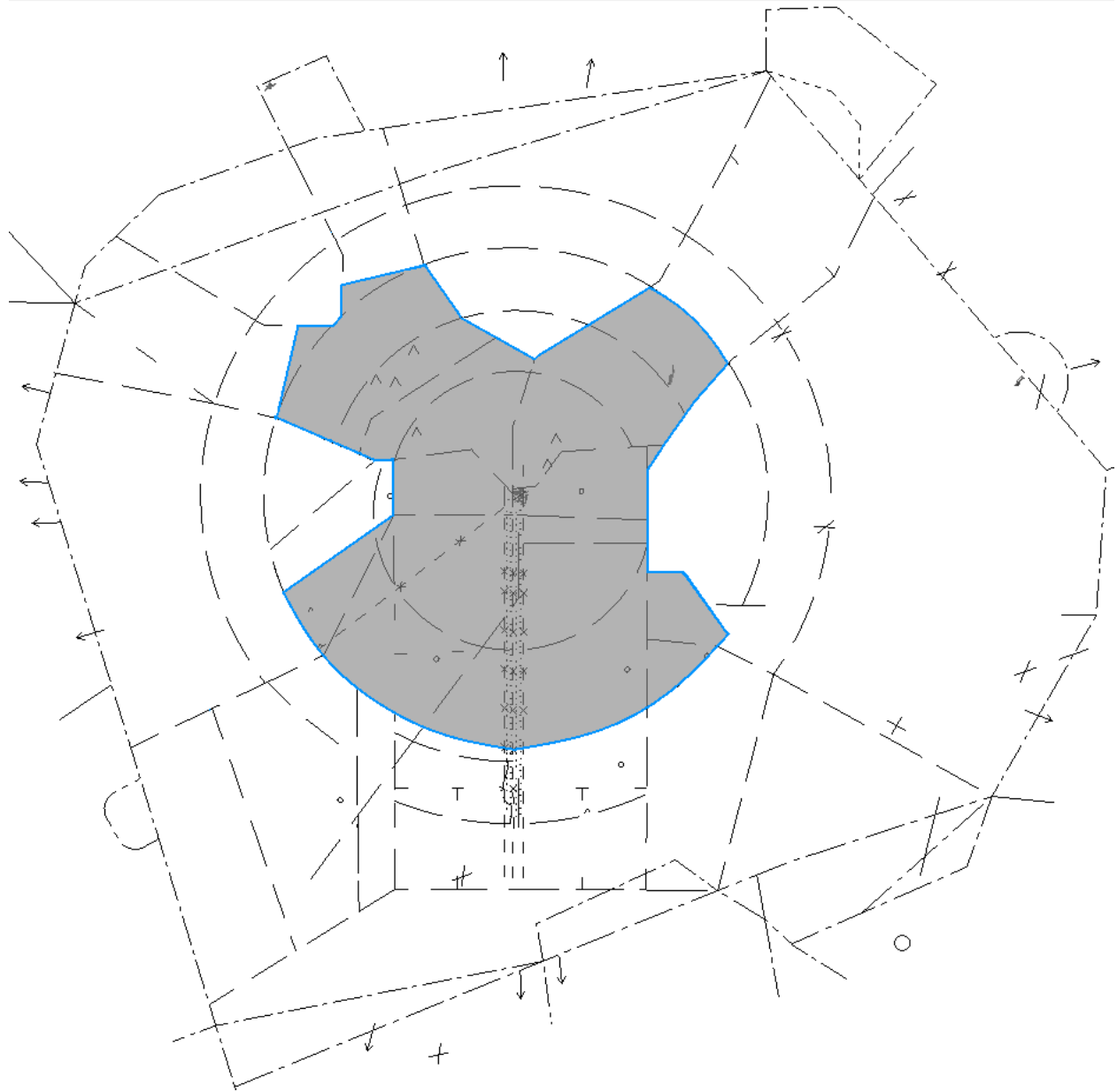
## Appendix F - Departure/Arrival Pre-Arranged Coordination Area

### Appendix F-1. Charlotte Landing South



## Appendix F-2. Charlotte Landing North

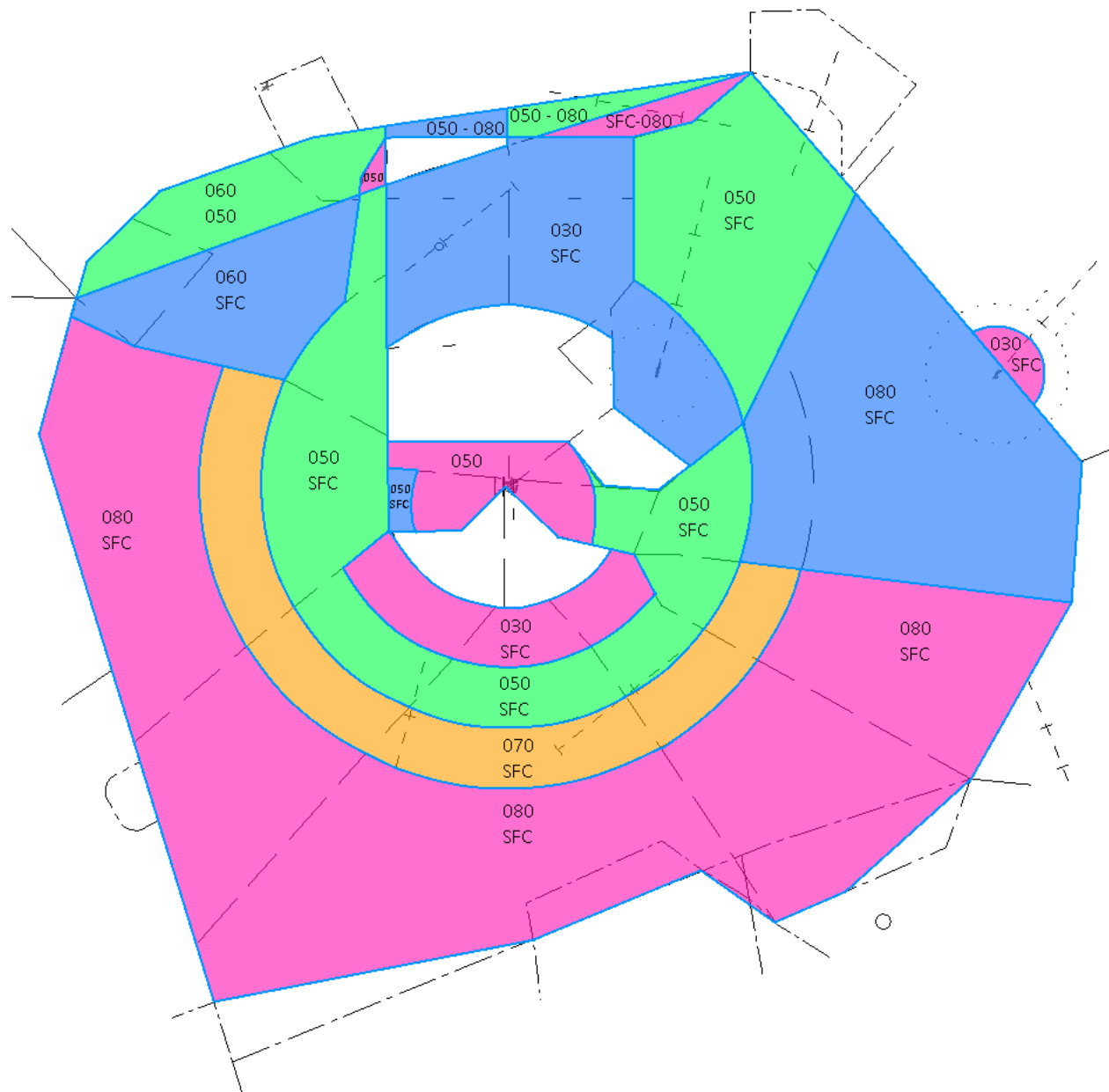
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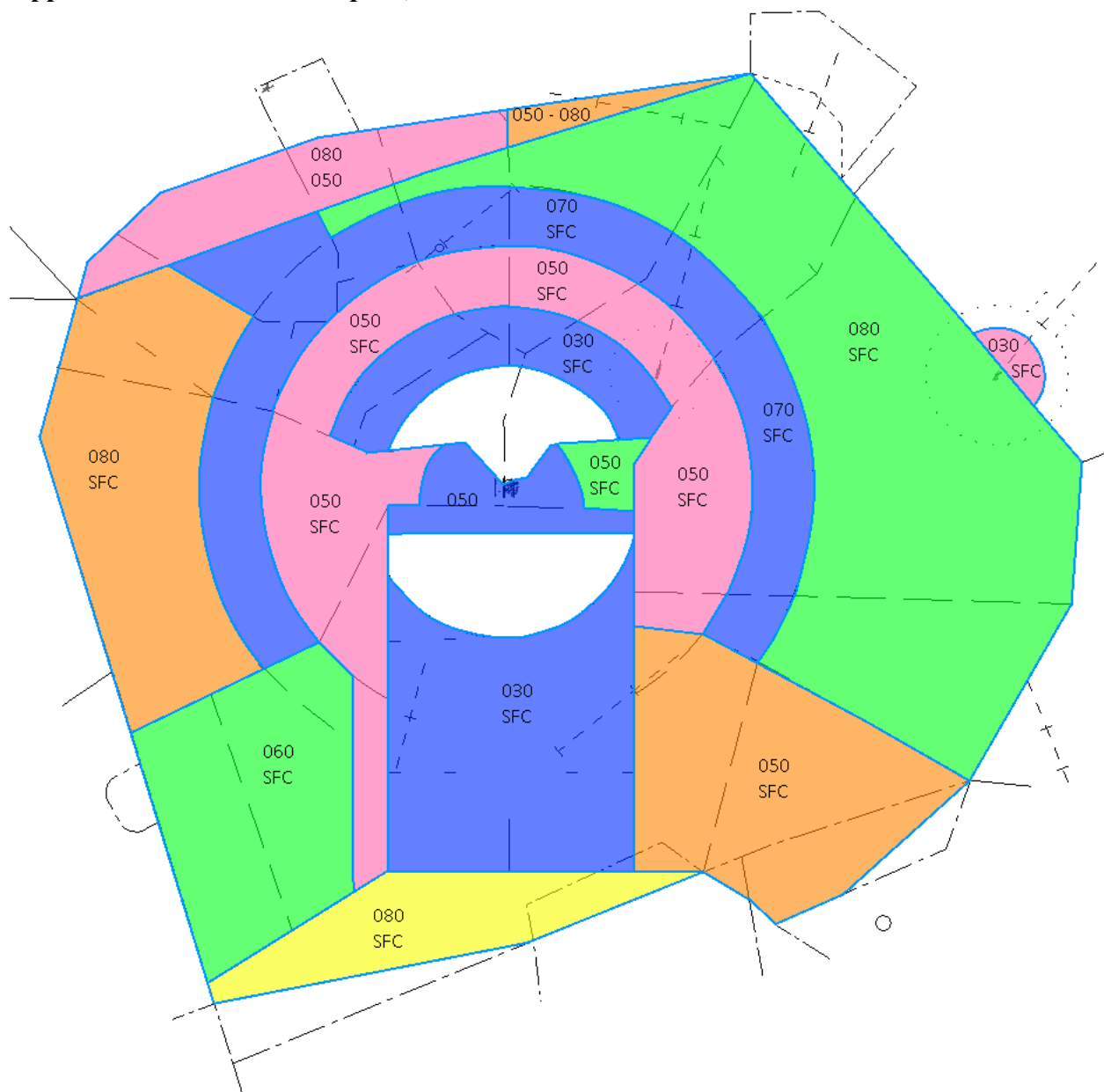
## Appendix G-1. Charlotte Landing South - No Runway 23



## Appendix G-2. Charlotte Landing South - Runway 23



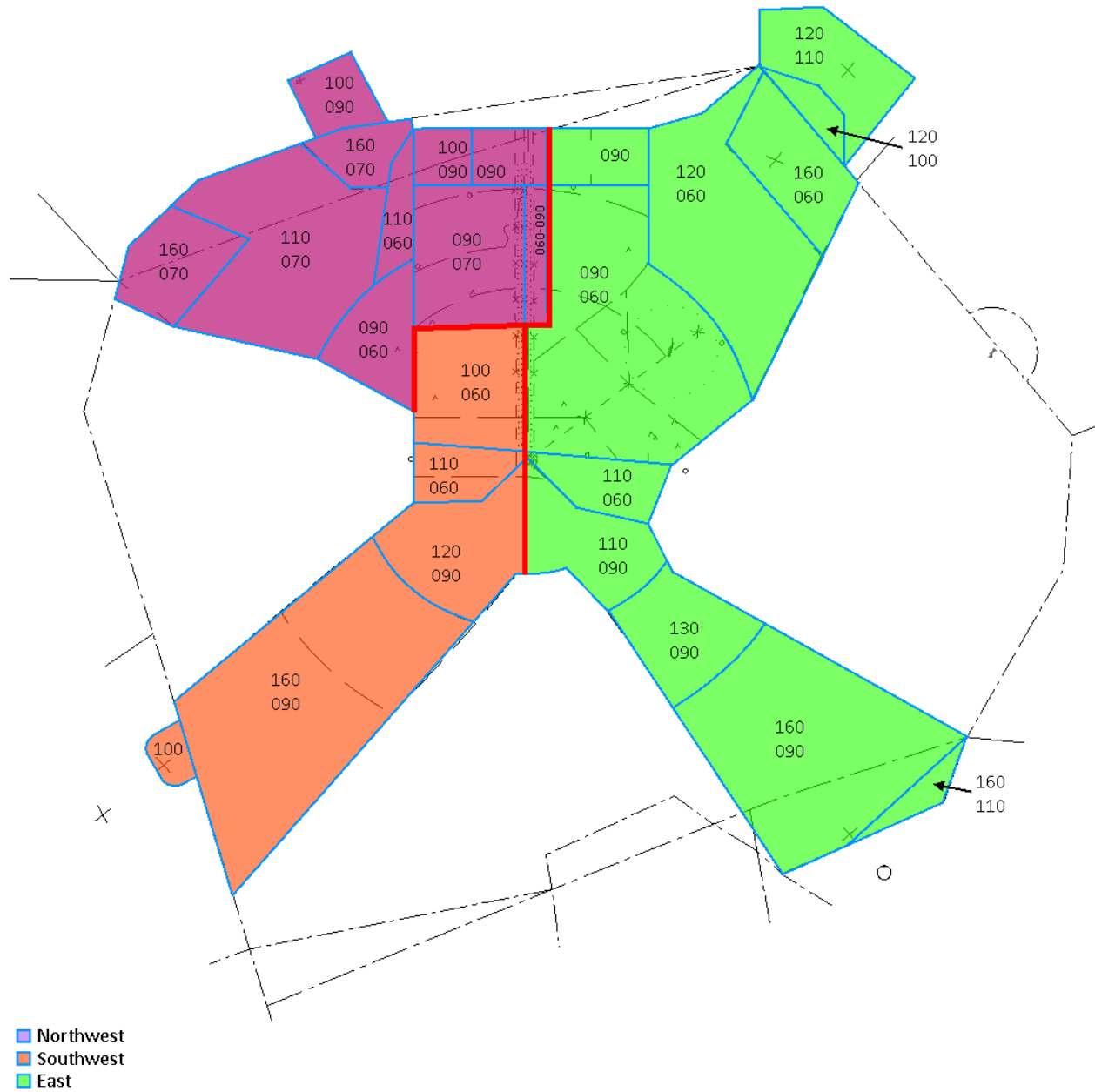
### Appendix G-3. Satellite Airspace, Charlotte North



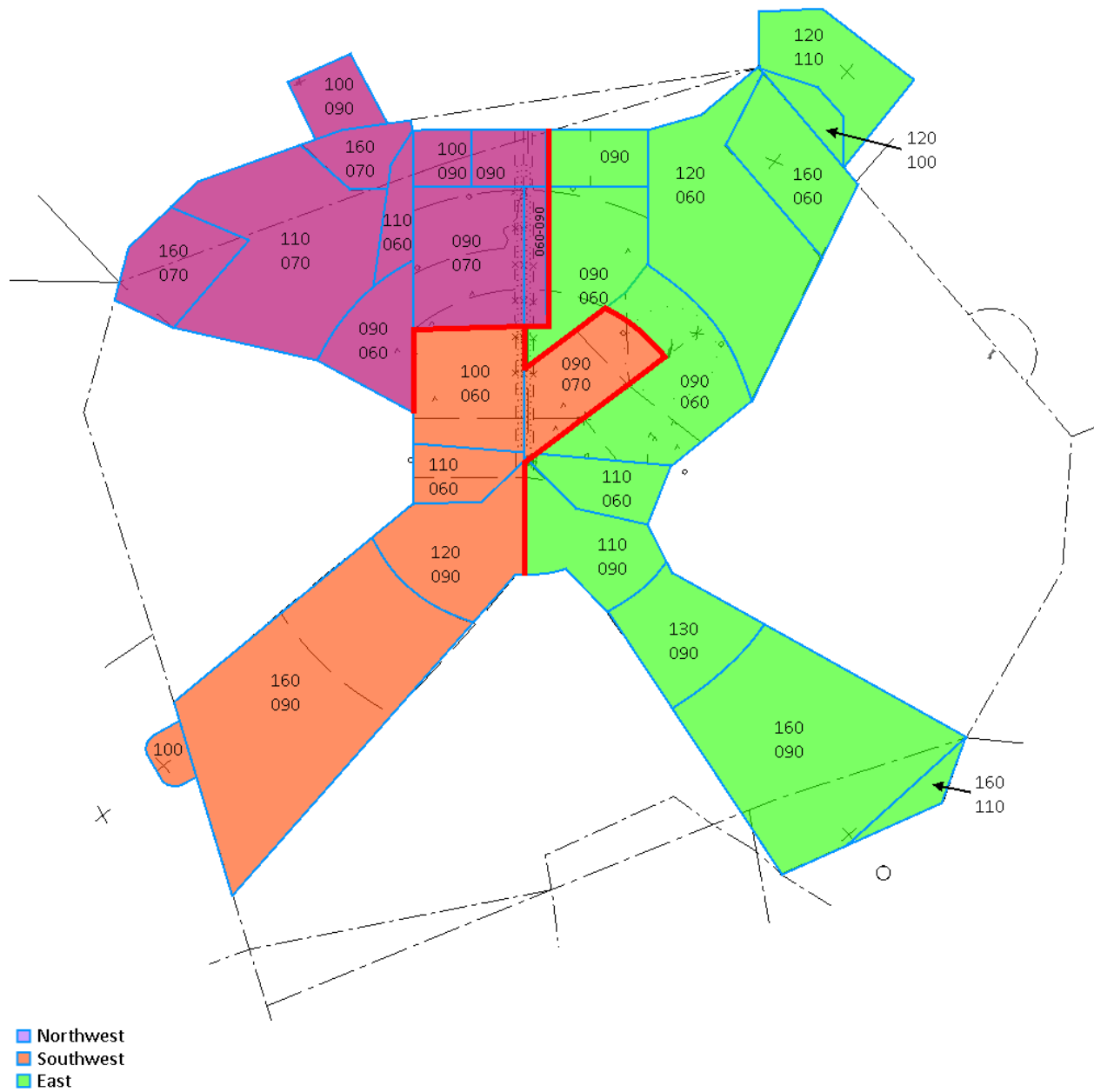


## Appendix H - Arrival Radar Airspace

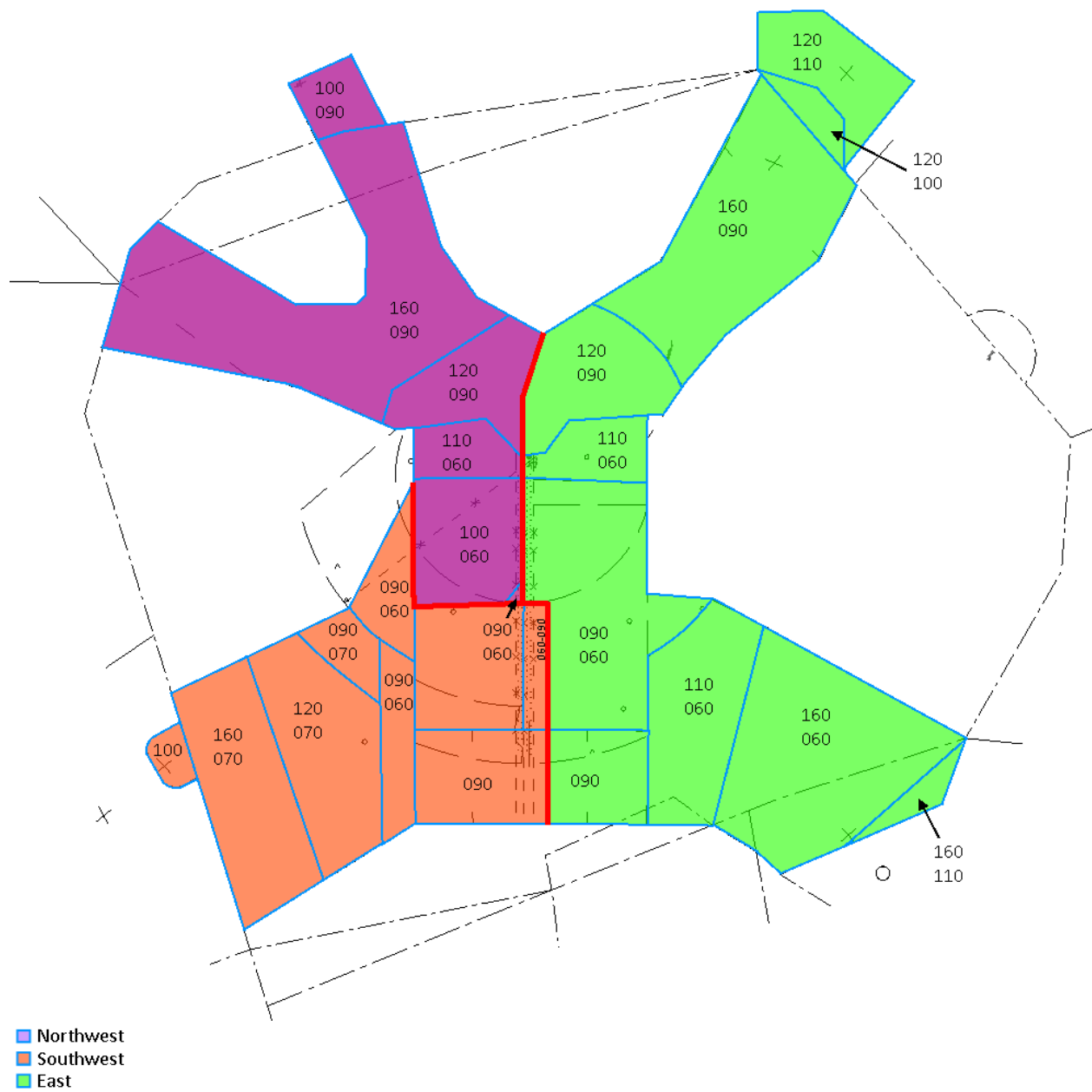
### Appendix H-1. South - No Runway 23



## Appendix H-2. Arrival Radar Airspace - South Ops- Runway 23

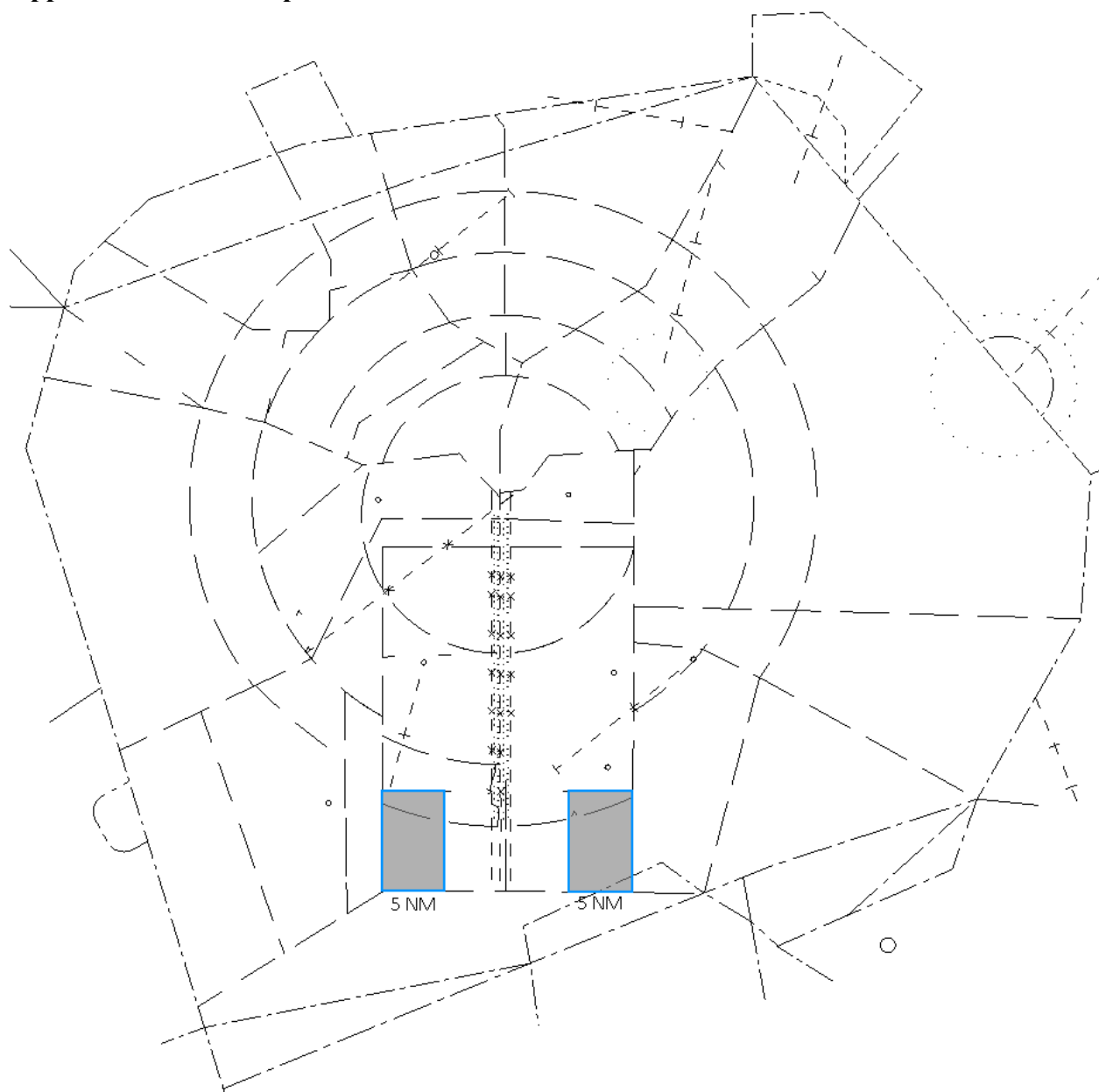


### Appendix H-3. Arrival Radar - North Ops

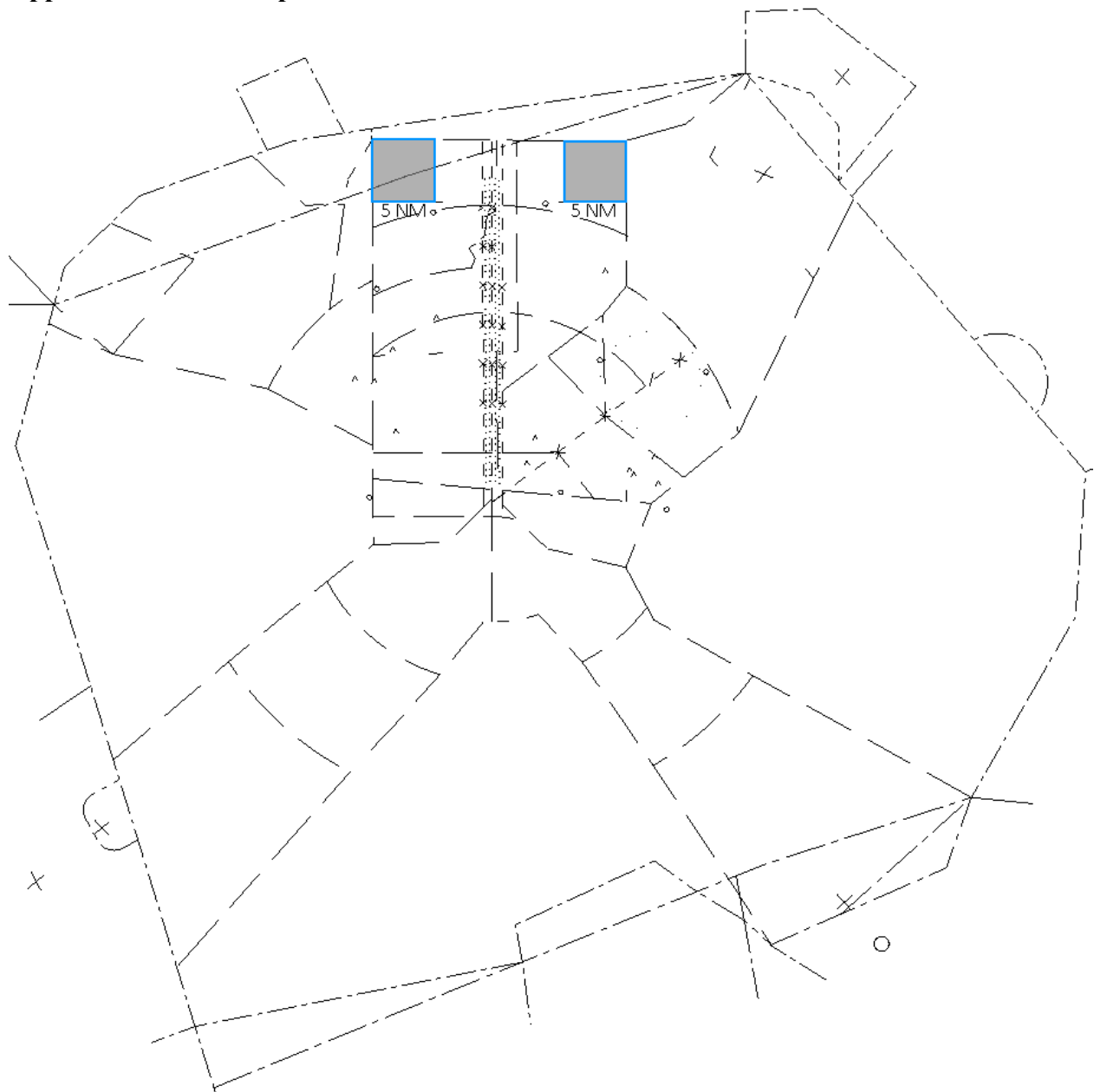


## Appendix I - Final Radar/Arrival Radar Pre-Arranged Coordination Area

### Appendix I-1. North Ops

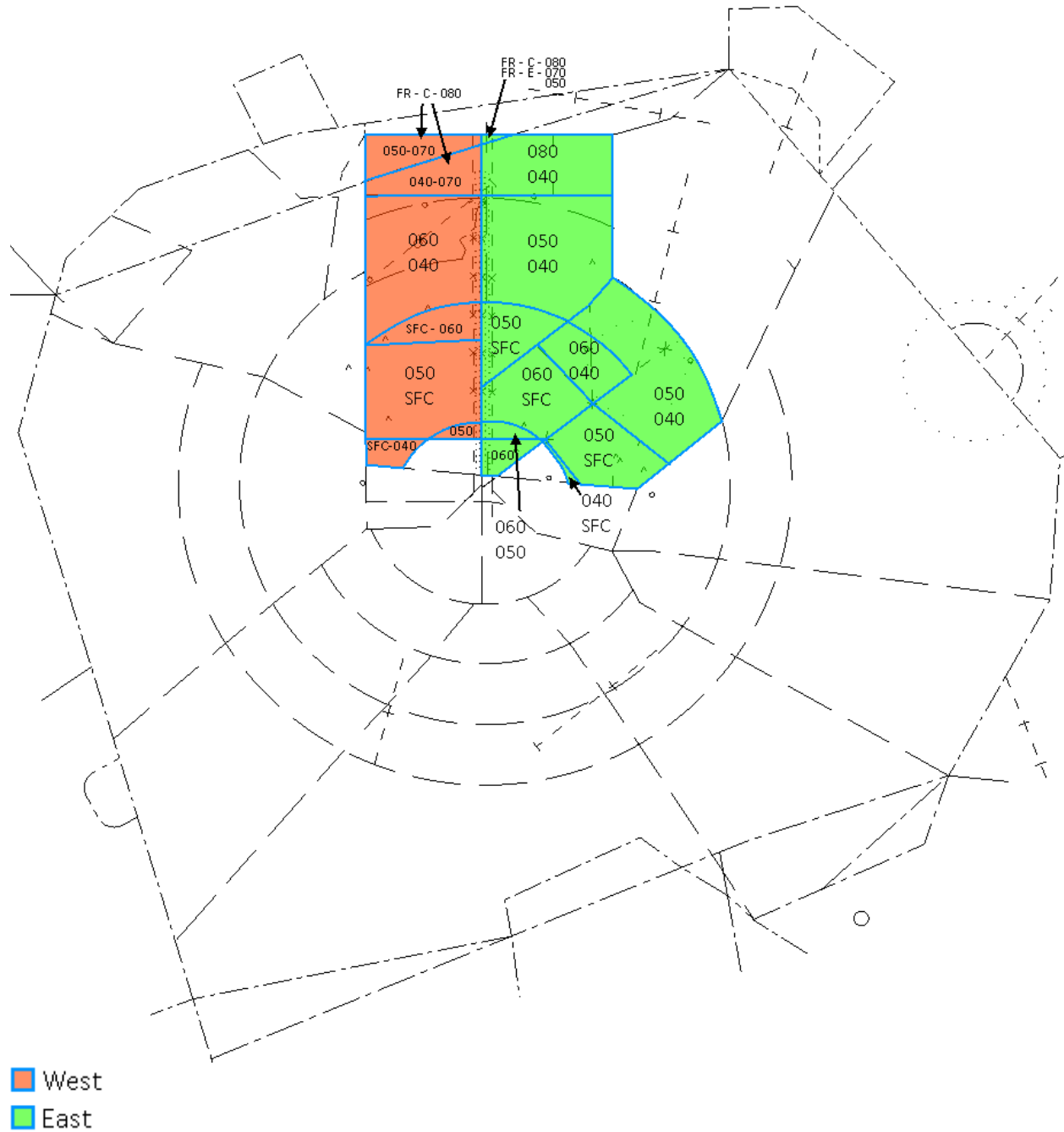


## Appendix I-2. South Ops

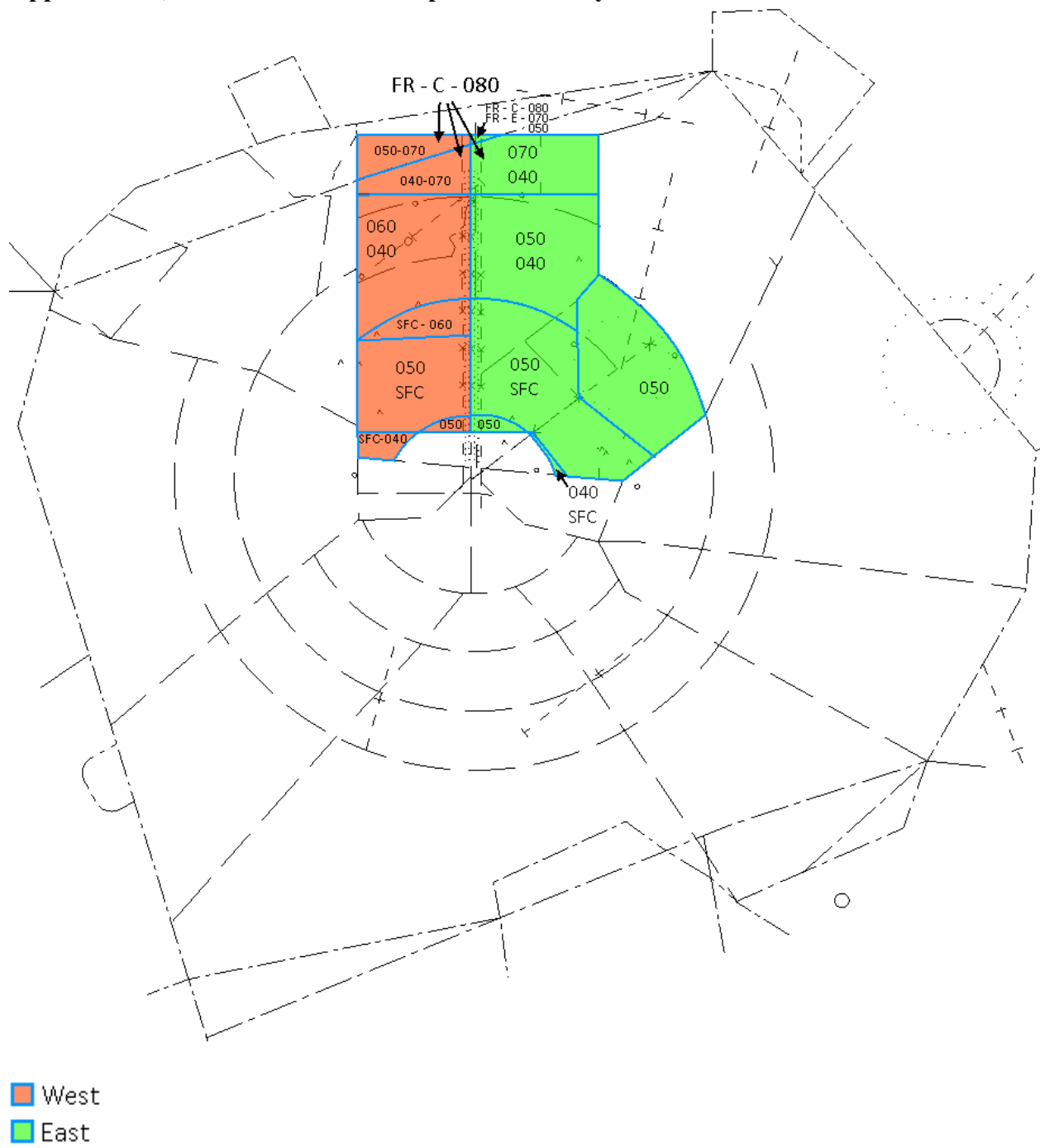


## Appendix J - Final Radar

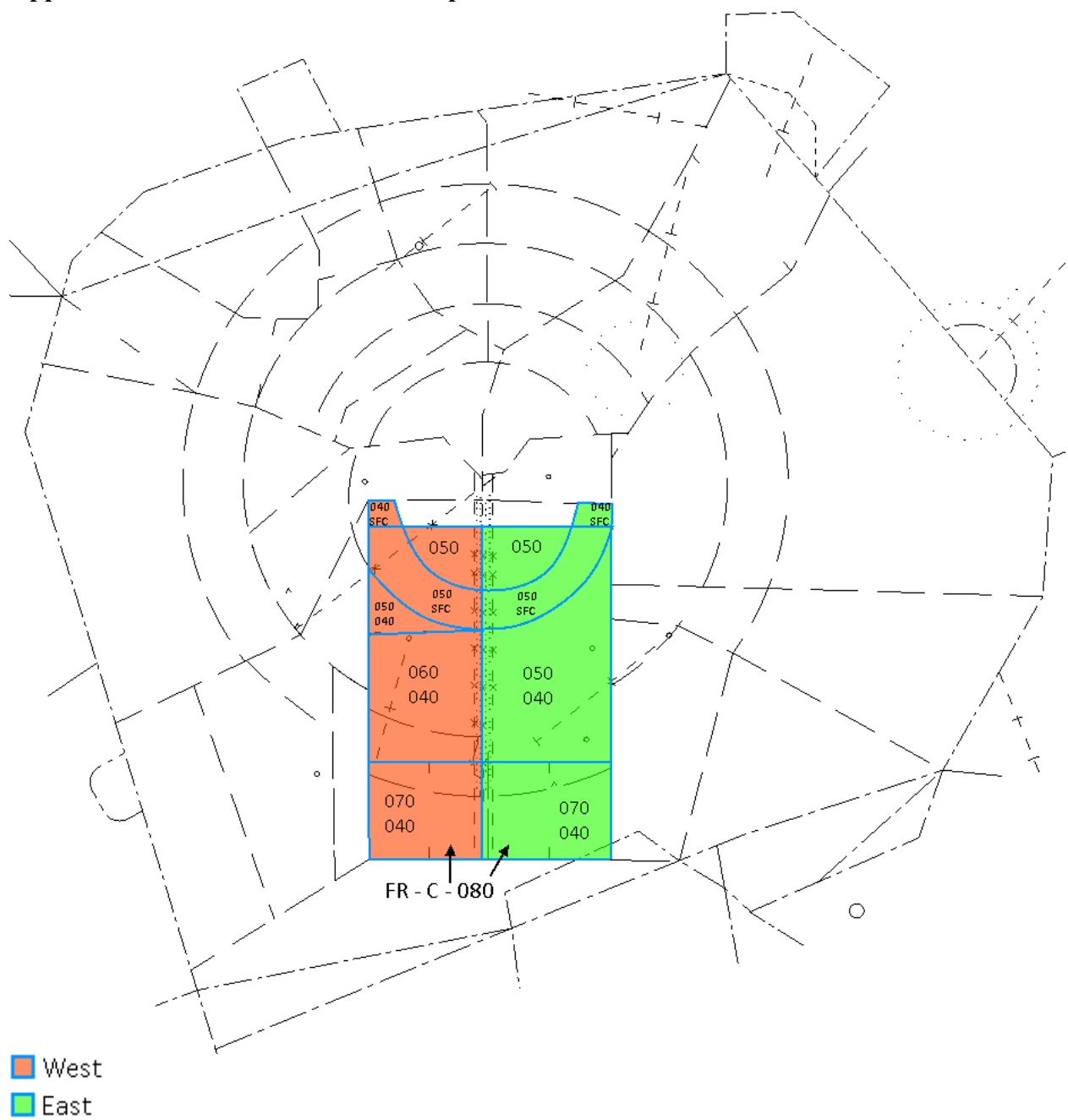
### Appendix J-1. South Ops - Runway 23 Active



## Appendix J-2, Final Radar - South Ops - No Runway 23



### Appendix J-3 - Final Radar - North Ops





## **Appendix K - Controller Relief Briefing Checklist**

### **Appendix K-1: Flight Data/Clearance Delivery Checklist:**

- 1) Status Information Areas: Applicable IDS and PIREP page, etc.
- 2) Equipment Status: Radios (proper frequencies (de)selected), Visibility Range and Center, ATIS, RADAR(s), etc.
- 3) Staffing: Adjacent and inter-facility staffing.
- 4) Airport Conditions: Airspace configuration, Runway(s) in use, runway/taxiway closures, etc.
- 5) Airport Activities: Gate hold procedures, braking action reports, etc.
- 6) Weather: Trends, Windshear, ATIS, PIREPs, SIGMETs, AIRMETs, etc.
- 7) Flow Control: Special programs, etc.
- 8) Special Activities: Events, Evaluations, Emergency, etc.
- 9) Special Instructions: Coordination, CIC instructions, etc.
- 10) Training in Progress.
- 11) Traffic Information:
  - a) Aircraft standing by for clearance or TMU release, etc.
  - b) PDC eligible flight plans which have not yet been sent a PDC.
  - c) Coordination agreements with other positions

NOTE: There must be at least a 4 minute overlap during each position relief briefing: A minimum of 2 minutes prior to receiving the briefing and a minimum of 2 minutes at the end of the briefing. At the beginning of the 2 minutes prior to the briefing, the relieving controller must be monitoring the frequency. Upon completion of the briefing, the controller relieved must monitor the frequency for 2 minutes.

### **Appendix K-2: Ground & Local Control Checklist:**

- 1) Status Information Areas: Applicable IDS and PIREP page, etc.
- 2) Equipment Status: Radios (proper frequencies (de)selected), Visibility Range and Center, ATIS, RADAR(s), etc.
- 3) Staffing: Adjacent and inter-facility staffing.
- 4) Airport Conditions: Airspace configuration, Runway(s) in use, runway/taxiway closures, etc.
- 5) Airport Activities: Gate hold procedures, braking action reports, etc.
- 6) Weather: Trends, Windshear, ATIS, PIREPs, SIGMETs, AIRMETs, etc.
- 7) Flow Control: Special programs, reportable CLT delays, etc.
- 8) Special Activities: Events, Evaluations, Emergency, etc.
- 9) Special Instructions: Coordination, CIC instructions, LUAW, LAHSO, etc.
- 10) Training in Progress.
- 11) Verbally State Runway Status: Unavailable, closed, or occupied.
- 12) Traffic Information:
  - a) Status of each aircraft and/or vehicle.
  - b) Point-outs.
  - c) Aircraft affected by Traffic Management Initiatives.
  - d) Coordination agreements with other positions.
  - e) Aircraft holding or standing by for service.

NOTE: There must be at least a 4 minute overlap during each position relief briefing, as described in Appendix K-1.

## Appendix L - Departure Flight Strip Marking

1		5	8	12	14	15	16
2		6	9		17	18	19
3	4	7	10	13	20	21	22

1	Aircraft identification.
2	Number of aircraft if more than one, heavy aircraft indicator "H/" if appropriate, type of aircraft, and aircraft equipment suffix.
3	Computer identification number if required. (Auto Generated)
4	Flight Rules. I = IFR, V = VFR, S = SVFR, D = DVFR
5	Secondary radar (beacon) code assigned.
6	Temporary Altitude.
7	Cruise Altitude.
8	Departure airport.
9	Destination airport.
10	Alternate airport.
11	Alternate Clearance Limit (Scratch Pad).
12	Route. Manually enter altitude/altitude restrictions in the order flown, if appropriate.
13	Remarks.
14	Letter of Reported ATIS
15-16	Optional
17	Checkmark or "X" to indicate a correct clearance readback
18	Departure Taxiway if not departing full length
19	Runway Clearance. Runway of which Local Control issues Landing to Takeoff Clearance.
20	Controller Position ID of Assigned Departure Frequency
21	Assigned Heading or Navigation Fix
22	Departure time (Minutes only)

## **Appendix M - ATIS Template**

Charlotte International Airport information (Code), (Time), (Wind) (Visibility), (RVR - if applicable) (Obscuration) (Sky Conditions) (Temperature) (Dew point) (Altimeter) (Pertinent Remarks). Expect Runway(s)\_\_\_\_\_ for departure. Simultaneous departures in use, Runway (Runways). Simultaneous approaches in use, (Type approach), (Runways).

Notices to Airmen. [RWY/Taxiway Closures] Braking Action Advisories are in effect (if applicable). Low-Level Windshear/Microburst advisories are in effect (if applicable). Runway 5/23 available for taxi (if applicable). Transponders required to be on while operating on taxiways and runways. VFR aircraft contact (Clearance Delivery) on (Frequency) and advise aircraft type, initial heading, and planned altitude.

## **Appendix N – Runway Change Checklist**

### **Appendix N-1:**

- a) The Tower CIC (or Local Control East, if CIC is not staffed) has the primary responsibility for determining when a runway change is required.
- b) Once a determination has been made to change runways, the CIC must:
  - i) Coordinate with the TRACON CIC (or Arrival Radar East, if CIC is not staffed). The TRACON and Tower CIC's must determine the last arrival and the last departure to the runways, as appropriate.
  - ii) Advise the TRACON CIC when the last arrival is on the ground and when the last departure is airborne.
  - iii) The TRACON and Tower CIC must advise all intrafacility sectors of the runway change.

## Appendix O – Runway Use Plan

When departure demand dictates, [ground](#) should make all efforts to assign the following runways for the corresponding departures. Coordinate with Local Control, or TMC/CIC if available, for aircraft not assigned departures, or if the runway assignment table does not correspond with active departure runways.

### Appendix O-1: RNAV TURBOJET DEPARTURES

RUNWAY	DEPARTURES (RNAV)	RUNWAY	DEPARTURES (RNAV)
18L/36R	BARMY# ICONS# KILNS# KWEEN# LILLS# BEAVY#	18C/36C	BOBZY# ESTRR# JOJJO# KRITR# WEAZL#

### Appendix O-2: NON-RNAV TURBOJET DEPARTURES

For the KERMIT and CHARLOTTE SIDs, assign departures to the NORTH and WEST Runways 36C / 18C. Departures to the SOUTH and EAST runways 18L / 36R.

For aircraft who have filed a transition on the CHARLOTTE/KERMIT SIDs, the directions correspond as follows:

	KERMIT	CHARLOTTE
North/West	JOTTA NALEY NEANO DEBIE	PITTY HARAY
South/East	ANDYS TREAL HAMLN LILLS MERIL	GANTS LILLS RUNIE BUCKL

## Appendix P – STARS Video Maps

Controllers can access all maps through “CTRL + F2 + [Map Number]”.

Number	Name	Description
1	AIRSPCE	Airspace External Boundaries
2	MVA	Minimum Vectoring Altitude
3	STARS N	RNAV STARS North
4	STARS S	RNAV STARS South
5	RNV DEP	RNAV Departure Fixes
6	TWR AIR	Local Control Airspace
7	CLASS B	Class B Airspace
8	RWYS	Charlotte Runways
9	CLT N	Arrival Radar, Departure Radar, Satellite Radar, North Ops
10	CLT S	Arrival Radar, Departure Radar, Satellite Radar, South Ops
11	DR N	Departure Radar, North Operations
12	DR S	Departure Radar, South Operations
13	AR N	Arrival Radar, North Operations
14	AR S	Arrival Radar, South Operations
15	ARN FAC	Arrival Radar, North Final Approach Courses
16	ARS FAC	Arrival Radar, South Final Approach Courses
17	DR S 23	Departure Radar, South Operations with Runway 23
18	AR S 23	Arrival Radar, South Operations with Runway 23
19	FR S 23	Final Radar, South Operations with Runway 23
20	FR N	Final Radar, North Operations with Runway 5
21	N FAC	North Final Approach Courses
22	S FAC	South Final Approach Courses
23	FR N/S	Final Radar, North AND South Simultaneous Approaches
24	CLT RNV	Charlotte GPS Waypoints
25	NTZ	No-Transgression Zone
26	SAT N	Satellite Radar North
27	SAT S	Satellite Radar South
28	ADW	Arrival / Departure Radar, Runway 23
29	NOISE	Noise Track – Turn window
30	WILKES	ZTL Wilkes Sector
31	CTR SEC	Center Sectors
32	EXT BND	External Boundary with Adjacent Shelves
33	APT/OBS	Airports and Obstructions Map

Number	Name	Description
34	COUNTY	Counties
35	EOVM	Emergency Obstructions Video Map
36	NAVAIDS	Navigation Aids
37	NUCLEAR	Nuclear
38	QRM 40	QRM 40 DME Ring (5 miles outside if using QRM Radar)
39	SAT GPS	Satellite GPS
40	SAT ILS	Satellite ILS
41	SAT OTH	Satellite – Non GPS/ILS approaches
42	T ROUTES	T-Routes
43	AIRWAYS	Low Altitude Airways
44	TRIPS-N	Establishment Points – Triple Approaches North Operations
45	TRIPS-S	Establishment Points – Triple Approaches South Operations
46	STADIUM	Stadiums
47	STARS	Non-RNAV STARS
48	BANKRN	BANKR STAR, North Operations
49	BANKRS	BANKR STAR, South Operations
50	CHSLYN	CHSLY STAR, North Operations
51	CHSLYS	CHSLY STAR, South Operations
52	FILPZN	FILPZ STAR, North Operations
53	FILPZS	FILPZ STAR, South Operations
54	JONZEN	JONZE STAR, North Operations
55	JONZES	JONZE STAR, South Operations
56	MLLETN	MLLET STAR, North Operations
57	MLLETS	MLLET STAR, South Operations
58	PARQRN	PARQR STAR, North Operations
59	PARQRS	PARQR STAR, South Operations
60	STOCRN	STOCR STAR, North Operations
61	STOCRS	STOCR STAR, South Operations
62	N RNAV	Satellite Radar, North RNAV Approaches
63	S RNAV	Satellite Radar, South RNAV Approaches
64	14A GPS	14A GPS
65	35A GPS	35A GPS
66	AFP	AFP GPS
67	AKH	AKH GPS
68	DCM	DCM GPS
69	EHO	EHO GPS

Number	Name	Description
70	EQY	EQY GPS
71	EXX	EXX GPS
72	HKY	HKY GPS
73	IPJ	IPJ GPS
74	JQF	JQF GPS
75	LKR	LKR GPS
76	N52	N52 GPS
77	PYG	PYG GPS
78	RUQ	RUQ GPS
79	SVH	SVH GPS
80	UZA	UZA GPS
81	VUJ	VUJ GPS
82	KCLT ASDE	Charlotte ASDE-X
83	1CLT ASDE	.asdex 1CLT will allow for an additional ASDE-X display.
84	2CLT ASDE	.asdex 2CLT will allow for an additional ASDE-X display.
85	3CLT ASDE	.asdex 3CLT will allow for an additional ASDE-X display.
86	4CLT ASDE	.asdex 4CLT will allow for an additional ASDE-X display.
87	5CLT ASDE	.asdex 5CLT will allow for an additional ASDE-X display.
88	6CLT ASDE	.asdex 6CLT will allow for an additional ASDE-X display.
89	7CLT ASDE	.asdex 7CLT will allow for an additional ASDE-X display.
To access the ASDE-X as described in the description for maps 83 – 89, Controllers must download an adapted airports.xml.		

## **Appendix Q – CLT/ZTL LOA**

### **ATLANTA ARTC CENTER AND CHARLOTTE ATC TOWER LETTER OF AGREEMENT**

#### **SUBJECT: APPROACH CONTROL SERVICE**

1. **PURPOSE:** To delegate authority and responsibility for approach control services in the airspace described in Annex 1 and to outline interfacility procedures supplemental to the Air Traffic Control Order.
2. **CANCELLATION:** Atlanta ARTC Center (ZTL) and Charlotte ATC Tower (CLT) Letter of Agreement, Approach Control Service, dated prior to the effective date of this document.
3. **RESPONSIBILITIES:** ZTL delegates to CLT authority and responsibility for control of IFR aircraft operations within the delegated airspace described in Annex 1.
4. **PROCEDURES:** ZTL and CLT will transition arrivals and departures via the Arrival Transition Areas (ATA's) and Departure Transition Areas (DTA's) depicted in Annex 1. Departures from Charlotte/Douglas International Airport (KCLT) and satellite airports must be established on the appropriate departure procedure prior to the ZTL/CLT airspace boundary to ensure aircraft transition within the confines of the DTA. This procedure must be utilized for departures with requested altitudes of 11,000 feet and above.
  - a. Arrivals:
    - (1) The Transfer of Control Point (TCP) will be the common ZTL/CLT lateral boundary and vertical confines of CLT airspace.
    - (2) ZTL must provide CLT arrivals a minimum of 5 miles in trail and published speeds at the ZTL/CLT lateral boundary unless otherwise coordinated. CLT has control for speed increases on arrivals.
    - (3) The airspace inside the ATA, 11,000 - 16,000 feet as depicted on Annex 1, is released to ZTL in the event of holding or if CLT does not accept a handoff by 3 NM from the TCP.
    - (4) ZTL will clear turbojet and turboprop arrivals to KCLT via the appropriate Standard Terminal Arrival Route (STAR) and ensure all aircraft are established on the appropriate routing prior to the TCP. Prop arrivals may remain on filed routings. All CLT terminal area arrivals must be cleared to cross the arrival transition fix (or TCP for prop arrivals not on STAR) in accordance with the following routes and altitudes.
    - (5) Turbojet arrivals to KCLT must be cleared as follows:



<b>(b) Non-Optimized Profile Descent STAR operations</b>	
<b>1. South Operation</b>	<b>CROSSING RESTRICTIONS</b>
a. STARs: FILPZ, PARQR, LIINN, BTSEY	TCP @ 11,000 and 250 knots
b. STARs: JONZE, BANKR, CHPTR	TCP AOB 14,000 and 250 knots
c. STAR: MAJIC, CHSLY	TCP @ 13,000 and 250 knots
<b>2. North Operation</b>	<b>CROSSING RESTRICTIONS</b>
1. STARs: FILPZ, PARQR, LIINN, BTSEY	TCP @ 14,000 and 250 knots
2. STARs: JONZE, BANKR, CHPTR	TCP @ 11,000 and 250 knots
3. STAR: MAJIC, CHSLY	TCP @ 13,000 and 250 knots

- (6) ZTL must issue the Descend Via clearance to turbojet aircraft in a timely manner that ensures aircraft are capable of meeting all restrictions based on landing direction. Aircraft are expected to be at these prescribed altitudes to meet appropriate CLT OPD windows. Special consideration will be made for high-performance aircraft.

(a) CLT North Operation

- (i) CHSLY, PARQR, and FILPZ via OPD
- (ii) JONZE cross JONZE at or below 13,000 feet
- (iii) BANKR cross DEBBT at or below 14,000 feet

(b) CLT South Operation

- (i) JONZE and BANKR via OPD
- (ii) FILPZ cross GLAXI at or below 15,000 feet
- (iii) PARQR cross PARQR at or below 13,000 feet

NOTE: Direct NCOMA and ensuring the 12,000 – 11,000 feet restriction does not require coordination.

- (iv) CHSLY cross CHSLY at or below 16,000 feet

NOTE: Direct KRISS and ensuring aircraft are at or below 13,000 feet does not require coordination.

(7) Turboprop and prop arrivals to KCLT must be cleared as follows:

<b>(a) Turboprop Aircraft north of V54</b>	
<b>1. South Operation</b>	<b>CROSSING RESTRICTIONS</b>
a. STAR: LIINN	TCP AOB 9,000 descending to 7,000
<b>2. North Operation</b>	<b>CROSSING RESTRICTIONS</b>
b. STAR: LIINN	TCP @ 9,000
<b>(b) Prop Aircraft north of V54</b>	Cross the TCP at or below 7,000

(8) ZTL must clear arrivals to CLT satellite airports as follows:

<b>(a) Landing: KDCM, N52, KUZA, KAFP, KLKR, KAKH, KEQY</b>	
<b>1. Turbojets, cleared via a Non-RNAV STAR</b>	<b>CROSSING RESTRICTIONS</b>
1. STARs: LIINN	TCP @ 11,000 and 250 knots
2. STAR: CHPTR, south operation	TCP AOB 14,000 and 250 knots
3. STAR: CHPTR, north operation	TCP @ 11,000 and 250 knots
4. STAR: MAJIC	TCP @ 13,000 and 250 knots
<b>2. Turboprops, cleared via a Non-RNAV STAR</b>	<b>CROSSING RESTRICTIONS</b>
STAR: LIINN	TCP @ 9,000
<b>3. Props, must be cleared as filed</b>	<b>CROSSING RESTRICTIONS</b>
North of V54, As filed	AOB 7,000
<b>(b) Landing: KEHO, KIPJ</b>	

1. Direct destination	Cross TCP AOB 7,000
2. From UNARM, direct destination and handed off to GSP when online	
<b>(a) Landing: KJQF, KVUJ, KRUQ</b>	
<b>North or South Operation</b>	<b>CROSSING RESTRICTIONS</b>
Turbojets through the UNARM sector	On CHPTR STAR & Cross TCP @ or below 14,000 and 250 knots

- (9) Arrivals to Hickory Regional Airport (KHKY) must be assigned 5,000 feet and released to the Wilkes Sector for turns and descent toward the airport or final approach course.
- (10) Arrivals to Statesville Regional Airport (KSVH) must be assigned 4,000 feet and released to the Wilkes Sector for turns and descent toward the airport or final approach course. When utilizing RNAV GPS RWY 28 and ILS or LOC/DME Z RWY 28 approaches, arrivals will be handled in accordance with the following:
- (a) Aircraft arriving from points south of the KSVH will be coordinated with the Wilkes Sector and cleared for the approach by CLT. CLT will instruct the aircraft to report cancellation or down time to ZTL.
  - (b) Aircraft arriving from points north of the KSVH will be coordinated with CLT and cleared for the approach by ZTL. The Wilkes Sector (ZTL) will advise CLT when the aircraft has cancelled or landed.

b. Departures:

- (1) CLT will clear all IFR departures via the appropriate Standard Instrument Departure (SID).
- (2) CLT will transition turboprop/prop departures from KCLT and satellite airports that will next enter Jacksonville ARTC Center (ZJX) directly to ZJX.
- (3) CLT will clear turbojet departures requesting 17,000 or above to maintain 16,000 feet and expect filed altitude 10 minutes after departure. CLT must make point outs to adjacent ZTL sectors when CLT verbally requests a higher altitude.
- (4) CLT will clear turboprop/prop departures requesting 13,000 or above to maintain 12,000 feet and expect filed altitude 10 minutes after departure. ZTL has control for climb and 15 degree turns. ZTL is responsible for separation from CLT arrivals.
- (5) CLT will clear departure aircraft requesting 16,000 feet or below, except as noted in paragraph 3 and 4 of this section, at requested altitude appropriate for direction of flight.
- (6) Only ZTL may delete the speed restriction to aircraft assigned a SID. ZTL is authorized to delete the speed restriction within CLT delegated airspace.
- (7) Regardless of KCLT runway configuration, aircraft departing KHKY landing KCLT must be cleared to 5,000 feet on an assigned heading of 180 degrees. CLT has control for

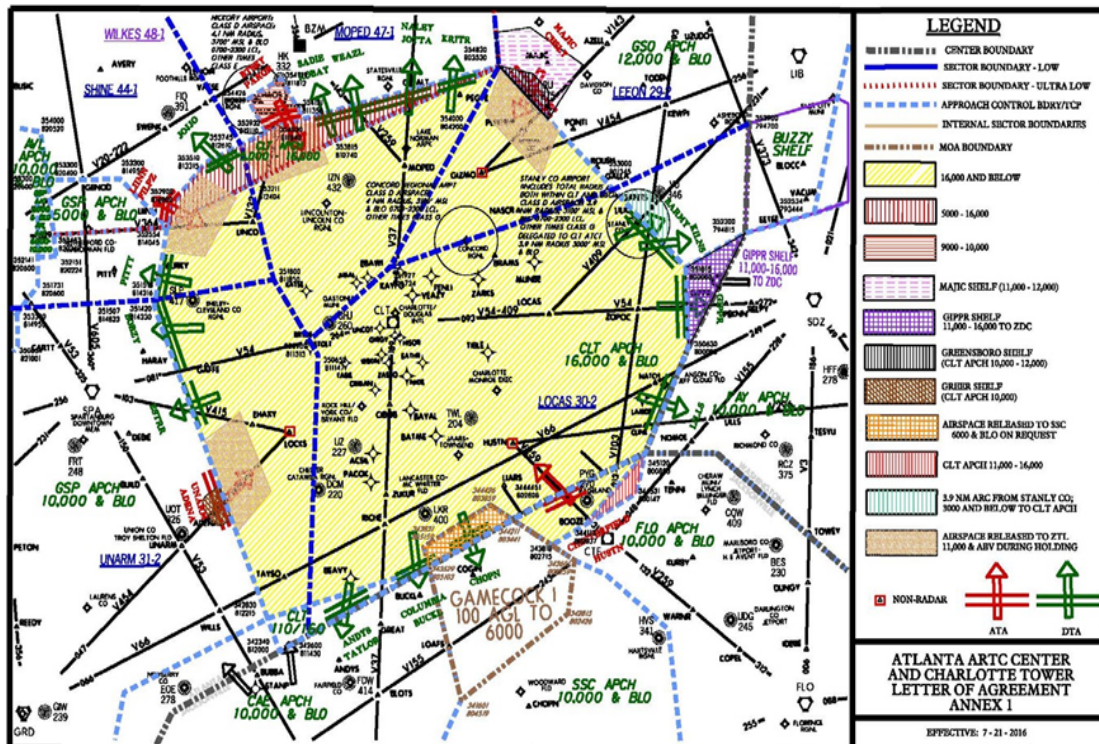
c. Overflights:

- (1) ARTCC shall clear aircraft landing CAE, airspace via CLT.V37.CAE, descend them to 15,000 feet, and handoff to CLT. CLT shall transition these aircraft to CAE TRACON.
- (2) ARTCC shall descend aircraft landing SOP to 15,000' and handoff to CLT. CLT shall transition these aircraft to FAY TRACON.
- (3) ARTCC shall descend aircraft landing POB to 15,000' and handoff to CLT TRACON. CLT shall descend these aircraft to 11,000' and handoff to ZDC ARTCC.
- (4) ARTCC shall descend prop and turboprop aircraft landing RDU to 15,000' and handoff to CLT. ARTCC shall clear these aircraft via SDZ BUZZY STAR and handoff to CLT. CLT shall transition them into CLT airspace and handoff to ZDC ARTCC.

## 5. MISCELLANEOUS:

- a. CLT must provide a minimum of 7 NM radar separation, constant or increasing, between departures and/or en route aircraft entering ZTL airspace at or climbing to the same altitude via the same DTA.
- b. GSP arrivals shall be descending to 15,000 and handed off to CLT. CLT shall descend to 11,000 (or lower) and handoff to GSP TRACON.

## 6. ATTACHMENTS:



## Appendix R. FAA JO 7110.126A: Consolidated Wake Turbulence Separation Standards (RECAT)

CLT is authorized to use the amended wake turbulence separation rules (the latest "RECAT" or "CWT" rules) in accordance with 7110.65 amendment 7110.126A.

Utilization of RECAT is recommended, but not mandatory.

### R-1 AIRCRAFT WAKE CATEGORIES

For the purposes of Wake Turbulence Separation Minima, aircraft are categorized as Category A through Category I in accordance with FAA JO 7360.1E (see TBL 1-1 for common types).

<b>A</b> <b>A380</b>	<b>B</b> <b>Upper Heavy</b>	<b>C</b> <b>Lower Heavy</b>	<b>D</b> <b>Non-Pairwise Heavy</b>		<b>E</b> <b>B757</b>	<b>F</b> <b>Upper Large</b>		<b>G</b> <b>Lower Large</b>		<b>H</b> <b>Upper Small</b>	<b>I</b> <b>Lower Small</b>
A388	A332	A306	A124	DC85	B752	A318	C130	AT43	E170	ASTR	BE10
	A333	A30B	A339	DC86	B753	A319	C30J	AT72	E45X	B190	BE20
	A343	A310	A342	DC87		A320	CVLT	CL60	E75L	BE40	BE58
	A345	B762	A3ST	E3CF		A321	DC93	CRJ1	E75S	B350	BE99
	A346	B763	A400	E3TF		B712	DC95	CRJ2	F16	C560	C208
	A359	B764	A50	E6		B721	DH8D	CRJ7	F18H	C56X	C210
	B742	C17	AN22	E767		B722	E190	CRJ9	F18S	C680	C25A
	B744	DC10	B1	IL62		B732	GL5T	CRJX	F900	C750	C25B
	B748	K35R	B2	IL76		B733	GLEK	DC91	FA7X	CL30	C402
	B772	MD11	B52	IL86		B734	GLF5	DH8A	GLF2	E120	C441
	B773		B703	IL96		B735	GLF6	DH8B	GLF3	F2TH	C525
	B77L		B741	K35E		B736	MD82	DH8C	GLF4	FA50	C550
	B77W		B743	KE3		B737	MD83	E135	SB20	GALX	P180
	B788		B84D	L101		B738	MD87	E145	SF34	H25B	PAY2
	B789		B74R	MYA4		B739	MD88			LJ31	PA31
	C5		B74S	R135			MD90			LJ35	PC12
	C5M		B78X	T144						LJ45	SR22
			BLCF	T160						LJ55	SW3
			BSCA	TU95						LJ60	
			C135	VMT						SH36	
			C141							SW4	

### R-2 WORDS AND PHRASES

- a. The word Super must be used as part of the identification in all communications with or about Category A aircraft.
- b. The word Heavy must be used as part of the identification in all communications with or about Category B, C, or D aircraft.

### R-3 DEPARTURE SAME/PARALLEL RUNWAY SEPARATION

*Radar minima may be used in lieu of time-based minima for full length departures and intersection departures separated by 500ft or less.*

In Front	Behind	Time
<ul style="list-style-type: none"> <li>Same runway or parallels separated by less than 2,500ft</li> <li>Parallels separated by 2,500ft or more when projected flight paths will cross</li> </ul>		
A	B/C/D/E/F/G/H/I	3 minutes
B/D	B/C/D/E/F/G/H/I	2 minutes
C	E/F/G/H/I	
<ul style="list-style-type: none"> <li>Same runway or parallels separated by less than 700ft or any if flight paths will cross</li> </ul>		
E	I	2 minutes
<ul style="list-style-type: none"> <li>Runway with displaced landing threshold if flight paths will cross when departure follows arrival or arrival follows departure</li> </ul>		
A	B/C/D/E/F/G/H/I	3 minutes
B/D	B/C/D/E/F/G/H/I	2 minutes
C	E/F/G/H/I	
E	I	

### R-4 INTERSECTION DEPARTURE SAME/PARALLEL RUNWAY SEPARATION

In Front	Behind	Time
<ul style="list-style-type: none"> <li>Same runway</li> </ul>		
H/F/G	I	3 minutes
<ul style="list-style-type: none"> <li>Same runway or parallels separated by less than 700ft</li> <li>Parallels separated by 700ft or more if flight paths will cross and the thresholds are offset by 500ft or more</li> </ul>		
E	I	3 minutes
<ul style="list-style-type: none"> <li>Same runway or parallels separated by less than 2,500ft</li> <li><i>Parallels separated by less than 2,500ft with thresholds offset by 500ft or more counts as an intersection departure for this section</i></li> </ul>		
A	B/C/D/E/F/G/H/I	4 minutes
B/D	B/C/D/E/F/G/H/I	3 minutes
C	E/F/G/H/I	

*Same runway I behind H/F/G separation may be waived by the I category pilot.*

**R-5 INTERSECTING RUNWAY/FLIGHT PATH & NONINTERSECTING  
CONVERGING RUNWAY SEPARATION**

<ul style="list-style-type: none"><li>• Departing behind landing or departing aircraft on intersecting or converging runway if flight paths will cross</li><li>• Landing behind departing aircraft on crossing runway if arrival will cross flight path (<i>may use radar separation</i>)</li></ul>		
A	B/C/D/E/F/G/H/I	3 minutes
B/D	B/C/D/E/F/G/H/I	2 minutes
C	E/F/G/H/I	
E	I	

## R-6 RADAR MINIMA

Separate aircraft by the minima specified by the table and in accordance with the following:

- When operating within 2,500ft and less than 1,000ft below the flight path of the leading aircraft over the surface of the earth of a Category A, B, C, or D aircraft.
- When operating within 2,500ft and less than 500ft below the flight path of the leading aircraft over the surface of the earth of a Category E aircraft.
- When departing parallel runways separated by less than 2,500ft, the 2,500ft requirement in subparagraph 2 is not required when a Category I aircraft departs the parallel runway behind a Category E aircraft. Issue a wake turbulence cautionary advisory and instructions that will establish lateral separation in accordance with subpara 2. Do not issue instructions that will allow the Category I aircraft to pass behind the Category E aircraft.

### NOTE –

*The application of 7110.65 5–8–3, Successive or Simultaneous Departures, satisfies this requirement.*

*Consider runways separated by less than 700 feet as a single runway because of the possible effects of wake turbulence.*

	Follower								
	A	B	C	D	E	F	G	H	I
A		4.5	6		7				8
B		3	4		5				5 (6)
C					3.5		5		
D		3	4		5		5 (6)		
E									4
F									(4)
G									
H									
I									

### NOTE –

*The leading (in front) aircraft is listed on the left.*

*All values are in nautical miles.*

*The values in parentheses are only applicable for two aircraft on approach and such separation must exist by the time the aircraft in front is over the landing threshold.*