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SUBJ: COS ATCT/TRACON Standard Operating Procedures

This document establishes the Colorado Springs Airport Traffic Control Tower (COS ATCT) and Colorado Springs TRACON Standard Operating Procedures within the Denver ARTCC on VATSIM (vZDV). Controllers are required to be familiar with the provisions of this document and to exercise their best judgment if they encounter situations not covered by it. The provisions and procedures described herein are supplemental to vZDV Facility Policy and FAA Order JO 7110.65.

The information contained herein is to be used for flight simulation purposes only on the VATSIM network. It is not intended, nor should it be used for real-world navigation. The Virtual Denver ARTCC is not affiliated with the FAA, the actual Denver ARTCC, or any governing aviation body.

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Record of Changes

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Table of Contents

Chapter 1. General Control	1
Section 1. Introduction	1
1-1-1. Purpose	1
1-1-2. Audience	1
1-1-3. Distribution	1
1-1-4. Cancellation	1
Section 2. Operational Positions	2
Section 3. Miscellaneous	3
1-3-1. Duty Familiarization	3
1-3-2. Transfer of Position Responsibility	3
1-3-3. Flight Progress Strip (FPS) Marking	3
Chapter 2 - Operational Positions	4
Section 1. Clearance Delivery	4
2-1-1. Position Relief Checklist	4
2-1-2. Responsibilities	4
2-1-3. Departure Instructions	4
Section 2. Ground Control	7
2-2-1. Position Relief Checklist	7
2-2-2. Responsibilities	7
2-2-3. Ground Procedures	7
Section 3. Local Control	9
2-3-1. Position Relief Checklist	9
2-3-2. Responsibilities	9
2-3-3. Separation	10
2-3-4. Transfer of Control Procedures	10
2-3-5. Pre-Arranged Coordination Procedures	10
2-3-6. Departure Procedures	10
2-3-7. Missed Approach Procedures	11
Section 4. Terminal Radar Approach Control (TRACON)	12
2-4-1. Position Relief Checklist	12
2-4-2. Airspace Allocation	12
2-4-3. Departure Radar Procedures (DR)	12
2-4-4. VFR Radar Procedures (VR)	13
2-4-5. Pre-arranged Coordination Procedures	13
2-4-6. Diverse Vector Area	13
2-4-7. Vectors Below the MVA	14
2-4-8. Practice Approaches	14
2-4-9. Mid-field Downwind Procedure	15
Appendix 1: Facility Maps	16
Appendix 1A: COS Tower and Tracon Airspace	16

Appendix 1B: Tower Pre-Arranged Coordination Area	17
Appendix 1C: Tower Pre-Arranged Coordination Area	18
Appendix 1D: COS Runway and Intersections Distances	19
Appendix 1E: CAT I/CAT II VFR Departure Fan Headings	20
Appendix 1F: IFR/CAT III VFR Departure/Practice Approach Headings	21
Appendix 1G: CAT I/CAT II VFR Altitude Restriction Guidelines	22
Appendix 1H: VR Airspace and Arrival Gates	23
Appendix 1I: Class C Airspace (COS) and Class D Airspace (AFF and FCS)	24

Chapter 1. General Control

Section 1. Introduction

1-1-1. Purpose

This document establishes the Colorado Springs Airport Traffic Control Tower (COS ATCT) and Colorado Springs TRACON Standard Operating Procedures within the Denver ARTCC on VATSIM (vZDV).

1-1-2. Audience

All vZDV controllers and visitors contained within the vZDV and VATUSA roster.

1-1-3. Distribution

This document is authorized for unrestricted use and release and is available in the Resources Section of the vZDV Website.

1-1-4. Cancellation

This document cancels COS ATCT/TRACON SOP - 7110.10D, effective June 13th, 2021.

Section 2. Operational Positions

Table 1. Colorado Springs Terminal Area Operational Positions Table

Position	Radio Name	Callsign	Relief	STARS Symbol	Frequency
Delivery	Springs Clearance	COS_DEL	1	2C	134.450
Ground	Springs Ground	COS_GND	1	2G	121.700
West Tower *	Springs Tower	COS_W_TWR	1W	2W	119.900
East Tower*	Springs Tower	COS_E_TWR	1E	2E	133.150
Departure Radar*	Springs Approach	COS_APP	1	2A	124.000
VFR Radar	Springs Approach	COS_VR_APP	1V	2V	120.600

Bold/Asterisk* designates a primary position

Section 3. Miscellaneous

1-3-1. Duty Familiarization

Prior to requesting a position relief briefing, controllers must accomplish the following items:

- a. Log in to position and activate session.
- b. Log in to vStrips.
- c. Review the current METAR.
- d. Review all Traffic Management Programs.
- e. Review pertinent overlying controller information.

1-3-2. Transfer of Position Responsibility

- a. All position relief briefings must be conducted in accordance with FAA Order 7110.65 Appendix A. All controllers must follow the position relief checklist located in Chapter 2-1-1.
- b. Controllers must activate the session of the position they are assuming prior to the start of the position relief briefing.
- c. When traffic conditions warrant, the controller being relieved must monitor and observe the position for a minimum of 2 minutes after the conclusion of the briefing.

1-3-3. Flight Progress Strip (FPS) Marking

Reference the ZDV Flight Strip Handling Directive (7210.3) for use cases of marking/handling IFR and VFR flight strips

Chapter 2 - Operational Positions

Section 1. Clearance Delivery

2-1-1. Position Relief Checklist

Position relief briefings must occur in accordance with Section 1-3 of this document. Utilize the following checklist for position relief briefings of all positions:

Position Relief Briefing Checklist
Position Information (which positions are being assumed)
ATIS Letter / Runway Configuration
Appropriate Departure Frequency
Current TMLs / Special Activities / Coordination Agreements
Traffic Impacted by TMLs
Special Requests or Instructions
Traffic Standing By for Service
Other Traffic Status

2-1-2. Responsibilities

Clearance Delivery responsibilities include the following:

- a. Monitor Clearance Delivery frequency: 134.450
- b. Issue ATC clearances to all departing aircraft at Springs Airport (KCOS)
- c. Create VFR flight plans for departing VFR aircraft

2-1-3. Departure Instructions

- a. IFR Clearances:
 - (1) Assign runway heading and 10,000 MSL.
 - (a) Issue the filed altitude if lower than 10,000 MSL.
 - (b) Aircraft landing D01/PUB should be assigned altitudes in accordance with COS-D01 LOA.
 - (2) Advise aircraft to expect their filed altitude 10 minutes after departure.
 - (3) Assign departure frequency 124.000.
 - (4) Utilize clearance limits of PETEY, COS, or BRK for local IFR flight plans.

b. VFR Clearances:

(1) Assign CAT I and CAT II aircraft (Appendix 1G):

(a) Departing SW through N (heading 170 degrees clockwise through 010 degrees):

- (i) Fly runway heading
- (ii) Maintain VFR (no altitude restriction)
- (iii) Departure Frequency 124.000
 - 1) If VR is open, assign 120.600
- (iv) Discrete beacon code

(b) Departing NNE through S (heading 011 degrees clockwise through 169 degrees):

- (i) Fly runway heading
- (ii) Maintain VFR at or below 8,500 MSL
- (iii) Departure Frequency 124.000
 - 1) If VR is open, assign 120.600
- (iv) Discrete beacon code

(2) Assign CAT III aircraft:

- (a) Fly runway heading
- (b) Maintain VFR at or below 9,000 MSL
- (c) Frequency 124.000
- (d) Discrete beacon code

(3) Assign VFR aircraft departing for FCS:

- (a) Fly runway heading
- (b) Maintain VFR at or below 8,000 MSL
- (c) Discrete Beacon Code

(4) Assign SVFR Aircraft:

- (a) Fly runway heading
- (b) CAT I and CAT II - Maintain SVFR at or below 8,500 MSL
- (c) CAT III - maintain SVFR at or below 9,000 MSL
- (d) Discrete beacon code
- (e) Departure Frequency 124.000

NOTE-

Aircraft remaining in the vicinity of the airport should be assigned the tower frequency.

(5) Practice Approach Clearances:

(a) Assign IFR aircraft:

- (i) Clear aircraft to COS Airport via radar vectors, fly runway heading, maintain 9,000 MSL, departure frequency 124.000, discrete beacon code

(b) Assign VFR aircraft:

- (i) Fly runway heading
- (ii) Maintain VFR at or below 8,500 MSL
- (iii) Frequency 124.000

Section 2. Ground Control

2-2-1. Position Relief Checklist

Position relief briefings must occur in accordance with Section 1-3 of this document. Utilize the following checklist for position relief briefings of all positions:

Position Relief Briefing Checklist
Position Information (which positions are being assumed)
ATIS Letter / Runway Configuration
Appropriate Departure Frequency
Current TMLs / Special Activities / Coordination Agreements
Traffic Impacted by TMLs
Special Requests or Instructions
Traffic Standing By for Service
Other Traffic Status

2-2-2. Responsibilities

Ground Control responsibilities include the following:

- a. Monitor Ground Control Frequency: 121.700
- b. Ensure departing aircraft have the current ATIS upon taxi.
- c. Comply with all runway incursion prevention/runway safety provisions.
- d. Protect the ILS critical areas when required. (See Appendix 1C)
- e. Issue taxi instructions to all aircraft on all movement areas not controlled by Local Control.

2-2-3. Ground Procedures

- a. GC must coordinate with the appropriate LC position verbally when an aircraft is:
 - (1) Not taxied to an advertised runway.
 - (2) Taxied to an intersection.
- b. GC must coordinate all active runway crossings with the appropriate LC position verbally. GC may cross inactive and closed runways without coordination. An attempt to reduce runway crossings should be made whenever possible.
 - (1) Hot Spot at the intersection of RWY 17R/35L, TWY G, and TWY A4 - when crossing at this location, ensure aircraft use the correct taxiway.

- (2) Multiple runway crossing clearances may be issued for an aircraft crossing RWY 17R/35L and RWY 13 to and from TWY A1 and TWY B1.
- c. Upon receiving a request for an engine run-up, GC determines the location for the run-up and coordinates with LC as needed. Run-ups should not adversely affect any movement area, and aircraft should be positioned to prevent prop/jet wash from crossing any movement area.

Section 3. Local Control

2-3-1. Position Relief Checklist

Position relief briefings must occur in accordance with Section 1-3 of this document. Utilize the following checklist for position relief briefings of all positions:

Position Relief Briefing Checklist
Position Information (which positions are being assumed)
ATIS Letter / Runway Configuration
Appropriate Departure Frequency
Current TMLs / Special Activities / Coordination Agreements
Traffic Impacted by TMLs
Special Requests or Instructions
Traffic Standing By for Service
Other Traffic Status

2-3-2. Responsibilities

LCW and LCE responsibilities include:

- a. Monitor frequencies:
 - (1) LCW - 119.900
 - (2) LCE - 133.150
- b. LCW and LCE shall Quick Look the data tags of the other local position at all times.
- c. Provide Class C airspace services as required.
- d. Protect the ILS critical areas as required. (See Appendix 1C)
- e. LCW has automatic releases with DR within the IFR Departure Fan area for the designated departure runway. (See Appendix 1F). LCE, when open, must obtain a release from LCW for all IFR and CAT III VFR departures. LCE must also coordinate all VFR aircraft that will transition through LCW airspace.
- f. LCW must coordinate with LCE on all RWY 31 arrivals.
- g. Coordinate with DR on traffic that will affect the approach sequence established by the TRACON
- h. Coordinate with GC prior to conducting helicopter operations on or near any movement/ non-movement area other than the active runway(s).
- i. Coordinate with DR/VR when tower pattern traffic can no longer be accepted.
- j. Ensure all VFR CAT I and CAT II transponder-equipped departure aircraft auto-acquire prior to frequency change.

- k. Coordinate with the appropriate radar position for a release of SVFR aircraft departure. If an arrival aircraft calls and requests SVFR to enter the Class C surface area, instruct the aircraft to remain outside of the Class C surface area and contact approach control on the appropriate radar frequency. Coordinate with the TRACON for SVFR aircraft remaining in the tower traffic pattern.
- l. Display the appropriate MVA map.

2-3-3. Separation

LCW/LCE have the following separation responsibilities:

- a. Ensure separation continuity between successive departures, between arrivals and departures, and arrivals with tower pattern traffic.
- b. Establish initial separation on all IFR aircraft that go around/conduct a missed approach.
- c. LCW/LCE is responsible for the separation and sequencing of VFR arrivals entering a midfield downwind.

2-3-4. Transfer of Control Procedures

- a. The tower has control for descent and turns toward tower airspace within 10 miles of the airport.
- b. TRACON has control for departure aircraft on communications transfer. When LCE is open, TRACON has control for departure aircraft leaving 7100 MSL or clear of LCE airspace.
- c. Local controllers will ensure that departing CAT I and II aircraft are squawking their assigned code and are tagged appropriately before communication transfer.

2-3-5. Pre-Arranged Coordination Procedures

The following establishes pre-arranged coordination permitting LCE to descend through the airspace delegated to LCW as depicted in Appendix 1B:

- a. LCE must issue traffic to LCW on all known targets within the pre-arranged coordination area without an associated full data block.
- b. LCW must issue traffic to LCE on all known targets, without an associated data block, that affect LCE traffic within the pre-arranged coordination area.

2-3-6. Departure Procedures

- a. Local Control East must obtain a release from Local Control West for all IFR and CAT III VFR aircraft departing 17L/35R.
- b. Local Control West and East have automatic releases with DR within the IFR departure Fan area for the designated departure runways.
- c. Prior to exiting the lateral confines of Tower's airspace, establish IFR, VFR CAT III departures, and all aircraft requesting practice approaches in the IFR fan area depicted in Appendix 1E and 1G and listed below:
 - (1) Runway 35L/R - 350 degrees or 010 degrees
 - (2) Runway 17L/R - 170 degrees or 150 degrees
 - (3) Runway 13 - 170 degrees

- (4) Runway 31
 - (a) IFR - SID heading, 350 or 010
 - (b) VFR CAT III - 350 or 010
- d. Assign VFR CAT I and II departures a heading in the general direction requested by the aircraft and a heading that establishes the departure within the confines of the VFR departure fan area listed below:
 - (1) Runway 35L/35R/31 - 280 degrees clockwise to 060 degrees from the departure end of runway
 - (2) Runway 17L/17R/13 - 100 degrees clockwise to 260 degrees from the departure end of runway

2-3-7. Missed Approach Procedures

- a. Runway 17L/35R, RY 17R/35L missed approach instructions: "Fly runway heading, maintain 9000."
- b. Runway 31 missed approach instructions: "Fly heading 350, maintain 9000."
- c. Runway 13 missed approach instructions: "Fly heading 170, maintain 9000."

Section 4. Terminal Radar Approach Control (TRACON)

2-4-1. Position Relief Checklist

Position relief briefings must occur in accordance with Section 1-3 of this document. Utilize the following checklist for position relief briefings of all positions:

Position Relief Briefing Checklist
Position Information (which positions are being assumed)
ATIS Letter / Runway Configuration
Appropriate Departure Frequency
Current TMLs / Special Activities / Coordination Agreements
Traffic Impacted by TMLs
Special Requests or Instructions
Traffic Standing By for Service
Other Traffic Status

2-4-2. Airspace Allocation

- Appendix 1H depicts the airspace allocation for VR Radar. Departure Radar is allocated all airspace not delegated to VR Radar.
- For the area of Colorado Springs airspace assignment where Departure Radar overlies VR Radar, VR Radar owns 500 feet above their designated airspace for use by VR aircraft only.

2-4-3. Departure Radar Procedures (DR)

The DR radar position is the primary radar position for COS. For coordination purposes within the facility, DR Radar shall identify themselves as “DR” or “Departure.”

Position responsibilities include the following:

- DR is the final authority for the radar sequence.
- DR must request approval from LCW for RWY 13/31 arrivals.
- DR must coordinate all RWY 13/31 arrivals with VR
- DR must coordinate with VR prior to releasing any departing IFR aircraft from the Meadow Lake airport (FLY).

2-4-4. VFR Radar Procedures (VR)

The VR radar position is a split radar position opened when the Air Force Academy (AFF) is conducting flight operations. VR works not only AFF operations, but a majority of VFR traffic in COS airspace allowing the DR controller to concentrate on arrival/departure/overflight traffic, as well as instrument practice approach aircraft, into/out of the COS airport. When the position is closed, it is combined to the DR position. For coordination purposes within the facility, VR Radar shall identify themselves as "VR".

Position responsibilities include the following:

- a. VR airspace is depicted in Appendix 1H.
- b. VFR CAT I aircraft requesting a full stop may be vectored to a midfield downwind entry.
- c. VR must ensure all aircraft inbound to COS requesting a full stop or practice instrument approach be put on a heading and at an appropriate altitude that allows DR to sequence them with his/her traffic. VR shall ensure the aircraft has the current ATIS information, climb out instructions (if applicable), and all required scratch pad entries are correct prior to handoff.
- d. Aircraft requesting an approach to RWY 31 will be handed off to VR and given a sequence by DR.
- e. VR is responsible for release of IFR aircraft from FLY. Aircraft should be assigned a heading and altitude that will ensure the aircraft enters VR airspace after departing. VR shall coordinate with DR prior to releasing an IFR aircraft from FLY.

2-4-5. Pre-arranged Coordination Procedures

Prearranged coordination procedures are authorized between the DR and VR positions as follows:

- a. DR may climb aircraft being cleared direct or vectored to the initial departure fix through VR airspace provided approved radar separation between all radar targets is ensured. If an aircraft needs to level at an altitude within VR airspace, automated/verbal coordination is required.
- b. DR may climb through VR airspace with overflying aircraft departing PUB enroute northbound. If the aircraft needs to level prior to exiting VR airspace, automated/verbal coordination is required.
- c. DR may descend through VR airspace west of COS (Appendix 1H) provided radar separation is maintained between all identified radar targets.
- d. After coordination with VR on usage of RWY 13/31, DR has control to turn and climb departing aircraft with the expectation that DR will turn the aircraft into their airspace as soon as feasible to exit VR airspace. If the turn and/or climb cannot be accomplished on initial contact, verbal coordination is required with VR.
- e. After completion of communications transfer, both DR and VR have control for descent and turns up to 90 degrees within the transferring controller's airspace.

2-4-6. Diverse Vector Area

The DVA headings for COS are as follows:

- a. RWY 35L/35R – 335 degrees clockwise to 121 degrees
- b. RWY 31 – 335 degrees clockwise to 071 degrees
- c. RWY 17L – 353 degrees clockwise to 197 degrees
- d. RWY 17R – 353 degrees clockwise to 190 degrees
- e. RWY 13 – 335 degrees clockwise to 195 degrees

2-4-7. Vectors Below the MVA

- a. RWY 17L/17R and 13:
 - (1) Departures may be vectored using the DVA
 - (2) Missed approach aircraft may be assigned headings between 090 degrees clockwise to 170 degrees.
- b. RWY 35L/35R:
 - (1) Departures may be vectored using the DVA
 - (2) Missed approach aircraft above 6800 MSL may be assigned headings between 335 degrees clockwise to 120 degrees.
- c. RWY 31:
 - (1) Departures may be vectored using the DVA
 - (2) Missed approach aircraft above 6800 MSL may be assigned headings between 335 degrees clockwise to 070 degrees.

2-4-8. Practice Approaches

COS accommodates both IFR and VFR practice approaches to RWY 17L/35R, RWY 17R/35L, and RWY 31. All practice approach aircraft are sequenced by the DR controller. The following procedures must be followed:

- a. Aircraft conducting practice approaches must have the type approach being conducted displayed in the scratch pad of the data block.
- b. Assign standard climb out to all practice approach aircraft, standard climb out is:
 - (1) IFR and VFR CAT III Aircraft: "Runway Heading, Maintain 9000, Departure Frequency 124.000"
 - (2) VFR CAT I/II Aircraft: "Runway Heading, Maintain at or below 8500, Departure Frequency 124.000"

NOTE -

Aircraft requesting a published missed approach should be assigned standard climb out and advised that the tower will address their request.

- c. If LC is unable to approve the published missed approach, LC must coordinate with DR via automated or verbal means.

- d. VFR aircraft requesting to remain in the tower traffic pattern following a practice approach should have “TAG” or “SAG” in the secondary scratch pad.

NOTE -

“TAG” - Touch and Go

“SAG” - Stop and Go

- e. For aircraft on a circling approach, the runway the aircraft is circling to should be entered into the scratchpad or coordinated verbally.

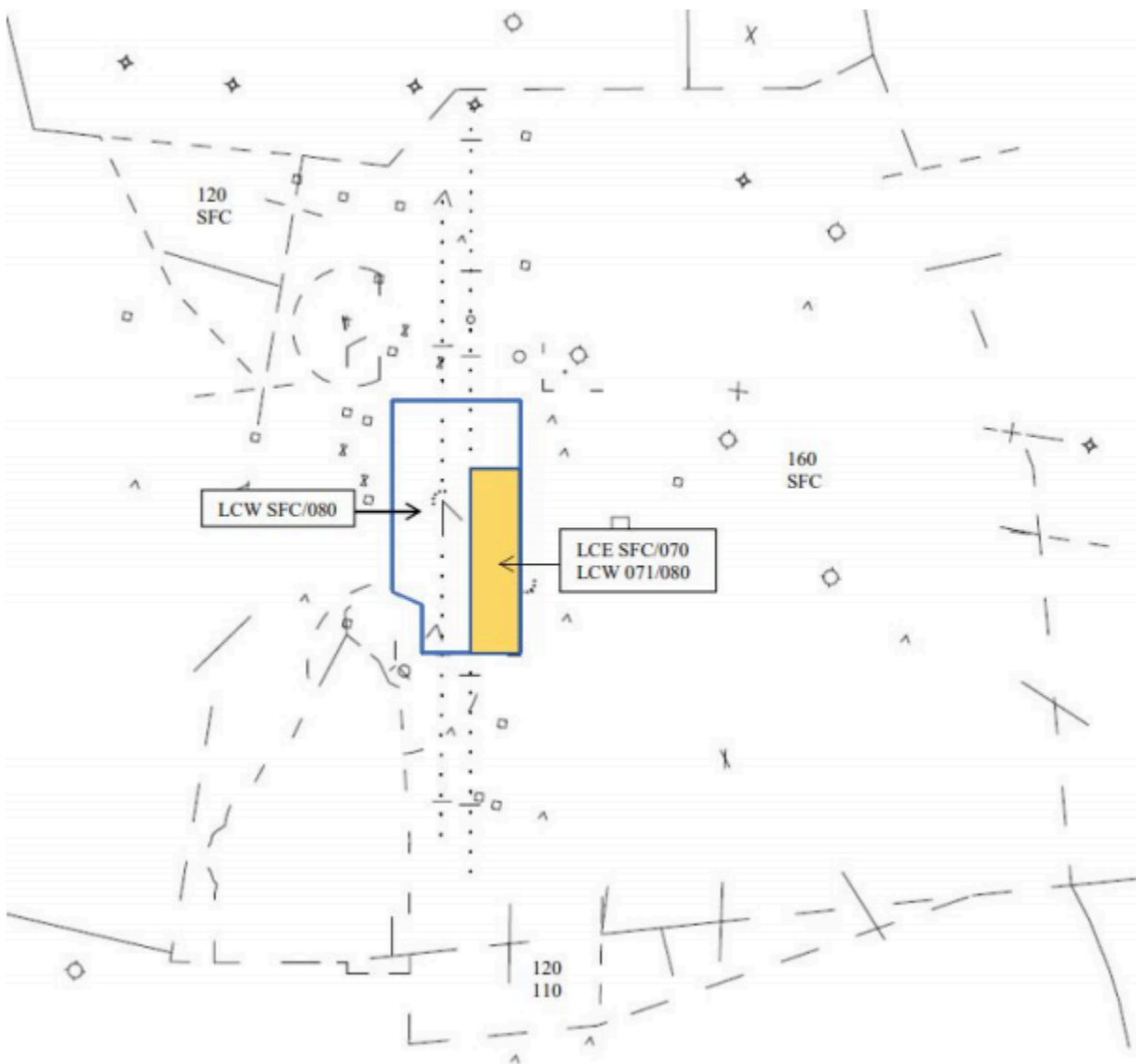
2-4-9. Mid-field Downwind Procedure

TRACON positions may instruct CAT I VFR aircraft to enter a mid-field downwind for full-stop or pattern arrivals. TRACON positions are not responsible for the sequence of CAT I VFR mid-field downwind arrivals and other arrival traffic. Utilize the following procedures:

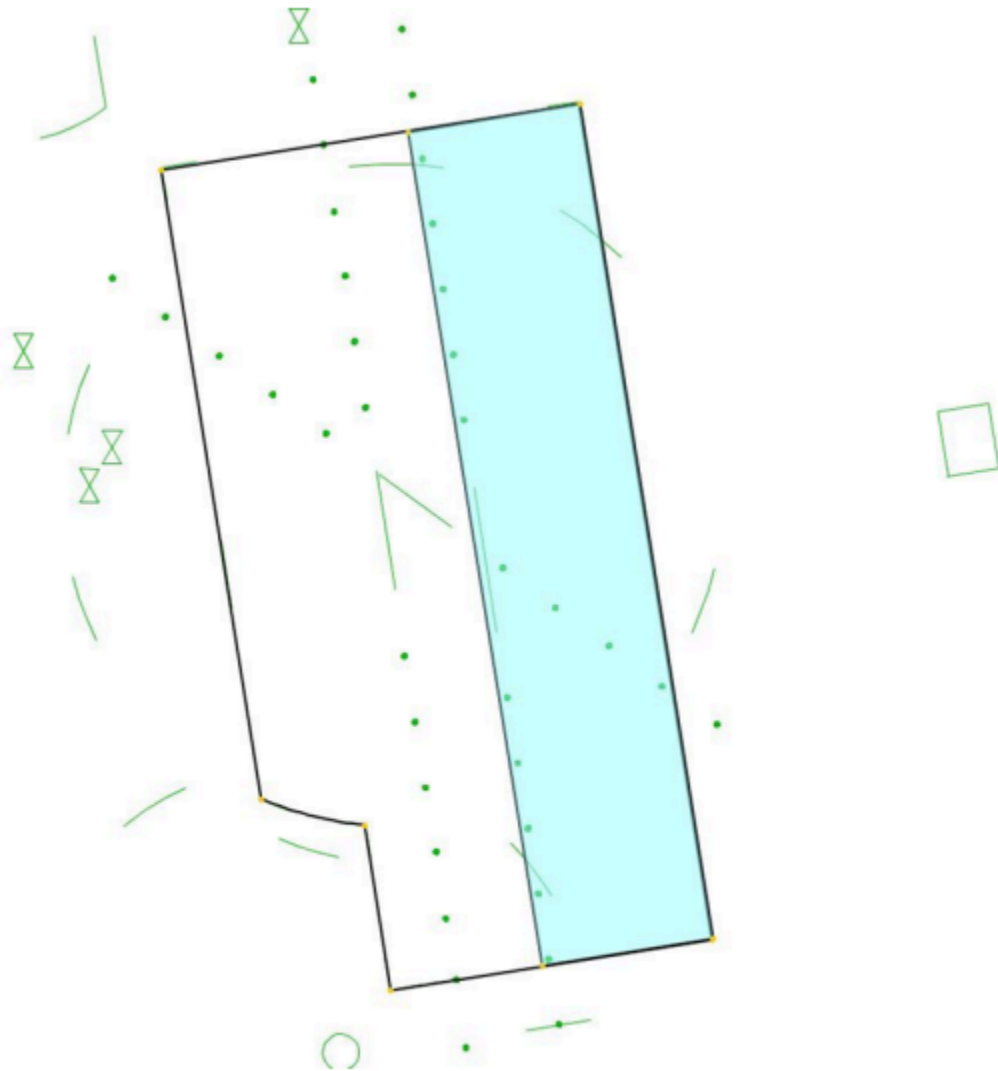
- a. Communication transfer of mid-field downwind arrivals should occur at least 10 flying miles from the assigned runway or as soon as possible thereafter.
- b. Aircraft that will overfly the airport to enter the assigned downwind (e.g. Aircraft from east of the airport assigned RWY 17R/35L) shall be assigned 8500 MSL or above.
- c. CAT I VFR arrivals not utilizing the mid-field downwind must be sequenced by the TRACON and/or pass through the arrival gate as appropriate.

Appendix 1: Facility Maps

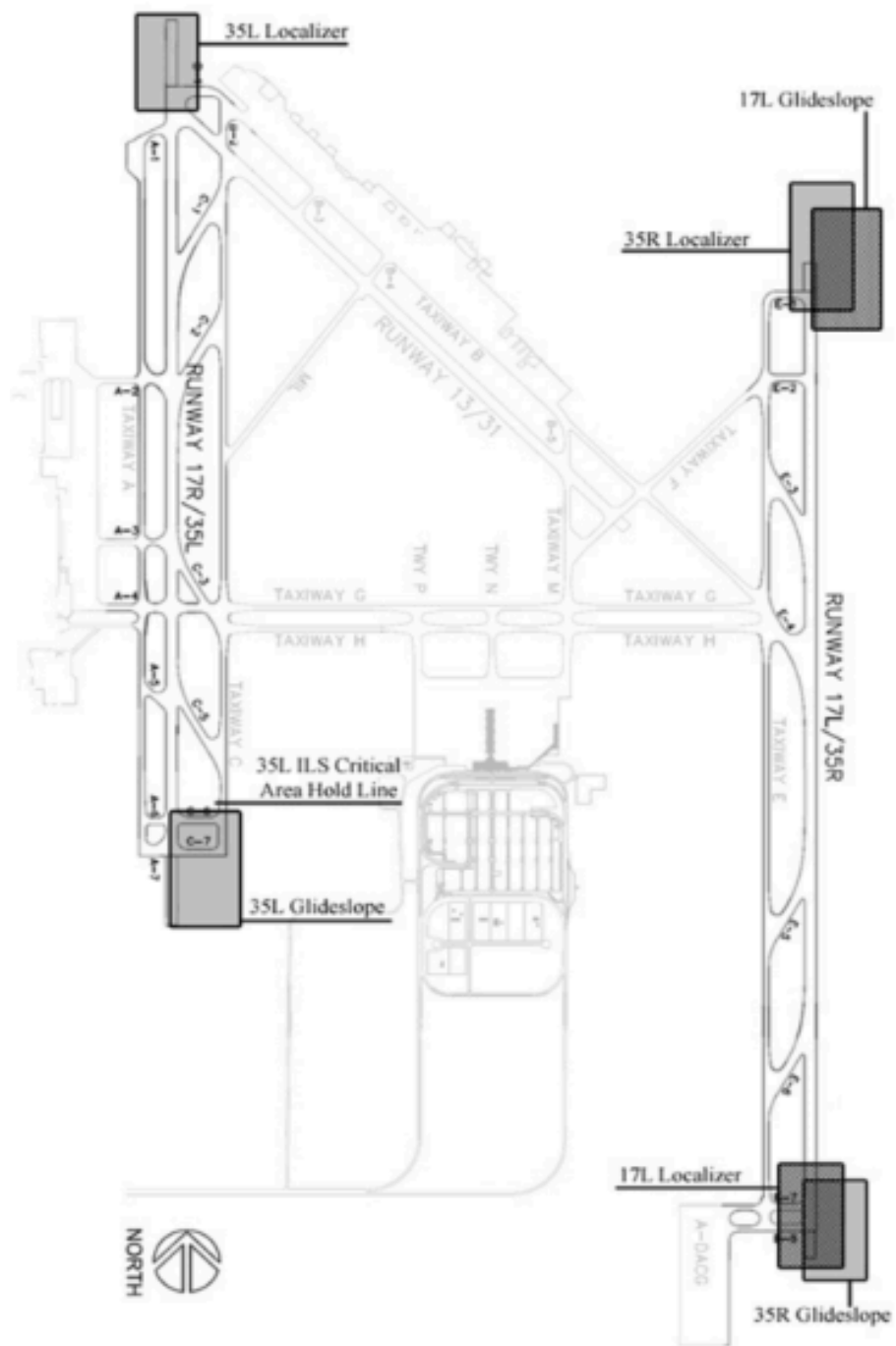
Appendix 1A: COS Tower and TRACON Airspace



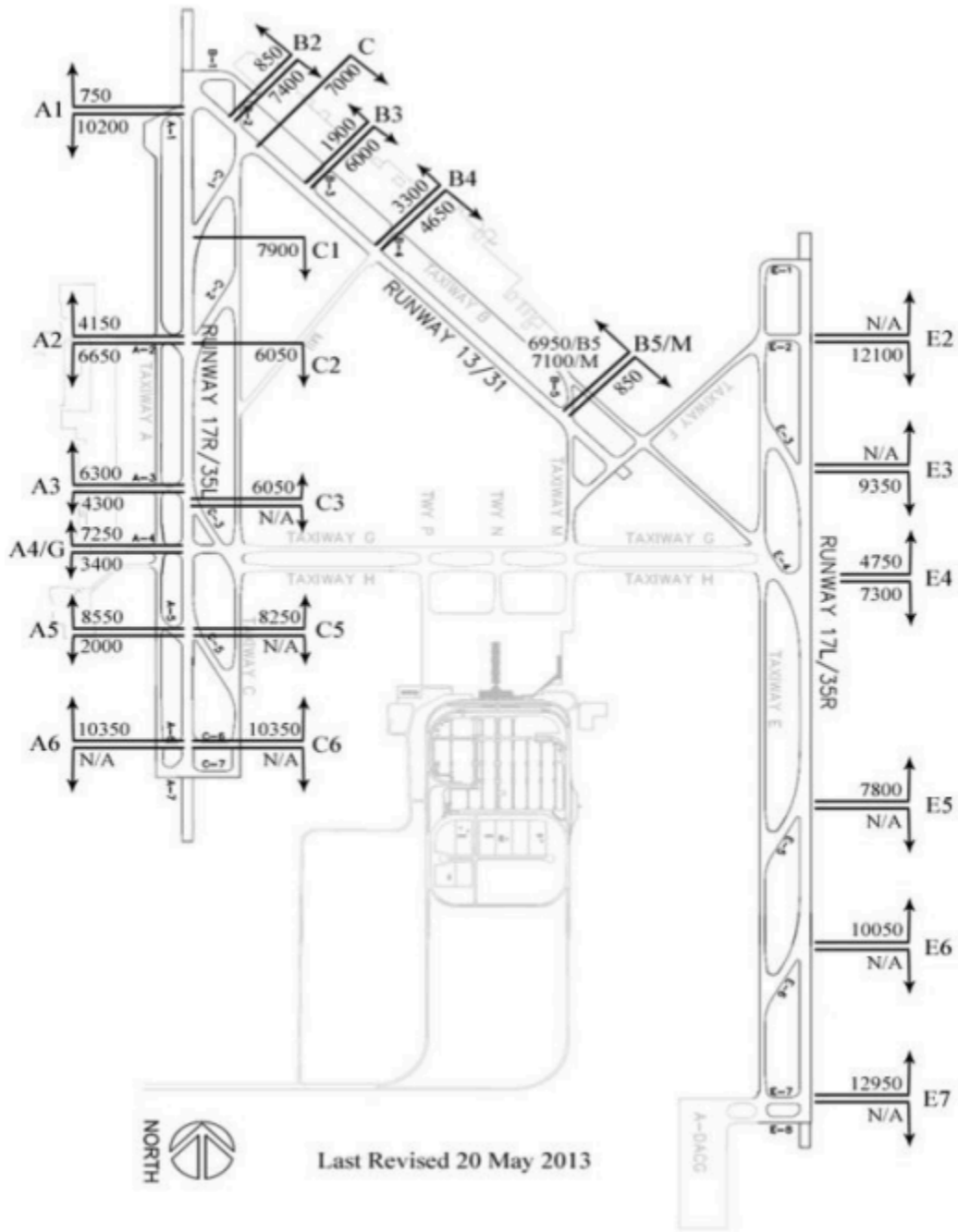
Appendix 1B: Tower Pre-Arranged Coordination Area



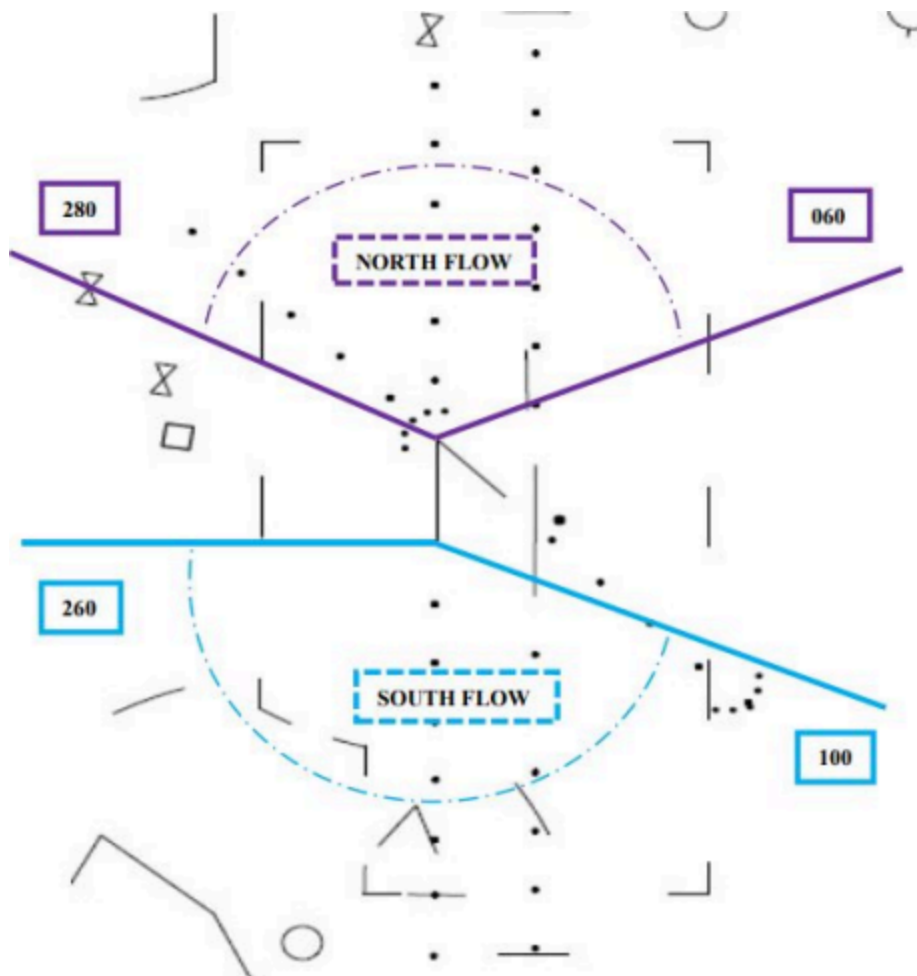
Appendix 1C: Tower Pre-Arranged Coordination Area



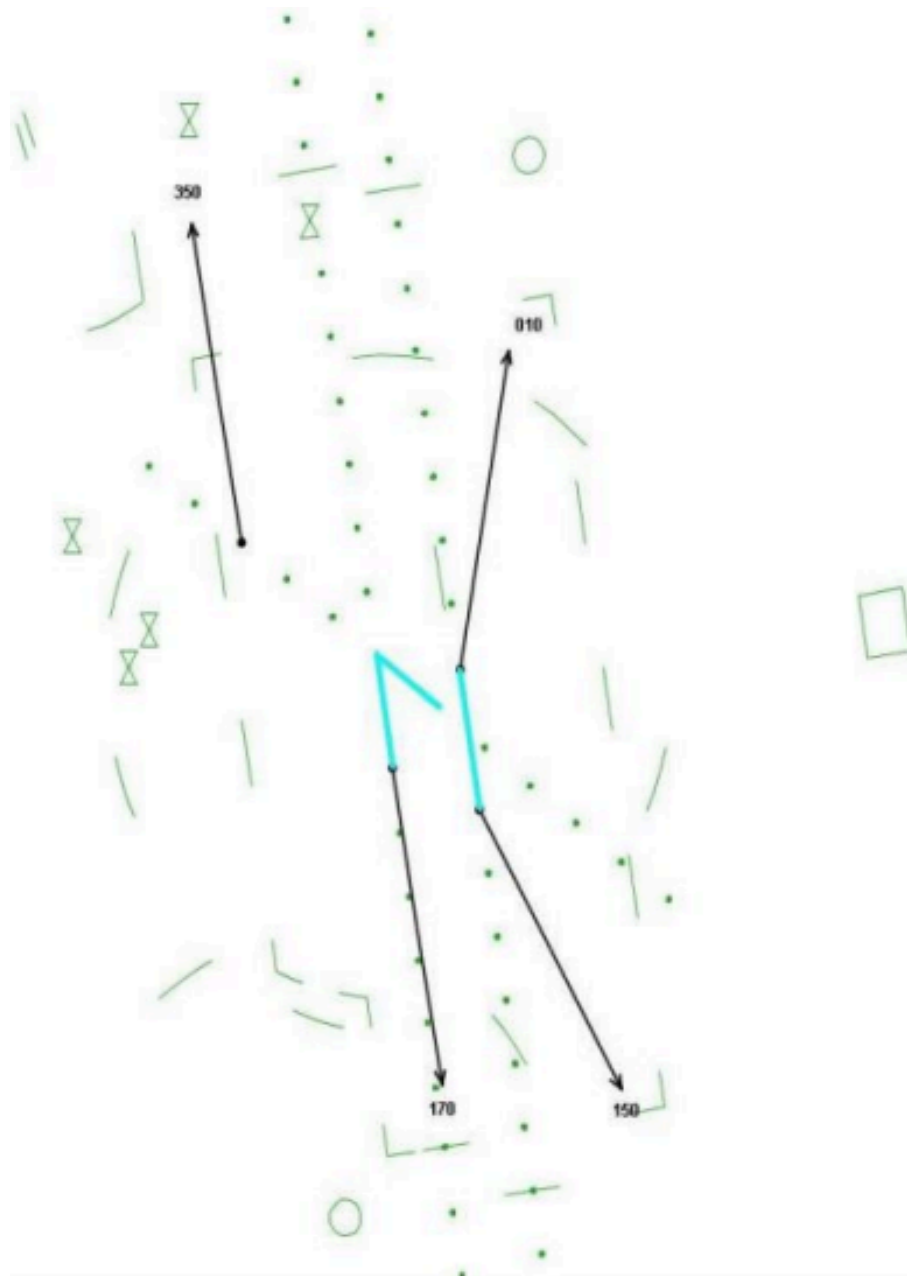
Appendix 1D: COS Runway and Intersections Distances



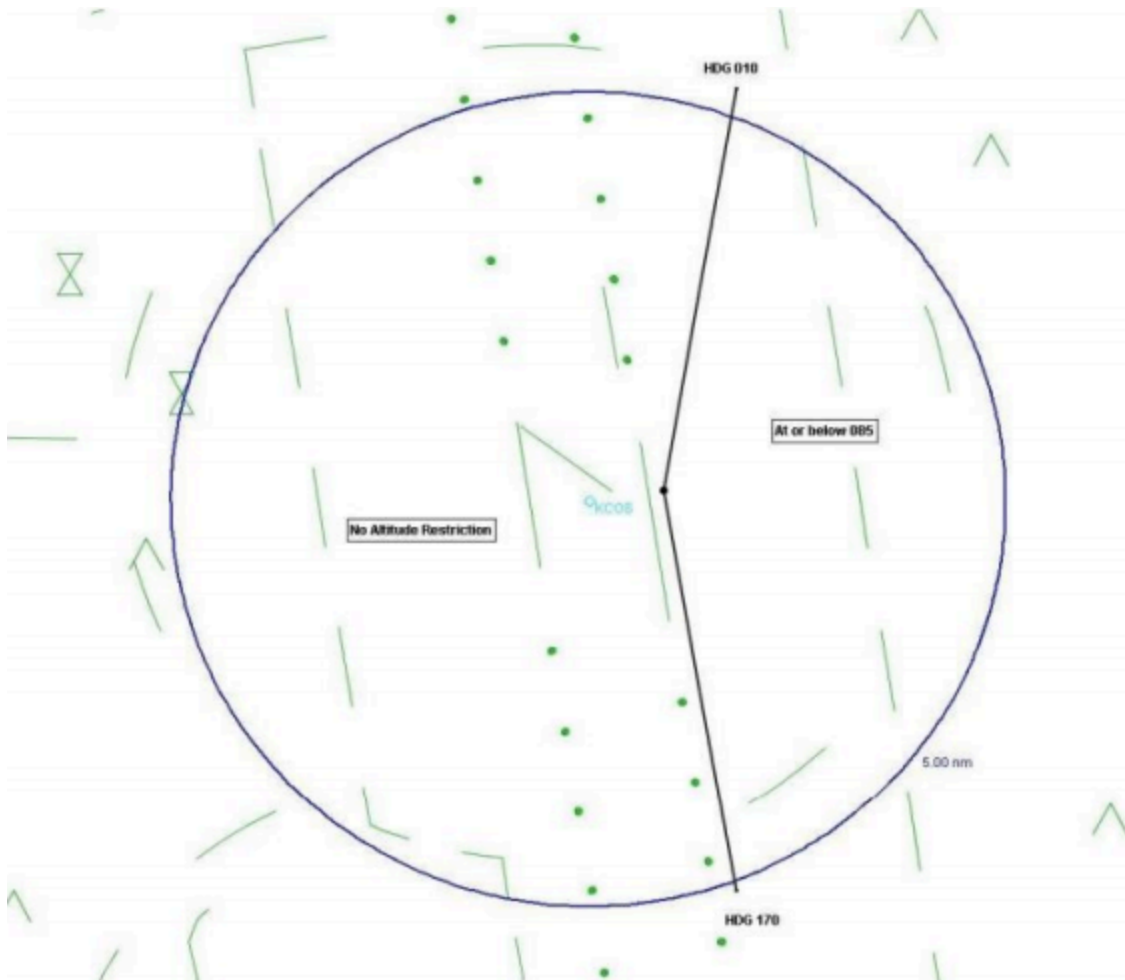
Appendix 1E: CAT I/CAT II VFR Departure Fan Headings



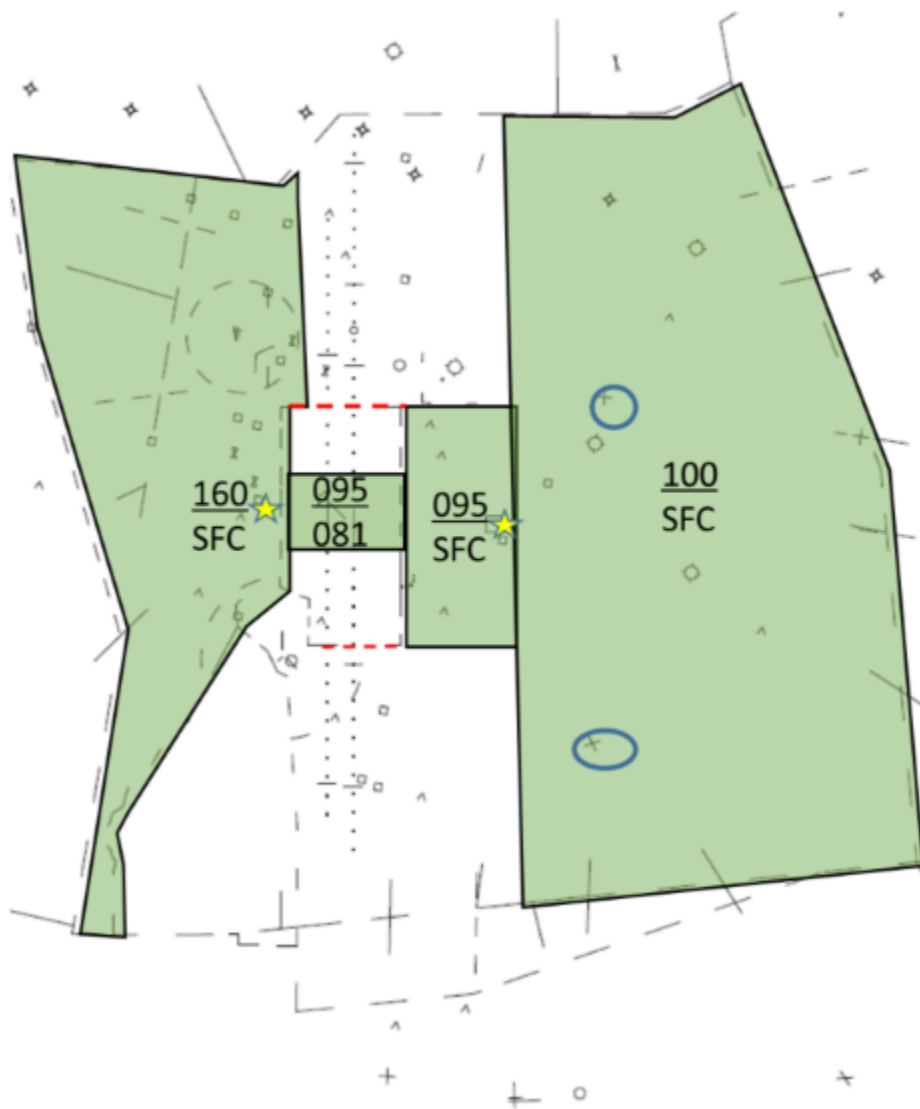
Appendix 1F: IFR/CAT III VFR Departure/Practice Approach Headings



Appendix 1G: CAT I/CAT II VFR Altitude Restriction Guidelines



Appendix 1H: VR Airspace and Arrival Gates



Appendix 1I: Class C Airspace (COS) and Class D Airspace (AFF and FCS)

