



Sport Class PRS 2025 Ground School

In-Brief and Differences Training



K G ECCLES 2021

PRS Ground School

- Objectives and Schedule Overview
- Part I: PRS Training and Race SOP Review
 - I.A: Airport & Area Review
 - I.B: Race Course Review
 - I.C: Ground and Departure/Rejoin/Course Entry Procedures
 - 1.D: On-Course Procedures
 - I.E: Show Lines and Escape Maneuvers Review
 - I.F: Recovery Procedures
 - 1.G: Safety
- Part II: Wrap / Q & A with Racers, Class Leaders and ARO Leaders

PRS - Objectives

- Refresher and ROW site differences training for a cadre of current Sport Class Racers
- 2025 Racer qualification and credentialing
- Demonstrate Safely Expanded Speed Envelope Air Racing Procedures and additional racecourse operations to FAA and event organizers
- Continue to set precedent for closed-course, wing-tip-to-wing-tip air racing outside of Reno
- Showcase Sport Class values and procedures to FAA, RARA, and event organizers

Part I – Safety



Keys to Sport Class Success

- Balance on the interests of the 5 constituents:
 - The racers
 - The spectators
 - The Race Organizers
 - The FAA
 - Insurance
- Constant Focus on Safety/Risk Reduction and Excellence
 - Make it our Culture
 - Take Care of Each Other
 - Have Fun!

Risk Mitigation

- Identify hazardous conditions
- Standardization
 - Everyone doing the same thing the same way
 - Keeps people predictable
 - Aids everyone's "Situational Awareness"
- People demonstrating poor airmanship or discipline will not be tolerated in the class

Risk Mitigation

- IMSAFE, Aircraft Readiness, Aircraft Familiarity
- Build-Up Approach
 - Crawl, Walk, Run
 - "Tunnel Vision"
- Start high, Work low
- The Build-Up
 - Identify Hazards, Find Pylons
 - Find additional visual cues
 - Work to a high race altitude
 - Develop line
 - Work up speed

On Course Hazards

- Turbulence
 - Difference wind direction makes the course fly differently
- Wing Tip Vortices / Prop Wash
 - Aspects that increase effect
 - Low aspect ratio wings
 - Highly wing loaded aircraft
 - Load factor
 - Strong though to dissimilar aircraft
 - Even similar aircraft can render another similar aircraft uncontrollable
- Unique On-Course Hazards

Flight Discipline

- Essential to Safety
 - Accurate reports
 - What you're actually doing, not what you think you should be doing...
 - Fulfill the formation "contract" at all times
 - Remain predictable
- Must be Standardized to avoid potential conflicts
 - Take-off with airplanes on course
 - Entering/exiting the course
 - Landing Pattern/Chute/Cool Down
- Must fly your plan!

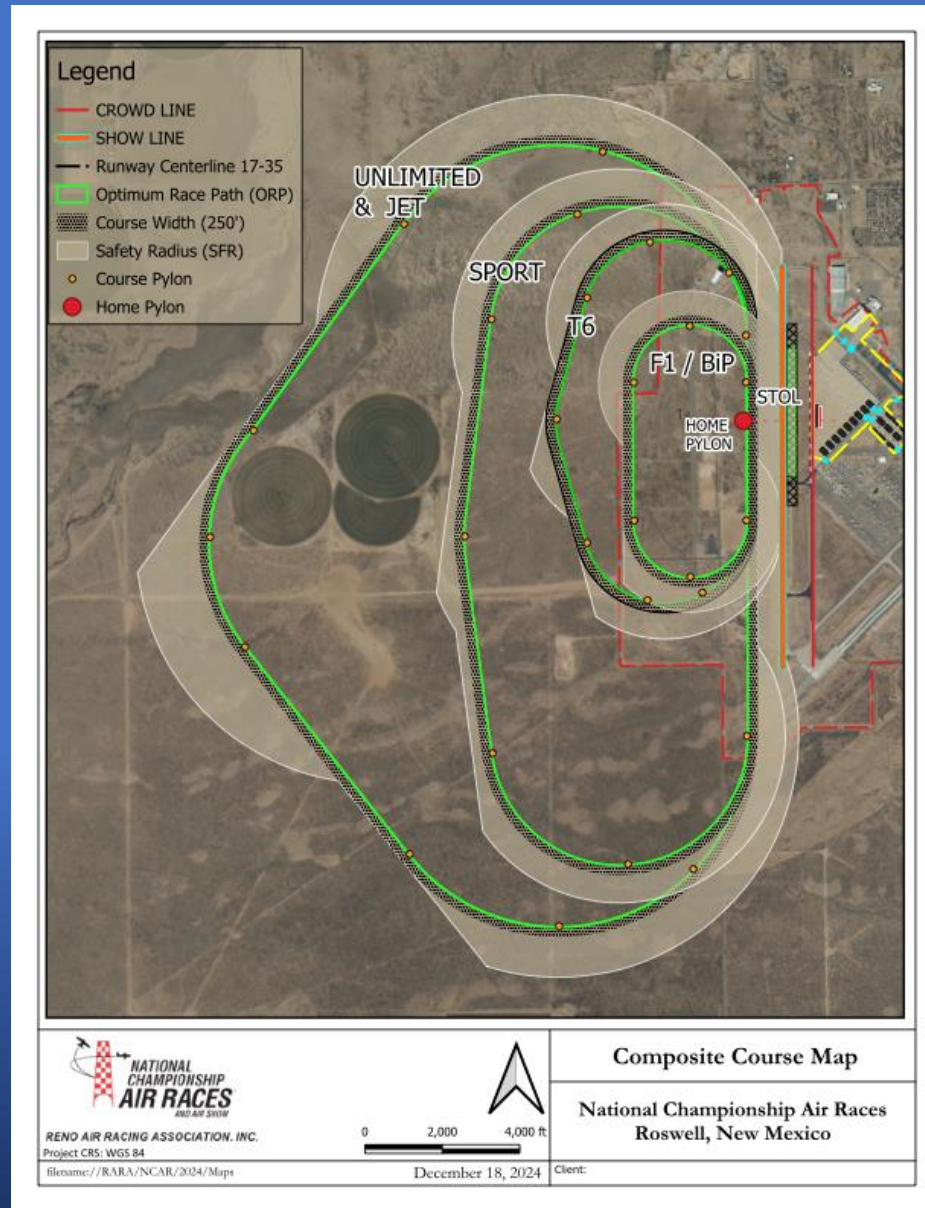
Part 2 – Roswell Airport & Area

- After our FWU – Any questions, comments, or concerns?

Part 3 – Race Course Overview



Roswell Course Overview - All Courses



Roswell Course Overview

Outer Course

- Max Speed
 - 500 MPH
- Altimeters will be set to 3,700'
 - All altitudes will be based on that setting
- Course Min Altitude
 - 50' AGL
- Cool-Down – 5,700' MSL and ABV
- Pattern Altitude – 4,700' MSL

Roswell Course Overview

Outer Course



ROW Course Overview - Outer Course

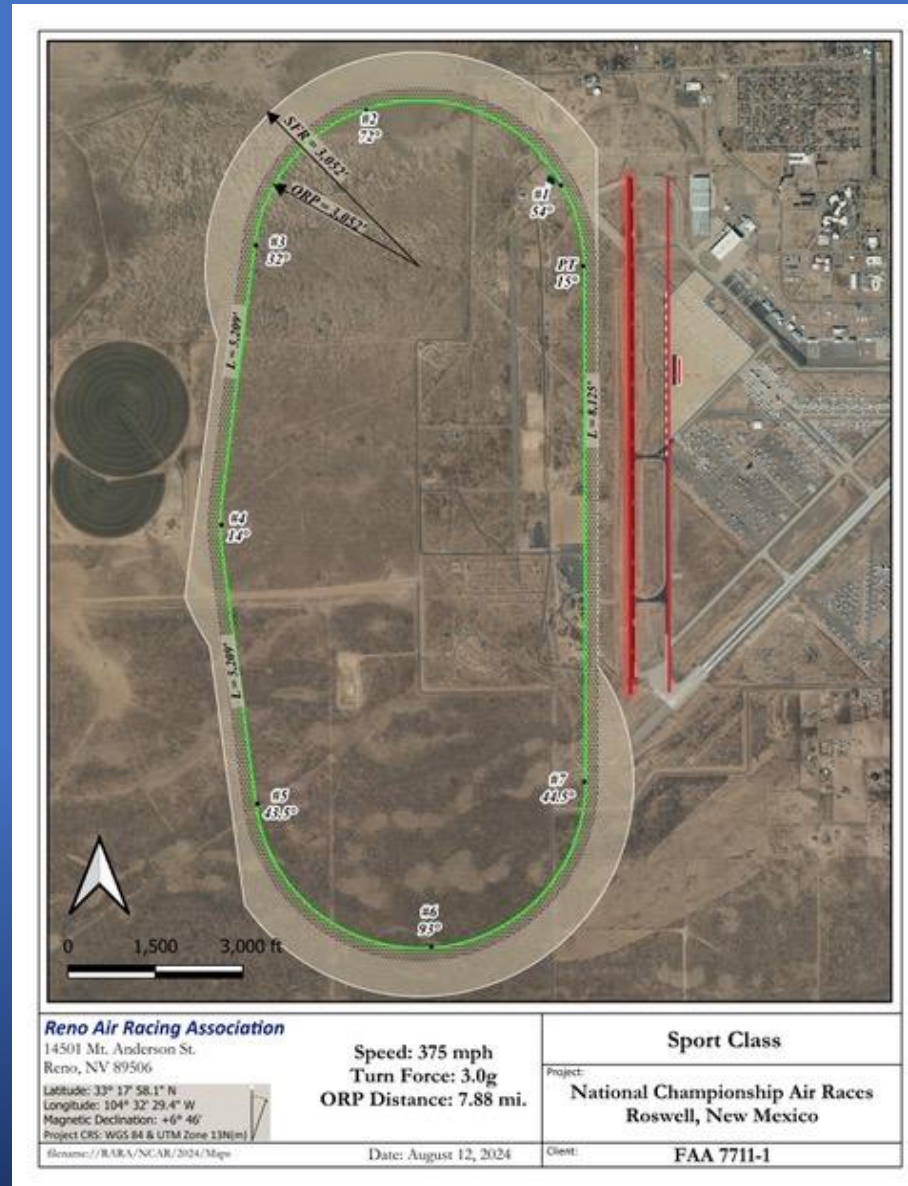


Roswell Course Overview

Middle Course

- Max Speed
 - 375 MPH
- Altimeters will be set to 3,700'
 - All altitudes will be based on that setting
- Course Min Altitude
 - 50' AGL
- Cool-Down – 5,700' MSL and ABV
- Pattern Altitude – 4,700' MSL

Row Course Overview - Middle Course



Roswell Course Overview

Middle Course

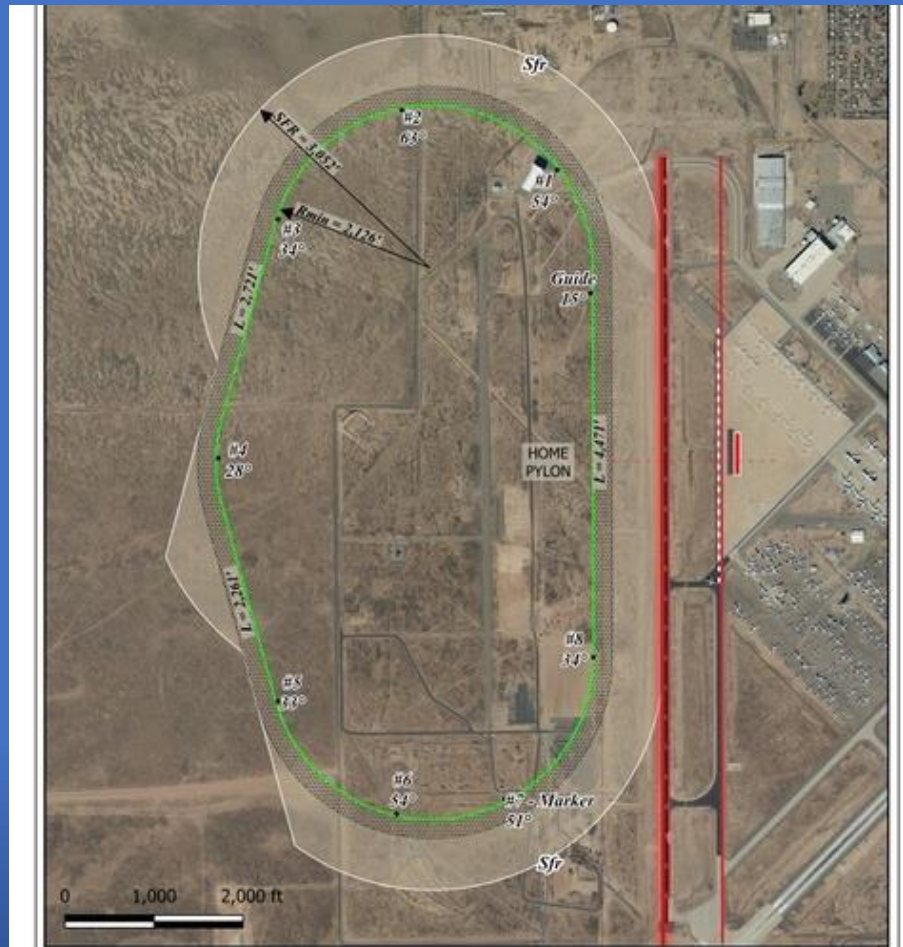


Roswell Course Overview

Inner Course

- Max Speed
 - 300 MPH
- Altimeters will be set to 3,700'
 - All altitudes will be based on that setting
- Course Min Altitude
 - 50' AGL
- Cool-Down – 5,700' MSL and ABV
- Pattern Altitude – 4,700' MSL

ROW Course Overview - Inner Course



Reno Air Racing Association
 14501 Mt. Anderson St.
 Reno, NV 89506

Latitude: 33° 17' 58.1" N
 Longitude: 104° 32' 29.4" W
 Magnetic Declination: +6° 46'
 Project CRS: WGS 84 & UTM Zone 13N(m)

Filename: //BARA/NCAR/2024/Maps

Speed: 300 mph
 Turn Force: 3.0g
 ORP Distance: 4.5 mi.

Date: October 9, 2024

Filename: //BARA/NCAR/2024/Maps

Date: October 9, 2024

AT-6 / SNJ Racing Association

Project:
 National Championship Air Races
 Roswell, New Mexico

Client: **FAA 7711-1**

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ROW Course Overview - Inner Course



Part 4 – Course Details



Roswell Course Details

Turn Visual Cues

- 50' Tall Can
- Colors for different courses



Roswell Course Details

Other Visual Cues

- Guide Marks – Outer Course
 - TBD
- Guide Pylon Light?

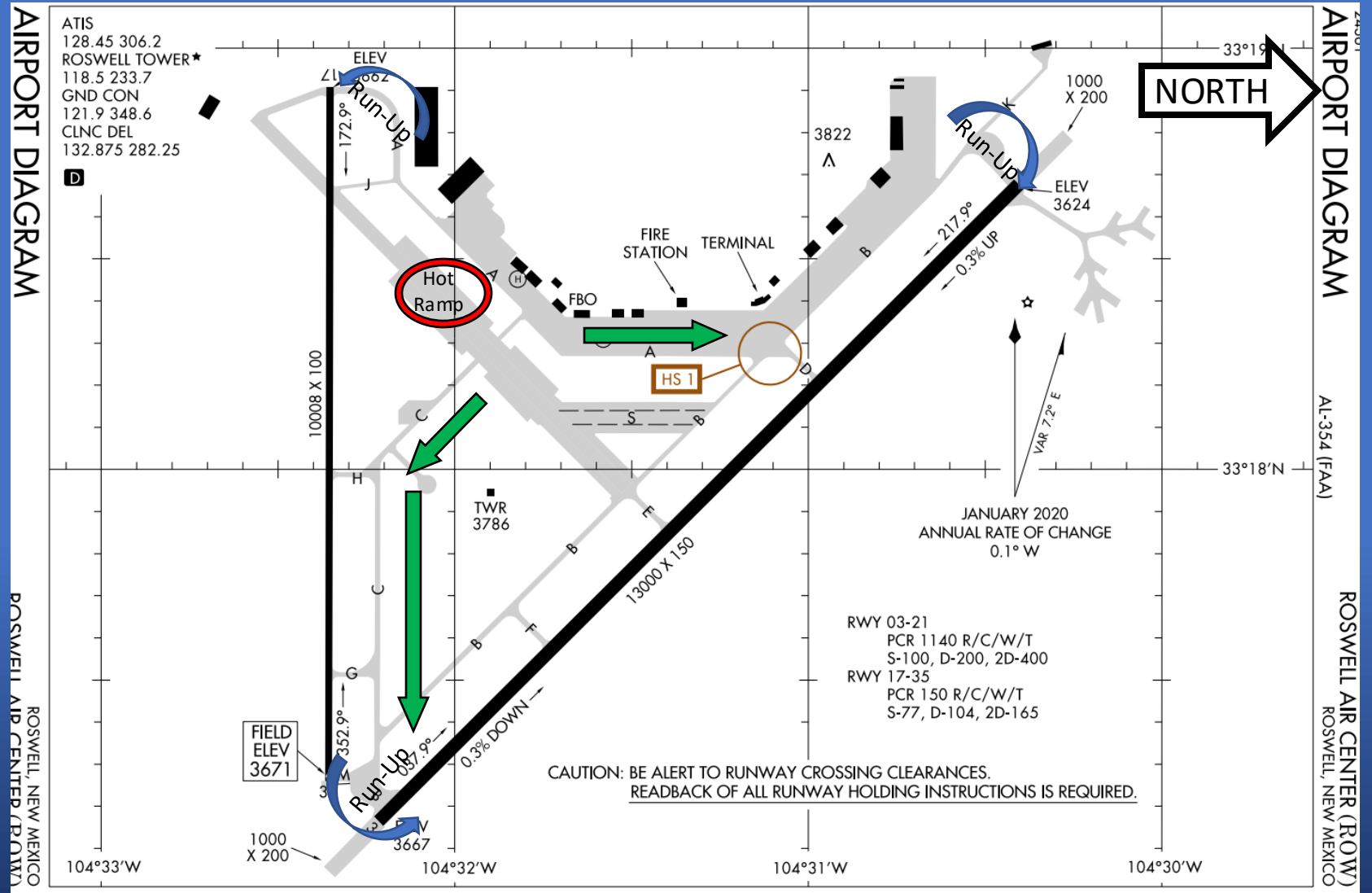


Part 5 – Ground, Rejoin & Course Entry Procedures



Taxi Out & Run Up

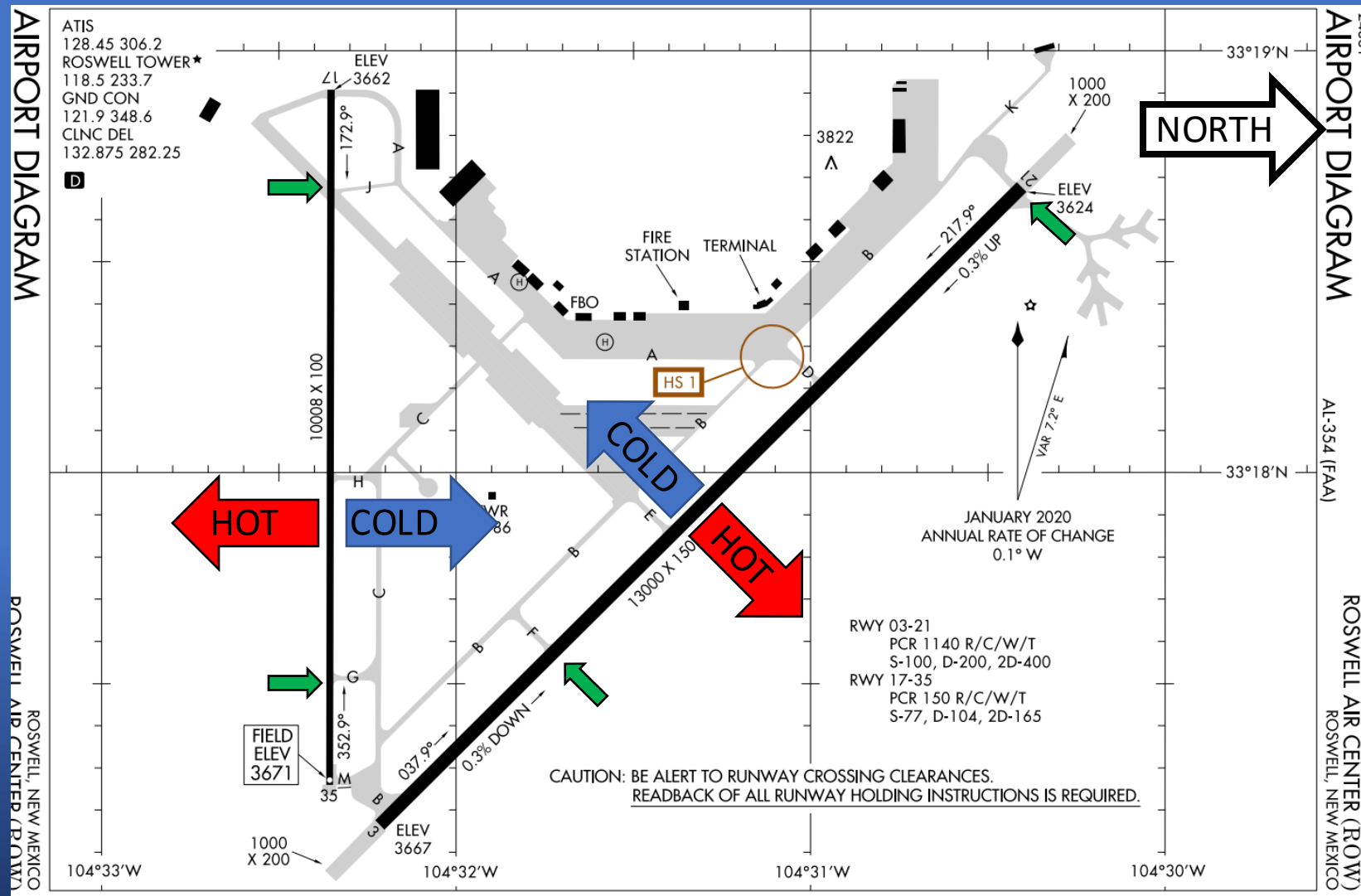
- Start & Check in on Ground: XXX.XXX
- Taxi & Run-up on Ground
- Standard Race SOP taxi from Hot Ramp to Run-up
- Run-up Complete: Standard Race SOP ready call from -2
- Lead directs "GO" to RC: XXX.XXX
- Standard Race SOP Line-up and Launch



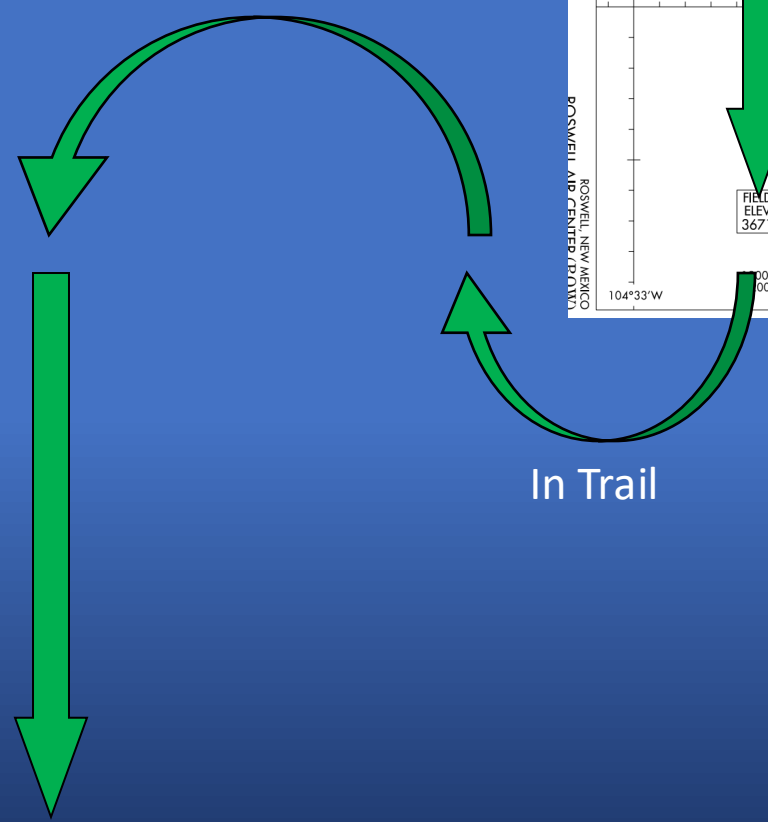
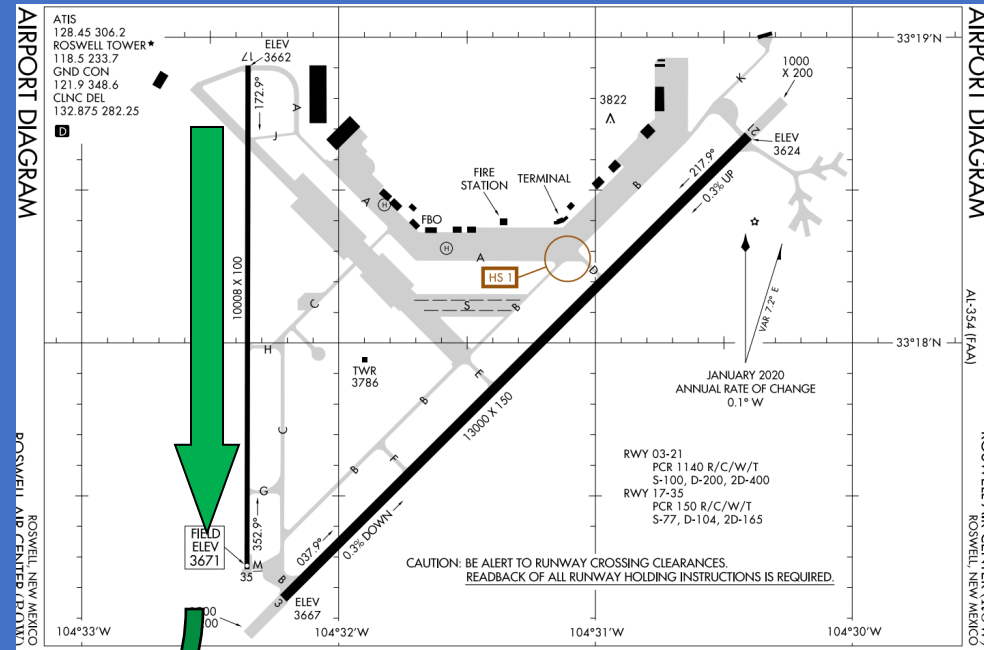
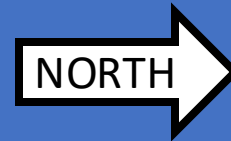
Hot Side – Cold Side

SARC/Sport Class Runway Procedures

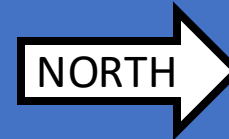
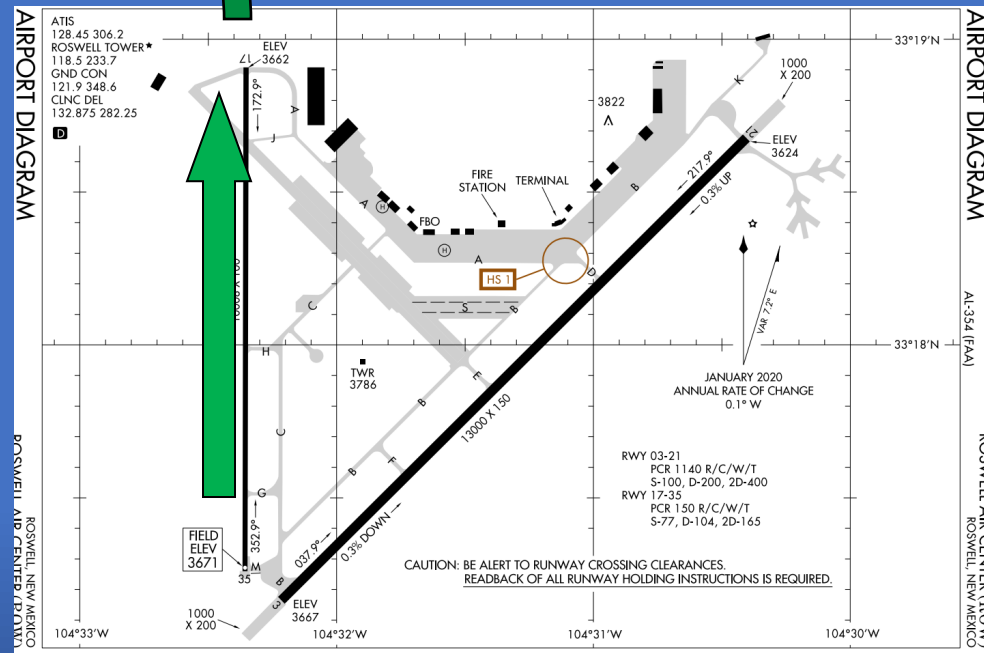
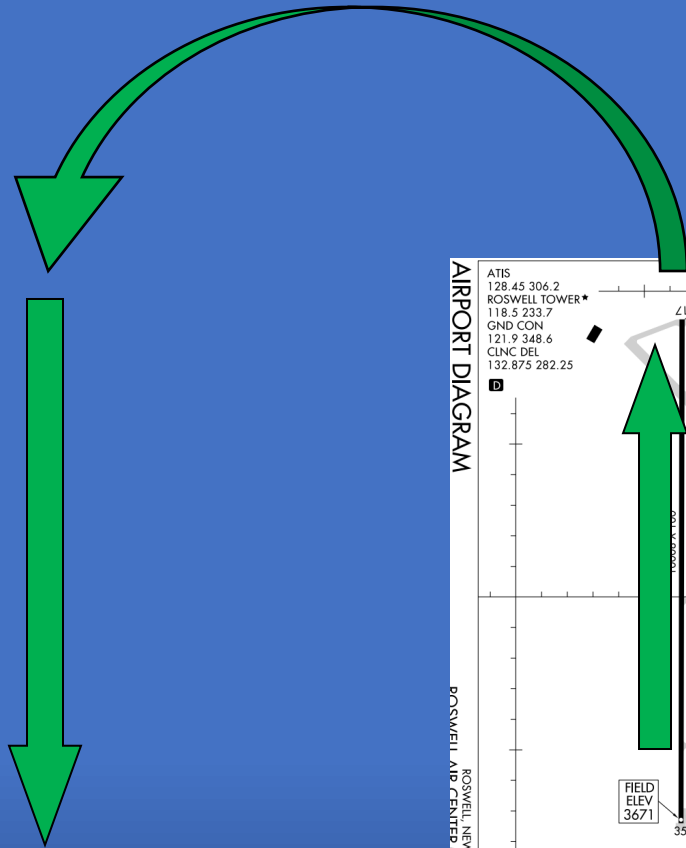
- Hot = W/S ; Cold = E/N
- No mid-field turn offs
 - 35 Exit J ; 17 Exit G
 - 21 Exit F ; 03 Exit End



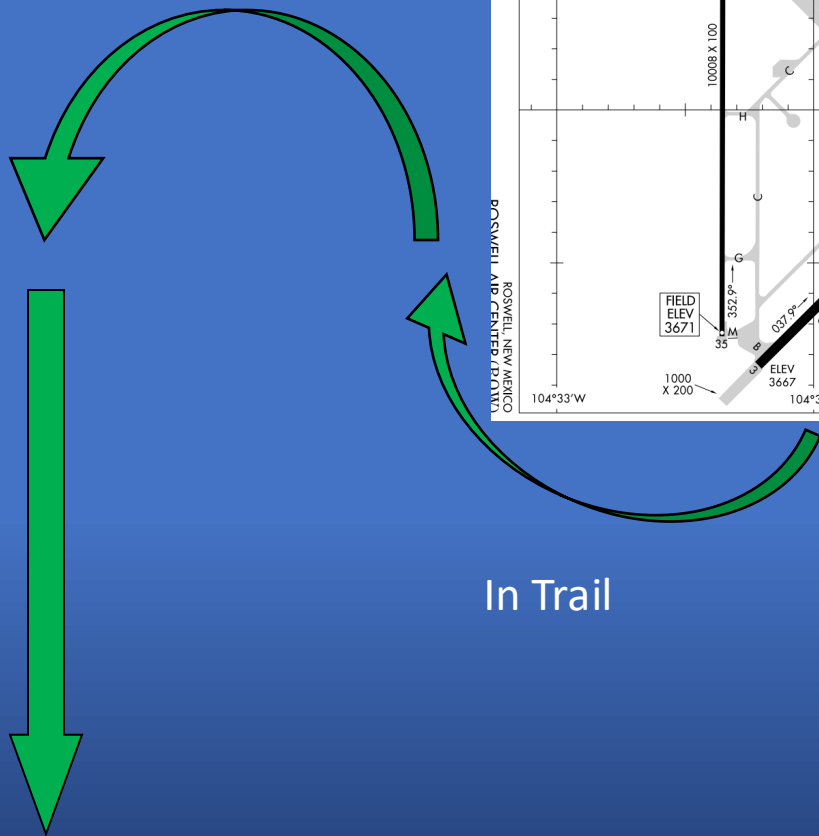
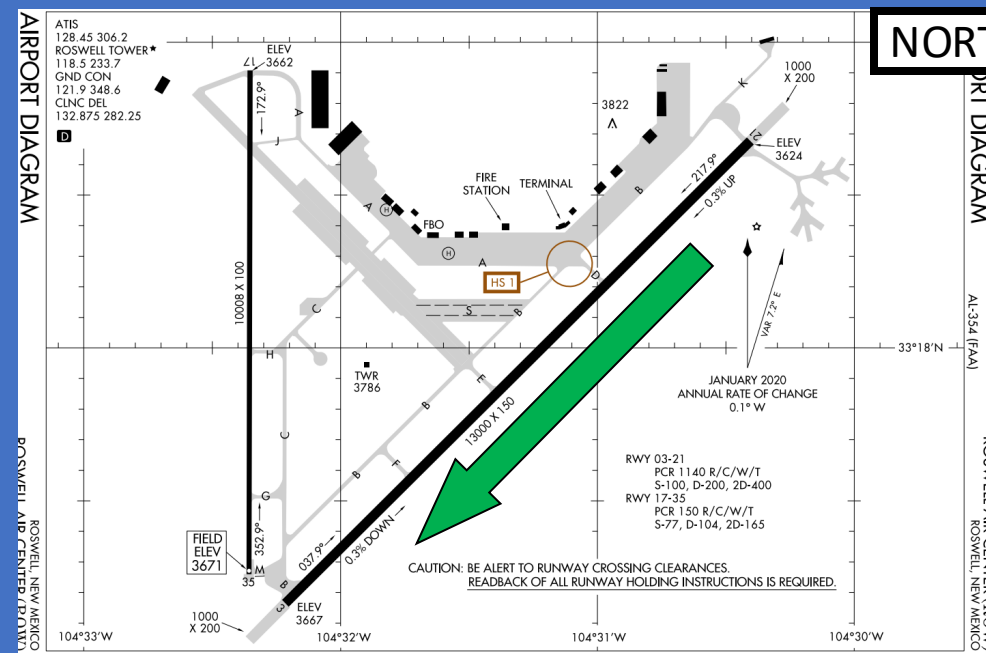
RWY 17 Departure – Rejoin Procedure



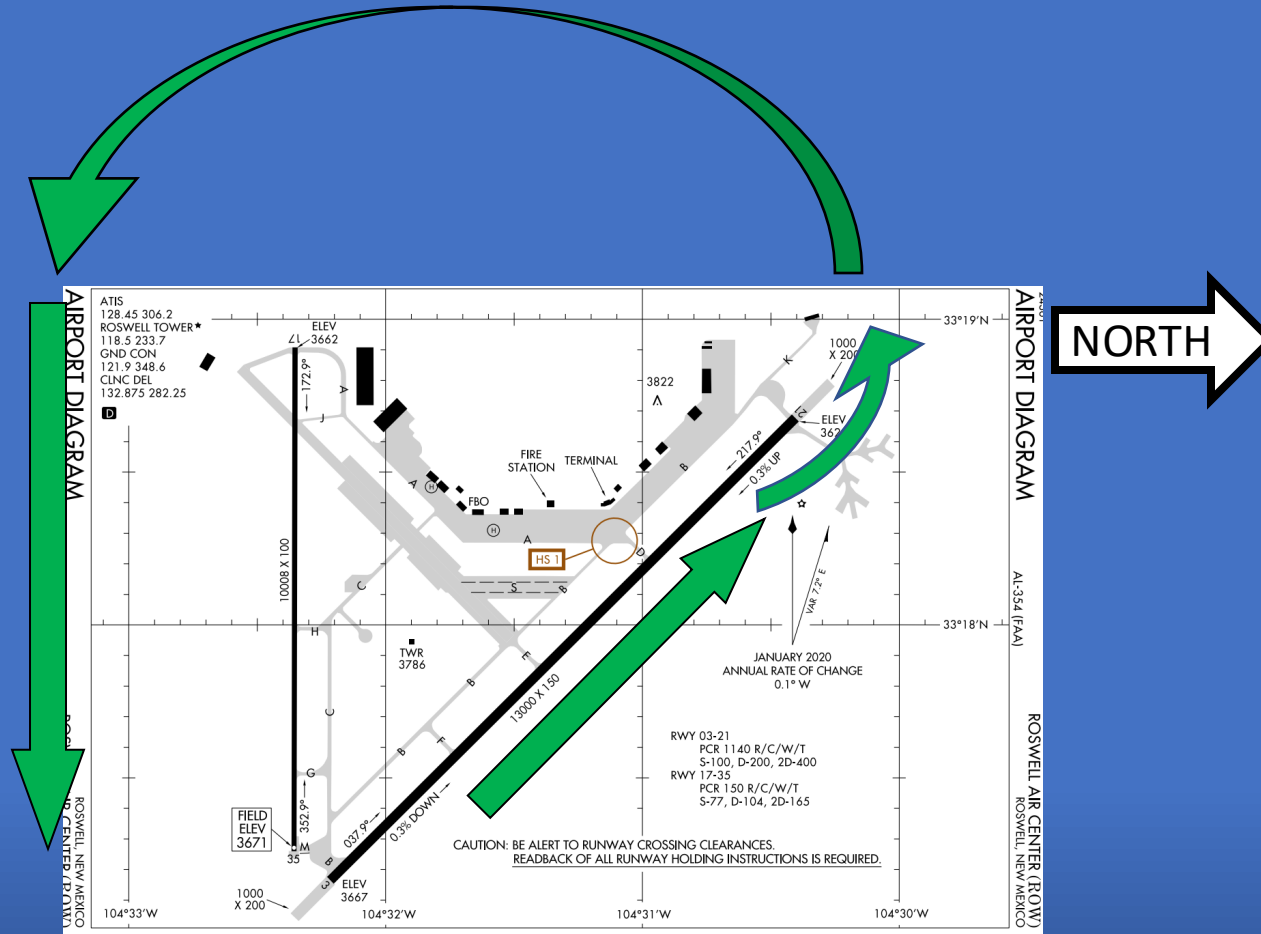
RWY 35 Departure – Rejoin Procedure



RWY 21 Departure – Rejoin Procedure

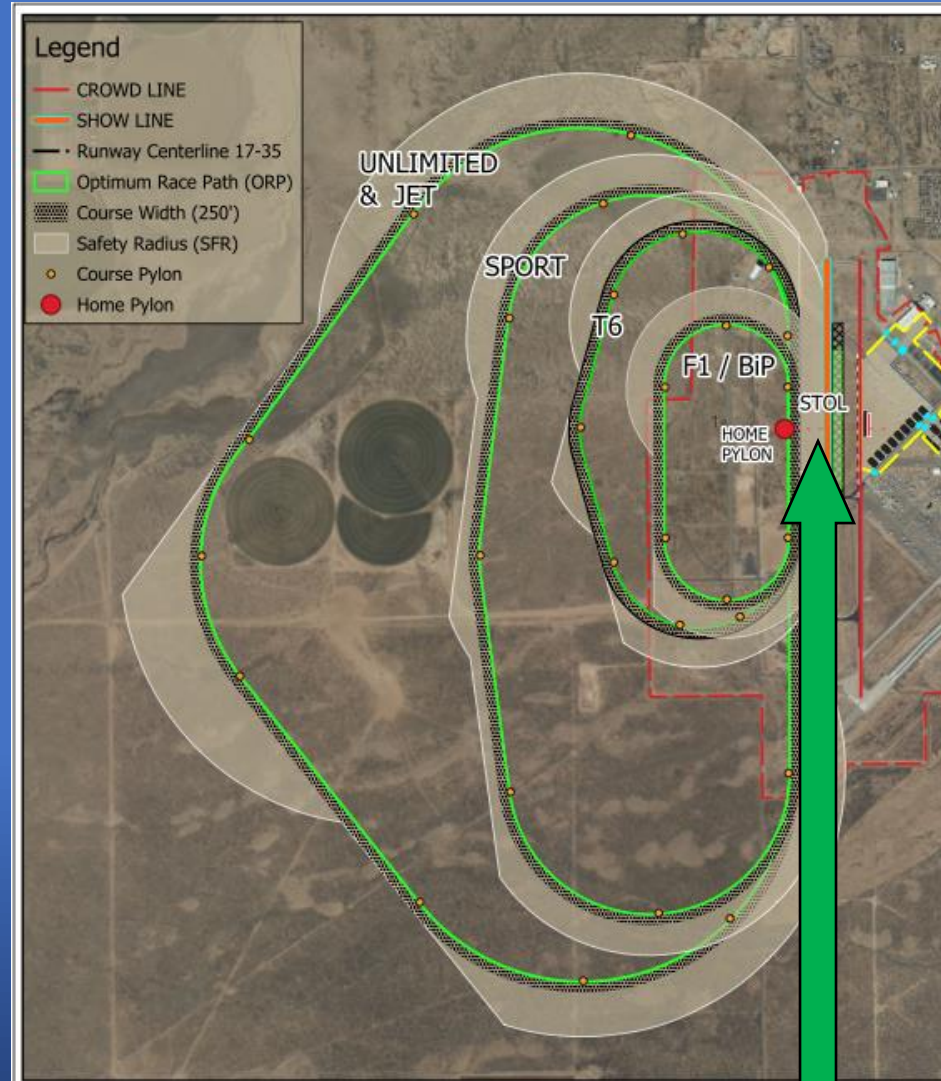


RWY 03 Departure – Rejoin Procedure

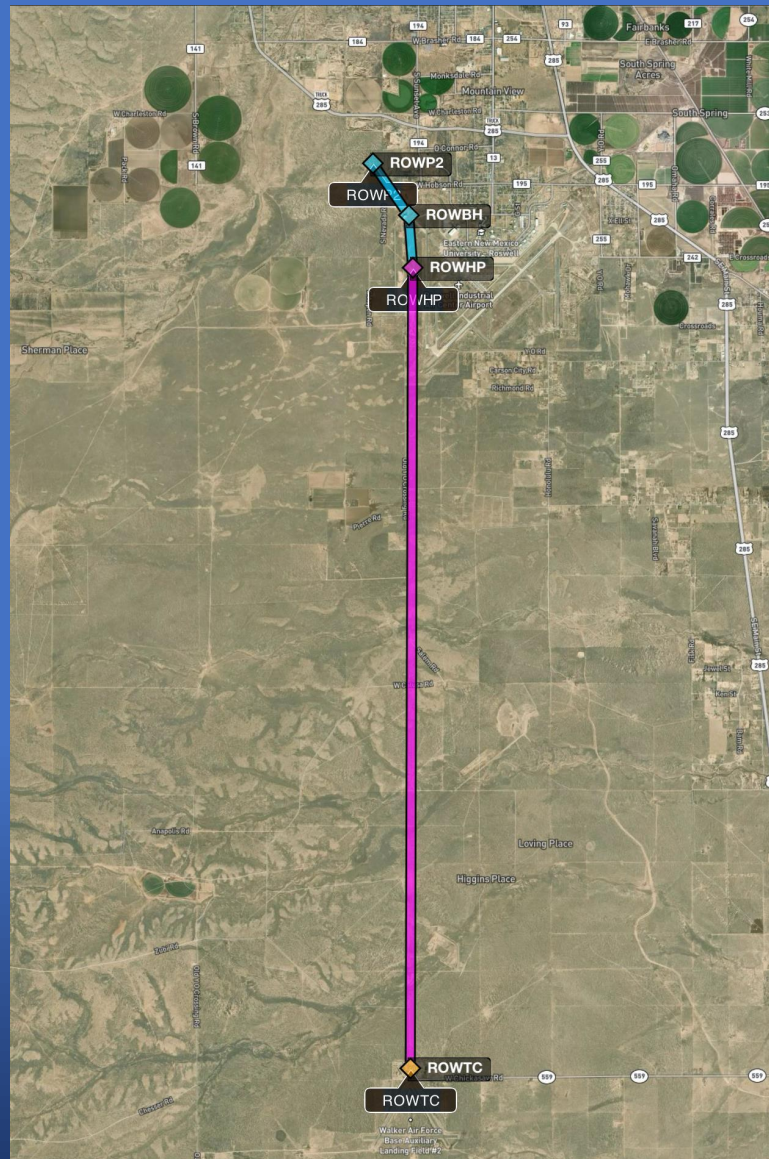


Course Details – Normal Start Chute Entry

- S to N
 - Parallel 17/35
 - 900' between Home Pylon and Show-line (~100' per airplane)
- Release
 - Abeam south turn of outer course
 - ~ 4,000-4,500' MSL
 - 300-800' AGL

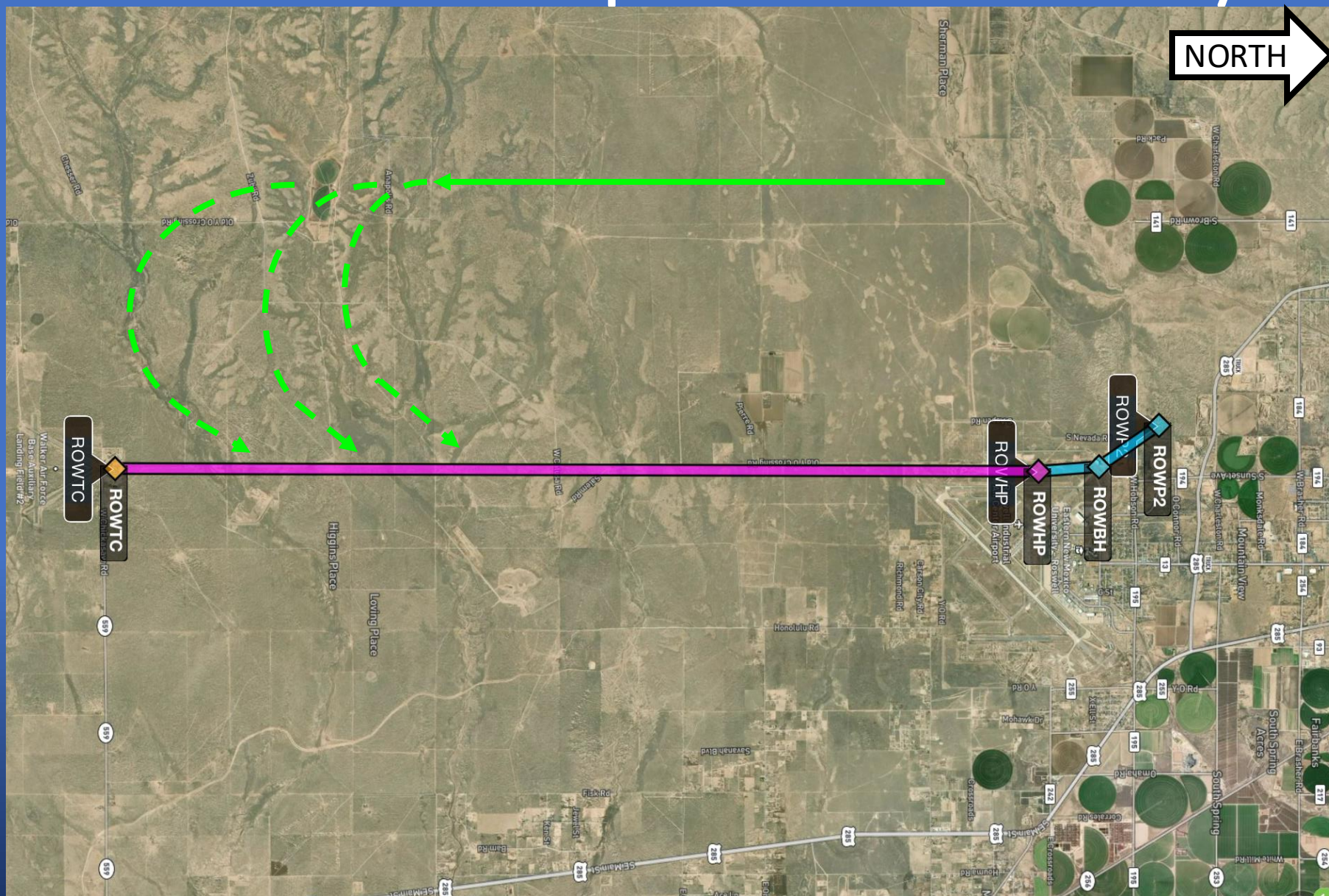


Course Details – Top of Chute to Entry



Course Details – Top of Chute to Entry

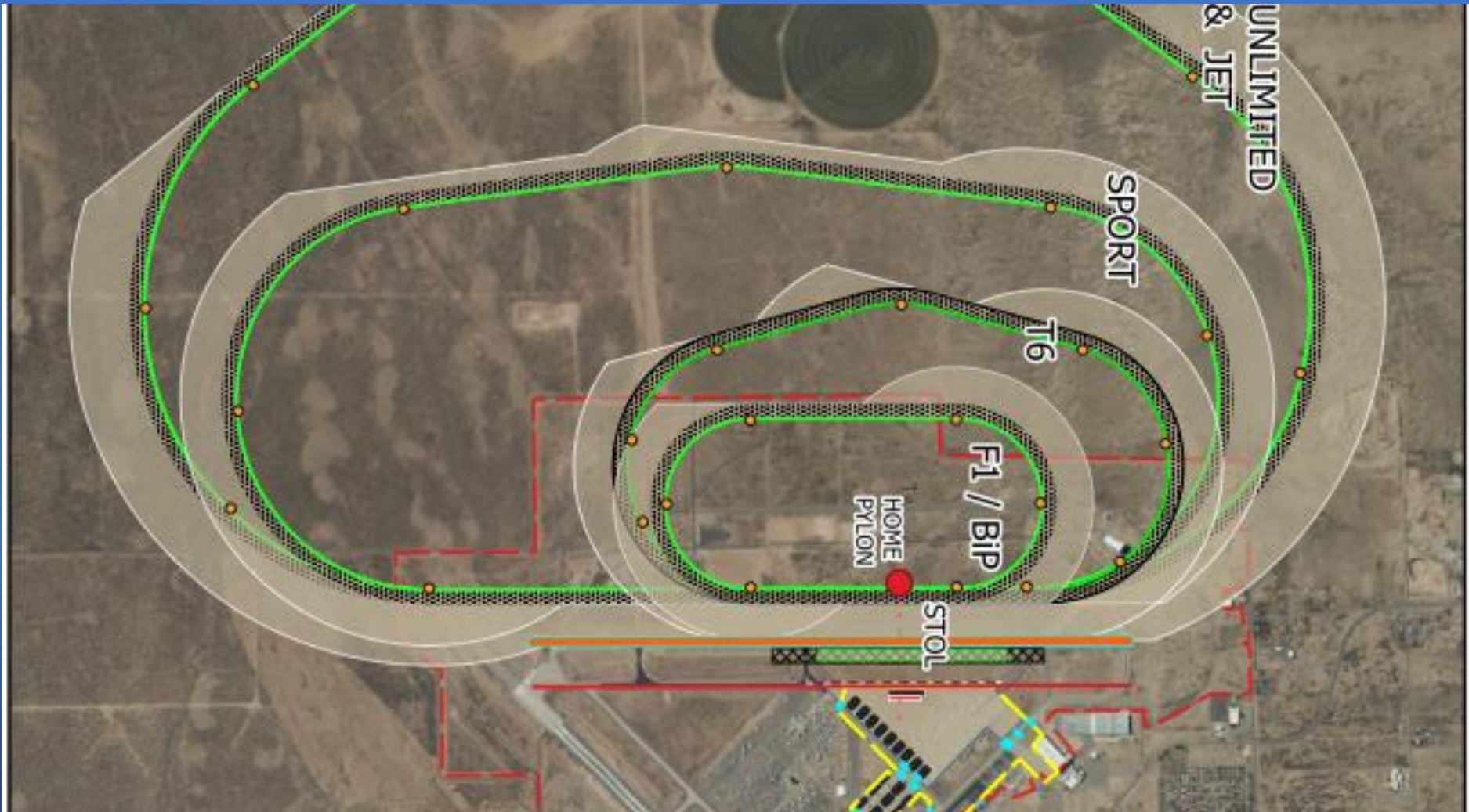
- Roswell correctional facility & Walker AFB Alt Lnd #2
- ~ 9nm from Home Pylon
- Will intercept along this course appropriate to release speed



Part 6 – Show Lines and Escape Maneuvers



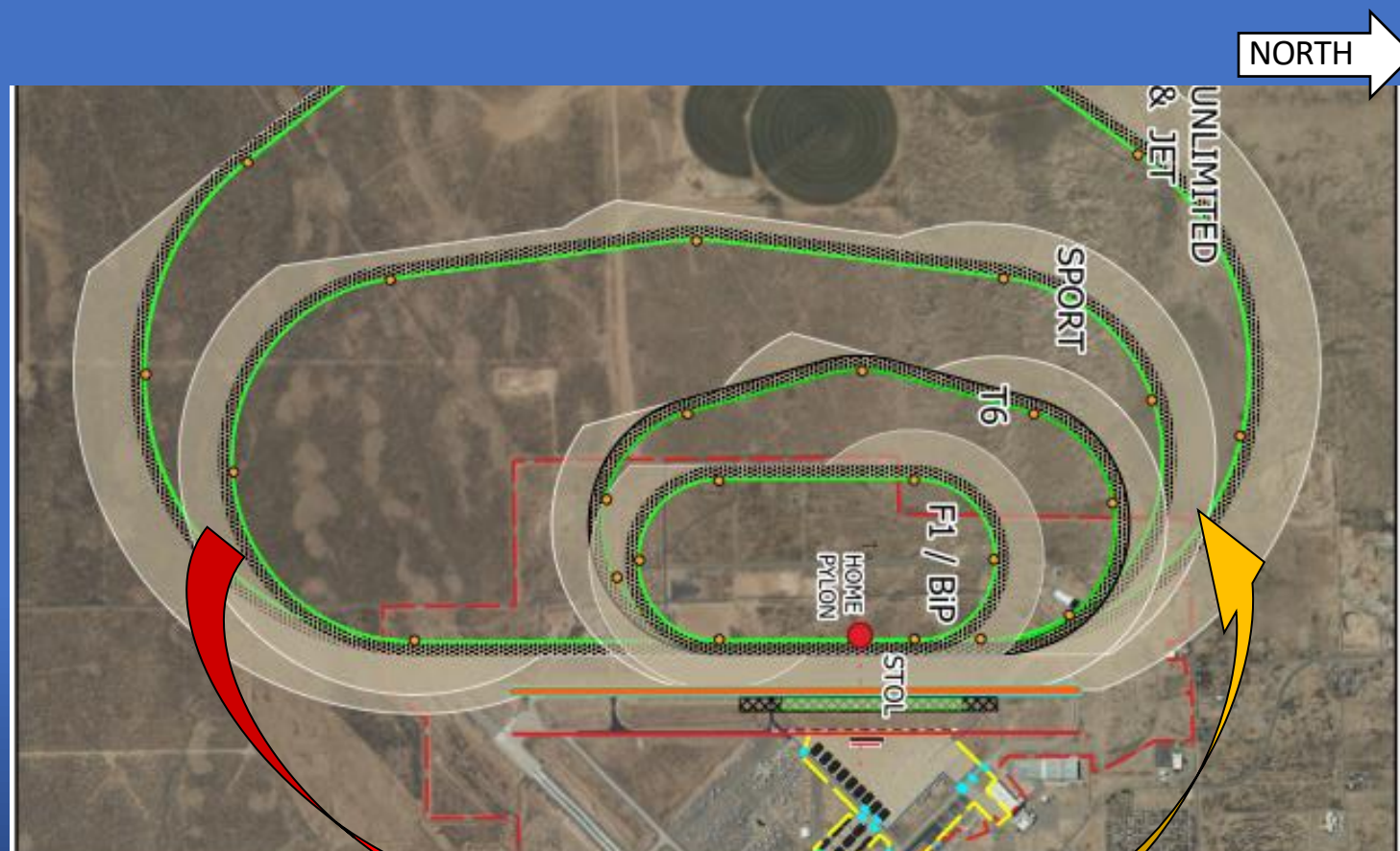
Show Lines



- E Show Line
 - W edge of 17/35

Escape Maneuvers – East Show-line

- Pylons 8-10
- Climb towards 5,200' MSL (1500' AGL)
- Once clear of course, arc N over center of airport, behind spectator areas
 - Aim for cross in runways or the tower
- Rejoin course between Pylons 2-5



Climb
toward
5,200 MSL

Part 7 – Course Exit, Cool-Down & Recovery Procedures



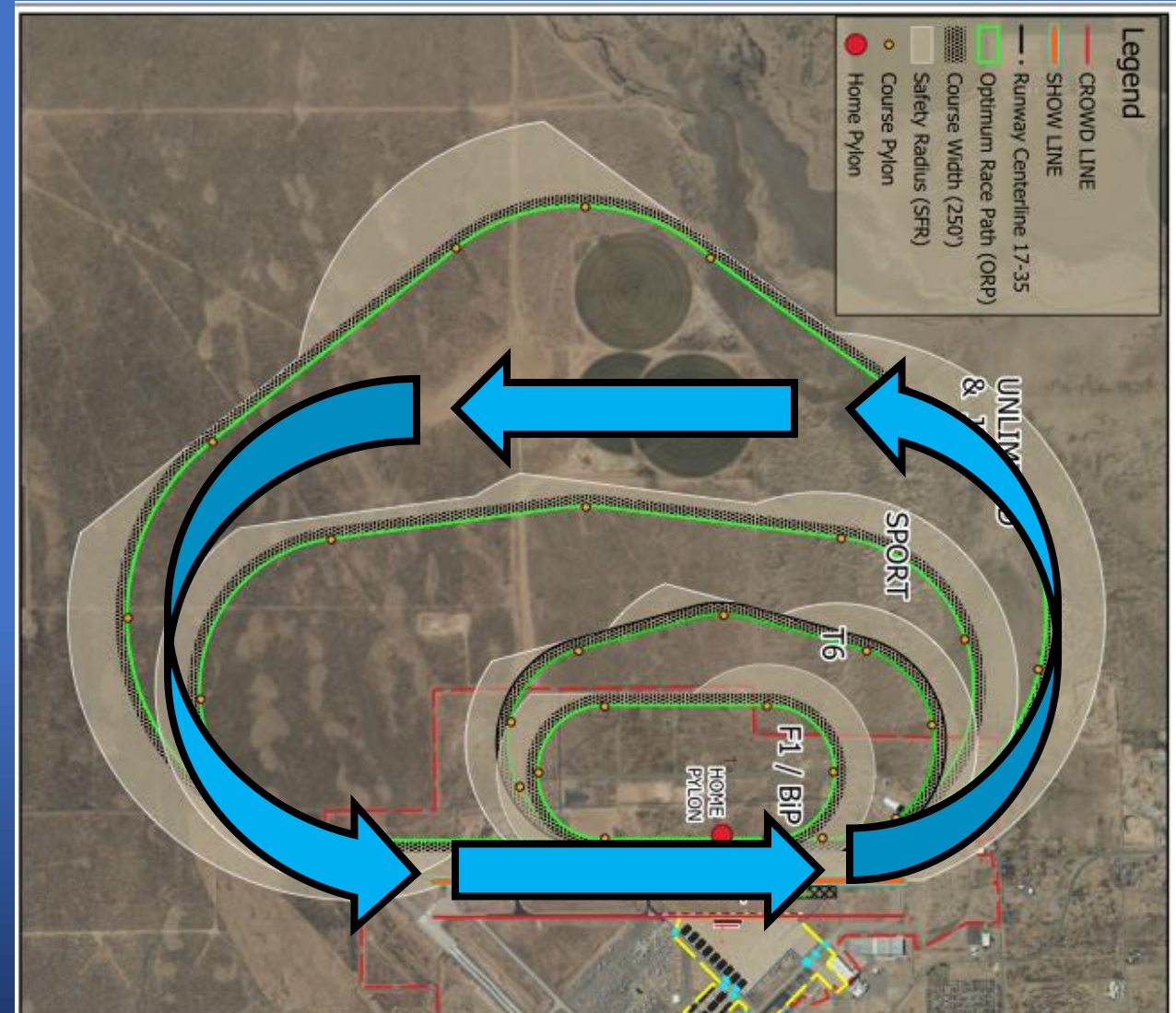
Course Details – Normal Exit

- Off at Home
- Climbing left turn to Cool Down: 6,000'
- Remain West 17/35
- Aim for middle of pivot fields



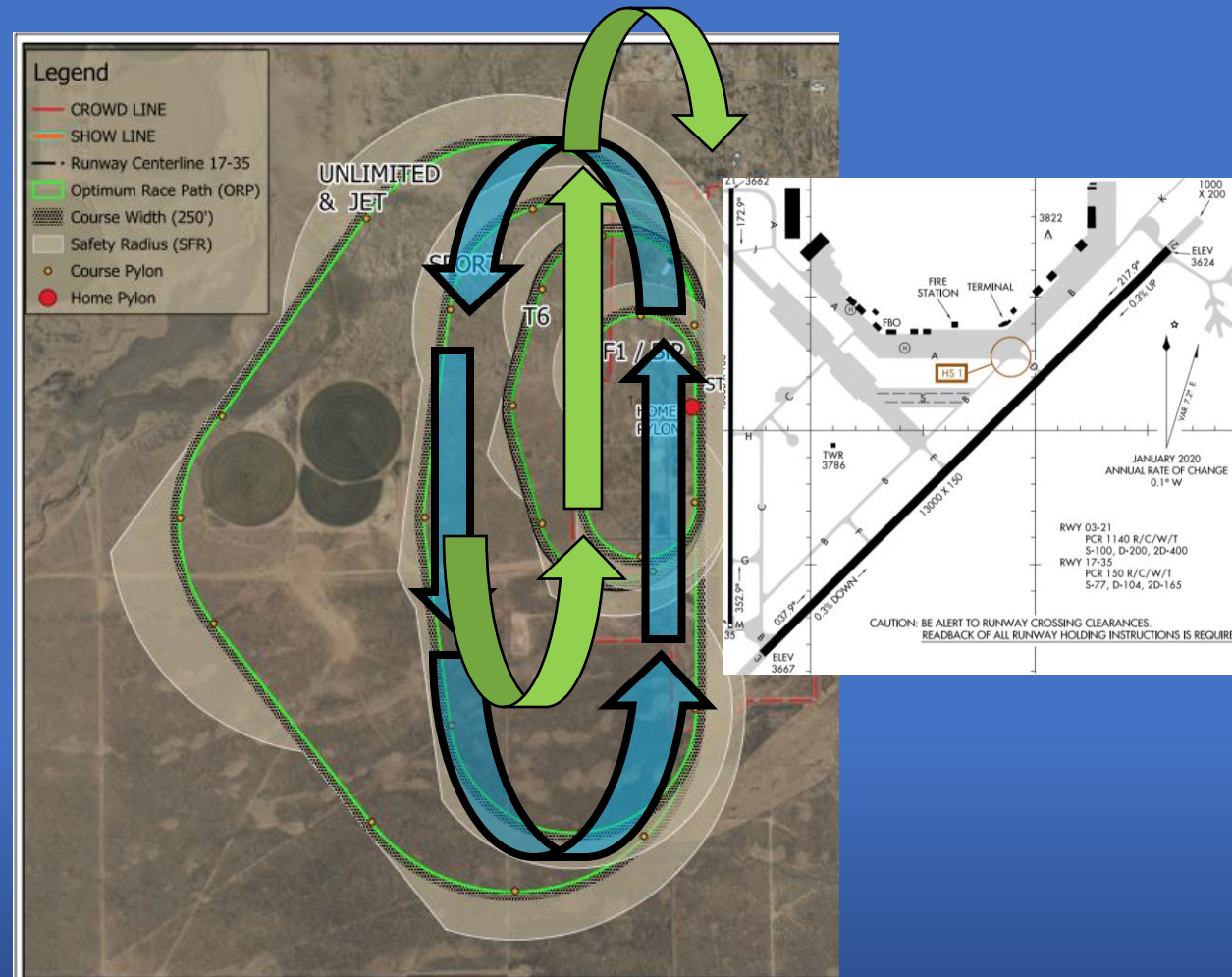
Course Details – Queue & Cool Down

- Queue
 - 5,500' MSL
 - Aim for middle of pivot fields
- Cool Down
 - 6,000' MSL



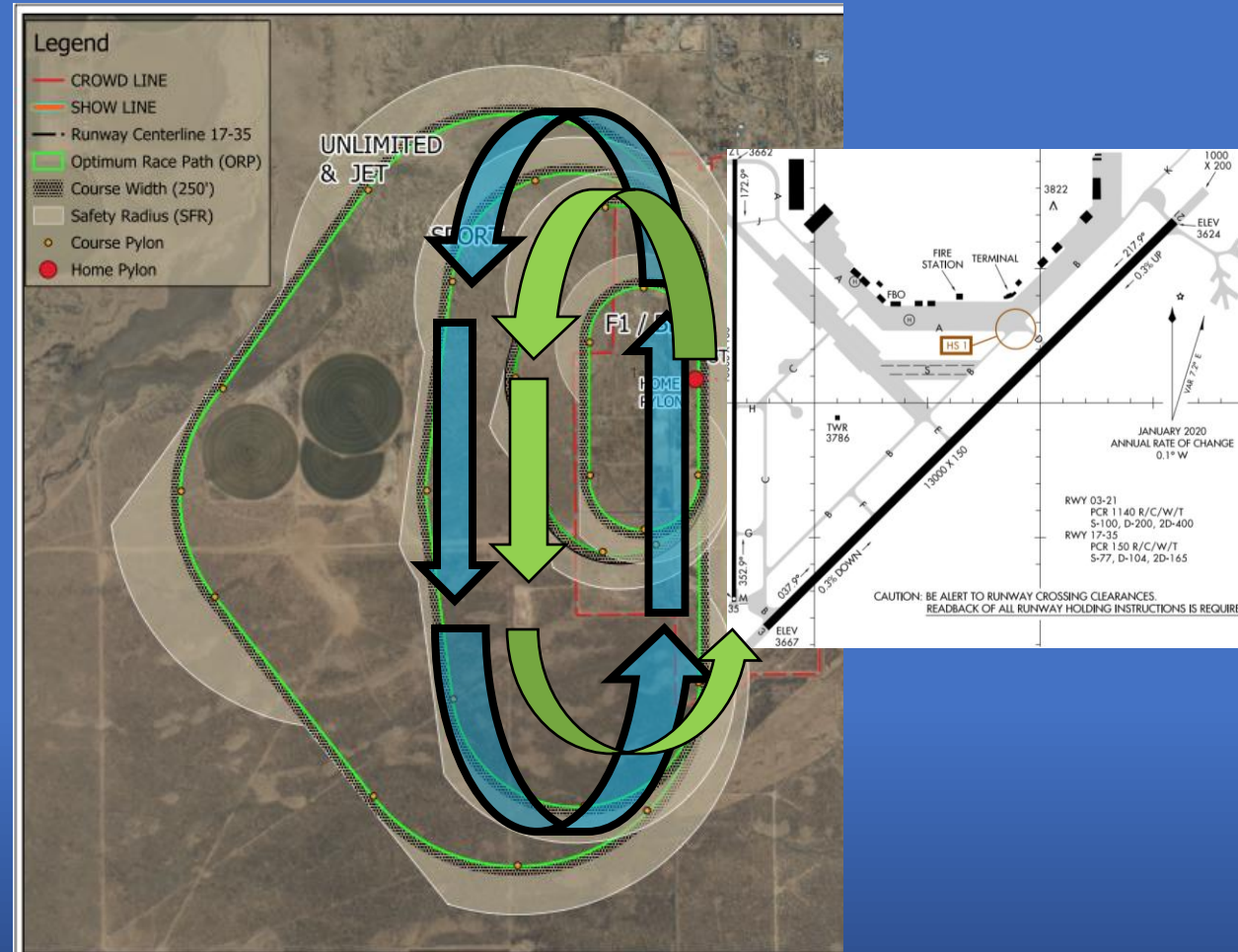
Recovery – RWY 17

- Exit Cool Down
 - Home pylon
 - 5,500 MSL
- Down Wind
 - 4,700 MSL
 - Right Traffic
 - Standard Calls
 - Leaving Cooldown
 - Downwind Abeam (Home Pylon)
 - Base/Gear



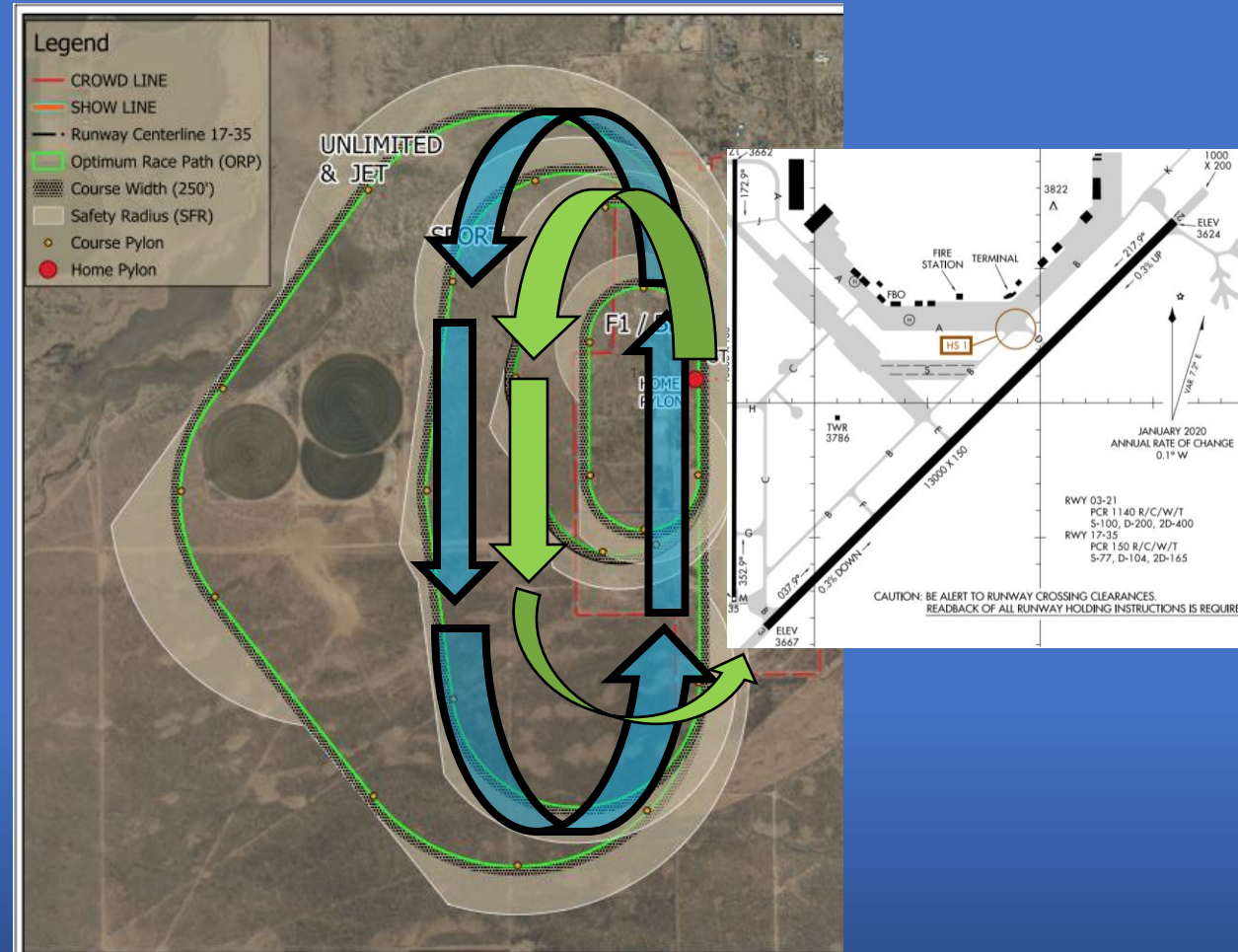
Recovery – RWY 35

- Exit Cool Down
 - Home Pylon
 - 5,500 MSL
- Down Wind
 - 4,700 MSL
 - Left Traffic
 - Standard Calls
 - Leaving Cooldown
 - Downwind Abeam
 - Base/Gear



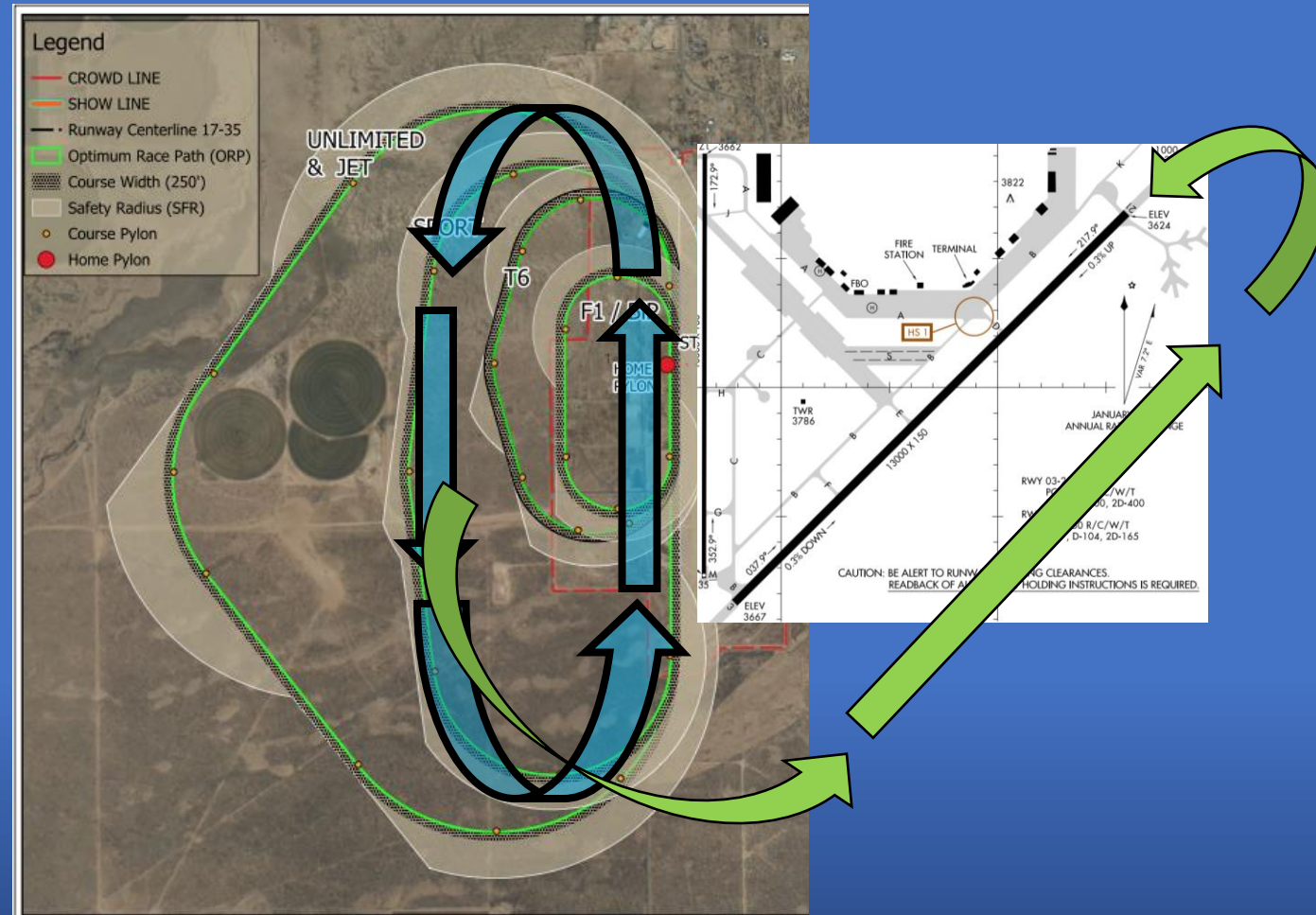
Recovery – RWY 03

- Exit Cool Down
 - Home Pylon
 - 5,500 MSL
- Down Wind
 - 4,700 MSL
 - Left Traffic
 - Standard Calls
 - Leaving Cooldown
 - Downwind Abeam
 - Base/Gear



Recovery – RWY 21

- Exit Cool Down
 - Home Pylon
 - 5,500 MSL
- Down Wind
 - 4,700 MSL
 - Left Traffic
 - Swing wide for Left DW 21
- Standard Calls
 - Leaving Cooldown
 - Downwind Abeam (Abeam D taxiway)
 - Base/Gear



Roll Out & Taxi In

- No Early Turn-Offs
- Lead gather flight
- Auto-push Ground upon crossing hold short
- -Last call, “Sport XX Clear”
- Lead will taxi flight back to hot ramp

Part 8 – On-Course Procedures



Normal Entry

- Take-off on time
 - Racers will be on course
 - If departing 17 – Opposite direction traffic
 - Be mindful to deadline (southerly crosswind common)
- Transit to top of chute ~8 min
 - Flight on course, use takeoff as timing SA
- Flight entering – Announce top of chute
 - Flight on course: “Sport XX flight, next time past home, exit the course via the escape maneuver”
 - Exit course via South Show-line escape maneuver to cool down
 - SA note: Flight in chute has right of way

Normal Landing

- After exiting course – In cool down
- Wait until flight in chute is fully established on course
- Then and only then – Recover to runway in use
- For Deconfliction: Do not exit cool down if there is a flight in the chute

Abnormal Ops Airline/Medevac/Etc

- TBD
- Come off course in current position
 - Continue over course, in trail
 - Climb to cool down
 - DO NOT over-fly deadlines
- Once cleared on course, re-enter via show-line re-entry procedure

Flights 1, 2, 3

- Build-Up Approach
 - Crawl, Walk, Run
- Flight 1 – Everyone Outer Course entire period
- Flight 2 – Everyone Start Lap, transition to middle course for entire period
- Flight 3
 - > 275 mph airplanes, split time between Outer and Middle Courses
 - < 275 mph airplanes



Part II – Q&A

Let's Go Fly!



K G ECCLES 2023

