



**Northern California TRACON  
STANDARD OPERATING PROCEDURE  
Version 1.10**

## List of Changes

VERSION	DATE	DESCRIPTION
1.0		
1.1	13SEP2018	Added new procedures
1.2	28FEB2019	Combined individual SOPs into single document
1.3	20OCT2019	Removed VOX Channels due to AFV release
1.4	20FEB2019	Replaced CZQ with NTELL
1.5	23APR2020	Add NCT_DEP position, OAKE, update Area B and D sectors; add Cedar and Laguna
1.6	21MAY2020	Changed SMF runways to 17/35
1.7	23OCT2021	Redid airspace graphics, updated handoff tables, added area B scratchpads, other misc changes/visual overhauls
1.8	07FEB2022	.xx5 frequency update
1.9	24FEB2022	Removal of NCT 900 ft rule
1.10	16JUN2022	Add NCT-specific general procedures, update RECAT to CWT, revised vectors below MVA section, simplify scratchpads, entry/exit/sector responsibility updates, add noise abatement appendix, improve formatting consistency, update video map list

Section 1. General Information .....	6
1-1 Purpose.....	6
1-2 Distribution .....	6
1-3 Cancellation.....	6
1-4 Airport Complexes .....	6
1-5 NCT Control Areas .....	7
1-6 Traffic Flow Plans and Runway Configurations .....	7
1-7 Aircraft Definitions .....	8
1-8 General Procedures and Responsibilities .....	8
1-9 Wake Recategorization (CWT).....	8
1-10 Vectors Below the MVA .....	9
1-11 Descend Via Phraseology .....	10
1-12 Aircraft Between Sectors .....	10
1-13 Intra-Facility Hand-offs.....	10
1-14 VFR to IFR (V2I).....	10
1-15 Transfer of Control .....	11
1-16 Down the Bay .....	11
1-17 Vector Gates .....	11
1-18 Pre-Arranged Coordination Procedures (P-ACP) .....	12
1-19 Scratchpads .....	12
1-20 Noise Abatement.....	13
Section 2. NCT Combined .....	14
2-1 General Information.....	14
2-2 Controller Information Template.....	15
Section 3. Area A Procedures .....	16
3-1 General Information.....	16
3-2 Seca .....	17
3-3 Morgan.....	20
3-4 Licke - SFOW .....	23
3-5 Licke - SFOE.....	25
3-6 Licke - SJCE.....	27
3-7 Toga - SFOW.....	30
3-8 Toga - SFOE.....	33
3-9 Toga - SJCE .....	36
3-10 Area A Combined - SFOW and SFOW/SJCE .....	39
3-11 Area A Combined - SFOE.....	40
Section 4. Area B Procedures .....	41
4-1 General Information.....	41
4-2 SFO Arrivals.....	41

4-3 SFO Runways 01 Arrivals .....	42
4-4 Simultaneous Dependent Approaches (DOT 308).....	42
4-5 Area B Scratchpad Entries .....	43
4-6 Boulder - SFOW .....	44
4-7 Boulder - SFOE .....	47
4-8 Boulder - OAKE .....	49
4-9 Boulder - SF010 .....	51
4-11 Cedar - SFOE .....	55
4-12 Foster - SFOW .....	57
4-13 Foster - SFOE.....	59
4-14 Foster - OAKE .....	61
4-15 Foster - SF010 .....	63
4-16 Laguna .....	64
4-17 Niles - SFOW.....	67
4-18 Niles - SFOE.....	69
4-19 Niles - SF010.....	71
4-20 Woodside - SFOW .....	72
4-21 Woodside - SFOE .....	75
4-22 Woodside - SF010 .....	77
4-22 Area B Combined - SFOW .....	78
4-23 Area B Combined - OAKE .....	79
4-24 Area B Combined - SFOE.....	80
4-25 Area B Combined - SF010.....	81
<b>Section 5. Area C Procedures .....</b>	<b>82</b>
5-1 General Information.....	82
5-2 Valley - SFOW .....	83
5-3 Valley - SFOE .....	85
5-4 Sunol - SFOW.....	87
5-5 Sunol - SFOE .....	90
5-6 Grove - SFOW .....	92
5-7 Grove - SFOE.....	95
5-8 Grove - OAKE .....	97
5-9 Grove - SF010 .....	100
5-10 Area C Combined - SFOW .....	101
5-11 Area C Combined - OAKE .....	102
5-12 Area C Combined - SFOE.....	103
5-13 Area C Combined - SF010 .....	104
<b>Section 6. Area D Procedures .....</b>	<b>105</b>
6-1 General Information.....	105

6-2 Richmond - SFOW .....	106
6-3 Richmond - SFOE .....	109
6-4 Richmond - OAKE.....	112
6-5 Sutro - SFOW .....	115
6-6 Sutro - SFOE .....	118
6-7 Sutro - OAKE.....	120
6-8 Area D Combined - SFOW .....	124
6-9 Area D Combined - OAKE .....	125
6-10 Area D Combined - SFOE.....	126
<b>Section 7. Area E Procedures .....</b>	<b>127</b>
7-1 Elkhorn - SMFS.....	128
7-2 Elkhorn - SMFN .....	130
7-3 Expo - SMFS .....	132
7-4 Expo - SMFN.....	135
7-5 Nugget .....	138
7-6 Silver .....	139
7-7 Area E CA Combined - All Configurations.....	140
<b>Appendix A. Noise Abatement.....</b>	<b>141</b>
A-1 General .....	141
A-2 Area A .....	141
A-3 Area B .....	142
A-4 Area C .....	142
A-5 Area D .....	143
A-6 Area E CA .....	144
A-7 Area E NV .....	145
<b>Attachment 1. vSTARS Maps.....</b>	<b>146</b>

# **Section 1. General Information**

## **1-1 Purpose**

This Standard Operating Procedure (SOP) outlines the procedures to be used by controllers working Northern California TRACON Sectors on the VATSIM network, to ensure that traffic flows are handled in as efficient and timely a manner as possible. This SOP is for simulation purposes only and shall not be used for real world use or reference.

## **1-2 Distribution**

This SOP is distributed to all members of the Oakland ARTCC on VATSIM.

## **1-3 Cancellation**

All previous procedures are canceled.

## **1-4 Airport Complexes**

COMPLEX	AIRPORTS
Fresno	FAT, FCH, VIS
Mather	MHR, AUN, BAB, GOO, LHM, MCC, MYV, OVE, PVF
Modesto	F34, MOD, LSN, MCE, MER
Monterey	CVH, MRY, SNS, WVI, OAR
Napa	APC, DVO, STS, 069, HES, CA35
Oakland	OAK, HWD
Sacramento	SMF, SAC, 088
San Francisco	SFO, HAF, SQL
San Jose	SJC, NUQ, PAO, RHV, E16
Stockton	SCK, LVK, TCY, C83, 027, 103
Travis	SUU, CCR, VCB, 041, EDU, DWA

## 1-5 NCT Control Areas

AREA	SECTORS	SECTOR IDS	CLASS B/C/D AIRPORTS
Combined	Areas A, B, C, D, E CA	2B, 4U	-
A	Licke, Morgan, Seca, Toga	1L, 1M, 1S, 1T	SJC, MRY, SNS, RHV, PAO, SQL, NUQ
B	Boulder, Cedar, Foster, Laguna, Niles, Woodside	2B, 2Z, 2F, 2G, 2N, 2W	SFO, SQL
C	Grove, Sunol, Valley	3G, 3S, 3Y	OAK, HWD, LVK, MOD, SCK, MER
D	Richmond, Sutro	4R, 4U	SFO, OAK
E CA	Elkhorn, Expo	5E, 5X	SMF, SAC, MHR, BAB
E NV (R)	Nugget, Silver	8N, 8S	RNO

## 1-6 Traffic Flow Plans and Runway Configurations

FLOW/PLAN	DEFINITION
SFOW	SFO landing Runways 01 or 28 OAK landing Runways 28 and 30 SJC landing Runways 30
SFOE	SFO landing Runways 10 or 19 OAK landing Runways 10 and 12 SJC landing Runways 12
SFOW / SJCE	Same as SFOW except SJC landing Runway 12
SFOW / OAKE	Same as SFOW except OAK landing Runways 10 and 12
SFOE / SJCW*	Same as SFOE except SJC landing Runway 30
SFOE / OAKW <sup>1</sup>	Same as SFOE except OAK landing Runways 28 and 30
SFOW / OAKE / SJCE	SFO landing Runways 01 or 28 OAK landing Runways 10 and 12 SJC landing Runways 12
SMFS	SMF landing Runways 17
SMFN	SMF landing Runways 35
RNOS	RNO landing Runways 16
RNON	RNO landing Runways 34

\* SFOE / SJCW configuration has no associated procedures, but it is feasible to utilize Area A SFOE airspace while SJC is landing and departing runways 30

<sup>1</sup> SFOE / OAKW: Due to airspace constraints, this configuration has no associated procedures, and is not authorized for routine use. Controllers must use due care when weather forces San Francisco Bay Area airports to operate in these configurations.

## 1-7 Aircraft Definitions

TYPE	DESCRIPTION
P (Prop)	Non-jet aircraft with a cruise speed of 179 knots or less
T (Turboprop)	Non-jet aircraft with a cruise speed of 180 knots or greater
J (Jet)	Jet aircraft and 4-engine turboprop aircraft

## 1-8 General Procedures and Responsibilities

- a. Issue the altimeter to all departures off uncontrolled (non-towered) airports on initial contact, except to air carrier flights.
- b. Arrival Information
  - i. The first radar sector in the Area that contains the aircraft's destination airport must ensure that the required approach information and the ATIS are disseminated
  - ii. Subsequent controllers must ensure that pilots are provided any changes to pertinent operational information after the initial confirmation of ATIS information is established
- c. All Class E airspace delegated to NCT is considered procedural outer area of Class C airspace. Aircraft participating in radar service must be provided Class C service within Class E airspace.

**NOTE-**

*Pilots still operate under the rules of Class E airspace within it, however, if pilots choose to receive radar service, NCT will provide radar service as if operating in Class C airspace, including Class C separation minima*

- d. NCT provides IFR separation to VFR aircraft conducting practice approaches at all airports.
- e. When issuing IFR clearance to aircraft at uncontrolled airports, NCT must:
  - i. Verify the intended departure runway
  - ii. State the departure airport in the clearance
  - iii. When departing Class E surface area, obtain pilot concurrence concerning a turn or heading before issuing a clearance
  - iv. When departing Class G airspace, issue one of the following:
    1. ODP
    2. "When entering controlled airspace..."
    3. "Via" or "as filed" provided the first fix is within NCT airspace

## 1-9 Wake Recategorization (CWT)

- a. NCT is a CWT (Consolidated Wake Turbulence) facility and utilizes the separation standards in [FAA JO 7110.126](#).

# 1-10 Vectors Below the MVA

- a. NCT is responsible for terrain and obstruction avoidance when vectoring aircraft not on a published procedure.
- b. When vectoring below the MVA, prominent obstacles must be displayed (Map #53 or #54)
- c. Prior to vectoring below the MVA, controllers must ensure aircraft are climbing to the MVA altitude or higher and cannot interrupt an aircraft's climb until the aircraft is at or above the MVA.
- d. Unless using a DVA or Vector SID, aircraft may be vectored below the MVA within the first MVA sector they enter only.
- e. If an aircraft departs on an ATCT SOP authorized heading or a non-vector DP/SID, NCT may vector the aircraft below the MVA in accordance with FAA JO 7110.65 5-6-3 (a) (1) & (2) (within the first MVA sector only)
- f. If an aircraft departs on a Vector SID, NCT may vector the aircraft below the MVA in accordance with the SID (vectoring below MVA not restricted to first MVA sector)
- g. Diverse Vector Area (DVA):
  - i. Airports in NCT's airspace with DVAs have textual/graphical descriptions and specific headings published on the Oakland ARTCC website downloads page.
  - ii. If an aircraft departs on a heading in accordance with a DVA, NCT may vector the aircraft below the MVA within the DVA.
  - iii. Tower may issue initial departure headings no later than with the takeoff clearance.
  - iv. When an aircraft departs using a SID/DP, the DVA may not be used to vector the aircraft below the MVA.
  - v. DVAs are not applicable for missed approach aircraft.
- h. Prominent Obstacles:
  - i. At towered airports where prominent obstacles have been identified, the ATCT SOPs contain the only authorized headings.
  - ii. MCC, MCE, MHR, MOD, SAC, SCK, and SMF airports have no prominent obstacles, and all headings are authorized.

**NOTE-**

*This authorizes the provisions of FAA JO 7110.65 5-6-3 (a) (3) to be utilized at the above airports. Aircraft may be vectored below the MVA.*

## 1-11 Descend Via Phraseology

- a. Utilize the following phraseology when requiring an aircraft to descend via to the bottom altitude and intercept an approach course:

**PHRASEOLOGY-**

(ACID) AT (FIX), JOIN THE (Approach Name), COURSE/LOCALIZER

**EXAMPLE-**

*United 1, at ARCHI, join the FMS Bridge Visual Runway 28R course.*

**EXAMPLE-**

*Southwest 1, at FRNNY, join the Runway 30 Localizer.*

## 1-12 Aircraft Between Sectors

Aircraft operating between the floor of one sector and the ceiling of another are the responsibility of the overlying sector.

## 1-13 Intra-Facility Hand-offs

- a. The information listed in the exit route tables is required unless coordinated.
  - i. "RV" means an aircraft can be direct or on a vector.
  - ii. "Direct" means an aircraft must be direct.
  - iii. "FDIO" means an altitude that is appropriate for direction of flight and will retain the aircraft in the receiving sector's airspace.
- b. All aircraft must be on the SOP exit route where listed. If no exit route is listed and the airport is covered via a Tower Enroute Clearance (TEC) routing, then aircraft must be established on the TEC route.
- c. Unless there is a designation of "level" in the exit route, aircraft may be climbing or descending to the assigned altitude when transiting a sector boundary.
- d. Aircraft not covered via a TEC or SOP exit route must be established on the filed route or direct to the first fix outside of NCT airspace in accordance with this directive.
- e. If a pilot reports the ATIS for an airport within another Area's jurisdiction, the ATIS code given may be entered into the scratchpad as a single letter, provided no other information is contained within the scratchpad.

## 1-14 VFR to IFR (V2I)

- a. V2I is an intra-facility procedure and scratchpad entry used to coordinate a VFR departure that has an IFR flight plan on file and plans to request it enroute.

- b. Do not amend the flight plan to VFR unless the pilot advises they no longer want the IFR flight plan.
- c. If the IFR clearance is not issued by NCT's airspace boundary and the aircraft is being handed off, the last sector is responsible to verbally coordinate with the adjacent facility.
- d. If the IFR clearance is not issued and the aircraft is landing in NCT airspace, the last sector is responsible to amend the flight plan to VFR.
- e. To coordinate V2I, the sector that enters V2I in the scratchpad must:
  - i. Ensure the aircraft has an IFR flight plan on file.
  - ii. Issue or ensure the aircraft is on the IFR beacon code.

## 1-15 Transfer of Control

- a. The receiving controller has control of the transferred aircraft for speed reduction, turns, a climb to the ceiling of, and/or a descent to the base altitude of the transferring controller's airspace.

**NOTE-**

*Exceptions to transfer of control are listed in the sector specific portions of the SOP*

## 1-16 Down the Bay

- a. "Down the Bay" is a routing issued to applicable SFO arrivals/departures and OAK departures.
- b. When a procedure includes the route "Down the Bay", the following definitions apply:
  - i. Arrivals – Aircraft landing SFO below 11,000 feet, descending and routed on a right downwind between OAK and SFO airports (between Hunter's Point and Fuller's Point), turned toward final no later than the Dumbarton Bridge pointed out to Area D/Area C in accordance with the SOP.
  - ii. Departures – Aircraft departing SFO or OAK that are immediately routed east between SFO and OAK airports.

## 1-17 Vector Gates

- a. Camanche Gate
  - i. The Camanche Gate begins at the northwestern edge of Valley's airspace and continues northeast along the Valley/Expo common boundary to the eastern edge of NCT airspace as shown in the Area E and Valley sector maps.
  - ii. Expo and Valley may utilize the gate in accordance with their respective exit routes.

- b. Salty Gate
  - i. The Salty Gate begins on the northern boundary of Sunol's airspace 2.4 NM west of the SCK Runway 29L center line and continues northeast along the Sunol boundary to the eastern edge as shown on the Sunol sector map.
  - ii. Expo and Sunol may utilize the gate in accordance with their respective exit routes.

## **1-18 Pre-Arranged Coordination Procedures (P-ACP)**

- a. P-ACP and associated requirements are listed in each sector's procedures section.
- b. P-ACP allow aircraft under one controller's jurisdiction to penetrate or transit another controller's airspace in a manner that assures approved separation without individual coordination for each aircraft.
- c. "Protect" means a controller must ensure appropriate separation between aircraft under their control and aircraft approved to penetrate/transit their airspace.
- d. P-ACP must be treated as if they are a continuously approved point out.
- e. When utilizing P-ACP, verbally coordinate the altitude of aircraft that do not have a valid Mode C readout.

## **1-19 Scratchpads**

- a. Departures will have a scratchpad automatically populated when using vSTARS based on the aircraft's exit fix.
- b. The following scratchpads may be used before an approach assignment is made to indicate that an aircraft is descending via an optimized profile descent (OPD) STAR:

ENTRY	DESCRIPTION	ENTRY	DESCRIPTION
MA1	Landing MHR descending via OPD	OA1	Landing OAK descending via OPD
RN1	Landing RNO descending via OPD	SJ1	Landing SJC descending via OPD
SF1	Landing SFO descending via OPD	SM1	Landing SMF descending via OPD
YSM	Landing SFO via YOSEM# STAR	SM2	Landing SMF via CCR# STAR

- c. The following scratchpads are considered NCT specific and may be used when transiting between NCT Areas:

ENTRY	DESCRIPTION
2ER	Aircraft sight-seeing in the San Francisco Bay Area
AIS	Airport in sight
CVP	Assigned charted visual approach
G##	Assigned RNAV GPS approach to a particular runway (e.g. G30 = Runway 30)
H##	Assigned heading followed by a two-digit number (e.g. H13 = 130°)
I##	Assigned ILS approach to a particular runway (e.g. I4L = Runway 34L)
##K	Aircraft assigned a speed in knots (e.g. 21K = 210 knots)
L##	Assigned LOC approach to a particular runway (e.g. L8L = Runway 28L)
R##	Aircraft requesting a particular runway (e.g. R8R = Runway 28R)
V2I	VFR aircraft requesting an IFR clearance airborne and has IFR flight plan on file
V##	Assigned visual approach to a particular runway (e.g. V04 = Runway 4)
XB	Aircraft issued a Class B clearance
Z##	Assigned RNAV RNP approach to a particular runway (e.g. Z8L = Runway 28L)
Single Letter	Single letter with no other information indicates the ATIS code last reported by the pilot for the landing air
<hr/>	
GPS*	Aircraft requesting/assigned an RNAV GPS approach
ILS*	Aircraft requesting/assigned an ILS approach
LOC*	Aircraft requesting/assigned a LOC approach
RNP*	Aircraft requesting/assigned an RNAV RNP approach
VA*	Aircraft requesting/assigned visual approach
VOR	Aircraft requesting/assigned VOR approach

\* Intended for use into uncontrolled airports or when an airport only has one approach of the specified type; use runway-specific scratchpads otherwise

## 1-20 Noise Abatement

- a. Controllers may choose to simulate optional noise abatement procedures as specified in Appendix A.

# Section 2. NCT Combined

## 2-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Combined Approach	NCT_APP	NorCal Approach	133.950
Combined Departure	NCT_DEP	NorCal Departure	135.100

- a. NCT Combined Approach may be opened to operate areas A, B, C, D, and E CA
- b. NCT Combined Departure may be opened to operate area D, area A Toga sector, SFO ATCT, OAK ATCT, SJC ATCT, and any other ATCT that is within the listed sectors
- c. Area E NV sectors may not be operated combined with any other NCT sectors.
- d. NCT Combined positions is required to operate all Areas as listed above unless an Area is already opened.
- e. NCT Combined is required to update their controller information to include the general areas they are working. A template will be provided at the end of this chapter.
- f. The primary area for Combined Approach is Area B; Combined Approach shall control no less than Area B if the rest of NCT becomes sectorized after Combined Approach signs in and takes control of the airspace.
- g. The primary area for Combined Departure is Area D; Combined Departure shall control no less than Area D if Area A Toga is staffed after Combined Departure signs in and takes control of the airspace.
- h. If Area B is open prior to Combined Approach, Combined Approach shall split Area B as defined below and cover the remaining NCT sectors. If Area D is staffed, Combined Departure is not authorized. **This is not preferred and should not be done on a regular basis. Please consider opening another Area.**
  - i. Combined Approach shall operate on the Boulder frequency 133.950 / NCT\_2B when splitting Area B.
  - ii. Combined Approach shall assume control of Niles, Boulder, Cedar, and Laguna sectors.
  - iii. Area B shall control the Woodside/Foster Sector.
- i. Area callsigns may be used to operate more than the primary area corresponding to that callsign, if they are certified for the areas they are covering. In cases like this, controllers MUST include the general area/airports they are covering in their controller information and ensure their primary frequency will provide adequate coverage for the areas they are covering.
  - i. Example 1: During an SFO-focused event, all Area B sectors are staffed. A controller may cover areas A, C, and E CA using the SJC\_APP callsign.
  - ii. Example 2: During an SMF-focused event, Area E CA is split Elkhorn/Expo. To split the workload, NCT\_APP may cover areas B and C while NCT\_DEP covers areas A and D.

## 2-2 Controller Information Template

\$radioname()

NorCal Combined - Providing service for KSFO, KOAK, KSJC, KMRY, KSMF and KMOD and the surrounding airports.

# Section 3. Area A Procedures

## 3-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Area A Combined	SJC_APP	NorCal Approach	120.100
Seca*	MRY_APP	NorCal Approach	127.150
Morgan	SJC_M_APP	NorCal Approach	124.525
Licke	SJC_L_APP	NorCal Approach	120.100
Toga	SJC_DEP	NorCal Approach	121.300

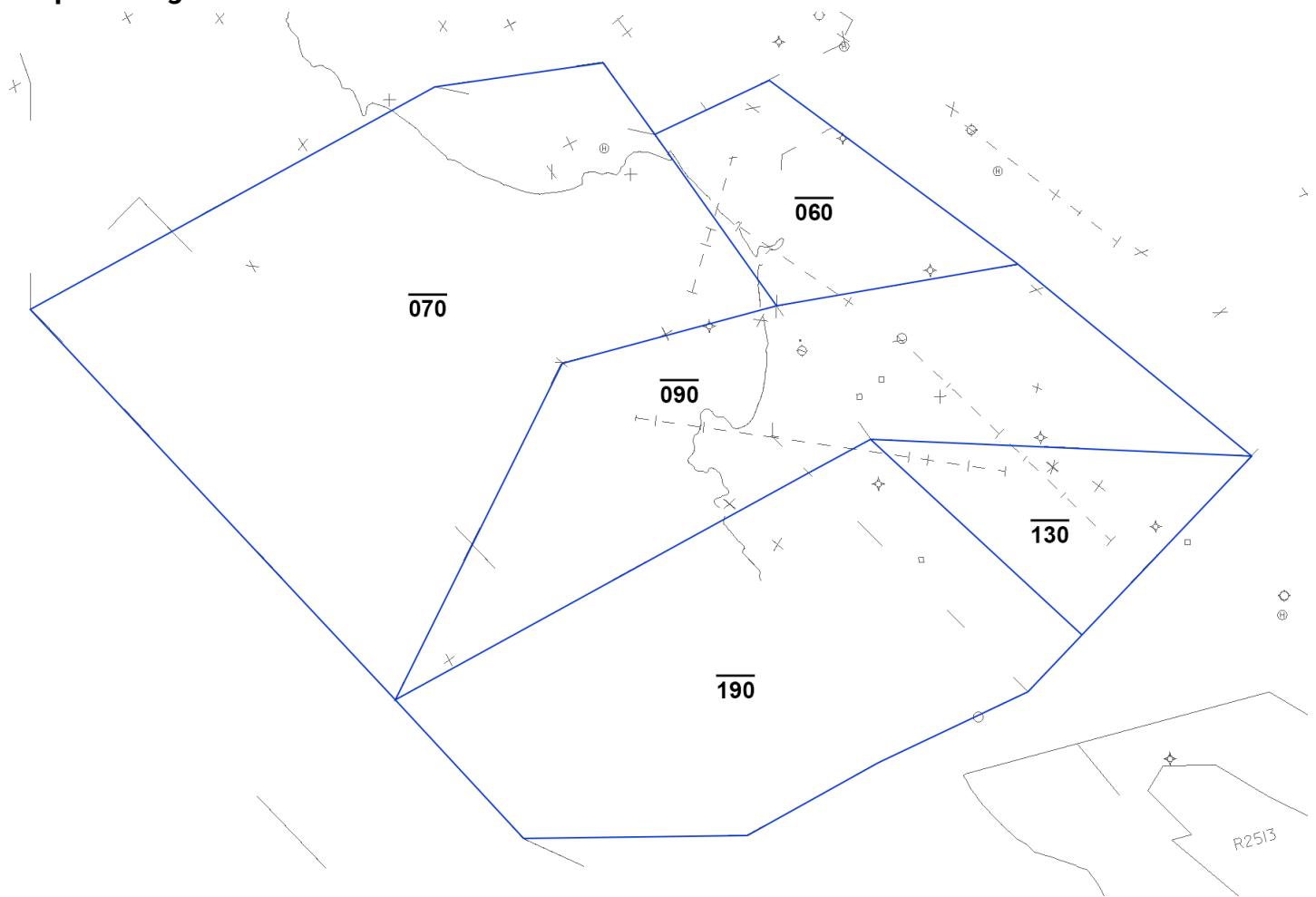
\* Indicates Minor Position

### a. Sector Definitions

- i. Area A provides ATC services to San Jose, Monterey, and area satellites.
- ii. Area A Seca is a low-level sector that handles arrivals and departures from the Monterey area.
- iii. Area A Morgan is a feeder/sequencing sector that handles San Jose arrivals.
- iv. Area A Licke is a final sector for San Jose and surrounding satellite airports.
- v. Area A Toga is a departure sector for San Jose and surrounding satellite airports.
- vi. All Area A sectors may be combined.

## 3-2 Seca

Airspace Diagram



## Seca Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Boulder	San Francisco CX via V25	P, T	6,000	
Boulder (SFOE)	HADLY (Monterey CX Departures Only)	P, T, J	7,000	
Laguna (SFOW)	SFO	P, T	12,000 or lower filed	BSR-OSI
Laguna (SFOE)	HADLY	T, J	12,000	
	SFO/OAK (Monterey CX Departures Only)	J	7,000	RV HADLY
Morgan	Sacramento CX or Mather CX	J	7,000	RV 360° Direct ALTAM (SFOE)
	V111 or direct KARNN	P, T, J	6,000	
	RHV			
Morgan (SFOW)	SJC (Monterey CX Departures)	T, J	6,000	
Licke	PAO	P, T, J	6,000	
	NUQ			
	SJC	P		RV SJC Final
	SQL	P, T, J		

## Seca Entry Routes

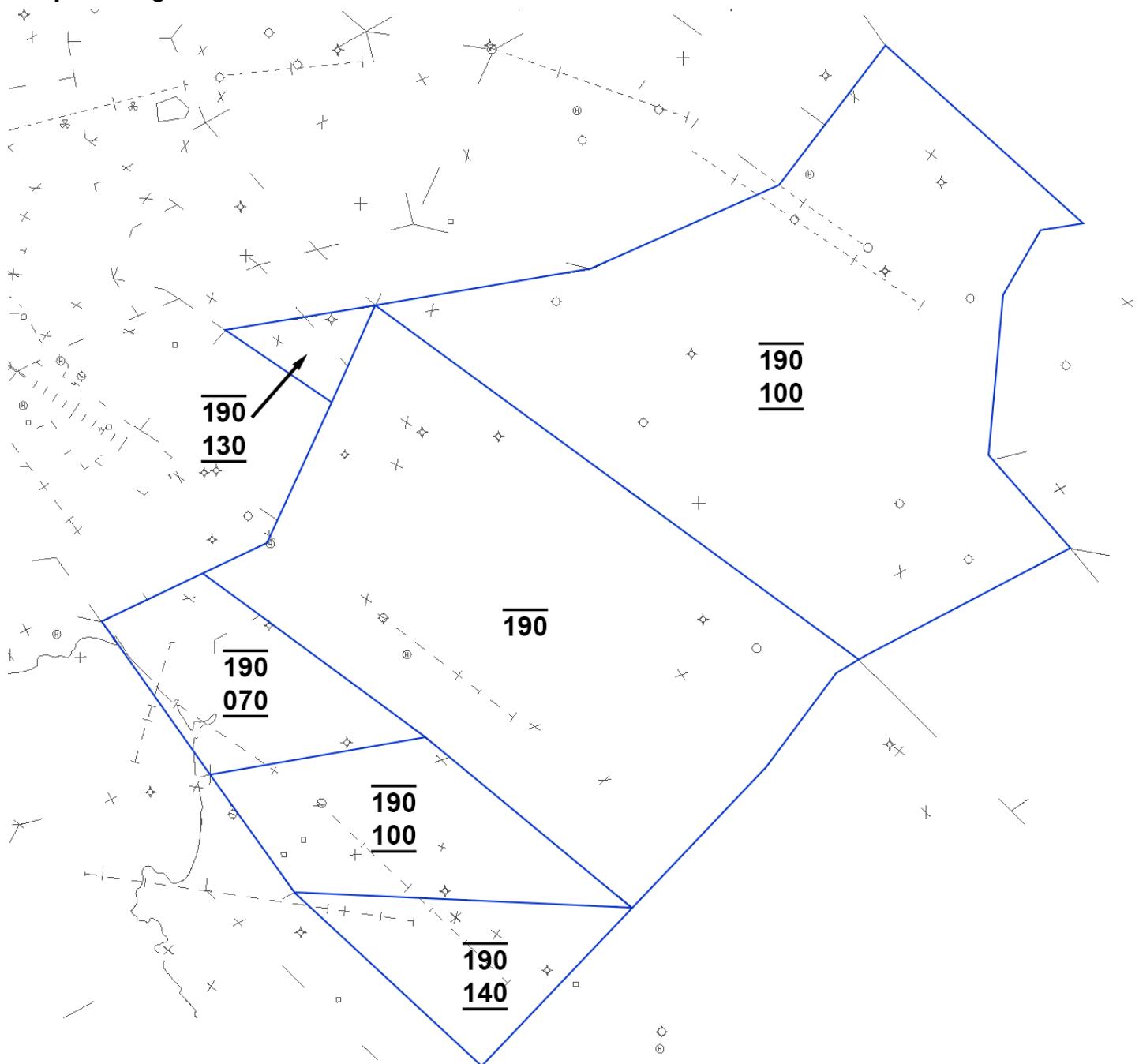
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Boulder</b>	Landing MRY	P, T	7,000	Direct MRY / Runway 28 Direct ZEBED / Runway 10
	Monterey CX (Except MRY)	P, T, J		RV SNS
<b>Laguna</b>	Landing MRY	P, T, J	8,000	Direct MRY / Runway 28 Direct ZEBED / Runway 10
	Monterey CX			Direct SNS
	V27	P, T, J	FL190 or lower filed	
<b>Licke/Toga</b>	MRY Runway 10	P, T, J	5,000	
	Monterey CX		7,000	
<b>Morgan</b>	MRY Runway 10	T, J	10,000	
	MRY Runway 28			

## Seca Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Laguna does not have control for descent on props and turbo props below 10,000 feet while in Morgan's or Seca's airspace.
- b. Ensure aircraft executing the MRY LOC Runway 28L are established on a published segment of the approach prior to YITUD.
- c. Protect aircraft established on and descending via the SERFR/WWAVS arrival.

# 3-3 Morgan

## Airspace Diagram



## Morgan Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Valley (SFOW)	V111	P, T	7,000	Direct KARNN
		J	9,000	
Valley (SFOE)	V111	P, T, J	7,000	Direct KARNN
Valley	Modesto CX	P, T, J	10,000	
Seca	MRY	T, J	10,000	
Laguna (SFOW)	SFO or HAF	P, T	12,000 or lower filed	RV OSI
Laguna (SFOE)	SFO	P, T	12,000 or lower filed	Direct SHOEY HADLY
Licke (SFOW)	RHV	P	6,000	
	SJC	T, J	8,000	
		J	Descend Via	
Licke (SFOE)	PAO	P	6,000	
	SQL			
	Sacramento CX or Mather CX	J	11,000	
Licke (SJCE/SFOE)	SJC	T	8,000	RV GGUGL
		J	Descend Via	
Sutro (SFOW)	Sacramento CX or Mather CX	J	13,000	Direct SJC VOR
Sunol (SFOW)	EMZOH	J	Descend Via	
	V111 or RV MOD	T, J	Level at 11,000	
	Stockton CX, LVK, Oakland CX, or Travis CX	P, T, J	12,000 or lower filed	
Sunol (SFOW/OAKE)	V301	P, T	Cross BORED @8,000	
	PXN STAR	J	Cross BORED @10,000	
Sunol (SFOE)	SKIZM	J	Descend Via	
	PXN STAR (OAK Only)		10,000	Depart KARNN RV 320°
	Stockton CX, LVK, Oakland CX, or Travis CX	P, T, J	12,000 or lower filed	
Toga (SFOE)	V301	P, T	8,000	
	PXN STAR (HWD only)	P, T	Cross BORED @8,000	
		J	Cross BORED @10,000	
Toga (SJCE)	RHV	P	6,000	
	PAO			
	SQL			
Cedar (SFOW)	SFO	T, J	14,000	RV ALWYS/MOD

## Morgan Entry Routes

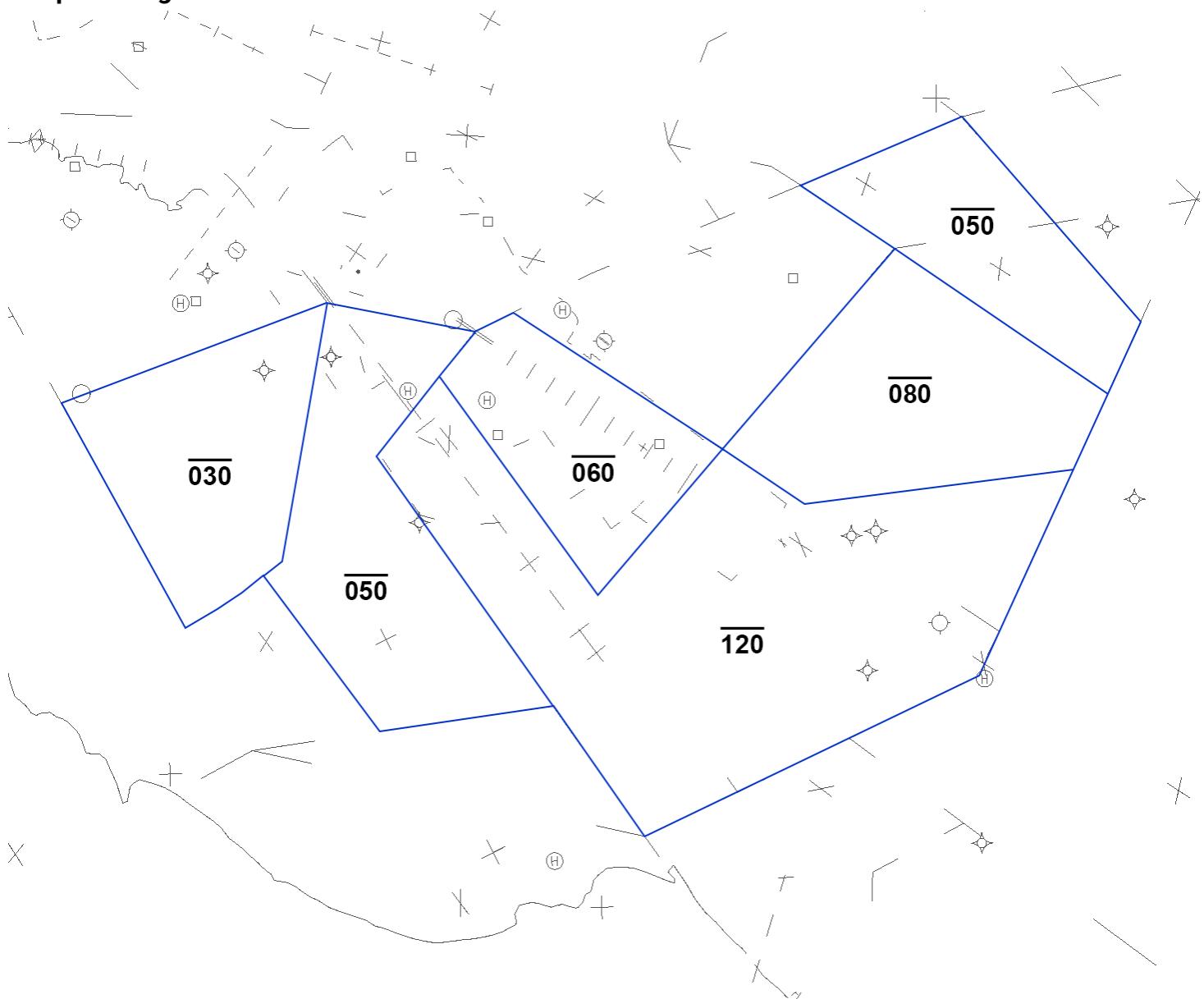
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Valley	V111	P, T, J	6,000	
	SQL	P, T		RV DOCAL
	San Jose CX			Direct GILRO
Cedar	West of or on T263	P, T, J	FDIO	RV 120° at least 4 miles north and east of V301
Cedar (SFOW)	East of or on T263	P, T, J	FDIO	
Cedar (SFOE)	T263, PXN, or AVE	P, T, J	FDIO	
Seca	V111 or direct KARNN	P, T, J	7,000	
Seca (SFOW)	SJC (Monterey CX Departures)	T, J	6,000	RV Final
	Sacramento CX or Mather CX	J	7,000	RV SJC VOR
Seca (SFOE)	Sacramento CX or Mather CX	J	7,000	RV SJC VOR
Laguna	SQL Departures	P, T, J	FL190 or lower filed	RV SNS
Licke (SFOW)	V107	P, T	7,000	
Licke (SFOE)	V485	P, T	7,000	
Toga (SJCE)	V107	P, T	7,000	
	V485			
Sunol	V111	T, J	10,000	RV LSN

## Morgan Pre-Arranged Coordination Procedures and Sector Responsibilities

- Laguna does not have control for descent on props and turbo props below 10,000 feet while in Morgan's or Seca's airspace.
- Ensure Oakland jet arrivals have the current ATIS.
- Protect SFO/OAK departures between 12,000 and FL190 with a requested altitude above FL190.
- Display all Monterey CX departures routed via SJC VOR to Toga.

## 3-4 Licke - SFOW

Airspace Diagram



## Licke SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Seca	MRY Runway 10	P, T, J	5,000	
	Monterey CX		7,000	
Morgan	V107	P, T	7,000	
	Departures via SNS		FL190 or lower filed	
Sunol	Modesto CX or Stockton CX	J	6,000	East of BORED
Boulder	SFO	P, T, J	6,000	RV BOLDR
Woodside	Northbound VFR (excluding VFR Bay Tours)	P, T, J	At or below 4,000	Outside SFO Class Bravo airspace
	VFR Bay Tours			

## Licke SFOW Entry Routes

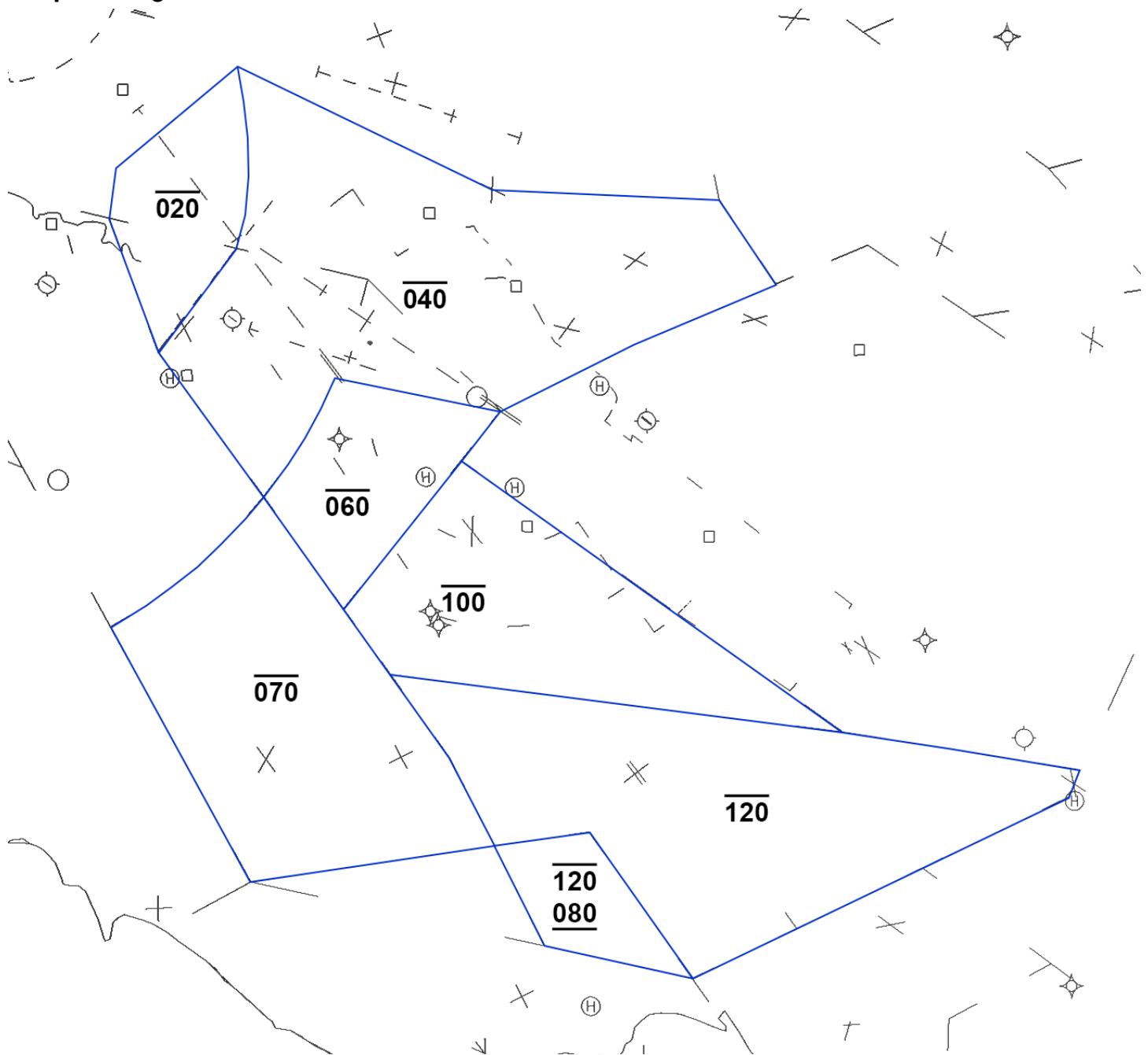
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Seca	NUQ	P, T, J	6,000	
	PAO			
	SQL			
	SJC	P		RV SJC Final
Morgan	SJC or RHV	P	6,000	
		T, J	8,000	RV Final
		J	Descend Via	STAR Fix inside Morgan Airspace
Sunol	San Jose CX, HAF, SQL	T, J	7,000	RV BORED KLIDE
Toga	V107	P, T, J	6,000	RV 120°
	Modesto CX or Stockton CX	J		
	Monterey CX	T, J	5,000 7,000	
	SFO	P, T, J	6,000	
Boulder	San Jose CX	J	7,000	RNAV STAR or Abeam OSI RV 110°
	SJC Oceanic Arrivals			RV to SJC Final
Woodside	San Jose CX or SQL GPS	P, T, J	5,000	OSI RV 110°

## Licke SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities

- Coordinate with Toga all PAO or SQL IFR arrivals received from Toga that have been delayed more than 5 minutes.
- Licke does not have control for left turns on BRIXX arrivals until the aircraft reaches LUYTA and is at or below 6,000 feet.

## 3-5 Licke - SFOE

Airspace Diagram



## Licke SFOE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Boulder</b>	SFO	P, T, J	6,000	Direct JILNA RV 260°
	Napa CX		5,000	
<b>Seca</b>	Monterey CX	P, T, J	5,000	
	Monterey Runway 10		7,000	
<b>Morgan</b>	V485	P, T	7,000	
<b>Sutro</b>	OAK	J	5,000	RV OSI
	Napa CX or Oakland CX (PAO Departures Only)	P, T, J	3,000	RV 280° south of PAO
<b>Toga</b>	Sacramento CX or Mather CX	J	11,000	RV SJC VOR
	V334, V107, V485	P, T	4,000	RV north and east of SJC

## Licke SFOE Entry Routes

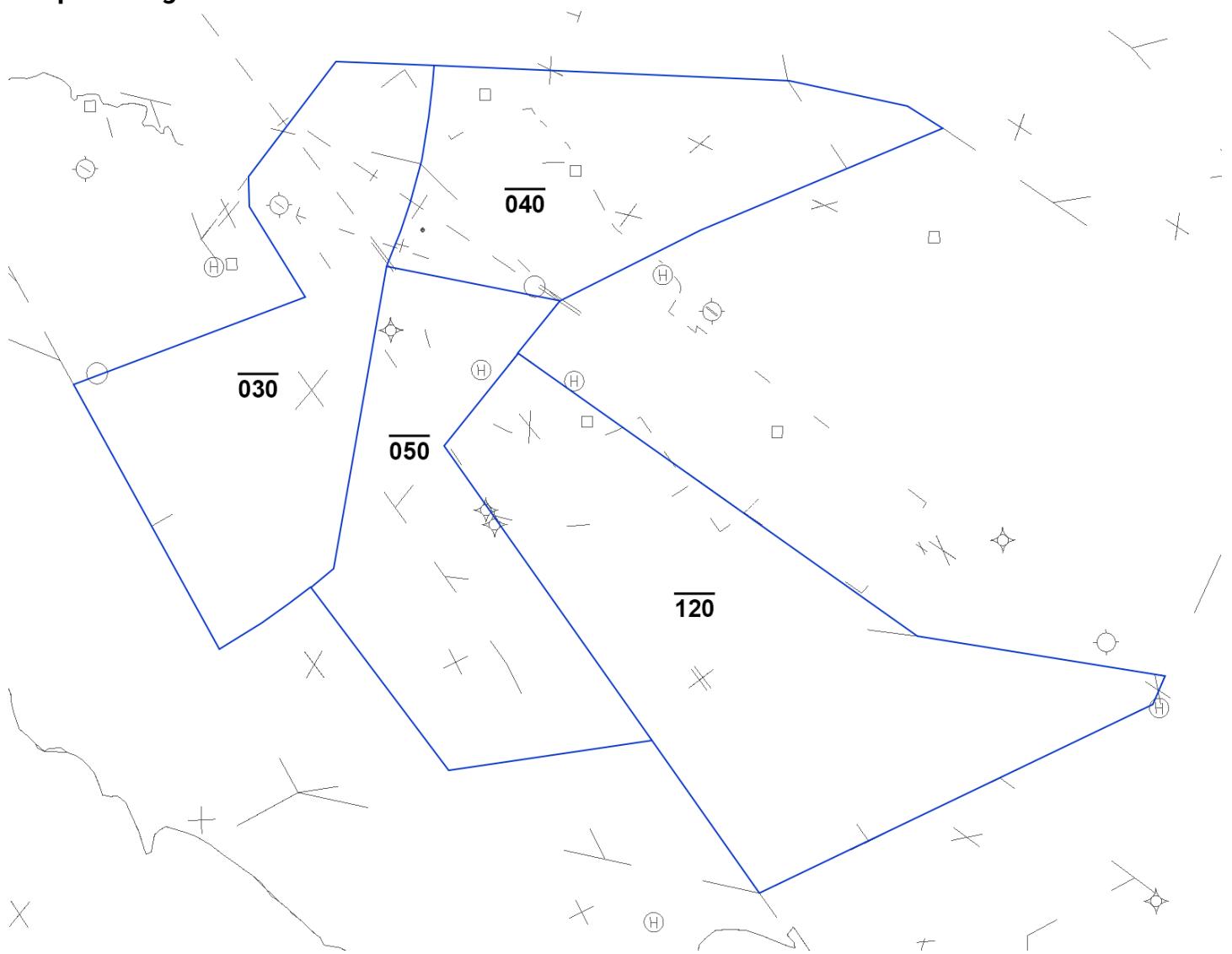
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO	
<b>Seca</b>	NUQ	P, T, J	6,000		
	PAO				
	SQL				
	SJC			RV SJC Final	
<b>Morgan</b>	Sacramento CX or Mather CX	J	11,000	RV SJC VOR	
	SJC	T	8,000		
		J	Descend Via	RV GGUGL	
	SJC	P	6,000		
<b>Sutro</b>	San Jose CX	P, T	5,000	OSI RV 140°	
		J	7,000		
	FRLON STAR	J	Descend Via	Except after MISSS maintain 7,000	
	V25	P, T	6,000	Filed 7,000 or below	
	SQL GPS Approach	P, T, J	5,000	Direct JEFNY	
<b>Toga</b>	SJC (OAK and SFO departures only)	J	3,000	ARTAQ	
	Monterey CX	P, T, J	5,000	RV 120°	
	SFO		7,000		
	OAK	J	5,000		
	Napa CX	P, T, J			
	V485	P, T	7,000		
<b>Richmond</b>	VFR SJC Arrivals	P	Cross Embassy Suites at or above 2,000		
		T, J	At or above 3,500	RV Tesla Plant	

## Licke SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities

- Coordinate with Toga on PAO V334 departures.

# 3-6 Licke - SJCE

## Airspace Diagram



## Licke SJCE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Boulder	SFO	P, T, J	6,000	RV BOLDR
Seca	Monterey CX	P, T, J	5,000 7,000	Direct SNS
Woodside	Northbound VFR (excluding VFR Bay Tours)	P, T, J	At or below 4,000	
	VFR Bay Tours			Outside SFO Class Bravo Airspace
	PAO Departures	P, T, J	3,000	RV 240°
Grove	All northbound departures (PAO & SQL Departures Only)	P, T, J	3,000	Via Dumbarton Bridge (see responsibilities)
Toga	Napa CX, Oakland CX, Travis CX, V334, V107, V485, or RV ALTAM	P, T	4,000	

## Licke SJCE Entry Routes

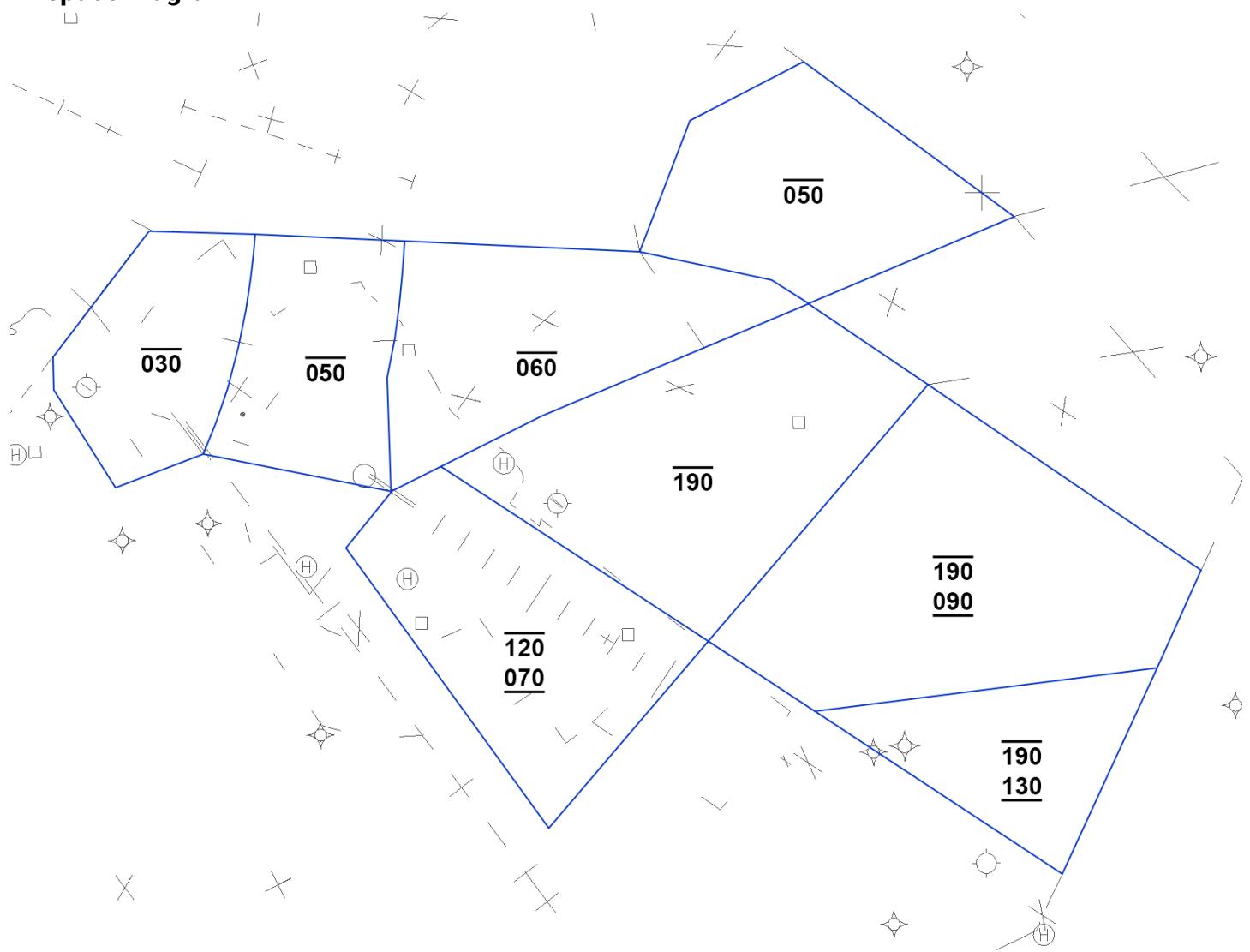
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Boulder	San Jose CX	J	7,000	Abeam OSI RV 140
	SJC (Oceanic Arrivals)			RV GGUGL
Seca	NUQ	P, T, J	6,000	
	PAO			
	SQL			
	SJC	P		RV SJC Final
Morgan	SJC	T	8,000	RV GGUGL
		J	Descend Via	
Toga	SFO	P, T, J	6,000	RV 120°
Woodside	SQL GPS and San Jose CX	P, T, J	5,000	OSI RV 140°
	Stockton CX, Modesto CX, V334 or ALTAM (SQL Departures Only)	P, T, J	2,000	RV over PAO
Grove	VFR SJC Arrivals	P	Cross Embassy Suites at or above 2,000	
		T, J	At or above 2,500	RV Tesla Plant
	SJC (HWD Departures Only)	P, T, J	2,000	RV to SJC 12R Localizer

## Licke SJCE Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Protect aircraft established on IAP to SFO Runways 28 west of DUMBA and below 4,000 feet.  
*NOTE- IAPs come within 1.5 of the Licke/Woodside/Foster common boundary*
- b. Woodside protects SJC Arrivals during SJCE:
  - a. On vectors for the SJC Runway 12 ILS/Visual Approach and at/below 3,000 feet up to, but not including the Licke/Woodside common airspace boundary west of NUQ.
  - b. Descending on the RNAV Z RWY 12 approach as published from HITIR.
- c. Ensure aircraft intercept V334 northbound east of MISON.
- d. Coordinate with Woodside prior to release on aircraft departures routed through Woodside's airspace.
- e. Coordinate with Toga on PAO departures that enter Grove's airspace.
- f. Coordinate with Grove prior to release on PAO and SQL departures via the Dumbarton Bridge.
- g. Licke does not have control for climb for aircraft received from Woodside.

## 3-7 Toga - SFOW

Airspace Diagram



## Toga SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Licke	V107	P, T, J	6,000	RV 120°
	Modesto CX or Stockton CX	J		
	Monterey CX	T, J	5,000 7,000	
	SFO	P, T, J	6,000	
Morgan	SPTNS, SJC or SOLN DP's	T, J	FL190 or lower filed	
Grove	Oakland CX (SJC Departures Only)	T, J	3,000	RV Dumbarton Bridge (See responsibilities)
	All Northbound (PAO and SQL Departures Only)	P, T, J		
	Oakland CX, SUNOL DP or V334	P, T	5,000	V334 or RV 360° through 050° and east of MISON
	Napa CX or Travis CX	P, T, J		
Sutro	LOUPE DP or SPTNS TECKY SJC (except Mather CX or Sacramento CX)	J, DH8D	15,000	Right turn direct SJC
	LOUPE DP or SPTNS TECKY SJC (Mather CX or Sacramento CX)		12,000	
	Oceanic Fixes (except SFO.V199)	J	15,000	RV BRINY
	Non-RNAV (coordination required)	J, DH8D	15,000	Right turn direct SJC; Depart SJC RV 340°
Woodside	Via SFO.V199	P, T, J	3,000	RV 240°
	PAO Departures			

## Toga SFOW Entry Routes

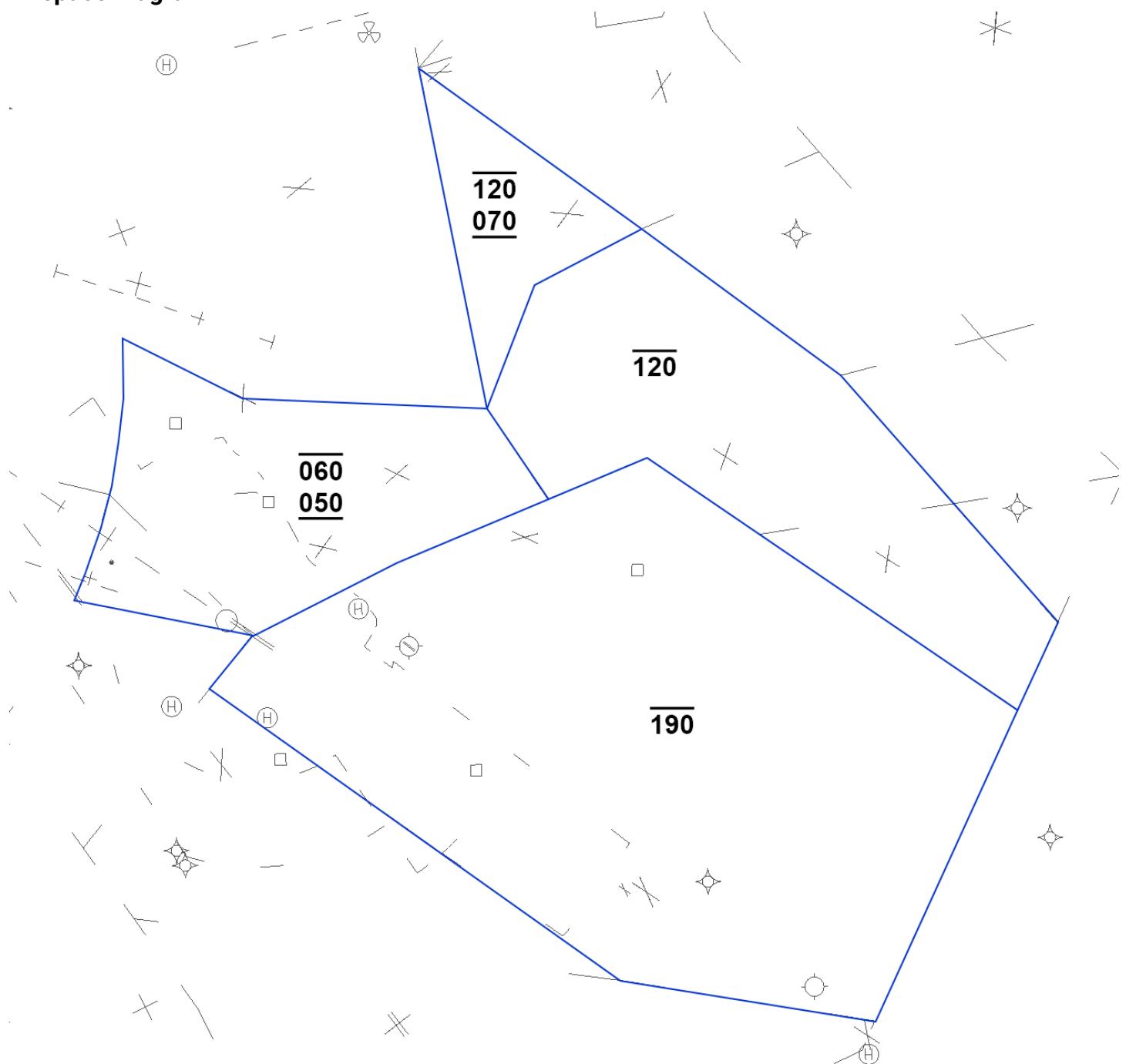
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	VFR SJC Arrivals	P	Cross Embassy Suites at or above 2,500	
		T, J	At or above 3,500	RV RHV
	San Jose CX (HWD departures only)	J	6,000	RV at least 3 miles west of MABRY
Sunol	SQL	P	6,000	RV vicinity of BUSHY
	San Jose CX			
Woodside	Stockton CX, Modesto CX, V334, or ALTAM (SQL Departures Only)	P, T	3,000	RV over PAO

## Toga SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Protect SFO/OAK departures between 12,000 and FL190 with a requested altitude above FL190.
- b. Protect aircraft established on IAP to SFO Runways 28 west of DUMBA and below 4,000 feet.  
*NOTE- IAPs come within 1.5 of the Licke/Woodside/Foster common boundary*
- c. Protect all PAO and SQL IFR arrivals handed off to adjacent sectors
- d. Protect VFR aircraft worked by Reid-Hillview Tower and handed off to Licke.
- e. Climb San Jose departures to the exit route altitude in Sutro's airspace after initiating an automated hand-off to Sutro.
- f. Coordinate with Licke for the release of all RHV IFR departures and PAO IFR departures routed via SNS.
- g. Coordinate with Licke for SJC departures issued a left turn.
- h. Coordinate with Grove prior to release for all aircraft landing in Oakland CX.
- i. Coordinate with Grove prior to release on PAO and SQL departures via the Dumbarton Bridge.
- j. Grove has control for IFR turbo props and jets departing SJC only after passing SJC 1.8 DME and leaving 2,000 feet.
- k. Toga does not have control for climb on aircraft received from Woodside.

## 3-8 Toga - SFOE

Airspace Diagram



## Toga SFOE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Richmond	V301 or PXN STAR	P, T, J	6,000	
	V334 or SUNOL DP	P, T	5,000	
	Sacramento CX or Mather CX	J	11,000	Direct SJC VOR ALTAM
	ALMDN DP	J, DH8D	15,000	
	ALTAM	J		RV ALTAM
Licke	Monterey CX	P, T, J	5,000	RV 120°
	Napa CX		7,000	
	OAK	J	5,000	
	SFO	P, T, J	6,000	
	V485	P, T	7,000	
Morgan	TECKY or SOLN DP	T, J	FL190 or lower filed	
Sutro	Oceanic Fix (except SFO.V199)	J	15,000	RV BRINY
Valley	Modesto CX or Stockton CX	J	6,000	East of BORED

## Toga SFOE Entry Routes

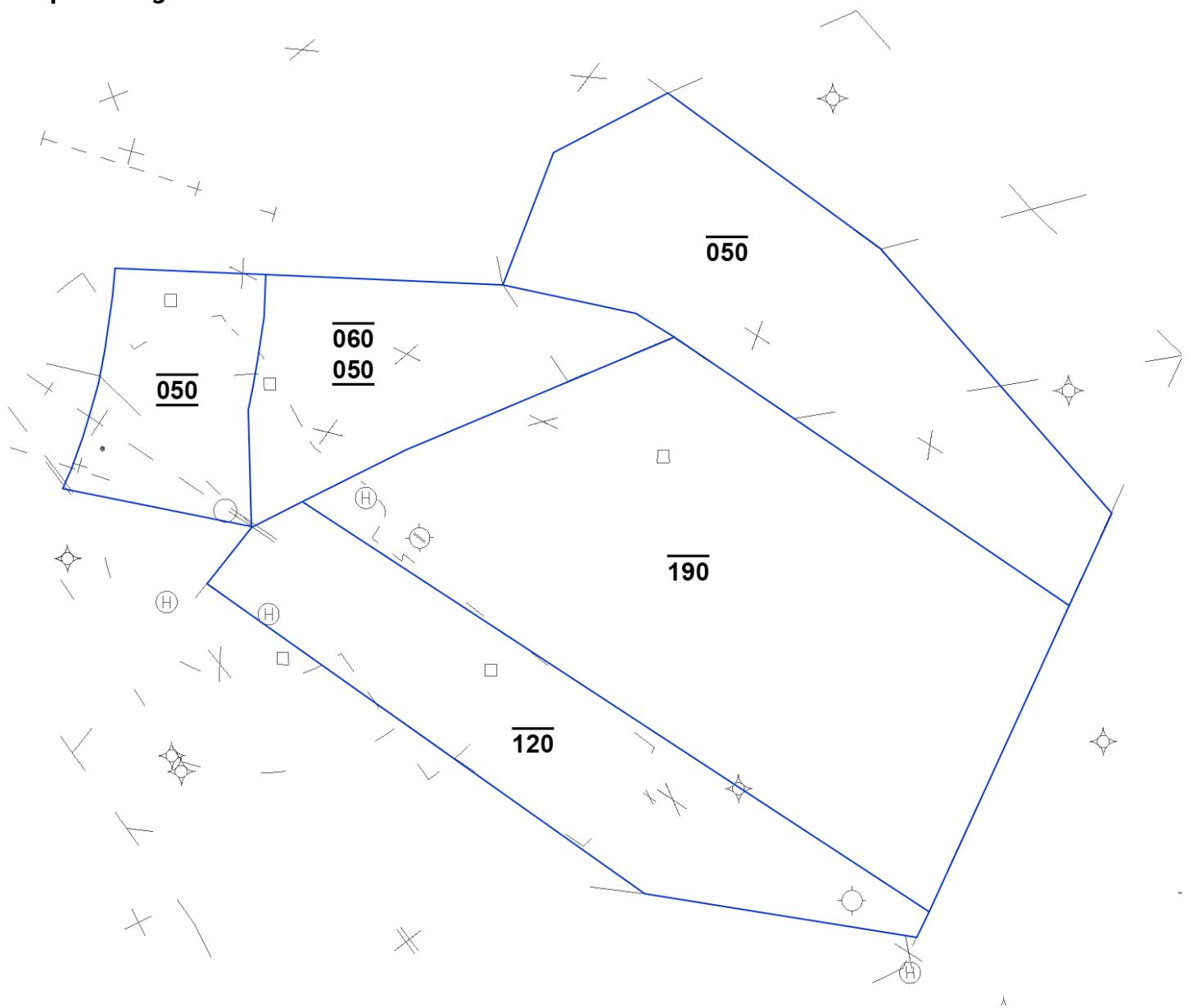
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Richmond	San Jose CX or SQL	P, T, J	6,000	Direct SJC VOR
	V107		7,000	
	Monterey CX (OAK and HWD departures only)		7,000	V301 KARNN V111 SNS
Licke	V334, V107, V485	P, T	4,000	RV north and east of SJC
	Sacramento CX or Mather CX	J	11,000	RV SJC VOR
Morgan	V301	P, T	8,000	
	PXN STAR (HWD only)	P, T	Cross BORED @8,000	
		J	Cross BORED @10,000	
Sunol	San Jose CX or SQL	T, J	9,000	RV BORED KLIDE
Sutro	MRY (OAK and HWD departures only)	P, T, J	7,000	V301 KARNN V111
Valley	San Jose CX	P	6,000	BUSHY
	SQL	P, T		DOCAL

## Toga SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities

- Protect SFO/OAK departures between 12,000 and FL190 with a requested altitude above FL190.
- Protect SJC and NUQ arrivals established on the runway extended centerline no later than 1.5 nm from the Toga airspace boundary.
- Verbally coordinate or enter the assigned heading in the scratchpad for SJC departures issued "runway heading" from Runway 12; prior to initiating a hand off to Richmond.

# 3-9 Toga - SJCE

## Airspace Diagram



## Toga SJCE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO	
<b>Sunol</b>	Modesto CX or Oakland CX	J	6,000	East of BORED	
<b>Seca</b>	Monterey CX	P, T, J	5,000 7,000	Direct SNS	
<b>Grove</b>	Oakland CX, SUNOL DP or V334	P, T	5,000	V334 or RV 360° through 050° and east of MISON	
	Napa CX or Travis CX	P, T, J			
<b>Licke</b>	SFO	P, T, J	6,000	RV 120°	
<b>Morgan</b>	TECKY or SOLN DP	T, J	FL190 or lower filed		
	V107	P, T	7,000		
	V485				
<b>Sutro</b>	Oceanic Fix (except SFO.V199)	J	15,000	RV BRINY	
	SFO.V199			RV 260°	
	Non-RNAV	J, DH8D	15,000	Right Turn direct SJC; Depart SJC RV 340°	
	BMRNG DP (except Mather CX, Sacramento CX, or Oceanic Fixes)			Direct GRRIF	
	BMRNG DP (Mather CX or Sacramento CX)		12,000		

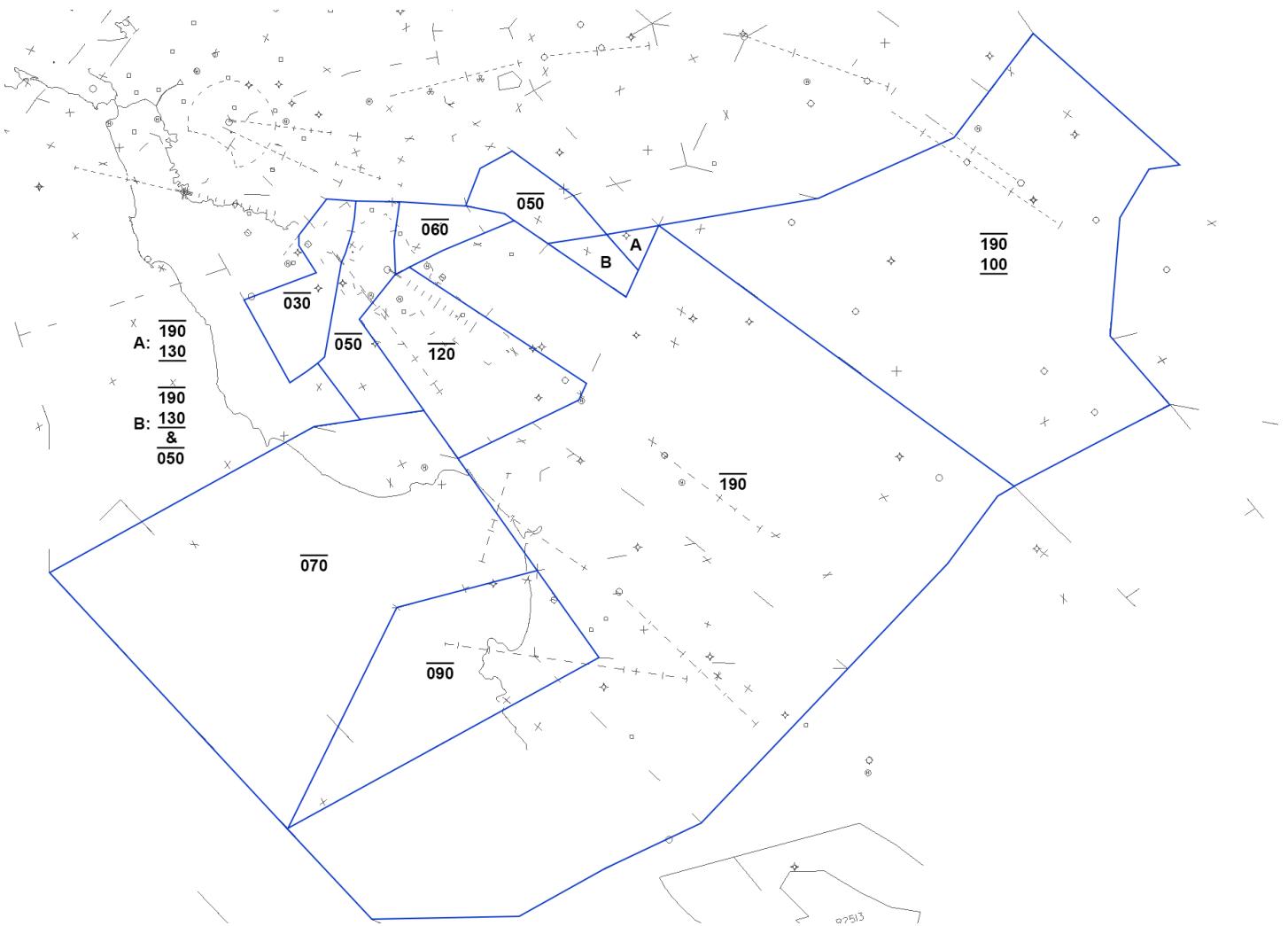
## Toga SJCE Entry Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Licke	V334 or ALTAM (SQL departures for Stockton CX or Modesto CX)	P, T	4,000	
	Oakland CX, Travis CX, Napa CX, V334, V107, V485, or RV ALTAM			
Morgan	RHV	P	6,000	Direct GILRO
	PAO			RV DOCAL
	SQL			RV AMEBY
Sunol	San Jose CX, HAF, or SQL	P	6,000	RV vicinity of BUSHY
		T, J	7,000	RV BORED KLIDE

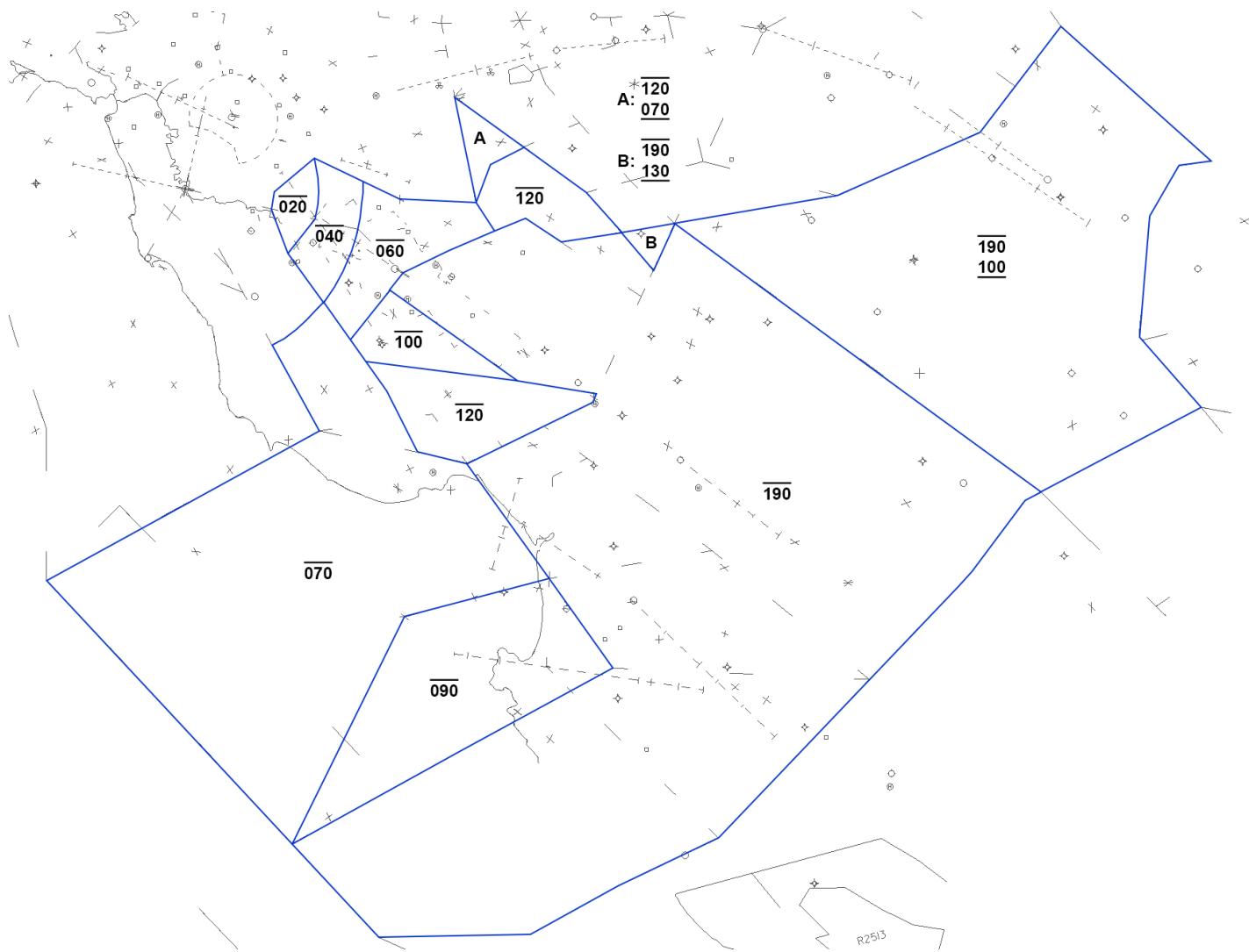
## Toga SJCE Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Protect SFO/OAK departures between 12,000 and FL190 with a requested altitude above FL190.
- b. Protect SJC and NUQ arrivals established on the runway extended centerline no later than 1.5 nm from the Toga airspace boundary.
- c. Climb San Jose departures to the exit route altitude in Sutro's airspace after initiating an automated hand-off to Sutro.
- d. Prior to initiating a hand off to Sutro, verbally coordinate or enter the assigned heading in the scratchpad for SJC departures issued "runway heading" from Runway 12.
- e. Advise Grove when an SJC departure bound for the Oakland CX departs.

## 3-10 Area A Combined - SFOW and SFOW/SJCE



## 3-11 Area A Combined - SFOE



# Section 4. Area B Procedures

## 4-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Area B Combined	SFO_APP	NorCal Approach	135.650
Boulder	SFO_B_APP	NorCal Approach	133.950
Cedar	SFO_Z_APP	NorCal Approach	128.325
Foster	SFO_F_APP	NorCal Approach	120.350
Laguna	SFO_G_APP	NorCal Approach	128.575
Niles	SFO_N_APP	NorCal Approach	134.500
Woodside	SFO_W_APP	NorCal Approach	135.650

### a. Sector Definitions

- i. Area B provides ATC services to San Francisco and area satellites.
- ii. Area B Boulder and Laguna are feeder/sequencing sectors that handles arrivals from the north and south. Laguna normally combines into Boulder, except during heavy traffic.
- iii. Area B Niles and Cedar are feeder/sequencing sectors that handles arrivals from the east. Cedar normally combines into Niles, except during heavy traffic.
- iv. Area B Woodside is a final sector for San Francisco RW 28L and surrounding satellite airports.
- v. Area B Foster is a final sector for San Francisco RW 28R and surrounding satellite airports. Foster is always combined to Woodside during DOT 308 operations.
- vi. All Area B sectors may be combined.

## 4-2 SFO Arrivals

- a. When routing SFO arrival heavy/super aircraft "down the bay", NCT must:
  - i. Consider workload (including adjacent area workload) and weather conditions.
  - ii. Only use this route for fix balancing and emergency/minimum fuel aircraft.
  - iii. Ensure aircraft are at a speed and altitude consistent with a stabilized approach.

**NOTE-**

*Aircraft on an ILS or Visual Approach must intercept the final approach course at or below the glideslope altitude*

## 4-3 SFO Runways 01 Arrivals

- a. When requested or approved by the pilot, sequence aircraft for the RNAV Visual Runway 01R approach to the maximum extent practicable.
- b. Sequence aircraft unable to accept the RNAV Visual Runway 01R approach for the ILS Runway 28R circle to Runway 01R approach (NCT issues clearance to circle)
- c. Sequence aircraft unable to accept the RNAV Visual Runway 01R approach or the ILS Runway 28R circle to Runway 01R for a noncharted visual approach to Runway 01R as follows:
  - i. Vector aircraft to join an extended Runway 28R centerline or to intercept the Runway 28R localizer, at least nine (9) miles from SFO and at/above 3,100.
  - ii. At the San Mateo Bridge high span, vector the aircraft left to track 230° and maintain 3,100
  - iii. Do not clear the aircraft for a visual approach until established on the 230° track

## 4-4 Simultaneous Dependent Approaches (DOT 308)

- a. Conduct 1.0 nm dependent approaches to San Francisco International Airport Runways 28L and 28R in accordance with [FAA JO 7110.308](#).  
**EXCEPTION- Weather Requirements.**  
*Ceiling must be at least 200 feet. Visibility must be at least 0.5 sm or RVR at least 2,400 feet.*
- b. A CWT category F, G, H, or I aircraft must be the lead aircraft in a dependent pair and must be assigned ILS 28L.
- c. Provide a minimum of 1,000 feet vertical separation or the appropriate radar separation until both aircraft are established on the localizer and cleared for the approach. Visual separation is not authorized until both aircraft are established on the localizer.
- d. If the lead aircraft executes a missed approach or is issued go-around instructions and is a larger wake category than the trailing aircraft in the pair, the trailing aircraft must be instructed to execute a missed approach or issued go-around instructions.

## 4-5 Area B Scratchpad Entries

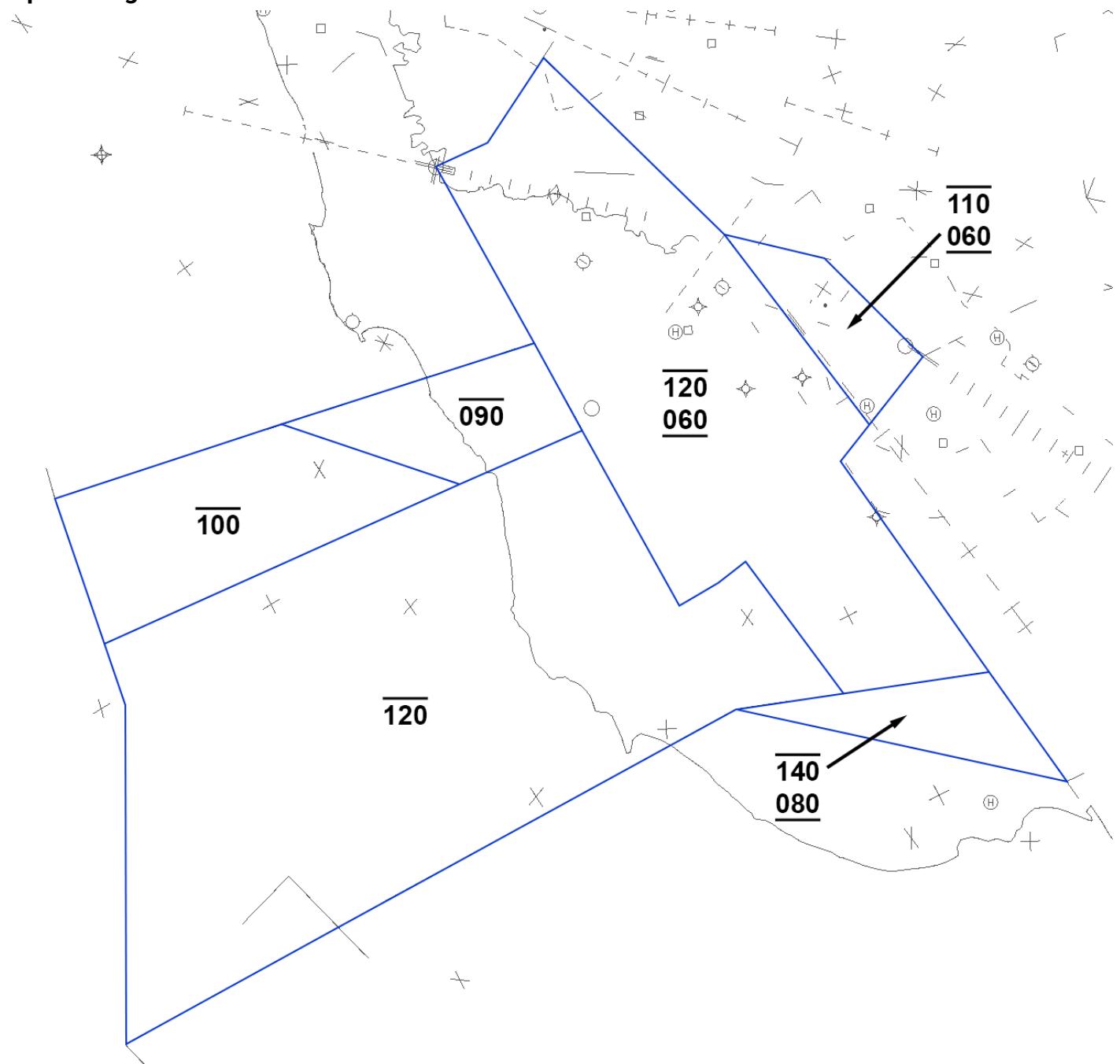
The following entries may be used within Area B for aircraft landing SFO. A quick reference can be opened in controller clients by using the *.bscratch* alias.

**EXCEPTION:** Boulder and Niles must use the entries noted with an asterisk.

ENTRY	MEANING
<b>FIS</b>	Aircraft requesting an FMS Visual Approach and has airport in sight or a charted landmark in sight
<b>FMS*</b>	Aircraft requesting/assigned an FMS Visual Approach to Runway 28R
<b>G8L*</b>	Aircraft requesting/assigned an RNAV (GPS) Approach to Runway 28L
<b>G8R*</b>	Aircraft requesting/assigned an RNAV (GPS) Approach to Runway 28R
<b>G9R (SFOE)</b>	RNAV (GPS) Approach Runway 19R
<b>I8L*</b>	ILS Runway 28L (ILS 28L circle to 01R during Runway 1 operations)
<b>I8R*</b>	ILS Runway 28R (ILS 28R circle to 01R during Runway 1 operations)
<b>I9L (SFOE)</b>	ILS Runway 19L
<b>V8L*</b>	VA Runway 28L (Requesting VA 01R during Runway 1 operations)
<b>V8R*</b>	VA Runway 28R (Requesting VA 01R during Runway 1 operations)
<b>QBL*</b>	Quiet Bridge Visual Approach Runway 28L
<b>QBR*</b>	Quiet Bridge Visual Approach Runway 28R
<b>TTL*</b>	Tipp Toe Visual Approach Runway 28L
<b>TTR*</b>	Tipp Toe Visual Approach Runway 28R
<b>LFT</b>	Aircraft assigned the left runway
<b>NSB</b>	Aircraft requesting a no side-by approach
<b>RGT</b>	Aircraft assigned the right runway
<b>RNV</b>	Aircraft requesting the RNAV Visual Runway 01R
<b>TIS</b>	Aircraft has parallel or preceding arrival aircraft in sight and is maintaining visual separation
<b>YSM</b>	Aircraft assigned YOSEM STAR
<b>RNP*</b>	Aircraft requesting/assigned a RNAV (RNP)
<b>VSL</b>	Aircraft Landing Runway 28L. Indicates pilot applied visual separation is applied with the preceding aircraft.
<b>VSR</b>	Aircraft Landing Runway 28R. Indicates pilot applied visual separation is applied with the preceding aircraft.

# 4-6 Boulder - SFOW

Airspace Diagram



## Boulder SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Licke	San Jose CX	J	7,000	RNAV STAR or Abeam OSI RV 110° (SFOW) Abeam OSI RV 140° (SJCE)
	SJC Oceanic Arrivals			RV SJC Final (SFOW) RV GGUGL (SJCE)
Laguna	V25	P, T, J	9,000	
	V27			Direct EUGEN
Grove	Oakland CX	T, J	6,000	RV over AXMUL
Seca	Landing MRY	P, T	5,000 7,000	Direct MRY / Runway 28 Direct ZEBED / Runway 10
	Monterey CX (Except MRY)			RV SNS
Sutro	Napa CX	T, J	8,000	V27

## Boulder SFOW Entry Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Licke	SFO	P, T, J	6,000	RV BOLDR
Laguna	SERFR	J	Descend Via	
	Napa CX	P, T, J	12,000 or lower filed	V27
Richmond (During Noise Abatement Period)	Landing MRY	P	7,000	RV AXMUL
Seca	San Francisco CX via V25	P, T	6,000	
Sutro	Monterey CX	P, T	7,000	RV EUGEN
	NUEVO DP; or EUGEN	P, T	11,000 or lower filed	

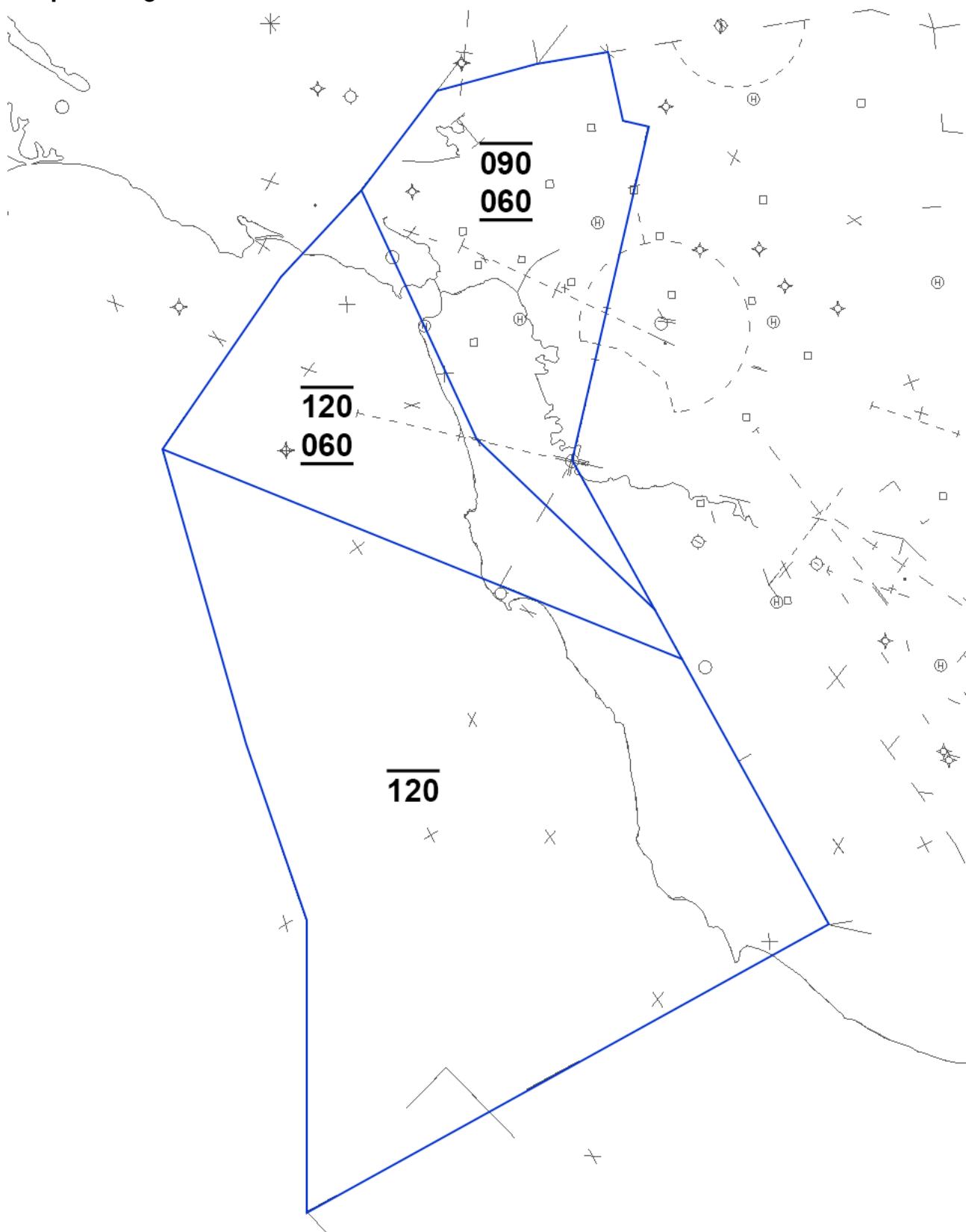
## **Boulder SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities**

- a. Coordinate "Down the Bay" arrivals with Niles.
- b. During in-trail operations to SFO, coordinate arrival sequence with Niles. Hand-off in sequence to Woodside.
- c. Ensure San Jose CX and Oakland CX jet arrivals have current ATIS.
- d. Except as specified below, Boulder must ensure that all aircraft on the BRIXX arrivals are at or above 11,000 feet while in Sutro's airspace.
- e. Aircraft routed north of SFO on a right downwind for SFO Runways 28 "Down the Bay" must be handled as follows:
  - i. Boulder must initiate an automated point out to Sutro.
  - ii. Acceptance of an automated point out constitutes Sutro's approval for Boulder to assign 6,000 feet within Area Alpha of the SFO Class B airspace between Hunter's Point and Fuller's Point.

***NOTE- Headings must be between 085° and 115° unless verbally coordinated.***

## 4-7 Boulder - SFOE

Airspace Diagram



## Boulder SFOE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	OAK	P, T, J	Level at 5,000	RV SAU
Laguna	V27	P, T, J	9,000	Direct EUGEN
Sutro	San Jose CX	T, J	7,000	OSI RV 140
	FRLON STAR			Except after MISSS maintain 7,000

## Boulder SFOE Entry Routes

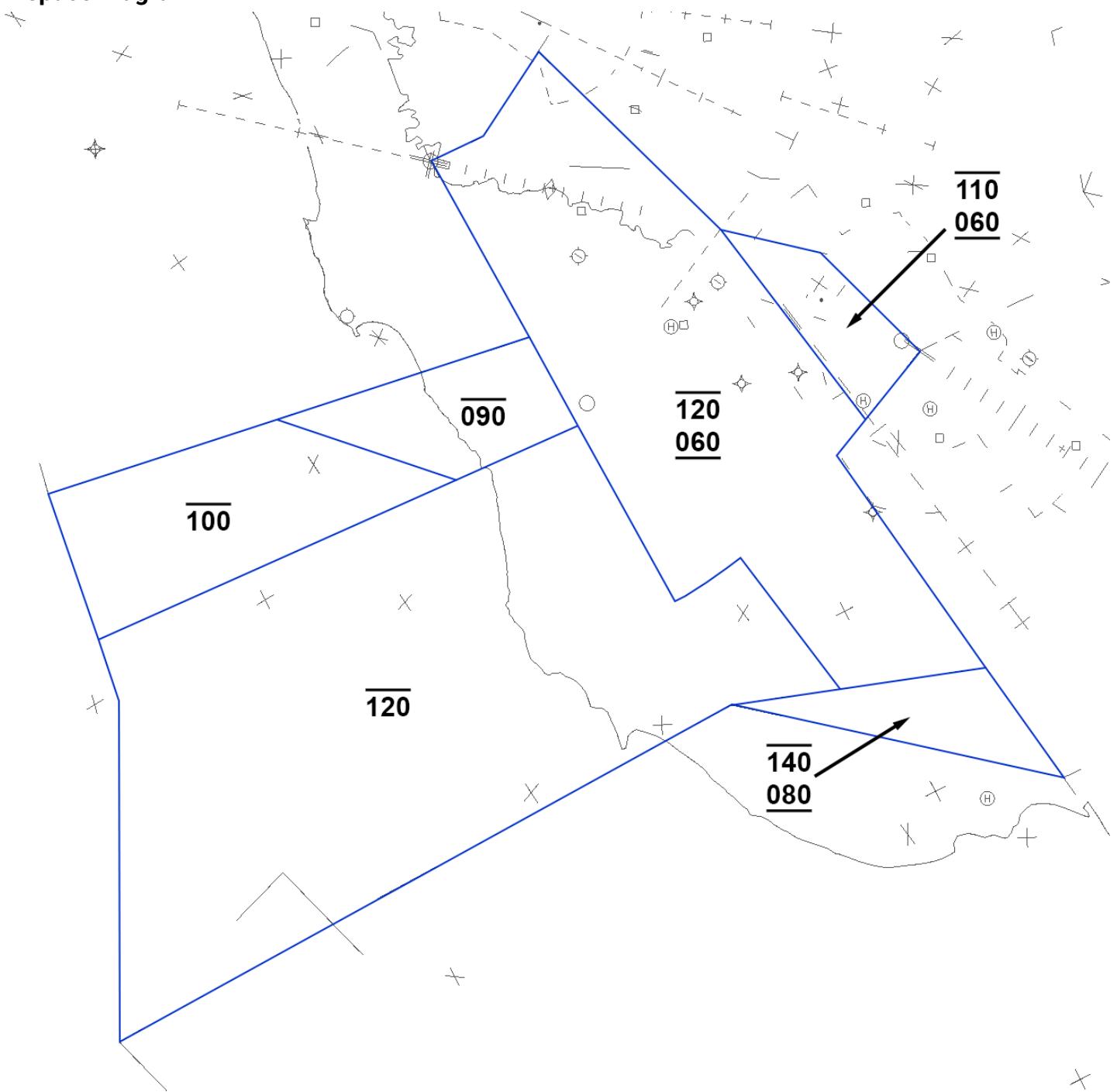
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	Oceanic Fix (SFO 28 Departures)	P, T, J	5,000	
Laguna	WWAVS	J	Descend Via	
Licke	SFO	P, T, J	6,000	Direct JILNA RV 260°
	Napa CX		5,000	
Seca	HADLY (Monterey CX Departures Only)	P, T	7,000	
Sutro	V27	P, T, J	6,000	Direct EUGEN

## Boulder SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities

Reserved.

# 4-8 Boulder - OAKE

Airspace Diagram



## Boulder OAKE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Licke	San Jose CX	J	7,000	RNAV STAR or Abeam OSI RV 110° (SFOW) Abeam OSI RV 140° (SJCE)
Laguna	V25	P, T, J	9,000	
Seca	MRY	P, T, J	7,000	Direct MRY / Runway 28 Direct ZEBED / Runway 10
Sutro	OAK	J	8,000	RV SAU
	Napa CX	T, J	8,000	V27

## Boulder OAKE Entry Routes

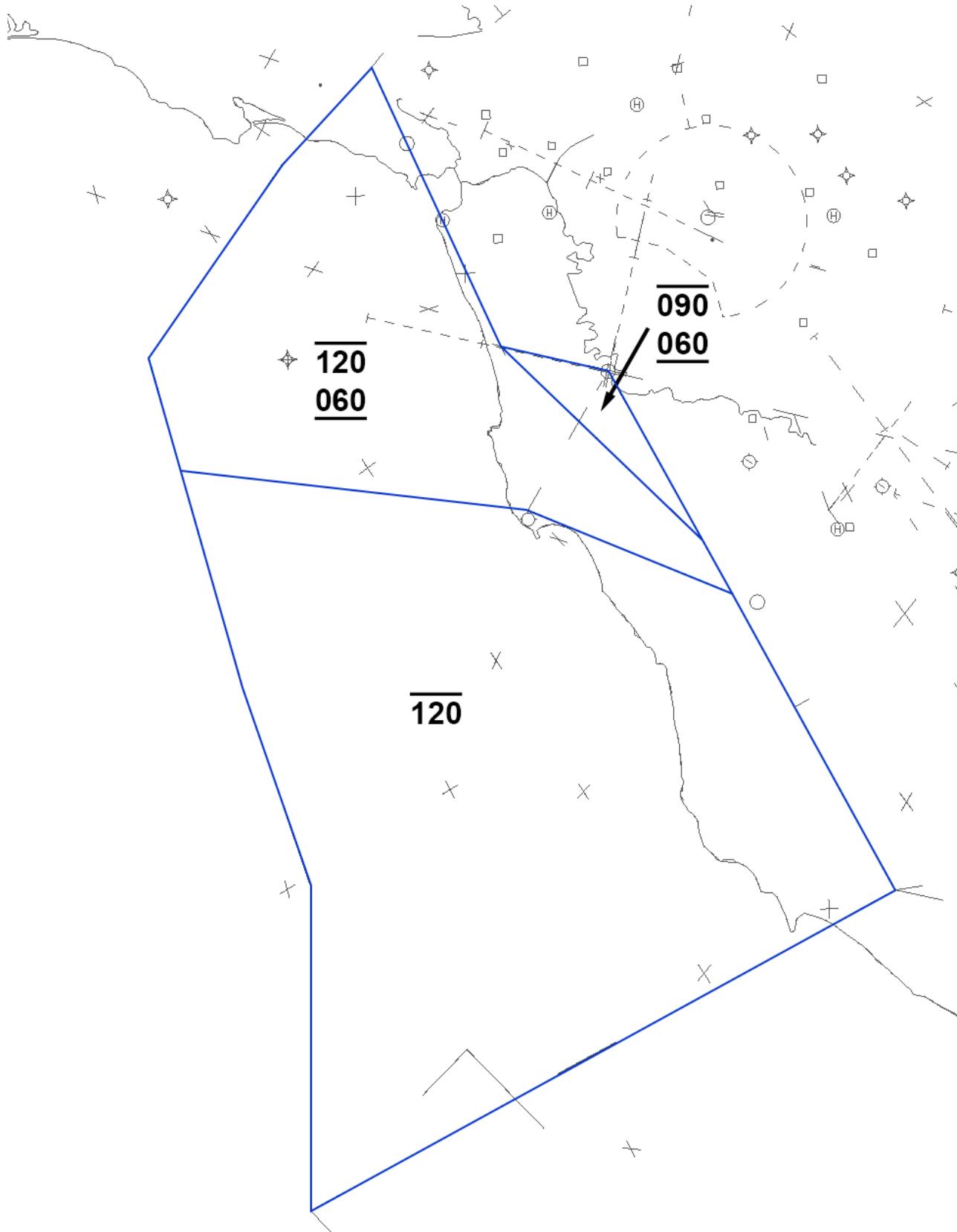
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Laguna	Napa CX	P, T, J	12,000 or lower filed	V27
Seca	San Francisco CX via V25	P, T	6,000	
Sutro	Monterey CX	P, T	7,000	RV EUGEN

## Boulder OAKE Pre-Arranged Coordination Procedures and Sector Responsibilities

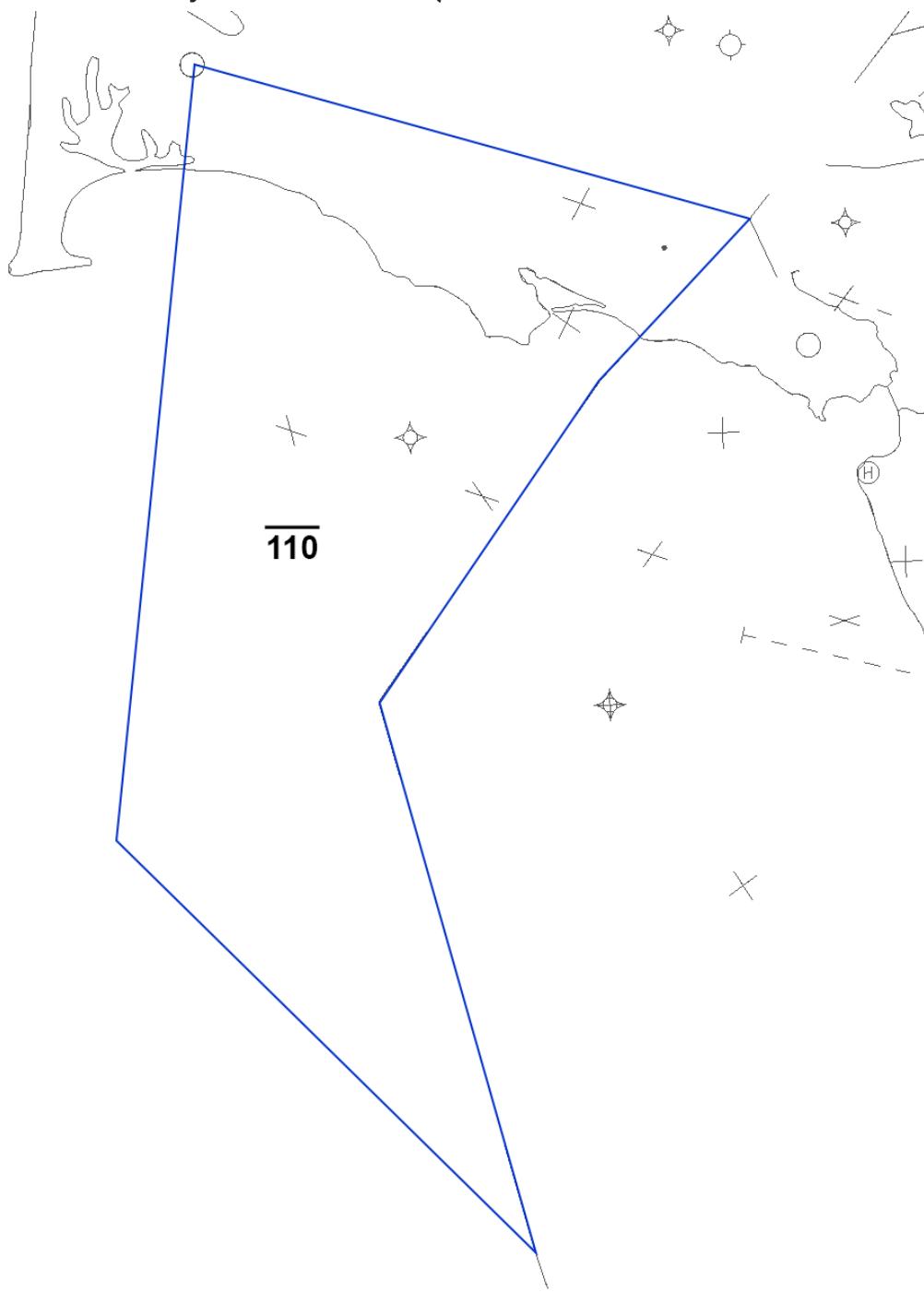
- During in-trail operations to SFO, coordinate arrival sequence with Niles. Hand-off the aircraft in sequence to Woodside.
- Do not authorize the "Down-The-Bay" procedure.
- Boulder must ensure that all aircraft on the BRIXX arrival are at or above 11,000 feet while in Sutro's airspace.

## 4-9 Boulder - SFO10

### Airspace Diagram



## Boulder SFO Runway 10 – Coast Area (after coordination with Oakland Center)



### Boulder SFO10 Exit Routes

*Reserved.*

### Boulder SFO10 Entry Routes

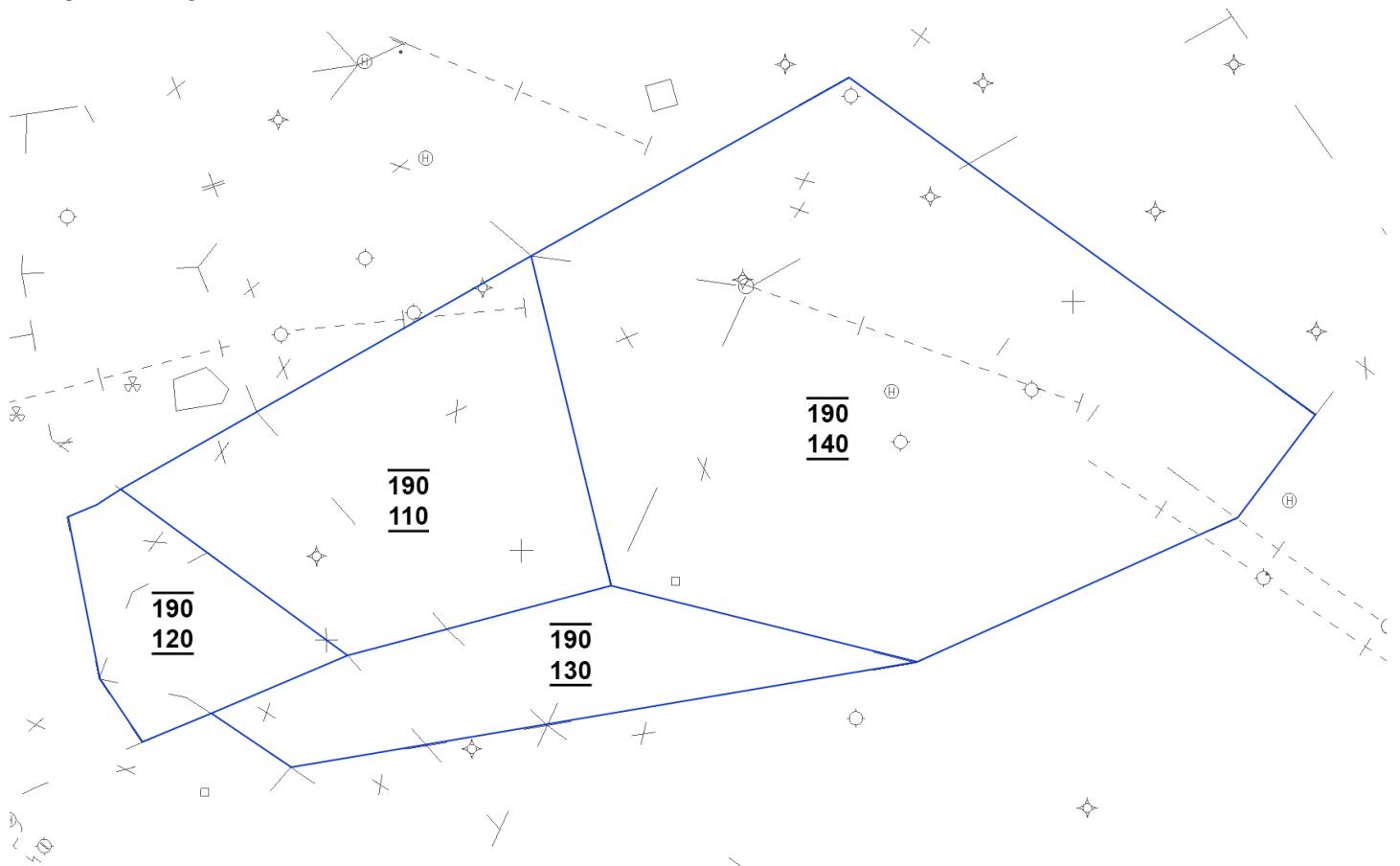
*Reserved.*

### Boulder SFO10 Pre-Arranged Coordination Procedures and Sector Responsibilities

- If needed, request the Coast Area, 11,000 feet and below, from Oakland Center.

# 4-10 Cedar - SFOW

## Airspace Diagram



### Cedar SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Morgan	West of or on T263	P, T, J	FDIO	RV 120° at least 4 miles north and east of V301
Niles	DYAMD	J	Descend Via	
	SFO		11,000	
Morgan	East of or on T263	P, T, J	FDIO	

### Cedar SFOW Entry Routes

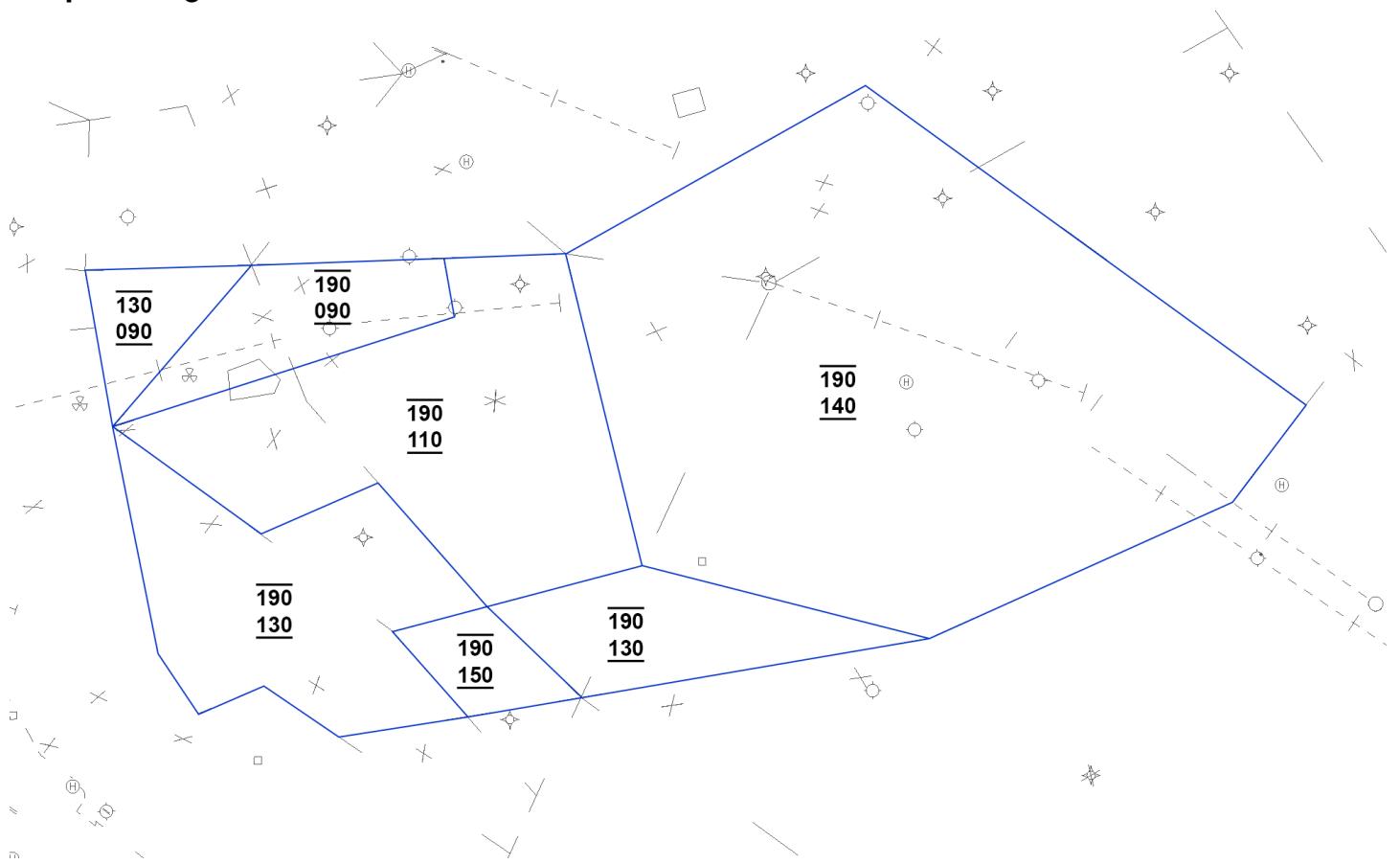
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Richmond	FRA, AVE, PXN, or EHF (CCR & SUU Departures Only)	P, T, J	FL190 or lower filed	RV CEDES
	CEDES HARGO BLEAR FRAME	P, T	FDIO	CEDES
	Southbound V244	T	FL190 or lower filed	RV EUGEN
Sunol	SFO	J	15,000	RV ALWYS/MOD
Morgan	SFO	T, J	14,000	RV ALWYS/MOD

### Cedar SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities

Reserved.

# 4-11 Cedar - SFOE

## Airspace Diagram



**Cedar SFOE Exit Routes**

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Niles	ALWYS	J	Descend Via	
	SFO	T, J	10,000	
Valley	T263, PXN, or AVE	P, T, J	FDIO	

**Cedar SFOE Entry Routes**

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Richmond	FRA, AVE, PXN, or EHF (CCR & SUU Departures Only)	P, T, J	FL190 or lower filed	RV CEDES
Sunol	SFO	J	15,000	RV ALWYS/MOD

**Cedar SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities**

- a. Protect aircraft worked by Richmond that are established on and climbing via the ALMDN DP.

## 4-12 Foster - SFOW

Airspace Diagram



### Foster SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	Oakland CX or OAK V6 (SQL Departures Only)	P, T	3,000	RV West of Dumbarton Bridge
		P, T, J	5,000	RV AXMUL

### Foster SFOW Entry Routes

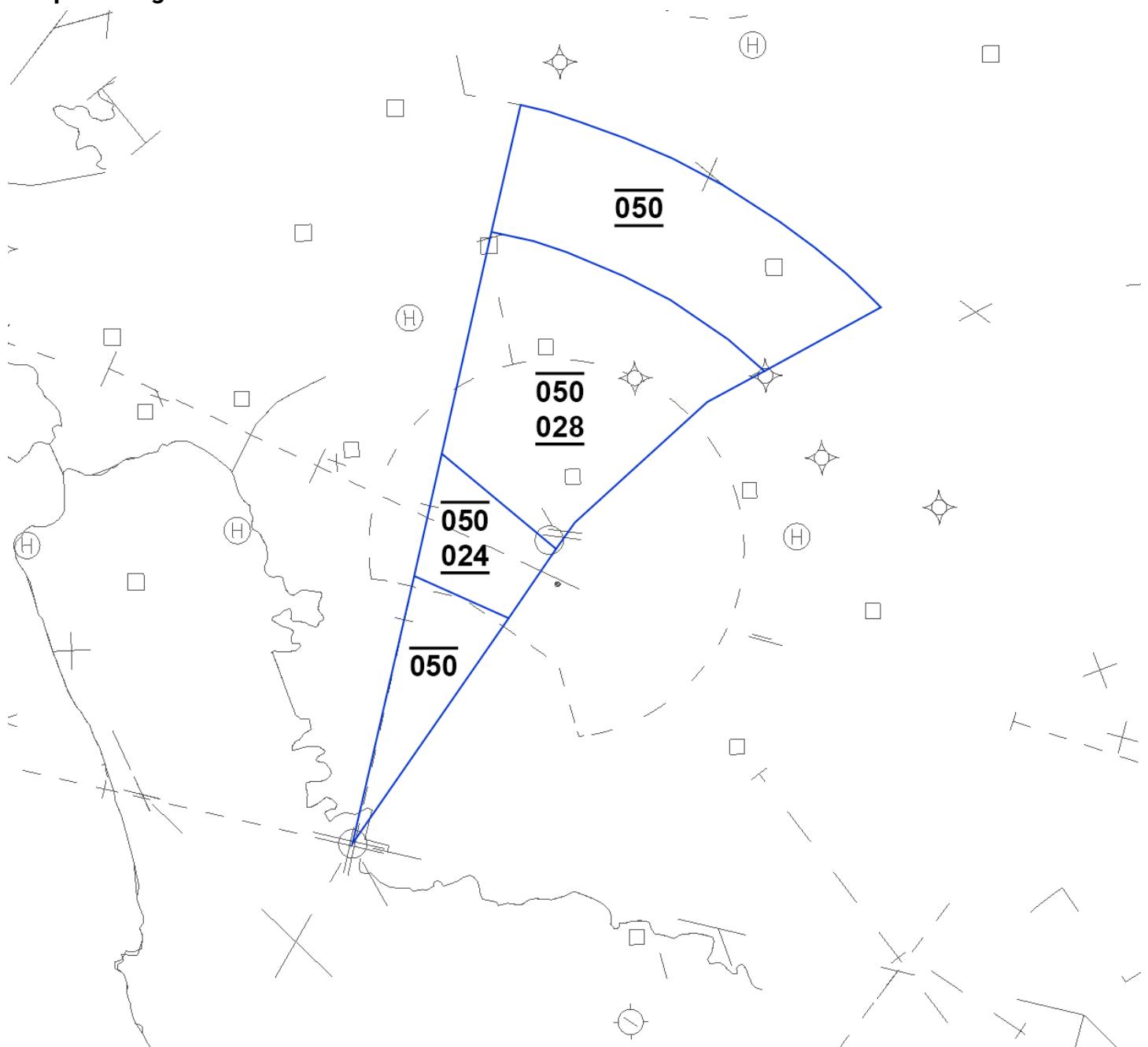
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	HAF	P, T, J	4,000	RV East of Dumbarton Bridge

### Foster SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Foster does not have control for descent of arrivals in Grove airspace until south of the OAK Runway 30 localizer.
- b. Foster does not have control for descent of arrivals on right traffic for SFO Runways 28 below 6,000 feet until crossing the SFO to OAK line.
- c. Grove does not have control for climb of SQL departures routed via the Dumbarton Bridge.
- d. Sequence arrivals to SFO Runway 28R during visual approach operations.
- e. Maintain radar separation from arrivals controlled by Woodside to Runway 28L until visual separation is applied.
- f. Protect SJC arrivals during SJCE operations:
  - i. On vectors for the SJC Runway 12 ILS/Visual Approach and at/below 3,000 feet up to, but not including, the Lickey/Woodside common airspace boundary west of NUQ.
  - ii. Descending on the RNAV Z RWY 12 approach as published from HITIR.
- g. Protect VFR aircraft worked by Palo Alto Tower and handed off to Grove.

## 4-13 Foster - SFOE

Airspace Diagram



## Foster SFOE Exit Routes

Reserved.

## Foster SFOE Entry Routes

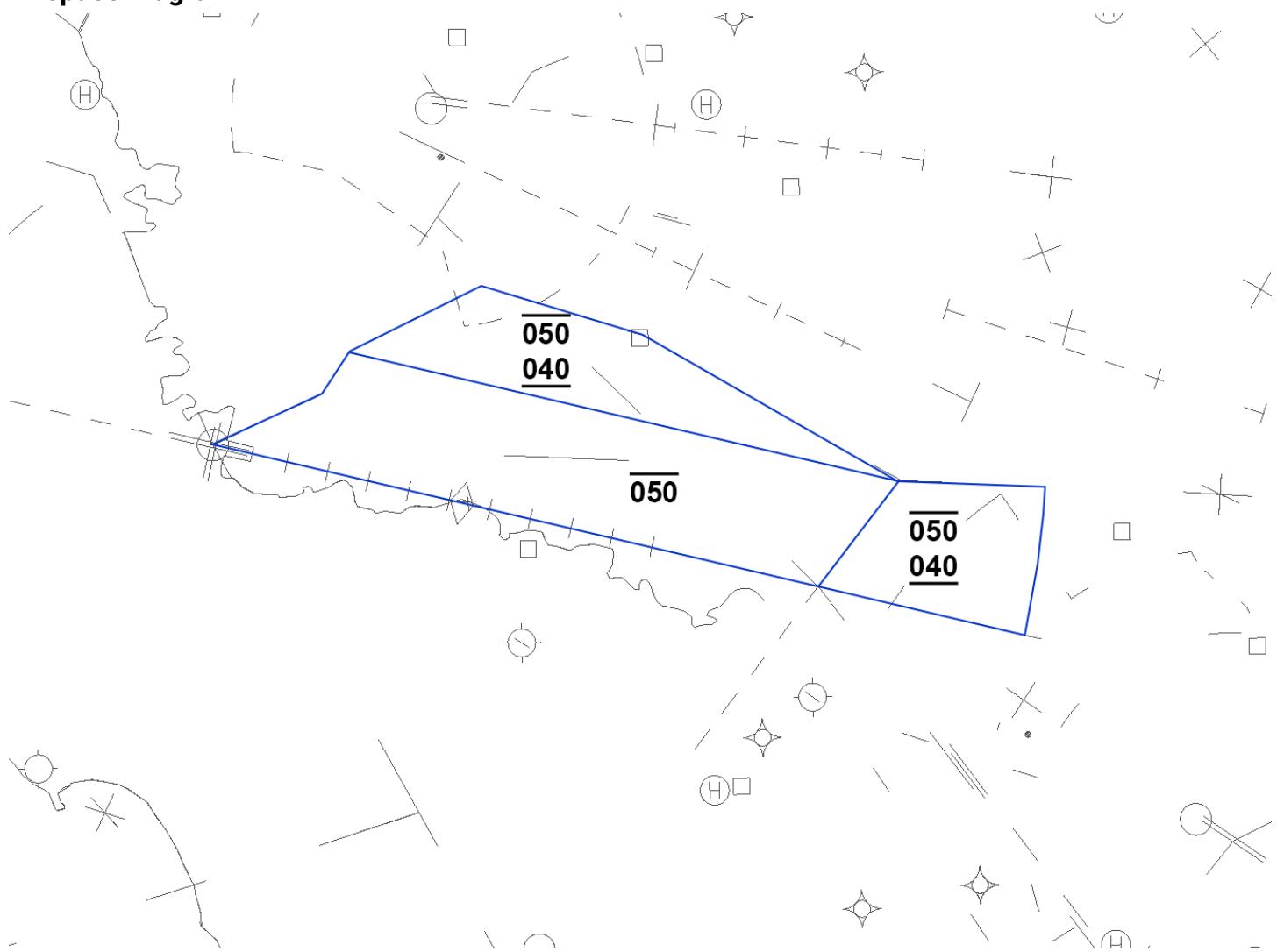
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Niles	SFO	P, T, J	7,000	

## Foster SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Sequence arrivals to SFO Runway 19L during visual approach operations.
- b. Maintain radar separation from arrivals controlled by Woodside to Runway 19R until visual separation is applied. Issue a restriction to cross the SFO 9 DME at or above 3,000 feet to aircraft conducting a visual approach to SFO Runways 19.

## 4-14 Foster - OAKE

Airspace Diagram



**Foster OAKE Exit Routes**

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	Oakland CX or OAK V6 (SQL Departures Only)	P, T	3,000	CFR. RV West of Dumbarton Bridge

**Foster OAKE Entry Routes**

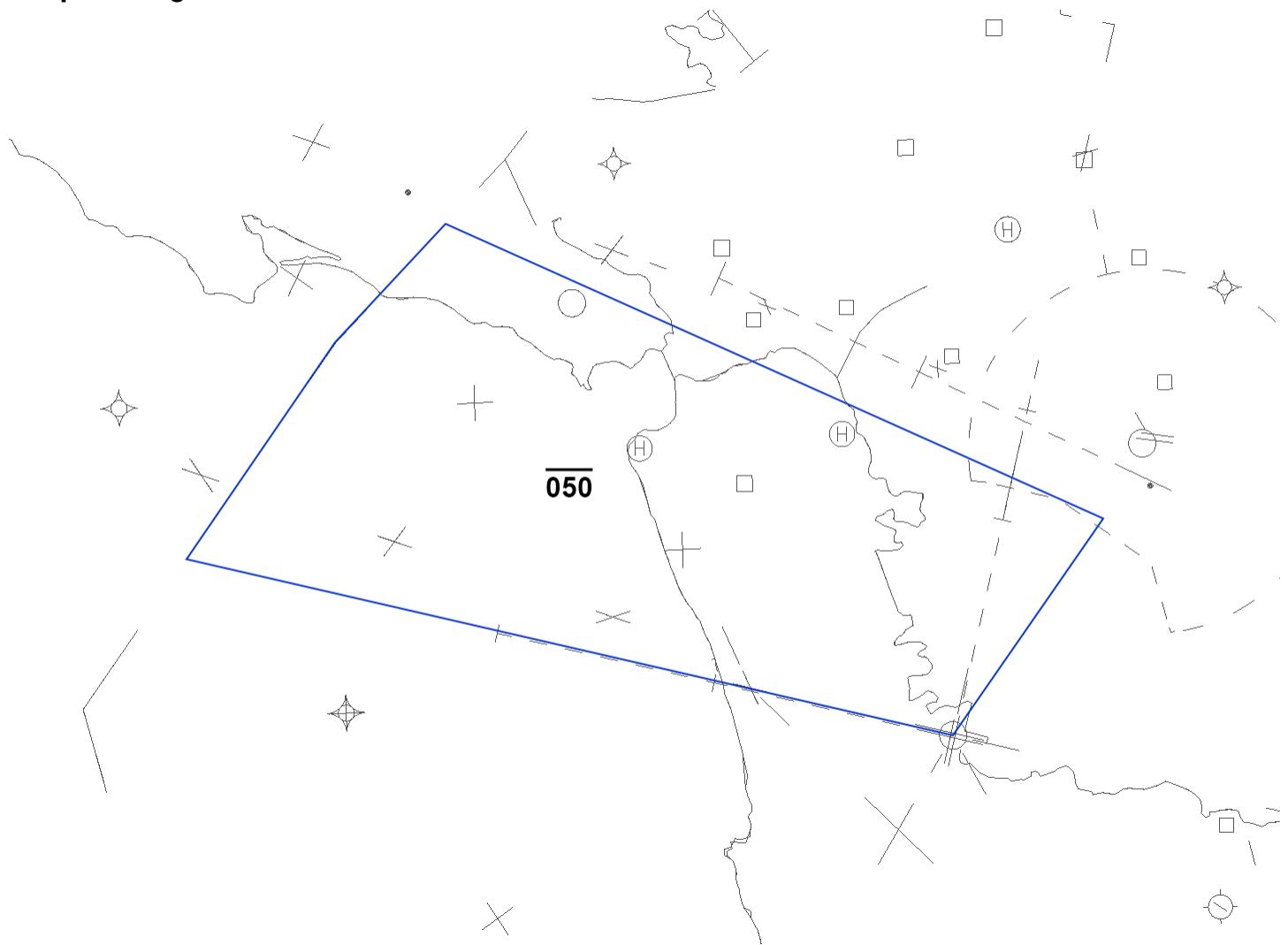
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	HAF	P, T, J	4,000	RV East of Dumbarton Bridge
	SQL	P, T	3,000	

**Foster OAKE Pre-Arranged Coordination Procedures and Sector Responsibilities**

- a. Foster does not have control for descent of arrivals in Grove's airspace until south of the OAK Runway 30 localizer.
- b. Sequence arrivals to SFO Runway 28R during visual approach operations.
- c. Maintain radar separation from arrivals controlled by Woodside to Runway 28L until visual separation is applied.
- d. Protect VFR aircraft worked by Palo Alto Tower and handed off to Grove.

# 4-15 Foster - SF010

## Airspace Diagram



### Foster SF010 Exit Routes

*Reserved.*

### Foster SF010 Entry Routes

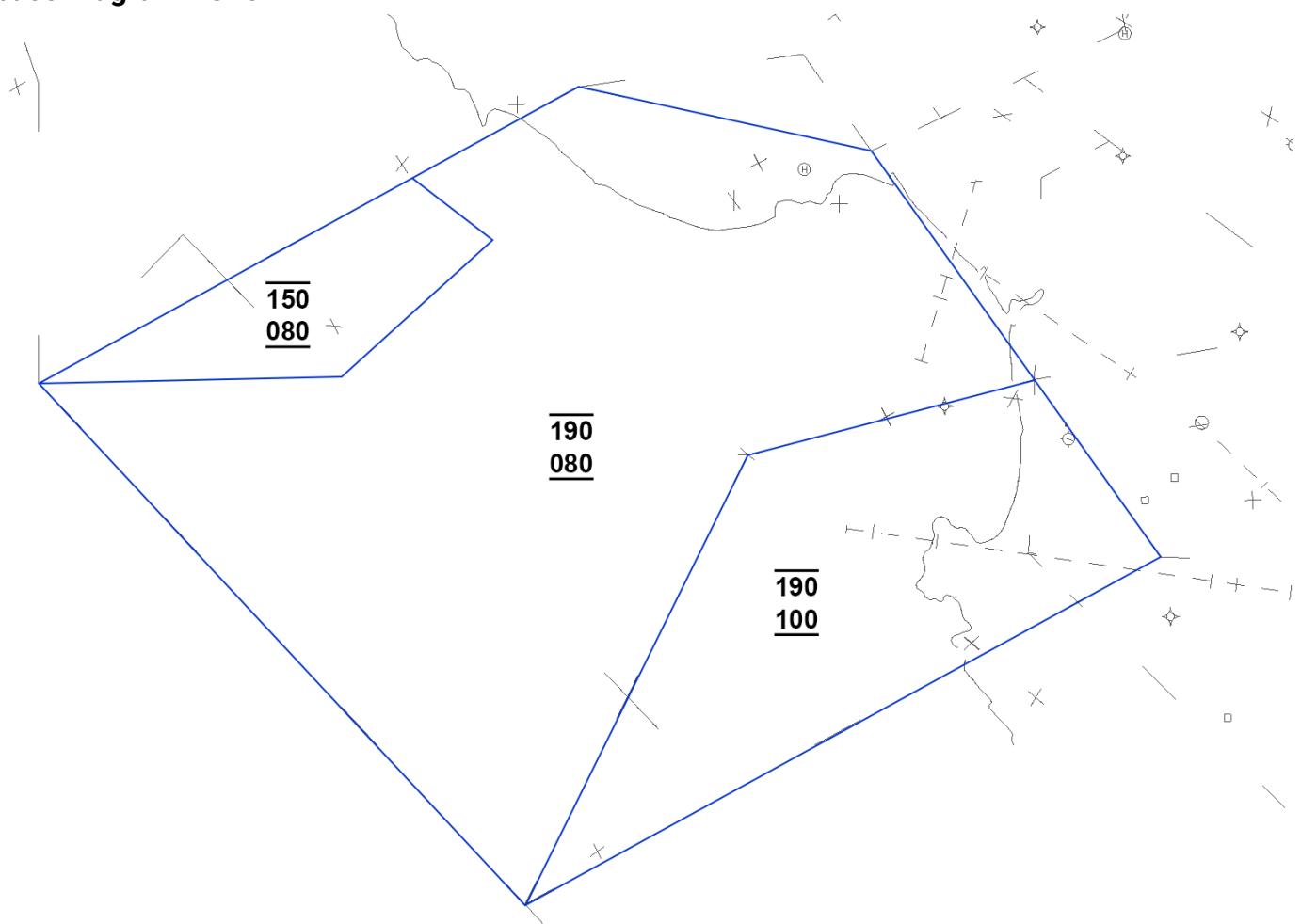
*Reserved.*

### Foster SF010 Pre-Arranged Coordination Procedures and Sector Responsibilities

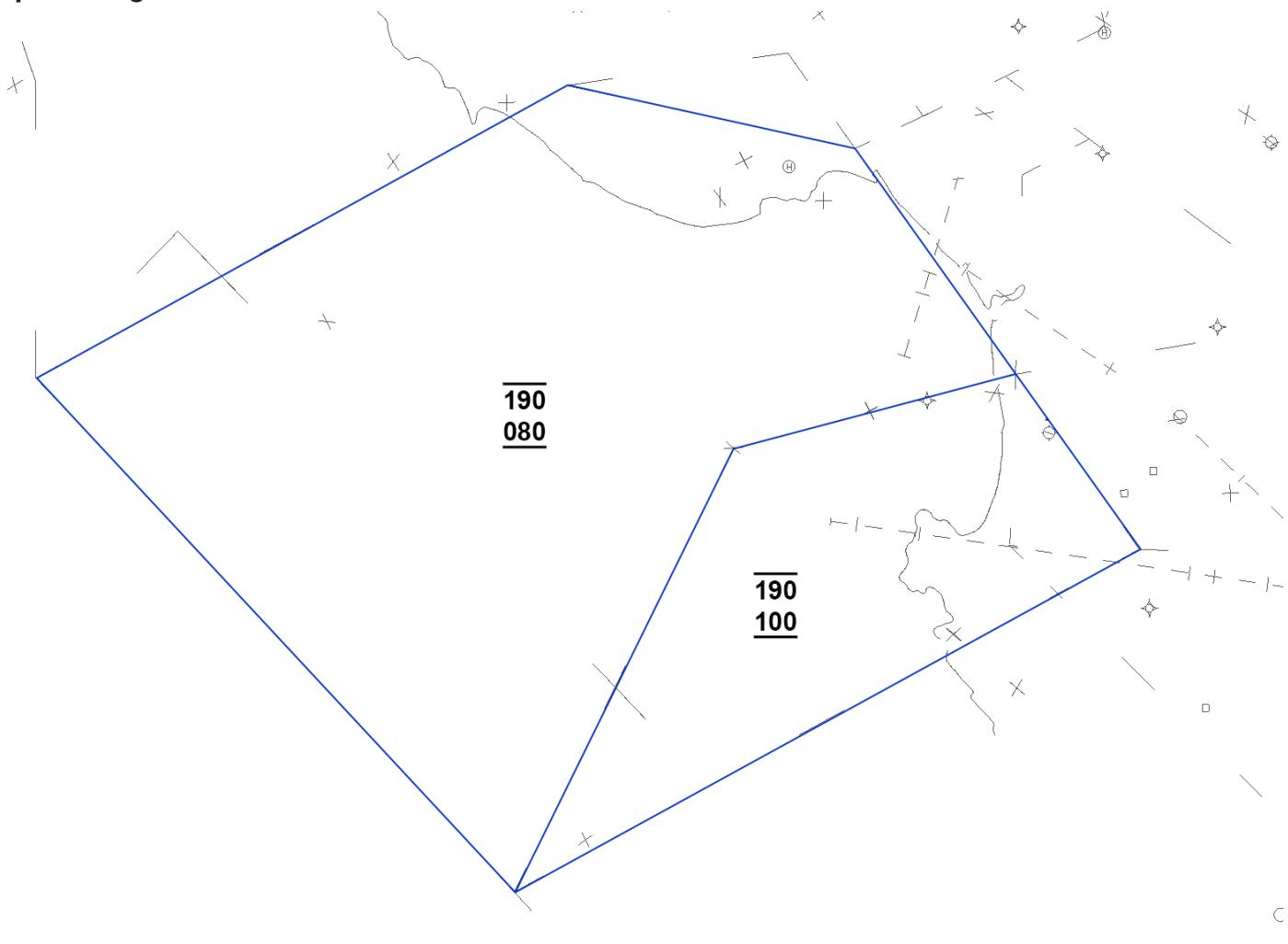
*Reserved.*

## 4-16 Laguna

Airspace Diagram - SFOW



## Airspace Diagram - SFOE



### Laguna Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Boulder</b>	SERFR/WWAVS	J	Descend Via	
	Napa CX	P, T, J	12,000 or lower filed	V27
<b>Morgan</b>	SQL Departures	P, T, J	FDIO	RV SNS
<b>Seca</b>	Landing MRY	P, T, J	8,000	Direct MRY / Runway 28
	Monterey CX			Direct ZEBED / Runway 10
	V27		FL190 or lower filed	Direct SNS
<b>Sutro</b>	Monterey CX DP's (except Napa CX)	P, T, J	FL190 or lower filed	

## Laguna Entry Routes

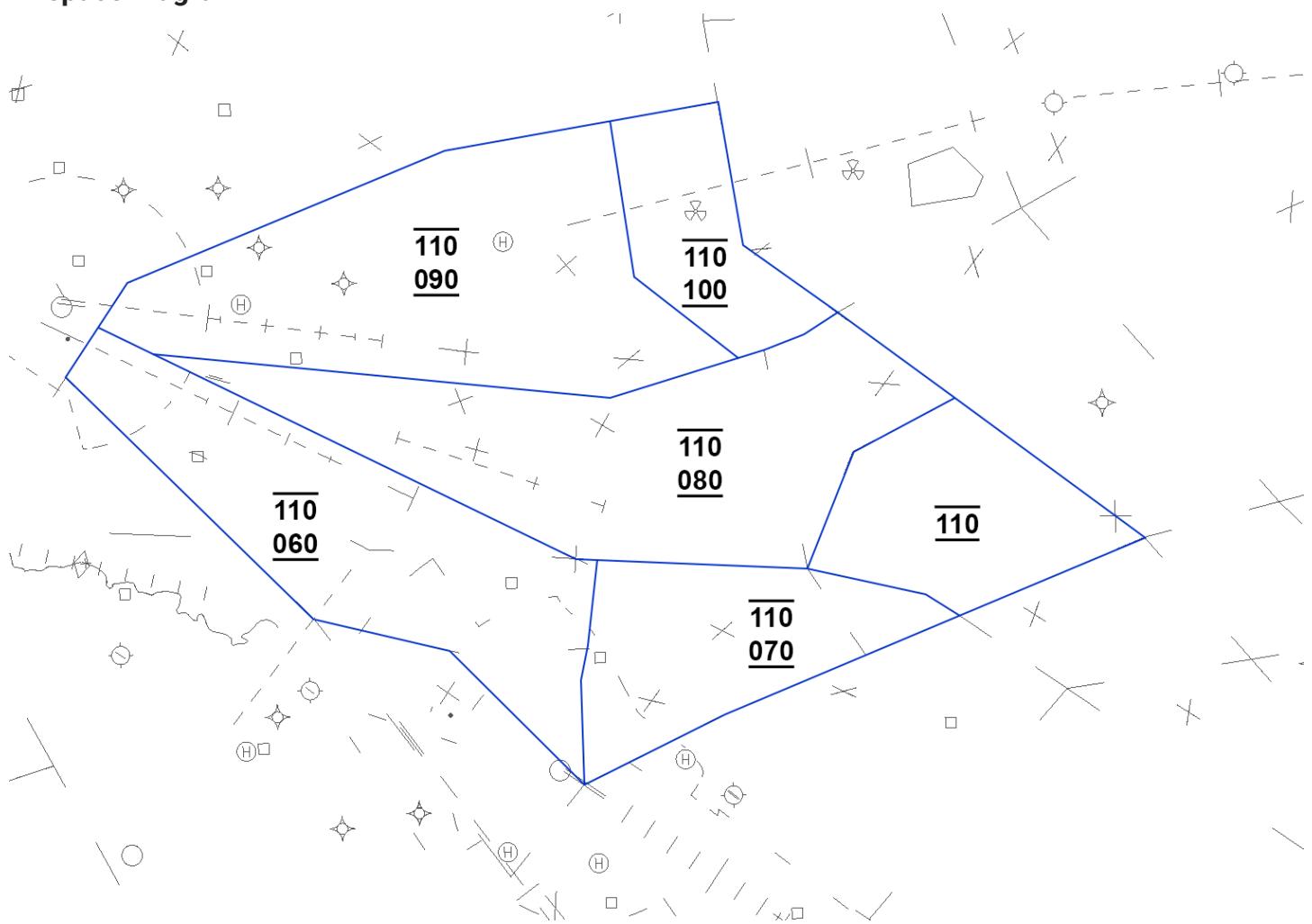
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Boulder (SFOW)	V25	P, T, J	9,000	
Boulder	V27	P, T, J	9,000	Direct EUGEN
Morgan	SFO or HAF (SFOW)	P, T	12,000 or lower filed	RV OSI
	SFO (SFOE)	P, T, J		Direct SHOEY HADLY
	SERFR / WWAVS		Descend Via	
Seca (SFOW)	SFO	P, T	12,000 or lower filed	
Seca (SFOE)	HADLY	T, J	12,000	
	SFO/OAK via HADLY (Monterey CX Departures Only)	J	7,000	
Sutro	NUEVO DP or EUGEN	P, T	FL190 or lower filed	
Sutro (SFOE)	V25	P, T, J	FL190 or lower filed	

## Laguna Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Laguna does not have control for descent on props and turbo props below 10,000 feet while in Morgan or Seca's airspace.

# 4-17 Niles - SFOW

Airspace Diagram



## Niles SFOW Exit Routes

Reserved.

## Niles SFOW Entry Routes

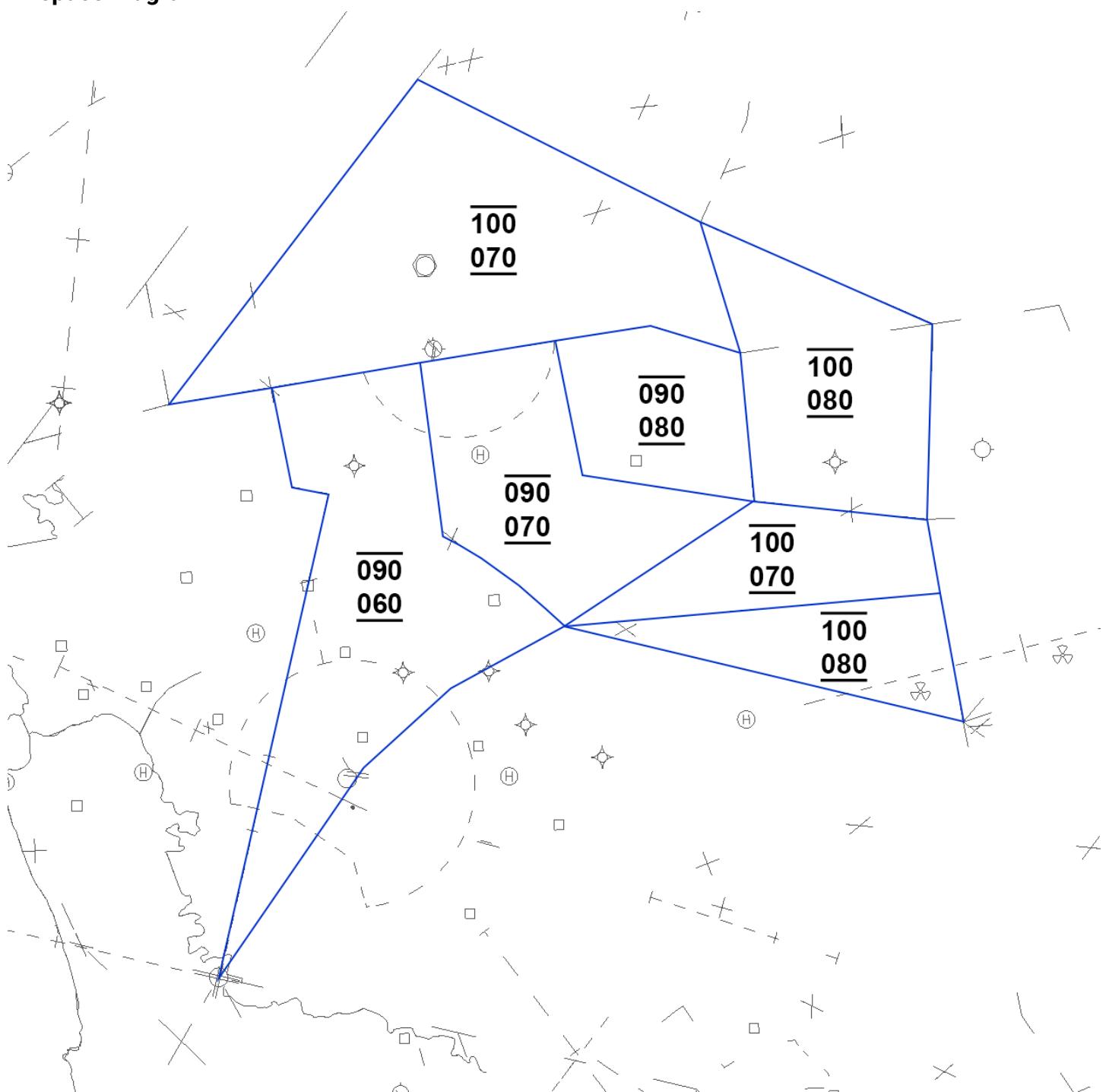
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Cedar	DYAMD	J	Descend Via	
	SFO		11,000	
Sunol	SFO	T	9,000	RV CEDES

## Niles SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Niles does not have control for descent in Sunol's airspace without coordination.
- b. During in-trail operations to SFO, coordinate arrival sequence with Boulder. Hand-off to Woodside in sequence.
- c. When assigning Runway 28L, coordinate with Boulder and hand-off to Woodside

# 4-18 Niles - SFOE

Airspace Diagram



**Niles SFOE Exit Routes**

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Foster	SFO	P, T, J	7,000	

**Niles SFOE Entry Routes**

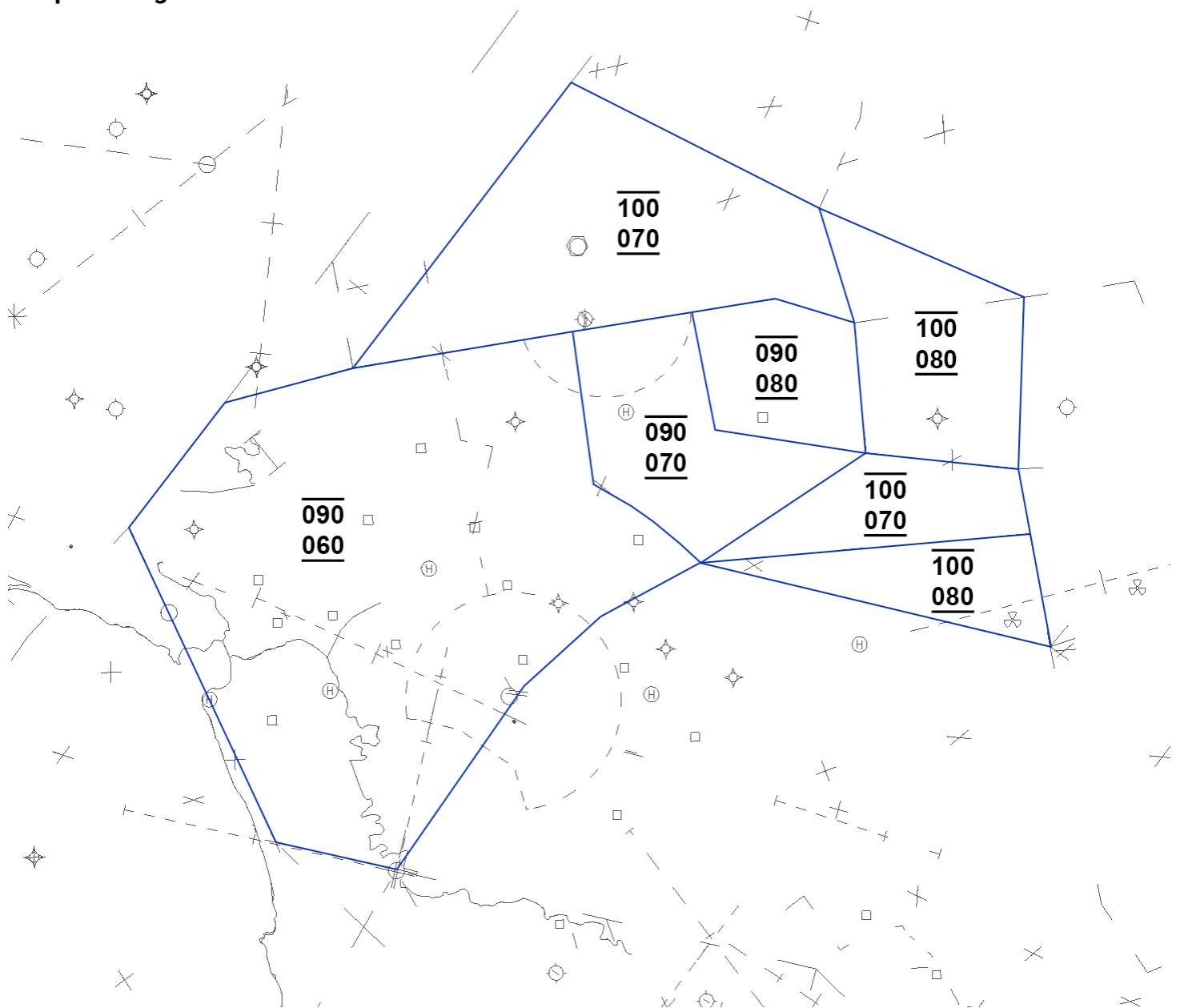
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Cedar	ALWYS	J	Descend Via	
	SFO	T, J	10,000	
Richmond	SFO	P, T	8,000	V6

**Niles SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities**

- a. Protect aircraft established on and descending via the SKIZM and BANND arrivals.

# 4-19 Niles - SFO10

## Airspace Diagram



## Niles SFO10 Exit Routes

Reserved.

## Niles SFO10 Entry Routes

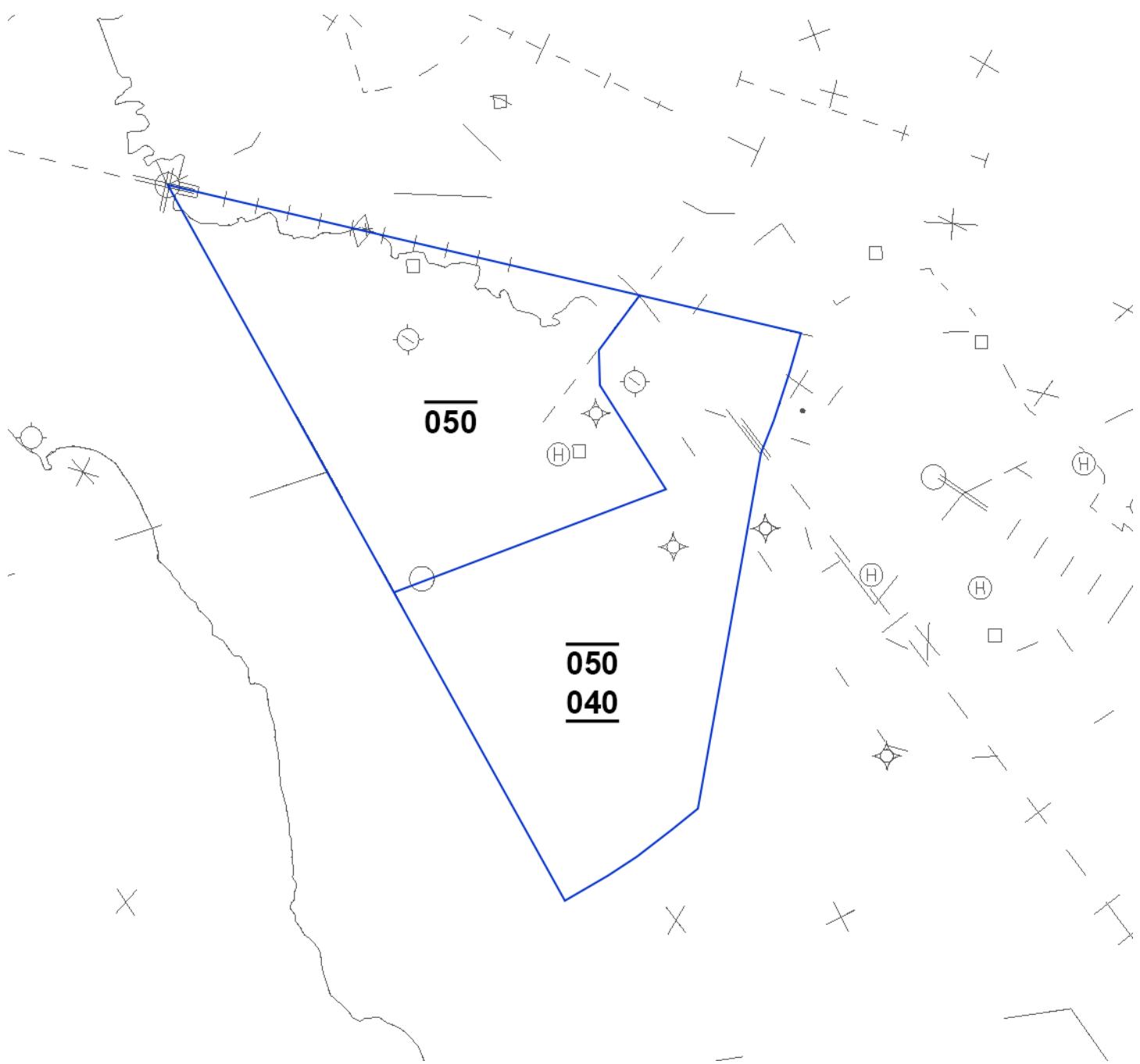
Reserved.

## Niles SFO10 Pre-Arranged Coordination Procedures and Sector Responsibilities

Reserved.

## 4-20 Woodside - SFOW

### Airspace Diagram



## Woodside SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Licke	SQL or San Jose CX	P, T, J	5,000	OSI Heading 110
Licke (SJCE)	SQL or San Jose CX	P, T, J	5,000	OSI Heading 140
	Stockton CX, Modesto CX, V334, or ALTAM (SQL Departures Only)	P, T	2,000	RV over PAO
Sutro	Northbound VFR (excluding Bay Tours)	P, T, J	5,000	Via South and West of Bayshore Freeway
	VFR Bay Tours			Outside SFO Class Bravo
	All Others			RV 280° at least 3 miles south of SFO
Toga	Stockton CX, Modesto CX, V334, or ALTAM (SQL Departures Only)	P, T	3,000	RV over PAO

## Woodside SFOW Entry Routes

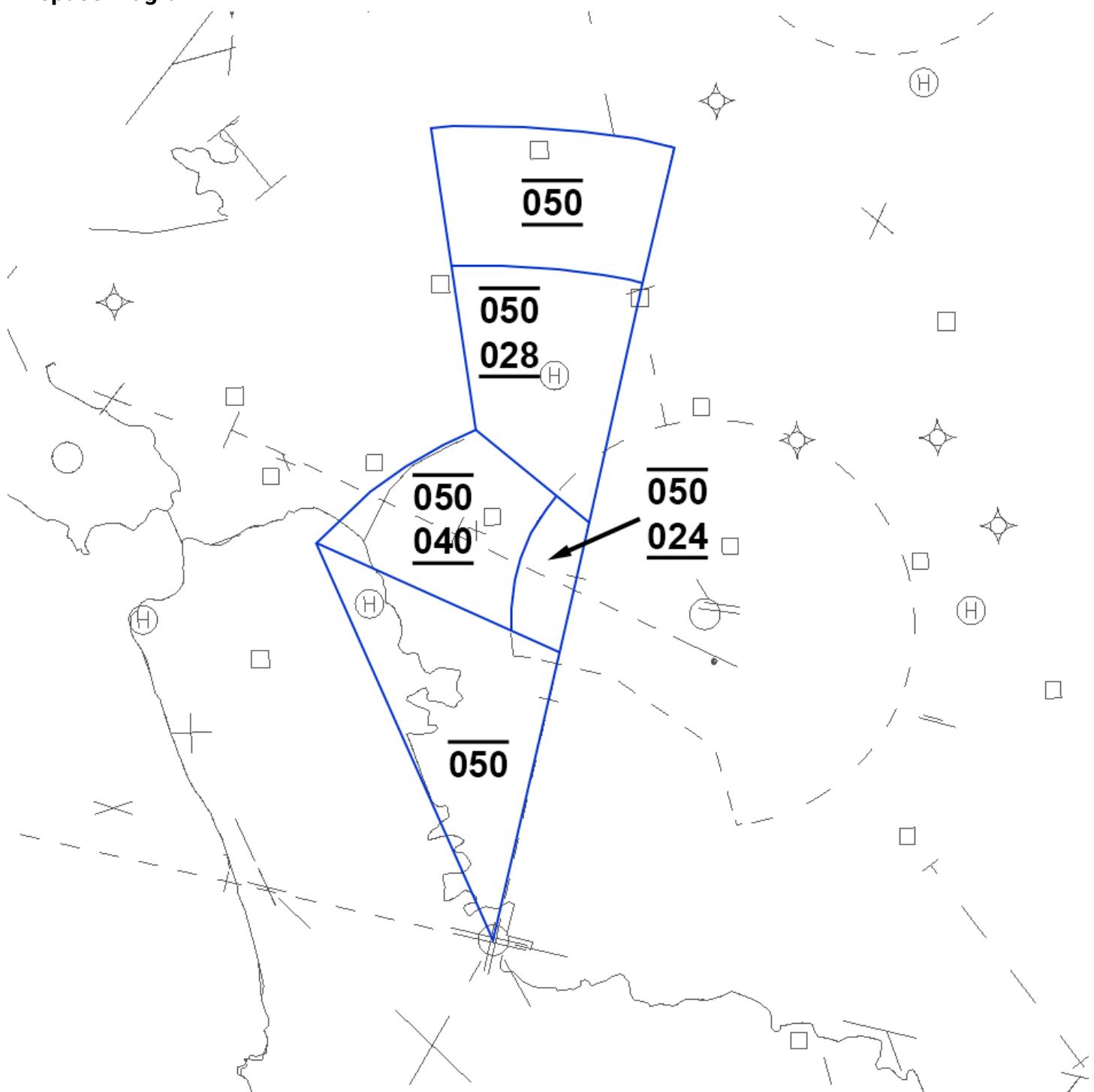
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Sutro (SFOW/SJCE)	San Jose CX or SQL	P, T, J	5,000	OSI RV 110° (SFOW) OSI RV 140° (SJCE)
Sutro	SFO	P, T	4,000	RV 100° / 4 NM south of SFO
		J	5,000	
Toga	Via SFO.V199	P, T, J	3,000	
Toga (SFOW)	PAO Departures		3,000	RV 240°
Licke	Northbound VFR (excluding VFR Bay Tours)		At or below 4,000	
	VFR Bay Tours	P, T, J		Outside SFO Class Bravo Airspace
Licke (SJCE)	PAO Departures		3,000	RV 240°

## **Woodside SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities**

- a. Toga (SFOW)/ Licke (SJCE) does not have control for climb on aircraft received from Woodside.
  - b. Sequence arrivals to SFO. During visual approach operations, sequence arrivals to SFO Runway 28L, and maintain radar separation from arrivals controlled by Foster to Runway 28R until visual separation is applied.
  - c. Initially control NUQ OSI DP departures.
  - d. Initially control jet aircraft departing SJC transiting Sutro's airspace or enroute to oceanic fixes.
  - e. Protect SJC arrivals during SJCE operations:
    - i. On vectors for the SJC Runway 12 ILS/Visual Approach and at/below 3,000 feet up to, but not including, the Licke/Woodside common airspace boundary west of NUQ.
    - ii. Descending on the RNAV Z RWY 12 approach as published from HITIR.
  - f. Protect VFR aircraft worked by Palo Alto Tower and handed off to Grove.
  - g. Do not turn jet aircraft departing SJC toward OSI until abeam NUQ at or above 3,000 feet.
  - h. Request release from Grove on IFR SQL departures routed via the Dumbarton Bridge through Grove's airspace.
- NOTE- A verbal release is not required on aircraft routed via AXMUL***
- i. Request release from Toga (SFOW) / Licke (SJCE) for IFR SQL departures routed through Toga (SFOW) / Licke (SJCE) airspace.

## 4-21 Woodside - SFOE

Airspace Diagram



## **Woodside SFOE Exit Routes**

Reserved.

## **Woodside SFOE Entry Routes**

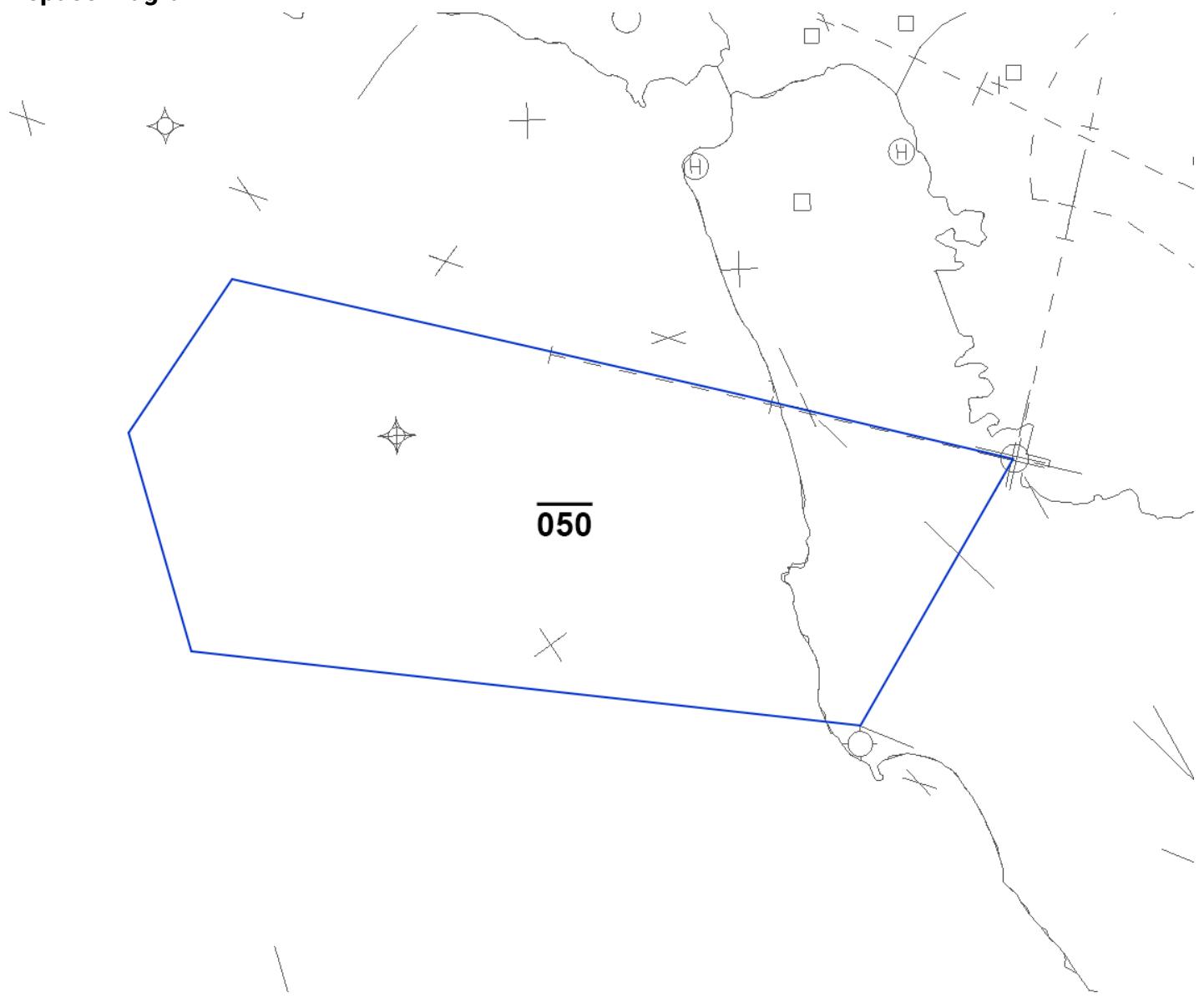
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	SFO	P, T	4,000	RV BERKS

## **Woodside SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities**

- a. Sequence arrivals to SFO. During visual approach operations, sequence arrivals to SFO Runway 19R, and maintain radar separation from arrivals controlled by Foster to Runway 19L until visual separation is applied.
- b. Issue a restriction to cross the SFO 9 DME at or above 3,000 feet to aircraft conducting a visual approach to SFO Runways 19.
- c. Issue the SHAKE crossing restriction to all aircraft on the ILS Runway 19L approach.

## 4-22 Woodside - SF010

Airspace Diagram



### Woodside SF010 Exit Routes

Reserved.

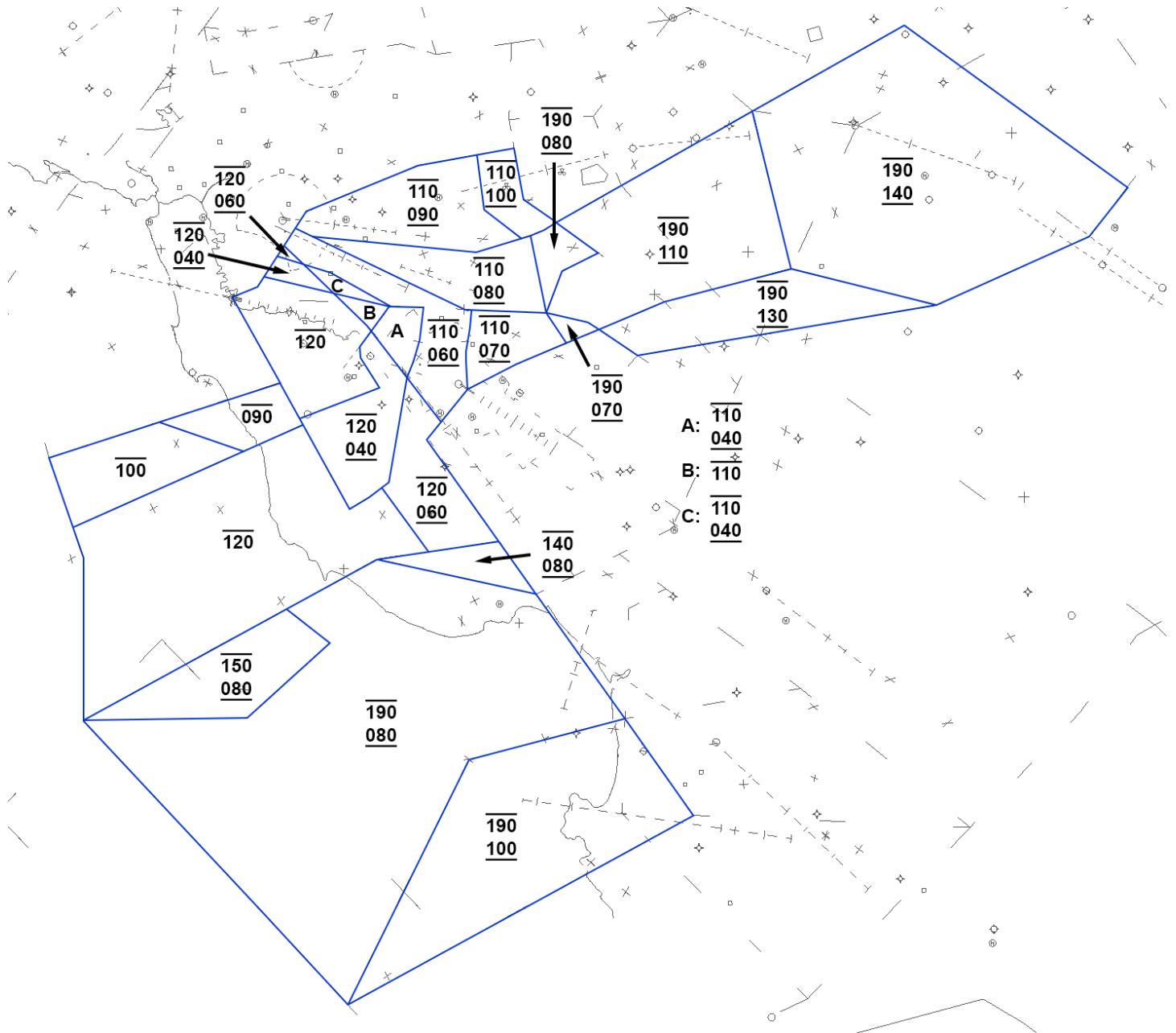
### Woodside SF010 Exit Routes

Reserved.

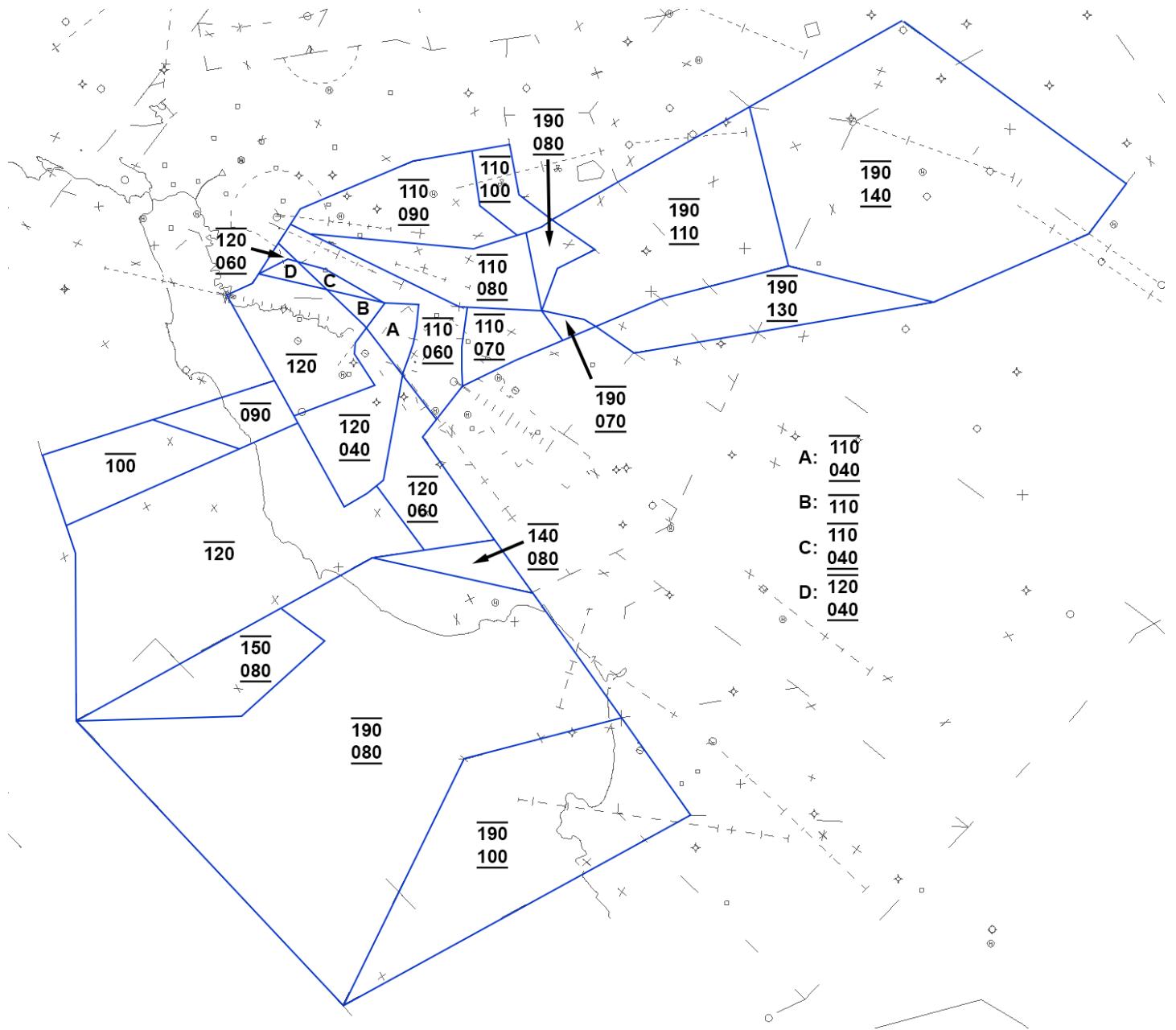
### Woodside SF010 Pre-Arranged Coordination Procedures and Sector Responsibilities

Reserved.

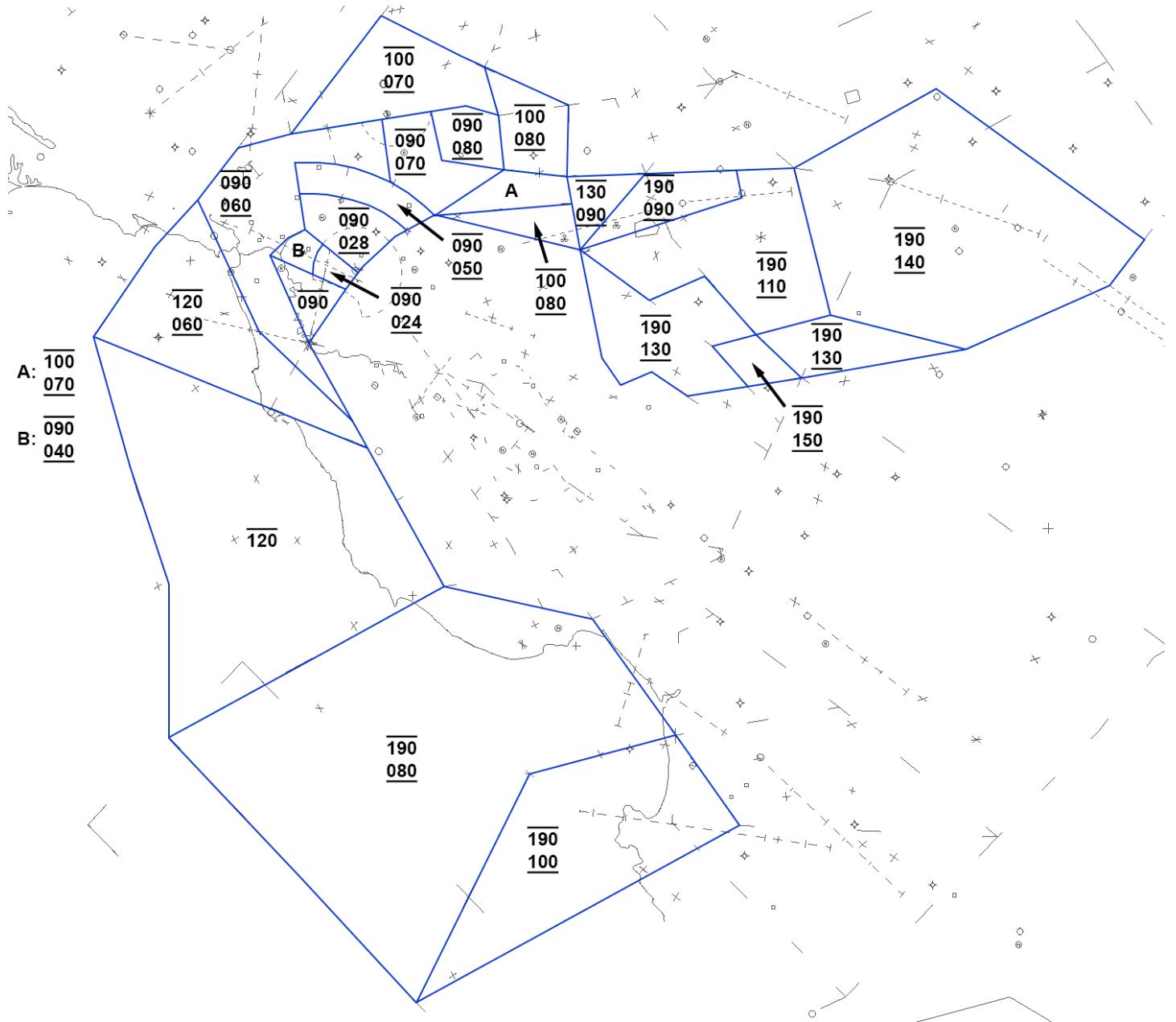
## 4-22 Area B Combined - SFOW



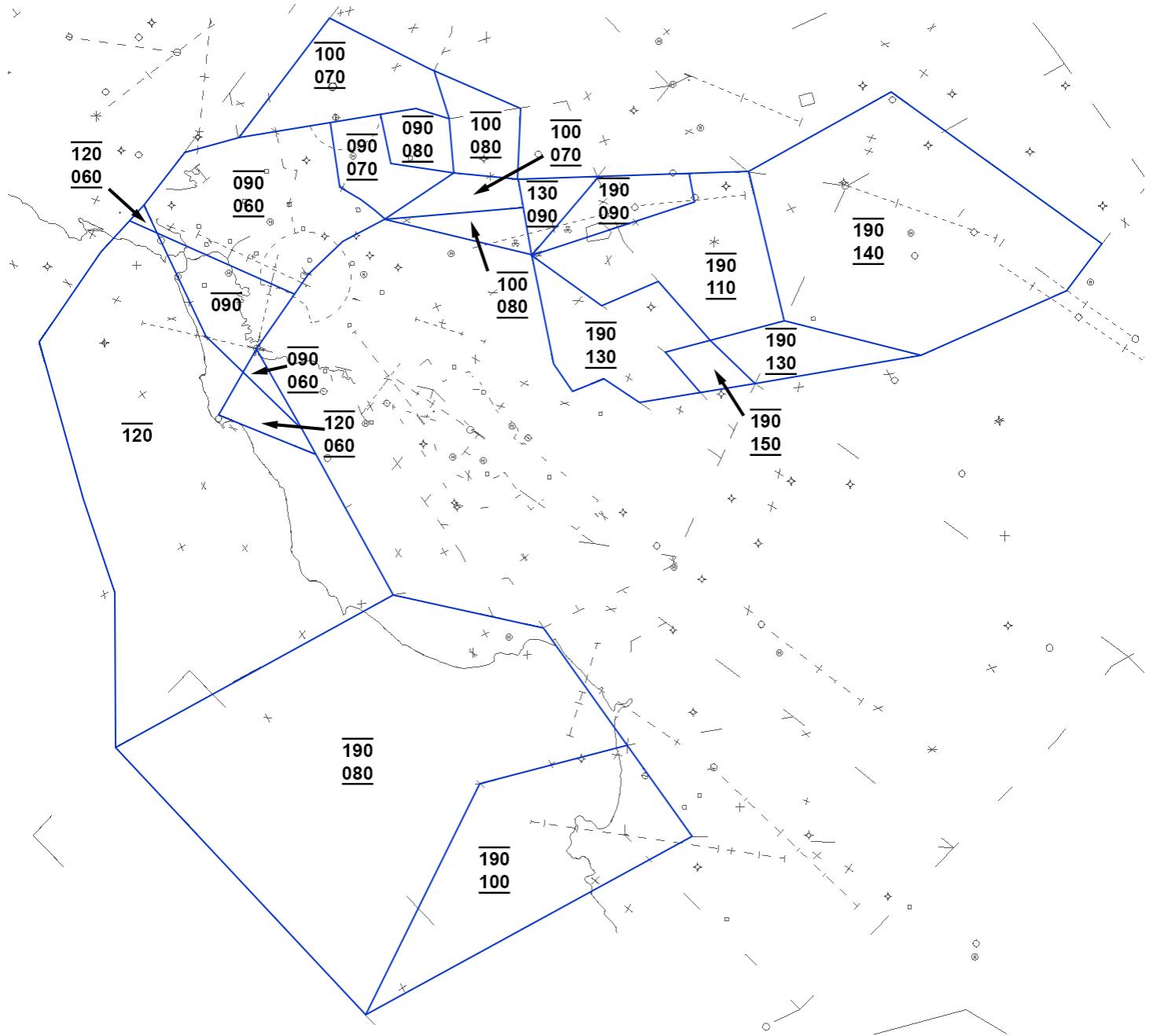
## 4-23 Area B Combined - OAKE



## 4-24 Area B Combined - SFOE



## 4-25 Area B Combined - SF010



# Section 5. Area C Procedures

## 5-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Area C Combined	OAK_APP	NorCal Approach	125.350
Valley*	MOD_APP	NorCal Approach	125.100
Sunol	OAK_S_APP	NorCal Approach	124.800
Grove	OAK_G_APP	NorCal Approach	125.350

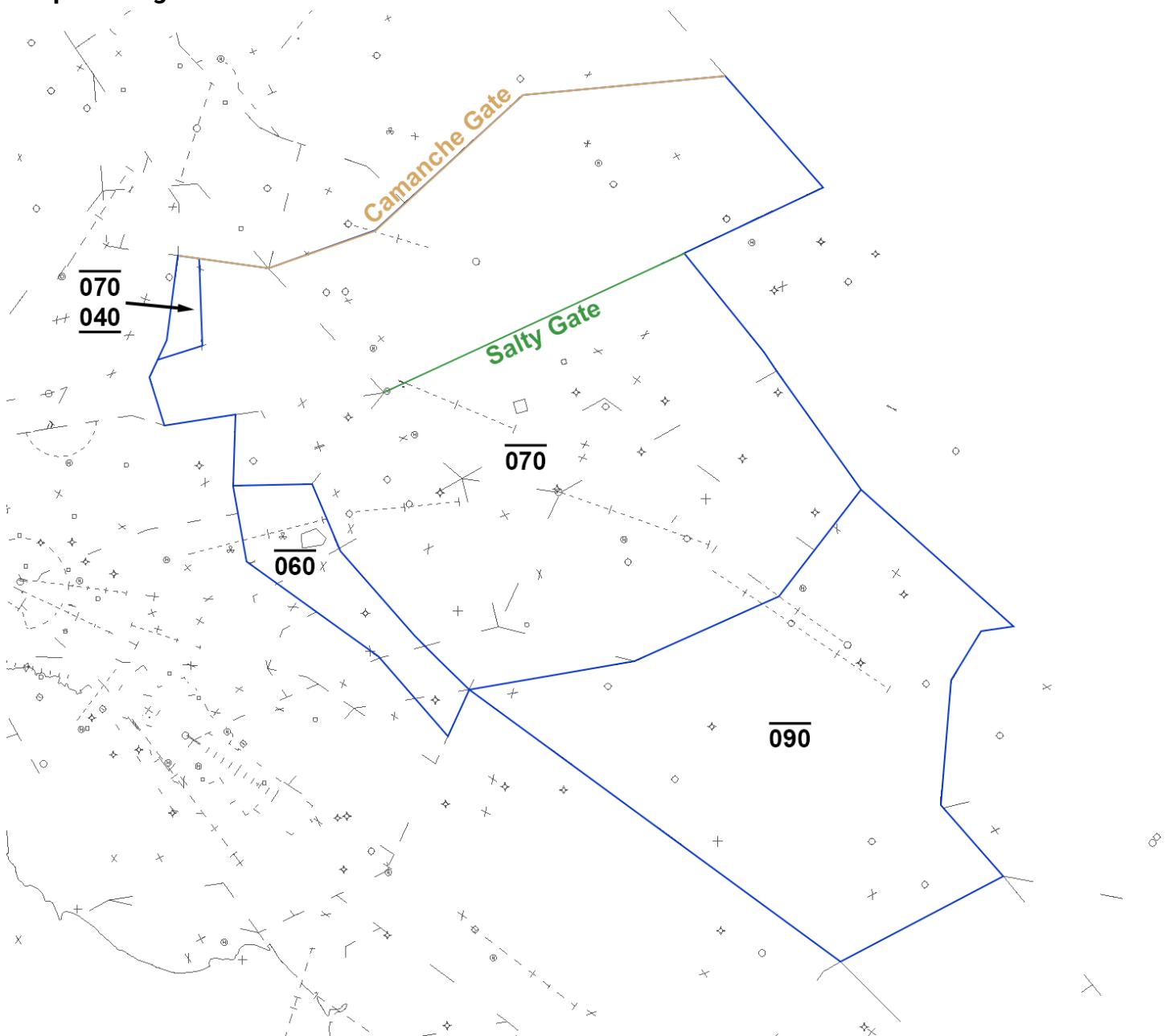
\*Indicates Minor Position

### a. Sector Definitions

- i. Area C provides ATC services to the Oakland area and California Central Valley.
- ii. Area C Valley handles aircraft low level aircraft in California Central Valley.
- iii. Area C Sunol is a feeder sector for Oakland and surrounding satellite airports.
- iv. Area C Grove is a final sector for Oakland and surrounding satellite airports.
- v. All Area C sectors may be combined.

## 5-2 Valley - SFOW

### Airspace Diagram



## Valley SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Expo	Landing Mather CX	P, T, J	6,000	RV through Camanche Gate
	Landing Sacramento CX		4,000/ 6,000	
Morgan	V111	P, T, J	6,000	
	SQL	P, T		RV DOCAL
	San Jose CX		Direct GILRO	

## Valley SFOW Entry Routes

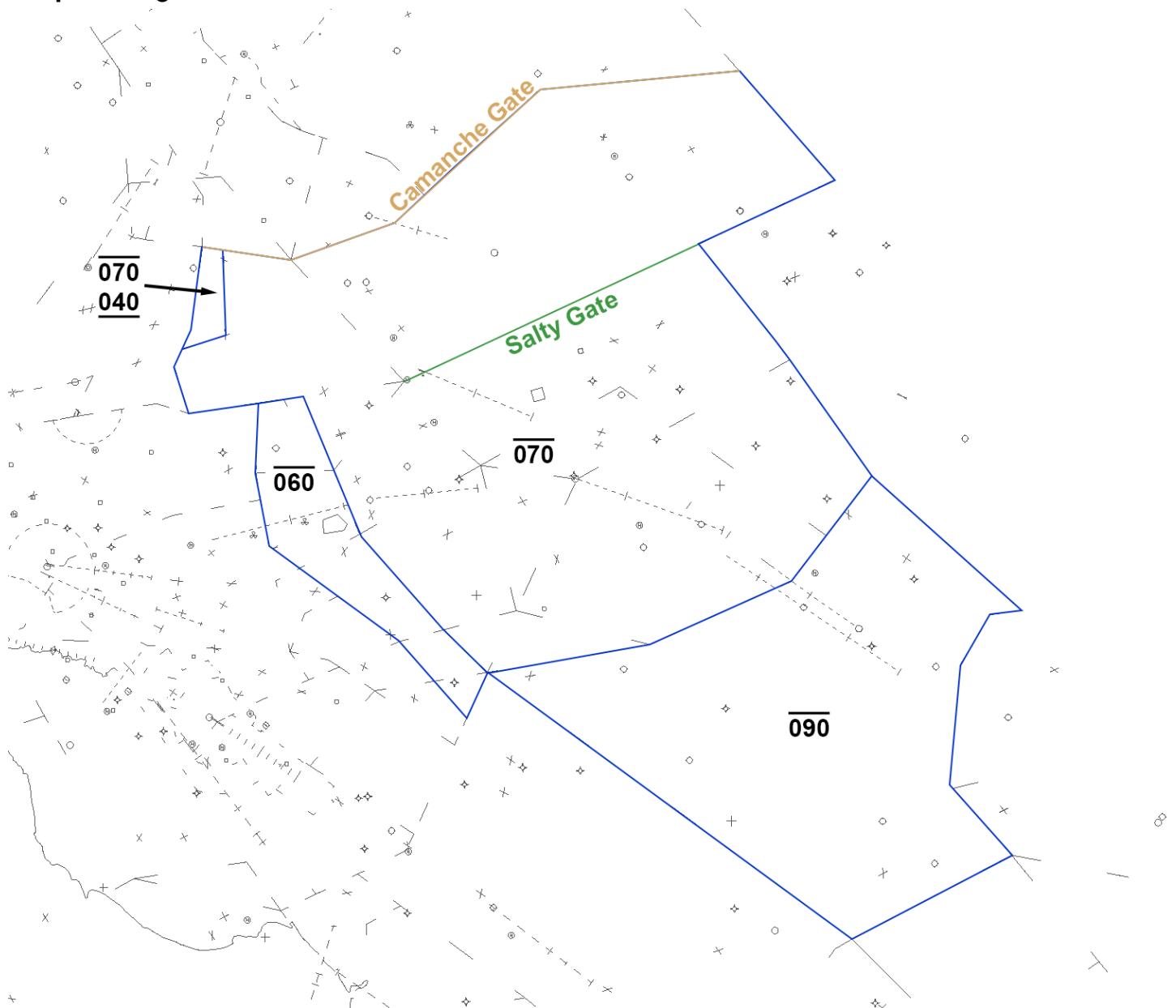
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Expo	Landing NCT (West of WAGER)	P, T, J	7,000	RV through Camanche Gate
	Landing NCT (Over or east of WAGER) (except OAK on SFOE)		5,000/ 7,000	
	Fresno CX			Direct NTELL
	Travis CX		8,000	V108 or RV OAKEY Gate
	Modesto or Stockton CX			RV Destination
Grove	V224 or LIN	P	5,000	On Route or RV LIN
		T, J	7,000	
	V334 or SAC	P	5,000	On Route or RV SAC
		T, J	7,000	
Morgan (SFOW)	V111	P, T	7,000	Direct KARNN
Morgan (SFOE)	V111		J 9,000	
Morgan	Modesto CX	P, T, J	7,000	
		P, T, J	10,000	

## Valley SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities

- Protect aircraft established on and descending via the OAKES arrival.

# 5-3 Valley - SFOE

## Airspace Diagram



## Valley SFOE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Expo</b>	Landing Mather CX	P, T, J	6,000	RV through Camanche Gate
	Landing Sacramento CX		4,000/ 6,000	
<b>Morgan</b>	V111	P, T, J	6,000	
	SQL	P, T		RV DOCAL
	San Jose CX		Direct GILRO	
<b>Richmond</b>	V334	P, T	6,000	On route or RV SUNOL
<b>Toga</b>	San Jose CX	P	6,000	BUSHY
	SQL			DOCAL

## Valley SFOE Entry Routes

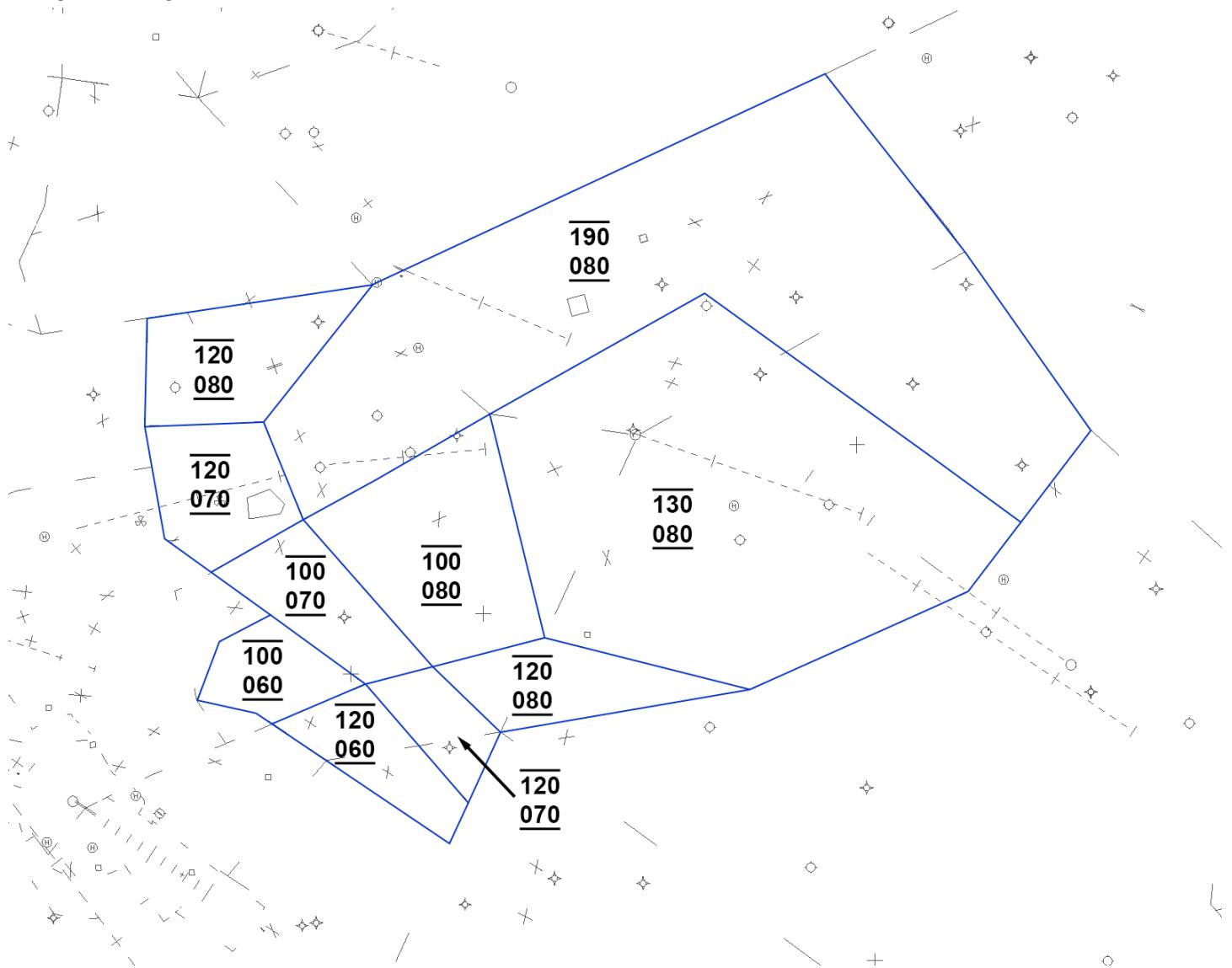
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Expo</b>	Landing NCT (West of WAGER)	P, T, J	7,000	RV through Camanche Gate
	Landing NCT (Over or east of WAGER) (except OAK on SFOE)		5,000/ 7000	
	Fresno CX		8,000	Direct NTELL
	Travis CX			V108 or RV OKEY Gate
	Modesto or Stockton CX			RV Destination
<b>Richmond</b>	Napa or Travis CX	P, T, J	5,000	Via V334 OKEY V108
	V224			On route or RV south V224
	V334 or SAC			SAC 177 radial
<b>Toga</b>	Modesto or Stockton CX	J	6,000	East of BORED
<b>Morgan (SFOW)</b>	V111	P, T	7,000	Direct KARNN
		J	9,000	
<b>Morgan (SFOE)</b>	V111	P, T, J	7,000	
<b>Morgan</b>	Modesto CX	P, T, J	10,000	

## Valley SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities

- Protect aircraft established on and descending via the SKIZM and BANND arrivals.

## 5-4 Sunol - SFOW

Airspace Diagram



## Sunol SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Cedar	SFO	J	15,000	RV ALWYS/MOD
Richmond	Napa CX	P	8,000	RV OKEY Gate
		T, J	12,000	
Expo	Landing NCT (except SUUTR)	P, T, J	14,000	RV through Salty Gate
	SUUTR	J	Descend Via	
Licke	San Jose CX, HAF, SQL	T, J	7,000	RV BORED KLIDE
Toga (SJCE)				
Toga	SQL	P	6,000	RV vicinity of BUSHY
	San Jose CX			
Morgan	V111	T, J	10,000	RV LSN
Niles	SFO	T	9,000	RV CEDES

## Sunol SFOW Entry Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Richmond</b>	SFO	T	9,000	SAC157R or RISTI STAR
	MOD PXN AVE or HARGO BLEAR FRAME or NTELL	P, T	11,000	HDG 090° vicinity of ALTAM (Filed 11,000-FL190)
<b>Grove</b>	V244, MOD or LIN	P, T, J	10,000	On route or RV MOD/LIN
<b>Licke (SFOW)</b>	Modesto CX or Stockton CX	J	6,000	East of BORED
<b>Toga (SJCE)</b>				
<b>Morgan</b>	EMZOH	J	Descend Via	
<b>Morgan (SFOW/OAKE)</b>	V111 or MOD	T, J	Level at 11,000	
	V301	P, T	Cross BORED @8,000	
	PXN STAR	J	Cross BORED @10,000	
<b>Expo</b>	Landing NCT (except SFO)	P, T, J	10,000 or lower filed	RV through Salty Gate.
	Fresno CX		15,000 or lower filed	Direct NTELL
	SFO	J	15,000	RV ALWYS/MOD
		P, T	10,000	RV ALWYS CEDES
<b>Morgan</b>	LVK	P, T, J	12,000 or lower filed	
	Stockton CX, Oakland CX, or Travis CX			

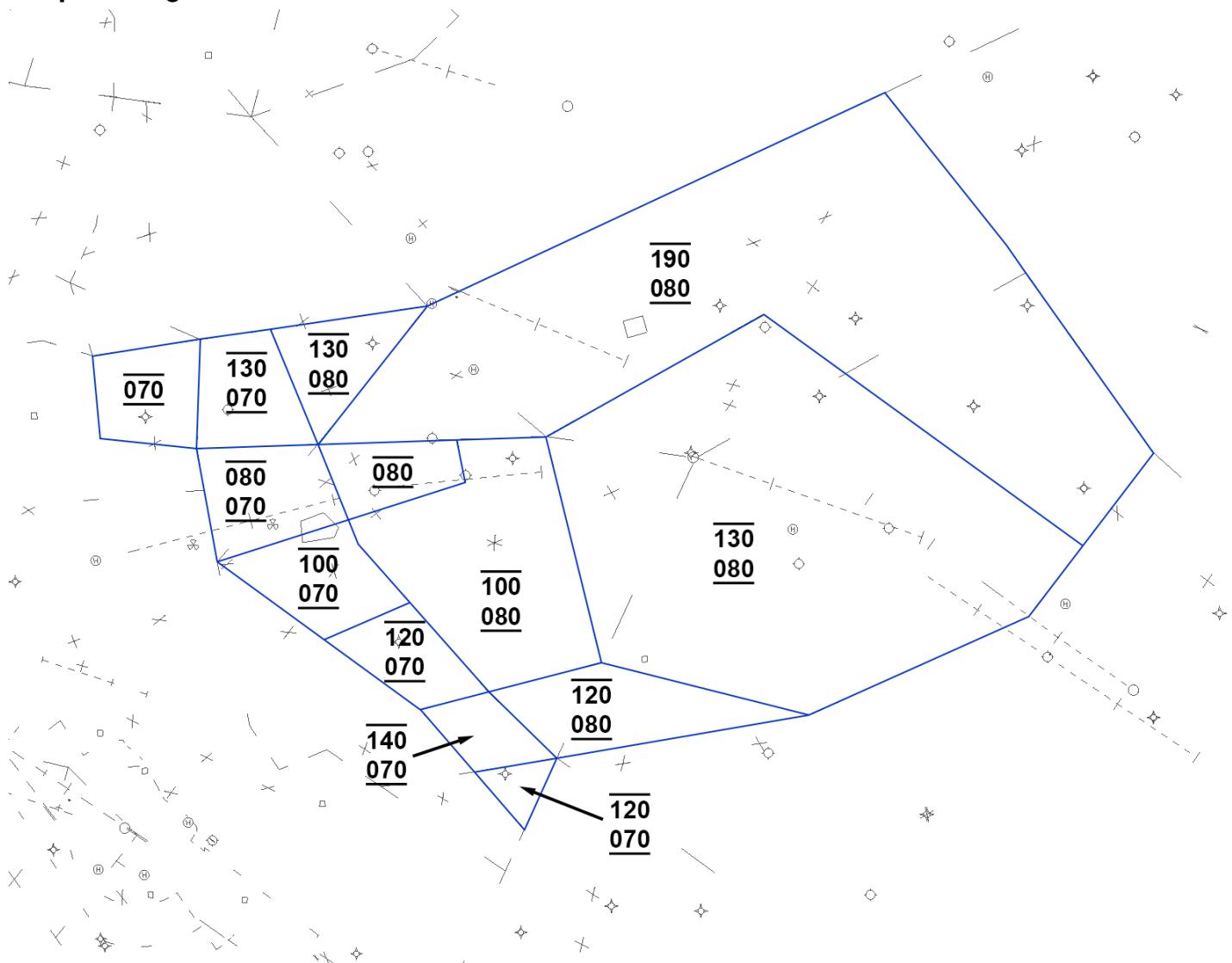
## Sunol SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities

- Niles does not have control for descent in Sunol's airspace.
  - Protect aircraft established on and descending via the DYAMD arrival.
  - Protect SFO departure aircraft established on and climbing via a SYRAH transition.
- NOTE-** Slow climbing aircraft on these departures may enter Sunol's airspace approximately 1.5 NM south of the Richmond Sunol common boundary.
- Protect SJC departure aircraft climbing via the BMRNG DP SYRAH transition at or above 13,000 feet.

**NOTE –** This protection is for airspace integrity as aircraft on this route are within 1.5 NM of the Richmond Sunol common boundary.

## 5-5 Sunol - SFOE

Airspace Diagram



## Sunol SFOE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Cedar	SFO	J	15,000	RV ALWYS/MOD
Expo	Landing NCT (Except SUUTR)	P, T, J	14,000 or lower filed	RV through Salty Gate
	SUUTR	J	Descend Via	
Toga	San Jose CX or SQL	T, J	9,000	RV BORED KLIDE
Morgan	V111	J	10,000	
Richmond	REJOY or PITTS	P, T	8,000	

## Sunol SFOE Entry Routes

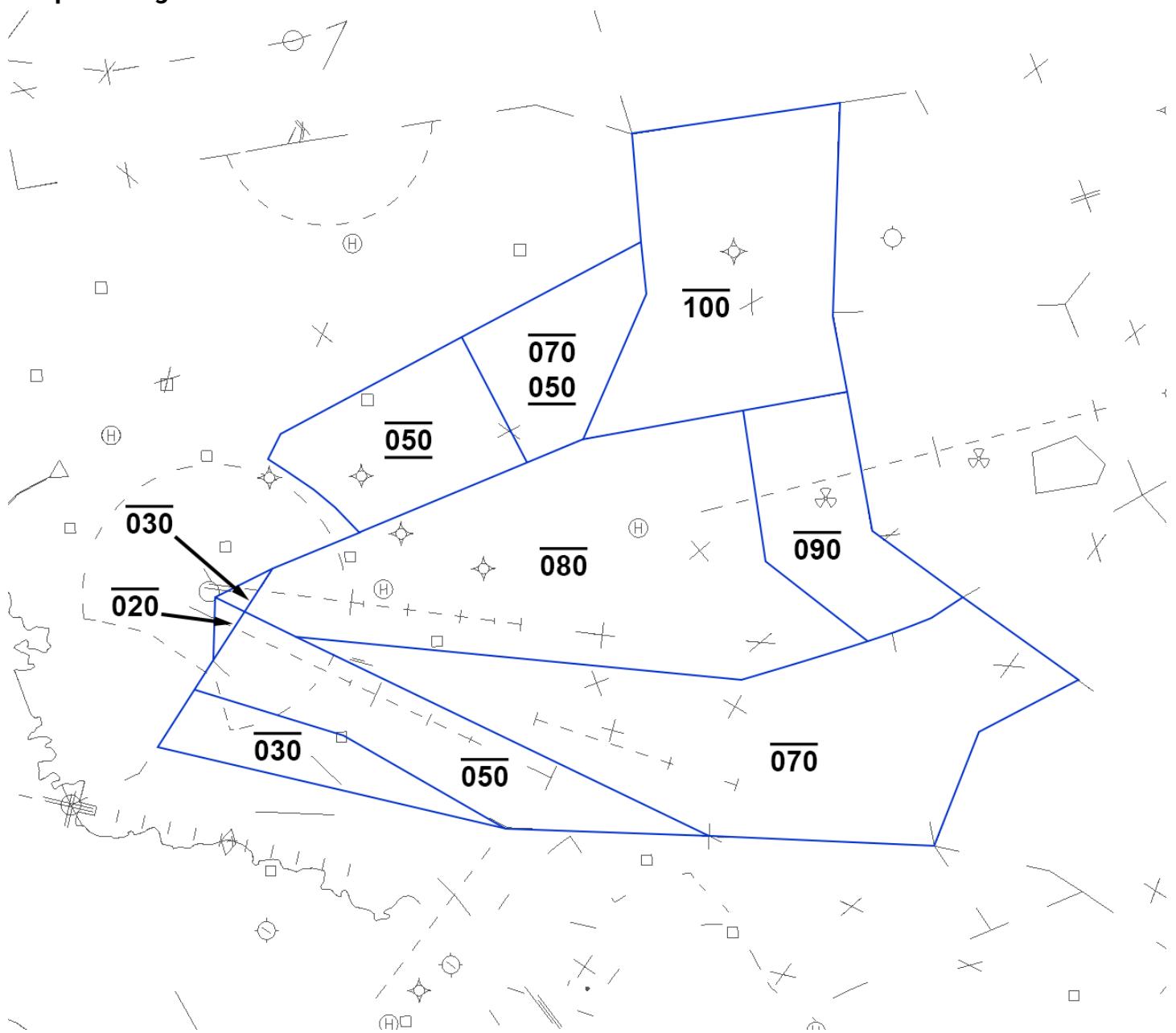
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Expo	Landing NCT (Except SFO)	P, T, J	10,000	RV through Salty Gate
	SFO	J	15,000	RV ALWYS/MOD
	Fresno CX	P, T, J	15,000 or lower filed	Direct NTELL
Morgan	SKIZM	J	Descend Via	
	PXN STAR (OAK Only)		10,000	Depart KARNN RV 320°
Richmond	LVK	P, T, J	12,000 or lower filed	
	Stockton CX, Oakland CX, or Travis CX		10,000	
Richmond	MOD	P, T, J	Level at 7,000	RV 090° south of LVK
	Fresno CX			Direct NTELL south of LVK

## Sunol SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities

- Ensure aircraft descending via the BANND arrival cross KEENR at 7,000 feet.
- Richmond protects aircraft established on and descending via the BANND arrival.

## 5-6 Grove - SFOW

Airspace Diagram



## Grove SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Foster	HAF	P, T, J	4,000	RV East of Dumbarton Bridge
Toga (SFOW)	San Jose CX (HWD Departures Only)	J	6,000	RV at least 3 miles east of MABRY
	VFR SJC Arrivals	P	Cross Embassy Suites at or above 2,500	
		T, J	At or above 3,500	RV RHV
Licke (SJCE)	SJC (HWD Departures Only)	P, T, J	2,000	RV to SJC 12R Localizer
	VFR SJC Arrivals	P	Cross Embassy Suites at or above 2,000	
		T, J	At or above 2,500	RV Tesla Plant
Richmond	CCR, V6, Napa CX	P, T, J	5,000	RV vicinity of Danville Tower
	V334 or SAC	P, T, J	10,000	ALTAM
	Exit Fixes North of ALTAM	T, J		
	Northbound requesting 6,000 or higher (This is the preferred route for HWD departures)	P, T, J	6,000	RV 360°
Sunol	V244, MOD or LIN	P, T, J	10,000 or lower filed	On route or RV MOD/LIN
Valley	V244, V334, SAC or LIN	P	5,000	On route or RV
		T, J	7,000	

## Grove SFOW Entry Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Boulder	Oakland CX	T, J	6,000	RV over AXMUL
Foster	Oakland CX or OAK V6 (SQL Departures Only)	P, T	3,000	RV West of Dumbarton Bridge
	Oakland CX or OAK V6	P, T, J	5,000	RV AXMUL
Richmond	HWD, OAK Runway 30	T, J	5,000	
	Oakland CX	P	4,000	North of OAK
	OAK Landing Runway 28	T, J	5,000	
	V244	P, T	10,000 or lower filed	
Toga	Oakland CX (SJC Departures Only)	T, J	3,000	
	Oakland CX, SUNOL DP, or V334	P, T	5,000	V334 or RV 360° through 050° and east of MISON
	Napa CX or Travis CX	P, T, J		
Toga (SFOW)	Napa CX, Oakland CX, or Travis CX (PAO and SQL Departures Only)	P, T, J	3,000	RV Dumbarton Bridge
Licke (SJCE)				

## Grove SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities

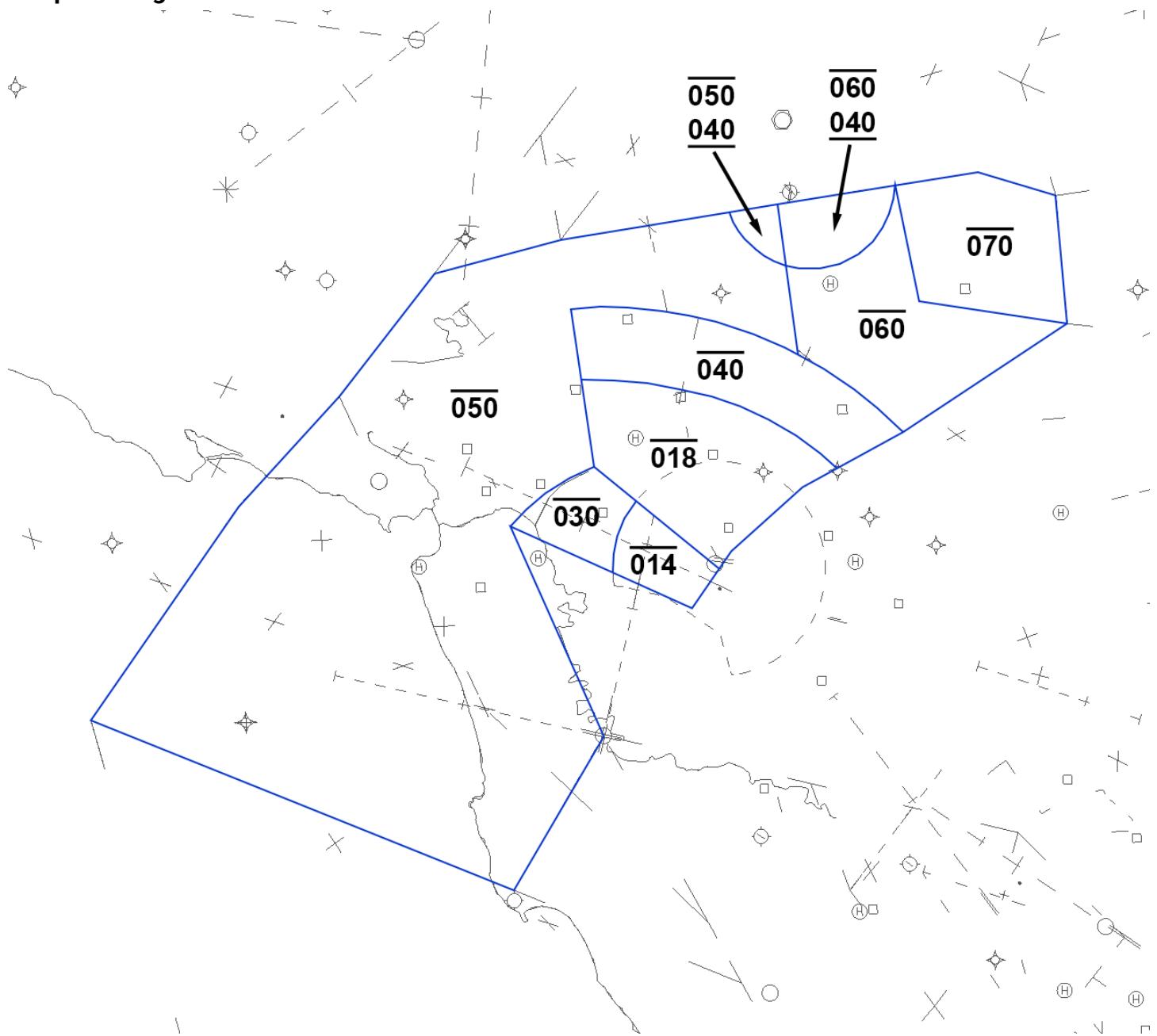
- Protect the SAU-OAK arrivals north of OAK worked by Richmond at 5,000 feet.
- Protect the SFO arrivals north of OAK controlled by Richmond at 4,000 feet.
- Protect SFO arrivals established on and descending via the DYAMD arrival.
- Protect LVK Runway 7 departures and Runway 25 arrivals worked by Valley.
- Protect aircraft established on and climbing via the TRUKN DP.

**NOTE-** The TRUKN DP comes within 1.5 nm of the Grove airspace boundary

- Issue Class C arrival instructions for VFR aircraft landing at SJC.
- Coordinate with Foster prior to release of a HWD departure routed through Woodside's airspace.
- Request approval from Niles for the release and/or sequence of aircraft departing HWD destined for SFO.
- Request the release of HWD jet departures landing in San Jose CX from Toga (SFOW)/Licke (SJCE).
- Foster does not have control for descent of arrivals in Grove airspace until south of the OAK Runway 30 localizer.
- Grove does not have control of IFR aircraft departing SJC landing OAK until passing SJC 1.8 DME and leaving 2,000 feet.
- Grove does not have control for climb of SQL departures routed via the Dumbarton Bridge.

## 5-7 Grove - SFOE

Airspace Diagram



## Grove SFOE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Boulder</b>	Oceanic Fix (SFO 28 Departures)	P, T, J	5,000	
<b>Richmond</b>	HWD	P, T, J	4,000	RV in vicinity of Danville Tower
	SFO DP (Runway 28)	P, T, J	5,000	Depart SFO HDG 070°
<b>Sutro</b>	GAPP DP (Runway 28)	J	5,000	RV 100°
	San Jose CX or SQL	P, T		Direct OSI south of SFO
<b>Woodside</b>	SFO	P, T	4,000	RV BERKS

## Grove SFOE Entry Routes

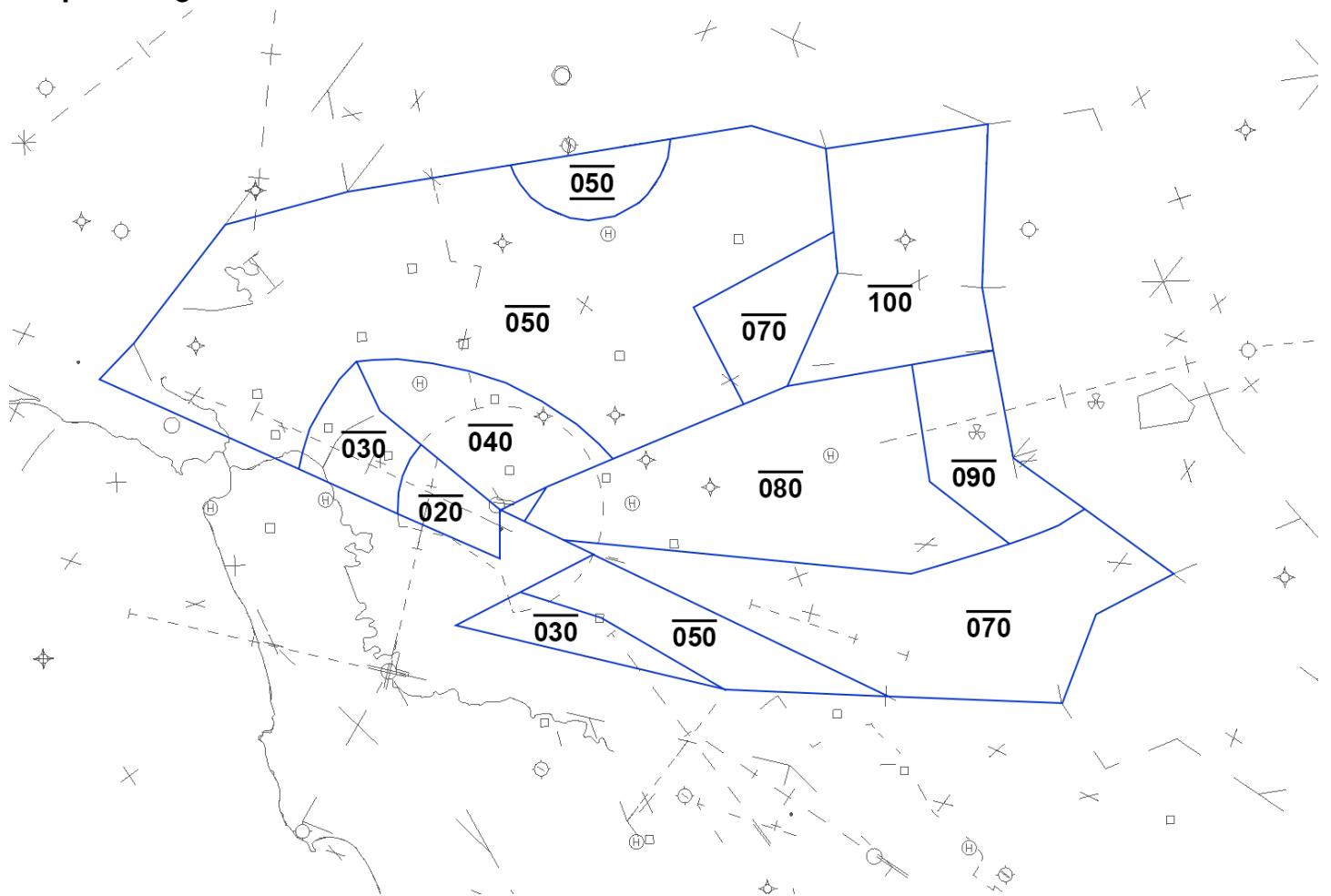
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Boulder</b>	OAK	P, T, J	Level at 5,000	RV SAU
<b>Richmond</b>	OAK	P, T	4,000	RV in vicinity of Danville Tower
<b>Sutro</b>	OAK	P, T, J	4,000	
	V199 or V27		5,000	

## Grove SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities

- Do not vector SFO Runway 28 jet departures prior to crossing the SFO 6 DME except to provide separation from other traffic.
- Protect aircraft established on the SFO Runways 19 IAPs below 5,000 feet and south of BERKS.

## 5-8 Grove - OAKE

Airspace Diagram



## Grove OAKE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Foster</b>	HAF	P, T, J	4,000	RV east of Dumbarton Bridge
	SQL	P, T	3,000	RV west of Dumbarton Bridge
<b>Licke (SJCE)</b>	SJC (HWD Departures Only)	P, T, J	2,000	RV to SJC 12R Localizer
<b>Richmond</b>	Northbound, requesting 6,000 or higher	P, T, J	6,000	RV 360°
<b>Sunol</b>	V244, MOD or LIN	P, T, J	10,000 or lower filed	On route or RV MOD/LIN
<b>Toga (SFOW)</b>	VFR SJC Arrivals	P	At or above 2,500	Cross Embassy Suites
<b>Licke (SJCE)</b>			At or above 2,000	
<b>Toga (SFOW)</b>	VFR SJC Arrivals	T, J	At or above 3,500	RV RHV
<b>Licke (SJCE)</b>			At or above 2,500	RV Tesla Plant
<b>Toga (SFOW)</b>	San Jose CX (HWD Departures Only)	P, T	3,000	RV at least 1 mile west of NUQ
		J	6,000	RV at least 3 miles east of MABRY
<b>Valley</b>	V244, V334, SAC or LIN	P	5,000	On route or RV
		T, J	7,000	
<b>Sutro</b>	San Jose CX	P, T, J	4,000	RV 180° over or west SAU
	VFR tours and VFR aircraft south-bound along Bayshore Freeway			Clear of Class B. Do not provide a Class B airspace clearance.

## Grove OAKE Entry Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Foster</b>	Oakland CX	J	4,000	RV east of Dumbarton Bridge
	Oakland CX & OAK V6 (SQL Departures Only)	P, T	3,000	RV west of Dumbarton Bridge
<b>Richmond</b>	V244	P, T	10,000 or lower filed	
<b>Sutro</b>	OAK	J	4,000	RV SAU
<b>Toga (SFOW)</b>	Napa CX, Oakland CX, or Travis CX (PAO and SQL Departures Only)	P, T, J	3,000	RV Dumbarton Bridge
<b>Licke (SJCE)</b>				
<b>Toga</b>	Oakland CX, Sunol DP or V334	P, T	5,000	V334 or RV 360° through 050° and east of MISON
	Napa CX or Travis CX	P, T, J		

## Grove OAKE Pre-Arranged Coordination Procedures and Sector Responsibilities

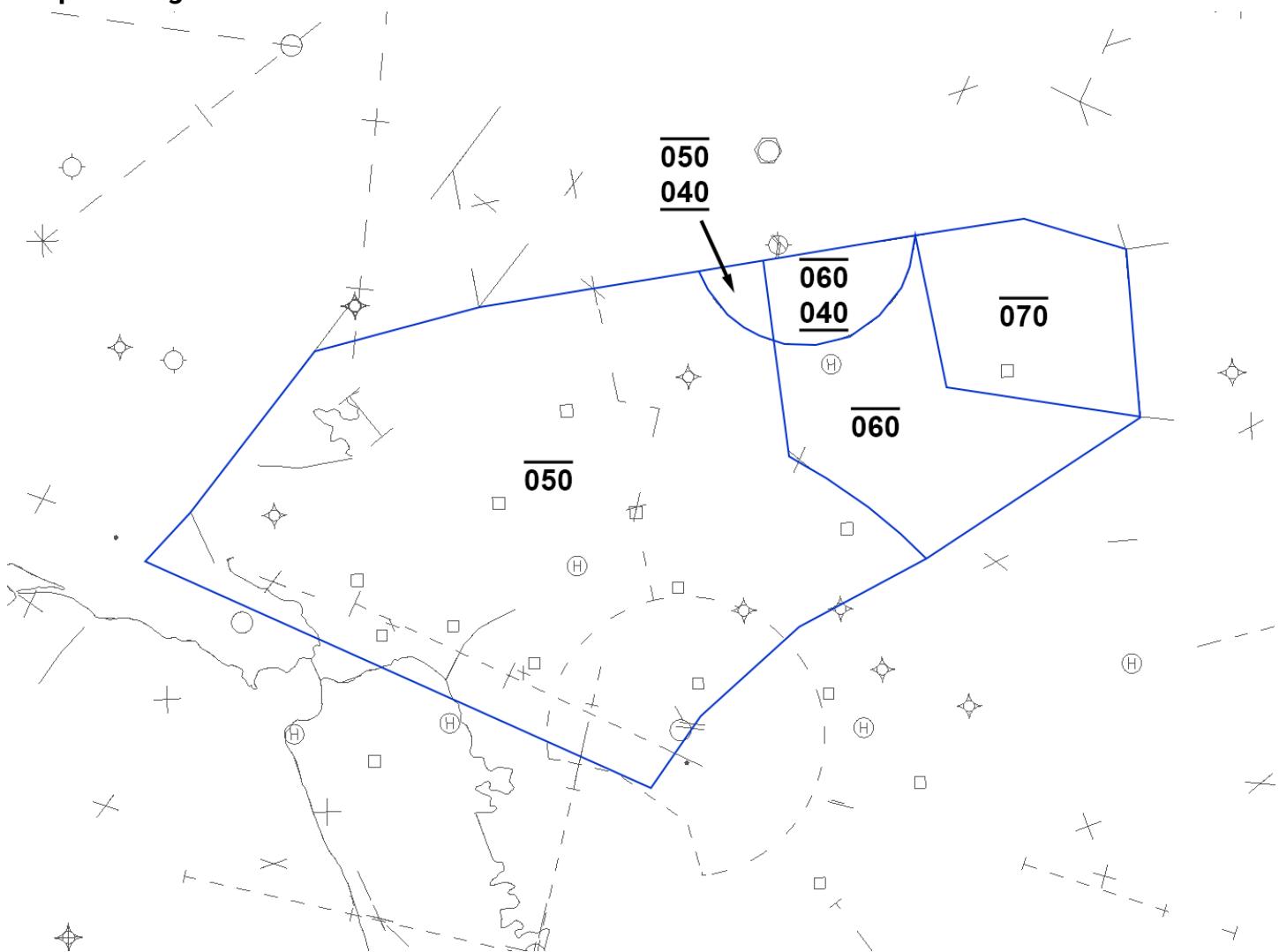
- a. Protect SFO arrivals established on and descending via the DYAMD arrival.
- b. Protect LVK Runway 7 departures and Runway 25 arrivals worked by Valley.
- c. Protect aircraft established on and climbing via the TRUKN DP.

***NOTE- The TRUKN DP comes within 1.5 nm of the Grove airspace boundary***

- d. Point to all HWD IFR arrivals to Richmond at least ten (10 miles) from HWD.
- e. Coordinate with Richmond for release of HWD IFR Runway 28 departures.
- f. During SJCE, coordinate with Lice prior to releasing OAK jet departures landing in the San Jose CX.
- g. Issue Class C arrival instructions to VFR aircraft landing at SJC.
- h. Grove does not have control of IFR aircraft departing SJC landing OAK until passing SJC 1.8 DME and leaving 2,000 feet.
- i. Grove does not have control for climb of SQL departures routed via the Dumbarton Bridge.

# 5-9 Grove - SF010

## Airspace Diagram



## Grove SF010 Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Richmond	HWD	P, T, J	4,000	RV vicinity of Danville Tower

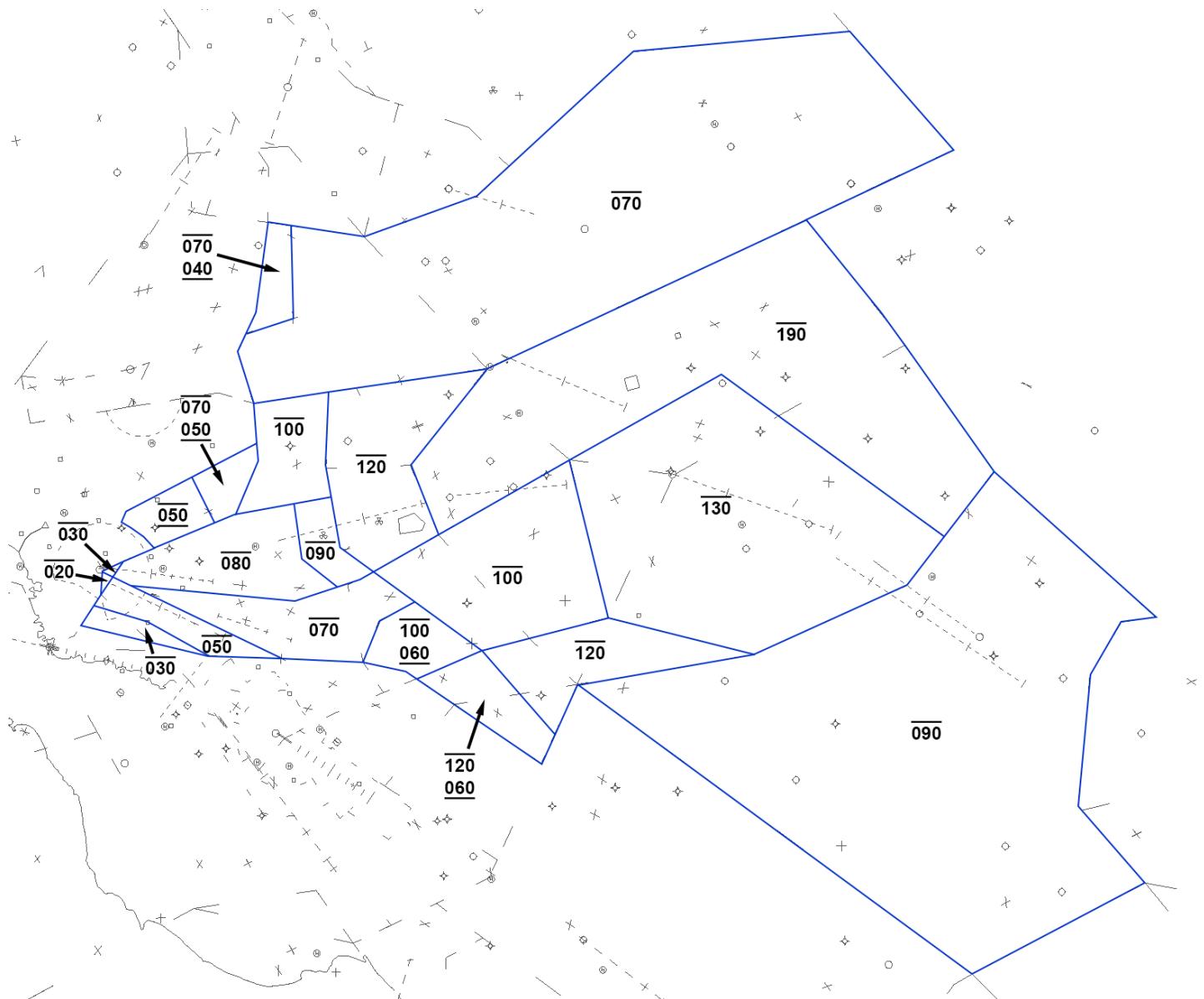
## Grove SF010 Entry Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Boulder	OAK	P, T, J	5,000	RV SAU
Richmond	OAK	P, T	4,000	RV vicinity of Danville Tower

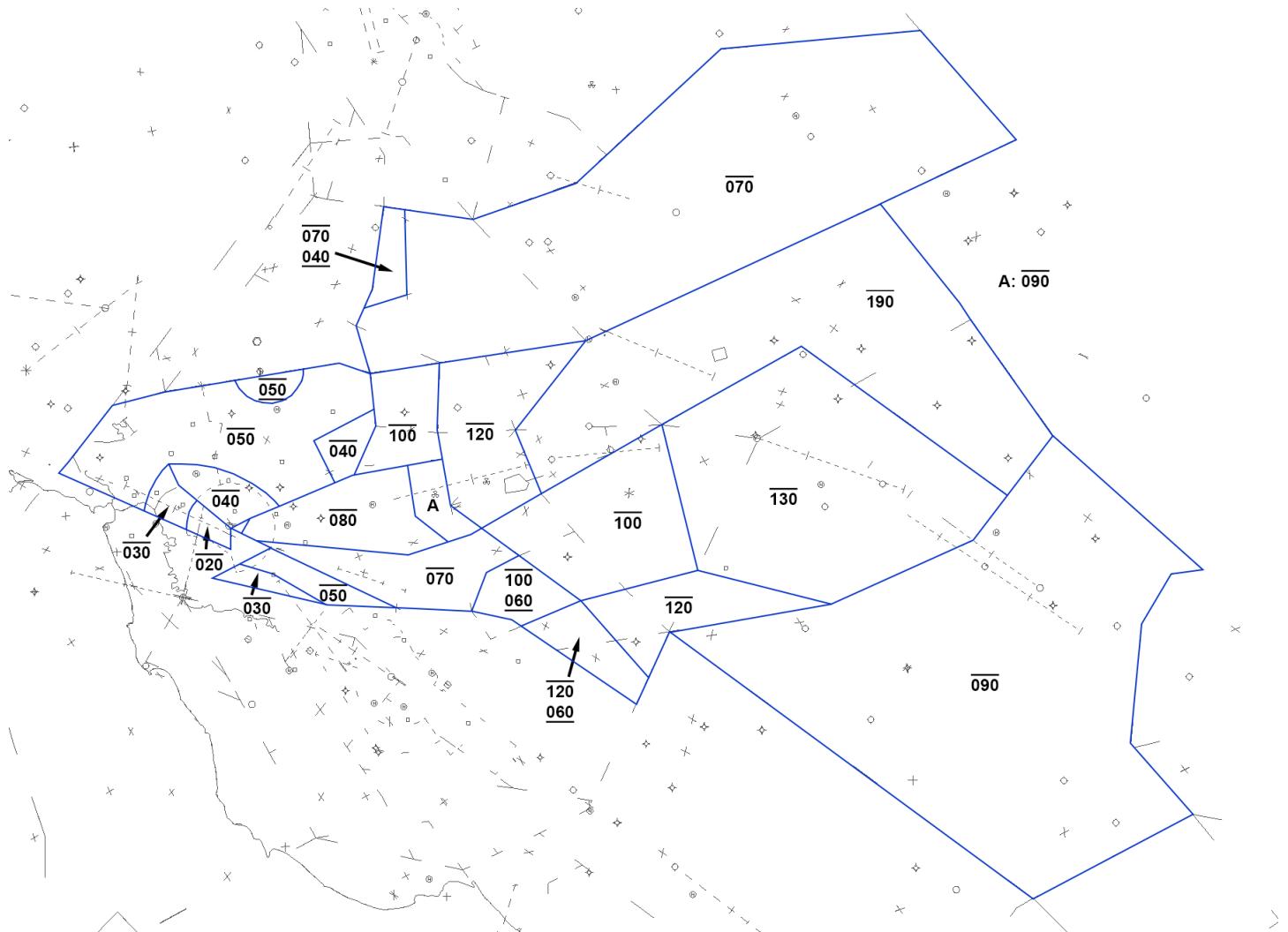
## Grove SF010 Pre-Arranged Coordination Procedures and Sector Responsibilities

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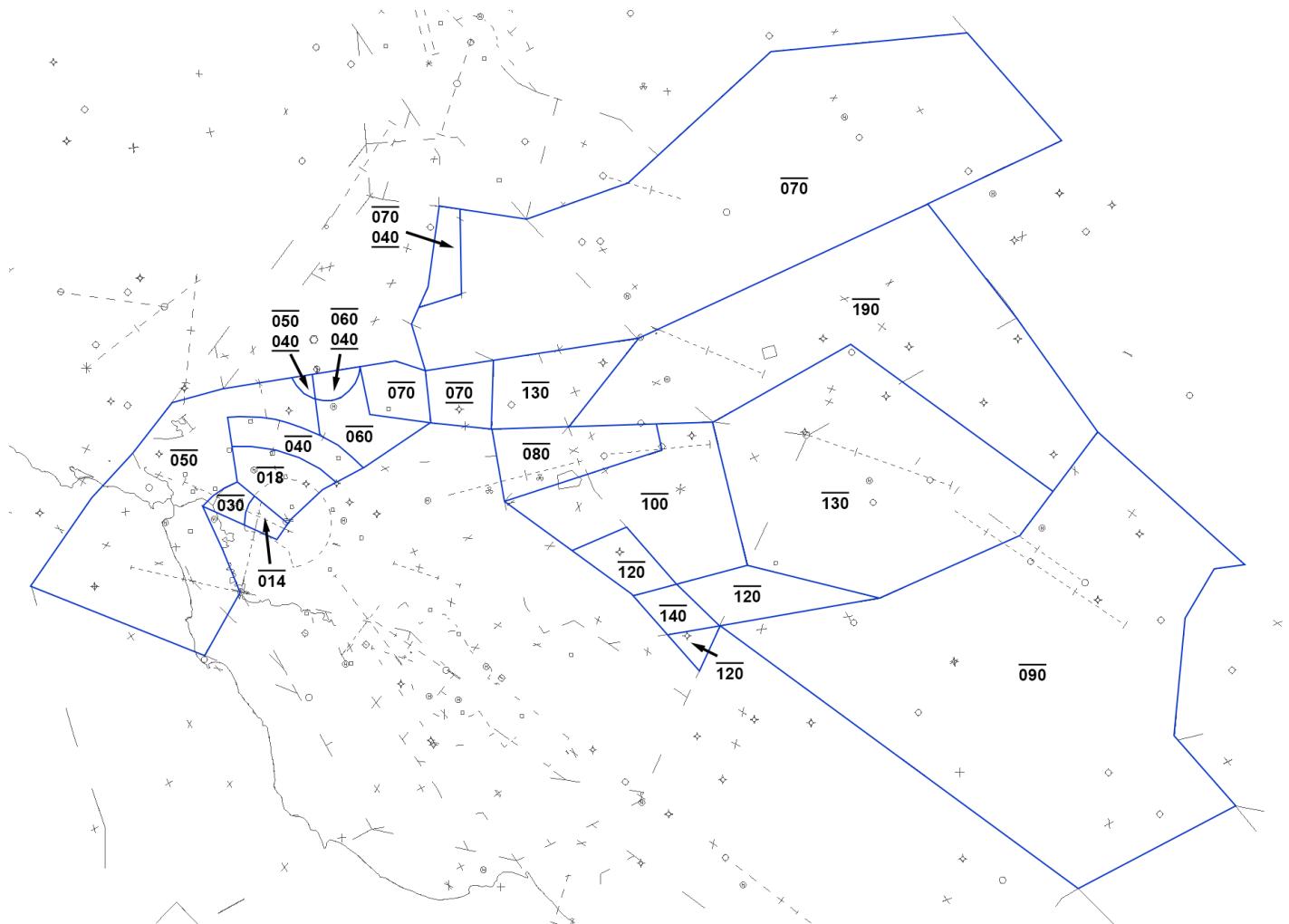
## 5-10 Area C Combined - SFOW



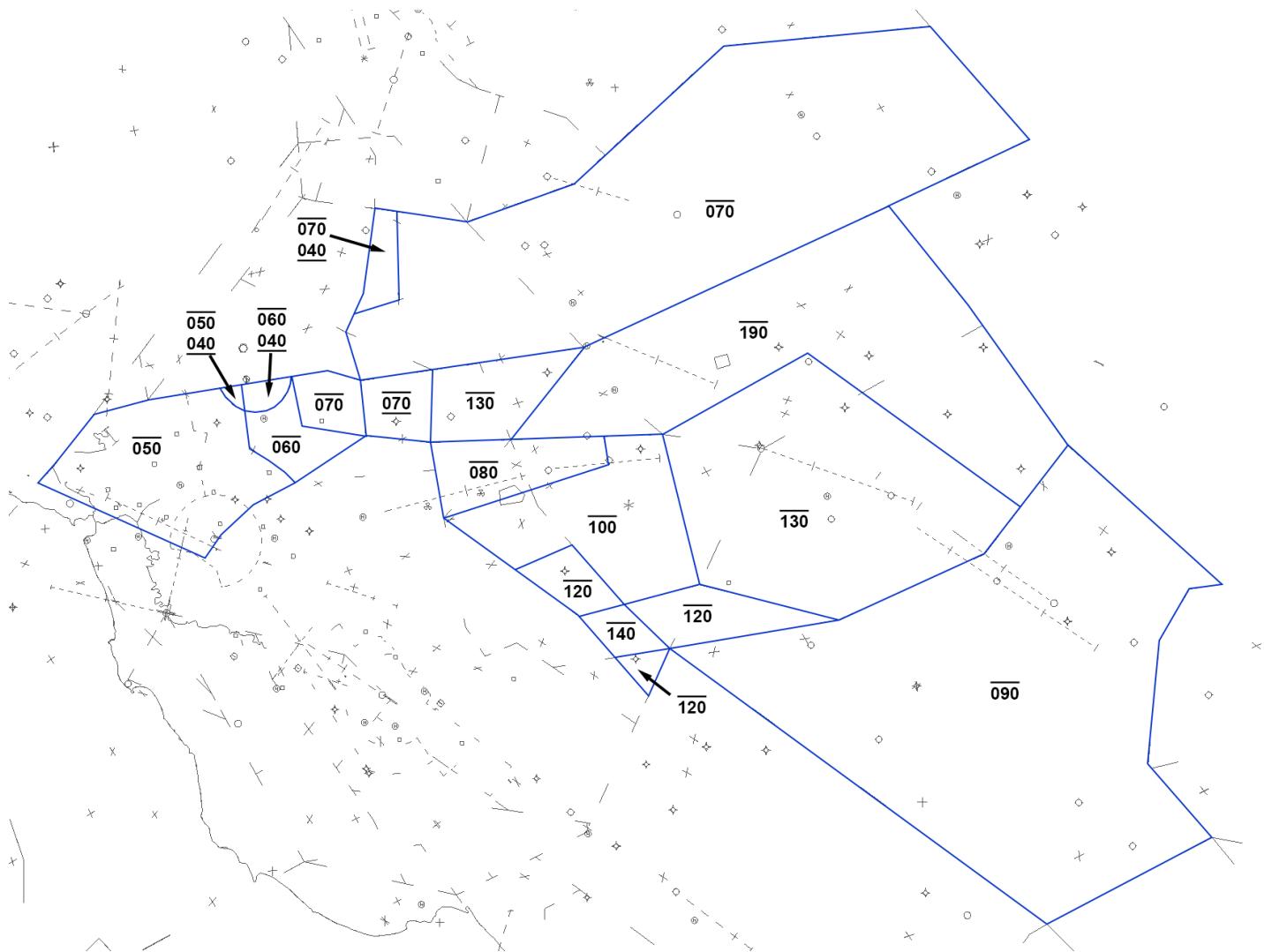
# 5-11 Area C Combined - OAKE



## 5-12 Area C Combined - SFOE



## 5-13 Area C Combined - SF010



# Section 6. Area D Procedures

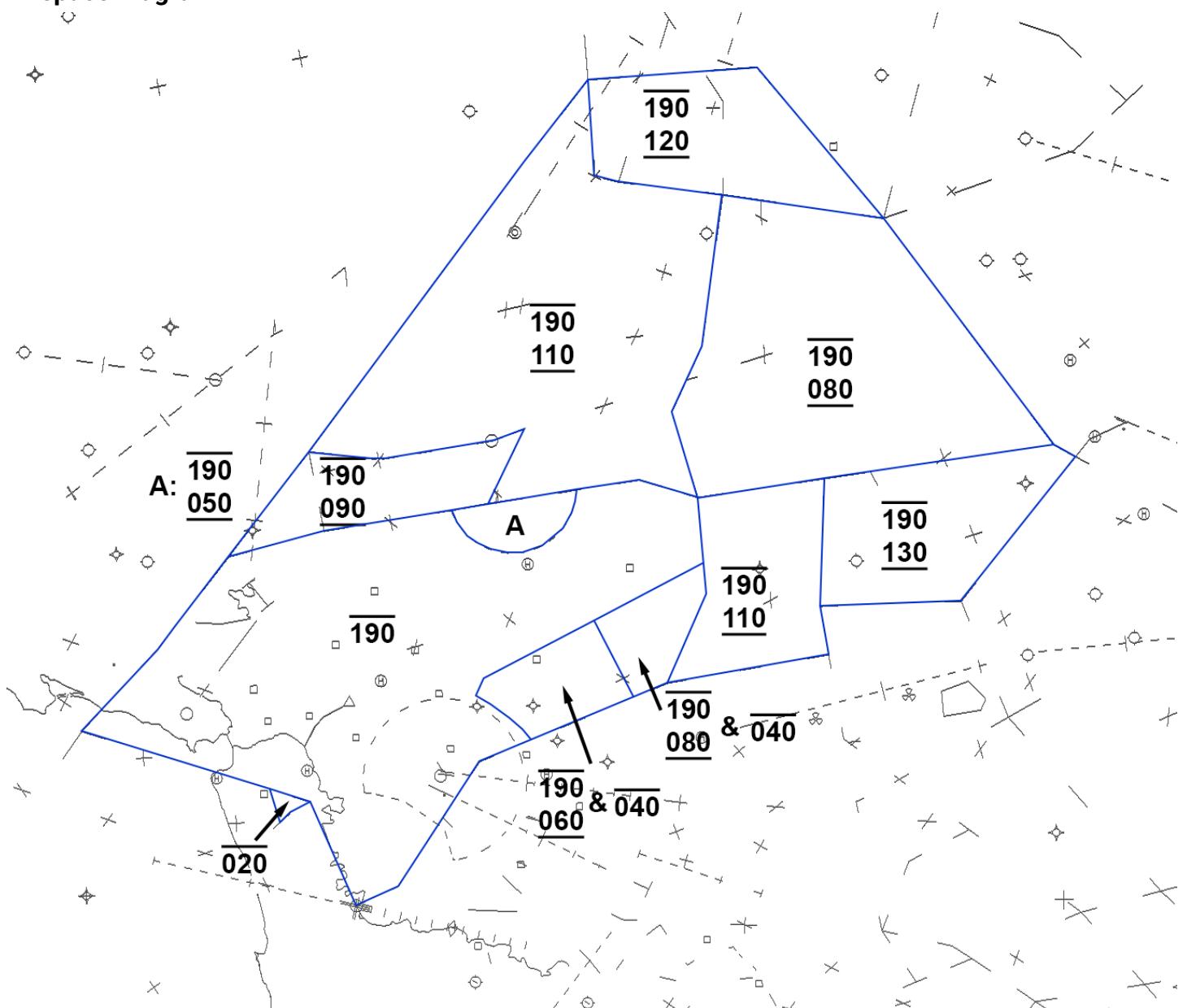
## 6-1 General Information

SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Area D Combined	SFO_DEP	NorCal Approach	135.100
Sutro	SFO_DEP	NorCal Approach	135.100
Richmond	OAK_DEP	NorCal Approach	120.900

- a. Sector Definitions
  - i. Area D is split between the north and south half of the bay
  - ii. Area D Sutro handles aircraft departing OAK and SFO southeast bound.
  - iii. Area D Richmond handles aircraft departing OAK and SFO north and east bound departures.
  - iv. Both Area D sectors may be combined.

## 6-2 Richmond - SFOW

Airspace Diagram



## Richmond SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Boulder (during Noise Abatement)</b>	Landing MRY	P	7,000	RV AXMUL
<b>Grove</b>	V244	P, T	10,000	
	OAK Arrivals	T, J	5,000	
	San Jose CX	P	6,000	
	HWD	J	5,000	
	Oakland CX	P	4,000	North of OAK
<b>Sutro</b>	CEDES HARGO BLEAR FRAME	P, T	FDIO	SALAD CEDES
<b>Sunol</b>	MOD PXN AVE or HARGO BLEAR FRAME or NTELL	P, T	11,000	HDG 090° vicinity of ALTAM (Filed 11,000-FL190)
	SFO	T	9,000	SAC157R or RISTI STAR
<b>Cedar</b>	FRA, AVE, PXN, or EHF (CCR and SUU Departures Only)	P, T, J	FL190 or lower filed	RV CEDES
<b>Expo</b>	MCC, MHR, PVF	P, T, J	11,000 or lower filed	Direct SAC VOR or ORRCA
	SMF		FDIO	On route
	RNO	P, T		
	SAC	J	8,000	
	RNO	J	FL190 or lower filed	On route or Direct HOBOA/TARVR
	Landing NCT (except Nevada)	P, T, J	12,000	RV Destination

## Richmond SFOW Entry Routes

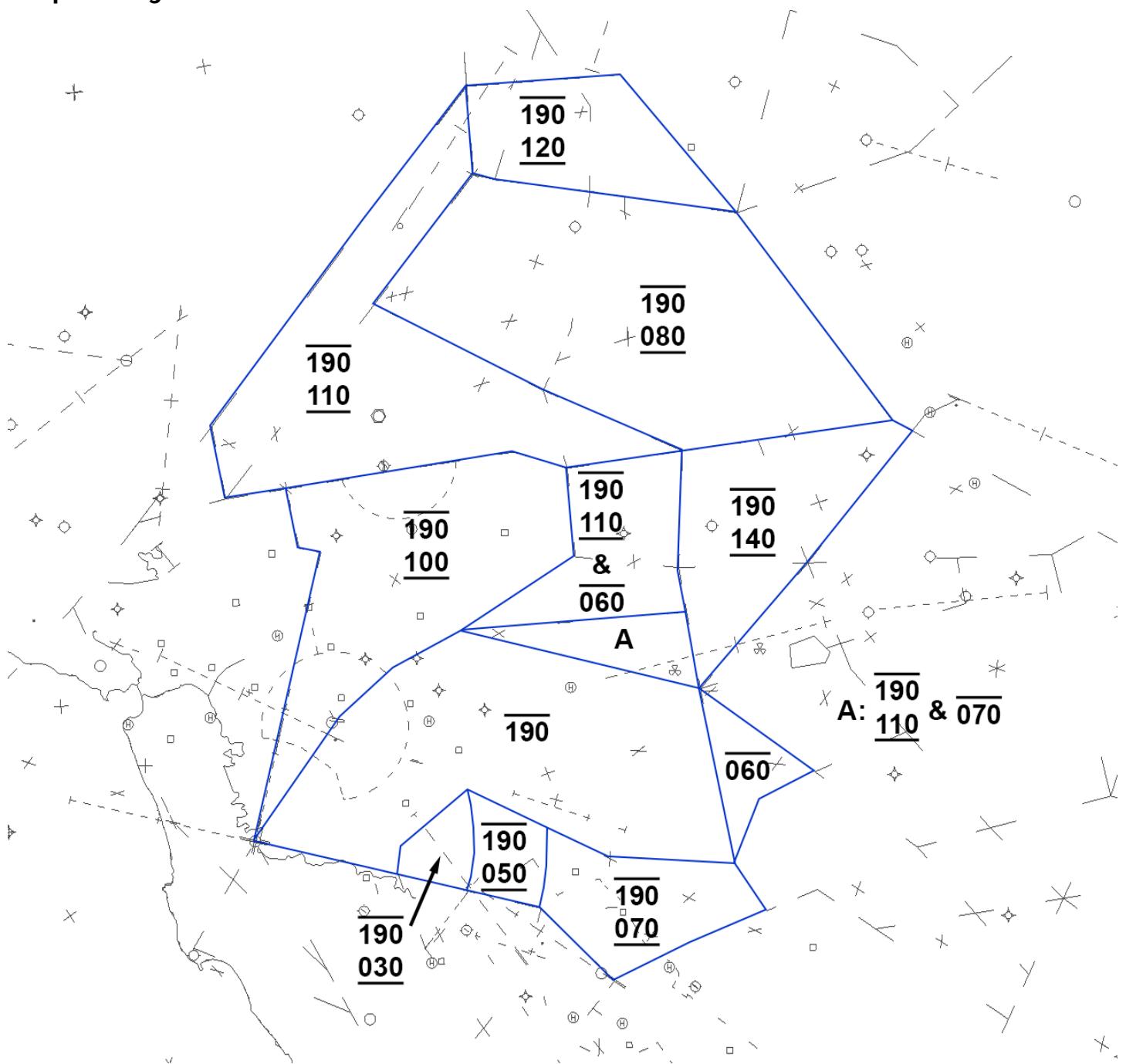
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	Northbound, requesting 6,000 or higher (This is the preferred route for HWD Departures)	P, T, J	6,000	RV 360°
	Napa CX		5,000	RV vicinity of Danville Tower
	V6			RV to join V6 over COLLI
	CCR		10,000	Direct CCR VOR
	V334 or SAC			ALTAM
	Exit Fixes North of ALTAM	T, J		
Sutro	Napa CX	T, J	16,000	Direct OAK Depart OAK RV 300°
Expo	SFO	P, T	9,000	On route
	LVK, TCY, C83	P, T, J	12,000 or lower filed	RV Destination
Sunol	Napa CX	P	8,000	RV OAKEY Gate
		T, J	12,000	

## Richmond SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Protect the BRIXX arrival at or above 11,000 feet.
- b. Protect aircraft established on and descending via the BDEGA arrival.
- c. Protect the LOUPE and BMRNG DPs worked by Sutro.
- d. Protect aircraft on right traffic for SFO Runways 28, "Down the Bay" descending to 6,000 feet. Acceptance of this point out constitutes Area D's approval for Boulder to assign 6,000 feet within Area Alpha of the SFO Class B Airspace between Hunter's Point and Fuller's Point.
- NOTE- Headings will be 085° through 115° unless verbally coordinated.***
- e. Protect aircraft established on and climbing via the SALAD departure from OAK Runway 28 arrivals worked by Grove.
- f. Display aircraft worked by Sutro.
- g. Point out aircraft that will not cross the common Richmond/Expo boundary at or above 16,000 feet.
- h. Point out OAK and SFO departures routed over SYRAH to Expo if the aircraft is below 14,000 feet at a point 23 NM west of SYRAH.
- i. Enter the first fix outside NCT airspace into the primary scratchpad on all CCR and SUU departures.
- j. Handoff SMF Runway 35 arrivals to Travis RAPCON.

# 6-3 Richmond - SFOE

Airspace Diagram



## Richmond SFOE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	OAK	P, T	4,000	RV Vicinity of Danville Tower
Licke	VFR SJC Arrivals	P	Cross Embassy Suites at or above 2,000	
		T, J	At or above 3,500	RV Tesla Plant
Toga	San Jose CX or SQL	P, T, J	6,000	Direct SJC VOR
	V107		7,000	
	Monterey CX (OAK and HWD departures only)			V301 KARNN V111 SNS
Valley	Napa CX or Travis CX	P, T, J	5,000	RV V334 OKEY V108
	V244			On route or RV south V244
	V334 or SAC			SAC 177° radial
Sunol	MOD	P, T, J	Level at 7,000	RV 090° South of LVK
	Fresno CX			Direct NTELL South of LVK
Cedar	FRA, AVE, PXN, or EHF (CCR and SUU Departures Only)	P, T, J	FL190 or lower filed	RV CEDES
Expo	MCC, MHR, PVF	P, T, J	11,000 or lower filed	Direct SAC VOR or ORRCA
	SMF		FDIO	On route
	RNO	P, T		
	SAC	J	8,000	On route
	RNO	J	FL190 or lower filed	On route or Direct HOBOA/TARVR
	Landing NCT (except Nevada)	P, T, J	12,000	RV Destination
Niles	SFO	P, T	8,000	V6

## Richmond SFOE Entry Routes

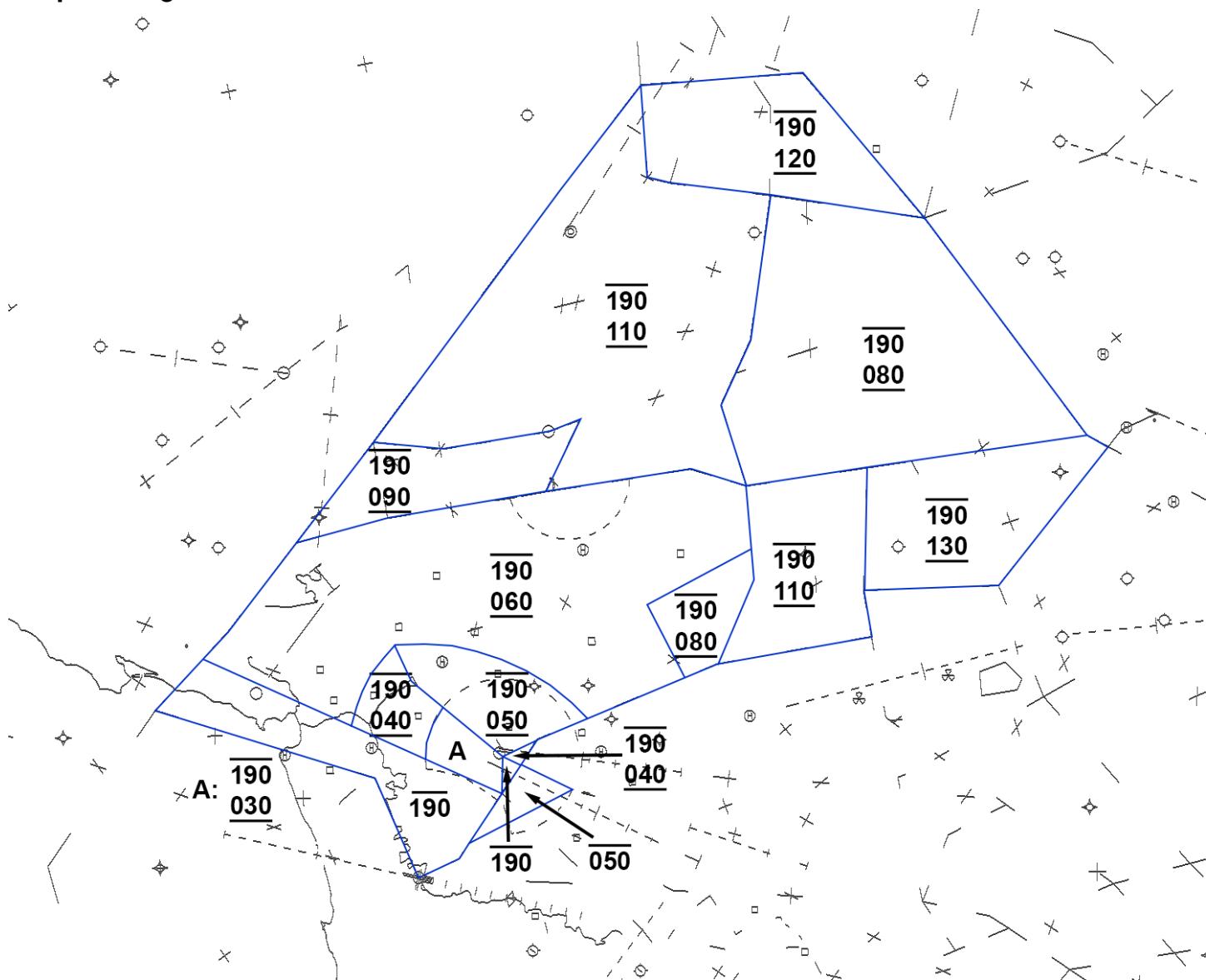
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Grove	SFO DP (RUNWAY 28)	P, T, J	5,000	SFO 070°
	HWD	P, T, J	4,000	RV vicinity of Danville Tower
Toga	ALMDN DP	J, DH8D	15,000	
	Sacramento CX or Mather CX	J	11,000	Direct SJC VOR ALTAM
	ALTAM	J	15,000	RV ALTAM
	V301 or PXN STAR	P, T, J	6,000	
	V334 or SUNOL DP	P, T	5,000	
Valley	V334	P, T	6,000	On route or RV SUNOL
Expo	SFO	P, T	8,000	On Route
	LVK, TCY, C83	P, T, J	12,000 or lower filed	RV Destination
	Napa CX, Travis CX	P, T, J	12,000	
Sunol	REJOY or PITTS	P, T	8,000	

## Richmond SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Protect aircraft established on and descending via the SKIZM and BANND arrivals.
- b. Protect LVK Runway 7 departures at or below 5,000 and Runway 25 arrivals worked by Valley.
- c. Coordinate release of HWD departures with Lickie.
- d. Enter the first fix outside of NCT airspace into the primary scratchpad on all departures routed via ALTAM.
- e. Point out HWD IFR arrivals to Lickie.
- f. Issue Class C arrival instructions for VFR aircraft landing at SJC.
- g. Point out aircraft that will not cross the common Richmond/Expo boundary at or above 16,000 feet.
- h. Point out OAK and SFO departures routed over SYRAH to Expo if the aircraft is below 14,000 feet at a point 23 NM west of SYRAH.
- i. Enter the first fix outside of NCT airspace into the primary scratchpad on all CCR and SUU departures.
- j. Handoff SMF Runway 35 arrivals to Travis RAPCON.

# 6-4 Richmond - OAKE

## Airspace Diagram



## **Richmond OAKE Exit Routes**

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Cedar</b>	V244	T	FL190 or lower filed	Routed south of SCK (Filed above 13,000)
	FRA, AVE, PXN, or EHF (CCR and SUU Departures Only)	P, T, J		RV CEDES
<b>Grove</b>	V244	P, T	10,000	
<b>Expo</b>	MCC, MHR, PVF	P, T, J	11,000 or lower filed	Direct SAC VOR or ORRCA
	SMF		FDIO	On Route
	RNO	P, T		
	SAC	J	8,000	
	RNO	J	FL190 or lower filed	On route or Direct HOBOA/TARVR
	Landing NCT (except Nevada)	P, T, J	12,000	RV Destination
<b>Sunol</b>	SFO	T	9,000	SAC157R or RISTI STAR

## **Richmond OAKE Entry Routes**

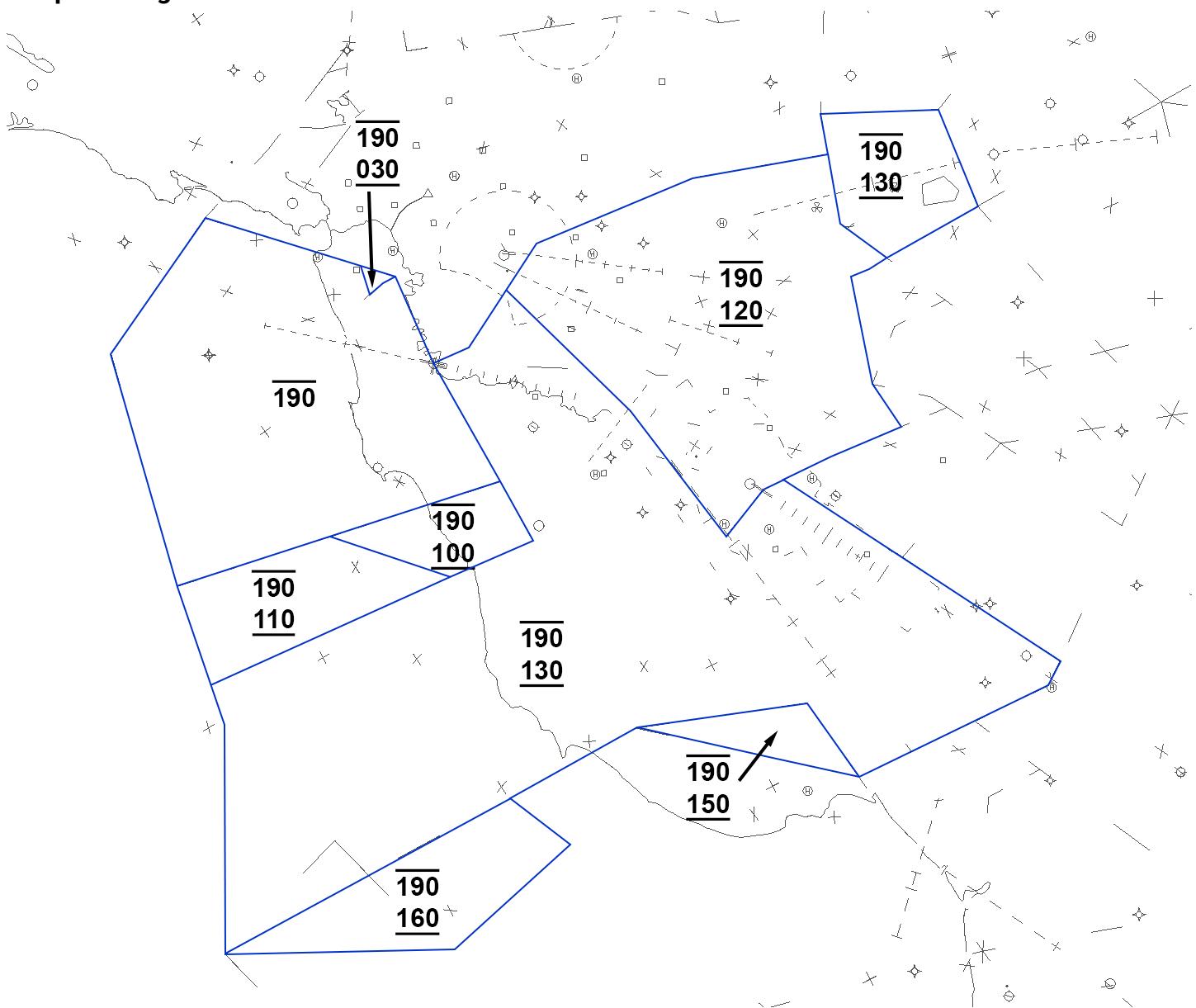
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Grove</b>	Northbound requesting 6,000 or higher	P, T, J	6,000	RV 360°
	V334 or SAC		10,000	ALTAM
	Exit Fixes North of ALTAM	T, J		
<b>Sutro</b>	Napa CX	T, J	16,000	Direct OAK Depart OAK RV 300°
<b>Expo</b>	SFO	P, T	9,000	On route
	LVK, TCY, C83	P, T, J	12,000 or lower filed	RV Destination
	Napa CX, Travis CX		12,000	
<b>Sunol</b>	Napa CX	P	8,000	RV OKEY Gate
		T, J	12,000	

## **Richmond OAKE Pre-Arranged Coordination Procedures and Sector Responsibilities**

- a. Protect the BRIXX arrival at or above 11,000 feet.
- b. Protect aircraft established on and descending via the BDEGA arrival.
- c. Protect the LOUPE and BMRNG DPs worked by Sutro.
- d. Protect Oakland departures within 1.5 nm of the Richmond/Grove airspace boundary that are heading 090° and handed off to Grove.
- e. Upon release of HWD Runway 28 departures, Richmond must protect at or below 2,000 feet for that departure.
- f. Display aircraft worked by Sutro.
- g. Point out aircraft that will not cross the common Richmond/Expo boundary at or above 16,000 feet
- h. Point out OAK and SFO departures routed over SYRAH to Expo if the aircraft is below 14,000 feet at a point 23 NM west of SYRAH.
- i. Enter the first fix outside of NCT airspace into the primary scratchpad on all CCR and SUU departures.
- j. Handoff SMF Runway 35 arrivals to Travis RAPCON.

# 6-5 Sutro - SFOW

## Airspace Diagram



## Sutro SFOW Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Boulder</b>	Monterey CX	P, T	7,000	RV EUGEN
	NUEVO DP or RV EUGEN		11,000 or lower filed	
<b>Woodside</b>	SFO	P, T	4,000	RV 100° 4 NM south of SFO
	San Jose CX or SQL	J	5,000	
<b>Cedar</b>	CEDES HARGO BLEAR FRAME	P, T	FDIO	CEDES
<b>Laguna</b>	NUEVO DP or EUGEN	P, T	FL190 or lower filed	
<b>Richmond</b>	Napa CX	T, J	16,000	Direct OAK Depart OAK RV 300°

## Sutro SFOW Entry Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Boulder</b>	Napa CX	T, J	8,000	V27
<b>Woodside</b>	Northbound VFR (excluding VFR Bay Tours)	P, T, J		RV south and west of the Bayshore Freeway
	VFR Bay Tours			Outside SFO Class Bravo Airspace
	All Others		5,000	RV 280° at least 3 miles south of SFO
<b>Laguna</b>	Monterey CX DP's (except Napa CX)	P, T, J	FL190 or lower filed	
<b>Morgan</b>	Sacramento CX or Mather CX	J	13,000	Direct SJC VOR
<b>Richmond</b>	CEDES HARGO BLEAR FRAME	P, T	FDIO	SALAD CEDES
<b>Toga</b>	LOUPE DP or SPTNS TECKY SJC	J, DH8D	15,000	Right Turn direct SJC
	BMRNG (except Mather & Sacramento CX departures)			Direct GRRIF
	SJC DYBLO			Right Turn direct SJC
	LOUPE or SPTNS TECKY SJC or BMRNG DP (Mather CX or Sacramento CX)	J, DH8D	12,000	
	Oceanic Fixes (except SFO.V199)	J	15,000	RV BRINY
	Non-RNAV (coordination required)	J, DH8D	15,000	Right Turn direct SJC; Depart SJC RV 340°
<b>Toga (SJCE)</b>	SFO.V199	J	15,000	RV 260°

## **Sutro SFOW Pre-Arranged Coordination Procedures and Sector Responsibilities**

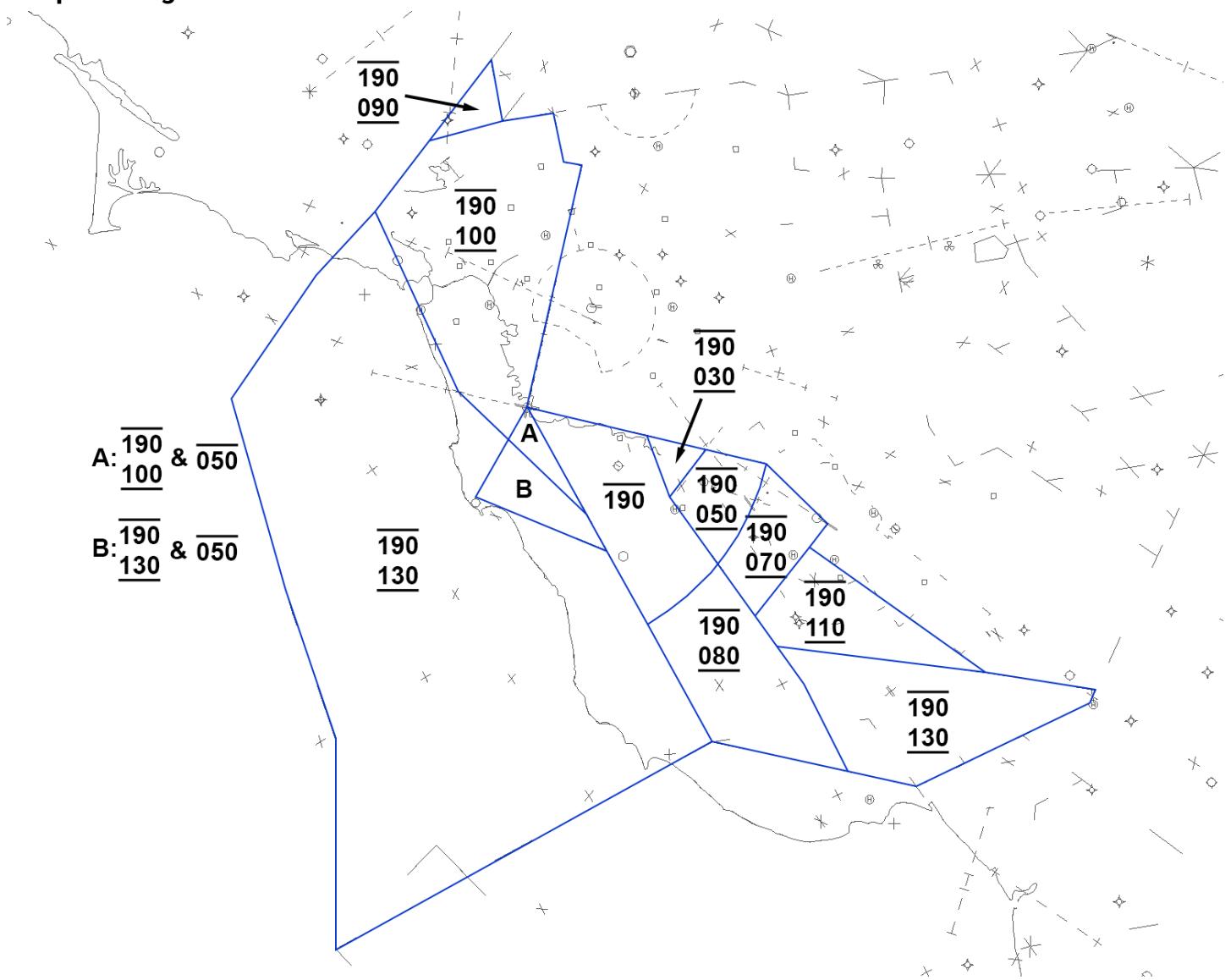
- a. Protect the BRIXX arrival at or above 11,000 feet.
- b. Protect aircraft established on and descending via the BDEGA arrival.
- c. Protect VFR aircraft at or below 5,000 feet worked by Richmond.
- d. Boulder must ensure that all aircraft on the BRIXX arrivals are at or above 11,000 feet while in Sutro's airspace.
- e. PYE-SFO aircraft routed north of SFO on a right downwind for Runways 28, "Down the Bay" must be handled as follows:
  - i. Boulder must initiate an automated point out to Sutro. Sutro will point out the aircraft to Richmond.
  - ii. Acceptance of this point out constitutes Area D's approval for Boulder to assign 6,000 feet within Area Alpha of the SFO Class B Airspace between Hunter's Point and Fuller's Point.

***NOTE- Headings will be 085° through 115° unless verbally coordinated.***

- f. During in-trail operations, coordinate with Boulder to establish a sequence for SFO.
- g. Display aircraft worked by Richmond.
- h. Point out all SFO or OAK departures landing in the San Jose CX via OSI at 5,000 feet to Boulder.
- i. Point out to Toga aircraft that are routed via NTELL that are level at FL190 or lower.
- j. Sutro is responsible for the separation between Monterey CX departures routed over the SJC VOR and the LOUPE/BMRNG departures.
- k. Toga must climb aircraft on the ALMDN, LOUPE or BMRNG DPs to the exit route altitude in Sutro's airspace after initiating an automated hand-off to Sutro.
- l. Richmond protects the LOUPE, BMRNG DPs worked by Sutro.

# 6-6 Sutro - SFOE

## Airspace Diagram



## Sutro SFOE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Boulder	V27	P, T, J	6,000	Direct EUGEN
Grove	OAK	P, T, J	4,000	
	V199 or V27		5,000	
Laguna	V25	P, T, J	FL190 or lower filed	
Licke	SJC (OAK and SFO Deps Only)	J	3,000	ARTAQ
	SQL GPS Approach	P, T, J	5,000	Direct JEFNY
	San Jose CX	P, T	5,000	OSI RV 140
			7,000	
	FRLON STAR	J	Descend Via	Except after MISSS maintain 7,000
Toga	MRY (OAK and HWD departures only)	P, T	6,000	Filed 7,000 or below
		P, T, J	7,000	V301 KARNN V111

## Sutro SFOE Entry Routes

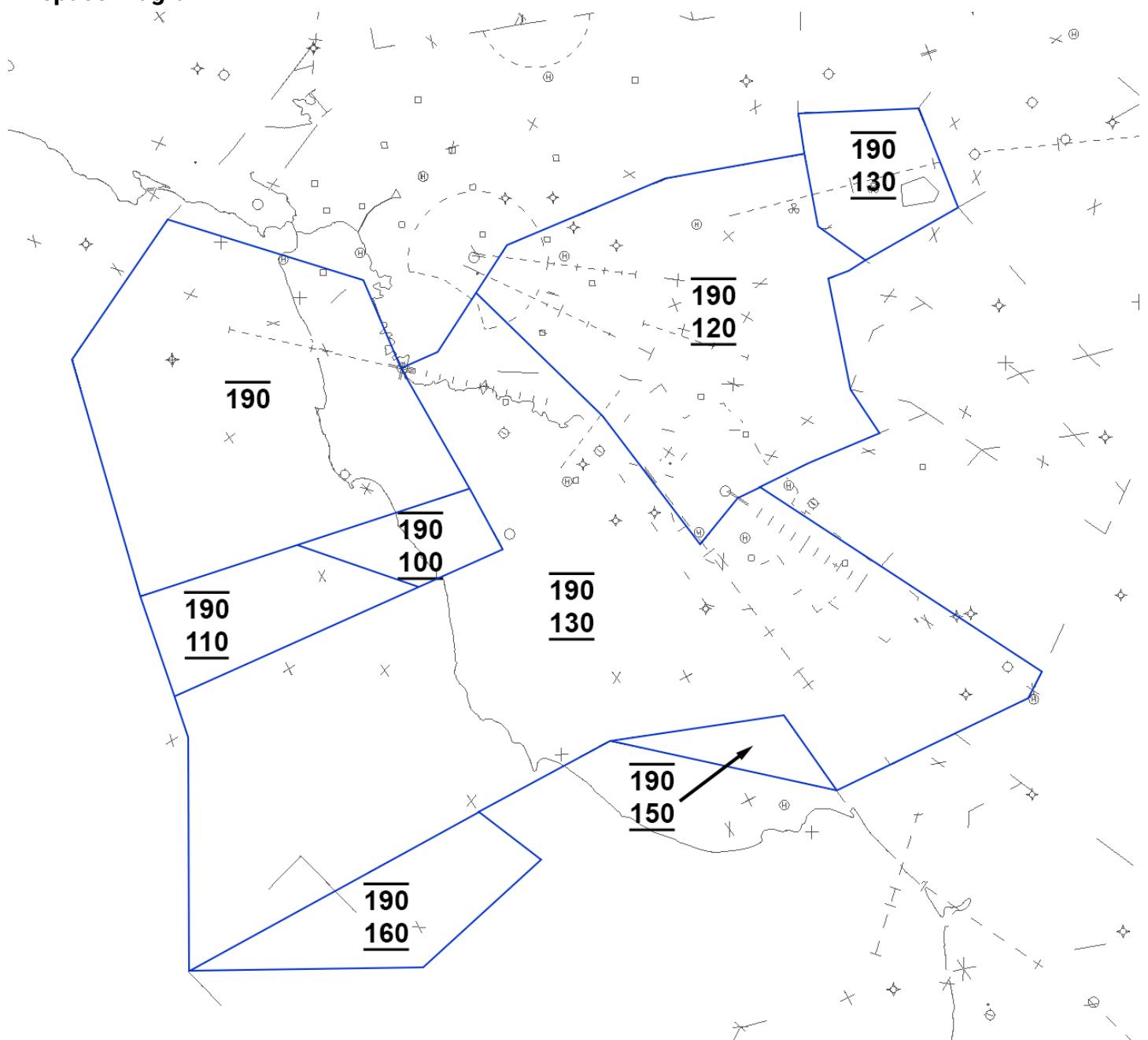
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Boulder	San Jose CX	T, J	7,000	OSI RV 140
	FRLON STAR			Except after MISSS maintain 7,000
Grove	GAPP DP (Runway 28)	J	5,000	RV 100°
	SQL or San Jose CX	P, T		Direct OSI (South of SFO)
Laguna	Monterey CX DP's (except Napa CX)	P, T, J	FL190 or lower filed	
Licke	Napa or Oakland CX (PAO Departures)	P, T, J	3,000	RV 280 South of PAO
	OAK	J	5,000	RV OSI
Toga	Oceanic Fix (except SFO.V199)	J	15,000	RV BRINY

## Sutro SFOE Pre-Arranged Coordination Procedures and Sector Responsibilities

- a. Coordinate with Licke prior to releasing a SQL Runway 12 departure.

# 6-7 Sutro - OAKE

## Airspace Diagram



## Sutro OAKE Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Boulder	Monterey CX	P, T	7,000	RV EUGEN
Grove	OAK	J	4,000	RV SAU
Woodside	SFO	P, T	4,000	RV 100° / 4 NM south of SFO
		J	5,000	
	San Jose CX or SQL	P, T, J	5,000	OSI RV 110° (SFOW) OSI RV 140° (SJCE)
Cedar	CEDES HARGO BLEAR FRAME	P, T	FDIO	CEDES
Laguna	NUEVO DP or EUGEN	P, T	FL190 or lower filed	
Richmond	Napa CX	T, J	16,000	Direct OAK Depart OAK RV 300°

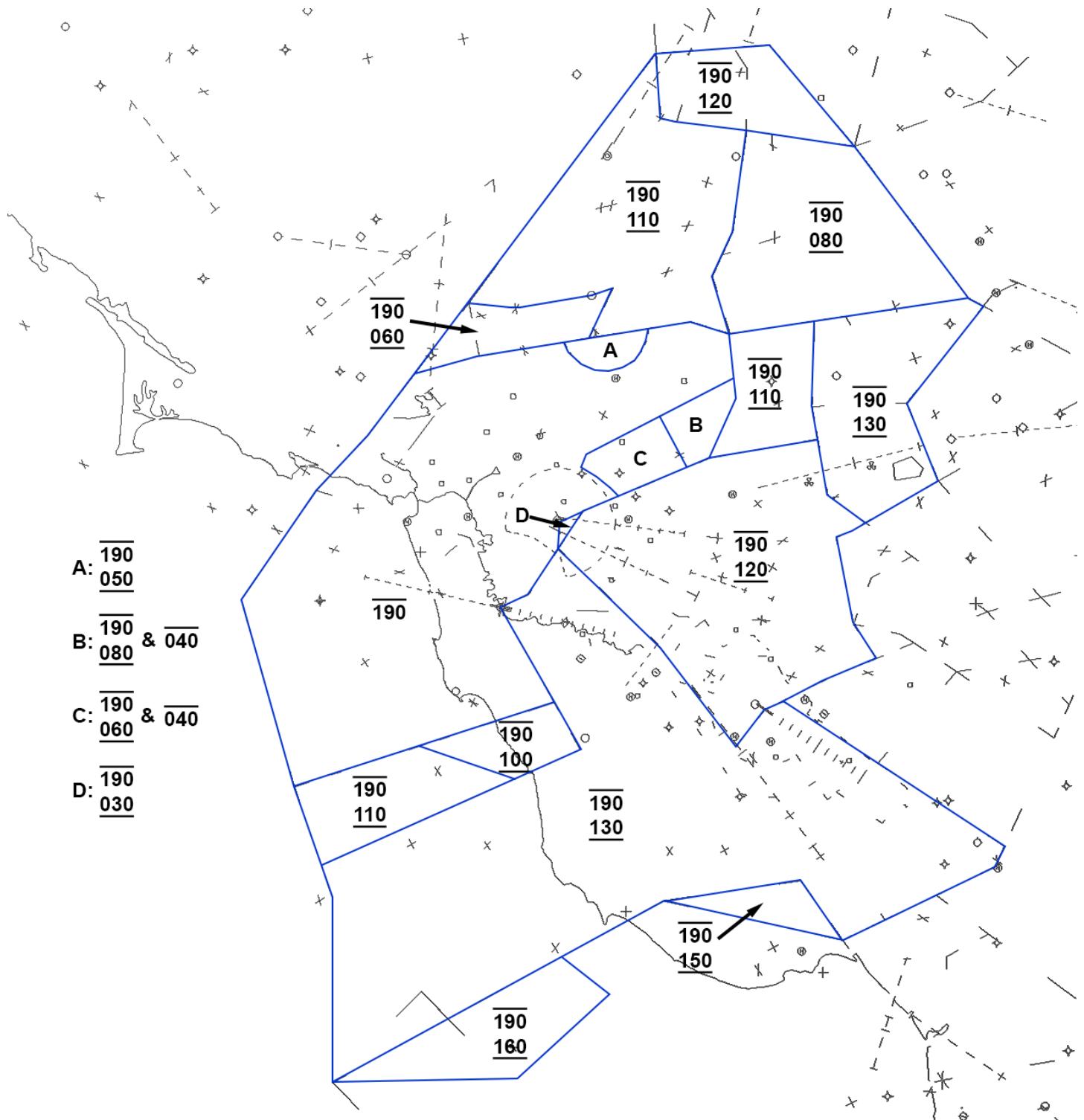
## Sutro OAKE Entry Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
<b>Boulder</b>	OAK	J	8,000	RV SAU
	Napa CX	T, J		V27
<b>Grove</b>	San Jose CX	P, T, J	4,000	RV 180° over or west of SAU
	VFR tours and VFR aircraft south-bound along Bayshore Freeway			Clear of Class B. Do not provide a Class B airspace clearance
<b>Woodside</b>	Northbound VFR (excluding VFR Bay Tours)	P, T, J		RV south and west of the Bayshore Freeway
	VFR Bay Tours			Outside SFO Class Bravo Airspace
	All others		5,000	RV 280° at least 3 miles south of SFO
<b>Laguna</b>	Monterey CX DP's (except Napa CX)	P, T, J	FL190 or lower filed	
<b>Morgan</b>	Sacramento CX or Mather CX	J	13,000	Direct SJC VOR
<b>Richmond</b>	CEDES HARGO BLEAR FRAME	P, T	FDIO	SALAD CEDES
<b>Toga</b>	LOUPE or SPTNS TECKY SJC DP	J, DH8D	15,000	Right Turn direct SJC
	BMRNG (except Mather & Sacramento CX departures)			Direct GRRIF
	SJC – DYBLO			Right Turn direct SJC
	LOUPE or SPTNS TECKY SJC or BMRNG DP (Mather CX or Sacramento CX)	J, DH8D	12,000	
	Oceanic Fixes (except SFO.V199)	J	15,000	RV BRINY
	Non-RNAV (coordination required)	J, DH8D		Right Turn direct SJC; Depart SJC RV 340°
<b>Toga (SJCE)</b>	SFO.V199	J	15,000	RV 260°

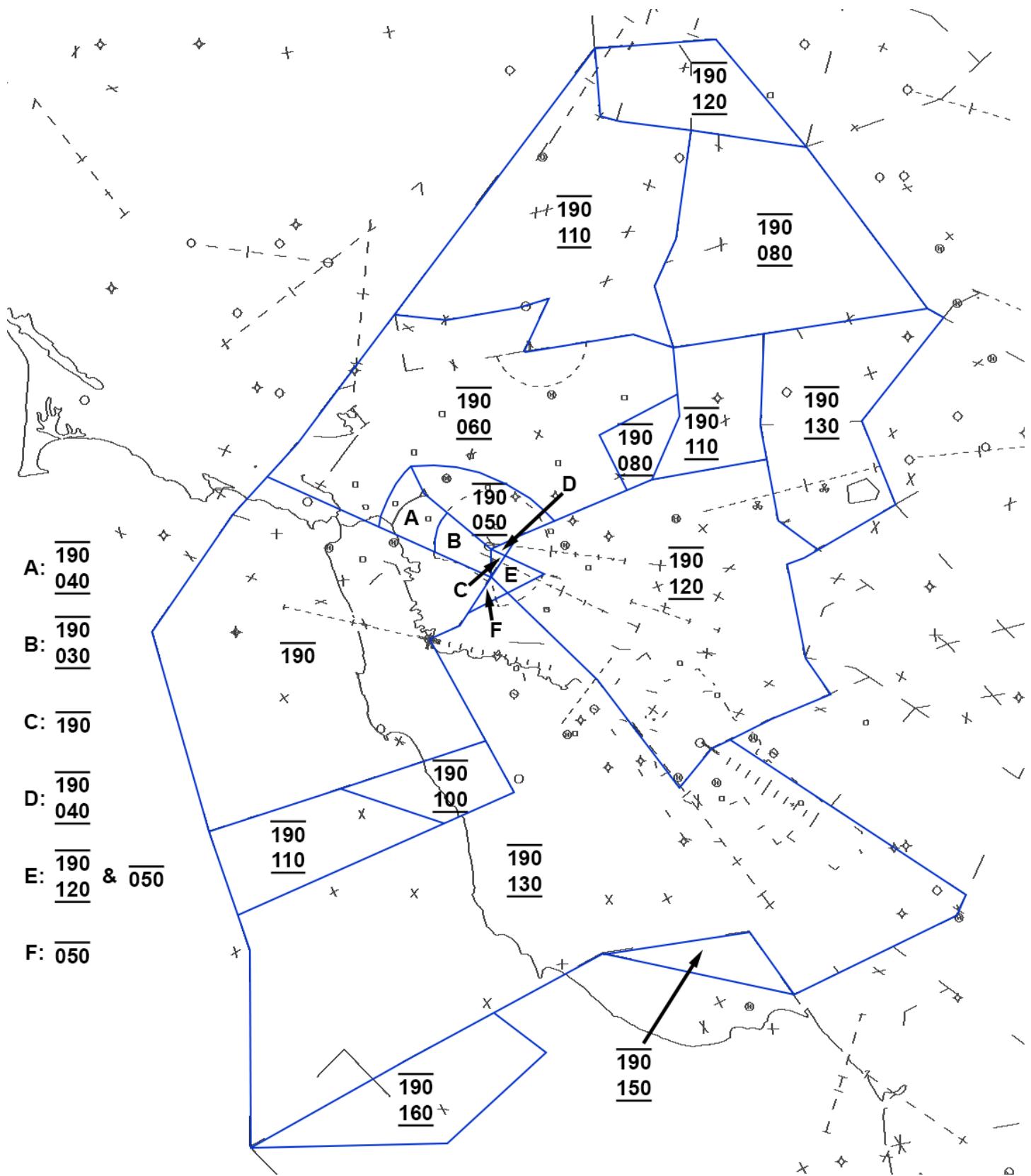
## **Sutro OAKE Pre-Arranged Coordination Procedures and Sector Responsibilities**

- a. Protect the BRIXX arrival at or above 11,000 feet.
- b. Boulder must ensure that all aircraft on the BRIXX arrivals are at or above 11,000 feet while in Sutro's airspace.
- c. Protect aircraft established on and descending via the BDEGA arrival.
- d. Point out all SFO or OAK departures landing in the San Jose CX via OSI at 5,000 feet to Boulder.
- e. During in-trail operations, coordinate with Boulder to establish a sequence for SFO arrivals.
- f. Display aircraft worked by Richmond.
- g. Point out to Toga aircraft that are routed via NTELL that level at FL190 or lower.
- h. Sutro is responsible for the separation between Monterey CX departures routed over the SJC VOR and the LOUPE/BMRNG departures.
- i. Toga must climb on the ALMDN, LOUPE, or BMRNG DPs to the exit route altitude in Sutro's airspace after initiating an automated hand-off to Sutro.
- j. Richmond protects the LOUPE, BMRNG DPs worked by Sutro.

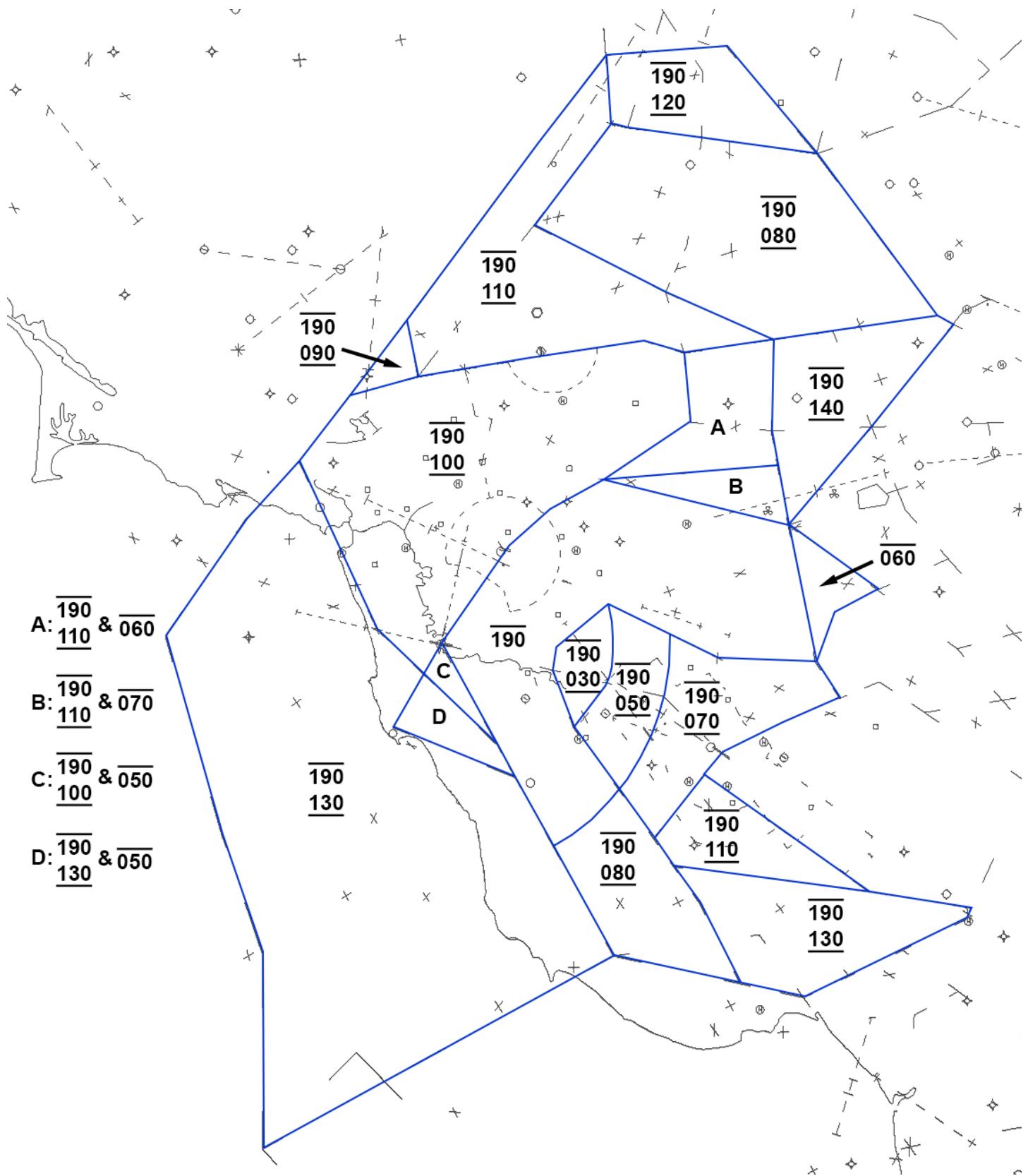
## 6-8 Area D Combined - SFOW



## 6-9 Area D Combined - OAKE



## 6-10 Area D Combined - SFOE



# Section 7. Area E Procedures

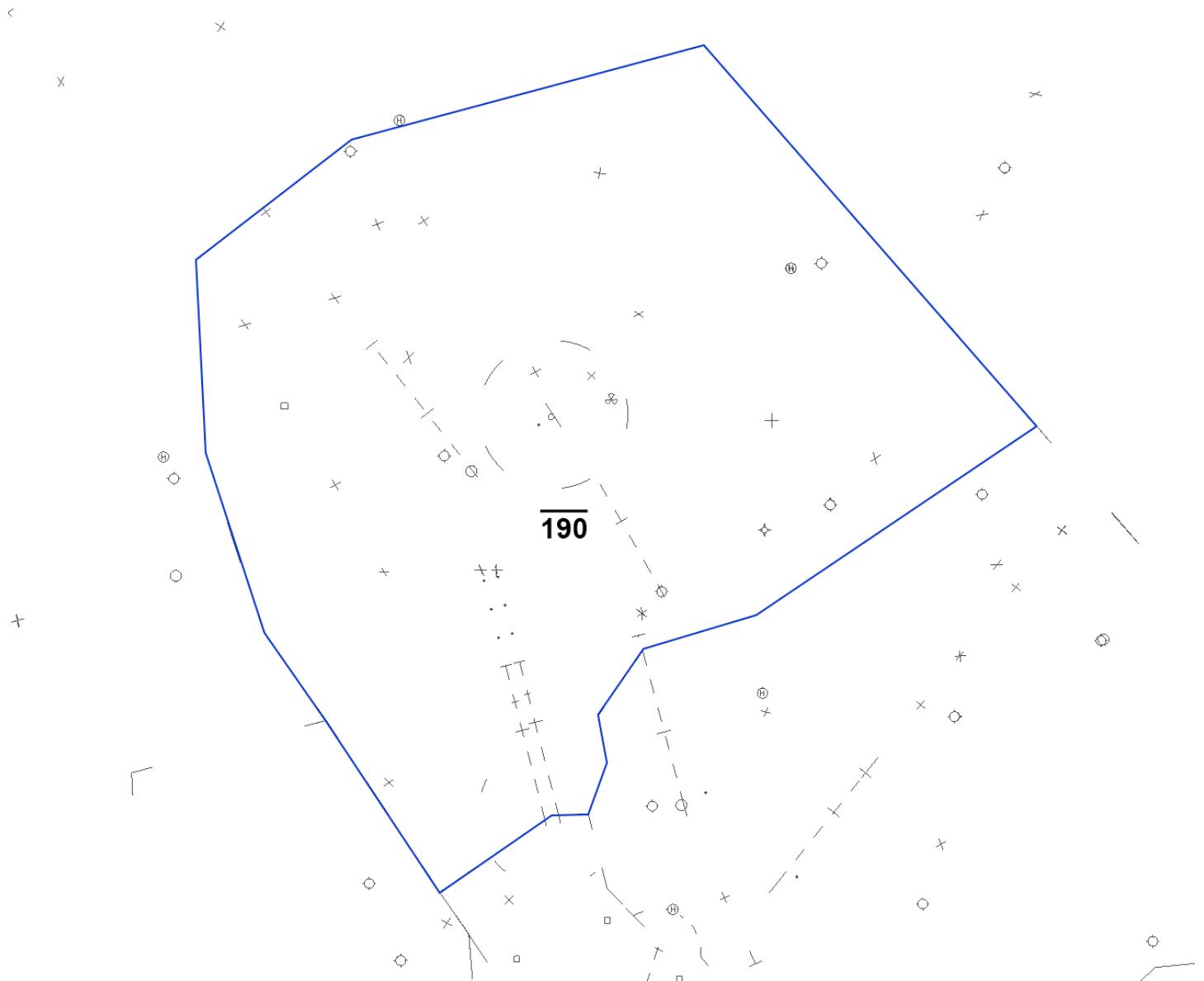
SECTOR	CALLSIGN	RADIO CALLSIGN	FREQUENCY
Area E CA Combined	SMF_APP	NorCal Approach	125.400
Area E NV Combined	RNO_APP	NorCal Approach	126.300
Elkhorn	SMF_E_APP	NorCal Approach	125.400
Expo	SMF_X_APP	NorCal Approach	127.400
Nugget	RNO_N_APP	NorCal Approach	126.300
Silver	RNO_S_APP	NorCal Approach	119.200

a. Sector Definitions

- i. Area E is split between California and Nevada complexes
- ii. Area E NV (Nevada) shall consist of the following sectors over Reno, NV.
  1. Nugget Sector
  2. Silver Sector
- iii. Area E CA (California) shall consist of the following sectors over Sacramento, CA.
  1. Elkhorn Sector
  2. Expo Sector
- iv. No controller may work both Area E complexes at the same time

# 7-1 Elkhorn - SMFS

## Airspace Diagram



## Elkhorn SMFS Exit Routes

SECTOR	DEST/ROUTE	ACFT	ALT	HDG/INFO
Expo	SAC, O88 (West of SMF)	P, T, J	3,000	RV ELKOE
	SAC, O88 (East of SMF)		5,000	RV SAC VOR
	MCC Rwy 16		3,000	RV Final Approach Course
	MCC Rwy 34, MHR, PVF		5,000	RV 061
	Travis CX (including SUU)		12,000	RV SAC VOR
	Landing NCT (except Area E)		FDIO	RV Camanche/Salty Gate
	South/southeast bound	P, T, J	FL190 or lower filed	RV FROGO

## Elkhorn SMFS Entry Routes

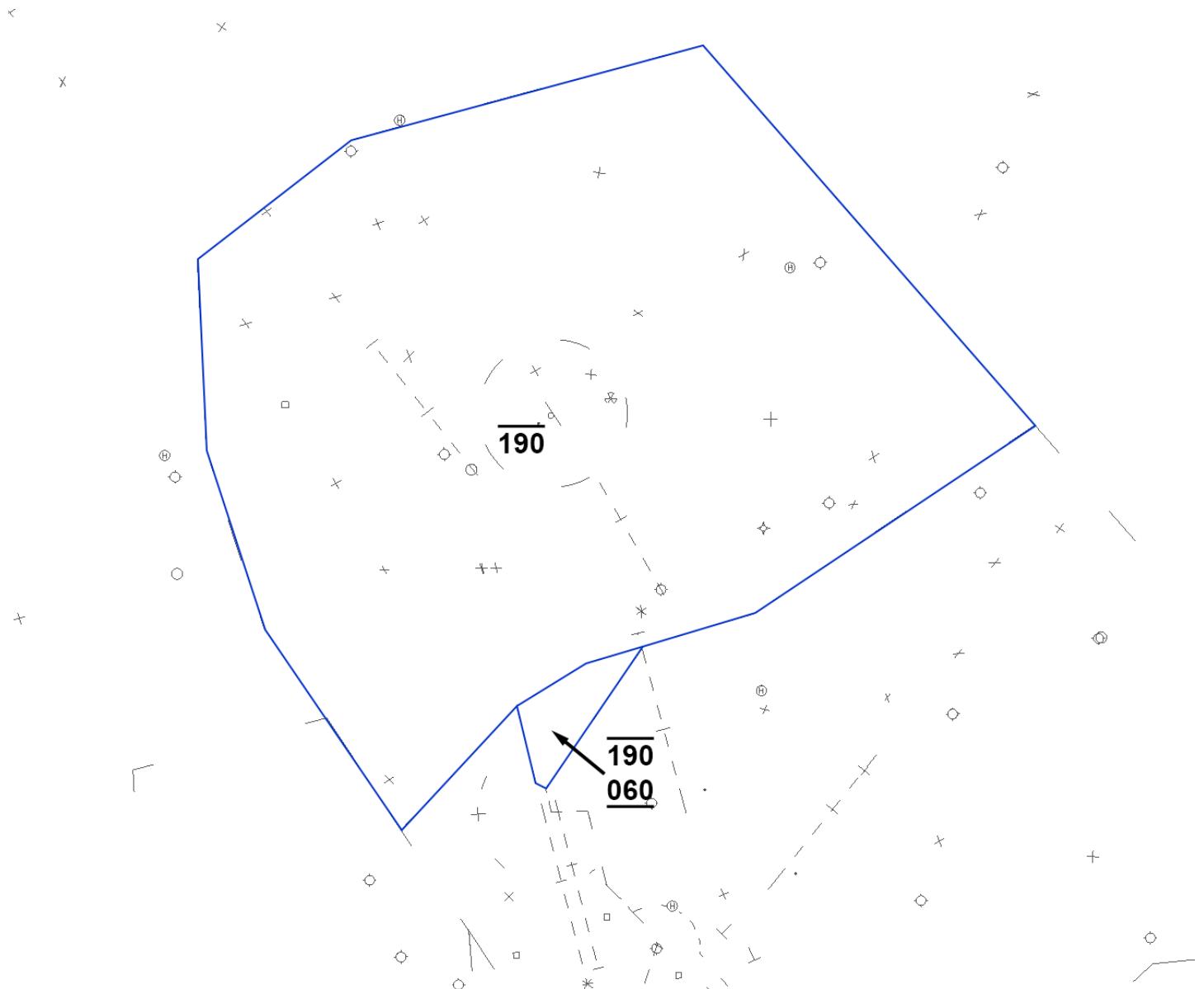
SECTOR	DEST/ROUTE	ACFT	ALT	HDG/INFO
Expo	SMF (West of SMF)	P, T, J	4,000	STAR or RV Final
	SMF (East of SMF)		3,000	RV Final
	AUN, BAB, GOO, LHM, MYV, OVE (West of SMF)		5,000	RV Final
	AUN, BAB, LHM, MYV, OVE (East of SMF)		4,000	RV Final
	GOO (East of SMF)		5,000	RV Final
	Landing Area E and 088		10,000	RV Destination
	CIC		FDIO	RV Destination

## Elkhorn SMFS Pre-Arranged Coordination Procedures and Sector Responsibilities

- Protect aircraft landing Napa CX west of SAC VOR, descending to 8,000 feet.
- Protect SMF departures worked by Expo, headings 135° through 255°, and 030° through 140°.
- Issue runway transitions and expected approach to all SLMMR arrivals.

# 7-2 Elkhorn - SMFN

## Airspace Diagram



## Elkhorn SMFN Exit Routes

SECTOR	DEST/ROUTE	ACFT	ALT	HDG/INFO
Expo	SMF (Non-OPD, West of SMF)	P, T, J	4,000	RV ELKOE
	SLMMR		Descend Via	
	MCC Rwy 16		3,000	RV Final
	MCC Rwy 34, MHR, PVF		5,000	RV 061
	SAC or O88 (West of SMF)		6,000	RV ELKOE
	SAC or O88 (East of SMF)		5,000	RV SAC VOR
	Travis CX		12,000	
	Landing NCT (except Area E)		FDIO	RV to Camanche/ Salty Gate
	SMF Southbound Departures		9,000 or lower filed	RV 160°
	South/southeast bound		FL190 or lower filed	RV FROGO

## Elkhorn SMFN Entry Routes

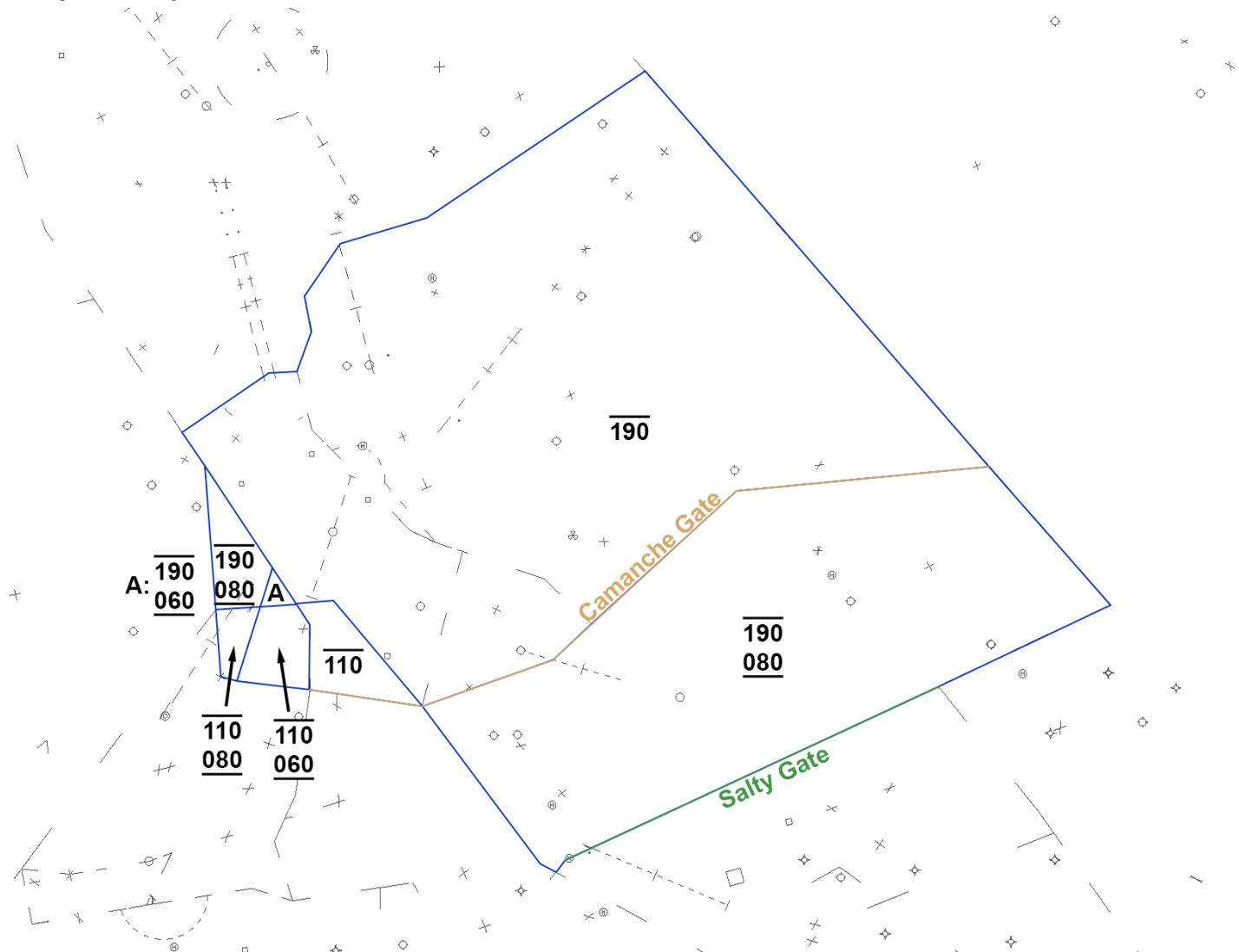
SECTOR	DEST/ROUTE	ACFT	ALT	HDG/INFO
Expo	AUN, BAB, GOO, LHM, MYV, OVE (West of SMF)	P, T ,J	5,000	RV Final
	AUN, BAB, LHM, MYV, OVE (East of SMF)		4,000	RV Final
	GOO (East of SMF)		5,000	RV Final
	Landing Area E, O88		10,000	RV Destination
	CIC		FDIO	RV Destination

## Elkhorn SMFN Pre-Arranged Coordination Procedures and Sector Responsibilities

- Protect aircraft landing Napa CX west of SAC VOR, descending to 8,000 feet.
- Protect SMF departures worked by Expo, headings 135° through 255°, and 040° through 150°.
- Issue runway transitions and expected approach to all SLMMR arrivals.

# 7-3 Expo - SMFS

## Airspace Diagram



## Expo SMFS Exit Routes

SECTOR	DEST/ROUTE	ACFT	ALT	HDG/INFO
Elkhorn	SMF (West of SMF)	P, T, J	4,000	STAR or RV Final
	SMF (East of SMF)		3,000	RV Final
	AUN, BAB, GOO, LHM, MYV, OVE (West of SMF)		5,000	RV Final
	AUN, BAB, LHM, MYV, OVE (East of SMF)		4,000	RV Final
	GOO (East of SMF)		5,000	RV Final
	CIC		FDIO	RV Destination
Richmond (SFOW)	SFO	P, T	9,000	On Route
Richmond (SFOE)	SMF South Departures	P, T	8,000	On Route
Richmond	LVK, TCY, C83	P, T, J	12,000 or lower filed	RV Destination
	Napa CX, Travis CX		12,000	
Sunol	Fresno CX	P, T, J	15,000 or lower filed	Direct NTELL
	Landing NCT (except SFO)		10,000 or lower filed	RV Salty Gate
	SFO	J	15,000	RV ALWYS/MOD
Sunol (SFOW)	SFO	P, T	10,000	RV ALWYS CEDES
Valley	Fresno CX	P, T, J	5,000/ 7,000	Direct NTELL
	Landing NCT (West of WAGER)		7,000	
	Landing NCT (over or east of WAGER) (Except OAK on SFOE)		5,000/ 7,000	RV Camanche Gate
	Travis CX		8,000	V108 or OKEY Gate
	Modesto or Stockton CX			RV Destination

## Expo SMFS Entry Routes

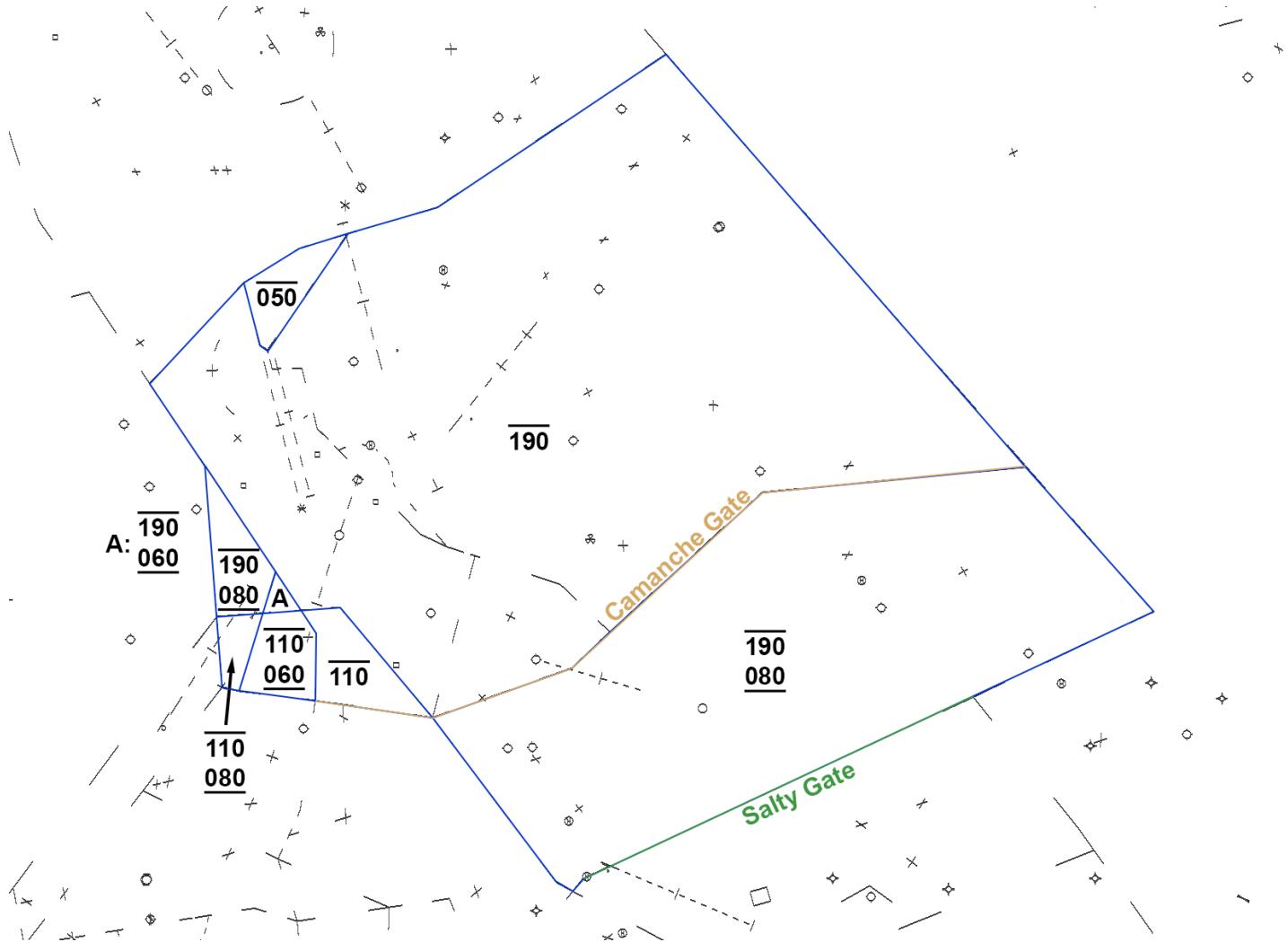
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Elkhorn	Landing Area E (except SMF), O88	P, T, J	10,000	RV Destination
	Landing NCT (except Area E)		FDIO	RV Camanche/ Salty Gate
	Travis CX		12,000	RV SAC VOR
	SAC or O88 (West of SMF)		3,000	RV ELKOE
	SAC or O88 (East of SMF)		5,000	RV SAC VOR
	MCC Runway 16		3,000	RV Final Approach Course
	MCC Runway 34, MHR, PVF		5,000	RV 061
Richmond	MCC, MHR, PVF	P, T, J	11,000 or lower filed	Direct SAC VOR or ORRCA
	SMF		FDIO	On Route
	SAC	J	8,000	
	RNO	P, T	FDIO	
		J	FL190 or lower filed	On Route or direct HOBOA/TARVR
Sunol	Landing NCT (Except Nevada)	P, T, J	12,000	RV Destination
	Landing NCT (Except SUUTR)	P, T, J	14,000 or lower filed	RV Salty Gate
Valley	SUUTR		Descend Via	
	Landing Mather CX	P, T, J	6,000	RV Camanche Gate
	Landing Sacramento CX		4,000	
			6,000	

## Expo SMFS Pre-Arranged Coordination Procedures and Sector Responsibilities

- Protect SMF departures worked by Elkhorn headings 245° through 030°.
- Protect OAK and SFO departures worked by Richmond with a requested altitude above FL190.
- Richmond is not required to separate OAK and SFO DPs routed over SYRAH from aircraft on SUUTR arrival; use other methods to separate.
- Protect aircraft landing Napa CX West of SAC VOR, descending to 8,000 feet.

## 7-4 Expo - SMFN

Airspace Diagram



## Expo SMFN Exit Routes

SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Elkhorn	AUN, BAB, LHM, MYV, OVE (East of SMF)	P, T, J	4,000	RV Final
	GOO (East of SMF)		5,000	RV Final
	AUN, BAB, GOO, LHM, MYV, OVE (West of SMF)		5,000	RV Final
	CIC		FDIO	RV Destination
Richmond (SFOW)	SFO	P, T	9,000	On Route
Richmond (SFOE)	SFO	P, T	8,000	On Route
Richmond	LVK, TCY, C83	P, T, J	12,000 or lower filed	RV Destination
	Napa CX, Travis CX		12,000	
Sunol	Fresno CX	P, T, J	15,000 or lower filed	Direct NTELL
	Landing NCT (Except SFO)		10,000 or lower filed	RV Salty Gate
	SFO	J	15,000	RV ALWYS/MOD
Sunol (SFOW)	SFO	P, T	10,000 or lower filed	Via ALWYS CEDES
Valley	Fresno CX	P, T, J	5,000/ 7,000	Direct NTELL
	Landing NCT (West of WAGER)		7,000	RV Camanche Gate
	Landing NCT (over or east of WAGER) (Except OAK on SFOE)		5,000/ 7,000	
	Travis CX		8,000	V108 or OKEY Gate
	Modesto or Stockton CX			RV Destination

## Expo SMFN Entry Routes

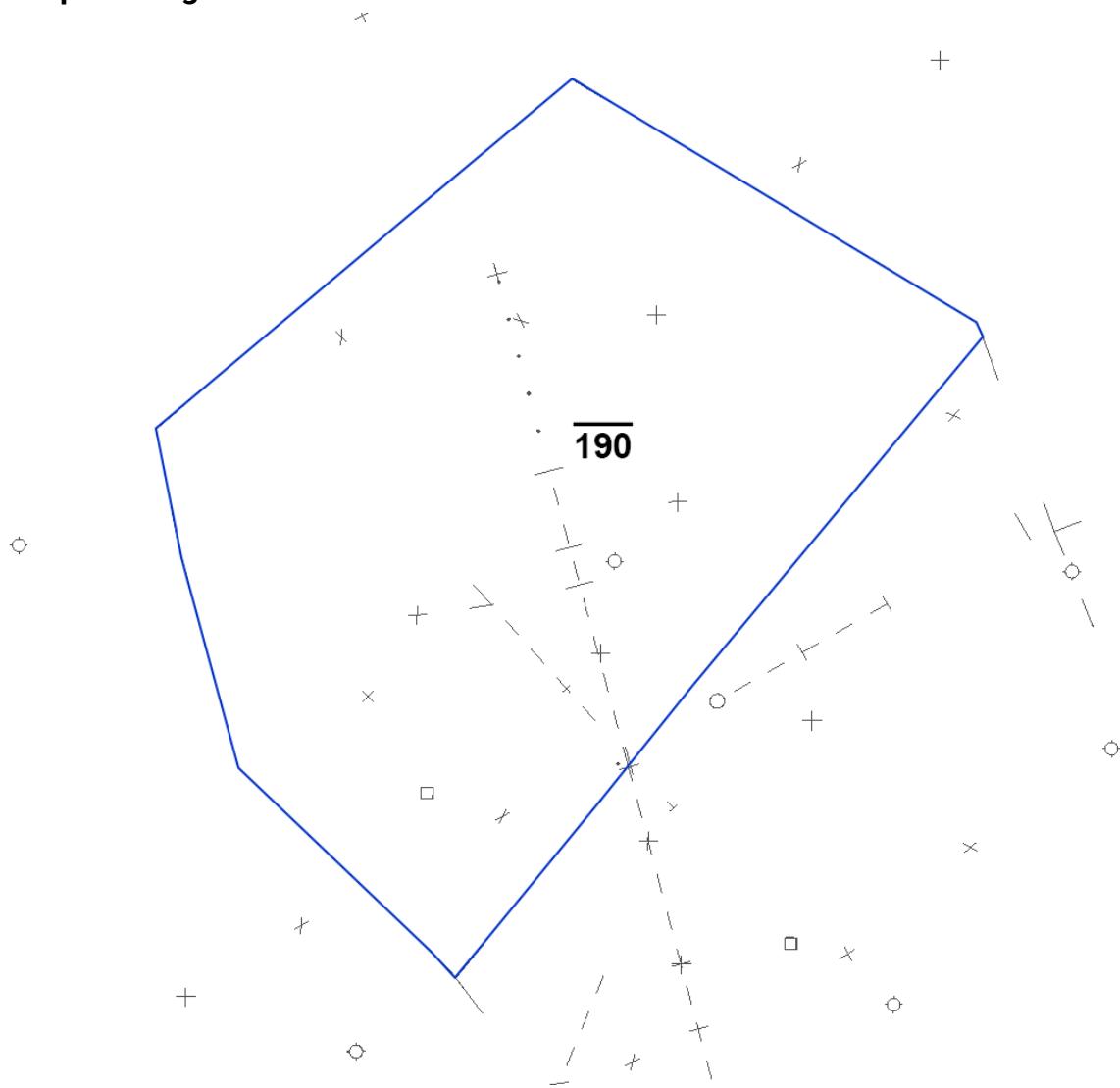
SECTOR	DEST/ ROUTE	ACFT	ALT	HDG/ INFO
Elkhorn	Landing Area E (except SMF), 088	P, T, J	10,000	RV Destination
	Landing NCT (Except Area E)		FDIO	RV Camanche or Salty Gate
	Travis CX		12,000	RV SAC VOR
	SAC or 088 (West of SMF)		6,000	RV ELKOE
	SAC or 088 (East of SMF)		5,000	RV SAC VOR
	MCC Runway 16		3,000	RV Final Approach Course
	MCC Runway 34, MHR, PVF		5,000	RV 061
	SMF Southbound Departures		9,000 or lower filed	RV 160°
	SMF (Non-OPD, West of SMF)		4,000	RV ELKOE
	SLMMR		Descend Via	
Richmond	MCC, MHR, PVF	P, T, J	11,000 or lower filed	Direct SAC VOR
	SMF		FDIO	On Route
	RNO	P, T	FL190 or lower filed	On Route or direct HOBOA/ TARVR
		J		
Sunol	Landing NCT (Except Nevada)	P, T, J	12,000	RV Destination
	Landing NCT (Except WRAPS/SUUTR)	P, T, J	14,000 or lower filed	RV Salty Gate
	WRAPS STAR	J	16,000	
Valley	SUUTR		Descend Via	
	Landing NCT	P, T, J	5,000 / 7,000	RV Camanche Gate
	Landing Mather CX		6,000	
	Landing Sacramento CX		4,000 6,000	

## Expo SMFN Pre-Arranged Coordination Procedures and Sector Responsibilities

- Protect SMF departures worked by Elkhorn headings 245° through 025°.
- Protect OAK and SFO departures worked by Richmond with a requested altitude above FL190.
- Richmond is not required to separate OAK and SFO DPs routed over SYRAH from aircraft on SUUTR arrival; use other methods to separate.
- Protect aircraft landing Napa CX West of SAC VOR, descending to 8,000 feet.

# 7-5 Nugget

## Airspace Diagram



### Nugget Exit Routes

SECTOR	DEST/ROUTE	ACFT	ALT	HDG/INFO
Silver (RNON)	RNO Arrivals from the north	P, T, J	11,000	On Route or RV Downwind
	RNO Arrivals from the west		12,000	

### Nugget Entry Routes

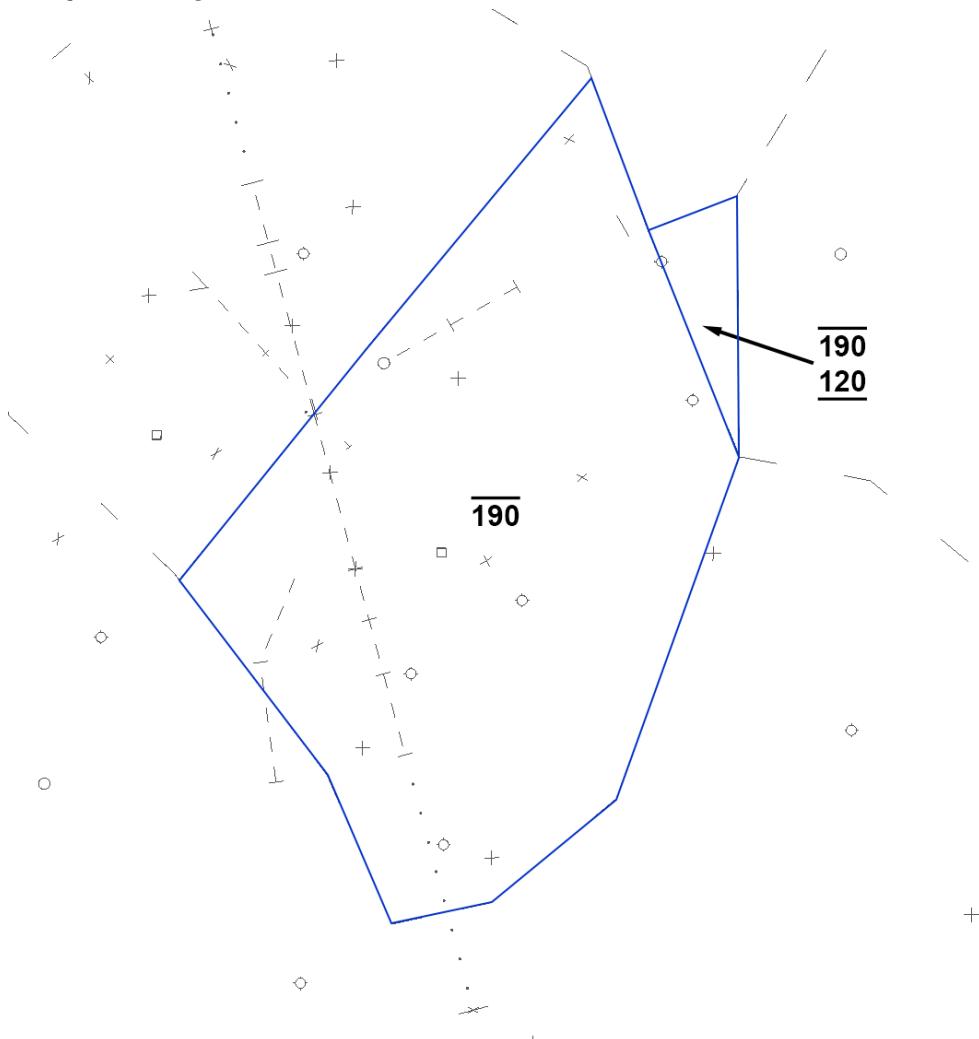
SECTOR	DEST/ROUTE	ACFT	ALT	HDG/INFO
Silver (RNOS)	RNO	P, T, J	11,000	On Route or RV Downwind

### Nugget Pre-Arranged Coordination Procedures and Sector Responsibilities

- During RNO Runways 34 operations, assign VFR arrivals a right down-wind to Runway 34R.
- Coordinate RNO Runway 7 and 25 arrivals with Silver.

# 7-6 Silver

## Airspace Diagram



## Silver Exit Routes

SECTOR	DEST/ROUTE	ACFT	ALT	HDG/INFO
Nugget	RNO (Runway 16)	P, T, J	11,000	On Route RV Downwind

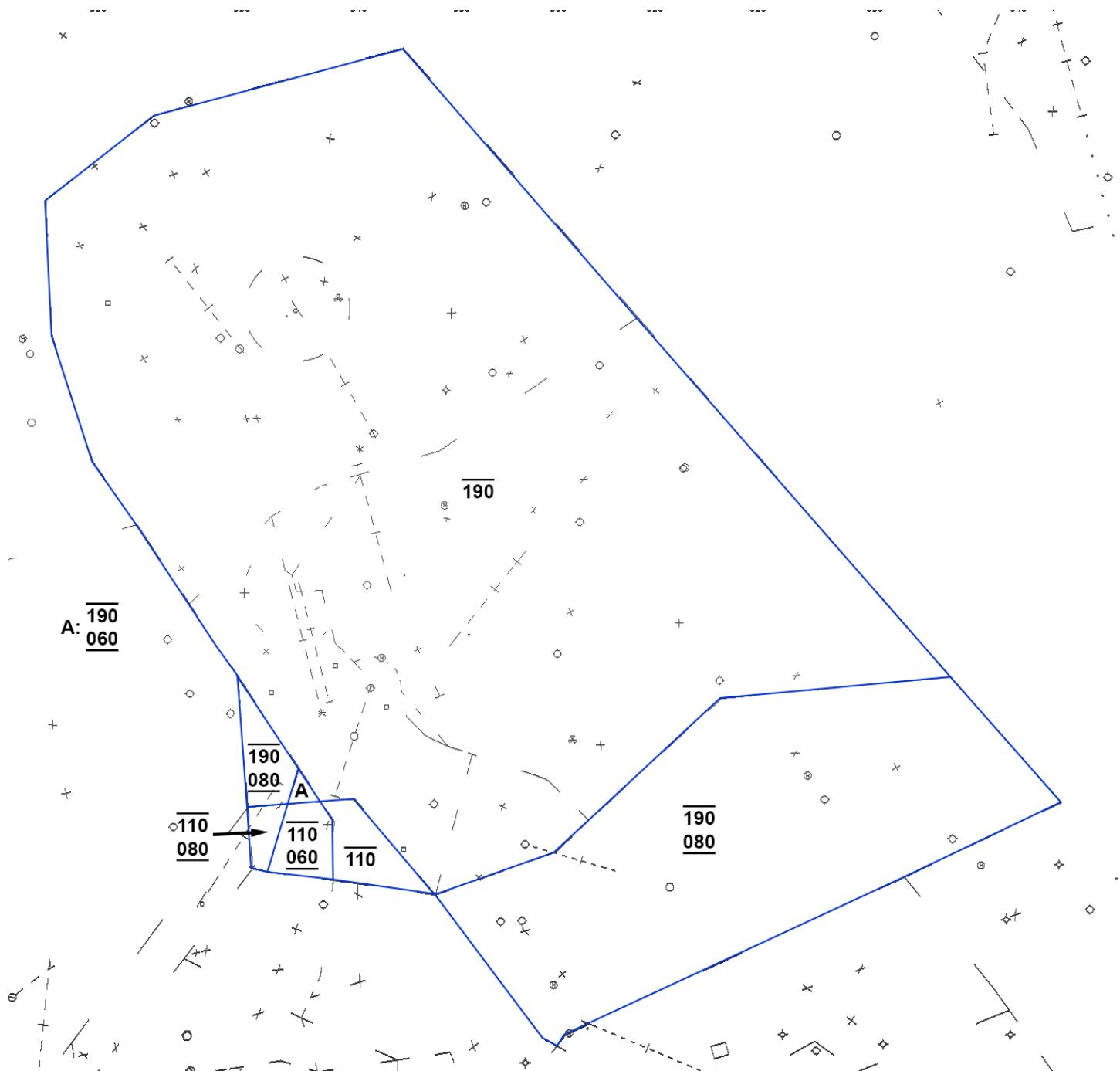
## Silver Entry Routes

SECTOR	DEST/ROUTE	ACFT	ALT	HDG/INFO
Nugget	RNO (Rwy 34) Arrivals from North	P, T, J	11,000	On Route or RV Downwind
	RNO (RWY 34) Arrivals from West		12,000	

## Silver Pre-Arranged Coordination Procedures and Sector Responsibilities

- Assume control of "Alpha Area" (120-190 shelf) during NFA's hours of operation.
- During RNO Runways 16 operations, assign VFR arrivals a left down-wind to Runway 16L.
- Coordinate RNO Runway 7 and 25 arrivals with Nugget.

## 7-7 Area E CA Combined - All Configurations



# **Appendix A. Noise Abatement**

## **A-1 General**

- a. Controllers may choose to simulate the noise abatement procedures specified in this appendix; however, they are not required to do so.
- b. Noise abatement procedures specified in this appendix are applied at all times, traffic and workload permitting, unless otherwise specified.

## **A-2 Area A**

- a. MRY
  - i. The preferred arrival procedure is the Raceway CVFP.
  - ii. Prohibit the use of the RNAV Y Runway 28L for practice approaches.
  - iii. Except when advertised or specifically requested by the pilot, do not advise aircraft to expect the RNAV Y Runway 28L approach.
  - iv. Jet aircraft departing Runways 28 via a left turn must be vectored to remain offshore until south of Point Lobos or until leaving 7,000 feet.
- b. SJC
  - i. Arrivals
    1. Runways 12: Between the hours of 2100 and 0700 local, vector jet aircraft to intercept the final approach course prior to SUNNE intersection.
    2. Runways 30:
      - a. The Fairgrounds Visual Approach must be utilized to the fullest extent possible.
      - b. Except for aircraft established on a published route, do not descend jet aircraft below 4,800 feet until the aircraft is east of the SJC 176 radial and west of a line that runs through BORED and KLIDE.
  - ii. Departures
    1. Runways 12: Do not give a right turn to jet traffic until at or above 3,000 feet
    2. Runways 30:
      - a. Do not vector jet aircraft until passing the SJC 1.8 DME and leaving 2,000 feet.
      - b. Do not turn jet aircraft toward OSI until abeam NUQ at or above 3,000 feet.

## A-3 Area B

- a. SFO
  - i. Runways 19: Jet aircraft executing visual approaches from the south and west must be vectored north of a line from Hunter's Point to the Golden Gate Bridge at 5,000 feet or above prior to being issued an approach clearance.
  - ii. Runways 28:
    - 1. Runway 28R is the preferred arrival runway and must be assigned whenever traffic permits without increasing delays.
    - 2. When traffic requires side-by arrivals, utilize CVFPs to the extent possible.
    - 3. Route SFO BDEGA# arrivals down the bay whenever practicable.
    - 4. Between the hours of 2200 and 0700 local, utilize the Quiet Bridge Approach to the maximum extent possible, including arrivals from the south, sequencing jet aircraft in-trail. The ILS Runway 28R is the primary approach when Quiet Bridge Approaches are not feasible.
    - 5. Jet aircraft executing visual approaches from the south must be vectored to turn final no closer than nine (9) miles from the runway
    - 6. All oceanic jet arrivals inbound from the west must cross OSI/ARGGG at or above 8,000 feet. Do not descend this traffic below 6,000 feet until east of V25.

## A-4 Area C

- a. HWD: Runways 28 departures must remain turn left to a heading of at least 250° until clear of the Bay shoreline.
- b. OAK
  - i. Instruct jet aircraft on a visual or VFR approach from the northeast to cross the OAK 100 radial at or above 3,000 feet.
  - ii. Vector practice approach jets to remain over the Bay.
  - iii. During SFOE or OAKE, vector all aircraft from the south or west over the Golden Gate Bridge and away from the city of San Francisco.
  - iv. During SFOE or OAKE, sequence all jets, four engine aircraft and turbo props in excess of 17,000 lbs to Runway 12 to the maximum extent practicable.
  - v. Monday through Saturday from 2200 to 0700 local, and Sunday until 0800 local in SFOW and Monday through Sunday from 2200 to 0600 local in SFOE
    - 1. Do not assign Runways 10s or Runway 15
    - 2. Vector jet aircraft inbound from the west south of OAK to remain over the bay
- c. SCK: Between the hours of 2100 and 0800 local, do not allow jet aircraft landing or departing SCK to overfly the City of Escalon.

## A-5 Area D

- a. OAK
  - i. Do not vector jet aircraft off Runways 28/30 north or east until leaving 3,000 feet
  - ii. Vector oceanic departures over the Bay to pass over the north end of the Golden Gate Bridge.
  - iii. Monday through Saturday from 2200 to 0700 local, and Sunday until 0800 local in SFOW and Monday through Sunday from 2200 to 0600 local in SFOE
    1. Tower is in a CFR status.
    2. Approve 120° heading/SUNNE# DP when operationally feasible.
    3. Do not vector aircraft off the HUSSH# or SLNT# DPs prior to REBAS.
    4. Between 0000 and 0600 local, vector prop aircraft departing runway 30 over the Bay until leaving 3,000 feet
    5. Do not vector aircraft off the SALAD# DP until reaching 3,000 feet
- b. SFO
  - i. Runways 01:
    1. Do not vector aircraft off the NIITE# DP prior to REBAS.
    2. Do not vector aircraft on the SSTIK# DP below 2,000 feet.
    3. Vector aircraft enroute to the San Jose complex along the SSTIK# DP route until crossing the SFO 281 radial, then direct OSI then per exit route
    4. When vectoring is required for traffic, vector jet departures to the northwest to remain over the Bay whenever possible.
    5. Oceanic departures may be issued a left turn after the aircraft crosses 4 miles north of SFO at or above 2,000 feet. Once the aircraft passes the SFO 281 radial, a direct route to the appropriate oceanic fix may be approved. Vector aircraft which are unable to comply with this climb restriction over the Bay and pass over the north end of the Golden Gate Bridge.
    6. Between the hours of 2200 and 0700 local (Sunday until 0800), vector oceanic departures over the Bay to pass over the north end of the Golden Gate Bridge.
    7. Aircraft departing on a 050° heading must be vectored to remain over the bay until leaving 6,000 feet.
  - ii. Runways 28:
    1. Do not vector aircraft off the NIITE# DP.
    2. Do not vector jet aircraft prior to crossing the SFO 6 DME.
    3. Between the hours of 2200 and 0700 local (Sunday until 0800), do not vector aircraft off the MOLEN# DP.
    4. Between the hours of 2200 and 0700 local (Sunday until 0800), vector aircraft issued the SFO#, SNTNA#, or GAPP# DPs west of the Peninsula Shoreline and over the north end of the Golden Gate Bridge (north/northeast bound aircraft).

## A-6 Area E CA

- a. BAB: When vectoring beyond nine (9) nm for Runway 15, restrict aircraft when on the TACAN Runway 15 final approach to cross AHART at or above 2,600 feet.
- b. MCC: Do not vector jet and 4-engine prop aircraft departing Runway 16 to the left below 3,000 feet.
- c. MHR
  - i. Runways 22 Arrivals:
    - 1. Do not issue an altitude below 3,000 feet to jet aircraft that are more than 10 miles from MHR until the aircraft is established on final.
    - 2. Vector pattern traffic to remain within 10 miles of MHR.
    - 3. Between the hours of 2200 and 0700 local:
      - a. If unable to vector aircraft inbound from the south onto the final within 10 miles of MHR, then vector onto the localizer east of LDOOR at or above 5,000 feet.
      - b. If the aircraft is on the AMRVR# arrival, clear them for the ILS Runway 22L approach at HNW.
      - c. If the aircraft is from the east and is not on the AMRVR# arrival, clear them for the ILS Runway 22L approach using one of the following procedures:
        - i. Direct HNW, cross HNW at or above 7,000.
        - ii. Direct CAMMR, cross CAMRR at or above 6,100.
        - iii. Vector to intercept outside of CAMRR at or above 6,500.
      - d. Do not clear aircraft from the east for a visual approach.
    - ii. Runways 4 Departures: Between the hours of 2200 and 0700 local, do not vector jet aircraft until passing 4,000 feet and then right turns only until passing 6,000 feet.
    - iii. Runways 22 Departures:
      - 1. Do not vector jets to the right.
      - 2. Between the hours of 2200 and 0700 local, do not vector jet aircraft until passing 4,000 feet or 6,000 feet for north/northeast departures.
  - d. SAC: Runway 20 is the noise abatement runway.
  - e. SMF
    - i. Runways 17
      - 1. Arrivals from the south: vector to remain clear of a nine (9) nm radius semi-circle east of SMF and via a downwind that is at least four (4) nm west of SMF.
      - 2. Arrivals from the north/east: vector toward TENCO for a left base no closer than nine (9) nm from SMF and remain at or above 6,000 feet until northwest of 061.

ii. Runways 35

1. Arrivals from the south: if not on route, vector to remain clear of a fifteen (15) nm radius semi-circle east of SMF for a straight-in approach only. Vector no closer than a 15-mile final and remain at or above 6,000 until west of RIU.
  2. Arrivals from the north/east: vector via a downwind that is at least 4 miles west of SMF.
- iii. Between the hours of 2145 and 0745 local:
1. Assign Runways 35 to the maximum extent possible.
  2. Assign the following to IFR/VFR practice approach aircraft:
    - a. Heading 010° and 3,000 feet.
    - b. An east traffic pattern to Runway 17L/35R
  3. Do not approve aircraft maneuvers west of the airport.
  4. Vector practice approach jet aircraft for an east downwind leg to intercept the final approach course not less than nine (9) nm from the airport.

## A-7 Area E NV

a. RNO

- i. Do not turn jet and large turboprop departures off the assigned DP until the aircraft has passed beyond 5 miles from the runway.
- ii. Avoid altitude assignments below 10,000 feet to jet and large turboprop departures.
- iii. To the extent possible, use Runways 16 for noise abatement.

# Attachment 1. vSTARS Maps

To load a map press *Ctrl + F2* then type the map ID number and press enter.

The following maps are most common for everyday use:

ID	NAME	DESCRIPTION
1	LO-W_S	NCT Low Map West/South Configurations
2	LO-E_N	NCT Low Map East/North Configurations
3	MVAC	NCT Minimum Vectoring Altitude
4	AIRWAYS	NCT Airways
6	GEOG	NCT Geography
9	HI-W_S	NCT High Map West/South Configurations
10	HI-E_N	NCT High Map East/North Configurations
11	TDM	Top-down Map (taxiway outlines in vSTARS top-down mode)
16	AIRSPAC	Class C/D Airspace Map
27	CBA	Class Bravo with no labels

The following table includes a selection of additional maps that may be useful:

ID	NAME	DESCRIPTION
5	EOVM	NCT Emergency Obstructions Video Map
15	EMERG	Emergency Airports Map (includes lighting/runway length)
17	T-RTE	T-Routes
21	FIN-W_S	Final Approach Courses for West Plan
22	FIN-E_N	Final Approach Courses for East Plan
25	DOTS	Dots outlining MVA sector boundaries
26	CBA_LBL	Class Bravo with labels
29	FLYWYTX	Bay Flyways with labels
31	A_SIDS	Area A SIDs
34	D_SIDS	Area D SIDs
35	E_SIDS	Area E CA SIDs
36	R_SIDS	Area E NV SIDs
41	A_STARS	Area A STARs
42	B_STARS	Area B STARs
43	C_STARS	Area C STARs
44	D_STARS	Area D STARs
45	E_STARS	Area E CA STARs
46	R_STARS	Area E NV STARs
53	PROMOBS	Prominent obstacles map without altitude labels
54	PROMALT	Prominent obstacles map with altitude labels
61	A_GPS1	Area A RNAV Approaches Part 1
62	A_GPS2	Area A RNAV Approaches Part 2
63	B_GPS	Area B RNAV Approaches
65	C_GPS	Area C RNAV Approaches Part 1
66	C_GPS2	Area C RNAV Approaches Part 2
67	D_GPS	Area D RNAV Approaches
69	E_GPS_S	Area E RNAV Approaches