Presentation on Five Proposed New/Revised FAA North Arrival Flight Procedures for LAX.

All are at Flight Check

Comment period open to 9/25 &9/26

LAX Roundtable – Special Meeting – September 20, 2017

Prepared by Michael Salman, UNNC representative

I have classified the proposed procedures into three groups, with distinct issues in each group:

1 – Revisions: HUULL 2, IRNMN 2, RYDDR 2
2 – Revision: SADDE 8
3 – New Procedure: BAYST 1

Let’s proceed as follows:

- look at each group
- compare new vs old procedures for the revisions
- discuss them group by group after this presentation
- we can then consider whether to take action on any or all of them

GROUP #1

Revisions: HUULL 2, IRNMN 2, RYDDR 2

All are RNAV procedures

IRNMN HUULL & RYDR STAR

Los Angeles World Airports

Federal Aviation Administration (FAA)
SoCal Metroplex Project
LAWA Briefing to City Council IGTC&T Committee

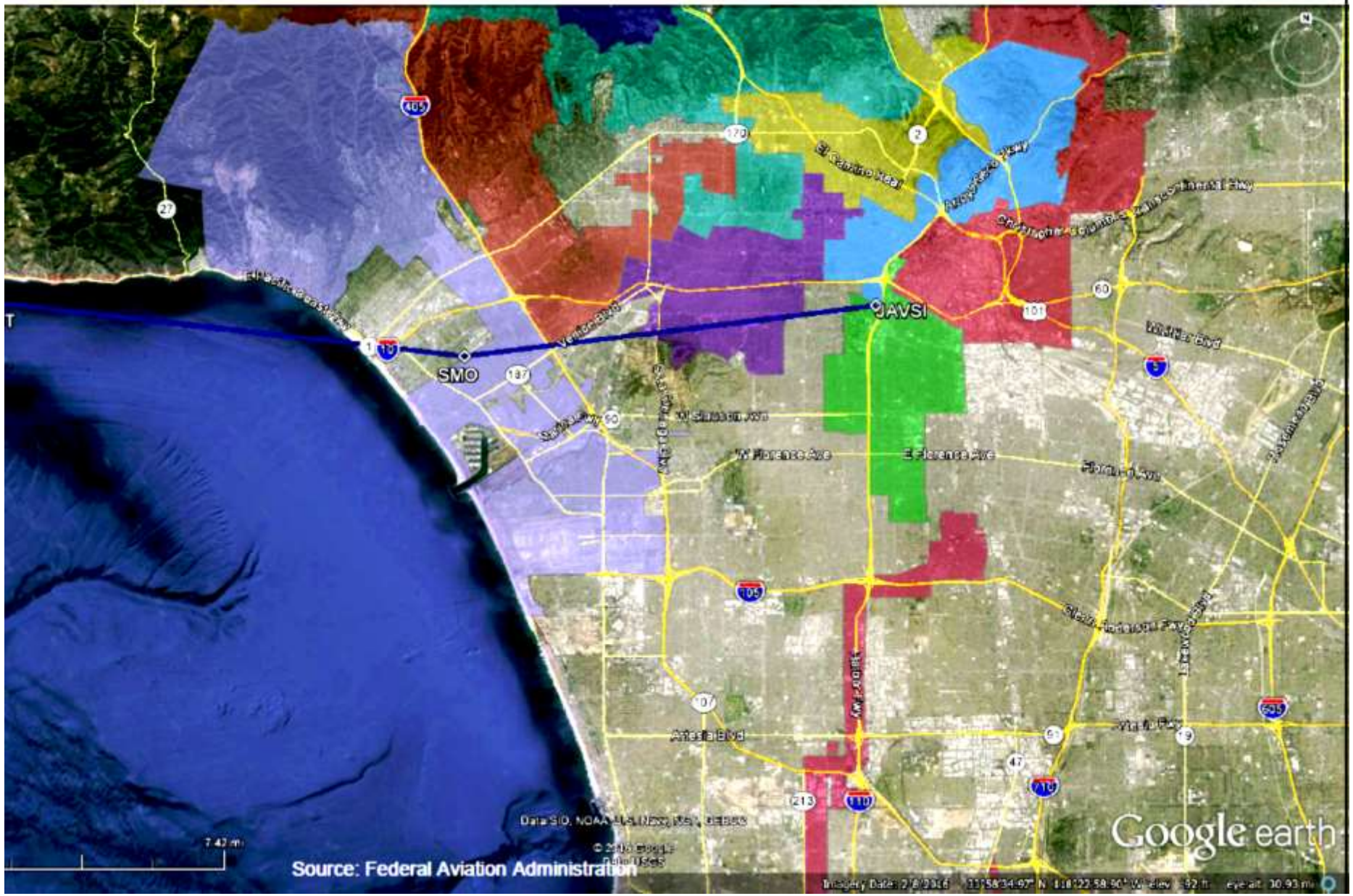
Los Angles World Airports

Noise Management

June 7, 2016

LAX North Arrival Downwind Leg

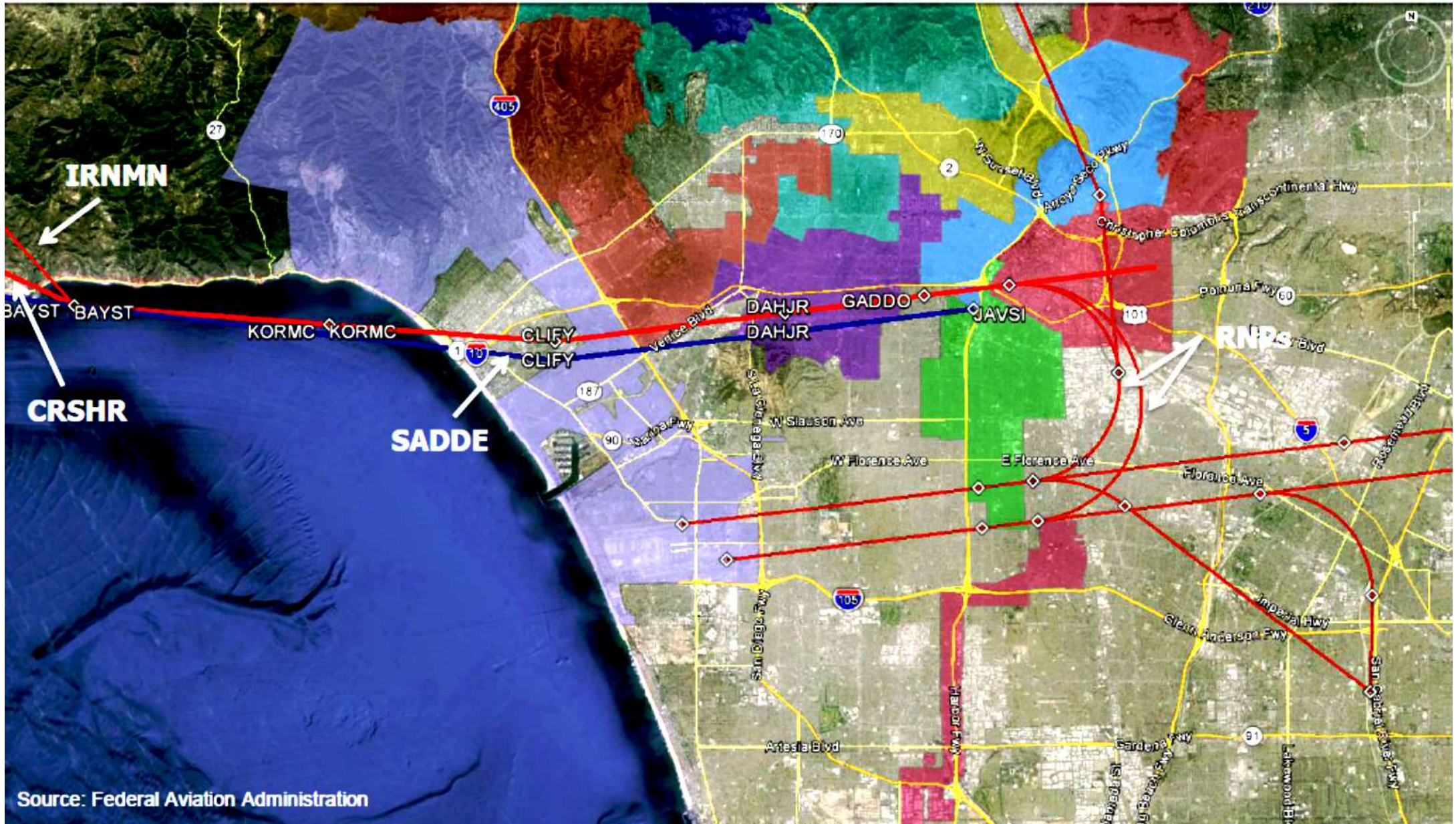
Current Procedure: SADDE 6



LAX North Arrival Downwind Leg

SADDE6 vs. Proposed CRSHR and IRNMN RNAVs and RNPs

Los Angeles World Airports



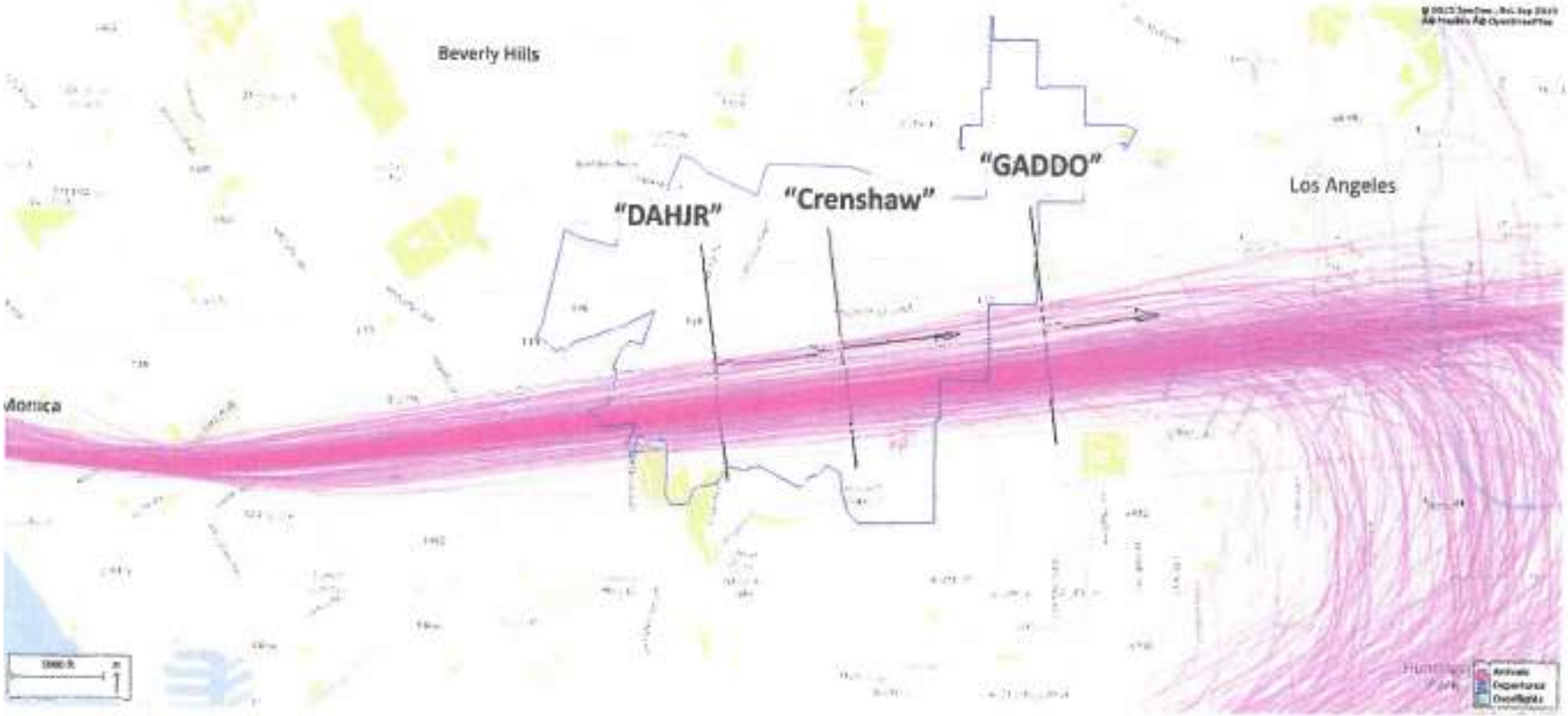
Flight Tracks, Dispersion Graphs, & Altitude Data that LAWA Gave to Office of L.A. City Council President Herb Wesson

1) **Comparing Pre vs Post NextGen = Apples vs Oranges**
2) **What Matters: Concentrated Flight Path, Over New Area, New Waypoints, New Min Alt, New Noise Impact, FAA Does Not Observe Own Rules**

Representative Daily Flight Tracks Over CD-10

November 7, 2016

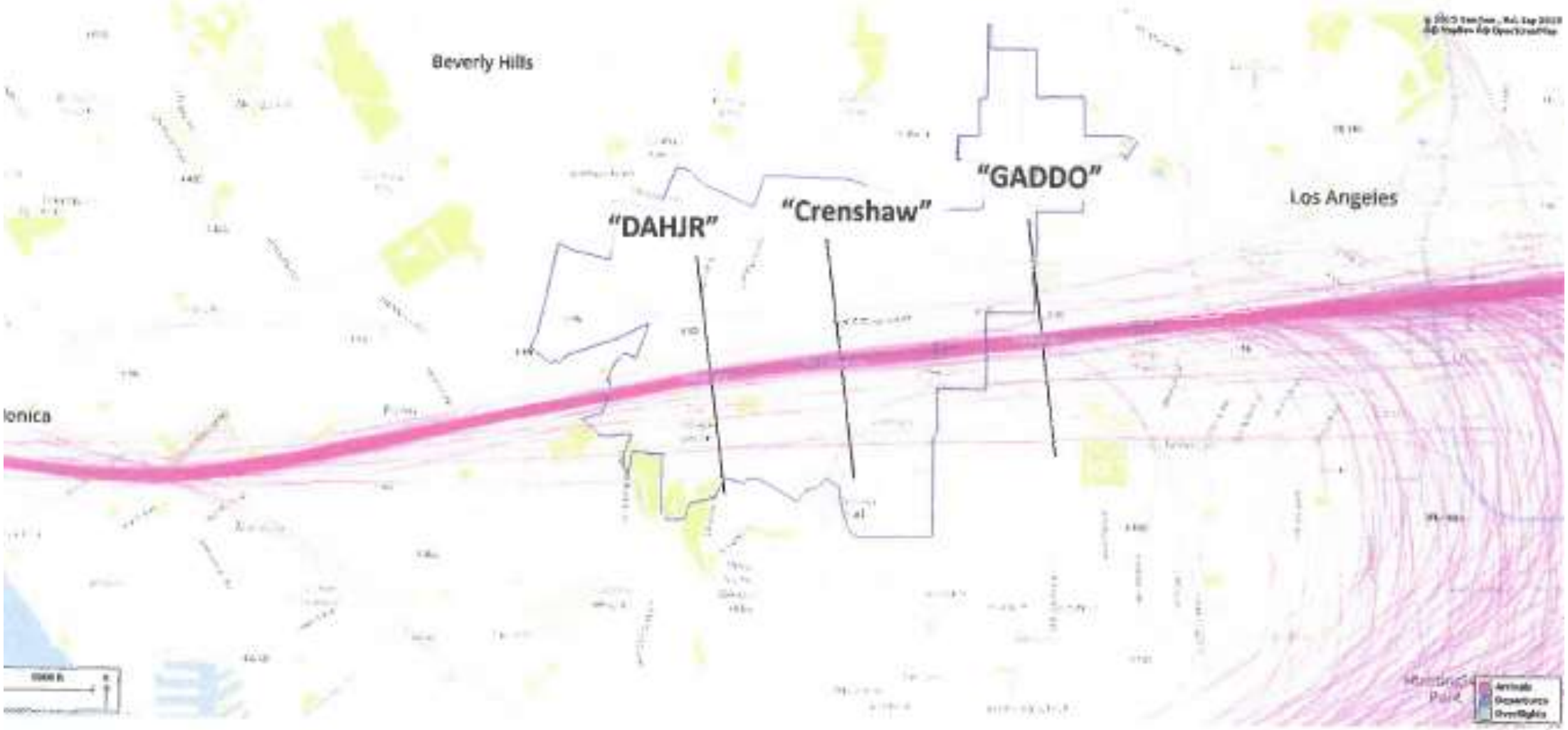
(922 operations)



Representative Daily Flight Tracks Over CD-10

May 8, 2017

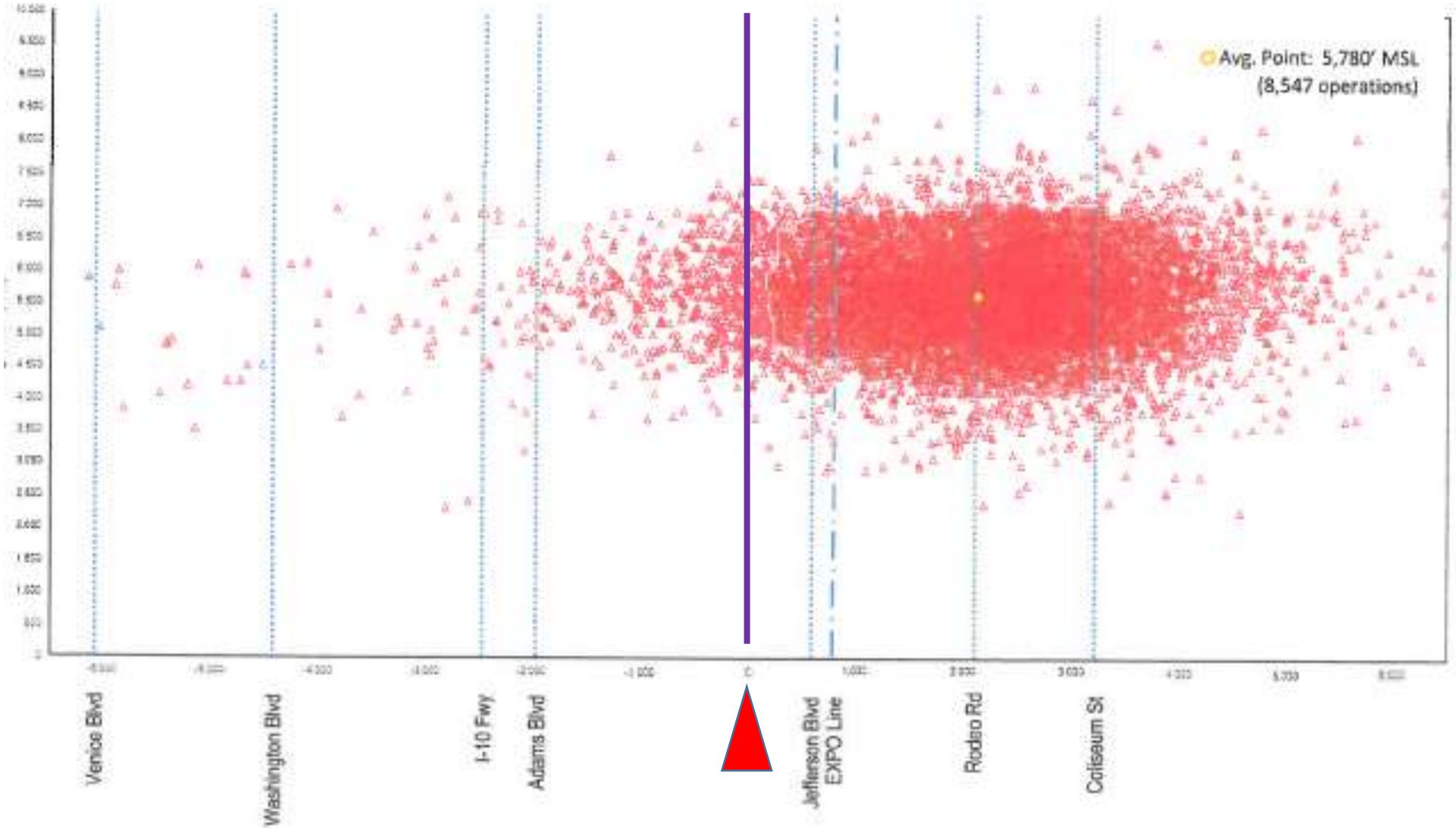
(984 operations)



Aircraft Gate Penetration Plot at "DAHJR"

(Centered near S. Redondo Blvd and Blackwelder St)

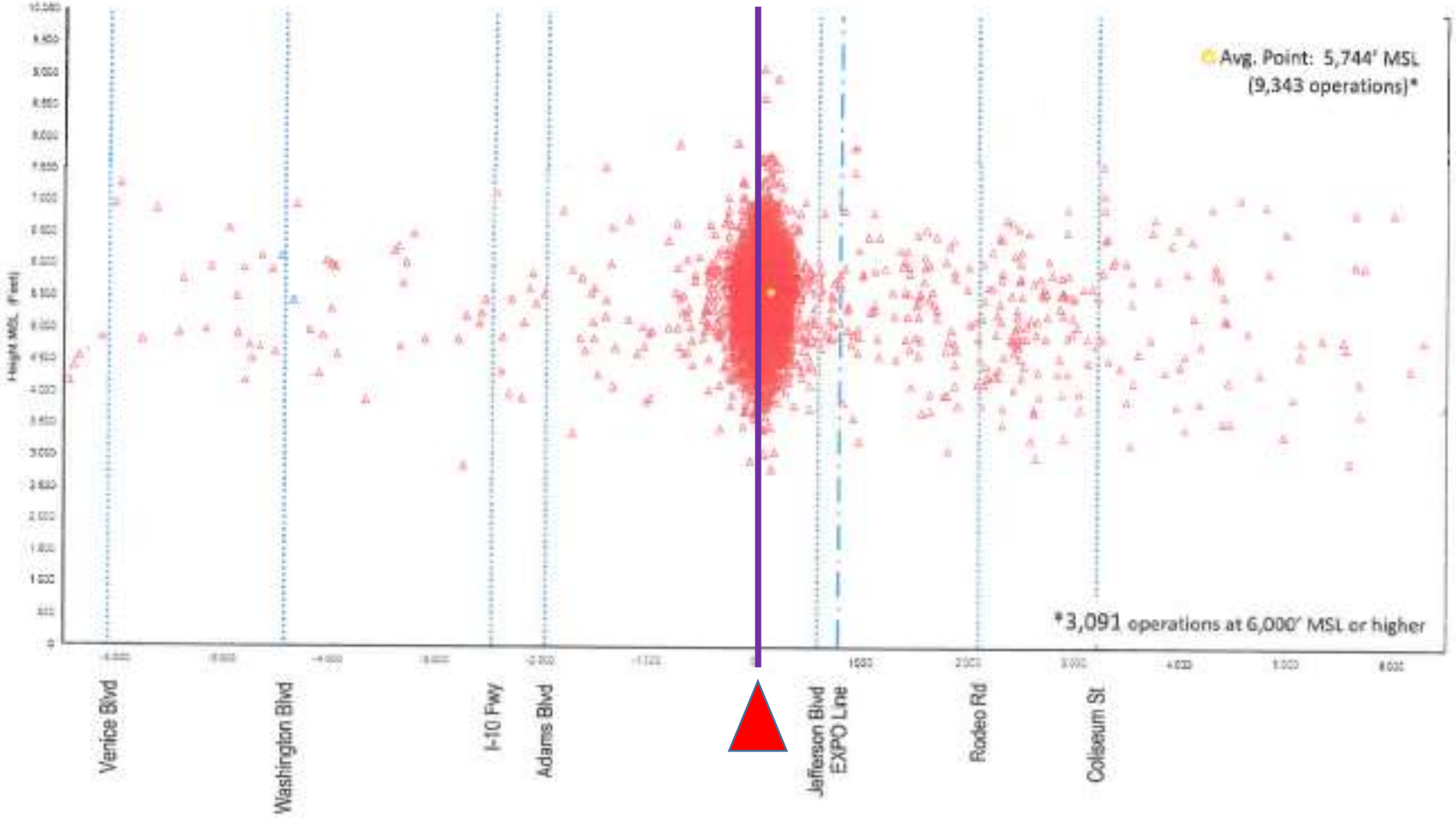
November 1-30, 2016



Aircraft Gate Penetration Plot at "DAHJR"

(Centered near S. Redondo Blvd and Blackwelder St)

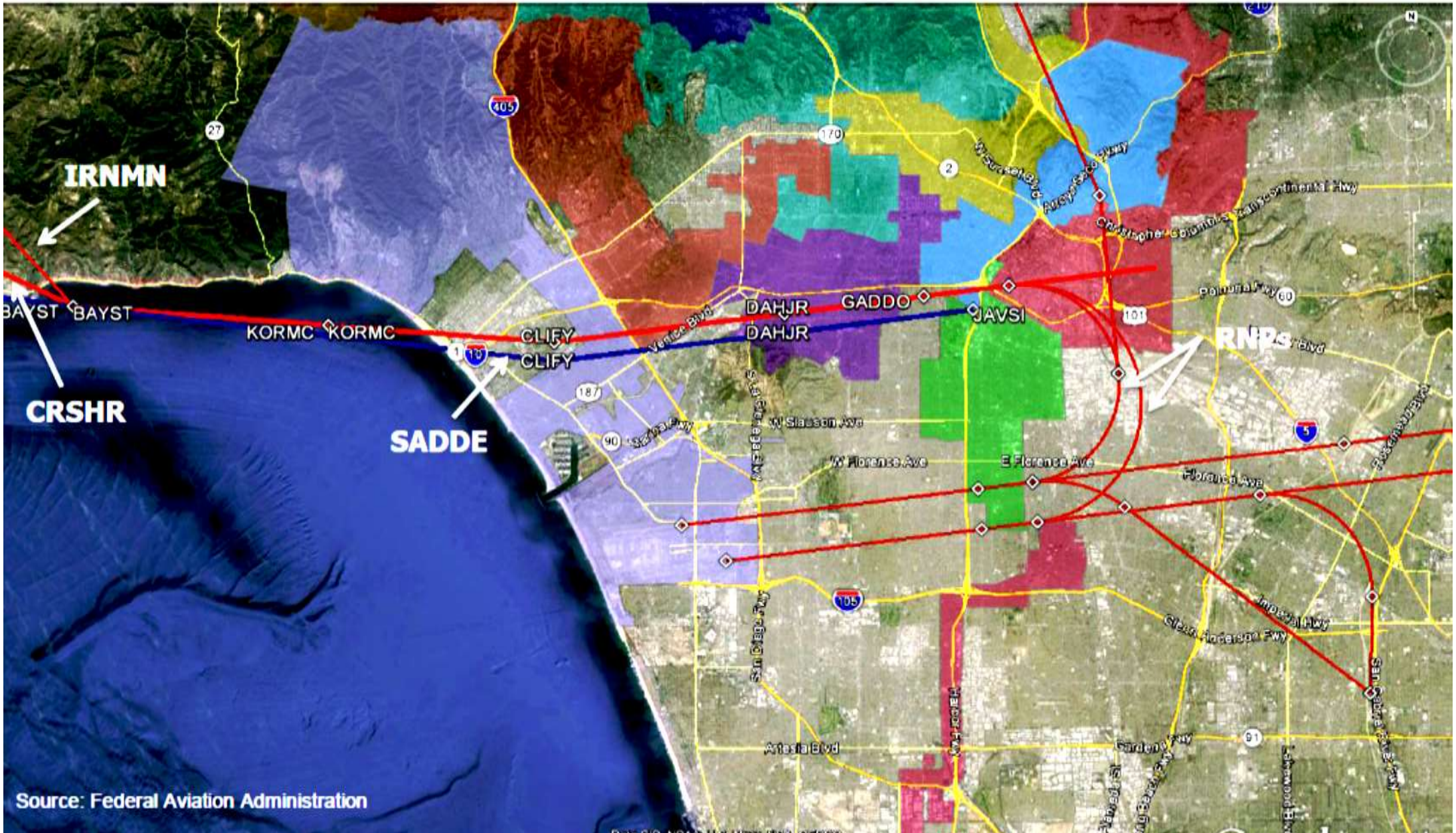
May 1-31, 2017



LAX North Arrival Downwind Leg

SADDE6 vs. Proposed CRSHR and IRNMN RNAVs and RNPs

Los Angeles World Airports



Nov-2016				
Altitude MSL (ft)	Count of Ops	% of Ops		
>9500	1	0.0%		
9000-9500	2	0.0%		
8500-9000	4	0.0%		
8000-8500	14	0.2%		
7500-8000	54	0.6%		
7000-7500	367	4.3%		
6500-7000	1113	13.0%		
6000-6500	1732	20.3%		
5500-6000	2230	26.1%	Count of Ops	% of Ops
5000-5500	1815	21.2%		
4500-5000	801	9.4%		
4000-4500	266	3.1%		
3500-4000	106	1.2%		
3000-3500	30	0.4%		
2500-3000	10	0.1%		
<2500	2	0.0%		
Grand Total	**8547**	**100%**	**5260**	**62%**

Mar-2017				
Altitude MSL (ft)	Count of Ops	% of Ops		
>9500	1	0.0%		
9000-9500	2	0.0%		
8500-9000	5	0.1%		
8000-8500	14	0.2%		
7500-8000	68	0.8%		
7000-7500	392	4.4%		
6500-7000	1166	13.0%		
6000-6500	1904	21.3%		
5500-6000	2416	27.0%	Count of O	% of Ops
5000-5500	1861	20.8%		
4500-5000	734	8.2%		
4000-4500	251	2.8%		
3500-4000	90	1.0%		
3000-3500	29	0.3%		
2500-3000	6	0.1%		
Grand Total	**8939**	**100%**	**5387**	**60%**

DAHJR MONTHLY

May-2017

Altitude MSL (ft)	Count of Ops	% of Ops
9000-9500	2	0.0%
8500-9000	1	0.0%
8000-8500	3	0.0%
7500-8000	14	0.1%
7000-7500	71	0.8%
6500-7000	296	3.2%
6000-6500	2704	28.9%
5500-6000	3773	40.4%
5000-5500	1707	18.3%
4500-5000	551	5.9%
4000-4500	162	1.7%
3500-4000	47	0.5%
3000-3500	11	0.1%
2500-3000	1	0.0%
Grand Total	**9343**	**100%**

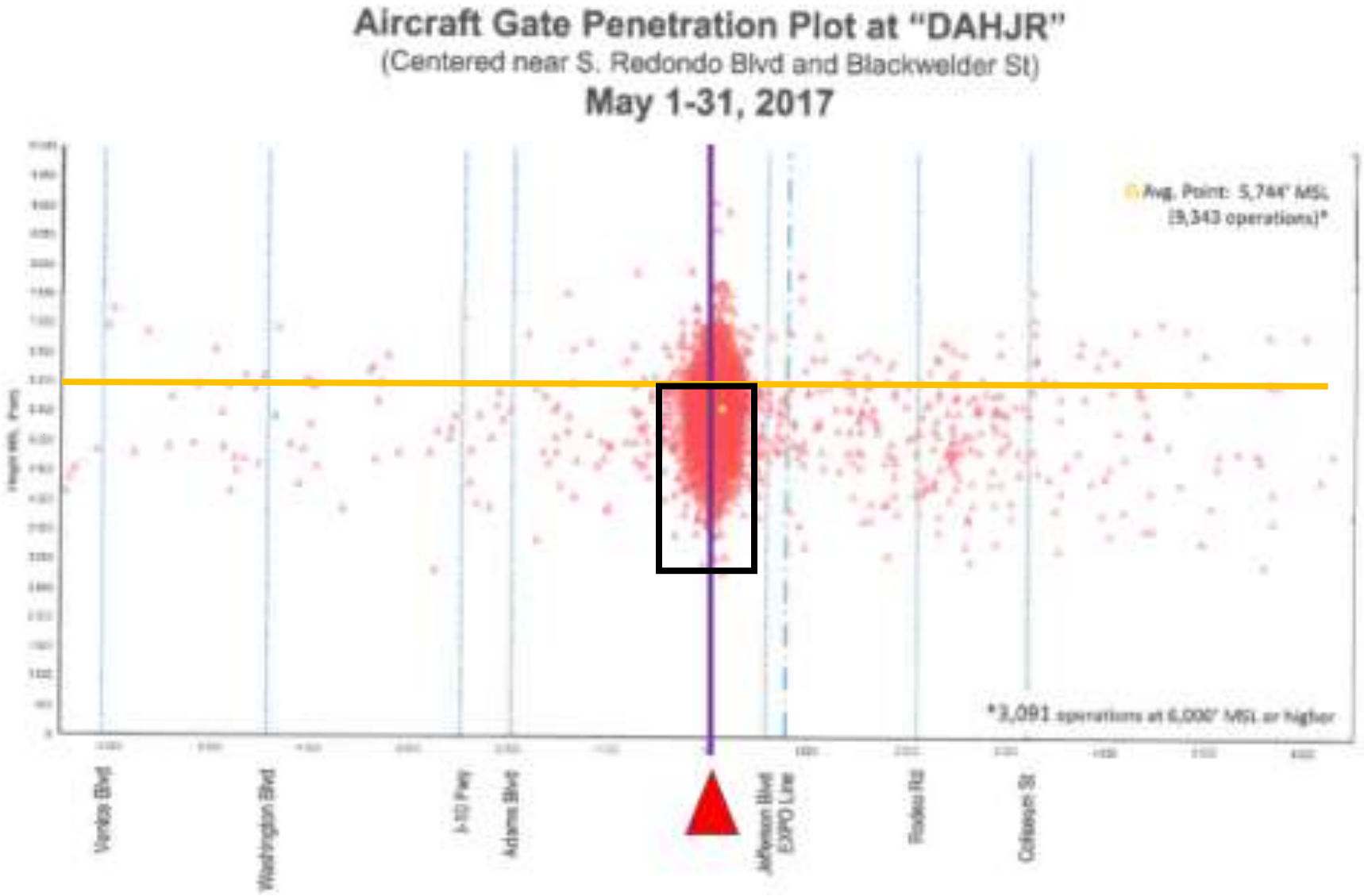
Count of O	% of Ops
6252	67%

Jul-2017

Altitude MSL (ft)	Count of Ops	% of Ops
>9500	1	0.0%
9000-9500	0	0.0%
8500-9000	5	0.1%
8000-8500	8	0.1%
7500-8000	14	0.1%
7000-7500	60	0.6%
6500-7000	290	2.9%
6000-6500	2919	29.6%
5500-6000	4251	43.1%
5000-5500	1672	16.9%
4500-5000	464	4.7%
4000-4500	134	1.4%
3500-4000	35	0.4%
3000-3500	12	0.1%
2500-3000	1	0.0%
<2500	1	0.0%
Grand Total	**9867**	**100%**

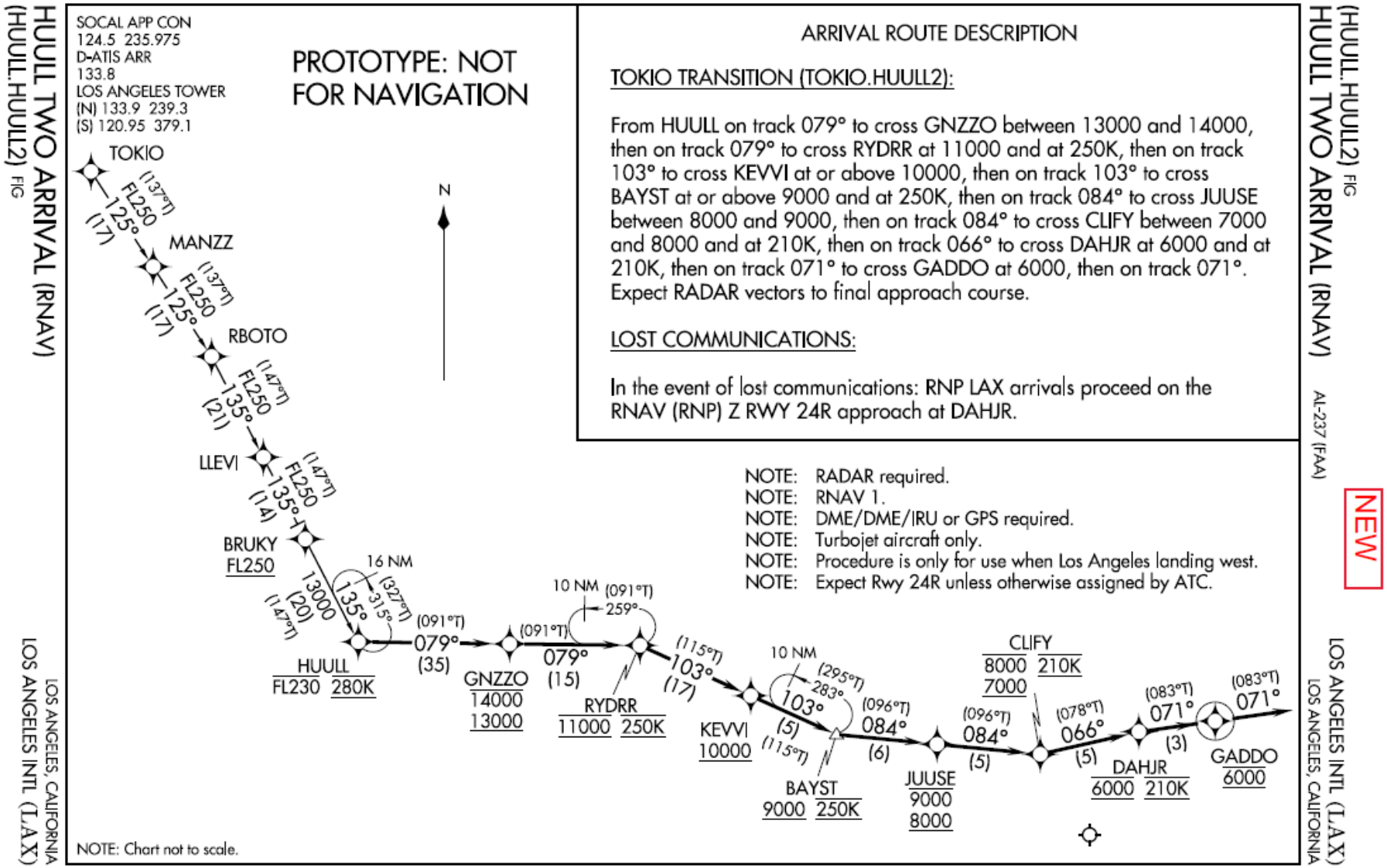
Count of O	% of Ops
6570	67%

This Noise Zone is an Entirely New Phenomenon

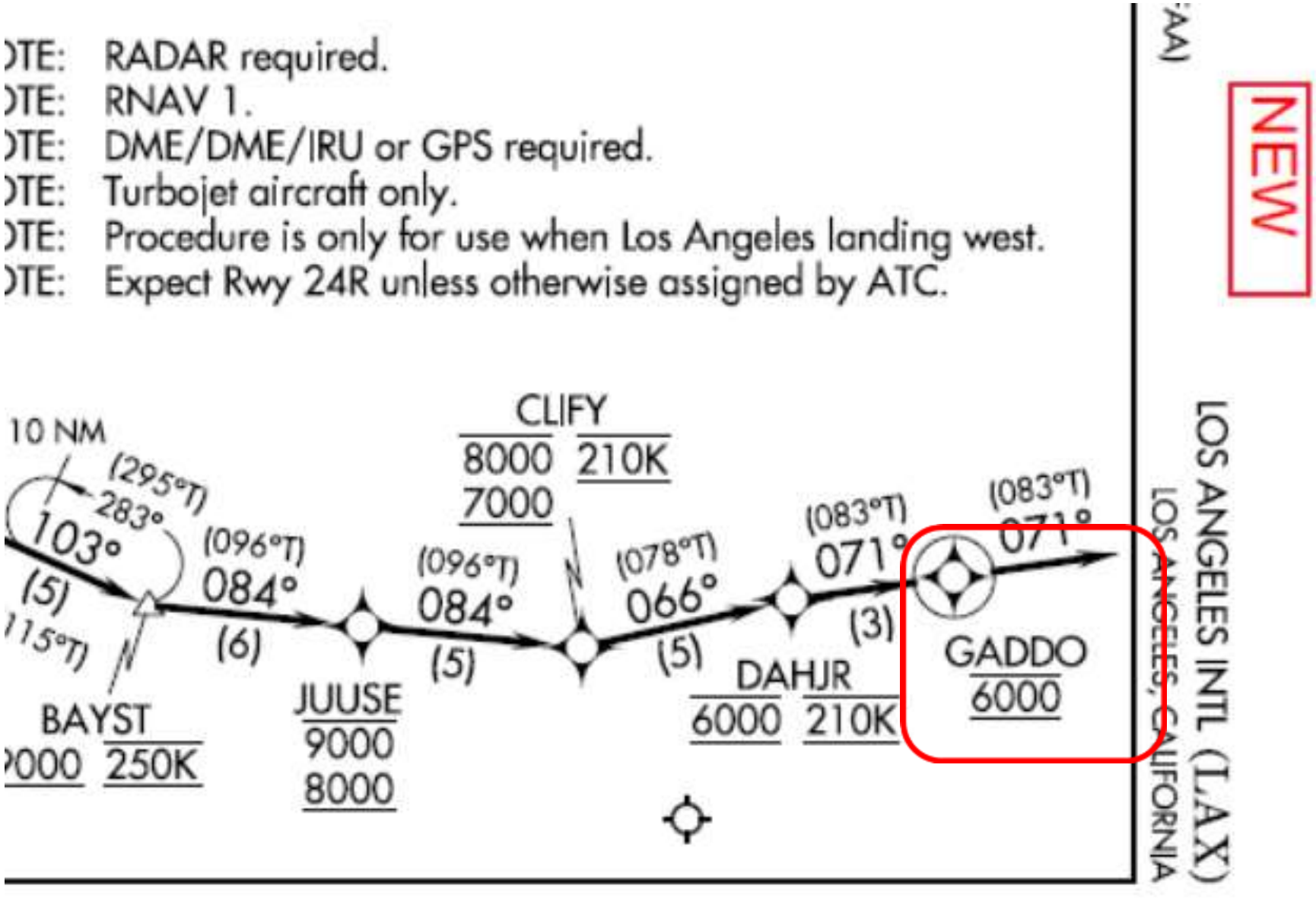


FAA’s Proposed Revisions to HUULL, IRNMN, RYDRR

HUULL 2 – Proposed Revision at Flight Check



HUULL 2 – Blow up of LA Basin end of approach



HUULL 1 – Blow up of LA Basin end of approach

ARRIVAL ROUTE DESCRIPTION

TOKIO TRANSITION (TOKIO.HUULL1)

From HUULL on track 079° to cross GNZZO between 14000 and 16000, then on track 079° to cross RYDRR at 11000, then on track 103° to cross KEVVI at or above 10000 and at 250K, then on track 103° to cross BAYST at or above 9000 and at 240K, then on track 084° to cross JUUSE between 8000 and 9000, then on track 084° to cross CLIFY between 7000 and 8000 and at 210K, then on track 066° to cross DAHJR at 6000 and at 210K, then on track 071° to GADDO, then on track 071°. Expect RADAR vectors to final approach course.

LOST COMMUNICATIONS

In the event of lost communications: RNP LAX arrivals proceed on the RNAV (RNP) Z RWY 24R approach at DAHJR.

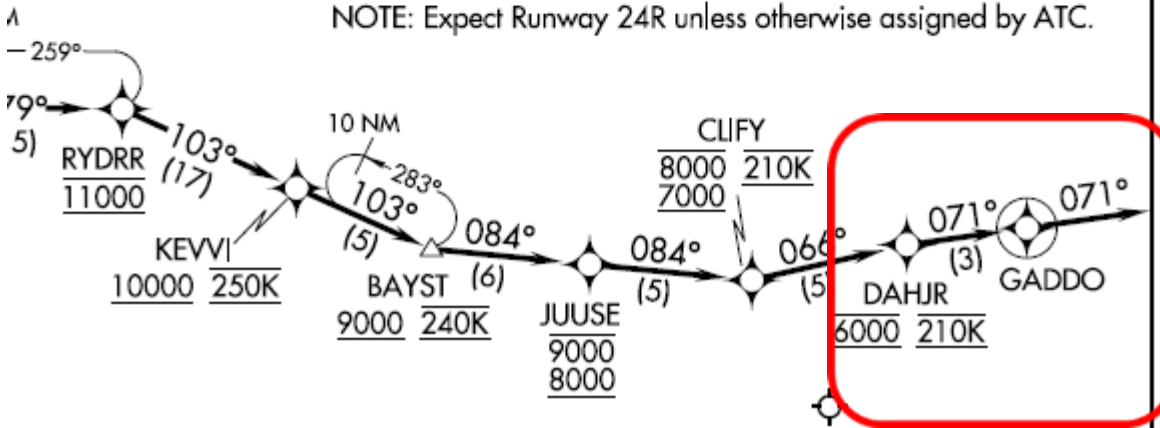
(HUULL.HUULL1) 17117

HUULL ONE ARRIVAL (RNAV)

AL-237 (FAA)

OLD

NOTE: RADAR required.
NOTE: RNAV 1.
NOTE: DME/DME/IRU or GPS required.
NOTE: Turbojet aircraft only.
NOTE: Procedure is only for use when Los Angeles landing west.
NOTE: Expect Runway 24R unless otherwise assigned by ATC.



LOS ANGELES INTL (LAX)

Why is GADDO getting a Min Alt now?

FAAO 8260.3C, par 2-2-1 (f)(6)(b) (effective March 14, 2016)

If the STAR authorizes radar vectors after the termination fix/NAVAID, an altitude is required at the termination fix and that altitude must be at or above the minimum vectoring altitude (MVA) and/or minimum IFR altitude (MIA) (as applicable). If the STAR authorizes radar vectors after the termination fix/NAVAID and does not join an approach, then the altitude authorized at the termination fix should be a mandatory altitude.

Note: If the STAR termination fix will be authorized for either joining an approach or for radar vectors, the altitude must match the approach altitude [see paragraph 2-2-1.f(6)(a)] and must be above the MVA/MIA [see paragraph 2-2-1.f(6)(b)].

FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
STANDARD TERMINAL ARRIVAL (STAR)

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet, MSL. Altitudes are minimum altitudes unless otherwise indicated.
Distances are in nautical miles (NM). Graphic depictions attached.

Arrival Name	Number	STAR Computer Code	Superseded Number	Dated	Effective Date
HUULL (RNAV)	TWO	HUULL.HUULL2	ONE	04/27/2017	

ADDITIONAL FLIGHT DATA:

DME/DME ASSESSMENT: SAT (RNP 2.0)

REFERENCE MAGNETIC VARIATION = KLAX 12E/2020

DO NOT CHART MOCAS.

FLIGHT INSPECTED BY:

Name	Organization	Date	Signature

DEVELOPED BY:

Name	Organization	Date	Signature
Robert E. Henry - FAA Lead Jose Gonzalez, NATCA Co-Lead	Southern California Metroplex	06/02/2017	

APPROVED BY:

Name	Organization	Date	Signature
S. L. Shrimpton	Acting Manager, WSC-OSG		

CHANGES:

1. ADDED BRUKY WAYPOINT AND RESTRICTION AT OR ABOVE FL250 BETWEEN LLEVI AND HUULL.
2. AMENDED MEA BETWEEN TOKIO/MANZZ, MANZZ/RBOTO, RBOTO/LLEVI FROM 14000 TO FL250, BETWEEN BRUKY/HUULL FROM 14000 TO 13000.
3. CHANGED RESTRICTION AT HUULL FROM "AT OR BELOW FL250" TO "AT OR BELOW FL230".
4. CHANGED RESTRICTION AT GNZOO FROM "BETWEEN 14000 AND 16000" TO "BETWEEN 13000 AND 14000".
5. ADDED SPEED RESTRICTION AT RYDRR "AT 250K".
6. REMOVED SPEED RESTRICTION AT KEVVI "AT 250K".
7. CHANGED SPEED RESTRICTION AT BAYST FROM "240K" TO "250K"
8. ADDED RESTRICTION "AT 6000" TO GADDO WAYPOINT.
9. FM LEG CHANGED FROM 071.00 TO 071.01.

REASONS:

1, 3, 4. ATC REQUEST FOR SEPARATION FROM CROSSING DEPARTURE AIRCRAFT.
2. CORRECTED MEA TO MATCH OPERATIIONAL MINIMUM RESTRICTIONS AT BRUKY AND GNZZO.
5, 6. ATC REQUEST FOR IMPROVED SEQUENCING OF ARRIVALS.
7. IAW FAAO 8260.3C PARA 2-2-1h.
8. REQUIRED PER FAAO 8260.3C PARA 2-2-1f(6)(b).
9. ALIGN WITH LEG INTO GADDO.

QUALITY 14 CHECKED

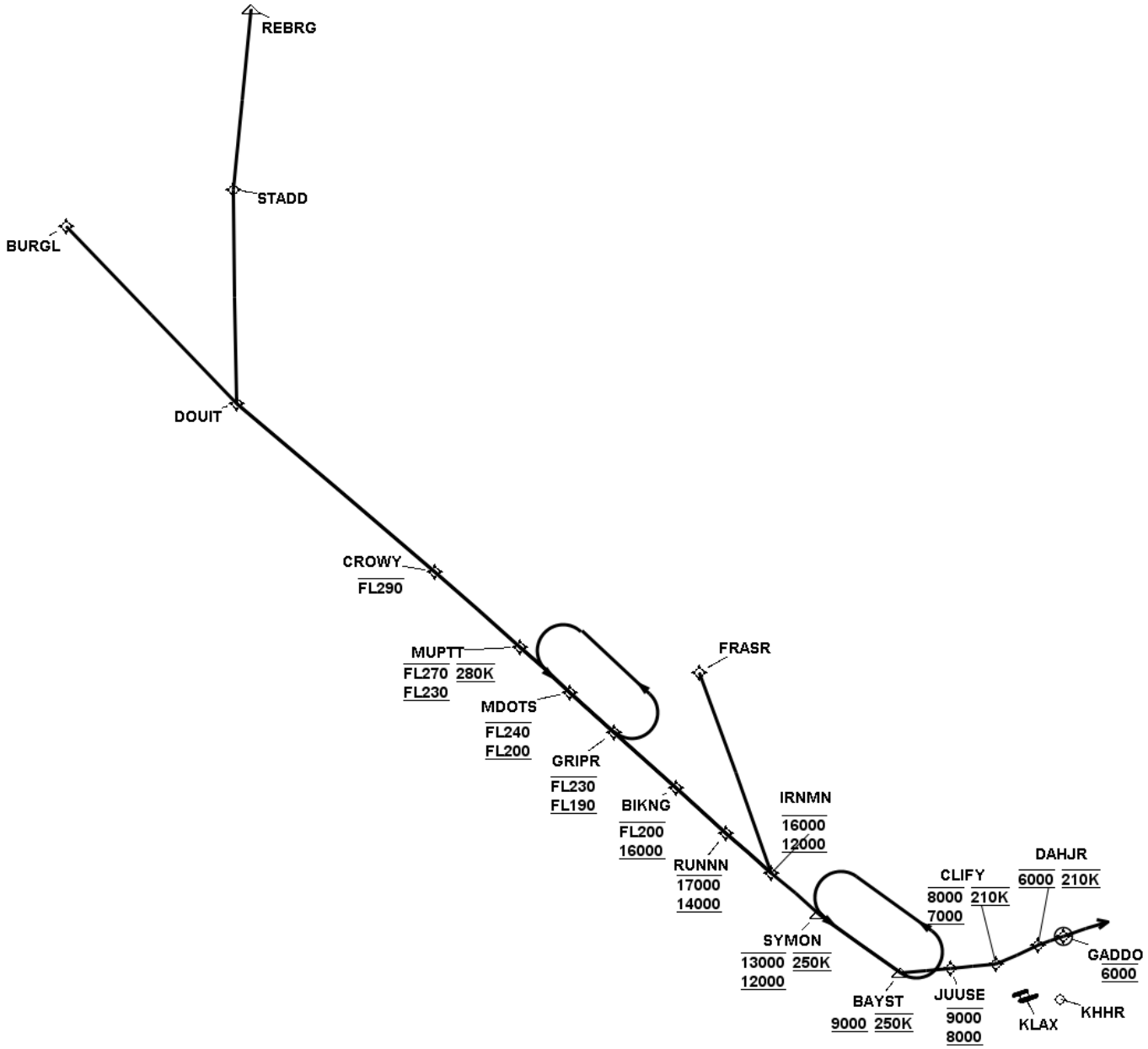
CHANGES:

1. ADDED BRUKY WAYPOINT AND RESTRICTION AT OR ABOVE FL250 BETWEEN LLEVI AND HUULL.
2. AMENDED MEA BETWEEN TOKIO/MANZZ, MANZZ/RBOTO, RBOTO/LLEVI FROM 14000 TO FL250, BETWEEN BRU
3. CHANGED RESTRICTION AT HUULL FROM "AT OR BELOW FL250" TO "AT OR BELOW FL230".
4. CHANGED RESTRICTION AT GNZOO FROM "BETWEEN 14000 AND 16000" TO "BETWEEN 13000 AND 14000".
5. ADDED SPEED RESTRICTION AT RYDRR "AT 250K".
6. REMOVED SPEED RESTRICTION AT KEVVI "AT 250K".
7. CHANGED SPEED RESTRICTION AT BAYST FROM "240K" TO "250K"
8. ADDED RESTRICTION "AT 6000" TO GADDO WAYPOINT.
9. EM LEG CHANGED FROM 071.00 TO 071.01.

REASONS:

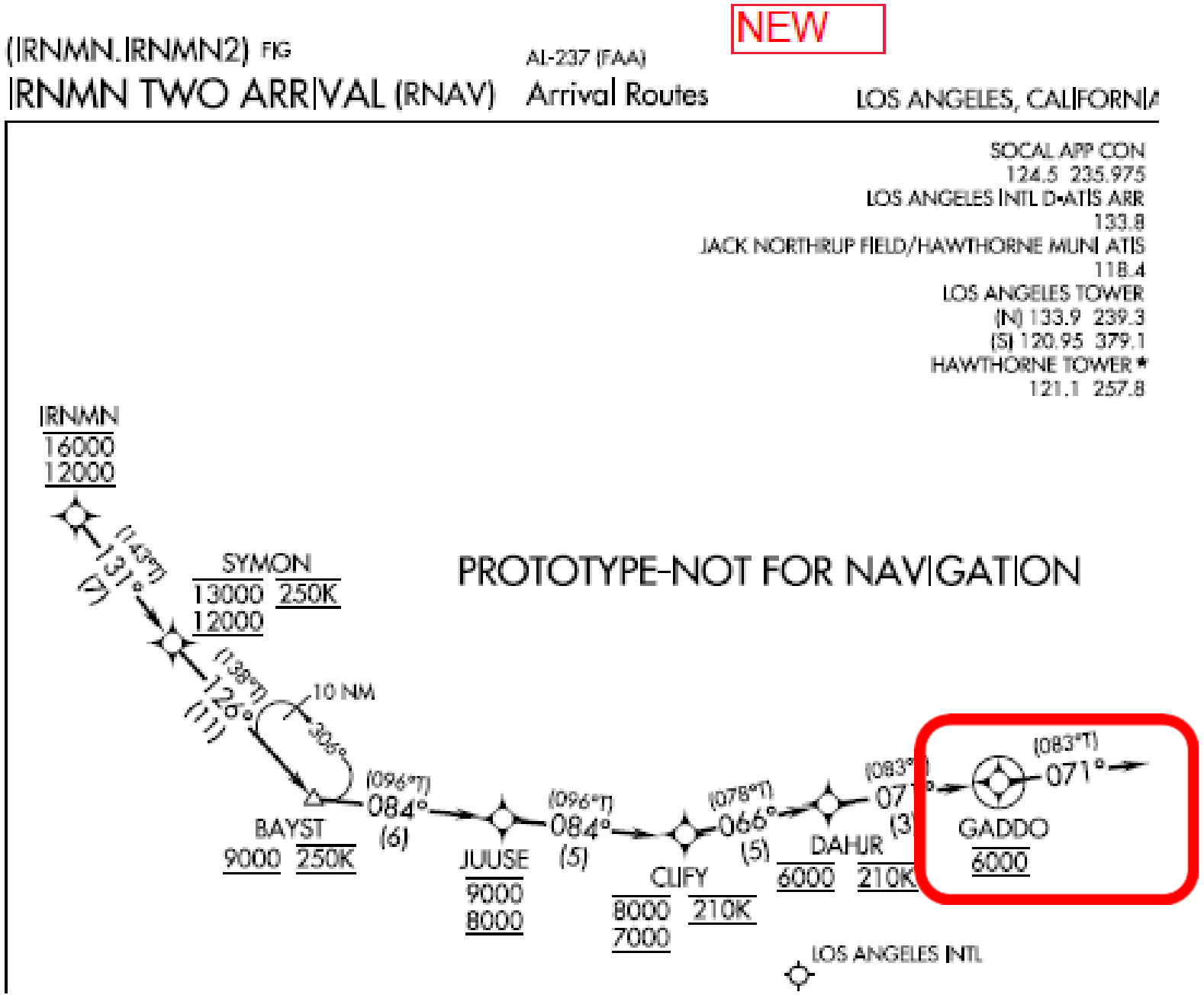
1, 3, 4. ATC REQUEST FOR SEPARATION FROM CROSSING DEPARTURE AIRCRAFT.
2. CORRECTED MEA TO MATCH OPERATIIONAL MINIMUM RESTRICTIONS AT BRUKY AND GNZZO.
5, 6. ATC REQUEST FOR IMPROVED SEQUENCING OF ARRIVALS.
7. IAW FAAO 8260.3C PARA 2-2-1b.
8. REQUIRED PER FAAO 8260.3C PARA 2-2-1f(6)(b).
9. ALIGN WITH LEG INTO GADDO.

IRNMN 2 – Proposed Revision at Flight Check

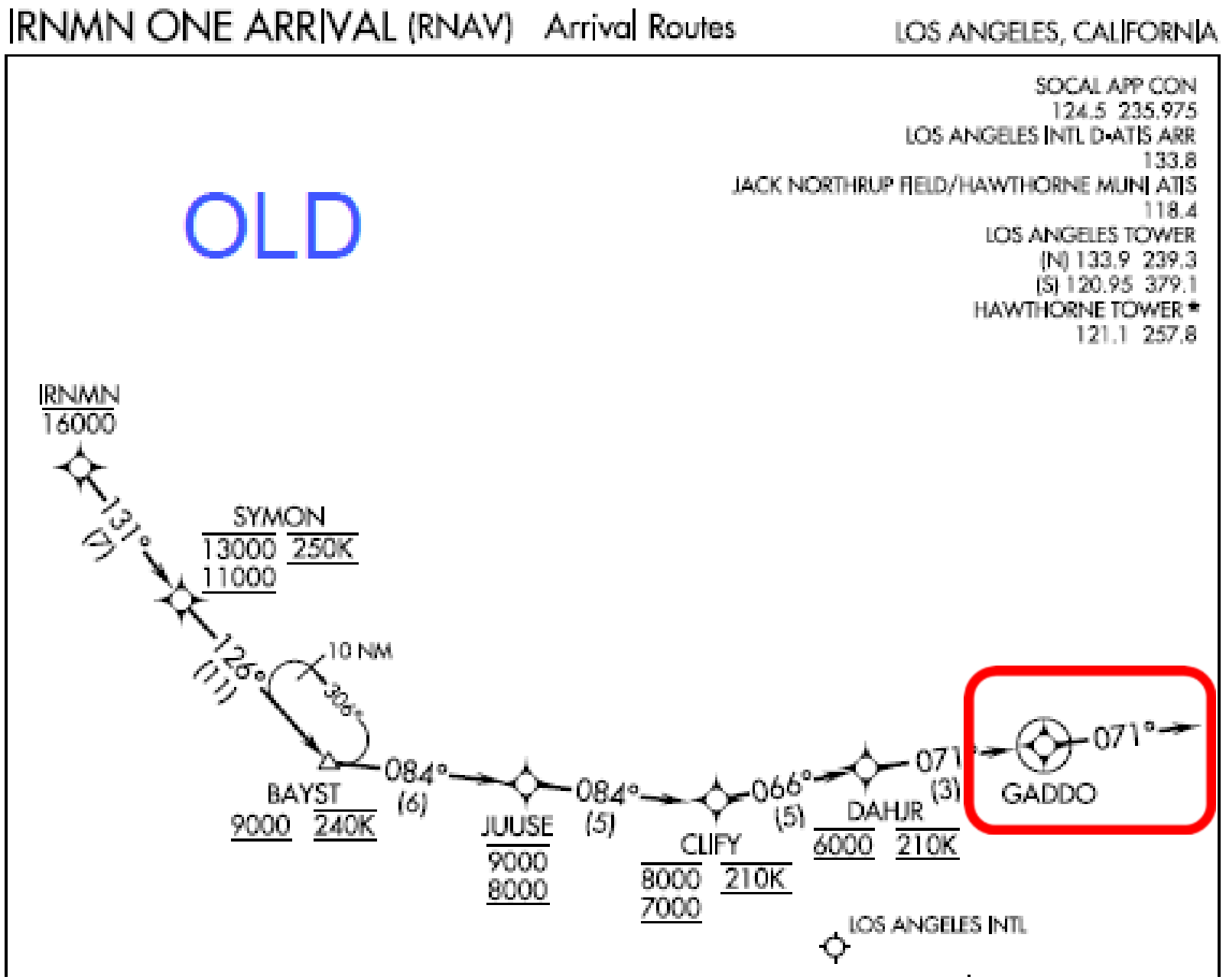


IRNMN 2 – Blow up of LA Basin end of approach

NEW



IRNMN 1 – Blow up of LA Basin end of approach



RYDRR 2 – Proposed Revision at Flight Check

FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
STANDARD TERMINAL ARRIVAL (STAR)

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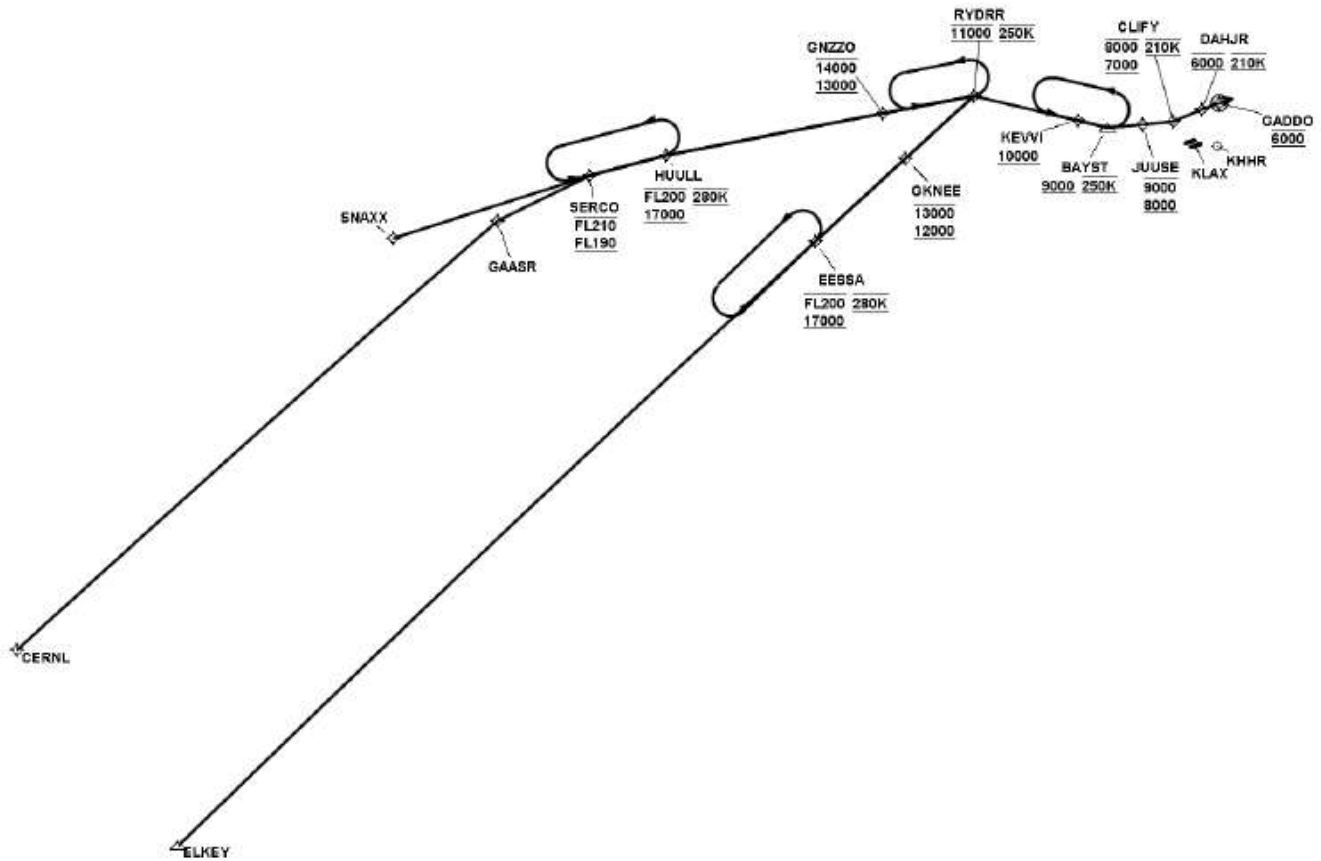
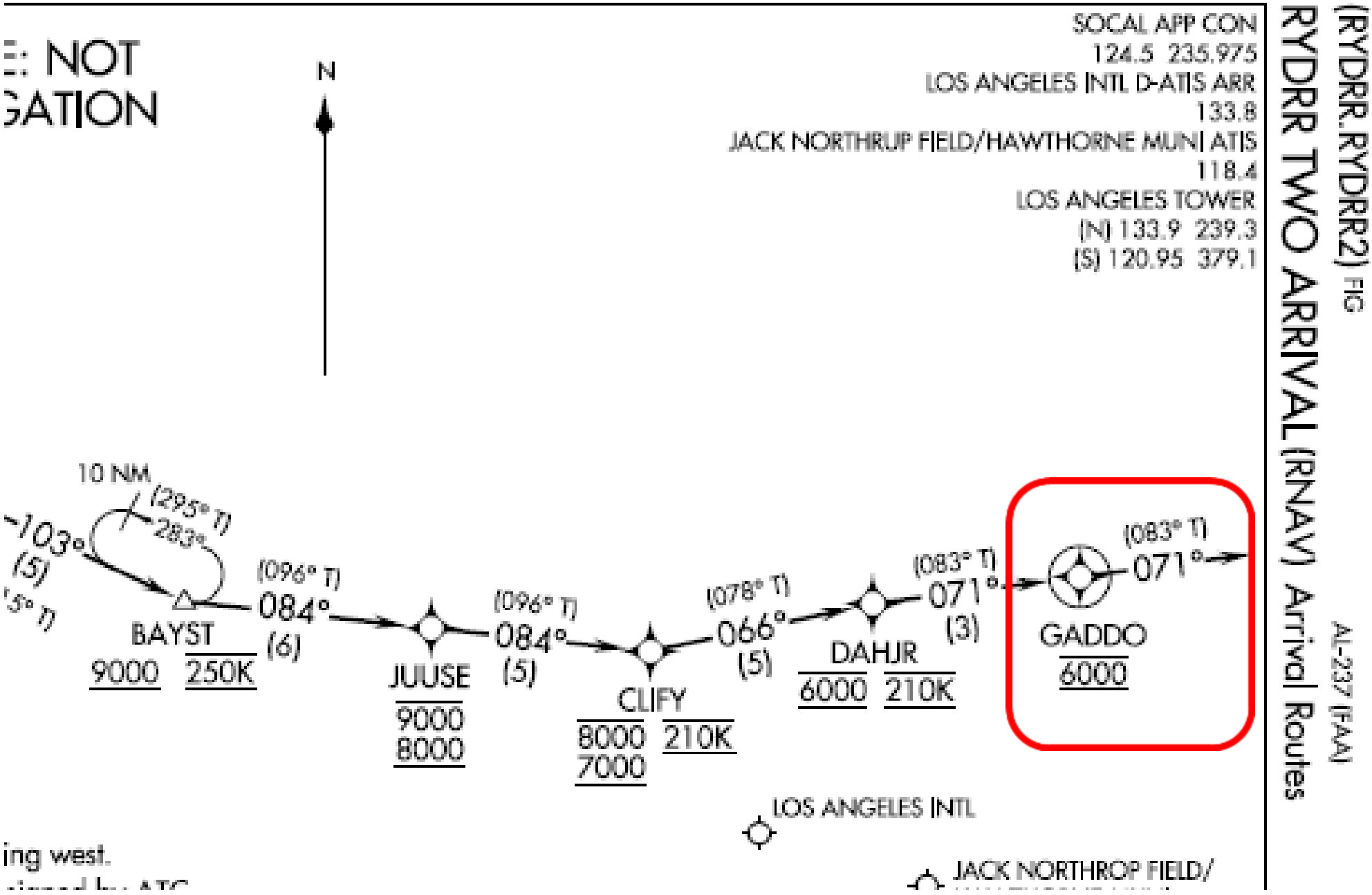
Arrival Name	Number	STAR Computer Code	Superseded Number	Dated	Effective Date
RYDRR (RNAV)	TWO	RYDRR.RYDRR2	ONE	04/27/2017	

Graphic Depiction 1

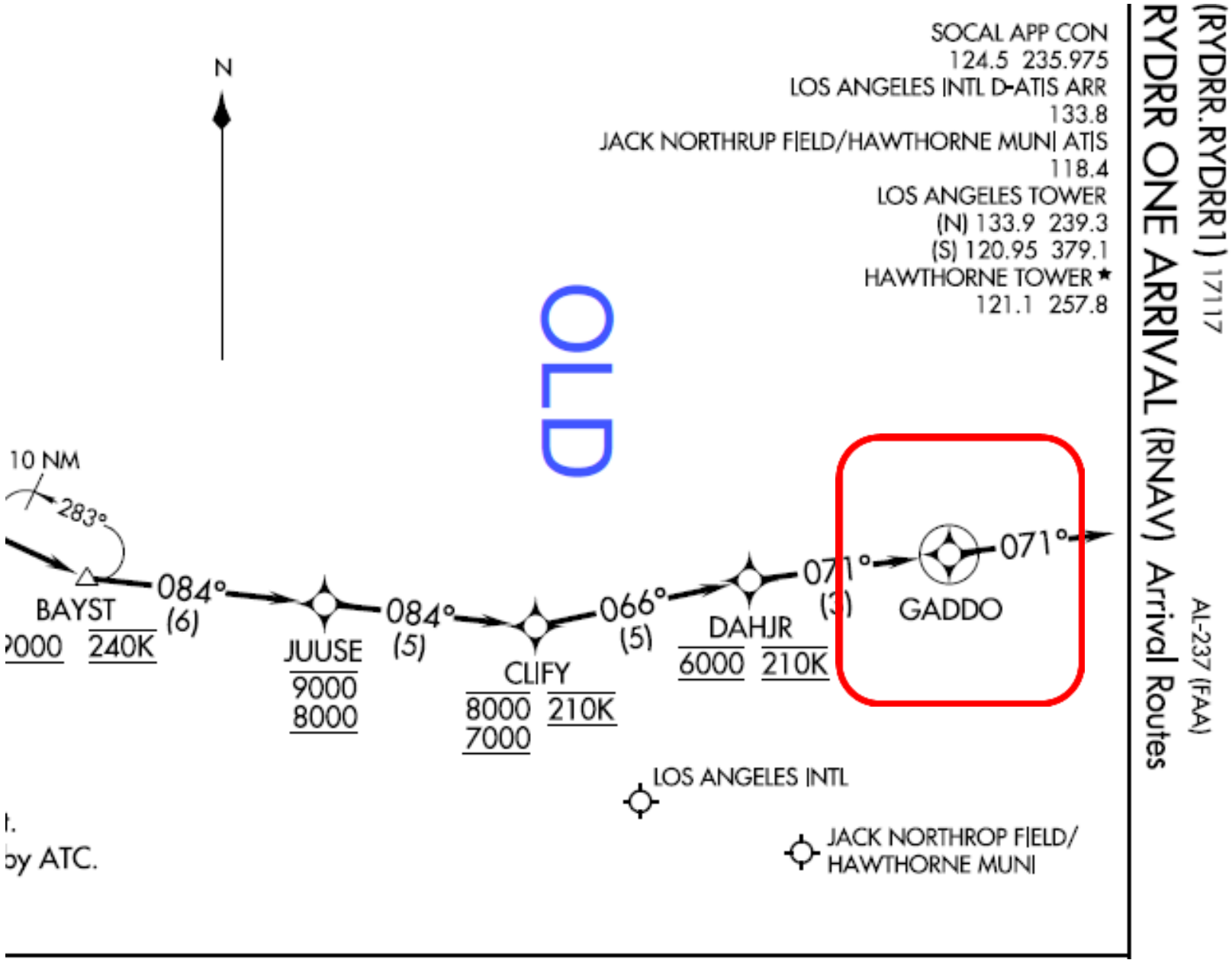


RYDRR 2 – Blow up of LA Basin end of approach



NEW

RYDRR 1 – Blow up of LA Basin end of approach

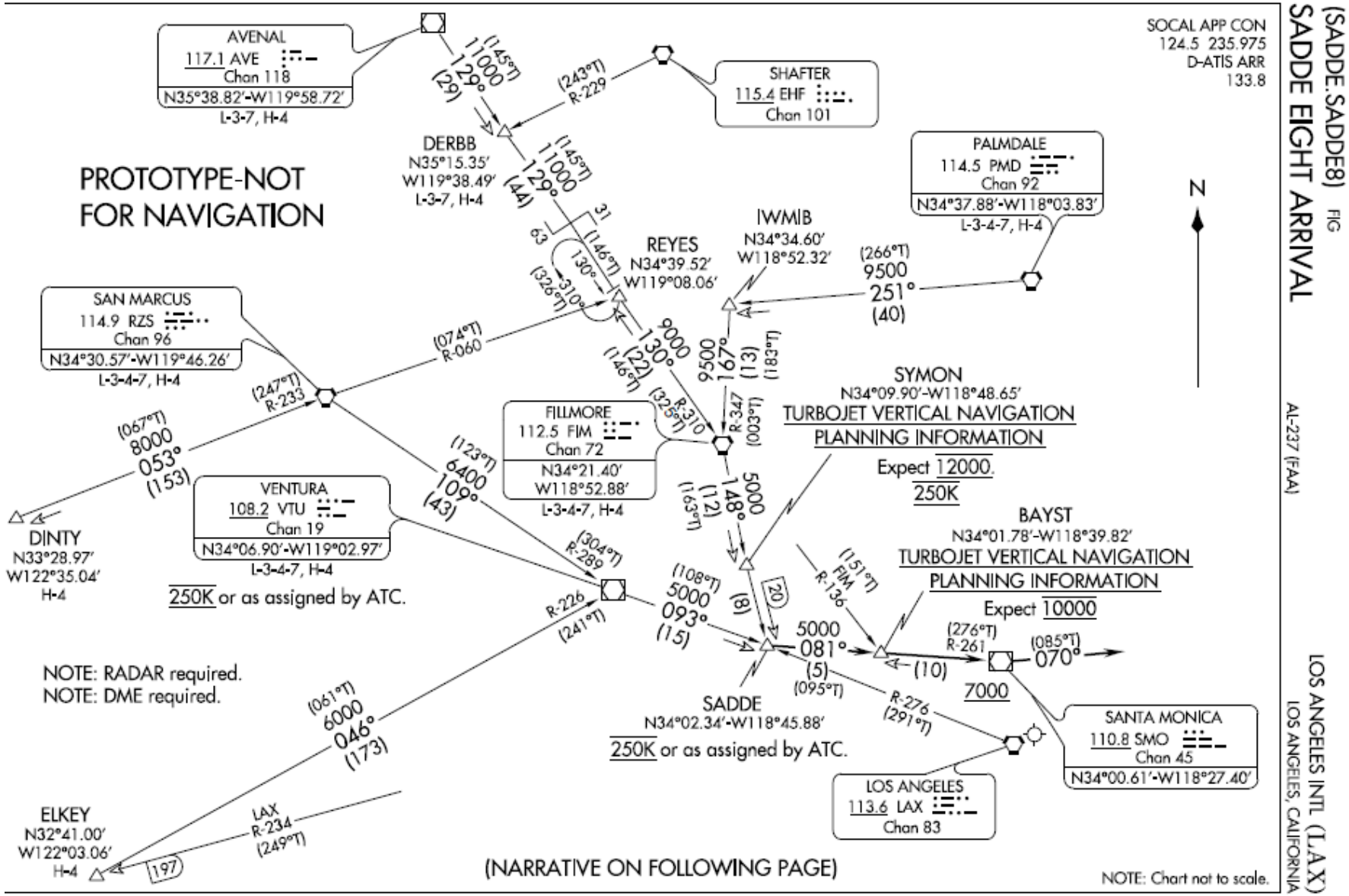


GROUP #2

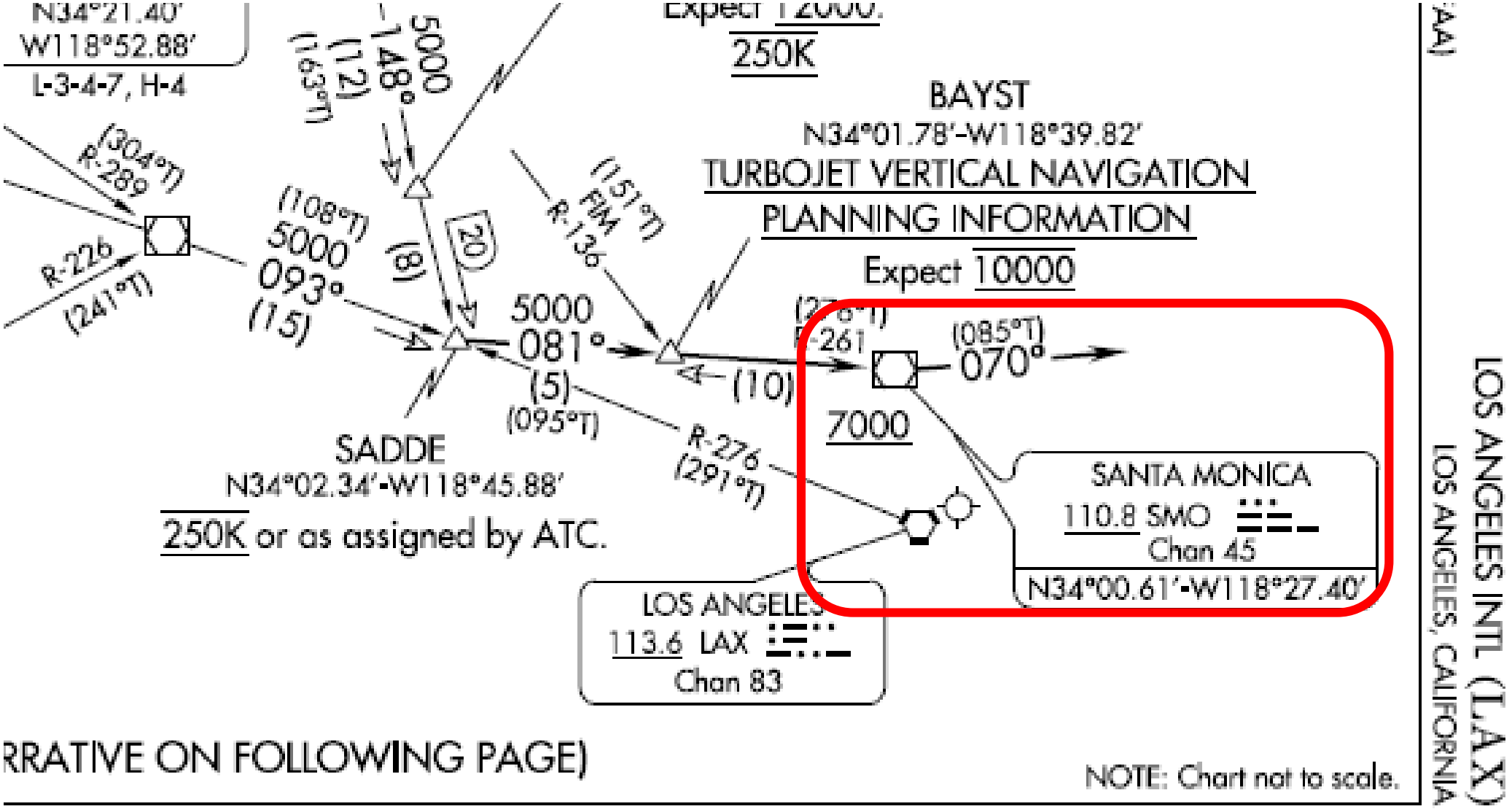
Revision: SADDE 8

SADDE 8 is not RNAV

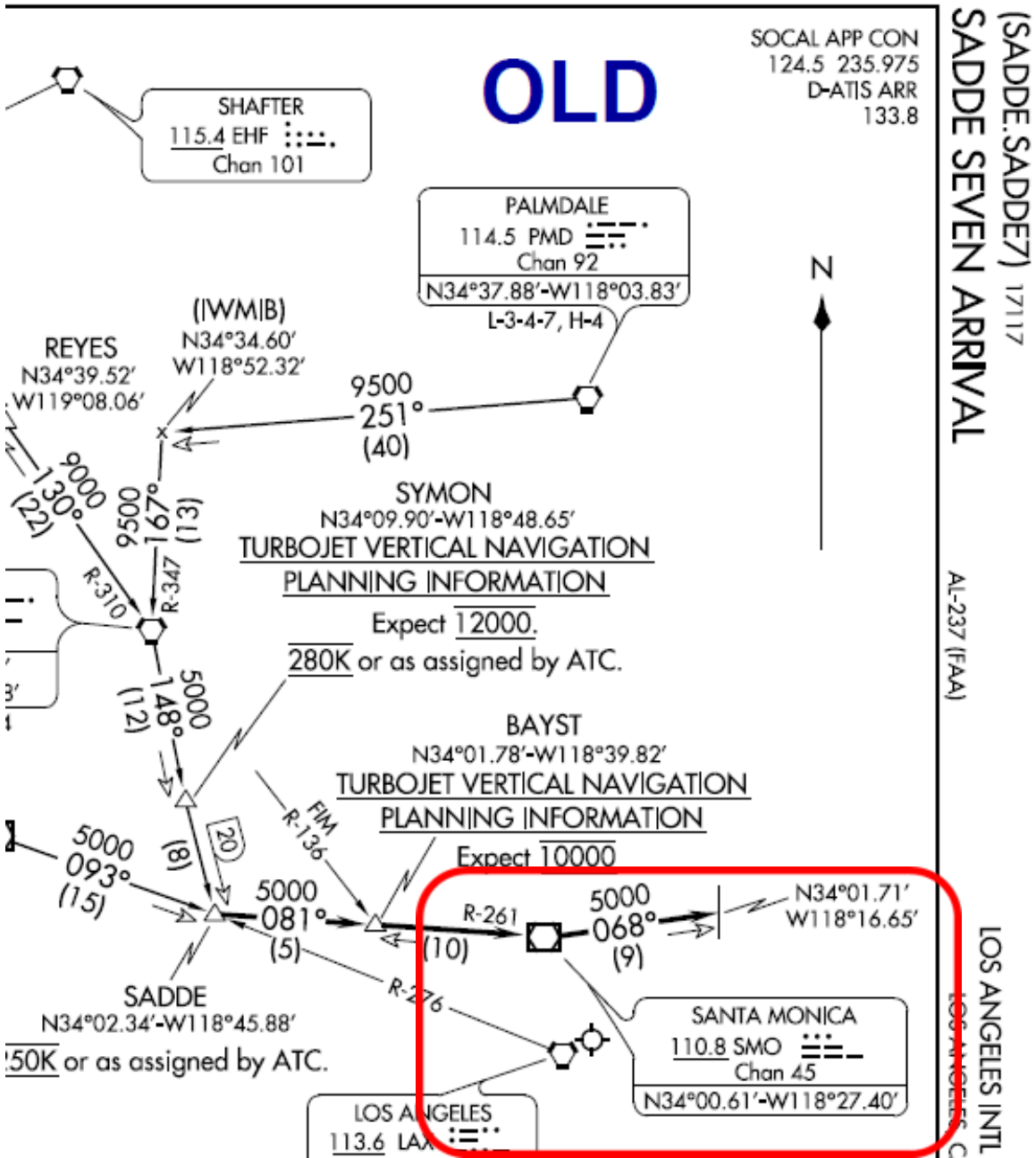
SADDE 8– Proposed Revision at Flight Check



SADDE 8 – Blow up of LA Basin end of approach



SADDE 7 – Blow up of LA Basin end of approach



GROUP #3

New Procedure: BAYST 1

BAYST 1 is RNAV

BAYST 1 – New Procedure

FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
STANDARD TERMINAL ARRIVAL (STAR)

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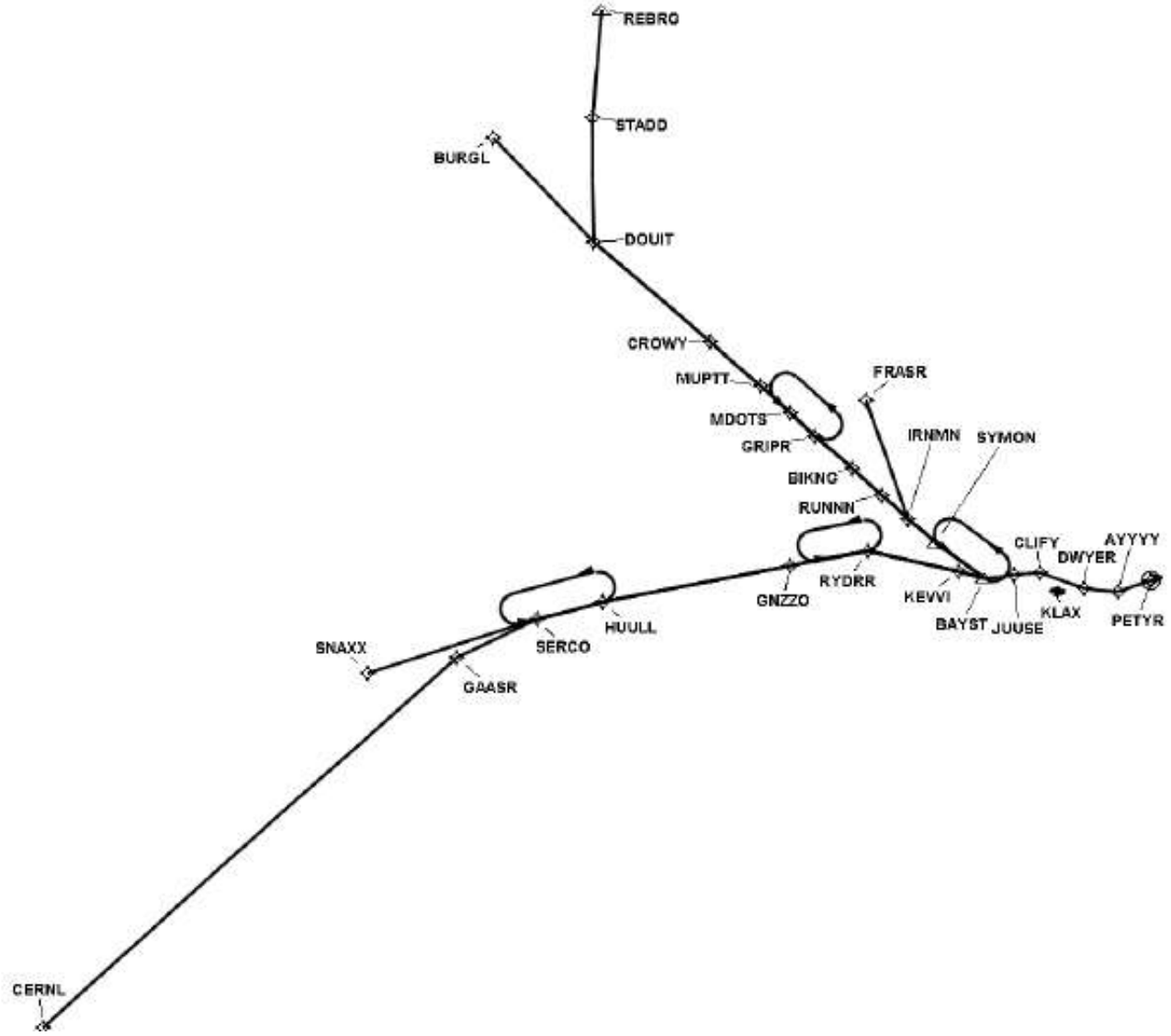
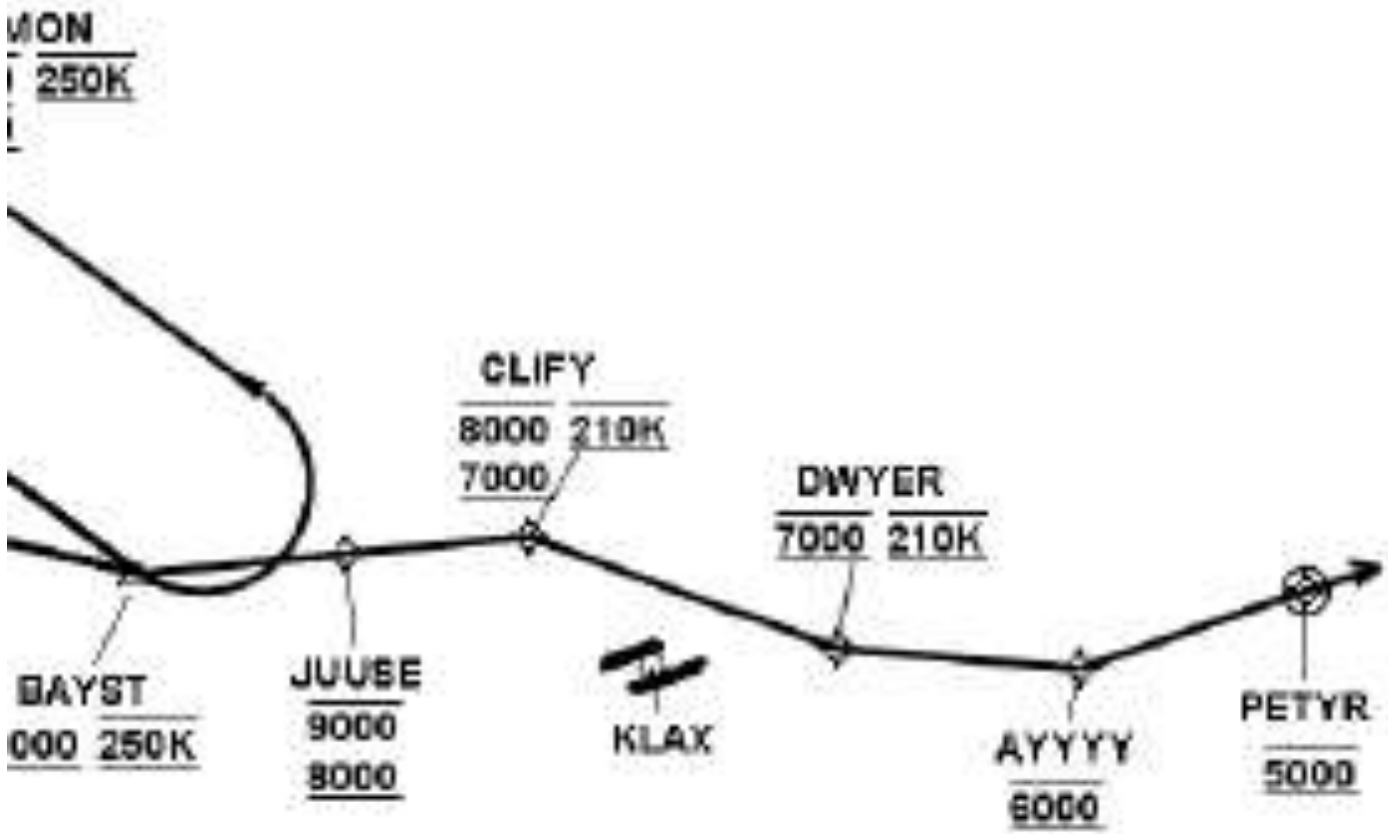
Arrival Name	Number	STAR Computer Code	Superseded Number	Dat
BAYST (RNAV)	ONE	BAYST.BAYST1	NONE	

Graphic Depiction 1



BAYST 1 – Blow up of LA Basin end of approach



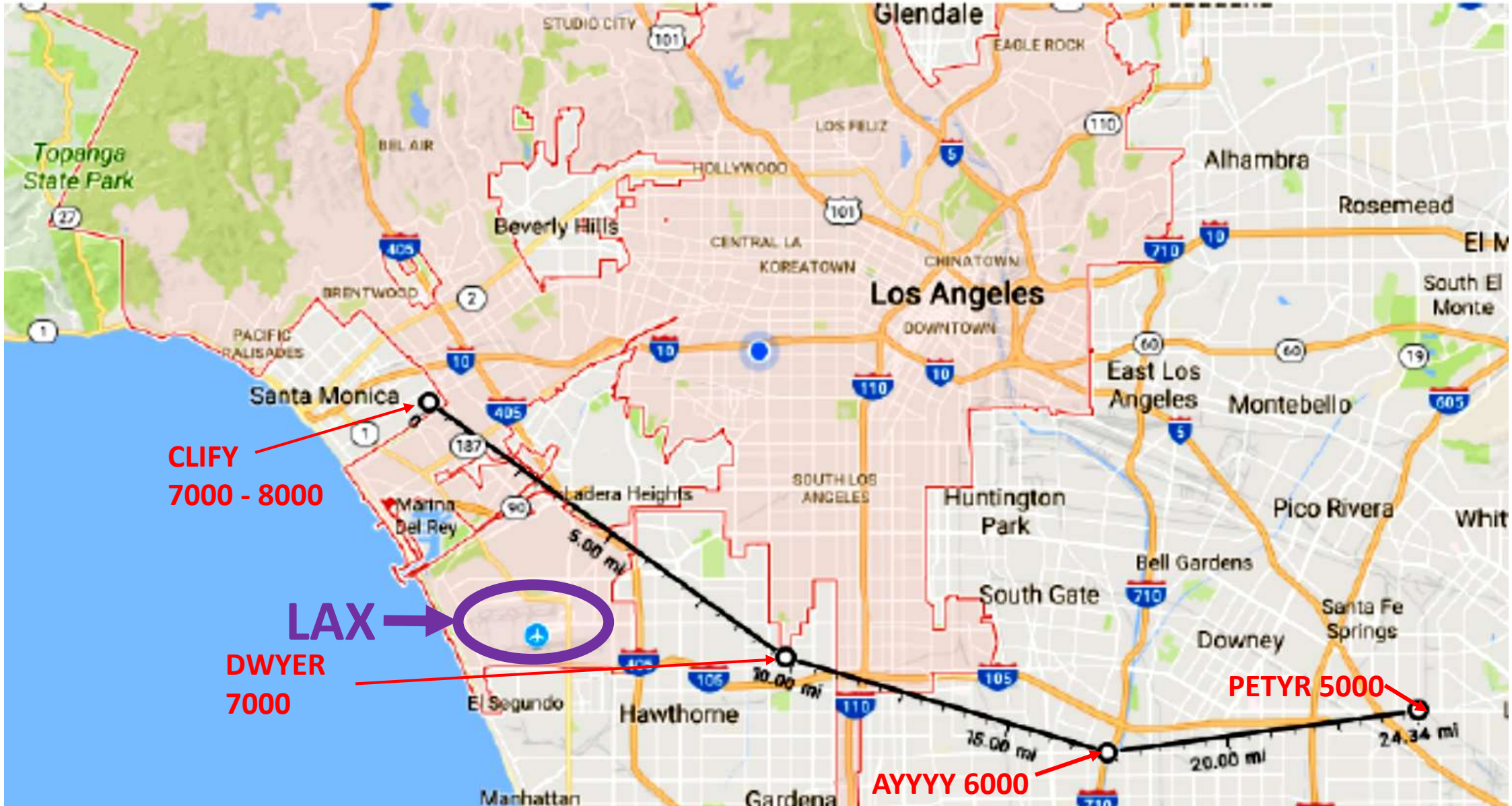
FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
STAR (DATA RECORD)

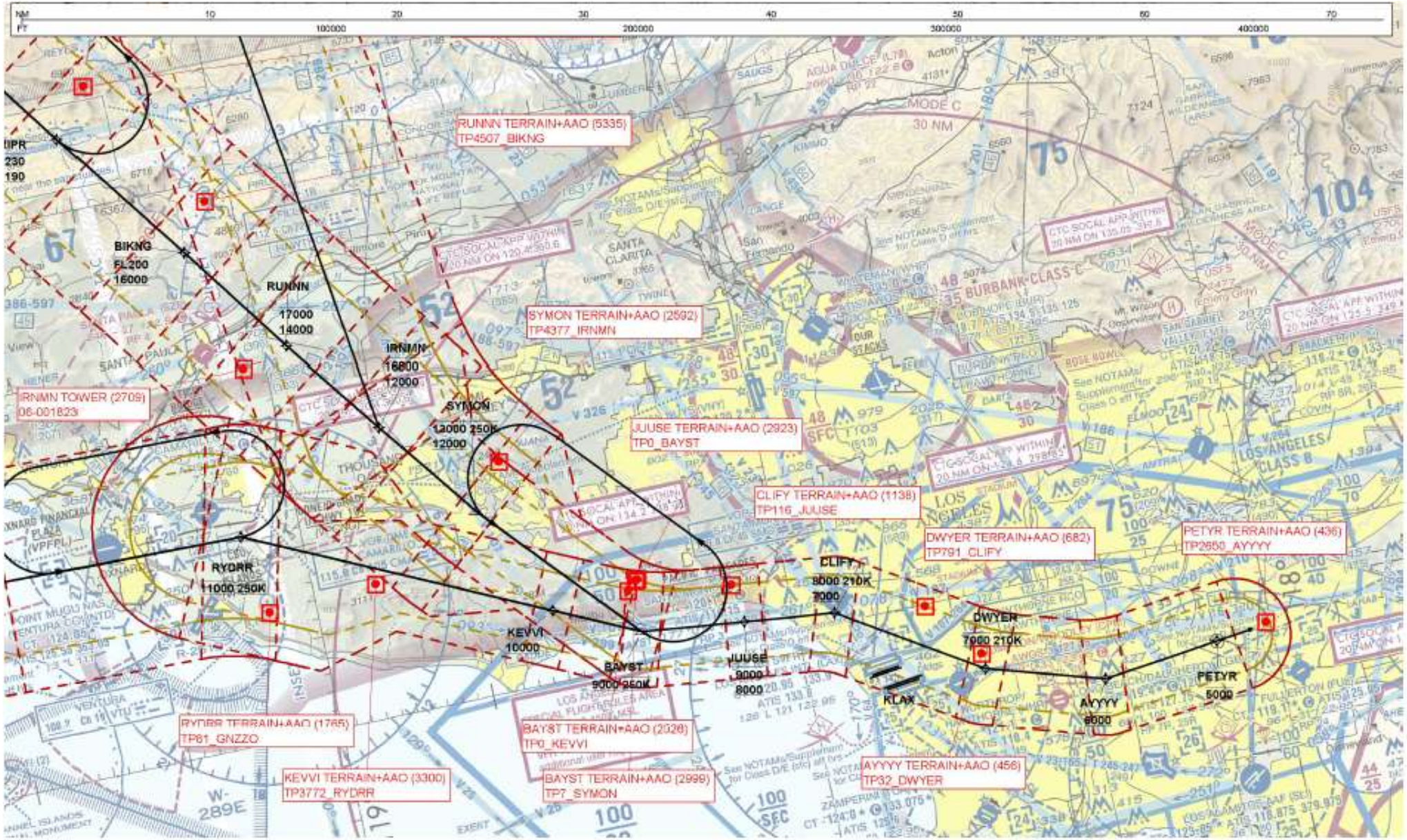
Arrival Name	Number	STAR Computer Code	Superseded N
BAYST (RNAV)	ONE	BAYST.BAYST1	NONE

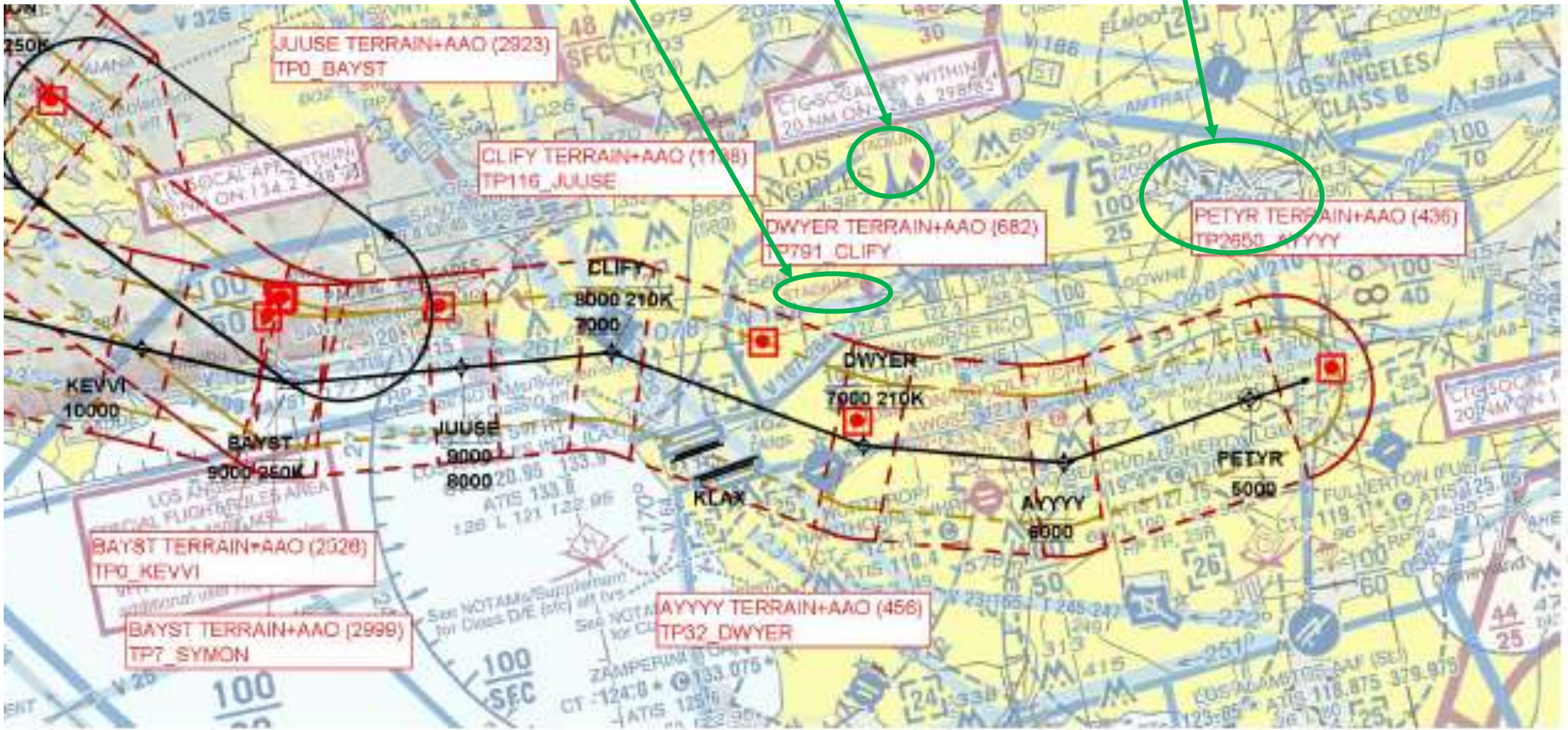
FIX/NAVAID	LAT/LONG	C	FO/FB	LEG TYPE	TC	DIST (NM)	ALTITUDE
SYMON	340954.20N / 1184838.05W	Y	FB	TF	142.64	06.83	[illegible]
BAYST	340146.73N / 1183949.20W	Y	FB	TF	137.85	10.93	AT/ABOVE 9000
En Route Transition							
RYDRR	341110.05N / 1190347.38W	Y		IF			AT 11000
KEVVI	340352.14N / 1184508.94W	Y	FB	TF	115.12	17.10	AT/ABOVE 10000
BAYST	340146.73N / 1183949.20W	Y	FB	TF	115.20	04.90	AT/ABOVE 9000
En Route Transition							
SNAXX	340822.24N / 1205838.76W	Y		IF			
SERCO	341131.24N / 1201908.34W	Y	FB	TF	084.34	32.93	FL190BFL210
HUULL	341205.81N / 1200357.13W	Y	FB	TF	087.31	12.61	17000BFL200
GNZZO	341128.14N / 1192133.99W	Y	FB	TF	090.82	35.16	13000B14000
RYDRR	341110.05N / 1190347.38W	Y	FB	TF	091.09	14.75	AT 11000
KEVVI	340352.14N / 1184508.94W	Y	FB	TF	115.12	17.10	AT/ABOVE 10000
BAYST	340146.73N / 1183949.20W	Y	FB	TF	115.20	04.90	AT/ABOVE 9000
Common Route							
BAYST	340146.73N / 1183949.20W	Y		IF			AT/ABOVE 9000
JUUSE	340109.55N / 1183314.68W	Y	FB	TF	096.43	05.50	8000B9000
CLIFY	340036.64N / 1182725.58W	Y	FB	TF	096.43	04.87	7000B8000
DWYER	335602.21N / 1181839.61W	Y	FB	TF	122.02	08.60	AT 7000
AYYYY	335409.81N / 1181115.25W	Y	FB	TF	106.84	06.44	AT 6000
PETYR	335454.48N / 1180343.59W	Y	FO	TF	083.20	06.31	AT 5000
KLAX				FM	083.20		

Google Maps Los Angeles

BAYST 1 – New Procedure – Approx locations of way points

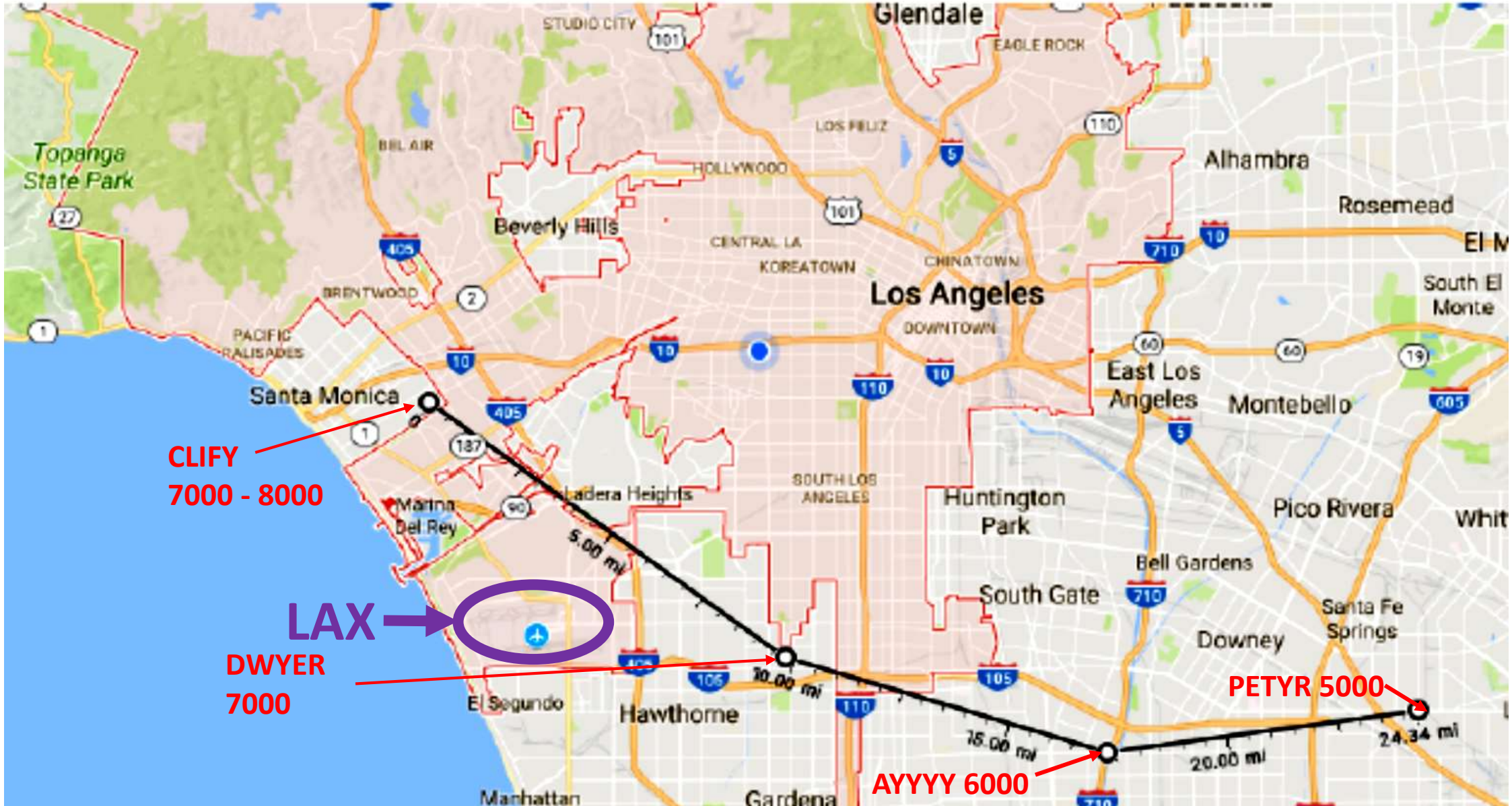



RUNNN TERRAIN+AAO (5335)
TP4507_BIKNG
BIKNG
FL200
16000
RUNNN
17000
14000
SYMON TERRAIN+AAO (2592)
TP4377_IRNMN
IRNMN
16000
12000
IRNMN TOWER (2709)
06-001823
SYMON
12000 250K
12000
JUUSE TERRAIN+AAO (2923)
TP0_BAYST
CLIFY TERRAIN+AAO (1138)
TP116_JUUSE
DWYER TERRAIN+AAO (682)
TP791_CLIFY
PETYR TERRAIN+AAO (436)
TP2650_AYYYY
RYDRR
11000 250K
KEVVI
10000
BAYST
9000 250K
JUUSE
9000
8000
CLIFY
8000 210K
7000
DWYER
7000 210K
KLAX
AYYYY
6000
PETYR
5000
RYDRR TERRAIN+AAO (1765)
TP61_GNZZO
KEVVI TERRAIN+AAO (3300)
TP3772_RYDRR
BAYST TERRAIN+AAO (2020)
TP0_KEVVI
BAYST TERRAIN+AAO (2999)
TP7_SYMON
AYYYY TERRAIN+AAO (456)
TP32_DWYER


L.A. Coliseum
Dodger Stadium
Montebello Hills
JUUSE TERRAIN+AAO (2923)
TP0_BAYST
CLIFY TERRAIN+AAO (1178)
TP116_JUUSE
DWYER TERRAIN+AAO (682)
TP791_CLIFY
PETYR TERRAIN+AAO (436)
TP2650_AYYYY
CLIFY
8000 210K
7000
DWYER
7000 210K
KEVVI
10000
BAYST
9000 250K
JUUSE
9000
8000
KLAX
AYYYY
8000
PETYR
5000
BAYST TERRAIN+AAO (2528)
TP0_KEVVI
BAYST TERRAIN+AAO (2998)
TP7_SYMON
AYYYY TERRAIN+AAO (456)
TP32_DWYER

Google Maps Los Angeles

BAYST 1 – New Procedure – Approx locations of way points



FEDERAL AVIATION ADMINISTRATION
FLIGHT STANDARDS SERVICE
STANDARD TERMINAL ARRIVAL (STAR)

Bearings, headings, courses, tracks and radials are magnetic. Elevations and altitudes are in feet, MSL. Altitudes are minimum altitudes unless otherwise indicated.
Distances are in nautical miles (NM). Graphic depictions attached.

Arrival Name	Number	STAR Computer Code	Superseded Number	Dated	Effective Date
BAYST (RNAV)	ONE	BAYST.BAYST1	NONE		

Transition Name	Transition Computer Codes	From FIX/NAVAID	To FIX/NAVAID	Mag Course	Distance	MEA	MOCA	MAA	Crossing Altitudes / Fixes
			RYDRR	079.09	14.75	11000	3800		AT 11000
			KEVVI	103.12	17.10	10000	5400		AT/ABOVE 10000
			BAYST	103.20	04.90	9000	4600		AT/ABOVE 9000

ARRIVAL ROUTE DESCRIPTION:

FROM BAYST ON TRACK 084.43/5.50 TO CROSS JUUSE BETWEEN 8000 AND 9000, THEN ON TRACK 084.43/4.87 TO CROSS CLIFY BETWEEN 7000 AND 8000 AND AT 210 KIAS, THEN ON TRACK 110.02/8.60 TO CROSS DWYER AT 7000 AND AT 210 KIAS, THEN ON TRACK 094.84/6.44 TO CROSS AYYYY AT 6000, THEN ON TRACK 071.20/6.31 TO CROSS PETYR AT 5000, THEN ON TRACK 071.20 OR AS ASSIGNED BY ATC. EXPECT RADAR VECTORS TO ILS OR RNAV (RNP) RUNWAY 25L FINAL APPROACH COURSE.

PROCEDURAL DATA NOTES:

NOTE: RADAR REQUIRED

NOTE: RNAV 1

NOTE: DME/DME/IRU OR GPS REQUIRED

NOTE: TURBOJET AIRCRAFT ONLY

NOTE: EXPECT RWY 25L UNLESS OTHERWISE ASSIGNED BY ATC.

NOTE: CERNL TRANSITION GPS REQUIRED.

NOTE: BURGL, FRASR, HUULL, SNAXX, MUPIT, REBRG, RYDRR TRANSITIONS DME/DME/IRU OR GPS REQUIRED

NOTE: DO NOT FILE – TO BE ASSIGNED BY ATC.

FIXES AND/OR HOLDING PATTERNS:

CHART HOLDING AT BAYST: HOLD NW, LT, 125.85 INBOUND, 10 NM LEGS.

CHART HOLDING AT GRIPR: HOLD NW, LT, 132.49 INBOUND, 10 NM LEGS.

CHART HOLDING AT HUULL: HOLD W, LT, 075.31 INBOUND, 16 NM LEGS.

CHART HOLDING AT RYDRR: HOLD W, LT, 079.09 INBOUND, 10 NM LEGS.

COMMUNICATIONS:

SOCAL APP CON, LAX ATCT (N/S), LAX ATIS

Discussion of each Group and Procedure

&

Consideration of whether to take action on any or all