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General Information

Location: Las Vegas NV USA
IATA Code: LAS
Lat/Long: N36° 04.8' W115° 09.1'
Elevation: 2181 ft

Airport Use: Public
Magnetic Variation: 12.2°E
Sectional Chart: Las Vegas

Fuel Types: 100 Octane (LL), 100-130 Octane, Jet A-1
Oxygen Types: High Pressure, Low Pressure, HP Bottle
Repair Types: Major Airframe, Major Engine
Customs: Upon Prior Request
Airport Type: IFR
Landing Fee: No
Control Tower: Yes
Jet Start Unit: Yes
LLWS Alert: No
Beacon: Yes

Sunrise: 1414 Z
Sunset: 0133 Z,

Runway Information

Runway: 01L
Length x Width: 8985 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 2176 ft
Lighting: Edge, ALS
Displaced Threshold: 584 ft

Runway: 01R
Length x Width: 9775 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 2170 ft
Lighting: Edge, REIL
Displaced Threshold: 491 ft

Runway: 07L
Length x Width: 14510 ft x 150 ft
Surface Type: asphalt
TDZ-Elev: 2155 ft
Lighting: Edge
Displaced Threshold: 2139 ft

Runway: 07R
Length x Width: 10526 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 2157 ft

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Lighting: Edge

Runway: 19L
Length x Width: 9775 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 2113 ft
Lighting: Edge, REIL
Displaced Threshold: 878 ft

Runway: 19R
Length x Width: 8985 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 2117 ft
Lighting: Edge, REIL

Runway: 25L
Length x Width: 10526 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 2069 ft
Lighting: Edge, ALS

Runway: 25R
Length x Width: 14510 ft x 150 ft
Surface Type: asphalt
TDZ-Elev: 2067 ft
Lighting: Edge, ALS
Displaced Threshold: 1397 ft

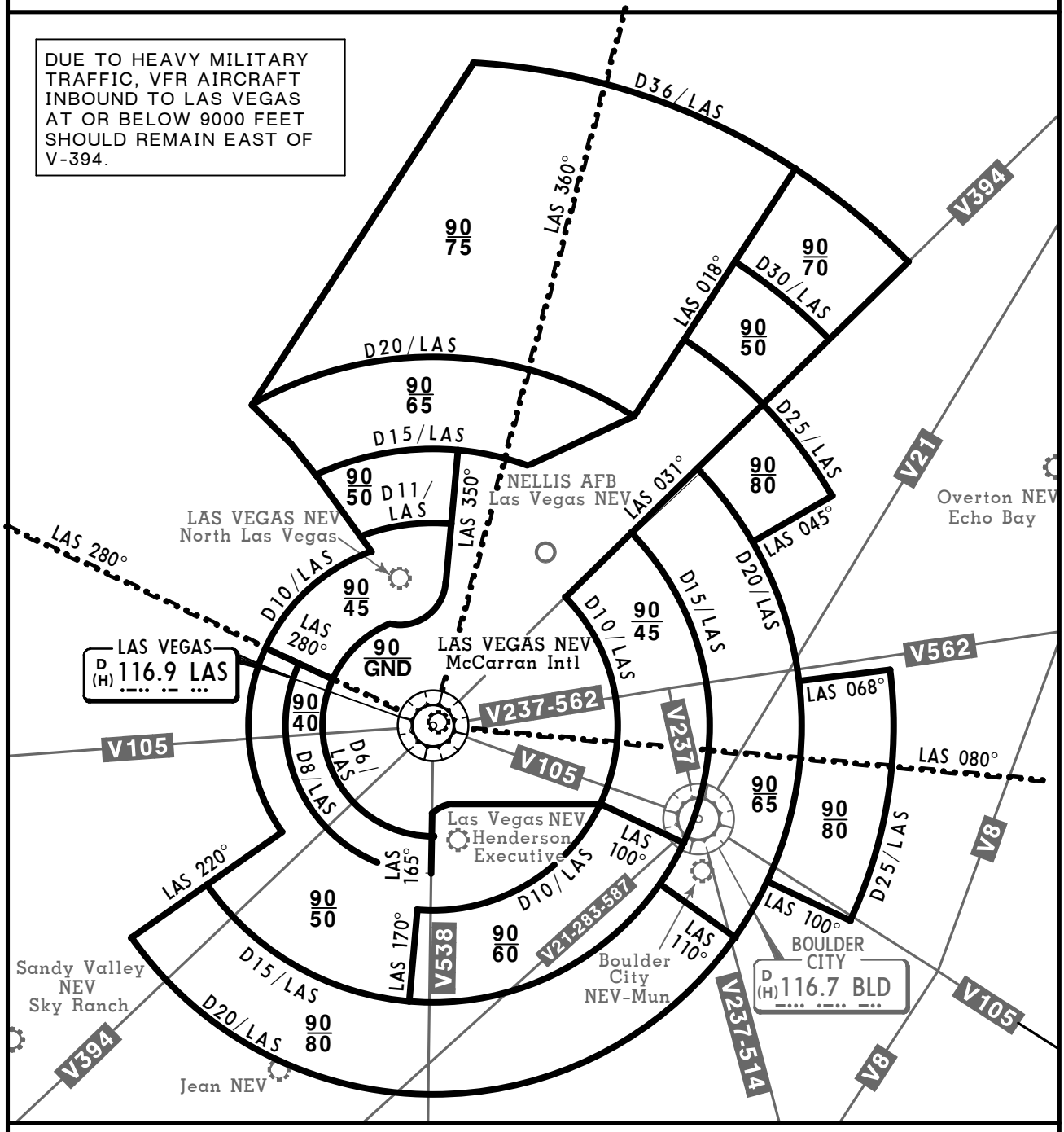
Communication Information

ATIS 132.4
Las Vegas Tower 119.9
Las Vegas Tower 118.75
Las Vegas Tower 120.45
Las Vegas Ground Control 121.9
Las Vegas Ground Control 121.1
MC Carran Intl Ramp/Taxi Control 124.4
MC Carran Intl Ramp/Taxi Control 127.9
MC Carran Intl Ramp/Taxi Control 129.175
Las Vegas Clearance Delivery 118.0
Las Vegas Approach Control 125.025
Las Vegas App TCA 125.9
Las Vegas App TCA 118.4
Las Vegas App TCA 125.025
Las Vegas Departure Control 133.95
Las Vegas Departure Control 125.9
Las Vegas Departure Control 125.025
MC Carran Intl Unicom 122.95

LAS VEGAS CLASS B AIRSPACE

CLASS B AIRSPACE VFR COMMUNICATIONS

(280°-360°) **Las Vegas App** 125.02
(360°-080°) **Las Vegas App** 125.02
(E of I-15 & S of 080°) **Las Vegas App** 118.4
(W of I-15 & S of 280°) **Las Vegas App** 125.9



FOR OPERATING RULES AND PILOT AND EQUIPMENT REQUIREMENTS SEE FAR 91.131, 91.117 AND 91.215.

FLIGHT PROCEDURES

IFR Flights-Aircraft within Class B airspace are required to operate in accordance with current IFR procedures.

VFR Flights-

a. Arriving aircraft should contact Las Vegas Approach Control on the specified frequencies. Although arriving aircraft may be operating beneath the floor of Class B airspace on initial contact, communications should be established with Approach Control for sequencing and spacing purposes.

b. Aircraft departing the primary airport are requested to advise clearance delivery prior to taxiing of their intended altitude and direction of flight to depart Class B airspace. Aircraft departing from other than McCarran International Airport whose route of flight would penetrate Class B airspace should give this information to ATC on appropriate frequencies.

c. Aircraft desiring to transit Class B airspace may obtain an ATC clearance and will be handled on an equitable "First-come, first-served" basis, provided the requirements of FAR 91 are met.

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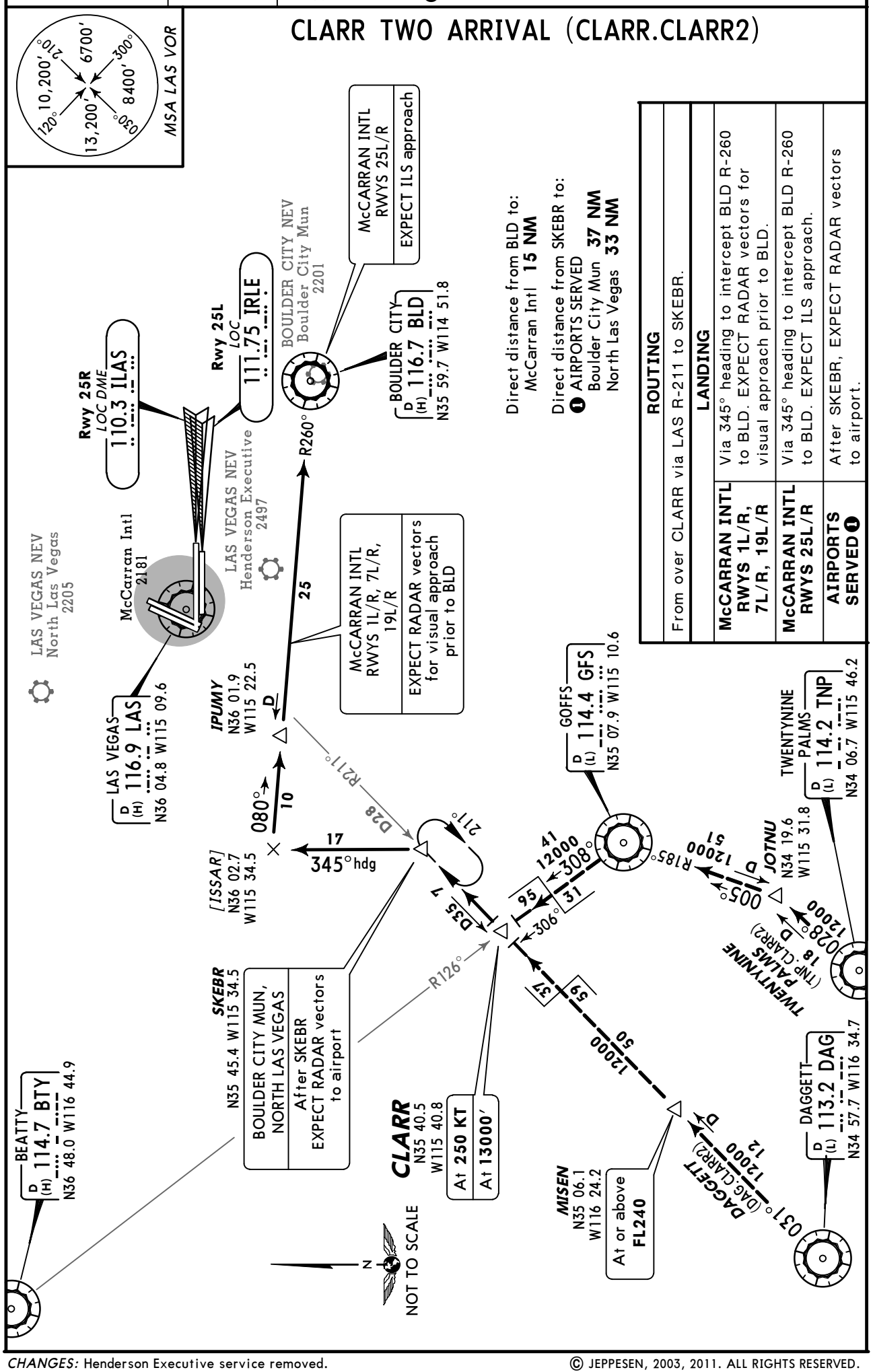
McCARRAN INTL D-ATIS Arrival 132.4	Apt Elev See Graphic	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. DME required.** **2. RADAR required.** 3. Also Serves ❶

CLARR TWO ARRIVAL (CLARR.CLARR2)



ROUTING	
From over CLARR via LAS R-211 to SKEBR.	
LANDING	
McCARRAN INTL RWYS 1L/R, 7L/R, 19L/R	Via 345° heading to intercept BLD R-260 to BLD. EXPECT RADAR vectors for visual approach prior to BLD.
McCARRAN INTL RWYS 25L/R	Via 345° heading to intercept BLD R-260 to BLD. EXPECT ILS approach.
AIRPORTS SERVED❶	After SKEBR, EXPECT RADAR vectors to airport.

CHANGES: Henderson Executive service removed.

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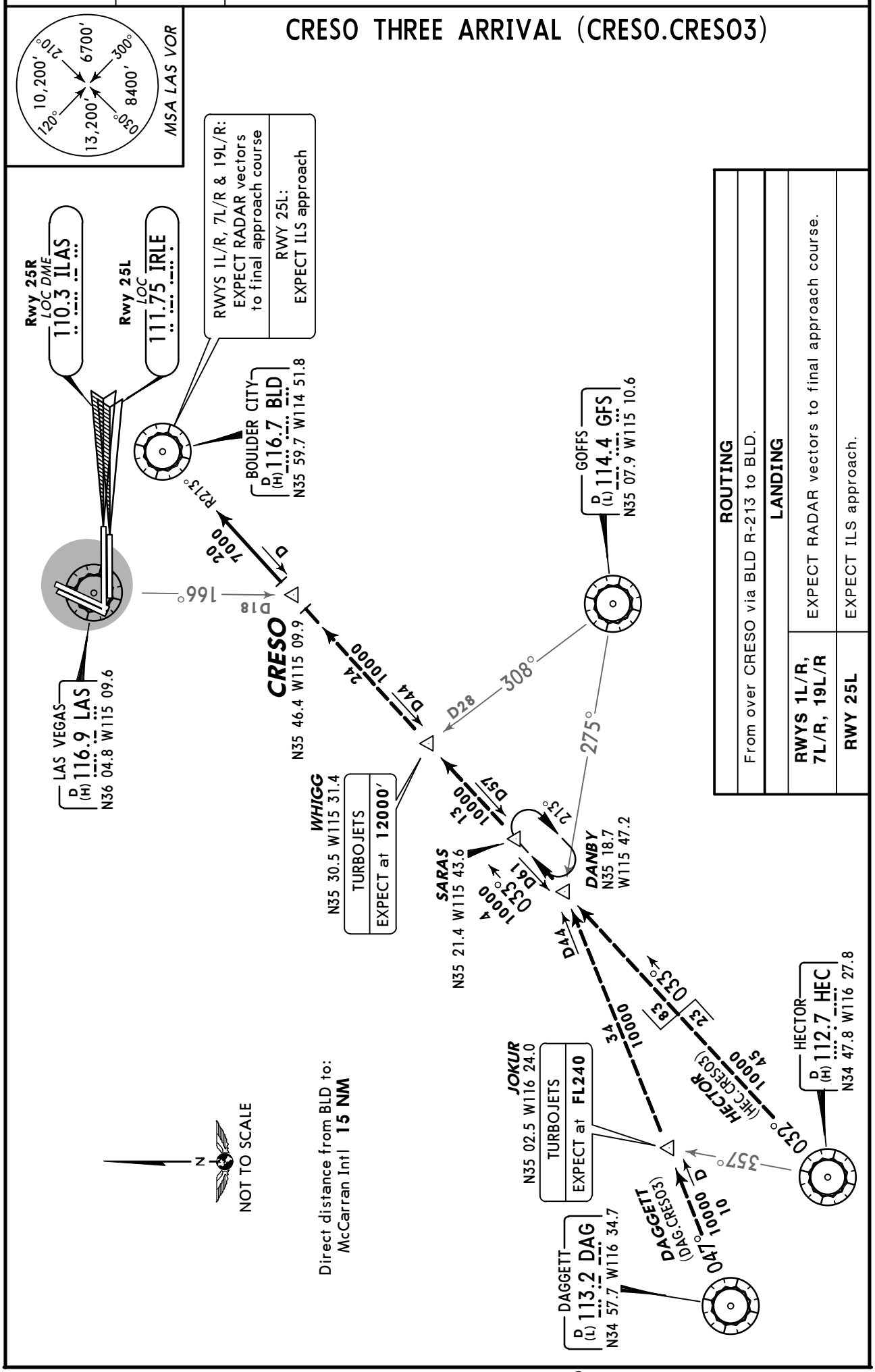
D-ATIS Arrival	Apt Elev	
132.4	2181′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′

CRESO THREE ARRIVAL (CRESO.CRESO3)



ROUTING	
From over CRESO via BLD R-213 to BLD.	
LANDING	
RWYS 1L/R, 7L/R, 19L/R	EXPECT RADAR vectors to final approach course.
RWY 25L	EXPECT ILS approach.

CHANGES: None.

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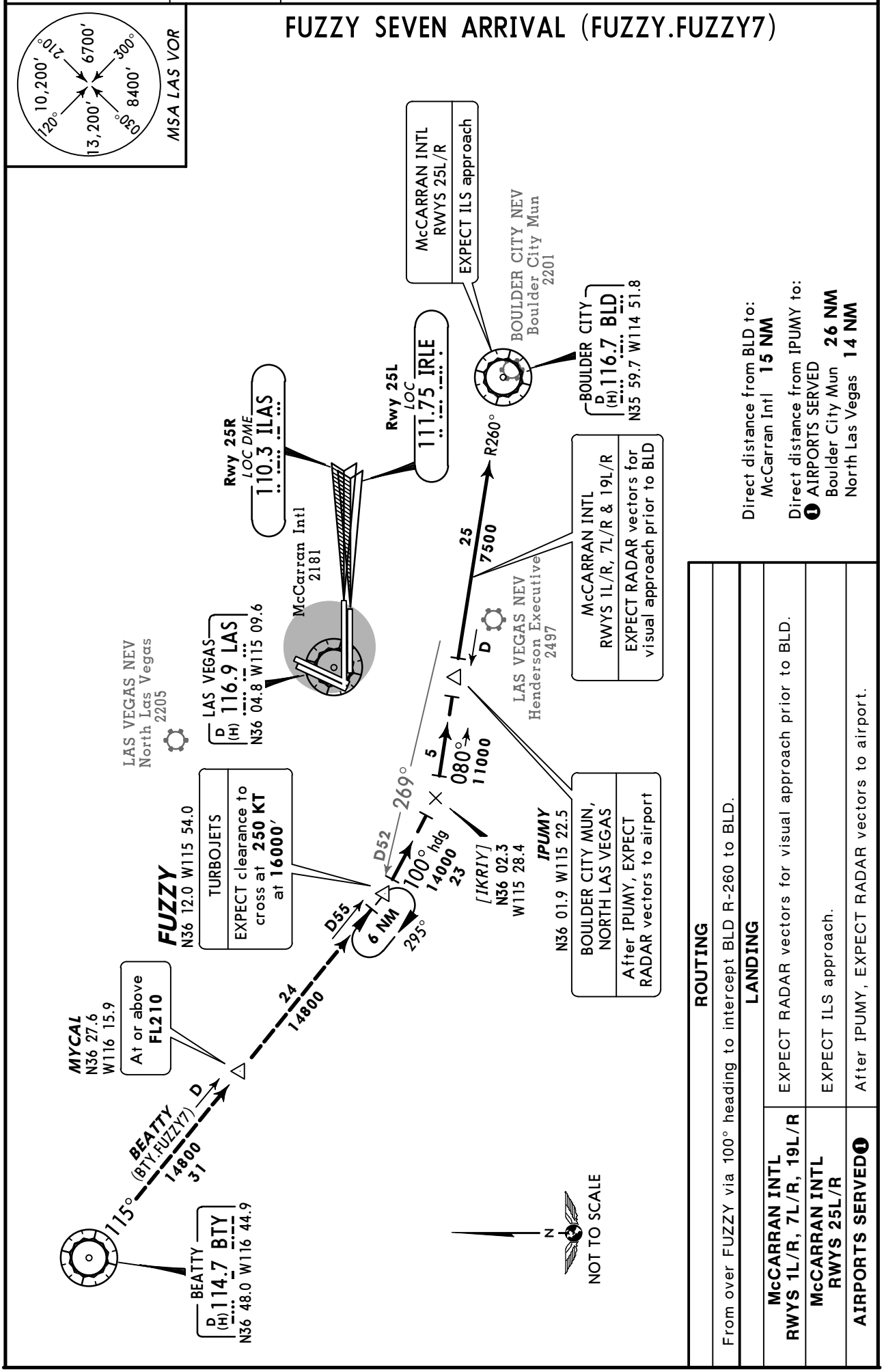
McCARRAN INTL D-ATIS Arrival 132.4	Apt Elev See Graphic	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. DME required.** **2. RADAR required.** 3. Also Serves ❶

FUZZY SEVEN ARRIVAL (FUZZY.FUZZY7)



ROUTING	
From over FUZZY via 100° heading to intercept BLD R-260 to BLD.	
LANDING	
McCARRAN INTL RWYS 1L/R, 7L/R, 19L/R	EXPECT RADAR vectors for visual approach prior to BLD.
McCARRAN INTL RWYS 25L/R	EXPECT ILS approach.
AIRPORTS SERVED❶	After IPUMY, EXPECT RADAR vectors to airport.

CHANGES: Henderson Executive service removed.

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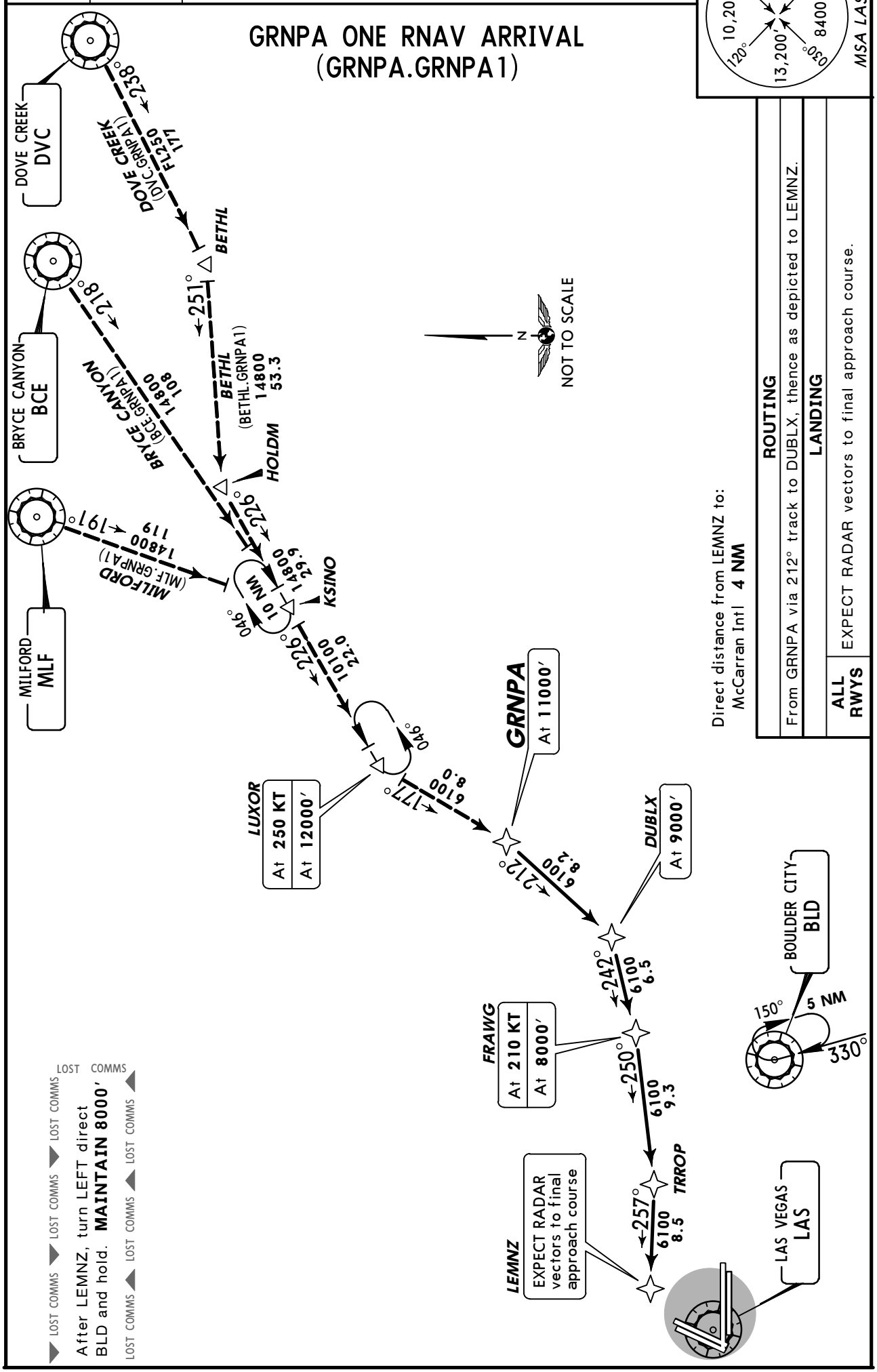
D-ATIS Arrival	Apt Elev	
132.4	2181′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. RADAR required. 2. DME/DME/IRU or GPS required.** **3. RNAV 1.**

GRNPA ONE RNAV ARRIVAL
(GRNPA.GRNPA1)



CHANGES: BLD hold.

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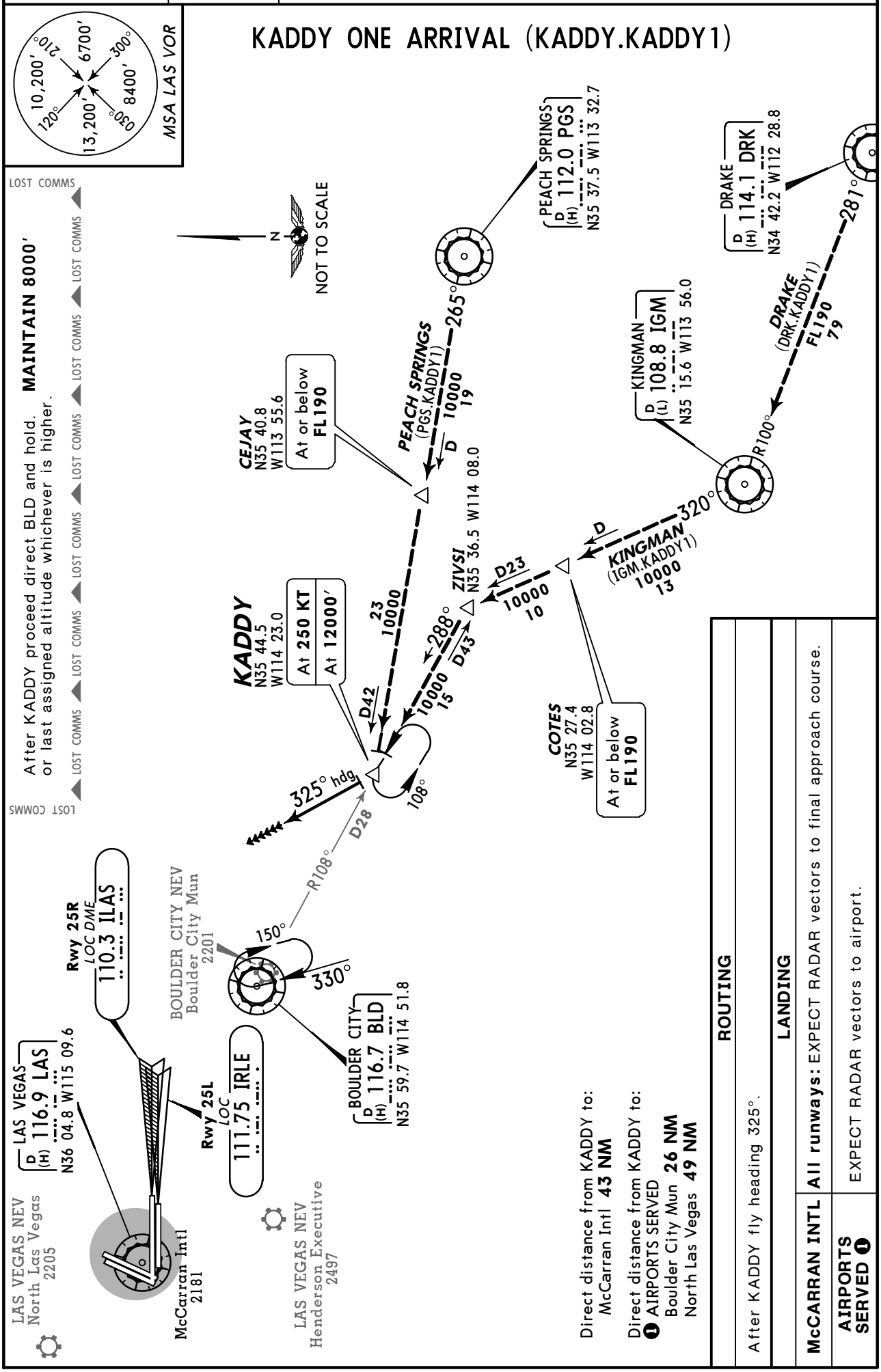
McCARRAN INTL D-ATIS Arrival 132.4	Apt Elev See Graphic	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. RADAR and DME required.** 2. Also Serves ❶

KADDY ONE ARRIVAL (KADDY.KADDY1)



CHANGES: Henderson Executive service removed.

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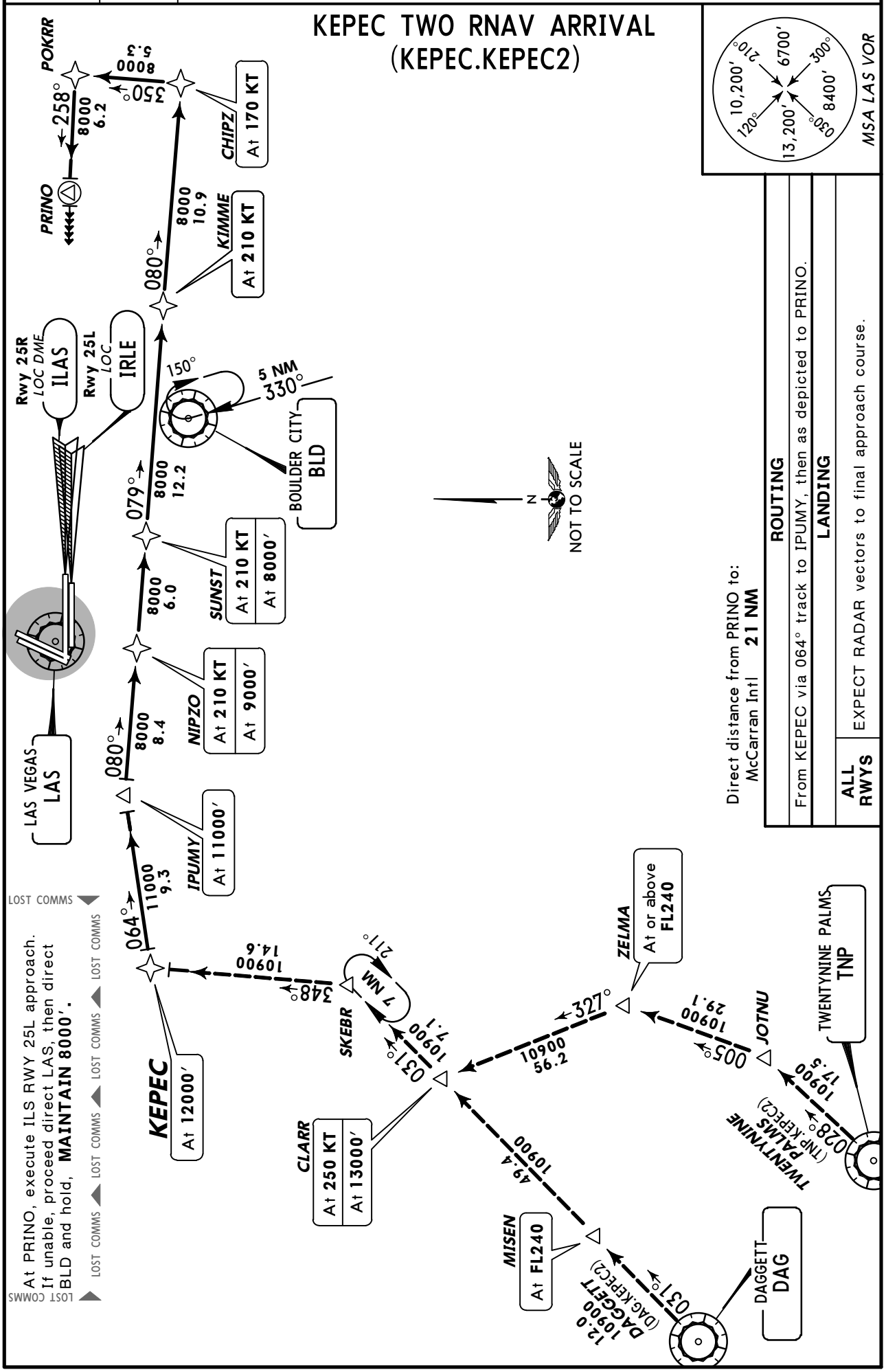
D-ATIS Arrival	Apt Elev	
132.4	2181′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. RADAR required. 2. DME/DME/IRU or GPS required. 3. RNAV 1.** 4. DAGGETT and TWENTYNINE PALMS transitions: For non-GPS equipped aircraft BTY, BLD, LAS and LSV DMEs must be operational.

KEPEC TWO RNAV ARRIVAL
(KEPEC.KEPEC2)



CHANGES: None.

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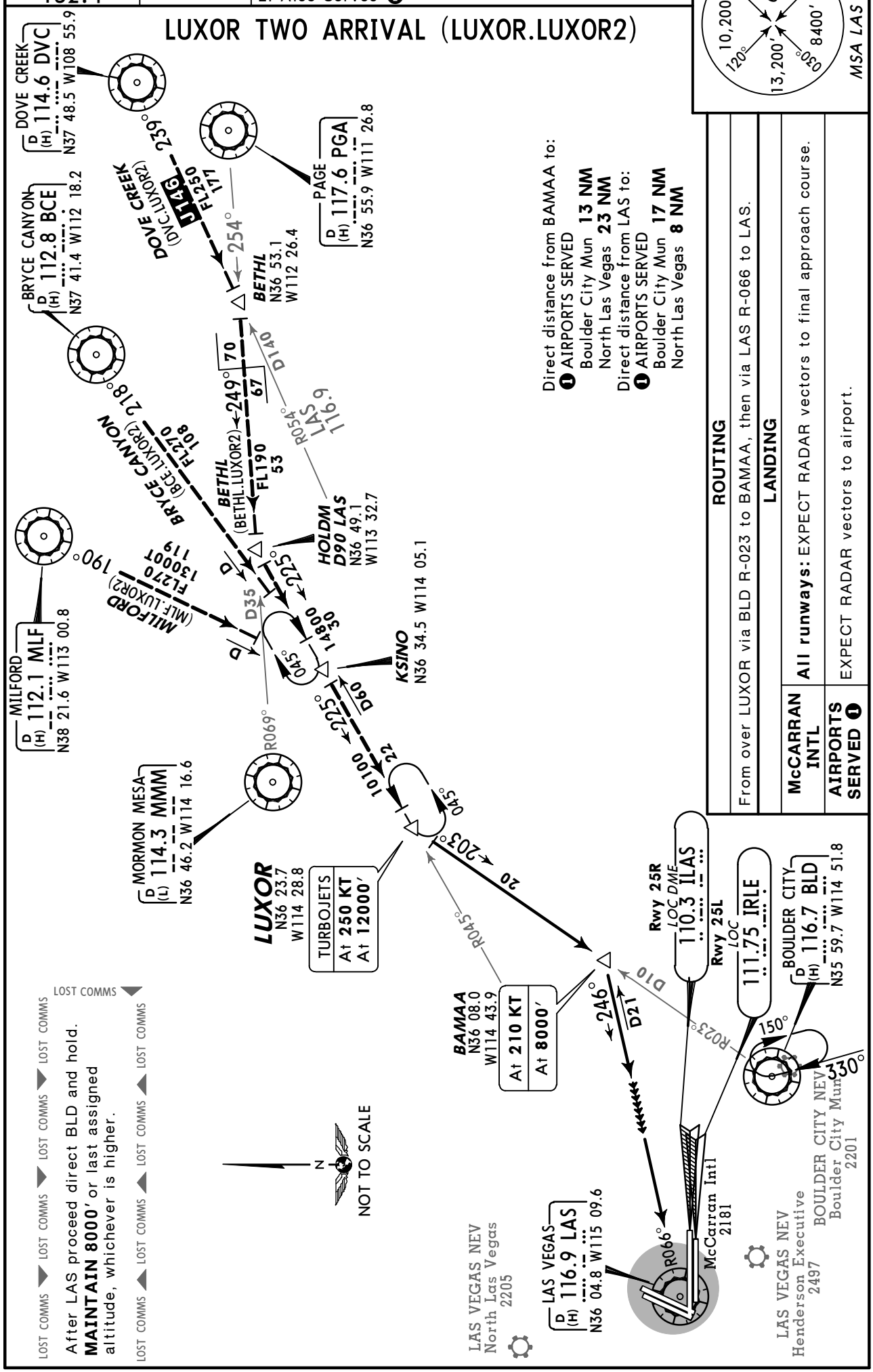
McCARRAN INTL D-ATIS Arrival 132.4	Apt Elev See Graphic	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. RADAR and DME required.** 2. Also Serves ❶

LUXOR TWO ARRIVAL (LUXOR.LUXOR2)



CHANGES: Henderson Executive service removed.

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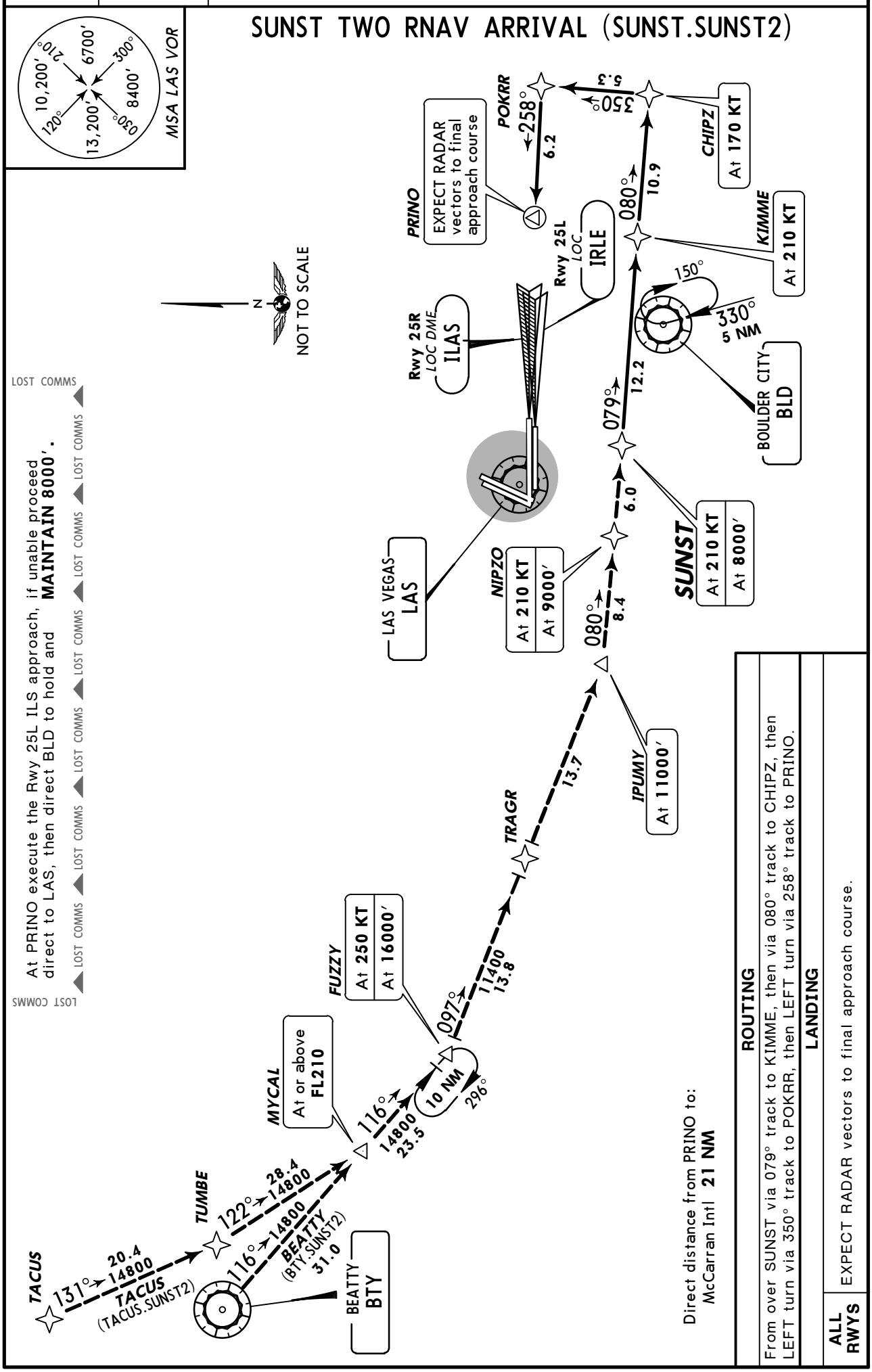
D-ATIS Arrival 132.4	Apt Elev 2181′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. RADAR required. 2. DME/DME/IRU or GPS required.** **3. RNAV 1.**

SUNST TWO RNAV ARRIVAL (SUNST.SUNST2)



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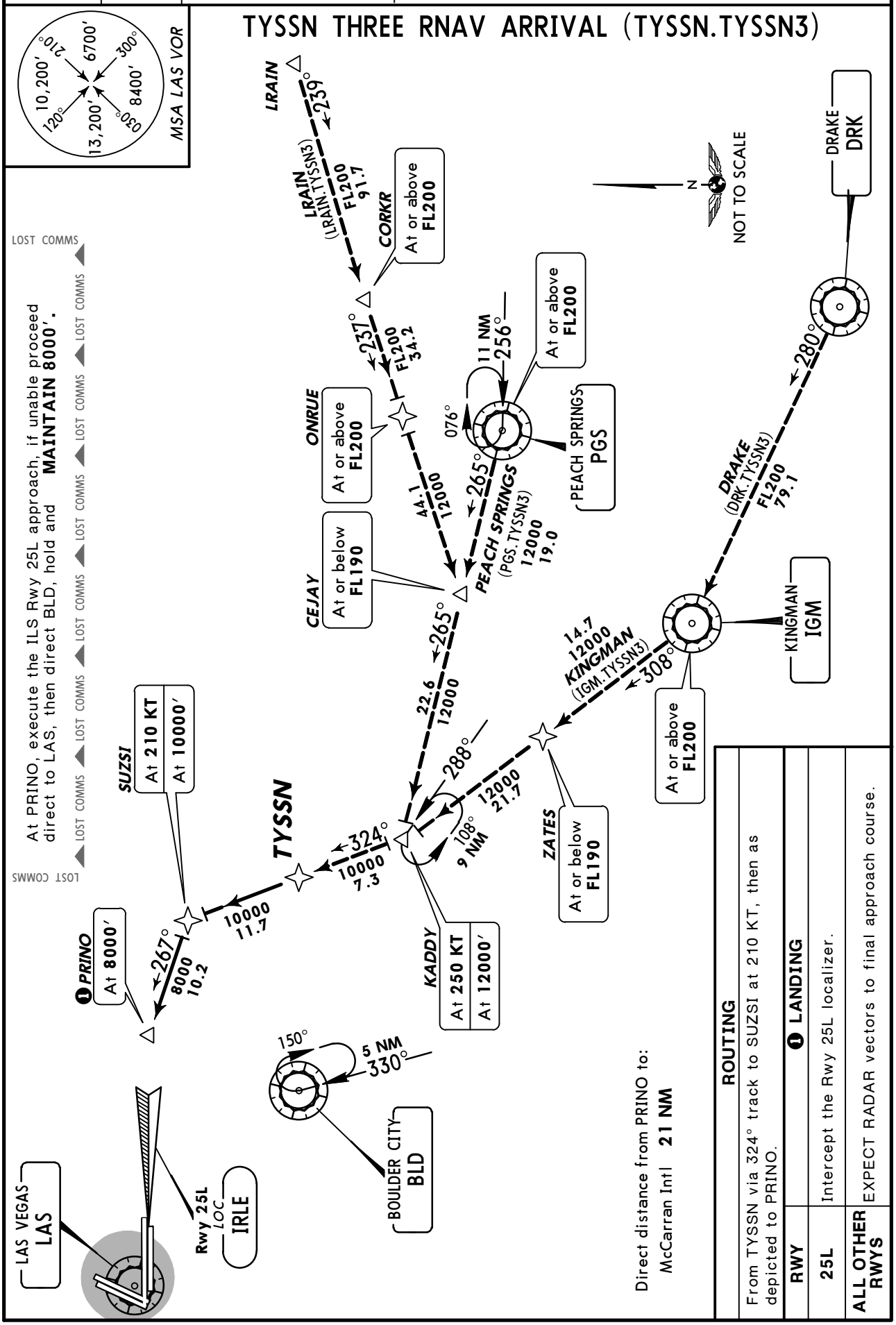
D-ATIS Arrival	Apt Elev
132.4	2181′

Alt Set: INCHES Trans level: FL180 Trans alt: 18000′

1. RADAR required. 2. DME/DME/IRU or GPS required. 3. RNAV 1.

4. DRAKE and KINGMAN transitions: For non-GPS equipped aircraft MMM DME must be operational.
5. LRAIN transition: For non-GPS equipped aircraft MMM, DRK, IGM and PGS DMEs must be operational.
6. PEACH SPRINGS transition: For non-GPS equipped aircraft IGM and MMM DMEs must be operational.

TYSSN THREE RNAV ARRIVAL (TYSSN.TYSSN3)



ROUTING	
From TYSSN via 324° track to SUZSI at 210 KT, then as depicted to PRINO.	
RWY	**1 LANDING**
25L	Intercept the Rwy 25L localizer.
ALL OTHER RWYS	EXPECT RADAR vectors to final approach course.

CHANGES: Procedure notes, renumbered.

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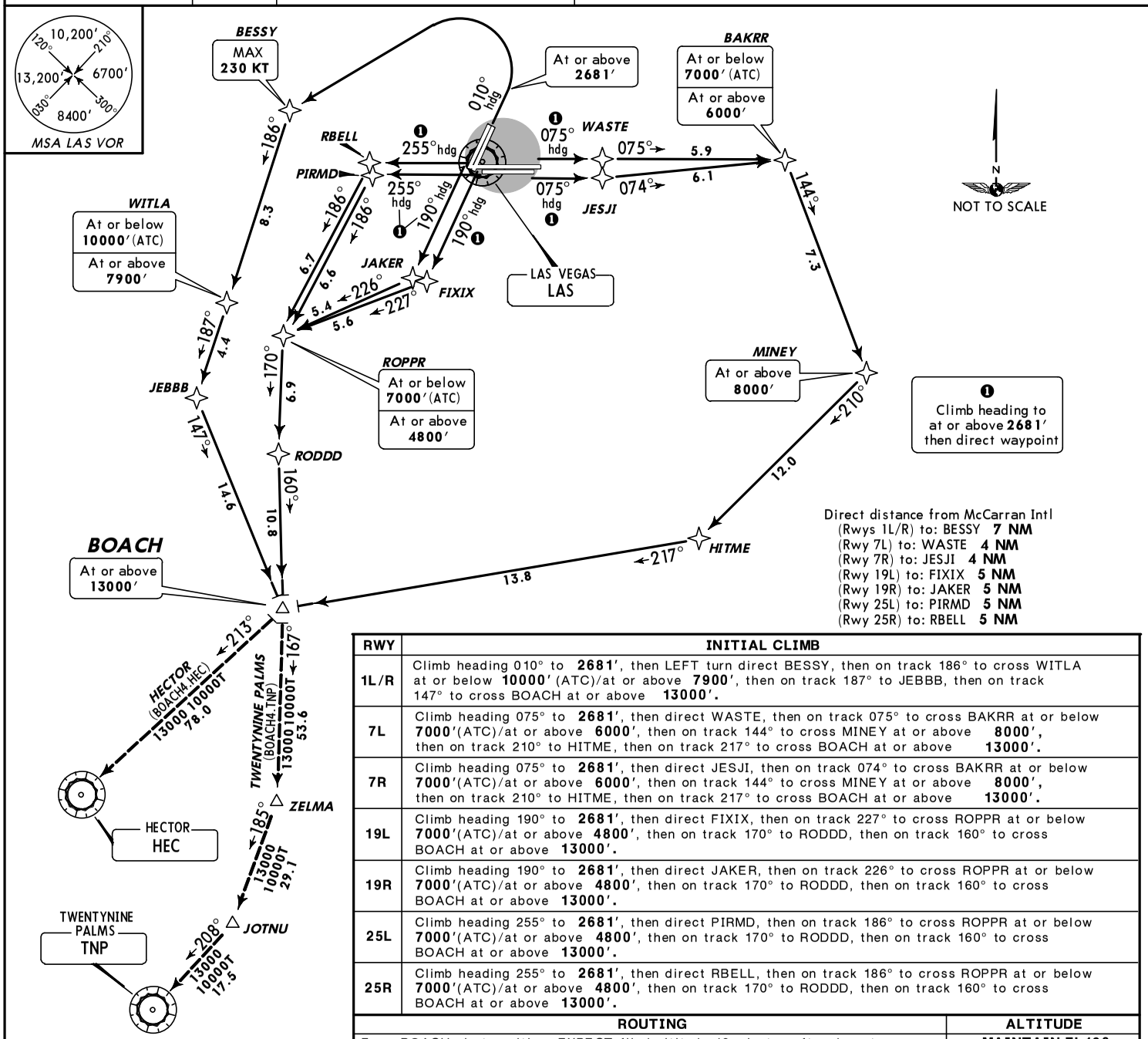
LAS VEGAS Departure (R)	Apt Elev	Trans level: FL180 Trans alt: 18000′
125.9	2181′	

1. DME/DME/IRU or GPS required. 2. RADAR required. 3. RNAV 1.
4. For non-GPS equipped aircraft, departing:
Rwys 1L/R: LSV, BLD, DAG, EED and HEC DMEs must be operational for HECTOR Transition.
Rwys 1L/R: LSV, BLD, GFS, EED, HEC and TNP DMEs must be operational for TWENTYNINE PALMS Transition.
Rwys 7L/R, 19L/R, 25L/R: BLD, DAG, EED and HEC DMEs must be operational for HECTOR Transition.
Rwys 7L/R, 19L/R, 25L/R: BLD, GFS, EED, HEC and TNP DMEs must be operational for TWENTYNINE PALMS Transition.

BOACH FOUR RNAV DEPARTURE (BOACH4.BOACH)

SPEED: ***RWYS 1L/R: MAX 230 KT UNTIL BESSY***



Direct distance from McCarran Intl
(Rwys 1L/R) to: BESSY **7 NM**
(Rwy 7L) to: WASTE **4 NM**
(Rwy 7R) to: JESJI **4 NM**
(Rwy 19L) to: FIXIX **5 NM**
(Rwy 19R) to: JAKER **5 NM**
(Rwy 25L) to: PIRMD **5 NM**
(Rwy 25R) to: RBELL **5 NM**

RWY	INITIAL CLIMB
1L/R	Climb heading 010° to **2681′**, then LEFT turn direct BESSY, then on track 186° to cross WITLA at or below **10000′**(ATC)/at or above **7900′**, then on track 187° to JEBBB, then on track 147° to cross BOACH at or above **13000′.**
7L	Climb heading 075° to **2681′**, then direct WASTE, then on track 075° to cross BAKRR at or below **7000′**(ATC)/at or above **6000′**, then on track 144° to cross MINEY at or above **8000′**, then on track 210° to HITME, then on track 217° to cross BOACH at or above **13000′.**
7R	Climb heading 075° to **2681′**, then direct JESJI, then on track 074° to cross BAKRR at or below **7000′**(ATC)/at or above **6000′**, then on track 144° to cross MINEY at or above **8000′**, then on track 210° to HITME, then on track 217° to cross BOACH at or above **13000′.**
19L	Climb heading 190° to **2681′**, then direct FIXIX, then on track 227° to cross ROPPR at or below **7000′**(ATC)/at or above **4800′**, then on track 170° to RODDD, then on track 160° to cross BOACH at or above **13000′.**
19R	Climb heading 190° to **2681′**, then direct JAKER, then on track 226° to cross ROPPR at or below **7000′**(ATC)/at or above **4800′**, then on track 170° to RODDD, then on track 160° to cross BOACH at or above **13000′.**
25L	Climb heading 255° to **2681′**, then direct PIRMD, then on track 186° to cross ROPPR at or below **7000′**(ATC)/at or above **4800′**, then on track 170° to RODDD, then on track 160° to cross BOACH at or above **13000′.**
25R	Climb heading 255° to **2681′**, then direct RBELL, then on track 186° to cross ROPPR at or below **7000′**(ATC)/at or above **4800′**, then on track 170° to RODDD, then on track 160° to cross BOACH at or above **13000′.**

ROUTING	ALTITUDE
From BOACH via transition. EXPECT filed altitude 10 minutes after departure.	**MAINTAIN FL190**

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 1L/R: 1100-3 with minimum climb of 500′ per NM to **6000′**, then 345′ per NM to **13000′.**
Rwys 7L/R: Standard (or lower than standard, if authorized) with minimum climb of 400′ per NM to **8000′.**
Rwys 19L/R: Standard (or lower than standard, if authorized) with minimum climb of 400′ per NM to **5400′**, then 437′ per NM to **13000′.**
Rwys 25L/R: Standard (or lower than standard, if authorized) with minimum climb of 400′ per NM to **7000′**, then 417′ per NM to **13000′.**

Gnd speed-KT	75	100	150	200	250	300
345′ per NM	431	575	863	1150	1438	1725
400′ per NM	500	667	1000	1333	1667	2000
417′ per NM	521	695	1043	1390	1738	2085
437′ per NM	546	728	1093	1457	1821	2185
500′ per NM	625	833	1250	1667	2083	2500

OBSTACLES
Rwy 1L: Building 1508′ from DER, 463′ LEFT of centerline, 71′ AGL/2146′ MSL. Pole 453′ from DER, 283′ LEFT of centerline, 38′ AGL/2118′ MSL. Sign 1042′ from DER, 694′ LEFT of centerline, 35′ AGL/2124′ MSL.
Rwy 1R: Sign 1331′ from DER, 448′ RIGHT of centerline, 60′ AGL/2120′ MSL. Vents 604′ from DER, 539′ RIGHT of centerline, up to 17′ AGL/2095′ MSL.
Rwy 7L: Trees 761′ from DER, LEFT and RIGHT of centerline, up to 42′ AGL/2074′ MSL. Pole 747′ from DER, 442′ RIGHT of centerline, 25′ AGL/2057′ MSL.
Rwy 7R: Tower 1457′ from DER, 847′ RIGHT of centerline, 65′ AGL/2096′ MSL.
Rwy 19L: Multiple buildings, trees and poles 1394′ from DER, 251′ RIGHT of centerline, up to 96′ AGL/2284′ MSL. Sign 2181′ from DER, 1062′ RIGHT of centerline, 36′ AGL/2236′ MSL.
Rwy 19R: Trees 1563′ from DER, 329′ LEFT of centerline, up to 55′ AGL/2236′ MSL. Multiple buildings, signs and poles 197′ from DER, 59′ RIGHT of centerline, up to 75′ AGL/2291′ MSL.
Rwy 25L: Multiple poles, sign and buildings 1003′ from DER, 145′ LEFT of centerline, up to 97′ AGL/2291′ MSL. Tree 2837′ from DER, 1008′ LEFT of centerline, 72′ AGL/2230′ MSL. Railroad 2564′ from DER, 773′ LEFT of centerline, 66′ AGL/2223′ MSL.
Rwy 25R: Multiple poles and trees 533′ from DER, 1′ LEFT of centerline, up to 271′ AGL/2457′ MSL. Building 1822′ from DER, 652′ LEFT of centerline, 59′ AGL/2238′ MSL. Roads 669′ from DER, 17′ RIGHT of centerline, up to 29′ AGL/2208′ MSL.

CHANGES: Procedure renumbered, crossing restrictions, climb gradients.

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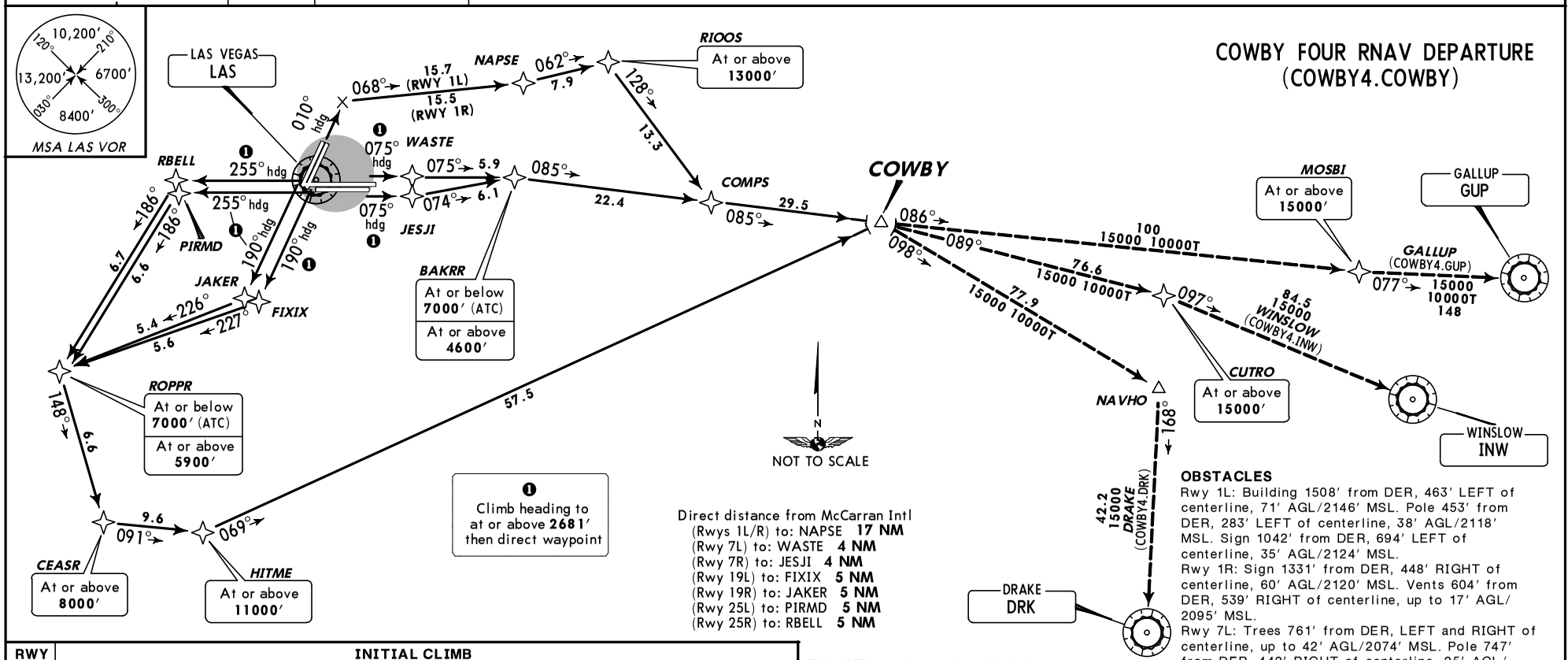
LAS VEGAS Departure (R)		Apt Elev	Trans level: FL180
Rwys 1L/R, 7L/R	Rwys 19L/R, 25L/R	2181′	Trans alt: 18000′
133.95	125.9		

1. DME/DME/IRU or GPS required. 2. RADAR required. 3. RNAV 1.
4. For non-GPS equipped aircraft, departing:
Rwys 1L/R, 19L/R, 25L/R: LAS, BLD, MMM, PGS, DRK, GCN, TBC, ZUN, INW and GUP DMEs must be operational for GALLUP Transition.
Rwys 7L/R: LSV, LAS, BLD, MMM, PGS, DRK, GCN, TBC, ZUN, INW and GUP DMEs must be operational for GALLUP Transition.
Rwys 1L/R, 19L/R, 25L/R: BLD, LAS, MMM, PGS, DRK, FLG and INW DMEs must be operational for WINSLOW Transition.
Rwy 7L: LSV, LAS, BLD, MMM, DRK, FLG and INW DMEs must be operational for WINSLOW Transition.
Rwy 7R: LSV, LAS, MMM, PGS, DRK, FLG and INW DMEs must be operational for WINSLOW Transition.
Rwys 1L/R, 19L/R, 25L/R: BLD, LAS, MMM, GCN, PGS and DRK DMEs must be operational for DRAKE Transition.
Rwys 7L/R: LSV, LAS, MMM, GCN, PGS and DRK DMEs must be operational for DRAKE Transition.



COWBY FOUR RNAV DEPARTURE (COWBY4.COWBY)

Direct distance from McCarran Intl
(Rwys 1L/R) to: NAPSE **17 NM**
(Rwy 7L) to: WASTE **4 NM**
(Rwy 7R) to: JESJI **4 NM**
(Rwy 19L) to: FIXIX **5 NM**
(Rwy 19R) to: JAKER **5 NM**
(Rwy 25L) to: PIRMD **5 NM**
(Rwy 25R) to: RBELL **5 NM**

RWY	INITIAL CLIMB
1L/R	Climb heading 010° to intercept course 068° to NAPSE, then on track 062° to cross RIOOS at at or above **13000′**, then on track 128° to COMPS, then on track 085° to COWBY.
7L	Climb heading 075° to **2681′**, then direct WASTE, then on track 075° to cross BAKRR at or below **7000′**(ATC)/at or above **4600′**, then on track 085° to COMPS, then on track 085° to COWBY.
7R	Climb heading 075° to **2681′**, then direct JESJI, then on track 074° to cross BAKRR at or below **7000′**(ATC)/at or above **4600′**, then on track 085° to COMPS, then on track 085° to COWBY.
19L	Climb heading 190° to **2681′**, then direct FIXIX, then on track 227° to cross ROPPR at or below **7000′**(ATC)/at or above **5900′**, then on track 148° to cross CEASR at or above **8000′**, then on track 091° to cross HITME at or above **11000′**, then on track 069° to COWBY.
19R	Climb heading 190° to **2681′**, then direct JAKER, then on track 226° to cross ROPPR at or below **7000′**(ATC)/at or above **5900′**, then on track 148° to cross CEASR at or above **8000′**, then on track 091° to cross HITME at or above **11000′**, then on track 069° to COWBY.
25L	Climb heading 255° to **2681′**, then direct PIRMD, then on track 186° to cross ROPPR at or below **7000′**(ATC)/at or above **5900′**, then on track 148° to cross CEASR at or above **8000′**, then on track 091° to cross HITME at or above **11000′**, then on track 069° to COWBY.
25R	Climb heading 255° to **2681′**, then direct RBELL, then on track 186° to cross ROPPR at or below **7000′**(ATC)/at or above **5900′**, then on track 148° to cross CEASR at or above **8000′**, then on track 091° to cross HITME at or above **11000′**, then on track 069° to COWBY.

ROUTING	ALTITUDE
From COWBY via transition. EXPECT filed altitude 10 minutes after departure.	**MAINTAIN FL190**

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 1L/R: Standard (or lower than standard, if authorized) with minimum climb of 321′ per NM to **5100′**, then a climb of 483′ per NM to **13000′.**
Rwys 7L/R: Standard (or lower than standard, if authorized) with minimum climb of 310′ per NM to **7000′.**
Rwys 19L/R: Standard (or lower than standard, if authorized) with minimum climb of 400′ per NM to **10000′.**
Rwys 25L/R: Standard (or lower than standard, if authorized) with minimum climb of 350′ per NM to **11000′.**

Gnd speed-KT	75	100	150	200	250	300
310′ per NM	388	517	775	1033	1292	1550
321′ per NM	401	535	803	1070	1338	1605
350′ per NM	438	583	875	1167	1458	1750
400′ per NM	500	667	1000	1333	1667	2000
483′ per NM	604	805	1208	1610	2013	2415

OBSTACLES
Rwy 1L: Building 1508′ from DER, 463′ LEFT of centerline, 71′ AGL/2146′ MSL. Pole 453′ from DER, 283′ LEFT of centerline, 38′ AGL/2118′ MSL. Sign 1042′ from DER, 694′ LEFT of centerline, 35′ AGL/2124′ MSL.
Rwy 1R: Sign 1331′ from DER, 448′ RIGHT of centerline, 60′ AGL/2120′ MSL. Vents 604′ from DER, 539′ RIGHT of centerline, up to 17′ AGL/2095′ MSL.
Rwy 7L: Trees 761′ from DER, LEFT and RIGHT of centerline, up to 42′ AGL/2074′ MSL. Pole 747′ from DER, 442′ RIGHT of centerline, 25′ AGL/2057′ MSL.
Rwy 7R: Tower 1457′ from DER, 847′ RIGHT of centerline, 65′ AGL/2096′ MSL.
Rwy 19L: Multiple buildings, trees and poles 1394′ from DER, 251′ RIGHT of centerline, up to 96′ AGL/2284′ MSL. Sign 2181′ from DER, 1062′ RIGHT of centerline, 36′ AGL/2236′ MSL.
Rwy 19R: Trees 1563′ from DER, 329′ LEFT of centerline, up to 55′ AGL/2236′ MSL. Multiple buildings, signs and poles 197′ from DER, 59′ RIGHT of centerline, up to 75′ AGL/2291′ MSL.
Rwy 25L: Multiple poles, sign and buildings 1003′ from DER, 145′ LEFT of centerline, up to 97′ AGL/2291′ MSL. Tree 2837′ from DER, 1008′ LEFT of centerline, 72′ AGL/2230′ MSL. Railroad 2564′ from DER, 773′ LEFT of centerline, 66′ AGL/2223′ MSL.
Rwy 25R: Multiple poles and trees 533′ from DER, 1′ LEFT of centerline, up to 271′ AGL/2457′ MSL. Building 1822′ from DER, 652′ LEFT of centerline, 59′ AGL/2238′ MSL. Roads 669′ from DER, 17′ RIGHT of centerline, up to 29′ AGL/2208′ MSL.

CHANGES: Procedure renumbered, crossing restrictions, climb gradient.

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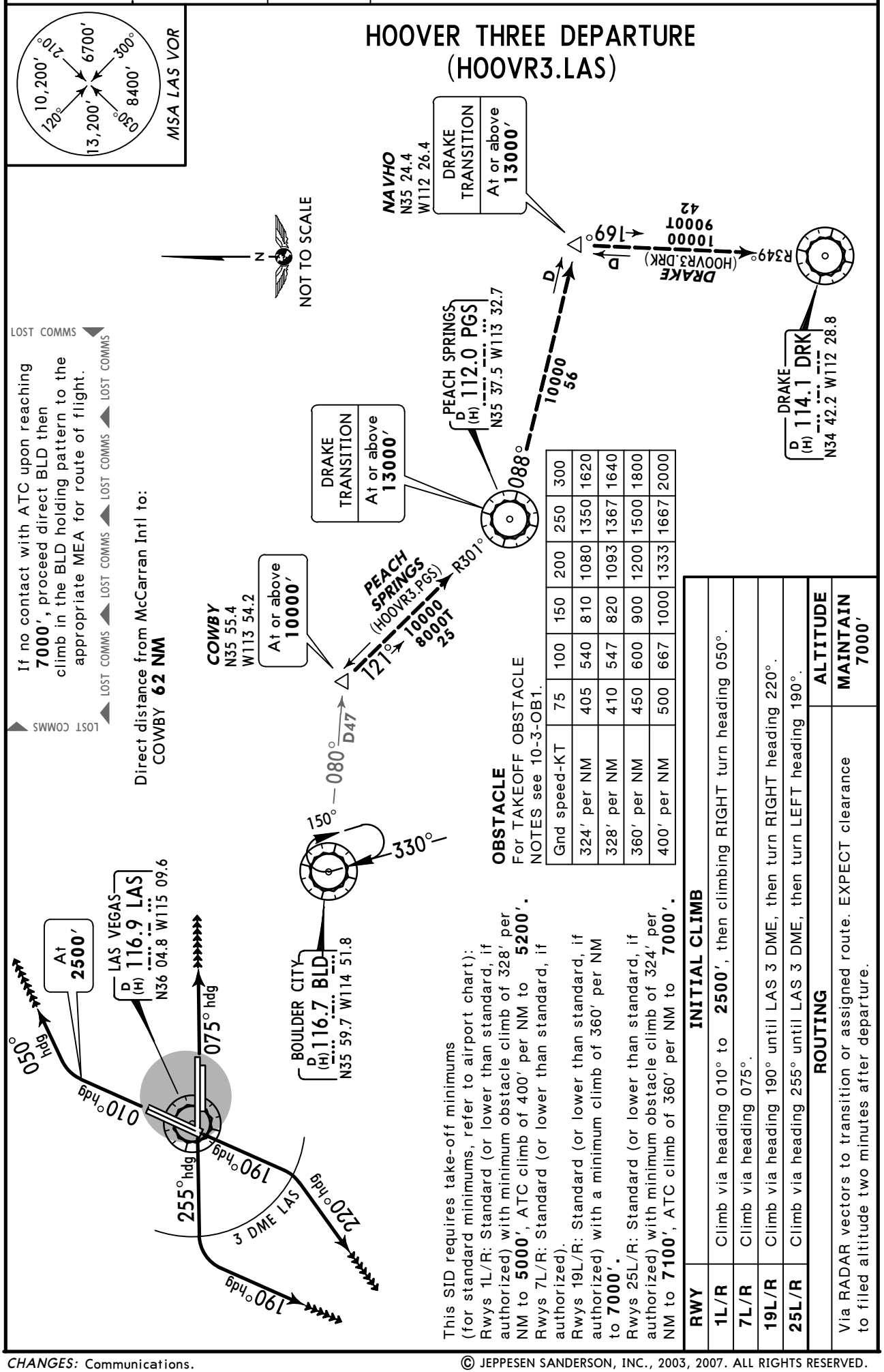
LAS VEGAS Departure (R) Rwys 1L/R, 7L/R	Rwys 19L/R, 25L/R	Apt Elev	
133.95	125.9	2181′	Trans level: FL180 Trans alt: 18000′ 1. RADAR required. 2. DME required.

HOOVER THREE DEPARTURE
(HOOVR3.LAS)



OBSTACLE
For TAKEOFF OBSTACLE NOTES see 10-3-OB1.

Gnd speed-KT	75	100	150	200	250	300
324′ per NM	405	540	810	1080	1350	1620
328′ per NM	410	547	820	1093	1367	1640
360′ per NM	450	600	900	1200	1500	1800
400′ per NM	500	667	1000	1333	1667	2000

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 1L/R: Standard (or lower than standard, if authorized) with minimum obstacle climb of 328′ per NM to **5000′**, ATC climb of 400′ per NM to **5200′**.
Rwys 7L/R: Standard (or lower than standard, if authorized).
Rwys 19L/R: Standard (or lower than standard, if authorized) with a minimum climb of 360′ per NM to **7000′**.
Rwys 25L/R: Standard (or lower than standard, if authorized) with minimum obstacle climb of 324′ per NM to **7100′**, ATC climb of 360′ per NM to **7000′**.

RWY	INITIAL CLIMB
1L/R	Climb via heading 010° to **2500′**, then climbing RIGHT turn heading 050°.
7L/R	Climb via heading 075°.
19L/R	Climb via heading 190° until LAS 3 DME, then turn RIGHT heading 220°.
25L/R	Climb via heading 255° until LAS 3 DME, then turn LEFT heading 190°.

ROUTING	ALTITUDE
Via RADAR vectors to transition or assigned route. EXPECT clearance to filed altitude two minutes after departure.	**MAINTAIN 7000′**

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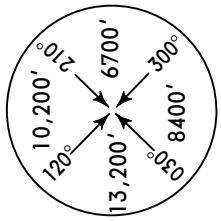
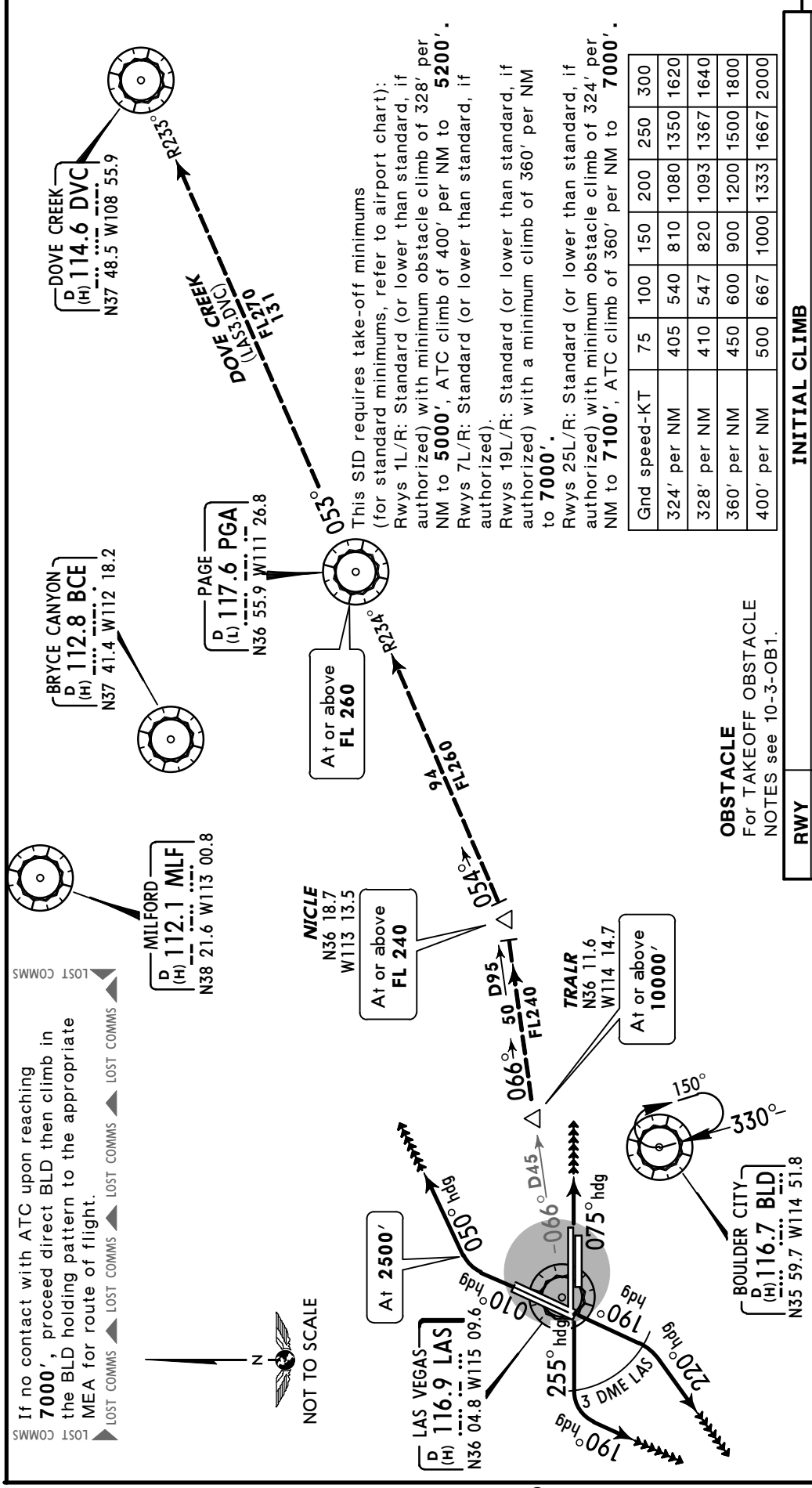
LAS VEGAS Departure (R) Rwys 1L/R, 7L/R	Rwys 19L/R, 25L/R	Apt Elev	
133.95	125.9	2181′	Trans level: FL180 Trans alt: 18000′ 1. RADAR required. 2. DME required.

LAS VEGAS THREE DEPARTURE (LAS3.LAS)





This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 1L/R: Standard (or lower than standard, if authorized) with minimum obstacle climb of 328′ per NM to **5000′**, ATC climb of 400′ per NM to **5200′**.
Rwys 7L/R: Standard (or lower than standard, if authorized).
Rwys 19L/R: Standard (or lower than standard, if authorized) with a minimum climb of 360′ per NM to **7000′**.
Rwys 25L/R: Standard (or lower than standard, if authorized) with minimum obstacle climb of 324′ per NM to **7100′**, ATC climb of 360′ per NM to **7000′**.

Gnd speed-KT	75	100	150	200	250	300
324′ per NM	405	540	810	1080	1350	1620
328′ per NM	410	547	820	1093	1367	1640
360′ per NM	450	600	900	1200	1500	1800
400′ per NM	500	667	1000	1333	1667	2000

OBSTACLE
For TAKEOFF OBSTACLE NOTES see 10-3-OB1.

RWY	INITIAL CLIMB
1L/R	Climb via heading 010° to **2500′**, then climbing RIGHT turn heading 050°.
7L/R	Climb via heading 075°.
19L/R	Climb via heading 190° until LAS 3 DME, then RIGHT turn heading 220°.
25L/R	Climb via heading 255° until LAS 3 DME, then LEFT turn heading 190°.

ROUTING	ALTITUDE
Via RADAR vectors to transition or assigned route. EXPECT clearance to filed altitude two minutes after departure.	**MAINTAIN 7000′**

CHANGES: Communications.

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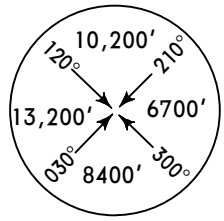
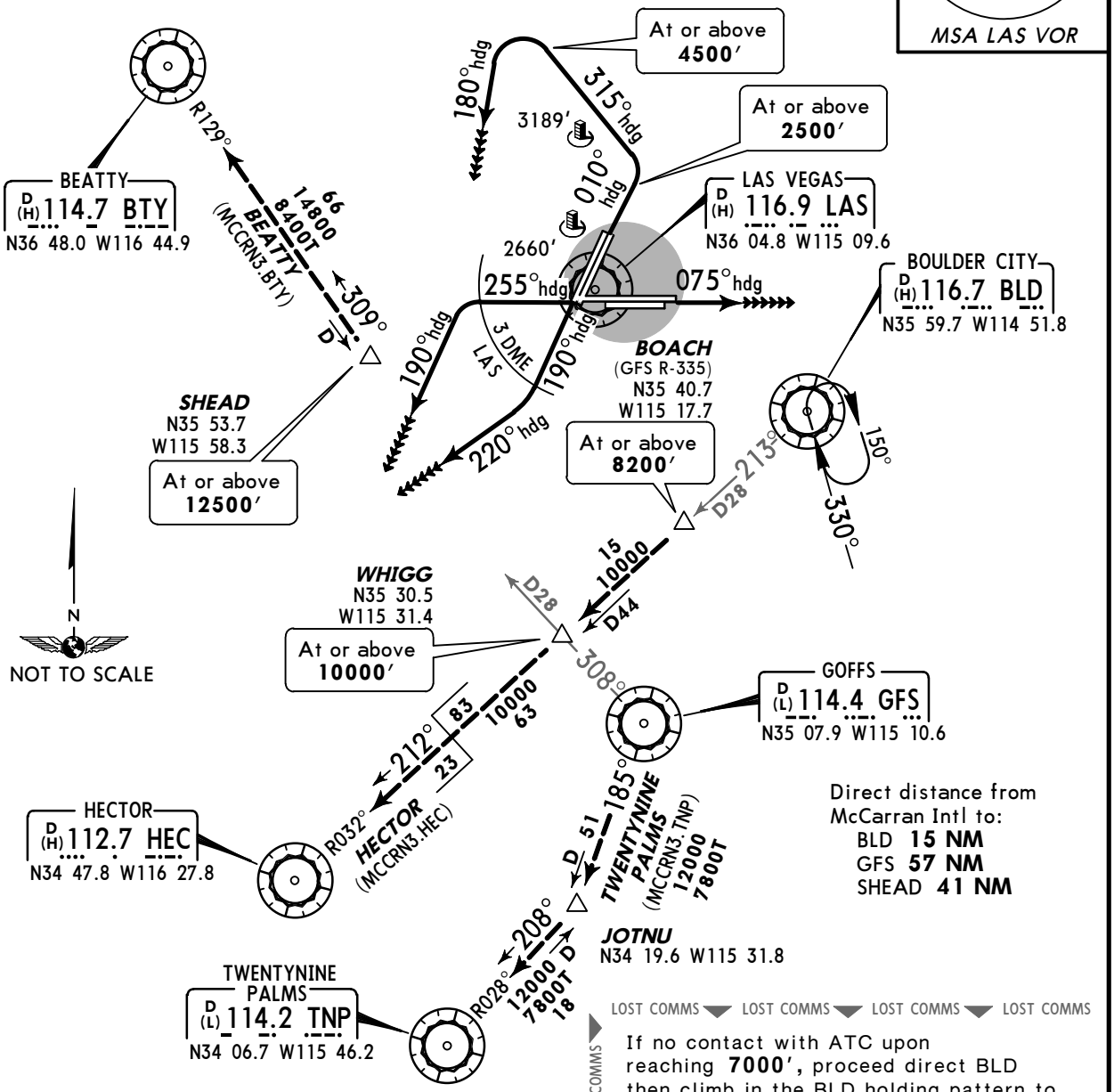
LAS VEGAS Departure (R)	Apt Elev	
125.9	2181′	Trans level: FL180 Trans alt: 18000′ 1. RADAR required. 2. DME required.



MSA LAS VOR

MCCARRAN THREE DEPARTURE (MCCRN3.LAS)



Direct distance from McCarran Intl to:
BLD **15 NM**
GFS **57 NM**
SHEAD **41 NM**

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS

LOST COMMS ▶ If no contact with ATC upon reaching **7000′**, proceed direct BLD then climb in the BLD holding pattern to the appropriate MEA for route of flight.

◀ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS ▲ LOST COMMS

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 1L/R: 1100-3 with minimum climb of 529′ per NM to **7000′.**
Rwys 7L/R: Standard (or lower than standard, if authorized) with minimum climb of 440′ per NM to **7000′.**
Rwys 19L/R: Standard (or lower than standard, if authorized) with a minimum climb of 360′ per NM to **7000′.**
Rwys 25L/R: Standard (or lower than standard, if authorized) with a minimum obstacle climb of 324′ per NM to **7100′**, ATC climb of 360′ per NM to **7000′.**

OBSTACLE
For TAKEOFF OBSTACLE NOTES see 10-3-OB1.

Gnd speed-KT	75	100	150	200	250	300
324′ per NM	405	540	810	1080	1350	1620
360′ per NM	450	600	900	1200	1500	1800
440′ per NM	550	733	1100	1467	1833	2200
529′ per NM	661	882	1323	1763	2204	2645

RWY	INITIAL CLIMB	ALTITUDE
1L/R	Climb via heading 010° to **2500′**, then climbing LEFT turn heading 315° to **4500′**, then climbing LEFT turn heading 180°.	MAINTAIN 7000′
7L/R	Climb via heading 075°.	
19L/R	Climb via heading 190° until LAS 3 DME, then RIGHT turn heading 220°.	
25L/R	Climb via heading 255° until LAS 3 DME, then LEFT turn heading 190°.	

ROUTING

Via RADAR vectors to transition or assigned route. EXPECT clearance to filed altitude two minutes after departure.

CHANGES: None.

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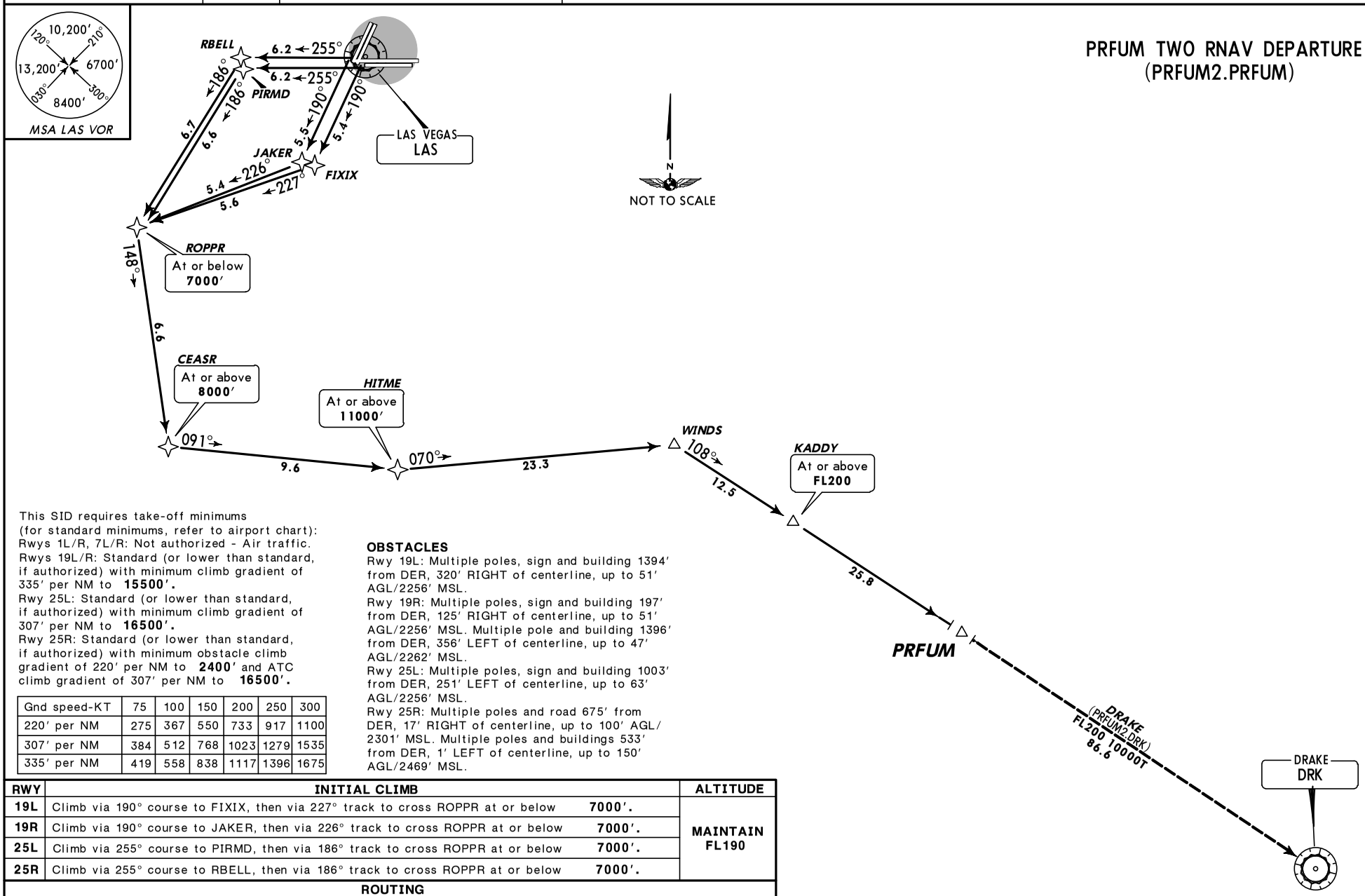
LAS VEGAS Departure (R) 125.9	Apt Elev 2181′	Trans level: FL180 Trans alt: 18000′	1. DME/DME/IRU or GPS required. 2. RNAV 1. 3. RADAR required. 4. For non-GPS equipped aircraft, LAS and BLD DMEs must be operational.

PRFUM TWO RNAV DEPARTURE (PRFUM2.PRFUM)



This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 1L/R, 7L/R: Not authorized - Air traffic.
Rwys 19L/R: Standard (or lower than standard, if authorized) with minimum climb gradient of 335′ per NM to **15500′.**
Rwy 25L: Standard (or lower than standard, if authorized) with minimum climb gradient of 307′ per NM to **16500′.**
Rwy 25R: Standard (or lower than standard, if authorized) with minimum obstacle climb gradient of 220′ per NM to **2400′** and ATC climb gradient of 307′ per NM to **16500′.**

Gnd speed-KT	75	100	150	200	250	300
220′ per NM	275	367	550	733	917	1100
307′ per NM	384	512	768	1023	1279	1535
335′ per NM	419	558	838	1117	1396	1675

OBSTACLES
Rwy 19L: Multiple poles, sign and building 1394′ from DER, 320′ RIGHT of centerline, up to 51′ AGL/2256′ MSL.
Rwy 19R: Multiple poles, sign and building 197′ from DER, 125′ RIGHT of centerline, up to 51′ AGL/2256′ MSL. Multiple pole and building 1396′ from DER, 356′ LEFT of centerline, up to 47′ AGL/2262′ MSL.
Rwy 25L: Multiple poles, sign and building 1003′ from DER, 251′ LEFT of centerline, up to 63′ AGL/2256′ MSL.
Rwy 25R: Multiple poles and road 675′ from DER, 17′ RIGHT of centerline, up to 100′ AGL/2301′ MSL. Multiple poles and buildings 533′ from DER, 1′ LEFT of centerline, up to 150′ AGL/2469′ MSL.

RWY	INITIAL CLIMB	ALTITUDE
19L	Climb via 190° course to FIXIX, then via 227° track to cross ROPPR at or below **7000′.**	MAINTAIN FL190
19R	Climb via 190° course to JAKER, then via 226° track to cross ROPPR at or below **7000′.**	
25L	Climb via 255° course to PIRMD, then via 186° track to cross ROPPR at or below **7000′.**	
25R	Climb via 255° course to RBELL, then via 186° track to cross ROPPR at or below **7000′.**	

ROUTING

From ROPPR via 148° track to cross CEASR at or above **8000′**, then via 091° track to cross HITME at or above **11000′**, then via 070° track to WINDS, then via 108° track to cross KADDY ar or above **FL200**, then via 108° track to PRFUM, then via transition. EXPECT filed altitude 10 minutes after departure.

CHANGES: Procedure note.

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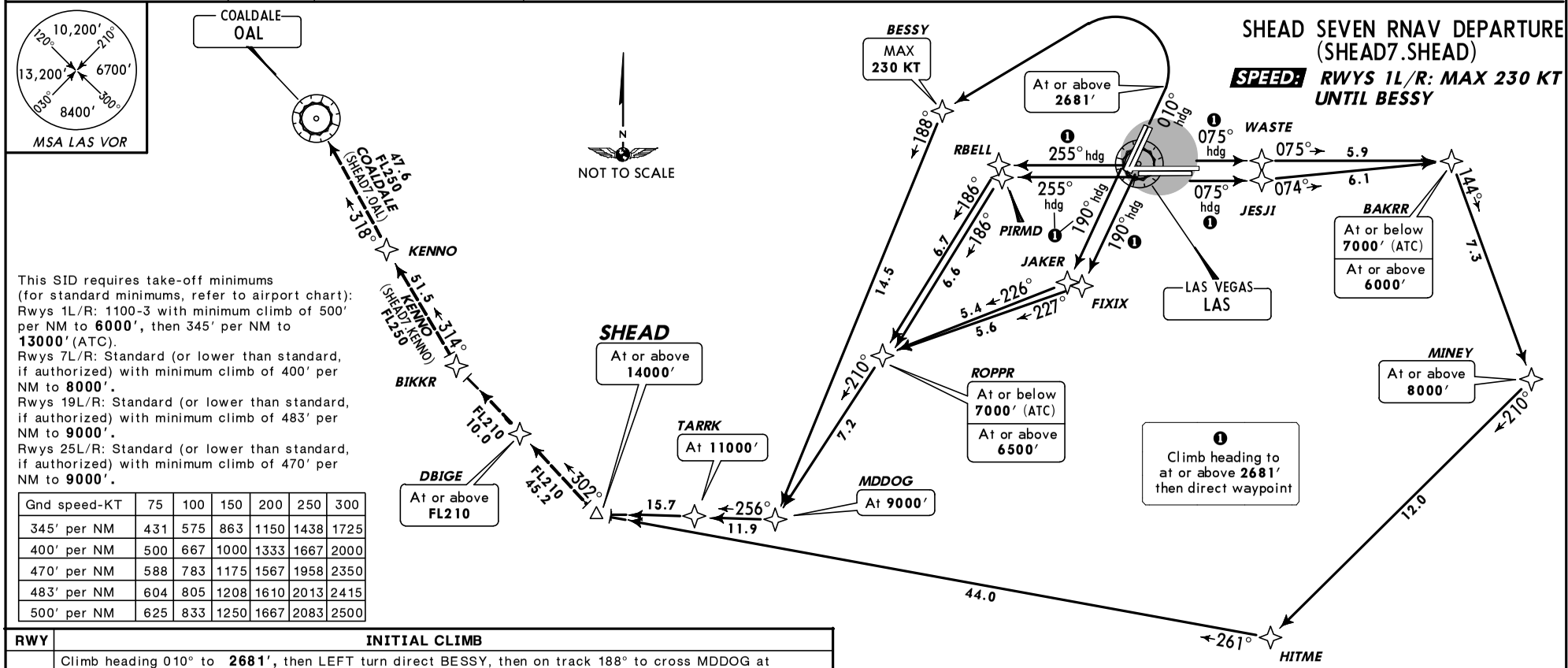
LAS VEGAS Departure (R)	Apt Elev	Trans level: FL180	
125.9	2181′	Trans alt: 18000′	

1. **DME/DME/IRU or GPS required.**
2. **RNAV 1.**
3. **RADAR required.**
4. For non-GPS equipped aircraft departing Rwys 1L/R, 19L/R, 25L/R: LSV, BLD, BTY and TPH DMEs must be operational.
5. For non-GPS equipped aircraft departing Rwys 7L/R: BLD, BTY and TPH DMEs must be operational.



This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 1L/R: 1100-3 with minimum climb of 500′ per NM to **6000′**, then 345′ per NM to **13000′**(ATC).
Rwys 7L/R: Standard (or lower than standard, if authorized) with minimum climb of 400′ per NM to **8000′**.
Rwys 19L/R: Standard (or lower than standard, if authorized) with minimum climb of 483′ per NM to **9000′**.
Rwys 25L/R: Standard (or lower than standard, if authorized) with minimum climb of 470′ per NM to **9000′**.

Gnd speed-KT	75	100	150	200	250	300
345′ per NM	431	575	863	1150	1438	1725
400′ per NM	500	667	1000	1333	1667	2000
470′ per NM	588	783	1175	1567	1958	2350
483′ per NM	604	805	1208	1610	2013	2415
500′ per NM	625	833	1250	1667	2083	2500

RWY	INITIAL CLIMB
1L/R	Climb heading 010° to **2681′**, then LEFT turn direct BESSY, then on track 188° to cross MDDOG at **9000′**, then on track 256° to cross TARRK at **11000′**, then on track 256° to cross SHEAD at or above **14000′**.
7L	Climb heading 075° to **2681′**, then direct WASTE, then on track 075° to cross BAKRR at or below **7000′**(ATC)/at or above **6000′**, then on track 144° to cross MINEY at or above **8000′**, then on track 210° to HITME, then on track 261° to cross SHEAD at or above **14000′**.
7R	Climb heading 075° to **2681′**, then direct JESJI, then on track 074° to cross BAKRR at or below **7000′**(ATC)/at or above **6000′**, then on track 144° to cross MINEY at or above **8000′**, then on track 210° to HITME, then on track 261° to cross SHEAD at or above **14000′**.
19L	Climb heading 190° to **2681′**, then direct FIXIX, then on track 227° to cross ROPPR at or below **7000′** (ATC)/at or above **6500′**, then on track 210° to cross MDDOG at **9000′**, then on track 256° to cross TARRK at **11000′**, then on track 256° to cross SHEAD at or above **14000′**.
19R	Climb heading 190° to **2681′**, then direct JAKER, then on track 226° to cross ROPPR at or below **7000′** (ATC)/at or above **6500′**, then on track 210° to cross MDDOG at **9000′**, then on track 256° to cross TARRK at **11000′**, then on track 256° to cross SHEAD at or above **14000′**.
25L	Climb heading 255° to **2681′**, then direct PIRMD, then on track 186° to cross ROPPR at or below **7000′** (ATC)/at or above **6500′**, then on track 210° to cross MDDOG at **9000′**, then on track 256° to cross TARRK at **11000′**, then on track 256° to cross SHEAD at or above **14000′**.
25R	Climb heading 255° to **2681′**, then direct RBELL, then on track 186° to cross ROPPR at or below **7000′** (ATC)/at or above **6500′**, then on track 210° to cross MDDOG at **9000′**, then on track 256° to cross TARRK at **11000′**, then on track 256° to cross SHEAD at or above **14000′**.

ROUTING	ALTITUDE
From SHEAD via transition. EXPECT filed altitude 10 minutes after departure.	**MAINTAIN FL190**

OBSTACLES

Rwy 1L: Building 1508′ from DER, 463′ LEFT of centerline, 71′ AGL/2146′ MSL. Pole 453′ from DER, 283′ LEFT of centerline, 38′ AGL/2118′ MSL. Sign 1042′ from DER, 694′ LEFT of centerline, 35′ AGL/2124′ MSL.
Rwy 1R: Sign 1331′ from DER, 448′ RIGHT of centerline, 60′ AGL/2120′ MSL. Vents 604′ from DER, 539′ RIGHT of centerline, up to 17′ AGL/2095′ MSL.
Rwy 7L: Trees 761′ from DER, LEFT and RIGHT of centerline, up to 42′ AGL/2074′ MSL. Pole 747′ from DER, 442′ RIGHT of centerline, 25′ AGL/2057′ MSL.
Rwy 7R: Tower 1457′ from DER, 847′ RIGHT of centerline, 65′ AGL/2096′ MSL.
Rwy 19L: Multiple buildings, trees and poles 1394′ from DER, 251′ RIGHT of centerline, up to 96′ AGL/2284′ MSL. Sign 2181′ from DER, 1062′ RIGHT of centerline, 36′ AGL/2236′ MSL.
Rwy 19R: Trees 1563′ from DER, 329′ LEFT of centerline, up to 55′ AGL/2236′ MSL. Multiple buildings, signs and poles 197′ from DER, 59′ RIGHT of centerline, up to 75′ AGL/2291′ MSL.

Direct distance from McCarran Intl
(Rwys 1L/R) to: BESSY **7 NM**
(Rwy 7L) to: WASTE **4 NM**
(Rwy 7R) to: JESJI **4 NM**
(Rwy 19L) to: FIXIX **5 NM**
(Rwy 19R) to: JAKER **5 NM**
(Rwy 25L) to: PIRMD **5 NM**
(Rwy 25R) to: RBELL **5 NM**

Rwy 25L: Multiple poles, sign and buildings 1003′ from DER, 145′ LEFT of centerline, up to 97′ AGL/2291′ MSL. Tree 2837′ from DER, 1008′ LEFT of centerline, 72′ AGL/2230′ MSL. Railroad 2564′ from DER, 773′ LEFT of centerline, 66′ AGL/2223′ MSL.
Rwy 25R: Multiple poles and trees 533′ from DER, 1′ LEFT of centerline, up to 271′ AGL/2457′ MSL. Building 1822′ from DER, 652′ LEFT of centerline, 59′ AGL/2238′ MSL. Roads 669′ from DER, 17′ RIGHT of centerline, up to 29′ AGL/2208′ MSL.

CHANGES: None.

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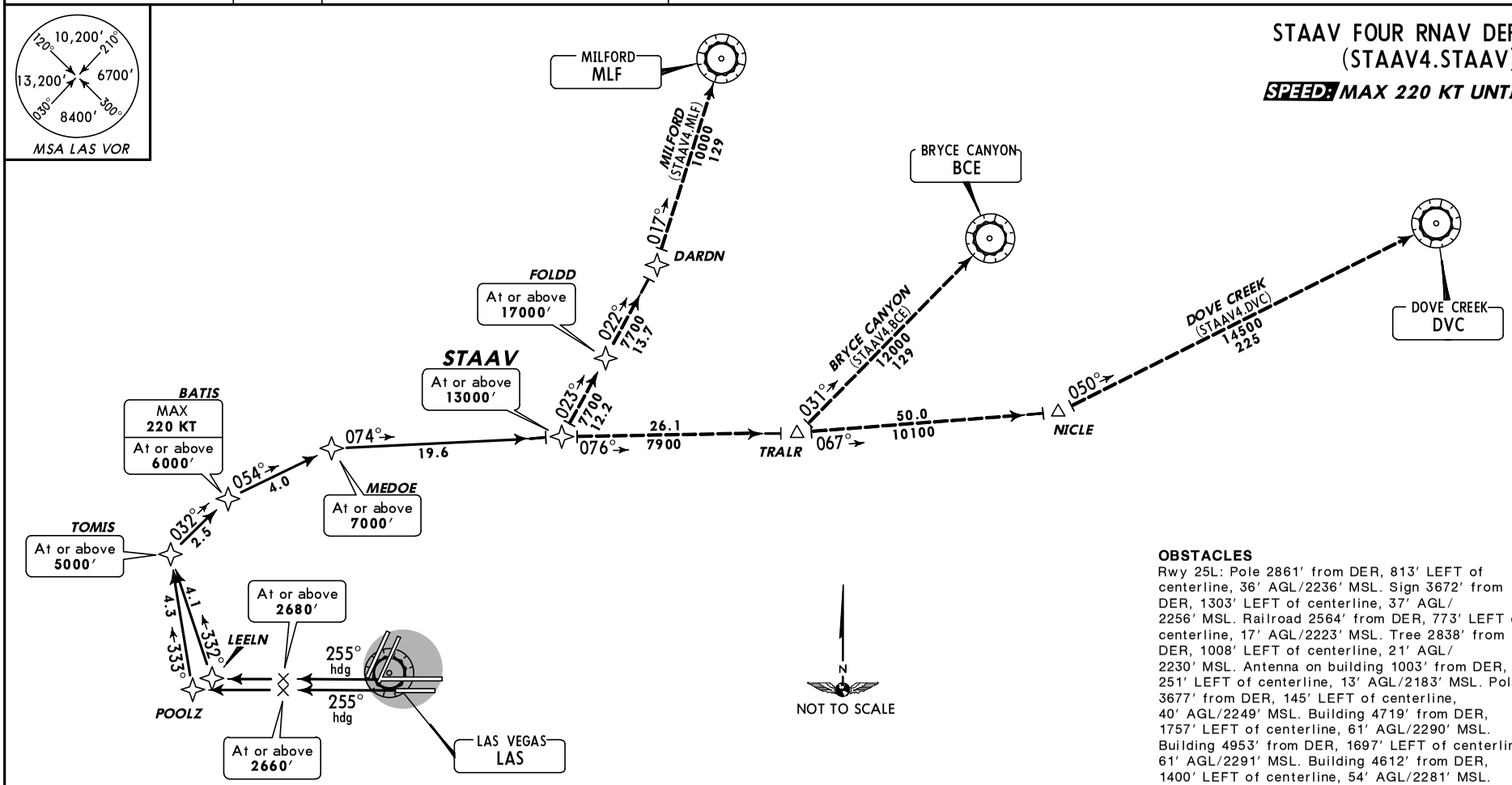
LAS VEGAS Departure (R)	Apt Elev	Trans level: FL180 Trans alt: 18000′	
133.95	2181′		

1. DME/DME/IRU or GPS required.
2. RNAV 1.
3. RADAR required.
4. For non-GPS equipped aircraft BLD and LAS DME must be operational.

STAAV FOUR RNAV DEPARTURE (STAAV4.STAAV)

SPEED: MAX 220 KT UNTIL BATIS



Direct distance from McCarran Intl
(Rwy 25L) to: POOLZ **6 NM**
(Rwy 25R) to: LEELN **6 NM**

RWY	INITIAL CLIMB	ALTITUDE
25L	Climb heading 255° to at or above **2660′** then direct POOLZ, then via 333° track to TOMIS.	MAINTAIN FL190
25R	Climb heading 255° to at or above **2680′** then direct LEELN, then via 332° track to TOMIS.	

ROUTING

From TOMIS via 032° track to BATIS, then via 054° track to MEDOE, then via 074° track to STAAV. Then via transition. EXPECT filed altitude 10 minutes after departure.

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 1L/R, 7L/R, 19L/R: Not authorized by ATC.
Rwy 25L: Standard (or lower than standard, if authorized) with ATC climb of 330′ per NM to **13000′.**
Rwy 25R: 300-2 or standard (or lower than standard, if authorized) with minimum climb of 313′ per NM to **4500′**, ATC climb of 330′ per NM to **13000′.**

Gnd speed-KT	75	100	150	200	250	300
313′ per NM	391	522	783	1043	1304	1565
330′ per NM	413	550	825	1100	1375	1650

OBSTACLES

Rwy 25L: Pole 2861′ from DER, 813′ LEFT of centerline, 36′ AGL/2236′ MSL. Sign 3672′ from DER, 1303′ LEFT of centerline, 37′ AGL/2256′ MSL. Railroad 2564′ from DER, 773′ LEFT of centerline, 17′ AGL/2223′ MSL. Tree 2838′ from DER, 1008′ LEFT of centerline, 21′ AGL/2230′ MSL. Antenna on building 1003′ from DER, 251′ LEFT of centerline, 13′ AGL/2183′ MSL. Pole 3677′ from DER, 145′ LEFT of centerline, 40′ AGL/2249′ MSL. Building 4719′ from DER, 1757′ LEFT of centerline, 61′ AGL/2290′ MSL. Building 4953′ from DER, 1697′ LEFT of centerline, 61′ AGL/2291′ MSL. Building 4612′ from DER, 1400′ LEFT of centerline, 54′ AGL/2281′ MSL.
Rwy 25R: Light pole 3115′ from DER, 1033′ RIGHT of centerline, 92′ AGL/2301′ MSL. Multiple light poles beginning 1.6 NM from DER, 2836′ LEFT of centerline, up to 130′ AGL/2469′ MSL. Obstacle light on sign 884′ from DER, 710′ LEFT of centerline, 34′ AGL/2233′ MSL. Multiple trees beginning 953′ from DER, 522′ RIGHT of centerline, up to 44′ AGL/2237′ MSL. Multiple trees beginning 954′ from DER, 546′ LEFT of centerline, up to 40′ AGL/2245′ MSL. Obstacle light DME 533′ from DER, 445′ LEFT of centerline, 18′ AGL/2207′ MSL. Building 1822′ from DER, 652′ LEFT of centerline, 59′ AGL/2238′ MSL. Road 669′ from DER, 477′ LEFT of centerline, 29′ AGL/2208′ MSL. Rod on building 534′ from DER, 369′ LEFT of centerline, 13′ AGL/2202′ MSL. Road 678′ from DER, 17′ RIGHT of centerline, 15′ AGL/2201′ MSL. Obstacle light on LOC 534′ from DER, 1′ from centerline, 6′ AGL/2195′ MSL.

CHANGES: None.

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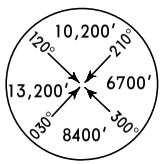
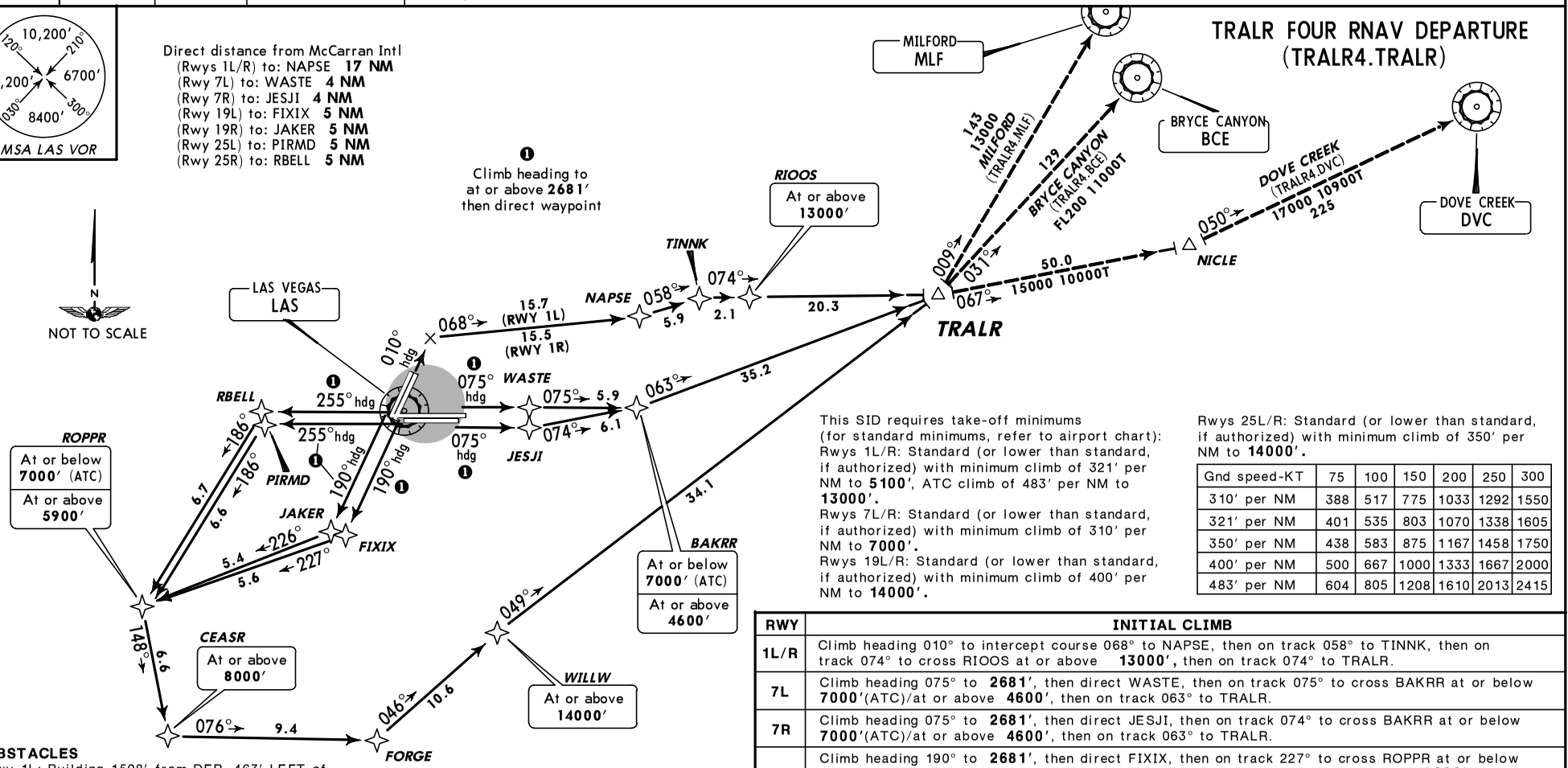
LAS VEGAS Departure (R)		Apt Elev	Trans level: FL180 Trans alt: 18000′
Rwys 1L/R, 7L/R	Rwys 19L/R, 25L/R	2181′	
133.95	125.9		

1. DME/DME/IRU or GPS required. 2. RADAR required. 3. RNAV 1.
4. For non-GPS equipped aircraft, departing:
Rwys 7L/R: LAS, BLD, MMM, MLF and BCE DMEs must be operational for BRYCE CANYON Transition.
Rwys 1L/R, 19L/R, 25L/R: BLD, MLF and BCE DMEs must be operational for BRYCE CANYON Transition.
Rwys 7L/R, 19L/R, 25L/R: BLD, LAS, MMM, PGS, GCN, PGA, BCE, DVC, HVE and CEZ DMEs must be operational for DOVE CREEK Transition.
Rwys 1L/R: BLD, MMM, PGS, GCN, PGA, BCE, DVC, HVE and CEZ DMEs must be operational for DOVE CREEK Transition.
Rwys 7L/R, 19L/R, 25L/R: BLD, LAS, MMM, ILC, CDC and MLF DMEs must be operational for MILFORD Transition.
Rwys 1L/R: BLD, MMM, ILC, CDC and MLF DMEs must be operational for MILFORD Transition.



MSA LAS VOR

Direct distance from McCarran Intl
(Rwys 1L/R) to: NAPSE **17 NM**
(Rwy 7L) to: WASTE **4 NM**
(Rwy 7R) to: JESJI **4 NM**
(Rwy 19L) to: FIXIX **5 NM**
(Rwy 19R) to: JAKER **5 NM**
(Rwy 25L) to: PIRMD **5 NM**
(Rwy 25R) to: RBELL **5 NM**



❶ Climb heading to at or above **2681′** then direct waypoint

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 1L/R: Standard (or lower than standard, if authorized) with minimum climb of 321′ per NM to **5100′**, ATC climb of 483′ per NM to **13000′.**
Rwys 7L/R: Standard (or lower than standard, if authorized) with minimum climb of 310′ per NM to **7000′.**
Rwys 19L/R: Standard (or lower than standard, if authorized) with minimum climb of 400′ per NM to **14000′.**

Rwys 25L/R: Standard (or lower than standard, if authorized) with minimum climb of 350′ per NM to **14000′.**

Gnd speed-KT	75	100	150	200	250	300
310′ per NM	388	517	775	1033	1292	1550
321′ per NM	401	535	803	1070	1338	1605
350′ per NM	438	583	875	1167	1458	1750
400′ per NM	500	667	1000	1333	1667	2000
483′ per NM	604	805	1208	1610	2013	2415

RWY	INITIAL CLIMB
1L/R	Climb heading 010° to intercept course 068° to NAPSE, then on track 058° to TINNK, then on track 074° to cross RIOOS at or above **13000′,** then on track 074° to TRALR.
7L	Climb heading 075° to **2681′**, then direct WASTE, then on track 075° to cross BAKRR at or below **7000′**(ATC)/at or above **4600′**, then on track 063° to TRALR.
7R	Climb heading 075° to **2681′**, then direct JESJI, then on track 074° to cross BAKRR at or below **7000′**(ATC)/at or above **4600′**, then on track 063° to TRALR.
19L	Climb heading 190° to **2681′**, then direct FIXIX, then on track 227° to cross ROPPR at or below **7000′**(ATC)/at or above **5900′**, then on track 148° to cross CEASR at or above **8000′,** then on track 076° to FORGE, then on track 046° to cross WILLW at or above **14000′,** then on track 049° to TRALR.
19R	Climb heading 190° to **2681′**, then direct JAKER, then on track 226° to cross ROPPR at or below **7000′**(ATC)/at or above **5900′**, then on track 148° to cross CEASR at or above **8000′,** then on track 076° to FORGE, then on track 046° to cross WILLW at or above **14000′,** then on track 049° to TRALR.
25L	Climb heading 255° to **2681′**, then direct PIRMD, then on track 186° to cross ROPPR at or below **7000′**(ATC)/at or above **5900′**, then on track 148° to cross CEASR at or above **8000′,** then on track 076° to FORGE, then on track 046° to cross WILLW at or above **14000′,** then on track 049° to TRALR.
25R	Climb heading 255° to **2681′**, then direct RBELL, then on track 186° to cross ROPPR at or below **7000′**(ATC)/at or above **5900′**, then on track 148° to cross CEASR at or above **8000′,** then on track 076° to FORGE, then on track 046° to cross WILLW at or above **14000′,** then on track 049° to TRALR.

ROUTING	ALTITUDE
From TRALR via transition. EXPECT filed altitude 10 minutes after departure.	**MAINTAIN FL190**

OBSTACLES
Rwy 1L: Building 1508′ from DER, 463′ LEFT of centerline, 71′ AGL/2146′ MSL. Pole 453′ from DER, 283′ LEFT of centerline, 38′ AGL/2118′ MSL. Sign 1042′ from DER, 694′ LEFT of centerline, 35′ AGL/2124′ MSL.
Rwy 1R: Sign 1331′ from DER, 448′ RIGHT of centerline, 60′ AGL/2120′ MSL. Vents 604′ from DER, 539′ RIGHT of centerline, up to 17′ AGL/2095′ MSL.
Rwy 7L: Trees 761′ from DER, LEFT and RIGHT of centerline, up to 42′ AGL/2074′ MSL. Pole 747′ from DER, 442′ RIGHT of centerline, 25′ AGL/2057′ MSL.
Rwy 7R: Tower 1457′ from DER, 847′ RIGHT of centerline, 65′ AGL/2096′ MSL.
Rwy 19L: Multiple buildings, trees and poles 1394′ from DER, 251′ RIGHT of centerline, up to 96′ AGL/2284′ MSL. Sign 2181′ from DER, 1062′ RIGHT of centerline, 36′ AGL/2236′ MSL.
Rwy 19R: Trees 1563′ from DER, 329′ LEFT of centerline, up to 55′ AGL/2236′ MSL. Multiple buildings, signs and poles 197′ from DER, 59′ RIGHT of centerline, up to 75′ AGL/2291′ MSL.
Rwy 25L: Multiple poles, sign and buildings 1003′ from DER, 145′ LEFT of centerline, up to 97′ AGL/2291′ MSL. Tree 2837′ from DER, 1008′ LEFT of centerline, 72′ AGL/2230′ MSL. Railroad 2564′ from DER, 773′ LEFT of centerline, 66′ AGL/2223′ MSL.
Rwy 25R: Multiple poles and trees 533′ from DER, 1′ LEFT of centerline, up to 271′ AGL/2457′ MSL. Building 1822′ from DER, 652′ LEFT of centerline, 59′ AGL/2238′ MSL. Roads 669′ from DER, 17′ RIGHT of centerline, up to 29′ AGL/2208′ MSL.

CHANGES: Procedure renumbered, crossing restrictions.

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TAKEOFF OBSTACLE NOTES

- RWY 1L/R:
  3189' MSL MONUMENT, 2.7 NM NORTH OF DER, 2660' MSL BUILDING, 1.0 NM NORTHWEST OF DER.

- RWY 1L:
  MULTIPLE BUILDINGS 3954' FROM DER, 1.0 NM LEFT OF CENTERLINE, UP TO 283' AGL/2409' MSL. POLE 450' FROM DER, 283' LEFT OF CENTERLINE, 38' AGL/2118' MSL, OBSTACLE LIGHT ON WIND SOCK 248' FROM DER, 224' RIGHT OF CENTERLINE, 50' AGL/2104' MSL, POLE 1029' FROM DER, 715' LEFT OF CENTERLINE, 85' AGL/2124' MSL, TREE 1536' FROM DER, 502' LEFT OF CENTERLINE, 100' AGL/2132' MSL.

- RWY 1R:
  SIGN 1331' FROM DER, 448' RIGHT OF CENTERLINE, 60' AGL/2120' MSL, BLDG 599' FROM DER, 541' RIGHT OF CENTERLINE, 70' AGL/2096' MSL, MULTIPLE BUILDINGS 4878' FROM DER, 1.2 NM LEFT OF CENTERLINE, 283' AGL/2409' MSL.

- RWY 7L:
  TREE 1257' FROM DER, 789' LEFT OF CENTERLINE, 85' AGL/2077' MSL, LIGHT POLE 747' FROM DER, 441' RIGHT OF CENTERLINE, 62' AGL/2057' MSL, TREE 1007' FROM DER, 557' RIGHT OF CENTERLINE, 70' AGL/2062' MSL.

- RWY 7R:
  LIGHT ON WIND SOCK 102' FROM DER, 300' RIGHT OF CENTERLINE, 30' AGL/2051' MSL.

- RWY 19L:
  POLE 1394' FROM DER, 533' RIGHT OF CENTERLINE, 36' AGL/2236' MSL, SIGN 2181' FROM DER, 1062' RIGHT OF CENTERLINE, 50' AGL/2256' MSL, ROD ON BLDG 2921' FROM DER, 581' RIGHT OF CENTERLINE, 50' AGL/2262' MSL, POLE 2633' FROM DER, 319' RIGHT OF CENTERLINE, 40' AGL/2246' MSL.

- RWY 19R:
  POLE 1135' FROM DER, 619' RIGHT OF CENTERLINE, 65' AGL/2249' MSL, POLE 756' FROM DER, 618' RIGHT OF CENTERLINE, 50' AGL/2231' MSL, SIGN 2182' FROM DER, 125' RIGHT OF CENTERLINE, 50' AGL/2256' MSL, POLE 1396' FROM DER, 403' LEFT OF CENTERLINE, 55' AGL/2236' MSL, ROD ON BLDG 197' FROM DER, 441' RIGHT OF CENTERLINE, 30' AGL/2202' MSL, ROD ON BLDG 2922' FROM DER, 356' LEFT CENTERLINE, 50' AGL/2262' MSL.

- RWY 25L:
  POLE 2860' FROM DER, 813' LEFT OF CENTERLINE, 57' AGL/2236' MSL, SIGN 3672' FROM DER, 1302' LEFT OF CENTERLINE, 57' AGL/2256' MSL, ANT ON BLDG 1002' FROM DER, 251' LEFT OF CENTERLINE, 34' AGL/2183' MSL, POLE 3677' FROM DER, 145' LEFT OF CENTERLINE, 67' AGL/2249' MSL.

- RWY 25R:
  LIGHT POLE 3115' FROM DER, 1033' RIGHT OF CENTERLINE, 109' AGL/2301' MSL, LIGHT ON POLE 1.5 NM FROM DER, 2836 LEFT OF CENTERLINE, 124' AGL/2457' MSL, ROAD 1.7 NM FROM DER, 2965 LEFT OF CENTERLINE, 139' AGL/2469' MSL, LIGHT ON POLE 1100' FROM DER, 508' LEFT OF CENTERLINE, 47' AGL/2226' MSL, BLDG 1822' FROM DER, 652' LEFT OF CENTERLINE, 46' AGL/2238' MSL, BLDG 2202' FROM DER, 596' LEFT OF CENTERLINE, 44' AGL/2246' MSL, ROD ON BLDG 534' FROM DER, 369' LEFT OF CENTERLINE, 33' AGL/2202' MSL, ROAD 678' FROM DER, 16' RIGHT OF CENTERLINE, 35' AGL/2201' MSL, LIGHT ON LOCALIZER ANTENNA 533' FROM DER ON CENTERLINE, 32' AGL/2195' MSL.

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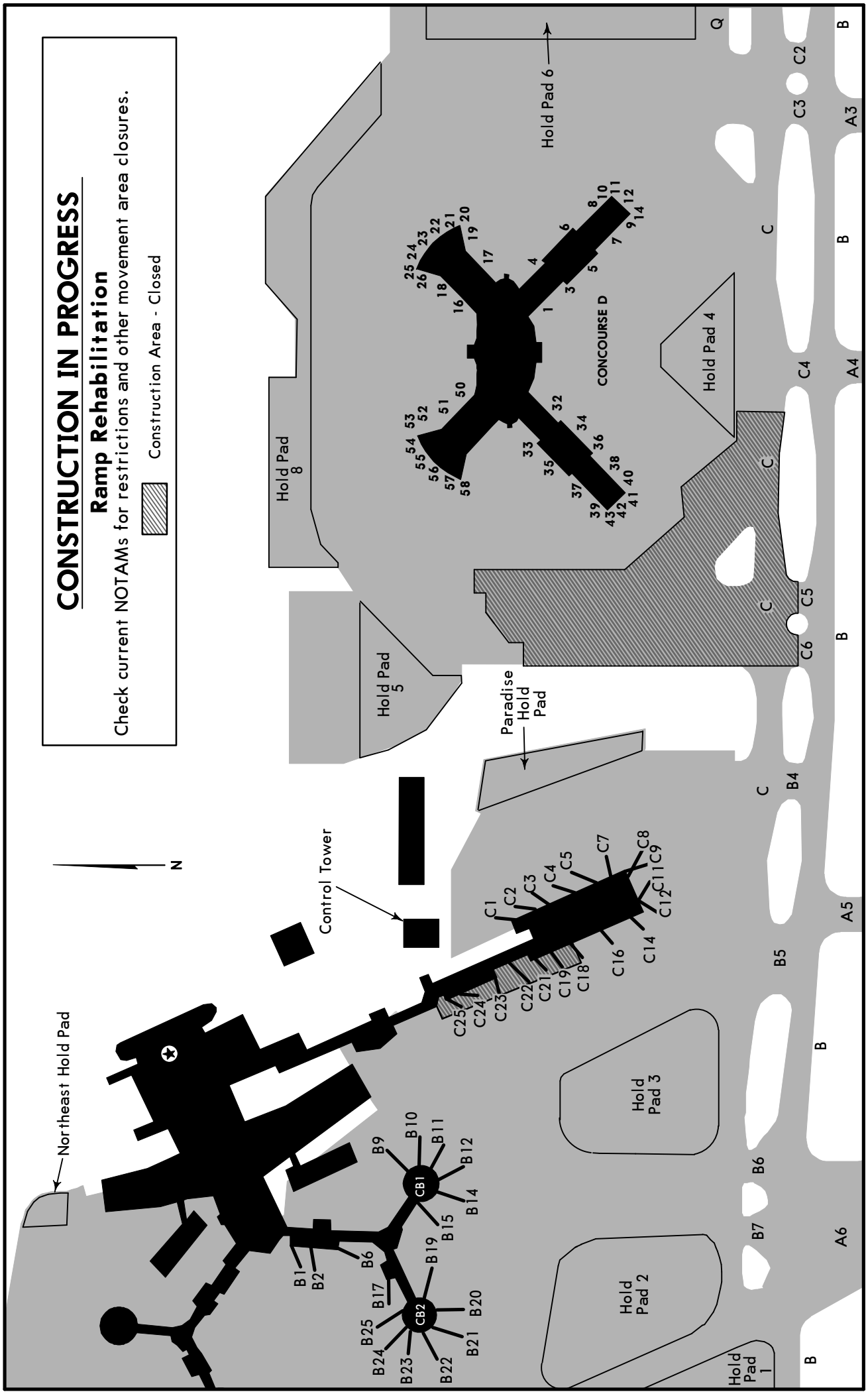

CHANGES: Concourse D gates added.

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D-ATIS	ACARS: D-ATIS PDC	LAS VEGAS Clearance	Ground West of Rwy 1R-19L	Ground East of Rwy 1R-19L
132.4		118.0	121.9	121.1

Tower Rwys 1L/R, 19L/R	Tower Rwys 7L/R, 25L/R	LAS VEGAS Departure (R) North	LAS VEGAS Departure (R) South	Ramp Control West	Ramp Control East
118.75	119.9	133.95	125.9	124.4	127.9

Aircraft may experience reflection of the sun from glass hotels located northwest of the airport. Reflection may occur at various altitudes, headings and distances from the airport.

Outbound aircraft contact Ramp Control prior to pushback 0530-0100 LT.

Lighted golf range 1400′ (427m) south of Rwys 1L/19R and 1R/19L.

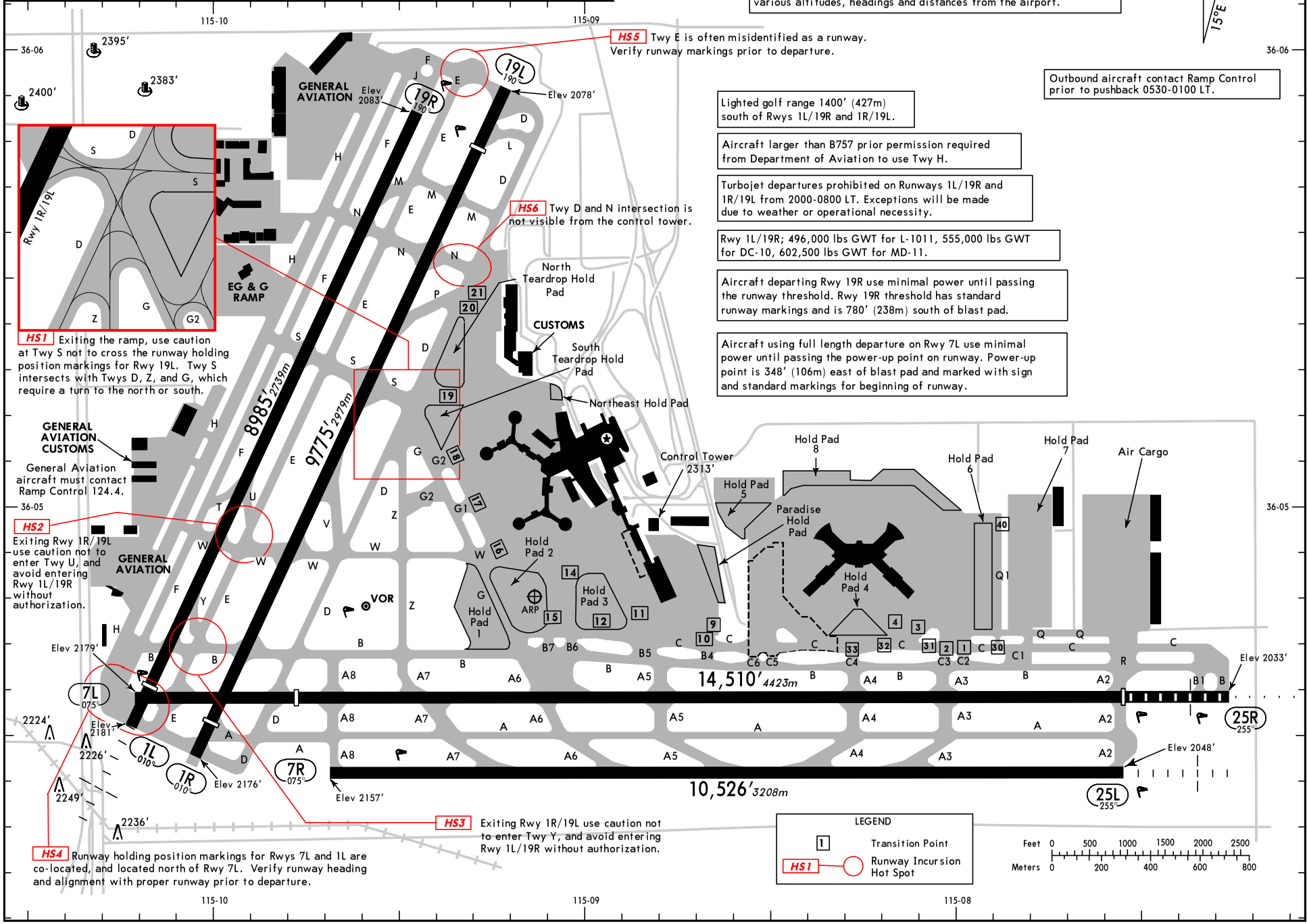
Aircraft larger than B757 prior permission required from Department of Aviation to use Twy H.

Turbojet departures prohibited on Runways 1L/19R and 1R/19L from 2000-0800 LT. Exceptions will be made due to weather or operational necessity.

Rwy 1L/19R; 496,000 lbs GWT for L-1011, 555,000 lbs GWT for DC-10, 602,500 lbs GWT for MD-11.

Aircraft departing Rwy 19R use minimal power until passing the runway threshold. Rwy 19R threshold has standard runway markings and is 780′ (238m) south of blast pad.

Aircraft using full length departure on Rwy 7L use minimal power until passing the power-up point on runway. Power-up point is 348′ (106m) east of blast pad and marked with sign and standard markings for beginning of runway.



CHANGES: Construction areas, transition points added, hold pad 6 added.

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GENERAL

ASDE-X surveillance system in use. Operate transponder with Mode C when operating on taxiways and runways.
Low-level wind shear alert system.
Birds and bats in vicinity of airport.
Extensive glider ops weekends and holidays; sunrise to sunset; LAS VOR R-187/020°; altitudes up to but not including FL180. Gliders remain clear of the Class B airspace but otherwise operate within the entire southwest quadrant of the Class B airspace veil.

ADDITIONAL RUNWAY INFORMATION

RWY			USABLE LENGTHS LANDING BEYOND Threshold	Glide Slope	TAKE-OFF	WIDTH
1R / 19L	MIRL REIL PAPI-L (angle 3.0°)	grooved	❶ 8681' *2646m*			150' *46m*
			❷ 8745' *2665m*			

❶ Last 603' *184m* of Rwy 1R is unavailable for landing distance computations.
❷ Last 152' *46m* of Rwy 19L is unavailable for landing distance computations.

1L	HIRL MALSF PAPI-L (angle 3.4°)	grooved	8401' *2561m*	7105' *2166m*		150' *46m*
19R	HIRL REIL PAPI-L (angle 3.0°)	grooved	❸ 8397' *2559m*			

❸ Last 588' *179m* of Rwy 19R is unavailable for landing distance computations.

7R	HIRL PAPI-L (angle 3.0°)	grooved				150' *46m*
25L	HIRL MALSF PAPI-L (angle 3.0°)	grooved		9401' *2865m*		

7L	HIRL PAPI-L (angle 3.0°)	porous friction course overlay	❹ 11,966' *3647m*			150' *46m*
25R	HIRL MALSR PAPI-L (angle 3.0°)		❺ 12,755' *3888m*	11,630' *3545m*		

❹ Last 405' *123m* of Rwy 7L is unavailable for landing distance computations.
❺ Last 358' *109m* of Rwy 25R is unavailable for landing distance computations.

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

	Rwys 1L/R, 7L/R, 25L		Rwys 19L/R		Rwy 25R		
			With Mim climb of 210'/NM to 2600'		With Mim climb of 230'/NM to 2600'		
	Adequate Vis Ref	STD	Adequate Vis Ref	STD	Adequate Vis Ref	STD	Other
1 & 2 Eng	1/4	1	1/4	1	1/4	1	300-2
3 & 4 Eng		1/2		1/2		1/2	

OBSTACLE DP

Runways 1L/R; Climbing right turn direct BLD VOR before proceeding on course. Runways 7L/R; Climb heading 075° to 3700' then climbing right turn direct BLD VOR before proceeding on course.
Runways 19L/R; Climbing left turn via heading 120° and BLD VOR R-257 direct BLD VOR before proceeding on course. Runways 25L/R; Climb via heading 255° to 2800' then climbing right turn direct BLD VOR before proceeding on course.

FOR FILING AS ALTERNATE

	ILS Rwy 25L/R LOC Rwy 25L/R VOR Rwy 25L/R RNAV (GPS) Rwy 1R VOR DME-A	ILS Rwy 1L LOC DME Rwy 1L	Authorized Only When Local Weather Available RNAV (GPS) Rwy 19L/R
A	900-2	900-2	900-2
B			
C	1000-3	1000-3	1000-3
D		NA	

AMEND 6

CHANGES: None.

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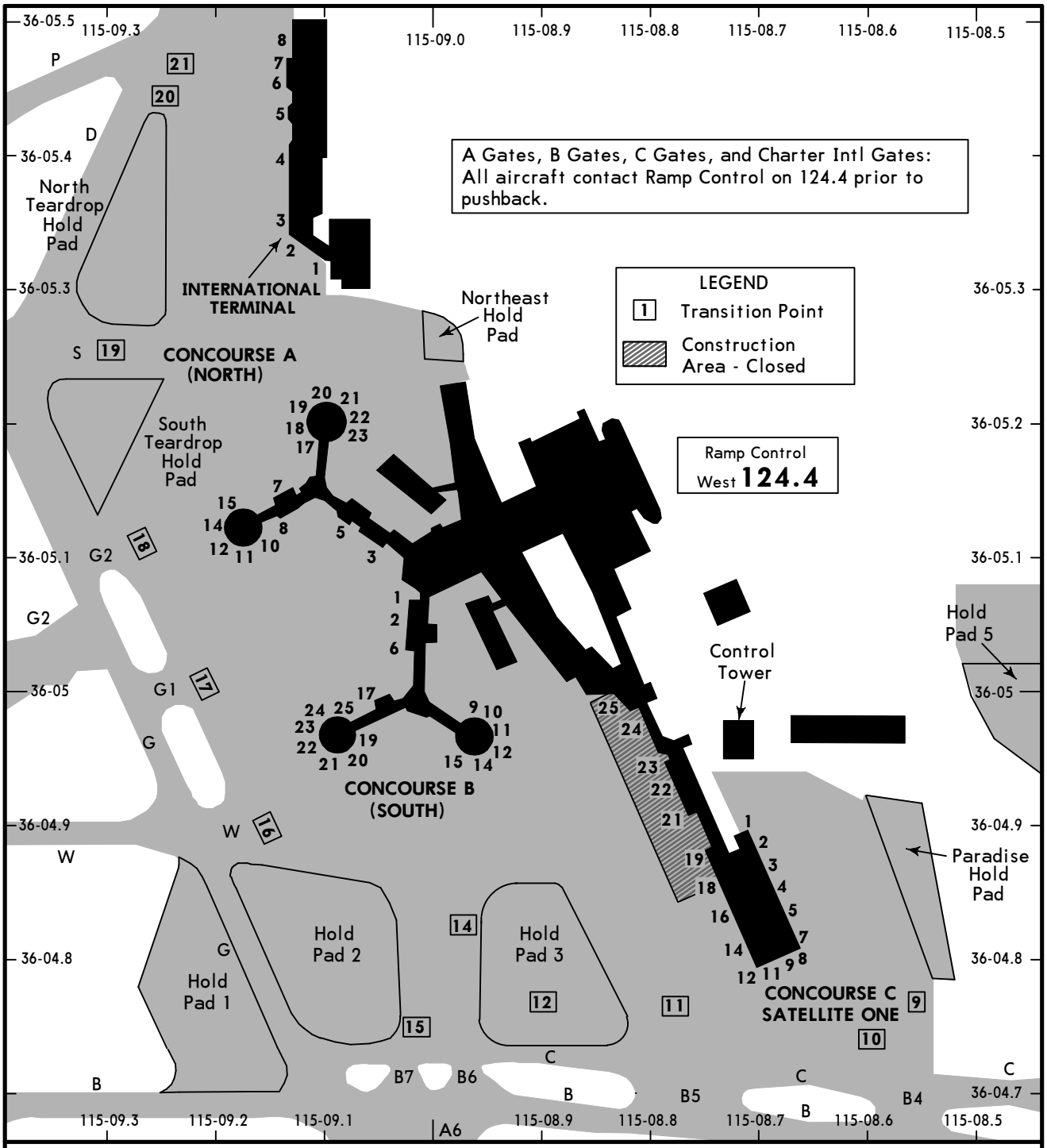

PARKING GATE COORDINATES

GATE No.	COORDINATES
INTERNATIONAL TERMINAL	
1, 2	N36 05.3 W115 09.1
3 thru 5	N36 05.4 W115 09.1
6 thru 8	N36 05.5 W115 09.1
CONCOURSE A (NORTH)	
3, 5	N36 05.1 W115 09.1
7	N36 05.2 W115 09.1
8	N36 05.1 W115 09.1
10, 11, 12	N36 05.1 W115 09.2
14, 15	N36 05.1 W115 09.2
17 thru 23	N36 05.2 W115 09.1

GATE No.	COORDINATES
CONCOURSE B (SOUTH)	
1,2	N36 05.1 W115 09.0
6, 9	N36 05.0 W115 09.0
10, 11, 12	N36 05.0 W115 08.9
14, 15	N36 05.0 W115 09.0
17	N36 05.0 W115 09.1
19 thru 25	N36 05.0 W115 09.1
CONCOURSE C-SATELLITE ONE	
1 thru 4	N36 04.9 W115 08.7
5, 7, 8, 9, 11	N36 04.8 W115 08.7
12,14,16	N36 04.8 W115 08.7
18	N36 04.9 W115 08.7
19	N36 04.9 W115 08.8
21 thru 23	N36 04.9 W115 08.8
24, 25	N36 05.0 W115 08.8

CHANGES: None.

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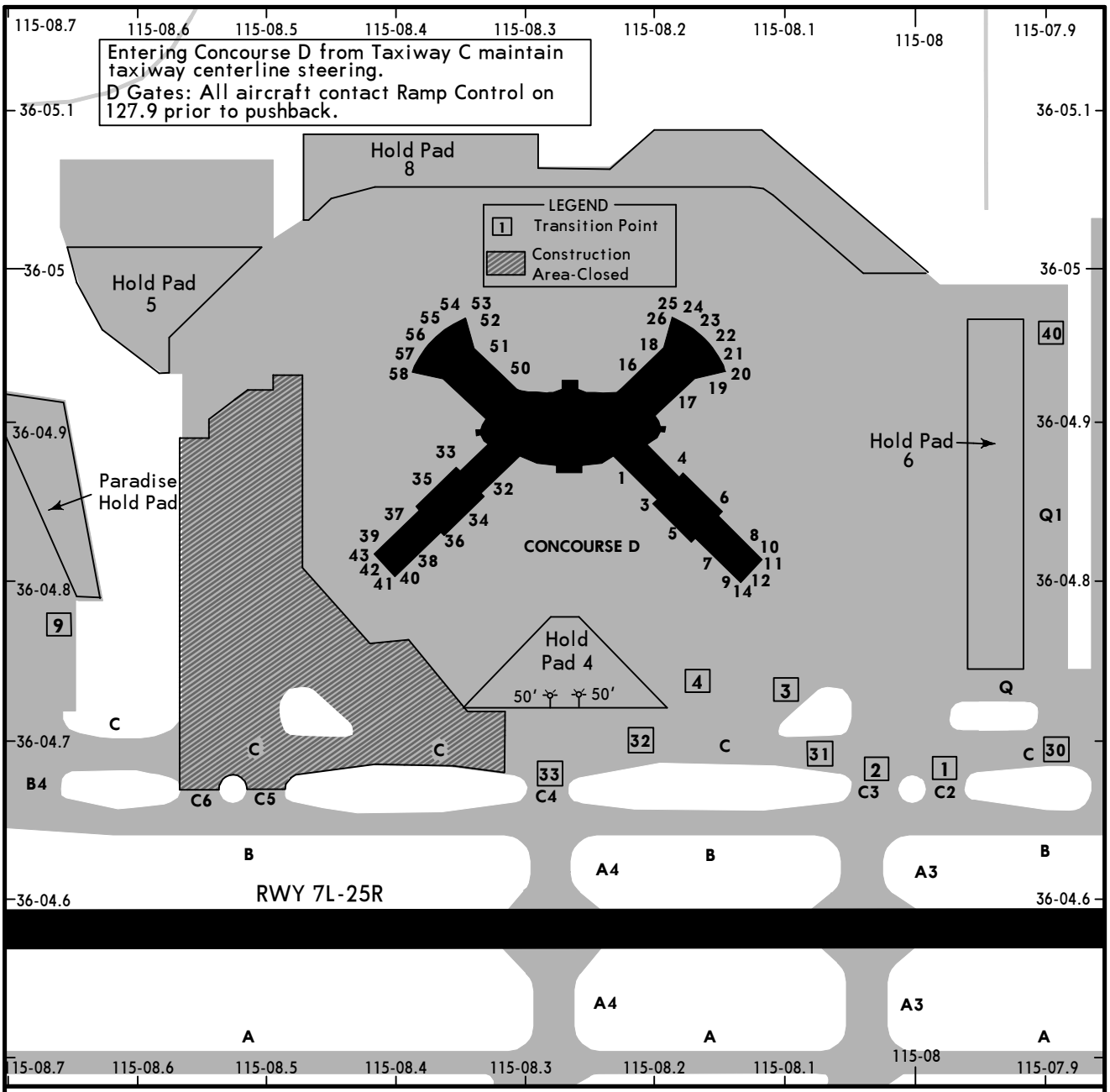

PARKING GATE COORDINATES

GATE No.	COORDINATES
CONCOURSE D	
1, 3, 4	N36 04.9 W115 08.2
5	N36 04.8 W115 08.2
6	N36 04.9 W115 08.1
7	N36 04.8 W115 08.2
8 thru 12	N36 04.8 W115 08.1
14	N36 04.8 W115 08.1
16 thru 19	N36 04.9 W115 08.2
20, 21	N36 04.9 W115 08.1
22 thru 26	N36 05.0 W115 08.2
32	N36 04.9 W115 08.3
33	N36 04.9 W115 08.4
34	N36 04.8 W115 08.3
35	N36 04.9 W115 08.4
36 thru 43	N36 04.8 W115 08.4
50, 51	N36 04.9 W115 08.3
52, 53	N36 05.0 W115 08.3
54, 55, 56	N36 05.0 W115 08.4
57, 58	N36 04.9 W115 08.4

CHANGES: Gates added.

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KLAS/LAS
McCARRAN INTL

JEPPESEN 6 JAN 12 (11-1)

CAT A,B & C

LAS VEGAS, NEV
ILS or LOC DME Rwy 1L

BRIEFING STRIP ™

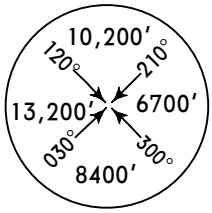
D-ATIS Arrival	LAS VEGAS Approach (R)	LAS VEGAS Tower Rwys 1 L/R, 19 L/R	LAS VEGAS Tower Rwys 7 L/R, 25 L/R	Ground West of Rwy 1R/19L	Ground East of Rwy 1R/19L
132.4	125.02	118.75	119.9	121.9	121.1

LOC ICUA	Final Apch Crs	GS NODIY	ILS DA(H)	Apt Elev 2181′
110.1	010°	5100′ (2924′)	2460′ (284′)	TDZE 2176′

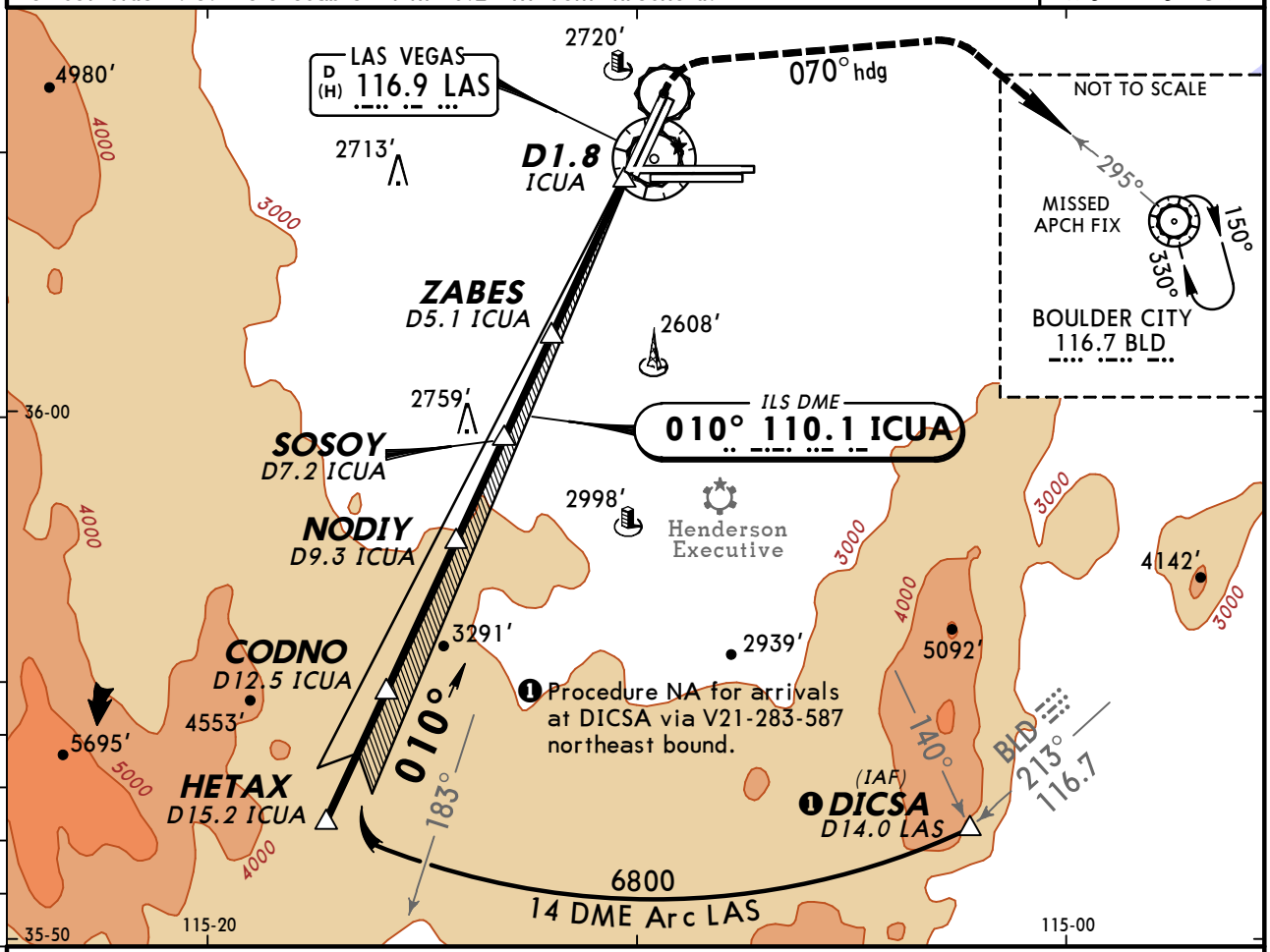
MISSED APCH: Climb to 3200′, then climbing RIGHT turn to 6000′ via 070° heading and inbound BLD R-295 to BLD VOR and hold.

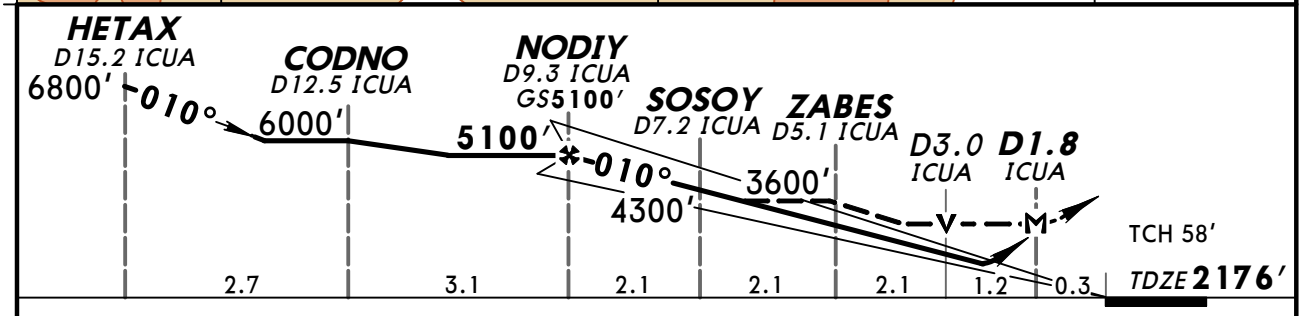
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. DME required. 2. Use ICUA DME when on the localizer course. 3. To remain within controlled airspace pilots should not exceed LAS 15.0 DME. 4. VGSI and ILS glidepath not coincident. 5. ILS unusable within 0.2 NM from threshold.



MSA LAS VOR





Gnd speed-Kts	70	90	100	120	140	160
GS 3.40°	421	541	602	722	842	963
MAP at D1.8 ICUA						

MALSF PAPI | 3200′ | 6000′ RT via 070° hdg and BLD 116.7 R-295

STRAIGHT-IN LANDING RWY 1L

	ILS DA(H) 2460′ (284′) FULL	ILS DA(H) 2460′ (284′) ALS out	LOC (GS out) MDA(H) 2720′ (544′)	LOC (GS out) MDA(H) 2720′ (544′) ALS out
A	1		1	
B				
C			1½	
D	NA		NA	

CIRCLE-TO-LAND

Max Kts.	MDA(H)
90	3080′ (899′) -1¼
120	
140	3280′ (1099′) -3
D	NA

TERPS AMEND OB 12 JAN 2012

CHANGES: Circling minimums.

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KLAS/LAS
McCARRAN INTL

JEPPESEN

6 JAN 12 (11-2)

LAS VEGAS, NEV
ILS or LOC Rwy 25L

D-ATIS Arrival	LAS VEGAS Approach (R)	LAS VEGAS Tower Rwys 1 L/R, 19 L/R	LAS VEGAS Tower Rwys 7 L/R, 25 L/R	Ground West of Rwy 1R/19L	Ground East of Rwy 1R/19L
132.4	125.02	118.75	119.9	121.9	121.1

LOC IRLE	Final Apch Crs	GS RELIN	ILS DA(H)	Apt Elev 2181'
111.75	255°	3800' (1731')	2269' (200')	TDZE 25L 2069'

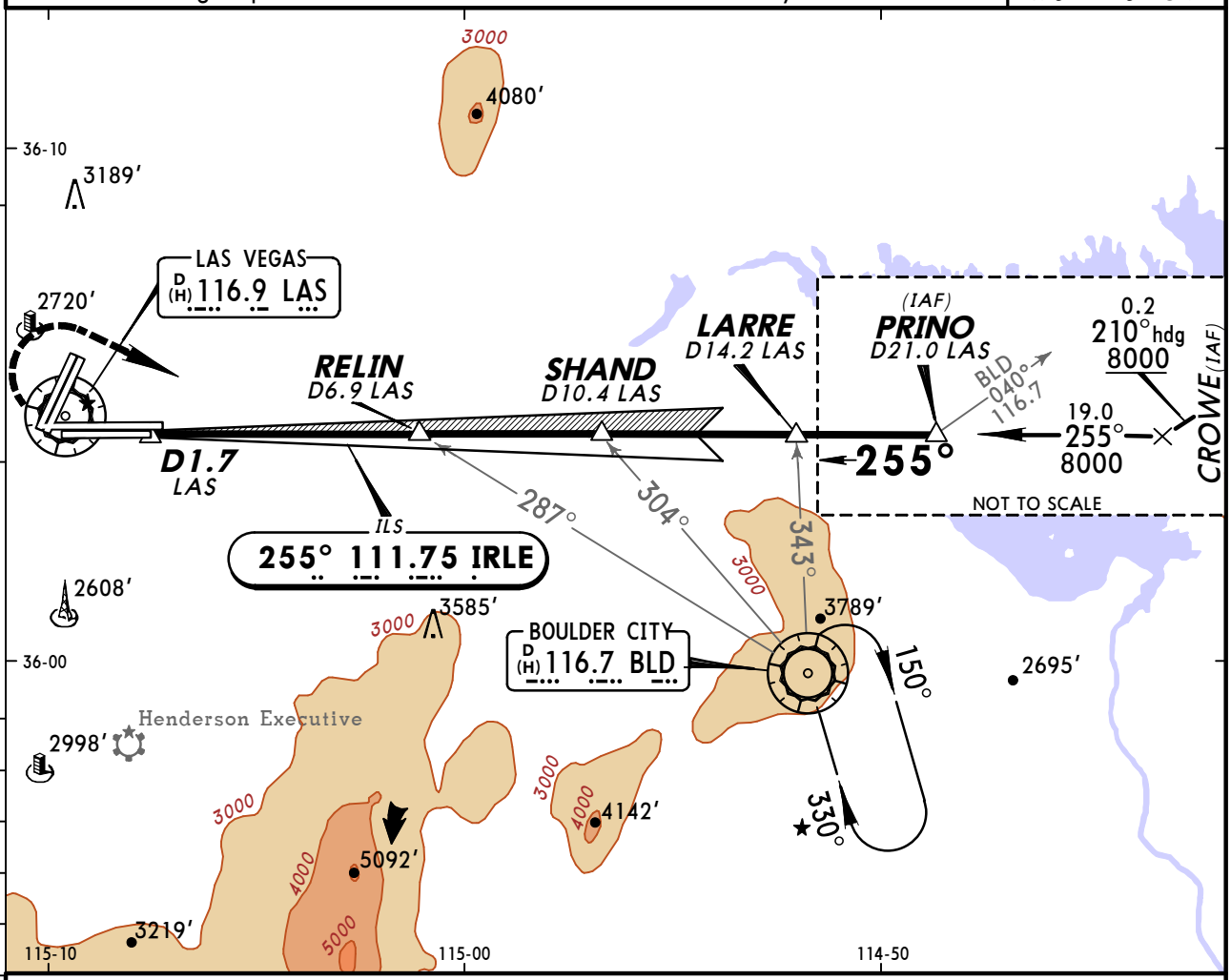
MISSED APCH: Climb to 3000' then climbing RIGHT turn to 6000' direct BLD VOR and hold.

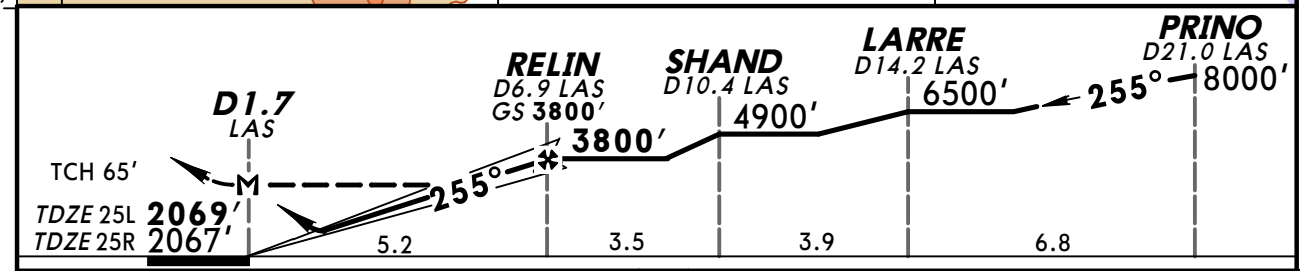
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000'

1. VGSI and ILS glidepath not coincident. 2. MALSR and PAPI-L on Rwy 25R.

MSA LAS VOR: 120° 10,200' 210°; 13,200' 6700'; 030° 8400' 300°

BRIEFING STRIP™





Gnd speed-Kts	70	90	100	120	140	160
GS 3.00°	372	478	531	637	743	849
MAP at D1.7 LAS or RELIN to MAP 5.2	4:27	3:28	3:07	2:36	2:14	1:57

MALSF PAPI 3000' 6000' RT D BLD 116.7

TERPS AMEND 3B

	STRAIGHT-IN LANDING RWY 25L ILS DA(H) 2269' (200') FULL	ALS out	LOC (GS out) MDA(H) 2540' (471')	ALS out	SIDESTEP LANDING RWY 25R MDA(H) 2540' (473')	RAIL or ALS out	CIRCLE-TO-LAND Max Kts	MDA(H)
A	3/4		3/4	1	1	1	90	3020' (839')-1
B							120	3020' (839')-1¼
C			1¼			1½	140	3020' (839')-2½
D			1½		1½	2	165	3020' (839')-2¾

CHANGES: None.

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KLAS/LAS
McCARRAN INTL

JEPPESEN
6 JAN 12 (11-3)

LAS VEGAS, NEV
ILS or LOC Rwy 25R

BRIEFING STRIP ™

D-ATIS Arrival	LAS VEGAS Approach (R)	LAS VEGAS Tower Rwys 7 L/R, 25 L/R	LAS VEGAS Tower Rwys 1 L/R, 19 L/R	Ground West of Rwy 1R/19L	Ground East of Rwy 1R/19L
132.4	125.02	119.9	118.75	121.9	121.1

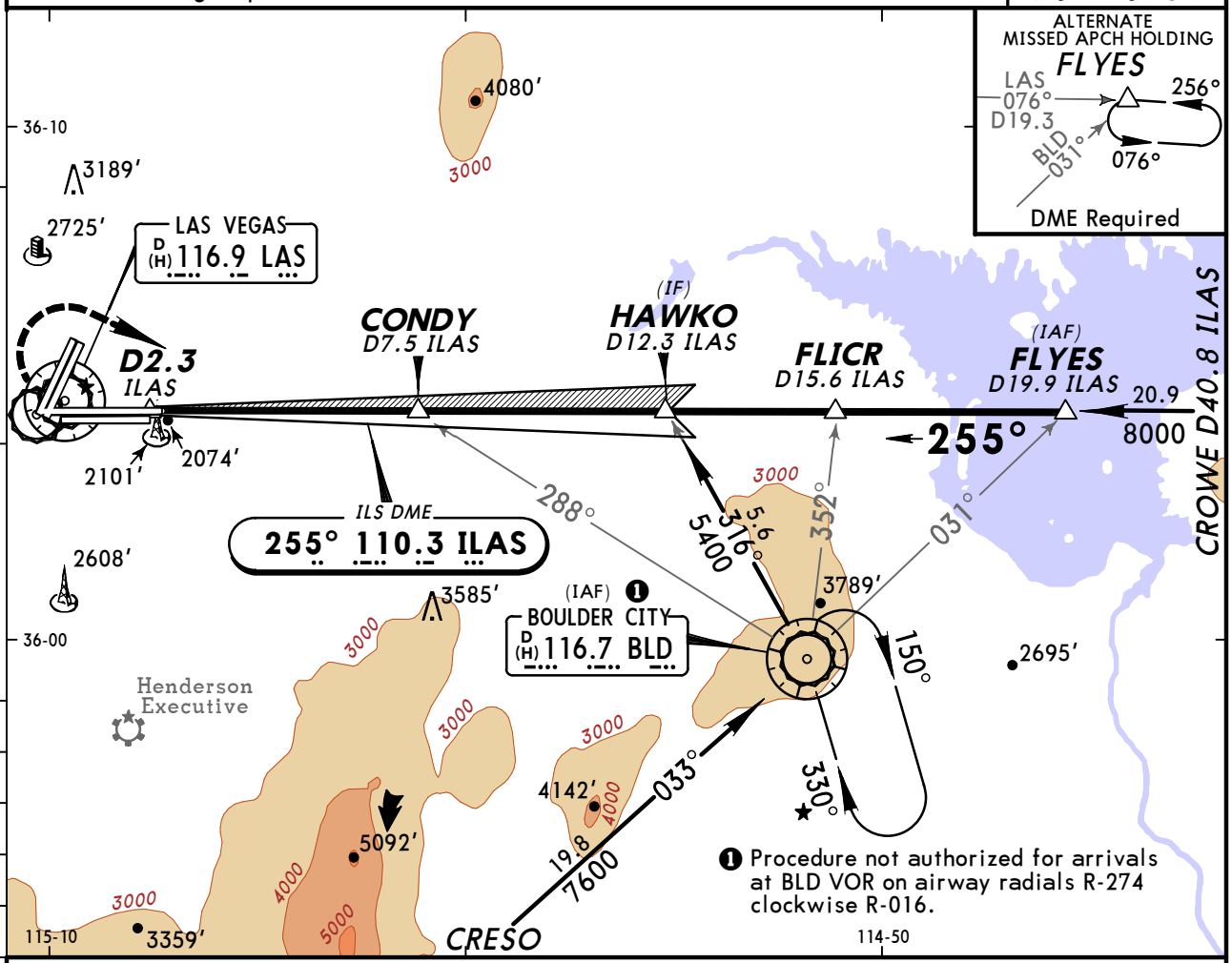
LOC ILAS	Final Apch Crs	GS CONDY	ILS DA(H)	Apt Elev 2181'
110.3	255°	3800' (1733')	2340' (273')	TDZE 25R 2067'

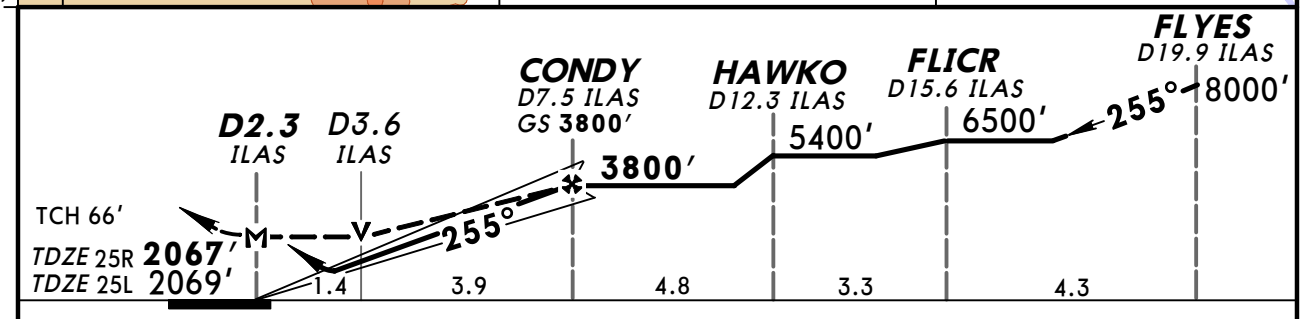
MISSED APCH: Climb to 3200' then climbing RIGHT turn to 6000' direct BLD VOR and hold.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000'

1. VGSI and ILS glidepath not coincident.

MSA LAS VOR: 120° 10,200'; 210° 6700'; 300° 8400'; 030° 13,200'





Gnd speed-Kts	70	90	100	120	140	160
GS 3.00°	372	478	531	637	743	849
MAP at D2.3 ILAS or CONDY to MAP 5.2	4:27	3:28	3:07	2:36	2:14	1:57

MALSR PAPI | 3200' | 6000' RT | D | BLD 116.7

STRAIGHT-IN LANDING RWY 25R ILS DA(H) 2340' (273')			LOC (GS out) MDA(H) 2560' (493')			SIDESTEP LANDING RWY 25L MDA(H) 2560' (491')		CIRCLE-TO-LAND	
	FULL	RAIL or ALS out		RAIL out	ALS out		ALS out	Max Kts.	MDA(H)
A	1/2	3/4	1/2	3/4	1	1		90	3080' (899') - 1¼
B								120	
C			3/4	1¼		1½		140	3280' (1099') - 3
D			1	1½		2		165	

TERPS AMEND 17A 12 JAN 2012

CHANGES: VDP distance, localizer, sidestep and circling minimums.

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KLAS/LAS
McCARRAN INTL

JEPPESEN
6 JAN 12 (12-1)

LAS VEGAS, NEV
RNAV (GPS) Rwy 1R

BRIEFING STRIP ™

D-ATIS Arrival	LAS VEGAS Approach (R)	LAS VEGAS Tower Rwys 1L/R, 19L/R	LAS VEGAS Tower Rwys 7L/R, 25L/R	Ground West of Rwy 1R/19L	Ground East of Rwy 1R/19L
132.4	125.02	118.75	119.9	121.9	121.1

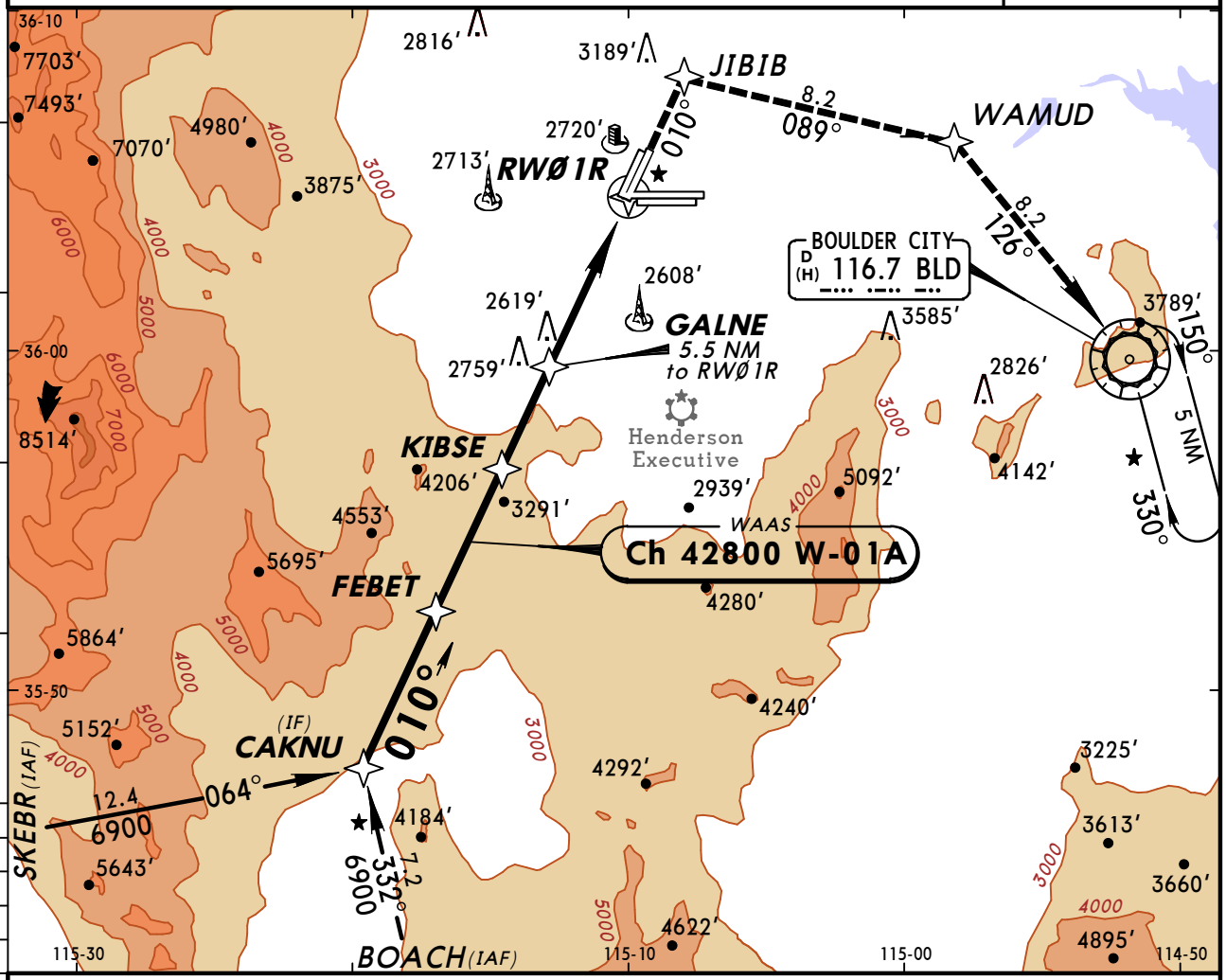
WAAS	Final Apch Crs	Minimum Alt KIBSE	LPV DA(H)	Apt Elev 2181′
Ch 42800 W-01A	010°	5100′ (2930′)	2693′ (523′)	TDZE 2170′

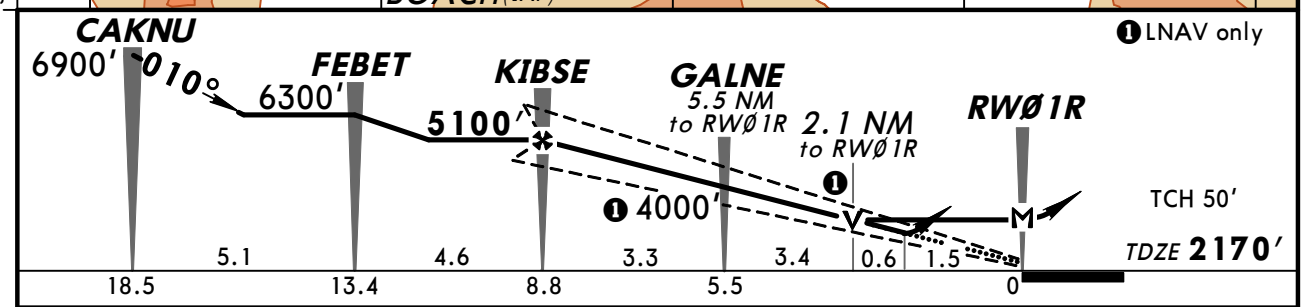
MISSED APCH: Climb to 6000′ direct JIBIB and via 089° track to WAMUD and via 126° track to BLD VOR and hold.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. DME/DME RNP-0.30 not authorized. 2. VGSI and RNAV glidepath not coincident.

13,200′
MSA RWØ1R





Gnd speed-Kts	70	90	100	120	140	160
Glide Path Angle 3.00°	372	478	531	637	743	849
MAP at RWØ1R						

REIL
PAPI-L
6000′
JIBIB

TERPS AMEND 1A 12 JAN 2012

STRAIGHT-IN LANDING RWY 1R

	LPV DA(H) 2693′(523′)	LNAV MDA(H) 2920′(750′)
A	1¾	1
B		1¼
C		2¼
D		2½

CIRCLE-TO-LAND

Max Kts	MDA(H)
90	3080′ (899′)-1¼
120	
140	3280′ (1099′)-3
165	

CHANGES: Circling minimums.

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KLAS/LAS
McCARRAN INTL

JEPPESEN
6 JAN 12 (12-2)

LAS VEGAS, NEV
RNAV (GPS) Rwy 19L

BRIEFING STRIP ™

D-ATIS Arrival	LAS VEGAS Approach (R)	LAS VEGAS Tower Rwys 1L/R, 19L/R	LAS VEGAS Tower Rwys 7L/R, 25L/R	Ground West of Rwy 1R/19L	Ground East of Rwy 1R/19L
132.4	125.02	118.75	119.9	121.9	121.1

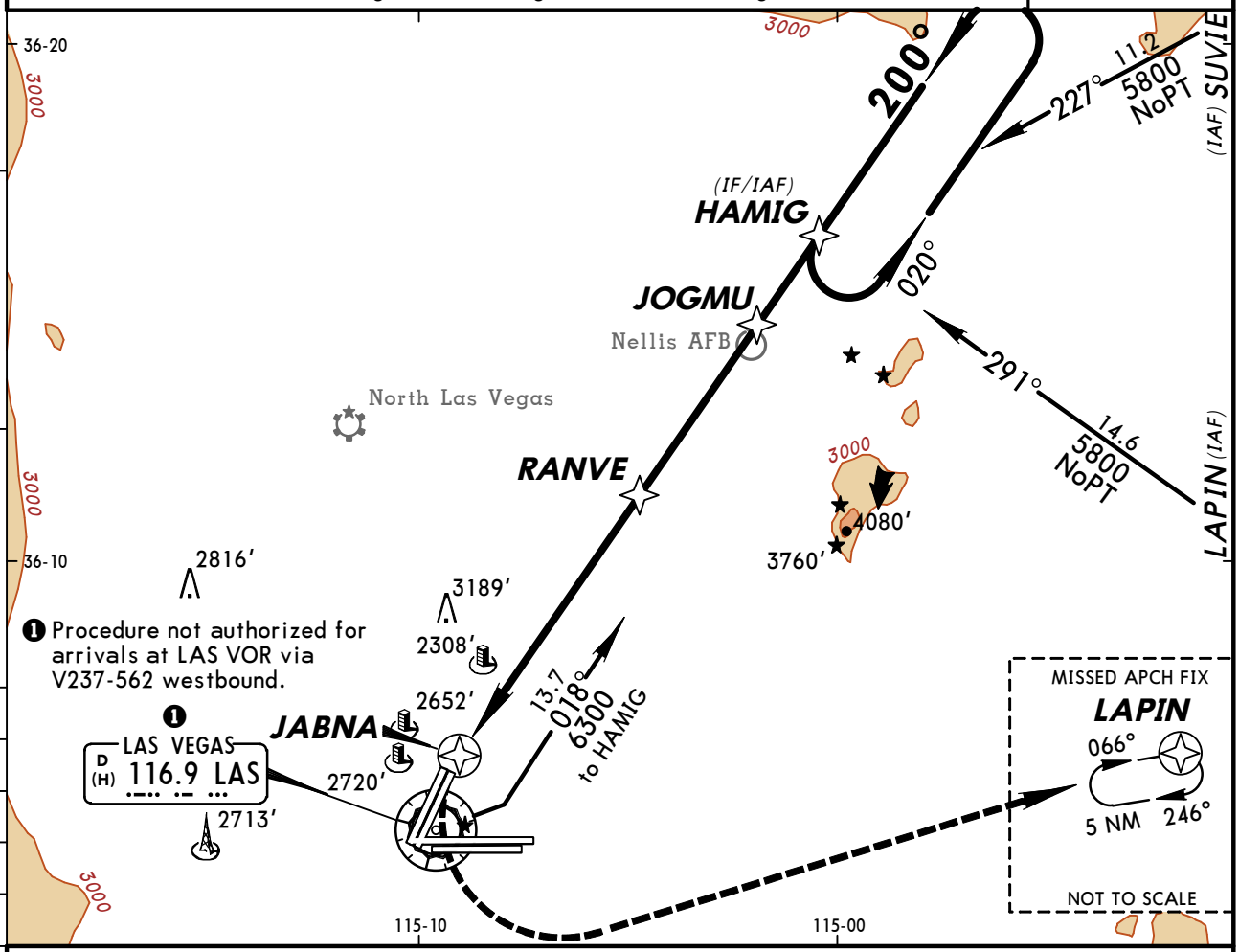
RNAV	Final Apch Crs	Minimum Alt RANVE	LNAV MDA(H) (CONDITIONAL)	Apt Elev 2181′
	200°	4500′ (2387′)	2920′ (807′)	TDZE 2113′

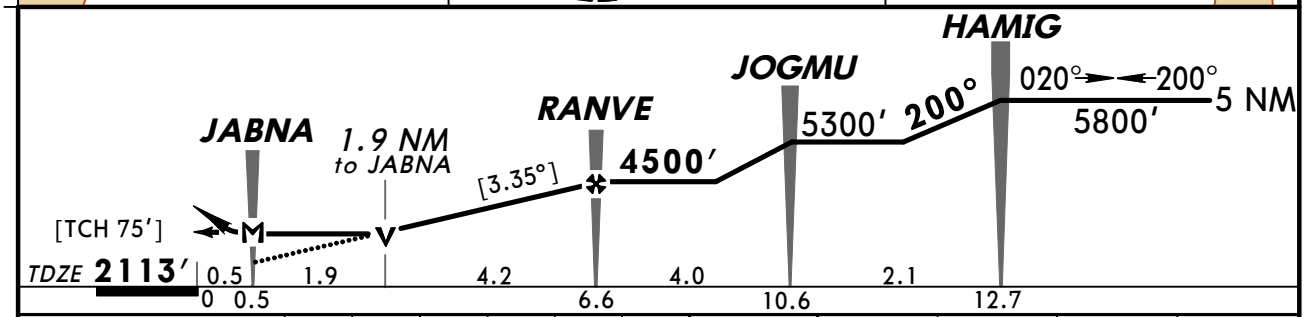
MISSED APCH: Climbing LEFT turn to 6000′ direct LAPIN and hold.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. If local altimeter setting not received, use North Las Vegas altimeter setting.
2. DME/DME RNP-0.30 not authorized. 3. VGSI and descent angles not coincident.
4. VDP not authorized when using North Las Vegas altimeter setting.

13,200′
MSA JABNA





Gnd speed-Kts	70	90	100	120	140	160
Descent angle [3.35°]	415	534	593	711	830	948
MAP at JABNA						

REIL
PAPI-L
6000′ LT
D
LAPIN

STRAIGHT-IN LANDING RWY19L LNAV	With Local Altimeter Setting MDA(H) 2920′ (807′)	With North Las Vegas Altimeter Setting MDA(H) 2960′ (847′)
A	1	1
B	1¼	1¼
C	2¼	2¼
D	2½	2½

CIRCLE-TO-LAND Max Kts	With Local Altimeter Setting MDA(H)	With North Las Vegas Altimeter Setting MDA(H)
90	3080′ (899′)-1¼	3120′ (939′)-1¼
120		
140	3280′ (1099′)-3	3320′ (1139′)-3
165		

TERPS AMEND 1A 12 JAN 2012

CHANGES: Circling minimums.

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KLAS/LAS
McCARRAN INTL

JEPPESEN
6 JAN 12 (12-3)

LAS VEGAS, NEV
RNAV (GPS) Rwy 19R

BRIEFING STRIP ™

D-ATIS Arrival	LAS VEGAS Approach (R)	LAS VEGAS Tower Rwys 1L/R, 19L/R	LAS VEGAS Tower Rwys 7L/R, 25L/R	Ground West of Rwy 1R/19L	Ground East of Rwy 1R/19L
132.4	125.02	118.75	119.9	121.9	121.1

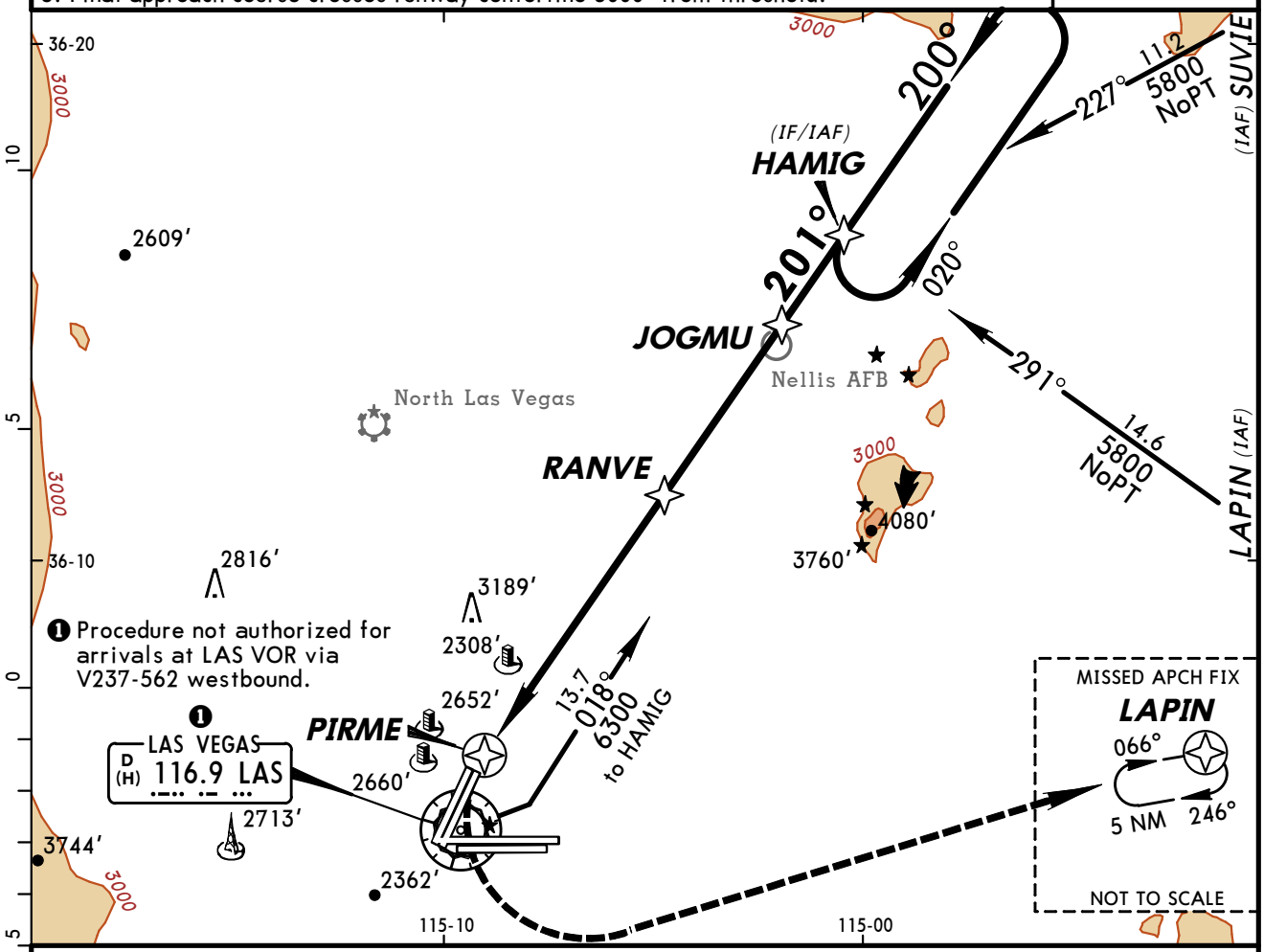
RNAV	Final Apch Crs	Minimum Alt RANVE	LNAV MDA(H) (CONDITIONAL)	Apt Elev 2181′
	201°	4500′ (2383′)	2980′ (863′)	TDZE 2117′

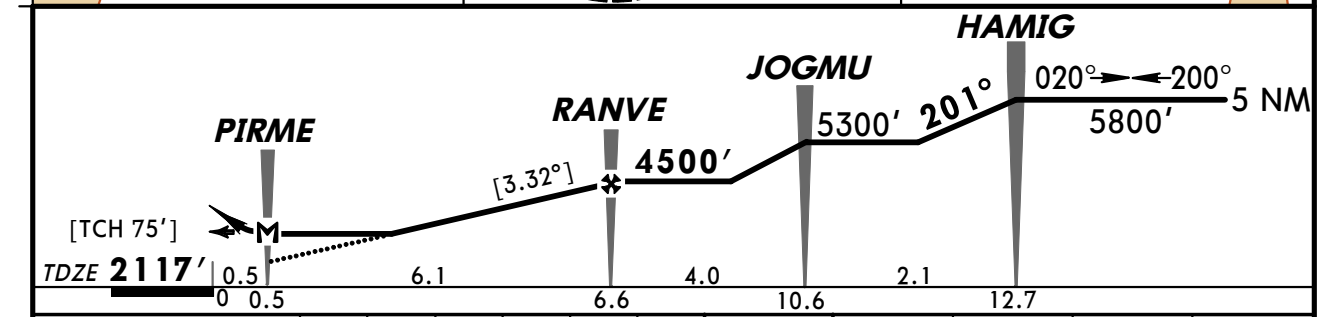
MISSED APCH: Climbing LEFT turn to 6000′ direct LAPIN and hold.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. If local altimeter setting not received, use North Las Vegas altimeter setting.
2. DME/DME RNP-0.30 not authorized. 3. VGSI and descent angles not coincident.
4. Visibility reduction by helicopters not authorized.
5. Final approach course crosses runway centerline 3000′ from threshold.

13,200′
MSA PIRME





Gnd speed-Kts	70	90	100	120	140	160
Descent angle [3.32°]	411	529	587	705	822	940
MAP at PIRME						

REIL
PAPI-L
6000′ LT
D
LAPIN

STRAIGHT-IN LANDING RWY19R LNAV	With Local Altimeter Setting MDA(H) 2980′ (863′)	With North Las Vegas Altimeter Setting MDA(H) 3020′ (903′)
A	1	1
B	1¼	1¼
C	2½	2½
D	2¾	2¾

CIRCLE-TO-LAND Max Kts	With Local Altimeter Setting MDA(H)	With North Las Vegas Altimeter Setting MDA(H)
90	3080′ (899′)-1¼	3120′ (939′)-1¼
120		
140	3280′ (1099′)-3	3320′ (1139′)-3
165		

TERPS AMEND 1A 12 JAN 2012

CHANGES: Circling minimums.

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KLAS/LAS
McCARRAN INTL

JEPPESEN

6 JAN 12 (13-1)

LAS VEGAS, NEV
VOR Rwy 25L/R

BRIEFING STRIP ™

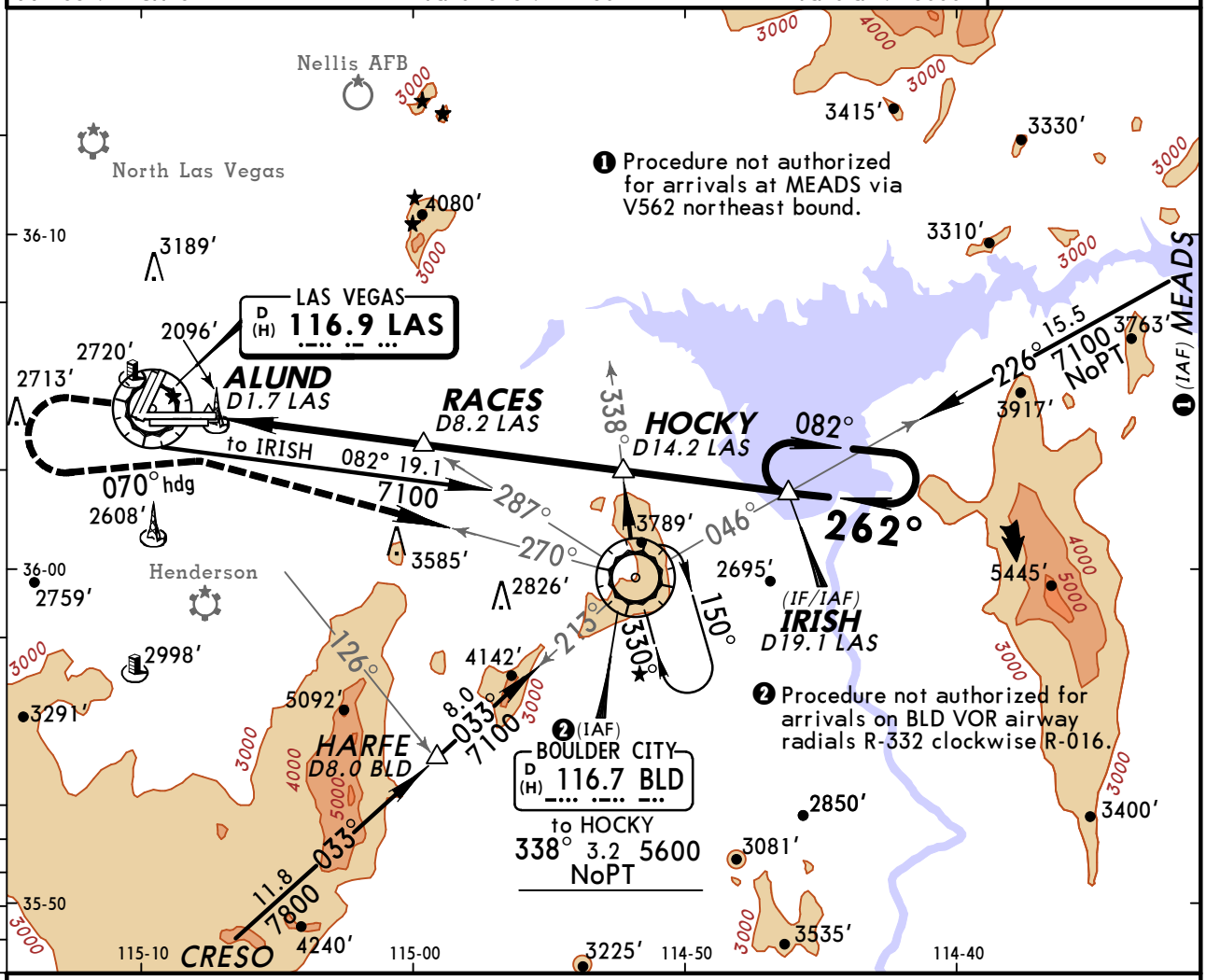
D-ATIS Arrival	LAS VEGAS Approach (R)	LAS VEGAS Tower Rwys 7L/R, 25L/R	LAS VEGAS Tower Rwys 1L/R, 19L/R	Ground East of Rwy 1R/19L	Ground West of Rwy 1R/19L
132.4	125.02	119.9	118.75	121.1	121.9

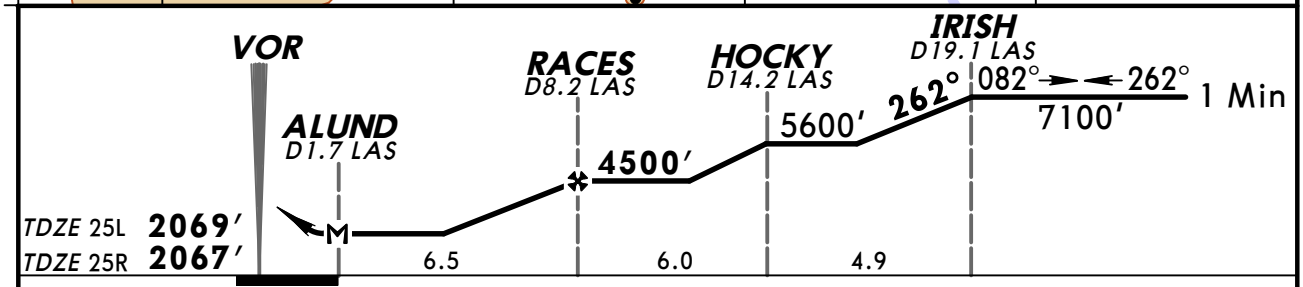
VOR LAS	Final Apch Crs	Minimum Alt RACES	MDA(H)	Apt Elev / TDZE 25L / TDZE 25R
116.9	262°	4500′ (2431′)	Refer to Minimums	Apt Elev 2181′ TDZE 25L 2069′ TDZE 25R 2067′

MISSED APCH: Climb to 4000′ then climbing LEFT turn to 6000′ via heading 070° and inbound via BLD VOR R-270 to BLD VOR and hold.

Alt Set: INCHES | Trans level: FL 180 | Trans alt: 18000′

MSA LAS VOR: 120° 10,200′; 210° 13,200′; 030° 6700′; 300° 8400′





Gnd speed-Kts	70	90	100	120	140	160
MAP at ALUND or RACES to MAP 6.5	5:34	4:20	3:54	3:15	2:47	2:26

Rwy 25L: MALSF, PAPI
Rwy 25R: MALSR, PAPI

4000′ then 6000′ via LT hdg 070°

	STRAIGHT-IN LANDING RWY 25L MDA(H) 2720′ (651′)		STRAIGHT-IN LANDING RWY 25R MDA(H) 2720′ (653′)			CIRCLE-TO-LAND Max Kts	MDA(H)
		ALS out		RAIL out	ALS out		
A	3/4	1	1			90	3080′ (899′) - 1¼
B						120	
C	1¾		1¾			140	3280′ (1099′) - 3
D	2		2			165	

TERPS AMEND 3A 12 JAN 2012

CHANGES: Circling minimums.

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KLAS/LAS
McCARRAN INTL

JEPPESEN
6 JAN 12 (13-2)

LAS VEGAS, NEV
VOR DME-A

D-ATIS Arrival	LAS VEGAS Approach (R)	LAS VEGAS Tower Rwys 1L/R, 19L/R	LAS VEGAS Tower Rwys 7L/R, 25L/R	Ground East of Rwy 1R/19L	Ground West of Rwy 1R/19L
132.4	125.02	118.75	119.9	121.1	121.9

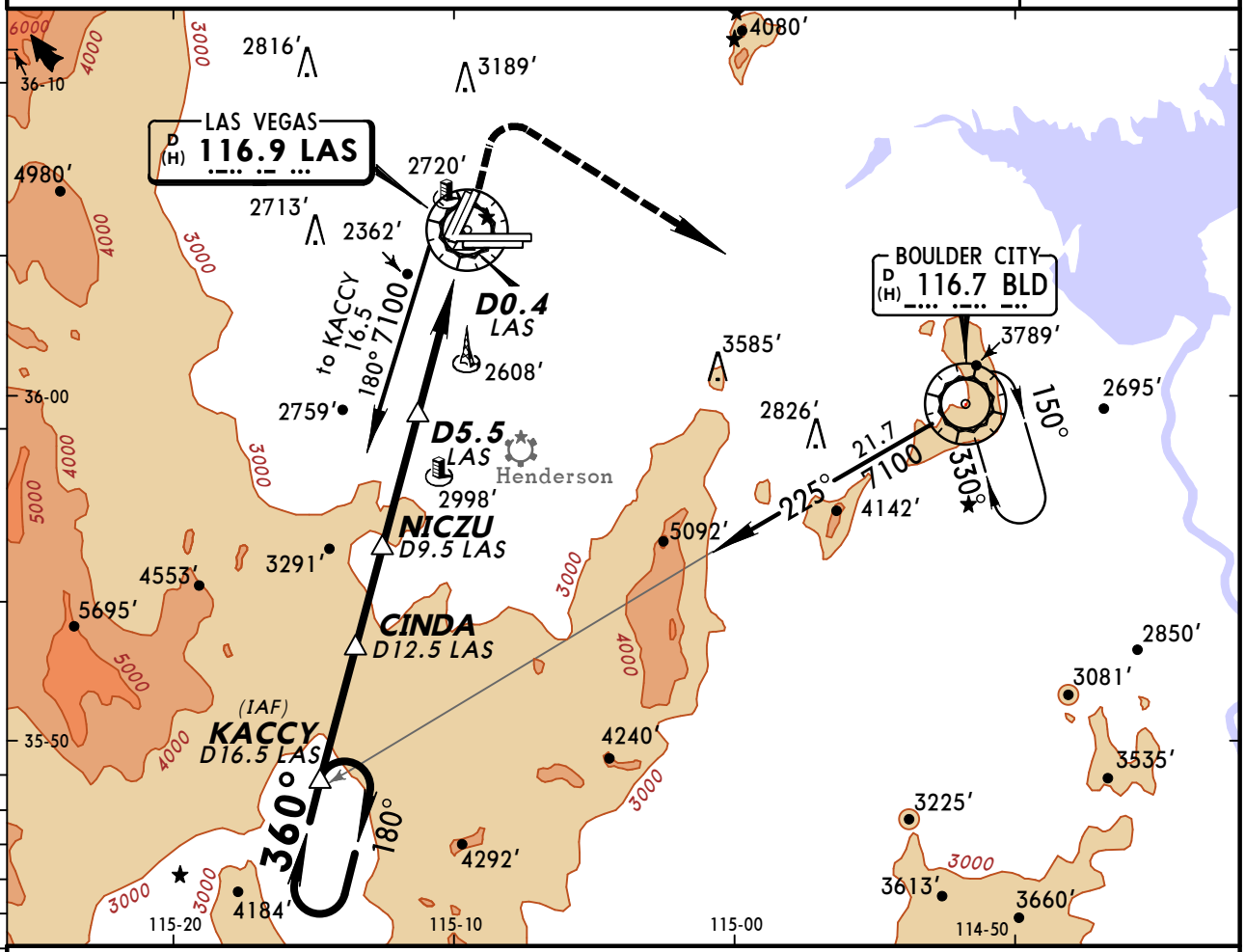
VOR	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev
LAS 116.9	360°	NICZU 5400′ (3219′)	Refer to Minimums	2181′

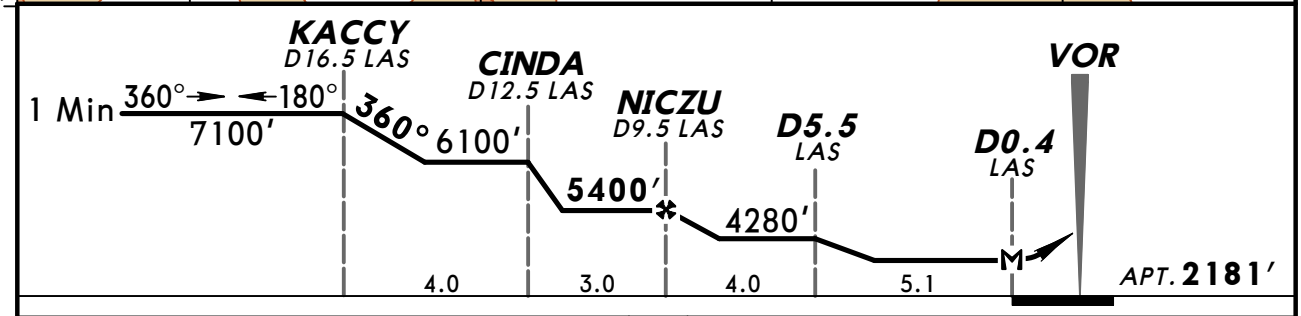
MISSED APCH: Climb to 5000′ then climbing RIGHT turn to 6000′ direct BLD VOR and hold.

Alt Set: INCHES | Trans level: FL 180 | Trans alt: 18000′

MSA LAS VOR: 120° 10,200′; 210° 6700′; 030° 13,200′; 300° 8400′

BRIEFING STRIP ™





MAP at D0.4 LAS	Lighting - Refer to Airport Chart	5000′ then 6000′ RT	D	BLD 116.7

CIRCLE-TO-LAND

	Max Kts	MDA(H)
A	90	3080′ (899′)-1¼
B	120	
C	140	3280′ (1099′)-3
D	165	

TERPS AMEND 0D 12 JAN 2012

CHANGES: D5.5 LAS minimum altitude, circling minimums.

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General Information

Location: Las Vegas NV USA
IATA Code: LSV
Lat/Long: N36° 14.2' W115° 02.1'
Elevation: 1870 ft

Airport Use: Military
Magnetic Variation: 12.2°E
Sectional Chart: Las Vegas

Fuel Types: Jet 4
Oxygen Types: High Pressure, Low Pressure
Repair Types: Major Airframe, Major Engine
Customs: Yes
Airport Type: IFR
Landing Fee: No
Control Tower: Yes
Jet Start Unit: Yes
LLWS Alert: No
Beacon: Yes

Sunrise: 1413 Z
Sunset: 0133 Z,

Runway Information

Runway: 03L
Length x Width: 10123 ft x 200 ft
Surface Type: concrete
TDZ-Elev: 1834 ft
Lighting: Edge, ALS
Stopway: 1000 ft

Runway: 03R
Length x Width: 10055 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 1826 ft
Lighting: Edge, ALS
Stopway: 1000 ft

Runway: 21L
Length x Width: 10055 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 1866 ft
Lighting: Edge, ALS
Stopway: 1000 ft

Runway: 21R
Length x Width: 10123 ft x 200 ft
Surface Type: concrete
TDZ-Elev: 1870 ft

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Lighting: Edge
Stopway: 1000 ft

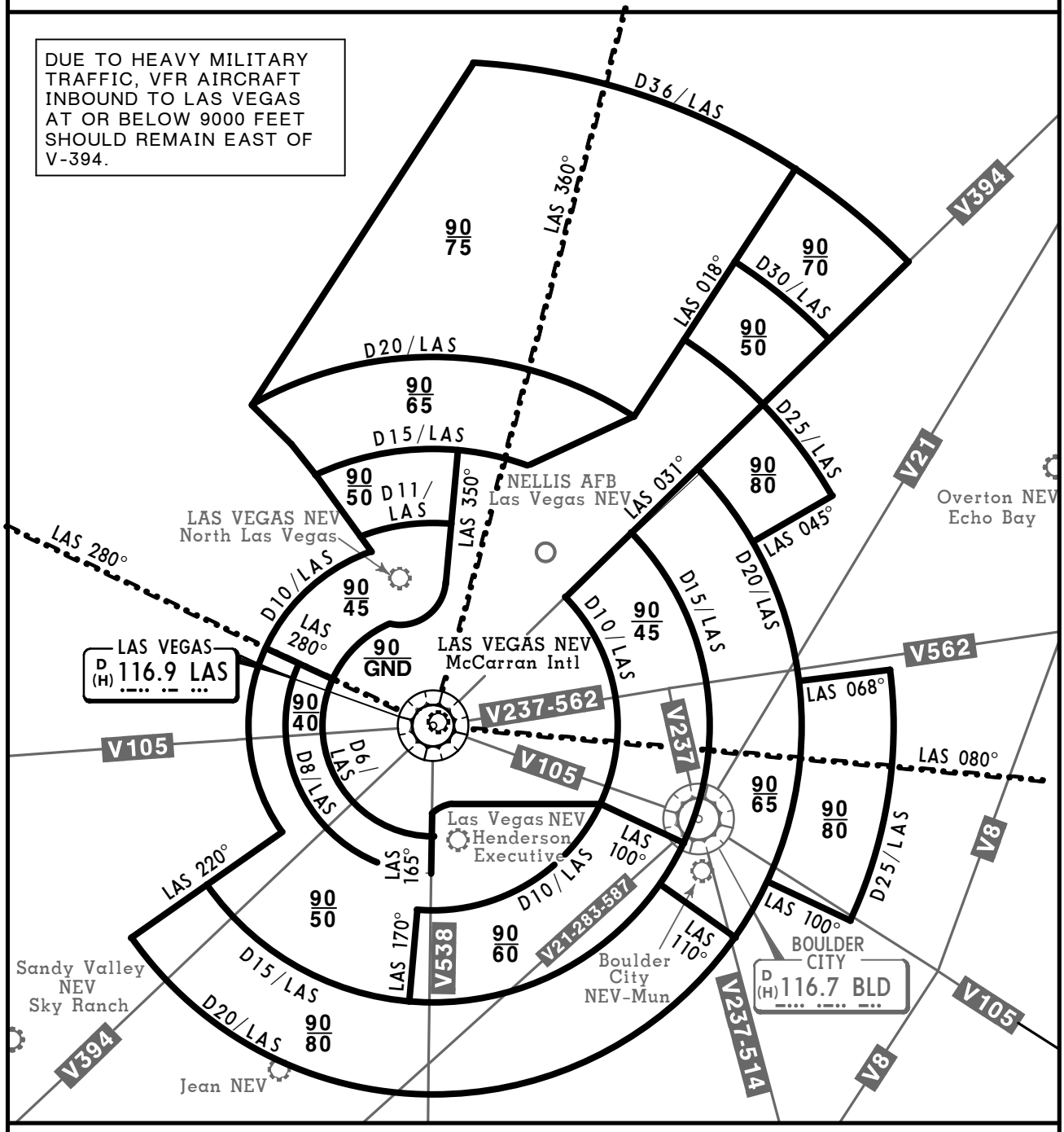
Communication Information

Nellis Tower 132.55
Nellis Ground Control 121.8
Nellis Clearance Delivery 120.9
Nellis Approach Control 124.95 Arrival Service
Nellis Approach Control 118.125 Arrival Service
Las Vegas App TCA 125.9
Las Vegas App TCA 118.4
Las Vegas App TCA 125.025
Nellis Departure Control 135.1
Nellis Control Control 126.65
Nellis Control Control 119.35

LAS VEGAS CLASS B AIRSPACE

CLASS B AIRSPACE VFR COMMUNICATIONS

(280°-360°) **Las Vegas App** 125.02
(360°-080°) **Las Vegas App** 125.02
(E of I-15 & S of 080°) **Las Vegas App** 118.4
(W of I-15 & S of 280°) **Las Vegas App** 125.9



FOR OPERATING RULES AND PILOT AND EQUIPMENT REQUIREMENTS SEE FAR 91.131, 91.117 AND 91.215.

FLIGHT PROCEDURES

IFR Flights-Aircraft within Class B airspace are required to operate in accordance with current IFR procedures.

VFR Flights-

a. Arriving aircraft should contact Las Vegas Approach Control on the specified frequencies. Although arriving aircraft may be operating beneath the floor of Class B airspace on initial contact, communications should be established with Approach Control for sequencing and spacing purposes.

b. Aircraft departing the primary airport are requested to advise clearance delivery prior to taxiing of their intended altitude and direction of flight to depart Class B airspace. Aircraft departing from other than McCarran International Airport whose route of flight would penetrate Class B airspace should give this information to ATC on appropriate frequencies.

c. Aircraft desiring to transit Class B airspace may obtain an ATC clearance and will be handled on an equitable "First-come, first-served" basis, provided the requirements of FAR 91 are met.

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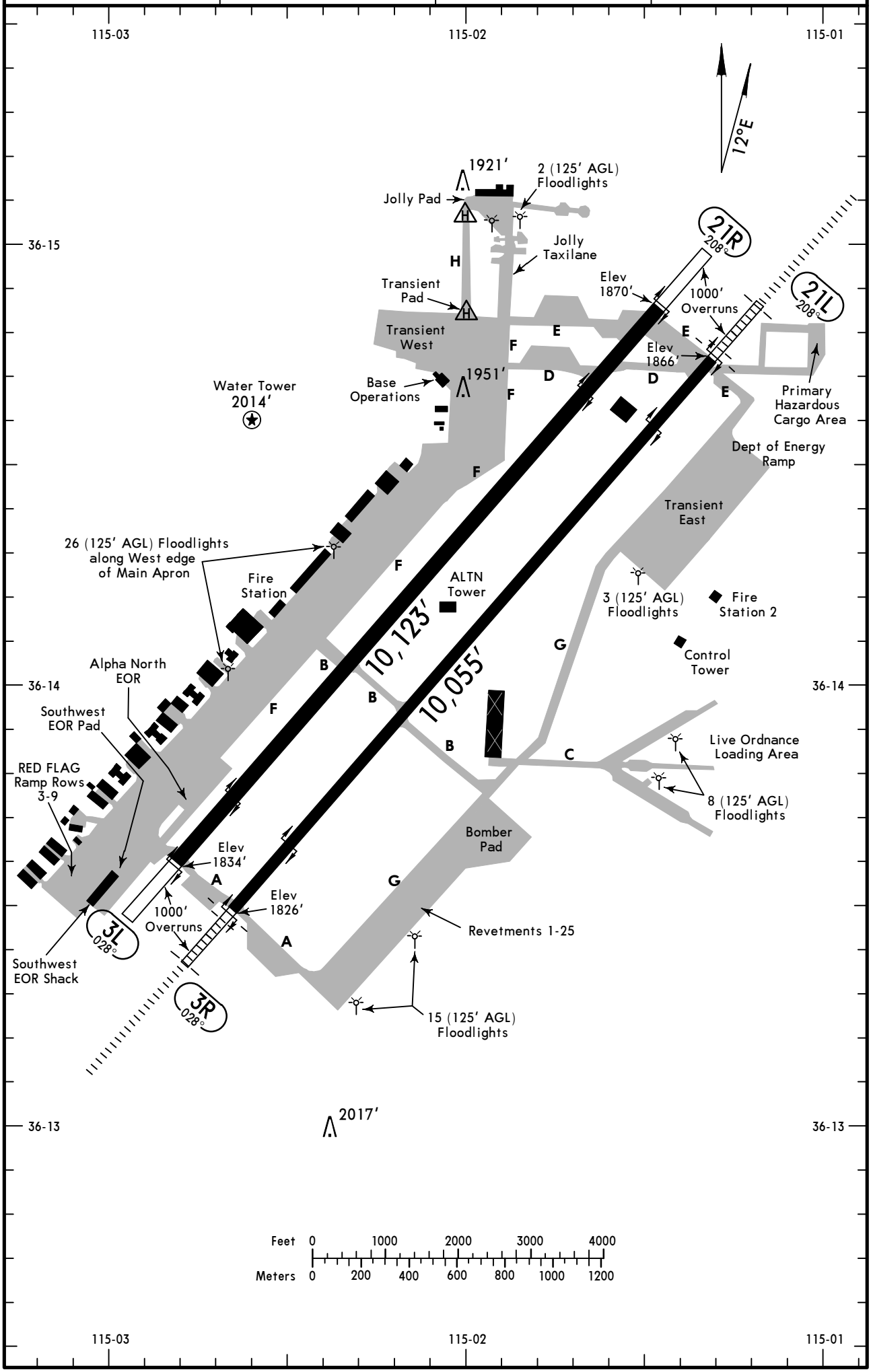
NELLIS Clearance	NELLIS Ground	Tower	NELLIS Departure (R)
120.9	121.8	132.55	135.1



CHANGES: Notes removed (see 30-9A).

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Refer to DoD/NGA supplementary publications for additional information.

ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS LANDING BEYOND Threshold	Glide Slope	TAKE-OFF	WIDTH
3R	HIRL ALSF-I PAPI-L (angle 3.0°)				150′
21L	HIRL ALSF-I PAPI-R (angle 3.0°) RVR		8935′		
3L ❶	HIRL PAPI-L (angle 3.0°)				200′
❷21R	HIRL PAPI-R (angle 3.0°)				

❶ First 920′ grooved.
❷ First 1320′ grooved.

TAKE-OFF

	1 All Rwys	
	Day	Night
1 & 2 Eng	10200-3	NA
3 & 4 Eng		

1 Diverse Departure not authorized.

MILITARY: Use published DP; if unable to comply with DP climb gradient file appropriate DP for intended destination and notify Clearance Delivery and request RADAR Vectors (climb gradient of 300′ per NM until 12,000′ for RADAR Vectors). If unable to comply with RADAR Vectors climb gradient, aircraft must depart VFR.

CIVIL: Use published DP; if unable to comply with DP climb gradient file appropriate DP for intended destination and notify Clearance Delivery and request RADAR Vectors (climb gradient of 330′ per NM until 12,000′ for RADAR Vectors). If unable to comply with RADAR Vectors climb gradient, aircraft may use published weather minimums or depart VFR.

NOTE: Rwy 3L, Terrain 0′ AGL/1870′ MSL, 0′ inward of DER, 500′ left of centerline. Road 15′ AGL/1934′ MSL, 1321′ from DER, 802′ left of centerline.

Rwy 3R, C-5 on taxiway 65′ AGL/1936′ MSL, 1345′ from DER, 822′ right of centerline. Road 15′ AGL/2014′ MSL, 3929′ from DER, 1404′ right of centerline.

Rwy 21L, Trees 90′ AGL/1949′ MSL, 4594′ from DER, 1596′ right of centerline. Trees 90′ AGL/1949′ MSL, 4940′ from DER, 541′ right of centerline. Trees 60′ AGL/1899′ MSL, 929′ from DER, 724′ left of centerline. Trees 60′ AGL/1899′ MSL, 946′ from DER, 626′ left of centerline. Trees 60′ AGL/1899′ MSL, 2720′ from DER, 341′ left of centerline. Trees 60′ AGL/1899′ MSL, 2514′ from DER, 403′ left of centerline.

Rwy 21R, Terrain 0′ AGL/1835′ MSL, 0′ inward of DER, 500′ right of centerline. Trees 90′ AGL/1949′ MSL, 4594′ from DER, 597′ right of centerline. Building 45′ AGL/1904′ MSL, 2274′ from DER, 1037′ right of centerline. Road 15′ AGL/1874′ MSL, 1404′ from DER, 465′ right of centerline.

FOR FILING AS ALTERNATE

	Precision	Non-Precision
A B C D	600-2	800-2

CHANGES: Take-off notes format.

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KLSV/LSV
LAS VEGAS, NEV

JEPPESEN

29 APR 11
Eff 5 May

31-1

NELLIS AFB
ILS or LOC DME Z Rwy 21L

NELLIS Approach (R)	NELLIS Tower	Ground
124.95	132.55	121.8

BRIEFING STRIP ™

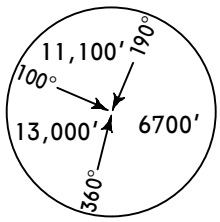
LOC IDIQ	Final Apch Crs	GS ROTSE	ILS DA(H)	Apt Elev 1870′
109.1	207°	4200′ (2334′)	2066′ (200′)	THR 1866′

MISSED APCH: Climb to 15000′, heading 209° to ROCKX/D2.5 LSV TAC, then climbing RIGHT turn heading 020° to join LSV TAC R-355 outbound to ARCOE and hold, continue climb-in-hold to 15000′.

CAUTION: Missed Approach Minimum Climb Rate to 13200′. Missed approach requires ATC RADAR monitoring.

WARNING: Missed approach with 200′/NM climb gradient not available.

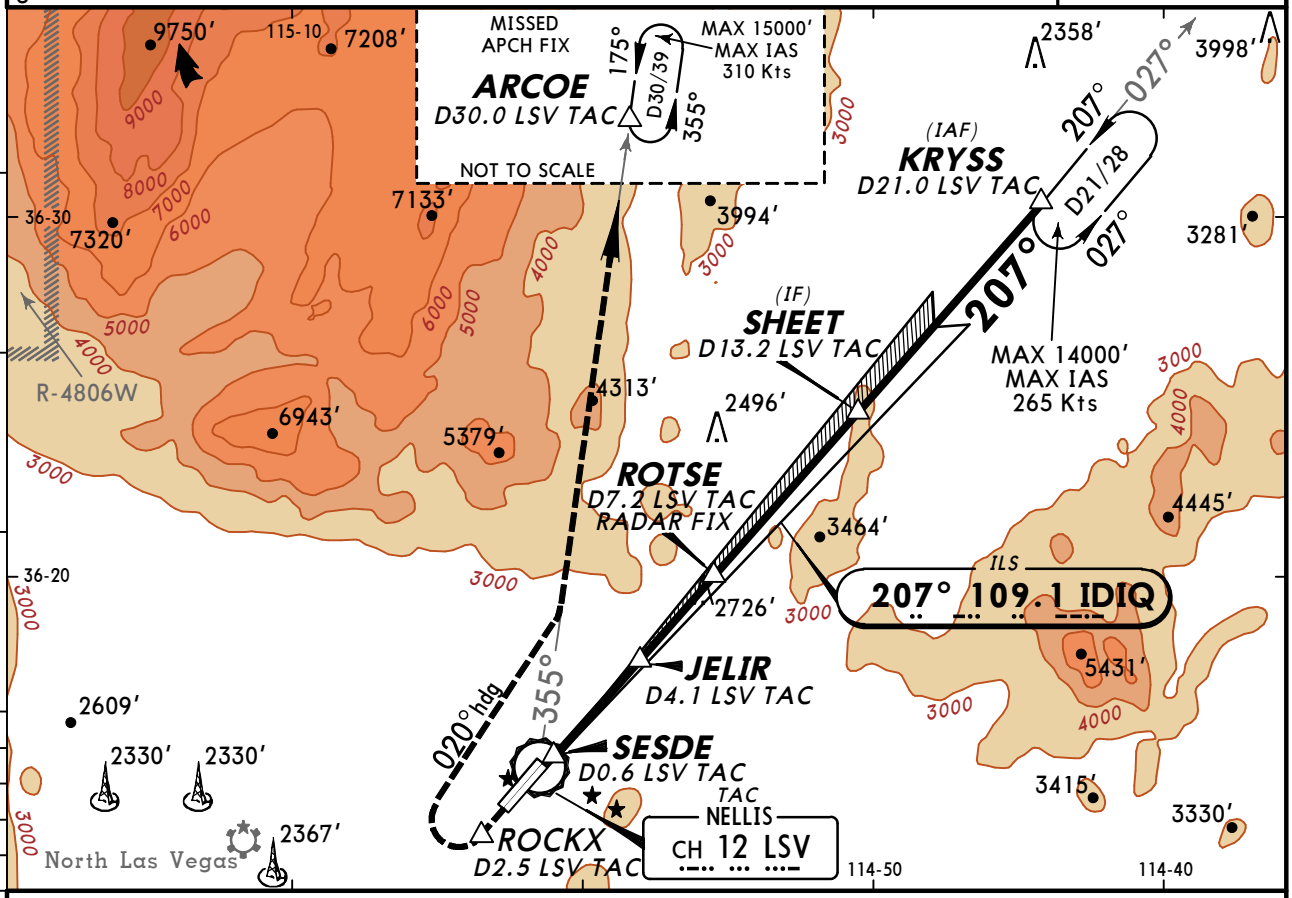
Gnd Speed-Kts	60	120	180	240	300	360
Ft per Min to 13200′	470	940	1410	1880	2350	2820

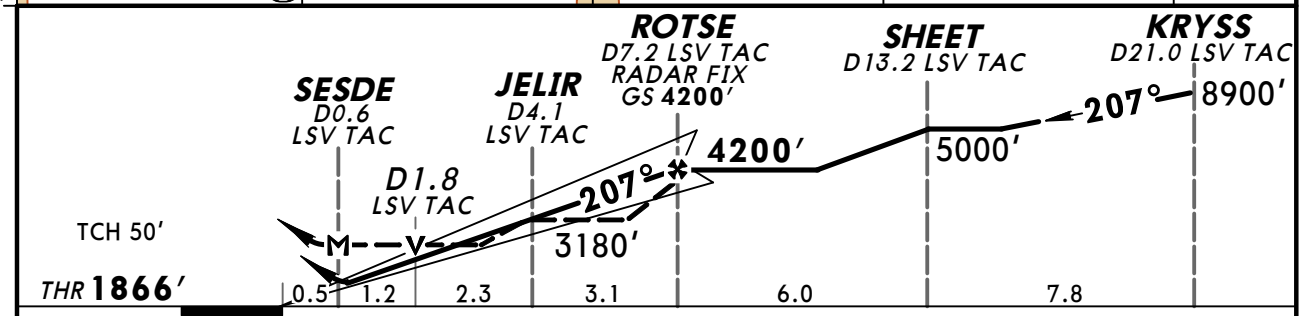


MSA LSV TAC

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. **RADAR or DME required.** 2. CAUTION: Minimum navaid reception at ARCOE (LSV TAC R-355/D30.0) 15000′MSL. 3. EMERG SAFE ALT 100 NM 14,000′. 4. Not for civil use. 5. The difference between the VGSI TCH (54′) and the procedure TCH (50′) is greater than 3′.





Gnd speed-Kts	70	90	100	120	140	160
GS 3.00°	372	478	531	637	743	849
MAP at SESDE						

ALSF-I
PAPI

15000′	209° hdg	ROCKX

STRAIGHT-IN LANDING RWY 21L

	ILS DA(H) 2066′ (200′) FULL	ILS DA(H) 2066′ (200′) ALS out	LOC (GS out) MDA(H) 2440′ (574′)	LOC (GS out) MDA(H) 2440′ (574′) ALS out
A	RVR 24 or ½	RVR 40 or ¾	RVR 24 or ½	RVR 55 or 1
B				
C			1¼	1⅝
D				

CIRCLE-TO-LAND
Not Authorized
East of Rwy 3R-21L

Max Kts	MDA(H)
90	2480′(610′)-1
120	2680′(810′)-1
140	2680′(810′)-2¼
165	2680′(810′)-2½

AMEND 4 TERPS

CHANGES: Notes, circling minimums.

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NELLIS Approach (R)	NELLIS Tower	Ground
124.95	132.55	121.8

BRIEFING STRIP ™

LOC IDIQ	Final Apch Crs	Minimum Alt CARUB	MDA(H)	Apt Elev 1870′
109.1	207°	4000′ (2134′)	2420′ (554′)	THR 1866′

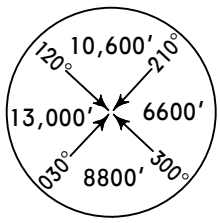
MISSED APCH: Climb to 8000′, track 206° to intercept the LAS VOR R-018 inbound to LAS VOR and hold, continue climb-in-hold to 8000′.

CAUTION: Missed Approach ATC Minimum Climb Rate to 8000′.

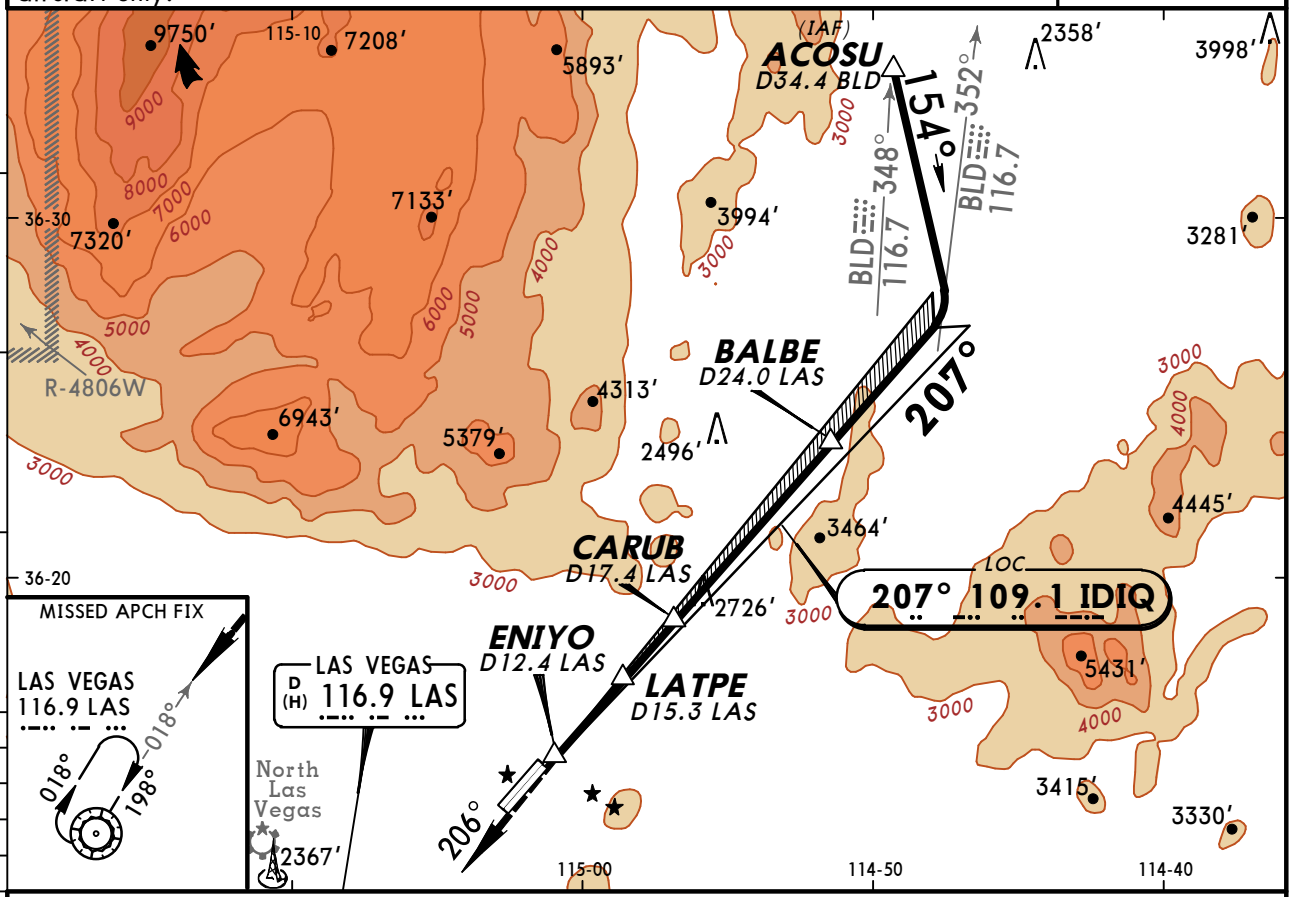
Gnd Speed-Kts	60	120	180	240	300	360
Ft per Min to 8000′	450	950	1350	1800	2250	2700

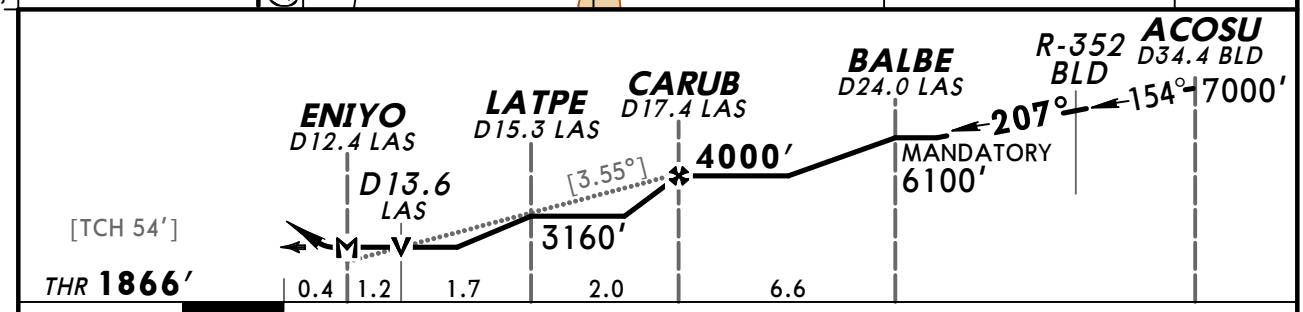
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. EMERG SAFE ALT 100NM 14,000′. 2. LAS VOR DME not usable for missed approach holding. 3. VGSI and descent angle not coincident. 4. For use by Nellis AFB assigned aircraft only.



MSA LAS VOR





Gnd speed-Kts	70	90	100	120	140	160
Descent angle [3.55°]	440	565	628	754	880	1005
MAP at ENIYO						

ALSF-I
PAPI

8000′ ↑ | 206° | LAS 116.9 R-018

STRAIGHT-IN LANDING RWY 21L			CIRCLE-TO-LAND	
MDA(H) 2420′ (554′)			Not Authorized East of Rwy 3R-21L	
		ALS out	Max Kts	MDA(H)
A	NOT APPLICABLE		A	NOT APPLICABLE
B			B	
C	RVR 60 or 1⅛	1⅝	140	2680′(810′)-2¼
D			165	2680′(810′)-2½

TERPS AMEND 2

CHANGES: Note.

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General Information

Location: Minden NV USA
IATA Code: MEV
Lat/Long: N39° 00.1' W119° 45.1'
Elevation: 4722 ft

Airport Use: Public
Magnetic Variation: 13.9°E
Sectional Chart: San Francisco

Fuel Types: 100 Octane (LL), Jet A
Oxygen Types: HP Bottle
Repair Types: Major Airframe, Major Engine
Customs: No
Airport Type: IFR
Landing Fee: No
Control Tower: No
Jet Start Unit: Yes
LLWS Alert: No
Beacon: Yes

Sunrise: 1435 Z
Sunset: 0149 Z,

Runway Information

Runway: 12
Length x Width: 5300 ft x 75 ft
Surface Type: asphalt
TDZ-Elev: 4713 ft

Runway: 16
Length x Width: 7400 ft x 100 ft
Surface Type: asphalt
TDZ-Elev: 4709 ft
Lighting: Edge, Pilot controlled

Runway: 30
Length x Width: 5300 ft x 75 ft
Surface Type: asphalt
TDZ-Elev: 4722 ft

Runway: 34
Length x Width: 7400 ft x 100 ft
Surface Type: asphalt
TDZ-Elev: 4717 ft
Lighting: Edge, Pilot controlled

Communication Information

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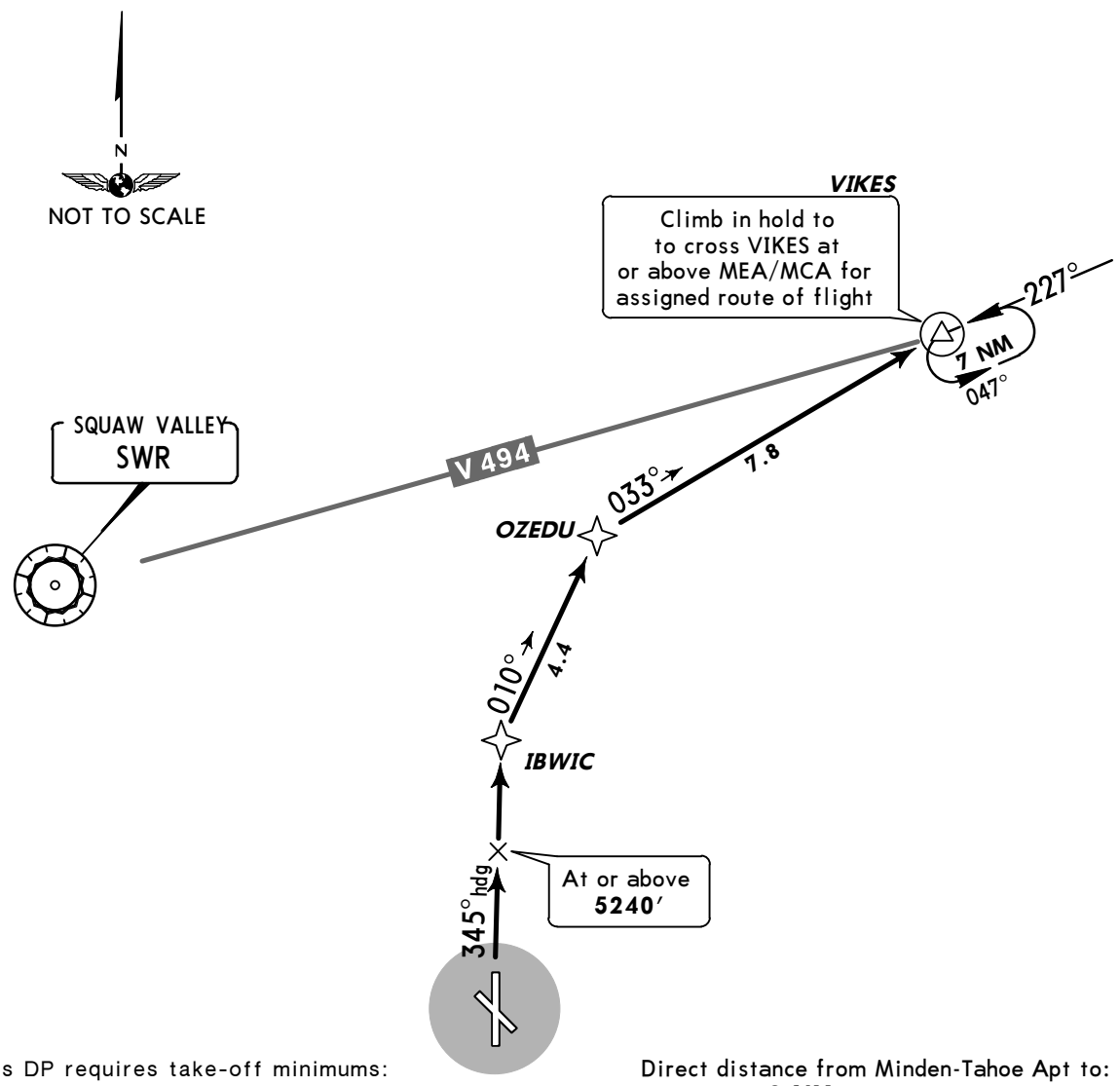
AWOS 119.325
Douglas Co Unicom 123.05 CTAF PCL
Norcal Approach Control 119.2 Arrival Service
Norcal Departure Control 119.2 Departure Service

NORCAL Departure	Apt Elev	
119.2	4726′	Trans level: FL180 Trans alt: 18000′ **1. GPS required.** **2. RNAV 1.**

OBSTACLE

MINDEN TWO RNAV DEPARTURE (MINDN2.VIKES)

(RWY 34)



This DP requires take-off minimums:
Rwys 12, 16, 30: Not authorized-obstacles.
Rwy 34: Standard (or lower than standard, if authorized) with a minimum climb of 413′ per NM to **7800′.**

Standard Take-off Minimums

	Adequate Vis Ref	STD
1 & 2 Eng	¼	1
3 & 4 Eng		½

Gnd speed-KT	75	100	150	200	250	300
413′ per NM	516	688	1033	1377	1721	2065

Direct distance from Minden-Tahoe Apt to:
IBWIC **8 NM**

OBSTACLE
Rwy 34: Fence 235′ from DER, 302′ RIGHT of centerline, up to 7′ AGL/4714′ MSL.

INITIAL CLIMB

Climb heading 345° to **5240′** then direct IBWIC, then on track 010° to OZEDU, then on track 033° to VIKES, then climb in VIKES holding pattern to cross VIKES at or above MEA/MCA for assigned route of flight.

CHANGES: Procedure revised, renumbered.

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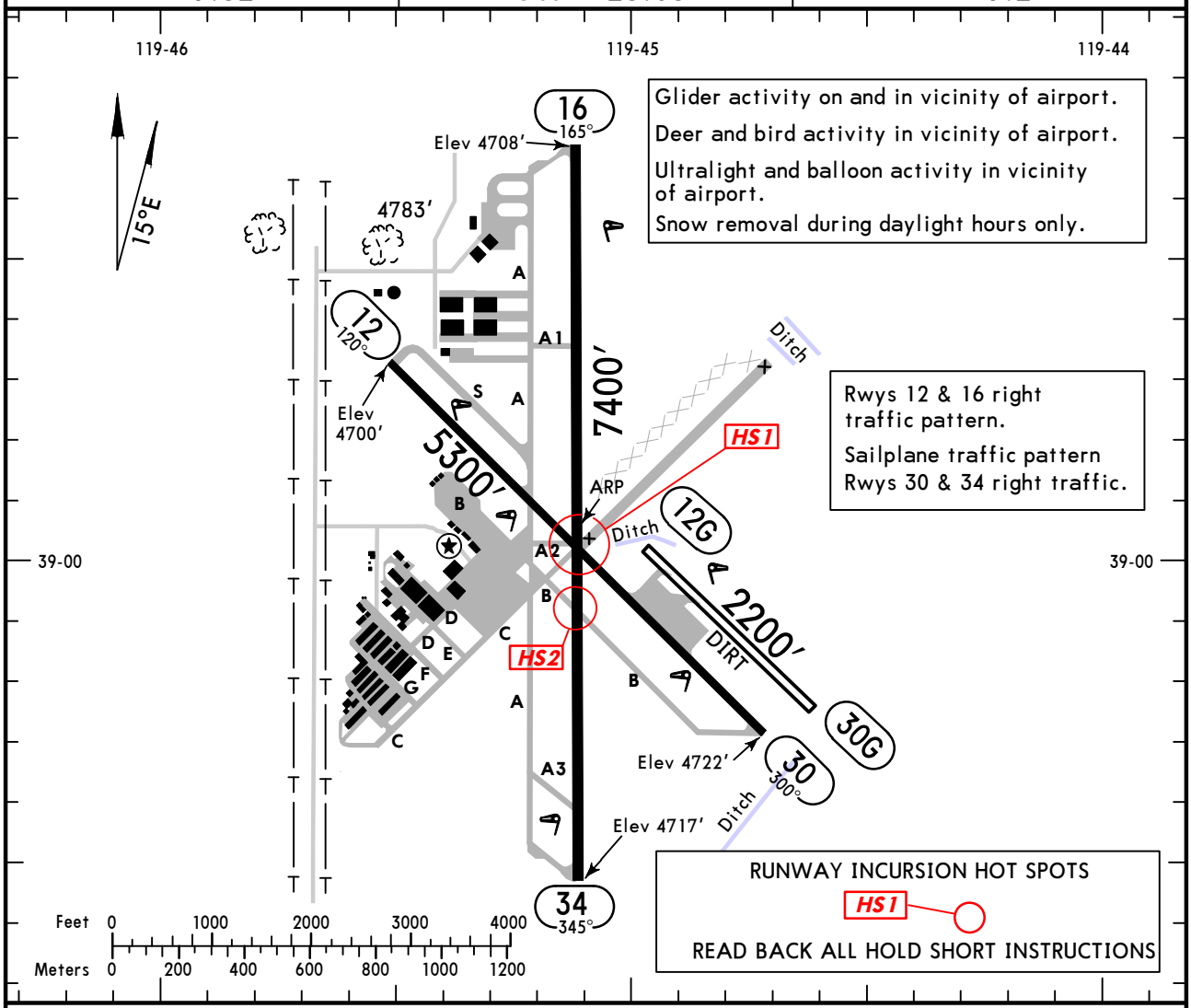
AWOS-3	MINDEN-TAHOE UNICOM	NORCAL Departure
119.32	CTAF 123.05	119.2



ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS — LANDING BEYOND: Threshold	Glide Slope	TAKE-OFF	WIDTH
12 30					75′
16	❶ MIRL VASI-R				100′
34	❶ MIRL VASI-L				

❶ Activate on 123.05

RUNWAY INCURSION HOT SPOTS HS1

For information only, not to be construed as ATC instructions

HS1 Complex intersection, be vigilant for aircraft using intersecting runways.

HS2 Frequent crossings for sailplane operations.

	TAKE-OFF: Rwy 34	TAKE-OFF: Rwys 12, 16, 30	FOR FILING AS ALTERNATE	
1 & 2 Eng	USE MINDEN RNAV DEPARTURE	NA	A, B, C, D	NA
3 & 4 Eng				

AMEND 2

CHANGES: Taxiways, buildings.

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BRIEFING STRIP TM

AWOS-3	NORCAL Approach	MINDEN-TAHOE UNICOM
119.32	119.2	CTAF 123.05

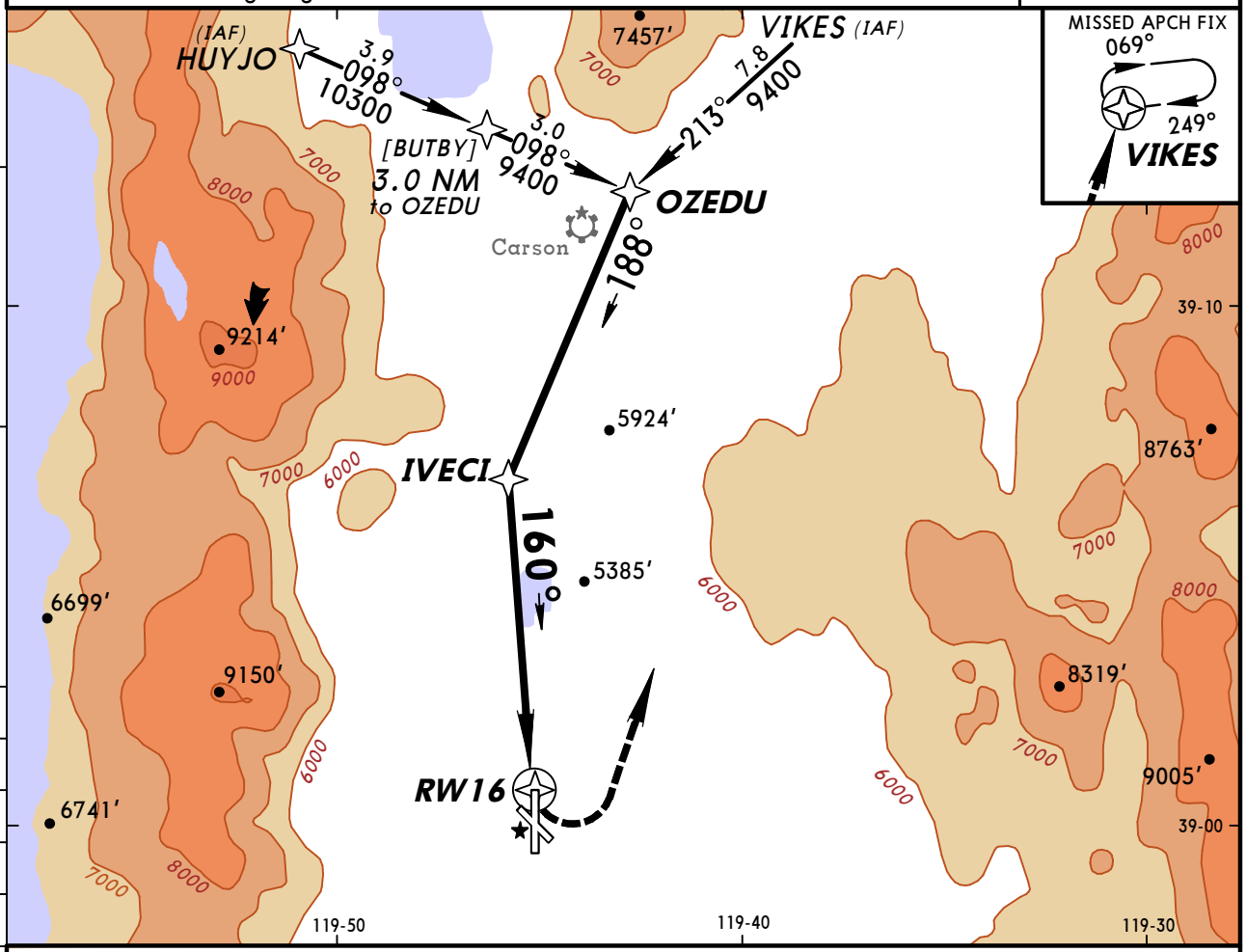
GPS	Final Apch Crs	Minimum Alt IVECI	MDA(H)	Apt Elev
	160°	7600′ (2878′)	Refer to Minimums	4722′

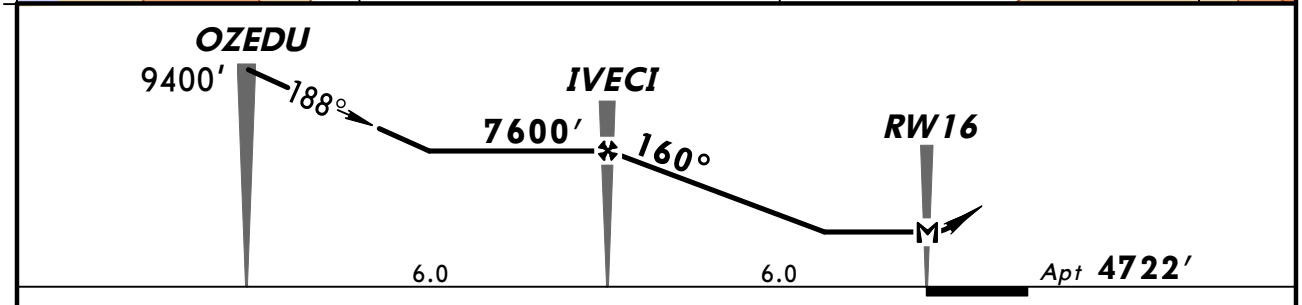
MISSED APCH: Climbing LEFT turn to 12000′ direct VIKES and hold.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. Pilot controlled lighting 123.05.

12,000′
MSA RW16





MAP at RW16								Lighting - Refer to Airport Chart	12000′ LT	VIKES

CIRCLE-TO-LAND

	Max Kts.	MDA(H)
A	90	6220′ (1498′) - 1¼
B	120	6220′ (1498′) - 1½
C	140	6220′ (1498′) - 3
D	165	

AMEND 0
TERPS

CHANGES: None.

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BRIEFING STRIP TM

AWOS-3	NORCAL Approach	MINDEN-TAHOE UNICOM
119.32	119.2	CTAF 123.05

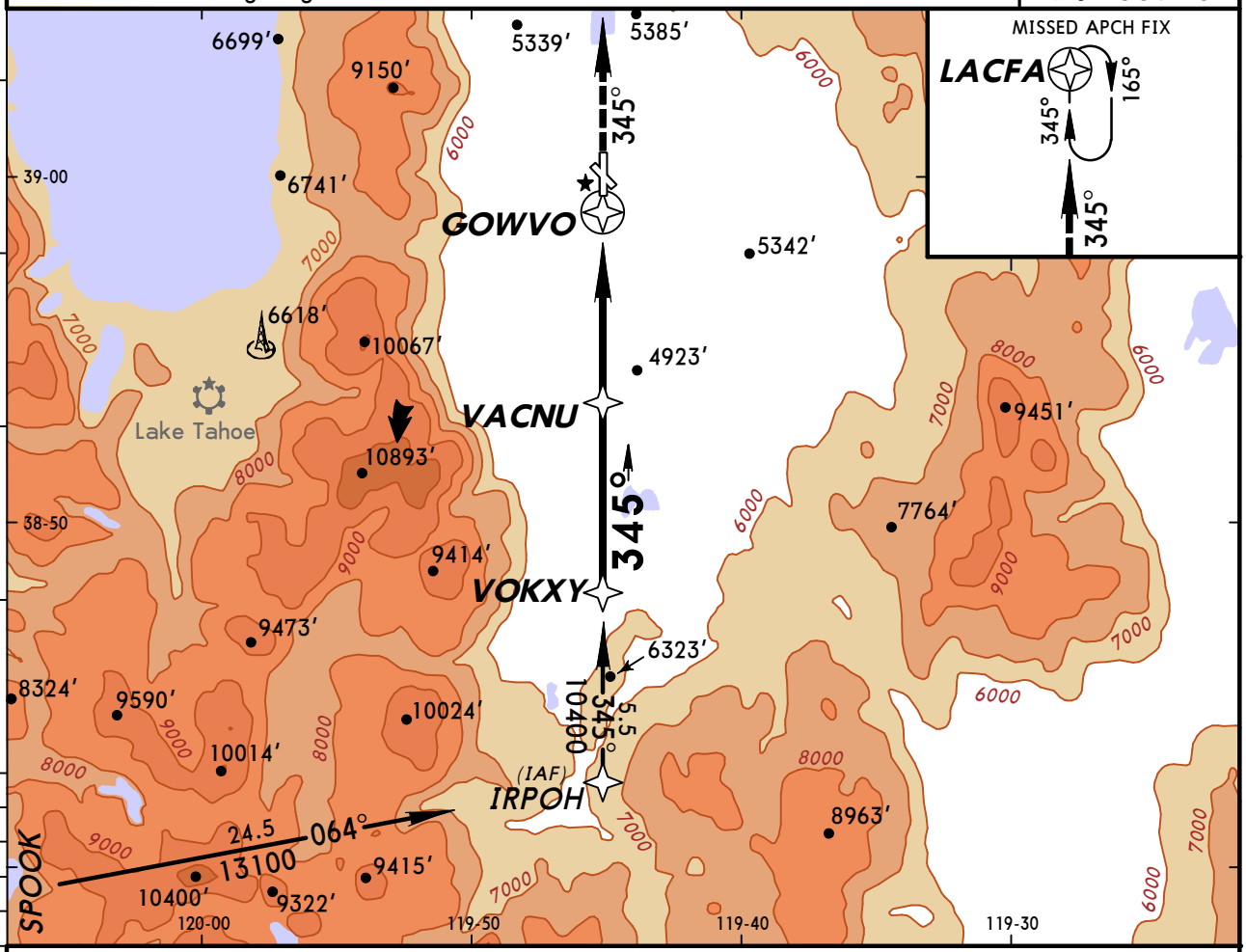
GPS	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev
	345°	VACNU 8800′ (4074′)	Refer to Minimums	4726′

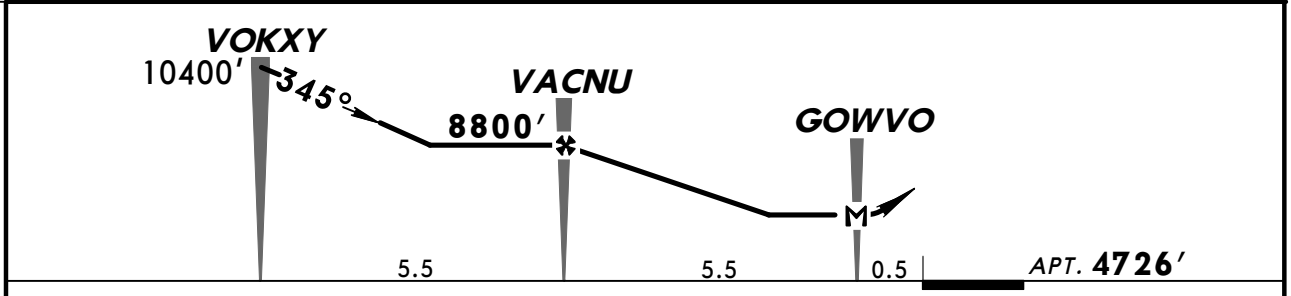
MISSED APCH: Climb to 12000′ via 345° course to LACFA and hold.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. Pilot controlled lighting 123.05.

12,000′
MSA GOWVO





								Lighting - Refer to Airport Chart	12000′ via 345°	LACFA
MAP at GOWVO										

CIRCLE-TO-LAND

	Max Kts	MDA(H)
A	90	6600′ (1874′)-1¼
B	120	6600′ (1874′)-1½
C	140	6600′ (1874′)-3
D	165	

AMEND 0
TERPS

CHANGES: Approach call sign.

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General Information

Location: Fallon NV USA
IATA Code: NFL
Lat/Long: N39° 25.1' W118° 41.9'
Elevation: 3934 ft

Airport Use: Military
Magnetic Variation: 13.8°E
Sectional Chart: San Francisco

Fuel Types: Jet 5
Oxygen Types: High Pressure, Low Pressure
Repair Types: Minor Airframe, Minor Engine
Customs: No
Airport Type: IFR
Landing Fee: No
Control Tower: Yes
Jet Start Unit: No
LLWS Alert: No
Beacon: Yes

Sunrise: 1431 Z
Sunset: 0144 Z,

Runway Information

Runway: 07
Length x Width: 7003 ft x 154 ft
Surface Type: asphalt
TDZ-Elev: 3929 ft
Lighting: Edge
Stopway: 500 ft

Runway: 13L
Length x Width: 11080 ft x 200 ft
Surface Type: concrete
TDZ-Elev: 3934 ft
Lighting: Edge
Stopway: 1000 ft

Runway: 13R
Length x Width: 14005 ft x 201 ft
Surface Type: asphalt
TDZ-Elev: 3934 ft
Lighting: Edge
Stopway: 1000 ft

Runway: 25
Length x Width: 7003 ft x 154 ft
Surface Type: asphalt
TDZ-Elev: 3927 ft

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Lighting: Edge
Stopway: 800 ft

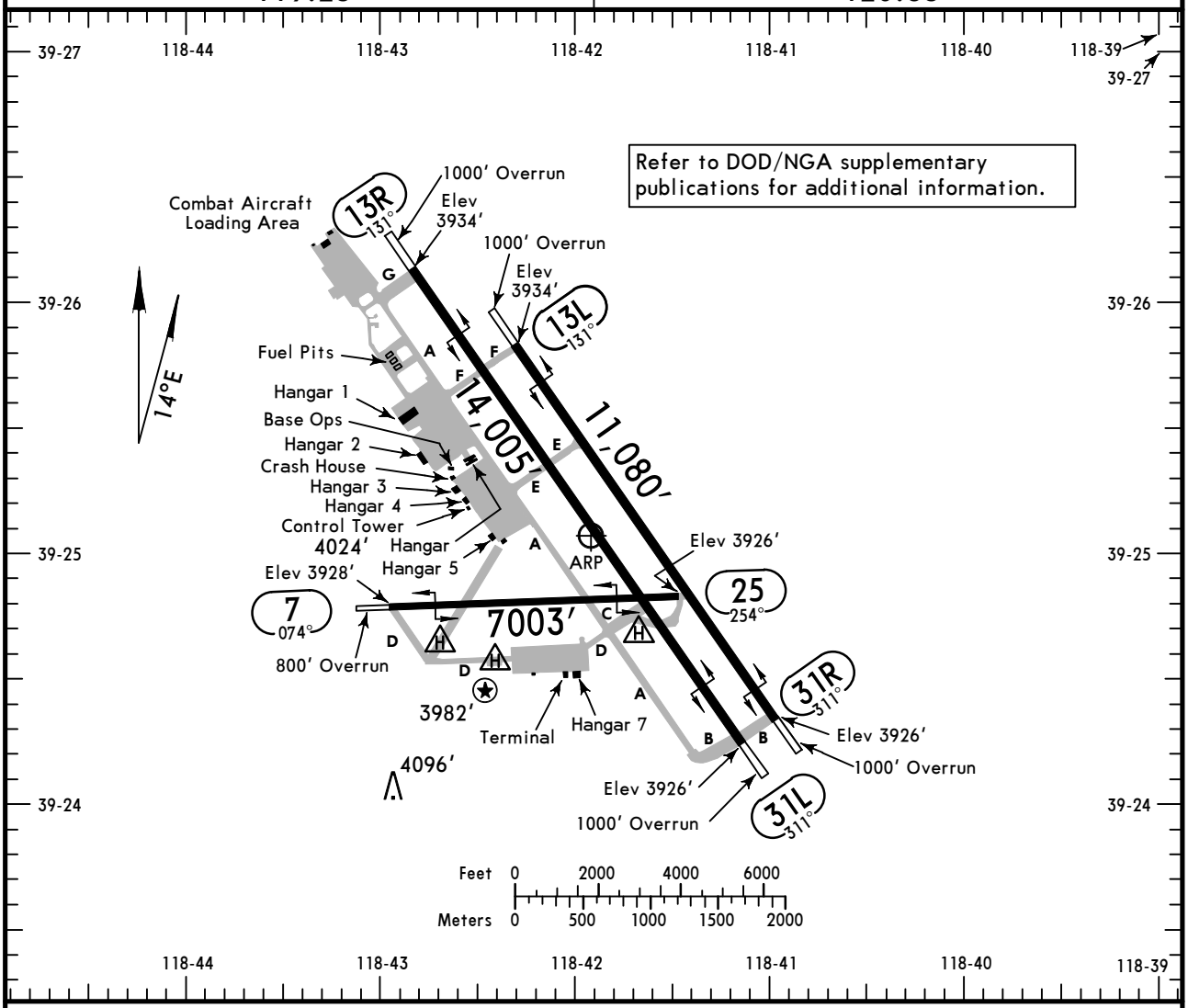
Runway: 31L
Length x Width: 14005 ft x 201 ft
Surface Type: asphalt
TDZ-Elev: 3926 ft
Lighting: Edge
Stopway: 1000 ft

Runway: 31R
Length x Width: 11080 ft x 200 ft
Surface Type: concrete
TDZ-Elev: 3928 ft
Lighting: Edge
Stopway: 1000 ft

Communication Information

Fallon Tower 134.1 Secondary
Fallon Tower 119.25
Navy Fallon Approach Control 120.85
Navy Fallon Departure Control 120.85
Fallon Radar 121.875
Fallon Radar 118.3
Desert Control 126.2 Military
Oakland Center 128.8 Remote Communications Air-Ground

*NAVY FALLON Tower	*NAVY FALLON Departure (R)
119.25	120.85



ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS — LANDING BEYOND — Threshold	Glide Slope	TAKE-OFF	WIDTH
7	HIRL ❶ NAVY FLOLS-L				154′
25	HIRL ❷ OLS-L				
13R	HIRL PAPI-L (angle 3.0°)				201′
31L	HIRL PAPI-L (angle 3.5°)				
13L 31R	HIRL ❷ OLS-L				200′

❶ Fresnel Lens Optical Landing System
❷ Optical Landing System

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

	1 All Rwys	
	Adequate Vis Ref	STD
1 & 2 Eng	1/4	1
3 & 4 Eng		1/2

1 Diverse Departures Authorized:
Rwy 13L/R: 131° clockwise 311° with mim climb rate of 245′/NM to 7200′.
Rwy 31L/R: 083° counter-clockwise 131° with mim climb rate of 225′/NM to 7200′.
Rwy 7: With mim climb rate of 295′/NM to 12,200 (Civil) or 275′/NM to 12,000′ (Military).
Rwy 25: 132° clockwise 073° with mim climb rate of 250′/NM to 12,200′ (Civil) or 240′/NM to 12,000 (Military).

CHANGES: Notes, runway bearings, lighting.

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*PAR Rwys 7, 13L/R, 31L/R

BRIEFING STRIP TM

*NAVY FALLON Approach (R)	*NAVY FALLON Tower
120.85	119.25

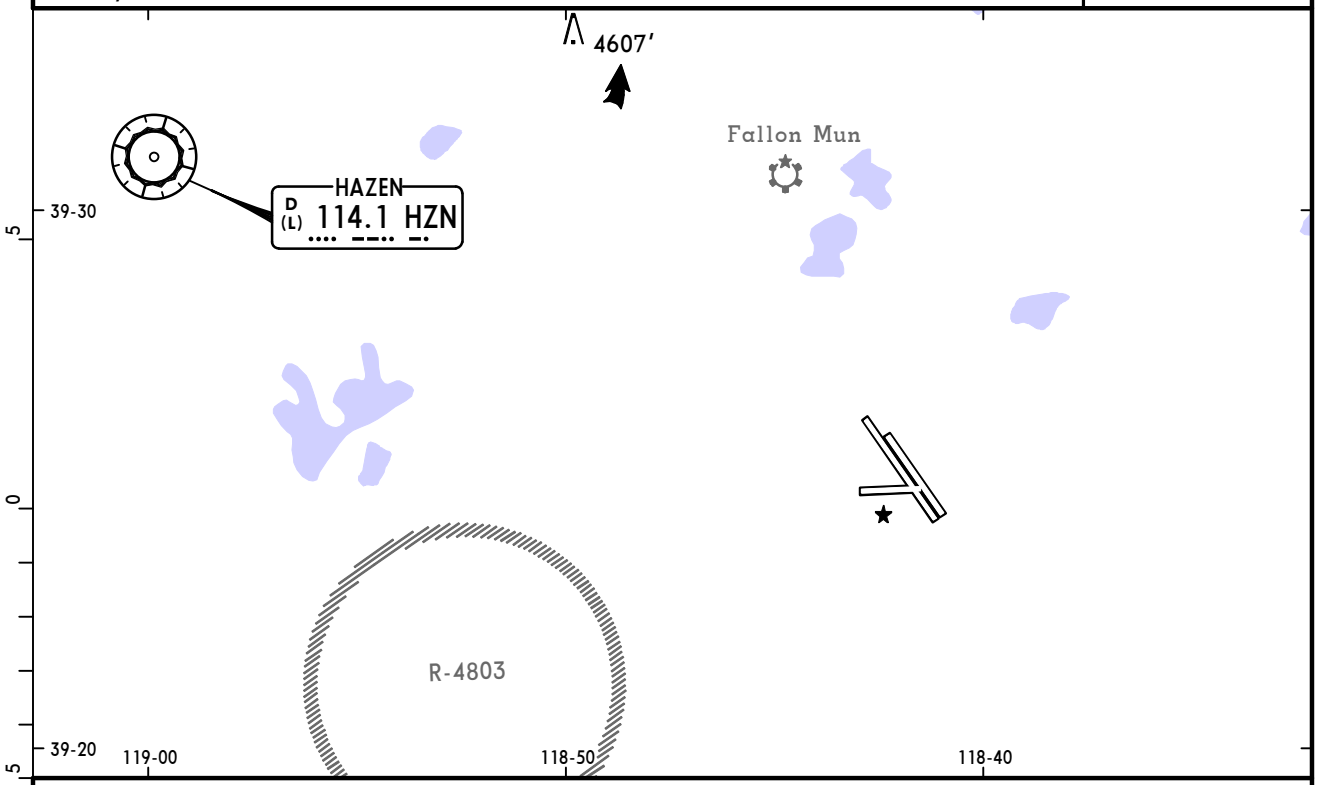
RADAR	Final Apch Crs	Minimum Alt	DA(H)	Apt Elev 3934'
	By ATC	No FAF	Refer to Minimums	TDZE -See below

MISSED APCH: As directed by RADAR CONTROLLER.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000'

1. CAUTION: Fallon Mun Apt 5 NM Northwest uncontrolled. Pattern altitude 800' AGL.
2. Descent to 5700' not authorized until inbound on initial segment within 10 NM of runway.

No MSA published



PAR RWY 7 CAUTION: ATC Missed Approach Minimum Climb Rate to 7500'						
Knots	60	120	180	240	300	360
FPM	300	600	900	1200	1500	1800

PAR RWY 13L/R CAUTION: ATC Missed Approach Minimum Climb Rate to 7300'						
Knots	60	120	180	240	300	360
FPM	250	500	750	1000	1250	1500

PAR RWY 31L/R CAUTION: ATC Missed Approach Minimum Climb Rate to 7300'						
Knots	60	120	180	240	300	360
FPM	270	540	810	1080	1350	1620

RWY 7	RWY 13L	RWY 13R	RWY 31L	RWY 31R
PAR TCH 36'	PAR TCH 46'	PAR TCH 47'	PAR TCH 55'	PAR TCH 55'
TDZE 3929'	TDZE 3934'	TDZE 3934'	TDZE 3926'	TDZE 3928'

Gnd speed-Kts		70	90	100	120	140	160
Rwys 7, 13L/R PAR GS	3.00°	377	484	538	646	753	861
Rwys 31L/R PAR GS	3.50°	439	564	627	752	877	1003

Lighting - Refer to Airport Chart

TERPS

STRAIGHT-IN LANDING

	PAR 7	PAR 13L	PAR 13R
	DA(H) 4129' (200')	DA(H) 4134' (200')	DA(H) 4134' (200')
A	3/4	3/4	3/4
B			
C			
D			

STRAIGHT-IN LANDING

	PAR 31L	PAR 31R
	DA(H) 4126' (200')	DA(H) 4128' (200')
A	3/4	3/4
B		
C		
D		

CIRCLE-TO-LAND

Max Kts.	MDA(H)
90	4400' (466')-1
120	
140	4400' (466')-1½
165	4520' (586')-2

CHANGES: New chart.

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*ASR Rwys 7, 13L/R, 31L/R

*NAVY FALLON Approach (R)	*NAVY FALLON Tower
120.85	119.25

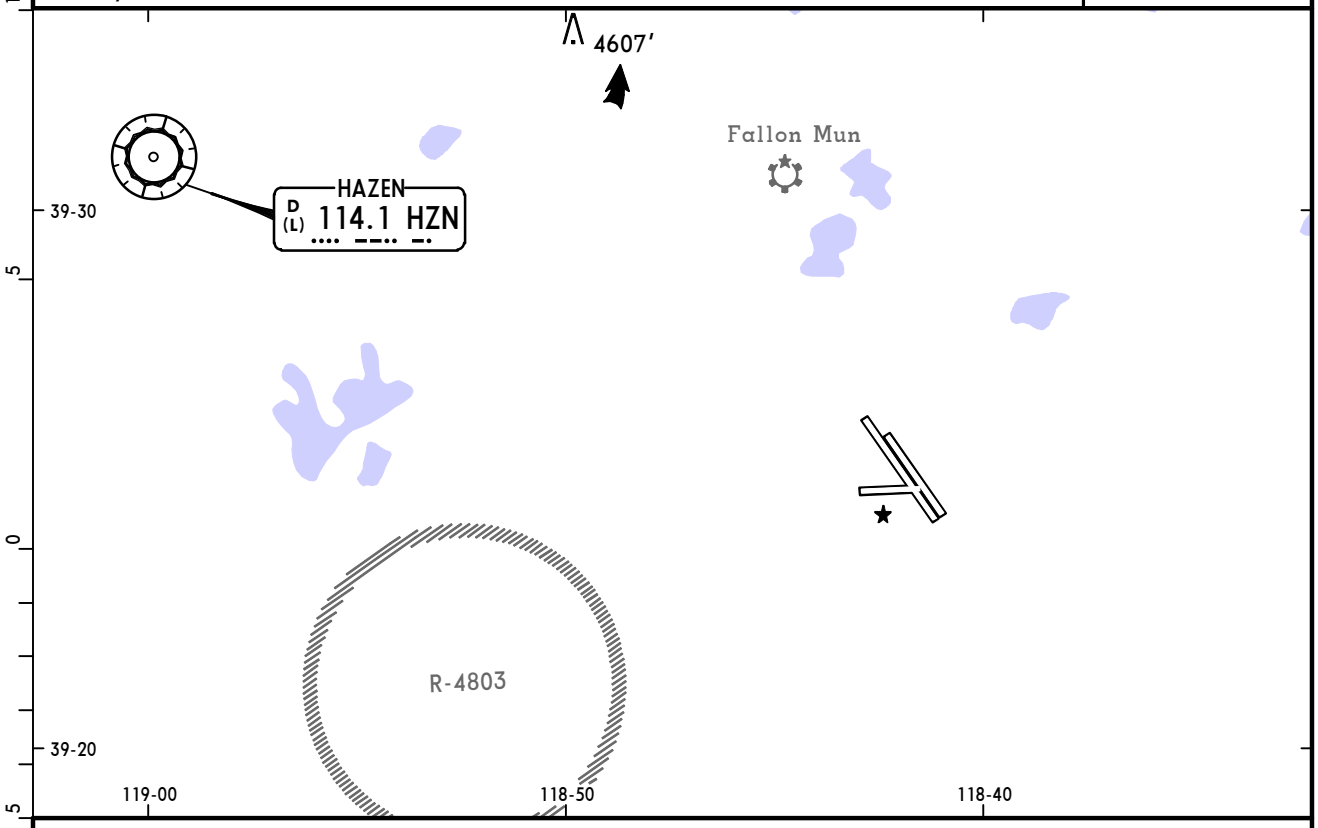
RADAR	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev 3934'
	By ATC	No FAF	Refer to Minimums	TDZE -See below

No MSA published

MISSED APCH: As directed by RADAR CONTROLLER.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000'

1. CAUTION: Fallon Mun Apt 5 NM Northwest uncontrolled. Pattern altitude 800' AGL.
2. Descent to 5700' not authorized until inbound on initial segment within 10 NM of runway.



ASR RWY 7
CAUTION: ATC Missed Approach
Minimum Climb Rate to 7500'

Knots	60	120	180	240	300	360
FPM	300	600	900	1200	1500	1800

ASR RWY 13L/R
CAUTION: ATC Missed Approach
Minimum Climb Rate to 7300'

Knots	60	120	180	240	300	360
FPM	250	500	750	1000	1250	1500

ASR RWY 31L/R
CAUTION: ATC Missed Approach
Minimum Climb Rate to 7300'

Knots	60	120	180	240	300	360
FPM	270	540	810	1080	1350	1620

RWY 7	RWY 13L	RWY 13R	RWY 31L	RWY 31R
TDZE 3929'	TDZE 3934'	TDZE 3934'	TDZE 3926'	TDZE 3928'

Lighting - Refer to Airport Chart

TERPS

STRAIGHT-IN LANDING

	ASR 7	ASR 13L	ASR 13R
	MDA(H) 4340' (411')	MDA(H) 4280' (346')	MDA(H) 4260' (326')
A	1	1	1
B			
C	1¼		
D		1¼	

STRAIGHT-IN LANDING

	ASR 31L	ASR 31R
	MDA(H) 4200' (274')	MDA(H) 4200' (272')
A	1	1
B		
C		
D		

CIRCLE-TO-LAND

Max Kts.	MDA(H)
90	4400' (466')-1
120	
140	4400' (466')-1½
165	4520' (586')-2

CHANGES: New chart.

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General Information

Location: Reno NV USA
IATA Code: RNO
Lat/Long: N39° 29.9' W119° 46.1'
Elevation: 4415 ft

Airport Use: Public
Magnetic Variation: 14.0°E
Sectional Chart: San Francisco

Fuel Types: 100 Octane (LL), Jet A-1
Oxygen Types: High Pressure, Low Pressure, HP Bottle, LP Bottle
Repair Types: Major Airframe, Major Engine
Customs: Upon Prior Request
Airport Type: IFR
Landing Fee: No
Control Tower: Yes
Jet Start Unit: Yes
LLWS Alert: No
Beacon: Yes

Sunrise: 1435 Z
Sunset: 0149 Z,

Runway Information

Runway: 07
Length x Width: 6102 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 4409 ft
Lighting: Edge, REIL

Runway: 16L
Length x Width: 9000 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 4415 ft
Lighting: Edge, Centerline, REIL

Runway: 16R
Length x Width: 11002 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 4415 ft
Lighting: Edge, ALS, Centerline
Displaced Threshold: 999 ft
Stopway: 1150 ft

Runway: 25
Length x Width: 6102 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 4402 ft
Lighting: Edge, REIL

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Runway: 34L
Length x Width: 11002 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 4410 ft
Lighting: Edge, ALS, Centerline
Displaced Threshold: 990 ft

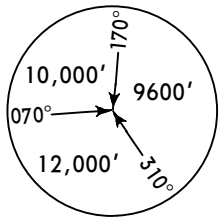
Runway: 34R
Length x Width: 9000 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 4408 ft
Lighting: Edge, Centerline, REIL

Communication Information

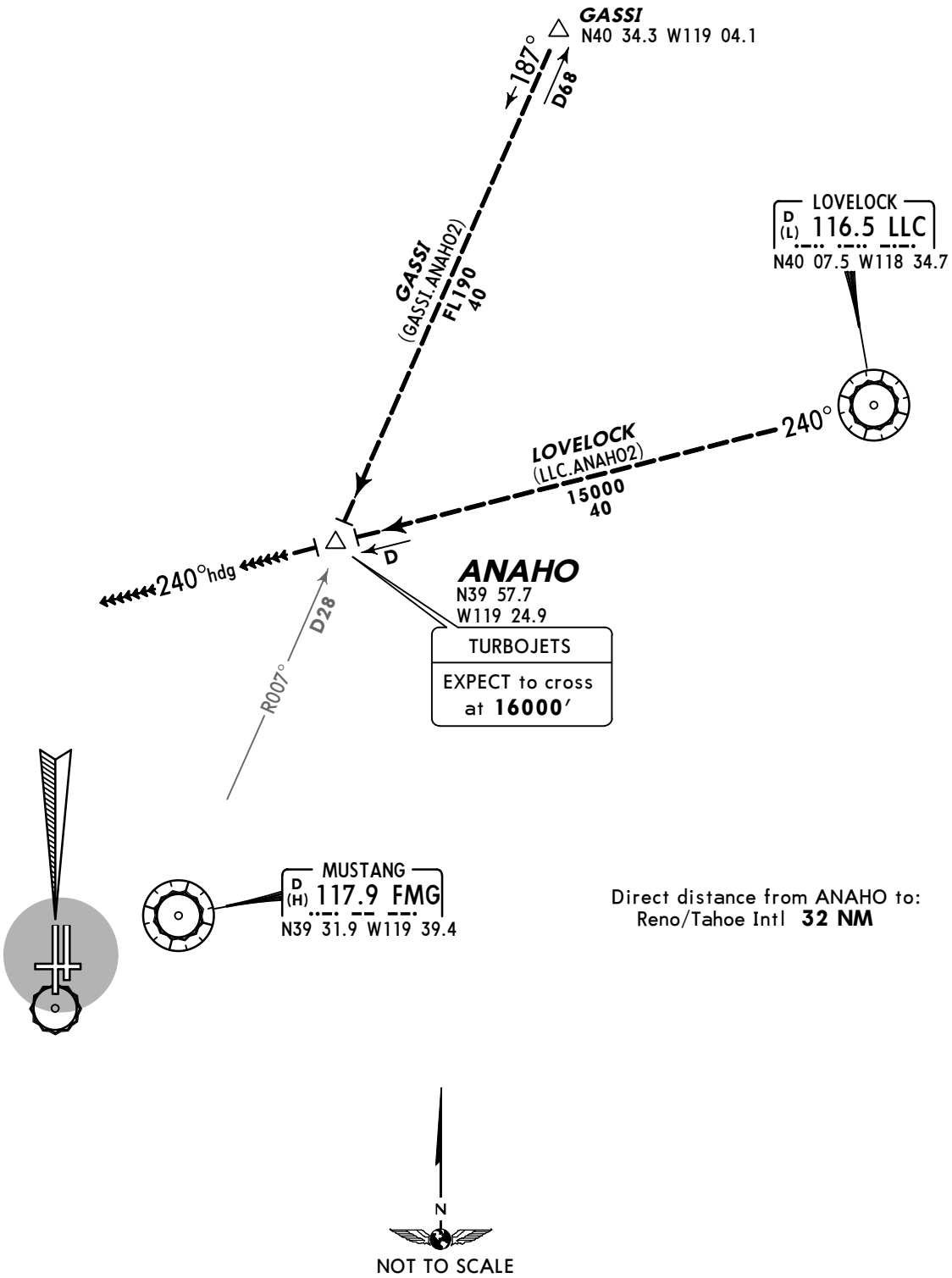
ATIS 135.8
Reno Tower 118.7
Reno Ground Control 121.9
Reno Clearance Delivery 124.9 Pre-Departure Clearance
Norcal Approach Control 119.2 (36°-255°)
Norcal Approach Control 126.3 (220°-35°)
Norcal Departure Control 119.2 (36°-219°)
Norcal Departure Control 126.3 (256°-35°)
Reno/Tahoe Intl Unicom 122.95
Reno Flight Service Station 122.5
Reno Flight Service Station 122.2

ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ 1. RADAR required. 2. CAUTION: Intense glider activity up to FL180.

ANAHO TWO ARRIVAL (ANAHO.ANAHO2)



MSA FMG VOR



ROUTING

Depart ANAHO heading 240° for vectors to final approach course.

CHANGES: New format, caution note added.

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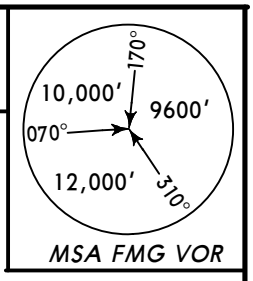
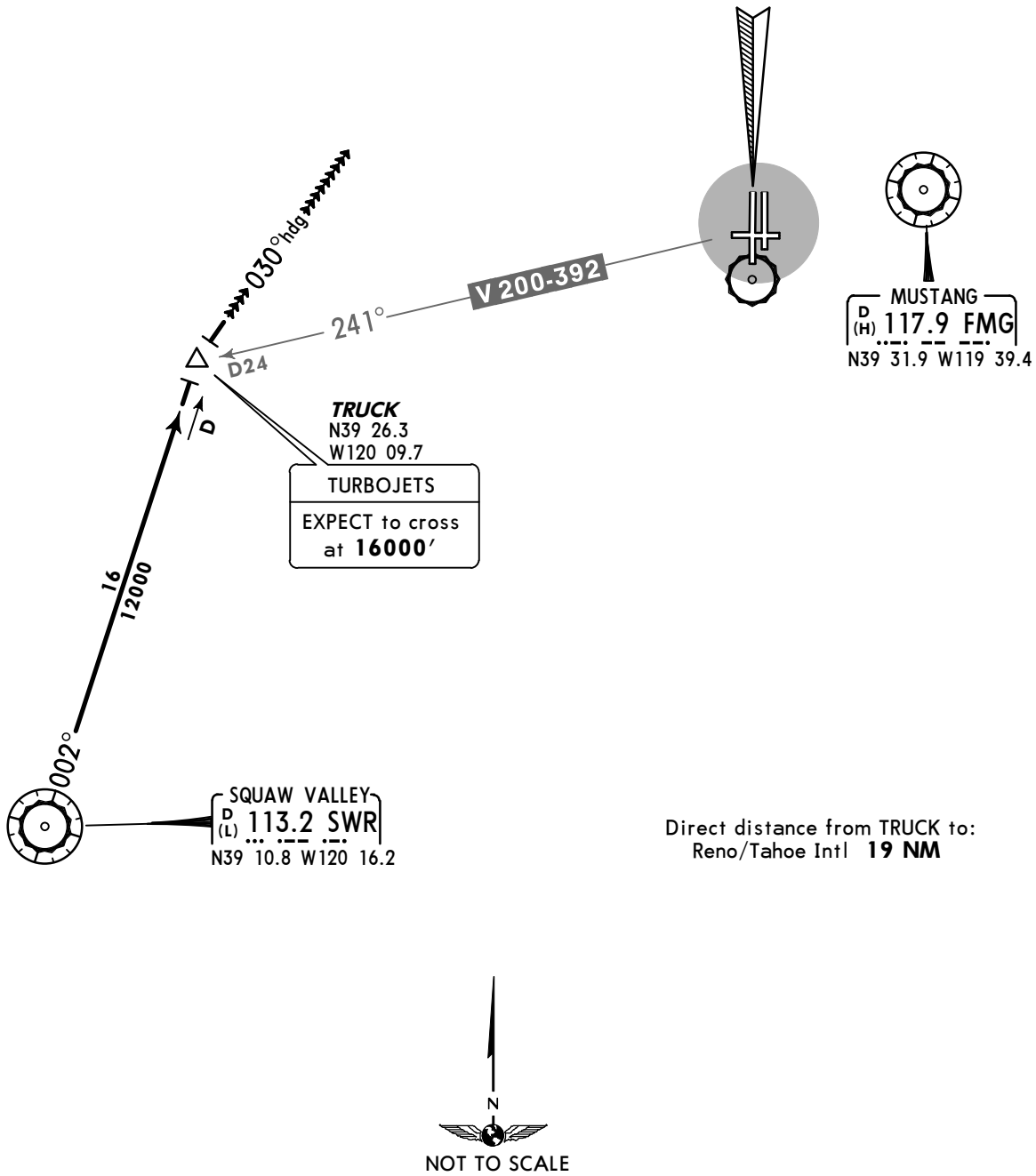
ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ 1. RADAR required. 2. CAUTION: Intense glider activity up to FL180.

CANNON TWO ARRIVAL (SWR.CANN2)





Direct distance from TRUCK to:
Reno/Tahoe Intl **19 NM**

ROUTING

From over SWR via SWR R-002 to TRUCK. Depart TRUCK heading 030° for vectors to final approach course.

CHANGES: New format, caution note added.

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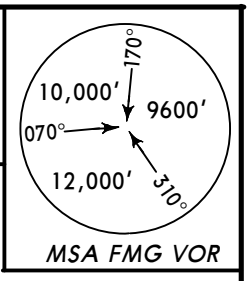
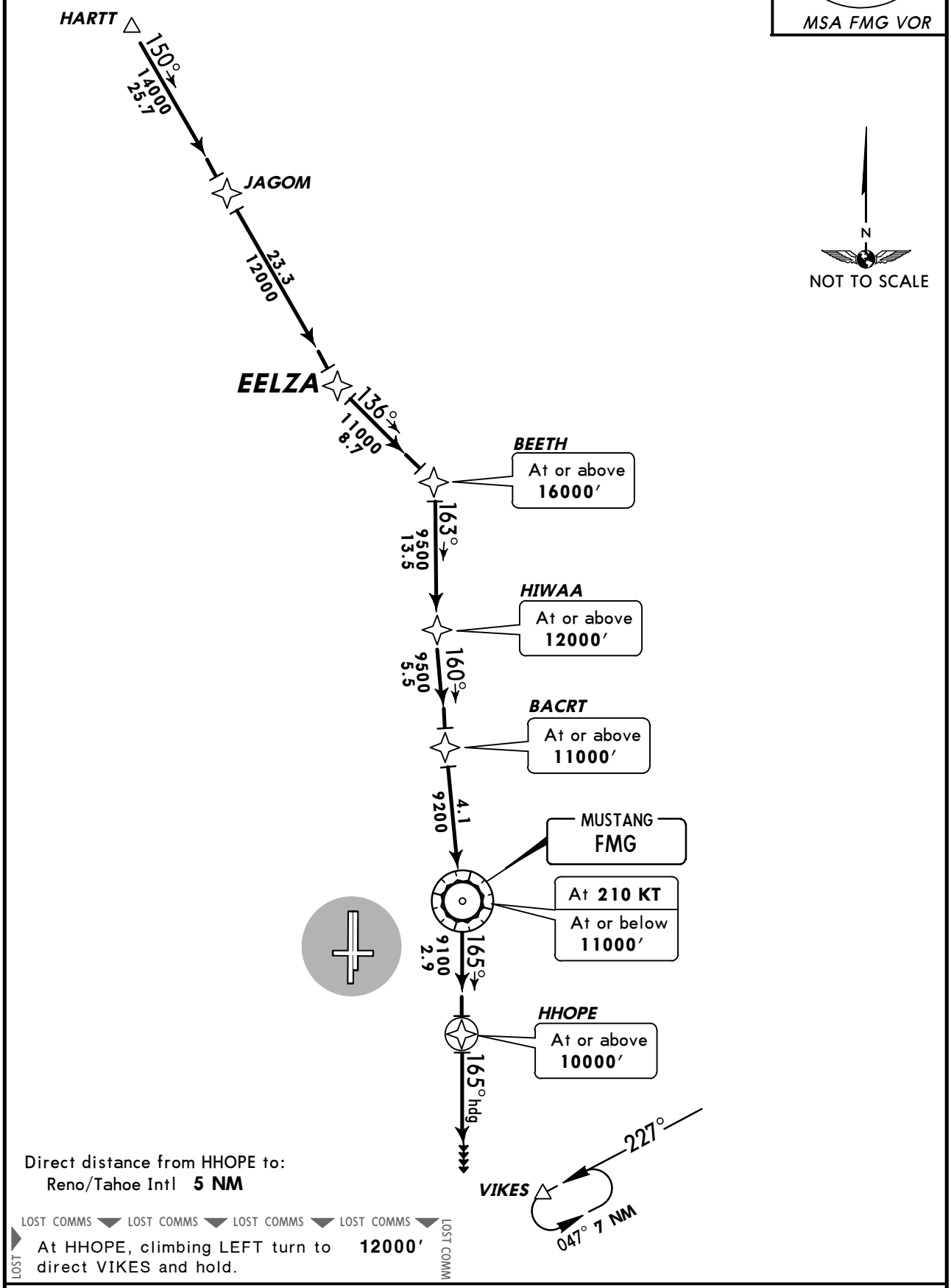
D-ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. RADAR required.** **2. GPS required.** **3. RNAV 1.** 4. CAUTION: Intense glider activity to FL180.



EELZA TWO RNAV ARRIVAL (HARTT.EELZA2)



Direct distance from HHOPE to:
Reno/Tahoe Intl **5 NM**

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

LOST At HHOPE, climbing LEFT turn to **12000′** direct VIKES and hold. LOST COMM

ROUTING

From HARTT on track 150° to JAGOM, then on track 150° to EELZA, then on track 136° to BEETH, then on track 163° to HIWAA, then on track 160° to BACRT, then on track 160° to FMG, then on track 165° to HHOPE, then on heading 165°.

Rwys 34L/R: EXPECT RADAR vectors to final approach course.

CHANGES: Computer code, MEA, upnumbered.

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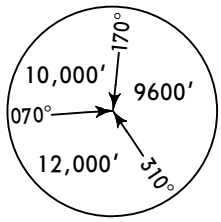
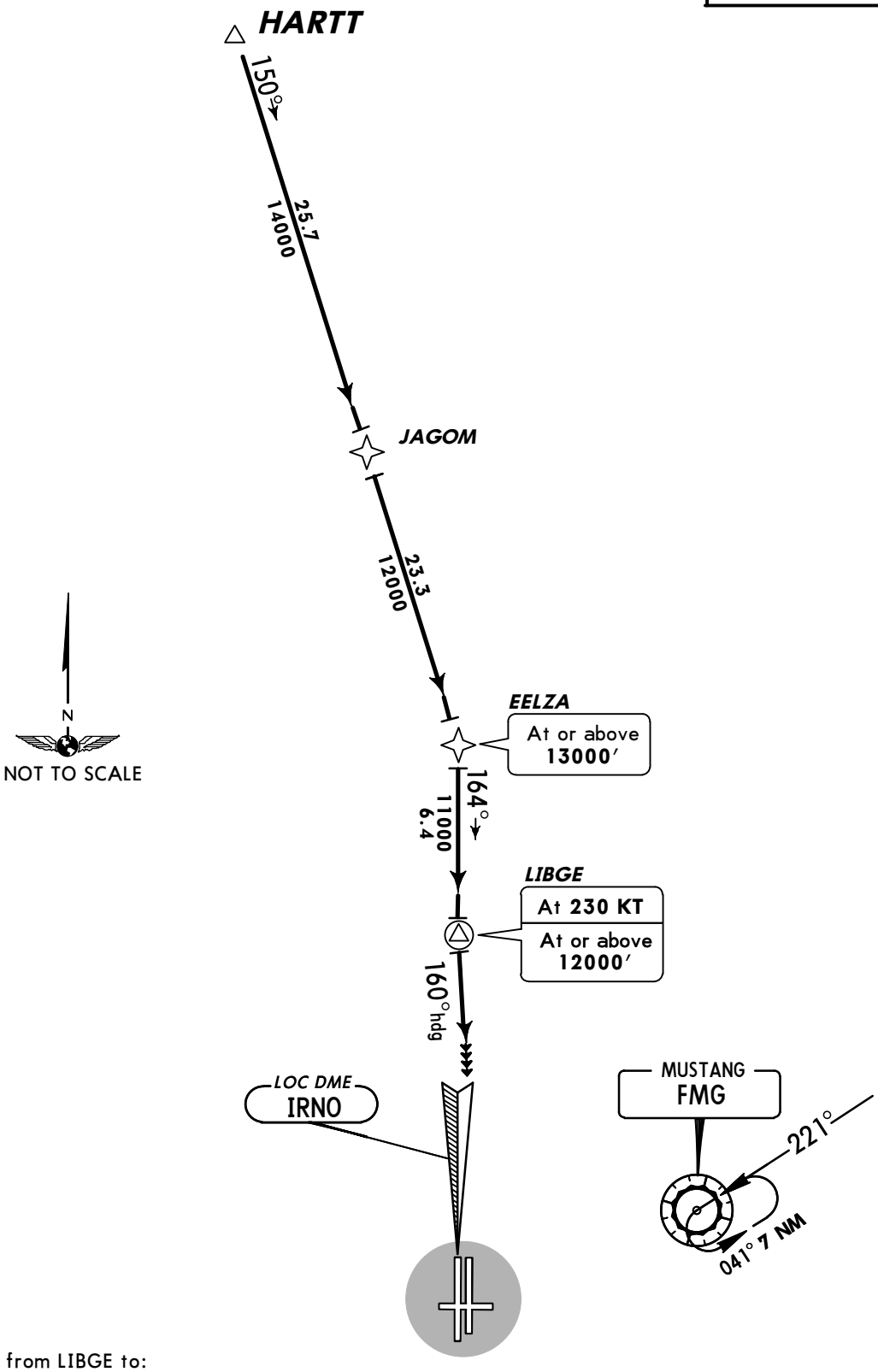
D-ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. GPS required.** **2. RNAV 1.** 3. CAUTION: Intense glider activity to FL180.



MSA FMG VOR

HARTT ONE RNAV ARRIVAL (HARTT.HARTT1)



Direct distance from LIBGE to:
Reno/Tahoe Intl **26 NM**

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST

LOST At LIBGE, proceed inbound via Rwy 16R ILS approach. If unable, climbing LEFT turn to **12000′** direct FMG and hold. LOST

ROUTING

From HARTT on track 150° to JAGOM, then on track 150° to EELZA, then on track 164° to LIBGE. Then on heading 160° EXPECT ILS RWY 16R or RADAR vectors.

CHANGES: None.

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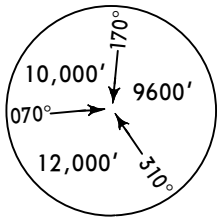
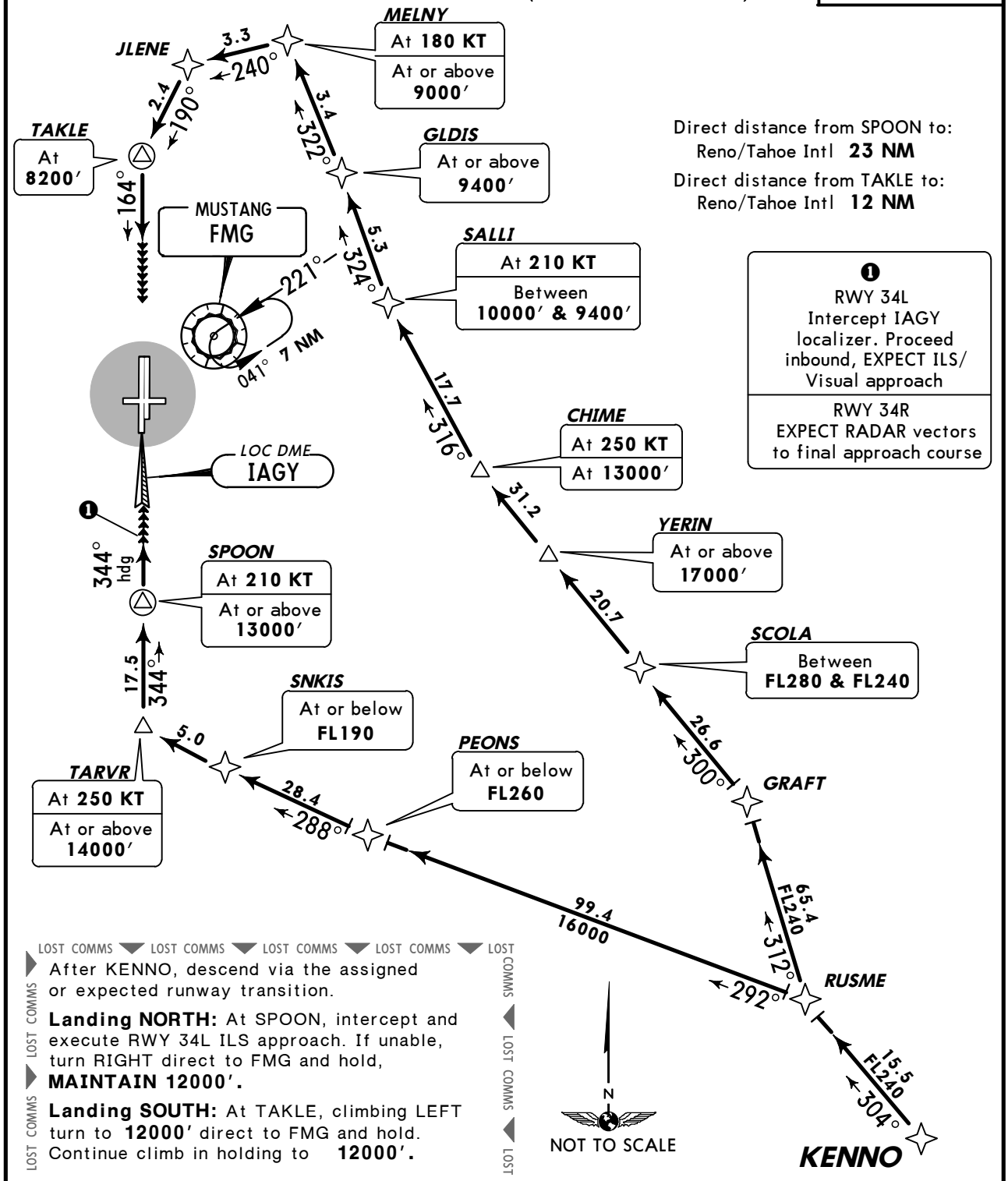
D-ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. DME/DME/IRU or GPS required. 2. RADAR required. 3. RNAV 1.** 4. Landing NORTH: For non-GPS equipped aircraft FMG, HZN, MVA, OAL and TPH DMEs must be operational. 5. Landing SOUTH: For non-GPS equipped aircraft MVA, OAL, SWR and TPH DMEs must be operational.



MSA FMG VOR

KENNO ONE RNAV ARRIVAL (KENNO.KENNO1)



ROUTING

From KENNO via 304° track to RUSME.

LANDING

NORTH (RWYS 34L/R)	From RUSME via 292° track to PEONS, then as depicted to SPOON, then via 344° heading. **Rwy 34L:** Intercept IAGY localizer. Proceed inbound, EXPECT ILS/Visual approach. **Rwy 34R:** EXPECT RADAR vectors to final approach course.
SOUTH (RWYS 16L/R)	From RUSME via 312° track to GRAFT, then as depicted to TAKLE, then via 164° course. **Rwy 16L:** EXPECT RADAR vectors to final approach course. **Rwy 16R:** EXPECT RADAR vectors to ILS final approach course.

CHANGES: Procedure reindexed.

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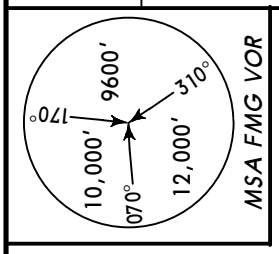
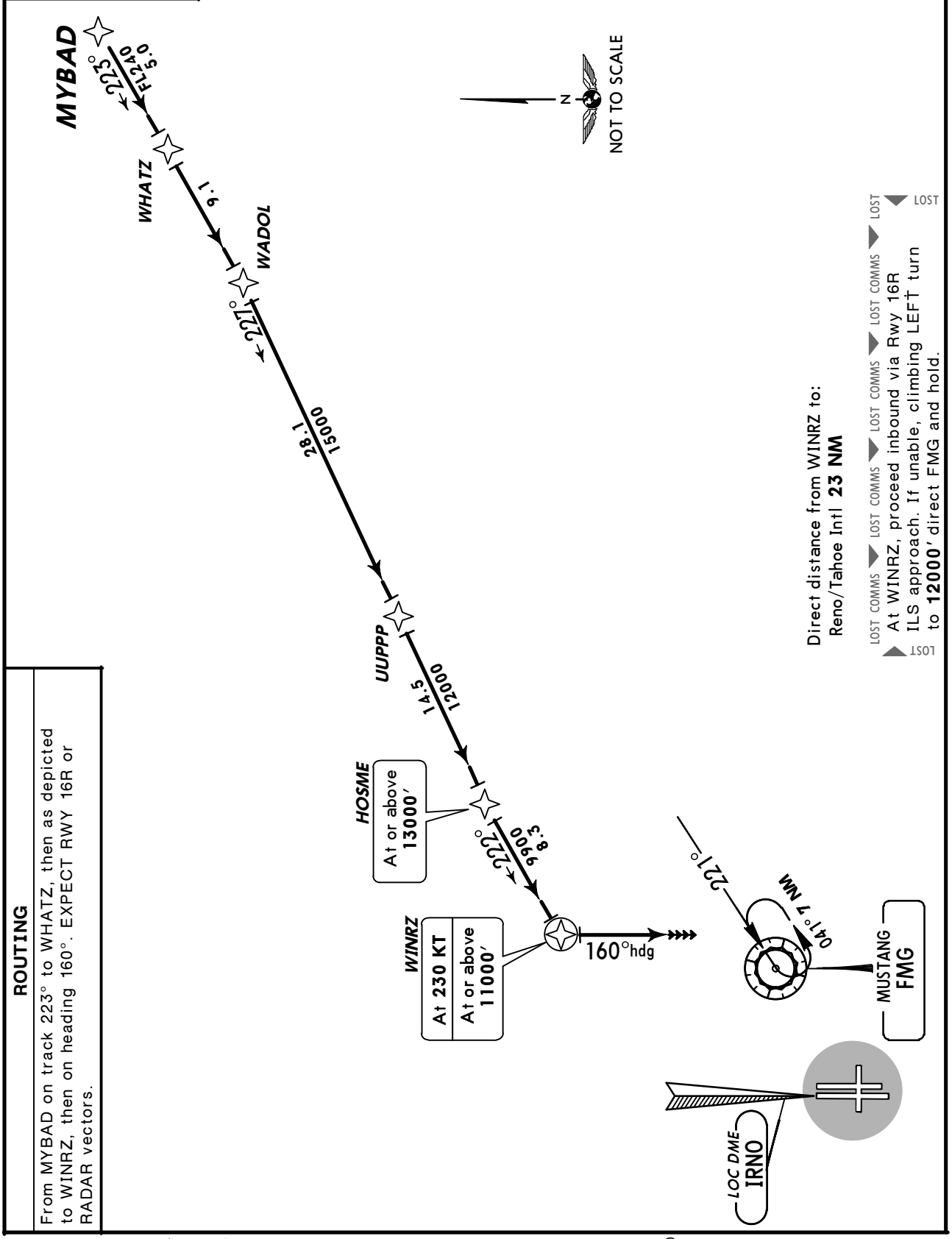
D-ATIS	Apt Elev
135.8	4415′

Alt Set: INCHES Trans level: FL180 Trans alt: 18000′

1. **DME/DME/IRU or GPS required.**
2. **RNAV 1.**
3. RADAR required for non-GPS equipped aircraft.
4. For non-GPS equipped aircraft HZN and FMG DMEs must be operational.
5. CAUTION: Intense glider activity to FL180.

MYBAD ONE RNAV ARRIVAL
(MYBAD.MYBAD1)





ROUTING

From MYBAD on track 223° to WHATZ, then as depicted to WINRZ, then on heading 160°. EXPECT RWY 16R or RADAR vectors.

CHANGES: New procedure at this airport.

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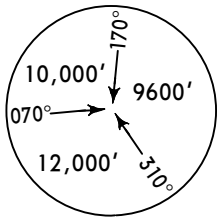
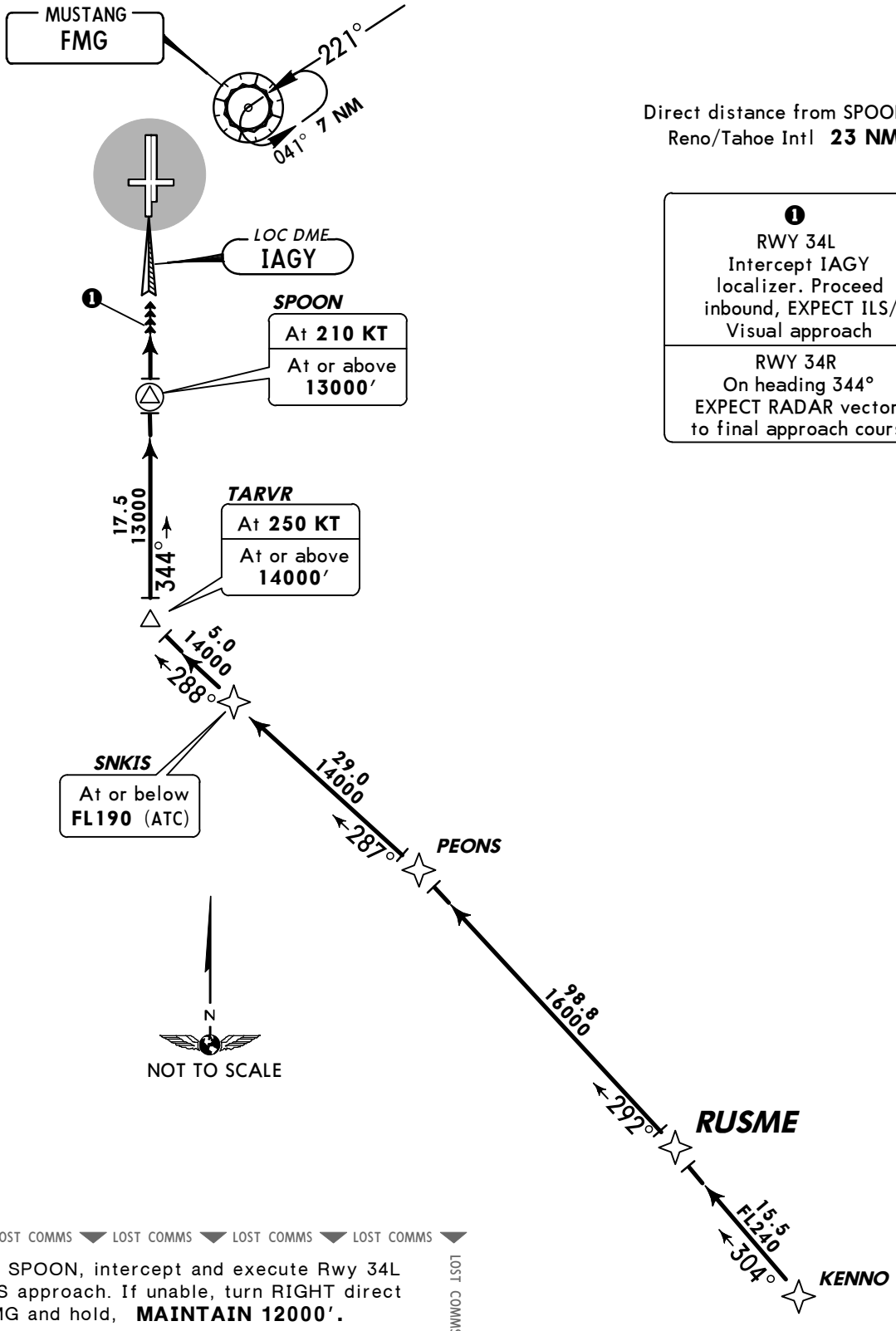
D-ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. DME/DME/IRU or GPS required.** **2. RADAR required for non-GPS aircraft. 3. RNAV 1.** 4. For turbojet and turboprop aircraft only. 5. For non-GPS equipped aircraft TPH, MVA, OAL, and SWR DMEs must be operational.



MSA FMG VOR

RUSME TWO RNAV ARRIVAL (KENNO.RUSME2)



Direct distance from SPOON to:
Reno/Tahoe Intl **23 NM**

❶
RWY 34L
Intercept IAGY localizer. Proceed inbound, EXPECT ILS/ Visual approach

RWY 34R
On heading 344°
EXPECT RADAR vectors to final approach course

LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

At SPOON, intercept and execute Rwy 34L ILS approach. If unable, turn RIGHT direct FMG and hold, **MAINTAIN 12000′.**

LOST COMMS

ROUTING

From KENNO via 304° track to RUSME, then via 292° track to PEONS, then via 287° track to SNKIS, then via 288° track to TARVR, then via 344° track to SPOON.

RWY	LANDING
34L	Intercept IAGY localizer. Proceed inbound, EXPECT ILS/Visual approach.
34R	On heading 344° EXPECT RADAR vectors to final approach course.

CHANGES: Computer code, notes, upnumbered.

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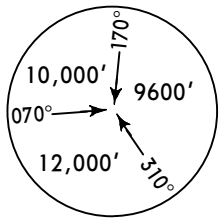
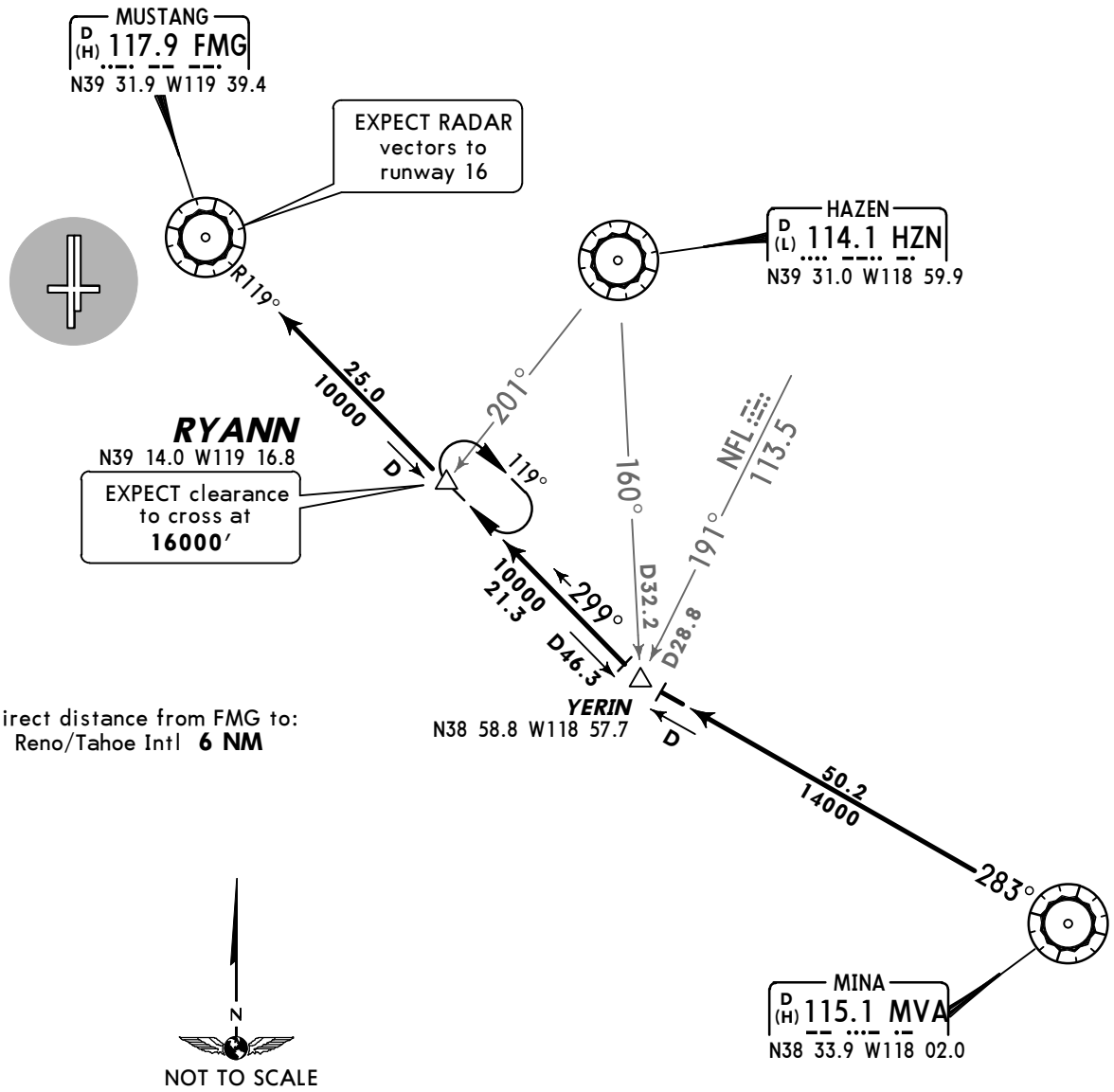
D-ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. RADAR required.** 2. CAUTION: Intense glider activity up to FL180.



MSA FMG VOR

RYANN ONE ARRIVAL (MVA.RYANN1)
(RWY 16)



Direct distance from FMG to:
Reno/Tahoe Intl **6 NM**

ROUTING

From over MVA via MVA R-283 to YERIN. Then via FMG R-119 to FMG. EXPECT RADAR vectors to runway 16.

CHANGES: None.

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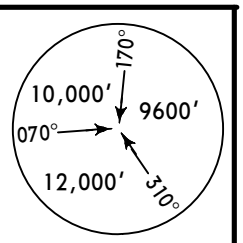
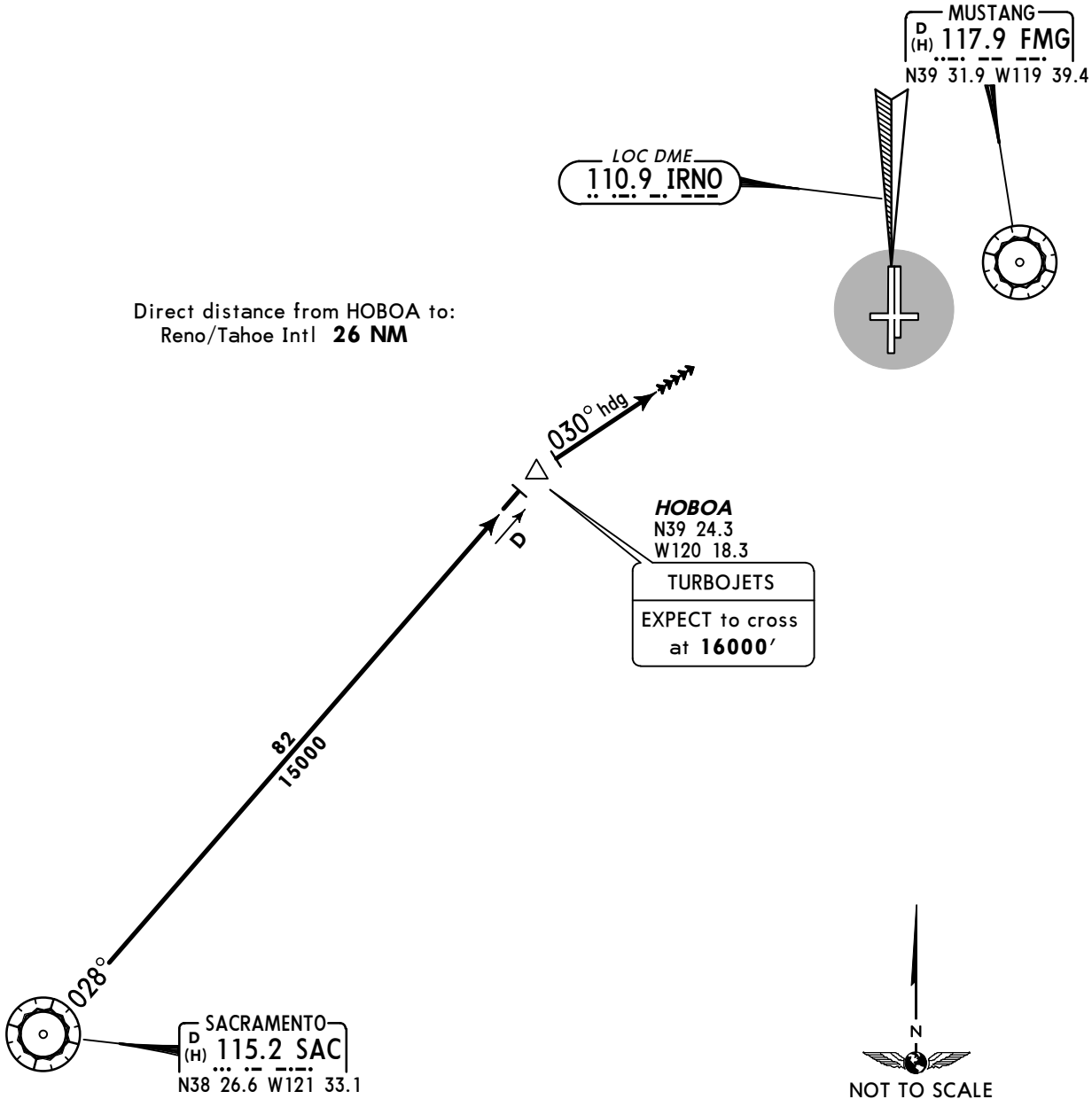
D-ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. RADAR required.** **2. DME required.** 3. CAUTION: Intense glider activity up to FL180.



MSA FMG VOR

SIERRA THREE ARRIVAL (SAC.SIER3)



ROUTING

From over SAC via SAC R-028 to HOBOA/D82 SAC. Depart HOBOA heading 030° for vectors to final approach.

CHANGES: Procedure reindexed.

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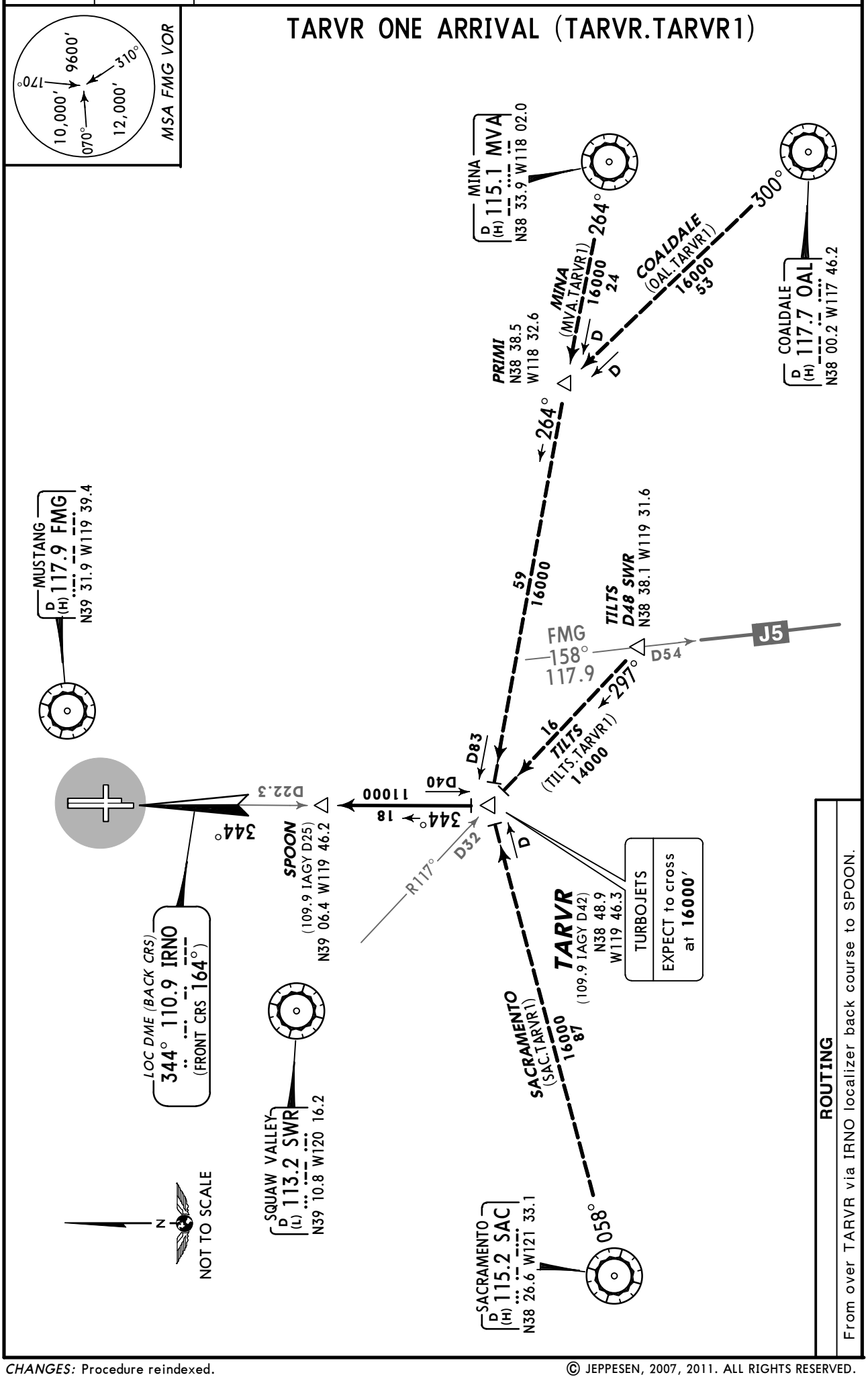
D-ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. DME required.** 2. CAUTION: Intense glider activity up to FL180.

TARVR ONE ARRIVAL (TARVR.TARVR1)



CHANGES: Procedure reindexed.

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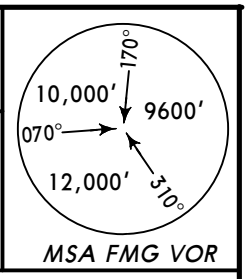
D-ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ CAUTION: Intense glider activity up to FL180.

VIKES ONE ARRIVAL (LLC.VIKES1)

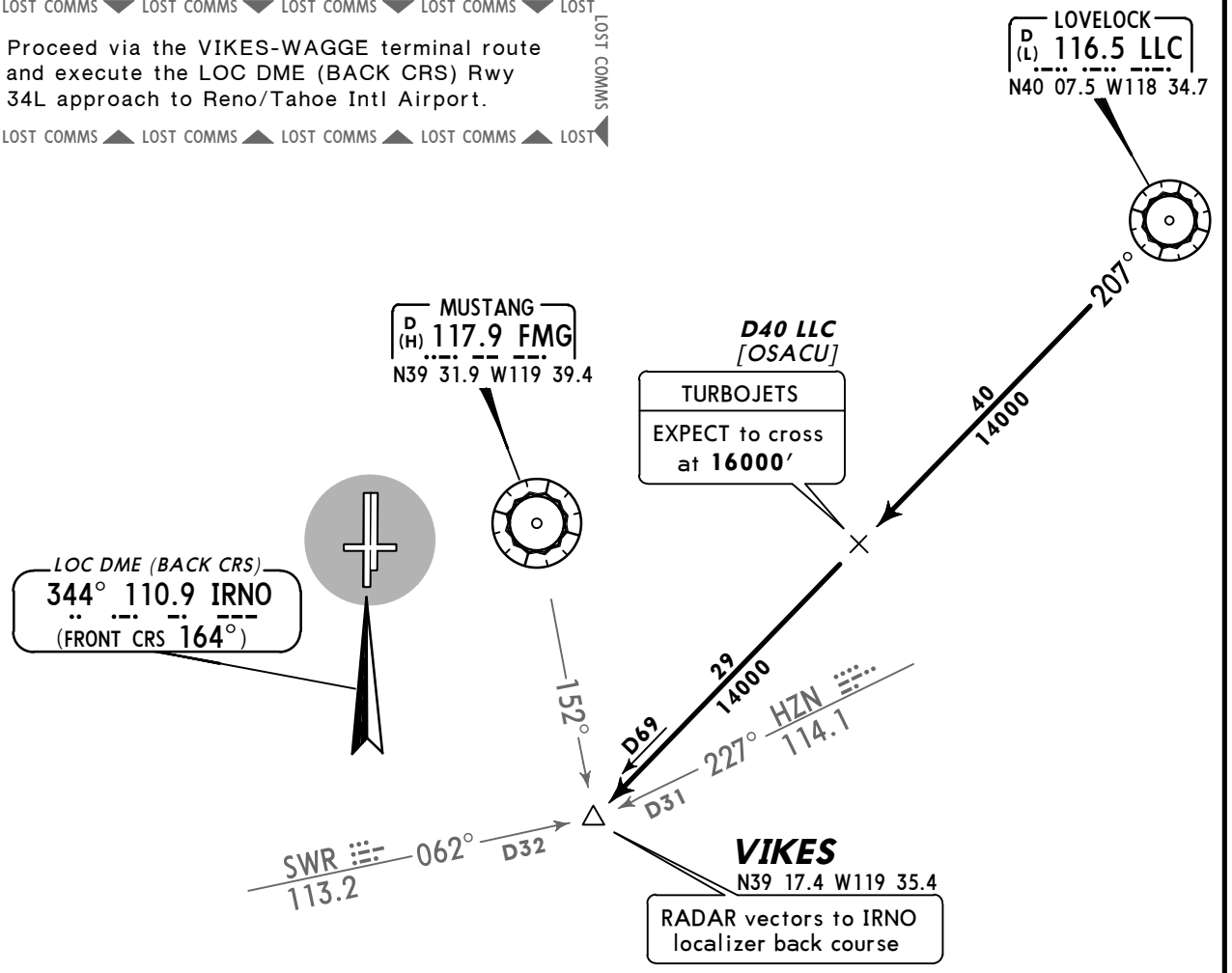


LOST COMMS LOST COMMS LOST COMMS LOST COMMS LOST

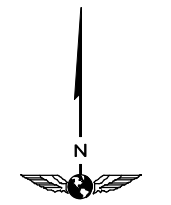
Proceed via the VIKES-WAGGE terminal route and execute the LOC DME (BACK CRS) Rwy 34L approach to Reno/Tahoe Intl Airport.

LOST COMMS LOST COMMS LOST COMMS LOST COMMS LOST

LOST COMMS



Direct distance from VIKES to:
Reno/Tahoe Intl **15 NM**



NOT TO SCALE

ROUTING

From over LLC via LLC R-207 to VIKES, then RADAR vectors to the IRNO localizer back course.

CHANGES: None.

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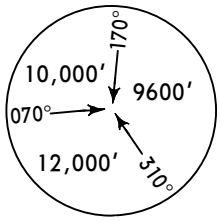
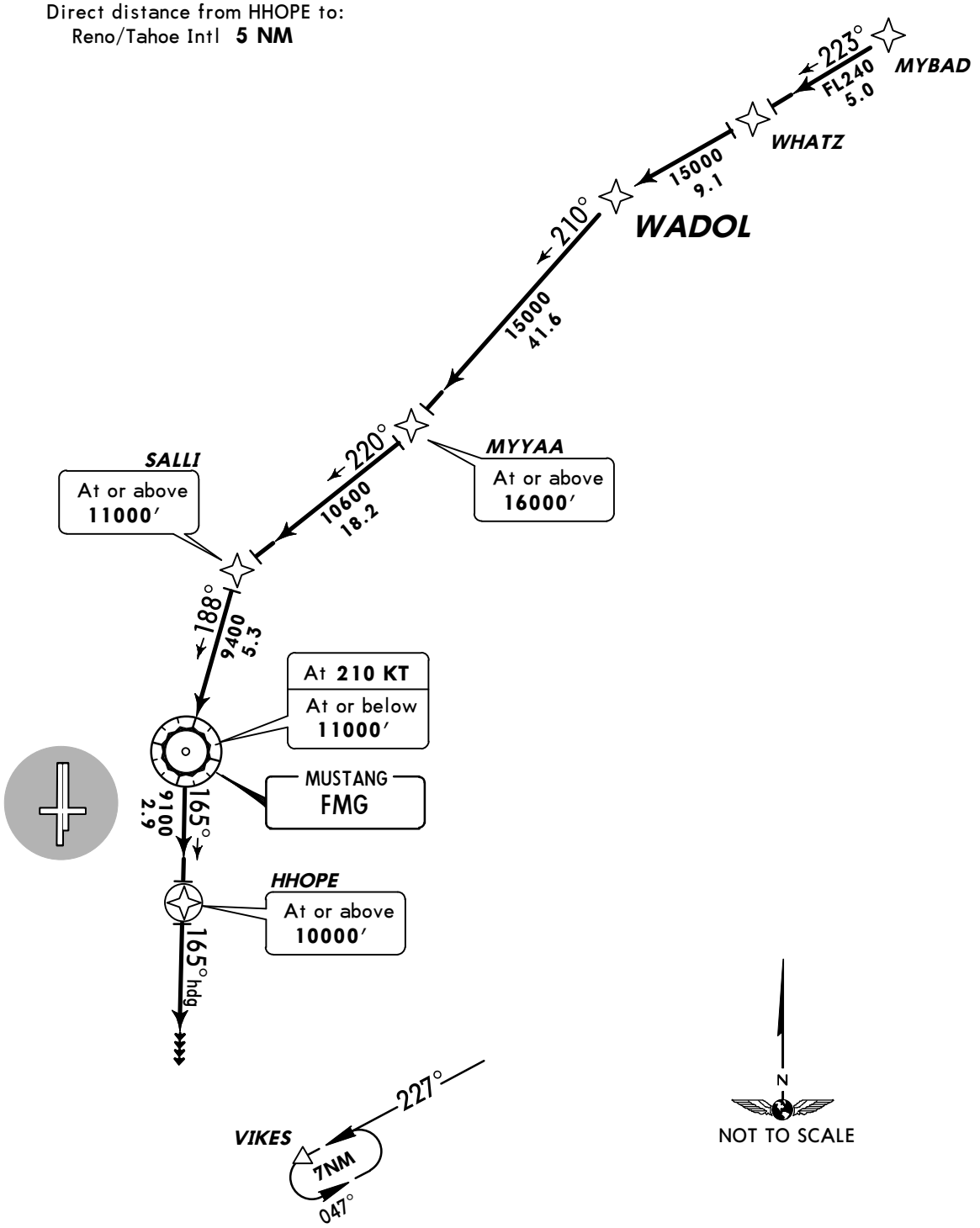
D-ATIS	Apt Elev	
135.8	4415′	Alt Set: INCHES Trans level: FL180 Trans alt: 18000′ **1. DME/DME/IRU or GPS required.** **2. RADAR required. 3. RNAV 1.** 4. For non-GPS equipped aircraft HZN DME must be operational. 5. CAUTION: Intense glider activity to FL180.



MSA FMG VOR

WADOL TWO RNAV ARRIVAL (MYBAD.WADOL2)

Direct distance from HHOPE to:
Reno/Tahoe Intl **5 NM**



LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼ LOST COMMS ▼

LOST ▶ At HHOPE, climbing LEFT turn to **12000′** direct to VIKES and hold. LOST COMMS

ROUTING

From MYBAD on track 223° to WHATZ, then as depicted to HHOPE, then on heading 165°.
Rwys 34L/R: EXPECT RADAR vectors to final approach course.

CHANGES: Computer code, routing, upnumbered.

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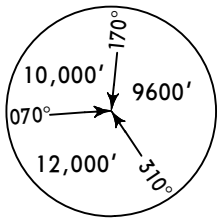
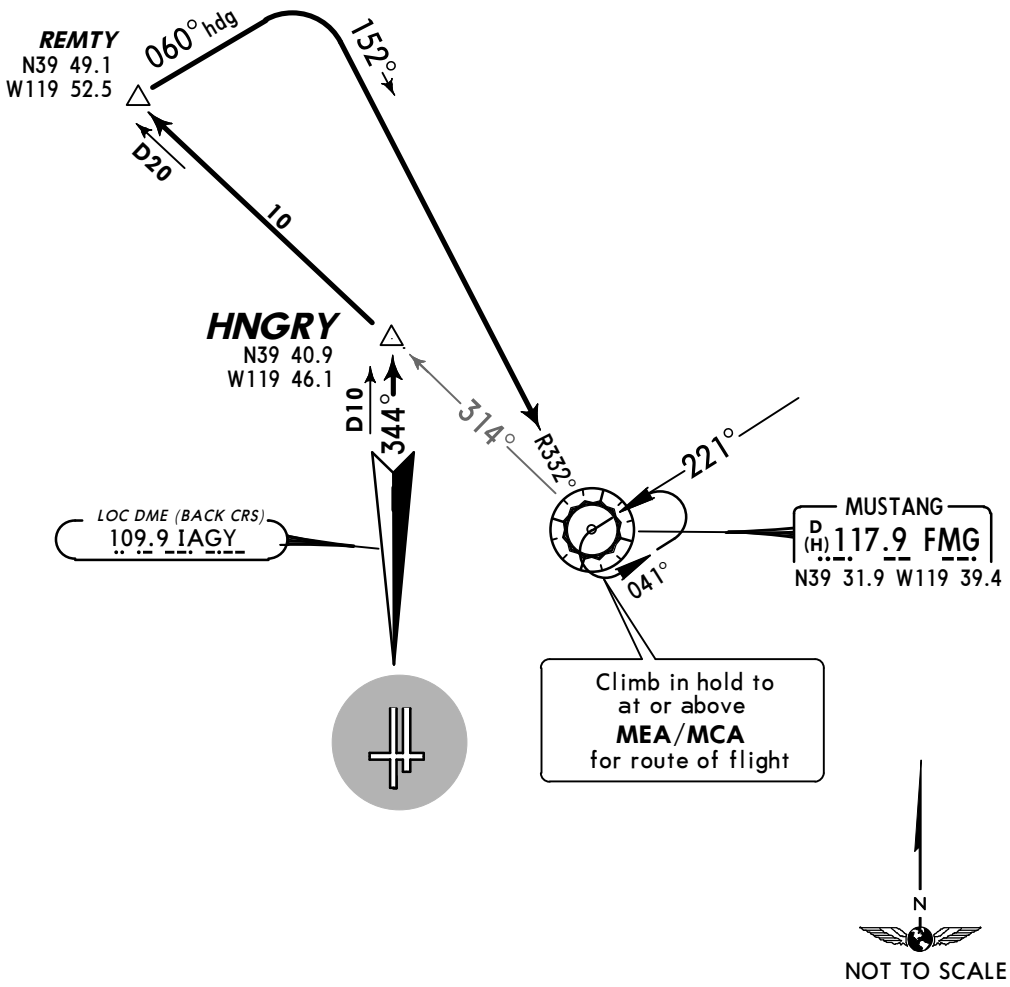
NORCAL Departure (R)	Apt Elev	Trans level: FL180 Trans alt: 18000′
126.3	4415′	**DME required.**



MSA FMG VOR

HUNGRY TWO DEPARTURE (HNGRY2.FMG)
(RWYS 34L/R)



This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwy 7: Not authorized - obstacles.
Rwys 16L/R, 25: Not authorized - ATC.
Rwy 34L: Standard (or lower than standard, if authorized) with minimum climb of 315′ per NM to **8400′**.
Rwy 34R: Standard (or lower than standard, if authorized) with minimum climb of 480′ per NM to **8400′** or, 500-1 1/2 with minimum climb of 315′ per NM to **8400′**.

Gnd speed-KT	75	100	150	200	250	300
315′ per NM	394	525	788	1050	1313	1575
480′ per NM	600	800	1200	1600	2000	2400

OBSTACLES
Rwy 34L: Multiple trees and pole beginning 1229′ from DER, 180′ RIGHT of centerline, up to 20′ AGL/4498′ MSL. Multiple trees beginning 1193′ from DER, 331′ LEFT of centerline, up to 20′ AGL/4489′ MSL.
Rwy 34R: Multiple trees and poles beginning 1067′ from DER, 172′ RIGHT of centerline, up to 20′ AGL/4497′ MSL. Multiple trees and poles beginning 1230′ from DER, 350′ LEFT of centerline, up to 20′ AGL/4498′ MSL. Building 1.2 NM from DER, 1730′ RIGHT of centerline, 363′ AGL/4780′ MSL.

INITIAL CLIMB

Climb to **10000′** or assigned altitude via IAGY localizer NORTH course to HNGRY/D10 IAGY, and intercept FMG R-314 to REMTY/D20 FMG, then turn RIGHT heading 060° to intercept FMG R-332 to FMG.

ROUTING

Climb in FMG holding pattern to depart FMG at or above MEA/MCA for route of flight.
EXPECT clearance to requested altitude five minutes after departure.

CHANGES: Glider activity note removed.

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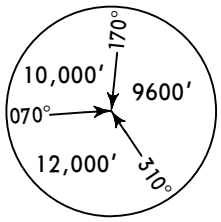
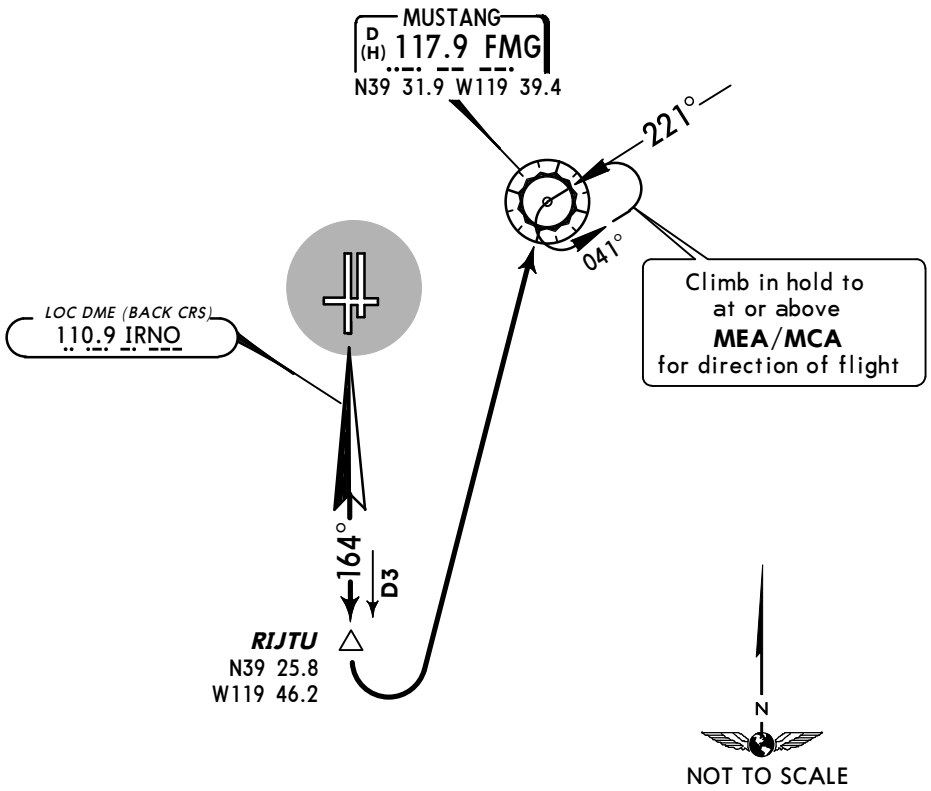
NORCAL Departure (R)	Apt Elev	Trans level: FL180 Trans alt: 18000′
119.2	4415′	**DME required.**



MSA FMG VOR

MUSTANG SEVEN DEPARTURE (FMG7.FMG)

(RWYS 16L/R)



OBSTACLES

Rwy 16L: Multiple antennas, tree, and light poles beginning 618′ from DER, 131′ LEFT of centerline, up to 40′ AGL/4449′ MSL. Terrain beginning 5189′ from DER, 821′ LEFT of centerline, up to 5027′ MSL.
Rwy 16R: Multiple antennas, tree, and light poles beginning 746′ from DER, 380′ LEFT of centerline, up to 95′ AGL/4510′ MSL. Terrain beginning 2784′ from DER, 990′ RIGHT of centerline, up to 288′ AGL/4703′ MSL.

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwy 7: Not authorized - obstacles.
Rwys 16L/R: Standard (or lower than standard, if authorized) with a minimum climb of 740′ per NM to **8000′** or, 600-1 1/4 with minimum climb of 525′ per NM to **8000′.**
Rwys 25, 34L/R: Not authorized - ATC.

Gnd speed-KT	75	100	150	200	250	300
525′ per NM	656	875	1313	1750	2188	2625
740′ per NM	925	1233	1850	2467	3083	3700

INITIAL CLIMB

Climb to **10000′** or assigned altitude via IRNO localizer SOUTH course to RIJTU/D3 IRNO, then LEFT turn direct to FMG.

ROUTING

Climb in FMG holding pattern to depart FMG at or above MEA/MCA for direction of flight.
EXPECT clearance to requested altitude five minutes after departure.

CHANGES: Glider activity note removed.

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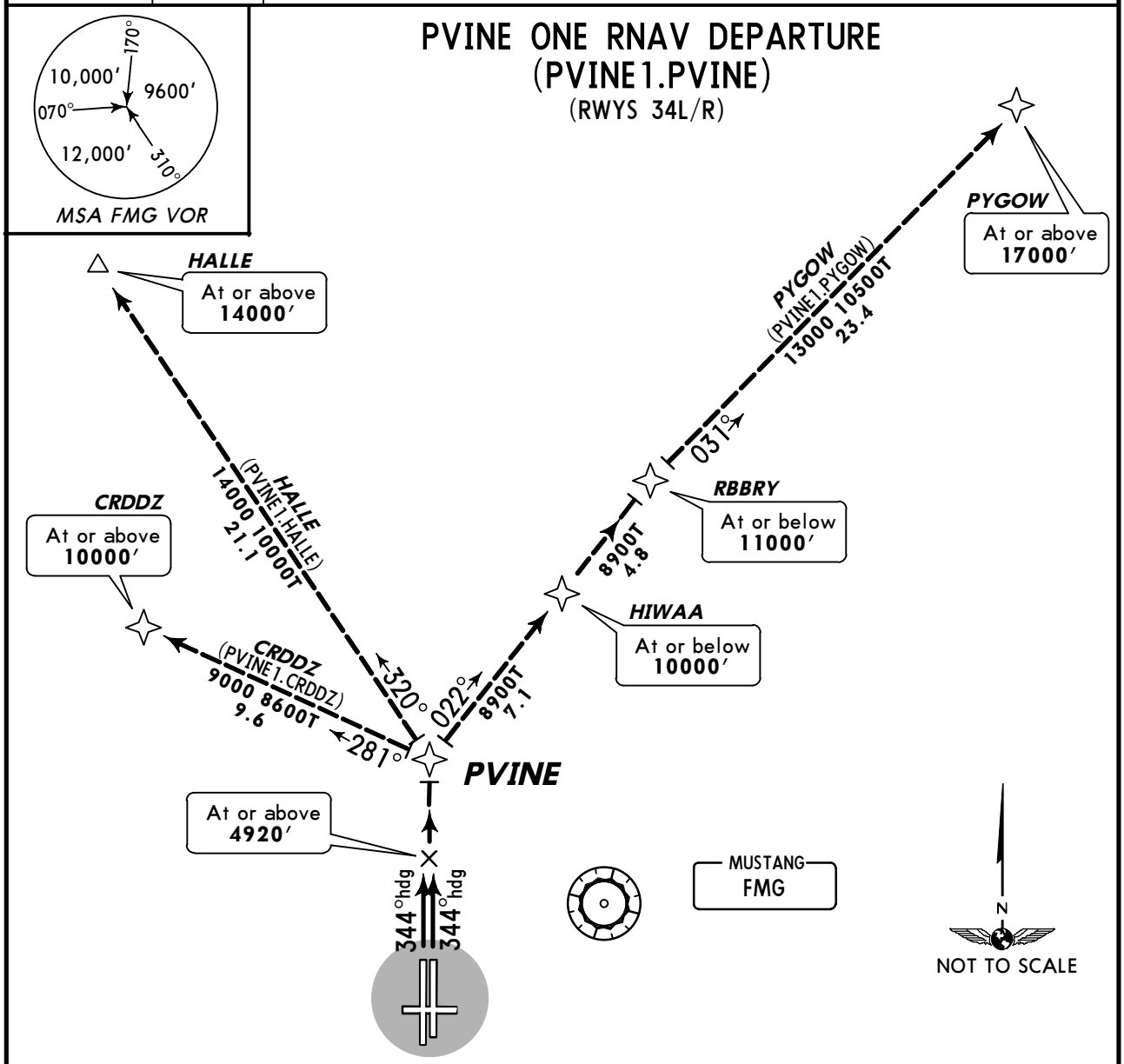
NORCAL Departure (R)	Apt Elev	
119.2	4415′	Trans level: FL180 Trans alt: 18000′ **1. DME/DME/IRU or GPS required.** **2. RNAV 1.** 3. RADAR required for non-GPS equipped aircraft. 4. For non-GPS equipped aircraft, FMG and SWR must be operational for HALLE transition. 5. For non-GPS equipped aircraft, FMG and HZN must be operational for PYGOW transition. 6. CAUTION: Intense glider activity up to FL180.

PVINE ONE RNAV DEPARTURE
(PVINE1.PVINE)
(RWYS 34L/R)



Direct distance from Reno/Tahoe Intl to:
PVINE **6 NM**

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 7, 25, 16L/R: Not authorized - ATC.
Rwy 34L: Standard (or lower than standard, if authorized) with minimum climb of 383′ per NM to **12000′**.
Rwy 34R: 400-1 1/2 with minimum climb of 383′ per NM to **12000′,** or standard (or lower than standard, if authorized) with minimum climb of 411′ per NM to **4900′,** then minimum climb of 383′ per NM to **12000′**.

Gnd speed-KT	75	100	150	200	250	300
383′ per NM	479	638	958	1277	1596	1915
411′ per NM	514	685	1028	1370	1713	2055

OBSTACLES
Rwy 34L: Trees beginning 1193′ from DER, 331′ LEFT of centerline, up to 75′ AGL/4489′ MSL. Trees beginning 1229′ from DER, 180′ RIGHT of centerline, up to 84′ AGL/4498′ MSL. Pole 2815′ from DER, 1230′ RIGHT of centerline, 83′ AGL/4497′ MSL.
Rwy 34R: Building 7104′ from DER, 1730′ RIGHT of centerline, 363′ AGL/4780′ MSL. Trees beginning 1229′ from DER, 350′ LEFT of centerline, up to 84′ AGL/4498′ MSL. Poles beginning 1067′ from DER, 171′ RIGHT of centerline, up to 83′ AGL/4497′ MSL.

INITIAL CLIMB	ALTITUDE
Climb heading 344° to **4920′** then direct PVINE.	**MAINTAIN FL190** or assigned altitude

ROUTING

EXPECT filed altitude 5 minutes after departure.

CHANGES: New procedure at this airport.

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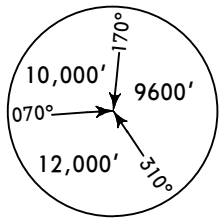
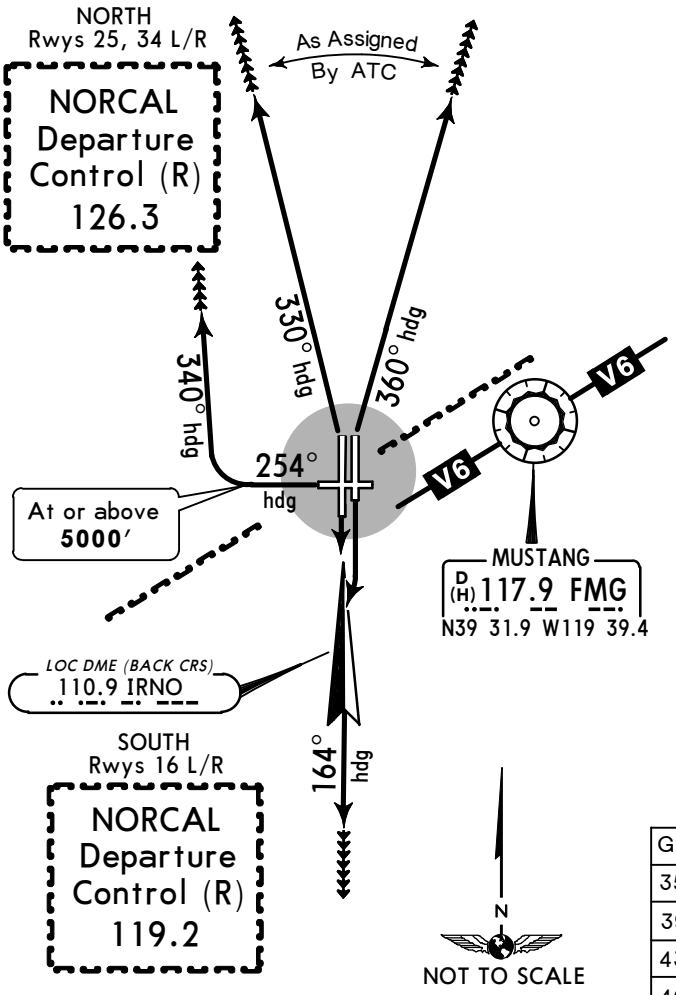
FOR DEPARTURE CONTROL FREQ. SEE GRAPHIC	Apt Elev 4415′	Trans level: FL180 Trans alt: 18000′ **RADAR required.**



MSA FMG VOR

RENO FIVE DEPARTURE (RENO5.FMG)



This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwy 7: Not authorized - obstacles.
Rwy 16L: Standard (or lower than standard, if authorized) with minimum climb of 730′ per NM to **10900′**, or 600-1 1/4 with minimum climb of 352′ per NM to **10900′.**
Rwy 16R: Standard (or lower than standard, if authorized) with minimum climb of 460′ per NM to **10900′**, or 300-1 with minimum climb of 395′ per NM to **10900′**.
Rwy 25: Standard (or lower than standard, if authorized) with minimum climb of 500′ per NM to **9700′**.
Rwys 34L/R: Standard (or lower than standard, if authorized) with minimum climb of 480′ per NM to **8700′**, or 500-1 1/2 with minimum climb of 430′ per NM to **8700′**.

Gnd speed-KT	75	100	150	200	250	300
352′ per NM	440	587	880	1173	1467	1760
395′ per NM	494	658	988	1317	1646	1975
430′ per NM	538	717	1075	1433	1792	2150
460′ per NM	575	767	1150	1533	1917	2300
480′ per NM	600	800	1200	1600	2000	2400
500′ per NM	625	833	1250	1667	2083	2500
730′ per NM	913	1217	1825	2433	3042	3650

OBSTACLES
Rwy 16L: Multiple poles, trees, bushes, terrain and buildings with antennas and cameras beginning 618′ from DER, 131′ LEFT of centerline, up to 20′ AGL/4959′ MSL.
Rwy 16R: Multiple trees beginning 2784′ from DER, 171′ RIGHT of centerline, up to 20′ AGL/4510′ MSL. Multiple trees and terrain beginning 746′ from DER, 380′ LEFT of centerline, up to 20′ AGL/4723′ MSL.
Rwy 25: Multiple trees, poles, fences and vent on building beginning 222′ from DER, 201′ RIGHT of centerline, up to 103′ AGL/4608′ MSL. Multiple trees, poles and sign beginning 500′ from DER, 31′ LEFT of centerline, up to 20′ AGL/4506′ MSL.
Rwy 34L: Multiple trees and pole beginning 1229′ from DER, 180′ RIGHT of centerline, up to 20′ AGL/4498′ MSL. Multiple trees beginning 1193′ from DER, 331′ LEFT of centerline, up to 20′ AGL/4489′ MSL.
Rwy 34R: Multiple trees and poles beginning 1067′ from DER, 172′ RIGHT of centerline, up to 20′ AGL/4497′ MSL. Multiple trees beginning 1230′ from DER, 350′ LEFT of centerline, up to 20′ AGL/4498′ MSL. Building 1.2 NM from DER, 1730′ RIGHT of centerline, 363′ AGL/4780′ MSL.

LOST COMMS LOST COMMS LOST COMMS LOST COMMS

If not in contact with departure control within one minute after take-off, **MAINTAIN** assigned heading until passing **10000′**; Then
Rwys 16L/R Departures: Turn LEFT direct FMG, then via assigned route.
Rwys 25, 34L/R Departures: Turn RIGHT direct FMG, then via assigned route.

RWY	INITIAL CLIMB	ALTITUDE
16L/R	Climb via heading 164° and IRNO localizer SOUTH course.	**MAINTAIN 15000′** or assigned altitude
25	Climb heading 254° to **5000′** then climbing RIGHT turn heading 340°.	
34L/R	Climb heading 330° clockwise to 360° as assigned by ATC.	

ROUTING
EXPECT clearance to requested altitude five minutes after departure. EXPECT RADAR vectors to assigned route/fix.

CHANGES: Procedure reindexed, glider activity note removed.

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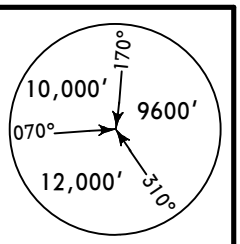
NORCAL Departure (R) 119.2	Apt Elev 4415′	Trans level: FL180 Trans alt: 18000′ **1. DME/DME/IRU or GPS required.** **2. RNAV 1.** 3. RADAR required for non-GPS equipped aircraft. 4. For non-GPS equipped aircraft, FMG and HZN must be operational. 5. CAUTION: Intense glider activity to FL180. 6. Procedure not applicable from 10 PM to 7 AM local.

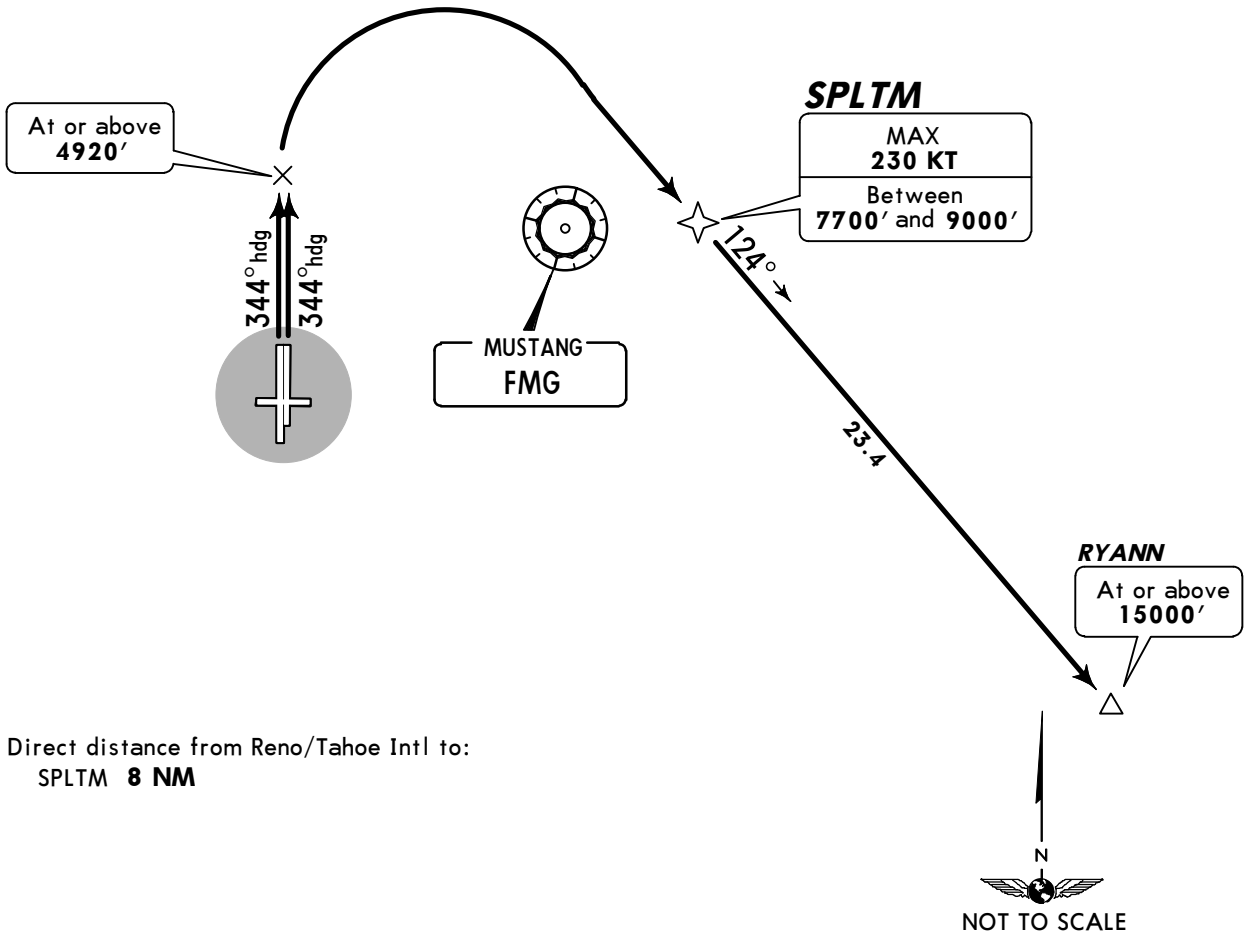


MSA FMG VOR

SPLTM ONE RNAV DEPARTURE (SPLTM1.SPLTM)

SPEED: MAX 230 KT UNTIL SPLTM

(RWYS 34L/R)



Direct distance from Reno/Tahoe Intl to:
SPLTM **8 NM**

OBSTACLES

Rwy 34L: Trees beginning 1193′ from DER, 331′ LEFT of centerline, up to 75′ AGL/4489′ MSL. Trees beginning 1229′ from DER, 180′ RIGHT of centerline, up to 84′ AGL/4498′ MSL. Pole 2815′ from DER, 1230′ RIGHT of centerline, 83′ AGL/4497′ MSL.
Rwy 34R: Building 7104′ from DER, 1730′ RIGHT of centerline, 363′ AGL/4780′ MSL. Trees beginning 1229′ from DER, 350′ LEFT of centerline, up to 84′ AGL/4498′ MSL. Poles beginning 1067′ from DER, 171′ RIGHT of centerline, up to 83′ AGL/4497′ MSL.

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 7, 25, 16L/R: Not authorized - ATC.
Rwy 34L: Standard (or lower than standard, if authorized) with minimum climb of 594′ per NM to **6700′,** then minimum climb of 306′ per NM to **15000′.**
Rwy 34R: 400-1 1/4 with minimum climb of 613′ per NM to **6700′**, then minimum climb of 306′ per NM to **15000′.**

Gnd speed-KT	75	100	150	200	250	300
306′ per NM	383	510	765	1020	1275	1530
594′ per NM	743	990	1485	1980	2475	2970
613′ per NM	766	1022	1533	2043	2554	3065

INITIAL CLIMB

Climb heading 344° to **4920′** then climbing RIGHT turn direct SPLTM to cross between **9000′** & **7700′**, then on track 124° to cross RYANN at or above **15000′.**

CHANGES: New procedure at this airport.

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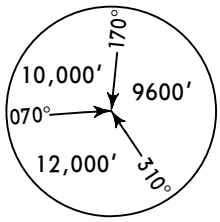
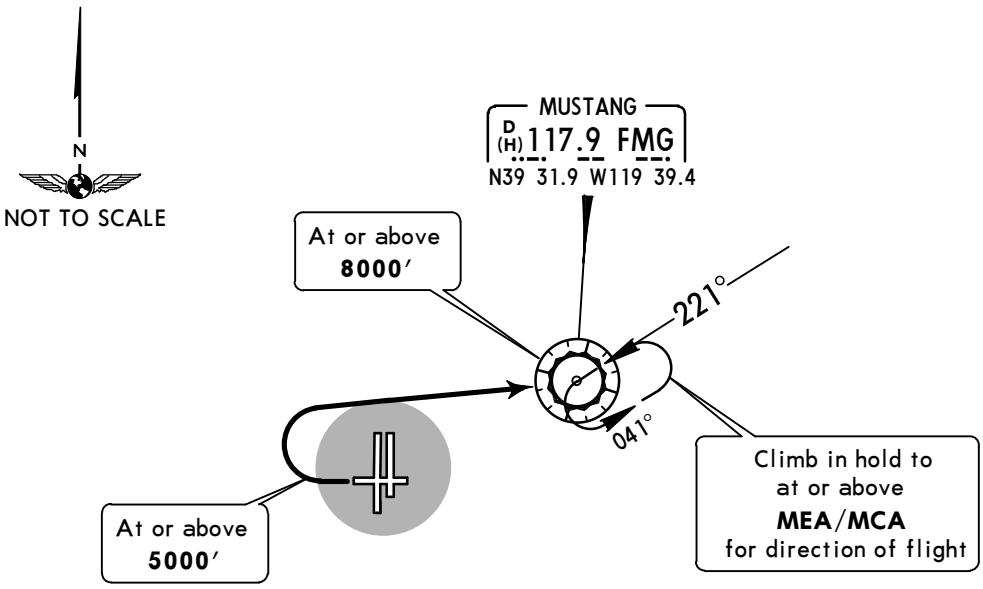
NORCAL Departure (R)	Apt Elev	
126.3	4415′	Trans level: FL180 Trans alt: 18000′



MSA FMG VOR

VISTA ONE DEPARTURE (VISTA1.FMG)
(RWY 25)



Direct distance from Reno/Tahoe Intl to:
FMG **6 NM**

This SID requires take-off minimums
(for standard minimums, refer to airport chart):
Rwy 7: Not authorized - obstacles.
Rwys 16L/R, 34L/R: Not authorized - ATC.
Rwy 25: CAT A & B - Do not exceed 180 KT until FMG, standard (or lower than standard, if authorized) with a minimum climb of 380′ per NM to **8400′**, ATC climb of 495′ per NM to **8000′**. CAT C & D - Not authorized - ATC.

Gnd speed-KT	75	100	150	200	250	300
380′ per NM	475	633	950	1267	1583	1900
495′ per NM	619	825	1238	1650	2063	2475

OBSTACLES
Rwy 25: Multiple poles LEFT and RIGHT of centerline, beginning 500′ from DER, 467′ LEFT of centerline, up to 48′ AGL/4523′ MSL. Numerous trees LEFT and RIGHT of centerline, beginning 1877′ from DER, 31′ LEFT of centerline, up to 40′ AGL/4506′ MSL. Sign, 1656′ from DER, 422′ LEFT of centerline, up to 31′ AGL/4482′ MSL.

INITIAL CLIMB

Climb to **5000′**, then climbing RIGHT turn to **10000′** or assigned altitude direct to FMG.

ROUTING

Climb in FMG holding pattern to depart FMG at or above MEA/MCA for direction of flight.
EXPECT clearance to requested altitude five minutes after departure.

CHANGES: Procedure reindexed, glider activity note removed.

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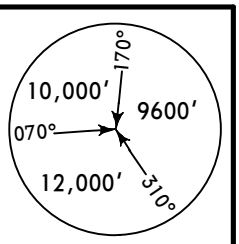
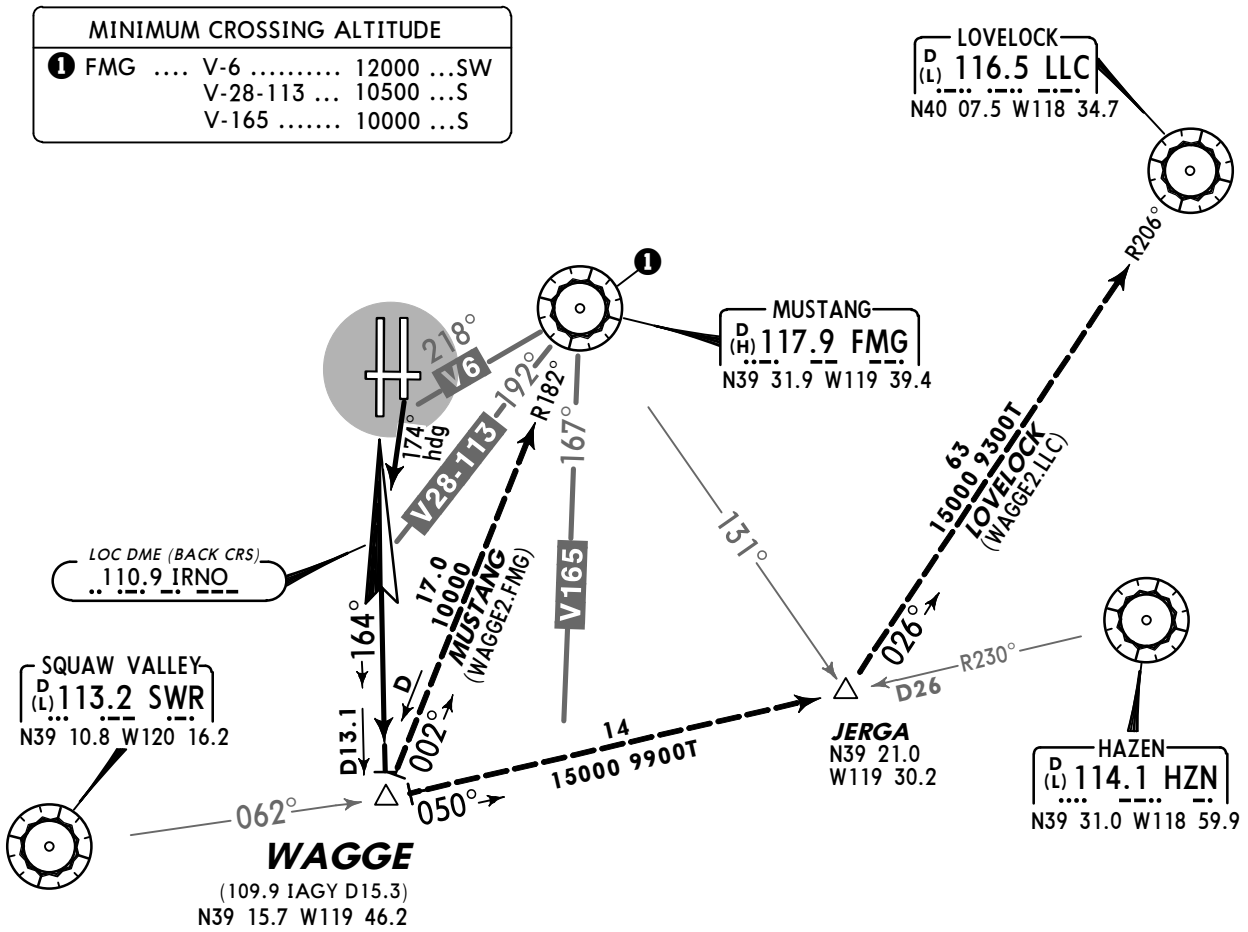
NORCAL Departure (R)	Apt Elev	Trans level: FL180 Trans alt: 18000′
119.2	4415′	



WAGGE TWO DEPARTURE (WAGGE2.WAGGE)

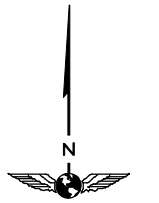
MINIMUM CROSSING ALTITUDE			
❶ FMG	V-6	12000	...SW
	V-28-113 ...	10500	...S
	V-165	10000	...S



This SID requires take-off minimums
(for standard minimums, refer to airport chart):
Rwys 7, 25, 34L/R: Not authorized - Air Traffic.
Rwy 16L: Standard (or lower than standard, if authorized) with a minimum climb of 740′ per NM to **8000′**. Note-Tower/hazard beacon 6056′ from DER, 2403′ LEFT of centerline, 16′ AGL/5027′ MSL.
Rwy 16R: Standard (or lower than standard, if authorized) with minimum climb of 370′ per NM to **9200′**. Note-Terrain 7638′ from DER, 2349′ LEFT of centerline, 4703′ MSL.

Gnd speed-KT	75	100	150	200	250	300
370′ per NM	463	617	925	1233	1542	1850
740′ per NM	925	1233	1850	2467	3083	3700

All runways: Cross DER at or above 35′ AGL.



NOT TO SCALE

RWY	INITIAL CLIMB	ALTITUDE
16L	Climbing RIGHT turn heading 174° to intercept IRNO localizer SOUTH course to WAGGE, then via transition or assigned route.	**MAINTAIN 15000′** or assigned altitude.
16R	Climb via IRNO localizer SOUTH course to WAGGE, then via transition or assigned route.	

ROUTING

EXPECT clearance to requested altitude 5 minutes after departure.

CHANGES: Procedure reindexed, glider activity note removed.

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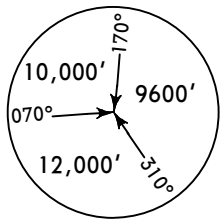
NORCAL Departure (R) 119.2	Apt Elev 4415′	Trans level: FL180 Trans alt: 18000′ **1. DME/DME/IRU or GPS required.** **2. RNAV 1.** 3. RADAR required for non-GPS equipped aircraft. 4. For non-GPS equipped aircraft, FMG must be operational for BLKJK and PESKE transitions. 5. For non-GPS equipped aircraft, FMG, MOD, SAC, and SWR must be operational for DARBI transition.

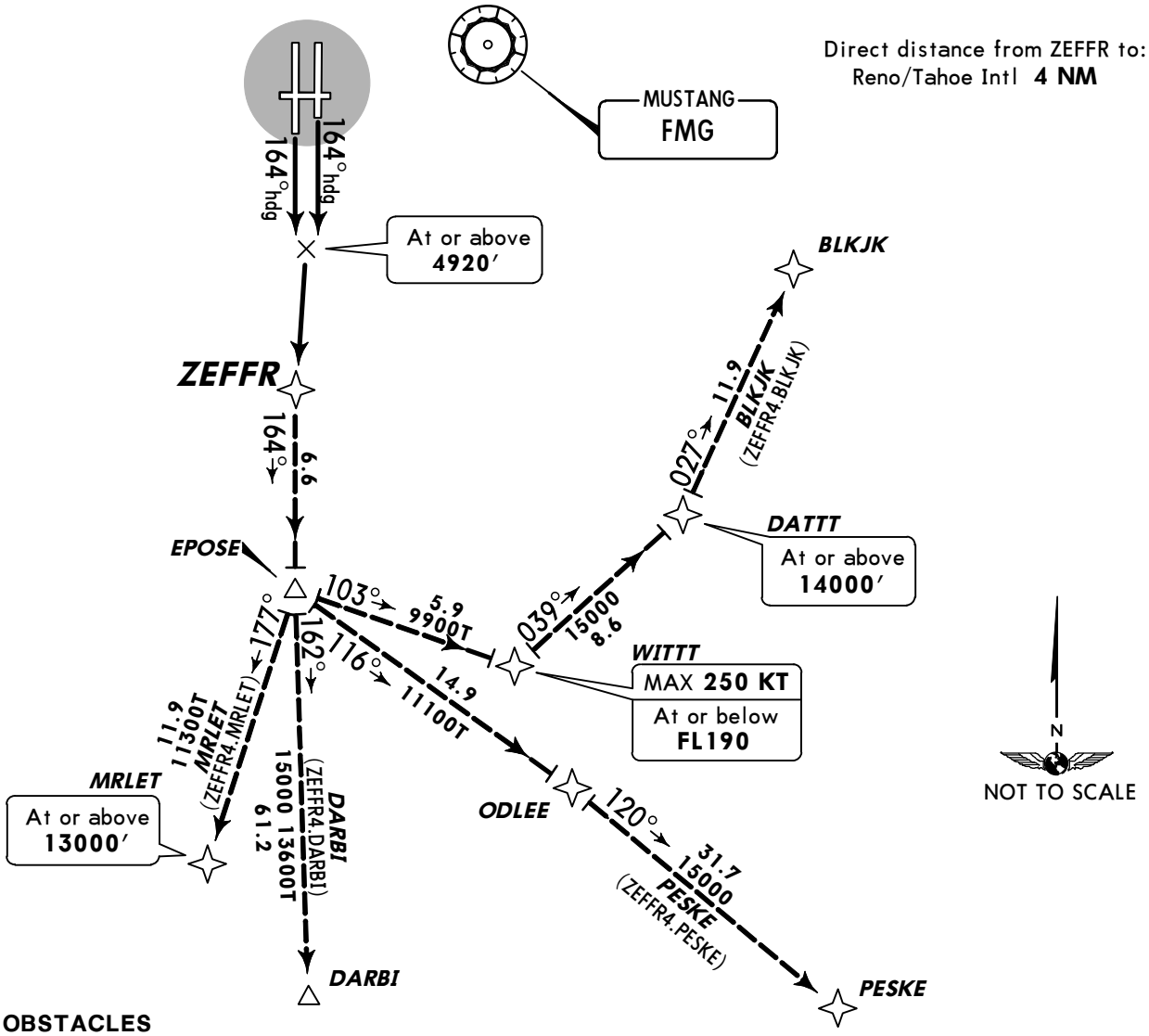


MSA FMG VOR

ZEFFR FOUR RNAV DEPARTURE (ZEFFR4.ZEFFR)

SPEED: MAX 250 KT UNTIL WITTT

(RWYS 16L/R)



OBSTACLES

Rwy 16L: Light poles beginning 1108′ from DER, 228′ LEFT of centerline, up to 41′ AGL/4449′ MSL. Tree 719′ from DER, 554′ LEFT of centerline, 26′ AGL/4434′ MSL. Tree 1055′ from DER, 131′ LEFT of centerline, 27′ AGL/4435′ MSL. Terrain beginning 5145′ from DER, 821′ LEFT of centerline, up to 4783′ MSL. Camera on building 1354′ from DER, 680′ LEFT of centerline, 36′ AGL/4444′ MSL.
Rwy 16R: Trees beginning 745′ from DER, 380′ LEFT of centerline, up to 64′ AGL/4478′ MSL. Trees beginning 2783′ from DER, 171′ RIGHT of centerline, up to 96′ AGL/4510′ MSL. Terrain beginning 1.1 NM from DER, 1573′ LEFT of centerline, 4703′ MSL. Terrain beginning 1.8 NM from DER, 776′ LEFT of centerline, 4702′ MSL.

This SID requires take-off minimums (for standard minimums, refer to airport chart):
Rwys 7, 25, 34L/R: Not authorized - ATC.
Rwy 16L: 700-1 1/8 with minimum climb of 440′ per NM to **9400′**, then minimum climb of 400′ per NM to **13000′.**
Rwy 16R: 500-2 1/8 or standard (or lower than standard, if authorized) with minimum climb of 440′ per NM to **9400′**, then minimum climb of 400′ per NM to **13000′.**

Gnd speed-KT	75	100	150	200	250	300
400′ per NM	500	667	1000	1333	1667	2000
440′ per NM	550	733	1100	1467	1833	2200

INITIAL CLIMB	ALTITUDE
Climb heading 164° to **4920′,** then direct ZEFFR, then on depicted route.	**MAINTAIN FL190** or assigned altitude

ROUTING

EXPECT filed altitude 5 minutes after departure.

CHANGES: Procedure revised, renumbered, reindexed.

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D-ATIS	ACARS: D-ATIS PDC	RENO Clearance	Ground	Tower	NORCAL Departure (R) North	NORCAL Departure (R) South
135.8		124.9	121.9	118.7	126.3	119.2

RUNWAY INCURSION HOT SPOT

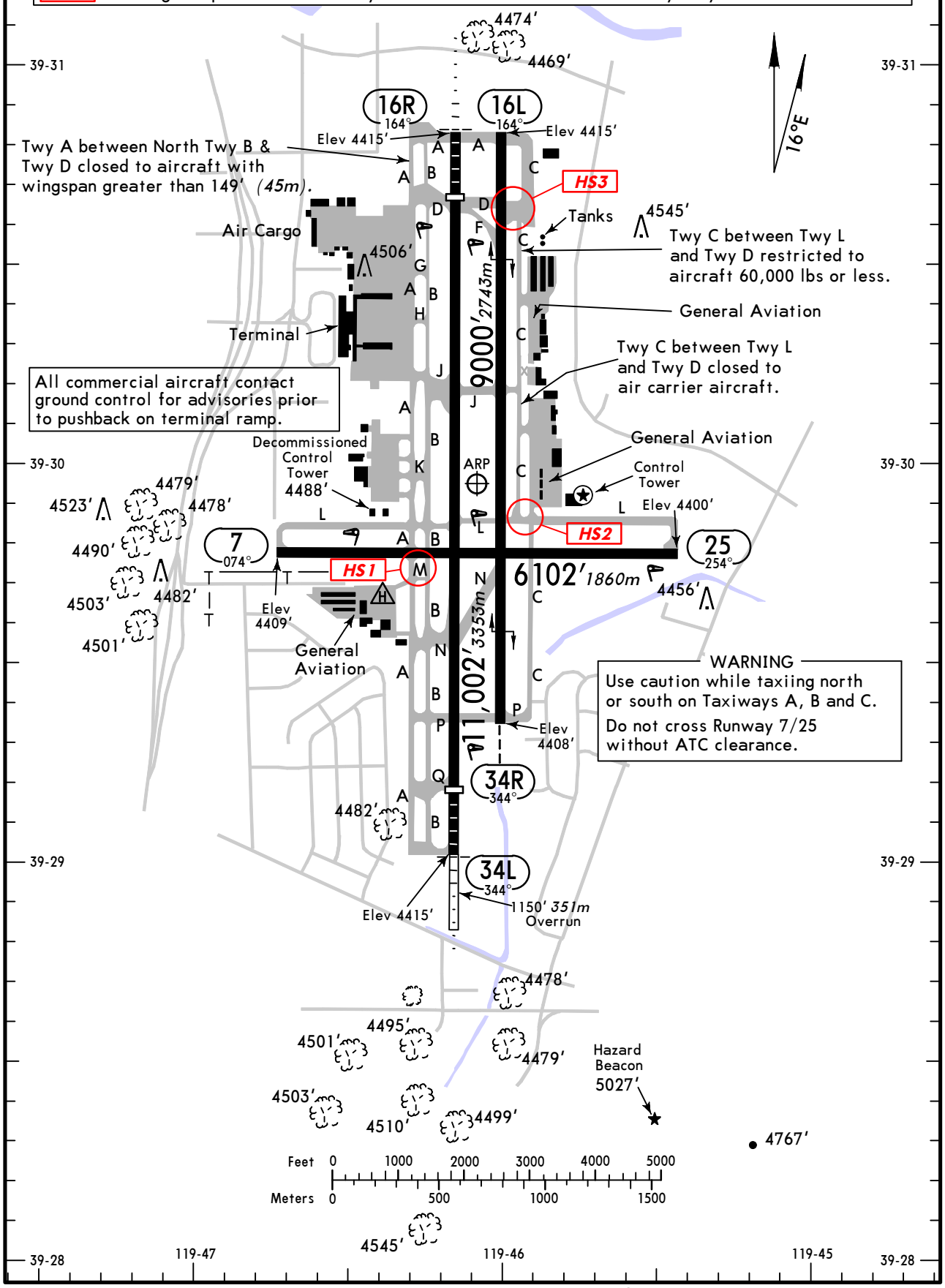
HS

Runway information only, not to be construed as ATC instructions.

HS1 Pilots departing the southwest ramp and instructed to hold short of Runway 7/25 sometimes fail to comply.

HS2 Pilots northbound on Taxiway C sometimes proceed straight ahead into the ramp by mistake.

HS3 Full length departures for Runway 16L sometimes turn left at Taxiway D by mistake.



CHANGES: Buildings and trees removed.

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GENERAL
Waterfowl all quadrants all seasons.
Intensive glider activity in vicinity of airport and surrounding areas up to 18,000'.

ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS LANDING BEYOND Threshold	Glide Slope	TAKE-OFF	WIDTH
7	MIRL REIL PAPI-L (angle 3.20°) grooved	❷ 5854' *1784m*		5854' *1784m*	150' *46m*
25	MIRL REIL ❶PAPI-L (angle 3.00°) grooved				

❶ Not to be used beyond 2 NM due to rapidly rising mountainous terrain.
❷ Last 248' *76m* is unavailable for landing distance computations.

16R	HIRL CL MALSR PAPI-L (angle 3.10°) grooved RVR	10,003' *3049m*	8804' *2683m*		150' *46m*
34L	HIRL CL MALSR ❸ PAPI-L (angle 3.54°) grooved	10,012' *3052m*	9137' *2785m*		

❸ On request thru Control Tower, operates for 15 minutes.
Not to be used beyond 6 NM due to high terrain.

16L	HIRL CL REIL PAPI-L (angle 3.00°) grooved				150' *46m*
34R	HIRL CL REIL ❹ PAPI-L (angle 3.00°) grooved				

❹ Not to be used beyond 6 NM due to high terrain.

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

	Rwy 34L			Rwy 34R			
	With Mim climb of 320'/NM to 7000'		Climb in Visual Conditions	With Mim climb of 480'/NM to 7000'		With Mim climb of 320'/NM to 7000'	Climb in Visual Conditions
	Adequate Vis Ref	STD		Adequate Vis Ref	STD		
1 & 2 Eng	1/4	1	2700-3	1/4	1	500-1½	2700-3
3 & 4 Eng		1/2			1/2		

	Rwy 25			Rwy 16R		
	With Mim climb of 470'/NM to 7800'		Climb in Visual Conditions	❶ 210 Kts or less, 385'/NM to 8000'; More than 210Kts, 420'/NM to 8900'		Climb in Visual Conditions
	Adequate Vis Ref	STD		Adequate Vis Ref	STD	
1 & 2 Eng	1/4	1	2700-3	RVR 16 or 1/4	RVR 50 or 1	2700-3
3 & 4 Eng		1/2			RVR 24 or 1/2	

	Rwy 16L				Rwy 7
	With Mim climb of 730'/NM to 8000'		With Mim climb of 480'/NM to 8000'	Climb in Visual Conditions	
	Adequate Vis Ref	STD			
1 & 2 Eng	1/4	1	600-1¼	2700-3	NA
3 & 4 Eng		1/2			

❶ Resume normal speed after passing FMG VOR.

OBSTACLE DP

Rwy 16L/R: Climb heading 164° to 6600' then climbing left turn direct FMG VOR. For Climb in Visual Conditions: Cross Reno/Tahoe Intl Airport at or above 7000' via heading 054° and FMG VOR R-234 to FMG VOR.

Rwy 25: Climb heading 254° to 5000' then climbing right turn direct FMG VOR. For Climb in Visual Conditions: Cross Reno/Tahoe Intl Airport at or above 7000' via heading 054° and FMG VOR R-234 to FMG VOR.

Rwy 34L/R: Climb heading 344° to 7000' then climbing right turn direct FMG VOR. For Climb in Visual Conditions: Cross Reno/Tahoe Intl Airport at or above 7000' via heading 054° and FMG VOR R-234 to FMG VOR.

NOTE: All aircraft: Continue climb in FMG VOR holding pattern (hold northeast, left turns, 221° inbound) to cross FMG VOR at or above MEA/MCA for route of flight.

FOR FILING AS ALTERNATE

	RNAV (GPS) Y Rwy 34L RNAV (GPS) Y Rwy 34R	RNAV (RNP) Y Rwy 16L RNAV (RNP) Y Rwy 16R RNAV (RNP) Z Rwy 16L RNAV (RNP) Z Rwy 16R	RNAV (GPS) X Rwy 34L RNAV (GPS) X Rwy 34R	ILS Rwy 34L LOC DME Rwy 34L	LOC DME (BC) Rwy 34L
A/B	800-2	800-2½	1000-2	1000-2	1000-2
C			1000-2¾	1000-2¾	1000-3
D	NA	NA	1000-3	NA	

	RNAV (GPS) X Rwy 16L	LOC Rwy 16R VOR-D	RNAV (GPS) X Rwy 16R	ILS Rwy 16R	RNAV (RNP) Z Rwy 34L RNAV (RNP) Z Rwy 34R
A/B	1400-2	1600-2	1800-2	2100-7	NA
C/D	1400-3	1600-3	1800-3		

AMEND 4

CHANGES: Alternate minimums.

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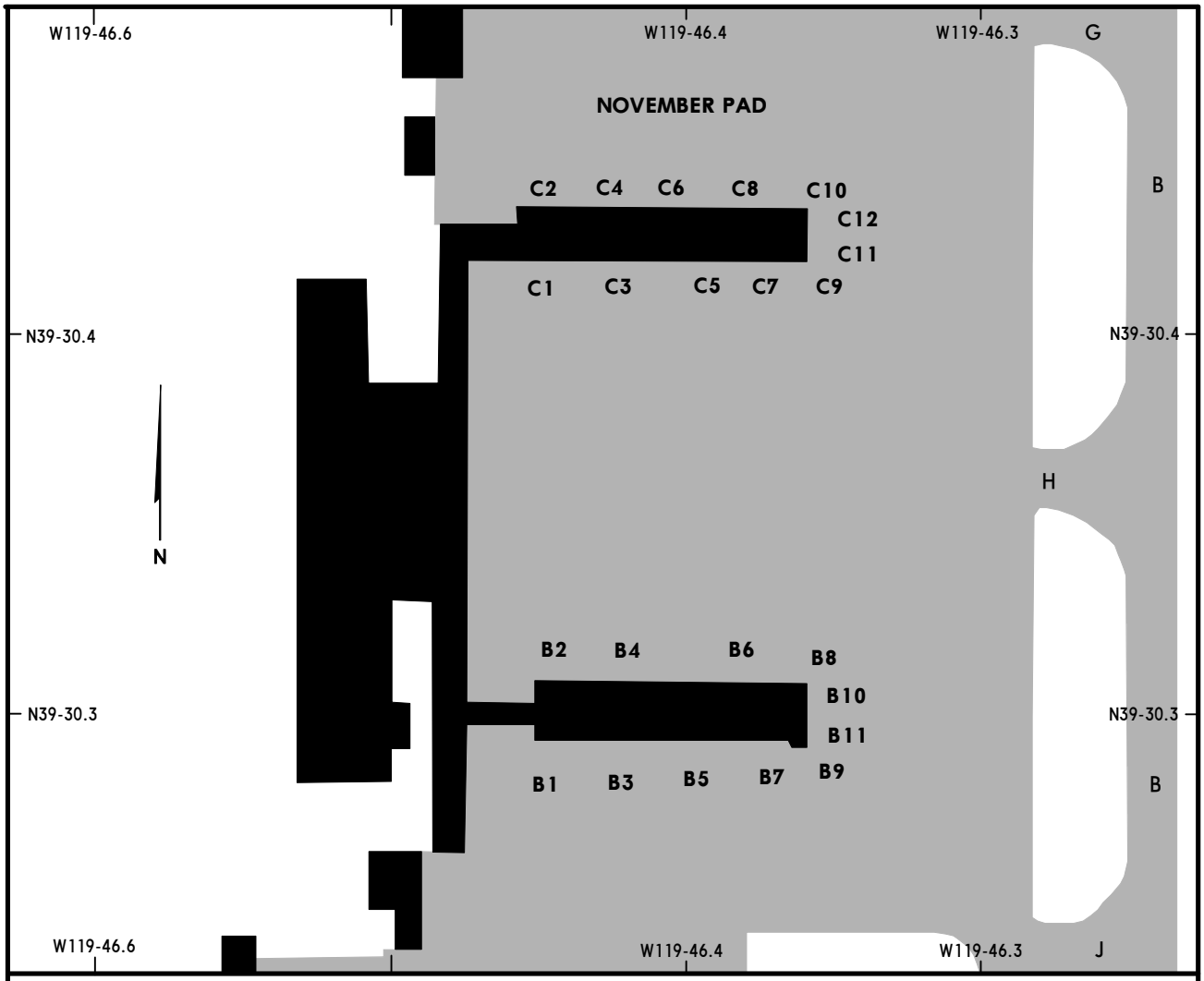

PARKING GATE COORDINATES

GATE No.	COORDINATES
B1 thru B11	N39 30.3 W119 46.4
C1 thru C12	N39 30.4 W119 46.4

CHANGES: Gate 11 added.

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BRIEFING STRIP™

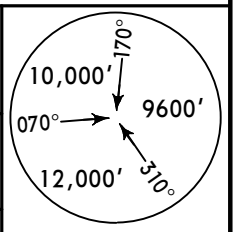
D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

LOC IRNO	Final Apch Crs	GS TAKLE	ILS DA(H)	Apt Elev 4415′
110.9	164°	8256′ (3841′)	6446′ (2031′)	TDZE 4415′

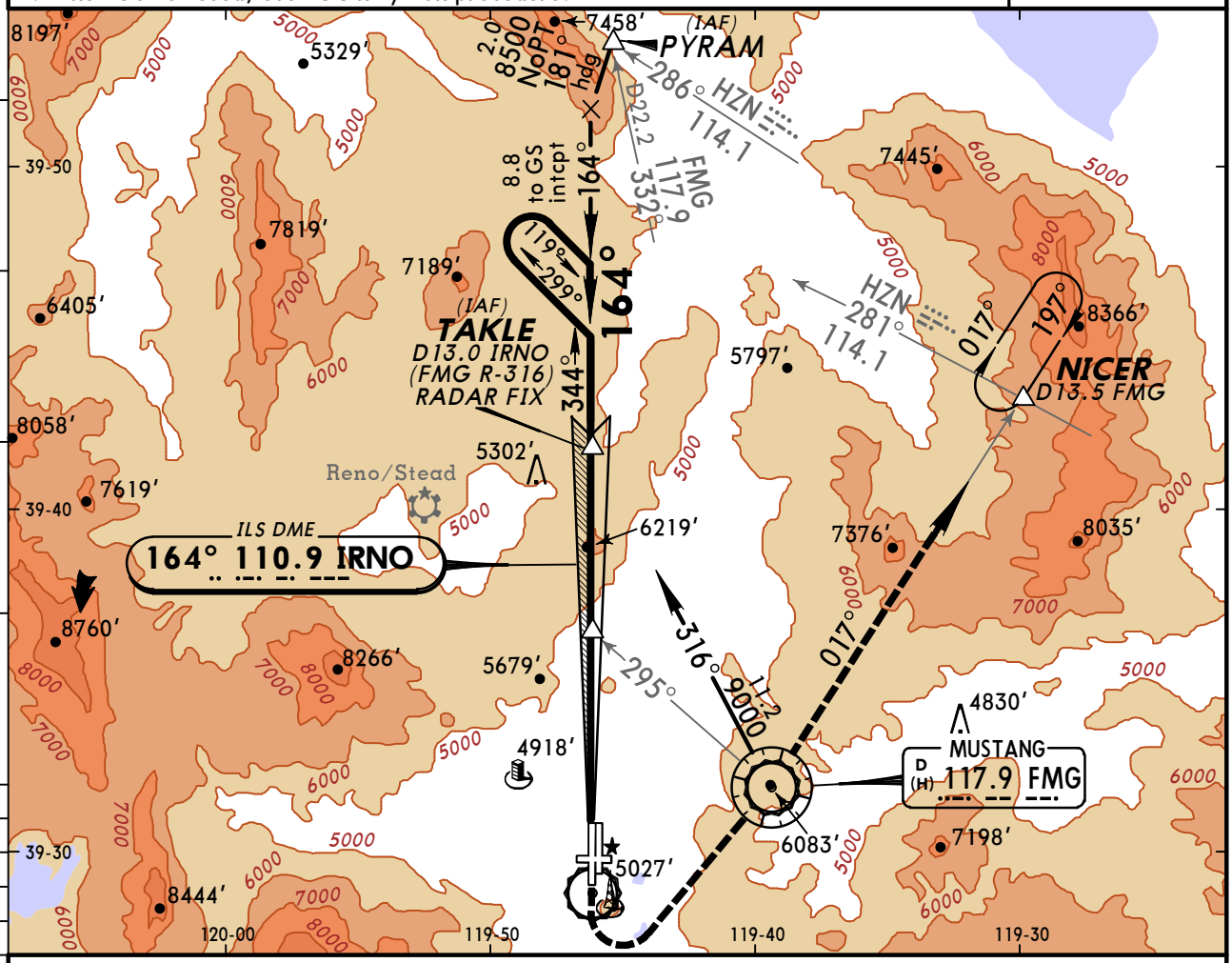
MISSED APCH: Climb to 6700′, then climbing LEFT turn to 11000′ direct FMG VOR , then outbound via FMG VOR R-017 to NICER INT/D13.5 FMG and hold.

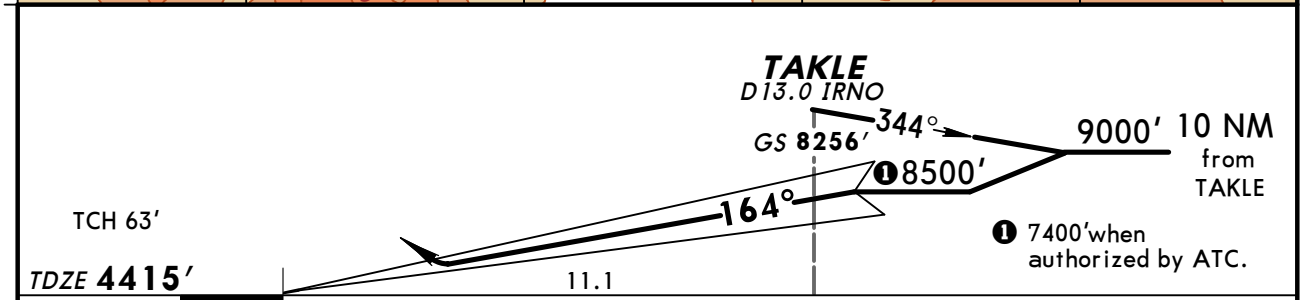
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. When GS not used, use LOC Rwy 16R procedure.



MSA FMG VOR





Gnd speed-Kts	70	90	100	120	140	160
GS 3.10°	389	500	556	667	778	889

MALSR PAPI 6700′ 11000′ LT D FMG 117.9

STRAIGHT-IN LANDING RWY 16R ILS DA(H) 6446′ (2031′) FULL	RAIL or ALS out	LOC (GS out)	CIRCLE-TO-LAND
A B C D: 7		NA	A B C D: NA

TERPS AMEND 10F 10 FEB 2011

CHANGES: Approach facility name, DICEY removed, bcn moved.

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BRIEFING STRIP™

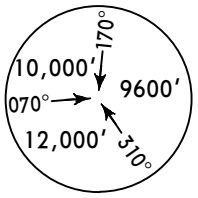
D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

LOC IRNO	Final Apch Crs	Minimum Alt TUDUY	MDA(H)	Apt Elev 4415′
110.9	164°	7200′ (2785′)	5980′ (1565′)	TDZE 4415′

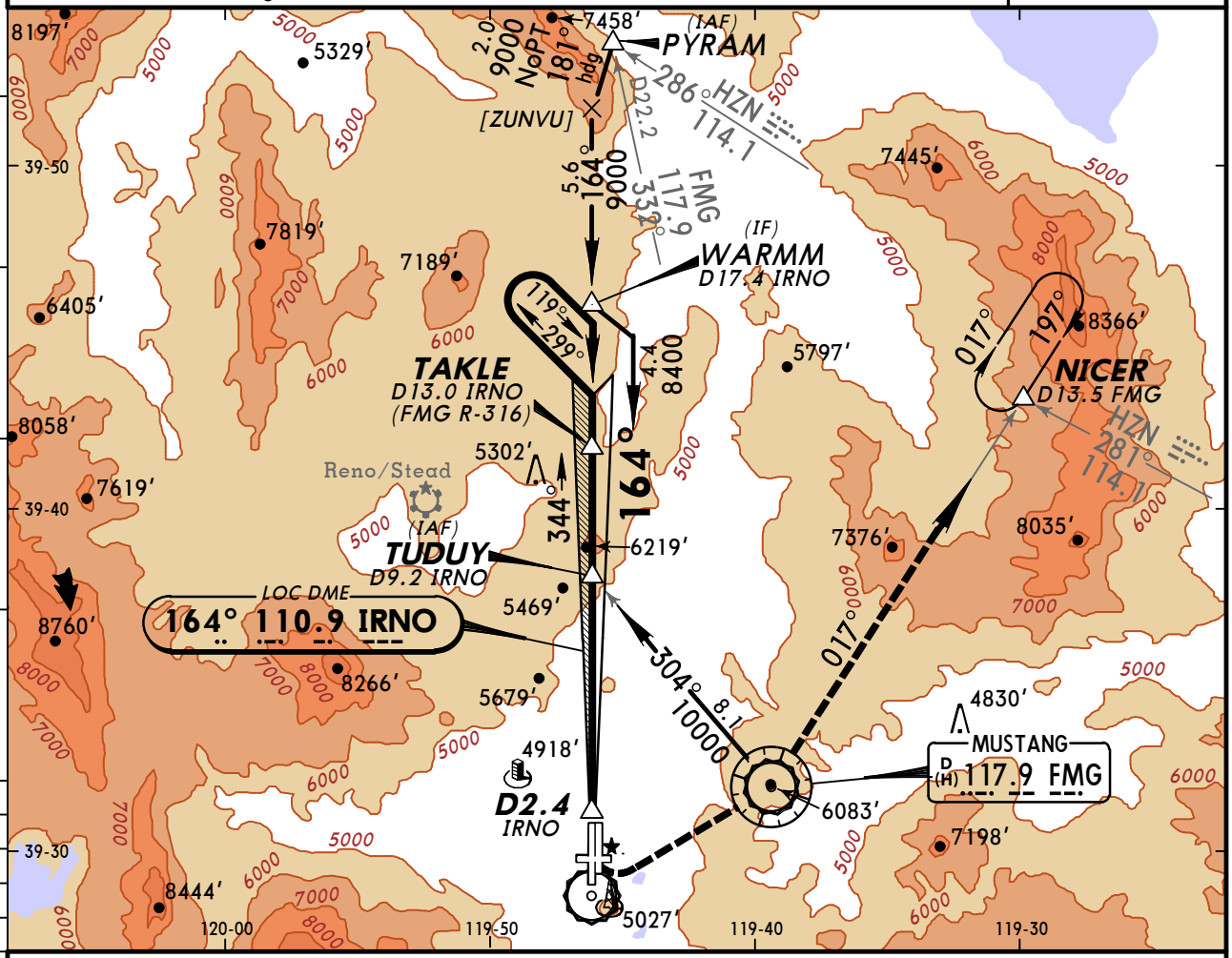
MISSED APCH: Climb to 6300′, then climbing LEFT turn to 11000′ direct FMG VOR, then outbound via FMG VOR R-017 to NICER INT/D13.5 FMG and hold, continue climb-in-hold to 11000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

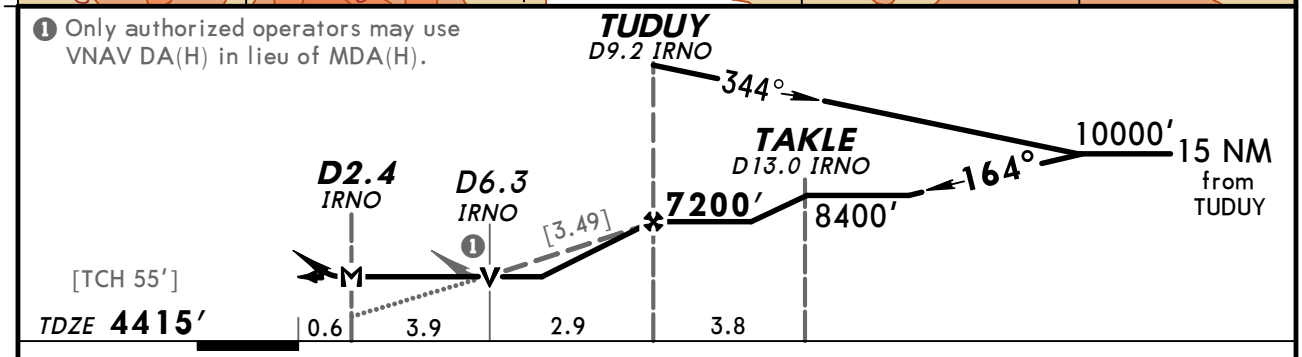
1. CAUTION: intensive glider activity between PYRAM and WARMM up to 12000′.
2. VGSI and descent angles not coincident.



MSA FMG VOR



ℹ Only authorized operators may use VNAV DA(H) in lieu of MDA(H).



Gnd speed-Kts		70	90	100	120	140	160
Descent angle	[3.49°]	432	556	618	741	865	988
MAP at D2.4 IRNO or TUDUY to MAP	6.8	5:50	4:32	4:05	3:24	2:55	2:33

MALSR / PAPI | 6300′ | 11000′ LT | D | FMG 117.9

TERPS AMEND 7

STRAIGHT-IN LANDING RWY 16R — MDA(H) 5980′ (1565′)	RAIL out	ALS out	Max Kts	CIRCLE-TO-LAND MDA(H)
A	RVR 60 or 1¼		90	5980′ (1565′)-1¼
B	1½		120	5980′ (1565′)-1½
C	2½	3	140	5980′ (1565′)-3
D			165	

CHANGES: Approach facility name, bcn moved.

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BRIEFING STRIP™

D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

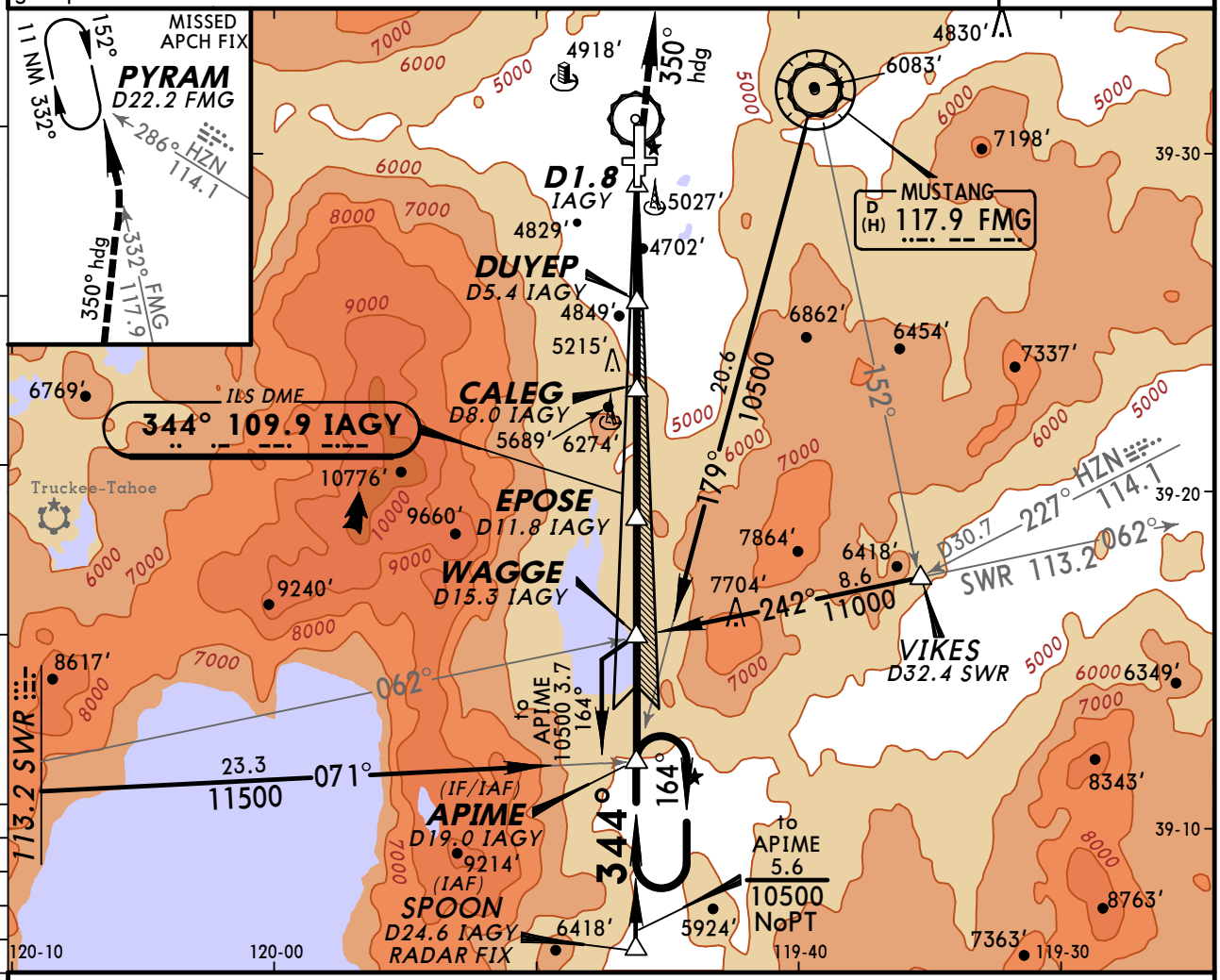
LOC	Final Apch Crs	GS	ILS DA(H)	Apt Elev 4415′
IAGY 109.9	344°	EPOSE 8300′ (3890′)	4946′ (536′)	TDZE 4410′

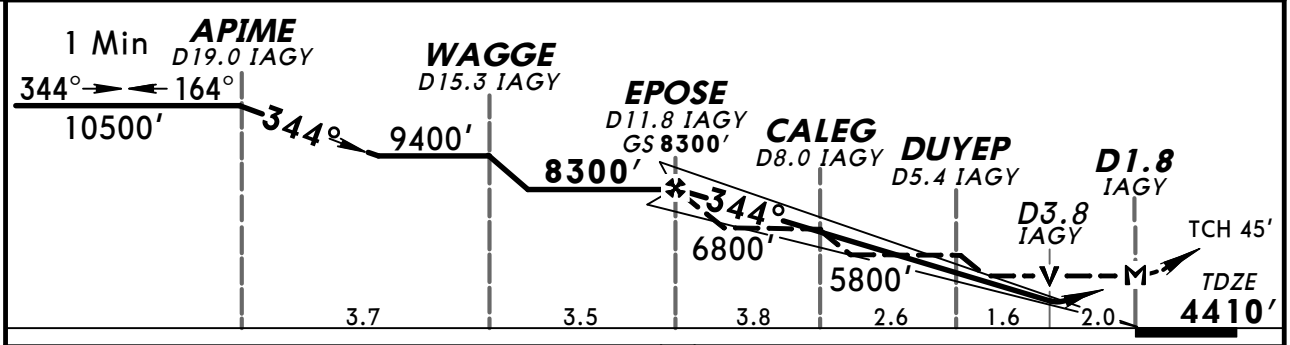
MISSED APCH: Climb to 11,000′ via heading 350° and outbound on FMG VOR R-332 to PYRAM INT/D22.2 FMG and hold, continue climb-in-hold to 11,000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. If local altimeter setting not received, procedure not authorized. 2. VGSI and ILS glidepath not coincident.

MSA FMG VOR: 10,000′ (170°–070°), 9600′ (070°–310°), 12,000′ (310°–170°)





Gnd speed-Kts	70	90	100	120	140	160
GS 3.54°	444	570	634	761	887	1014
MAP at D1.8 IAGY						

MALSR PAPI 11000′ via 350° hdg FMG 117.9 R-332 PYRAM

	STRAIGHT-IN LANDING RWY 34L ILS DA(H) 4946′ (536′)	LOC (GS out) MDA(H) 5120′ (710′)	Max Kts	CIRCLE-TO-LAND MDA(H)
A	1½	1	90	5340′ (925′) - 1¼
B			120	
C		2	140	5340′ (925′) -2¾
D	NA	NA	D	NA

TERPS AMEND 0B 3 JUN 2010

CHANGES: Approach call sign, obstacles.

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BRIEFING STRIP™

D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

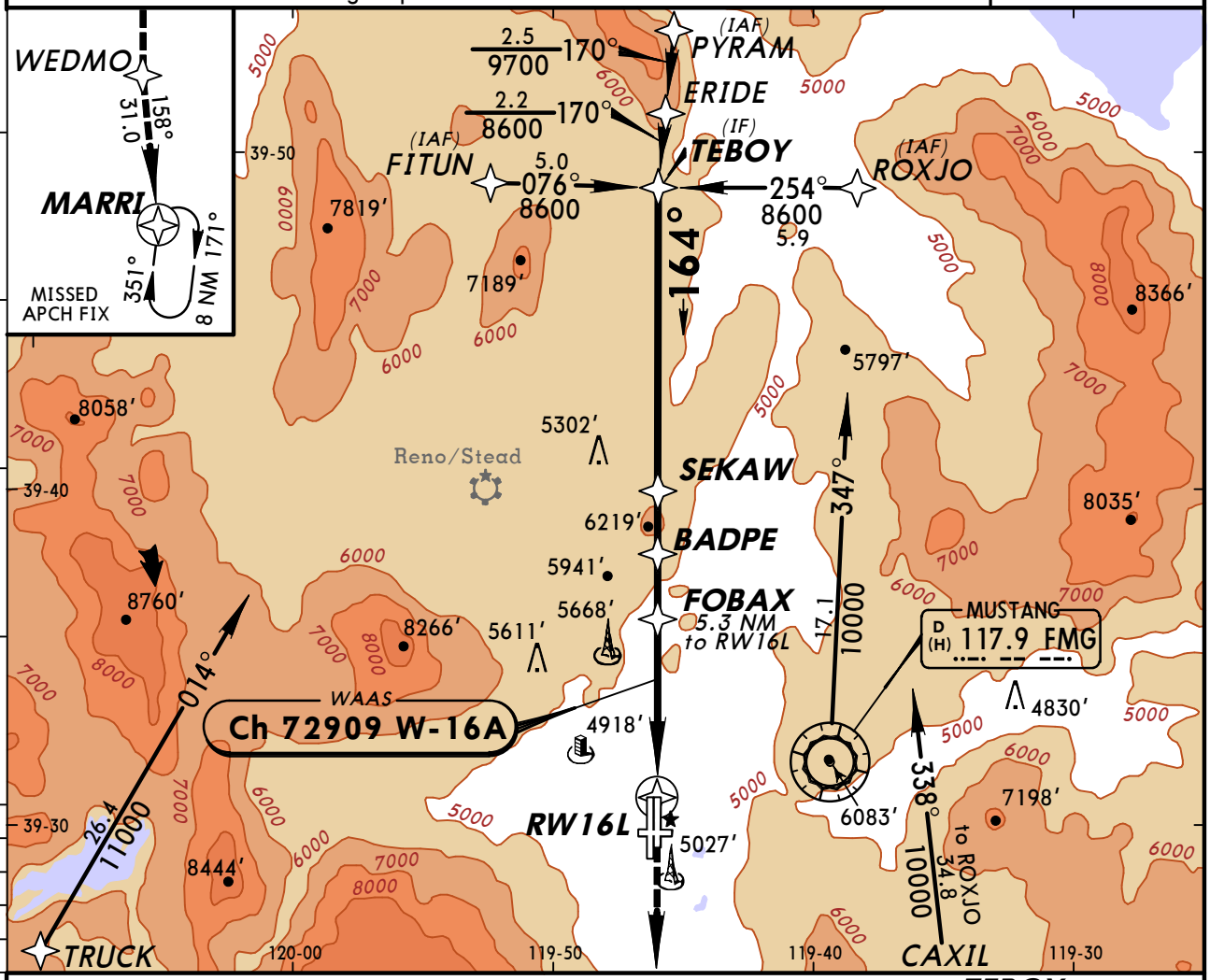
WAAS	Final Apch Crs	Minimum Alt	LPV DA(H)	
Ch 72909 W-16A	164°	BADPE 6900′ (2485′)	5220′ (805′)	Apt Elev 4415′ / Rwy 16L 4415′

MISSED APCH: Climb to 13,000′ direct WEDMO and on 158° track to MARRI and hold.

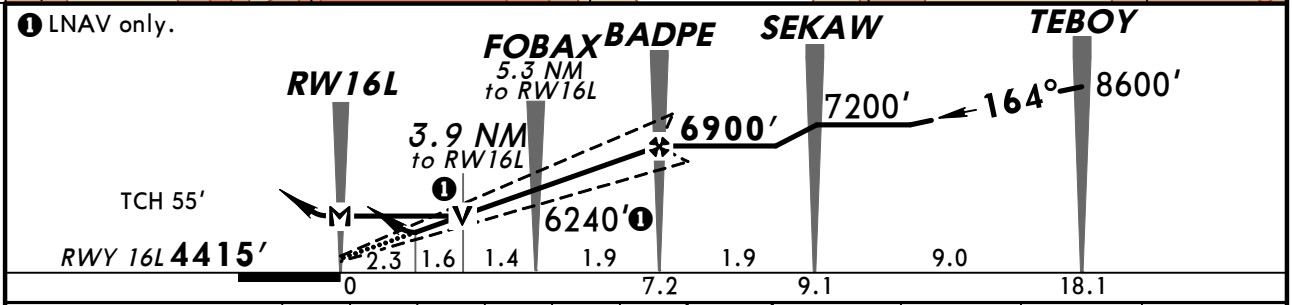
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. DME/DME RNP-0.30 not authorized. 2. Visibility reduction by helicopters not authorized. 3. VGSI and RNAV glidepath not coincident.

12,000′
MSA RW16L



❶ LNAV only.



Gnd speed-Kts	70	90	100	120	140	160
Glide Path Angle 3.10°	384	494	548	658	768	878
MAP at RW16L						

REIL
PAPI-L
13000′
WEDMO

STRAIGHT-IN LANDING RWY 16L			CIRCLE-TO-LAND	
	LPV DA(H) 5220′ (805′)	LNAV MDA(H) 5720′ (1305′)	Max Kts	MDA(H)
A	2¾	1¼	90	5720′ (1305′)-1¼
B		1½	120	5720′ (1305′)-1½
C		3	140	5720′ (1305′)-3
D			165	

Not Authorized at Night to Rwy 7-25

TERPS AMEND 1B 30 JUN 2011

CHANGES: Procedure title, note added.

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D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

BRIEFING STRIP™

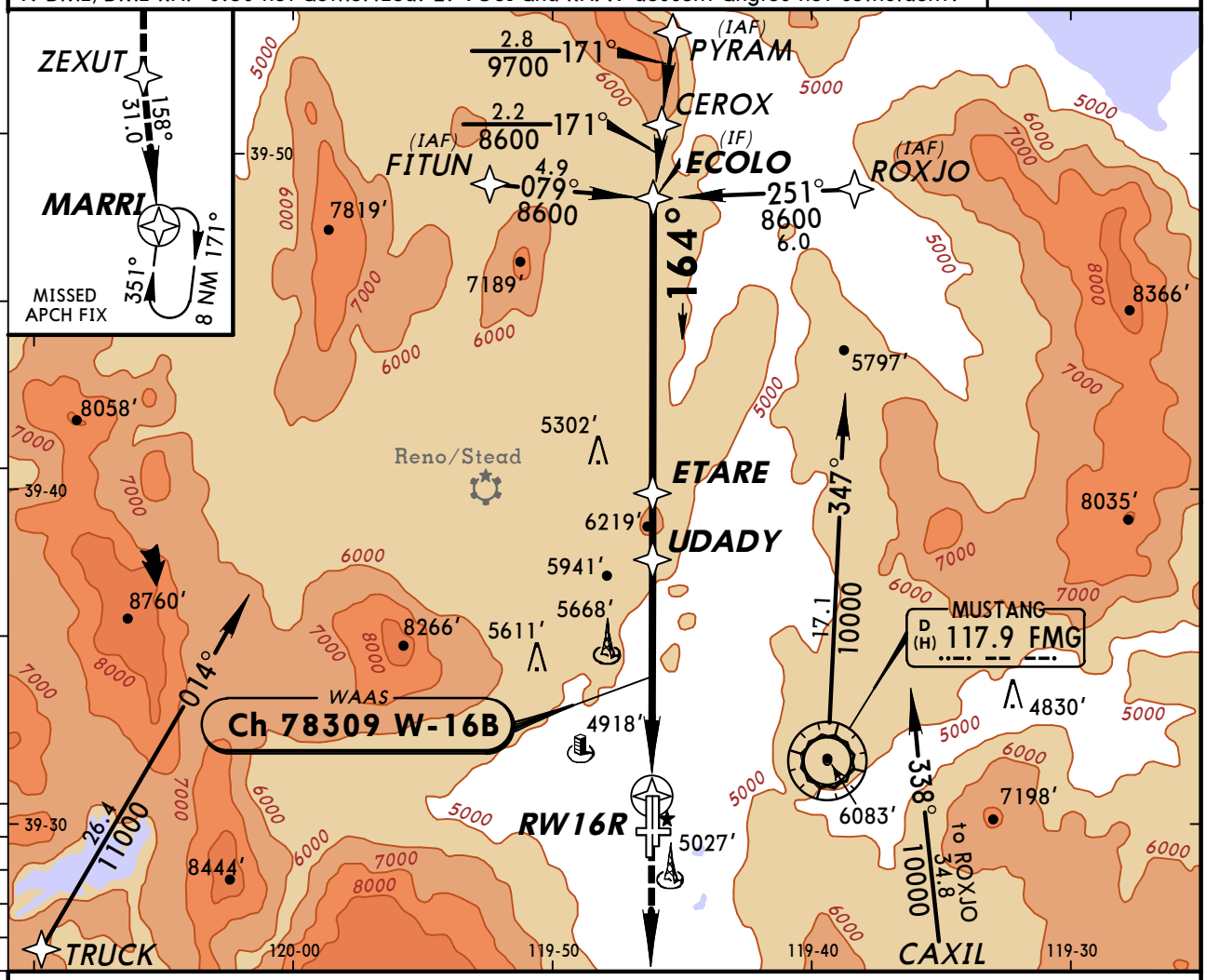
WAAS	Final Apch Crs	Minimum Alt	LPV DA(H)	
Ch 78309 W-16B	164°	UDADY 6900′ (2485′)	5239′ (824′)	Apt Elev 4415′ / Rwy 16R 4415′

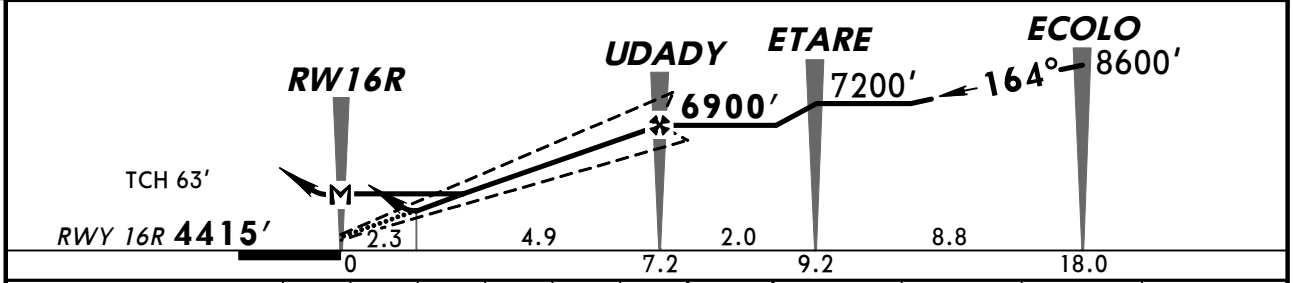
MISSED APCH: Climb to 13,000′ direct ZEXUT and on 158° track to MARRI and hold.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. DME/DME RNP-0.30 not authorized. 2. VGSI and RNAV descent angles not coincident.

12,000′
MSA RW16R





Gnd speed-Kts	70	90	100	120	140	160
Glide Path Angle 3.10°	384	494	548	658	768	878
MAP at RW16R						

MALSR
PAPI
13000′
ZEXUT

STRAIGHT-IN LANDING RWY 16R

	LPV DA(H) 5239′ (824′) RAIL out	LPV DA(H) 5239′ (824′) ALS out	LNAV MDA(H) 6200′ (1785′) RAIL out	LNAV MDA(H) 6200′ (1785′) ALS out
A	2¼	2¾	RVR 60 or 1¼	
B			1½	
C			3	
D				

CIRCLE-TO-LAND
Not Authorized at Night to Rwy 7-25

Max Kts	MDA(H)
90	6200′ (1785′) - 1¼
120	6200′ (1785′) - 1½
140	6200′ (1785′) - 3
165	

TERPS AMEND 1B 30 JUN 2011

CHANGES: Procedure title.

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BRIEFING STRIP™

D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

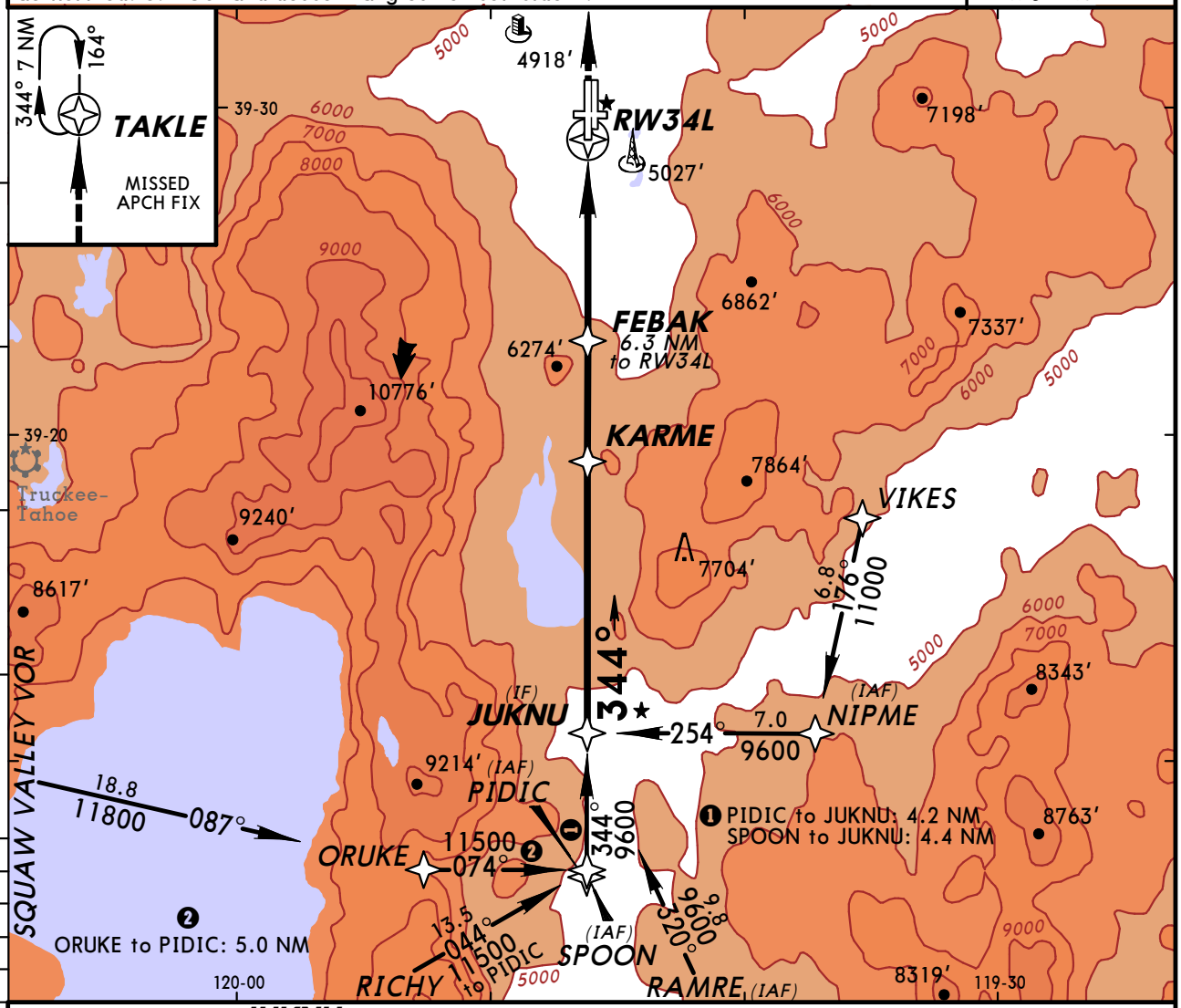
RNAV	Final Apch Crs	Minimum Alt KARME	LNAV MDA(H)	Apt Elev 4415′
	344°	8100′ (3690′)	5300′ (890′)	TDZE 4410′

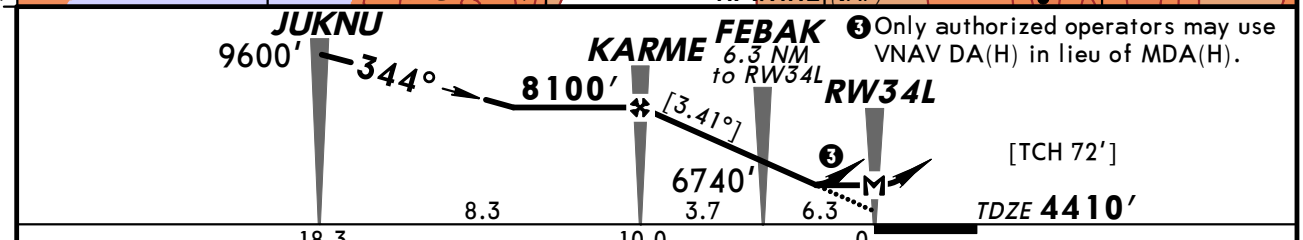
MISSED APCH: Climb to 10000′ direct TAKLE and hold, continue climb-in-hold to 10000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. DME/DME RNP-0.30 not authorized. 2. Visibility reduction by helicopters not authorized. 3. VGSI and descent angles not coincident.

12,000′
MSA RW34L





❸ Only authorized operators may use VNAV DA(H) in lieu of MDA(H).

Gnd speed-Kts	70	90	100	120	140	160
Descent angle [3.41°]	422	543	603	724	845	965
MAP at RW34L						

MALSR
PAPI
10000′
TAKLE

STRAIGHT-IN LANDING RWY 34L LNAV MDA(H) 5300′ (890′)			CIRCLE-TO-LAND Not Authorized at Night to Rwys 7 and 25	
	RAIL out	ALS out	Max Kts	MDA(H)
A	1	1¼	90	5340′ (925′) - 1¼
B			120	
C	2¼	2¾	140	5340′ (925′) - 2¾
D	2½	3	165	5340′ (925′) - 3

TERPS AMEND 1

CHANGES: TAKLE holding pattern length.

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BRIEFING STRIP™

D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

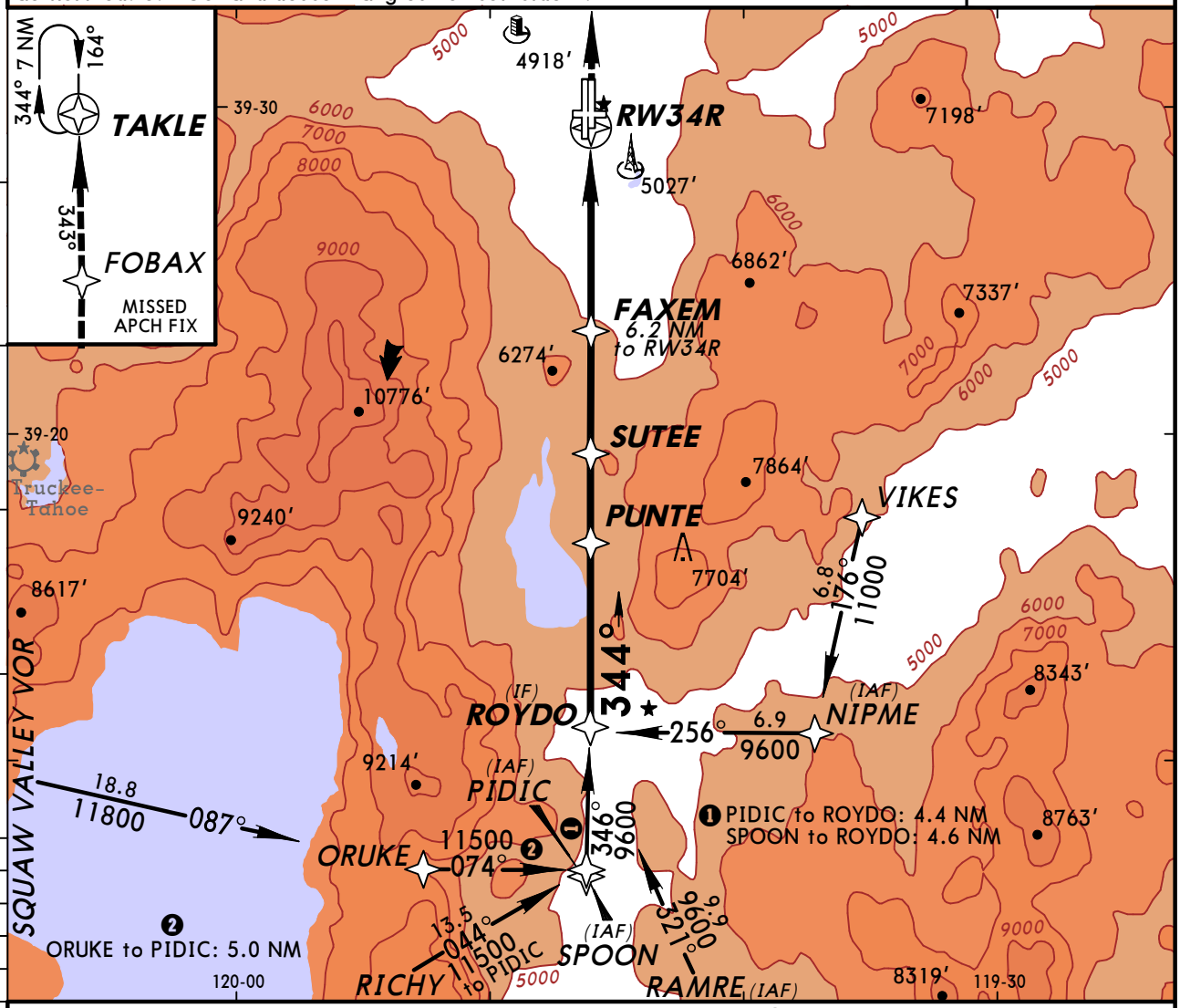
RNAV	Final Apch Crs	Minimum Alt SUTEE	LNAV MDA(H)	Apt Elev 4415′
	344°	8100′ (3692′)	5300′ (892′)	TDZE 4408′

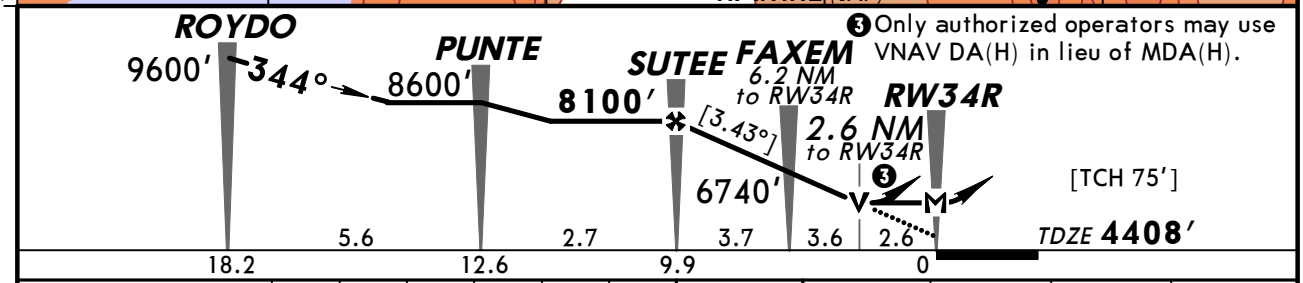
MISSED APCH: Climb to 10000′ direct FOBAX and via 343° track to TAKLE and hold, continue climb-in-hold to 10000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. DME/DME RNP-0.30 not authorized. 2. Visibility reduction by helicopters not authorized. 3. VGSI and descent angles not coincident.

12,000′
MSA RW34R





❸ Only authorized operators may use VNAV DA(H) in lieu of MDA(H).

Gnd speed-Kts	70	90	100	120	140	160
Descent angle [3.43°]	425	546	607	728	850	971
MAP at RW34R						

REIL
PAPI-L

10000′

FOBAX

TERPS AMEND 1

STRAIGHT-IN LANDING RWY 34R LNAV MDA(H) 5300′ (892′)		CIRCLE-TO-LAND Not Authorized at Night to Rwys 7 and 25	
		Max Kts.	MDA(H)
A	1¼	90	5340′ (925′) - 1¼
B		120	
C	2¾	140	5340′ (925′) - 2¾
D	3	165	5340′ (925′) - 3

CHANGES: TAKLE holding pattern length.

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KRNO/RNO
RENO/TAHOE INTL

JEPPESEN

4 FEB 11 (12-5) CAT A, B & C

RNAV (GPS) Y Rwy 34L

RENO, NEV

D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

WAAS	Final Apch Crs	Minimum Alt	LPV DA(H)	Apt Elev 4415′
Ch 82609 W-34A	344°	KARME 8300′ (3890′)	5018′ (608′)	TDZE 4410′

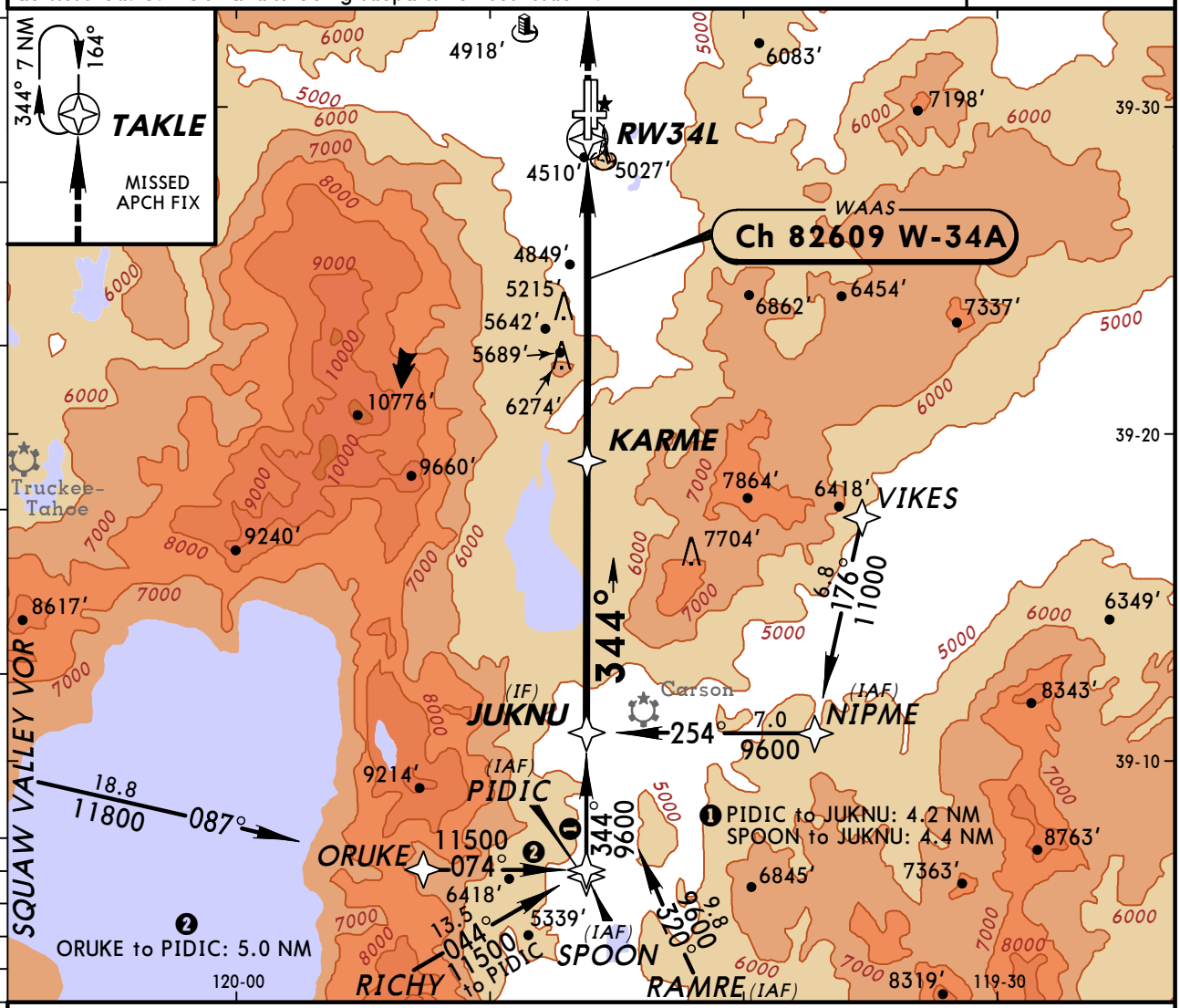
MISSED APCH: Climb to 10000′ direct TAKLE and hold, continue climb-in-hold to 10000′.

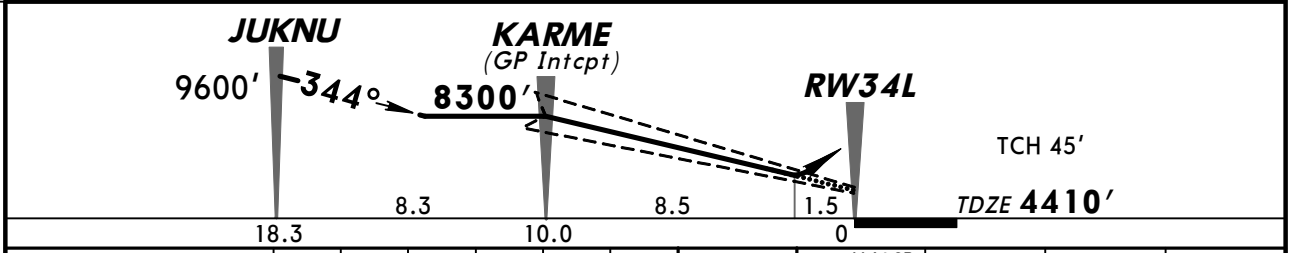
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. DME/DME RNP-0.30 not authorized. 2. Visibility reduction by helicopters not authorized. 3. VGSI and RNAV glidepath not coincident.

12,000′
MSA RW34L

BRIEFING STRIP™





Gnd speed-Kts	70	90	100	120	140	160
Glide Path Angle 3.54°	439	564	626	752	877	1002
MAP at DA						

MALSR
PAPI
10000′
D
TAKLE

STRAIGHT-IN LANDING RWY 34L
LPV
DA(H) 5018′ (608′)

		RAIL or ALS out
A	1¼	1¾
B		
C		
D	NA	NA

TERPS AMEND 0A 29 JUL 2010

CHANGES: Approach call sign, obstacles.

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KRNO/RNO
RENO/TAHOE INTL

JEPPESEN

4 FEB 11 (12-6) CAT A, B & C

RENO, NEV
RNAV (GPS) Y Rwy 34R

BRIEFING STRIP™

D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

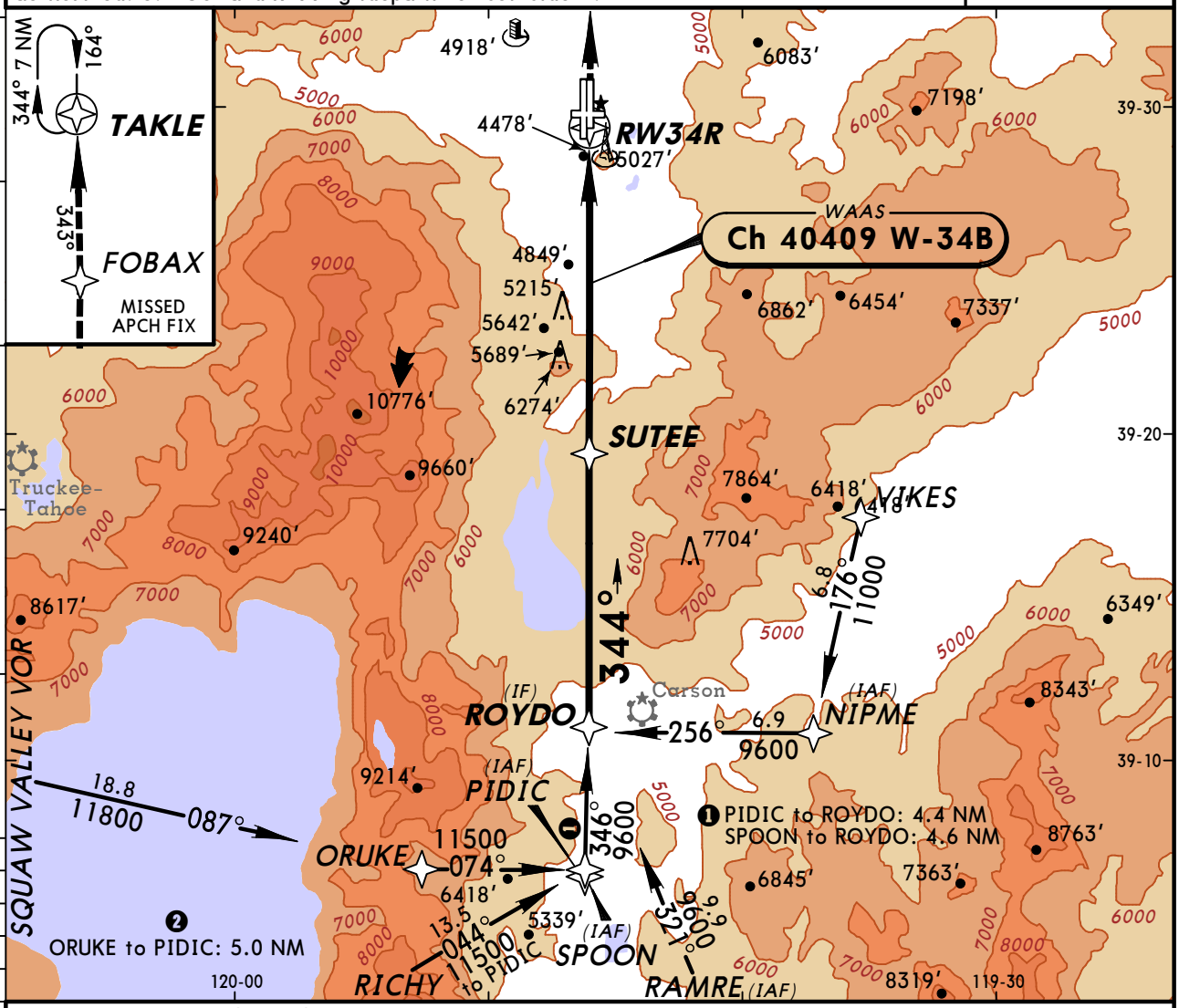
WAAS	Final Apch Crs	Minimum Alt SUTEE	LPV DA(H)	Apt Elev 4415′
Ch 40409 W-34B	344°	8300′ (3892′)	5043′ (635′)	TDZE 4408′

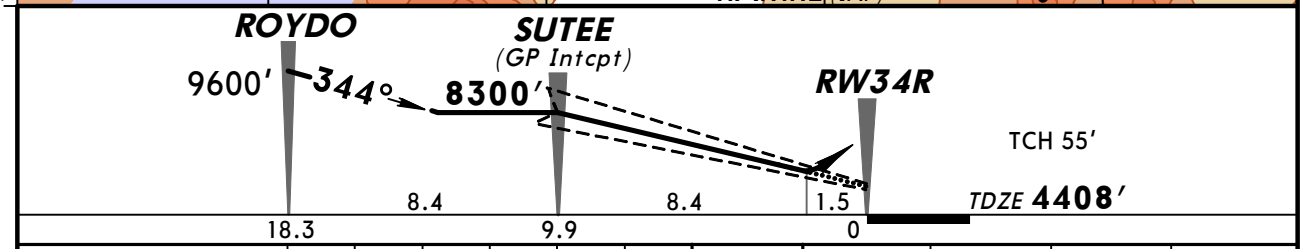
MISSED APCH: Climb to 10000′ direct FOBAX and via 343° track to TAKLE and hold, continue climb-in-hold to 10000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. DME/DME RNP-0.30 not authorized. 2. Visibility reduction by helicopters not authorized. 3. VGSI and RNAV glidepath not coincident.

12,000′
MSA RW34R





Gnd speed-Kts	70	90	100	120	140	160
Glide Path Angle 3.55°	440	565	628	754	880	1005
MAP at DA						

REIL
PAPI-L

10000′

FOBAX

STRAIGHT-IN LANDING RWY 34R
LPV
DA(H) 5043′ (635′)

A	2
B	
C	
D	NA

TERPS AMEND 0A 29 JUL 2010

CHANGES: Approach call sign, obstacles.

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24 JUN 11
Eff 30 Jun

CAT A, B & C

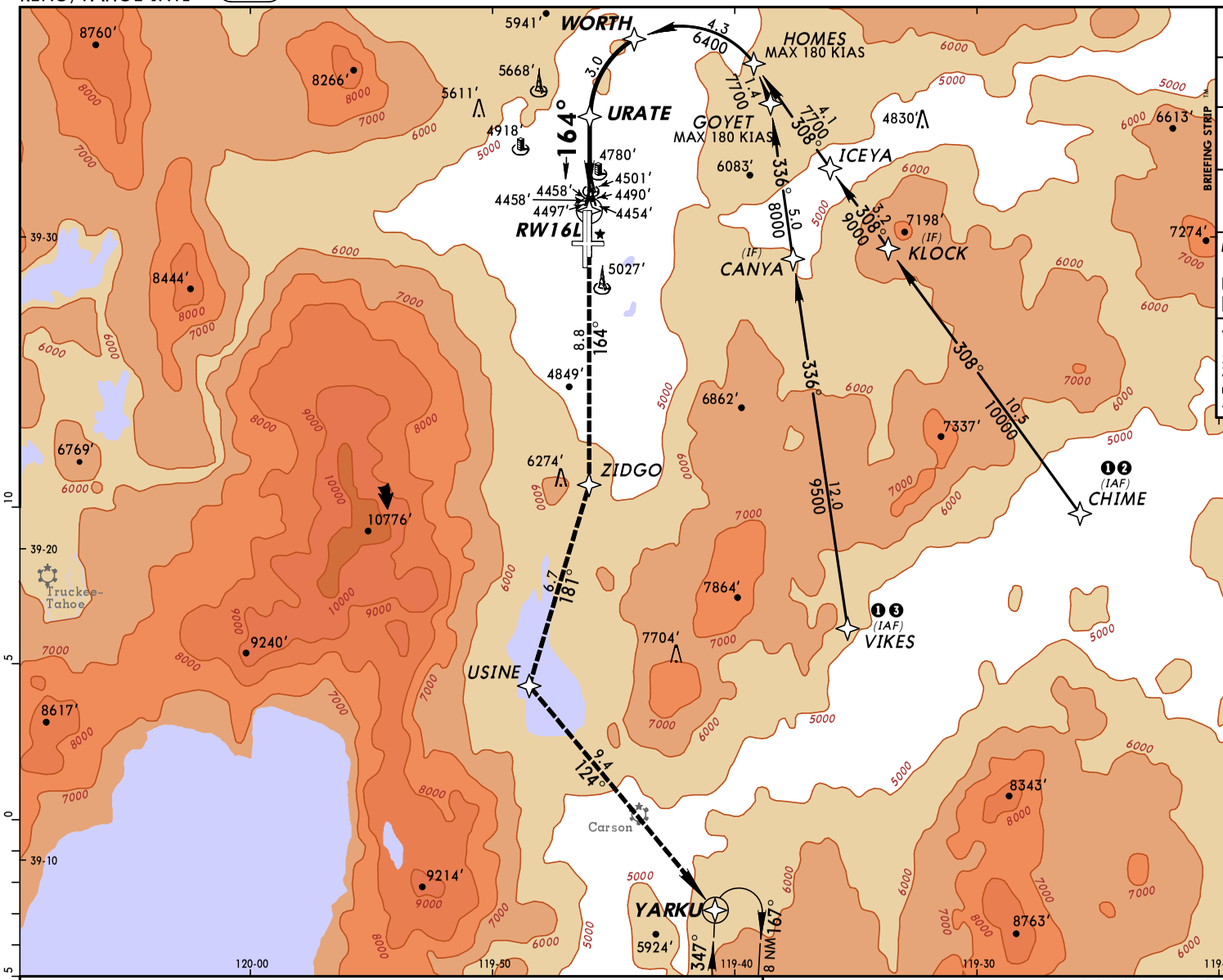
RENO, NEV
RNAV (RNP) Y Rwy 16L

D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South
135.8	126.3	119.2
RENO Tower	Ground	
118.7	121.9	
RNAV	Final Apch Crs 164°	

Minimum Alt WORTH	RNP 0.12 DA(H)	Apt Elev 4415′
6400′ (1985′)	4796′ (381′)	Rwy 16L 4415′

MISSED APCH: Climb to 13,000′ on 164° track to ZIDGO and on 181° track to USINE and on 124° track to YARKU and hold, continue climb-in-hold to 13,000′.

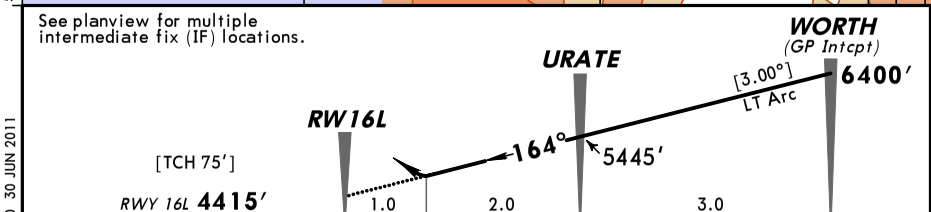
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′
1. **AUTHORIZATION REQUIRED.**
2. **RF and GPS required.**
3. For uncompensated Baro-VNAV systems, procedure not authorized below -16°C (4°F) or above 54°C (130°F).
4. When VGSI inop, procedure not authorized at night.



12,000′
MSA RW16L

❶ RNP 0.60
❷ Procedure not authorized for arrivals at CHIME on V494 northeast bound and on V105-564 southeast bound.
❸ Procedure not authorized for arrivals at VIKES on V494 southwest bound.

See planview for multiple intermediate fix (IF) locations.



Gnd speed-Kts	70	90	100	120	140	160
Descent Angle [3.00°]	372	478	531	637	743	849
MAP at DA						

REIL PAPI-L | 13000′ on 164° | ZIDGO

STRAIGHT-IN LANDING RWY 16L

	RNP 0.12 Missed Approach Requires Minimum Climb of 259′/NM to 7000′ DA(H) 4796′ (381′)	RNP 0.30 DA(H) 5133′ (718′)
A		
B	1⅛	2½
C		
D	NA	NA

TERPS AMEND 0 30 JUN 2011

CHANGES: New procedure.

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RENO, NEV
RNAV (RNP) Z Rwy 16L

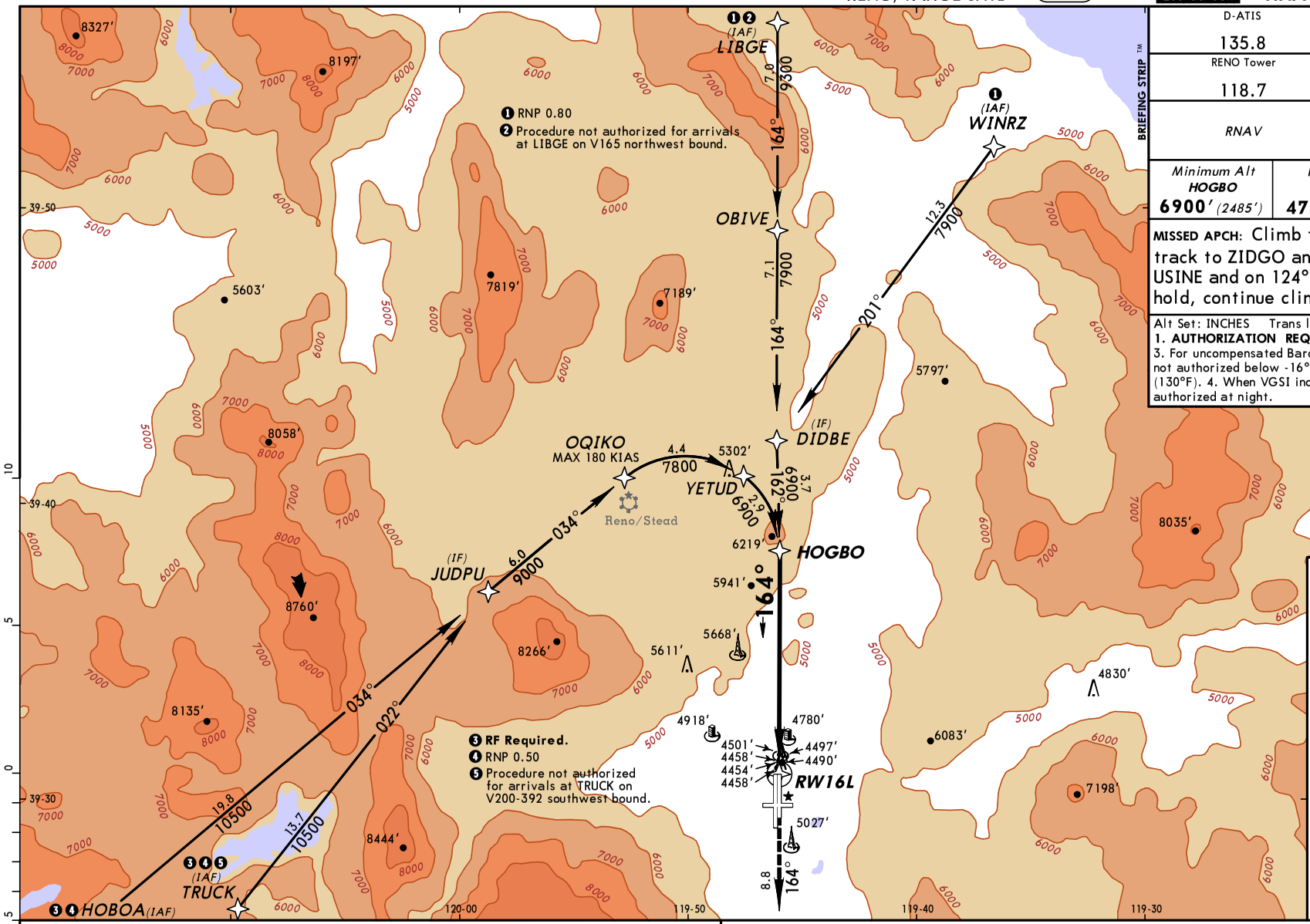
BRIEFING STRIP™

D-ATIS	NORCAL Approach (R) North	South
135.8	126.3	119.2
RENO Tower	Ground	
118.7	121.9	
RNAV	Final Apch Crs 164°	

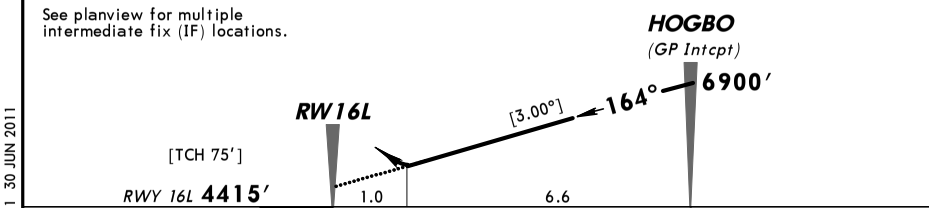
Minimum Alt	RNP 0.12 DA(H)	Apt Elev 4415′
HOGBO 6900′ (2485′)	4796′ (381′)	Rwy 16L 4415′

MISSED APCH: Climb to 13,000′ on 164° track to ZIDGO and on 181° track to USINE and on 124° track to YARKU and hold, continue climb-in-hold to 13,000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′
1. AUTHORIZATION REQUIRED. 2. GPS required.
3. For uncompensated Baro-VNAV systems, procedure not authorized below -16°C (4°F) or above 54°C (130°F). 4. When VGSI inop, procedure not authorized at night.



See planview for multiple intermediate fix (IF) locations.



Gnd speed-Kts	70	90	100	120	140	160
Descent Angle [3.00°]	372	478	531	637	743	849
MAP at DA						

REIL PAPI-L | 13000′ | on 164° | ZIDGO

STRAIGHT-IN LANDING RWY 16L

	RNP 0.12 Missed Approach Requires Minimum Climb of 259′/NM to 7000′ DA(H) 4796′ (381′)	RNP 0.30 DA(H) 5133′ (718′)
A		
B	1⅛	2½
C		
D	NA	NA

TERPS AMEND 1 30 JUN 2011

CHANGES: Procedure.

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24 JUN 11
Eff 30 Jun

CAT A, B & C

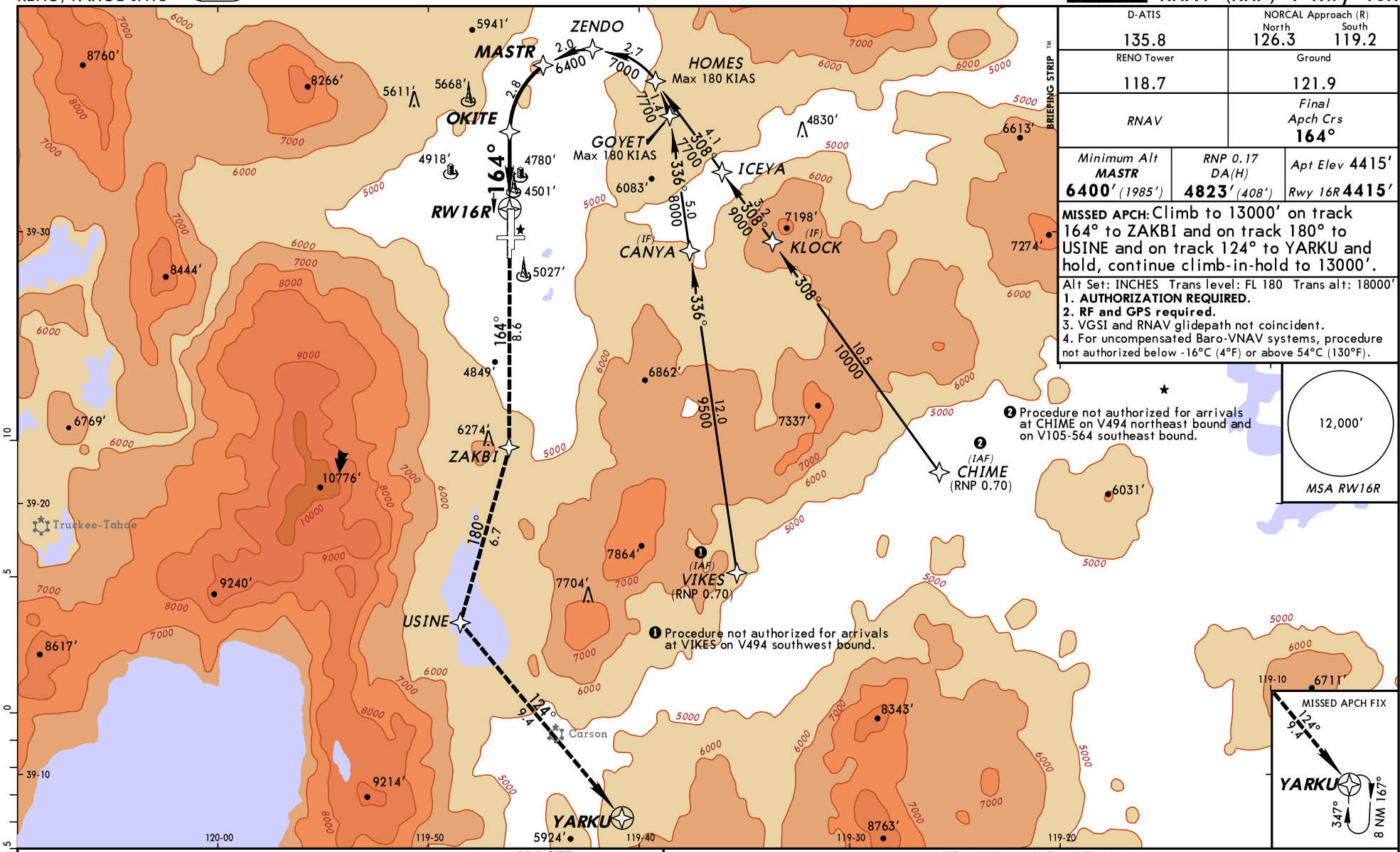
RENO, NEV
RNAV (RNP) Y Rwy 16R

D-ATIS	NORCAL Approach (R) North	South
135.8	126.3	119.2
RENO Tower	Ground	
118.7	121.9	
RNAV	Final Apch Crs 164°	

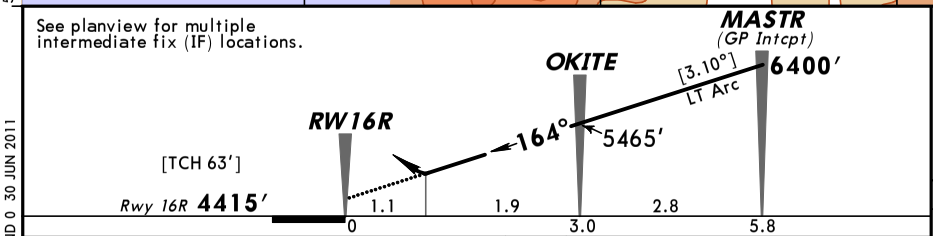
Minimum Alt	RNP 0.17 DA(H)	Apt Elev 4415′
MASTR 6400′ (1985′)	4823′ (408′)	Rwy 16R 4415′

MISSED APCH: Climb to 13000′ on track 164° to ZAKBI and on track 180° to USINE and on track 124° to YARKU and hold, continue climb-in-hold to 13000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′
1. **AUTHORIZATION REQUIRED.**
2. **RF and GPS required.**
3. VGSI and RNAV glidepath not coincident.
4. For uncompensated Baro-VNAV systems, procedure not authorized below -16°C (4°F) or above 54°C (130°F).



See planview for multiple intermediate fix (IF) locations.



Gnd speed-Kts	70	90	100	120	140	160
Descent angle [3.10°]	384	494	548	658	768	878
MAP at DA						

MALSR PAPI 13000′ on 164° ZAKBI

STRAIGHT-IN LANDING RWY 16R

	RNP 0.17 Missed Approach Requires Minimum Climb of 260′/NM to 7000′ DA(H) 4823′ (408′)		RNP 0.30 DA(H) 5142′ (727′)	
		RAIL or ALS out		RAIL or ALS out
A	RVR 45 or 7/8	1 1/4	1 7/8	2 1/2
B				
C				
D	NA		NA	

TERPS AMEND 0 30 JUN 2011

CHANGES: New procedure.

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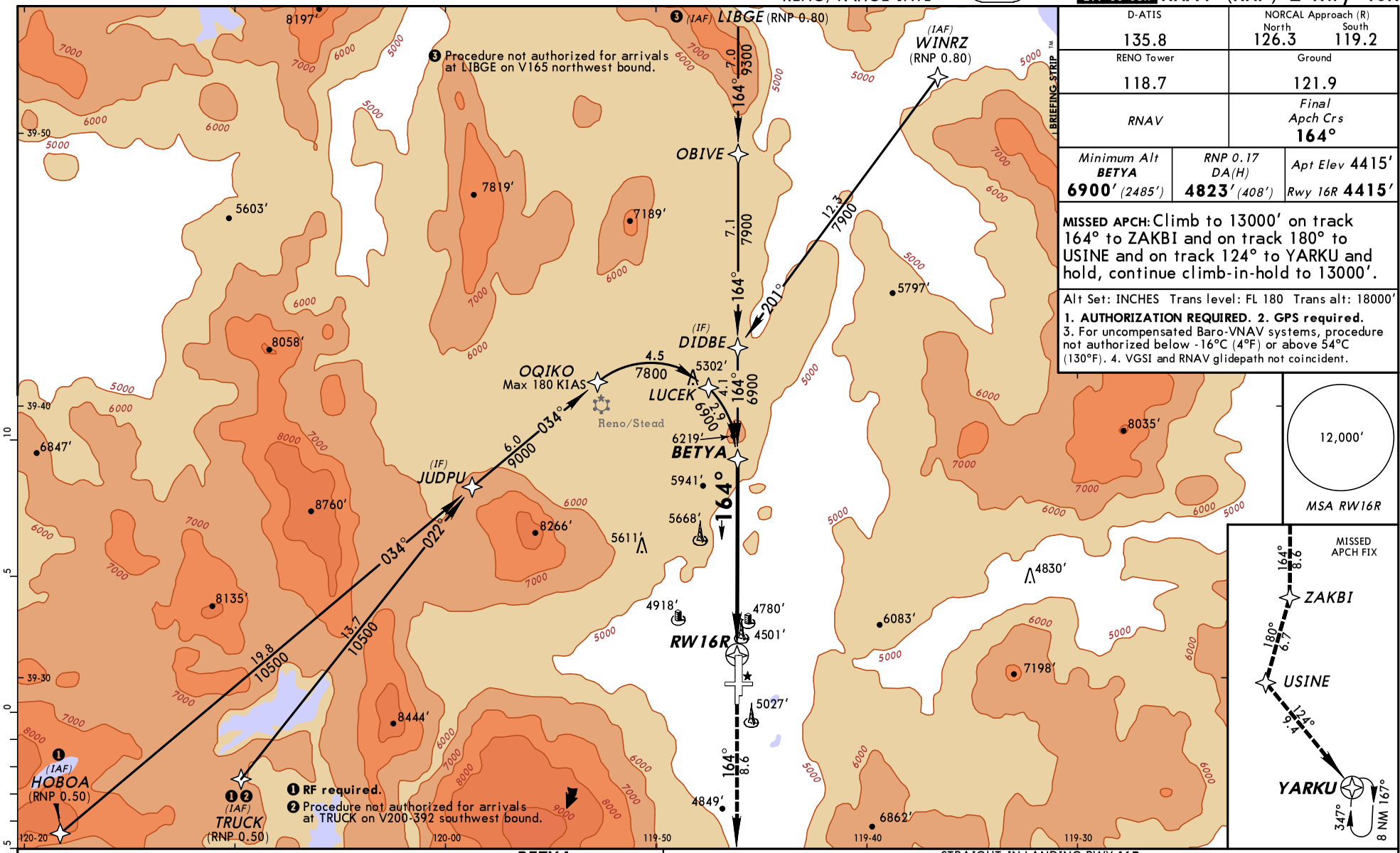
D-ATIS	NORCAL Approach (R) North	South
135.8	126.3	119.2
RENO Tower	Ground	
118.7	121.9	
RNAV	Final Apch Crs 164°	

Minimum Alt BETYA	RNP 0.17 DA(H)	Apt Elev 4415′
6900′ (2485′)	4823′ (408′)	Rwy 16R 4415′

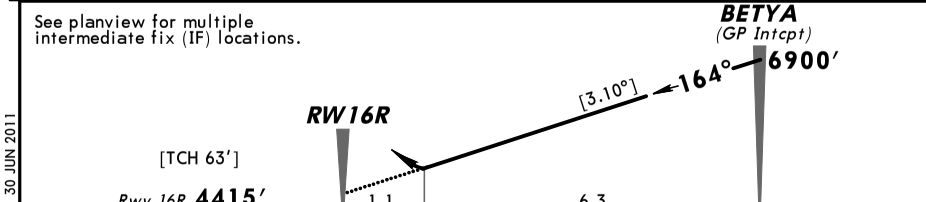
MISSED APCH: Climb to 13000′ on track 164° to ZAKBI and on track 180° to USINE and on track 124° to YARKU and hold, continue climb-in-hold to 13000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. AUTHORIZATION REQUIRED. 2. GPS required. 3. For uncompensated Baro-VNAV systems, procedure not authorized below -16°C (4°F) or above 54°C (130°F). 4. VGSI and RNAV glidepath not coincident.



See planview for multiple intermediate fix (IF) locations.



Gnd speed-Kts	70	90	100	120	140	160
Descent angle [3.10°]	384	494	548	658	768	878
MAP at DA						

MALSR PAPI 13000′ on 164° ZAKBI

STRAIGHT-IN LANDING RWY 16R

	RNP 0.17 Missed Approach Requires Minimum Climb of 260′/NM to 7000′ DA(H) 4823′(408′)		RNP 0.30 DA(H) 5142′(727′)	
		RAIL or ALS out		RAIL or ALS out
A	RVR 45 or 7/8	1¼	1⅞	2½
B				
C				
D	NA		NA	

TERPS AMEND 1 30 JUN 2011

CHANGES: Procedure.

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RENO, NEV
RNAV (RNP) Z Rwy 34L

3 FEB 12

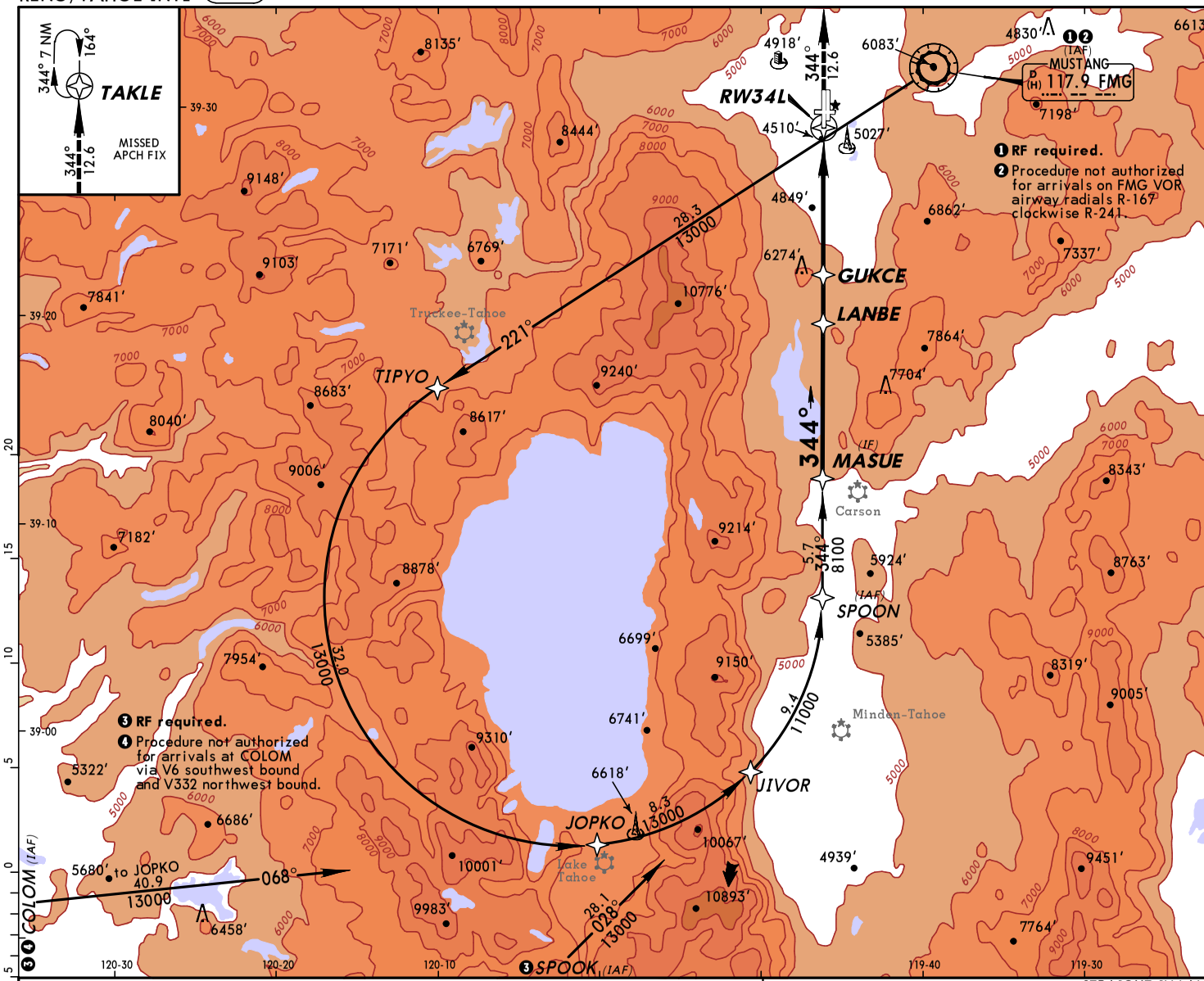
D-ATIS	NORCAL Approach (R) North	South
135.8	126.3	119.2
RENO Tower	Ground	
118.7	121.9	
RNAV	Final Apch Crs 344°	

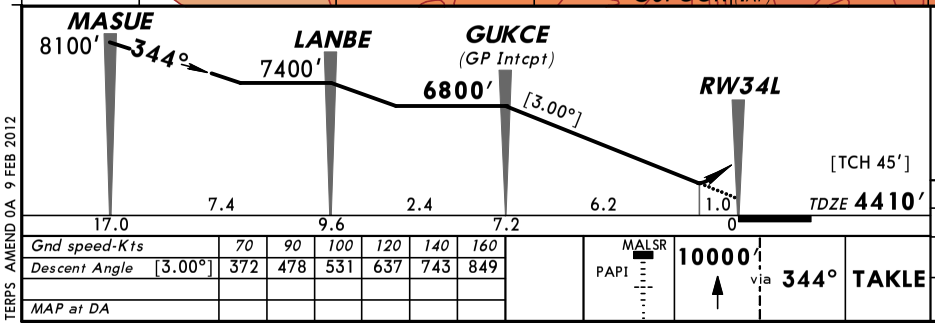
Minimum Alt	RNP 0.12 DA(H)	Apt Elev 4415′
GUKCE 6800′ (2390′)	4771′ (361′)	TDZE 4410′

MISSED APCH: Climb to 10000′ via 344° track to TAKLE and hold, continue climb in hold to 10000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. AUTHORIZATION REQUIRED. 2. GPS required.
3. For uncompensated Baro-VNAV systems, procedure not authorized below -13°C (8°F) or above 40°C (104°F). 4. VGSI and RNAV glidepath not coincident.





Gnd speed-Kts	70	90	100	120	140	160
Descent Angle [3.00°]	372	478	531	637	743	849
MAP at DA						

MALSR PAPI 10000′ via 344° TAKLE

STRAIGHT-IN LANDING RWY 34L

	RNP 0.12 Missed Approach Requires Minimum Climb of 243′/NM to 7200′ DA(H) 4771′(361′)		RNP 0.30 DA(H) 5342′(932′)	
		RAIL or ALS out		RAIL or ALS out
A				
B				
C	1	1¼	2¾	4
D				

TERPS AMEND OA 9 FEB 2012

CHANGES: Notes.

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3 FEB 12

RENO, NEV
RNAV (RNP) Z Rwy 34R

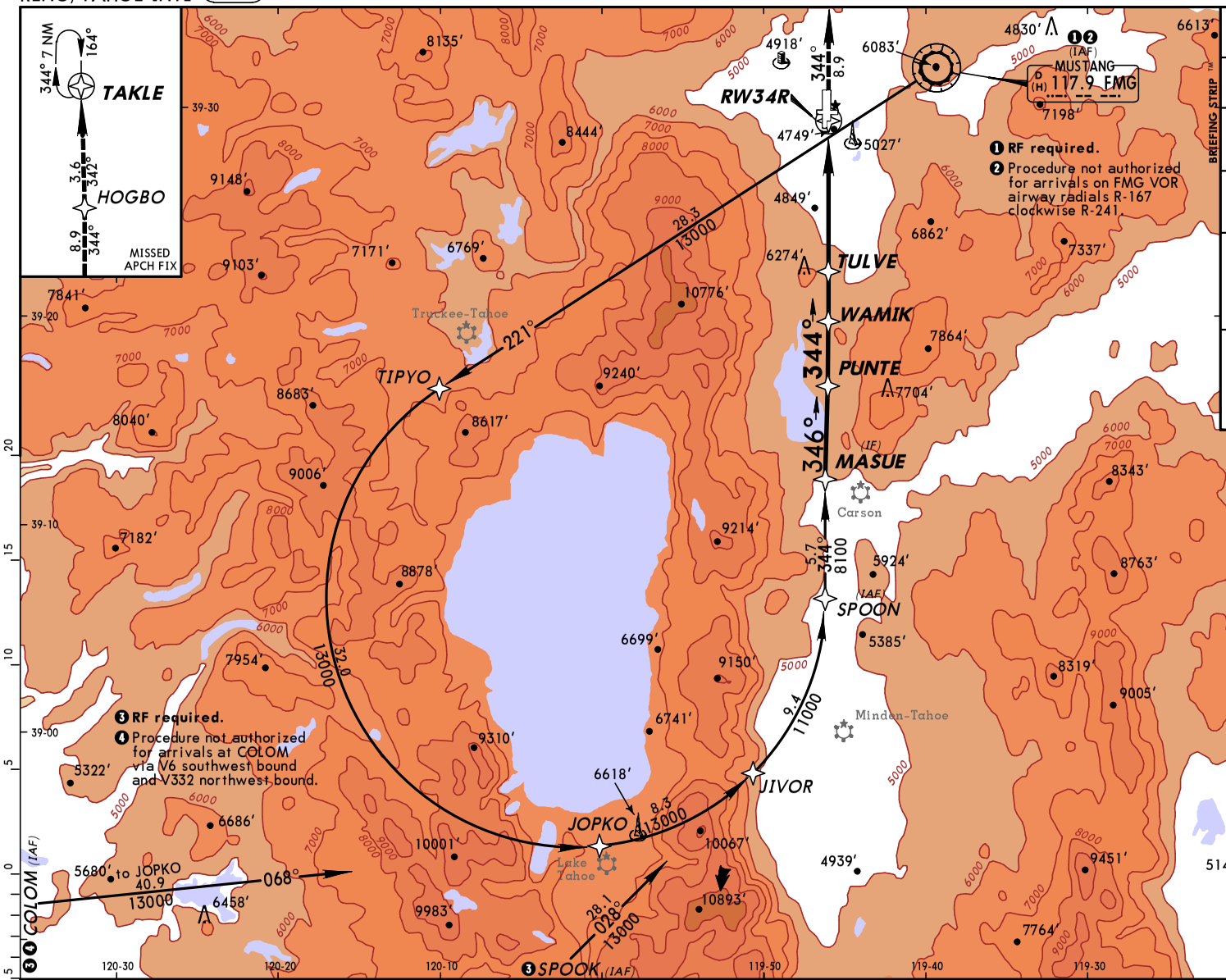
D-ATIS	NORCAL Approach (R) North	South
135.8	126.3	119.2
RENO Tower	Ground	
118.7	121.9	
RNAV	Final Apch Crs 344°	

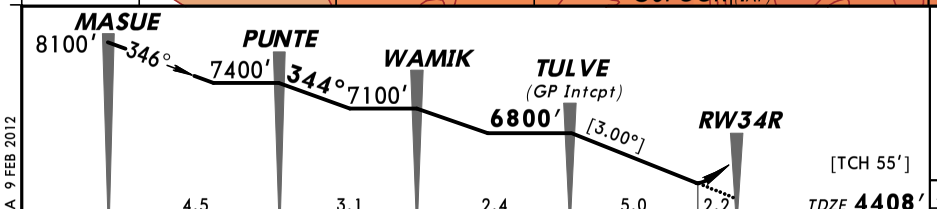
Minimum Alt	RNP 0.15 DA(H)	Apt Elev 4415′
TULVE 6800′ (2392′)	5173′ (765′)	TDZE 4408′

MISSED APCH: Climb to 10000′ via 344° track to HOGBO and 342° track to TAKLE and hold, continue climb in hold to 10000′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. AUTHORIZATION REQUIRED. 2. GPS required.
3. For uncompensated Baro-VNAV systems, procedure not authorized below -13°C (8°F) or above 40°C (105°F). 4. VGSI and RNAV glidepath not coincident.





Gnd speed-Kts	70	90	100	120	140	160
Descent Angle [3.00°]	372	478	531	637	743	849
MAP at DA						

REIL PAPI-L | 10000′ via 344° | HOGBO

STRAIGHT-IN LANDING RWY 34R

	RNP 0.15	RNP 0.30
	DA(H) 5173′ (765′)	DA(H) 5344′ (936′)
A		
B		
C	2¾	4
D		

TERPS AMEND 0A 9 FEB 2012

CHANGES: Notes.

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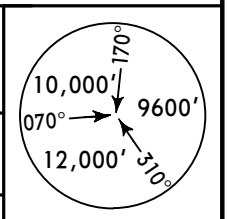
D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

VOR FMG	Final Apch Crs	Minimum Alt VOR	MDA(H)	Apt Elev
117.9	239°	7800′ (3385′)	Refer to Minimums	4415′

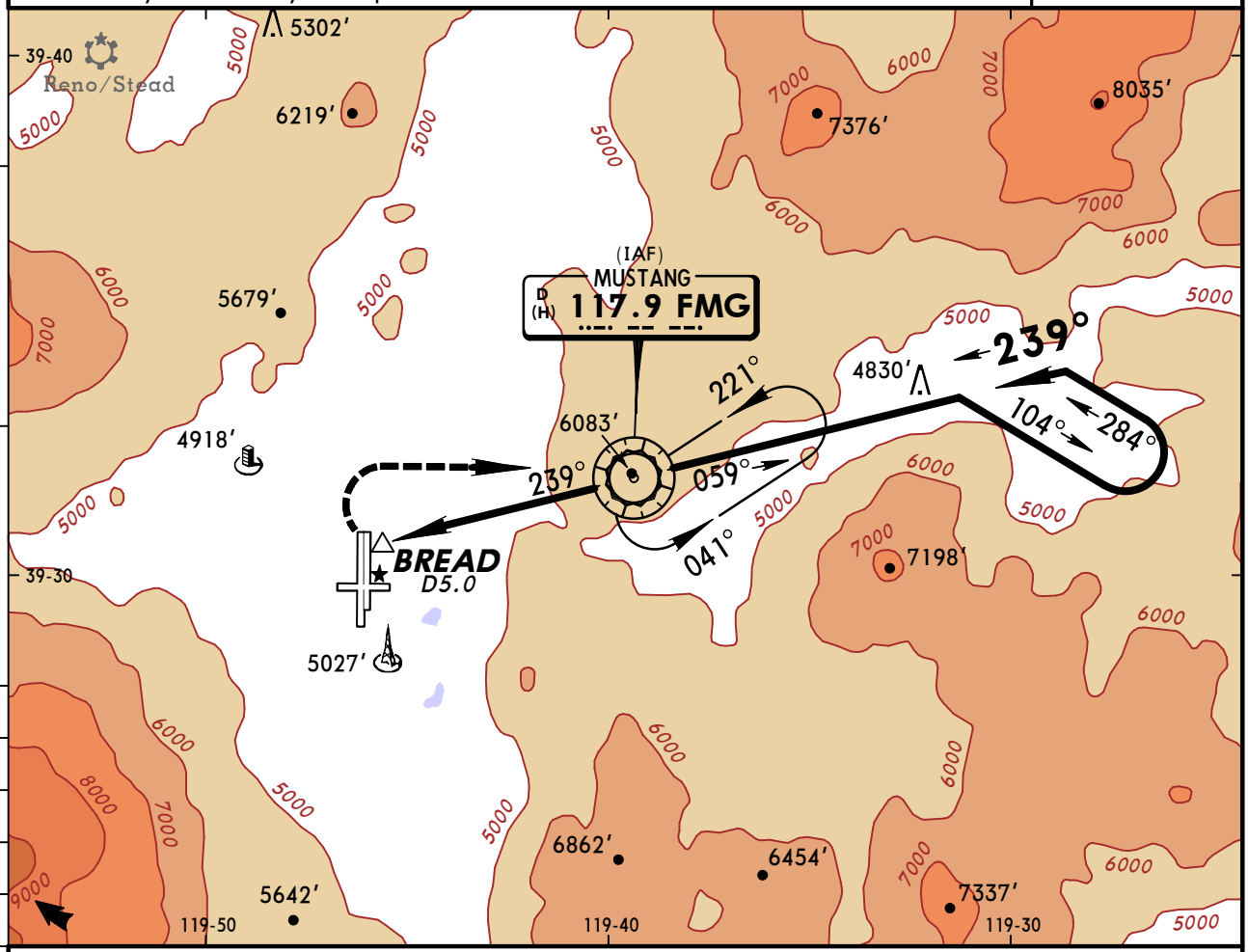
MISSED APCH: Climbing RIGHT turn to 10,000′ direct FMG VOR and hold. Continue climb-in-hold to 10,000′.

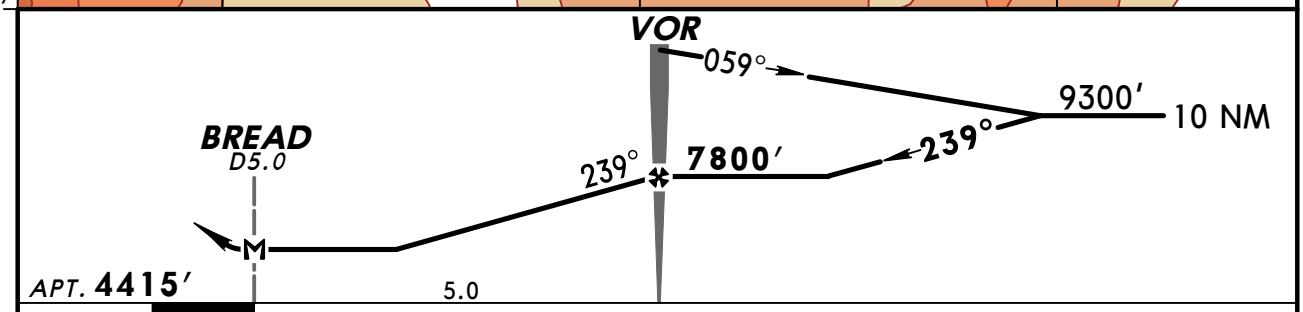
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. Visibility reduction by helicopters not authorized.



MSA FMG VOR





Gnd speed-Kts	70	90	100	120	140	160
MAP at BREAD or VOR to MAP 5.0	4:17	3:20	3:00	2:30	2:09	1:53

Lighting - Refer to Airport Chart | 10000′ RT | D | FMG 117.9

CIRCLE-TO-LAND

	Max Kts	MDA(H)
A	90	6000′ (1585′) - 1¼
B	120	6000′ (1585′) - 1½
C	140	6000′ (1585′) - 3
D	165	

BRIEFING STRIP™

TERPS AMEND 7 13 JAN 2011

CHANGES: Approach call sign, obstacles.

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SPARKS VISUAL Rwy 16R/16L

D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

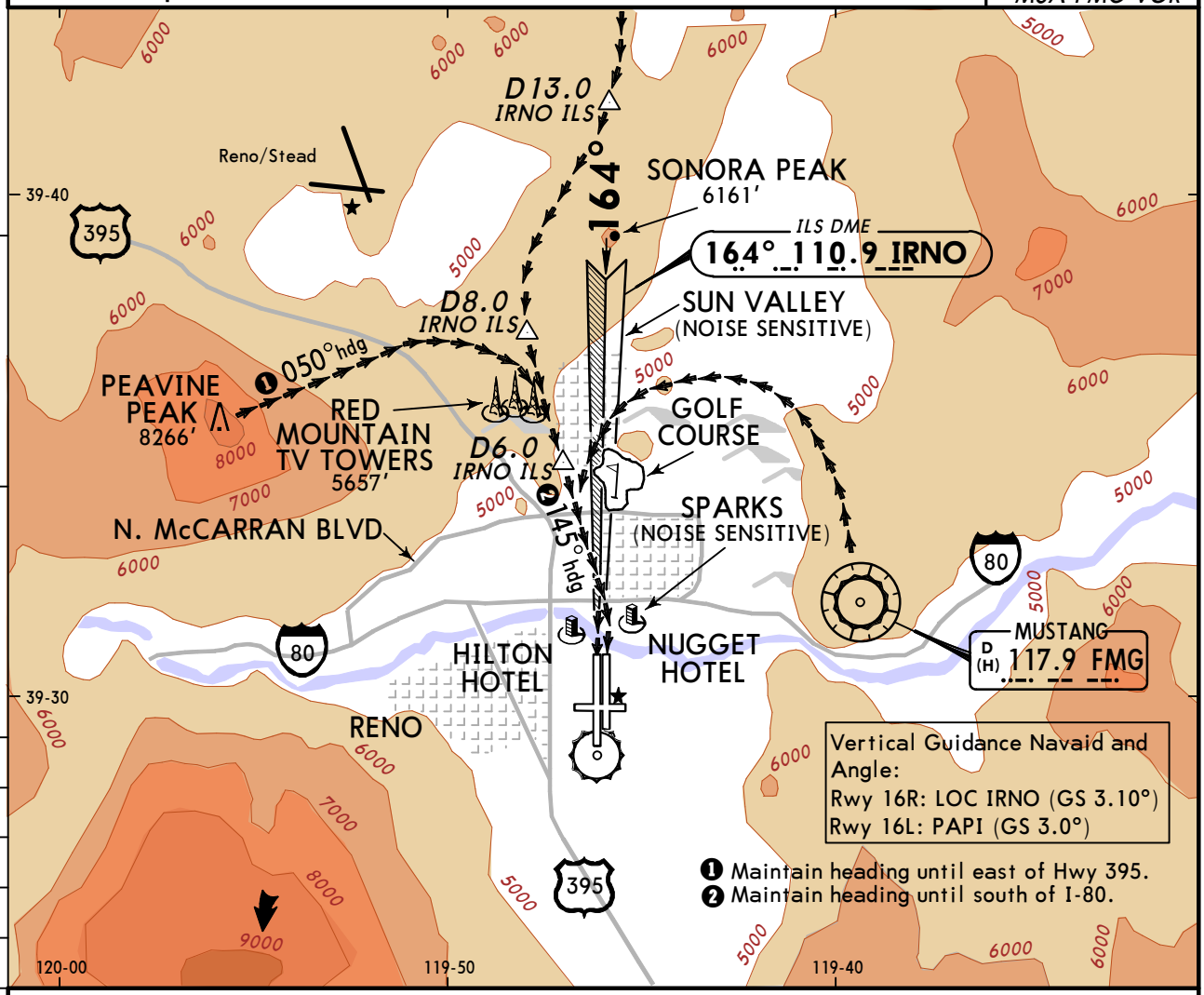
NAVAIDS- See Planview	Final Apch Crs 164°	No FAF	CEIL-VIS 5000′-5	Apt Elev 4415′

MISSED APCH: No missed approach procedure.

Alt Set: INCHES — Trans level: FL 180 — Trans alt: 18000′

1. RADAR required.

MSA FMG VOR: 10000′ 170°, 9600′ 070°, 12000′ 310°



SPARKS VISUAL APPROACH RWY 16R/16L

When visual approaches to Runways 16L/R are in progress clearances to aircraft will be given utilizing the following phraseology:

"(IDENT) CLEARED FOR SPARKS VISUAL RUNWAY 16 LEFT/RIGHT APPROACH."

PROCEDURE NOT AUTHORIZED AT NIGHT

WEATHER MINIMUMS

Ceiling **5000′** – VIS 5

AMEND 6

CHANGES: Approach call sign.

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SOUTH HILLS VISUAL Rwy 34L/34R

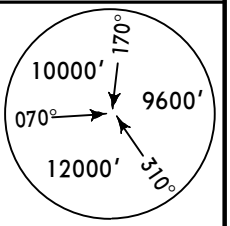
D-ATIS	NORCAL Approach (R) North	NORCAL Approach (R) South	RENO Tower	Ground
135.8	126.3	119.2	118.7	121.9

NAVAIDS- See Planview	Final Apch Crs 344°	No FAF	CEIL-VIS 5000′-5	Apt Elev 4415′

MISSED APCH: No missed approach procedure.

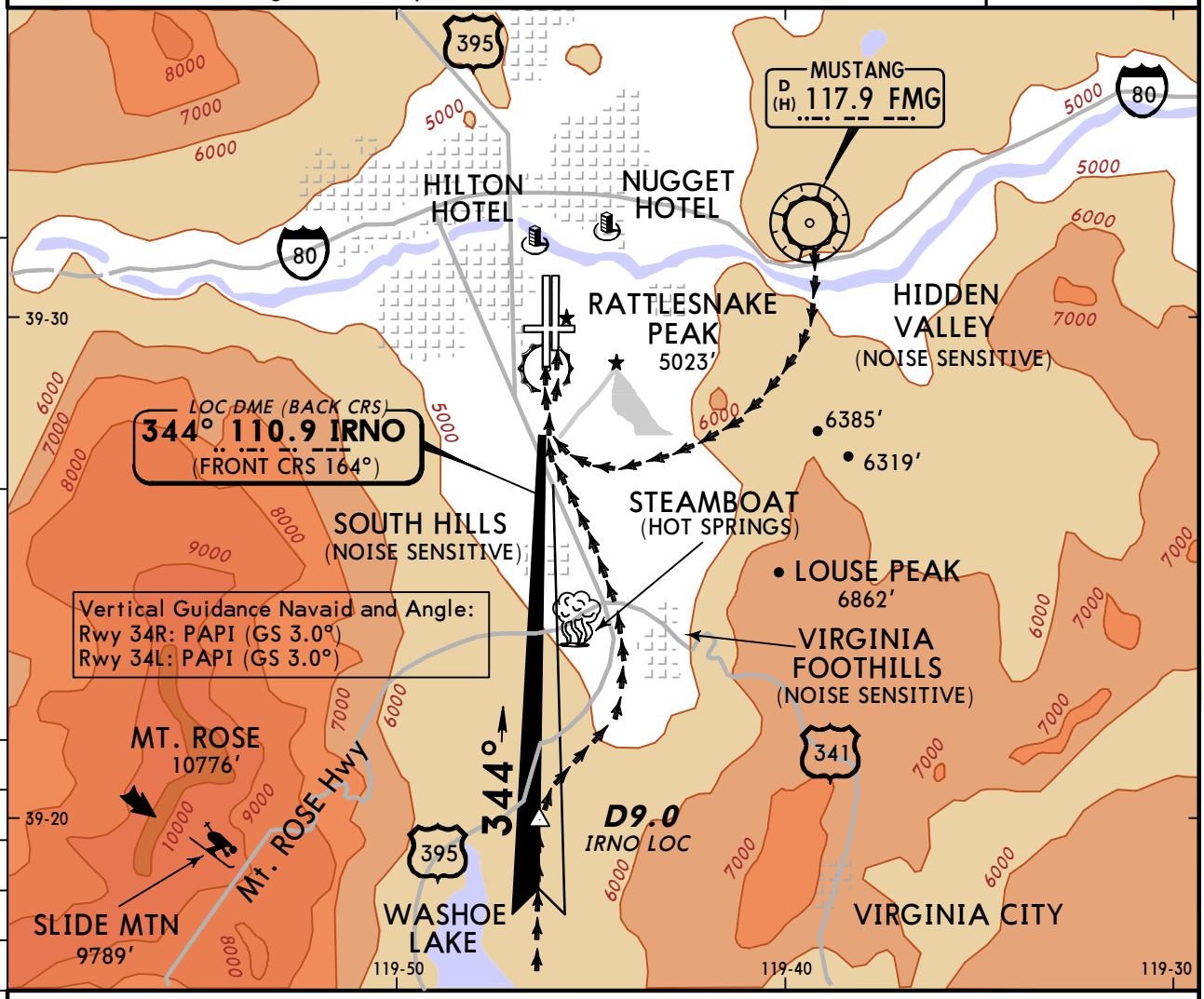
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. RADAR required. 2. Rwys 34L/R PAPI not usable beyond 6 NM due to terrain.
3. CAUTION: Intensive glider activity.



MSA FMG VOR

BRIEFING STRIP ™



SOUTH HILLS VISUAL APPROACH RWY 34L/34R

When visual approaches to Runways 34L/R are in progress, clearances to aircraft will be given utilizing the following phraseology:

"(IDENT) CLEARED FOR SOUTH HILLS VISUAL RUNWAY 34 LEFT/RIGHT APPROACH."

PROCEDURE NOT AUTHORIZED AT NIGHT

WEATHER MINIMUMS

Ceiling **5000′**– VIS 5

AMEND 4

CHANGES: Approach call sign.

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General Information

Location: Reno NV USA
IATA Code:
Lat/Long: N39° 40.1' W119° 52.6'
Elevation: 5050 ft

Airport Use: Public
Magnetic Variation: 14.1°E
Sectional Chart: San Francisco

Fuel Types: 100 Octane (LL), Jet A
Oxygen Types: High Pressure, HP Bottle
Repair Types: Major Airframe, Major Engine
Customs: No
Airport Type: IFR
Landing Fee: No
Control Tower: No
Jet Start Unit: Yes
LLWS Alert: No
Beacon: Yes

Sunrise: 1436 Z
Sunset: 0149 Z,

Runway Information

Runway: 08
Length x Width: 7608 ft x 150 ft
Surface Type: asphalt
TDZ-Elev: 5014 ft
Lighting: Edge, REIL, Pilot controlled

Runway: 14
Length x Width: 9000 ft x 150 ft
Surface Type: asphalt
TDZ-Elev: 5044 ft
Lighting: Edge, REIL, Pilot controlled

Runway: 26
Length x Width: 7608 ft x 150 ft
Surface Type: asphalt
TDZ-Elev: 5050 ft
Lighting: Edge, REIL, Pilot controlled

Runway: 32
Length x Width: 9000 ft x 150 ft
Surface Type: asphalt
TDZ-Elev: 5045 ft
Lighting: Edge, ALS, REIL, Pilot controlled
Displaced Threshold: 1200 ft

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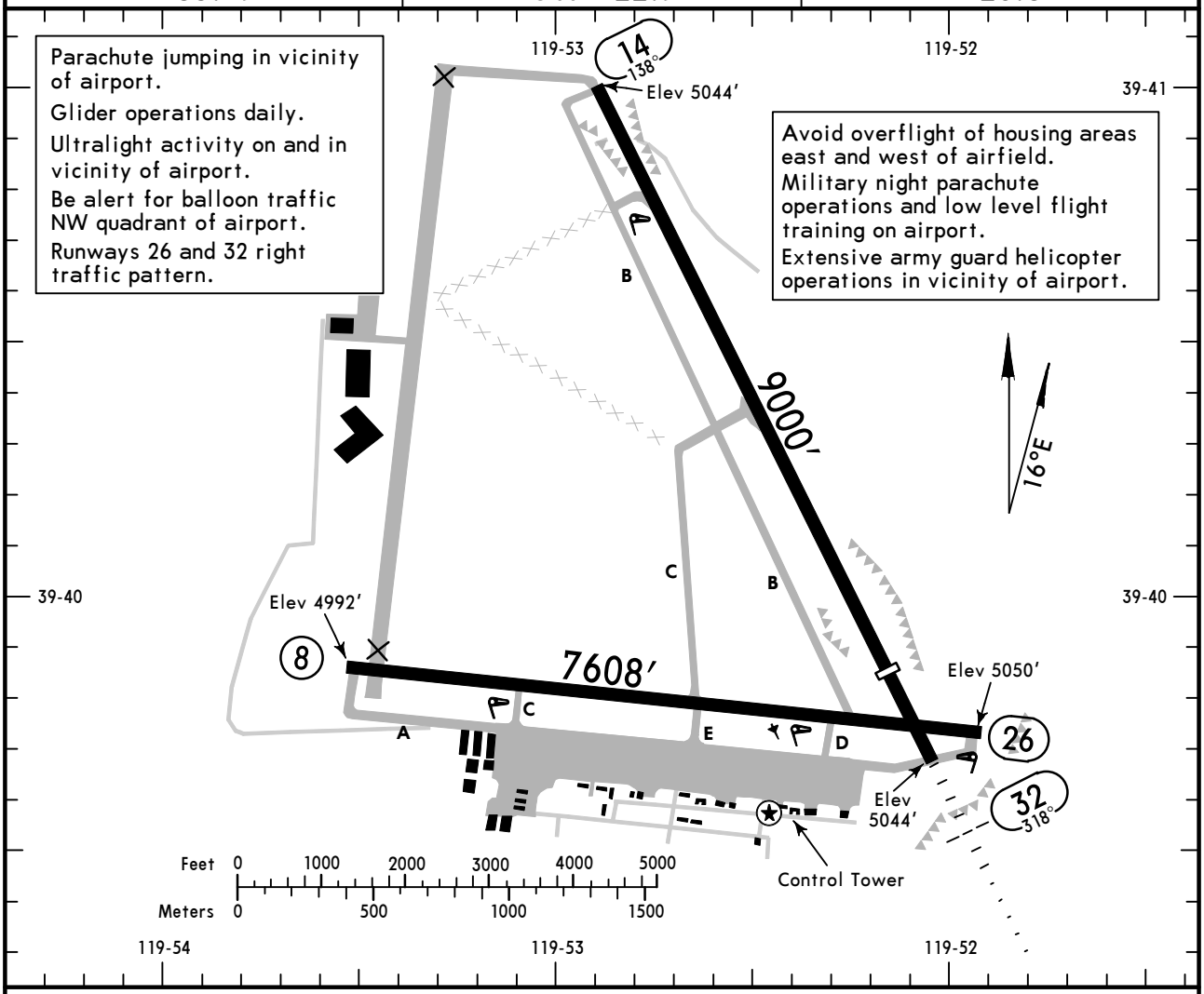
Communication Information

AWOS 135.175
Reno-Stead Unicom 122.7 CTAF PCL
Norcal Approach Control 126.3
Norcal Departure Control 126.3
Rocky Operations 122.8 Military
Rocky Operations 118.05 Military

AWOS-3	RENO/STEAD UNICOM	RENO Departure (R)
135.17	CTAF 122.7	126.3



ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS — LANDING BEYOND — Threshold	Glide Slope	TAKE-OFF	WIDTH
8 26	❶ HIRL REIL PAPI-L (angle 3.0°) grooved				150′
14	❶ HIRL REIL PAPI-L (angle 3.0°) grooved				150′
32	❶ HIRL MALSR REIL PAPI-L (angle 3.0°) grooved	7800′	7035′		

❶ Activate on 122.7.

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

	Rwys 8, 14				Rwy 26				Rwy 32			
	CAT A & B			CAT C & D	CAT A & B			CAT C & D	CAT A & B			CAT C & D
	With Mim climb of 400′/NM to 6500′		Other		With Mim climb of 410′/NM to 7200′		Other		With Mim climb of 420′/NM to 7200′		Other	
	Adequate Vis Ref	STD			Adequate Vis Ref	STD			Adequate Vis Ref	STD		
1 & 2 Eng	1/4	1	1300-2	NA	1/4	1	1900-2	NA	1/4	1	2300-2	NA
3 & 4 Eng		1/2				1/2				1/2		

OBSTACLE DP: Rwys 8 and 32 climbing right turn heading 100° and FMG VOR R-314 to FMG VOR. Rwy 26, climbing right turn heading 050° and FMG VOR R-314 to FMG VOR. Rwy 14, turn left climb direct FMG VOR. All aircraft climb in FMG VOR holding pattern (hold northeast, right turns, 221° inbound) to depart FMG VOR: R-260 clockwise R-170 at or above 10000′; R-171 clockwise R-195 at or above 10500′; R-196 clockwise R-259 at or above 12000′.

FOR FILING AS ALTERNATE

A	NA
B	
C	
D	

AMEND 3A

CHANGES: Rwy 32 lighting.

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AWOS-3	RENO Approach (R)	RENO/STEAD UNICOM
135.17	126.3	CTAF 122.7

BRIEFING STRIP ™

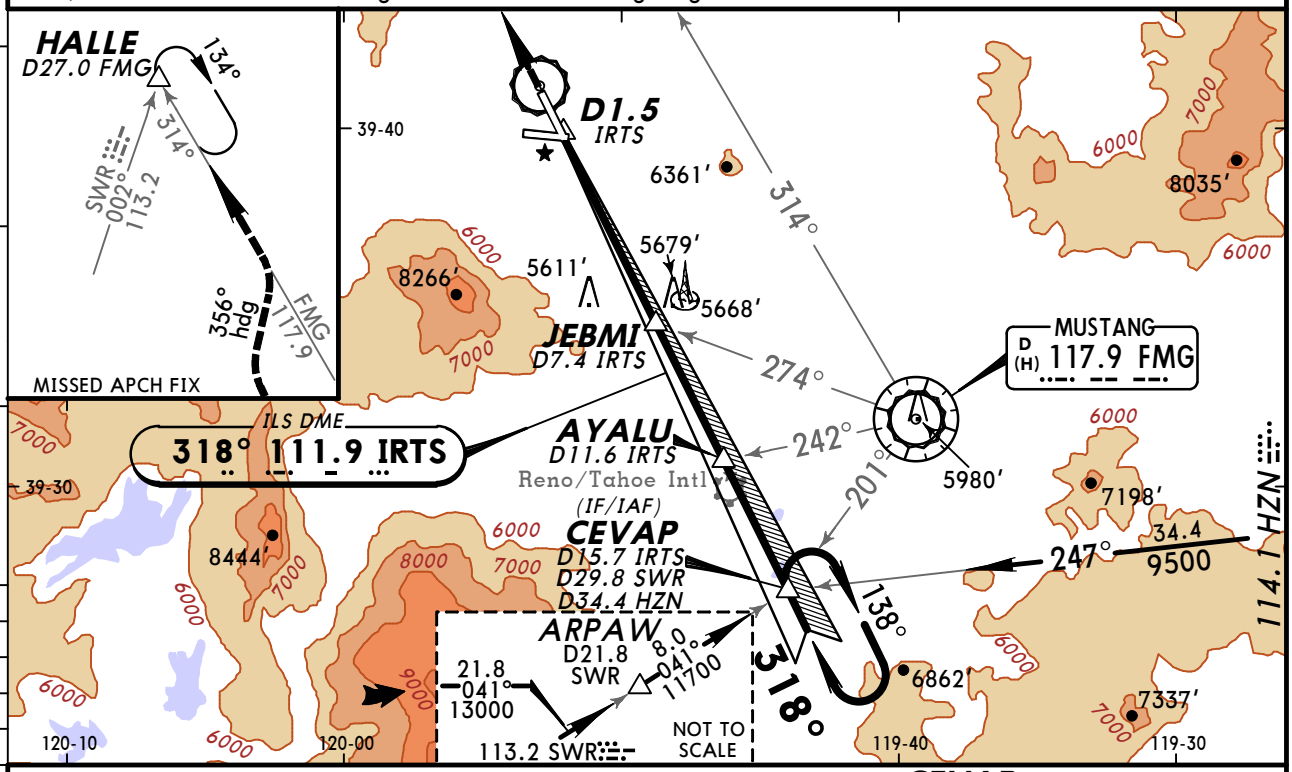
LOC IRTS	Final Apch Crs	GS JEBMI	ILS DA(H) (CONDITIONAL)	Apt Elev 5050′
111.9	318°	7000′(1955′)	6425′(1380′)	TDZE 5045′

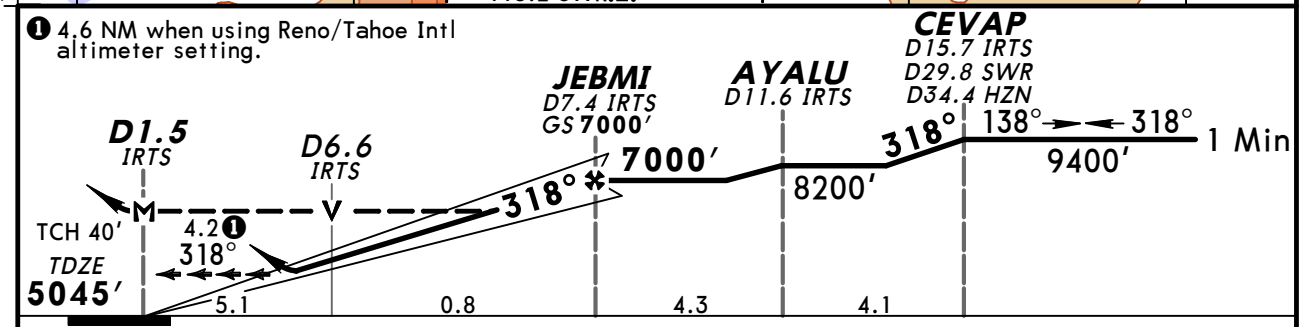
MISSED APCH: Climb to 6740′ then climbing RIGHT turn to 14,000′ via 356° heading and outbound via FMG VOR R-314 to HALLE INT/D27.0 FMG and hold, continue climb-in-hold to 14,000′.

12,000′
MSA FMG VOR

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. Use local altimeter setting; if not received, use Reno/Tahoe Intl altimeter setting. 2. ILS: Fly visual to airport 318°/4.2 NM and 4.6 NM when using Reno/Tahoe Intl altimeter setting. 3. Procedure not authorized at night. 4. Use IRTS DME when on the localizer course. 5. VDP not authorized when using Reno/Tahoe Intl altimeter setting. 6. Pilot controlled lighting 122.7.





Gnd speed-Kts		70	90	100	120	140	160
GS	3.00°	377	484	538	646	753	861
MAP at D1.5 IRTS							

MALSR
REIL
PAPI

6740′

14000′ RT via 356° hdg and FMG 117.9 R-314

STRAIGHT-IN LANDING RWY 32
With Local Altimeter Setting

	ILS DA(H) 6425′(1380′) FULL	ILS DA(H) 6425′(1380′) RAIL or ALS out	LOC (GS out) MDA(H) 6720′(1675′) RAIL out	LOC (GS out) MDA(H) 6720′(1675′) ALS out	NIGHT
A	3		1¼		NA
B			1½		
C			3		
D					

CIRCLE-TO-LAND
With Local Altimeter Setting

Max Kts	DAY MDA(H)	NIGHT
90	6720′(1670′)-1¼	NA
120	6720′(1670′)-1½	
140	6720′(1670′)-3	
165		

With Reno/Tahoe Intl Altimeter Setting

	ILS DA(H) 6545′(1500′) FULL	ILS DA(H) 6545′(1500′) RAIL or ALS out	LOC (GS out) MDA(H) 6840′(1795′) RAIL out	LOC (GS out) MDA(H) 6840′(1795′) ALS out	NIGHT
A	3		1¼		NA
B			1½		
C			3		
D					

With Reno/Tahoe Intl Altimeter Setting

Max Kts	DAY MDA(H)	NIGHT
90	6840′(1790′)-1¼	NA
120	6840′(1790′)-1½	
140	6840′(1790′)-3	
165		

AMEND TERPS

CHANGES: Lighting, minimums.

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AWOS-3	RENO Approach (R)	RENO/STEAD UNICOM
135.17	126.3	CTAF 122.7

WAAS	Final Apch Crs	Minimum Alt	LPV DA(H) (CONDITIONAL)	Apt Elev 5050′
Ch 60920 W-32A	318°	JEBMI 7000′(1955′)	6533′(1488′)	TDZE 5045′

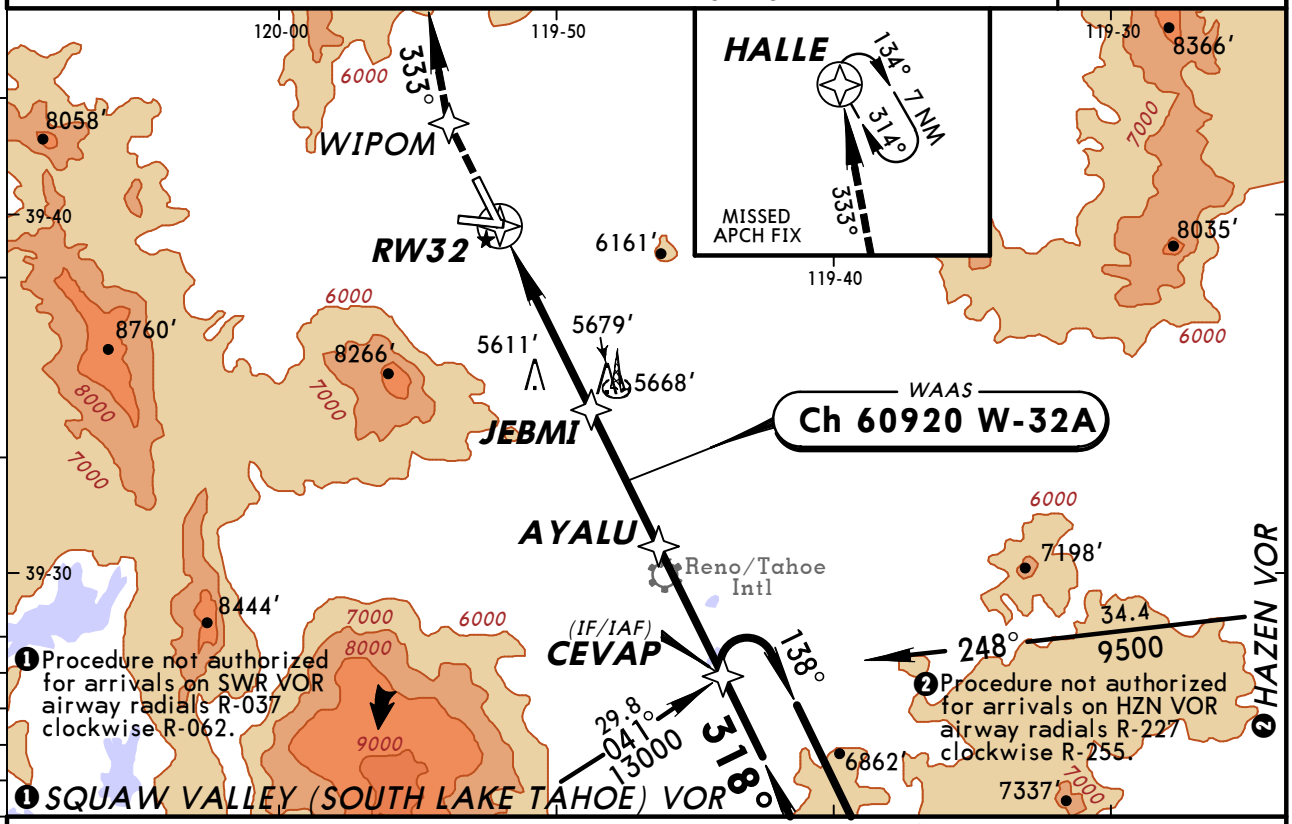
MISSED APCH: Climb to 14,000′ direct WIPOM and on track 333° to HALLE and hold. Continue climb-in-hold to 14,000′.

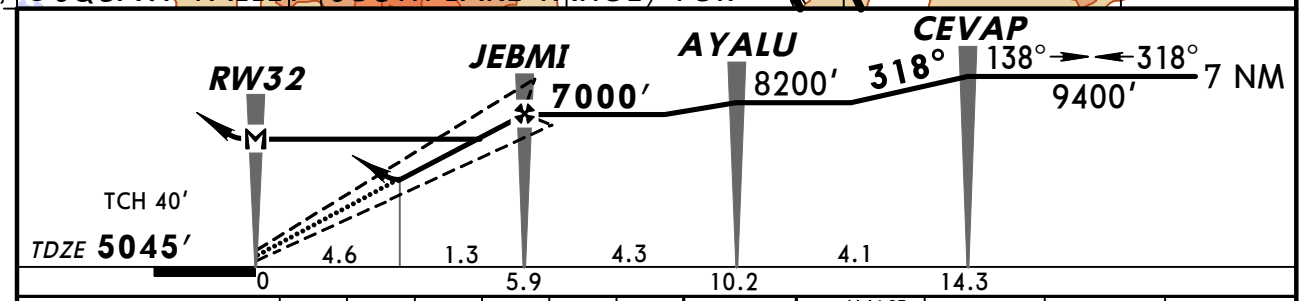
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. Use local altimeter setting; if not received, use Reno/Tahoe Intl altimeter setting.
2. DME/DME RNP-0.30 not authorized. 3. Pilot controlled lighting 122.7.

BRIEFING STRIP ™

12,000′
MSA RW32





Gnd speed-Kts	70	90	100	120	140	160
Glide Path Angle 3.00°	372	478	531	637	743	849
MAP at RW32						

MALSR
REIL
PAPI
14000′
D
WIPOM

STRAIGHT-IN LANDING RWY 32
With Local Altimeter Setting

	LPV DA(H) 6533′(1488′) RAIL or ALS out	LNAV MDA(H) 6840′(1795′) RAIL out	LNAV MDA(H) 6840′(1795′) ALS out
A	6	1¼	
B		1½	
C		3	
D			

CIRCLE-TO-LAND
Not Authorized at Night to Rwy 8 when VGSI inop
With Local Altimeter Setting

Max Kts	MDA(H)
90	6840′(1790′)-1¼
120	6840′(1790′)-1½
140 / 165	6840′(1790′)-3

With Reno/Tahoe Intl Altimeter Setting

	LPV DA(H) 6648′(1603′) RAIL or ALS out	LNAV MDA(H) 6960′(1915′) RAIL out	LNAV MDA(H) 6960′(1915′) ALS out
A	6	1¼	
B		1½	
C		3	
D			

With Reno/Tahoe Intl Altimeter Setting

Max Kts	MDA(H)
90	6960′(1910′)-1¼
120	6960′(1910′)-1½
140 / 165	6960′(1910′)-3

TERPS AMEND 1 29 JUL 2010

CHANGES: Missed approach, FAF, minimums.

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General Information

Location: Tonopah NV USA
IATA Code: XSD
Lat/Long: N37° 47.9' W116° 46.8'
Elevation: 5550 ft

Airport Use: Military
Magnetic Variation: 13.0°E
Sectional Chart: Las Vegas

Customs: No
Airport Type: IFR
Landing Fee: No
Control Tower: No
Jet Start Unit: No
LLWS Alert: No
Beacon: No

Sunrise: 1422 Z
Sunset: 0138 Z,

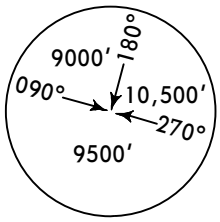
Runway Information

Runway: 14
Length x Width: 12001 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 5473 ft
Lighting: Edge, Part time
Stopway: 1000 ft

Runway: 32
Length x Width: 12001 ft x 150 ft
Surface Type: concrete
TDZ-Elev: 5550 ft
Lighting: Edge, Part time
Stopway: 1000 ft

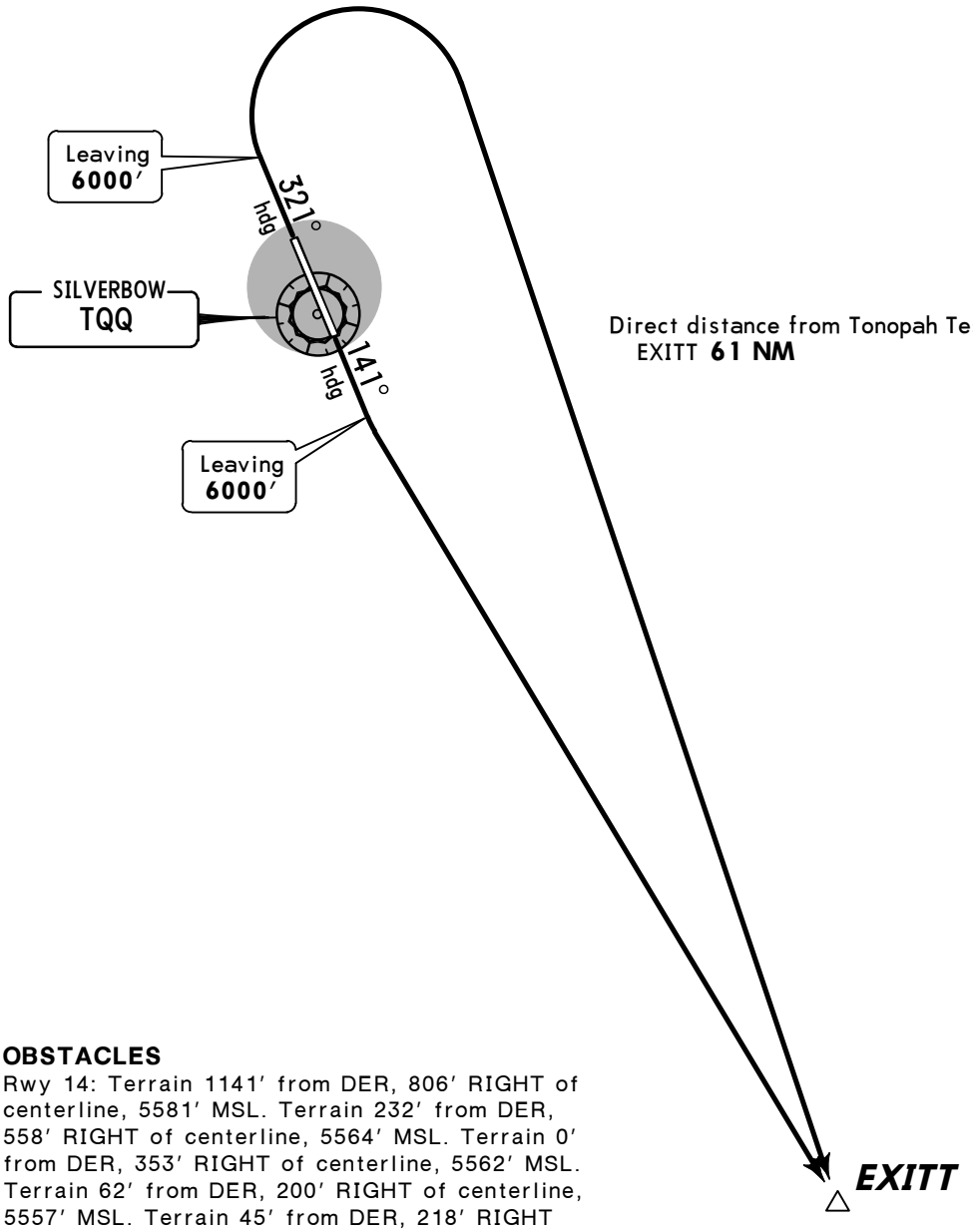
Communication Information

Apt Elev 5550′	Trans level: FL180 Trans alt: 18000′ 1. EMERG SAFE ALT 100 NM 16600′. **2. For use by /E, /F, /G and /R (RNP 2.0) equipped aircraft only.** **3. GPS required.**



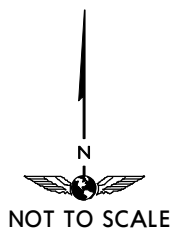
MSA TQQ VOR

EXITT ONE RNAV DEPARTURE (EXITT1.EXITT)



Direct distance from Tonopah Test Range Apt to:
EXITT **61 NM**

OBSTACLES
Rwy 14: Terrain 1141′ from DER, 806′ RIGHT of centerline, 5581′ MSL. Terrain 232′ from DER, 558′ RIGHT of centerline, 5564′ MSL. Terrain 0′ from DER, 353′ RIGHT of centerline, 5562′ MSL. Terrain 62′ from DER, 200′ RIGHT of centerline, 5557′ MSL. Terrain 45′ from DER, 218′ RIGHT of centerline, 5558′ MSL. Terrain 0′ from DER, 287′ RIGHT of centerline, 5560′ MSL. Terrain 0′ from DER, 222′ RIGHT of centerline, 5558′ MSL. Surveyed terrain 215′ from DER, 427′ RIGHT of centerline, 0′ AGL/5560′ MSL.
Rwy 32: Terrain 0′ from DER, 500′ LEFT of centerline, 5476′ MSL.



Minimum Climb Rate to **9100′.**

Rwy	Gnd speed-KT	75	100	150	200	250	300
32	V/V (fpm)	313	417	625	833	1042	1250

RWY	INITIAL CLIMB
14	Climb heading 141°. When leaving **6000′** turn LEFT direct EXITT.
32	Climb heading 321°. When leaving **6000′** turn RIGHT direct EXITT.

CHANGES: New airport.

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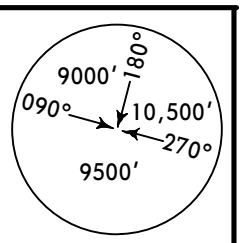
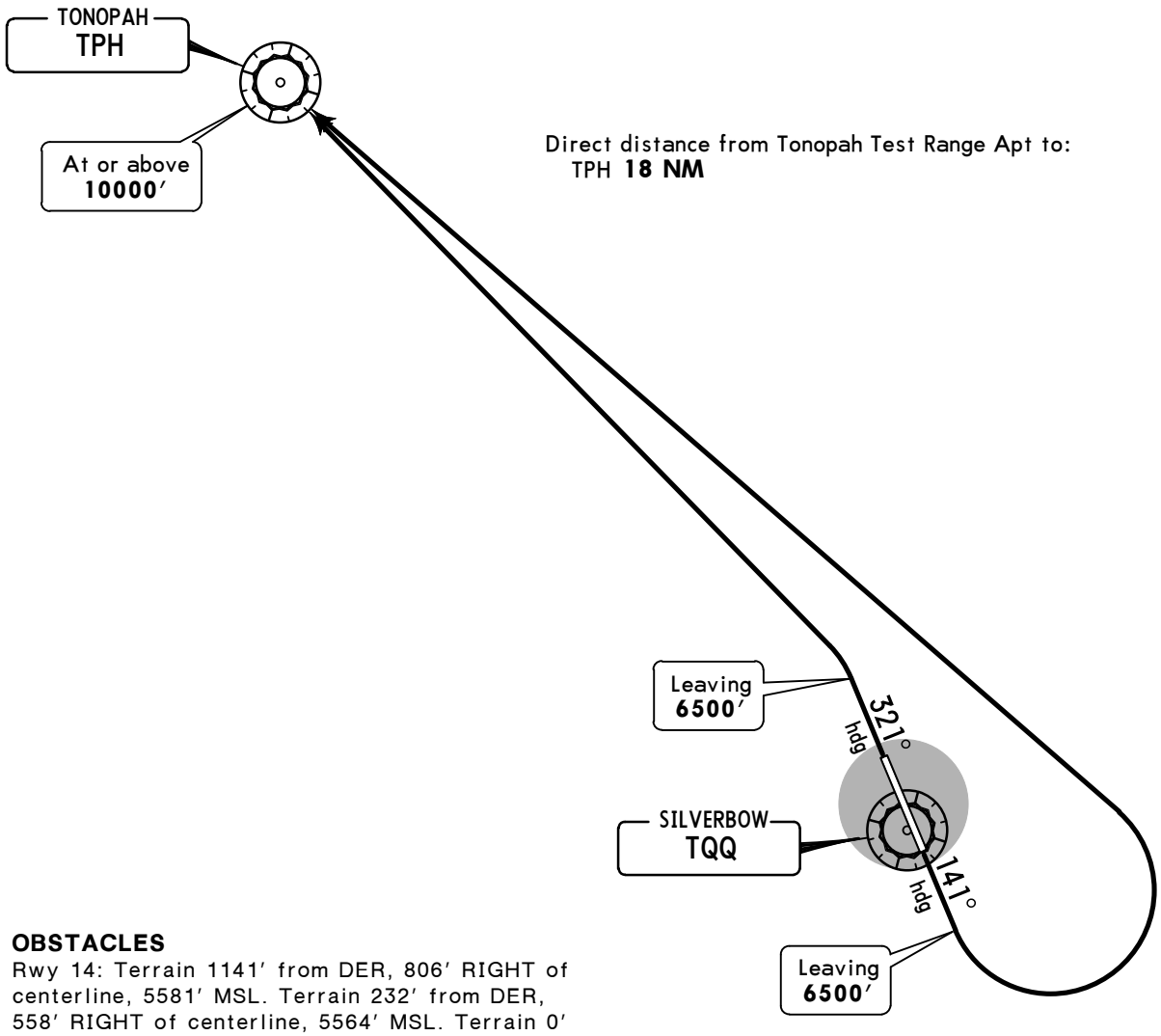
Apt Elev 5550′	Trans level: FL180 Trans alt: 18000′ 1. EMERG SAFE ALT 100 NM 16600′. **2. For use by /E, /F, /G and /R (RNP 2.0) equipped aircraft only.** **3. GPS required.**

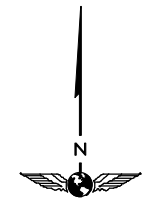


MSA TQQ VOR

RANGE ONE RNAV DEPARTURE (RANGE1.TPH)



OBSTACLES
Rwy 14: Terrain 1141′ from DER, 806′ RIGHT of centerline, 5581′ MSL. Terrain 232′ from DER, 558′ RIGHT of centerline, 5564′ MSL. Terrain 0′ from DER, 353′ RIGHT of centerline, 5562′ MSL. Terrain 62′ from DER, 200′ RIGHT of centerline, 5557′ MSL. Terrain 45′ from DER, 218′ RIGHT of centerline, 5558′ MSL. Terrain 0′ from DER, 287′ RIGHT of centerline, 5560′ MSL. Terrain 0′ from DER, 222′ RIGHT of centerline, 5558′ MSL. Surveyed terrain 215′ from DER, 427′ RIGHT of centerline, 0′ AGL/5560′ MSL.
Rwy 32: Terrain 0′ from DER, 500′ LEFT of centerline, 5476′ MSL.



NOT TO SCALE

ATC Climb Rate to **10000′.**

Rwy	Gnd speed-KT	75	100	150	200	250	300
32	V/V (fpm)	329	438	658	877	1096	1315

RWY	INITIAL CLIMB
14	Climb heading 141°. When leaving **6500′** turn LEFT direct TPH.
32	Climb heading 321°. When leaving **6500′** turn LEFT direct TPH.

CHANGES: New airport.

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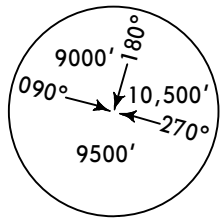
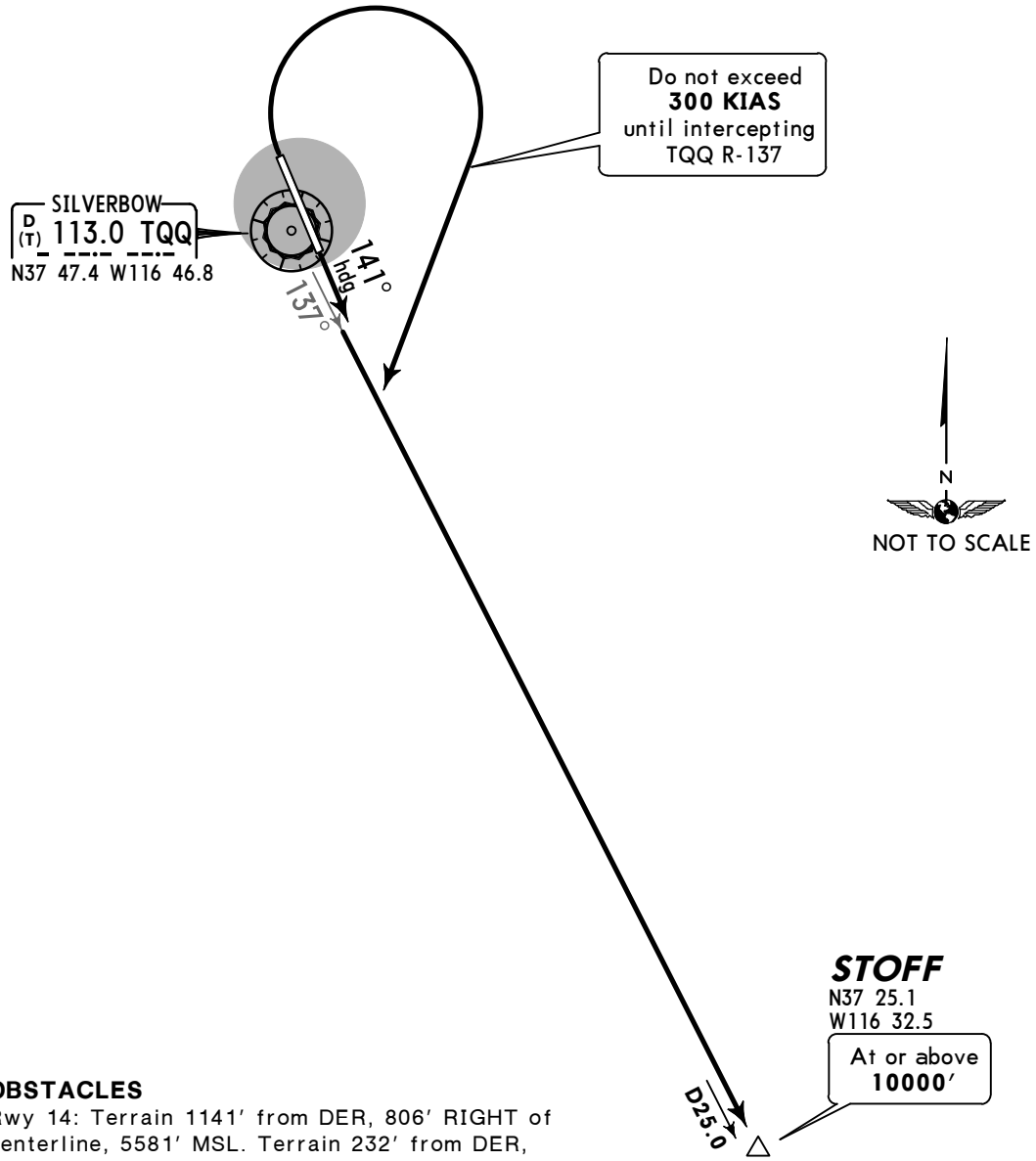
Apt Elev 5550′	Trans level: FL180 Trans alt: 18000′ 1. EMERG SAFE ALT 100 NM 16600′. 2. Rwy 32: Procedure not authorized for CAT E aircraft.



MSA TQQ VOR

STOFF ONE DEPARTURE (STOFF1.STOFF)

SPEED: *RWY 32: DO NOT EXCEED 300 KIAS UNTIL INTERCEPTING TQQ R-137*



OBSTACLES
Rwy 14: Terrain 1141′ from DER, 806′ RIGHT of centerline, 5581′ MSL. Terrain 232′ from DER, 558′ RIGHT of centerline, 5564′ MSL. Terrain 0′ from DER, 500′ RIGHT of centerline, 5565′ MSL. Terrain 62′ from DER, 200′ RIGHT of centerline, 5557′ MSL. Terrain 45′ from DER, 218′ RIGHT of centerline, 5558′ MSL. Terrain 0′ from DER, 287′ RIGHT of centerline, 5560′ MSL. Terrain 0′ from DER, 222′ RIGHT of centerline, 5558′ MSL. Terrain 3′ from DER, 200′ LEFT of centerline, 50′ AGL/5600′ MSL. Surveyed terrain 215′ from DER, 427′ RIGHT of centerline, 0′ AGL/5560′ MSL. Rwy 32: Terrain 0′ from DER, 500′ LEFT of centerline, 5476′ MSL.

Minimum Climb Rate to **9100′.**

Rwy	Gnd speed-KT	75	100	150	200	250	300
32	V/V (fpm)	313	417	625	833	1042	1250

RWY	INITIAL CLIMB
14	Climb heading 141° to intercept TQQ R-137 to STOFF.
32	Climbing RIGHT turn to intercept TQQ R-137 to STOFF.

CHANGES: New airport.

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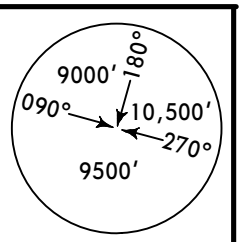
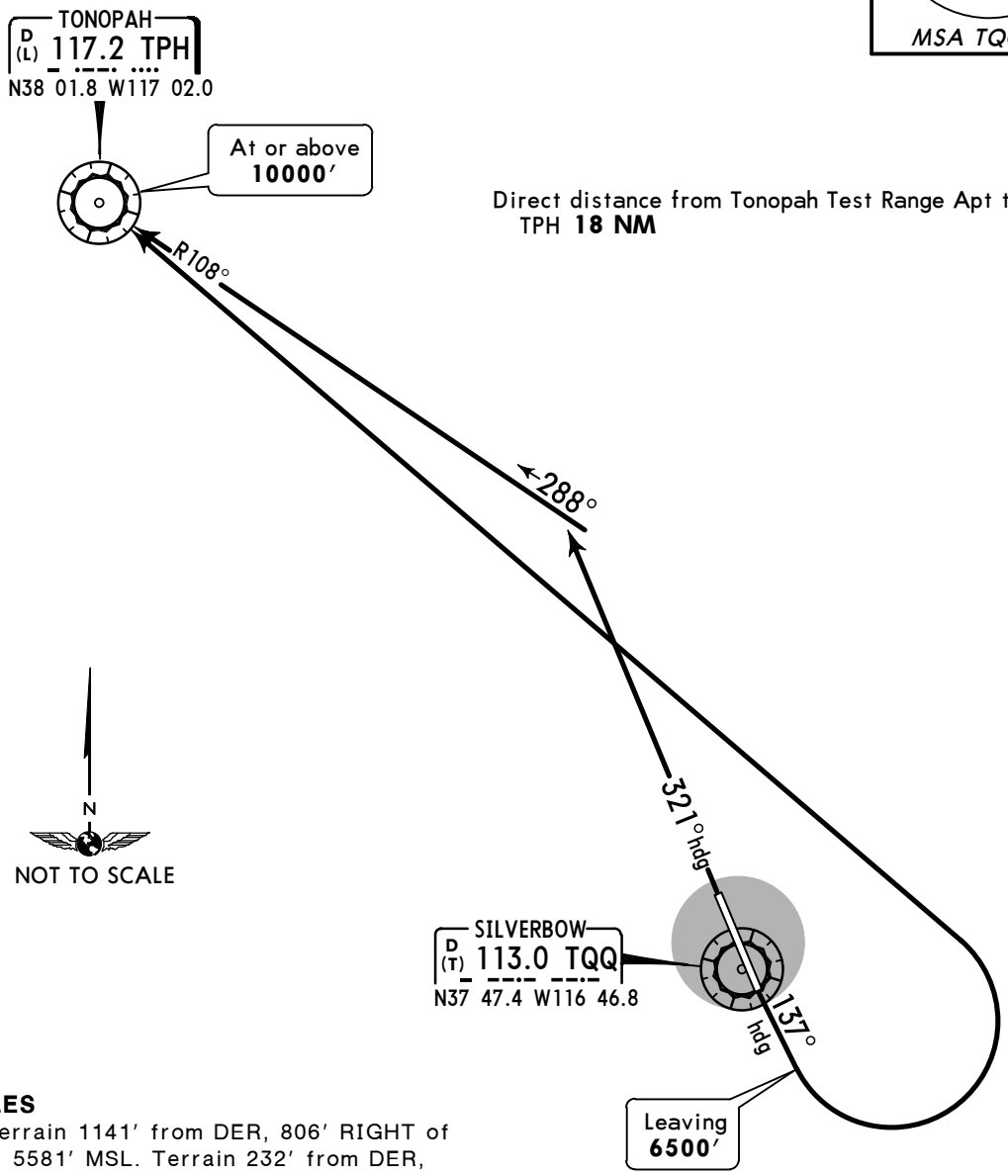
Apt Elev 5550′	Trans level: FL180 Trans alt: 18000′ EMERG SAFE ALT 100 NM 16600′.



MSA TQQ VOR

TONOPAH ONE DEPARTURE (TPH1.TPH)



Direct distance from Tonopah Test Range Apt to:
TPH **18 NM**

OBSTACLES
Rwy 14: Terrain 1141′ from DER, 806′ RIGHT of centerline, 5581′ MSL. Terrain 232′ from DER, 558′ RIGHT of centerline, 5564′ MSL. Terrain 0′ from DER, 500′ RIGHT of centerline, 5565′ MSL. Terrain 62′ from DER, 200′ RIGHT of centerline, 5557′ MSL. Terrain 45′ from DER, 218′ RIGHT of centerline, 5558′ MSL. Terrain 0′ from DER, 287′ RIGHT of centerline, 5560′ MSL. Surveyed terrain 215′ from DER, 427′ RIGHT of centerline, 0′ AGL/5560′ MSL.
Rwy 32: Terrain 0′ from DER, 500′ LEFT of centerline, 5476′ MSL.

Minimum Climb Rate

Rwy	Gnd speed-KT	75	100	150	200	250	300
14	V/V (fpm) to **7000′**	275	367	550	733	917	1100

ATC Climb Rate

Rwy	Gnd speed-KT	75	100	150	200	250	300
32	V/V (fpm) to **10000′**	328	437	655	873	1092	1310

RWY	INITIAL CLIMB
14	Climb heading 137°. When leaving **6500′** turn LEFT direct TPH.
32	Climb heading 321° to intercept TPH R-108 to TPH.

CHANGES: New airport.

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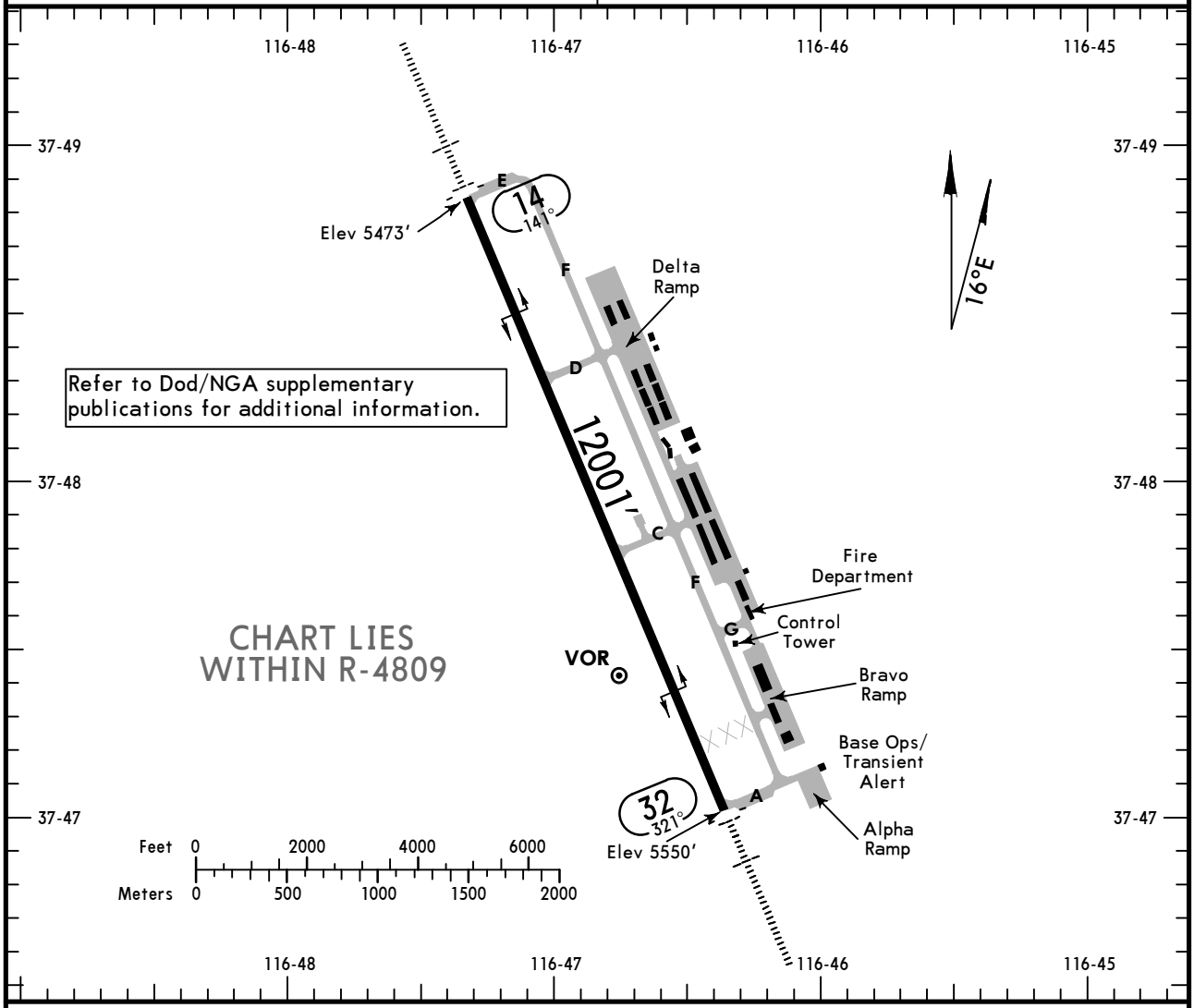
SILVERBOW Ground	Tower
127.25	124.75



ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS — LANDING BEYOND — Threshold	Glide Slope	TAKE-OFF	WIDTH
14 32	HIRL ALSF-I PAPI-L				150′

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

	Rwy 32		Rwy 14	
	Adequate Vis Ref	STD	With Mim climb of 300′/NM to 10700′ / Other	For Climb in Visual Conditions
1 & 2 Eng	1/4	1	1000-3	2700-3
3 & 4 Eng		1/2		

OBSTACLE DP: Rwy 14, climb on a heading between 325° clockwise to 155° from departure end of runway or Climb in Visual Conditions to cross the airport at or above 8100′ before proceeding on course. Rwy 32, climb on a heading between 295° clockwise to 005° from departure end of runway.
TAKE-OFF OBSTACLES: Rwy 14, terrain 1141′ from DER 806′ right of centerline, 5581′ MSL, terrain 380′ from DER 602′ right of centerline, 5566′ MSL, terrain 232′ from DER 558′ right of centerline, 5564′ MSL, terrain 62′ from DER 200′ right of centerline, 5557′ MSL, terrain 45′ from DER 218′ right of centerline, 5558′ MSL, terrain 0′ from DER 287′ right of centerline, 5560′ MSL, surveyed terrain 215′ from DER 427′ right of centerline, 0′ AGL/5560′ MSL. Rwy 32, terrain 0′ from DER 500′ left of centerline, 5476′ MSL, terrain 6049′ from DER 1761′ left of centerline, 50′ AGL/5664′ MSL.

CHANGES: Note.

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KTNX/XSD
TONOPAH, NEV

JEPPESEN
3 FEB 12
Eff 9 Feb
31-1

TONOPAH TEST RANGE
ILS or LOC DME Rwy 14

NELLIS Control	SILVERBOW Tower	Ground
119.35	124.75	127.25

BRIEFING STRIP™

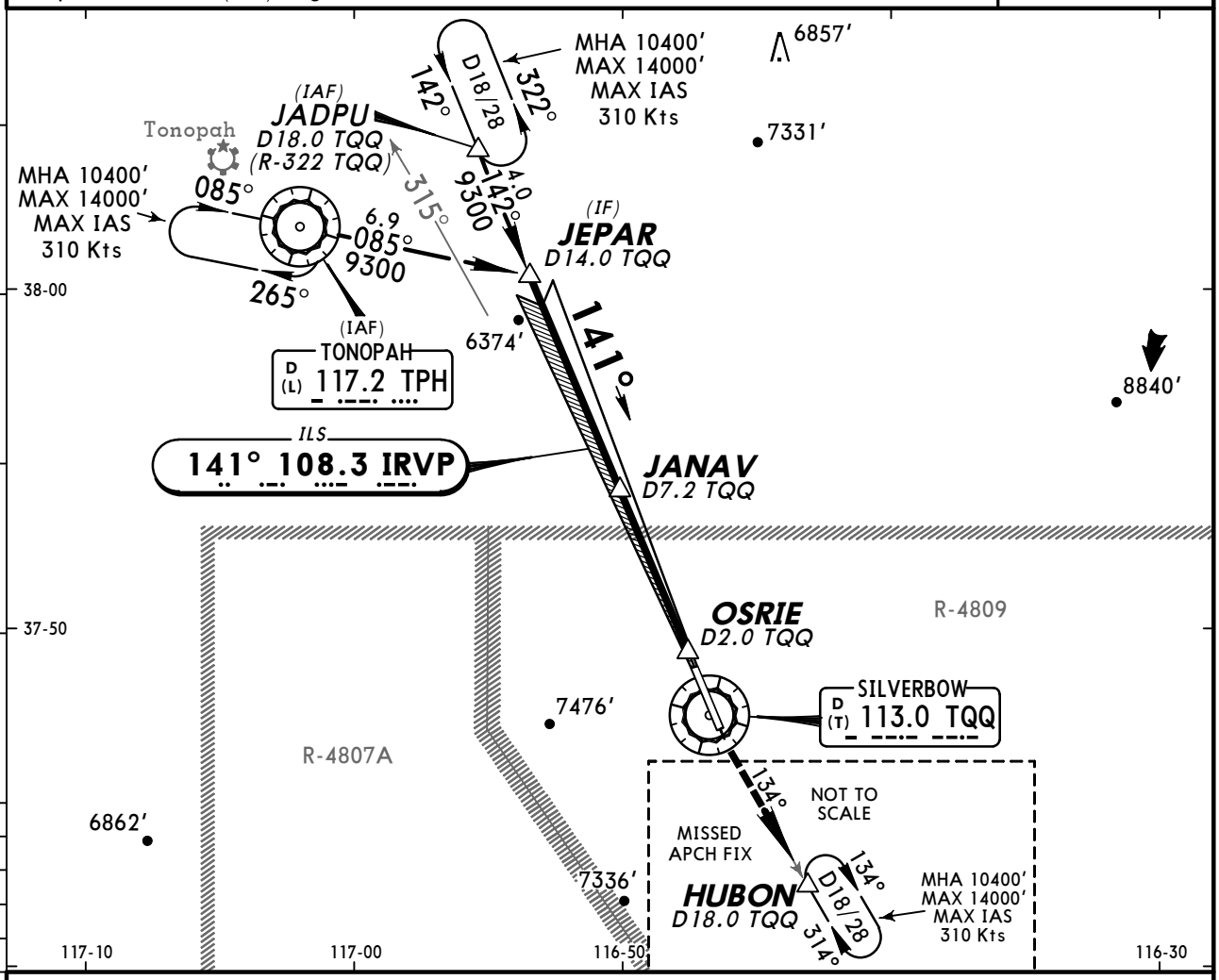
LOC IRVP	Final Apch Crs	GS JANAV	ILS DA(H)	Apt Elev 5550′
108.3	141°	7200′ (1727′)	5673′ (200′)	THR 5473′

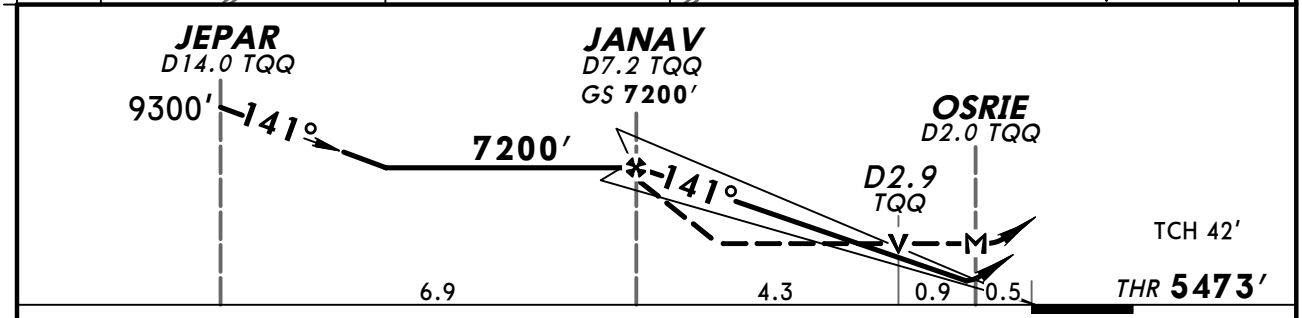
MISSED APCH: Climb to 10400′ outbound via TQQ R-134 to HUBON and hold, continue climb in hold to 10400′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. EMERG SAFE ALT 100NM 16600′. 2. The difference between the VGSI TCH (51′) and the procedure TCH (42′) is greater than 3′.

MSA TQQ VOR: 9000′ 180°, 090°, 10,500′, 270°, 9500′





Gnd speed-Kts	70	90	100	120	140	160
GS 2.75°	340	438	486	584	681	778
MAP at OSRIE						

ALSF-I PAPI **10400′** via TQQ **113.0** **R-134** **HUBON**

STRAIGHT-IN LANDING RWY 14					CIRCLE-TO-LAND
	ILS DA(H) 5673′ (200′)		LOC (GS out) MDA(H) 5940′ (467′)		Not Authorized West of Rwy 14-32 or to Rwy 32 at Night when VGSI inop
	FULL	ALS out		ALS out	Max Kts — MDA(H)
A	1/2	3/4	1/2	1	90 — 6040′ (490′)-1
B					120
C			1	1 3/8	140 — 6040′ (490′)-1 1/2
D					165 — 6100′ (550′)-2

AMEND 0 TERPS

CHANGES: None.

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KTNX/XSD
TONOPAH, NEV

JEPPESEN
22 JUL 11 (31-2)

TONOPAH TEST RANGE
ILS or LOC DME Rwy 32

NELLIS Control	SILVERBOW Tower	Ground
119.35	124.75	127.25

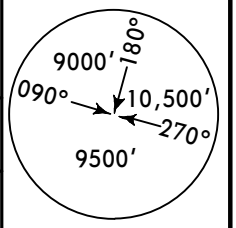
BRIEFING STRIP™

LOC IUVV	Final Apch Crs	GS DRAKO	ILS DA(H)	Apt Elev 5550′
111.7	321°	7600′ (2050′)	5800′ (250′)	THR 5550′

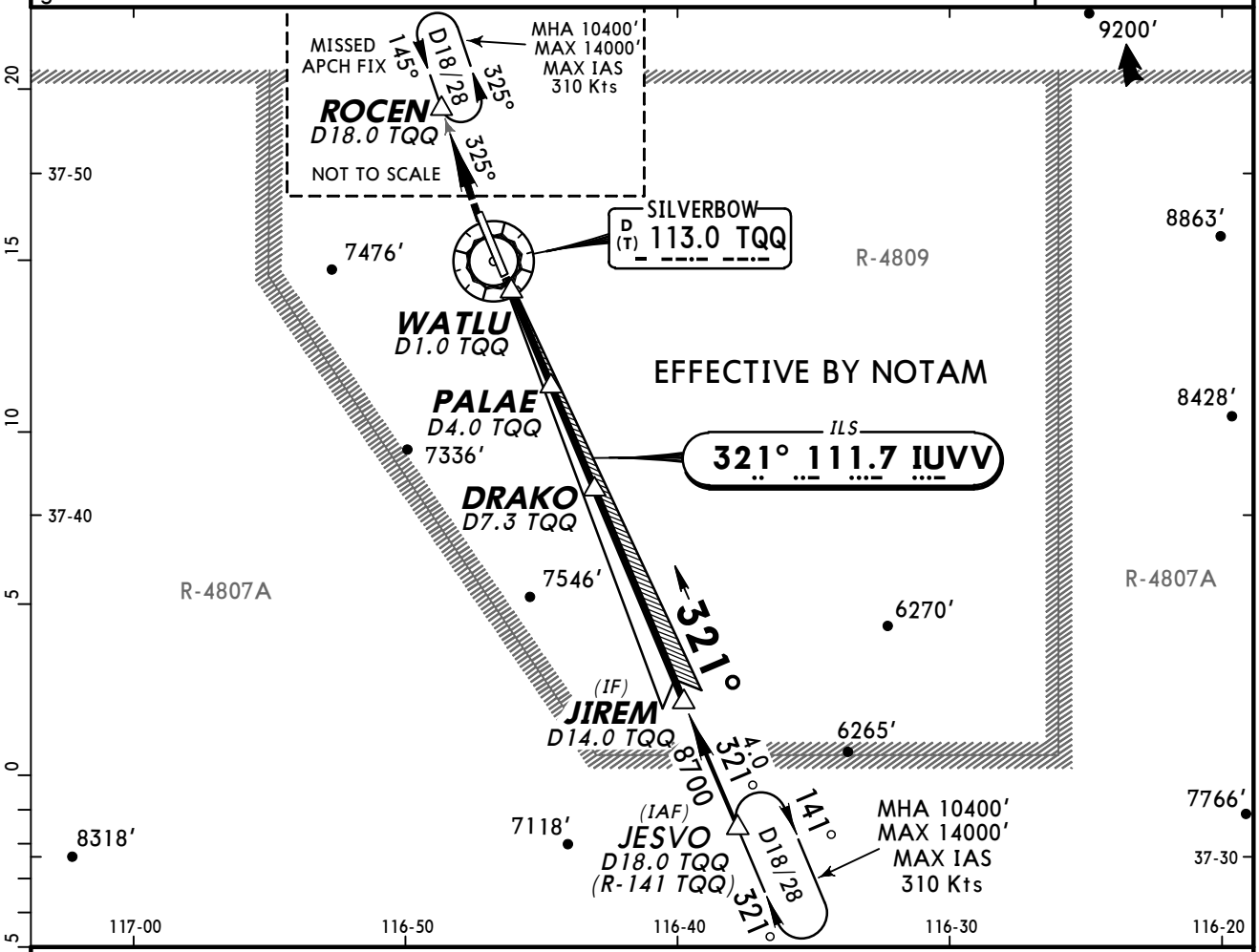
MISSED APCH: Climb to 10400′ outbound via R-325 TQQ to ROCEN and hold, continue climb in hold to 10400′.

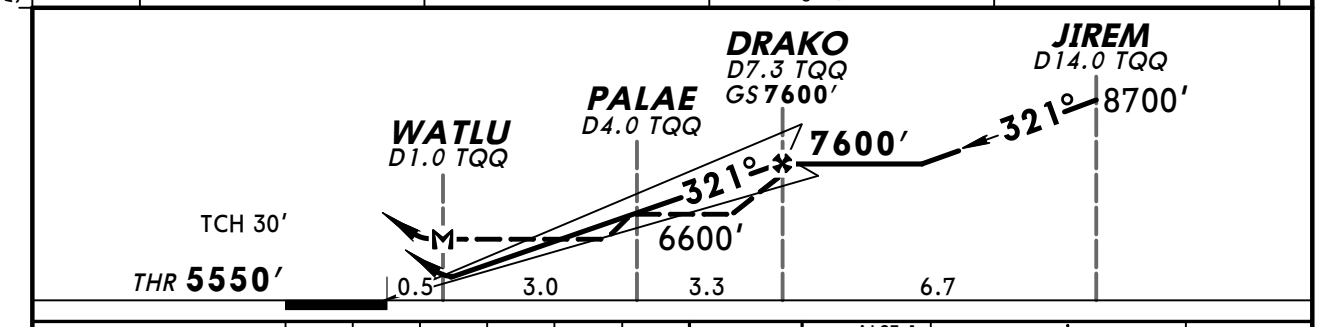
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. EMERG SAFE ALT 100NM 16600′. 2. When VGSI inop, procedure not authorized at night. 3. The difference between the VGSI TCH (39′) and the procedure TCH (30′) is greater than 3′.



MSA TQQ VOR





Gnd speed-Kts	70	90	100	120	140	160
GS 2.75°	340	438	486	584	681	778
MAP at WATLU						

ALSF-I PAPI 10400′ TQQ via 113.0 R-325 ROCEN

STRAIGHT-IN LANDING RWY 32

	ILS DA(H) 5800′(250′) FULL	ILS DA(H) 5800′(250′) ALS out	LOC (GS out) With PALAE MDA(H) 5980′(430′)	LOC (GS out) Without PALAE MDA(H) 6160′(610′)	LOC (GS out) Without PALAE MDA(H) 6160′(610′) ALS out
A	1		1	1	
B					
C			1¼	1⅜	1¾
D					2

CIRCLE-TO-LAND
Not Authorized
West of Rwy 14-32

Max Kts	With PALAE MDA(H)	Without PALAE MDA(H)
90	6040′(490′)-1	6160′(610′)-1
120		
140	6040′(490′)-1½	6160′(610′)-1¾
165	6100′(550′)-2	6160′(610′)-2

TERPS AMEND 0

CHANGES: WATLU fix name.

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KTNX/XSD
TONOPAH, NEV

JEPPESEN
24 JUN 11 (32-1)

TONOPAH TEST RANGE
RNAV (GPS) Rwy 14

BRIEFING STRIP™

NELLIS Control	SILVERBOW Tower	Ground
119.35	124.75	127.25

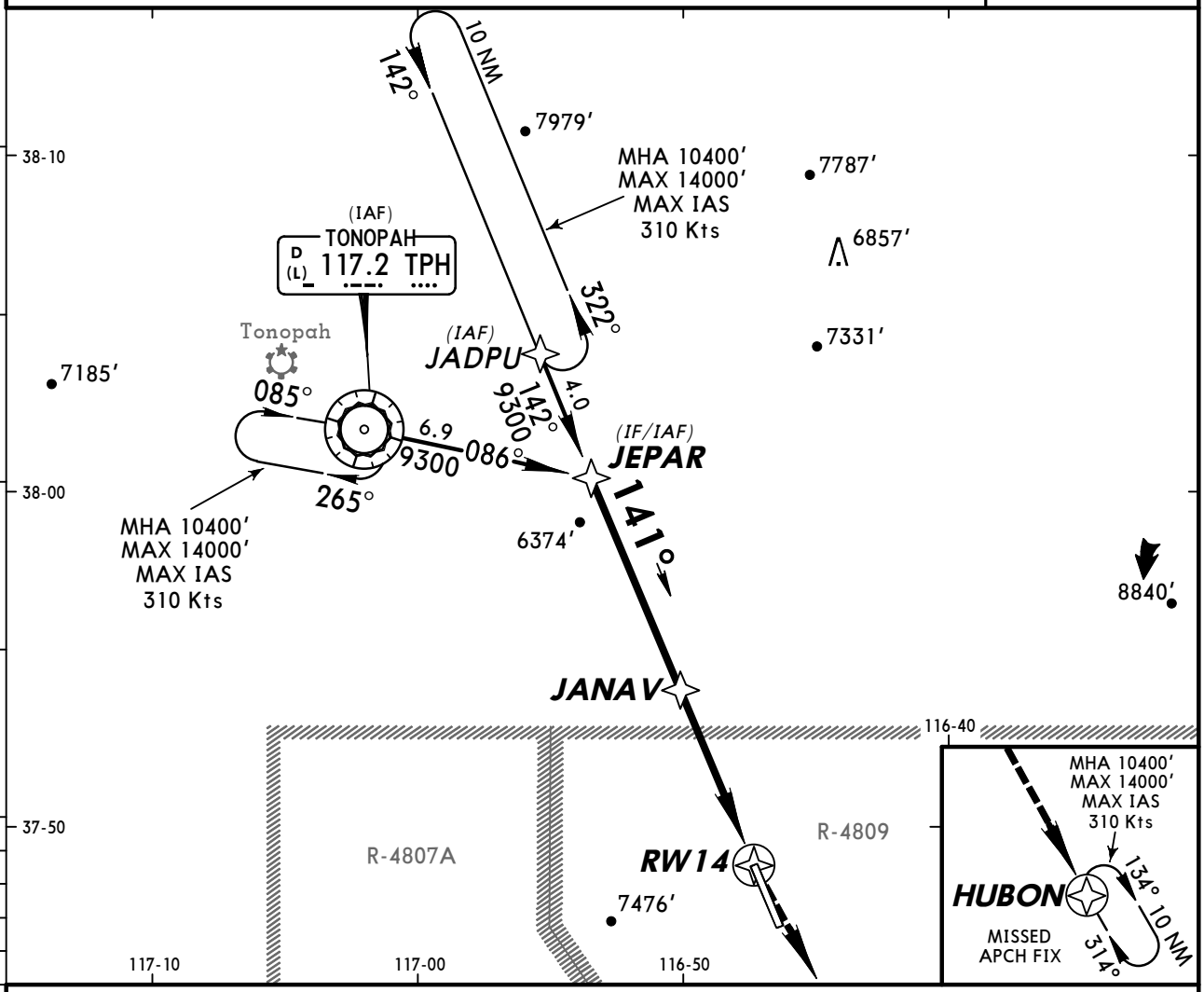
RNAV	Final Apch Crs	Minimum Alt JANAV	LNAV MDA(H)	Apt Elev 5550′ THR 5473′
	141°	7200′ (1727′)	5960′ (487′)	

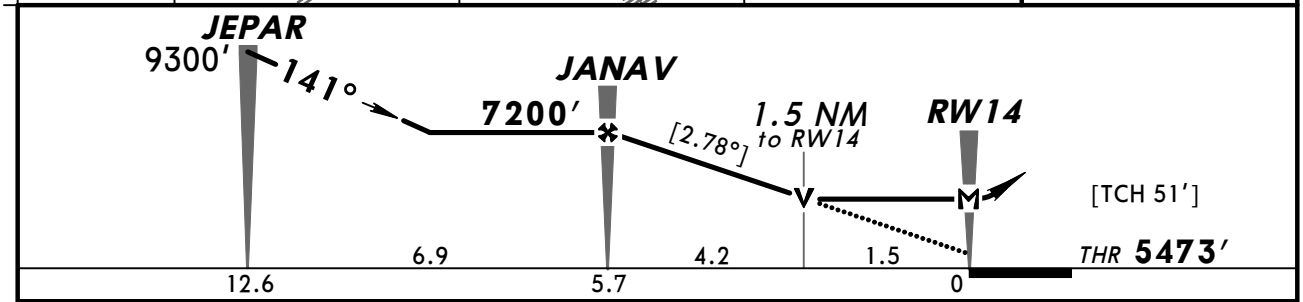
MISSED APCH: Climb to 10400′ direct HUBON and hold, continue climb in hold to 10400′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. EMERG SAFE ALT 100NM 16600′. 2. DME/DME RNP-0.30 not authorized.

10,500′
MSA RW14





Gnd speed-Kts	70	90	100	120	140	160
Descent angle [2.78°]	344	443	492	590	688	787
MAP at RW14						

ALSF-I
PAPI
10400′
HUBON

STRAIGHT-IN LANDING RWY 14
LNAV
MDA(H) **5960′** (487′)

TERPS AMEND		ALS out
A	1/2	1
B		
C	1	1 3/8
D		

CIRCLE-TO-LAND
Not Authorized
West of Rwy 14-32 or to
Rwy 32 at Night when VGSI inop

Max Kts	MDA(H)
90	6040′ (490′)-1
120	
140	6040′ (490′)-1 1/2
165	6100′ (550′)-2

CHANGES: Tower frequency.

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KTNX/XSD
TONOPAH, NEV

JEPPESEN
24 JUN 11 (32-2)

TONOPAH TEST RANGE
RNAV (GPS) Rwy 32

BRIEFING STRIP™

NELLIS Control	SILVERBOW Tower	Ground
119.35	124.75	127.25

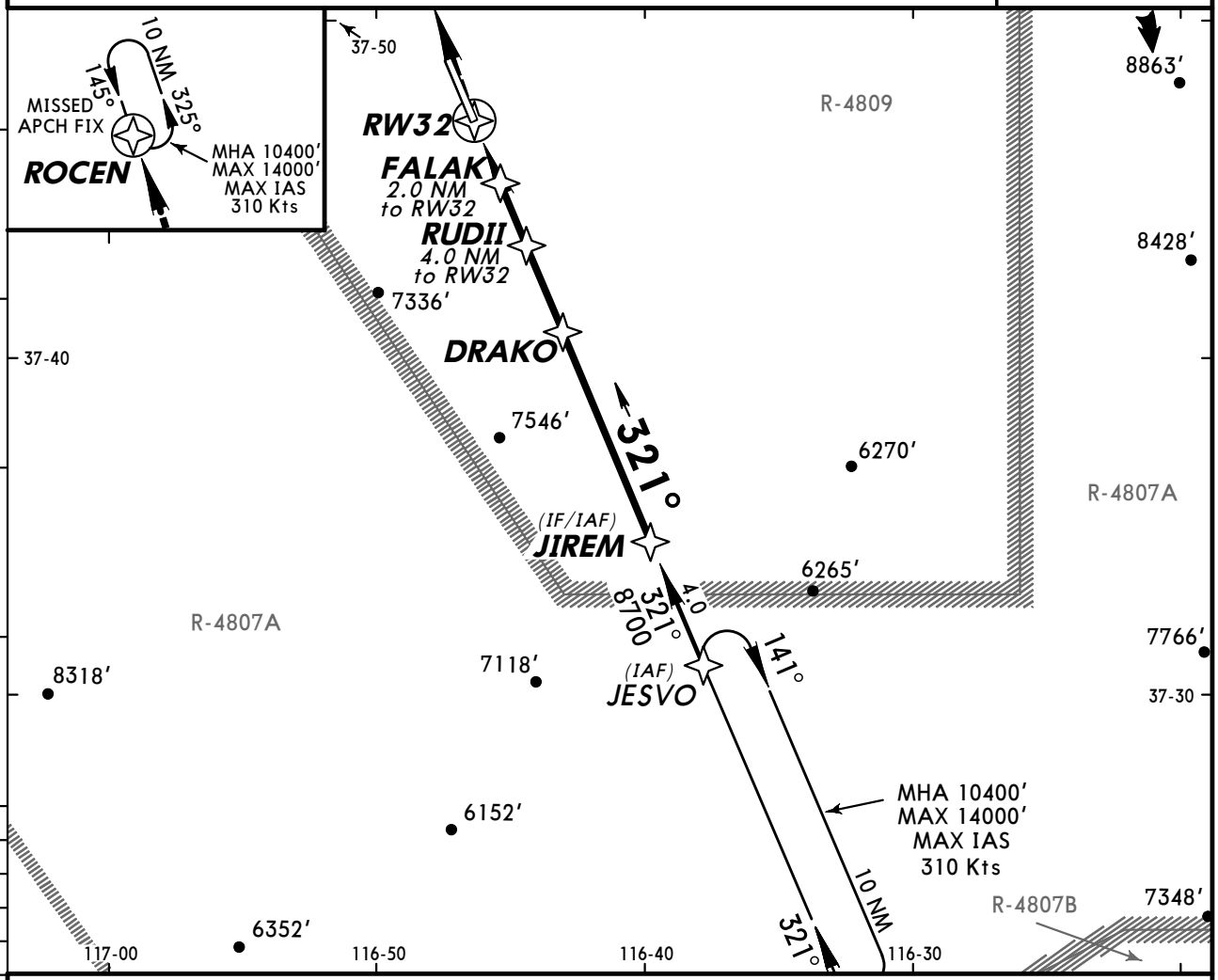
RNAV	Final Apch Crs	Minimum Alt	LNAV MDA(H)	Apt Elev 5550′
	321°	DRAKO 7600′ (2050′)	(CONDITIONAL) 5980′ (430′)	THR 5550′

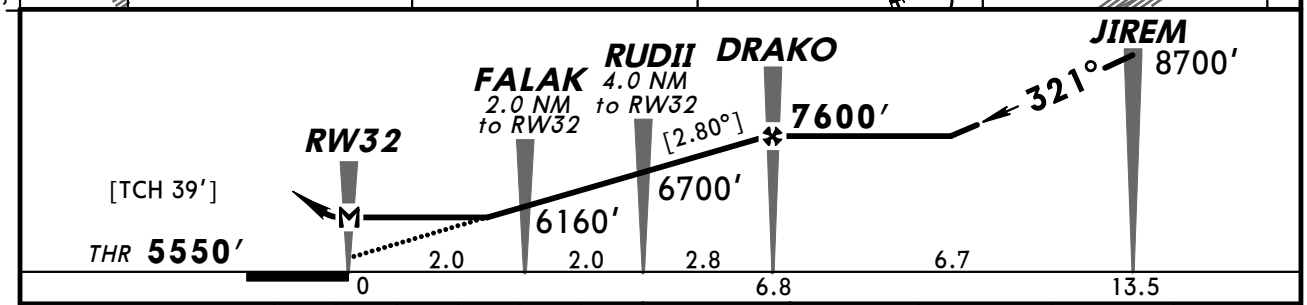
MISSED APCH: Climb to 10400′ direct ROCEN and hold, continue climb in hold to 10400′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. EMERG SAFE ALT 100NM 16600′. 2. DME/DME RNP-0.30 not authorized.
3. When VGSI inop, procedure not authorized at night. 4. Unlit terrain 0′ AGL/5561′ MSL, 200′ from threshold, 400′ left of course.

10,500′
MSA RW32





Gnd speed-Kts	70	90	100	120	140	160
Descent angle [2.80°]	347	446	495	594	693	792
MAP at RW32						

ALSF-I
PAPI
10400′
ROCEN

STRAIGHT-IN LANDING RWY 32

1 LNAV

	MDA(H) 5980′ (430′) With FALAK		MDA(H) 6060′ (510′) Without FALAK	
		ALS out		ALS out
A	1	1	1	1
B				
C		1¼		1¼
D				

CIRCLE-TO-LAND

Not Authorized West of Rwy 14-32

Max Kts	With FALAK MDA(H)	Without FALAK MDA(H)
90	6040′ (490′)-1	6060′ (510′)-1
120		
140	6040′ (490′)-1½	6060′ (510′)-1½
165	6100′ (550′)-2	6100′ (550′)-2

1 USAF only: When VGSI inop, straight-in RWY 32 authorized at night with MAJCOM A3 approval.

AMEND TERPS 0

CHANGES: Tower frequency.

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KTNX/XSD
TONOPAH, NEV

JEPPESEN
24 JUN 11 (33-1)

TONOPAH TEST RANGE
VOR DME Rwy 14

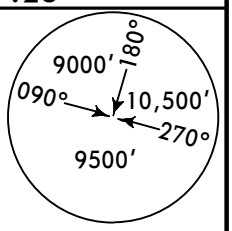
BRIEFING STRIP™

NELLIS Control	SILVERBOW Tower	Ground
119.35	124.75	127.25

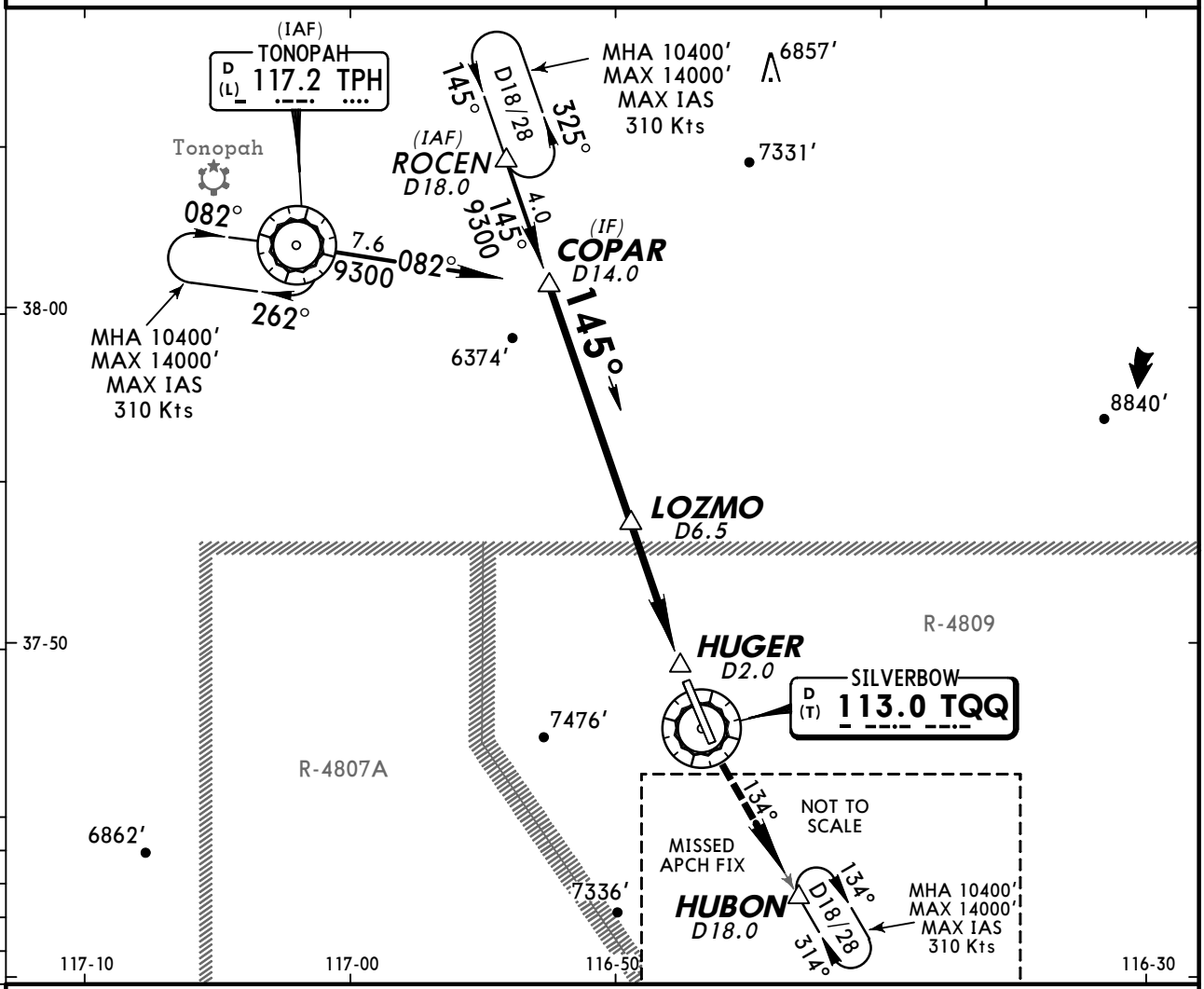
VOR	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev 5550′
TQQ 113.0	145°	LOZMO 7000′ (1527′)	5960′ (487′)	THR 5473′

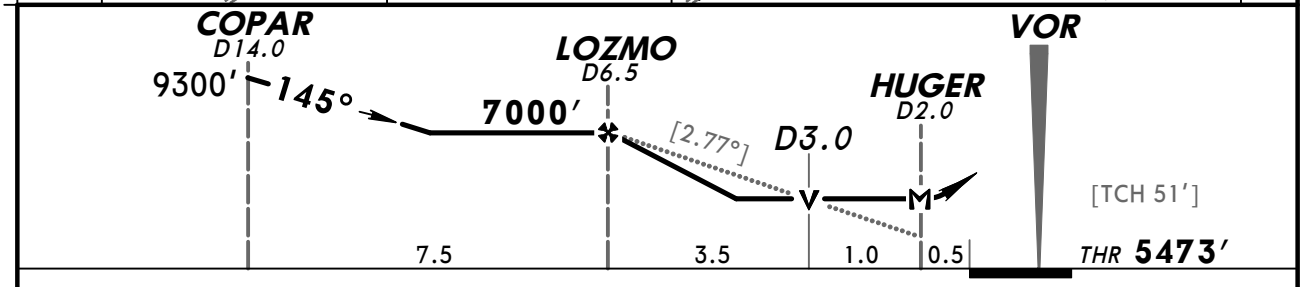
MISSED APCH: Climb to 10400′ outbound via TQQ R-134 to HUBON and hold, continue climb in hold to 10400′.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′
1. EMERG SAFE ALT 100NM 16600′.



MSA TQQ VOR





Gnd speed-Kts	70	90	100	120	140	160
Descent angle [2.77°]	343	441	490	588	686	784
MAP at HUGER						

ALSF-I
PAPI

10400′ via TQQ 113.0 R-134 HUBON

STRAIGHT-IN LANDING RWY 14

MDA(H) 5960′ (487′)

TERPS		ALS out
A	1/2	1
B		
C	1	1 3/8
D		

CIRCLE-TO-LAND

Not Authorized
West of Rwy 14-32 or to Rwy 32 at Night when VGSI inop

Max Kts	MDA(H)
90	6040′ (490′)-1
120	
140	6040′ (490′)-1 1/2
165	6100′ (550′)-2

AMEND 0

CHANGES: Tower frequency.

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KTNX/XSD
TONOPAH, NEV

JEPPESEN
24 JUN 11 (33-2)

TONOPAH TEST RANGE
VOR DME Rwy 32

BRIEFING STRIP ™

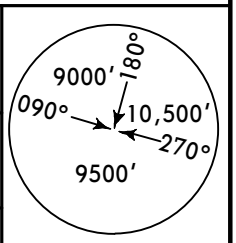
NELLIS Control	SILVERBOW Tower	Ground
119.35	124.75	127.25

VOR	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev 5550′
TQQ 113.0	314°	ITAVE 7400′ (1850′)	6080′ (530′)	THR 5550′

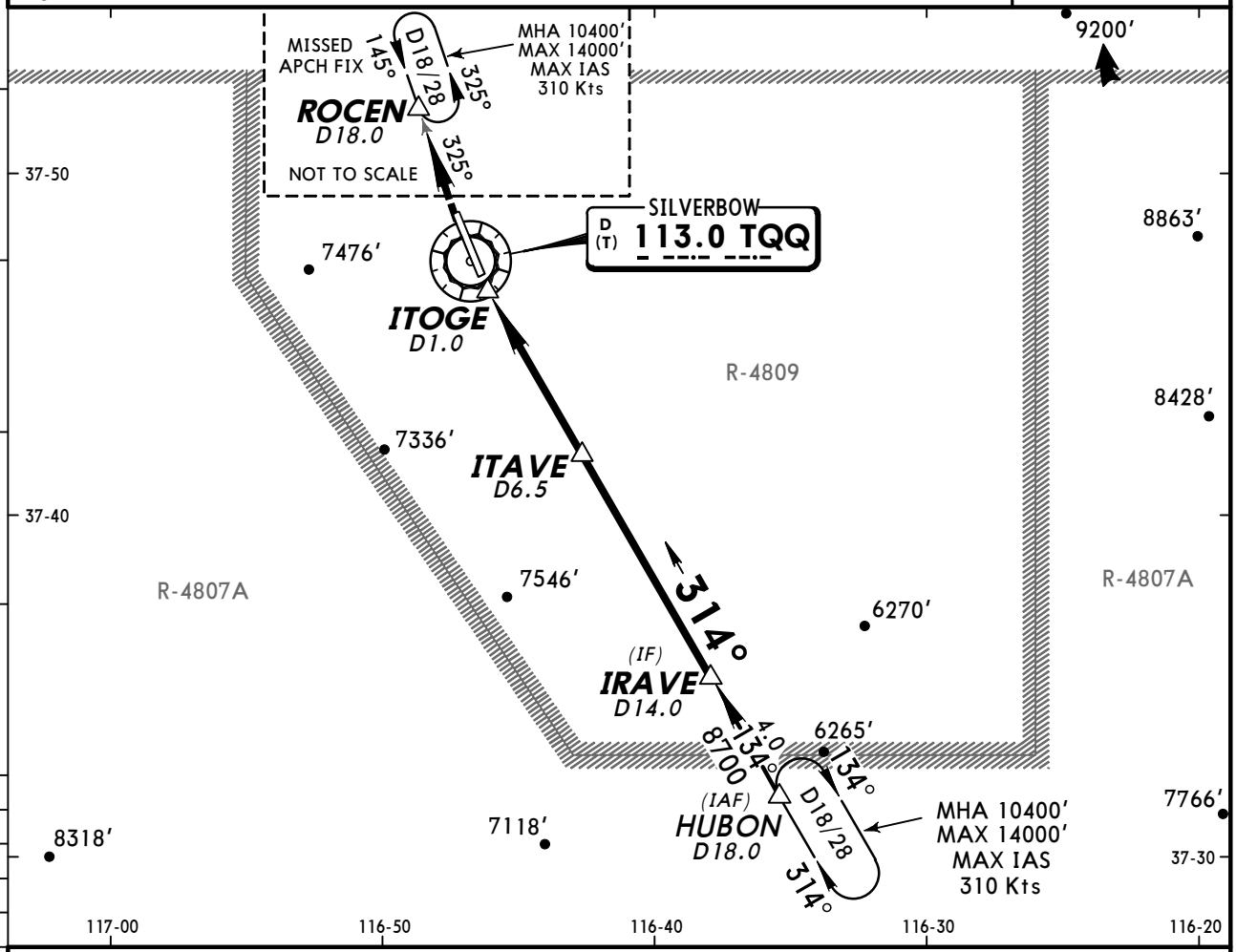
MISSED APCH: Climb to 10400′ outbound via R-325 TQQ to ROCEN and hold, continue climb in hold to 10400′.

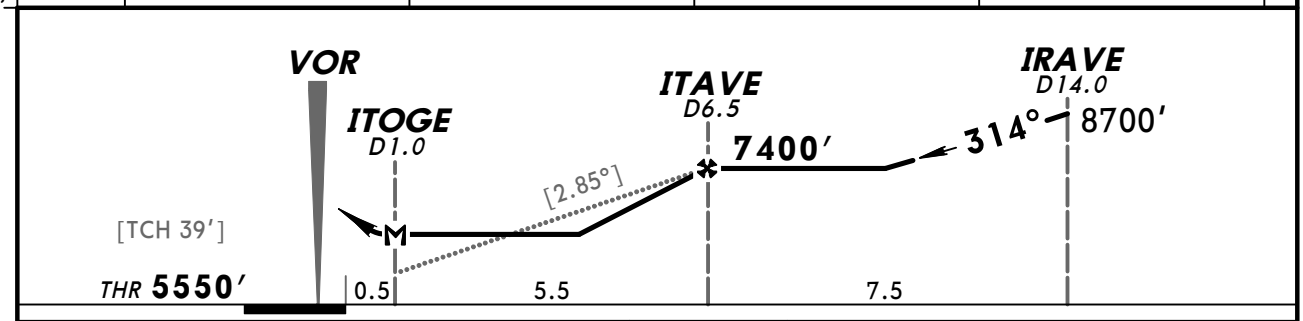
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. EMERG SAFE ALT 100NM 16600′. 2. When VGSI inop, procedure not authorized at night.



MSA TQQ VOR





Gnd speed-Kts	70	90	100	120	140	160
Descent angle [2.85°]	353	454	504	605	706	807
MAP at ITOGE						

ALSF-I
PAPI

10400′ ↑ via TQQ 113.0 R-325

ROCEN

STRAIGHT-IN LANDING RWY 32			CIRCLE-TO-LAND
MDA(H) 6080′(530′)			Not Authorized West of Rwy 14-32
		ALS out	Max Kts / MDA(H)
A	1	1	90 / 6080′(530′)-1
B			120 /
C		1½	140 / 6080′(530′)-1½
D			165 / 6100′(550′)-2

TERPS AMEND 0

CHANGES: Tower frequency.

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General Information

Location: Tonopah NV USA
IATA Code: TPH
Lat/Long: N38° 03.6' W117° 05.2'
Elevation: 5430 ft

Airport Use: Public
Magnetic Variation: 13.1°E
Sectional Chart: Las Vegas

Fuel Types: 100 Octane (LL), Jet A
Oxygen Types: LP Bottle
Repair Types: Major Airframe, Major Engine
Customs: No
Airport Type: IFR
Landing Fee: No
Control Tower: No
Jet Start Unit: Yes
LLWS Alert: No
Beacon: Yes

Sunrise: 1423 Z
Sunset: 0139 Z,

Runway Information

Runway: 11
Length x Width: 6196 ft x 50 ft
Surface Type: asphalt
TDZ-Elev: 5428 ft
Displaced Threshold: 538 ft

Runway: 15
Length x Width: 7161 ft x 80 ft
Surface Type: asphalt
TDZ-Elev: 5430 ft
Lighting: Edge, Pilot controlled
Stopway: 1537 ft

Runway: 29
Length x Width: 6196 ft x 50 ft
Surface Type: asphalt
TDZ-Elev: 5421 ft

Runway: 33
Length x Width: 7161 ft x 80 ft
Surface Type: asphalt
TDZ-Elev: 5410 ft
Lighting: Edge, Pilot controlled

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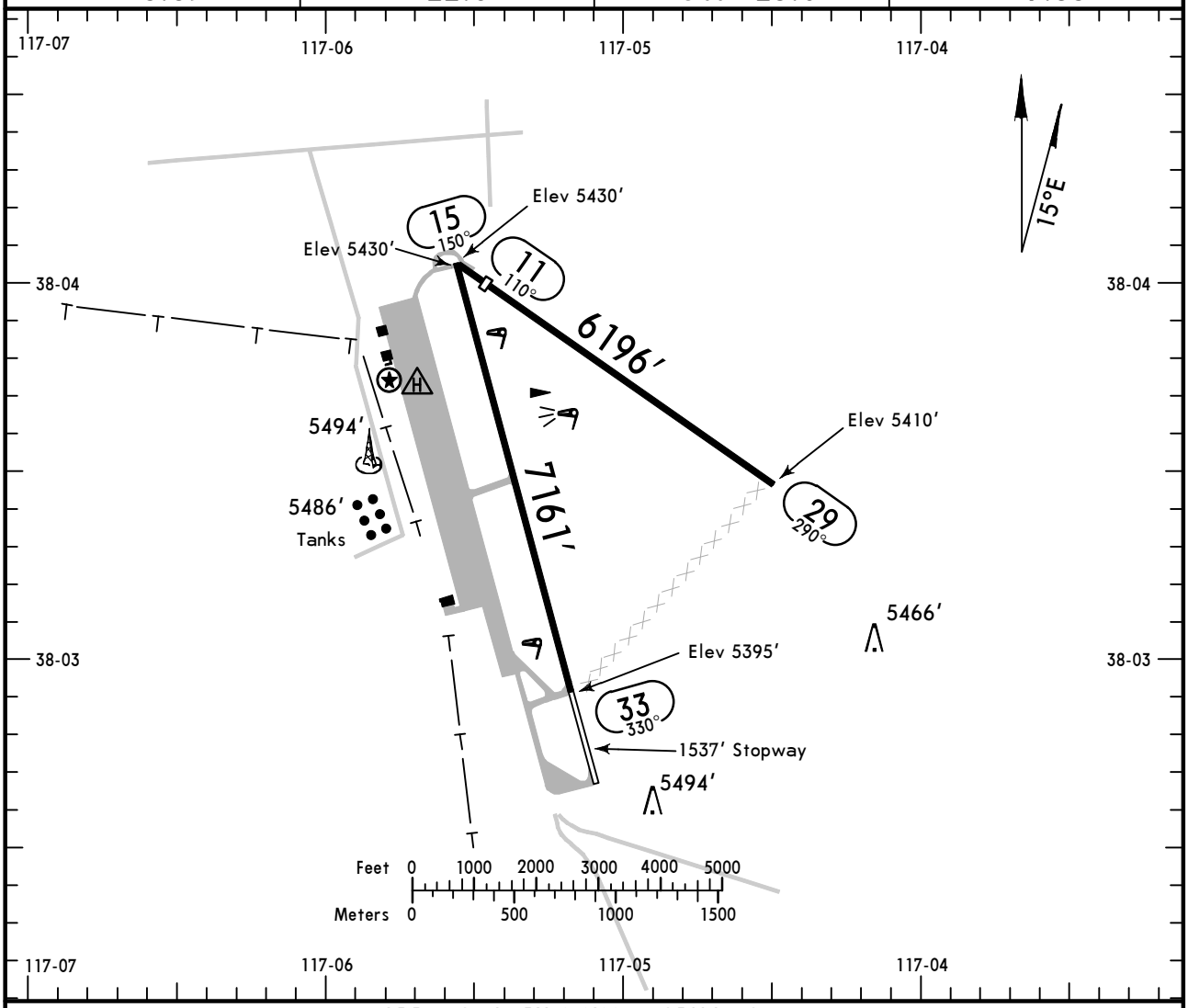
Communication Information

ASOS 118.875
Tonopah Unicom 123.0 CTAF PCL
Reno Flight Service Station 122.6 RCO
Nellis Control Control 119.35

ASOS	RENO Radio	TONOPAH UNICOM	NELLIS Departure (R)
118.87	122.6	CTAF 123.0	119.35



ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS LANDING BEYOND Threshold	Glide Slope	TAKE-OFF	WIDTH
11 29		5658′			50′
15 33	❶ MIRL PAPI-L (angle 3.0°) ❶ MIRL VASI-L				80′

❶ Activate on 123.0.

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

	Rwys 15, 33 With Mim climb of 260′/NM to 8000′ Adequate Vis Ref	Rwys 15, 33 STD	Rwys 15, 33 Other	Rwys 11, 29
1 & 2 Eng	¼	1	2600-2	NA
3 & 4 Eng		½		

FOR FILING AS ALTERNATE

	VOR or GPS-A	RNAV (GPS) Rwy 15
A	800-2	800-2
B		
C		
D	800-2¼	NA

OBSTACLE DP: Rwy 15 turn left, Rwy 33 turn right. Climb direct TPH VOR. Continue climb in holding pattern (hold northeast, right turns, 246° inbound) to depart TPH VOR at or above 8000′. Climb on course to MEA or assigned altitude.

AMEND 1

CHANGES: Chart reindexed, alternate minimums.

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BRIEFING STRIP ™

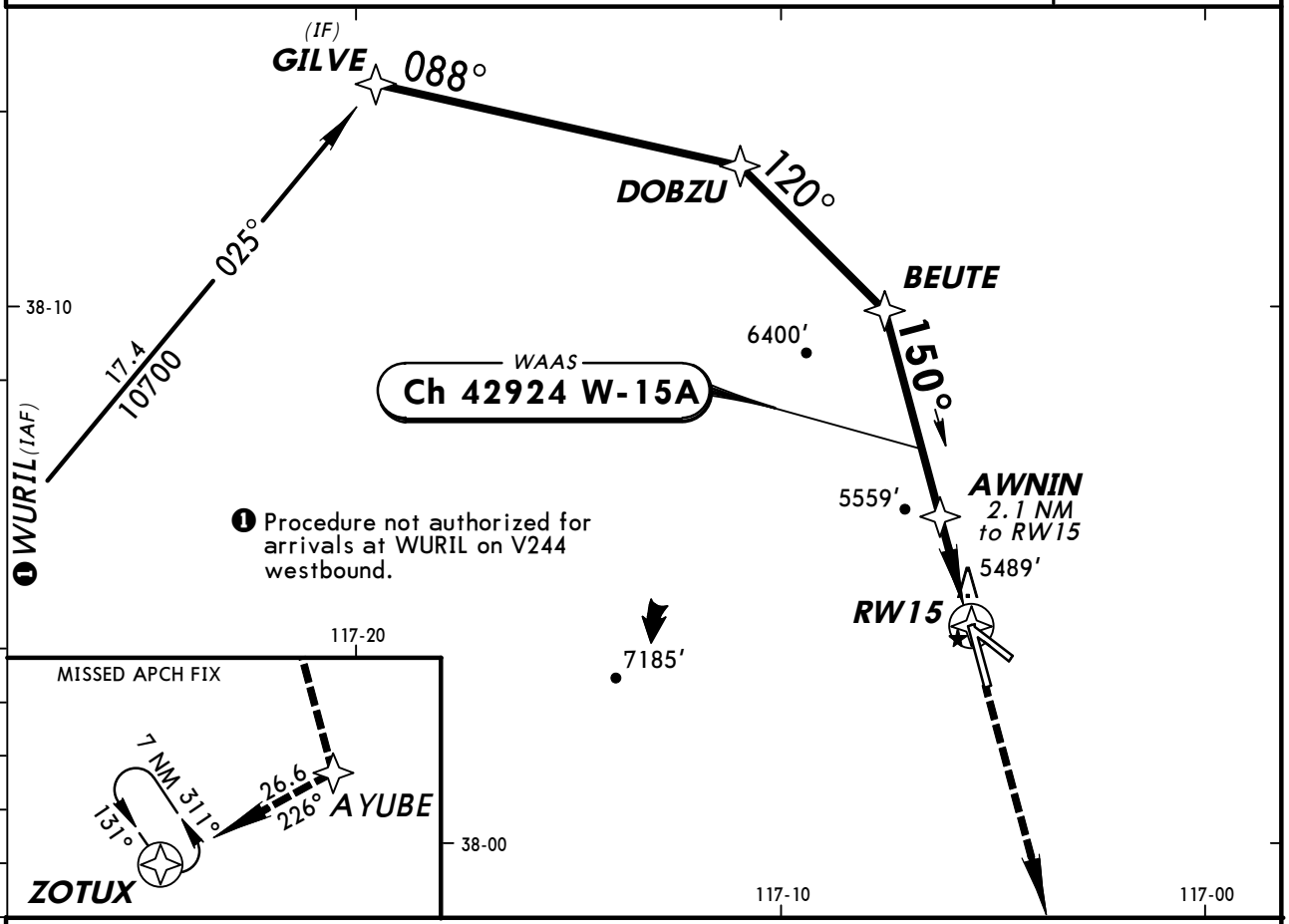
ASOS	NELLIS Approach (R)	RENO Radio	TONOPAH UNICOM
118.87	119.35	122.6	CTAF 123.0

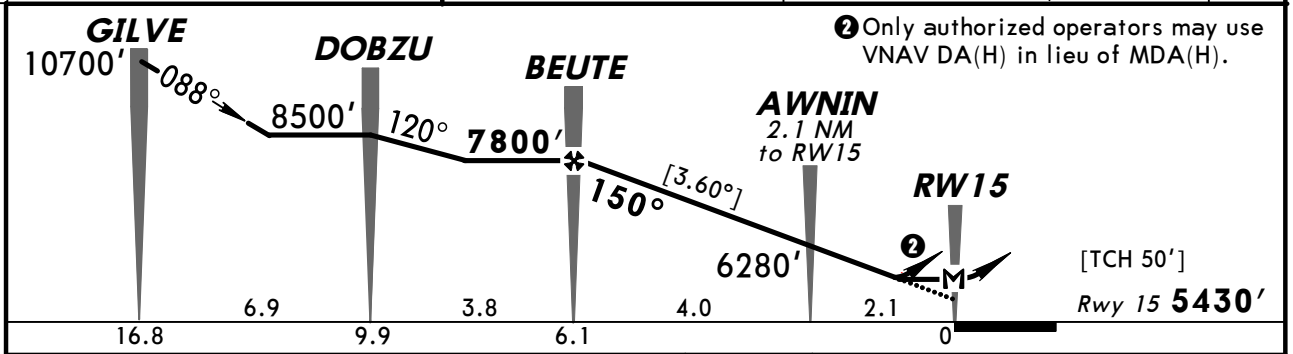
WAAS	Final Apch Crs	Minimum Alt BEUTE	LP MDA(H)	Apt Elev 5430′
Ch 42924 W-15A	150°	7800′(2370′)	5740′ (310′)	Rwy 15 5430′

MISSED APCH: Climb to 11,000′ direct AYUBE and on track 226° to ZOTUX and hold.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′
1. When local altimeter setting not received, procedure not authorized.
2. DME/DME RNP-0.30 not authorized. 3. VGSI and descent angles not coincident.
4. Visibility reduction by helicopters not authorized. 5. Pilot controlled lighting 123.0.

10,600′
MSA RW15





Gnd speed-Kts	70	90	100	120	140	160
Descent angle [3.60°]	446	573	637	765	892	1019
MAP at RW15						

PAPI-L 11000′ AYUBE

TERPS

1 STRAIGHT-IN LANDING RWY 15

	LP MDA(H) 5740′(310′)	LNAV MDA(H) 5820′(390′)
A	1	1
B		
C		1⅛
D	NA	NA

1 CIRCLE-TO-LAND
Circling to Rwy 11-29
Not Authorized at Night

Max Kts	MDA(H)
90	5880′ (450′)-1
120	5900′ (470′)-1
140	5920′ (490′)-1½
D	NA

1 When VGSI inop, straight-in/circling Rwy 15 procedure not authorized at night.

TERPS AMEND 0 15 DEC 2011

CHANGES: New procedure.

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BRIEFING STRIP TM

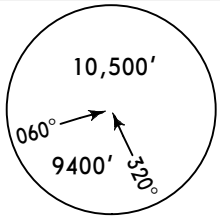
ASOS	NELLIS Approach (R)	RENO Radio	TONOPAH UNICOM
118.87	119.35	122.6	CTAF 123.0

VOR	Final Apch Crs	Minimum Alt VOR	MDA(H)	Apt Elev
TPH 117.2	280°	6900′ (1470′)	Refer to Minimums	5430′

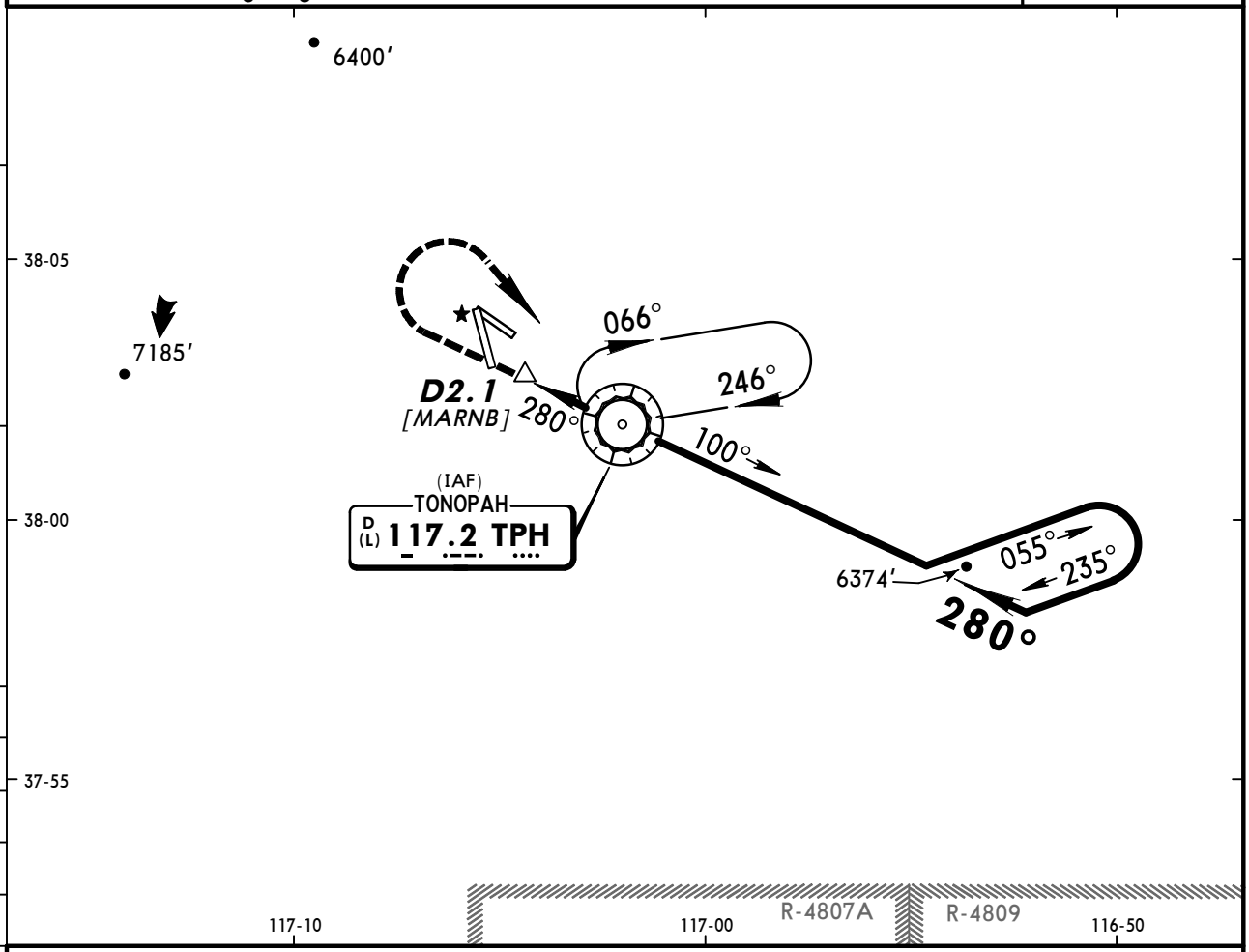
MISSED APCH: Climb to 6400′ then climbing RIGHT turn to 9000′ direct TPH VOR and hold.

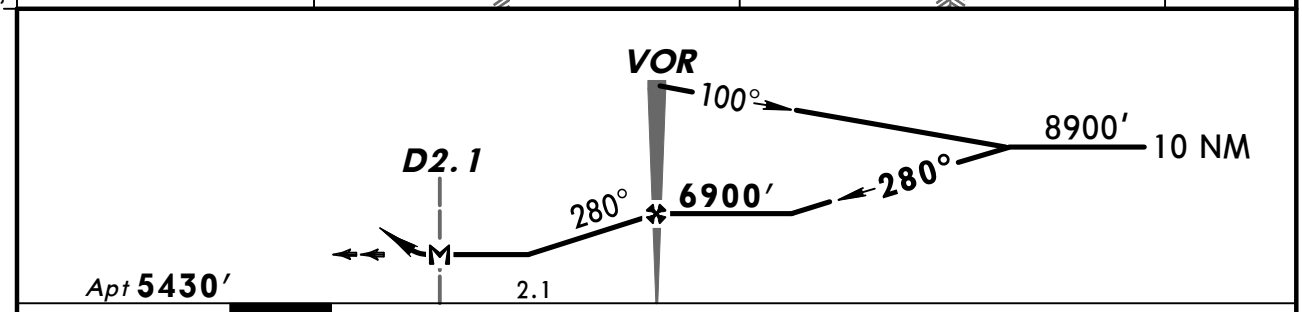
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. Pilot controlled lighting 123.0.



MSA TPH VOR





Gnd speed-Kts	70	90	100	120	140	160
MAP at D2.1 or VOR to MAP 2.1	1:48	1:24	1:16	1:03	0:54	0:47

Lighting - Refer to Airport Chart	6400′	9000′ RT	D	TPH 117.2

TERPS AMEND 3A

CIRCLE-TO-LAND

	Max Kts	MDA(H)
A	90	6100′ (670′) -1
B	120	
C	140	6100′ (670′) -2
D	165	6100′ (670′) -2 ¼

CHANGES: Printing sequence.

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General Information

Location: Winnemucca NV USA
IATA Code: WMC
Lat/Long: N40° 53.8' W117° 48.4'
Elevation: 4308 ft

Airport Use: Public
Magnetic Variation: 13.9°E
Sectional Chart: Klamath Falls

Fuel Types: 100 Octane (LL), Jet A
Repair Types: Major Airframe, Major Engine
Customs: No
Airport Type: IFR
Landing Fee: No
Control Tower: No
Jet Start Unit: Yes
LLWS Alert: No
Beacon: Yes

Sunrise: 1429 Z
Sunset: 0139 Z,

Runway Information

Runway: 02
Length x Width: 4800 ft x 75 ft
Surface Type: asphalt
TDZ-Elev: 4307 ft
Lighting: Edge

Runway: 14
Length x Width: 7000 ft x 100 ft
Surface Type: asphalt
TDZ-Elev: 4304 ft
Lighting: Edge, Pilot controlled

Runway: 20
Length x Width: 4800 ft x 75 ft
Surface Type: asphalt
TDZ-Elev: 4308 ft
Lighting: Edge

Runway: 32
Length x Width: 7000 ft x 100 ft
Surface Type: asphalt
TDZ-Elev: 4304 ft
Lighting: Edge, Pilot controlled

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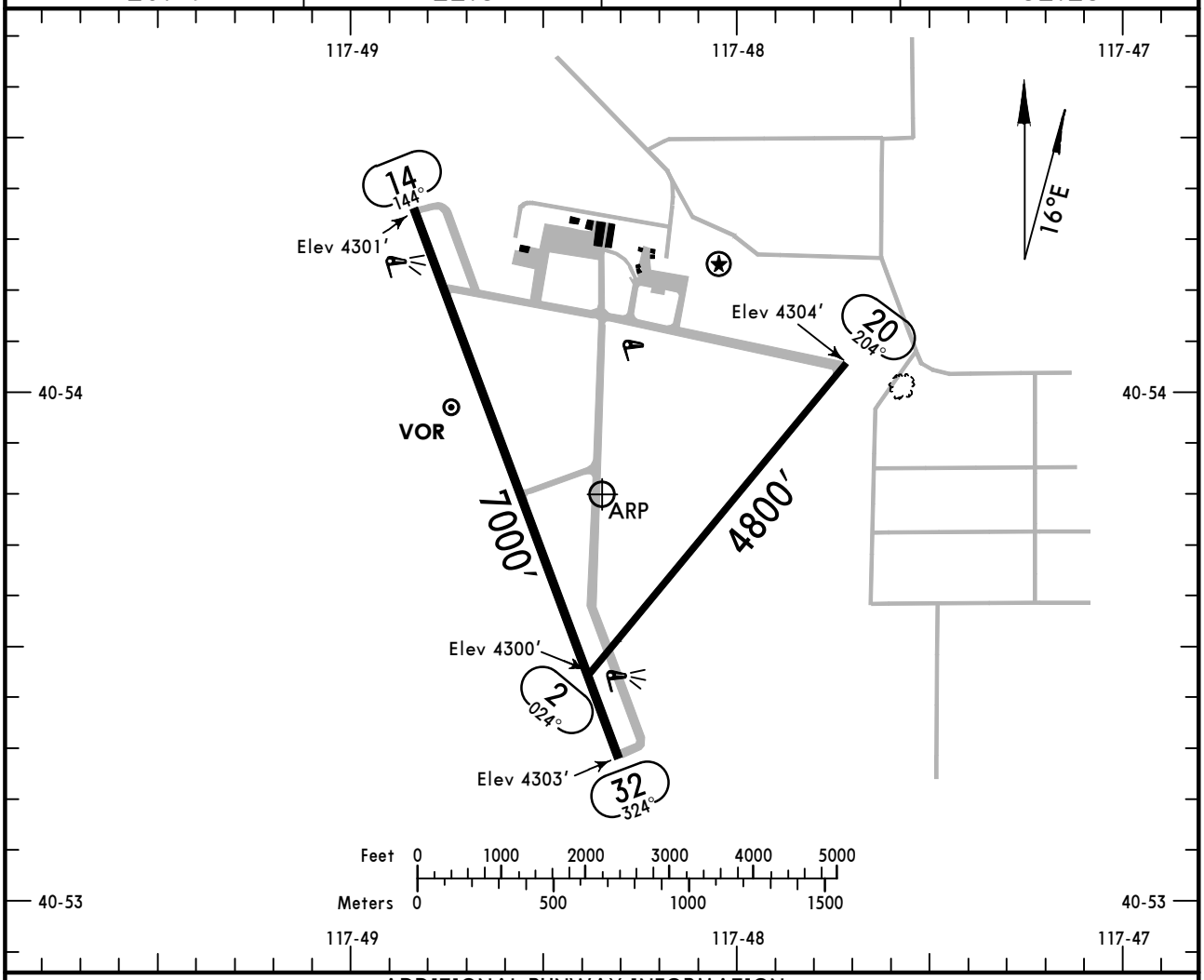
Communication Information

ASOS 120.175
Winnemucca Mun Unicom 122.8 CTAF PCL
Reno Flight Service Station 122.3 RCO
Salt Lake City Center 132.25 Remote Communications Air-Ground

ASOS	RENO Radio	WINNEMUCCA MUN UNICOM	SALT LAKE Center
120.17	122.3	CTAF 122.8	132.25



ADDITIONAL RUNWAY INFORMATION

RWY		USABLE LENGTHS — LANDING BEYOND Threshold	Glide Slope	TAKE-OFF	WIDTH
2 20	MIRL				75′
14	❶ MIRL AVASI-L				100′
32	❶ MIRL				

❶ Increase intensity on 122.8.

TAKE-OFF & OBSTACLE DEPARTURE PROCEDURE

	Rwy 32		Rwy 2			Rwys 14, 20		
			With Mim climb of 450′/NM to 6800′			With Mim climb of 520′/NM to 7500′		
	Adequate Vis Ref	STD	Adequate Vis Ref	STD	Other	Adequate Vis Ref	STD	Other
1 & 2 Eng	1/4	1	1/4	1	2500-2	1/4	1	3200-2
3 & 4 Eng		1/2		1/2			1/2	

OBSTACLE DP: Rwys 14, 20 turn right; rwy 2 turn left; rwy 32 climb straight ahead. All aircraft climb via INA VOR R-326 to 6700′ or above within 12 miles, then climbing left turn return to INA VOR via R-326. Continue climb in INA VOR holding pattern (Hold NW, right turns, 146° inbound) to depart INA VOR at or above 11000′. Southbound aircraft continue via INA VOR R-146 direct Fesko; Northbound aircraft continue via INA VOR R-326 and SDO VOR R-144 direct SDO VOR.

FOR FILING AS ALTERNATE

Authorized Only When Local Weather Available

	RNAV (GPS) Rwy 32	RNAV (GPS) Rwy 14	VOR DME Rwy 14
A	800-2	800-2	800-2
B			
C		800-2¼	
D		800-2½	1300-3

AMEND 1A

CHANGES: Chart reindexed, Rwy 2/20 length, alternate mims.

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KWMC/WMC
WINNEMUCCA MUN

JEPPESEN
22 SEP 06 (12-1) Eff 28 Sep

WINNEMUCCA, NEV
RNAV (GPS) Rwy 14

ASOS	SALT LAKE Center	RENO Radio	WINNEMUCCA MUN UNICOM
120.17	132.25	122.3	CTAF 122.8

WAAS	Final Apch Crs	Minimum Alt	LPV DA(H) (CONDITIONAL)	Apt Elev 4308′
Ch 62902 W-14A	144°	WINQY 6300′ (1996′)	4843′ (539′)	TDZE 4304′

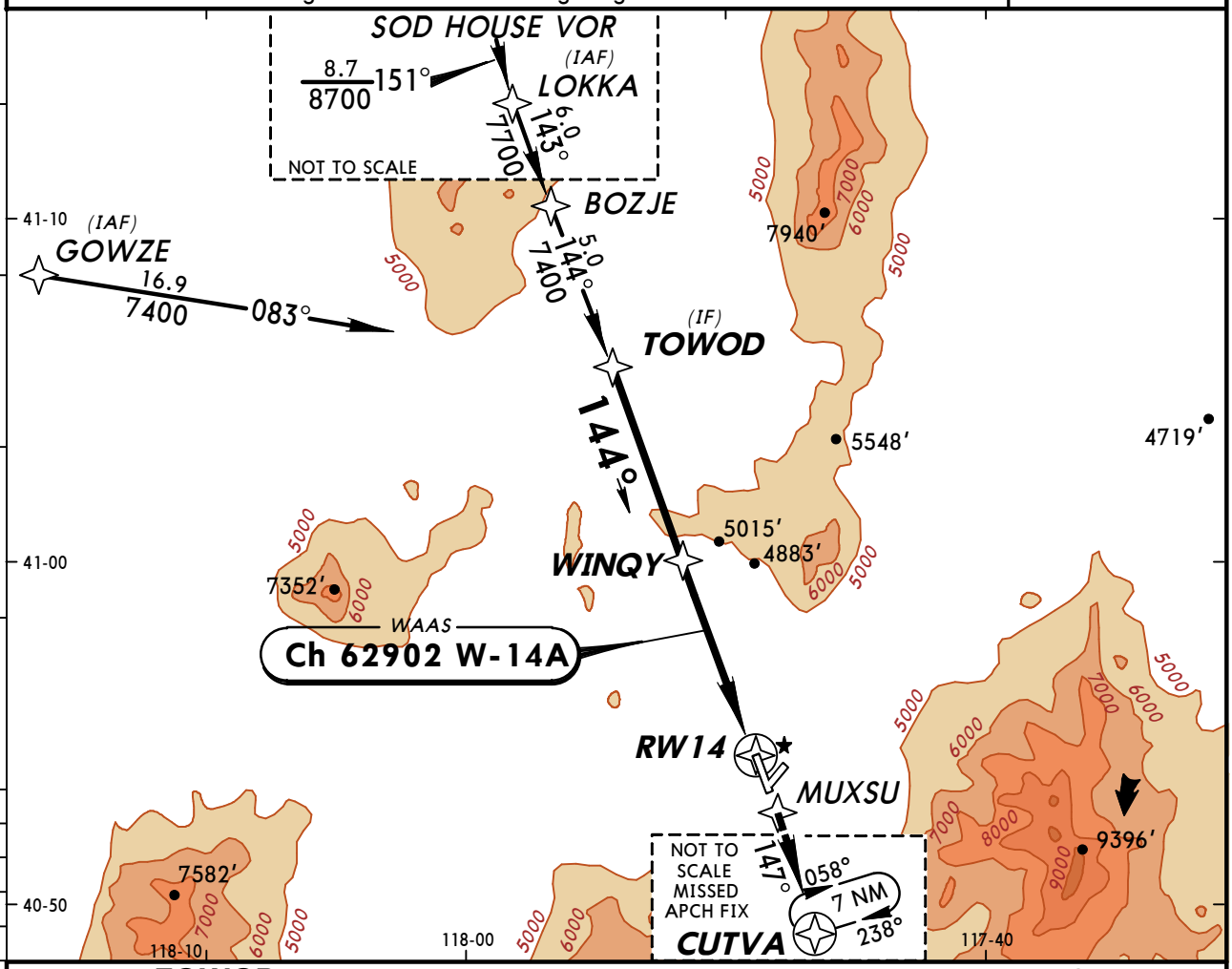
MISSED APCH: Climb to 12000′ direct MUXSU and via 147° track to CUTVA and hold, continue climb-in hold to 12000′.

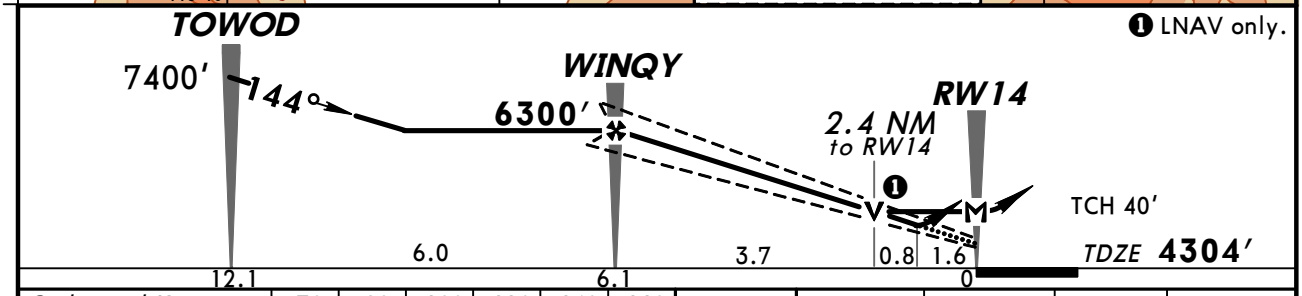
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. Use local altimeter setting, if not received, use Battle Mountain altimeter setting.
2. DME/DME RNP-0.3 not authorized. 3. VDP not authorized when using Battle Mountain altimeter setting. 4. Pilot controlled lighting 122.8.

11,100′
MSA RW14

BRIEFING STRIP ™





Gnd speed-Kts	70	90	100	120	140	160
Glide path angle 3.00°	372	478	531	637	743	849
MAP at RW14						

AVASI-L | 12000′ | D | MUXSU

STRAIGHT-IN LANDING RWY 14			CIRCLE-TO-LAND		
	1 LPV DA(H) 4843′ (539′)	2 LNAV MDA(H) 5100′ (796′)	Max Kts	With Local Altimeter Setting MDA(H)	With Battle Mountain Altimeter Setting MDA(H)
A	2	1	90	5100′ (792′)-2	5240′ (932′)-2
B		1¼	120		
C		2¼	140	5100′ (792′)-2¼	5240′ (932′)-2¼
D		2½	165	5100′ (792′)-2½	5240′ (932′)-2½

AMENDO

TERPS

1 DA(H) 4983′ (679′) with Battle Mountain altimeter setting.
2 MDA(H) 5240′ (936′) with Battle Mountain altimeter setting.

CHANGES: New Procedure.

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KWMC/WMC
WINNEMUCCA MUN

JEPPESEN
22 SEP 06 (12-2) Eff 28 Sep

WINNEMUCCA, NEV
RNAV (GPS) Rwy 32

ASOS	SALT LAKE Center	RENO Radio	WINNEMUCCA MUN UNICOM
120.17	132.25	122.3	CTAF 122.8

BRIEFING STRIP™

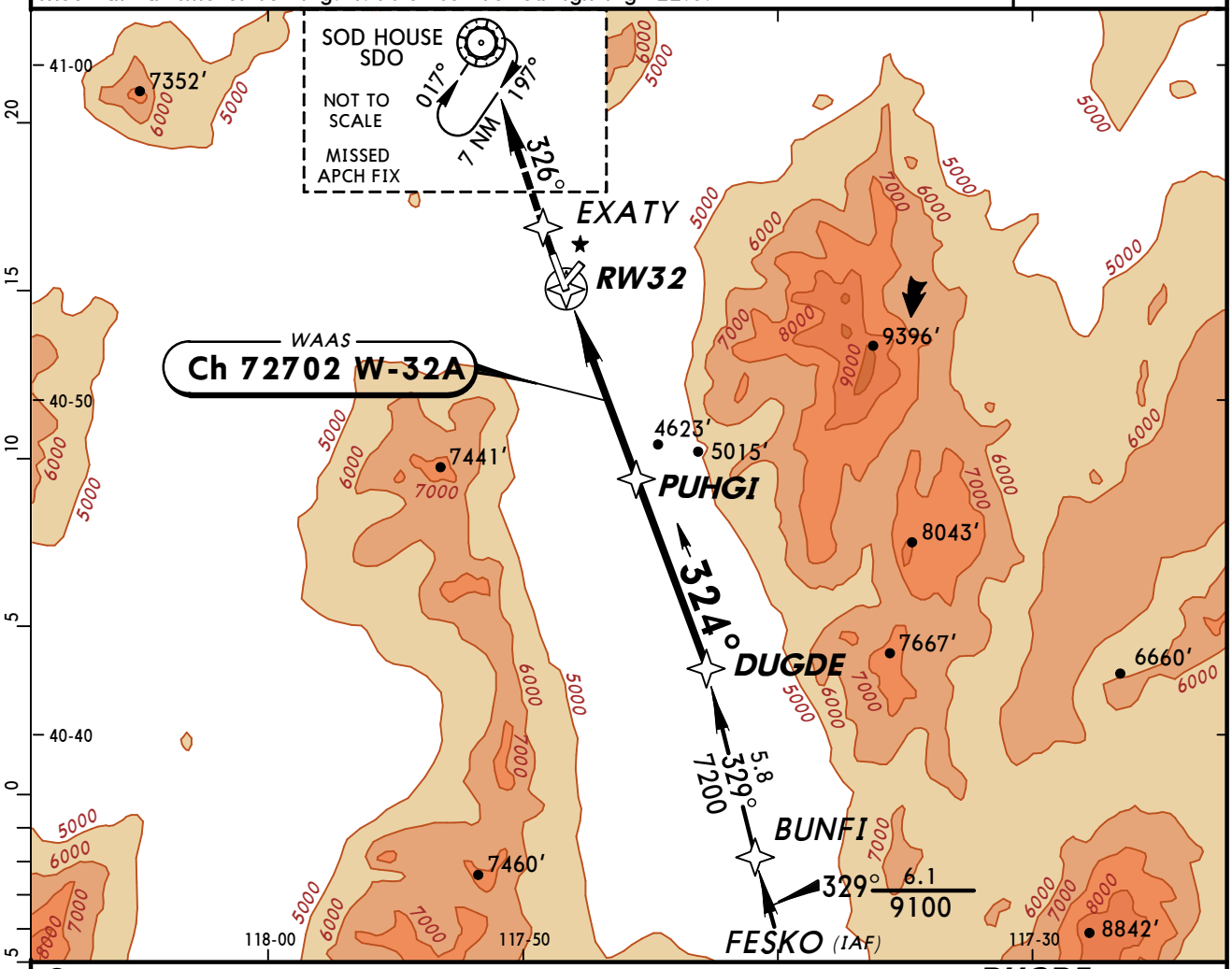
WAAS	Final Apch Crs	Minimum Alt PUHGI	LPV DA(H) (CONDITIONAL)	Apt Elev 4308′
Ch 72702 W-32A	324°	6300′ (1996′)	4554′ (250′)	TDZE 4304′

MISSED APCH: Climb to 10000′ direct EXATY and via 326° track to SDO VOR and hold.

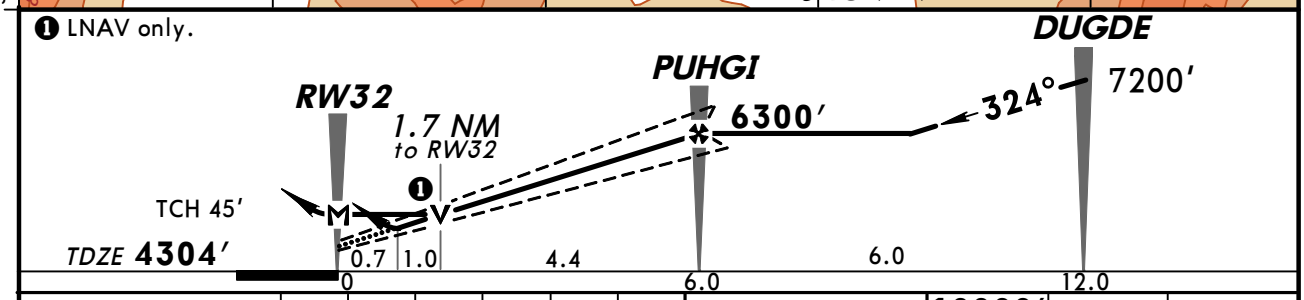
Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′

1. Use local altimeter setting, if not received, use Battle Mountain altimeter setting.
2. DME/DME RNP-0.3 not authorized. 3. VDP not authorized when using Battle Mountain altimeter setting. 4. Pilot controlled lighting 122.8.

11,100′
MSA RW32



❶ LNAV only.



Gnd speed-Kts		70	90	100	120	140	160
Glide path angle	3.00°	372	478	531	637	743	849
MAP at RW32							

10000′ ↑ D→ EXATY

STRAIGHT-IN LANDING RWY 32			CIRCLE-TO-LAND		
	1 LPV DA(H) 4554′(250′)	2 LNAV MDA(H) 4880′(576′)	Max Kts	With Local Altimeter Setting MDA(H)	With Battle Mountain Altimeter Setting MDA(H)
A	3/4	1	90	4880′(572′)-1	5020′(712′)-1
B			120		
C		1½	140	4880′(572′)-1½	5020′(712′)-1½
D		1¾	165	4880′(572′)-2	5020′(712′)-2

AMENDO

TERPS

1 DA(H) 4694′ (390′) with Battle Mountain altimeter setting.
2 MDA(H) 5020′ (716′) with Battle Mountain altimeter setting.

CHANGES: New Procedure.

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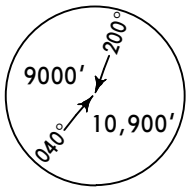
BRIEFING STRIP ™

ASOS	SALT LAKE Center	RENO Radio	WINNEMUCCA MUN UNICOM
120.17	132.25	122.3	CTAF 122.8

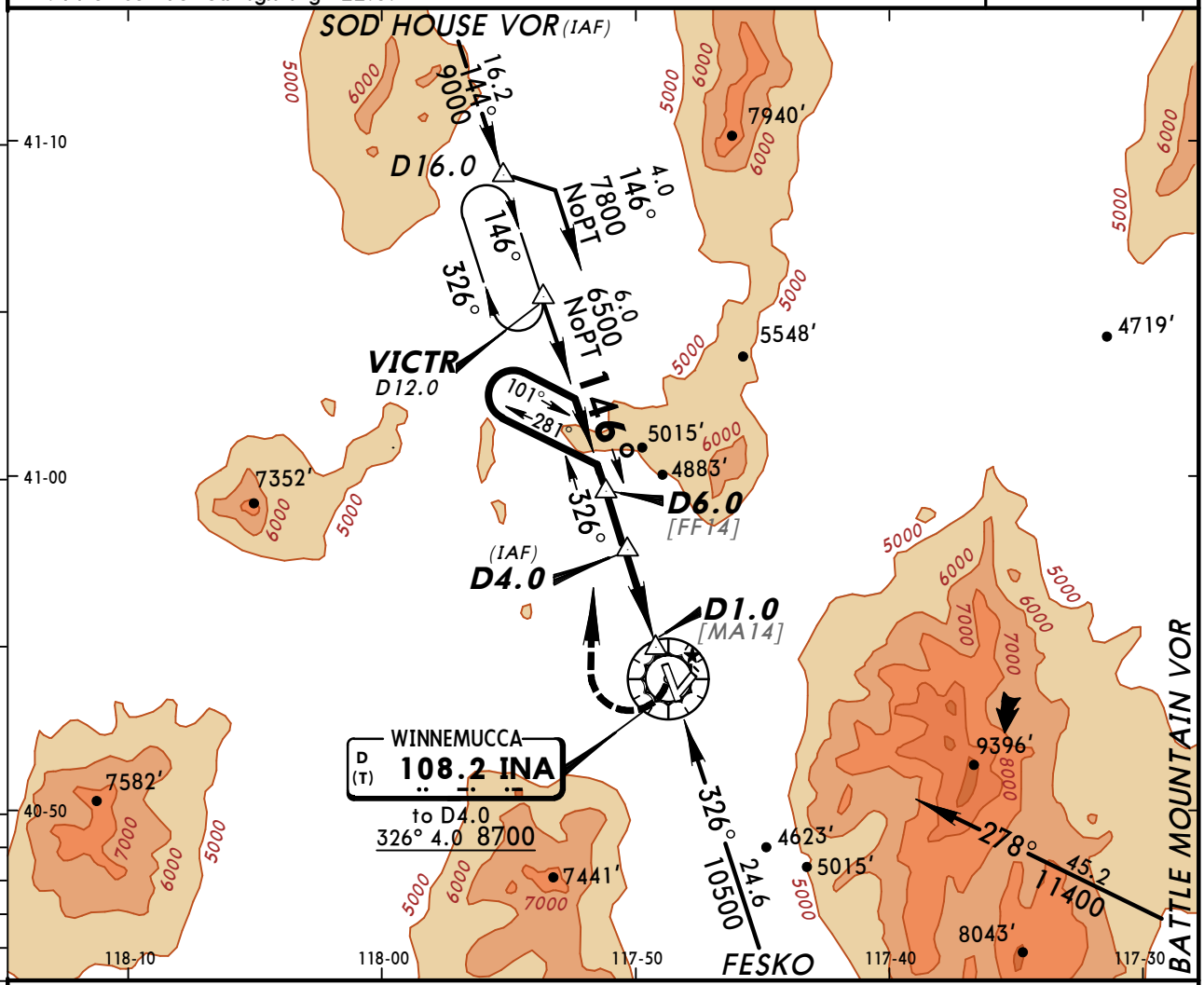
VOR	Final Apch Crs	Minimum Alt	MDA(H)	Apt Elev 4308′
INA 108.2	146°	D6.0 6500′ (2196′)	Refer to Minimums	TDZE 4304′

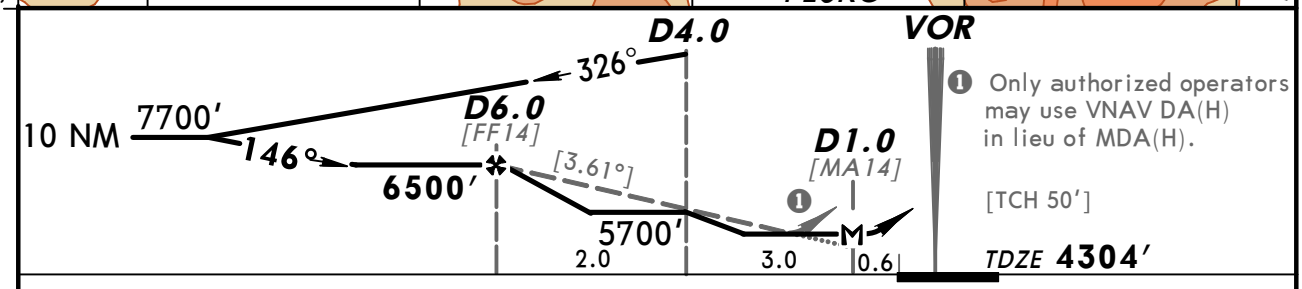
MISSED APCH: Climbing RIGHT turn to 8000′ outbound via INA VOR R-326 to VICTR D12.0 and hold.

Alt Set: INCHES Trans level: FL 180 Trans alt: 18000′
1. Pilot controlled lighting 122.8.



MSA INA VOR





❶ Only authorized operators may use VNAV DA(H) in lieu of MDA(H).

[TCH 50′]

Gnd speed-Kts	70	90	100	120	140	160
Descent angle [3.61°]	447	575	639	767	894	1022
MAP at D1.0						

AVASI-L

8000′ RT via INA 108.2 R-326 VICTR

STRAIGHT-IN LANDING RWY 14		CIRCLE-TO-LAND	
MDA(H) A,B: 4620′ (316′)		Max Kts	MDA(H)
MDA(H) C: 4840′ (536′)			
MDA(H) D: 5560′ (1256′)			
A	1	90	4700′ (392′)-1
B		120	4760′ (452′)-1
C	1½	140	4840′ (532′)-1½
D	3	165	5560′ (1252′)-3

TERPS AMEND 0

CHANGES: Printing sequence, descent angle.

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Chart changes since cycle 03-2012

ADD = added chart, REV = revised chart, DEL = deleted chart.

ACT	PROCEDURE IDENT	INDEX	REV DATE	EFF DATE
LAS VEGAS, NV (MC CARRAN INTL - KLAS)				
REV	RAMP CONSTRUCTION (TEMP)	10-8	17 Feb 2012	
REV	AIRPORT, AIRPORT INFO	10-9	17 Feb 2012	
REV	AIRPORT INFO (CONTD), TAK...	10-9A	17 Feb 2012	
REV	PARKING GATE COORDS (CONC...	10-9B	17 Feb 2012	
REV	PARKING GATE COORDS (CONC...	10-9C	17 Feb 2012	
LAS VEGAS, NV (NELLIS AFB - KLSV)				
MINDEN, NV (MINDEN-TAHOE - KMEV)				
FALLON, NV (FALLON NAS - KNFL)				
REV	AIRPORT, AIRPORT INFO, TA...	30-9	17 Feb 2012	
RENO, NV (RENO/TAHOE INTL - KRNO)				
RENO, NV (RENO/STEAD - KRTS)				
TONOPAH, NV (TEST RANGE - KTNX)				
TONOPAH, NV (TONOPAH - KTPH)				
WINNEMUCCA, NV (WINNEMUCCA MUN - KWMC)				

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TERMINAL CHART CHANGE NOTICES

Chart Change Notices for Airport KLAS

Type: Terminal
Effectivity: Permanent
Begin Date: Immediately
End Date: No end date

Airport construction area Twy W east of Twy Z. Hold Pad 1 and Hold Pad 2 north of Twy B to Twy B7. Twy G from Twy B north to Twy G1. Transition Points 15 and 16 could be affected by the construction area.

No Chart Change Notices for Airport KLSV

No Chart Change Notices for Airport KMEV

No Chart Change Notices for Airport KNFL

No Chart Change Notices for Airport KRNO

No Chart Change Notices for Airport KRTS

No Chart Change Notices for Airport KTNX

No Chart Change Notices for Airport KTPH

No Chart Change Notices for Airport KWMC