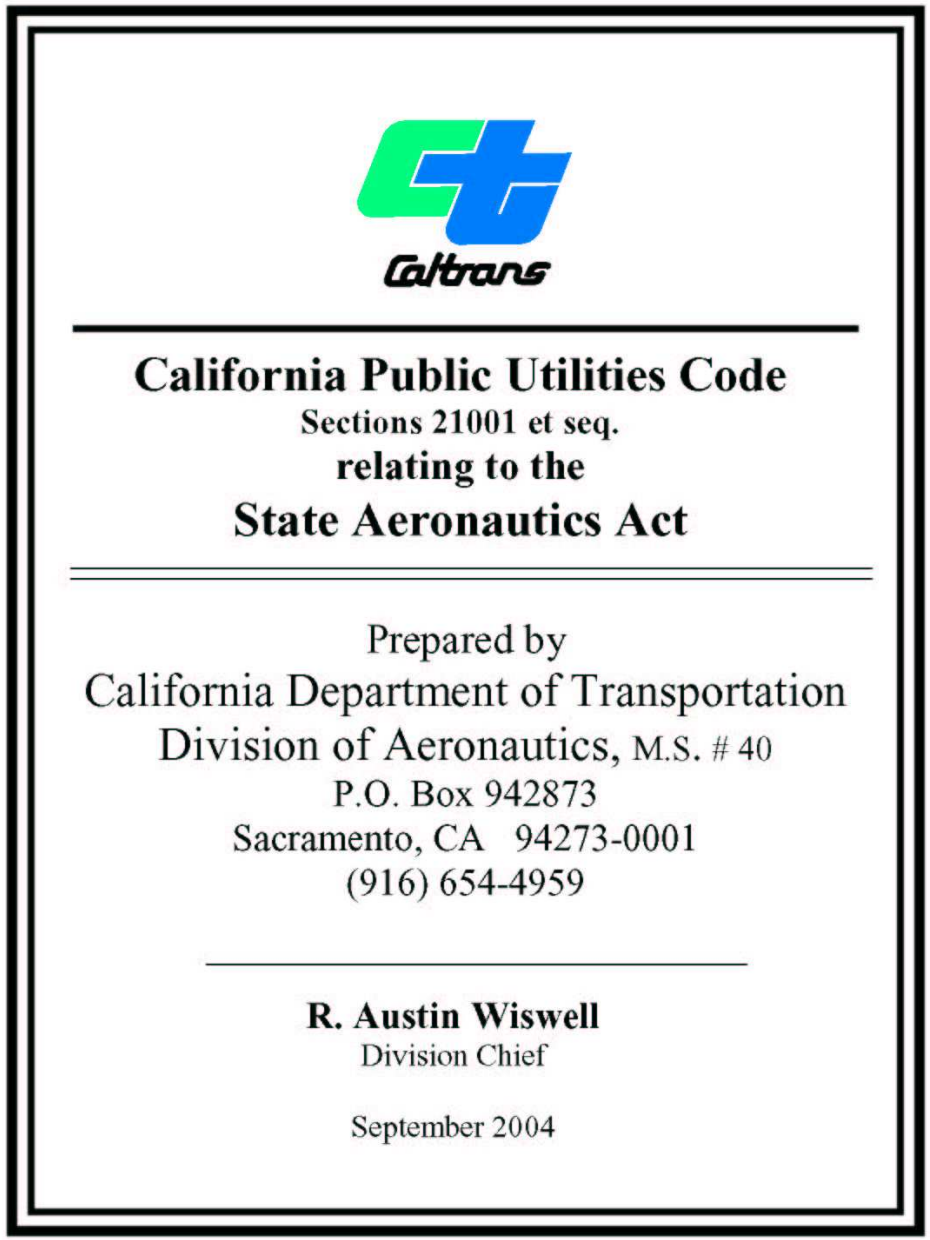
AERONAUTICS
DEPARTMENT OF TRANSPORTATION

INSPECTION 101

FAA
Western Pacific Region
4th Annual Airports Conference

May 8, 2008

Phillip Miller – Caltrans, Division of Aeronautics


Caltrans
California Public Utilities Code
Sections 21001 et seq.
relating to the
State Aeronautics Act
Prepared by
California Department of Transportation
Division of Aeronautics, M.S. # 40
P.O. Box 942873
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(916) 654-4959
R. Austin Wiswell
Division Chief
September 2004

State airport permit requirements

- Public Utilities Code, 21001 et. seq.
- California Code of Regulations, Title 21, Sections 3525-3560

Responsibilities of the Office of Airports

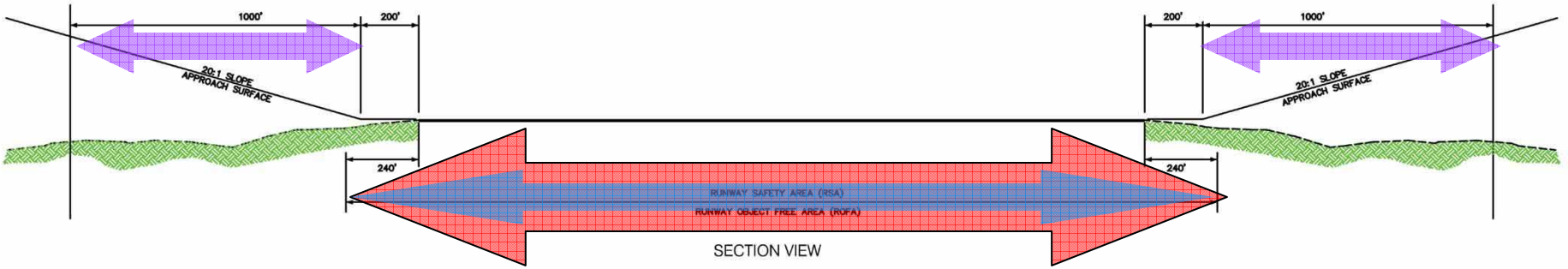
- Permit all airports and heliports (unless exempt)
- Conduct periodic safety and permit compliance inspections
- Conduct FAA Airport Master Record safety inspections for the FAA
- Conduct evaluations of proposed school, community college, and state buildings
- Conduct Helicopter Landing Authorizations for helicopter landings within 1000 feet of a school (K-12).

Airport Safety

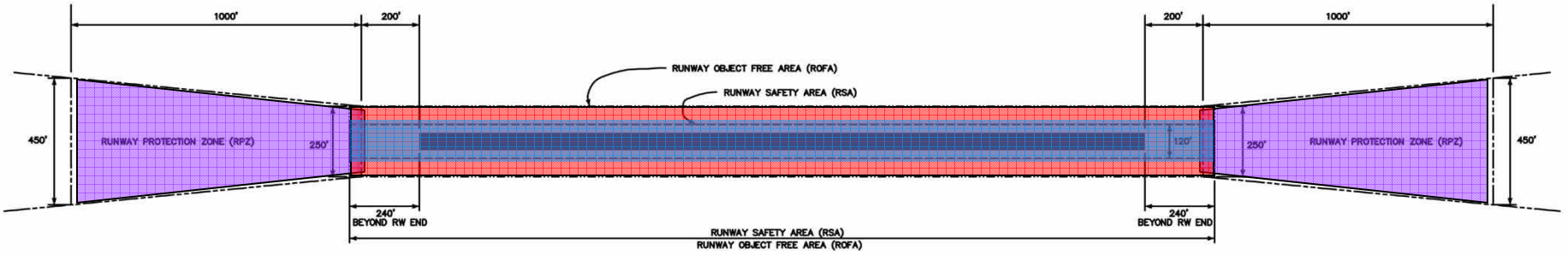
- Overview of responsibilities of the Office of Airports
- State airport permit requirements
- Federal airport design standards
- Access control and runway incursions
- Hazards to Air Navigation
- Questions and Answers

Federal airport design standards

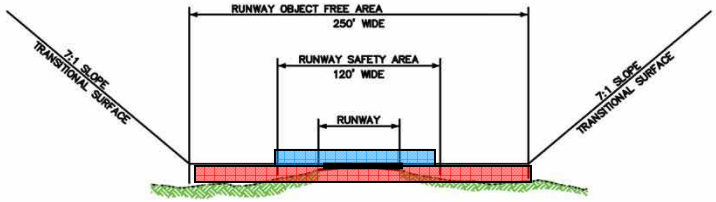
- **Advisory Circular (AC) 150/5300-13, Airport Design**
  1. **Runway Object Free Areas (ROFA)**
  2. **Runway Protection Zones (RPZ)**
  3. **Runway Safety Areas (RSA)**



SECTION VIEW



PLAN VIEW



CROSS SECTION VIEW

FAA DEFINED AREAS, ZONES
AIRPLANE DESIGN GROUP "I - SMALL"

(AIRCRAFT APPROACH CATEGORIES A & B. RUNWAYS WITH NOT LOWER THAN 1 STATUTE MILE APPROACH VISIBILITY MINIMUMS)

5

CAT

Federal airport design standards

- **Advisory Circular (AC) 150/5300-13, Airport Design**
  1. **Runway Safety Areas (RSA)**
  2. **Runway Object Free Areas (ROFA)**
  3. **Runway Protection Zones (RPZ)**
- **AC 150/5340-1J, Standards for Airport Markings**

Background

This holding position marking on Taxiway Uniform is not in line with the holding position sign. In addition, the holding position marking is parallel to the runway rather than perpendicular to the taxiway centerline.

Corrective action for this situation is to remove the holding position marking and reinstalled it perpendicular to the taxiway centerline.

Federal airport design standards

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  3. **Runway Protection Zones (RPZ)**
- **AC 150/5340-1J, Standards for Airport Markings**
- **AC 150/5340-30A, Design and Installation Details for Airport Visual Aids (lights)**

Federal airport design standards

- Advisory Circular (AC) 150/5300-13, Airport Design
  1. Runway Safety Areas (RSA)
  2. Runway Object Free Areas (ROFA)
  3. Runway Protection Zones (RPZ)
- AC 150/5340-1J, Standards for Airport Markings
- AC 150/5340-30A, Design and Installation Details for Airport Visual Aids (lights)
- AC 150/5340-18C, Standards for Airport Sign Systems (signs)

The 14L sign had some additional problems.

A black joint piece needs to be replaced with a yellow joint piece to match the yellow background. The black joint piece looks like a message divider, especially at night.

In addition, the distance between the “14” and the “L” exceeds FAA standards. This situation can cause pilot confusion because the “L” may be viewed as a separate message element for Taxiway Lima. Taxiway Lima at this airport was located on the other side of Runway 14L. A pilot using an airport diagram could be confused by this sign.

This is how the sign should look.
14L ↑

FAA Dimensional Standards

as of: 7/15/2005

Based on AC 150/5300-13, Airport Design

AIRPLANE DESIGN GROUP (ADG) [Wingspan: **I** < 49' ≤ **II** < 79' ≤ **III** < 118' ≤ **IV** < 171' ≤ **V** < 214' ≤ **VI** < 262']

	I-small		I				II				III				IV				V		VI	
Approach Categories:	A&B		A&B		C&D		A&B		C&D		A&B		C&D		A&B		C&D		C&D		C&D	
Visibility:	>3/4	<3/4	>3/4	<3/4	>3/4	<3/4	>3/4	<3/4	>3/4	<3/4	>3/4	<3/4	>3/4	<3/4	>3/4	<3/4	>3/4	<3/4	>3/4	<3/4	>3/4	<3/4
Runway Width	**60**	**75**	**60**	**100**	**100**		**75**	**100**	**100**		**100**	**100**	**100**		**150**	**150**	**150**		**150**		**200**	
Runway Shoulder Width	10	10	10	10	10		10	10	10		20	20	20		25	25	25		35		40	
Runway Blast Pad Width	80	95	80	120	120		95	120	120		140	140	140		200	200	200		220		280	
Runway Blast Pad Length	60	60	100	100	100		150	150	150		200	200	200		200	200	200		400		400	
Rwy Safety Area Width	**120**	**300**	**120**	**300**	**500**		**150**	**300**	**500**		**300**	**400**	**500**		**500**	**500**	**500**		**500**		**500**	
Rwy Safety Area Length	240	600	240	600	600		300	600	600		600	600	600		600	600	600		600		600	
prior to Lndg Threshold																						
Rwy Safety Area Length	**240**	**600**	**240**	**600**	**1000**		**300**	**600**	**1000**		**600**	**800**	**1000**		**1000**	**1000**	**1000**		**1000**		**1000**	
beyond RW End																						
Rwy Object Free Area Wth	**250**	**800**	**400**	**800**	**800**		**500**	**800**	**800**		**800**	**800**	**800**		**800**	**800**	**800**		**800**		**800**	
Rwy Object Free Area Lgth	**240**	**600**	**240**	**600**	**1000**		**300**	**600**	**1000**		**600**	**800**	**1000**		**1000**	**1000**	**1000**		**1000**		**1000**	
beyond RW End																						
Rwy CL to Holdline	125*	175**	200*	250**	250*	250**	200*	250**	250*	250**	200*	250**	250*	250**	250*	250**	250*	250**	250*	280**	250*	280**
Rwy CL to TW/TL CL***	150	200	225	250	300	400	240	300	300	400	300	350	400	400	400	400	400	400	see Table 2-2		600	600
Rwy CL to Acft Parking Area	125	400	200	400	400	500	250	400	400	500	400	400	500	500	500	500	500	500	500	500	500	500
Taxiway Width			**25**				**35**				**50**				**75**				**75**		**100**	
Taxiway Edge Safety Margin			5				7.5				10				15				15		20	
Taxiway Shoulder Width			10				10				20				25				35		40	
Taxiway Safety Area Width			**49**				**79**				**118**				**171**				**214**		**262**	
Twy Object Free Area Width			89				131				186				259				320		386	
Taxilane Obj Free Area Width			79				115				162				225				276		334	
Twy CL to Parallel TW/TL CL			69				105				152				215				267		324	
Tw CL to Fixed/Moveable Obj			44.5				65.5				93				129.5				160		193	
Tlane CL to Parallel TL CL			64				97				140				198				245		298	
Tlane CL to Fixed/Move Obj			39.5				57.5				81				112.5				138		167	

Aircraft Approach Category Speeds:

A < 91 ≤ **B** < 121 ≤ **C** < 141 ≤ **D** < 166 ≤ E

FAR Part 77 (U=Utility; O=larger than U; V=Visual; NPI=Non-Prec)**:**

Primary Surf Width: U=250'; O=500' for V & NPI >3/4; Rest = 1000'

App Surf Length: U&V=5000'@20:1; Rest=10000'(+40000 for P)

App Surf Out Width: V:U=1250',O=1500'; NPI: U=2000', O=3500'

w/mins>3/4, 4000' w/mins=4000'; P=16000'

Runway Protection Zone:

ADG or Acft Approach Category:		Approach Visibility Minimums: Visual / > 1			> 3/4	< 3/4
		I-small	A&B	C&D	A,B,C,D	A,B,C,D
DIMENSIONS:	Length	1000	1000	1700	1700	2500
	Inner Width	250	500	500	1000	1000
	Outer Width	450	700	1010	1510	1750

Notes: Visibilities are in nautical miles; other distances are in feet

I-small is for airports limited to small aircraft (defined as 12,500 lbs or less max certified takeoff weight)

* - indicates Visual/Nonprecision/GPS Nonprecision Runway

** - indicates Precision/GPS Precision Runway

*** - Taxiway/Taxilane centerline separation standards are for sea level. At higher elevations, an increase to separation distances may be required to keep taxiing/holding acft clear of the OFZ

Declared Distances -- used when RSA, ROFA, RPZ impracticable

TORA (TakeOff Run Avail): Length of Rwy Declared for T-Off Run

TODA (TakeOff Distance Avail): TORA + Rwy or Clearway to meet T-Off Dist.

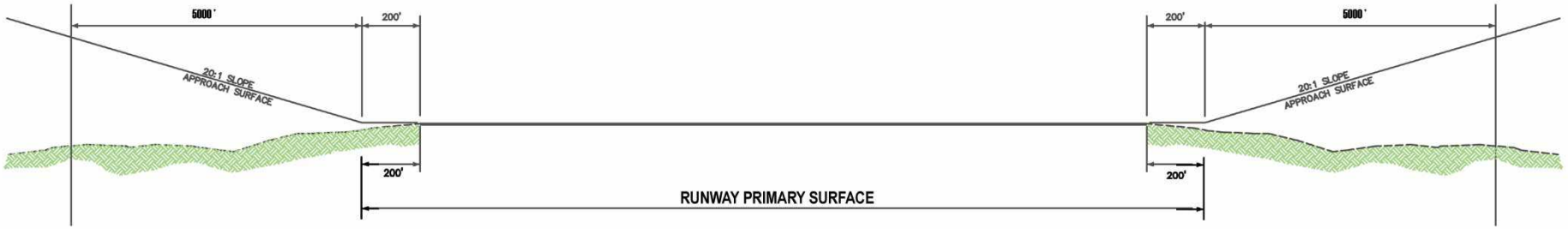
ASDA (Accel-Stop Dist Avail): Lgth of Rwy + Stopway for Accel-Stop Dist

LDA (Landing Distance Avail): Rwy Avail to meet Lndg Distance Req

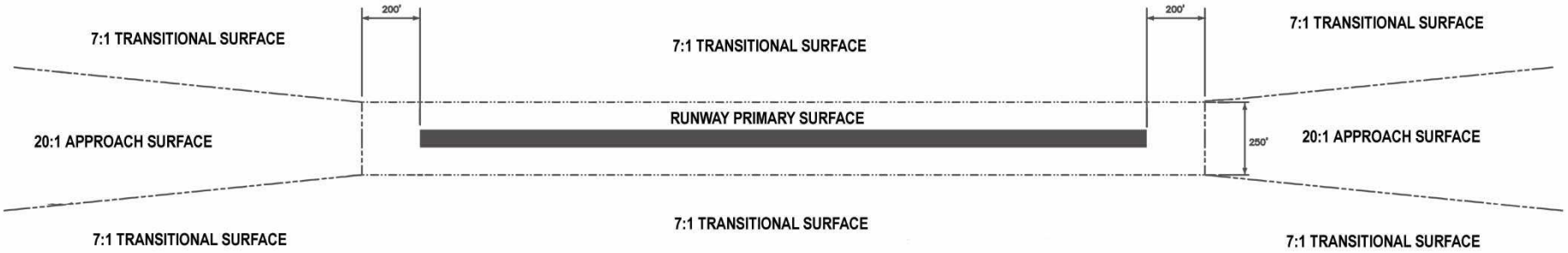
Steel fence in RSA
Large rocks in RSA

Hazards to Air Navigation

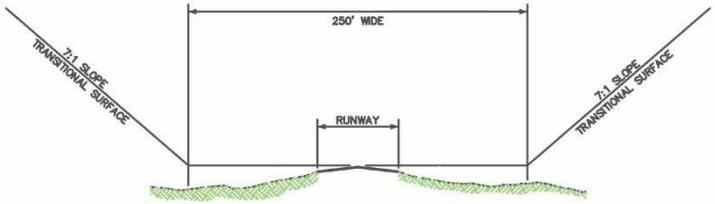
- PUC - Section 21646, 21658, and 21659
- Federal Aviation Regulation, Part 77 – Objects Affecting Navigable Airspace
  - Primary Surface
  - Approach Surface
  - Transitional Surface



SECTION VIEW



PLAN VIEW

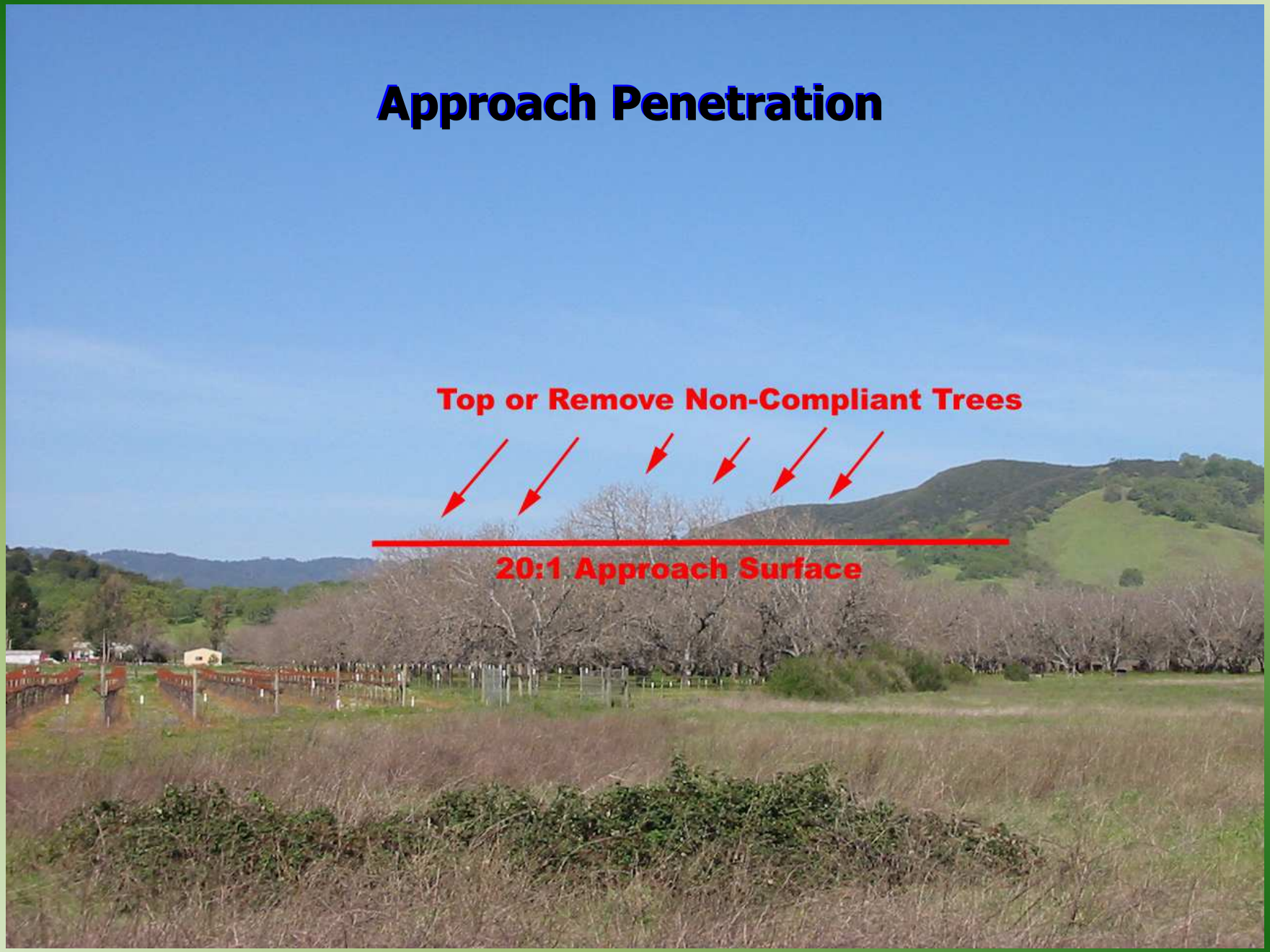


CROSS SECTION VIEW

FEDERAL AVIATION REGULATION PART 77
SMALL AIRPORT VISUAL RUNWAY

20:1 Approach Surface
7:1 Transitional Surface

Approach Penetration



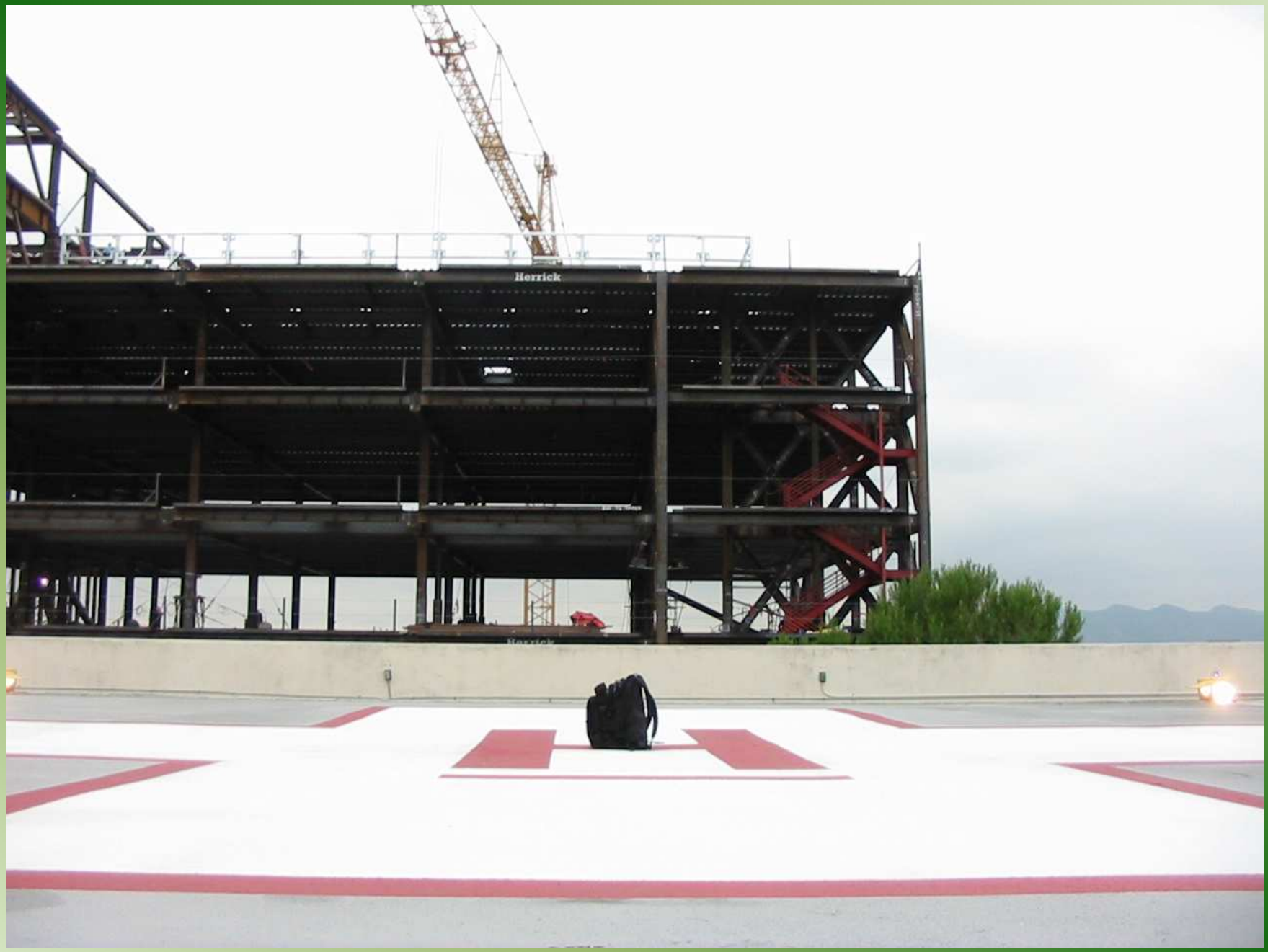
34:1 Approach Surface
Penetration

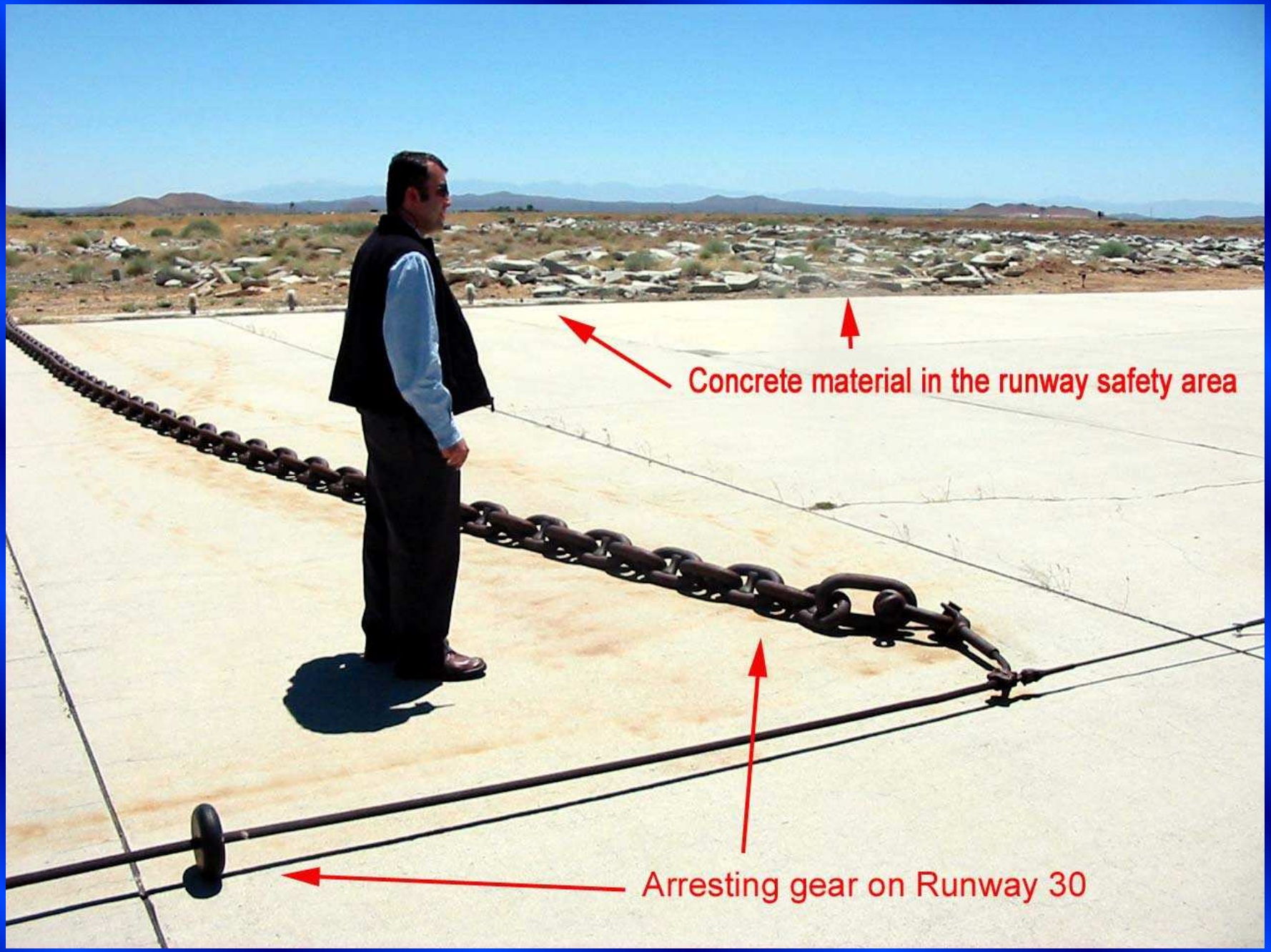
Hangars penetrate 20:1 approach surface

7:1 Transitional Surface
Penetration

Penetration to Part 77 Surface

1) The object is removed or lowered to preclude penetration of applicable threshold siting surfaces;
2) The threshold is displaced to preclude object penetration of applicable threshold siting surfaces, with a resulting shorter landing distance; or
3) Visibility minimums are raised.
4) Prohibit night operations.
5) Suspend airport permit.


Herrick


Concrete material in the runway safety area
Arresting gear on Runway 30

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Questions and Answers

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That's it !!

Thank You for Your Time