

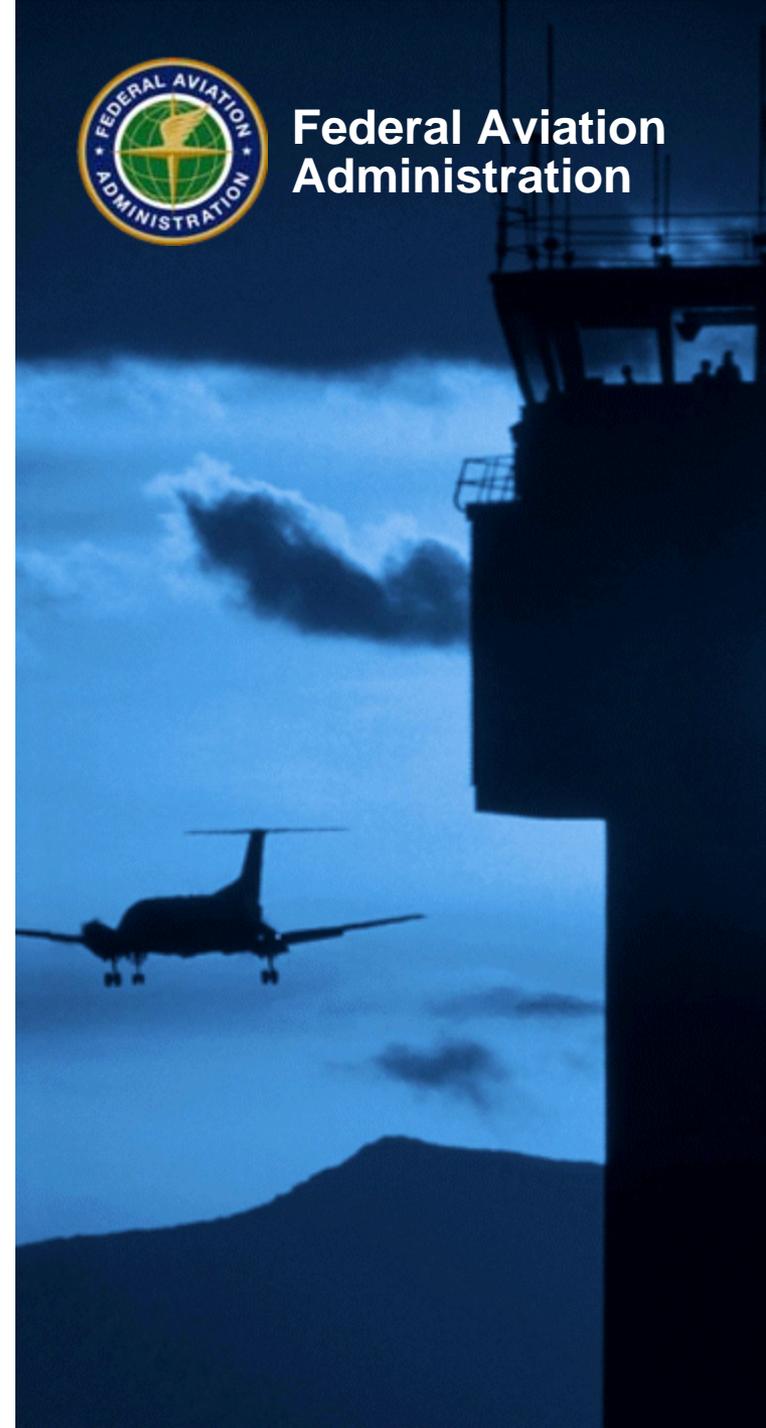
Northwest Mountain Region 2009 Conference

Enhanced Markings

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Federal Aviation
Administration



AC 150/5300-1J Changes 1&2 (Standards for Airport Marking)

- **Extended RW Holding Position Markings**
- **Enhanced TW Centerline Markings**
- **Surface Painted Hold Signs**

Extended Hold Position Markings

Required June 30, 2008



The extended holding position marking extends onto the paved shoulders at holding positions used by Group 5 and 6 aircraft. Other holding positions not used by Group 5/6 aircraft are not required to have the extended holding position marking.

Changes to Marking Standards in AC 150/5340-1J



The extended holding position marking extends onto the paved shoulders to within 5 feet of the pavement edge or 25 feet from the edge of the taxiway, whichever is less. If a light fixture is aligned with the marking, the extended holding position marking ends to 5 feet from the light fixture.

Changes to Marking Standards in AC 150/5340-1J



However, it is not a problem if the extended holding position marking is painted past a light fixture.

Changes to Marking Standards in AC 150/5340-1J

The taxiway edge marking should not be interrupted for the holding position marking with a 3 foot gap on the runway side. The taxiway edge marking should abut the holding position marking, or black outline if present, according to Par 23 (b)(2)(ii) and (iii) of AC 150/5340-1J.



Enhanced Taxiway Centerline Markings

- Airports over 1.5 million passenger enplanements
June 30, 2008
- Airports over 370,000 but less than 1.5 million
Dec 31, 2009
- Remaining Part 139 airports
Dec 31, 2010

Enhanced Taxiway Centerline Marking



The enhanced taxiway centerline marking begins 150 prior to all holding position markings and consists of a yellow dashed line on either side of the taxiway centerline. The dashes are 9 feet long with 3 foot gaps.

Enhanced Taxiway Centerline Marking



The dashed portion of the enhanced taxiway centerline marking is 6 inches wide even if the taxiway centerline is 12 inches wide.

Enhanced Taxiway Centerline Marking



The black outline may be 6 inches wide rather than the 3 inches specified in the AC, so the nozzles on the paint equipment do not have to be readjusted. See SAMS #108.

Enhanced Taxiway Centerline Marking

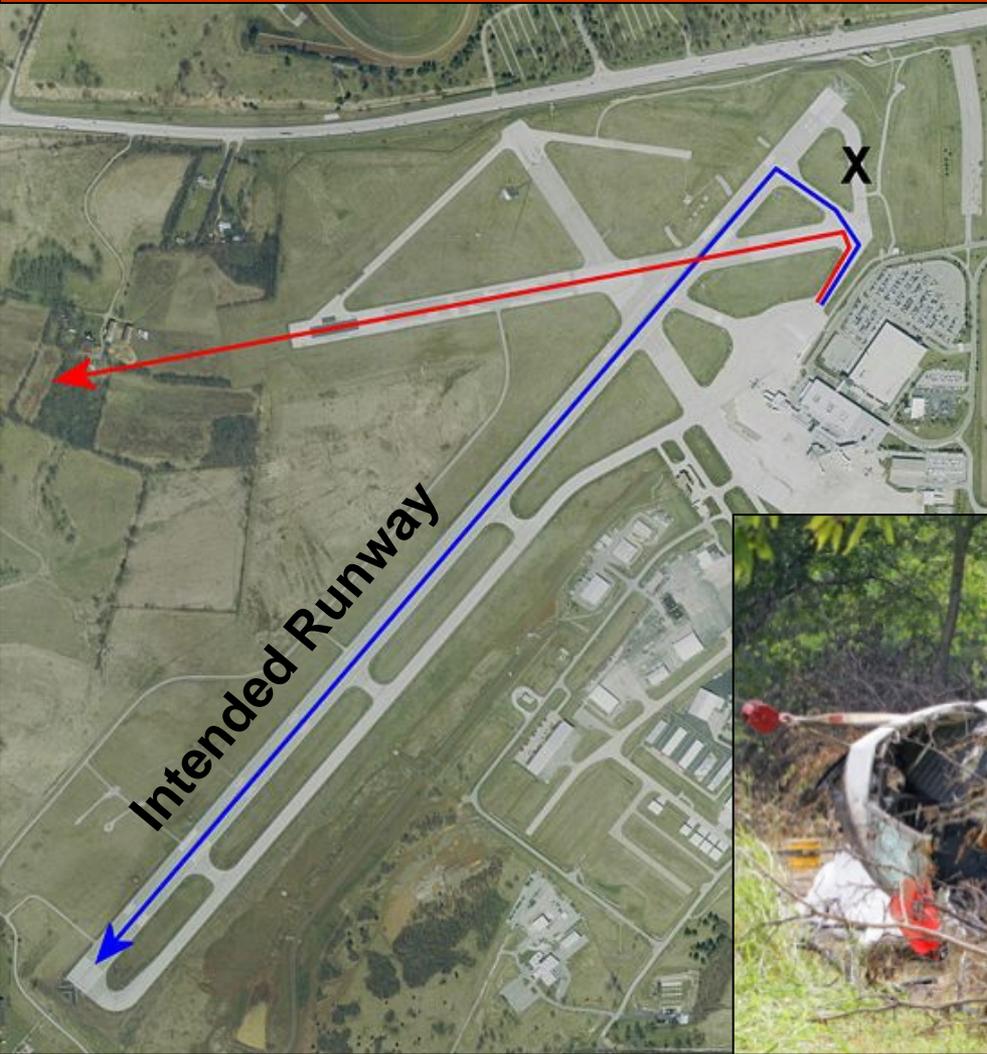


Enhanced taxiway centerlines are not to be installed at runway approach holding positions or ILS holding positions. Enhanced taxiway centerlines are only installed at holding positions on taxiways where aircraft immediately enter a runway.

Surface Painted Hold Signs

- **Required by December 31, 2010**
- **Required at all Part 139 Airports with more than one runway.**
- **Required on all taxiways with entrance widths greater than 200 feet at Part 139 Airports.**

Surface Painted Holding Position Signs



The new marking requirements are based on NTSB Recommendation A-07-46, issued after the Comair wrong runway takeoff accident in Lexington, KY.

Surface Painted Holding Position Signs

Change 2 to 150/5340-1J now requires surface painted holding position signs at all Part 139 airports with more than one runway by December 31, 2010.



Surface Painted Holding Position Signs



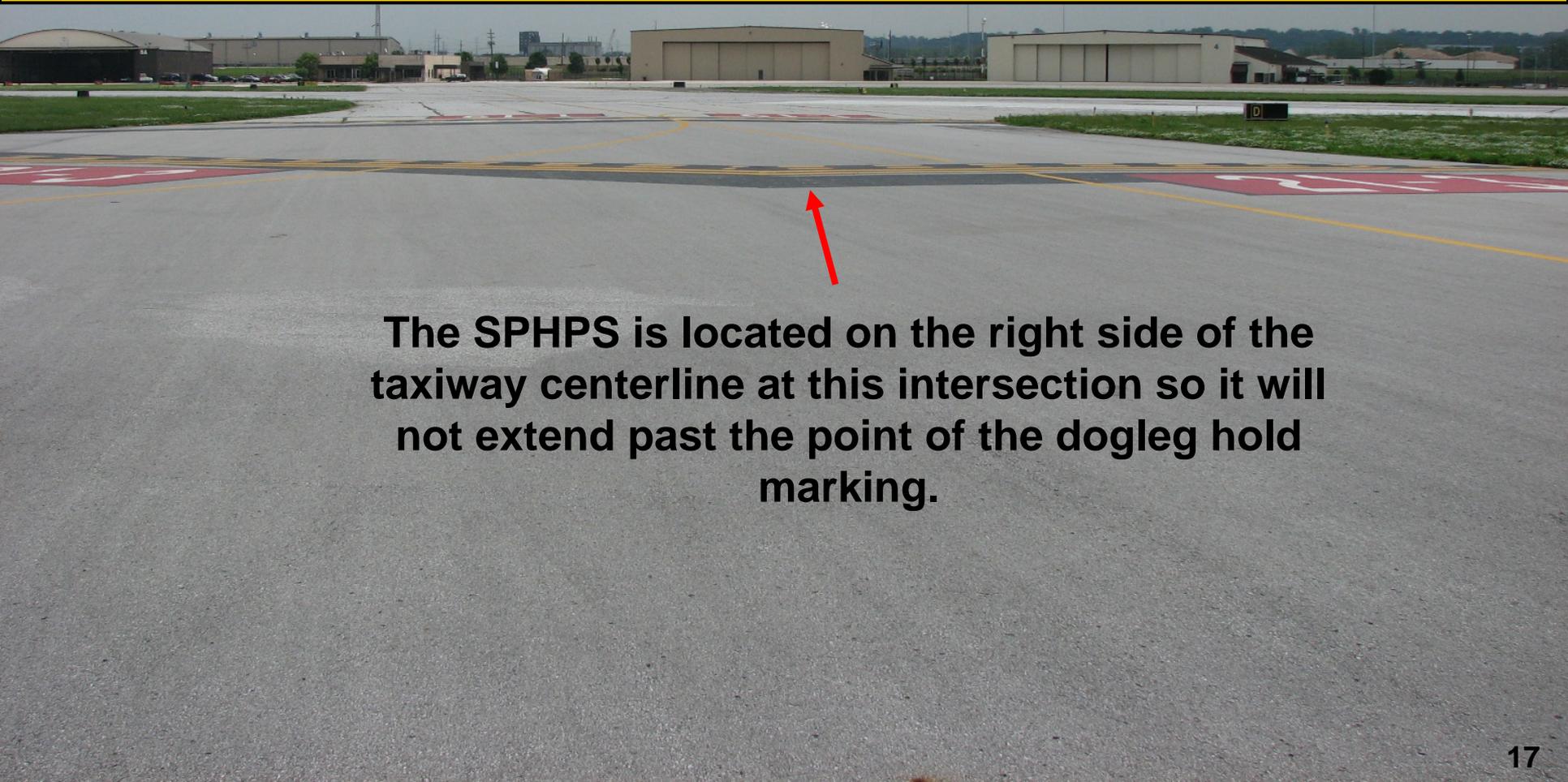
Surface painted holding position signs are located both to the left and to the right of the taxiway centerline, however, if the taxiway centerline is less than 45 feet from the left and right edge of the taxiway, the SPHPS on the right side may be omitted.

Surface Painted Holding Position Signs



If the enhanced taxiway centerline does not extend the full 150 feet due to the close proximity of the parallel taxiway, SPHPS are required on both sides of the taxiway centerline, even if the taxiway centerline is less than 45 feet from the edges of the taxiway.

AC 150/5340-1J, Change 2, Par 26b(4) states, *If two or more taxiway centerlines intersect the runway holding position marking or intersect each other within 15 feet (4.57 m) of the runway holding position, there might not be enough space for two or more surface painted holding position signs. These locations will require individual assessment for applying surface painted holding position signs that take into account such factors as taxi route usage rate and space.*



The SPHPS is located on the right side of the taxiway centerline at this intersection so it will not extend past the point of the dogleg hold marking.

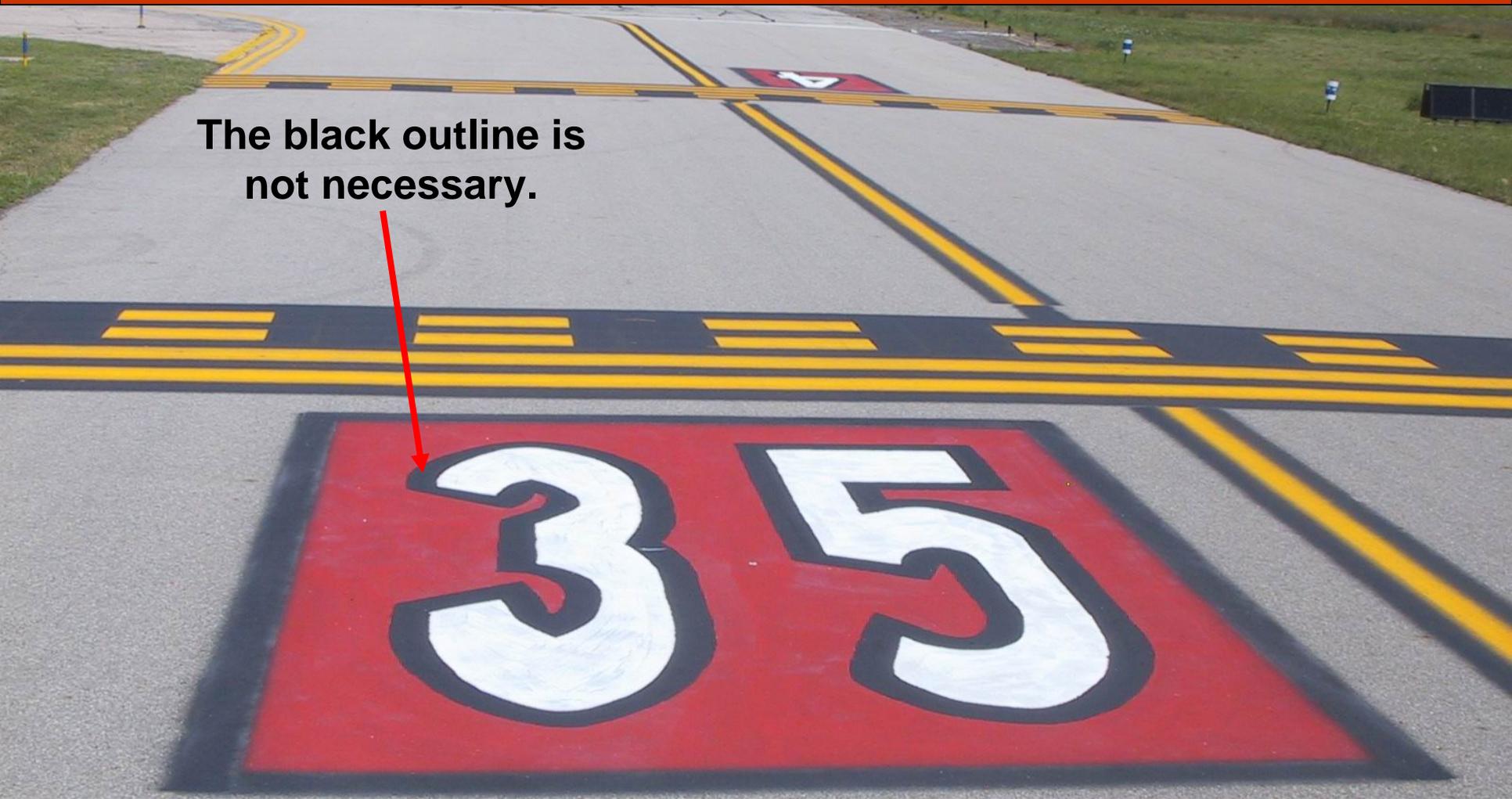
Surface Painted Holding Position Signs



Change 2 requires several SPHPS at hold positions over 200 feet wide. At these locations, place one SPHPS left of the taxiway centerline and place additional SPHPS every 100 feet (left or right) from the taxiway centerline.

Surface Painted Holding Position Signs

The black outline is not necessary.



AC 150/5340-1J, Chg 2, *Standards for Airport Markings*, Par 26c, states, *“The black border around the white alphanumerics required on the actual mandatory holding position sign is not necessary on the surface painted holding position signs.”*

Surface Painted Holding Position Signs

SPHPS are normally installed parallel to the holding position marking.



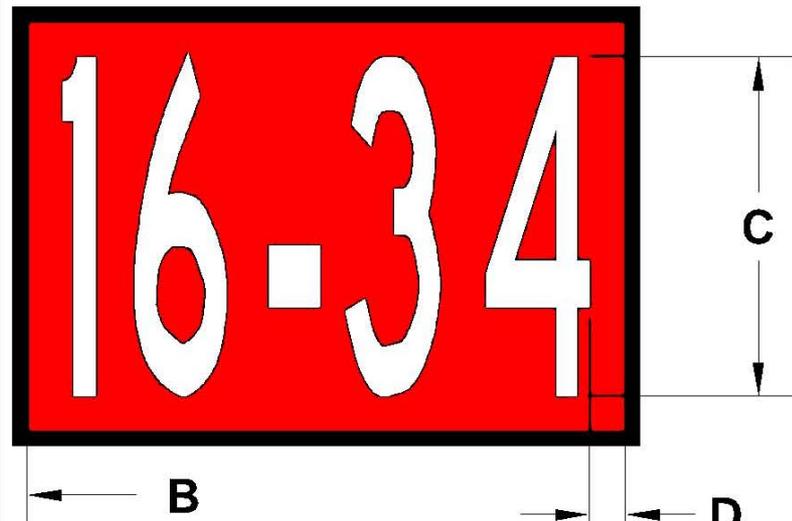
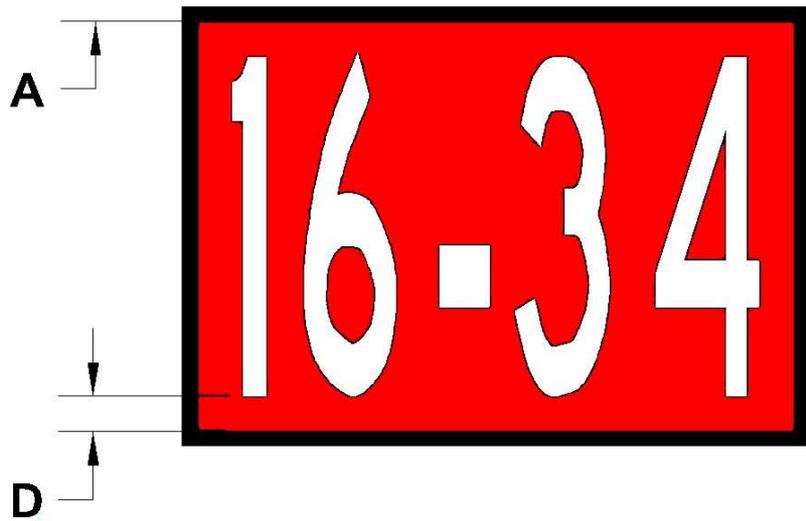
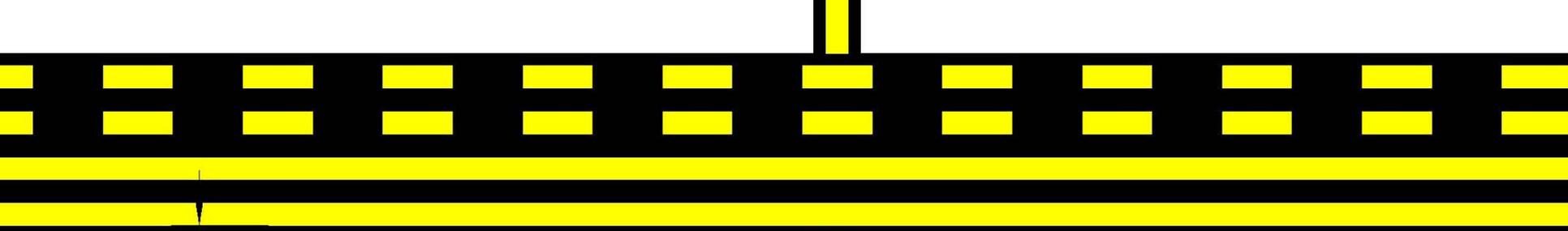
**Corrected During an
AIP Project**



Surface Painted Holding Position Signs

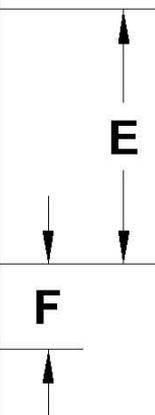
Dogleg holding positions are not specifically addressed. The location of the second SPHPS on the right side at this intersection should be parallel to the hold marking. Installation of SPHPS at these locations should be coordinated with the airport certification staff on a case-by-case basis.

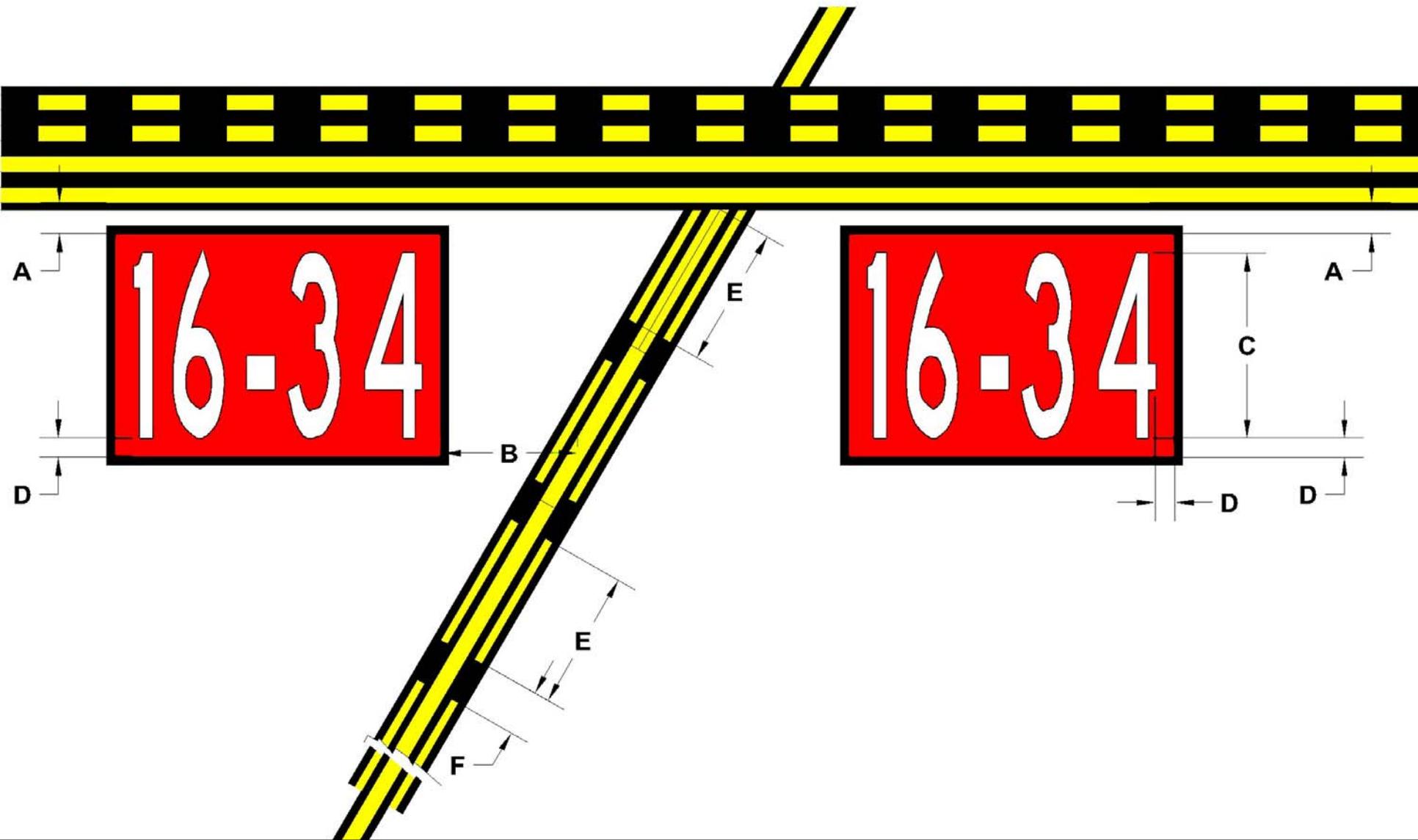




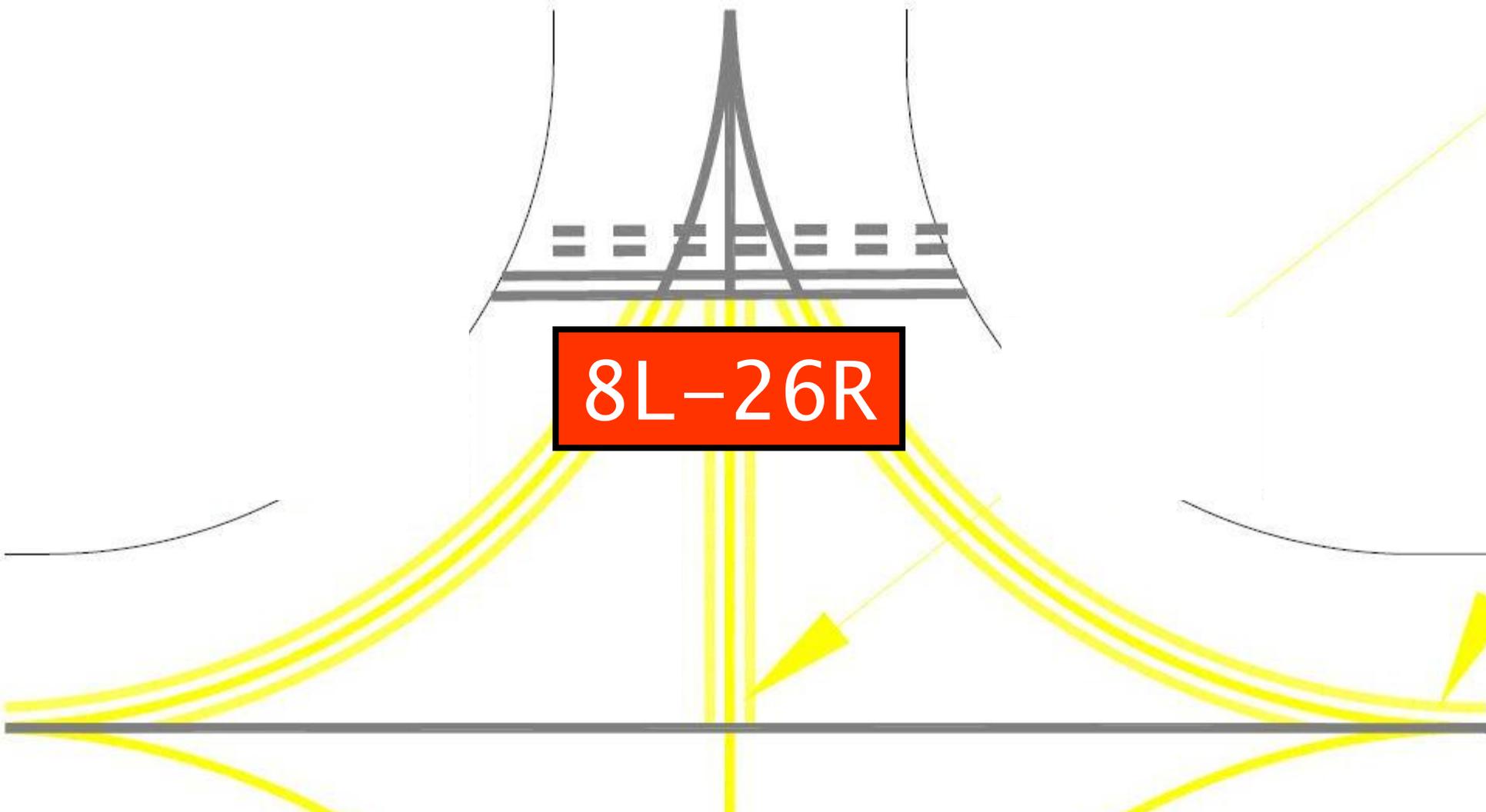
Dimension Letter	Dimension feet (meters)	Notes
A	2 – 4 (0.67 – 1.34)	
B	3 – 10 (0.91 – 2.75)	
C	9 – 12 (3.0 – 3.67)	The inscriptions must have a height of 12 feet (3.67 m); however, the height may be reduced, as necessary, to the minimum height of 9 feet (3 m). In special situations, the surface painted marking may be reduced below 9 feet (3 m) in order to fit the marking appropriately. Examples include taxiways with widths narrower than 75 feet (23 m) or taxiways that need to display multiple runway designations with arrows. In all cases, the inscriptions follow Appendix 1 inscription criteria. All other taxiway entrances to the same runway not needing the reduction are to maintain the 12 foot (3 m) height dimension. For practicality, the lowest height reduction is 3 feet (1 m).
D	15 inches (38 cm)	
E	9 (2.75)	
F	3 (0.91)	

Paragraph 26(d) states inscriptions height is 12 feet, however may be reduced to 9 feet if it is necessary to reduce the height below 12 feet at one location on the airport. The operator may want to reduce all





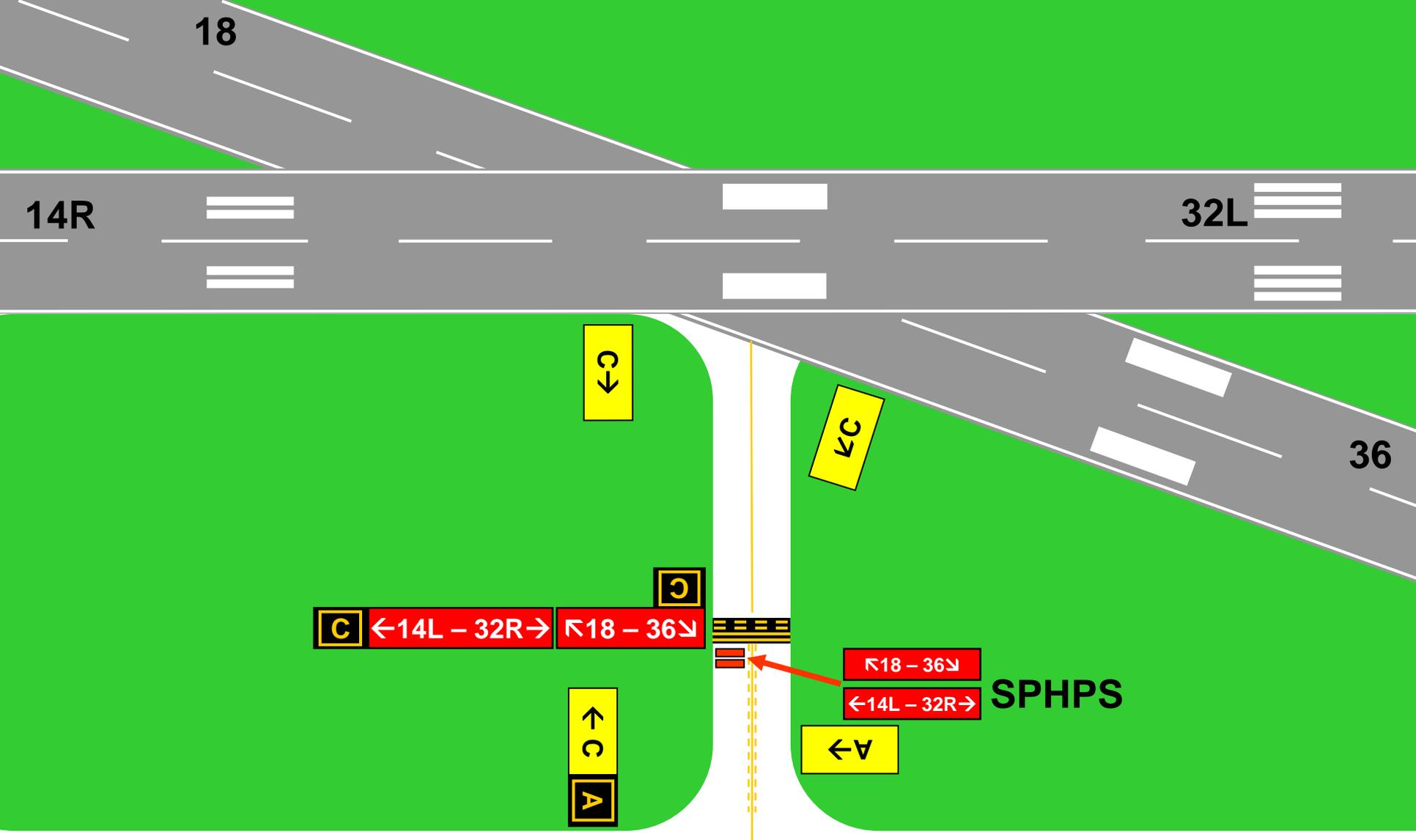
At locations where the taxiway centerline is not perpendicular to the holding position marking, the 3-10 foot distance from the taxiway centerline is measured from the nearest corner of the SPHPS.



The diagram shows a top-down view of a taxiway. At the top, a runway or taxiway centerline is shown with a dashed line and a solid line. A SPHPS (Standard Positioning and Holding Position Sign) is centered on the centerline. The sign is a red rectangle with the text '8L-26R' in white. The taxiway centerline is shown as a solid line that converges towards the centerline of the runway. A yellow arrow points to the SPHPS, indicating its position relative to the centerline.

8L-26R

For narrow taxiways where it is difficult to install a SPHPS due to space limitations and converging centerlines, an alternate method for installing a SPHPS will be to center one SPHPS on the taxiway over the taxiway centerline. This will result in the use of a larger inscription closer to the 9-12 foot range. A Modification to Standards to AC 150/5340-1J, Chg 2, Par 26a and 26d will need to be submitted to the ADO for this situation and will be forwarded to FAA HQ.



At taxiway/runway/runway intersections on very narrow taxiways, where a SPHPS with 3' tall legend will not fit, stack the SPHPS one above the other and reduce the size of the legend to fit using the standards in Figure C-6. Separate the two stacked SPHPS by 2 feet.

Enhanced Centerline and Painted Hold Signs Eligible for AIP



Surface Painted Holding Position Signs



Glass beads are required on the red and white portions of SPHPS.

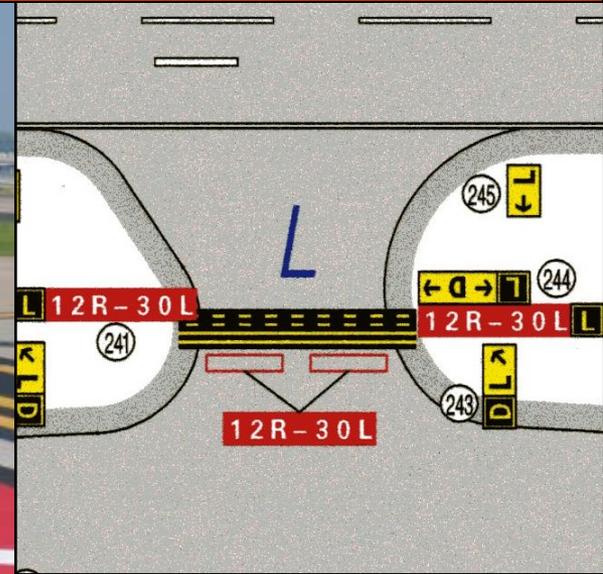
Surface Painted Holding Position Signs

No glass beads on the red



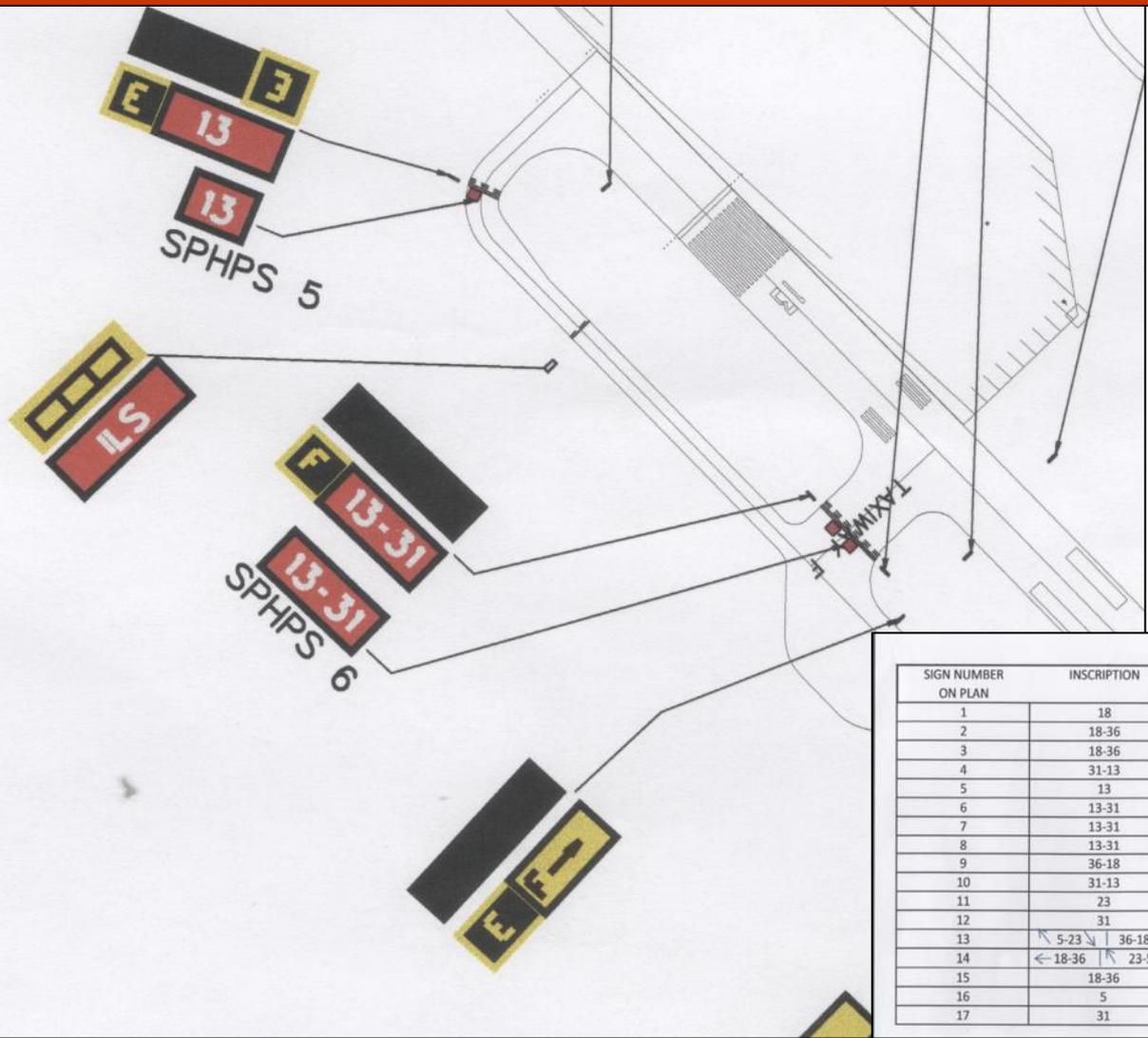
Glass beads on the red.

Surface Painted Holding Position Signs



Don't forget to revise your Sign and Marking Plan in the ACM to show surface painted holding position signs when they are installed. Due to the small size of SPHPS on most Sign and Marking Plans, it will be acceptable to indicate the presence of a SPHPS with a red boxes at the appropriate location at the holding positions. The legend will not need to be included since it will be the same as the holding position sign legend.

Surface Painted Holding Position Signs



SIGN NUMBER ON PLAN	INSCRIPTION	TAXIWAY WIDTH	TAXIWAY NAME	CALCULATED INSCRIPTION HEIGHT
1	18	50'	D	12'
2	18-36	60'±	H	12'
3	18-36	60'±	G	12'
4	31-13	50'	D	10'
5	13	60'±	E	12'
6	13-31	150'	F	12'
7	13-31	75'	D	12'
8	13-31	50'	C	10'
9	36-18	50'	C	10'
10	31-13	35'	C	5'
11	23	35'	C	12'
12	31	75'-80'	B	12'
13	↖ 5-23 ↘ 36-18 →	75'-80'	B	5'
14	← 18-36 ↖ 23-5 ↘	75'-80'	B	5'
15	18-36	50'	C	10'
16	5	45'-50'	A	12'
17	31	300'	B HOLD PAD	12'

TWO SIGNS
TWO SIGNS
TWO SIGNS
THREE SIGNS

This is an example of one method for depicting SPHPS on the Sign and Marking Plan. A Table showing the width of the taxiways and size of the inscriptions dimensions would also be helpful in reviewing SPHPS.

Marking Requirement Dates (Part 139)

- **Extension of Runway Hold Lines On Shoulder** **June 30, 2008**
- **Surface Painted Hold Position Signs** **December 31, 2010**
- **Enhanced Taxiway Centerline Marking**
 - Airports over 1.5 million passenger enplanements June 30, 2008
 - Airports over 370,000 but less than 1.5 million Dec 31, 2009
 - Remaining Part 139 airports Dec 31, 2010

Any Questions?

