

Example:

Title Sheet:

Urban Principal Arterial (TC-5.11U - 2011 AASHTO Green Book)
45 mph Minimum Design Speed

Horizontal Curve on plans:

Radius = 1533'

Superelevation = 3.3% (provided by GEOPAK)

V = ?

1. To verify the velocity of the horizontal curve compare project radius and superelevation with Design Factors Charts in Section 800 of the Road and Bridge Standards.
2. Start with Page 803.29 TC-5.11U for given Design Speed shown above (45 mph).^{*}
 - ⇒ Chart shows that a curve with 3.3% superelevation and radius of 1446' will support a velocity of 45 mph. The radius on the plans is greater than 1446' (1533').
3. Go to Section 803.30 (50 mph Design Speed).
 - ⇒ Chart shows that a curve with 3.3% superelevation and radius of 1857' will support a velocity of 50 mph, but the radius on the plans is less than 1857' (1533').
4. Therefore, the project radius and superelevation will not support a 50 mph design velocity. The more conservative V = 45 mph shall be shown on the plans as the velocity of the curve.

A Design Exception is required whenever the horizontal curve radius and/or superelevation rate does not support the minimum design speed. See [IIM-LD-227](#) for information on Design Exceptions.

ADDITIONAL RESOURCES

Transportation Research Board, *NCHRP Report 504*, Design Speed, Operating Speed, and Posted Speed Practices, available at:
http://trb.org/publications/nchrp/nchrp_rpt_504.pdf

2004 AASHTO Green Book, "Speed", Chapter 2.

NS 23 CFR 625 available at:

<http://www.fhwa.dot.gov/legregs/directives/fapg/0625sup.htm>

The Federal Aide Policy Guide (FAPG)

* Added 7/16