

**SR 99 S. Holgate St. to S. King St. Viaduct Replacement Project, Stage 2
XL 3237 and PIN 809936D
Deviation #4 Maximum Superelevation Rate
June 10, 2009**

Description of Design Element, Matrix, Design level, and WSDOT Reference
Superelevation Rate on Principal Arterial (P-1)
Matrix 3-7, Full Design Level (Fig. 440-6, May 2008)
Max. 8% (Chapter 642.04 and Fig. 642-4b)

Existing Conditions

The existing maximum superelevation is 6% and the design and posted speed is 50 mph.

Deviation description and Justification

The proposed roadway does not meet current WSDOT design criteria for a P-1 roadway with a design speed of 55mph. However, it does meet AASHTO guidelines for a low-speed freeway in an urban area. "...this design speed should not be less than 50 mph." "Superelevation rates of 6 to 8 percent are generally the maximum that should be used on viaducts...In lower speed situations, a maximum superelevation rate of 6 percent may be applicable."

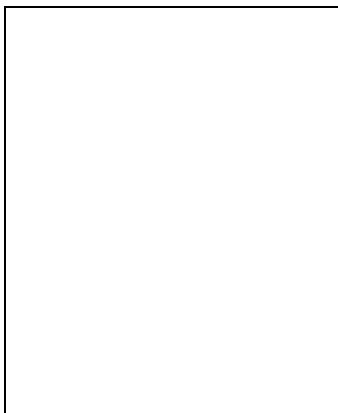
The posted speed will be 50mph, which is a low-speed freeway. Therefore, the maximum 6% superelevation rate is applicable.

AASHTO Reference: title, publication date, page

A Policy on Geometric Design of Highways and Streets, 2004, pages 503 (design speed) and 505 (superelevation)

Recommendation

Use the 6% max. superelevation rate table (WSDOT Design Manual Fig. 642-4c, Nov. 2007).



Mark Anderson, PE
Project Engineer

Deviation Approval

Date _____

By _____, P.E.

Susan Everett, P.E. Alaskan Way Viaduct Design Manager