

3.3M Vertical Alignment

3.3.5M Vertical Alignment: Design Domain Additional Application Heuristics

3.3.5.1M Vertical Alignment Principles: Application Heuristics

The TAC Subsection **3.3.5.1** is applicable to the Department's highways with the following additions:

13. Under certain circumstances, it is possible for the design of crest vertical curvature to be so severe as to potentially cause long truck trailers to "hang". The most common example is at-grade rail crossings in urban areas with low design speeds. In such cases, the K_c value is low enough that exceptionally long truck trailers may not clear. Such problems will have to be dealt with on a case-by-case basis. In such examples a K_c value higher than the design speed warrant should be employed.
14. Vertical curves are always desirable and should definitely be used when the algebraic difference in grades is greater than that indicated in Table 3.3.6M below. For grade breaks within intersections, see TAC Subsection 9.7.3 for guidance.

Table 3.3.6M: Maximum Algebraic Difference (A) in Grades Requiring the Use of Vertical Curves

Design Speed (km/h)	Use vertical curve if 'A' (%) is greater than:	
	Crest	Sag
≥110	0.5	0.5
70-100	0.7	1.0
≤60	0.8	1.5