

CHANGE LOG



PROJECT DEVELOPMENT AND DESIGN GUIDE

CHAPTER NO./TITLE 4. Horizontal and Vertical Alignment

EFFECTIVE DATE October 4, 2023

SECTION	CHANGE
General	Updated agency name to MassDOT throughout.
General	Various minor grammatical changes and nomenclature changes for consistency and readability.
General	Added hyperlinks to external resources.
General	References to "curvature" and "geometry" have been changed to "roadway alignment" where appropriate. Replaced the term Middle Ordinate (M) with Horizontal Sightline Offset (HSO). Updated AASHTO 2004 Green Book figures and tables to source from the AASHTO 2018 Green Book.
Introduction	Added the following to the list of critical constraints that drive the design process: purpose and need, land use, bicyclist and transit functions, context of the area, and terrain.
4.2 Horizontal Alignment	Added considerations for horizontal alignment compatibility with the selected target speed of a roadway. Added detail to "broken-back" curve considerations. Added detail to abrupt reversals in alignment considerations. Types of Horizontal Curvature: Added detail to the explanation for avoiding reverse curves. Superelevation Transitioning: Updated "shoulders" to "outside shoulders" for content about shoulder superelevation. Superelevation Transitioning: Added minimum superelevation runoff length equation. Superelevation Design and Superelevation Runoff Lengths: Added spiral curve transitions explanation, including the advantages of these curve transitions. Superelevation Design and Superelevation Runoff Lengths: Updated Table 4-5, Maximum Relative Gradients to be consistent with Section 3.3.8.2.1 of the 2018 AASHTO Green Book. The table includes linearly interpolated values for design speeds of 25, 35, and 45 mph.
4.3 Vertical Alignment	Added considerations for vertical alignment compatibility with the selected target speed of a roadway. Vertical Clearances: Added note regarding sag vertical curves at undercrossings.