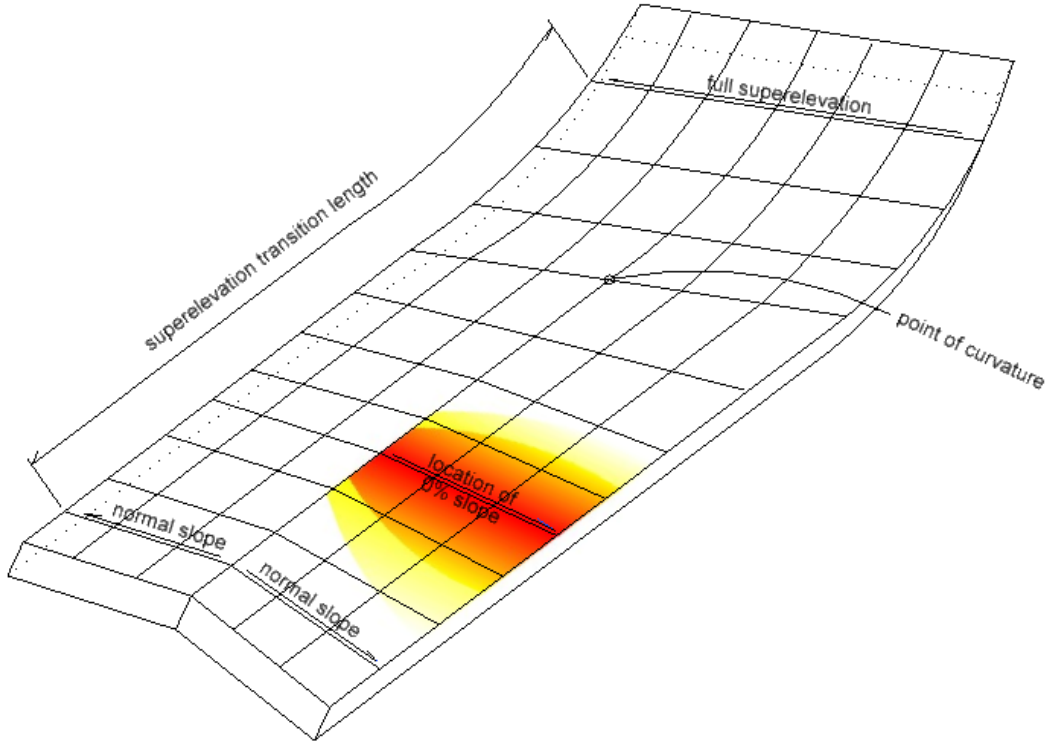
Office of Design

2A-4

Superelevation Transition Considerations for Pavement Drainage

Design Manual
Chapter 2
Alignments
Originally Issued: 07-22-14
Revised:

To achieve superelevation, the pavement surface must rotate through an area of zero cross slope. These areas of zero cross slope are critical for consideration because they occur at or near where the forces exerted by a vehicle are changing due to a change in the vehicle path. If this location coincides with a flat area within the profile, the result can be an area of pavement that does not drain well. This can occur near the turning point of a crest or sag, or within a tangent section of profile where the transition edge slope ratio acts with the profile to create a nearly flat area.



Situations such as this should be avoided if possible. Designers should seek to provide adequate running slope and/or avoid placing the flat location of a vertical curve coincident with the area of no cross slope. However, project constraints occasionally necessitate this occurrence. In these locations, designers should be aware of the implications this holds.

Newly placed pavement will generally provide adequate surface friction in areas of no cross slope; however, as the surface wears over time, the loss of surface friction can result in less than desirable conditions.

A tool has been developed to assist with the review of these areas, see Section 21M-51.

The output provided by this tool should be saved as project documentation for both ends of every superelevated curve within a project.

Chronology of Changes to Design Manual Section:

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7/22/2014	NEW
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