2.5 Visibility and Danger Zone Limits Analyses

With reference to the geometric properties of the vertical curve, and the emergency stopping distance of 1150 ft., visibility and danger zone limits are geometrically examined in Figure-I.4 and Figure-I.5.

For the east side of the crest vertical curve (Figure-I.4), the outer limit of danger zone starts at milepoint 96.5. This start point is determined based on the fact that if two cars are visible to each other, there will be no violator which will try to pass a vehicle in front, thus creating a potential for a head-on collision with a oncoming vehicle. The danger zone should be between the limits in which one driver will attempt an overtake maneuver, without having a clear sight of opposite traffic. As it is indicated on Figure-I.4, 1150-ft. emergency stopping distance will be available, if the vehicles are outside of the red line. Any two opposing vehicles entering the red-line on same lane (one obeying and other violating), will have a collision, unless one is able to change the lane, or get out of opposing vehicle’s lane by any other means (like steering the car off the road).

Using the same analogy, visibility and danger zone limit for the west side of the crest vertical curve starts at milepoint 117.5 (Figure-I.5). Again, the objective is keeping 1150-ft. emergency stopping distance between two vehicles.