REFINING VERTICAL ALIGNMENT

Vertical alignments or grades are to be reviewed and computed for smooth, exact tie-ins with adjoining projects and existing road elevations. Also, connections, interchange ramps, etc., are to be computed considering pavement crowns, variable widths, etc.

Grades on divided highways are to provide for allowable median crossover grades (See Appendix F, Section 2-MEDIAN CROSSOVER GRADES). Grades are to be checked for proper mainline sight distances at median crossovers, connections, and entrances.

STOPPING SIGHT DISTANCE

Stopping sight distances exceeding those shown in the table below should be used as basis for design wherever practical. [*]

In computing and measuring stopping sight distances, the height of the driver's eye is estimated to be 3.5 feet and the height of the object to be seen by the driver is 2 feet, equivalent to the taillight height of a passenger car. The "K Values" shown are a coefficient by which the algebraic difference in grade may be multiplied to determine the length in feet of the vertical curve that will provide minimum sight distance. Crest vertical curves shall meet or exceed AASHTO design criteria for Stopping Sight Distance, not the "k" Values. The "K" valves for sag vertical curves take into account the headlight sight distance.

Height of Eye 3.5'											Height of Object 2'
Design Speed (mph) **	25	30	35	40	45	50	55	60	65	70	75
Min. Sight Distance (ft.)	155	200	250	305	360	425	495	570	645	730	820
Minimum K Value For:											
Crest Vertical Curves	12	19	29	44	61	84	114	151	193	247	312
Sag Vertical Curves	26	37	49	64	79	96	115	136	157	181	206

Source: 2011 AASHTO Green Book, Chapter 3, Section 3.2.2, page 3-4

TABLE 2D-1 STOPPING SIGHT DISTANCE

**For all tables, use design speed if available, if not use legal speed.

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[*] Rev. 1/16