

The **Engineer*** is to study the requirements of each particular situation. In the case of a facility without crossovers, the first method above is generally acceptable on superelevated curves. This will allow the median area to be properly graded without creating an adverse design situation.

Method 2 generally results in an undesirable situation and must be used with caution.

In a case where a crossover is proposed, particularly in conjunction with a connecting road within the limits of a superelevated curve, the designer shall pay particular attention to the patch which must be traversed by vehicles using the crossover.

In most cases, the application of the superelevation in a single plane (Method 3) is the acceptable method. This will allow a vehicle to cross from one lane to the other without negotiating several different gradients. As noted, herein, this will require the adjustment of the mainline grades.

The desirable grade on a crossover is between 0.5% and 5%. The maximum grade should never exceed 10% as safe turning movements above this level are difficult. It is especially important at locations, such as truck stops and other businesses generating large vehicular traffic, that crossover grades fall in the category of less than 5%. A desirable maximum algebraic difference of a crossover crown line is 4 or 5 percent, but it may be as high as 8 percent at the locations where there are few trucks or school buses and low speeds.

Additionally, sight distances must be checked for values shown in the Table 2-7 Intersection Sight Distance.

Any deviation from these values is to be brought to the attention of the State Location and Design Engineer.

The grade on a crossover is measured from the edge of shoulder to the edge of shoulder, unless left turn lanes are provided, in which case the grade is applied from the edge of pavement of the left turn lanes to the edge of pavement of the opposite left turn lane. This is more clearly shown in the following diagram:

Determination of Grade on a Crossover



In preparing plans for field inspection, the gradient at each crossover is to be plotted graphically.

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