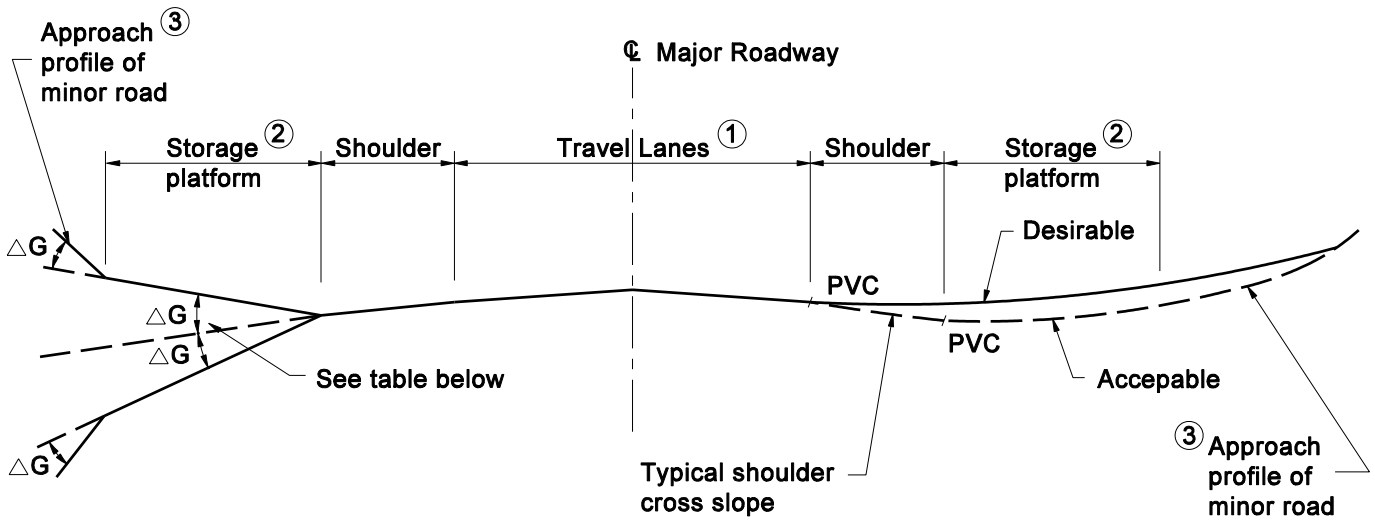

MAXIMUM CHANGE IN GRADES WITHOUT A VERTICAL CURVE		
Design Speed (mph)	Crest Vertical Curves	Sag Vertical Curves
20	△G = 7.0%	G = 4.5%
25	△G = 5.0%	G = 2.5%
30	△G = 3.0%	G = 1.5%

Notes:

1. At signalized intersections, the most desirable rotation option will be to transition all approach legs into a plane section through the intersection.

2. Desirably, the gradient of the approach roadway where vehicles may be stored should not exceed 1%. Gradients greater than 3% should be avoided.

3. Desirably, the minor road profile should tie into the major road's travel lane cross slope as shown in the figure. However, it will be acceptable for the minor road profile to tie into the major road's shoulder cross slope. Actual field conditions will determine the final design.

VERTICAL PROFILES OF INTERSECTING ROADS

Figure 46-1C