cular curve formulas are relevant (Table 5.12). For most local street design, the centerline of the proposed street is used as a starting point for calculations.

The following guidelines should be observed when working with curved roadways: Whenever the horizontal direction of the street changes, a horizontal curve is used to make the transition. For most purposes horizontal alignment should be as direct as possible; however, under some conditions longer transitions might be appropriate to minimize the amount of grading or other impacts on the site. In general, abrupt or sharp curves are to be avoided as are multiple compound curves. Exceptions to these guidelines, however, are common when dealing with very low volume local roads in difficult terrain. Many local land development ordinances require specific minimum horizontal curves.

Figure 5.18, together with Table 5.12, illustrates the relationships used to calculate horizontal curves. The PC is the *point of curvature,* or the point where the curve begins. The PT is the *point of tangency,* or the point where the curve ends. Points along the curve are usually given in terms of the stationing on a given road. The *arc,* or *arc length,* is shown as *L* in the formulas. It refers to the length of the curve between the PC and PT. The PI is the *point of intersection,* or the point where both tangents intersect. The Greek symbol delta represents the *internal angle.* The *chord* is a straight line drawn from the PC to the PT. The *deflection angle* is the angle between the chord and the tangent. The deflection angle is always one-half of the angle subtended by the arc.

Intersections

Intersections of two or more streets should be carefully designed to allow adequate sight distance as well as smooth traffic flow. Grades at intersections should be kept to 3 percent or less. On local streets there should be a clear sight triangle of no less than 50 ft. When local roads dictate an offset

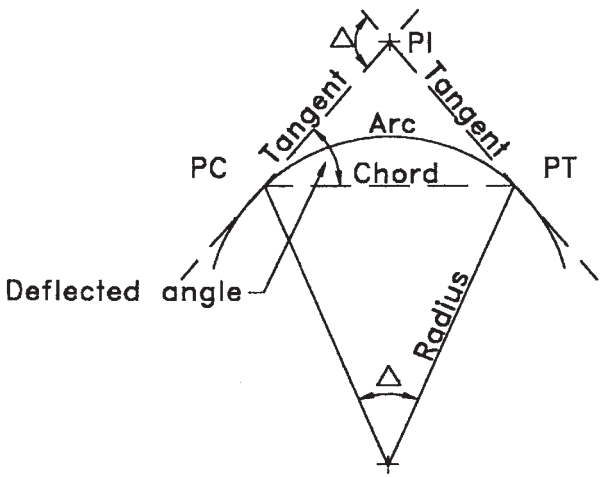

Figure 5.18 Horizontal curve calculation.