

At street intersections, there are two distinct radii that need to be considered, the effective turning radius of the turning vehicle and the radius of the curb return (actual curb radius).\* (See 2011 AASHTO Green Book, Figure 5-3).

The effective turning radius is the minimum radius appropriate for turning from the right-hand travel lane on the approach street to the appropriate lane of the receiving street. This radius is determined by the selection of a design vehicle appropriate for the streets being designed and the lane on the receiving street into which that design vehicle will turn. **The minimum effective turning radius at street intersections on subdivision streets shall not be less than 25 feet.**

The radius of the curb return (actual curb radius) should be no greater than that needed to accommodate the design turning radius. The actual curb radius shall be such that the design vehicle does not encroach into the adjacent or opposite lanes when making a turn. **The minimum radius of the curb return (actual curb radius) shall not be less than 15 feet. In industrial areas with no on-street parking, the radius of the curb return shall not be less than 30 feet.**

If intercity buses, single unit trucks or standard 65-passenger school buses are expected to use the street, the minimum radius should be increased to accommodate the turning radius of such vehicles. Minimal encroachment into the opposing lane of traffic of the receiving street is expected. The minimum radius of the curb return shall not be less than 5 feet.

A larger radius or additional pavement at the intersection may be required on shoulder and ditch sections to avoid shoulder rutting.

Auto-TURN® diagrams should be used to demonstrate the impact on the opposing lane of the receiving street and the sufficiency of the street widths to accommodate the vehicles without running off of pavement or scrubbing curbs.

## E. CONCENTRIC DESIGN

Normally, the design of principal roadway elements of subdivision streets should be concentric about the center of the right-of-way. However, certain circumstances and special development goals, such as phased development may justify arrangements that require one side of the right of way to differ from the other, when based on a typical centerline between travel lanes. The normal typical section may be varied as necessary to provide for vehicular or pedestrian safety or both and traffic channelization features, e.g., turn lanes, intersection radius, etc.

## F. CUL-DE-SACS AND TURNAROUNDS

To afford the greatest flexibility in design, various types of turnaround designs may be used on subdivision streets. Additional right-of-way shall be provided as required by the turnaround design to continue the right of way limits around the perimeter of the turnaround. Acceptable Cul-de-sac designs include:

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\* Rev.7/14