

**Application** - Best suited for areas where right-of-way is restricted.

**Advantages**

- Relatively narrow right-of-way.
- Opposing left turns pass to the left of each other.
- Traffic signal is three-phase rather than four.
- Operates with a single traffic signal reducing delay through the ramp intersection.
- Handles high volume left-turns on the cross road more efficiently than a diamond.
- Curve radii for left-turn movements through the intersection are significantly flatter than at conventional intersections, and therefore the left turns move at higher speeds.
- Higher capacity than a conventional tight diamond interchange.

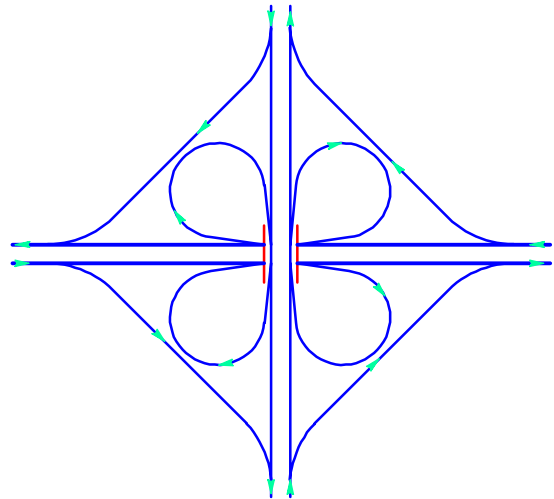
**Disadvantages -**

- Higher construction cost than a conventional tight diamond interchange.
- Extensive retaining walls required where right-of-way is restricted.
- Vehicle path through the intersection requires, at a minimum, a painted guidance stripe.
- Not suitable for skewed interchanges.
- Adding pedestrian movement to the interchange adds a signal phase and reduces efficiency.

**Cloverleaf**

The cloverleaf is a four-leg interchange that uses loop ramps to eliminate the four left-turn movements and uses outer ramps for the four right-turn movements (Figure 500.04). An interchange with loops in all quadrants is referred to as "full cloverleaf" and all others as a "partial cloverleaf (parclo)".

**Application** - Where there is a need to avoid restrictive at-grade left turns and adequate right of way is available.



*Figure 500.04*  
**Cloverleaf**

**Advantages -**

- Left-turn conflicts eliminated
- Single structure design.
- Traffic signals are unnecessary.
- Lends itself to stage construction.

**Disadvantages -**

- Large right-of-way requirements.
- Weaving may severely limit capacity.
- Adding weaving lanes on and under structure increase cost.
- High weave volumes require collector distributor roads.
- Double exit on the expressway complicates signing.
- Insufficient deceleration length from expressway speed to control speed of inner loop.
- Poor safety features.
- Extra travel distance/time required for left turns.
- Large trucks may experience problems with tight curves.