Barrier Tangent Length (L_T) and Barrier Lateral Offset (L_1) - The barrier tangent length (L_T) is the portion immediately ahead from the hazard and parallel to the roadway. It is of variable length, selected by the designer, and shall be at least as long as the flared section of the barrier.

The barrier's lateral offset (L_1) is the distance between the edge of travelled way to the barrier. This offset is also selected by the designer and shall be as far away from the edge of travelled way as possible. This provides an unobstructed recovery area to allow an out of control vehicle to gain control without colliding with the barrier.

Flare Rate (b:a) - The flared portion of the barrier is not parallel to the roadway. Flared sections are used mainly to introduce the barrier toward the barrier line or a narrower segment of the roadway. The flared transition decreases the likelihood that the barrier is perceived as a hazard by motorists.

Flared barrier sections have their disadvantages. The greater the flare rate, the greater the angle of impact from an approaching vehicle. This may increase the magnitude of injuries particularly with rigid barriers. Barrier flares can also increase the probability that an impacting vehicle will be redirected across the roadway and into incoming traffic. This is particularly dangerous if the roadway has two-way traffic not separated by a median or a median barrier. Therefore, flatter flare rates shall be used particularly in locations with two-way traffic or steep embankments.

See Figure 300.09 for barrier layout diagram.

308.04 MEDIAN BARRIERS

308.04.01 Median Barrier Warrants

A Median barrier's primary function is to separate opposing traffic on a divided roadway and/or shield fixed object hazards within the median. Like all types of barriers, median barriers shall only be installed if it is less hazardous colliding with the barrier than not having a barrier installed at all. Barrier installation shall be considered only if the fixed object hazards can not be removed.

Median barriers are warranted in locations that have a history of cross-median accidents. On roadways that have wide medians, (greater than nine meters) median barriers generally are not warranted unless there is a history of cross-median accidents or there are fixed object hazards within the median.

308.04.02 Median Barrier Types and Features

There are three types of commonly used median barriers. See Figure 300.10.

- Concrete Safety Shape Median Barrier
- Single Face Concrete Barrier
- Metal-Beam Guardrail

The concrete safety shape barrier is the most commonly used median barrier, and shall be installed in most locations requiring a barrier. In areas where the adjoining sections of roadway have previously installed a Metal Beam Guardrail consideration may be given to continue using it for that segment. Single face Concrete Barriers are used mainly to shield hazards or for earth berm support.

308.05 MEDIAN BARRIER PLACEMENT

The two primary factors to consider when placing median barriers are:

- Median Geometry
- Treatment of Fixed Object Hazards in the Median

308.05.01 Median Geometry

As previously mentioned, a median that is flat (1:10 or flatter), relatively smooth and clear of fixed obstacles is desirable. If a median barrier is warranted under these conditions, it shall be installed at the center of the median.

If the median is a v-shaped foreslope embankment or a ditch and warrants a barrier, it shall be installed near the shoulder on both sides of the median.