

### **3.4M Coordination and Aesthetics**

#### **3.4.5M Independent Roadway Design**

##### ***Introduction***

Independent roadway design refers to a design for a divided highway in which the one-way roadways are separated sufficiently to allow each to be designed independent of the other. This may include a variable median width and independent profile designs.

The use of independent roadway design should be considered where Right-of-Way acquisition is not a significant constraint and where no private property or development will remain within the median.

Some specific advantages of independent roadway design include:

- The alignment, both vertical and horizontal, can more closely fit the terrain resulting in improved appearance and lower costs,
- Varying the median and grade differential between the two roadways can add a sense of variety to the driver,
- Can result in reduced headlight glare from traffic in the opposite direction,
- Provides an opportunity to use flatter grades on the ascent than on the descent for each direction of travel,
- Allows for the preservation of existing natural features such as rock outcrops, timber stands, shrubs, streams, overlooks, grassy slopes, etc... which may be an aesthetic asset to the completed highway. This is sometimes referred to as "context-sensitive" design.

##### ***Application Heuristics***

A number of application heuristics, which can assist the Designer in preparing independent roadway designs, are offered below:

1. If the two roadways diverge it must appear that they are doing so for a reason, otherwise the divergence will appear illogical.
2. The Designer should avoid long stretches where the opposing lanes are not visible to each other. In such cases the driver may forget that he is travelling on a one-way roadway. Generally, the opposing lanes should be clearly visible to one another every 3-7 km.
3. At intersections, the opposing lanes must be visible to each other, otherwise a one-way roadway may be mistaken for a two-way roadway resulting in wrong way movements.
4. At intersections, care must be taken to ensure that the profiles of the two roadways are such that the grade of the intersecting road is acceptable.
5. With curvilinear roadway design, care must be taken to avoid confusion resulting from opposing headlights. The designer should avoid situations in which opposing headlights are aligned at each other or, worse yet, where opposing headlights appear to the right of an approaching driver.