

Impact attenuators: These are required at the introductory locations of traffic barrier service, unless the traffic barrier can be transitioned as indicated in the Virginia Work Area Protection Manual. [Standards/Special Design Section](#)* will be contacted to design the Impact Attenuators.

Lane closures: When lane closures are proposed in the traffic control and sequence of construction plan, the use of electronic arrow boards and variable message signs should be addressed. This subject is normally addressed at Field Inspection by the Traffic Engineer.

Lanes, number of: While it may not always be possible to provide the same number of lanes that were available prior to initiating construction activities, the same number of lanes should be provided during peak hours. Lane restrictions may not be appropriate during certain periods and this should be noted on the plan.

Lane shifting: Lane shifting should be designed to accommodate the operating speed for the particular work zone. When these areas are on 4 lane divided facilities and the operating speed is considerably high, the proper superelevation is imperative. Also, the adequate horizontal and vertical alignment must be available to maintain driver expectancy and should not be designed for more than a 10 mph speed reduction than that of the remainder of the work zone.

Lane widths: Adequate lane widths should be available. Geometric Design Standards in the front of Appendix A of the *Road Design Manual* specify lane widths. Lane widths should be a minimum of 11' and in minor work zones 10'. When determining lane widths, the percent of truck traffic should be considered.

Navigable streams: Advanced up and down stream signing should be provided for sportsmen, canoeists and fishermen when overhead construction activities are required for bridge placement over navigable streams.

Pavement design should incorporate existing pavement when practical. Pavement design should consider temporary markings, so proper courses may be specified at appropriate construction stages. Milling may excessively weaken existing road pavement strength, such as at bridge approaches and the Materials Division should be consulted for appropriate instructions.

Pavement markings for temporary use may be covered with the final pavement course. Details should provide for any special pavement marking requirements. Pavement marking eradication information is in [IIM LD-93](#). Temporary pavement markers should be considered to provide more positive guidance at nighttime and during inclement weather.

* Rev. 7/07