

## **MB-9A TURNED DOWN CONCRETE MEDIAN BARRIER TERMINAL**

For run-on treatment outside the clear zone with operating speeds of 40 mph or less and all run-off treatment, a concrete turned down terminal (MB-9A) can be used to terminate concrete barrier.

## **IMPACT ATTENUATORS**

During the preliminary design stages for new construction and for rehabilitation or reconstruction of existing highways, the need for and space requirements of impact attenuators to shield non-removable fixed objects should be considered. This will ensure compatibility with the final design and the impact attenuator that is to be installed. Since these devices are expensive to install and maintain, the hazard must be studied to determine if elimination is possible or its inherent hazard potential can be economically reduced to tolerable limits by less drastic safety treatments, such as guardrail, breakaway supports, set-back, safety shape, etc. Present procedure requires that the proposed site be selected by the roadway designer and reviewed by the [Standards/Special Design Section](#) for the type of impact attenuator to be used. When requesting the review and installation details from the [Standards/Special Design Section](#), submit a print of the plans with a transmittal slip giving the project number, UPC numbers, activity number, roadway design speed and advertisement date. In no case will attenuation devices be designed for placement behind curbed locations. For additional data, refer to the AASHTO's *Roadside Design Guide*.

Devices subjected to traffic speeds greater than 45 mph must meet Test Level 3 requirements per NCHRP 350 or AASHTO's MASH as appropriate.

Devices subjected to traffic speeds of 45 mph and less must meet Test Level 2 requirements per NCHRP 350 or AASHTO's MASH as appropriate.

## **TYPE 1 RE-DIRECTIVE LOW-MAINTENANCE IMPACT ATTENUATORS AND IMPACT ATTENUATOR SERVICE\***

Impact attenuators will be installed in areas that have a design speed (for permanent installations) or a posted speed (for temporary installations) of  $\geq 50$  mph and have an ADT more than 25,000 VPD. These devices must come from the "Type 1 (Re-Directive Low-Maintenance)" category of the VDOT's NCHRP 350 Approved Product List (See link below).

For a list of approved devices see VDOT's NCHRP 350 Approved Products List at: <http://www.virginia-dot.org/business/locdes/nchrp350-index.asp>

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