

Temporary Concrete Barriers are referred to as Traffic Barrier Service Concrete (TBSC) and are used to prevent errant vehicles from entering a work zone when site conditions warrant their use. Requirements for anchoring TBSC are described in Appendix A of the Virginia Work Area Protection Manual. When a project requires the use of an anchored barrier the designer shall label and quantify the barrier as Standard MB-10A or MB-11A. The Standard MB-10A Traffic Barrier Service Concrete Parapet (Single Face) is for use on bridge decks only. The Standard MB-11A Traffic Barrier Service Concrete (Double Face) is intended for use on bridge decks and roadway pavements. See the current Road & Bridge Standards MB-10A and MB-11A for installation details.\*

## **BARRIER TERMINALS GENERAL CRITERIA**

Guardrail/barrier terminals are to be provided for all installations regardless of "Functional Classification". Terminals develop the necessary tension at the end of the system in order to redirect a vehicle and, if hit, minimize the damage to a vehicle and its occupants. The termini of guardrail/barrier must be designed and located so there are no exposed rail element ends within the clear zone which a vehicle could impact.

New and existing terminals within the project limits must meet NCHRP 350 or MASH requirements. Those that are not within project limits but are part of a length of barrier that has 60% within the project limits (see Section 1) must also meet NCHRP 350 or MASH requirements. All terminals shall be installed as they were tested in accordance with NCHRP 350 or MASH. Lapping of guardrail terminals must be per the Standards.

A site investigation shall be made to determine whether a terminal should be upgraded, or eliminated. For gaps between two runs of guardrail  $\leq 200' \pm$ , closing the gap by continuing the run of guardrail is recommended, thereby eliminating the need for a terminal. If a cut slope is within approximately  $200' \pm$  longitudinal distance from the location of the terminal and is sufficient to install a Standard GR-6, the guardrail shall be extended to the cut slope and a cut slope terminal (Standard GR-6) shall be used.

Radial guardrail not to be used in place of a MASH or NCHRP 350 approved terminal section. Radial terminal sections that exist within the project limits shall be upgraded to an approved terminal section. For guidance on the use of radial guardrail, see Radial Guardrail in Section 3 or contact the Central Office Standards and Special Design Section.

If the w-beam terminal installation site does not provide at least 75' of clear run-out path in addition to the length of need required for the barrier (exclusive of the terminal), a parallel terminal (Standard GR-9) shall be used instead of a flared terminal (Standard GR-7). If an extensive amount of grading would be required for site preparation to install a flared terminal (Standard GR-7), consideration should be given to using a parallel terminal (Standard GR-9) that does not require as much site preparation. Before replacing a substandard terminal, the location of the existing terminal shall be checked to ensure sufficient length of need has been provided in the run of guardrail to adequately shield the hazard for which it was installed. In some cases it may be necessary to extend the guardrail to better shield the hazard or to

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