



Title: Guardrail and Guardrail Terminal Policy

Discipline: General Engineering

Approved by Engineering Council Feb. 12, 2026
Date

Chief Engineer

Bill Pulver, P.E.

Supersedes previous version: January 19, 2024

APPLICABILITY

This Policy applies to all Maine Department of Transportation (MaineDOT) Capital Improvement projects on Highway Corridor Priority 1-4 roads.

This Policy only applies to w-beam steel rail barrier systems and the terminals used in conjunction with them, referred to in this Policy as “guardrail” and “guardrail terminals” respectively.

REQUIREMENTS

Guardrail and guardrail terminals shall comply with the requirements of the National Cooperative Highway Research Program Report 350 (NCHRP 350) or the Manual for Assessing Safety Hardware (MASH) as established by this policy. Where compliance is not required by this policy, consideration should always be given to the potential safety benefits of upgrading guardrail or guardrail terminals.

The standard MaineDOT NCHRP 350 compliant guardrail installation shall consist of galvanized strong-post W-beam guardrail with the guardrail beam splices at the posts, wood or steel posts, and eight-inch wood or composite offset blocks. The height shall not exceed 30 inches.

The standard MaineDOT MASH compliant guardrail installation shall consist of galvanized strong-post W-beam guardrail with mid-way splices, steel posts, and eight-inch wood or composite offset blocks. The height shall be 31 inches.

Guardrail Length of Need, defined as the length of barrier needed to shield the area of concern, shall be established using the detailed methodology presented in the AASHTO Roadside Design Guide and the MaineDOT Design Guidance: Barrier Layout – Length of Need.

Exceptions:

Where MASH compliant devices are required in this policy, non-MASH compliant devices may be used in the absence of MASH compliant solutions or when MASH compliant devices are available but do not meet the needs of the project given the specific project conditions. When this exception is utilized, the non-MASH compliant device used and the basis for its use must be documented according to the appropriate Program documentation protocol.

The following references provide flexibility for non-MASH compliant devices: FHWA's "Clarifications on Implementing the AASHTO Manual for Assessing Safety Hardware (November 2019 Question #3)" and FHWA's March 2017 Memorandum "Clarification of Roles and Responsibilities in Implementing the AASHTO/FHWA Joint Implementation Agreement on the AASHTO MASH".

NEW GUARDRAIL/GUARDRAIL TERMINALS

Guardrail

New permanent guardrail installations shall be MASH compliant.

Guardrail Terminals

New permanent guardrail terminal installations shall be listed on MaineDOT's Qualified Products List (QPL). Buried in back-slope and flared terminals are preferred. Tangent terminals are more likely to experience head-on and nuisance hits and should be installed with a two-foot offset whenever possible. Safety and maintenance concerns should be weighed against potential cost savings and impact minimization when considering tangent terminals.

The following exceptions apply:

- At entrance or access points located within the Length of Need required to properly shield an area of concern, a guardrail radius shall be used instead of a compliant guardrail terminal. If an extreme hazard exists in the area immediately behind the radius, especially on the leading end, the radius may be anchored.
- On one-way roadways or divided highways, a compliant guardrail terminal is not required on the trailing end.

EXISTING GUARDRAIL/GUARDRAIL TERMINALS

Treatment of existing guardrail and guardrail terminals shall be determined by one of the following project scopes: Reconstruction, Rehabilitation, or Restoration/Resurfacing. Projects cannot always be categorized neatly by scope, and terminology varies by Program within MaineDOT. The intent of this Policy is that when the nature of the work is such that existing guardrail systems are impacted, the Reconstruction section should be used. When the nature of

the work is such that existing guardrail systems are not impacted, the Restoration/Resurfacing section should be used.

Extensions to runs of existing guardrail shall be NCHRP 350 or MASH compliant.

For existing guardrail runs that extend beyond the limit of work by more than 150 feet, only the sections within project limits need to be considered for adjustment or replacement.

Reconstruction

Guardrail

Existing guardrail shall be fully replaced with MASH compliant guardrail.

Guardrail Terminals

Existing guardrail terminals shall be fully replaced with terminals listed on MaineDOT's QPL. See the New Guardrail Terminal section for additional considerations.

Rehabilitation

Existing guardrail systems that are impacted based on the nature of the work shall be adjusted based on the Reconstruction section of this Policy.

Existing guardrail systems that are not impacted based on the nature of the work shall be adjusted based on the Restoration/Resurfacing section of this Policy.

Restoration/Resurfacing

Guardrail

Existing guardrail in good condition may remain in place.

Guardrail Terminals

Existing guardrail terminals shall be adjusted as follows:

- National Highway System: Existing NCHRP 350 and MASH compliant guardrail terminals in good condition may remain in place. All other terminals shall be replaced with a system listed on MaineDOT's QPL.
- Non-National Highway System: Existing guardrail terminals in good condition may remain in place.