

Maine Department of Transportation

Highway Program

Design Guidance

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| Title: Guardrail Height Adjustment Considerations | Issue Date: October 1, 2015 |
| Discipline: General Engineering | Revised: January 17, 2019 |
| Originator: Steve Bodge, P.E. | Reference: Guardrail and Guardrail Terminal Policy |
| Approved By: Bradford Foley, P.E. | |

Background:

The [Guardrail and Guardrail Terminal Policy](#) sets forth the Department's current compliance standards for the installation of new guardrail and guardrail terminals, as well as when upgrades to existing systems are required. The Policy also indicates that consideration should be given to the potential safety and economic benefits to making upgrades even when not required.

Guidance:

Existing Guardrail Height

Consider adjusting guardrail height if the following conditions exist or will exist after final pavement surface is placed:

Corridor Priority 1-3: height less than 26 ½"

Corridor Priority 4 and 6: height less than 24 ½"

Height is measured from the final pavement surface at face of rail to the top of the guardrail beam. Raising the height to 30" is desirable, but raising the height to 27 ¾ inches is acceptable if limitations exist. If the rail must be removed to adjust the height, consideration should be given to replacing steel offset blocks with wood or composite blocks.

Existing/Proposed Guardrail Terminal Height

Consider adjusting or replacing guardrail terminals based on the same height allowances as indicated above. When guardrail terminals are adjusted or newly installed, they should be adjusted to or installed at 27 ¾ inches. When raising guardrail height to 30", the guardrail beam should be transitioned to the proper terminal height over 25 feet, starting with the first beam after the terminal. New terminals, except at entrances, should be selected appropriately from the Department's [Qualified Products List](#).

Other Considerations

In addition to height, consider the following when assessing the need to upgrade guardrail:

1. Crash history that may indicate a problem that needs attention
2. Damage that affects structural integrity or serviceability

3. Inadequate soil backing, especially when raising the height of the guardrail
4. Erosion that may affect vehicle interaction with the guardrail
5. Leaning Posts increase snagging potential and reduce effective guardrail height
6. Compliance with standards (post spacing, offset block material, crash tested terminals, etc.)