

ENGINEERING DIRECTIVE

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CHIEF ENGINEER

Requirements for the Use of Non-Standard or Non-Compliant Roadside Safety Hardware

This Engineering Directive supplements Engineering Directive E-20-004, MASH Implementation Plan, and provides additional information regarding the authorized use of non-standard or non-MASH-compliant roadside safety hardware on MassDOT facilities and on MassDOT projects.

In 2020, MassDOT formally recognized that all roadside safety hardware installed on advertised construction projects and installed during state highway maintenance activities must comply with the *Manual for Assessing Safety Hardware* (MASH) crash testing criteria. However, Engineering Directive E-20-004 also recognized that there may be gaps in designs and/or hardware types that are MASH-compliant and that some locations may require the use of non-compliant roadside safety hardware to best meet project goals, given the physical constraints and unique conditions associated with each affected location. These goals include enhancing safety for all users, minimizing impacts to environmental resources and minimizing impacts to private properties.

Thus, in locations where it is not possible or not practical to install roadside safety hardware components that conform with the *Construction Standard Details*, the *Bridge Manual*, the Qualified Traffic Control Equipment (QTCE) list or relevant MASH crash testing requirements, the project designer is required to document the proposed non-conforming elements during the design process, for review and approval by MassDOT. In cases where non-conforming elements may be necessary during active construction or maintenance operations, the responsible party (i.e. contractor, Resident Engineer, etc.) is responsible for documenting the proposed non-conforming elements prior to installation.

Documentation of the proposed use of non-conforming roadside safety hardware shall include a description of the facility and the affected location(s), identification of the required safety hardware for the location(s), discussion of the constraints or reasons why it is not possible or practical to install the required safety hardware, discussion of alternatives, recommendation of a preferred alternative, discussion of the safety benefits of the preferred alternative, detail drawings and plans. Requests made by design

consultants or contractors for the use of non-standard or non-compliant roadside safety hardware must be stamped and signed by a professional engineer registered in Massachusetts and in responsible charge of the work.

MassDOT has established a Design Solutions Committee that meets regularly to review requests for the use of non-standard or non-compliant roadside safety hardware. The Committee may invite designers, project managers, District personnel and others familiar with each issue to the Committee meetings to review and discuss the details of each issue, with the intent of developing acceptable solutions. The Design Solutions Committee will recommend acceptable solutions to the Chief Engineer for formal MassDOT approval.

Following written approval by the Chief Engineer, the necessary work may proceed.

MassDOT shall not allow any unauthorized use of non-standard or non-MASH-compliant roadside safety hardware on MassDOT facilities and on MassDOT projects.