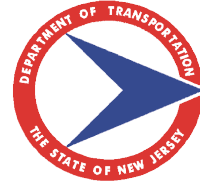


New Jersey Department of Transportation
1035 Parkway Avenue, PO Box 600, Trenton, New Jersey 08625-0600



Baseline Document Change Announcement

ANNOUNCEMENT:	BDC21MR-01
DATE:	June 2, 2022
SUBJECT:	Crash Cushion MASH Compliance - Revision to “Section 9 - Crash Cushions” of the Roadway Design Manual 2015.
REFERENCES:	Compressive Barrier Summary Tables - Revision to CD-159-10 and CD-611-1 of the Standard Construction Details 2016, Roadway BDC21D-01 dated June 2, 2022 Permanent Compressive Crash Cushions - Revision to the 2019 Standard Specifications for Road and Bridge Construction, Subpart 611.03.02 BDC21S-10 dated June 2, 2022

Roadway Design Manual Section 9 "Crash Cushions" has been revised to incorporate MASH compliant standards in accordance with the AASHTO/FHWA Joint Implementation Agreement for the AASHTO Manual for Assessing Safety Hardware (MASH), 2016.

Roadway Design Manual Section 9 Changes:

DESCRIPTION OF THE CHANGES:

1. Section 9 is revised to reflect MASH crash cushion compliance.
2. All references in Section 9 to specific crash cushion manufacturers and systems are deleted.
3. Cross slope requirements are revised in Section 9.2.4 and Figure 9-A.
4. Curb height restrictions in Section 9.2.5 are revised.
5. Design Speed criteria in Section 9.2.7 are revised.
6. Sections 9.2.9 through 9.2.13 are deleted.
7. Foundation Requirements in Section 9.2.8 are revised.
8. Contents of Figure 9-B and Figure 9-C are reversed.
9. Module to obstruction distance is revised on Figure 9-C.
10. Figure 9-B plan view and Table are revised.
11. Figures 9-D, 9-E, & 9-F are replaced with pre-designed inertial barrier layouts on new Figures 9-D and 9-E.
12. New Figure 9-F is added for inertial barriers with bidirectional traffic.

13. Figures 9-G and 9-H are revised.
14. Proprietary Item forms and references to these forms in Section 9.3.2 are deleted.

REASON FOR THE CHANGES:

1. To comply with the AASHTO/FHWA MASH Implementation Agreement.
2. The Qualified Products List will provide the designer with updated information on available MASH compliant crash cushions.
3. To comply with cross slope requirements for both inertial and compressive barriers.
4. Curb height restriction in advance of and along a crash cushion is revised based on design speed.
5. Design Speed criteria revised to reference MASH compressive barrier categories TL-2 and TL-3.
6. Backup Structure Requirements and Anchorage Requirements are the responsibility of the contractor to comply with current manufacturer guidance. Flying Debris Characteristics, Initial Cost, and Maintenance Sections are evaluated during the NJDOT product approval process.
7. Guidance is provided to the designer for the review of working drawing that are required to be submitted by the contractor for permanent compressive crash cushions.
8. To place Figures in order of appearance in Section 9.
9. To comply with MASH compliant inertial barrier manufacturers' recommendations.
10. Dimension F has been corrected and the Table revised to reflect dimensions of MASH compliant TL-2 and TL-3 systems.
11. Pre-designed layouts for inertial barriers are provided on Figures 9-D and 9-E for 30 MPH, 35 MPH, 40 MPH, 45 MPH, 50 MPH, 55 MPH and 60 MPH. They are in accordance with a MASH compliant inertial barrier manufacturer's recommendations. The inertial barrier formulas and sample calculation Tables are no longer used by the designer. They are retained for informational purposes only.
12. Figure 9-F specifies an inertial barrier module layout for reverse direction traffic as per AASHTO *Roadside Design Guide, 2011*, Figure 8-41.
13. Revisions are in accordance with Section 9 modifications and revisions to CD-159-10 and CD-611-1.
14. Proprietary Item approval is no longer required when less than three systems are listed.

The following pages of the Roadway Design Manual have been revised and replaced:

Section 9 is replaced in its entirety.

This revision must be read in conjunction with the referenced BDC Announcements.

Implementation Code R (ROUTINE)

Changes must be implemented in all applicable Department projects scheduled for Final Design Submission at least one month after the date of the BDC announcement. This will allow designers to make necessary plan, specifications, and estimate/proposal changes without requiring the need for addenda or postponement of advertisement or receipt of bids.

Recommended By:

Approved By:



Paul F. Schneider
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for _____
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PS: NE: MS