

SPECIAL ATTENTION

e-Ticketing

As the Department and contracting industry have been moving further toward electronic record keeping, and more recently accelerated by the Covid-19 pandemic that has impacted so many, the Department is adopting, to the extent practical, an all-electronic environment that will include, but is not limited to, the following:

Concrete and paving delivery slips, invoices, bills of lading, and other documents that would normally be provided to the Engineer for the purposes of record keeping and payment.

The electronic format shall contain all information that would normally be found on the paper copy.

Contractors shall comply with this directive, unless otherwise approved by the Engineer, for all projects advertised on or after September 1, 2020.

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NOTICE TO CONTRACTORS

MASH Compliant Portable or Temporary Barrier Requirement and Sunsetting of Non-MASH PCB on the NHS

For contracts on the NHS, all new Portable Concrete Barrier (PCB) (For Traffic Control) (Item 606.417) and Temporary Traffic Control Barrier (Item 606.953) manufactured after December 31, 2019, shall conform to the testing and evaluation criteria of the Manual for Assessing Safety Hardware (MASH). Existing 3-Loop PCB (NHDOT Standard GR-23) and temporary barrier that meets National Cooperative Highway Research Program (NHCRP) 350 can be used throughout its remaining useful service life (see current Standard Drawing GR-23 regarding linking pin information). Non-MASH compliant PCB and temporary barrier fabricated/manufactured after December 31, 2019 will not be allowed.

To achieve the goal of 100% MASH compliant PCB and temporary barrier on the NHS, the NHDOT will “phase-out” the use of non-MASH compliant barrier over a future four (4) year period. Beginning in 2030, approximately 25% of the contracts advertised will require the use of MASH compliant PCB and temporary barrier and the requirement will increase incrementally until the 2034 construction season, when all new contracts will specify the use of only MASH compliant PCB and temporary barrier.

Note: In addition, a Certificate of Compliance for Item 619.1, accompanied with FHWA letter of compliance if one exists - or a copy of report of successful MASH testing if one does not exist, shall be provided to the Department stating that the traffic control devices provided meet the testing and evaluation criteria of MASH.

New NHDOT Standard Portable Concrete Barrier

Item 606.417 - Portable Concrete Barrier (Standard Drawing GR-24 and GR-25, based on Roadside Pooled Fund F-Shape Concrete Portable Barrier) cast after December 31, 2019, meets all the testing and evaluation criteria of MASH and is therefore acceptable on applicable state contracts.

MASH-compliant PCB other than the state standard (GR-24 and GR-25) may be used on a project-by-project basis, with approval of the Engineer, and only if documentation of its MASH-compliance is provided.

06/11/2020

SSD: 2/1/2001;03/03/04, 05/13/04, 02/15/11, 11/22/13

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SPECIAL ATTENTION

ROADSIDE SAFETY HARDWARE WORTHINESS COMPLIANCE WITH NCHRP REPORT 350 AND MASH

The American Association of State Highway and Transportation Officials (AASHTO) has most recently published the Manual for Assessing Safety Hardware (MASH), 2016 edition. The main objective of MASH is to present uniform guidelines for the crash testing of both permanent and temporary highway safety hardware and evaluation criteria to assess test results. The need for updated crash criteria was based primarily on the changes to the vehicle fleet since the publication of National Cooperative Highway Research Program (NCHRP) Report 350. Highway safety hardware includes, but is not limited to, longitudinal barriers, crash cushions, attenuators, end terminals, breakaway supports, and work zone hardware/devices.

IMPORTANT: AASHTO & FHWA formed a joint Implementation Agreement (dated January 7, 2016) for MASH to set dates for states to come into compliance with MASH standards for various categories of roadside safety hardware. This agreement states full compliance to MASH for all permanent hardware by January 1, 2020.

Temporary work zone devices manufactured after December 31, 2019 must be MASH 2016 compliant. However, NCHRP-350 and MASH 2009 compliant devices manufactured prior to January 1, 2020 can be used throughout their normal service life. Service life for portable concrete barrier has been defined in the *Notice to Contractors*. Service life for temporary impact attenuation devices has been defined in their item specifications. All other devices meeting NCHRP-350 or MASH 2009 compliance, and manufactured prior to January 1, 2020, such as temporary barricades, can be used until December 31, 2025.

WORK ZONE TRAFFIC CONTROL DEVICES:

The following is a summary of work zone traffic control devices categories, and their crash testing acceptance requirements, titled "Recommended Procedures for the Safety Performance Evaluation of Highway Features," testing and evaluation criteria as implemented by the AASHTO-FHWA Agreement (350 Agreement) dated July 1, 1998. These categories and associated requirements also apply to newly designed or revised devices that would now fall under MASH testing criteria.

Category I: Small, lightweight devices that are known to be crash-worthy from crash testing or years of demonstrable safe operational performance. These include plastic or rubber cones, tubular markers, flexible delineators, and plastic drums with no lights, batteries, signs, etc. added. For devices to be included in this category, there must be virtually no potential that they will penetrate windshields, cause tire damage, or have a significant effect on the control or trajectory of an impacting vehicle. These devices will be allowed based upon developer's self-certification, as long as there are no attachments to the device.

Category II: Devices that are not expected to produce significant vehicular velocity change, but may be otherwise hazardous. All or parts of the devices may be substantial enough to penetrate a windshield or injure a worker or they may cause instability when driven over or become lodged under a vehicle. The total mass of a Category II device must be less than 45 kg. Examples of this category are barricades, portable sign supports, intrusion detectors and alarms and drums, vertical panels, or cones with lights.

Category III: Devices expected to cause significant velocity change or other potentially harmful reactions in impacting vehicles and Category II devices with a mass greater than 45 kg. Examples of this category are Truck-mounted attenuators (TMA), portable crash cushions, and portable concrete barrier (requires appropriate sized pin and loop or better connection).

Category IV: Examples of this category are portable, usually trailer mounted devices such as area light supports, flashing arrow panels/arrows displays, temporary traffic signals, and changeable message signs. However, these types of devices combined with TMA are considered Category III devices.

All categories of project work zone traffic control devices in use shall conform to the testing and evaluation criteria as outlined above. Devices not conforming to the criteria shall be replaced with conforming devices at no expense to the Department.

06/11/20

SSD: 09/01/05, 04/07/09, 11/30/10, 06/1//13

SPECIAL ATTENTION**SECTION 606 – GUARDRAIL****W-BEAM GUARDRAIL**

There may be situations where standard beam guardrail, set at 31 inches high as required by the mid-splice guardrail system, will need to be connected to beam guardrail terminals that have only been crash tested at 27 inches high or bridge approach units that are designed at 27-inches high. This may reflect an existing or new installation. Similarly, new standard beam guardrail may be connected to existing beam guardrail that is not at the 31-inch height as stated above. In those circumstances, transition the height of the new standard beam guardrail over 50 feet to connect to the existing rail, terminal unit, or bridge approach unit (transition will be subsidiary to 606 Items).

Set the EAGRT heights according to the manufacturer's recommendation, as accepted under the Manual for Assessing Safety Hardware (MASH) - 2016 criteria. All other terminals, including but not limited to, ELT, MELT, and the CRT, shall be set at the crash acceptance height of 27-inch unless otherwise accepted under crash test acceptance for a higher height.