



Connecticut DOT

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Bureau of Engineering and Construction

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ENGINEERING DIRECTIVE

Engineering Administrator

Bridge Design Standard Practice for Parapet and Railing Design on Bridges and Retaining Walls

MASH 2016 Implementation

Effective immediately the design of all new and retrofitted traffic and combination railings on bridges, retaining walls and concrete barrier walls must comply with the crash test requirements of the 2016 Edition of the AASHTO Manual for Assessing Safety Hardware (MASH). Contract bridge plan addendums shall be prepared as required to satisfy this directive. Exceptions to MASH 2016 may be allowed for structures on non-NHS highways and must be approved on a case-by-case basis by the Division Chief of Bridges.

Test Level (TL) Designation

All new and retrofitted traffic and combination railings on bridges and retaining walls shall have an overall minimum height of 42 inches when measured from a roadway or sidewalk surface. MASH TL shall be shown on the plans and be designed to meet the following criteria:

- TL-4 shall be used (at a minimum) for all interstate highways, freeways and expressways except for the Merritt and Wilbur Cross Parkways.
- TL-3 shall be used (at a minimum) on all other state and local roadways.
- Unfavorable geometric or other site conditions where vehicular rollover or barrier penetration could result in severe consequences may warrant a higher MASH TL as determined on a case-by-case basis.
- Any exception to the 42 inch height and TL requirements shall be on a case-by-case basis approved by the Division Chief of Bridges.

The following railing types shall be used and are available on <https://portal.ct.gov/DOT/State-Bridge-Design/Guide-Sheets>:

- 42 inch single slope concrete parapet (TL-4)
- 42 inch F-shape concrete parapet (TL-4)
- 42 inch vertical shape concrete parapet (TL-4)
- 36 inch vertical shape concrete parapet at sidewalk (TL-3)
- 42 inch curb mounted bridge railing (TL-4)

The single slope parapet is preferred over the F-shape parapet. However, the F-shape parapet may be used where tie-in to adjacent highway barriers are F-shape.

The 42-inch single slope and F-shape parapets are permitted on highways other than Interstate, expressway and freeways.

Retaining Wall Traffic and Combination Railings

The owned specification for Item#0616XXA-Retaining Wall have been updated to provide the MASH design criteria to be used by the proprietary wall designers and is available in the Owned Specifications folder in ProjectWise. For all projects, which have not reached Design Approval, the design of Mechanically Stabilized Earth and Prefabricated Modular Retaining Walls shall conform to the latest "AASHTO LRFD Bridge Design Specifications". All retaining wall plan details and notes shall also consistent with LRFD design requirements. The LRFD version of the owned specification for Item#0616XXA-Retaining Wall is available on the Engineering Services webpage.