
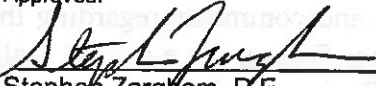


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| To: |  | New York State Department of Transportation ENGINEERING BULLETIN | EB 10-021 |
| <i>Expires one year after issue unless replaced sooner</i> | | | |
| Title: HIGHWAY DESIGN MANUAL REVISION NO. 57 - Chapter 10 – Roadside Design, Guide Rail, and Appurtenances | | | |
| Distribution: <input type="checkbox"/> Manufacturers (18) <input type="checkbox"/> Surveyors (33) <input checked="" type="checkbox"/> Local Govt. (31) <input checked="" type="checkbox"/> Consultants (34) <input checked="" type="checkbox"/> Agencies (32) <input checked="" type="checkbox"/> Contractors (39) <input type="checkbox"/> _____ () | | Approved:  Stephen Zargham, P.E. Director, Design Quality Assurance Bureau | |
| | | | <u>6/28/2010</u> Date |

ADMINISTRATIVE INFORMATION:

- **Effective Date.** This Engineering Bulletin (EB) is effective for all projects that have lettings on or after January 6, 2011.
- **Superseded Issuances.** The following Engineering Instructions have been incorporated into Chapter 10 and therefore are superseded by this EB.
 - EI 03-020 Weak-Post, Corrugated Beam Median Barrier-Now Acceptable TL-3 (100 km/h)
 - EI 03-036 Type 0 Designation For "Buried Box Beam Terminals"
 - EI 04-002 Support of Guide Rail Over Shallow Obstructions
 - EI 04-016 Modified G2 Weak-Post, Corrugated Beam Guide Rail, Design Guidance
 - EI 04-036 Weak-Post Corrugated Beam Guide Rail and Median Barrier Transitions - New Pay Items
 - EI 06-015 Culvert-End Safety Grates (Design Guidance)
 - EI 06-030 Cable Guide Railing Standard Specifications
 - EI 07-023 Revised Median Width Warrants for Use of Median Barriers
 - EI 07-026 Cable Median Barrier
 - EI 08-016 Options for Replacement of Decommissioned A588 Guide Rail

PURPOSE: To announce the availability of the revised Chapter 10 of the Highway Design Manual (HDM), Revision No. 57.

TECHNICAL INFORMATION:

HDM users should replace their entire existing Chapter 10 with the version dated 6/28/2010.

IMPLEMENTATION: This issuance may be applied prior to the effective date.

TRANSMITTED MATERIALS:

- List of Changes to Chapter 10 as of HDM Revision 57
- Revised Chapter 10 and updated Table of Contents are available at:
<https://www.nysdot.gov/divisions/engineering/design/dqab/hdm/chapter-10>

DISTRIBUTION: Consultants and others who are required to purchase the HDM may purchase Revision 57 by sending a check or money order for \$3.50 payable to the New York State Department of Transportation at the following address:

Plan Sales Unit
 New York State Department of Transportation

50 Wolf Road
Albany, N.Y. 12232

This revision and the entire Highway Design Manual are available, free of charge, in a downloadable Adobe© Acrobat© format on the NYSDOT internet site. Go to the NYSDOT Home page (www.nysdot.gov/portal/page/portal/index) and click on "Site Index," "H," and "Highway Design Manual."

CONTACT: Questions and comments regarding this revision should be addressed to Terry Hale of the Design Quality Assurance Bureau via e-mail at thale@dot.state.ny.us or by phone at (518) 485-7009 and Kevin Stanley of the Design Quality Assurance Bureau via e-mail at kstanley@dot.state.ny.us or by phone at (518) 485-8612.

List of Changes to Chapter 10 as of HDM Revision 57

Note: Not All changes to the chapter are identified here. The reader should refer to the actual chapter to determine what the current design guidance is on any given topic.

| <u>Page</u> | <u>Change</u> |
|-------------|--|
| All | Change from metric to US Customary units |
| 4 | Recommend shielding 1:3 embankment slopes taller than 15 feet |
| 4 | Embankment slopes steeper than 1:4 to be shielded on Interstates |
| 6 | Itemize minor CZ width differences if segments involved are long |
| 9 | Added new coverage on Slope Intersection Rounding |
| 9 | Added new coverage on addressing clear zones for auxiliary lanes |
| 11 | Updated to "Guide rail itself is a <u>mild</u> hazard", to reflect safety improvements over the last decades |
| 12 | Pulled together a section on "Hazardous-at-any-speed Features" |
| 12 | Pulled together section on "Evaluation of Water Features" |
| 13, 14 | Added section on Longitudinal Ditches |
| 15 | Added "Make Traversable" to treatment hierarchy to reflect AASHTO |
| 19 | Moved discussion of crash testing protocols (NCHRP350) to Appendix |
| 19 | Introduced "Point of Redirection" for rail systems |
| 22 | Revised Fig 10-3A to show that Point of Redirection should be at or upstream from point of need. Also, added downstream extent guidance. |
| 23 | Added Figure 10-3b on Crush Accommodation for proprietary terminals |
| 23 | Runout length method only appropriate with broad clear areas |
| 23 | Added overpass embankments as non-bypassables for under highways |
| 40 | Noted potential need for emergency pulloff areas where shoulders are narrow and rail runs are long |
| 40 | Added consideration of shielding where high-speed, high-volume roads are adjacent to high-volume pathways |
| 42 | Clarified how different rails interact with heavy vehicles |
| 43 | Added curvature allowances for other post spacings |
| 45 | Noted redemption of Weak Post W-Beam as the Modified G2 |
| 52 | Dropped routine allowance for pier protection guide rail to encroach onto a shoulder by up to 25% of the shoulder's width. |
| 54 | Dropped "Rustic steel" guide rail use |
| 55, 56 | Significantly expanded guidance on safety concerns for aesthetic rigid barriers |
| 58, 59 | Updated median width warrant to 50' |
| 60 | Added to guidance on median barrier use on adjacent ramps |
| 65 | More detailed discussion of mounting objects on median barrier |
| 73 | Downplayed use of Self Restoring Barrier |

- 77, 78 New section on "Police/Maintenance Crossover Areas"
- 79 Optional terminal items discussed
- 82 Added detail on different cable anchorage systems in service
- 83 Redefined "close to the limit of the clear zone" for W-beam terminals to mean that the center of the anchor block should be within 2' of the limit
- 86 Added the X-Tension as an HPBO terminal
- 89 Added guidance on Type 0 box beam terminal and need to shorten to avoid clotheslining
- 91 Disapproved further use of the Type II box beam terminal
- 91 Introduced new Type IIA box beam terminal
- 93 Updated cost estimates for Type III box terminals
- 93 New caution for shielding of concrete blunt ends near redirecting slopes
- 99 Added Approved List sand barrel manufacturers
- 106 Added the TAU-II attenuator
- 107 Added the SCI attenuator
- 111 Clarified that cable can be used on high-volume, high-speed highways, provided it will be promptly repaired
- 116, 117 Updated box terminal options for camp residence areas
- 120-124 New section on driveways adjacent to bridges and large culverts
- 133 Adjusted acceptable heights for W-Beam
- 136 Revised Basic Safety Package for 3R projects to limit situations where grating is required on culvert ends
- 137 Moved 3R ditch guidance to consolidated Section 10.2.1.1 C
- 144 Construction Zone Guidance is being moved to Chapter 16
- 151, 152 Expanded coverage of Visual Screen Fencing
- App. B Incorporated "Support of Guide Rail over Shallow Obstructions"
- App. C Added "Barrier Impact Testing and Its Relation to In-Service Performance"