



Document Change Announcement

2007 Design Manual

DCA2012-DM-04

DATE: August 15, 2012

Subject: Revision to Design Manual Section 2.2.2 Design Live Load

Description of Change

Increased weight of truck traffic on the Turnpike mainline and ramps has been identified as greatly exceeding current AASHTO minimum design criteria via Weigh in Motion studies. This revision increases the live load for the Turnpike mainline and ramp structures only in order prevent under designed bridges. The design live load for the Parkway remains unchanged.

Instructions to Designers and Consultants

Effective immediately, the revisions contained in this announcement shall be applied to all projects involving new bridge design for the Turnpike Roadway where bridge design has not commenced. Contact your NJTA Project Manager for instructions. Attached revision is noted in italics.

Designers may access these revisions in the NJTA Design Manual, which is available on the Authority's Web Page: <http://www.state.nj.us/turnpike/professional-services.html>.

Information for In-House Staff

The revisions have been incorporated into the Design Manual, which is available on the S drive @ S:\Project Files\Design-Procedure Manual. Please distribute the information to your respective Project Managers and have them direct their consultants appropriately.

Recommended By:

A handwritten signature in black ink, appearing to read 'R. Fischer', written over a horizontal line.

Robert J. Fischer, P.E.
Assistant Chief Engineer, Design

Approved By:

A handwritten signature in black ink, appearing to read 'R. Raczynski', followed by the date '8/22/12', written over a horizontal line.

Richard J. Raczynski, P.E.
Chief Engineer

New Jersey Turnpike Authority

DOCUMENT UPDATE REQUEST

Forward to Assistant Chief Engineer, Design

Initiator	Rich Schaefer	Submittal Date	08.13.12
Firm	HNTB Corporation	Telephone	973-237-1650

Document (check one)

- Procedures Manual
- Design Manual
- Sample Plans
- Standard Drawings
- Standard Specifications

Description of Change

Delete the first paragraph of Section 2.2.2 – 3.6 and replace with the following:

3.6 Live Loads (AASHTO) (Except for the design of Modular Bridge Expansion Joints)

The design live load to be used for all new Turnpike mainline and ramp bridges shall be HL- 93 modified as noted below. Design live load for all new Garden State Parkway bridges shall be HL-93 unless otherwise directed by the NJTA Project Engineer. Design live load on new Turnpike bridges carrying local traffic or U-Turns shall be HL-93 unless otherwise directed by the NJTA Project Engineer.

- The first sentence of section 3.6.1.2.3 is changed to:

The design tandem shall consist of a pair of 50.0 kip axles spaced 4.0 ft. apart.

- The first sentence of section 3.6.1.2.4 is changed to:

The design lane load shall consist of a load of 0.700 klf uniformly distributed in the longitudinal direction.

- The first sentence of section 3.6.1.3.1, third bullet item, is changed to:

For negative moment between points of contraflexure under a uniform load on all spans, and reaction at interior piers only, 90% of the effect of two unmodified HL-93 design trucks spaced a minimum of 50.0 ft. between the lead axle of one truck and the rear axle of the other truck, combined with 90% of the effect of the unmodified HL-93 lane load.

- The first sentence of section 3.6.1.4.1 is changed to:

The fatigue load shall be one design truck or axles thereof specified in Article 3.6.1.2.2. The weights of the axle loads shown in Figure 3.6.1.2.2-1 shall be increased by multiplying by a factor of 1.33. A constant spacing of 30.0 ft. shall be used between the 42.6 kip axles. For computation of fatigue resistance in accordance with section 6.6.1.2.5, one way ADTT traffic counts may be taken from Tables 1A and 1B in the NJTA Load Rating Manual, current edition.

- Wherever a wheel load is specified, a 20 Kip load shall be used.

The above modified HL-93 loading shall also be considered for Turnpike bridge rehabilitation projects where practical and cost effective rehabilitation of the superstructure may be accomplished to accommodate the modified HL-93 loading. Where the modified HL-93 loading is considered for rehabilitation projects, it shall only be considered for superstructure elements. Substructure elements need not be considered for the increased live load. The use of modified HL-93 loading for rehabilitation projects shall be as directed by the NJTA project engineer.

The design live load to be used for all new bridges on the Parkway and for all new members in modifications to existing Parkway bridges shall be HL-93. Wherever a wheel load is specified, a 20 Kip load shall be used.

Reason for Change

Increased weight of truck traffic on the Turnpike mainline and ramps has been identified as greatly exceeding current AASHTO minimum design criteria via Weigh in Motion studies. This revision increases the live load for the Turnpike mainline and ramp structures only in order prevent under designed bridges. The design live load for the Parkway remains unchanged.