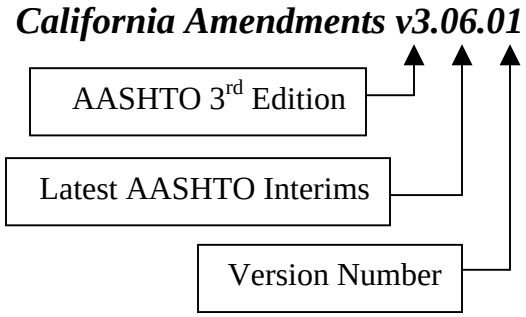
To recipients of the *California Amendments, v3.06.01* to the AASHTO LRFD Bridge Design Specifications-Third Edition w/ 2005 & 2006 Interims:

Instructions

California Department of Transportation (Caltrans) has made amendments to the *AASHTO LRFD Bridge Design Specifications-Third Edition with 2005 & 2006 Interims*. This packet contains the amended articles. Each amendment page is numbered in the upper right-hand corner with the AASHTO LRFD section and page number it amends.
The California amendments nomenclature has been modified. Starting with the current version, the California amendment version number will signify the AASHTO LRFD Bridge Design Specifications Edition it amends, the latest AASHTO Interim it amends, and the consecutive numbering of the versions for a specific AASHTO edition and interim.



Strikethrough (~~example~~) and underlined (example) text indicates deletions and insertions by California amendments to the AASHTO LRFD Bridge Design Specifications, that were approved by the DES Structure Design LRFD Executive Committee. A listing of the changed and deleted articles is included as an addendum to the preface.

All revised pages also display the California amendment version number in the lower right hand corner. To keep your Specifications correct and up-to-date, please remove all previous California amendments and place the pages in this packet at the back of the appropriate sections.

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CALIFORNIA AMENDMENTS

to the AASHTO LRFD Bridge Design Specifications (Third Edition w/2005 & 2006 Interims)

Version 3.06.01

April, 2007

DEPARTMENT OF TRANSPORTATION
STATE OF CALIFORNIA

Foreward

In 1993, the AASHTO Subcommittee on Bridge and Highway Structures (SCOBS) voted to accept the *AASHTO Load and Resistance Factor Design (LRFD)* Bridge Design Specifications as an alternate design specification. In 1999, SCOBS voted to no longer update the *Standard Specifications for Highway Bridges*, which was the basis for the *Caltrans Bridge Design Specification (BDS)*, and support LRFD as the primary design code. In June 2000, FHWA mandated that LRFD must be used on all new bridge design commencing on or after October 1, 2007 and provided additional information in a clarification memorandum dated January 22. 2007.

In 1999, California Department of Transportation (Caltrans) began developing amendments to the AASHTO LRFD Bridge Design Specifications that were necessary to adopt the national code into California's bridge design practice. In December 2004, Richard D. Land, former State Bridge Engineer, established April 2006 as the transition date to use the LRFD specifications for bridges designed by the State. Similarly, October 2006 was established for using the LRFD specifications for bridges designed by Local Agencies or others, (located within state right-of-way).

In April 2006, Kevin J. Thompson, State Bridge Engineer, confirmed that all structural components for bridges designed by the State that had not received Type Selection approval, shall conform to the *AASHTO LRFD Bridge Design Specifications, Third Edition, with 2005 Interim Revisions, as amended by Caltrans.* Similarly, October 1, 2006 was confirmed for the LRFD structural design for bridges, without Type Selection approval, designed by Local Agencies or others located within state right-of-way. Full implementation of the complete AASHTO LRFD design specifications including the geotechnical design of foundations was set for April 1, 2007 for bridges designed by the State and October 1, 2007 for bridges designed by others.

In March 2007, Kevin J. Thompson, State Bridge Engineer, approved the AASHTO LRFD Bridge Design Specifications, Third Edition, with 2005 & 2006 Interim Revisions and California Amendments, amended by California Department of Transportation (Caltrans), v3.06.01 as the primary Caltrans bridge design specification. The LRFD Specifications with the most current interims and California amendments shall be the basis for all advance planning studies, geotechnical investigation, bridge design and other project supporting documentation and bridge design guidance material.

CALTRANS LRFD TASK FORCE
APRIL 2007

State Bridge Engineer: Kevin J. Thompson

DES Structure Design LRFD Executive Committee:

Thomas A. Ostrom, Chief, Bridge Design North
Shannon H. Post, Chief, Bridge Design Services
Elias K. Kurani, Chief, Bridge Design South 1
Susan E. Hida, DES AASHTO LRFD Liaison

DES Structure Design LRFD Task Force:

Madhwesh Raghavendrachar, Chair, Reinforced Concrete Committee
Jim Ma, Prestressed Concrete Specialist
Mike Pope, Chair, Prestressed Concrete Committee
Dan Adams, Chair, Substructure Committee
Lian Duan, Chair, Structural Steel Committee
Sue Hida, Chair, Loads Committee
Paul Chung, Chair, Structural Analysis Committee

PREFACE
to
CALIFORNIA AMENDMENTS, V3.06.01

THE CALTRANS STANDARD SPECIFICATIONS:
Shall supercede all references to the *AASHTO LRFD Bridge **Construction** Specifications* within the *LRFD Bridge Design Specifications*. However, the AASHTO Construction Specifications are recommended as reference.

THE CALTRANS SEISMIC DESIGN CRITERIA:
Shall supercede all provisions for seismic design, analysis, and detailing of bridges contained in the *AASHTO LRFD Bridge Design Specifications* **except for the definition of the Extreme Event I Load Combination.**

The AASHTO document shall be adhered to in areas where the California document and/or the Contract Documents are silent.

THE GENERAL PLAN TITLE BLOCK SHALL SPECIFY THE DESIGN LIVE LOAD AS:

> **"Load and Resistance Factor Design", and "HL93 w/ 'Low-Boy' and Permit Design Vehicle"**

THE GENERAL NOTES SHALL BE TITLED:

"Load and Resistance Factor Design" and list the "*AASHTO LRFD Bridge Design Specifications*, 3rd edition with the 2005 & 2006 Interims and California Amendments v3.06.01".

a. If the project contains any earth-retaining structures other than abutments, *BDS* should be cited and the specific structures listed to which it applies.
b. The California Amendments v3.06.01 addresses design of abutments.
c. General Notes regarding seismic design remain unchanged.

PREFACE TO CALIFORNIA AMENDMENTS, v3.06.01
AMENDED ARTICLES

AASHTO Page No.	Article No.	CA Amendment
1-5, 1-6, 1-7	1.3.3, 1.3.4, 1.3.5	$\eta = 1.0$
2-13	2.5.2.6.3	deflections
2-1, 2-2, 2-5, 2-14.2, 2-16 to 2-19, 2-21 to 2-22	2.2, 2.5.5, 2.6.1, 2.6.2, 2.6.3, 2.6.4.3, 2.6.4.4.2	Comply with Caltrans scour policy described in MTD 1-23.
3-2, 3-3, 3-7 to 3-9, 3-10.1 to 3-13, 3-90.2 to 3-93, 3-91, 3-97	3.2, 3.3, 3.3.2, 3.4.1, 3.12.2, 3.12.7	Clarification of super-imposed deformations *CR*, *SH*, *PS*, and *TU*
3-8, 3-12, 3-26, 4-42	3.4.1, 3.6.1.8, 4.6.2.2.5	Design permit vehicle (2 lanes)
3-9, 3-33	C3.4.1, 3.7.5	Structure configuration w/scour
3-10, 3-12, 3-24.1, 5-20 to 5-22, 6-40 to 6-42, 6-96, 6-122	3.4.1, 3.6.1.4, 5.5.3, 6.6.1.2.5, 6.10.5.3, 6.10.10.2	Fatigue: clarification and additional load group for P9's; load group for concrete design; steel resistance for infinite and finite life
3-12, 3-13	3.4.1	No live load with seismic
3-15, 3-22	3.6.1.1.2, 3.6.1.2.6	Culverts
3-22	3.6.1.3.1	Dual tandem "low-boy", required
3-23	3.6.1.3.3	Deck loads
3-24, 4-59, 9-5	3.6.1.3.4, 4.6.3.1, 9.4.3	Barriers—not structural!
3-26	3.6.1.6	Pedestrian bridge frequency check
3-26	3.6.2.1	Reduced *IM* for permit trucks
3-28, 3-36	3.6.3, 3.6.4, 3.8.1.3	Exceptions to load application 6-ft above deck
3-31	3.6.5.2	Vehicle collision load, deleted
3-97	3.12.4, 3.12.5	Reduction of CR, SH from 1.2 to 1.0
4-6.1	4.3	Clarification of definition
4-8	4.4	Software
4-23 to 4-25, 4-34, 4-39 to 4-40, 4-42	4.6.2.2.1, 4.6.2.2.2e, 4.6.2.2.3c, 4.6.2.2.6	Rationale of using the interior girder distribution factor for whole-width design; skew factors
4-42.2, 4-43	4.6.2.5	Effective length factor
4-45.2, 4-46	4.6.2.6	Effective flange width for girders, integral bent caps
4-59.1	4.6.3.2	No refined analysis for deck design
5-12	5.4.2.1	Specified compressive strength
5-23, 5-25	5.5.4.2.1, 5.5.5	Resistance factors for concrete
5-32.1, 5-33, 5-34, 5-36, 5-40	5.7.2.1, 5.7.3.1.1, 5.7.3.1.2, 5.7.3.2.2	Check of over-reinforcement, compression steel
5-40	5.7.3.4	Crack control in decks dc=2.5
5-41, 5-42	5.7.3.6.2	Deflection and camber
5-54, 5-56.3	5.8.2.1	Shear-torsion clarifications
5-56.3	5.8.2.9	No duct-diameter deduction
5-63, 5-68	5.8.3.4.2, 5.8.3.5	Associated values
5-77, 5-81	5.9.3, 5.9.4.2.2	Stress limits
5-85, 5-86.1, 5-87	5.9.5.2.2b, 5.9.5.2.3b	Wobble and friction coefficients; removal of iteration
5-89, 5-90	5.9.5.3	25 ksi losses for post-tensioned members, only
5-146	5.11.4.3	Debonding
5-150 to 5-152	5.12.3 to 5.12.5	Bar cover and corrosion protection
6-69, 6-98, 6-103, 6-129	6.10.1, 6.10.7.1.2, 6.10.11.2	Curved steel I-members in flexure
6-99, 6-103	6.10.6.2.2, 6.10.7.1.2	Composite sections, nominal flexure
6-129, 6-164, 6-184 to 6-192	6.10.11.2.1, 6.13.1, 6.13.6	Steel connections; bolted splices
9-5	9.5.2	Decks—Class 2 exposure
9-7	9.7.1	Minimum deck thickness
9-8	9.7.2	Empirical deck design not allowed
10-29 to 10-46	10.5	Foundations amended to past practice and LRFD superstructure design
10-46 to 10-80	10.6	Spread footing modifications
10-122, 10-150	10.7.4, 10.8.4	Extreme event limit state for piles and shafts
11-10	11.5	Refers to Section 10.5 for abutments.
13-23.1	A13.4.2	Deck overhangs 10-ft effective wd

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