Memorandum

To: CHIEF ENGINEER
PROJECT DELIVERY DIVISION CHIEFS
TRAFFIC OPERATIONS DIVISION CHIEF
MAINTENANCE DIVISION CHIEF
DES DEPUTY DIVISION CHIEFS

Date: August 30, 2013

File:

From: BARTON J. NEWTON
State Bridge Engineer
Structure Policy & Innovation
Division of Engineering Services

Subject: ADOPTION OF AASHTO SIGN SPECIFICATIONS, SIXTH EDITION

Effective September 1, 2013, the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Sixth Edition (LTS-6) constitutes the primary California Department of Transportation design specifications for structural supports for sign structures. This memo is posted at http://www.dot.ca.gov/hq/esc/techpubs/.

The Highways Subcommittee on Bridges and Structures approved LTS-6 in 2012. A description of major changes to Section 5, “Steel Design” and Section 11, “Fatigue Design” is in the Foreword. See attachment for brief summary of changes to LTS-6.

The Department’s Standard Plans and Standard Specifications remain valid for use. If project conditions require significant deviations from these standards, the design must meet the requirements of LTS-6. Refer to the Highway Design Manual, Topic 82.5 for implementation of revised design standards for on-going projects.

Questions regarding the adoption of LTS-6 should be directed to Shannon Post, Chief, Office of Design and Technical Services at 916-227-8070.

Attachments
(1) Summary of Revisions to Sixth Edition
### Summary of Revisions to Sixth Edition

<table>
<thead>
<tr>
<th>LTS-5 Article</th>
<th>LTS-6 Article</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2, 1.4.2</td>
<td>1.2, 1.4.2</td>
<td>Minor changes.</td>
</tr>
<tr>
<td>C2.4.1.1, 2.4.1.2, and C2.4.1.2</td>
<td>C2.4.1.1</td>
<td>Some text moved to C2.4.1.1. 2.4.1.2 and C2.4.1.2 deleted. Illumination requirements.</td>
</tr>
<tr>
<td>4.8.1</td>
<td>4.8.1</td>
<td>Minor changes.</td>
</tr>
<tr>
<td>5.15 through C5.15.3</td>
<td>5.15 through C5.15.3</td>
<td>Major changes and C5.15.1 deleted.</td>
</tr>
<tr>
<td>5.16, 5.17, and C5.17</td>
<td>5.16, 5.17, and C5.17</td>
<td>Major changes. Certain bolted connections and minimum number of anchor bolts.</td>
</tr>
<tr>
<td>5.17.5.2 and C5.17.5.2</td>
<td>5.17.5.2 and C5.17.5.2</td>
<td>Text of 5.17.5.2 deleted and major changes in C5.17.5.2. Tensioning of anchor bolts.</td>
</tr>
<tr>
<td>6.7.1 and C6.7.1</td>
<td>6.7.1 and C6.7.1</td>
<td>Major changes. Certain tubes bent about diagonal axis.</td>
</tr>
<tr>
<td>11.2</td>
<td>11.2</td>
<td>Minor changes.</td>
</tr>
<tr>
<td>11.5 through C11.6</td>
<td>11.5 through C11.6</td>
<td>Major changes. Fundamental fatigue design criteria.</td>
</tr>
<tr>
<td>11.7 and C11.7</td>
<td>11.7 and C11.7</td>
<td>Minor changes.</td>
</tr>
<tr>
<td>11.7.1 and C11.7.1</td>
<td>11.7.1.1 and C11.7.1.1</td>
<td>Moved.</td>
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<tr>
<td>11.7.2 and C11.7.2</td>
<td>-</td>
<td>Deleted. Vortex shedding load case.</td>
</tr>
<tr>
<td>11.7.3 through C11.7.4</td>
<td>11.7.1.2 through C11.7.1.3</td>
<td>Moved and minor changes.</td>
</tr>
<tr>
<td>11.9 and C11.9</td>
<td>11.9 and C11.9</td>
<td>Text deleted. New organization of load cases left 11.9 and C11.9 without code text.</td>
</tr>
<tr>
<td>12.5.1 and C12.5.1</td>
<td>12.5.1 and C12.5.1</td>
<td>Some text moved from C12.5.1 to 12.5.1</td>
</tr>
<tr>
<td>12.5.3</td>
<td>12.5.3</td>
<td>Minor changes</td>
</tr>
</tbody>
</table>

### New items for the 6th edition:

1. **Figures:**
   - 3.8.3-3 through 3.8.3-5 (detailed wind speed maps for certain areas),
   - C5.14.6.1-1 and C5.14.6.1-2 (unreinforced holes and cutouts),
   - C5.14.6.2-1 (reinforced holes and cutouts),
   - C5.14.7-1 and C5.14.7-2 (mast arm to pole connections),
   - C5.15.2-1 (reinforcement of a longitudinal seam),
   - 11.7.2-1 (yearly mean wind velocity for high-mast lighting tower (HMLT) load case), and
   - C11.9.3-1 (S-N curves).

2. **Articles:**
   - 5.14.2 and C5.14.2 (multisided tubular sections),
   - 5.14.4 through C5.14.5 (tube to transverse plate connections),
   - 5.14.6.1 through C5.14.6.2 (holes and cutouts),
   - 5.14.7 and C5.14.7 (mast arm to pole connections),
Summary of Revisions to Sixth Edition

- 5.15.4 through C5.15.5 (welds and weld inspection),
- C5.16 (certain bolted connections),
- 11.5.1 and C11.5.1 (nominal stress based fatigue design),
- 11.7.1 (fatigue loads for traffic signal and sign structures),
- 11.7.2 and C11.7.2 (fatigue loads for high-mast lighting towers), and
- 11.9.1 through 11.9.3.1 (calculating stresses and determining fatigue resistance).

3. Tables:
   - C5.14.2-1 (multisided tubular sections),
   - 5.14.3-1 (Thickness of plates at tube to transverse plate connections),
   - C5.14.5-1 (backing rings),
   - 5.15.5-1 (weld inspection),
   - 11.6.2 (fatigue importance factors for HMLT's),
   - 11.9.3.1-2 (fatigue details), and
   - 11.9.3.1-3 (fatigue stress concentration factors).

4. Appendix D, including all figures and tables (advanced methods for fatigue design of certain types of connections).

Changes to Tables for the 6th Edition:
- 3-6 (3.8.6-1) (especially Note a),
- 5-6 (C5.17.5.2-1),
- 9-1 (9.5.2-1) Note b,
- 9-2 (9.5.2-2) Note b,
- 11-1 (11.6-1),
- 11-1 (11.6-1),
- B-2 (B.2-1), and
- 11-2 and 11-3 (consolidated into 11.9.3.1-1 along with major changes to the content)

Changes to Equations for the 6th Edition:
- Equations: 5-14 (5.11.2-2) in the 2nd equation,
- 6-28 (6.4.5.1-1), and
- 8-2 (8.8.2-1).