



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

MEMORANDUM TO: Project Engineers  
Project Design Engineers

FROM: B. C. Hanks, P. E.  
State Structures Engineer

DATE: June 27, 2019

SUBJECT: DESIGN MANUAL REVISIONS

Chapter 10 of the Design Manual has been reorganized. The sections listed below contain revisions that provide clarification and/or new guidance on current design practice.

Section	Summary
10.4.1	Added guidance to provide the minimum clear distance between a contact lap splice and adjacent splices or bars when bars are spliced at the same or nearby section. Added guidance to consider detailing staggered splice locations in heavily reinforced sections. Added guidance to not detail bar terminations at the same location for adjacent flexural reinforcing bars and for more than half of the flexural reinforcing bars in a section.
10.4.2	Added a list of bar support types and applications commonly used in bridges and culverts.
10.4.3	Added references to revised figures for tension development lengths and splice lengths and included guidance for modifying tension splice lengths when necessary. Added guidance for detailing splice lengths when splicing bars of unequal size.
10.4.5	Revised the maximum bar length for #3 and #4 bars.
10.4.3	Added references to revised figures for tension development lengths and splice lengths and included guidance for modifying tension splice lengths when necessary. Added guidance for detailing splice lengths when splicing bars of unequal size.

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10.4.6 Added guidance for independent assurance samples.

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The following Design Manual figures have been revised or added:

<b>Figure</b>	<b>Summary</b>
10-3	Revised to incorporate revisions to <i>AASHTO</i> regarding tension development lengths and tension splice lengths.
10-4	Revised to incorporate revisions to <i>AASHTO</i> regarding tension splice lengths.
10-6	Revised to incorporate revisions to <i>AASHTO</i> regarding tension splice lengths.
10-7	Revised to incorporate revisions to <i>AASHTO</i> regarding tension splice lengths.
10-8	Revised to incorporate revisions to <i>AASHTO</i> regarding tension splice lengths.
10-10	Revised reference to the section for clearance requirements in corrosive sites.
10-13	Added to provide tension splice lengths for culverts.
10-14	Added to provide an example detail of a standee bar support.

The updated Chapter 10 has been incorporated into the Design Manual. The Design Manual, as well as the updated Design Manual Figures, are available on the Structures Management Unit website.

These revisions are effective not later than the October 2019 letting.

BCH/THC/ksl

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