

# **REVISIONS TO THE SCDOT BRIDGE DESIGN MANUAL**

The SCDOT Bridge Design Manual has been revised to be compliant with AASHTO LRFD 8<sup>th</sup> edition. The changes are listed as shown in the following tables.

**List of changes to SCDOT Bridge Design Manual**

<b>SCDOT BDM SECTION #</b>	<b>LINE #(omit if full section)</b>	<b>OLD contents(omit if all inclusive)</b>	<b>changed to</b>
12.2.7			Approach slabs are required on all bridge projects
12.6.1.3	1	48H:1V (2.08%)	50H:1V (2%)
12.6.1.3	3,7,12	2.08%	2.00%
12.6.1.3	9	36H:1V (2.78%)	40H:1V (2.5%)
12.6.1.6	14	bike lanes will have a cross slope of 24H:1V (4.16%).	See SCDOT Roadway Design Manual for bike lanes cross slope
12.6.1.6	15	48H:1V (2.08%).	50H:1V (2%)
Figure 12.6.3 - 12.6.7		48H:1V	50H:1V
14.3	1,3	LRFD Article 5.7.3.5	LRFD Article 5.6.3.4
15.1.2	1	LRFD Article 5.7	LRFD Article 5.6
15.1.2	3	LRFD Article 5.7.2.2	LRFD Article 5.6.2.2
15.1.2	4	LRFD Article 5.7.3.2.5	LRFD Article 5.6.3.2.5
15.1.2	5	LRFD Article 5.7.3.2.1	LRFD Article 5.6.3.2.1
15.1.3.1			deleted
15.1.3.2	1	LRFD Article 5.7.3.3.2	LRFD Article 5.6.3.3
15.1.3.2	5	5.7.3.3.2-1	5.6.3.3-1
15.1.4	1	LRFD Article 5.8	LRFD Article 5.7
15.1.4	11	LRFD Article 5.6.3	LRFD Article 5.8.2
15.1.4	12	and 5.13.2	deleted
15.1.4	13	LRFD Article 5.8.3	LRFD Article 5.7.3
15.1.4	16	LRFD Eq. 5.8.3.3-1	LRFD Eq. 5.7.3.3-1
15.1.4	17	LRFD Eq. 5.8.3.3-2	LRFD Eq. 5.7.3.3-2
15.1.4	19	LRFD Equation 5.8.3.3-2	LRFD Equation 5.7.3.3-2
15.1.4	22	LRFD Eq. 5.8.3.3-3	LRFD Eq. 5.7.3.3-3
15.1.4	24	LRFD Eq. 5.8.3.3-4	LRFD Eq. 5.7.3.3-4

<b>List of changes to SCDOT Bridge Design Manual ( continued)</b>			
<b>SCDOT BDM SECTION #</b>	<b>LINE #(omit if full section)</b>	<b>OLD contents(omit if all inclusive)</b>	<b>changed to</b>
15.1.4	32	LRFD Article 5.8.3.4.2	LRFD Article 5.7.3.4.2
15.1.4	33	LRFD Article 5.8.2.5	LRFD Article 5.7.2.5
15.1.4	34	LRFD Table 5.8.3.4.2-1	LRFD Table 5.7.3.4.2-1
15.1.4	35	LRFD Table 5.8.3.4.2-2	LRFD Table 5.7.3.4.2-2
15.1.4	36	LRFD Article 5.8.3.4	LRFD Article 5.7.3.4
15.1.4	39	LRFD Eq. 5.8.2.4-1	LRFD Eq. 5.7.2.3-1
15.1.4	41	LRFD Eq. 5.8.2.5-1	LRFD Eq. 5.7.2.5-1
15.1.4	44	5.8.3.2	5.7.3.2
15.1.4	46	Article 5.8.3.5	Article 5.7.3.5
15.1.4	50	5.8.2	5.7.2
15.1.4	50	5.8.3.6	5.7.3.6
15.1.5	1	LRFD Article 5.6.3	LRFD Article 5.8.2
15.1.7	1	LRFD Article 5.7.3.4	LRFD Article 5.6.7
15.3.1.2	1	LRFD Article 5.12.3	LRFD Article 5.10.1
15.3.1.5	14,15		Class 4000 concrete with galvanized reinforcing bars (excluding steel girder shear studs, prestressed concrete beam stirrups, or any steel studs and steel reinforcement extended into deck from diaphragms) is the approved corrosion protection system for use on bridge decks.
15.3.1.6.1	1	LRFD Article 5.11.2	LRFD Article 5.10.8.2
15.3.1.6.1	2-9		See BDM DM0619*
15.3.1.6.3	1	LRFD Article 5.11.2.4	LRFD Article 5.10.8.2.4
15.3.1.6.3	4	Figure 15.3-5	Table 5 in BDM DM0619*
15.3.1.6.3	8	LRFD Article C5.11.2.4	LRFD Article C5.10.8.2.4a-1 and DM0619*
Figure 15.3-4			Deleted

\* Refer to "Revisions to the SCDOT Bridge Design Manual (Reinforcing).pdf".

<b>List of changes to SCDOT Bridge Design Manual ( continued)</b>			
<b>SCDOT BDM SECTION #</b>	<b>LINE #(omit if full section)</b>	<b>OLD contents(omit if all inclusive)</b>	<b>changed to</b>
Figure 15.3-5			Deleted
15.3.1.7	1	LRFD Article 5.11.5	LRFD Article 5.10.8.4
15.3.1.7.1	4	mechanical	ultimate mechanical
15.3.1.7.2	1	LRFD Article 5.11.5.3	LRFD Article 5.10.8.4.3
15.3.1.7.2	5	Class A, Class B and Class C	Class A, and Class B
15.3.1.7.2	9	Figure 15.3-6 shows	Table 3-4 in BDM DM0619*
Figure 15.3-6			Deleted
15.3.1.7.4	1	LRFD Articles 5.11.5.2.2, 5.11.5.3.2, and 5.11.5.5.2	LRFD Articles 5.10.8.4.2b, 5.10.8.4.3b and 5.10.8.4.5b
15.3.1.7.6	1	LRFD Articles 5.11.5.3.2, 5.11.5.4	LRFD Articles 5.10.8.4.3b and 5.10.8.4.4
15.3.1.8	1	LRFD Articles 5.11.2.3 and 5.11.5.2.1	LRFD Articles 5.10.8.2.3 and 5.10.8.4.2a
15.4.1	1	LRFD Article 5.14.4	LRFD Article 5.12.2
15.4.1.4	1	LRFD Articles 5.7.3.3.2, 5.10.8, and 5.14.4.1	LRFD Articles 5.6.3.3, 5.10.6, and 5.12.2.1
15.4.1.4	4	5.7.3.3.2 and 5.10.8	5.6.3.3 and 5.10.6
15.4.1.4	7	LRFD Article 5.14.4.1	LRFD Article 5.12.2.1
15.4.1.4	10	Equation 5.14.4.1-1	Equation 5.12.2.1-1
15.4.2	1	LRFD Article 5.7.3.6.2	LRFD Article 5.6.3.5.2
15.4.4	1	5.14.4.1	5.12.2.1
15.4.5	1	LRFD Articles 5.6.2 and 5.10.8	LRFD Articles 5.5.1.1 and 5.10.6
Figure 15.4-1	5	LRFD Article 5.10.8.2	Equation 5.10.6-2
15.4.6	8	LRFD Article 5.11.1.2	LRFD Article 5.10.8.1.2
15.4.9	1	LRFD Article 5.14.4.1	LRFD Article 5.12.2.1
15.4.11	1,2	LRFD Article 5.11.1.2	LRFD Article 5.10.8.1.2
15.4.11	4	LRFD Article 5.11.1.2.3	LRFD Article 5.10.8.1.2c

\* Refer to “Revisions to the SCDOT Bridge Design Manual (Reinforcing).pdf”.

**List of changes to SCDOT Bridge Design Manual ( continued)**

<b>SCDOT BDM SECTION #</b>	<b>LINE #(omit if full section)</b>	<b>OLD contents(omit if all inclusive)</b>	<b>changed to</b>
15.5.3.4	1	LRFD Article 5.9.5	LRFD Article 5.9.3
15.5.3.5	1	LRFD Article 5.11.4	LRFD Article 5.9.4.3
15.5.3.5	10	Equation 5.11.4.2-1	Equation 5.9.4.3.2-1
15.5.3.5	13	LRFD Article 5.11.4.3	LRFD Article 5.9.4.3.3
15.5.6.4	1	LRFD Article 5.8.4	LRFD Article 5.7.4
15.5.6.4	2-9		deleted
15.5.7	1	LRFD Article 5.13.2.2	LRFD Article 5.12.4
16.2.1.3.5	3	ASTM A325	F3125
16.2.1.5	2	LRFD Table 6.6.2-1	LRFD Table 6.6.2.1-2
16.2.2	3,4	A325	F3125
16.4.1.2	5,20	6.6.1.2.5-2	6.6.1.2.5-3
16.4.1.3	54,57	Equation 6.6.1.2.5-2	Equation 6.6.1.2.5-3
16.7.1	3,4	A325	F3125
17.1.2	1,3	5.12	5.14
17.5.1	7	LRFD Article 5.8.4	LRFD Article 5.7.4
19.2.4	1	LRFD Articles 10.7.1.10, 10.7.1.11, and 10.7.1.12	LRFD Article 10
19.2.4	9	LRFD Article 10.7.1.11	LRFD Article 10
19.2.6.2	1	LRFD Article 10.7.1.5	LRFD Article 10.7.1.2
19.2.6.7	2	LRFD Articles 10.7.3.7.3 and 10.7.3.10	LRFD Articles 10.7.3.9 and 10.8.3.6
19.2.6.10	1	LRFD Article 10.7.1.13	LRFD Article 10.7.3.8
19.2.6.11	1	LRFD Article 10.7.1.14	LRFD Article 10.7.3.8.4
19.3.2	2	LRFD Articles 10.8.3.3 and 10.8.3.4	LRFD Articles 10.8.3.5
19.3.3	10	LRFD Article 5.7.4.4	LRFD Article 5.6.4.4
19.5.4	1	LRFD Articles 5.8.3, 5.13.3.6, and 5.13.3.8	LRFD Articles 5.7.3, 5.12.8.6, and 5.12.8.8
19.5.6.1	1	LRFD Article 10.6.3.1.5	LRFD Article 10.6.3.1
19.5.6.2	1	LRFD Article 10.6.3.2.5	LRFD Article 10.6.3.2
19.5.7	1	LRFD Article 10.6.3.3	LRFD Article 10.6.3.4

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19.5.9	1	LRFD Articles 5.10.8 and 5.13.3	LRFD Articles 5.10.6 and 5.12.8
19.5.9	12,20	LRFD Article 5.13.3	LRFD Article 5.12.8
19.5.9	18	LRFD Article 5.8.3.4	LRFD Article 5.7.3.4
Figure 19.5-2	note	LRFD Article 10.6.3.1.5	LRFD Article 10.6.1.3
20.1.8	1	LRFD Article 5.6.3	LRFD Article 5.8.2
20.3.4	8	LRFD Article 5.6.3	LRFD Article 5.8.2
20.3.5	10	LRFD Article 5.7.4.3	LRFD Article 5.6.4.3
20.3.7	1	LRFD Article 5.7.4	LRFD Article 5.6.4
20.3.7	4	LRFD Article 5.7.4.3	LRFD Article 5.6.4.3
20.3.7	6	LRFD Article 5.7.4.1	LRFD Article 5.6.4.1
21.1.1.2	2	$\Delta T = \alpha L (T_{MaxDesign} - T_{MinDesign})$ LRFD Equation 3.12.2.3-1	$\Delta T = 1.2\alpha L (T_{MaxDesign} - T_{MinDesign})$ modified LRFD Equation 3.12.2.3-1 Where, 1.2 is the load factor.
21.1.1.12			deleted
21.2.1.3	3	$\Delta T = \alpha L (T_{MaxDesign} - T_{MinDesign})$ LRFD Equation 3.12.2.3-1	$\Delta T = 1.2\alpha L (T_{MaxDesign} - T_{MinDesign})$ modified LRFD Equation 3.12.2.3-1 Where, 1.2 is the load factor.
21.2.1.8	3	Use a minimum bearing plate thickness of 1½ in.	Use a minimum bearing plate thickness of 1½ in. For beveled bearing plates, use a minimum thickness of 1 ½ inches at mid-section while maintaining 1 inch minimum at the low side.
21.2.3	22	The designer shall check the bearing against horizontal walking in accordance with LRFD Article 14.7.6.4	deleted
DM 0108	21	LRFD Article 5.14.1.4.9	LRFD Article 5.12.3.3.9
DM 0108	26	5.14.1.4.6,5.14.1.4.7	5.12.3.3.6,5.12.3.3.7
DM 0108	27	5.14.1.4.8	5.12.3.3.8
DM 0108	35,42	5.9.4	5.9.2.3