

## 2/22/2022 to 8/8/2022 Guidelines Change Summary

2/2/2022 Guideline Section	8/8/2022 Guideline Section	Change Description
<b>All Chapters</b>		
-	-	Added Chapter numbers to Page numbering
-	-	Added Acronyms Page for each Chapter
-	-	Updated Table of Contents to include all Figures and Tables
-	-	Updated Revision Date
<b>Chapter 2 - Legal Aspects, Policies and Practices in Highway Drainage</b>		
2.3.8	2.3.8	pg 2-8 - 4th paragraph - Replaced "Therefore, engineers should evaluate the potential effects" with "Therefore, it is incumbent on engineers to evaluate the potential effects"
2.4.13	2.4.13	pg 2-17 - Added "report" to last bullet
<b>Chapter 3 - Preliminary Hydraulic Studies for Planning Document</b>		
3.3.1	3.3.1	pg 3-3 - Added "NCID required" after hyperlink
3.4	3.4	Pg 3-6 & 3-7 - Revised "Drainage" to be on one sheet
<b>Chapter 4 - Preliminary Roadway Plans Review and PreDesign Study</b>		
4.2	4.2	pg 4-2 - Added a bullet to the last item of the list under typical sections
4.3.2	4.3.2	pg 4-4 - Updated NCDOT Hydroplaning Assessment Tool hyperlink
4.3.2.1	4.3.2.1	pg 4-5 - Added language to paragraph under Table 1. pg 4-5 - Replaced last sentence of paragraph under Table 1.
4.3.2.2	4.3.2.2	pg 4-6 - Revised language in sentence under Figure 2 pg 4-6 - Removed metric units from Table 2
4.3.2.3	4.3.2.3	pg 4-6 - Revised last paragraph pg 4-6 - Updated NCDOT Hydroplaning Assessment Tool hyperlink
4.3.2.4	4.3.2.4	pg 4-6 - Revised 1st paragraph pg 4-6 - Revised Equation 1 and Caption pg 4-6 - Updated NCDOT Hydroplaning Assessment Tool hyperlink
4.3.2.5	4.3.2.5	pg 4-7 - Revised last paragraph
4.3.3.1	4.3.3.1	pg 4-8 - 3rd Bullet - Revised language pg 4-8 - Cross-slope was changed to cross slope in the section
4.3.4.1	4.3.4.1	pg 4-9 - 1st paragraph - Revised last sentence
4.3.5	4.3.5	pg 4-11 - 1st bullet - Revised language under Typical Sections pg 4-11 - Updated NCDOT Hydroplaning Assessment Tool hyperlink pg 4-12 - 1st Bullet - Under Areas of Concern - bullets were revised
4.5	4.5	pg 4-16 - Updated hyperlink to 4B Guidance
4.7	4.7	pg 4-18 - Updated NCDOT Hydroplaning Assessment Tool & Example hyperlink
<b>Chapter 7 - Hydrology</b>		
7.2.3.2	7.2.3.2	pg 7-2 - Revised link for FMPs website
7.2.4	7.2.4	pg 7-3 - Added "NCID required" after hyperlink
7.4.1	7.4.1	pg 7-6 - Revised link for FMPs website
7.6	7.6	pg 7-11 - Moved References Section to new page
<b>Chapter 8 - Bridges</b>		
8.7	8.7	pg 8-4 deleted a repeated citation
8.8.2.3	8.8.2.3	pg 8-21 - Hyperlink for Figure 1 updated
<b>Chapter 9 - Culverts</b>		
9.3, 9.4, 9.6, & 9.10	9.3, 9.4, 9.6, & 9.10	pgs. 9-1, 9-3, 9-19, & 9-25 updated pipe data sheet link
9.6.1	9.6.1	pg 9-4 - 2nd Sentence - Replaced "possible" with "practicable"
9.6.1.1	9.6.1.1	pg 9-5 - 1st Sentence - Removed "as much as possible" pg 9-5 - 5th Bullet - Removed "as much as possible"
9.6.1.2	9.6.1.2	pgs 9-5 & 9-6 - Updated Pipe Material Selection Guide link
9.6.1.3	9.6.1.3	pg 9-6 - Removed 3rd Sentence
9.6.1.4	9.6.1.4	pg 9-6 - Revised 2nd sentence to read "The headwater depth is measured from the design flood elevation to the invert of the inlet of the culvert and, should not exceed the lowest upstream shoulder (overtopping) point elevation of the roadway or an elevation about twenty percent higher than the height of the culvert, whichever is lower."

## 2/22/2022 to 8/8/2022 Guidelines Change Summary

2/2/2022 Guideline Section	8/8/2022 Guideline Section	Change Description
-	9.6.1.5	Added New Section - Minimum Barrel Size
9.6.1.5	9.6.1.6	Revised Section Numbering - Multiple Barrels Section Moved 2nd through 4th sentences to new Minimum Barrel Requirement Section (9.6.1.5)
9.6.1.6.1	9.6.1.7.1	pg 9-11 - Fixed Figure 3 hyperlink
9.7	9.7	pg 9-22 - Fixed Pipe Liner Manual link
9.10	9.10	pg 9-25 - Fixed Pipe Material Selection Guide and Pipe Liner Manual links
<b>Chapter 10 - Storm Drain System</b>		
10.4	10.4	pgs 10-4,10-5, 10-7 - Fixed NCDOT Pipe Material Selection Guide link
10.5.2	10.5.2	pg 10-8 - 3rd Bullet - Replaced "as calculated in the hydraulic toolbox" with "set forth in Section 10.11.3 - Storm Drain Pipe Maximum Capacity Table."; Removed "Storm Drain Pipe Maximum Capacity Table" from next sentence
10.5.3	10.5.3	pg 10-11 - Fixed NCDOT Compliance Documentation Workflow link
10.6	10.6	pg 10-12 - Fixed NCDOT Pipe Material Selection Guide link
10.11	10.11	pg 10-21 - Fixed NCDOT Pipe Material Selection Guide link and NCDOT Compliance Documentation Workflow link
<b>Chapter 12 - Erosion and Sediment Control</b>		
12.3	12.3	Pg 12-4 - Revised the hyperlink for the Temporary Stilling Basin Dimensions and Volume Calculator to the spreadsheet
<b>Chapter 13 - Stormwater Management</b>		
13.4.1	13.4.1	pg 13-7 - Revised bulleting and indentation in last two lines
13.4.2	13.4.2	pgs 13-7 & 13-8 - Revised bulleting and indentation formatting
<b>Chapter 15 - Floodplain Management</b>		
15.2.1	15.2.1	pg 15-2 - 1st Sentence - Added a space after "an"
15.7.1	15.7.1.1 & 15.7.1.2	pgs 15-5 & 15-6 - Changed bullets for "Geographical Information", "Hydrological Information" and "Final Deliverables" to be headings
<b>Chapter 16 - Coastal Hydraulic Design</b>		
All	All	Revised section number formatting (took off the period at the end of section headings to match other chapters)
16.5.1.1	16.5.1.1	pg 16-6 - Deleted extra page break to move Table 1 up
<b>Additional Documentation</b>		
NCDOT Pipe Liner Special Provision	NCDOT Pipe Liner Special Provision	Added Revision Date to Footer  Pg 3 - Under Materials: Category B Fold and Form flexible liners: Deleted "Methods & Pipe classification not permitted for use due to low pipe strength" Bullet Moved ASTM F1867 and ASTM F1871 Bullets up a level Removed "cell classification 12111" from ASTM F1871 Bullet
NCDOT Pipe Liner Special Provision	NCDOT Pipe Liner Special Provision	Pg 11 - Under Construction: Category B - Fold and Form flexible Liners: -Deleted extra space between with and the -Deleted extra space after sentence -delete "three" and add "two" -delete "on the outer surface (interface between host pipe of liner and liner) of the liner" -delete "and one approximately mid-length" - deleted second bullet under "Liner may be rejected if any of:"

**2/22/2022 to 8/8/2022 Guidelines Change Summary**

<b>2/2/2022 Guideline Section</b>	<b>8/8/2022 Guideline Section</b>	<b>Change Description</b>
NCDOT Pipe Liner Manual	NCDOT Pipe Liner Manual	<p>Version Date Revised to 5/24/2022</p> <p>Under Category B Fold and Form flexible liners:  Deleted "Methods &amp; Pipe classification not permitted for use due to low pipe strength" Bullet  Moved ASTM F1867 and ASTM F1871 Bullets up a level  Removed "cell classification 12111" from ASTM F1871 Bullet</p> <p>Under Category E - Spray-on liners:  8th Bullet - Revised to "Traffic loading is HL-93."  9th Bullet - Removed " and / or bolt heads."  Added 10th and 11th Bullets  Deleted "In addition to structural calculations as required by this manual, a contractor or vendor may submit structural design calculations..." Bullet  Revised entire "Cementitious or geopolymer" Bullets  Revised entire "Liners which exhibit Flexible Pipe behavior" Bullets</p>
Permit Drawing Guidelines	Permit Drawing Guidelines	<p>Version Date Revised to July 22, 2022</p> <p>Added Acronyms Section</p> <p>Pgs 16 - 18: Added Permit Example Drawings to Section 5</p>