STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
NASHVILLE, TENNESSEE 37243-0350

MENORANDUM

TO: TDOT Design Division Drainage Manual Users

FROM: Mr. Ali R. Hangul, P.E., CE Manager I
Design Office

DATE: February 1, 2006

SUBJECT: Revised TDOT DESIGN DIVISION DRAINAGE MANUAL

Comments: Effective date January 1, 2006. The Drainage Manual is revised as follows:

Title Sheet
Updated Manual date to January 1, 2006.

Master Table of Contents
Revised page numbers where necessary for all revisions noted herein. Updated date in header.

Chapter 1
Performed minor text edits and formatting changes to make chapter more consistent with later chapters. Updated date in header.

Chapter 2
Performed minor text edits and formatting changes to make chapter more consistent with later chapters. Updated date in header.

Chapter 3
Performed minor text edits and formatting changes to make chapter more consistent with later chapters. Updated date in header.

Chapter 4

Performed minor text edits and formatting changes to make chapter more consistent with later chapters. Updated date in header. The Table of Contents has been modified to reflect the changes noted below.

Section 4.04.1.1: Minor revisions to both paragraphs in this section.

Section 4.04.1.1: Revised the paragraph in this section to reflect the new IDF zones and curves developed and placed in the chapter Appendix.

Section 4.04.2.1: Revisions to text in both paragraphs of this section. The equations in Table 4-4 have been updated to the 2000 USGS Rural Regression Equations, adopted in 2003. The drainage area limitations in Table 4-5 have been modified to reflect the latest USGS recommendations. There are now two sets of equations for Hydrologic Area 3; one for areas less than 30.2 square miles, and one for areas larger. Only the equations for areas less than 30.2 square miles have been incorporated into the Manual.

Section 4.05: The reference to the National Flood Frequency (NFF) program has been updated to reflect it is no longer a part of the HYDRAIN software package. Revised parts of Table 4-11.

Chapter 4 Appendix

Performed minor text edits and formatting changes to make the Appendix more consistent with later chapters. Updated date in header. The page numbers in the Table of Contents have been modified to reflect the changes noted below.

- Figure 4A-1has been updated to show the new IDF zones.
- Previous Figures 4A-2 through 4A-5 have been replaced with 10 new IDF curves as Figures 4A-2 through 4A-11. The numbers of the other figures in the Appendix have been adjusted accordingly.
- Previous Figure 4A-6 has been replaced with new Figure 4A-12.
- The Time of Concentration and Curve Number worksheets have been updated and recreated.
- Previous Figure 4-4 was moved to the Appendix as Figure 4A-15.
- Figure 4A-16, Tennessee Physiographic Regions, was added to the document for reference.
- The previous 24-hour rainfall curves presented as Figures 4A-25 through 4A-31 have been replaced with Tables 4A-5 through 4A-10, which are now County specific.
- New Table 4A-11 has been added to the chapter Appendix and is referenced in Section 4.04 of the chapter text.

Section 4.06.2.1.1: The sample problem has been updated to reflect the new IDF curves.

Section 4.06.2.1.2: The sample problem has been updated to reflect the new IDF curves.

Section 4.06.2.1.3: The sample problem has been updated to reflect the new IDF curves. The reference has been corrected to show the new publication data. The HYDRO computer program run has been re-run with the new IDF values.

Section 4.06.2.2.1: The regression equations used in the sample problem have been updated along with the result. Also, the NFF computer program run has been updated and revised using the new Windows-based program published by USGS.

Section 4.06.2.2.2: The 2-yr/24-hr rainfall depth used in the regression equation has been updated. The NFF run was also converted to the new version of the program.

Section 4.06.2.2.3: The sample problem has been deleted since the Regression Equations developed specific to Shelby County are no longer acceptable on TDOT projects.

Section 4.06.4: A number of corrections and updates were made to the references. Additionally, a Glossary of Terms has been added to the chapter Appendix.

Chapter 5

Performed minor formatting edits. Updated date in header. The page numbers in the chapter Table of Contents and MASTER Table of Contents have been modified to reflect the changes noted below.

The following general additions, updates and/or revisions were made to Chapter 5:

- Added Channel Liner Selection Methodology to text
- Update and Additions to miscellaneous other Sections
- Added/Updated Figure 5A-1 Flow Chart of Selection Process
- Added new Tables 5A-13 thru 5A-21. Rearranged and renumbered others.
- Updated entire Chapter and Appendix text to reflect the revised figure and table numbers
- Updated Table of Contents and Sample Problems to reflect all of these changes
- Added TRM information and selection guide

Section 5.04.3 Ditch Grade: 3rd Paragraph revised

Section 5.04.7.1.2 RIPRAP: Added a 3rd paragraph & deleted part of 4th paragraph

Section 5.04.7.1.5 WIRE-ENCLOSED STONE (GABIONS):
Minor edits to the 2nd of 2 paragraphs.

Section 5.04.7.2.2REQUIRED ANALYSIS LOCATIONS:
Minor edit to the 2nd paragraph.

Section 5.05.7.1.3 PRECAST CONCRETE FORMS:
Significant Overhaul of 2nd and 3rd paragraphs in this section.

Section 5.06.1.2 GENERAL DITCH DESIGN AND ANALYSIS PROCEDURE, Step 9:
Significant overhaul of this step to conform to previously edited section.

Performed minor formatting edits. Updated date in header.

Chapter 6
Performed minor formatting edits. Updated date in header.

Chapter 7
Performed minor formatting edits. Updated date in header.

Section 7.06.2.1 (Sample Problem 1): The sample problem has been updated to reflect the new IDF data in chapter 4. In addition, Figures 7A-15 and 7A-16 were updated to reflect the new results.

Section 7.06.2.2 (Sample Problem 2): The sample problem has been updated to reflect the new IDF data in chapter 4. In addition, Figures 7A-17 was updated to reflect the new results.

Section 7.06.2.3 (Sample Problem 3): The sample problem has been updated to reflect the new IDF data in chapter 4. In addition, Table 7A-13, as well as Figures 7A-20 and 7A-21 were updated to reflect the new IDF data and results.

Chapter 8
Performed minor formatting edits. Updated date in header.

Section 8.06.2.1 (Sample Problem 1): All of the computations, as well as the associated tables and figures were updated to reflect the new IDF data in chapter 4.

Chapter 9
Performed minor formatting edits. Updated date in header. No further changes were necessary.