



STATE OF TENNESSEE
DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION

ROADWAY DESIGN GUIDELINES

November 2015

TDOT - ROADWAY DESIGN GUIDELINES

English

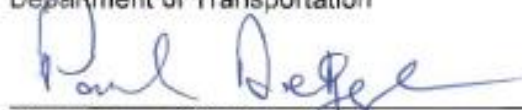
Revised: 11/12/15

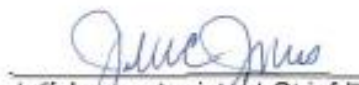
Revised 6-11-12: for IB 12-09 and 12-10
Revised 8-13-12 for IB 12-11, 12-13, 12-14, 12-15, and 12-16
Revised 8-16-12 for IB 12-17 and 12-18
Revised 9-4-12 for IB 12-12
Revised 10-4-12 for IB 19-19
Revised 1-31-13 for IB 13-01 thru 13-06
Revised 2-7-13 for IB 13-07
Revised 2-21-13 for IB 13-08
Revised 4-18-13 for IBs 13-09, 13-10, 13-11
Revised 5-22-13 for IB 13-12
Revised 5-28-13 for IB 13-13
Revised 6-19-13 for IB 13-14
Revised 9-12-13 for IBs 13-15, 13-16, 13-17, 13-18, 13-20, 13-21, 13-22 & 13-23
Revised 11-14-13 for IB 13-24
Revised 12-9-13 for IBs 13-25 and 13-26
Revised 2-10-14 for IBs 14-01 and 14-02
Revised 4-22-14 for IBs 14-03 and 14-04
Revised 6-23-14 for IBs 14-05 and 14-06
Revised 8-18-14 for IBs 14-07 thru 14-11
Revised 12-5-14 for IBs 14-12 thru 14-24
Revised 3-20-15 for IB's 15-01 thru 15-05
Revised 4-15-15 for IB's 15-06 thru 15-07
Revised 7-01-15 for IB's 15-08
Revised 10-15-15 for IB's 15-12 thru 15-13



TDOT Roadway Design Guidelines is approved.

 JUN 20 2012
 John Schroer, Commissioner
 Department of Transportation Date

 6/14/12
 Paul Degges, Chief Engineer
 Department of Transportation Date

 5/29/12
 Jeff Jones, Assistant Chief Engineer
 Bureau of Engineering Date

 5/25/12
 Carolyn Stonecipher, Director
 Design Division Date

FOREWORD

These guidelines establish uniform procedures for roadway design activities within the Tennessee Department of Transportation. The guidelines do not establish any legal or administration interpretations of the Department's contracts. In the event that the terms of a contract and this guide are in conflict, this guide is subordinate to the contract.

Utilization of these guidelines will ensure more uniformity in the design of roadway plans by the Roadway Design Division. These guidelines are not intended to provide an explanation to every design problem encountered by design personnel. The guidelines should not be a substitute for good engineering knowledge, experience, or sound judgment.

As permitted under 23 CFR 625.3 (e), the roadway design procedures herein do not apply for traffic engineering, spot improvements, road safety audit review (RSAR) projects, and safety projects such as signing, marking, signalization, roadway lighting and traffic barriers which include very minor or no roadway work. This will permit implementation of projects addressing safety and operational concerns in a timely manner without requiring design exceptions for those elements of the roadway that are beyond the scope of purpose and funding for these types of projects.

The Roadway Design Guidelines have been prepared for guidance in the preparation of roadway plans and estimates.

All design personnel should make every effort to become familiar with the Guidelines and the format within which they were developed. An explanation of the format of the Guidelines and the manner in which they will be updated is explained on the next page.

These guidelines will be in a state of constant evaluation for any revisions, additions, and deletions to keep Roadway Design personnel current with improved design procedures.

FORMAT OF ROADWAY DESIGN GUIDELINES

The Roadway Design Guidelines have been categorized by the tasks that occur for the development of roadway plans. The breakdown is as follows:

- I. General Roadway Information
- II. Preliminary Plans Information
- III. Right-of-Way Plans Information
- IV. Construction Plans Information
- V. List of Current Standard Drawings Revision Dates
- VI. General Notes and Special Notes
- VII. Index
- VIII. Instructional Bulletins

The Roadway Design Guidelines are categorized by the particular design functions that must take place in the process of plans development. A typical set of roadway plans would first have the Preliminary Plans developed, next the Right-of-Way Plans, and finally the Construction Plans. An item will be listed where it first might occur during plans development. Later references will refer back to that previous listing. On rare occurrences an item might be forward referenced.

The Roadway Design Guidelines will be updated as needed on a yearly basis. Directions to designers throughout the year will be in the form of "Instructional Bulletins". Instructional Bulletins will no longer be distributed in hard copy. Updates are going to be posted on the Roadway Design Division's web site. Notifications for the updates will be sent via email.

Instructional Bulletins will be issued as the need arises throughout the year. They will have a number that designates the year and the sequence of bulletins for that year (for example 08-01). The practice or principle is to remain in effect for an extended period of time then the bulletin will contain the necessary pages to insert into the guidelines. If the instructions are no longer needed then the bulletin will be voided.

With this approach to updates, the designers shall be able to learn about where the guidelines are contained, and be able to find a particular item more easily.

The Roadway Design Division will no longer be updating or revising existing Metric Roadway Design Guidelines, General Notes, and Standard Drawings. As a result of this decision, these documents will no longer be distributed in hard copy or posted on TDOT web site. Designers needing access to metric documents should contact the Roadway Design Division, Standards Office at (615)741-0840 to obtain guidance for preparing metric plans.

TDOT - ROADWAY DESIGN GUIDELINES

English

Revised: 11/12/15

REVISIONS SINCE THE 2010 EDITION

SECTION	REASON
All of Section I has been updated	Incorporates and voids IB 10-14
1-100.00 and Table 1-1 has been revised	Incorporates and voids IB 13-16
1-115.00 has been added	Addresses the procedure for archiving plans on to FileNet. Incorporates and voids IB 11-08
1-115.00, Table 1-1, and Figure 1-2 has been revised	Incorporates and voids IB 13-11
Table 1-2 has been revised	Incorporates and voids IB 13-12
1-115.10 has been added	Addresses the standard pdf size for FileNet plans. Incorporates and voids IB 12-02
1-115.15 has been added	Incorporates IB 14-16
1-115.20 has been added	Addresses plan phase stamps to be placed on plans. Incorporates and voids IB 09-08
1-115.20 and Table 1-1 have been revised and 1-120.01 added	Incorporates and voids IB 13-02
1-120.23 has been added	Incorporates and voids IB 14-11
1-200.11 and 1-200.17 has been revised	Incorporates and voids IB 13-04
1-216.00 has been added	Incorporates IB 14-17
1-120.00 has been added	Addresses field review procedure and FileNet distribution. Incorporates and voids IB 11-09 and IB 11-10
1-200.11, 1-200.12, 1-200.15, 1-200.17, and Figures 1-6, 1-6A, 1-6B, and 1-6C have been revised	Incorporates IB 15-01
1-200.18 has been added	Incorporates and voids IB 13-03
1-220.00 has been voided	Incorporates and voids IB 12-16
Section I- Chapter 3 has been moved	Is now Section II-Chapter 4
All of Section I has been updated	Changed links and staff information.
All of Section II has been updated	Incorporates and voids IB 11-17
2-102.00 has been added	Incorporates IB 11-06
2-115.01 has been revised	Incorporates and voids IB 13-24
2-115.01 has been revised	Incorporates IB 15-02
2-120.00 and Figure 2-6 has been revised	Incorporates IB 14-21
2-127.00 has been revised	Incorporates and voids IB 12-16
2-132.00 has been added	Addresses procedure for checking sight distance at intersections. Incorporates and voids IB 08-13
2-136.00 has been revised	Incorporates IB 14-19
2-136.00 has been added	Addresses landscaping and voids Standard Drawings EL-P-10 and EL-P-11
2-155.00 has been revised	Clarified procedure for showing wetlands on the plans.
2-175.00 has been revised	Minor wording change
2-175.00 and Figure 2-24 has been revised	Incorporates and voids IB 12-16
2-175.00 has been revised	Incorporates and voids IB 13-11
2-175.01 has been revised and 2-175.02 has	Incorporates and voids IB 14-03

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been added	
2-315.00 has been revised	Revised procedure for sending files to Signal Design.
2-315.01 has been added	Incorporates and voids IB 13-15
Section II- Chapter 4	New location of former Section I-Chapter 3
All of Section II has been updated	Changed links and staff information.
All of Section III has been updated	Incorporates and voids IB 11-18
3-110.02 and Figure 3-1 has been revised	Incorporates and voids IB 13-23
3-125.01 has been revised and Figure 3-3A added	Incorporates and voids IB 12-14
3-400.00 has been revised	Incorporates and voids IB 12-07
3-400.15 has been revised	Incorporates and voids IB 12-16
3-400.05 has been revised	Incorporates and voids IB 12-07
3-400.15 has been revised	Incorporates and voids IB 12-07
3-400.17 has been added	Incorporates and voids IB 12-07
3-400.20 has been revised	Incorporates and voids IB 12-07
3-400.25 and Figure 3-5 have been revised	Incorporates and voids IB 12-07 Added email notification for railroad involved projects, incorporates IB 09-13
3-400.30 has been deleted	Incorporates and voids IB 12-07
3-405.00 has been revised	Incorporates and voids IB 12-07
3-405.00 has been revised	Incorporates and voids IB 12-16
3-405.00 has been revised	Incorporates and voids IB 13-12
3-410.00 and all figures therein have been revised	Revised for changes to the new Construction General Permit requirements
3-410.03 has been added	Incorporates and voids IB 13-21
3-411.00 has been added	Incorporates and voids IB 13-07
All of Section III has been updated	Changed links and staff information.
All of Section IV has been updated	Incorporates and voids IB 11-19
3-412.00 and 3-413.00 has been added and Section VI has been updated	Incorporates IB 14-17
4-112.01 has been revised	Revised to reflect the addition of 1-115.10
4-414.05 has been revised	Incorporates and voids IB 12-14
4-115.10 has been revised	Incorporates and voids IB 12-07
4-416.00 has been added	Incorporates and voids IB 12-14
4-126.00 has been added	Incorporates and voids IB 12-11
4-136.00 and Figure 4-4 has been added	Addresses Project Commitments Sheet. Incorporates and voids IB 11-11
4-137.00 has been revised	Incorporates and voids IB 12-07
Section	Reason
4-138.00 and 4-139.00 has been added and Figures 1-1 and 4-2 revised	Incorporates and voids IB 12-09
4-140.00 and Figure 4-8 have been revised	Incorporates and voids IB 12-07
4-140.00 has been revised	Incorporates and voids IB 13-14
4-140.00 has been revised	Incorporates IB 14-13
4-140.01 has been deleted	No longer required due to digital distribution
4-140.02 has been revised	Incorporates and voids IB 12-07

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4-140.02 has been revised	Incorporates and voids IB 12-16
4-140.02 has been revised	Incorporates and voids IB 13-12
4-140.06 has been revised	Incorporates and voids IB 12-07
4-140.06 has been revised	Incorporates and voids IB 12-16
4-150.00 has been revised	Incorporates and voids IB 12-16
4-150.00 has been revised	Incorporates and voids IB 13-12
4-150.00 has been revised	Incorporates IB 14-14
4-150.00 has been revised	Incorporates and voids IB 12-07
4-203.02 has been revised	Clarified definition of Transitional Materials.
4-203.35 has been deleted	All excavation for culverts to now be considered culvert excavation
4-204.05, 4-205.00 and Figure 4-14 have been revised	Incorporates and voids IB 12-16
4-204.05 and Figure 4-14 have been revised	
4-303.00 (Item 303-10.01) has been revised	Revised for new barrier wall standard drawings
4-403.00 (Item 403-01) has been revised	Application fate for Item 403-01 has been modified
4-403.00 has been revised	Incorporates and voids IB 13-10
4-411.03 has been revised	Revised to include standard drawings RP-CS-1 and RP-CS-2
4-414.05 (item No 403-01) has been revised	Item No 403-01.01 has been created to differentiate between typical tack coat application and micro-surfacing application
4-115.10 has been revised	Revised for digital signature requirement
4-115.11 has been added	Incorporates and voids IB 13-5
4-115.12 has been added	Incorporates and voids IB 13-26
4-133.00 has been revised	Added SWPPP Sheets to Index
4-138.00, 4-139.00, and Figure 4-2 has been revised	Incorporates and voids IB 13-22
4-139.00 has been revised	Incorporates IB 14-18
4-140.00 has been revised	Incorporates and voids IB 14-07
4-403.05 has been added	Incorporates and voids IB 13-06
4-411.00 has been revised	Incorporates IB 15-07
4-416.00 has been deleted	Incorporates and voids IB 12-17
4-604.35 has been deleted	Excavation at Culverts to no longer include Channel Excavation
4-650.00 has been added	Incorporates IB 14-15
4-705.05 has been moved to 4-706.20	Addresses guardrail end treatments.
Section 4-706.XX has been added	Incorporates and voids IB 12-03
4-705.00 through 4-706.39	Incorporates and voids IB 14-02
4-712.00 has been revised	Incorporates IB 14-13
4-712.01 has been added	Incorporates and voids IB 13-17
4-712.15 has been revised	Revised to match 4-712.00
4-712.20 has been deleted	Redundant section removed, same information is provided in 4-712.25
4-712.25 has been revised	Incorporates and voids IB 13-17
4-713.00 has been added	Incorporates and voids IB 12-13

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4-713.05 and 4-713.10 has been deleted	Incorporates IB 15-05
4-713.15 has been revised	Incorporates IB 15-05
4-716.05	Added guidance concerning striping on OGFC pavements
Table 4-3 has been revised	Incorporates and voids IB 14-04
4-730.12 and 4-730.13 has been added	Incorporates IB 14-23
All of Section IV has been updated	Changed links and staff information.
All of Section V has been updated	Incorporates and voids IB 11-07, IB 12-06, IB 12-08
Section V Chapter 1 has been revised	Incorporates and voids IB 12-12
Section V Chapter 1 has been revised	Incorporates and voids IB 12-15
Section V Chapter 1 has been revised for D-CB-14RB	Incorporates and voids IB 12-18
Section V Chapter 1 revised D-CB-series drawings	Incorporates and voids IB 13-01
Section V Chapter 1 has been revised	Incorporates and voids IB 13-08
Section V Chapter 1 has been revised	Incorporates and voids IB 13-13
Section V Chapter 1 has been revised	Incorporates and voids IB 13-18
Section V Chapter 1 has been revised	Incorporates and voids IB 13-20
Section V Chapter 1 has been revised	Incorporates and voids IB 13-25
Section V Chapter 1 has been revised	Revised guardrail and safety Roadway Standard Drawings. Incorporates and voids IB 14-01
Section V Chapter 1 has been revised	Incorporates and voids IB 14-05
Section V Chapter 1 has been revised	Revised catch basin Roadway Standard Drawings. Incorporates and voids IB 14-06
Section V Chapter 1 has been revised	Incorporates and voids IB 14-08
Section V Chapter 1 has been revised	Deleted brick catch basins. Incorporates IB 14-10
Section V has been revised. Revises Chapter 1 & 2. Adds Chapter 3	Incorporates IB's 15-03, 15-04, and 15-06
Section V has been revised. Revises Chapter 1 & 2.	Incorporates IB 15-08
All of Section V has been updated	Revised standard drawings to reflect website.
6-150.00 is revised to include note 3	Incorporates and voids IB 12-14
6-150.00 is revised to include note 3	Incorporates and voids IB 12-17
6-160.00 has been revised	Revised to include Class A-3 in the exception note.
6-180.xx has been revised (various notes)	New Erosion Control procedures.
6-190.xx has been revised (various notes)	Revised to revise, add, and deleted various general and special notes. Incorporates and voids IB 14-22
6-190.xx has been revised (various notes)	Revised to reflect changes in the new Construction General Permit
6-205.xx has been revised	Re-numbering notes
6-230.xx has been revised (various notes)	New Erosion Control procedures.
6-240.00 has been added	Incorporates and voids IB 14-03

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6-250.03 has been revised	Revised to reflect sign changes in the MUTCD
6-265.00 has been added	Incorporates and voids IB 12-13
6-270.00 note 2 has been added	Incorporates and voids IB 11-14
6-290.xx has been revised (various notes)	Revised to reflect changes in the new Construction General Permit
6-300.00 has been added	Incorporates Right-Of-Way notes
6-305.00 has been added	Incorporates Utility notes
6-400.00 has been added	New Erosion Control procedures.
6-405.00 has been added	New Erosion Control procedures.
6-410.00 has been added	New Erosion Control procedures.
6-415.00 has been added	New Erosion Control procedures.
Section VI, Chapter 5 has been added	Incorporated Pavement Edge Drop-Off Traffic Control Notes
Section VI has been revised (various notes)	Revised to reflect name change of the Design Division to the Roadway Design Division. Incorporates and voids IB 13-09
Section VI has been revised (various notes)	Revised to reflect name change of the Design Division to the Roadway Design Division.

The following IBs have been previously voided.

08-13, 09-08, 09-13, 10-14, 11-07, 11-08, 11-09, 11-10, 11-11, 11-14, 11-17, 11-18, 11-19, 11-20, 12-01, 12-02, 12-03, 12-04, 12-05, 12-06, 12-07, 12-08, 12-09, 12-10, 12-11, 12-12, 12-13, 12-14, 12-15, 12-16, 12-17, 12-18, 12-19 13-01, 13-02, 13-03, 13-04, 13-05, 13-06, 13-07, 13-08, 13-09, 13-10, 13-11, 13-12, 13-13, 13-14, 13-15, 13-16, 13-17, 13-18, 13-20, 13-21, 13-22, 13-23, 13-24,

The following IBs have been voided by this update:

13-19, 13-25, 13-26, 14-01, 14-02, 14-03, 14-04, 14-05, 14-06, 14-07, 14-08, 14-10, 14-11

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