



**NRA Alpha-Numeric Index
to the
Design Manual for Roads and Bridges**

June 2001

Summary:

This document provides a list, volume by volume, of the current documents of the Design Manual for Roads and Bridges, as implemented in Ireland. It also provides an index in alpha-numeric order.

This document is updated quarterly and may be used as a check of the current status of the DMRB and the implementation documents.

**VOLUME 1 HIGHWAY STRUCTURES -
APPROVAL PROCEDURES
AND GENERAL DESIGN**

**SECTION 0 PUBLICATION
PROCEDURE**

PART B

NRA ALPHA-NUMERIC INDEX

Contents

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1. CONTENTS

VOLUME 1: HIGHWAY STRUCTURES : APPROVAL PROCEDURES AND GENERAL DESIGN

Documents Available for Use in Ireland

- Notes: 1. The Standards (BD) of Volume 1 of the DMRB listed below are applicable in Ireland when used in conjunction with the relevant NRA Addenda.
2. NRA Standards or other documents are indicated by *. These replace DMRB documents in Ireland.
3. Advice Notes (BA) have not been implemented for use in Ireland. However, they may be of interest for background reading and, for completeness, are listed here in italics. Users of these Advice Notes must make due allowance for any differences from UK practice.

Standard or Advice Note			
DMRB Part	Number	Title	NRA Addendum or Standard Dated
Section 0: Publication Procedure			
1.0.1	1.0.A*	The Introduction to the NRA Design Manual for Roads and Bridges*	Dec 2000
1.0.2	1.0.B*	NRA Alpha-Numeric Index*	Jun 2001
-	1.0.C*	NRA Introduction to Volume 1*	Jun 2001
Section 1: Approval Procedures			
1.1.1A	NRA BD 2/01*	Technical Approval of Road Structures on Motorways and Other National Roads*	Jun 2001
Section 2: Other Procedural Documents			
1.2.1	BD 36/92	Evaluation of Maintenance Costs in Comparing Alternative Designs for Highway Structures	Dec 2000
1.2.2	<i>BA 28/92</i>	<i>Evaluation of Maintenance Costs in Comparing Alternative Designs for Highway Structures</i>	-
Section 3: General Design			
1.3.1	NRA BD 24/00*	The Design of Concrete Road Bridges and Structures, Use of BS 5400: Part 4 : 1990*	Dec 2000
1.3.2	BD 15/92	General Principles for the Design and Construction of Bridges. Use of BS 5400: Part 1: 1988	Dec 2000
1.3.3	BD 49/01	Design Rules for Aerodynamic Effects on Bridges	Jun 2001
1.3.4	<i>BA 40/93</i>	<i>Tack Welding of Reinforcing Bars</i>	-
1.3.5	BD 60/94	Design of Highway Bridges for Vehicle Collision Loads	Dec 2000
1.3.6	<i>BA 59/94</i>	<i>Design of Highway Bridges for Hydraulic Action</i>	-

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VOLUME 2: HIGHWAY STRUCTURES: DESIGN (SUBSTRUCTURES AND SPECIAL STRUCTURES) MATERIALS

Documents Available for Use in Ireland

- Notes: 1. The Standards (BD and TD) of Volume 2 of the DMRB listed below are applicable in Ireland when used in conjunction with the relevant NRA Addenda.
2. NRA Standards or other documents are indicated by *. These replace DMRB documents in Ireland.
3. Advice Notes (BA and TA) and Standard BD 65 have not been implemented for use in Ireland. However, they may be of interest for background reading and, for completeness, are listed here in italics. Users of these documents must make due allowance for any differences from UK practice.

Standard or Advice Note			
DMRB Part	Number	Title	NRA Addendum or Standard Dated
Section 0 : Introduction			
-	2.0.A*	NRA Introduction to Volume 2*	Jun 2001
Section 1 : Substructures			
2.1.1	BD 41/97	Reinforced Clay Brickwork Retaining Walls of Pocket-Type and Grouted-Cavity Type Construction	Dec 2000
2.1.2	BD 42/94	Design of Embedded Retaining Walls and Bridge Abutments (Unpropped or Propped at the Top)	Dec 2000
2.1.3	BD 68/97	Crib Retaining Walls	Dec 2000
2.1.4	<i>BA 68/97</i>	<i>Crib Retaining Walls</i>	-
2.1.5	BD 70/97	Strengthened/Reinforced Soils and other Fills for Retaining Walls and Bridge Abutments	Dec 2000
2.1	BD 30/87	Backfilled Retaining Walls and Bridge Abutments	Dec 2000
2.1.7	<i>BA 80/99</i>	<i>Use of Rockbolts</i>	-
2.1.8	BD 74/00	Foundations	Dec 2000
Section 2 : Special Structures			
2.2.1	BD 26/99	Design of Lighting Columns [incorporating Amendment No.1, dated May 2001]	Jun 2001
2.2.2	<i>BA 48/93</i>	<i>Pedestrian Protection at Head Walls, Wing Walls and Retaining Walls</i>	-
2.2.4	BD 51/98	Design Criteria for Portal and Cantilever Sign/Signal Gantries	Dec 2000
2.2.5	<i>BD 65/97</i>	<i>Design Criteria for Collision Protection Beams</i>	-
2.2.6	BD 12/95	Design of Corrugated Steel Buried Structures with Spans not Exceeding 8m (Including Circular Arches)	Dec 2000
2.2.7	BD 67/96	Enclosure of Bridges	Dec 2000
2.2.8	<i>BA 67/96</i>	<i>Enclosure of Bridges</i>	-

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VOLUME 4: GEOTECHNICS AND DRAINAGE

Documents Available for Use in Ireland

- Notes: 1. Standard HD 33 of Volume 4 of the DMRB, as noted below, is applicable in Ireland when used in conjunction with the relevant NRA Addendum.
2. Other NRA documents relating to Volume 4 are indicated by *.
3. Advice Notes (HA and TA) have not been implemented for use in Ireland. However, they may be of interest for background reading and, for completeness, are listed here in italics. Users of these Advice Notes must make due allowance for any differences from UK practice.

Standard or Advice Note			
DMRB Part	Number	Title	NRA Addendum or Standard Dated
Section 0: NRA Introduction			
-	4.0.A*	NRA Introduction to Volume 4*	Dec 2000
Section 1: Earthworks			
4.1.1	HA 44/91	<i>Earthworks: Design and Preparation of Contract Documents [Incorporating Amendment No. 1, April 1995]</i>	-
4.1.3	HA 48/93	<i>Maintenance of Highway Earthworks and Drainage</i>	-
4.1.4	HA 68/94	<i>Design Methods for the Reinforcement of Highway Slopes by Reinforced Soil and Soil Nailing Techniques</i>	-
4.1.5	HA 70/94	<i>Construction of Highway Earthworks</i>	-
4.1.6	HA 74/00	<i>Treatment of Fill and Capping Materials Using Either Lime or Cement or Both</i>	-
4.1.7	HA 73/95	<i>Site Investigation for Highway Works on Contaminated Land</i>	-
4.1	HA 43/91	<i>Geotechnical Considerations and Techniques for Widening Highway Earthworks</i>	-
Section 2 : Drainage			
4.2.1	HA 71/95	<i>The Effects of Highway Construction on Flood Plains [Incorporating Amendment No. 1, August 1998]</i>	-
4.2	HA 78/96	<i>Design of Outfalls for Surface Water Channels</i>	-
4.2	HA 39/98	<i>Edge of Pavement Details</i>	-
4.2.2	TA 80/99	<i>Surface Drainage of Wide Carriageways</i>	-

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VOLUME 5: ASSESSMENT AND PREPARATION OF ROAD SCHEMES

Documents Available for Use in Ireland

- Notes: 1. NRA Standards or other documents are indicated by *. These replace DMRB documents in Ireland.
2. Advice Notes (HA or TA) have not been implemented for use in Ireland. However, they may be of interest for background reading and, for completeness, are listed here in italics. Users of these Advice Notes must make due allowance for any differences between the UK and Ireland.

Standard or Advice Note			
DMRB Part	Number	Title	NRA Document Dated
Section 0: NRA Introduction			
-	5.0.A*	NRA Introduction to Volume 5*	Jun 2001
Section 1: Assessment of Road Schemes			
5.1.1	TA 44/92	<i>Capacities, Queues, Delays and Accidents at Road Junctions – Computer Programs ARCADY/3 and PICADY/3 (TRRL).</i>	-
5.1.2	- *	NRA National Roads Project Management Guidelines* (available from NRA)	Mar 2000
5.1.3	TA 46/97	<i>Traffic Flow Ranges for Use in the Assessment of New Rural Road Standards</i>	-
5.1.3	TA 79/99	<i>Traffic Capacity of Urban Roads (Incorporating Amendment No. 1 dated May 1999)</i>	-
5.1	TA 11/81	<i>Traffic Surveys by Roadside Interview</i>	-
5.1	TA 22/81	<i>Vehicle Speed Measurement on All-Purpose Roads</i>	-
5.1	TA 30/82	<i>Choice Between Options for Trunk Road Schemes</i>	-
Section 2: Preparation and Implementation			
5.2.1	HA 46/92	<i>Quality Assurance for Highway Design</i>	-
5.2.2	NRA HD 19/01*	Road Safety Audits*	Jun 2001
5.2.3	NRA HA 42/01*	Road Safety Audit Guidelines*	Jun 2001
5.2.4	TA 67/95	<i>Providing for Cyclists</i>	-
5.2	HA 12/81	<i>Management of Contractual Claims</i>	-
5.2	HA 13/81	<i>The Planting of Trees and Shrubs</i>	-
5.2	HA 19/92	<i>Engineer/Contractor Relationship on Trunk Road Contracts</i>	-

VOLUME 6: ROAD GEOMETRY

Documents Available for Use in Ireland

- Notes: 1. The Standards (TD) of Volume 6 of the DMRB listed below are applicable in Ireland when used in conjunction with the relevant NRA Addenda.
2. NRA Standards or other documents are indicated by *. These replace DMRB documents in Ireland.
3. With the exception of NRA TA 43/00, Advice Notes (TA) have not been implemented for use in Ireland. However, they may be of interest for background reading and, for completeness, are listed here in italics. Users of these Advice Notes must make due allowance for any differences from UK practice.

Standard or Advice Note			
DMRB Part	Number	Title	NRA Addendum or Standard Dated
Section 0: NRA Introduction			
-	6.0.A*	NRA Introduction to Volume 6*	Dec 2000
Section 1: Links			
6.1.1	NRA TD 9/00*	Road Link Design* [and NRA Amendment No.1, dated June 2001]	Dec 2000
6.1.1A	NRA TA 43/00*	Guidance on Road Link Design* [and NRA Amendment No.1, dated June 2001]	Dec 2000
6.1.2	NRA TD 27/00*	Cross Sections and Headroom*	Dec 2000
Section 2 : Junctions			
6.2.1	TD 22/92	Layout of Grade Separated Junctions	Dec 2000 [and NRA Erratum No.1, dated Jun 2001]
6.2.2	<i>TA 48/92</i>	<i>Layout of Grade Separated Junctions</i>	-
6.2.3	TD 16/93	Geometric Design of Roundabouts	Dec 2000
6.2.3	<i>TA 78/97</i>	<i>Design of Road Markings at Roundabouts</i>	-
6.2.3	TD 50/99	The Geometric Layout of Signal-Controlled Junctions and Signalised Roundabouts	Dec 2000
6.2.4	TD 39/94	The Design of Major Interchanges	Dec 2000
6.2.5	TD 40/94	Layout of Compact Grade Separated Junctions	Dec 2000

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VOLUME 7: PAVEMENT DESIGN AND MAINTENANCE

DOCUMENTS AVAILABLE FOR USE IN IRELAND

- Notes: 1. The Standards (HD) of Volume 7 of the DMRB listed below are applicable in Ireland when used in conjunction with the relevant NRA Addenda.
2. Other NRA documents relating to Volume 7 are indicated by *.

Standard or Advice Note			
DMRB Part	Number	Title	NRA Addendum or Standard Dated
Section 0: NRA Introduction			
-	7.0.A*	NRA Introduction to Volume 7*	Jun 2001
Section 1: Preamble			
7.1.1	HD 23/99	General Information	Dec 2000
7.1.2	HD 35/95	Technical Information	Dec 2000
Section 2 : Pavement Design and Construction			
7.2.1	HD 24/96	Traffic Assessment	Dec 2000
7.2.2	HD 25/94	Foundations	Dec 2000
7.2.3	HD 26/94	Pavement Design [Incorporating Amendment No. 1, March 1995, Amendment No. 2, February 1996, and Amendment No. 3, February 1998]	Dec 2000
7.2.4	HD 27/94	Pavement Construction Methods [Incorporating Amendment No. 2, February 1999]	Dec 2000
7.2.5	HD 39/01	Footway Design	Jun 2001
Section 5 : Surfacing and Surfacing Materials			
7.5.1	HD 36/99	Surfacing Materials for New and Maintenance Construction	Dec 2000
7.5.2	HD 37/99	Bituminous Surfacing Materials and Techniques [Incorporating Amendment No. 1, May 1999]	Dec 2000
7.5.3	HD 38/97	Concrete Surfacing and Materials [Incorporating Amendment No. 1 February 1999]	Dec 2000

VOLUME 8: TRAFFIC SIGNS AND LIGHTING

Documents Available for Use in Ireland

- Notes:
- Standards TD 30, TD 33, TD 34, TD 35 and TD 49 of Volume 8 of the DMRB, as listed below, are applicable in Ireland when used in conjunction with the relevant NRA Addenda.
 - Other NRA documents relating to Volume 8 are indicated by *.
 - Advice Notes (TA) and Standards TD 23, TD 24, TD 25 and TD 26 have not been implemented for use in Ireland. However, they may be of interest for background reading and, for completeness, are listed here in italics. Users of these documents must make due allowance for any differences from UK practice.

Standard or Advice Note			
DMRB Part	Number	Title	NRA Addendum or Standard Dated
Section 0: NRA Introduction			
-	8.0.A*	NRA Introduction to Volume 8*	Dec 2000
Section 1: Traffic Signals and Control Equipment			
8.1.1	TD 35/91	All Purpose Trunk Roads – MOVA System of Traffic Control at Signals	Dec 2000
8.1.2	<i>TA 84/01</i>	<i>Code of Practice for Traffic Control and Information Systems for All-Purpose Roads</i>	-
8.1	<i>TA 12/81</i>	<i>Traffic Signals on High Speed Roads</i>	-
8.1	<i>TA 15/81</i>	<i>Pedestrian Facilities at Traffic Signal Installations</i>	-
8.1	<i>TA 16/81</i>	<i>General Principles for Control by Traffic Signals</i>	-
8.1	<i>TD 24/97</i>	<i>All Purpose Trunk Roads : Maintenance of Traffic Signals</i>	-
8.1	<i>TA 82/99</i>	<i>The Installation of Traffic Signals and Associated Equipment</i>	-
Section 2 : Traffic Signs and Road Markings			
8.2.1	<i>TA 58/92</i>	<i>Traffic Signs and Road Markings for Lane Gains and Lane Drops on All Purpose Dual Carriageway and Motorway Trunk Roads</i>	-
8.2.2	<i>TD 25/01</i>	<i>Inspection and Maintenance of Traffic Signs on Motorway and All-Purpose Trunk Roads</i>	-
8.2.2	<i>TA 61/94</i>	<i>Currency of the Traffic Signs Manual</i>	-
8.2	<i>TA 8/80</i>	<i>Carriageway Markings. Markings for Right Turning Movements at Cross Road Junctions</i>	-

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VOLUME 9: NETWORK – TRAFFIC CONTROL AND COMMUNICATIONS

Documents Available for Use in Ireland

- Notes: 1. Standard HD 20 of Volume 9 of the DMRB, as noted below, is applicable in Ireland when used in conjunction with the relevant NRA Addendum.
2. Other NRA documents relating to Volume 9 are indicated by *.
3. Advice Note TA 71 has not been implemented for use in Ireland. However, it may be of interest for background reading and, for completeness, is listed here in italics. Users of this Advice Note must make due allowance for any differences from UK practice.
4. Sections 1, 2, 4 and 5 of Volume 9 have not been implemented. Therefore, documents from those Sections are not available for use in Ireland.

Standard or Advice Note			
DMRB Part	Number	Title	NRA Addendum or Standard Dated
Section 0: NRA Introduction			
-	9.0.A*	NRA Introduction to Volume 9*	Dec 2000
Section 3: Traffic Control and Surveillance – Standards of Provision			
9.3.1	HD 20/92	Loop Detectors for Motorways	Dec 2000
9.3.1	<i>TA 71/97</i>	<i>Motorways. Overview</i>	-

2. ALPHA-NUMERIC INDEX

This Index lists, in alpha-numeric order, the documents in the DMRB as implemented in Ireland, together with their references and date of issue. All information is current at June 2001.

Series

The following series of Standards and Advice Notes are listed:

- BA Advice Notes – Bridges and Structures
- BD Standards – Bridges and Structures
- HA Advice Notes – Roads
- HD Standards – Roads
- TA Advice Notes – Traffic Engineering and Control
- TD Standards – Traffic Engineering and Control
- NRA Introductions to Volumes

Notes

1. This index lists documents relating to the DMRB which have been adopted for use in Ireland. With the exception of Advice Notes, which are for background reading only, DMRB documents which have not been implemented in Ireland are not listed.
2. Standards and Advice Notes which have been prepared by the National Roads Authority to replace the equivalent UK DMRB documents are prefixed with 'NRA' (for example, NRA BD 2/01). They are included in the relevant parts of the index.
3. All Standards of the UK DMRB which have been adopted for use in Ireland have a corresponding NRA Addendum which describes any particular requirements of the National Roads Authority. The date of the current NRA Addendum is given for each Standard.
4. The DMRB Part number is given for each document to assist in locating it within the manual. These numbers are in the form 'Volume.Section.Part' (e.g. 1.3.5). However, documents issued before the compilation of the UK DMRB in 1992 (and some later ones) do not have Part numbers; they are identified by Volume and Section and are placed at the end of the relevant Section.
5. The documents listed in Tables 1 and 2 have been published since the issue of the previous edition of the NRA Alpha-Numeric Index.
6. Lists of the documents withdrawn since the previous edition of the NRA Alpha-Numeric Index are included in Tables 3 and 4. These documents should be archived as appropriate.
7. Users should note that Tables 1 and 3 list only the alterations to Volumes 1, 2, 4 to 8 and Section 3 of Volume 9 of the UK DMRB. There may also be alterations to the other volumes which have not been implemented for use in Ireland.

TABLE 2 : NATIONAL ROADS AUTHORITY DOCUMENTS ISSUED SINCE NOVEMBER 2000

Document Reference	Title	Date of Issue	DMRB Part
NRA BD 2/01	Technical Approval of Road Structures on Motorways and Other National Roads	Jun 2001	1.1.1A
NRA Addendum to BD 49/01	Design Rules for Aerodynamic Effects on Bridges	Jun 2001	1.3.3
NRA Addendum to BD 26/99	Design of Lighting Columns	Jun 2001	2.2.1
NRA TD 19/01	Safety Barriers	Jun 2001	2.2.8A
NRA Addendum to HD 33/96, Erratum No.1	Surface and Sub-Surface Drainage Systems for Highways	Jun 2001	4.2.3
NRA HD 19/01	Road Safety Audits	Jun 2001	5.2.2
NRA HA 42/01	Road Safety Audit Guidelines	Jun 2001	5.2.3
NRA TD 9/00, Amendment No.1	Road Link Design	Jun 2001	6.1.1
NRA TA 43/00, Amendment No.1	Guidance on Road Link Design	Jun 2001	6.1.1A
NRA Addendum to TD 22/92, Erratum No.1	Layout of Grade Separated Junctions	Jun 2001	6.2.1
NRA Addendum to TD 42/95	Geometric Design of Major/Minor Priority Junctions	Jun 2001	6.2.6
NRA Addendum to HD 39/01	Footway Design	Jun 2001	7.2.5

[Note: In addition to the above, new (June 2001) editions of the Alpha-Numeric Index (1.0.B) and the Introductions to Volumes 1, 2, 5, 6 and 7 (1.0C, 2.0A, 5.0A, 6.0A and 7.0A) have been issued]

ADVICE NOTES – BRIDGES AND STRUCTURES (BA SERIES)

The following Advice Notes have not been implemented for use in Ireland. However, they may be of interest as background reading. Users must make due allowance for any differences from UK practice.

Document Reference	Title	Date of Issue	DMRB Part
<i>BA 9/81</i>	<i>The Use of BS 5400: Part 10: 1980. Code of Practice for Fatigue Amendment No. 1</i>	<i>Dec 1981 Nov 1983</i>	<i>1.3</i>
<i>BA 19/85</i>	<i>The Use of BS 5400: Part 3: 1982</i>	<i>Jan 1985</i>	<i>1.3</i>
<i>BA 24/87</i>	<i>Early Thermal Cracking of Concrete Amendment 1</i>	<i>Jul 1987 Aug 1989</i>	<i>1.3</i>
<i>BA 26/94</i>	<i>Expansion Joints for Use in Highway Bridge Decks</i>	<i>Nov 1994</i>	<i>2.3.7</i>
<i>BA 27/99</i>	<i>Quality Assurance Scheme for Paints and Similar Protective Coatings</i>	<i>Aug 1999</i>	<i>2.4.2</i>
<i>BA 28/92</i>	<i>Evaluation of Maintenance Costs in Comparing Alternative Designs for Highway Structures</i>	<i>Aug 1992</i>	<i>1.2.2</i>
<i>BA 33/90</i>	<i>Impregnation of Concrete Highway Structures Addendum</i>	<i>Apr 1990 May 1990</i>	<i>2.4</i>
<i>BA 36/90</i>	<i>The Use of Permanent Formwork</i>	<i>Feb 1991</i>	<i>2.3</i>
<i>BA 37/92</i>	<i>Priority Ranking of Existing Parapets</i>	<i>Oct 1992</i>	<i>2.3.2</i>
<i>BA 40/93</i>	<i>Tack Welding of Reinforcing Bars</i>	<i>Apr 1993</i>	<i>1.3.4</i>
<i>BA 41/98</i>	<i>The Design and Appearance of Bridges</i>	<i>Feb 1998</i>	<i>1.3.11</i>
<i>BA 42/96</i>	<i>The Design of Integral Bridges</i>	<i>Nov 1996</i>	<i>1.3.12</i>
<i>BA 47/99</i>	<i>Waterproofing and Surfacing of Concrete Bridge Decks</i>	<i>Aug 1999</i>	<i>2.3.5</i>
<i>BA 48/93</i>	<i>Pedestrian Protection at Head Walls, Wing Walls and Retaining Walls</i>	<i>Dec 1993</i>	<i>2.2.2</i>
<i>BA 53/94</i>	<i>Bracing Systems and the Use of U-Frames in Steel Highway Bridges</i>	<i>Dec 1994</i>	<i>1.3.13</i>

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STANDARDS - BRIDGES AND STRUCTURES (BD SERIES)

- Notes: 1. Equivalent NRA Standards are indicated by *. Other Standards are UK DMRB Standards which are to be used in conjunction with the relevant NRA Addenda.
2. BD65 has not been implemented for use in Ireland. However, it may be of interest as background reading. Users must make due allowance for any differences from UK practice.

Document Reference	Title	Date of Issue	DMRB Part	NRA Addendum Dated
NRA BD 2/01*	Technical Approval of Structures on Motorways and Other National Roads*	Jun 2001	1.1.1A	-
BD 7/81	Weathering Steel for Highway Structures	Aug 1981	2.3	Dec 2000
BD 9/81	Implementation of BS 5400: Part 10: 1980. Code of Practice for Fatigue	Dec 1981	1.3	Dec 2000
BD 10/97	Design of Highway Structures in Areas of Mining Subsidence	May 1997	1.3.14	Dec 2000
BD 12/95	Design of Corrugated Steel Buried Structures with Spans not Exceeding 8m, Including Circular Arches	Feb 1996	2.2.6	Dec 2000
BD 13/90	Design of Steel Bridges. Use of BS 5400: Part 3: 1982	Feb 1991	1.3	Dec 2000
BD 15/92	General Principles for the Design and Construction of Bridges. Use of BS 5400: Part 1: 1988	Dec 1992	1.3.2	Dec 2000
BD 16/82	Design of Composite Bridges. Use of BS 5400: Part 5: 1979 Amendment No.1	Nov 1982 Dec 1987	1.3	Dec 2000
BD 20/92	Bridge Bearings. Use of BS 5400: Part 9: 1983	Oct 1992	2.3.1	Dec 2000
NRA BD 24/00*	Design of Concrete Bridges. Use of BS 5400: Part 4: 1990*	Dec 2000	1.3.1	-
BD 26/99	Design of Lighting Columns Amendment No. 1	Aug 1999 May 2001	2.2.1	Jun 2001
BD 28/87	Early Thermal Cracking of Concrete Amendment No. 1	Jul 1987 Aug 1989	1.3	Dec 2000

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STANDARDS - BRIDGES AND STRUCTURES (BD SERIES) (Continued)

Document Reference	Title	Date of Issue	DMRB Part	NRA Addendum Dated
BD 58/94	The Design of Concrete Highway Bridges and Structures with External and Unbonded Prestressing	Nov 1994	1.3.9	Dec 2000
BD 60/94	Design of Highway Bridges for Vehicle Collision Loads	Apr 1994	1.3.5	Dec 2000
<i>BD 65/97</i>	<i>Design Criteria for Collision Protection Beams</i>	<i>Feb 1997</i>	2.2.5	-
BD 67/96	Enclosure of Bridges	Aug 1996	2.2.7	Dec 2000
BD 68/97	Crib Retaining Walls	Feb 1997	2.1.3	Dec 2000
BD 70/97	Strengthened/Reinforced Soils and other Fills for Retaining Walls and Bridge Abutments.	Feb 1997	2.1.5	Dec 2000
BD 74/00	Foundations	May 2000	2.1.8	Dec 2000
BD 78/99	Design of Road Tunnels	Aug 1999	2.2.9	Dec 2000
BD 82/00	Design of Buried Rigid Pipes	Aug 2000	2.2.10	Dec 2000

ADVICE NOTES – HIGHWAYS (HA SERIES) (Continued)

Document Reference	Title	Date of Issue	DMRB Part
HA 73/95	<i>Site Investigation for Highway Works on Contaminated Land</i>	May 1995	4.1.7
HA 74/00	<i>Treatment of Fill and Capping Materials Using Either Lime or Cement or Both</i>	Nov 2000	4.1.6
HA 78/96	<i>Design of Outfalls for Surface Water Channels</i>	Jan 1996	4.2.1
HA 79/97	<i>Edge of Pavement Details for Porous Asphalt Surface Courses</i>	Feb 1997	4.2.4
HA 83/99	<i>Safety Aspects of Road Edge Drainage Features</i>	Nov 1999	4.2.4
HA 102/00	<i>Spacing of Road Gullies</i>	Nov 2000	4.2.3

ADVICE NOTES – TRAFFIC ENGINEERING AND CONTROL (TA SERIES)

With the exception of NRA TA 43/00, the following Advice Notes have not been implemented for use in Ireland. However, they may be of interest as background reading. Users must make due allowance for any differences from UK practice.

Document Reference	Title	Date of Issue	DMRB Part
TA 8/80	<i>Carriageway Markings: Markings for Right Turning Movements at Cross-Road Junctions</i>	Sep 1980	8.2
TA 11/81	<i>Traffic Surveys by Roadside Interview</i>	May 1981	5.1
TA 12/81	<i>Traffic Signals on High Speed Roads</i>	Apr 1981	8.1
TA 15/81	<i>Pedestrian Facilities at Traffic Signal Installations</i>	Jul 1981	8.1
TA 16/81	<i>General Principles for Control by Traffic Signals</i>	Sep 1981	8.1
TA 19/81	<i>Reflectorisation of Traffic Signs</i>	Sep 1981	8.2
TA 22/81	<i>Vehicle Speed Measurement on All-Purpose Roads</i>	Nov 1981	5.1
TA 23/81	<i>Junctions and Accesses: Determination of Size of Roundabouts and Major/Minor Junctions</i>	Dec 1981	6.2
TA 30/82	<i>Choice Between Options for Trunk Road Schemes</i>	Jul 1982	5.1
NRA TA 43/00*	Guidance on Road Link Design * NRA Amendment No. 1	Dec 2000 Jun 2001	6.1.1A
TA 44/92	<i>Capacities, Queues, Delays and Accidents at Road Junctions: Computer Programs ARCADY/3 and PICADY/3 (TRRL)</i>	Jul 1992	5.1.1
TA 45/85	<i>Treatment of Gaps in Central Reserve Safety Fences</i>	Jun 1985	2.2
TA 46/97	<i>Traffic Flows Ranges for Use in the Assessment of New Rural Road Standards</i>	Feb 1997	5.1.3
TA 48/92	<i>Layout of Grade Separated Junctions</i>	Aug 1992	6.2.2
TA 49/86	<i>Appraisal of New and Replacement Lighting on Trunk Roads and Trunk Road Motorways Amendment No. 3</i>	Aug 1986 Jul 1990	8.3

(Continued)

STANDARDS – TRAFFIC ENGINEERING AND CONTROL (TD SERIES)

- Notes: 1. Equivalent NRA Standards are indicated by *. Other Standards are UK DMRB Standards which are to be used in conjunction with the relevant NRA Addenda.
2. The four Standards (TD 23 – TD 26) in italics have not formally been implemented for use in Ireland. They may be of interest for background reading, but users must make due allowance for any differences from UK practice.

Document Reference	Title	Date of Issue	DMRB Part	NRA Addendum Dated
NRA TD 9/00*	Road Link Design * NRA Amendment No. 1	Dec 2000 Jun 2001	6.1.1	-
TD 16/93	Geometric Design of Roundabouts	Sep 1993	6.2.3	Dec 2000
NRA TD 19/01*	Safety Barriers*	Jun 2001	2.2.8A	-
TD 22/92	Layout of Grade Separated Junctions	Aug 1992	6.2.1	Dec 2000 [and NRA Erratum No.1, dated Jun 2001]
<i>TD 23/99</i>	<i>Trunk Roads and Trunk Road Motorways: Inspection and Maintenance of Road Lighting</i>	<i>Nov 1999</i>	8.3	-
<i>TD 24/97</i>	<i>All Purpose Trunk Roads: Maintenance of Traffic Signals</i>	<i>Aug 1997</i>	8.1	-
<i>TD 25/01</i>	<i>Trunk Roads and Trunk Road Motorways: Maintenance of Traffic Signals</i>	<i>Feb 2001</i>	8.2	-
<i>TD 26/86</i>	<i>Trunk Roads and Trunk Road Motorways: Maintenance of Road Markings</i>	<i>Mar 1986</i>	8.2	-
NRA TD 27/00*	Cross Sections and Headroom*	Dec 2000	6.1.2	-
TD 30/87	Design of Road Lighting for All Purpose Trunk Roads	Dec 1987	8.3	Dec 2000
TD 33/90	The Use of Variable Message Signs on All Purpose and Motorway Trunk Roads	Sep 1990	8.2	Dec 2000
TD 34/91	Design of Road Lighting for Motorway Trunk Roads	Jan 1991	8.3	Dec 2000

(Continued)

NRA INTRODUCTIONS TO VOLUMES

Note: These Introductions are updated whenever there is a change to one of the Standards in the relevant Volume or to a corresponding NRA Addendum. Except for the Alpha-Numeric Index, they are not updated when the only changes are to Advice Notes issued by the UK Highways Agency. For the latest lists of Advice Notes, see Chapters 1 and 2 of this document.

Title	Date of Issue	DMRB Part
Introduction to the NRA Design Manual for Roads and Bridges	Dec 2000	1.0.A
NRA Alpha – Numeric Index	Jun 2001	1.0.B
NRA Introduction to Volume 1	Jun 2001	1.0.C
NRA Introduction to Volume 2	Jun 2001	2.0.A
NRA Introduction to Volume 4	Dec 2000	4.0.A
NRA Introduction to Volume 5	Jun 2001	5.0.A
NRA Introduction to Volume 6	Jun 2001	6.0.A
NRA Introduction to Volume 7	Jun 2001	7.0.A
NRA Introduction to Volume 8	Dec 2000	8.0.A
NRA Introduction to Volume 9	Dec 2000	9.0.A

3. RELATED NRA PUBLICATIONS

The National Roads Authority has published the following documents which do not form part of the DMRB but nevertheless are concerned with the design of roads and bridges.

Title	Issue Date
Manual of Contract Documents for Road Works:	
Volume 1: Specification for Road Works	Mar 2000
Volume 2: Notes for Guidance on the Specification for Road Works	Mar 2000
Volume 3: Method of Measurement for Road Works and Notes for Guidance on the Method of Measurement for Road Works	Mar 2000
Volume 4: Road Construction Details	Mar 2000
National Roads Project Management Guidelines	Mar 2000
Guidelines for Traffic Calming for Towns and Villages on National Routes	Oct 1999