

IMPERIAL ROAD DESIGN MANUAL
REVISIONS January 2009

CHAPTER 1D

- Deleted the following language from “PROJECT DEVELOPMENT”; *“from the Management Services Division.”*

CHAPTER 2A

- Page 2A-9 – Added the following language under “PROJECTING HORIZONTAL ALIGNMENT”; *The use of spiral transitions for compound and reverse curves on urban roadways should be avoided. However, the Engineer does have latitude in the use of spiral transitions if the geometrics are warranted. Should spiral transitions be utilized see Road and Bridge Standards, pages 802.01, 802.13 and 802.14 for details.*

CHAPTER 2B

- Page 2B-2 – Included the following under “DATA REQUIRED” item 7; “*PM-100*” this has replaced the old LD-430.
- Page 2B-8 – Replaced “*PMO-FORM-05*” with “*PM-104*” in two locations under “REQUEST FOR COST ESTIMATES FROM OTHERS”.
- Page 2B-10 – Replaced “*PMO-FORM-06 or 07*” with “*PM-105*” under “AVAILABILITY OF PLANS”.
- Page 2B-11 – Revised the following language in the first sentence under “PREPARATION OF PROJECT COST ESTIMATE AND REPORT”; from *“Construction cost estimates are received from other divisions as noted...”* to *“Construction cost estimates are received from other sections as noted...”*
- Page 2B-13 – Included the following form number in the last sentence; “*PM-131*” this has replaced the old LD-404.

CHAPTER 2C

- Page 2C-9 - Added the following language in the eleventh sentence under “PROFILES”; Existing terrain profiles for survey baselines are to be shown where deemed appropriate by the designer “*and shown as long dashed lines.*”

CHAPTER 2D

- Page 2D-16 – Added “Form LD-440” and replaced “waiver” with “exception” under “DESIGN EXCEPTIONS”.
- Page 2D-17 – Added an “Approval Date” column to the example on how to show design exceptions on the title sheet.
- Page 2D-18 – Added the following language in the fourth sentence under “PLOTTING CROSS SECTIONS”; “*Cross sections are to be cut at the following intervals, Rural - 50’ and Urban - 25’*”.
- Page 2D-21 – Replaced the following language in the third paragraph under “PLOTTING ENTRANCES AND CROSSOVERS”; “*Proposed entrances and crossovers are to be shown on plans to proper tie-ins and labeled as to width, type, material, and grade.*” With “*All entrances and crossovers impacted by construction are to be shown on plans to proper tie-ins and labeled as to width, type, material, and grade.*”
- Page 2D-26 - Replaced form “PMO-FORM-04” with “PM-100” under “BRIDGE DESIGN”.

Replaced form “PMO-FORM-05” with “PM-104” under “PUBLIC HEARING DATA”.

- Page 2D-29 - Replaced form “PMO-FORM-15” with “PM-130” in the last paragraph.
- Deleted the following language “*and Utilities*” from “Right of Way and Utilities Division” in the last paragraph.
- Page 2D-31 - Replaced form “PMO-FORM-15” with “PM-130” in two locations under “DESIGN APPROVAL”.
- Page 2D-33 – Included the following form number in the last sentence under “FINAL SCOPING CERTIFICATION”; “PM-131” this has replaced the old LD-404.

CHAPTER 2E

- Page 2E-13 - Replaced form “*PMO-FORM-04*” with “*PM-100*” under “CURB AND GUTTER”.
- Page 2E-40 – Deleted the following language from the first paragraph; “*by the Right of Way Division*”.
- Page 2E-42 – Deleted the following language in the fifth paragraph under “LIMITED ACCESS”; “*and Utilities*” from Right of Way Division.
- Page 2E-44 – Deleted the following language in the fourth and fifth paragraph; “*and Utilities*” from Right of Way Division.
- Page 2E-56 – Included the following language in the fourth paragraph; The following codes will be used for all drainage structures measuring over 20 feet (6 m) along the “*roadway*” centerline between the inner faces of the outer walls (as defined by 23 CFR 650 © National Bridge Standards, Section 650.301, Application of Standards). Such structures are classed as major structures and are to be set up as separate projects with separate lengths. Multiple lines of two or more pipes “*measuring over 20 feet (6 m) along the roadway centerline will be considered a “major structure” where the clear distance measured along the roadway centerline between openings is less than half of the smaller contiguous opening.*” The Structure & Bridge Division should be consulted in instances where the application of this guideline requires interpretation. The stations and length used on the plans for culverts “*measuring over 20 feet (6 m)*” shall be based on the distance between the back of the outside walls, not on the distance between the faces of same.
- Page 2E-58 – Added the following language in the third paragraph; “A note is to be shown in a conspicuous location, within *the county and/or* municipality boundaries, showing the name of the *county and/or* municipality, population, and census year.”

Added the following language in the second paragraph under “Project Section Numbers”; “*(pertaining to R/W only)*”.

CHAPTER 2F

- Page 2F-1 – Deleted the following language under “RIGHT OF WAY DATA SHEET”; “*and Utilities*” from Right of Way Division.

Deleted the following language under “PARCEL NUMBERS AND DEMOLITION NUMBERS ON PLANS” in the first paragraph; “*and Utilities*” from Right of Way Division.

- Page 2F-2 – Deleted the following language in the second paragraph; “*and Utilities*” from Right of Way Division.

Deleted the following language under “WELLS”; “*and Utilities*” from Right of Way Division.

Deleted the following language under “BUILDING DATA REPORT”; “*and Utilities*” from Right of Way Division.

- Page 2F-3 – Deleted the following language under “OUTDOOR AVERTISING SIGNS”; “*and Utilities*” from Right of Way Division.

- Page 2F-4 – Replaced the Commissioners name with the Chief of Policy and Environment in the “Approved for Right of Way” blocks.

- Page 2F-5 - Replaced form “*PMO-FORM-05*” with “*PM-104*” under “INTEGRATED PROJECT MANAGER (CERTIFICATION ACCEPTANCE)”.

- Page 2F-7 – Included the following under “DATA REQUIRED” item 2; “*PM-131*” this has replaced the old LD-404.

Deleted the following language under “DATA REQUIRED”; “*and Utilities*” from Right of Way Division. Also deleted “by the Commissioner” from the following; *(These are standard form letters used by the Commissioner to authorize the State Right of Way Engineer to acquire right of way.)* to read *(These are standard form letters used to authorize the State Right of Way Engineer to acquire right of way.)*

- Page 2F-8 - Replaced the Commissioners name with the Chief of Policy and Environment in the last paragraph.

- Page 2F-9 – Deleted the following language under “DISTRIBUTION OF PRINTS OF PLANS” in two places; “*and Utilities*” from Right of Way Division and State Right of Way Engineer.

Replaced the Commissioners name with the Chief of Policy and Environment under “RECOMMENDATION FOR APPROVAL” and “APPROVAL”.

- Page 2F-10 – Deleted the following language in the third sentence under “RIGHT OF WAY PLANS”; “*and Utilities*” from Right of Way Section.
- Page 2F-11 - Deleted the following language in paragraph one, three, five under “FORMAL REVISIONS-MAJOR CHANGES”; “*and Utilities*” from Right of Way Division.

Deleted the following language in the second paragraph under “FORMAL REVISIONS-MAJOR CHANGES”; “*and Utilities*” from District Right of Way Manager.

- Page 2F-12 – Deleted the following language in the first paragraph; “*and Utilities*” from District Right of Way Manager
- Page 2F-13 - Deleted the following language under “INFORMAL REVISIONS-MINOR CHANGES and PROPOSED CONVEYANCES OF RESIDUE PARCELS”; “*and Utilities*” from Right of Way Division and District Right of Way personnel..

CHAPTER 2G

- Page 2G-1 - Deleted the following language in the second paragraph under “REVIEWING REPORTS-INTEGRATED PROJECT MANAGEMENT”; “*and Utilities*” from Right of Way Division.
- Page 2G-10 - Deleted the following language under “DEMOLITION OF BUILDINGS AND CLEARING OF PARCELS”; “*and Utilities*” from Right of Way Division.
- Page 2G-11 – Deleted the following language under “UTILITY ADJUSTMENTS”; “*DIVISIONS*” from “PLANS PREPARED BY OTHER DIVISIONS”

APPENDIX “A”

- Page A-5 – Added the following language to the fourth paragraph under “GENERAL NOTES” after Standard TC-5.01R; “(2001 AASHTO Green Book)”.
- Page A-6 – Added the following language to the third paragraph under “GENERAL NOTES” after Standard TC-5.01R; “(2001 AASHTO Green Book)”.
- Page A-7 – Added the following language to the seventh paragraph under “GENERAL NOTES” after Standard TC-5.01R; “(2001 AASHTO Green Book)”.
- Page A-8 – Added the following language to the fourth paragraph under “GENERAL NOTES” after Standard TC-5.01R; “(2001 AASHTO Green Book)”.

Revised and added the following language to item number 4 under “FOOTNOTES”; Revised *I’*:*I’* to 8%, added (*See St’d. GS-12*).

- Page A-9 – Added the following language to the fourth and fifth paragraph under “GENERAL NOTES” after Standard TC-5.01R and TC-5.01U; “(2001 AASHTO Green Book)”.

Added the following language to the seventh paragraph under “GENERAL NOTES” after Standard TC-5.04ULS (Urban Low Speed); “(2004 AASHTO Green Book)”.

- Page A-10 – Added the following language to the second and third paragraph under “GENERAL NOTES” after Standard TC-5.01R and TC-5.01U; “(2001 AASHTO Green Book)”.

Added the following language to the fourth paragraph under “GENERAL NOTES” after Standard TC-5.04ULS (Urban Low Speed); “(2004 AASHTO Green Book)”.

Added the following language to item number 7 under “FOOTNOTES”; “(*See Standard GS-11 for shoulder design*).”

- Page A-11 – Added the following language to the third paragraph under “GENERAL NOTES” after Standard TC-5.01U (Urban); “(2001 AASHTO Green Book)”.

Added the following language to the fourth paragraph under “GENERAL NOTES” after Standard TC-5.04ULS (Urban Low Speed); “(2004 AASHTO Green Book)”.

Added the following language to item number 7 under “FOOTNOTES”; “(*See Standard GS-11 for shoulder design*).”

- Page A-12 – Added the following language to the fourth paragraph under “GENERAL NOTES” after Standard TC-5.01U (Urban); “(2001 AASHTO Green Book)”.

Added the following language to the fifth paragraph under “GENERAL NOTES” after Standard TC-5.04ULS (Urban Low Speed); “(2004 AASHTO Green Book)”.

Added the following language to item number 7 under “FOOTNOTES”; “(See Standard GS-12 for shoulder design).”

- Page A-13 – Added the following language to item number 1 under “FOOTNOTES”; “(See Standard GS-12).”
- Page A-20 – Replaced form “PMO-FORM-04” with “PM-100” at the end of the first paragraph.
- Page A-88 – Replaced the following language in the second paragraph, second sentence from; “*When this is not possible and the distance between the edge of the shoulder and the shared use path is less than 5 feet, a suitable physical barrier is recommended.*” with “*When this is not possible a minimum distance of 5 feet is required between the edge of the shoulder and the shared use path and a suitable physical barrier is recommended.*”
- Page A-89 – Replaced *should* with *shall* in the second sentence in the last paragraph.
- Page A-104 - Deleted the following language in the first sentence under “GENERAL CONCEPTS” and “PUBLIC HEARING AND RIGHT OF WAY”; “*and Utilities*” from Right of Way Division.
- Page A-108 – Replaced the following language; “*The Central Office Right of Way and Utilities Division*” with “*The Central Office Location and Design, Utilities Section*”.
- Page A-134 – Replaced Category 1, 2, and 3 with Type A, B, and C in the first paragraph.
- Page A-153 - Deleted the following language under “INSTRUCTIONAL AND INFORMATIONAL MEMORANDA”; LD-173 Construction Access, Temporary Construction Causeway Design this II&M has been deleted.

APPENDIX “B”

- Page B-25 – Deleted the following language in item No.1 under “C. Sidewalks along ditch section streets” this information was repeated; “*Hydraulic cement concrete sidewalk, on a compacted subgrade and with underdrains in accordance with the department’s Standard UD-3,*”.

- Page B-40 – Replaced “*should*” with “*shall*” in the first sentence of the second paragraph under ROUNDABOUTS.

APPENDIX “C”

- Page C-18 – Revised FIGURE C-1-1.20 Passing/ Left Turn Lane on Two-Lane Highway to remove “Optional Treatment” detail.
- Page C-24 – Included the following under “ROUNDABOUTS”; “*PM-100*” this will replaces the old LD-430.

Replaced “*should*” with “*shall*” in the first sentence of the fifth paragraph under ROUNDABOUTS.

- Page C-39 – Replaced the following language from Title 33.1-199 of the Code of Virginia; “*Replacing entrances destroyed by Commissioner. The Commonwealth Transportation Commissioner shall review the existing access to any parcel of land having an entrance destroyed in the repair or construction of the systems of state highways and shall provide access to the systems of state highways in a manner that will serve the parcel of land and ensure efficient and safe highway operation.*”

Added the following language under item #5; “*The type of entrance (Type I, II, III, IV) to be constructed will be determined by the existing conditions at the time of construction.*”

- Page C-50 – Deleted the following language under “RIGHT OF WAY”; “*and Utilities*” from The Right of Way Engineer.
- Page C-51 – Deleted the following language in “SECTION 3 RIGHT OF WAY”

“*St’d RM-1 monuments shall be set by the contractor.*”

“*St’d. RM-2 monuments will be set by the Contractor when Construction Surveying is to be performed by contract.*”

“*St’d. RM-2 monuments will be set by the State Survey Party only after approval by the State Location and Design Engineer, in accordance with IIM-LD-152.*”

Added the following language “*Right of Way Monuments will be set by State Forces unless otherwise denoted on the plans. This should be discussed at the Pre-Advertisement Conference (PAC) meeting.*”

- Page C-83 – Included the following in the second paragraph; “*PM-131*” this has replaced the old LD-404.

APPENDIX “F”

- Page F-26 – Added the following language at the end of note number 4 “*Note: Spacing shown in Table 2-2 for Partial Access one or two way entrances does not include perception-reaction time (PRT)*”.
- Page F-27 – Revised the “Z” spacing distance in the Urban area in Table 2-3 from 900’ to 990’.
- Page F-69 – Revised the “perception-reaction time from 0.6 to 2.5 seconds.
- Page F-72 – Added the following language at the end of the first paragraph; “*Figure 4-3 illustrates the concept of corner clearance*”.

Added the following language the third sentence of the second paragraph; “*or right (Flow F) or to enter opposite entrance (Flow E), the length of the queue at the main intersection must be considered to assure there is enough room “that” the entrance “will” not be blocked by queue D.*

Revised “Downstream Corner Clearance” detail to add additional entrance to the minor side street.