

ROAD DESIGN MANUAL REVISIONS July, 2018

CHAPTER 2B

- Page 2B-8 – Revised the following language in the first sentence under “COORDINATION WITH OTHER DIVISIONS AND AGENCIES” from; “*After refinements as outlined in this section are made, the electronic files are to be placed in Falcon to allow other...*”
To; After refinements as outlined in this section are made, the electronic files are to be placed in “*ProjectWise*” to allow other...
- Page 2B-14 – Revised the following language in the second paragraph under “VALUE ENGINEERING (VE)” from; “*Value Engineering is required on any project regardless of highway classification with a total construction cost of more than \$5 million.*”
To; Value Engineering is required on any project regardless of highway classification with a total construction cost of more than \$”15” million.

CHAPTER 2C

- Page 2C-11 – Revised the following language in the first sentence in the third paragraph under “FRONTAGE ROAD (SERVICE ROAD)” from; “*After preliminary scheme(s) and grades have been developed, the designer will make plans available in Falcon.*”
To; After preliminary scheme(s) and grades have been developed, the designer will make plans available in “*ProjectWise*”.
- Page 2C-13 – Revised the following language in the first sentence under “SOLICITING COMMENTS WITHIN DIVISION” from; “*In order that all disciplines within the Location and Design Division are given an opportunity to provide input into the total design, plans are made available through Falcon, for review...*”
To; In order that all disciplines within the Location and Design Division are given an opportunity to provide input into the total design, plans are made available through “*ProjectWise*”, for review...

CHAPTER 2D

- Page 2D-23 – Revised the following language in the first sentence in the second paragraph from; “*In those rare instances when the District Location and Design Engineer has given approval to use the Standard CG-9D entrance gutter for a commercial entrance, use the Standard CG-13 entrance design if heavy truck traffic is anticipated.*”
To; In those rare instances when the District Location and Design Engineer has given approval to use the Standard CG-9D entrance gutter for a commercial entrance, the Standard CG-13 entrance design “*shall be used*”.

- Page 2D-27 – Revised the following language in the first sentence under “SOIL INVESTIGATION, PAVEMENT RECOMMENDATIONS ANF STAKING” from; “*The location (in Falcon) of plans, profiles, and typical sections...*” To; The location (in “ProjectWise”) of plans, profiles, and typical sections...

CHAPTER 2E

- Page 2E-8 – Revised the following language in the last paragraph under “CURB AND GUTTER” from; “*St’d. CG-6 or CG-7 Curb and Gutter is to be specified based on design speed or if guardrail is to be located at the face of curb. If a municipality requests the use of their own design, the request is to be forwarded by Local Assistance Division to the State L&D Engineer for review and approval. For a municipality’s own design, details are to be shown on the typical sections and the basis of payment is to be their standard; for example: Norfolk St’d. Curb and Gutter. However, whenever guardrail is to be placed at the face of curb instead of the applicable offsets, St’d. CG-7 shall be used.*” To; St’d. CG-6 or CG-7 Curb and Gutter is to be specified based on design speed. If a municipality requests the use of their own design, the request is to be forwarded by Local Assistance Division to the State L&D Engineer for review and approval. For a municipality’s own design, details are to be shown on the typical sections and the basis of payment is to be their standard; for example: Norfolk St’d. Curb and Gutter.
- Page 2E-23 – Revised the following language it the first item under “The following references apply” from; “*Reinforced Soil Slope standard design (Drawings available under 2016 insertable sheets in Falcon DMS and the FTP)*” To; Reinforced Soil Slope standard design (Drawings available under 2016 insertable sheets in “ProjectWise” and the FTP).
- Page 2E-29 – Revised the following language at the end of the last sentence under “BICYCLE FACILITIES” from; “*See Appendix A, Section A-5-BICYCLE FACILITY GUIDELINES*” To; See Appendix A(1), Section A(1) – 1 – BICYCLE AND PEDESTRIAN FACILITY GUIDELINES.
- Page 2E-35 – Revised the following language in the last paragraph under “CURB AND CURB AND GUTTER” from; “*Where a bicycle accommodation is next to curb or curb and gutter or guardrail is required, mountable curb (CG-3) or curb and gutter (CG-7) shall be used for designs speeds 45 mph and below.*” To; Where a bicycle accommodation is next to curb or curb and gutter, mountable curb (CG-3) or curb and gutter (CG-7) shall be used for designs speeds 45 mph and below.

- Page 2E-41 – Revised the following language in the first sentence in the first paragraph under “DETERMINING PERMANENT EASEMENTS” from; “*Permanent easements are used where perpetual maintenance is required, such as slope easements as recommended by the District Engineer/Administrator or where fee right of way is impractical, such as for ditches or pipes extending beyond the project limits.*” To; Permanent easements are used where perpetual maintenance is required, such as slope easements as recommended by the District Engineer/Administrator or where fee right of way is impractical, such as “*behind retaining walls, sound walls or*” for ditches or pipes extending beyond the project limits.
- Page 2E-44 – Revised the following language in the first sentence in the fourth paragraph under “UTILITY EASEMENTS” from; “*If the decision is made to add preliminary utility easements on the project plans, plans will be made available in Falcon by the designer...*” To; If the decision is made to add preliminary utility easements on the project plans, plans will be made available in “*ProjectWise*” by the designer...
- Page 2E-48 – Revised the following language in the last sentence in the second paragraph under “Establishing New Limited Access Control” from; “*The date of the CTB approval as well as any previous CTB L/A approval shall be shown on the appropriate plan sheets prior to approval for Right of Way.*” To; “*On all projects designated as "Limited Access Highways", the date of the resolution passed by the commission, Board, etc., and the words "LIMITED ACCESS HIGHWAY" as well as any previous CTB L/A approval shall be shown above the project block on the title sheet and on each applicable plan sheet prior to approval for Right of Way.*”
- Page 2E-51 – Revised the following language in the sixth paragraph under “LIMITED ACCESS LINES” from; “*On all projects designated as "Limited Access Highways", the date of the resolution passed by the commission, Board, etc., and the words "LIMITED ACCESS HIGHWAY" are to be shown above the project block on the title sheet and on each plan sheet.*” To; On all projects designated as "Limited Access Highways", the date of the resolution passed by the commission, Board, etc., and the words "LIMITED ACCESS HIGHWAY" “*as well as any previous CTB L/A approval shall be shown above the project block on the title sheet and on each applicable plan sheet prior to approval for Right of Way.*”
- Page 2E-69 – Revised the following language in the second sentence in the first paragraph under “RIGHT OF WAY DATA SHEET” from; “*This sheet is available in the CADD cell library under sheet2015.*” To; “*See VDOT CADD Manual, Chapter 5, Section 5.15.*”

CHAPTER 2G

- Page 2G-13 – Revised the following language in second paragraph under “INSERTABLE SHEET” from; “*The insertable sheets are available on Falcon/DMS, eng-ser...*”
To; The insertable sheets are available in “*ProjectWise, Central Office*”, eng-ser...
- Page 2G-34 – Revised the following language in second paragraph from; “*Revisions are updated electronically in the Falcon Plan File Room.*”
To; Revisions are updated electronically in the “*ProjectWise*” Plan File Room.
- Page 2G-35 – Revised the following language in the last sentence under “ROUTE FILES AND CORRESPONDENCE” from; “*All electronic and paper correspondence shall be stored in Falcon.*”
To; All electronic and paper correspondence shall be stored in “*ProjectWise*”.
- Page 2G-36 – Revised the following language in the last sentence under “AS-BUILT PLANS” from; “*...with a request that the plans be stored in Falcon.*”
To; ...with a request that the plans be stored in “*ProjectWise*”.

Added the following language after the first paragraph under “AS-BUILT PLANS”; “*As-Built revisions are not to be shown on the Revision Data Sheets, but are to be shown in red on all applicable plan sheets.*”

- Page 2G-45 – Revised the following language in the third row under “Design” from; “*In accordance with Falcon.*”
To; In accordance with “*ProjectWise*”.

APPENDIX A

- Page A-12 – Revised the following language in the first “General Note” from; “*Interstates - All new and major reconstructed Interstate facilities will have a 75 mph design speed unless a lower design speed is approved by the State Location and Design Engineer and FHWA.*”
To; Interstates - All new and major reconstructed Interstate facilities will have a “*posted +5 mph*” design speed unless “*concurrence*” by the State Location and Design Engineer.
- Page A-16 – Revised the following language under “FOOTNOTE #11” from; “*For buffer strip widths see Appendix A, Section A-5 Bicycle & Pedestrian Facility Guidelines.*”
To; For buffer strip widths see Appendix A”(1)”, Section A”(1)-1” Bicycle & Pedestrian Facility Guidelines.

Revised the following language under “FOOTNOTE #14” from; “*Where bicycle accommodation is next to curb or curb and gutter or guardrail is required, mountable curb (CG-3) or mountable curb and gutter (CG-7) shall be used for design speeds of 45 mph and below.*”
To; “Where bicycle accommodation is next to curb or curb and gutter, mountable curb (CG-3) or mountable curb and gutter (CG-7) shall be used for design speeds of 45 mph and below.”

- Page A-17 – Revised the following language under “FOOTNOTE #10” from; “For buffer strip widths see Appendix A, Section A-5 Bicycle & Pedestrian Facility Guidelines.”
To; For buffer strip widths see Appendix A”(1)”, Section A”(1)-I” Bicycle & Pedestrian Facility Guidelines.

Revised the following language under “FOOTNOTE #14” from; “Where bicycle accommodation is next to curb or curb and gutter or guardrail is required, mountable curb (CG-3) or mountable curb and gutter (CG-7) shall be used for design speeds of 45 mph and below.”
To; “Where bicycle accommodation is next to curb or curb and gutter, mountable curb (CG-3) or mountable curb and gutter (CG-7) shall be used for design speeds of 45 mph and below.”

- Page A-18 – Revised the following language under “FOOTNOTE #9” from; “For buffer strip widths see Appendix A, Section A-5 Bicycle & Pedestrian Facility Guidelines.”
To; For buffer strip widths see Appendix A”(1)”, Section A”(1)-I” Bicycle & Pedestrian Facility Guidelines.

Revised the following language under “FOOTNOTE #14” from; “Where bicycle accommodation is next to curb or curb and gutter or guardrail is required, mountable curb (CG-3) or mountable curb and gutter (CG-7) shall be used for design speeds of 45 mph and below.”
To; “Where bicycle accommodation is next to curb or curb and gutter, mountable curb (CG-3) or mountable curb and gutter (CG-7) shall be used for design speeds of 45 mph and below.”

- Page A-19 – Revised the following language under “FOOTNOTE #4” from; “For buffer strip widths see Appendix A, Section A-5 Bicycle & Pedestrian Facility Guidelines.”
To; For buffer strip widths see Appendix A”(1)”, Section A”(1)-I” Bicycle & Pedestrian Facility Guidelines.

- Page A-27 – Revised the following language in the fifth paragraph under “ROADWAY WITH CURB” from; “When a vertical drop-off or other hazard (see Appendixes I & J, Section I-3 & J-3, Guardrail Warrants) is located within 6’ of the face of curb, guardrail should be considered. For instructions on the placement of guardrail adjacent to curb, see Appendixes I & J, Section I-3 & J-3, Guardrail Installation in Urban Settings. Contact the Location and Design Standards and Special Design Section for details.”
To When a vertical drop-off or other hazard (see Appendix J, Section J-3, Guardrail Warrants) is located within 6 feet of the face of curb, guardrail should be considered. For instructions on the placement of guardrail adjacent to curb, see Appendix J, Section J-3, Guardrail Installation in Urban Settings.

- Page A-37 – Revised the following language from; “When traffic barriers must be provided because hazardous conditions cannot be eliminated, see Appendix I - Barrier Installation Criteria.”
To; When traffic barriers must be provided because hazardous conditions cannot be eliminated, see Appendix “J” - Barrier Installation Criteria.

- Page A-49 – Revised the following language in item number 3 under “Mini-Roundabout should meet the following geometric design criteria” from; “*Central Island cross slope of 12:1 Maximum*” To; Central island “*should be domed using 5% - 6% cross slope, with maximum height of 5 inches*”
- Page A-53 – Revised the following language in the second sentence in the second bullet from; “*Truck apron width shall be determined by the tracking of the design vehicle (WB-67) using AutoTurn.*” To; Truck apron width shall be determined by the tracking of the “*appropriate project*” design vehicle using AutoTurn.
- Page A-57 – Revised the following language in the second sentence in the second paragraph under “THE REVIEW AND APPROVAL PROCEE FOR ROUNDABOUTS” from; “*Roundabout designs in which the traffic volume exceeds 10,000 VPD shall be submitted to the Central Office Roundabout Review Committee at...*” To; Roundabout designs in which the traffic volume exceeds 10,000 VPD shall be submitted to the “*Innovative Intersection Committee*” at...

Revised the following language in the first sentence in the third paragraph under “THE REVIEW AND APPROVAL PROCEE FOR ROUNDABOUTS” from; “*When a District receives a request for a roundabout from an outside entity, and the design volume is below 10,000 VPD but requests the Central Office Roundabout Review Committees review...*” To; When a District receives a request for a roundabout from an outside entity, and the design volume is below 10,000 VPD but requests the “*Innovative Intersection Committees*” review...

Revised the following language in the first sentence in the fourth paragraph under “THE REVIEW AND APPROVAL PROCEE FOR ROUNDABOUTS” from; “*Primary or Urban System - The District Location & Design Engineer shall submit roundabout designs to the Central Office Roundabout Review Committee at...*” To; Primary or Urban System - The District Location & Design Engineer shall submit roundabout designs to the “*Innovative Intersection Committee*” at...

- Page A-58 – Revised the following language in the third bullet under “The plan submittal shall contain and depict the following criteria” from; “*Design vehicle for Truck Apron (WB-67)*” To; “*Appropriate project*” design vehicle for Truck Apron.
- Page A-111 – Revised the following language in the last sentence on this page from; “*The current versions of the No Plan files are in Falcon in the sub-directory for No Plan under Engineering Services (eng-ser).*” To; The current versions of the No Plan files are in “*ProjectWise*” in the sub-directory for No Plan under Engineering Services (eng-ser).
- Page A-117 – Revised the following language in the last sentence in the last paragraph from; “*...which can be found in Falcon DMS under the eng_ser directory, subfolder for “No Plan”.*” To; ... which can be found in “*ProjectWise*” under the eng_ser directory, subfolder for “No Plan”.

- Page A-120 – Revised the following language in the last sentence in the first paragraph under “PLAN PREPARATION” from; “*For the current version of the “No Plan” title sheet, see the CADD No Plan Directory, which is in Falcon under Engineering Services (eng-ser).*” To; For the current version of the “No Plan” title sheet, see the CADD No Plan Directory, which is in “*ProjectWise*” under Engineering Services (eng-ser).
- Page A-121 – Revised the following language in the first sentence in the first paragraph on this page from; “*The plan assemblies for both “No Plan” and “Minimum Plan” projects are to be placed in Falcon and transmitted electronically.*” To; The plan assemblies for both “No Plan” and “Minimum Plan” projects are to be placed in “*ProjectWise*” and transmitted electronically.

Revised the following language in the second sentence in the first paragraph on this page from; “*The document assembly instructions are located in Falcon along with the other typical drawings needed for “No Plan” and “Minimum Plan” projects.*” To; The document assembly instructions are located in “*ProjectWise*” along with the other typical drawings needed for “No Plan” and “Minimum Plan” projects.

APPENDIX A(1)

New – Appendix A(1) “VDOT Complete Streets; The Bicycle and Pedestrian Facilities Guidelines and Parking and Bus Stop Design Guidelines” was created to provide an Appendix that incorporated the following: “Bicycle and Pedestrian Facilities”, which was previously in Appendix A, Section A-5 and the “Parking Design” and “Bus Turnout (Bus Stop) Design”, which was previously in Appendix C, Section C-1.

- Page A(1)-1 – Added an “Introduction” to the new Appendix.
- Page A(1)-2 – Added “Specific VDOT Policies and Guidelines” documents and “Resources”.

APPENDIX B

- Page B-27 – Revised the following language at the end of the last sentence under “Bike lanes” from; “*See Appendix A, Section A-5-BICYCLE FACILITY GUIDELINES*” To; See Appendix A(1), Section A(1) – 1 – BICYCLE AND PEDESTRIAN FACILITY GUIDELINES.

APPENDIX B(1)

- Page B(1)-21 – Revised the following language under item “C” from; “*PARALLEL PARKING LANE WIDTHS (SEE APPENDIX C FOR MORE DETAILS)*” To; PARALLEL PARKING LANE WIDTHS (SEE APPENDIX “A(1)” FOR MORE DETAILS).

Deleted the following language under item “C”; “*Parallel parking is the preferred arrangement for on-street parking. Provisions for on-street parallel parking are allowed on roadways where the posted speed limit is 35 mph or less.*”

The use of curb and gutter and/or shoulder and ditch designs for on-street parking will be accommodated, using the following widths for the parking lane:

*Residential and mixed-use local streets – 7 feet in width measured from the face of curb.
Commercial and industrial – 8 feet in width measured from the face of curb”*

Revised the following language under item “D” from; “*PERPENDICULAR AND ANGLE PARKING (SEE APPENDIX C FOR MORE DETAILS)*” To; PERPENDICULAR AND ANGLE PARKING (SEE APPENDIX “A(1)” FOR MORE DETAILS).

Deleted the following language under item “D”; “*Perpendicular and angle parking along streets is normally prohibited. However, perpendicular and angle parking may be allowed on low-speed (25 mph and less), low volume collector and local streets with ground floor commercial uses, primarily those serving as main streets and local streets in Traditional Neighborhood Development (TND) or similar higher-density developments.*”

- Page B(1)-28 – Revised the following language in the first sentence under “PRIVATE ENTRANCES” from; “*At all driveway entrances, standard entrance gutter (Std. CG-9B or CG-9D) shall be used with Standard CG-6 or CG-7 curb and gutter.*” To; “*The Standard CG-9D entrance gutter is to be used for most single family residential entrances with curb and gutter.*”

*The Standard CG-9A and 9B entrance gutters should be considered only as a last resort in situations where the access into the property is too narrow to accommodate a Standard CG-9D, or if it is known that the lane adjacent to the curb will be used as a parking lane **AT ALL TIMES.**”*

- Page B(1)-31 – Revised the following language at the end of the first paragraph under I. PEDESTRIAN AND BICYCLE FACILITIES” from; “*Appendix A, Section 5 and IIM-LD-55.*” To; Appendix “A(1)”, Section “1” and IIM-LD-55.
- Page B(1)-33 – Revised the following language at the end of the third paragraph from; “*See Appendix A, Figure A(1)-5-4.*” To; See Appendix A”(1)”, Figure “A(1)-1-4.”

Revised the following language in the third sentence in the fourth paragraph from; “*See Appendix A, Figure A-5-4.*” To; See Appendix A”(1)”, Figure “A(1)-1-4.”

- Page B(1)-34 – Revised the following language in the first sentence under “Railing Requirements” from; “*See Appendix A, Figure A-5-6 Physical Barrier For Shared-Use Path.*” To; See Appendix “A(1)”, Figure A”(1)-1-6” Physical Barrier For Shared-Use Path.

Revised the following language in the last sentence under “Railing Requirements” from; “*Further design details for shared use paths may be found in Section A-5 BICYCLE FACILITY GUIDELINES of VDOT’s Road Design Manual.*” To; Further design details for shared use paths may be found in “*Appendix A(1),*” Section “A(1)-1” BICYCLE “AND PEDESTRIAN” FACILITY GUIDELINES of VDOT’s Road Design Manual.

- Page B(1)-36 – Revised the following language at the end of the last sentence in the first paragraph under “Bicycle Lanes” from; “*See Appendix A, Section A-5-BICYCLE FACILITY GUIDELINES*” To; See Appendix A(1), Section A(1) – 1 – BICYCLE AND PEDESTRIAN FACILITY GUIDELINES.

Revised the following language at the end of the last sentence in the second paragraph under “Bicycle Lanes” from; “*...Section A-5-BICYCLE FACILITY GUIDELINES of VDOT’s Road Design Manual.*” To; “*Appendix A(1), Section A(1) – 1*” – BICYCLE “AND PEDESTRIAN” FACILITY GUIDELINES of VDOT’s Road Design Manual.

- Page B(1)-43 – Revised the following language under “GUARDRAIL” from; “*For design and application of guardrail, refer to Appendix A and the current VDOT Road and Bridge Standards.*” To; For design and application of guardrail, refer to Appendix “J” and the current VDOT Road and Bridge Standards.

APPENDIX B(2)

- Page B(2)-13 – Revised the following language under “BICYCLE AND PEDESTRIAN FACILITIES” from; “*See “APPENDIX A, SECTION A – 5 – BICYCLE AND PEDESTRIAN FACILITIES GUIDELINES...”*” To; See APPENDIX “A(1)”, SECTION “A(1) – 1” – BICYCLE AND PEDESTRIAN FACILITIES GUIDELINES...

Revised the following language in the last sentence under “PARALLEL ON-STREET PARKING LANE WIDTHS” from; “*For more details, see APPENDIX C, SECTION C-1- DESIGN FEATURES.*” To; For more details, see APPENDIX “A(1)”, SECTION “A(1) -2- PARKING” DESIGN FEATURES.

APPENDIX C

- Page C-1 thru C-32 has been relocated to the new Appendix A(1), this included the following; On-Street Parking, Park-And-Ride Lots, Bus (Transit) Stops, Shelters and Boarding, Alighting Areas, Transit Signs, Benches, Stops and Shelters, Rest Areas.

APPENDIX F

- Page F-21 – Revised the following language to the “Source” in “Figure 2-6 Minimum Angle of Intersection” from; “AASHTO “Green Book” To; AASHTO “Green Book”, “Section 9.4.2, page 9-25”
- Page F-34 – Added the following language at the bottom of the page; “All Additions, Relocations and/or Closings of a Median Crossover require approval as indicated on the following pages.”
- Page F-35 – Revised the following language in the second sentence in the first paragraph under “Median Crossovers Requested by the Private Sector (MPS)” from; “The basic process is the same as for non-MPS roadways (below), but must be forwarded to the State Location and Design Engineer for approval.” To; The basic process is the same as for non-MPS roadways (“see” below).

Added the following language after the first paragraph under “Median Crossovers Requested by the Private Sector (MPS)”;

- **Responsible Person:** State Location and Design Engineer (New Median Crossovers)

The District Transportation and Land Use Director should consult with the responsible District Traffic Engineer concerning private sector (developer) requests to relocate or close an existing median crossover on VDOT owned and maintained highways. A median crossover request that complies with the spacing standards, the sight distance requirements, and all other engineering standards may be approved by the District Engineer/Administrator or designee.

- **Responsible Person:** District Traffic Engineer
- Page F-36 – Revised the following language in the second sentence in the first paragraph under “Median Crossovers on a Highway Construction Project (MPS)” from; “The basic process is the same as for non-MPS roadways (below), but must be forwarded to the State Location and Design Engineer for approval.” To; The basic process for non-MPS roadways is the same “(See below). The closing of a median crossover is to be approved by the District Engineer/Administrator and the responsible District Traffic Engineer.”
 - **Responsible Person:** State Location & Design Engineer (New Median Crossovers)
 - **Responsible Person:** District Engineer/Administrator and responsible District Traffic Engineer (Closing a Median Crossovers)”

Added the following language at the beginning under “Median Crossovers on a Highway Construction Project (Non-MPS)”;

The determination of any new median crossover or the closing of an existing median crossover shall be the result of field inspection recommendations of the District Engineer/Administrator and the responsible District Traffic Engineer.

- **Responsible Person:** District Engineer/Administrator and the responsible District Traffic Engineer

Deleted the following language that was the third paragraph under “Median Crossovers on a Highway Construction Project (Non-MPS)”; *“The determination of additional median crossover locations or closing of a median crossover shall be the result of field inspection recommendations of the District Engineer/Administrator and the responsible District Traffic Engineer.”*

- Page F-52 – Revised the following language in the first sentence in the first paragraph from; *“Bicycle and Pedestrian Facility Guidelines are presented in Section A-5, Appendix A of the Road Design Manual.”* To; Bicycle and Pedestrian Facility Guidelines are presented in Appendix “A(1)”, Section “A(1)-1” of the Road Design Manual.
- Page F-55 – Revised the following language in the first paragraph under “Turn Lane Criteria for Single and Dual Lanes” from; *“Right and left-turn lanes are to be provided...”* To; Right and left-turn lanes “shall” be provided...

Revised the following language in the first paragraph under “Turn Lane Criteria for Single and Dual Lanes” from; *“...four-lane or greater divided highways using controls as shown in Figure 3-1...”* To; ... four-lane or greater divided highways using “the criteria” as shown in Figure 3-1...

Revised the following language in the second paragraph under “Turn Lane Criteria for Single and Dual Lanes” from; *“Left-turn lanes should also be established on two-lane and four lane undivided highways where needed for storage of left-turn vehicles and/or prevention of thru-traffic delay as shown in Figure 3-1 and adjusted upward as determined by Table 3-1 and Figure 3-5 through 3-22 or by capacity analysis for left-turn storage.”* To; Left-turn lanes “shall” also be established on two-lane and four lane highways where needed for storage of left-turn vehicles and/or prevention of thru-traffic delay “using the criteria” shown in Figure 3-1. See Table 3-1 and Figures 3-5 through 3-22 “for warrants for left-turn storage lanes on two-lane highways and Figure 3-3 for four-lane highways.”

- Page F-56 – Revised the following language under “For Four-Lane Highways” from; *“*Dimension “L” to be adjusted upward as determined in Figures 3-5 through 3-22...”* To; “Storage Length “S”” to be adjusted upward as determined “by Table 3-1 and” Figures 3-5 through 3-22...

Revised “FIGURE 3-2 LEFT AND RIGHT TURN STORAGE AND TAPER LENGTHS” to include right turn lane diagram.

- Page F-57 – Deleted the following language at the bottom of the page; *“Left-turn lanes shall also be established on two-lane highways where traffic volumes are high enough to warrant them.”*

- Page F-58 – Revised the following language under “For Two-Lane Highways” from; “Dimension “L” to be adjusted upward as determined...” To; “Storage Length “S”” to be adjusted upward as determined by “Table 3-1 and” ...

Added the following language after the third paragraph under “For Two-Lane Highways”; “Left-turn lanes shall also be established on two-lane highways where traffic volumes are high enough to warrant them.”

- Page F-84 – Revised the following language from; “SEE BUS TURNOUT (BUS STOP) DESIGN: LOCATION, TYPE AND DIMENSIONS IN APPENDIX C” To; SEE BUS TURNOUT (BUS STOP) DESIGN: LOCATION, TYPE AND DIMENSIONS IN APPENDIX “A(1)”.
- Page F-91 – Revised the following language to the last sentence under “Entrance to Parking Areas” from; “For Parking Space Guidelines See Appendix “C”.” To; For Parking Space Guidelines See Appendix “A(1)”.

APPENDIX I

- Page I-23 – Revised the following language in the last sentence in the second paragraph from; “See detail in RDM, Appendix A, Section A-5 for shared-use paths and IIM-LD-55 for sidewalks.” To; See detail in RDM, Appendix “A(1)”, Section “A(1)-1” for shared-use paths and IIM-LD-55 for sidewalks.