

IMPERIAL ROAD DESIGN MANUAL
REVISIONS January 2010

CHAPTER 2A

- Page 2A-9 – Added the following language under “PROJECTING VERTICAL ALIGNMENT”; “*Crest vertical curves shall meet or exceed AASHTO design criteria for Stopping Sight Distance, not the "k" Values. Sag vertical curves shall meet or exceed the AASHTO design criteria for "k" Values.*”

CHAPTER 2C

- Page 2C-10 – Deleted the following language in the first bullet under “HORIZONTAL ALIGNMENT AND VERTICAL CONTROL DATA”; “(See attached example)”.

Revised the following language at the end of the third bullet under “HORIZONTAL ALIGNMENT AND VERTICAL CONTROL DATA”; (“Section 2E – 6” – Preparation of Supplemental Sheets – Index “*of Sheets*”).

CHAPTER 2D

- Page 2D-10 – Added the following language in the first paragraph under “DEPICTING HORIZONTAL ALIGNMENT ON PLANS”; “P.I.'s, P.C.'s, P.T.'s, etc., curve data, bearings, “*delta's, direction of angle*” and tie stations are to be shown where applicable as outlined in Section 2C-5 (Curve Data).”
- Page 2D-13 – Revised language from “Appendix C, Section C-1-CROSSOVER GRADES” to “Appendix F, Section 2-CROSSOVER GRADES” in the second paragraph.

Revised language from “Appendix C, Section C-1- INTERSECTING CROSS ROAD GRADES” to “Appendix F, Section 2- INTERSECTING CROSS ROAD GRADES” in the third paragraph.

Added the following language in the fifth paragraph; “All grades are to be checked, as accurately as possible at this stage. “*See GS standards*” for proper minimum vertical clearances at underpasses and overpasses”.

- Page 2D-18 – Added the following language; “*Superelevation rates shall be shown along proposed pavement slopes*”.

- Page 2D-21 – Revised the following language in the first sentence under “PLOTTING ENTRANCES AND CROSSOVERS”; *All proposed entrances are to be designed in accordance with VDOT's Minimum Standards of Entrances to State Highways available at www.virginiadot.org/business/manuals-default.asp. with All proposed entrances are to be designed in accordance with VDOT's *Road Design Manual, Appendix F*.*

Revised language from “Appendix C, Section C-1” to “Appendix F, Section 2-” in the third paragraph under “Plotting Entrances and Crossovers”.

- Page 2D- 22 – Replaced the following language in the third paragraph; from “The minimum entrance radii outlined in *the current Minimum Standards of Entrances To State Highways*” should be adhered to in the design of **ALL** entrances.” with “The minimum entrance radii outlined in “Appendix “F” should be adhered to in the design of **ALL** entrances.”

Deleted the following language from the sixth paragraph; “*current insertable sheets for the*”.

CHAPTER 2E

- Page 2E-16 – Revised language from “Appendix C, Section C-1-DESIGN FEATURES” to “Appendix F, Section 3-TURNING LANES” in the second paragraph.
- Page 2E-17 – Revised language from “*See Figures C-1-1, C-1-1.1 and Table C-1-2 in Appendix C for length of taper requirements.*” To “See Figures 3-1, 3-2, 3-3 and Table 3-1 in Appendix F for length of taper requirements.”
- Page 2E-54 – Added the following language in the third paragraph under “LAYOUT”; Description reference blocks are to be shown to coincide with the “*construction*” project description and previous projects.
- Page 2E-56 – Added additional information to the “Project Length Tabulation Block”.
- Page 2E-57 – Added the following language to “*Standard Box Culverts*” under “D” PREFIX”; “*(See criteria on previous page)*”.
- Page 2E-59 – Added the following language under “FUNCTIONAL CLASSIFICATION – TRAFFIC DATA”; “*The functional classification and minimum design speed for all connections with the mainline where construction is to take place beyond the radius return shall be determined and identified in the plan set. Depending upon the number of impacted connections, this information can be listed on the Title Sheet under the mainline information, or a note can be placed under the mainline information directing plan reviewers to the location where this information is provided. For example, connection functional classification and minimum design speed is provided on the applicable plan sheets, profile sheets and typical section sheets.*”

- Page 2E-62 – Added the following language; Denotes sheets which are not to be printed for construction, “*but sheets shall be included in final set of construction plans stored in Falcon/Web Suite.*”
- Page 2E-64 – Replaced Figure 2D-15 SAMPLE INDEX SHEET.
- Page 2E-71 – Moved the following language from to make paragraph six now paragraph two; “*Dimensions are generally shown below the typical section with the first line showing dimensions of pavement, shoulder, recoverable area, ditch, curb and gutter, buffer strip, sidewalk space, etc., widths. The second line generally shows the roadway width.*”

Moved the following language from page 2E-72 to the eighth paragraph; “*Pavement courses, prime coats, incidentals, etc., are to be denoted with a number within a circle with a line to the denoted item. A legend is to be shown on each typical section sheet with complete descriptions of each item.*”

- Page 2E-72 – Moved the following language from page 2E-72 to page 2E-71; “*Pavement courses, prime coats, incidentals, etc., are to be denoted with a number within a circle with a line to the denoted item. A legend is to be shown on each typical section sheet with complete descriptions of each item.*”

CHAPTER 2G

- Page 2G-11 – Replaced “Diversions” with “Detours” in numerous places.
- Page 2G-12 – Replaced “Diversions” with “Detours” in numerous places.

APPENDIX “A”

- Page A-1 – Added the following language to “INTRODUCTION” under SECTION A-1 GEOMETRIC DESIGN STANDARDS; “*The 2004 AASHTO Green Book shall only be used for Urban Low Speed (ULS) superelevation design criteria and the 2001 AASHTO Green Book shall be used for all Urban (U) and Rural (R) superelevation design criteria.*”
- Page A-8(GS-1) – Deleted the “Relationship of Maximum Grades to Design Speed” chart and replaced it with the following note; “*For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 7, Exhibit 7-2*”.

Added the following language to the end of “FOOTNOTE” No. 3; “*A hydraulic analysis is necessary to determine actual depth requirement.*”

Replaced “FOOTNOTE” No. 6 with the following; “*For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book*”.

- Page A-9(GS-2) – Deleted the “Relationship of Maximum Grades to Design Speed” chart and replaced it with the following note; “*For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 7, Exhibit 7-2*”.

Added the following language to the end of “FOOTNOTE” No. 3; “*A hydraulic analysis is necessary to determine actual depth requirement.*”

Added the following language to the end of “FOOTNOTE” No. 4; “*For additional guidance on shoulder widths, see the AASHTO Green Book, Chapter 7.*”

Replaced “FOOTNOTE” No. 8 with the following; “*For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book*”.

- Page A-10(GS-3) – Deleted the “Relationship of Maximum Grades to Design Speed” chart and the following note; “*Maximum grades of short length (less than 500'), on one-way down grades and on low-volume Rural Collectors may be 2 percent steeper*” and replaced it with the following note; “*For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 6, Exhibit 6-4*”.

Added the following language to the end of “FOOTNOTE” No. 3; “*For additional guidance on shoulder widths, see the AASHTO Green Book, Chapter 6.*”

Added the following language to the end of “FOOTNOTE” No. 5; “*A hydraulic analysis is necessary to determine actual depth requirement.*”

Replaced “FOOTNOTE” No. 9 with the following; “*For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book*”.

- Page A-11(GS-4) – Deleted the “Relationship of Maximum Grades to Design Speed” chart and replaced it with the following note; “*For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 5, Exhibit 5-4*”.

Added the following language to the end of “FOOTNOTE” No. 5; “*For additional guidance on shoulder widths, see the AASHTO Green Book, Chapter 5.*”

Added the following language to the end of “FOOTNOTE” No. 6; “*A hydraulic analysis is necessary to determine actual depth requirement.*”

Replaced “FOOTNOTE” No. 9 with the following; “*For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book*”.

- Page A-12(GS-5) – Revised “Minimum Radius” from 732’ to 730’ for 45mph design speed on “Other Principal Arterial with Curb and Gutter”.

Deleted the “Relationship of Maximum Grades to Design Speed” chart and replaced it with the following note; “*For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 7, Exhibit 7-2*”.

Added the following language to the end of “FOOTNOTE” No. 3; “*A hydraulic analysis is necessary to determine actual depth requirement.*”

Replaced “FOOTNOTE” No. 13 with the following; “*For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book*”.

Revised language in “FOOTNOTE” No. 14 from “Appendix C, Table C-1-5” to “Appendix F, Table 2-7”.

Deleted “FOOTNOTE” No. 15.

- Page A-13(GS-6) – Revised “Minimum Radius” from 732’ to 730’ for 45mph design speed on “Other Principal Arterial with Curb and Gutter”.

Revised “Minimum Width Graded Shoulder” and “Paved Shoulder Width” for “Streets with Shoulder Design”.

Deleted the “Relationship of Maximum Grades to Design Speed” chart and replaced it with the following note; “*For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 7, Exhibit 7-2*”.

Added the following language to the end of “FOOTNOTE” No. 9; “*A hydraulic analysis is necessary to determine actual depth requirement.*”

Replaced “FOOTNOTE” No. 12 with the following; “*For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book*”.

Added the following “FOOTNOTE”; No. 13 “For information on reduced shoulder widths, See Exhibit 7-3 of the 2004 AASHTO Green Book.

- Page A-14(GS-7) – Revised “Minimum Radius” from 732’ to 730’ for 45mph design speed on “Other Principal Arterial with Curb and Gutter”.

Revised “Minimum Width Graded Shoulder” and “Paved Shoulder Width” for “Streets with Shoulder Design”.

Deleted the “Relationship of Maximum Grades to Design Speed” chart and the following note; “*Maximum grades of short length (less than 500’), on one-way down grades may be 2 percent steeper*” and replaced it with the following note; “*For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 6, Exhibit 6-4*”.

Added the following language to the end of “FOOTNOTE” No. 6; “*A hydraulic analysis is necessary to determine actual depth requirement.*”

Replaced “FOOTNOTE” No. 11 with the following; “*For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book*”.

Added the following “FOOTNOTE”; No. 12 “For information on reduced shoulder widths, See Exhibit 6-5 of the 2004 AASHTO Green Book.

- Page A-15(GS-8) – Revised “Minimum Width Graded Shoulder” and “Minimum Bridge Width” for “Streets with Shoulder Design”.

Added the following language at the end of “FOOTNOTE” No. 1; “*For maximum grades relative to terrain and design speed, see AASHTO Green Book, Chapter 5, Exhibit 5-4*”.

Replaced “FOOTNOTE” No. 4; “*The minimum buffer strip width with no sidewalk or sidewalk space is to be 5’*. With “FOOTNOTE” No. 10; “*For buffer strip widths see IIM-LD-55*”.

Added the following language to the end of “FOOTNOTE” No. 8; “*A hydraulic analysis is necessary to determine actual depth requirement.*”

Replaced “FOOTNOTE” No. 11 with the following; “*For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book*” and renamed “FOOTNOTE” No. 10.

Added the following “FOOTNOTE”; No. 12 “For information on reduced shoulder widths, See Exhibit 5-5 of the 2004 AASHTO Green Book and renamed “FOOTNOTE” No. 11.

- Page A-16(GS-9) – Added additional information to the table for “Service Roads”.

Added the following language to “FOOTNOTE” No. 1; “Also” to Standard CG-12.

Added the following language to the end of “FOOTNOTE” No. 3; *“A hydraulic analysis is necessary to determine actual depth requirement.”*

- Page A-17(GS-RM) – Revised “Minimum Radius” from 172’ to 171’ for 25mph design speed on “Interchange Ramps”.

Added the following language at the end of the forth paragraph under “GENERAL NOTES”; *“However, down grades with sharp horizontal curvature and significant heavy truck or bus traffic should be limited to 4 percent. See page 829 of the 2004 AASHTO Green Book”.*

Added the following language at the end of the “GENERAL NOTES”; *“See Chapter 10 of the 2004 AASHTO Green Book for further guidance on ramp design”.*

Added the following language to the end of “FOOTNOTE” No. 5; *“A hydraulic analysis is necessary to determine actual depth requirement.”*

Replaced “FOOTNOTE” No. 6 with the following; *“For additional information on sight distance requirements on grades of 3 percent or greater, see Exhibit 3-2 of the 2004 AASHTO Green Book”.*

- Page A-19– Replaced the following language in the last paragraph; *“(e.g. Preliminary Field Inspection Report, recommendation from Right of Way Division, etc.)”* with *“with an approved Design Waiver”.*
- Page A-34 – Added the following language to the second sentence in the forth paragraph; *In situations like this, guardrail can be placed behind the sidewalk”/sidewalk space”* and in front of the hazard.

Added the following language after the forth paragraph; *“When a sidewalk or shared-use path transitions from the roadway onto a bridge, guardrail is required if the travelway and the sidewalk or shared-use path are separated by a barrier on the bridge See detail in RDM, Appendix A, Section A-5 for shared-use paths and IIM-LD-55 for sidewalks.”*

- Page A-36– Replaced the year 2003 with 2006 for the latest version of the “ROADSIDE DESIGN GUIDE” source for the “DESIGN PARAMETERS FOR ROADSIDE BARRIER LAYOUT” table.
- Page A-41 – Replaced the following language in the first paragraph; *“Standard GR-3P”* with *“GR-7”* and *“Special Design Drawing No. 2154-A, Asphalt Paving Under Guardrail”* with *“Standard MC-4”.*

- Page A-47 – Replaced the following language in the last sentence in “Maintenance” under “DEFINITIONS”; Seal coats, overlays less than “0.06 foot” thick... with Seal coats, overlays less than “2 inches” thick...
- Page A-90 – Replace the following the language in the second sentence under “BIKE LANES”; “*Delineating bike lanes is not recommended within a required paved shoulder area.*” with “Delineating bike lanes within *the limits of* a required paved shoulder area is *not recommended.*”
- Page A-91 – Added the follow note to “FIGURE A-5-2”; “*Delineating bike lanes within the limits of a required paved shoulder area is not recommended.*”
- Page A-93 – Added the following language to the first bullet under “SHARED USE PATHS”; “Shoulder and Ditch Typical Section:” “*On shoulder and ditch typical sections shared use paths should be placed behind the ditch in a manner that will be compatible with the roadway if the roadway is converted to a curb and/or curb and gutter typical section.*” When this is not possible and the distance between the *outside* edge of the paved shoulder and the shared use path is less than 5 feet, a suitable physical barrier is recommended.

Added the following language in the last paragraph; “Curb and/or Curb and Gutter Typical Sections:” For curb and/or curb and gutter streets, the separation between from face of the curb to the edge of the shared use path shall be a minimum of 8 feet in order to meet the minimum lateral offset distance to install signs for the roadway and the shared use path in accordance with MUTCD Part 2 “*and part 9.*”

Added the following language at the beginning of the last sentence in the last paragraph; “*If signs are not required...*”. Also revised “Figure A-5-3.1” label to “Figure A-5-4”.

- Page A-94 – Revised FIGURE A-5-3.1 to include additional sign information and renamed it “Figure A-5-4”. Also added “*See Figure A-5-5*” at the end of the second sentence in the first paragraph.

- Page A-95 – Added the following language in the second paragraph; A minimum 2 foot wide graded area with a maximum 6:1 slope, shall be maintained adjacent to both sides of the path. A minimum 3 foot clearance shall be maintained from the edge of the path to signs, trees, poles, walls, fences, “railing,” guardrail, or other lateral obstructions. Where the path is adjacent to canals, ditches or slopes “3:1 or” steeper a minimum “5 foot wide separation from the edge of the path pavement to the top of slope is required. *If the separation is less than 5 feet wide and the drop-off is 2 feet 6 inches or greater, a physical barrier, such as railing or chain link fence 42 inches high is required. When the separation from the edge of the shared use path to the top of the slope is 5 feet or greater, situations may dictate a physical barrier, such as the height of embankment or conditions at the bottom (i.e. – water greater than 2 feet deep). See Figure A-5-6.*”

“When a shared use path is along a retaining wall or any vertical drop-off greater than 6 inches a railing or chain link fence 54 inches high is required. See Figure A-5-7.”

Deleted the following paragraph; *“Depending on the height of embankment and condition at the bottom, a physical barrier, such as dense shrubbery, railing or chain link fence, may need to be provided.”*

- Page A-96 – Added the following details; “Figure A-5-6 Physical Barrier For Shared-Use Path” and “Figure A-5-7 Physical Barrier For Shared-Use Path”
- Page A-97 – Deleted the following paragraph; *Where a slope of 1:2 or greater exist within 5 feet of a path and the fill is greater than 10 feet, a physical barrier such as dense shrubbery, railing or chain link fence should be provided along the top of slope. Other situations may also dictate a physical barrier, such as the height of embankment and condition at the bottom.*
- Page A-101 - Revised language in the first sentence to change “Figure A-5-5” with “Figure A-5-8” and revised “Figure A-5-5” label with “Figure A-5-8”.
- Page A-102 – Replaced the following language; “cuts” with “CG-12” in the seventh and ninth sentence in the first paragraph and in the first sentence of the second paragraph under “Path-Roadway Intersections.

Replaced the following language twice in the first sentence of the second paragraph under “Path-Roadway Intersections; “Trail” with “Path”

- Page A-103 – Deleted the following language under “Structures”; *“The typical section, including the shared use path and the 2 foot wide clear areas, may be modified by the State Structure and Bridge Engineer because of expected low bicycle volume, budget considerations, or other reasons”*.

Replaced “*should*” with “*shall*” in the first sentence under “Structures”.

Added the following language at the bottom of the page; *“When structures require a barrier separation between the travelway and the shared-use path see Figure A-5-9 for transition from roadway onto bridge.”*

- Page A-104 – Added the following detail; “Figure A-5-9 Shared Use Path Transition From Roadway Onto Bridge”
- Page A-105 – Revised the last sentence under “Rails-With-Trails” from; *“See Figure A-5-5.1 and Table A-5-12.1 for minimum separation distance between active rails and paths (RWT).”* To *“See Figure A-5-10 and Table A-5-13 for minimum separation distance between active rails and paths (RWT).”* Also revised “Figure A-5-5.1” label to “Figure A-5-10”.
- Page A-106 – Revised “Table A-5-12.1” label to “Table A-5-13” and revised language in the first sentence change “Figure A-5-6” to “Figure A-5-11”.
- Page A-107 – Added the following language; PEDESTRIAN ACCESS ROUTES For information on curb ramps and sidewalks, see IIM-LD-55.
- Page A-114 – Added the following language in the title of “SECTION 7”; SECTION A-7-“NO PLAN” AND “MINIMUM PLAN” FOR ROAD & BRIDGE PROJECTS.

Added the following language in the first paragraph under “GENERAL CONCEPTS”; *“Generally, “road” improvements will consist of widening, grading, draining and stabilizing primary and secondary roads with relatively low traffic volumes by using engineering judgment. “Bridge improvements will consist of drainage structures, “bridge only” rehabilitation and replacement projects with minimal roadway approach work and other engineered non-complex structures in nature.”* “No Plan” and “Minimum Plan” concepts are to be used only for projects where significant reductions in the “*time and*” cost of engineering, “*contract development*” and construction can be experienced by using these concepts to obtain the quality of improvement necessary for the particular situation.”

Added the following language in the first sentence in the third paragraph under “GENERAL CONCEPTS”; A “Minimum Roadway Plan” project requires survey and topo to provide sufficient right of way plans necessary for the acquisition of right of way by the Right of Way Division and plan, profile and cross section sheets are to be provided.

Deleted the following language in the first sentence in the second paragraph; “*or when there will be no major structures with "B" or "D" designation numbers.*”

Added the following language in the fourth paragraph under “GENERAL CONCEPTS”; *"Minimum Bridge Plan" process may be used when pertinent survey, engineering, hydraulic analysis or river mechanic studies are needed when there are structures with "B" or "D" designation numbers or as otherwise necessary for other engineered structures. Minimal survey and topography information will be provided to develop sufficient right of way plans necessary for the acquisition of right of way. Roadway plan, profile and cross section sheets are to be provided for projects requiring minimal approach roadway work. In the establishment of such projects, attention should be given to determine that the project location and selection is in an area where disruption due to construction can be tolerated by the users of that particular roadway for a reasonable period of time.*

- Page A-115 – Replaced the following language in the first sentence under “SPECIAL DESIGN STRUCTURES, SOIL SURVEY AND PAVEMENT DESIGN”; “*No Plan" projects may include drainage structures; however, major*” with “*Standard or special design drainage*” structures with "B" or "D" designation numbers and all standard box culverts and/or major channel modifications that require a hydraulic study are to be constructed under the “*No Plan*” or “*Minimum Plan*” concept.
- Page A-116 – Added the following language at the end of the first paragraph under DRAINAGE FACILITIES AND EROSION AND SEDIMENT CONTROL MEASURES; “*The appropriate notes on the SWPPP General Sheets must be completed and the SWPPP General Information Sheets must be included in the plan set or other such contract documents. Guidelines for developing and approving an ESC Plan are contained in the latest version of IIM-LD-11. Guidelines for completing the SWPPP General Information Sheets are contained in the latest version of IIM-LD-246.*”

Replaced the following language in the first sentence in the second paragraph under “DRAINAGE FACILITIES AND EROSION AND SEDIMENT CONTROL MEASURES”; “*standard practices and procedures*” with “*approved ESC and SWM Standards and Specifications.*”

Replaced the following language in the second sentence in the third paragraph under “DRAINAGE FACILITIES AND EROSION AND SEDIMENT CONTROL MEASURES”; “*Federal Oversight*” with “*Federal Funding*”.

- Page A-117 – Added the following language at the beginning of “STORMWATER MANAGEMENT PLAN AND VSMP CONSTRUCTION PERMIT”; “*POST CONSTRUCTION*” STORMWATER MANAGEMENT PLAN AND VSMP CONSTRUCTION PERMIT.

Added the following paragraph at the beginning of “POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND VSMP CONSTRUCTION PERMIT”; “*For all land disturbance activities that disturb an area equal to or greater than one acre or 2,500 square feet or greater in an area locally designated as a Chesapeake Bay Preservation Area, a post construction stormwater management plan and coverage under the Virginia Stormwater Management Program (VSMP) Construction Permit are required. For routine maintenance activities, the land disturbance threshold is 5 acres (see the latest version of IIM-LD-242 for additional information).*”

Added the following language at the beginning of first sentence in the second paragraph under “POST CONSTRUCTION STORMWATER MANAGEMENT PLAN AND VSMP CONSTRUCTION PERMIT”; “*Permanent*” to Stormwater management. Also added the following language at the end; “*The appropriate notes on the SWPPP General Sheets must be completed and the SWPPP General Information Sheets must be included in the plan set or other such contract documents. Guidelines for developing and approving a post construction SWM Plan are contained in the latest version of IIM-LD-11 and 195. Guidelines for completing the SWPPP General Information Sheets are contained in the latest version of IIM-LD-246. Guidelines for applying for VSMP Construction permit coverage are contained in the latest version of IIM-LD-242.*”

Replace the following language under “PROJECT SCOPING FIELD REVIEW”; “*IIM-LD-210*” with “*PM-100*”.

- Page A-118 – Added the following language to the first item (a) under “NO PLAN” PROJECTS; Minimal “*or no*” survey is required to accomplish engineering, right of way and construction stakeout.

Replaced the first item (b) and (c) under “NO PLAN” PROJECTS with the following language;

- (b) *Road only improvements with or without drainage designs.*
- (c) *Small drainage structures or other engineered entities with or without road improvements, such as precast concrete box culverts, structural plate arches, 3-sided concrete rigid frames, drainage designs, retaining walls, sinkhole remediation’s, etc. detailed on 8 ½” X 11” sketches.*

Revised the first item (e) and (f) under “NO PLAN” PROJECTS with the following language;

- (e) Environmental permits, “*including VSMP Construction Permit coverage*” will not normally be required
- (f) “*Plan and Contract Development and/or*” Construction activities must be handled in an expeditious manner

Added the following items (i) thru (t) under “NO PLAN” PROJECTS;

- (i) *Bridge Painting Operations*
- (j) *Minor Bridge Structural Repairs*
- (k) *Bridge Deck Overlays and Sealing*
- (l) *Bridge Deck Cleaning and Washing*
- (m) *Bridge Concrete Guniting Repairs*
- (n) *Standards (Retaining Walls, Steel Beam/Timber Deck (SS-8), C-I-P Slab Spans)*
- (o) *Manufactured Superstructure (Truss)*
- (p) *Bridge Scour Countermeasures*
- (q) *Culvert Repairs*
- (r) *Bridge Debris Removal*
- (s) *Bridge Slope Repairs*
- (t) *Sign, Signal and Luminaire Repair and Replacement*

- Page A-119 - Added the following language in the last sentence in the third paragraph; “*State Structure and Bridge Engineer and/or*”

Deleted the following language; “*For all land disturbance activities that disturb an area equal to or greater than 10,000 square feet or 2,500 square feet or greater in the area defined as Tidewater Virginia**, an Erosion and Sediment Control Plan and a Stormwater Pollution Prevention Plan (SWPPP) must be developed, reviewed, and approved by appropriate qualified personnel in accordance with the latest version of IIM-LD-11 and IIM-LD-246.*”

*** Tidewater, VA, as defined by the Virginia Chesapeake Bay Preservation Act, Title 10.1, Chapter 21, Code of Virginia.*

For all projects that disturb one acre of land or greater or 2,500 square feet or greater in an area locally designated as a Chesapeake Bay Preservation Area, a Stormwater Management Plan must be developed, reviewed, and approved by appropriate qualified personnel in accordance with the latest version of IIM-LD-11 and IIM-LD-195.”

- Page A-120 – Added the following language in the first paragraph under “MINIMUM PLAN” PROJECTS”; Those projects that require an engineering design, “*that exceeds the effect required for the “No Plan” 8½” by 11’ submission*” should be designated as “Minimum Plan” projects.

Revised item (b) under “MINIMUM PLAN” PROJECTS” as follows;

- (b) *Major stream/river crossing sites requiring bridges less than or equal to 100 feet*

Replaced item (f) under “MINIMUM PLAN” PROJECTS” with the following;

- (f) *Full scale plans for non-complex bridges less than or equal to 100 feet or other engineered structures with or without road improvements.*

- Page A-121 – Added the following language in the first sentence in the first paragraph; The basic difference between the "Minimum Plan" *Road project* and the "No Plan" *Road project* is ...

Added the following language in the third sentence in the fourth paragraph; However, where it is impractical or not economical to obtain minimum design “*standard*” a design exception is required, permission must be secured from the State Location and Design Engineer and, if applicable, from the “*State Structure and Bridge Engineer and/or*” Federal Highway Administration.

- Page A-122 – Added the following language the first sentence in the first paragraph under “PLAN PREPARATION”; The sample plan assemblies for both "No Plan" and "Minimum Plan" *Road projects* provide...

Added the following language the first sentence in the second paragraph under “PLAN PREPARATION”; “Minimum Plan” (*Roadway*) title sheet shall include all the...

Added the following language to paragraph three under “PLAN PREPARATION”; “*Minimum Plan*” (*Bridge*) projects shall follow the established plan preparation guidelines set forth in the S&B Division’s *Structure and Bridge Manuals – Volume V Series*.

- Page A-124 – Revised the following language at the end of the last sentence in the second paragraph; from “*Section C-1 DESIGN FEATUERS - ENTRANCES*” to “Appendix F, Section 4- *Entrances Affected by Highway Construction Projects.*”

Added the following language under “INSPECTION AND RECORD KEEPING”; “*No Plan*” *Bridge structural sketches and the “Minimum Plan” Bridge structural plan set shall have a plan number assigned and “As-Built” plans completed and recorded in accordance with S&B Division policy.*

- Page A-125 – Added the following language to the first sentence; Where it is determined by the District that "As Built *Road Plans*" are more practical...

APPENDIX “B”

- Page B-6 – Replaced the following language in the second sentence in item no. 1 under “TRANSITIONS AND TURN LANES”; “*Appendix C*” with “*Appendix F*”.
- Page B-19 – Revised detail of “Rolltop Curb” in Figure 5 to redefine the “face of curb” from 6” to 1’.

- Page B-24 – Revised the language in the first sentence of item No. 4 from; “*Sidewalks are normally at least 3 feet behind the back of curb on curb and gutter sections and, if trees are to be planted between the curb and the sidewalk, the sidewalk shall be not less than 6 feet behind the back of curb with the trees...*” with “Sidewalks are normally at least 3 feet behind the back of curb on curb and gutter sections and, if trees are to be planted between the curb and the sidewalk, the *buffer strip* shall *not be* less than 6 feet wide with the trees...”
- Page B-41 – Replaced the following language; “For THE APPROVAL PROCESS OF ROUNDABOUTS see Appendix “C” with “For THE APPROVAL PROCESS OF ROUNDABOUTS see Appendix “F”

APPENDIX “B(1)”

- Page B(1)-6 – Replaced the following language in the second sentence in item no. 1 under “TRANSITIONS AND TURN LANES”; “*Appendix C*” with “*Appendix F*”.
- Page B(1)-8 –Revised the following language in footnote No. 1 from “22 feet to 18 feet” to read “24 feet to 18 feet”.
Deleted the following language in Footnote No. 1 and made it Footnote No. 11 “*For 0-400 ADT ONLY minimum pavement width may be reduced from 24 feet to 18 feet.*”
- Page B(1)-26 – Revised detail of “Rolltop Curb” in Figure 5 to redefine the “face of curb” from 6” to 1’.
- Page B(1)-31 – Revised the language in the first sentence of item No. 4 from; “*Sidewalks shall be a minimum of 3 feet behind the back of curb on curb and gutter sections to allow for the placement of signs in accordance with the MUTCD, Part 2 and, if trees are to be planted between the curb and the sidewalk, the sidewalk shall be not less than 6 feet behind the back of curb with the trees ...*” with “Sidewalks shall be a minimum of 3 feet behind the back of curb on curb and gutter sections to allow for the placement of signs in accordance with the MUTCD, Part 2 and, if trees are to be planted between the curb and the sidewalk, the *buffer strip* shall *not be* less than 6 feet wide with the trees...”.
- Page B(1)-32 – Added the following language under “Shared use paths”; *Shoulder and Ditch Typical Section*:

“*On shoulder and ditch typical sections shared-use paths should be placed behind the ditch in a manner that will be compatible with the roadway if the roadway is converted to a curb and/or curb and gutter typical section.*”

- Page B(1)-33 – Added the following language to the first sentence in the first paragraph; “When this is not possible and the distance between the *outside* edge of the *paved* shoulder and the shared use path is less than 5 feet, a suitable physical barrier is recommended.”

Added the following language before the third paragraph; “*Curb and/or Curb and Gutter Typical Sections:*”

Added the following language at the end of the third paragraph;

“in accordance with MUTCD Part 2 and Part 9. If signs are required on the outside of the shared use path due to horizontal and vertical grade changes then a minimum of 6.5’ of right of way from the edge of the path shall be provided otherwise, a minimum 3’ of right of way shall be provided. See Appendix A, Figure A-5-3.1.”

Added the following language after the second sentence under “Width and Clearance”;
“*See Appendix A, Figure A-5-4.*”

- Page B(1)-34 – Added the following language in the second paragraph; A minimum 2 foot wide graded area with a maximum 6:1 slope, shall be maintained adjacent to both sides of the path. A minimum 3 foot clearance shall be maintained from the edge of the path to signs, trees, poles, walls, fences, “*railing,*” guardrail, or other lateral obstructions. Where the path is adjacent to canals, ditches or slopes “3:1 or” steeper a minimum “5 foot *wide* separation from the edge of the path pavement to the top of slope is required.

Added the following language after the second paragraph; “*If the separation is less than 5 feet wide and the drop-off is a 2 feet 6 inches or greater, a physical barrier, such as dense shrubbery, railing or chain link fence 42 inches high is required. When the separation from the edge of the shared use path to the top of the 5 feet or greater situations may dictate a physical barrier such as the height of embankment or conditions at the bottom (i.e. – water greater than 2 feet deep). See Figure A-5-5.*”

“When a shared use path is along a retaining wall or any vertical drop-off greater than 6 inches a railing or chain link fence 54 inches high is required. See Figure A-5-6.”

- Page B(1)-50 – Replaced the following language; “For THE APPROVAL PROCESS OF ROUNDABOUTS see Appendix “C” with “For THE APPROVAL PROCESS OF ROUNDABOUTS see Appendix “F”

APPENDIX “C”

- Page C-2 – Revised the language in the first paragraph under “Perpendicular or Angled Parking Spaces” from; “*Accessible parking spaces shall be at least 96 in. (2440 mm) wide. Access aisles adjacent to accessible spaces shall be 60 in. (1525 mm) wide minimum. One in every eight accessible spaces, but not less than one, shall be served by an access aisle 96 in. (2440 mm) wide minimum and shall be designated “van accessible”. Two accessible parking spaces may share a common access aisle (see Figure C-1-10.1).*” To “*Accessible parking spaces shall be at least 8 feet wide. Access aisles adjacent to accessible spaces shall be 8 feet wide minimum and shall be provided at street level the full length of the parking space and shall connect to a pedestrian access route serving the space. Access aisles shall be marked so as to discourage parking in them. Two accessible parking spaces may share a common access aisle (see Figure C-1-1).*”

Revised the second paragraph under “Perpendicular or Angled Parking Spaces” to replace 2440mm to 5 feet, 132 in (3350) to 11 feet, (1525 mm) to 5 feet.

Revised the following language at the end of the last a paragraph; from “*The Traffic Engineering Division and Environmental Division should be contacted to coordinate the signing and placement of curb cuts. Figure C-1-3 is to be used to provide ample space for the accessible loading area.*” to *The Location and Design Traffic Engineering Section should be contacted to coordinate the signing and placement of curb cuts. Figure C-1-3 is to be used to provide ample space for the Accessible Parking And Passenger Loading Zones.*

- Page C-3 – Replaced the following language in the first paragraph; “*114 in. to 9.5 feet.*”

Added the following language to “*Parallel Parking Spaces*” title with “*in Central Business Districts (CBD) and Traditional Neighborhood Development (TND) Where Parking Spaces are Stripped and Signed*”.

Added the following language and 2 new figures under “**PARALLEL PARKING SPACE IN CENTRAL BUSINESS DISTRICTS (CBD) AND TRADITIONAL NEIGHBORHOOD DEVELOPMENT (TND) WHERE PARKING SPACES ARE STRIPPED AND SIGNED**”; “*Where the width of the adjacent walkway is 14 feet or greater an access aisle at least 5 feet wide shall be provided at street level the full length of the parking space. The access aisle shall connect to a pedestrian access route serving the space. The access aisle shall not encroach on the vehicular travel lane. See Figure C-1-1.* and

EXCEPTION: An access aisle is not required where the width of the sidewalk between the extension of the normal curb and boundary of the public right-of-way is less than 14 feet. When an access aisle is not provided, the *accessible (handicapped)* parking space shall be located at *either* the end of the block *closest to the CG-12 curb ramp at the street crossing.* See Figure C-1-2.

- Page C-4 – Revised “ACCESSIBLE PARKING AND PASSENGER LOADING ZONES” figure.

Replaced the following language under “PASSENGER LOADING ZONES”; *“If there are curbs between the access aisle and the vehicle pull-up space, then a Standard CG-12 Curb Ramp shall be provided.”* With *“Passenger loading zones shall provide a vehicular pull-up space 8 feet wide minimum and 20 feet long minimum. The access aisle serving the vehicle pull-up space shall be 5 feet wide minimum and adjoin a pedestrian route and shall not overlap the vehicular way. Access aisles shall be marked so as to discourage parking in them.”*

- Page C-16 – Deleted the following language; *REVIEW OF PUBLIC NOTICES*

The Department frequently receives copies of public notices from the Corps of Engineers and/or U.S. Coast Guard advising us of permit applications for various items crossing navigable waters such as overhead power lines, bridges, and underwater telephone cables. The Corps of Engineers and the U.S. Coast Guard have requested that all contacts in response to these public notices be from a single state agency. The Governor designated the Dept. of Environmental Quality as the contact agency. Any comments or objections are to be submitted to their office in writing. The Location and Design Engineer will review these public notices and act as the clearinghouse for all comments and/or objections from the Department. The Assistant Location and Design Engineer in charge of Location will consolidate and submit all comments to the Dept. of Environmental Quality. If there are no comments, then no response is necessary.

APPENDIXES “F” & “G”

- Appendixes “F” and “G” were combined to merge the Access Management Design Standards. All information is now in Appendix “F”.