

Roadway Design Manual Changes

07/01/05

The following changes have been made to the September 2004 edition of the Roadway Design Manual (RDM). Changes in design guidance are noted in red.

The Table of Contents, the List of Exhibits, and the Index have been updated.

Entire Manual:

- Slope notation has been changed, i.e. *1V:10H* is now denoted as 10:1.
- The date in the Title Block was updated to July 2005

Introduction:

General:

- Most of the references to “*policy*” or “*standard*” have been replaced with “*guideline*” or “*criteria*”. “*Design procedures*” are now “*design practices*”.

Section 2. HOW TO USE THE MANUAL:

- The last sentence of the second paragraph, “*The designer should contact his/her supervisor if NDOR standards cannot be met because a design exception approval may be required (See Chapter One: Design Standards, Section 6).*” has been moved to the final sentence of the third paragraph.
- The final sentence of the third paragraph, “~~*Less than minimum standards require a design exception or relaxation of standards.*~~” has been removed from the manual and replaced with the final sentence of the second paragraph.
- A citation to Chapter One: Design Standards, Section 6.D, has been added to the second bullet (“Should”) of the fourth paragraph.

Section 3. MANUAL UPDATES:

- This section has been rewritten and an internet link to the RDM has been added.

Chapter One: Design Standards

Section 2 NEBRASKA MINIMUM DESIGN STANDARDS:

- The third paragraph has been moved from post **Exhibit 1.3** (Urban Typical Cross-Sections: 4-Lane Divided and 5-Lane Undivided Highways) to prior to **Exhibit 1.1** (Urban Typical Cross-Sections: 2-Lane Undivided).

Exhibit 1.1 Urban Typical Cross-Sections: 2-Lane Undivided:

- The slope nomenclature has been updated.

Exhibit 1.2 Urban Typical Cross-Sections: 3-Lane Undivided:

- The slope nomenclature has been updated.

Exhibit 1.3 Urban Typical Cross-Sections: 4-Lane Divided and 5-Lane Undivided Highways:

- The slope nomenclature has been updated.
- The raised median is now a more typical 18’ (5.5 m) in width instead of 16’ (4.9 m).

Section 3.A Needs Study Criteria:

- In the final sentence of the first paragraph “*ears*” has been corrected to “*years*”.

Section 4.A Maintenance Project Policy Guidelines:

- “**Guidelines**” has been added to the section title.
- In the first sentence, “*Minimum Maintenance Standards*” has been corrected to “*Maintenance Projects*”.

Section 5.D Secondary Roads – Off System Rural Projects:

- The last sentence was added to this section, referring to the Nebraska Minimum Design Standards.

Chapter One: Design Standards (Continued)

Section 6.C Procedures for Exceptions of the Needs Study Criteria:

- This section has been moved in location from prior to **Exhibit 1.5** (Example Design Relaxation Letter) to post **Exhibit 1.5**.
- The citation to “*Section 3.A*” in the second sentence of the first paragraph now refers to “*Section 3.B*”.

Section 6.D Procedure for when Desirable Conditions Cannot be Attained:

- **This is a New Section**

Section 7.A Federal Classification:

- “~~(map at end of Chapter)~~” has been removed from the first sentence.

Section 7.D Priority Commercial and Expressway System:

- This section has been moved from prior to **Exhibit 1.6** (Nebraska State Rural Highway Functional Classifications) to post **Exhibit 1.7** (Nebraska State Municipal Streets Functional Classification).

Section 7.D.1 Priority Commercial System:

The fourth paragraph has been removed from the Roadway Design Manual:

~~“A map showing the Nebraska Interstate and Priority Commercial Systems is included at the end of the chapter. This map shows the Expressway and the non-Expressway segments of the system. The **Materials and Research Division** maintains this map.”~~

Section 7.E 28’ (8.4 m) Surfaced Top System:

- ~~(Map at end of Chapter)~~ has been removed from the title.

Section 8.A Design Year Forecast Traffic:

- ~~(Map at end of Chapter)~~ has been removed from the title.

Chapter Two: Design Process

Section 4 PRELIMINARY ALIGNMENT DESIGN FOR BRIDGE HYDRAULICS (ACTIVITY 5306/5312):

- The final sentence has been added as a clarification; **“This activity only applies to projects with 5 or more bridges.”**

Section 7.A Plan-in-Hand Plans:

- The third paragraph was removed from the RDM;
~~Plan-in-hand plans for 3R projects should include the following statements (either A or B) and (either C or D):~~
 - ~~A. This is a 3R project and meets the minimum 3R standards.~~
 - ~~B. This is an emergency overlay only project. This segment is scheduled for reconstruction in the Five Year Program.~~
 - ~~C. No changes have been made in this project form the preliminary engineering review.~~
 - ~~D. The following changes are recommended from the preliminary engineering review: (List the changes and provide cost estimates).~~

Section 9.C Design Access Control:

- In the second sentence of the first paragraph, the “**Access Control Team**” has been corrected to the “**Control Access and Permit Review Committee**”.

Section 10 COVENANT RELINQUISHMENT AGREEMENT:

- In the last sentence of the second paragraph the citation to “*Section 20*” has been updated to cite “*Section 21*”.

Section 11 COST UPDATE 2 – STATUS 40 (ACTIVITY 5406):

- In the third sentence the reference to “*DR form 344*” (Project Quantity Sheets) has been corrected to “*DR form 343*” and the reference to the Project Information Sheet as “*DR form 343*” has been corrected to read “*DR form 342*”.

Chapter Two: Design Process (Continued)

Section 12.A Public Hearings:

- The following sentence and bullets have been added to the end of the sixth paragraph:

Public Hearing Statements should include some environmental statements, such as:

- Thoughtful design and construction techniques are used to minimize the impacts to the environment, wetland areas will be avoided when possible and replaced when eliminated.
- Temporary water pollution control measures will be used to reduce soil erosion.
- Trees will be saved where consistent with good design.
- On this project some trees are located within the proposed construction limits and will be removed.
- After construction, disturbed areas will be seeded with grasses and wildflowers chosen based upon the soil type and compatibility with the surrounding vegetation.

Sections 12.C.1, 12.C.2 and 12.C.3:

- Moved from prior to **Exhibit 2.2** (Plan and Agreement Requirements for Public Meetings) to post **Exhibit 2.2**.

Exhibit 2.3 Public Hearing Notice Worksheet:

- The Public Hearing Notice Worksheet, DR Form 356, has been updated from the Feb 02 version to the May 05 version.

Section 14 **DESIGN REVIEW SUPPORT PROCESSES (ACTIVITY 5340)**:

- This section was in the wrong order, this is now Section 16.

Section 16 **ROADWAY DESIGN REVIEW/LIMITS OF CONSTRUCTION PLANS (ACTIVITY 5335/5336)**:

- This section was in the wrong order, this is now Section 14.

New Section 14.A Limits of Construction Plans:

- In the second paragraph and in the bullets following the third paragraph the **Wetlands Unit** was added to the list of divisions that may require notification of changes to the L.O.C plans.
- "Impacts to Wetlands areas" was added to the bullets following the second paragraph

New Section 16 **DESIGN REVIEW SUPPORT PROCESSES (ACTIVITY 5335/5336)**:

- The reference to "*Section 20*" under the second bullet has been updated to "*Section 21*".

Section 19 **FINAL DESIGN (ACTIVITY 5355/5357)**:

- This section is out of order, this is now Section 20.
- "**CHANGES TO**" was added to the title

Section 19.A **INFORMATION MEETING PRIOR TO APPRAISAL AND ACQUISITION**:

- This is now Section 19.
- **(ACTIVITY 5314)** added to the title.

Section 19.B Check on Other Agreements:

- This is now Section 20.A.

Section 20 **FINAL RELINQUISHMENT AGREEMENT (FRA)**:

- This is now Section 21.

Section 21 **PREPARATION OF FINAL PLANS PACKAGE (ACTIVITY 5369/5368)**:

- This is now Section 22.
- **"/FINAL PLAN REVIEW FOR PS&E** was added to the title.

Chapter Two: Design Process (Continued)

Section 21.A Assemble Project Data:

- This is now Section 22.A.
- The referral to “*Section 20*” in the fifth bullet has been updated to “Section 21”.

Section 21.B Percentage of Work Near Railroad:

- This is now Section 22.B.
- In the first sentence, “on railroad right-of-way” was added after “*of the centerline of the nearest railroad track*”.

Section 21.C Check Earthwork and Notes:

- This is now Section 22.C.

Section 21.D Checking Plans for Conflicts:

- This is now Section 22.D.

Section 22 FINAL PLAN REVIEW FOR PS&E:

- This is now Section 22.E.
- (*Activity 5375/5376*) was removed from the title.
- In the first sentence “*Activity 5375/5376*” was updated to “*Activity 5369/5368*”.
- The fourth paragraph was added:

During the period after a project has been advertised for letting until it has been let to contract, all questions from outside the **Nebraska Department of Roads** (i.e. contractors or suppliers) regarding the project and plans shall be referred to the **Highway Construction Scheduling Manager** in the **Construction Division**.

Section 23 MISCELLANEOUS ACTIVITIES

- This Section has been renamed to **POST LETTING SUPPORT AND PLAN REVISION (ACTIVITY 5375/5376)**.

Section 23.A Revisions (Activity 6925):

- This section heading has been eliminated. The text of this section is now the text of Section 23.

Section 23.B Archiving the Project File:

- This is now Section 24.

Section 24 REFERENCES:

- This is now Section 25.

Chapter Three: Roadway Alignment

Section 3.A.3 Compound Curves:

- This section has been moved from post **Exhibit 3.1** (Elements of a Simple Curve) to prior to **Exhibit 3.1**.

EXHIBIT 3.1 Elements of a Simple Curve:

- The formula for finding the station at the point of tangency was corrected from “*PT Sta. = PI Sta. + T*” to “*PT Sta. = PC Sta. + L*”

Section 3.B Superelevation:

- The exhibit numbers have been updated.
- The final sentence of the fourth paragraph was added; “**Low-speed urban roadways should not be designed with a superelevation rate of less than 2%.**”

Exhibit 3.3 Superelevation Rates:

- The exhibit numbers have been updated.
- “Desirable Design” was added to the first column, third row preceding “*Low-Speed Urban Roadways*”.
- The fourth row, “Minimum Design, Low-Speed Urban Roadways” was added to the table.
- The following note was added below the table; **** Requires Design Project Manager approval.**

Chapter Three: Roadway Alignment (Continued)

Section 3.B.1 Transition Lengths:

- The exhibit numbers have been updated.
- The following sentences were added to the end of the first paragraph; “A minimum profile grade of 0.5% will be maintained through the area where the adverse crown has been removed to facilitate pavement drainage. The desirable profile grade through this area is 1.5%.”

Section 3.B.2 Axis of Rotation:

- The following clarification was added to the first sentence of the third and the fourth paragraphs; “...and depressed medians of 40 ft. (12.2 m) or less in width, ...”
- The following sentence was added to the end of the third and the fourth paragraphs; “When the median width is greater than 40 ft. (12.2 m) the axis of rotation and the profile grade point may be the centerline of the individual lanes.”
- The fifth paragraph was added to this section: “For multi-lane facilities with raised medians, the axis of rotation and the profile grade point are the projected lane at the back of the median curb (See **EXHIBIT 3.6**).”

Exhibit 3.4 Superelevation for Dual Highways (Crowned Surface):

- “WITH DEPRESSED MEDIANS OF 40’ OR LESS IN WIDTH” was added to the title.

Exhibit 3.5 Superelevation for Dual Highways (Tangent Surface):

- “WITH DEPRESSED MEDIANS OF 40’ OR LESS IN WIDTH” was added to the title.

Exhibit 3.6 Superelevation for Dual Highways w/Raised Median:

- This is a new exhibit, subsequent exhibits were renumbered.

Exhibits 3.7 Through 3.10 Values for Design Elements Related to Design Speed and Horizontal Curvature:

- The exhibit numbers have been updated.
- The following clarification was added to L_r in the KEY; “Minimum length of superelevation runoff based on a 12’ (3.7 m) lane.”
- The following sentence was added to the Notes; “The use of a relative gradient other than given in the table requires Roadway Design Project Manager approval.”

Exhibit 3.8 ($e_{max}=8\%$):

- The following reminder was added below $e_{max}=8\%$; “(Use of this table requires Assistant Design Engineer approval)”.

Exhibit 3.9 High Speed Roadways ($e_{max}=4\%$):

- “Urban” was removed from the exhibit title.

Exhibit 3.10 Desirable Design for Low Speed Roadways ($e_{max}=4\%$):

- “Urban” was removed from the exhibit title and “Desirable Design for...” was added.

Exhibit 3.11 Minimum Design for Low Speed Urban Roadways ($e_{max}=4\%$):

- This is a new exhibit, subsequent exhibits were renumbered.

Section 4.B.1 Vertical Curve Computations:

- The exhibit numbers have been updated.

Section 4.B.3 Design

- The exhibit numbers have been updated.
- The following was added as the second sentence to the third paragraph; “If the desirable K values cannot be met, the designer should provide the longest vertical curve possible given the various R.O.W. and design constraints.”

Exhibit 3.13 Design Controls for Crest Vertical Curves:

- The citation to **Exhibit 3.11** in notes 2, 3, and 4 was updated to **Exhibit 3.14**.

Section 4.C Crest Vertical Curves:

- The exhibit numbers have been updated.

Section 4.C.1 Stopping Sight Distance:

- In equation 3.1, “L” has been replaced with “ S_d ”.

Chapter Three: Roadway Alignment (Continued)

Section 4.D Sag Vertical Curves:

- The exhibit numbers have been updated.

Section 4.G Vertical Clearances:

- The exhibit numbers have been updated.

Chapter Four: Intersections, Driveways and Channelization

Section 1.A.3 Roundabouts:

- This is a new section.

Section 1.B.3 Frontage Roads:

- In the first sentence of the third paragraph, the offset of a frontage road to a crossroad has been changed from “200 ft. (61 m)” to “220 ft. (67 m)”.

Exhibit 4.2 Typical Frontage Road Connection off of a Major Roadway:

- “Westbound” was removed from the Centerline of the Roadway designator.

Exhibit 4.3 Typical Frontage Road Connection off of a Crossroad:

- “Westbound” was removed from the Centerline of the Roadway designator.
- The offset of a frontage road to a crossroad was increased from 200 ft. (61 m) to 220 ft. (67 m).
- It was clarified that the measurement should be taken from the “Edge of Through Lane”, not the “Edge of Driving Lane”.

Section 1.C Intersection Design Considerations:

- The exhibit numbers have been updated.

Section 1.C.2 Sight Distance:

- The last sentence of the first paragraph states a change in design guidance: 3R projects will not be evaluated using “*the minimum stopping sight distance*” but will now be evaluated using “[Case B1 from Chapter 9 of A Policy on Geometric Design of Highways and Streets](#), (Reference 4.1c).”
- The following sentence was added at the end of the second paragraph; “[All intersections should also be checked for intersection sight distance for left-turns from a major highway \(Case F from Chapter 9 of A Policy on Geometric Design of Highways and Streets, \(Reference 4.1c\).](#)”

Exhibit 4.5 Intersection Sight Triangles:

- This is a new exhibit, subsequent exhibits were renumbered.

Exhibit 4.9 Guidelines for the Selection of Intersection Design Vehicles:

- The following was added to the RURAL HIGHWAYS table: “Farm Equipment Drive” in the first column, second row from the bottom and “Farm Residence Drive” in the bottom row, first column.
- The following clarification was added below the tables: “Use for drive geometrics only, not to be used in the calculation of intersection sight distance.”

Section 1.D Auxiliary Lanes:

- The exhibit numbers have been updated.

Section 1.D.1 Turn Lanes:

- This section has been moved from prior to **Exhibit 4.10** (Typical Auxiliary Lanes) to post **Exhibit 4.10**.

Section 2 DRIVEWAYS:

- The exhibit numbers have been updated.
- In the first and the fifth paragraphs the “Controlled Access Policy to the State Highway System” has been corrected to the “Access Control Policy to the State Highway System”.

Section 2.A Rural Driveways:

- In the fifth bullet, what had been the “*maximum allowable grade*” is now the “*desirable grade*”. The second half of this bullet was separated into bullet number 6.

Chapter Four: Intersections, Driveways and Channelization (Cont.)

Exhibit 4.14 Rural Driveway Width Criteria:

- “Field Entrances” was added to the table.

Exhibit 4.15 Rural Driveway Without a Special Ditch:

- The slope nomenclature was updated.

Exhibit 4.16 Rural Driveway With a Special Ditch:

- The slope nomenclature was updated.
- The spelling of “Intersections” was corrected in the arrowed leaders at the top of the drawing.

Exhibit 4.17 Rural Driveway Culvert Pipe Lengths:

- The slope nomenclature was updated.

Section 2.B Urban Driveways:

- In the third and fifth paragraphs the “Controlled Access Policy to the State Highway System” has been corrected to the “Access Control Policy to the State Highway System”.

Exhibit 4.19 Urban Driveway:

- The slope nomenclature was updated.

Section 3 SURFACING:

- The exhibit numbers have been updated.

Section 5 CHANNELIZATION:

- The exhibit numbers have been updated.

Exhibit 4.23 Example of a Rural Three-Leg Intersection with Minor Roadway with Surface Shoulder:

- “*Land*” has been corrected to “*Lane*” in the note in the bottom left corner of the exhibit.

Section 6 REFERENCES:

- In Reference 4.11, the “Controlled Access Policy to the State Highway System” has been corrected to the “Access Control Policy to the State Highway System”.

Chapter Six: The Typical Roadway Cross-Section

Exhibit 6.2 Typical Section of a Crowned Multi-Lane Roadway With a Depressed Median:

- The following note was added to the exhibit; “For Details of Superelevated Multi-Lane Roadways with Depressed Medians 40’ (12.2 m) or Less in Width See Exhibit 3.4.”

Exhibit 6.5 Curbs:

- Flow arrows were added to the Concrete Median Curb and the 4” (100 mm) Concrete Median Lip Curb details.

Section 2.A.3 Fill Slopes (Transverse):

- The exhibit numbers have been updated.

Exhibit 6.7 Daylighting:

- The slope nomenclature was updated.

Section 3.H Drainage:

- There is a change in design guidance in the third sentence of the second paragraph; “*The grading should not go directly to a 3:1 foreslope from the hinge point until the depth of the slope requires it, but this is permissible with Roadway Design Project Manager approval.*”

Chapter Seven: Earthwork

Entire Chapter:

- Only the date in Title Block and the slope nomenclature were changed.

Chapter Eight: Surfacing

Section 3.A Concrete Shoulders:

- The reference to “Chapter Eleven: Design Standards” in the second sentence was corrected to read ‘Chapter Eleven: Plan Preparation”

Section 3.C Shoulder Construction:

- There is a change in design guidance in the first sentence of the first paragraph; “The subgrade on **all** projects that have new surfacing **shall be designed an additional 2” (50 mm) high** so that when the surfacing contractor completes subgrade trimming there will be enough material trimmed to complete the shouldering operation, as shown in EXHIBITS 8.3a and 8.3b.”

Exhibit 8.3 Typical Shoulder Construction:

- The “X” dimension for material to be removed for shoulder construction is now set at **0.2’ (50mm).**
- The footnote for the “X” dimension has been removed from the plan.
- **The Shoulder Subgrade Preparation, the Subgrade Preparation, or the Foundation Course should extend 3’ (0.9 m) beyond the edge of pavement, not 2’ (0.6m).**
- The slope nomenclature has been updated.

Chapter Nine: Guardrail and Roadside Barriers

Exhibit 9.4 Cable Guardrail Warrants for Fill Section Embankments:

- The slope nomenclature has been updated.

Exhibit 9.12 Surfaced Shoulder with Curb at Safety Beam Guardrail Location:

- The arrowed leader referring to **3” (80 mm) or 4” (110 mm) curb** now simply reads “curb”.

Section 1.J Guardrail and Curbs:

- In the first sentence the following clarification and change in design guidance has been added; “...*a guardrail installation* on a high-speed facility (greater than 45 mph (70 km/h)), **the curb should be either**...”.
- In the third sentence, guardrail installations **should** be flush with the front face of the guardrail posts.
- In the fifth sentence, the curb free distance in advance of the guardrail end treatment **should** be 25’ (7.6 m).
- In the last sentence, Exhibit B-25 in Appendix B, “Guardrail Design Guides”, was added as a citation.

Section 1.K.1 Guardrail Design:

- The fifth bullet was added; **“Use a tangent installation of a Type I End Treatment (see Section 1.E.1) when there is minimal or no earthwork on the project.”**

Exhibit 9.18 Minimum Guardrail Height Requirements:

- This is an existing table which has been given an exhibit number and is cited in Section 1.L.

Chapter Ten: Miscellaneous Design Issues

Section 1 RAILROAD/HIGHWAY GRADE CROSSINGS:

- This final sentence was added to the second to last paragraph; “For additional information see Chapter Four: Intersections, Driveways, and Channelization, Section 3.A and EXHIBIT 4.20.”

Section 1.A Railroad/Highway Crossing Surfacing:

- In the second paragraph, final sentence, the reference to Chapter Two, “*Section 21.B*” was updated to “Section 22.B”.

Exhibit 10.6 Vertical Stream Clearances for Sag or Level Profile:

- “4 ft.” was added to the final sentence of the note in the bottom left corner of the exhibit.

Chapter Ten: Miscellaneous Design Issues (Continued)

Exhibit 10.7 Airway Highway Clearance Requirements (Civil Airports):

- The slope nomenclature has been updated.

Section 4.B Roundabout Landscaping:

- **New Section.**

Section 6 **FENCING:**

- The third paragraph has been added; “For additional information, see section 8 for fencing adjacent to retaining walls and Section 10.B.1 for fencing behind sidewalks adjacent to steep slopes.”

Exhibit 10.10 Typical Sidewalk Section:

- The slope nomenclature has been updated.

Section 10.B.1.b Design Considerations – Sidewalks:

- The following paragraphs were added to the section:

Fencing – To provide safety when there are sidewalks adjacent to steep slopes (greater than 3:1) and where no safety barrier or guardrail is present, a chainlink fence may be considered at a typical distance of 2 ft. (0.6 m) behind the sidewalk. The fence should have a minimum height of 4 ft. (1.2 m) with the chainlink fabric facing the sidewalk (See **EXHIBIT 10.11**). If the sidewalk and the steep slope are on the approach to a viaduct or overpass, the concrete bridge railing should be extended onto the approach slab and, where possible, the sidewalk flared away from the traffic.

Underpasses - When a culvert is to be used as a bicycle and pedestrian underpass, the minimum reinforced concrete box size shall be 10 ft by 10 ft (12 ft by 12 ft if equestrian use is expected). The designer shall consider the safety of the underpass users, (including location, sight distance, and lighting), and the drainage of the facility while designing the underpass. Bicycle/pedestrian underpass design shall be coordinated with the **Bicycle/Pedestrian Coordinator in Planning and Project Development**.

Exhibit 10.11 Fencing on Steep Slopes Adjacent to a Sidewalk:

- This is a new Exhibit, subsequent exhibits were renumbered.

Section 10.B.3 Curb Ramps:

- The exhibit numbers have been updated.

Section 11.B Temporary Roads:

- The exhibit numbers have been updated.
- In the **Design Speed** sub-section, “*desired design speed*” is now simply “design speed”.
- In the **Transitions** sub-section, new design guidance has been given for CURVES and TAPERS as follows:

CURVES – Horizontal curves should be designed according to the design speed of the temporary road. High-speed temporary roads ($V > 45$ mph (70 km/h)) should be designed according to the $e_{\max} = 4\%$ superelevation table found in Chapter Three: Roadway Alignment, (**EXHIBIT 3.9**). Low-speed temporary roads ($V \leq 45$ mph (70 km/h)) should be designed in accordance with Exhibit 3-40 of A Policy on Geometric Design of Highways and Streets, (Reference 10.2c), using a relative gradient of 185:1.

(See Chapter Three: Roadway Alignment, Section 3.A for information on the design of horizontal curvature).

TAPERS – Taper rates between 29:1 (2°) and 11:1 (5°) are allowed. A 20:1 taper rate is recommended.

- The **Superelevation** sub-section was removed from the chapter.

Chapter Ten: Miscellaneous Design Issues (Continued)

Exhibit 10.13 Example Temporary Road:

- This exhibit has been redrawn to reflect the new design guidance regarding temporary road transitions.

Exhibit 10.14 Typical Temporary Road Section:

- The slope nomenclature has been updated.

Section 11.D Temporary Surfacing:

- In the title and in the first paragraph “*Pavement*” has been replaced with “*Surfacing*” in order to match the pay item.
- The second paragraph was added to the manual:
“On New and Reconstructed Projects with major grading involving disrupted accesses, the designer should discuss the use of gravel, crushed rock, or millings with the **District** on the plan-in-hand field inspection. These materials may be used to provide temporary access to adjacent properties during construction.”

Section 12 MAILBOX TURNOUTS AND SUPPORTS:

- The first sentence of the first paragraph has been removed; ~~“Mailboxes shall be located so that they are on the right hand side of the roadway based on the direction of travel as designated by the local postmaster for each delivery.”~~
- The exhibit numbers have been updated.

Section 14 PARKING:

- The exhibit numbers have been updated.

Chapter Thirteen: Planning and Project Development

Section 5.G Railroads:

- In the last sentence of the second paragraph the reference to “*Section 21.B*” of Chapter Two has been updated to read “*Section 22.B*”.

Chapter Fourteen: Traffic Engineering

Entire Chapter:

- Only the date in Title Block was changed.

Chapter Fifteen: Right-of-Way

Section 3.A Access Control Design:

- “*Access Control Team*” was replaced with “**Control Access and Permit Review Committee**”.

Section 3.E Access Control on Side Streets and Roads:

- “*Access Control Team*” was replaced with “**Control Access and Permit Review Committee**”.

Section 4 APPRAISAL:

The referral to “*Section 19.A*” of Chapter Two in the second sentence of the first paragraph has been updated to read “*Section 19*”.

Section 7.E Relinquishment and Abandonment:

In the final sentence of the third paragraph the citation to “*Section 20*” of Chapter Two was updated to “*Section 21*”.

Appendix F: Selected NDOR Operating Instructions

Entire Appendix:

- Added Operating Instructions 45-1 and 45-2 were added at the beginning of the appendix.
- Operating Instruction 45-6 was updated to the October 27, 2004 version.

Glossary

Hinge Point:

- The previous definition, “*The top of the slope where the outside edge of shoulder meets the foreslope.*” has been replaced with “The point where the rate of slope either continues at 6:1 or changes to a steeper slope based on the difference in elevation between the edge of the finished shoulder and the end of the foreslope.”