LAND DEVELOPMENT MANUAL AND STANDARD PLANS

Prepared for the County of El Dorado Board of Supervisors

Prepared by DSD, EMD, Surveyors Office, and DOT

July 25, 2011

On February 14, 2011, the Board directed staff and EDAC to work together to

- Combine the Land Development Manual and the "Matrix" (developed by EDAC); and
- Include a less stringent version of the Fire Code than what may have been adopted recently by the Fire Districts.

Reference: February 14, 2011 Board Minutes

Since February 14, 2011, staff have completed the following:

- Incorporated EDAC's Matrix as footnote references throughout the Land Development Manual (LDM);
- Resolved all outstanding issues related to the Fire Code;
- Merged LDM Chapters 2 and 4 into Chapter 2, eliminating redundancies and the need for them to cross reference each other.

LDM Chapter	2/14/11 VERSION	7/25/11 VERSION
Chapter 1	Introduction	Introduction
Chapter 2	Lot design, some road and some fire-related standards	Lot design, all road and fire standards related to lots & roads
Chapter 3	Water & sewage disposal	Water & sewage disposal
Chapter 4	Road and fire standards related to roads	Merged into Chapter 2
Chapter 5	Grading	Renumbered to Chapter 4
Chapter 6	Surveying	Renumbered to Chapter 5
Chapter 7	Contact Information	Renumbered to Chapter 6

Since February 14, 2011, staff have completed the following (continued):

- Removed text from the LDM that either doesn't focus on standards (e.g., process descriptions), or that is already captured in other County documents (e.g., *Title 16, Title 17*):
  - This shortens the Manual and focuses it on standards;

- Copied into the new Standard Plans, the standards in the old *Design & Improvements Standards Manual* (DISM) that are not being replaced with new standards, enhancing ease of use:
  - This eliminates the need to have both the new Standard Plans and the old DISM as references.

- Worked with EDAC to resolve outstanding issues.
  - All issues that staff are aware of have been resolved, with the exception of 2 related to the Standard Plans…

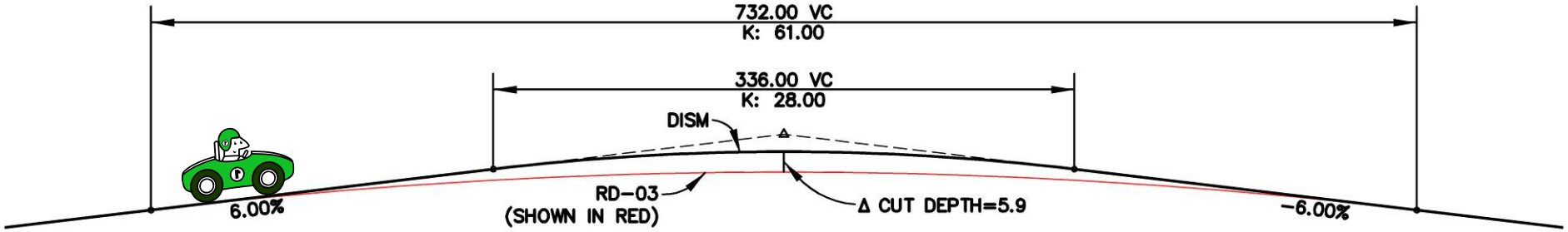
Two outstanding issues remain related to the Standard Plans. The first is related to Vertical Curve Design:

- The purpose of vertical curve design is to "flatten" roads enough to provide drivers with adequate visibility (especially with headlights at night) to see obstacles in the roadway and have enough time to stop or otherwise avoid the obstacles.
- EDAC prefers to keep the existing DISM standard, while staff is recommending use of AASHTO* guidelines for increased safety on higher speed roads.
  - The following exhibits show that the difference between the existing standard and the AASHTO guideline is primarily on roads designed for speeds above 35 MPH.
- The proposed Standard Plans have been modified in response to EDAC's concern to include the possibility of using AASHTO's *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT <=400).*

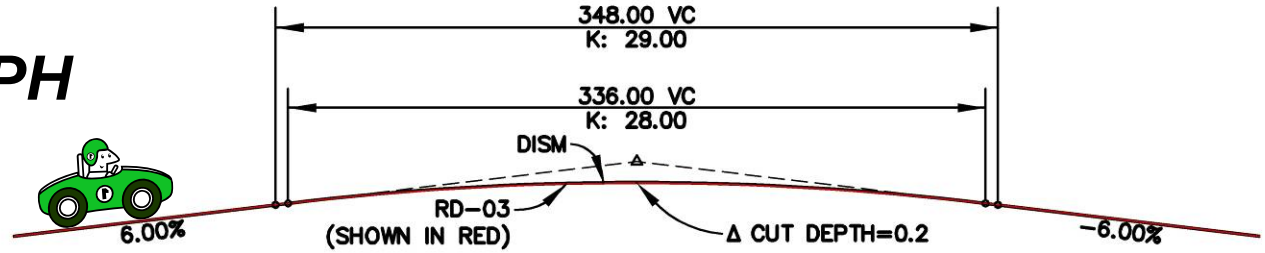
** American Association of State and Highway and Transportation Officials*

Crest vertical curve comparison:

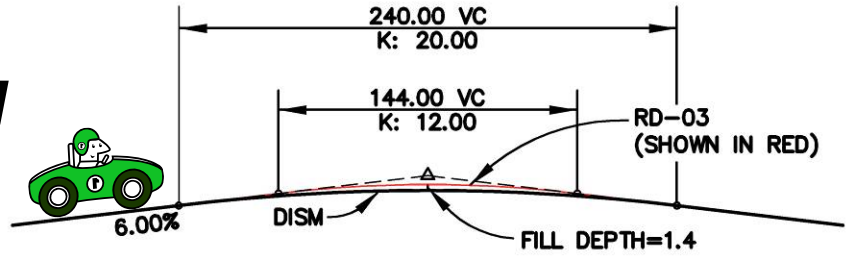
45 MPH



35 MPH

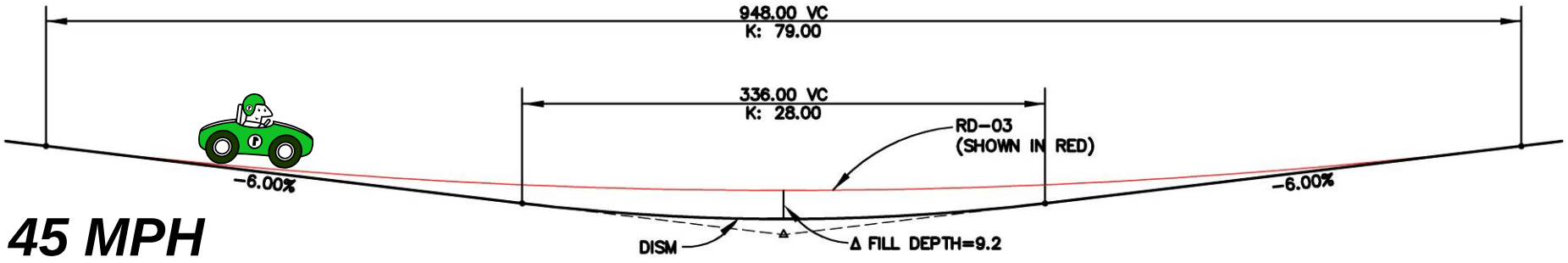


25 MPH

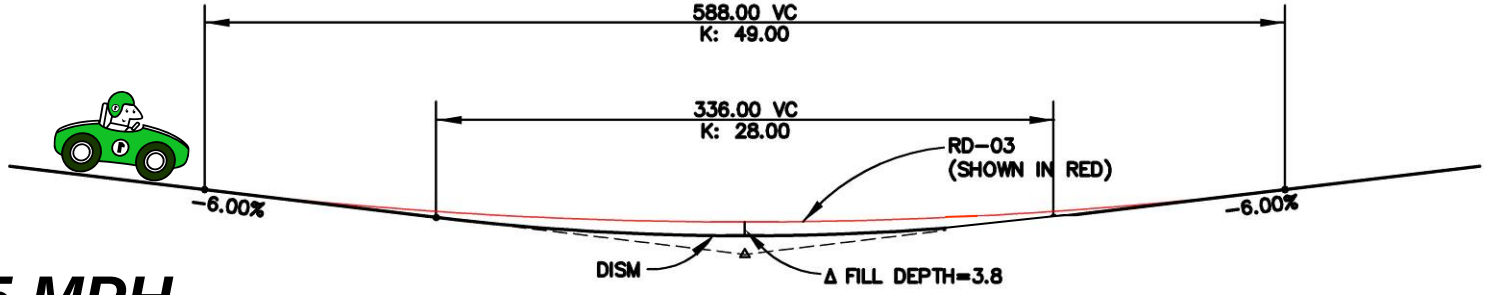


Proposed:
DISM:

Sag vertical curve comparison:



45 MPH



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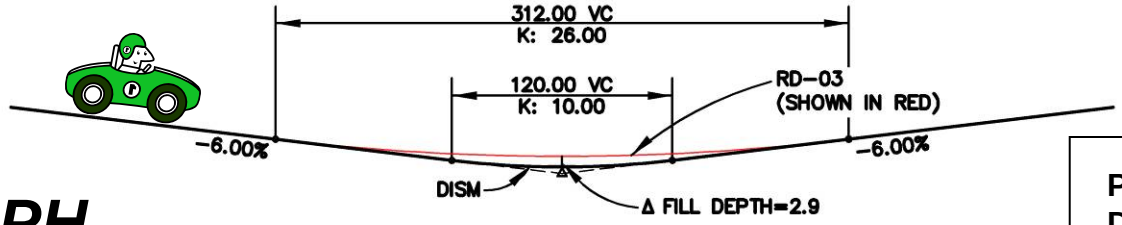

25 MPH

Proposed:
DISM:

LDM-Standard Plans Presentation
Board Workshop/July 25, 2011
11.0356.3G.7

The second outstanding issue is related to Design Speed:

- Roads are designed taking into account a number of factors including the planned vehicle speed in miles per hour (i.e., the design speed).
- An industry-wide standard in choosing an appropriate design speed is to apply AASHTO's guidelines based on type of terrain (i.e., level, rolling, or mountainous) and a projected volume of daily traffic.

ALTERNATIVES	Design Speed (MPH) for Specified Design Volume (Vehicles/Day)	
	➢600 (applies to new Std Plan RS-30)	2500 – 4000 (applies to new Std Plans RS-20, -21, -22, -23, -25)
Existing Standard in DISM	40	35
DOT Recommendation (AASHTO Guidelines*)	40	40
EDAC Recommendation	25	25
DOT Suggested Alternative	30	30

* See Exhibit 5-2. of *A Policy on Geometric Design for Highways and Streets*, AASHTO, 2004

Generally, on terrain that is not flat, the higher the design speed, the more impacts and costly the road will be due to the need for wider curves, flatter road surfaces, etc., all increasing the required grading.

- The converse is also typically true: the lower the design speed, the less costly the road.
- Staff recommend using the AASHTO guideline.
- Implication: Changing to the current AASHTO standard could potentially result in increased costs for higher volume roads, but also increased safety.
- The proposed Standard Plans have already been modified in response to EDAC's concern:
  - Using a design speed lower than 30 MPH is possible with a Design Exception approved by the County Engineer.

Staff Recommendation on the Standard Plans:

- Staff recommends the Board:
  - Delegate to DOT the adoption and updating of the Standard Plans as needed.
- Discussion:
  - Because the Standard Plans are very technical in nature, it would make sense to defer these to DOT.
  - In addition to the Standard Plans presented today, other standard plans must be updated
  - Delegation to DOT would improve efficiency, since the engineering details may need to change from time to time
  - Standard Plans are based primarily on engineering principles based on standardized documents (AASHTO, Caltrans, etc.)
  - These are then customized by DOT to meet the specific needs of the mountainous terrain of the County

Options for Board of Supervisors

- Provide direction on Standard Plans presented today, and delegate future changes to DOT with provision for review and/or appeal to the Board.
  - This would address concerns about specific issues discussed today (design speed and vertical curves).
  - Staff to return to the Board with the plans and the LDM after final clean-up, CEQA, and public notice.
- Retain approval authority of Standard Plans and direct staff to return to the Board with any future revisions to the Standard Plans.
  - Staff to return to the Board with the plans and the LDM after final clean-up, CEQA, and public notice.
  - Future changes and new plans would be provided to the Board for approval by resolution.

Staff recommendation on the Land Development Manual

Direct staff to work with EDAC and the Fire Prevention Officers (FPOs) to finalize the current version of the LDM and return to the Board for its adoption within 60 to 120 days.

- The LDM would move forward independently from the targeted General Plan amendment, under a separate negative declaration.
- Direction from the Board on the dead end road issue and any others will be incorporated into the final draft
- The LDM can be modified as needed, including when the targeted General Plan amendment is adopted, and any new policies incorporated into the LDM.