

## NDDOT DESIGN GUIDELINES

### General

1. The intent of the roadway width guidelines is not to reduce the roadway width to the minimum width shown in the guidelines, but rather to maintain the width as close as possible to the existing width.
2. If a District Corridor is on the NHS system the roadway will be designed to meet the minimum design guidelines for a State Corridor.
3. Design features that do not meet the minimum design guidelines, but are incorporated into a project will require a design exception.
4. Safe pavement sloughs will be maintained as described in the Departments shoulder standards in appendix B. If there is no shoulder the slough should have a minimum slough of 3:1.
5. The traffic volumes shown are general guidelines. A 10 % tolerance in the volumes may be allowed without requiring the designer to move to the next level of standard or the need for a design exception.
6. On Minor Rehabilitation and Structural Improvement projects, existing guardrail linear runs, end treatments, and transition sections may be left in place if the guardrail was originally installed in conformity with NCHRP Report 230 or 350 crash test criteria and has been maintained in a condition that is in reasonably close conformity to NCHRP 230 or 350 guidelines.

The following is considered reasonably close conformity for linear runs:

Variation for height of rail is  $\pm 3$  inches of the design dimension when originally installed.

No un-repaired damage to the linear run is visible and there is evidence of adequate maintenance of key as-built elements including posts, block outs, rail elements and rail delineation.

The following is considered reasonably close conformity for end treatments:

No un-repaired damage to the end treatment is visible and there is evidence of adequate maintenance of key as-built elements including posts, block outs, rail elements, tensioning devices, breakaway devices and end treatment delineation.

The following is considered reasonably close conformity for transition sections:

No un-repaired damage to the transition section is visible and there is evidence of adequate maintenance of key as-built elements including posts, block outs, rail elements, and connection to the fixed object.

In addition to being in reasonably close conformity to NCHRP Report 230 or 350 crash test guidelines, the geometric layout and past performance of the rail system should meet the following criteria:

1. Be functionally adequate for length of need, flare rate, slope, etc. based on the existing ADT and posted speed less 10 mph.
2. Exhibit no significant crash history at the installation location.

Non-standard end treatments and/or transition sections may be removed and replaced without adjustment to the linear run segments if the linear run segments are in reasonably close conformity to the NCHRP Report 230 or 350 guidelines.

Approved by:

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