

SECTION 1

INTRODUCTION

1-01 GENERAL

This manual is developed to present current Department guidelines pertaining to roadway design on the State Highway system. It will provide a means of developing uniformity and safety in the design of a highway system consistent with the needs of the motoring public.

It is recognized that situations will occur where good engineering judgement dictates deviations from the current Department design guidelines. Any such deviations from design guidelines relative to the following controlling design elements, as contained in Sections 4 through 7, will require an approved design exception:

Roadway Elements

- Cross Slope
- Lane and Shoulder Width
- Minimum Radius (mainline and interchange ramps)
- Grades (maximum and minimum)
- Stopping Sight Distance (horizontal curves, vertical curves, two-way left-turn lanes)
- Intersection Sight Distance
- Superelevation (mainline and interchange ramps)
- Auxiliary Lane Length (interchange only)
- Through-lane Drop Transition Length

Structural Elements

(Ref: Current edition of NJDOT Bridges and Structures Design Manual)

- Bridge Width
- Structural Capacity
- Vertical Clearance

For reconstruction and new construction projects, a design exception shall be prepared in accordance with the current *Guidelines for the Preparation of Design Exceptions*.

For resurfacing, restoration and rehabilitation projects, a design exception shall be prepared in accordance with the *Design Procedure for 3R Projects* and the *Guidelines for the Preparation of Design Exceptions*. Excluded from the former procedure are Interstate and freeway 3R projects.

The guidelines contained in this manual, other than the controlling design elements shown above, are primarily informational or guidance in character and serve to assist the engineer in attaining good design. Deviations from this information or guidance does not require a design exception.

It is not the intent of this manual to reproduce all the information that is adequately covered by textbooks and other publications which are readily available to designers and technicians.

This manual, when used in conjunction with engineering knowledge of highway design and good judgement, should enable the designer to perform his job more efficiently.

The geometric design of streets and highways not on the State Highway system should conform to the standards as indicated in *A Policy on Geometric Design of Highways and Streets*, AASHTO, 2001. The design of traffic barriers and drainage systems shall conform to the *Design Manual - Roadway*.

1-02 POLICY ON USE OF AASHTO STANDARDS

The American Association of State Highway and Transportation Officials (AASHTO) has published policies on highway design practice. These are approved references to be used in conjunction with this manual. AASHTO policies represent nationwide standards which do not always satisfy New Jersey conditions. When standards differ, the instructions in this manual shall govern except on Interstate highways. The geometric design of the Interstate system shall, as a minimum, comply with the standards presented in the AASHTO publications; but the design of traffic barriers and drainage systems shall conform to the *Design Manual - Roadway*.

1-03 REFERENCE PUBLICATIONS

1. AASHTO (AASHO) Publications American Association of State Highway and Transportation Officials
 - *A Policy on Geometric Design of Highways and Streets*, 2001.
 - *Highway Definitions*, 1968.
 - *Roadside Design Guide*, 2002.
 - *A Policy on Design Standards - Interstate System*, 1991.
 - *A Policy on U-Turn Median Openings on Freeways*, 1960.
 - *A Guide for the Development of Rest Areas on Major Arterials and Freeways*, 2001
2. Transportation Research Board
 - *Highway Capacity Manual*, 2000.
3. *Manual on Uniform Traffic Control Devices*, Millennium Edition.
4. *FHWA Federal-Aid Policy Guide (FAPG)*, 1991 with updates.
5. *Roundabouts: An Informational Guide*. FHWA 1999, Publication No. FHWA-RD-00-067