

## DESIGN EXCEPTIONS

All efforts should be made to adhere to the standards stated herein. However, under unusual conditions, it may be necessary to use values that are less than the minimum values shown. If lesser values are proposed for use, a **design exception**\* will be needed and approval by the State Location and Design Engineer and the Federal Highway Administration on Federal aid funded projects must be granted before developing the project further.

Methods of showing design exceptions on the plans are noted in Instructional and Informational Memorandum [IIM-LD-227](#). Design Exceptions are to be requested on Form [LD-440](#), maintained on the VDOT website at <http://vdotforms.vdot.virginia.gov/>. If approved, the completed Form [LD-440](#) is to be attached to [Form LD-430](#) Scoping Report for submittal at advertisement stage.

## PLANNING DRAINAGE DESIGN ELEMENTS

The hydraulic consequences of a highway improvement need to be addressed during the planning phase of the project.

Failure to assess the hydraulic aspects of the improvement could result in an increase in damages to adjacent property as well as the highway facility. Although detailed site information may not be required, it is important that a hydraulic assessment be made by a drainage engineer in the planning phase to determine that engineering and regulatory constraints can be met.

Items to be considered include:

- Hydraulic impacts
- Interaction with other agencies
- Utilities
- R/W and property owners' concerns
- Environmental concerns and permits

## REPLACEMENT OR REHABILITATION OF DRAINAGE ELEMENTS

The decision to rehabilitate or replace a structure should not be made without checking hydraulic adequacy. Normally, the highway designs that improve upstream flooding conditions should generally result from meeting highway flooding criteria. Scour protection, spur dikes, or other protective measures should be included with the bridge rehabilitation.

The decision regarding the rehabilitation or replacement of existing bridges or culverts is often a structural or functional decision. Hydraulic input is important when the cost of the rehabilitation is high enough to consider replacement or where the contemplated rehabilitation involves a change in the roadway profile which, by lessening roadway overflow, could increase hydraulic stresses on the structure and change flow distribution.

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\* Rev. 1/14