

Design Exceptions

Local Agency Bridge Projects

Local Agency Programs Bridge Unit

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Design Exceptions

When needed?

A design exception is required for any design element that does not meet the American Association of State Highway Transportation Officials' (AASHTO) guidelines.

Design Exceptions

Most Common Elements:
(all based on design speed)

- Lane and/or Shoulder Widths
- Horizontal Alignment & Superelevation
- Vertical Alignment

“Minimum” Design Criteria (for design exceptions)

- ❑ 3R Guidelines
 - ❑ Shoulder Width based on Average Daily Traffic: 2.0 Feet to 6.0 Feet
 - ❑ Lane Width based on Average Daily Traffic: 9.0 Feet to 12.0 Feet
- ❑ “Minimum” Design Speed: 30 mph
Unless the Posted Speed is Less

Design Exception Process

- ❑ One Form for All Design Elements not meeting AASHTO guidelines
- ❑ Form Submitted by Designer with:
 - Traffic Crash Analysis (for safety)
 - Cost Analysis vs meeting AASHTO
- ❑ Reviewed by LAP's Bridge Unit

Special Considerations

- ❑ Excessive Impacts to Environment
 - ❑ Areas of Excessive Cut and/or Fill
 - ❑ Major Impacts to Watercourse / Wetlands
 - ❑ Severe Impacts to Homes & Businesses
- ❑ The Designer Needs to Work With DEQ
- ❑ MDOT Depends on DEQ Review
- ❑ Special Consideration is Given When DEQ Finds a Design That Meets AASHTO or 3R Guidelines Environmentally Unacceptable

Example Project: Huff Road over Pine Creek Manistee County

- ❑ To Meet Minimum 30 mph Design Speed
 - ❑ Raise Existing Roadway Grade by 15 Feet
 - ❑ Cut Back Hill in SW Quadrant
 - ❑ Construct Large Wall in NW Quadrant
 - ❑ Significantly Steepen Residential Driveway
 - ❑ Necessitated a 3 Span Structure

Example Project: Huff Road over Pine Creek Manistee County

- ❑ Preliminary Drawings Created by Designer
 - ❑ 1 Set to DEQ for Review
 - ❑ 1 Set to LAP's Bridge Unit
- ❑ Due to Impacts, DEQ Permit Rejected
 - ❑ Designer Notified LAP's Bridge Unit
 - ❑ Special Design Minimums Considered

Example Project: Huff Road over Pine Creek Manistee County

- ❑ Special Considerations Made
 - ❑ Design Speed: 20 mph
 - ❑ Reduced Bridge Length to 1 Span
 - ❑ Reduced Large Earth Fills and Cuts
 - ❑ Bridge to be Constructed with Minimal Impact to Watercourse
- ❑ Design Acceptable to DEQ, MDOT, and Manistee County

Huff Road over Pine Creek



Huff Road over Pine Creek NW Quad Retaining Wall



Working Together

- ❑ Bridge Unit of LAP Responsible for Compliance of Federal Regulations and Ensuring Designs Meet AASHTO and/or 3R Guidelines
- ❑ Designs Also Need to Meet DEQ's Environmental Requirements

Working Together

- ❑ Good Communication Between LAP's Bridge Unit, DEQ, and the Local Agency Helps Expedite the Design Process
- ❑ The Design Exception "Minimums" Can Be Adjusted for Site Specific Conditions
- ❑ Public Safety and Protection of the Environment are Key in an Acceptable Bridge Design

Questions?

