



Illinois Department of Transportation

Memorandum

To: ALL BRIDGE DESIGNERS 25.2
From: Jayme F. Schiff
Subject: 2025 IDOT Seismic Manual
Date: August 29, 2025

A handwritten signature in blue ink that reads "Jayme F. Schiff".

The 2025 Seismic Manual is available for access/download from the primary [Bridges & Structures Page](#). This 2025 manual, which continues using a displacement-based approach with Performance-Based guidelines, shall replace the “Seismic Manual- *DRAFT* Sections 1- 8” from 2024. Please refer to the change bars on the left side of the 2025 Seismic Manual pages for updates.

The 2024 *DRAFT* version will be removed from the primary IDOT website in the forthcoming weeks. The following ABD Memoranda are considered incorporated into the 2025 Seismic Manual. These memos are attached for reference:

- ABD 24.1 - IDOT Seismic Manual Update – Planning Requirements
- ABD 22.6 - IDOT Seismic Manual- Plan Detail Requirements
- ABD 22.4 - Seismic Manual Announcement

CADD Library updates will soon be issued to correspond to the 2025 Seismic Manual. Please direct questions regarding the Seismic Manual to DOT.BBS.COMSUGGEST@illinois.gov.

Implementation

The 2025 Seismic Manual is a formal publication containing the draft portions from previous memorandums with some minor revisions as observed through the vetting process. As such, this Manual may be implemented for projects currently under design with approved Type, Size, and Location plans requiring the AASHTO Guide Specifications for LRFD Seismic Bridge Design and shall be applicable to all design plans prepared from Type, Size, and Location plans approved on or after September 1, 2025.

Attachments

KLR/PLP

August 29, 2025



Illinois Department of Transportation

Memorandum

To: ALL BRIDGE DESIGNERS 24.1
From: Jayme F. Schiff 
Subject: IDOT Seismic Manual Update – Planning Requirements
Date: January 9, 2024

All Bridge Designers (ABD) Memorandum 24.1 introduces the Planning section to the [Seismic Manual](#). The planning policies herein shall be applicable to all structures being designed using a displacement-based design approach.

The Department is adopting a displacement-based approach, with performance guidelines. The Planning section provides guidance to bridge planners on performance levels, seismic hazards, and structure type selection for bridges in high seismic zones.

The policy and details herein are subject to review. The Seismic Manual is intended to provide direction and documentation for all forthcoming seismic policy. Bridge planners are encouraged to review the forthcoming policy and forward any questions or comments to the Bureau of Bridges and Structures. Incorporation of comments will occur when future sections are added.

The Department intends to incorporate displacement-based seismic design on bridges with Type, Size, and Location plans approved February 1, 2024 and later. Due to the amount and complexity of required design changes, and the effects these changes may have on preliminary design, this date may be extended on a project-by-project basis.

Please direct questions and comments to Mark Shaffer, Bridge Design Engineer, by telephone at (217) 782-2125 or email at mark.shaffer@illinois.gov.

August 29, 2025



Illinois Department of Transportation

Memorandum

To: ALL BRIDGE DESIGNERS 22.6

From: Jayme F. Schiff 

Subject: IDOT Seismic Manual Update — Plan Detail Requirements

Date: October 7, 2022

This memorandum introduces the Plan Detail Requirements section to the Seismic Manual. The details herein shall be applicable to all structures being designed using a displacement-based design approach.

One goal of the Seismic Manual is to house details required for a displacement-based design approach in a separate document from those required for a force-based design approach. The details herein have been derived from the Guide Specifications for LRFD Bridge Seismic Design, are specific to a displacement-based approach, and therefore should not be used for bridges designed using a force-based approach without prior approval from the Bureau of Bridges and Structures. Examples of details that would be approved include support length requirements and abutment backfill details, as these details are not specific to one design paradigm.

The Department intends to incorporate displacement-based seismic design on bridges with Type, Size, and Location plans approved September 1, 2023, and later. Due to the amount and complexity of required design changes, and the effects these changes may have on preliminary design, this date may be extended on a project-by-project basis.

The Seismic Manual is found in the “Design” tab, under Specific Scope of Services on the primary IDOT-Bureau of Bridges and Structures website at <https://idot.illinois.gov/doing-business/procurements/engineering-architectural-professional-services/Consultants-Resources/index#Bridges>.

The policy and details herein are subject to review. The Seismic Manual is intended to provide direction and documentation for all forthcoming seismic policy. Bridge designers are encouraged to review the forthcoming policy and forward any questions or comments to Mark Shaffer, Policy, Standards, and Final Plan Control Unit Chief, by telephone at (217) 785-2914 or email at mark.shaffer@illinois.gov. Incorporation of comments will occur when future sections are added.

MDS/kktABD22.6-20221007



Illinois Department of Transportation

Memorandum

To: ALL BRIDGE DESIGNERS 22.4

From: Jayme F. Schiff

Subject: Seismic Manual Announcement

Date: September 2, 2022

A handwritten signature in blue ink that reads "Jayme F. Schiff".

The AASHTO LRFD Bridge Design Specifications currently include a seismic design method known as force-based design. In accordance with these specifications, seismic structural design and detailing policies in the Bridge Manual utilize this method of design. A second design method known as displacement-based design is currently found in the AASHTO Guide Specifications for LRFD Seismic Bridge Design.

Displacement-based design is the only method currently being modified by AASHTO and is expected to replace force-based design in forthcoming AASHTO updates. Displacement-based design is required to be used when other documents such as the AASHTO Guidelines for Performance-Based Seismic Design and AASHTO Guide Specifications for Seismic Isolation Design are used. Therefore, it is prudent for the Department to begin utilizing this method of design.

In anticipation of displacement-based design becoming the preferred method of seismic design used in Illinois, IDOT has begun developing new seismic design and detailing criteria for this method. The seismic design and detailing criteria required for displacement-based design have many differences when compared to the criteria used in force-based design. Because of the large number of differences, and the need for clarity and separation of the two design methodologies, IDOT has chosen to adopt future seismic design and detailing policy into a separate document, known as the Seismic Manual. Use of a separate document to keep seismic design policy will also allow this manual to be updated on a regular basis. These updates will be accompanied with All Bridge Designers Memoranda.

The Seismic Manual will not be populated all at once, but rather will be constructed via a series of All Bridge Designers Memoranda.

This manual will contain most forthcoming seismic policies. Some policies, such as liquefaction analysis, or evaluation of existing structures during Bridge Condition Reports, are more appropriately placed in the manuals associated with their use (e.g. Geotechnical Manual). References to these manuals will be made in the Seismic Manual.

The following is a preliminary outline of the Seismic Manual:

1. Introduction
2. Engineering Design Parameters
3. Design Hazards
4. Planning Structure Types
5. Analysis Procedures
6. Modeling Assumptions
7. Design Requirements
8. Plan Detail Requirements
9. Retrofitting of Existing Bridges
10. Design Guide

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September 2, 2022

The IDOT Bridge Manual will contain all policy regarding force-based design until such time that it is determined that it is no longer required to be maintained.

The Department intends to incorporate displacement-based design on bridges with Type, Size, and Location plans approved September 1, 2023 and later. Due to the amount and complexity of required design changes, and the effects these changes may have on preliminary design, this date may be extended on a project-by-project basis. Type, Size, and Location plans will state which document the designer will be required to use (AASHTO LRFD Bridge Design Specifications for force-based design, AASHTO Guide Specifications for LRFD Seismic Bridge Design for displacement-based design).

Please direct questions to Mark Shaffer, Policy, Standards, and Final Plan Control Unit Chief, by telephone at (217) 785-2914 or email at mark.shaffer@illinois.gov.

MDS/kktABD22.4-20220826

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