

## **MAJOR OR UNUSUAL BRIDGES**

Many major or unusual structures are designed to utilize features that are at the edge of today's state-of-the-art or unique fracture critical details that often require special consideration during construction, inspection, and maintenance.

The following FHWA policy is to be followed in the preparation of design documents for major or unusual bridges to help avoid construction problems and provide guidelines for on-going maintenance:

- FHWA Memorandum November 13, 1998  
*Project Oversight Unusual Bridges and Structures*

Unusual bridges are those that have any of the following:

- Difficult or unique foundation problems
- New or complex designs with unique operational or design features
- Bridges with exceptionally long spans
- Bridges being designed with procedures that depart from currently recognized acceptable practices

Examples of unusual bridges include:

- Cable-stayed
- Suspension
- Arch
- Segmental Concrete
- Movable
- Truss

Examples of bridge types that deviate from AASHTO bridge design standards or AASHTO guide specifications for highway bridges include:

- Major bridges using LRFD design specifications
- Bridges requiring abnormal dynamic analysis for seismic design
- Bridges using a three-dimensional computer analysis
- Bridges with spans exceeding 500 feet
- Bridges with major supporting elements of ultra high strength concrete or steel

A manual for the inspection and maintenance of the structure shall be prepared during the design process that includes explicit guidelines and instructions. The lead designer, whether the ITD Bridge Section or a Consultant does the design, will be responsible for the preparation of the inspection and maintenance manual. The manual will identify critical areas to be inspected and recommend maintenance procedures. The following areas will be addressed as well as any other areas requiring special attention:

Deck  
Girders  
Expansion Joints  
Bearing Units  
Piers or Columns  
Abutments  
Connections  
Fracture Critical Members (to be marked on the drawings)  
Member cracking or deformation

Copies of the manual shall be sent to the District and Bridge Asset Management.

## **Commentary**

The FHWA November 13, 1998 Memorandum is available at <http://www.fhwa.dot.gov/bridge/unusual.htm>

The FHWA Implementing Guidance memorandum is available at <http://www.fhwa.dot.gov/bridge/sec1305.htm>

Revisions:  
Oct 2016      Changed Article number from 0.5 to 0.05.