

FROM: Bijan Khaleghi
TO: All Design Section Staff
DATE: April 21, 2017
SUBJECT: BDM Updates to Chapters 8 and 15- Culverts

This memorandum cleans up some conflicting language in Bridge Design Manual Chapters 8 and 15 for culverts.

The second paragraph of Section 8.3.1 is revised to read:

In accordance with current WSDOT policy, only cast-in-place reinforced concrete and precast concrete arch, box, and elliptical structures shall be used for buried highway and hydraulic structures with spans equal to or greater than 20 feet (measured parallel to roadway centerline).

The last paragraph of Section 8.3.3.E is revised to read:

For buried structures, with span lengths equal to or greater than 20 feet, the seismic effects of potential unstable ground conditions (e.g., liquefaction, liquefaction induced settlement, landslides, and fault displacements) on the function of the buried structures shall be considered, except liquefaction need not be considered if the liquefaction, landslides, or fault displacements do not cause life safety hazards. If the depth of fill on top of a four-sided (or other closed shape) structure is more than one-half the clear span along the skew, liquefaction induced settlement or local instability are not likely to cause life safety hazards.

The first paragraph of Section 8.3.4 is revised to read:

Box culverts are four-sided rigid frame structures. For span lengths equal or greater than 20 feet, box culverts shall be made either from cast-in-place (CIP) reinforced concrete or precast concrete. See Appendix 8.3-B1 to B3 for design criteria specific to concrete four sided split box culverts.

Section 8.3.7. is deleted.

The third item in the Bridge Design Memorandum dated February 20, 2017 is deleted.

The first paragraph of Section 15.8.3.A is deleted.

The second paragraph of 15.8.3.A. is revised to read:

In accordance with current WSDOT policy, only cast-in-place reinforced concrete and precast concrete arch, box, and elliptical structures shall be used for buried highway and hydraulic structures with spans equal or greater than 20 feet (measured parallel to roadway centerline).

Section 15.8.3.B is supplemented with the following:

Precast reinforced concrete three sided structures shall be designed and constructed in accordance with Standard Specifications Section 7-02.3(6). Refer to Section 8.3.5 for additional design criteria specific to precast reinforced concrete three sided structures.

Section 15.8.3.G is deleted:

Section 15.8.3. H is re-numbered to 15.8.3.G:

If you have any questions regarding this policy memorandum, please contact Rich Zeldenrust zeldenr@wsdot.wa.gov at 360-705-7196, Lou Tran TranLuo@wsdot.wa.gov at 360-705-7195, Scott.Sargent@wsdot.wa.gov at 360-705-7753 or Bijan.Khaleghi@wsdot.wa.gov at 360-705-7181.

cc: Mark Gaines, Construction Office – 47354
Craig Boone, Bridge and Structures – 47340