

TO: All Design Section Staff  
FROM: Bijan Khaleghi  
DATE: August 21, 2015  
SUBJECT: Design Standard for Pedestrian Railing Geometry

The structural and geometric design of pedestrian railings for WSDOT bridges shall be in accordance with AASHTO LRFD Bridge Design Specifications Article 13.8 and WSDOT Bridge Design Manual 10.5

### **Geometry**

Spacing of the railing elements different than the above requirements, such as IBC 1013.4 could be acceptable on a case-by-case basis. Requests must come from the Project Engineer and be approved by the Bridge Design Engineer.

The minimum height of a pedestrian railing shall be 54" as measured from the top of the walkway.

### **Structural Design**

Where geometry is other than that specified in the AASHTO LRFD Bridge Design Specifications the design loads for pedestrian railings shall be as specified in LRFD Article 13.8.2

### **Background**

The rail spacing requirements of the IBC 1013.4 Opening Limitations of 4" and 4 3/8" is less than LRFD spacing requirements.

A design that exceeds the requirements of AASHTO and the WSDOT Bridge Design Manual could be acceptable. A possible scenario for other than AASHTO requirements would be where a municipality with IBC standards is directly adjacent to a bridge facility. For continuity and simplicity designers may choose to use the same spacing.

There is precedence for use of IBC Opening Limits in WSDOT Bridge Barriers or openings that are less than the AASHTO limit of 6". Examples of these projects are:

- SR-90 Homer Hadley Barrier Retrofit (current contract)

- SR 101 Dosewallips River Bridge
- SR-433 Lewis and Clark Bridge in Longview
- SR-99 Aurora Avenue Safety Fence – AASHTO geometry was used however the spacing was set at 5”

The minimum height of 54” is based on RCW 46.61.755(2) since in Washington State bicyclists are typically allowed to ride a bicycle upon a sidewalk or crosswalk. The height is also characteristic of multiple decades of railing height designs in the WSDOT bridge inventory.

If you have any questions regarding this policy memorandum, please contact [Paul.Kinderman@wsdot.wa.gov](mailto:Paul.Kinderman@wsdot.wa.gov) at 705-7159, or [Scott.Sargent@wsdot.wa.gov](mailto:Scott.Sargent@wsdot.wa.gov) at 705-7753, or [Bijan.Khaleghi@wsdot.wa.gov](mailto:Bijan.Khaleghi@wsdot.wa.gov) at 705-7181.

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