

Bridges and Structures

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All Employees

521.1

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Bridges and Structures

MM No. 40 (Exterior Beam Distribution Factor – LRFD)

When calculating the live load distribution factor for moment and shear for the exterior beam of beam-supported slab bridges for prestressed beam design, the following guidelines shall be used.

1. For exterior girder design with slab cantilever length equal to or less than one-half of the adjacent interior girder spacing, use the live load distribution factor for the interior girder. Note: The slab cantilever length is defined as the distance from the centerline of the exterior girder to the edge of the slab.
2. For exterior girder design with slab cantilever length exceeding one-half of the adjacent interior girder spacing, use the lever rule with the multiple presence factor of 1.0 for single lane to determine the live load distribution. Note: The live load used to design the exterior girder shall never be less than the live load used to design an interior girder.
3. The special analysis based on the conventional approximation of loads on piles as per AASHTO-LRFD Article C4.6.2.2.2d shall not be used until additional research is available.

The exterior and interior beams shall be designed for the same capacity and the interior beam should generally control the design. If calculations show the exterior beam controlling the design in special situations, then check with your section leader for approval before continuing the design.

If you have any questions please check with your section leader.

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