

# Missouri Department of Transportation

Code: R05816

Title: Bridge Location and Layout Designer

Exemption Status: Exempt

Grade: 10

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## Job Description

Effective Date 07-01-2022

Replaces  
(Effective Date) 03-01-2021

**General Summary** The bridge location and layout designer is responsible for all aspects of preliminary design and final layouts for any type of highway structure, including but not limited to, new bridges, culverts and retaining walls and the widening and rehabilitation of existing structures, preparing bridge memorandums, hydraulic analysis, cost estimating and ensuring adherence to all applicable state and federal guidelines. Responsibilities are performed under general supervision.

**Minimum/Required Qualifications** Bachelor's degree in Engineering from an ABET-accredited college or university curriculum.  
Successful completion of the Engineer-in-Training exam.  
Five years of experience in civil engineering with a demonstrated proficiency in structural or highway design. An advanced degree in civil engineering with an emphasis in hydrology/hydraulics or soil mechanics may be substituted for a maximum of two years of experience.

**Supervisory Responsibilities** Lead Worker Only

**Location** Central Office - Bridge

**Special Working Conditions/Job Characteristics** Job requires occasional national or statewide travel.

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## Examples of Work

- (1) Performs hydraulic and hydrologic analysis for stream crossing structures and geometric designs for grade separation structures as required to determine the appropriate type of structure, span lengths, widths, grades and substructure types.
- (2) Evaluates multiple alternatives and prepares comparative cost estimates for determination of the most structurally and fiscally practical design for the site.
- (3) Liaisons with department personnel, state and federal agencies, consultants, contractors, fabricators, product suppliers, railroads, utilities, and other agencies in order to gain or provide information, provide technical assistance, obtain necessary permits, or request an agreement on a proposed structural layout in order to proceed with final design; serves on core teams.

- (4) Develops the final design file, design layout sheet, and final layout for use by the final design staff.
- (5) Coordinates and reviews work and activities with appropriate division and district personnel in order to obtain valley section data, surveys and sounding information.
- (6) Prepares bridge memorandums for use as internal contractual agreements between the division and the districts detailing all necessary aspects of the structure and any additional specific bridge and roadway requirements.
- (7) Performs preliminary and final site field checks to ensure proper design and specification adherence.
- (8) Performs lead worker responsibilities, which may include providing general instruction, assigning and reviewing work, coaching and training, providing guidance and instruction in the proper and most efficient methods of accomplishing tasks, and providing input to the direct supervisor on staffing decisions and performance management.
- (9) Performs other responsibilities as required or assigned.

**The Missouri Department of Transportation promotes an equal opportunity workplace that includes reasonable accommodation of otherwise disabled applicants and employees. Please see your manager should you have any questions about this policy or these job duties.**