

Missouri Department of Transportation Job Description

Job Title: Structural Analyst

Title Code: R03058

Salary Grade: 8

Exemption Status: Non-Exempt

Supervisory Responsibilities: Lead Worker Only

District/Division: Central Office – Bridge

Effective Date: 02-01-2025

Replaces (Effective Date): 07-01-2022

General Summary

The structural analyst prepares preliminary design layouts and cost estimates for bridge overlays and rehabilitations; designs and details retaining walls and box culverts, miscellaneous bridge attachments, including sign supports, and cathodic protection systems for bridges; provides technical assistance in broad areas of bridge rating and developing standard plan sheets for structural elements. Responsibilities are performed under moderate supervision.

Minimum/Required Qualifications

- Two years of college or Associate's Degree: Drafting, Computer Aided Drafting, or related field.
- Eight years of experience in structural detailing.

Special Working Conditions/Job Characteristics

- Job requires occasional, statewide, overnight travel.
- A postsecondary degree is the best measure to ensure candidates possess required knowledge in computer aided drafting; trigonometry, geometry, and physics; statics and strength of materials; surveying concepts; material quantity calculations, takeoffs, and unit pricing; and dimensioning concepts.

Examples of Work

1. Designs, develops, and documents miscellaneous structural elements such as bridge expansion devices, drainage systems, bridge railings, and underpass lighting.
2. Serves as a core team member on district project teams; corresponds and coordinates with district personnel for activities such as valley section data and sounding information.

3. Designs and develops plans and writes special provisions for cathodic protection systems; assists districts with cathodic protection issues.
4. Processes bridge utility attachment agreements requested by public utilities.
5. Prepares preliminary design layouts for bridge overlays, routine rehabilitation, retaining walls, and box culverts in minor drainage basins; prepares final design for routine box culverts and retaining walls.
6. Prepares comparative cost estimates to determine the proper and most economical type of rehabilitation layout for bridges.
7. Provides technical assistance and completes assignments in areas of structural detailing, development of new standard plans, and load rating and inventory; assists in resolving special material or fabrication problems.
8. Conducts training for other technical personnel in broad areas of structural detailing practice.
9. Performs routine hydraulic analysis for stream crossing structures and routine geometric designs for grade separation structures and retaining walls, including field check memorandum and complete final design layouts.
10. Reviews bridge plans, writes special provisions and calculates the final cost estimate.
11. 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.
12. Performs other responsibilities as required or assigned.