

Missouri Department of Transportation Job Description

Job Title: Senior Highway Designer

Title Code: R05814

Salary Grade: 9

Exemption Status: Non-Exempt

Supervisory Responsibilities: Lead Worker

District/Division: District Offices – Design

Effective Date: 04-01-2026

Replaces (Effective Date): 07-01-2022

General Summary

The senior highway designer prepares highway design projects and coordinates the work of highway design technicians engaged in such projects. Responsibilities are performed under general supervision.

Minimum/Required Qualifications

- Bachelor's degree in engineering from an ABET-accredited college or university curriculum.
- Four years of experience in highway or transportation engineering.

Special Working Conditions/Job Characteristics

- Job may require occasional, statewide, overnight travel.
- A postsecondary degree is the best measure to ensure candidates possess required knowledge in applied physics and mathematics, drafting, engineering processes and procedures, project management, industry ethical standards, and analyzing and modeling data.

Examples of Work

1. Establishes horizontal and vertical alignment, balances earthwork, hydrologic and hydraulic designs using engineering principles; makes design notes, sketches, and layouts for detailing personnel; directs and/or completes the preparation of plan and profile sheets; determines mapping corridors for aerial photography.
2. Determines highway design features including geometrics, standards for highway functional classification, profile grades, typical sections, earthwork quantities, signals, signing and lighting, construction staging, traffic control, drainage, construction limits, exceptions to design standards,

and safety improvements; uses computer aided drafting and design (CADD) system and other engineering software for computations and plan preparation.

3. Prepares cost estimates for use in accurately scoping projects for the Statewide Transportation Improvement Program; determines items and prices to be used for tabulation of quantities, summaries, and estimates; prepares preliminary cost estimates for projects.
4. Prepares displays and exhibits to present to the public and participates in public hearings and meetings to obtain public input and answer questions; meets with landowners to discuss right of way acquisition and design options; meets with groups with special interests in transportation.
5. Prepares conceptual report, detailed preliminary, right of way, and final plans for an assigned project.
6. Prepares contract plan documentation including job special provisions, estimate, workday study, and related contract documents.
7. In conjunction with a Professional Land Surveyor prepares bridge surveys to determine approximate bridge length, location, and type of structure; determines the location, type, and size of drainage structures and erosion control measures.
8. Reviews in-house, consultant, and permit plans for conformance with standards and policy; reviews plans for error or omissions.
9. Participates in quality circle and core teams involving other divisions.
10. Designs, codes, develops, supports, and configures engineering software applications to be used by the department's engineers and designers.
11. Develops and trains material for end users on department's engineering software applications and assists end users with software problem/issues.
12. 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.
13. Performs other responsibilities as required or assigned.