

STATE OF MONTANA

JOB DESCRIPTION

Montana state government is an equal opportunity employer. The State shall, upon request, provide reasonable accommodation for otherwise qualified individuals with disabilities.

Job Title: Steel Fabrication Specialist Position Number: 50038 Location: Helena

Department: Transportation Division and Bureau: Engineering/Bridge

Section and Unit: Bridge Management, Bridge Inspection

Job Overview: This position is the Steel Materials Compliance Specialist for MDT. Duties include establishing and implementing steel materials inspection requirements; designing and performing or directing the performance of nondestructive testing; and developing and managing MDT's steel fabrications and inspection certification program. The position reports to the Bridge Inspection Engineer.

Essential Functions (Major Duties or Responsibilities):

Quality Engineering and Inspection Project Management - 60%

- Develops quality assurance procedures, reviews, and evaluates past and current inspection and testing reports and determines the viability of the entire quality assurance process.
- Establishes and implements steel materials inspection requirements to ensure compliance with applicable state and federal standards for materials quality and placement.
- Reviews inspection and testing instructions to ensure necessary quality assurance requirements are incorporated.
- Develops and implements annual materials inspection and testing plans to ensure steel materials are inspected according to state and federal requirements. Carries out determined priorities and develop plans that can adjust to a variety of contingencies.
- Monitors compliance with established operational policies and procedures and achievement of steel materials inspection goals by meeting with district and headquarters staff and personal review of project reports as well as review and approval of atypical or developmental methods and procedures.
- Determines the need for and overseeing the development, negotiation, and monitoring of fabrication inspection contracts with approved and qualified contractors.
- Schedules and facilitates meetings between MDT staff, contracted inspection agents, and materials fabricators to inform those agents and fabricators of MDT requirements regarding inspection methods, documentation, quality control, and appearance of the final product.
- Provides oversight and direction in the fabrication and inspection of all structural steel used in bridge projects and miscellaneous steel to ensure quality assurance requirements and materials specifications are met.
- Ensures that all fabrication work is within tolerances and specifications by interpreting and applying materials codes.
- Perform inspections as needed when fabrication agencies are unavailable or when specialized expertise is required.
- Perform spot inspections as needed to ensure fabrication facility staff are properly certified and use the appropriate materials.

- Observes fabrication processes to ensure quality and compliance with project specifications and approved shop drawings.
- Develops and provides training on inspection and testing standards, documentation requirements, policy interpretations, and related information for MDT bridge inspectors and contracted fabrication inspectors.

Certification Program Management - 20%

- Establishes and documents MDT requirements for qualification and certification to work on bridge and related projects.
- Develops informational materials, certification documentation requirements, and other guidelines to inform affected businesses of MDT certification and experience requirements.
- Provides technical assistance and direction to contractors, fabrication facilities and others in the appropriate requirements to attain and maintain status as a qualified contractor with MDT.
- Provides training and qualifies welders working for and contracted by MDT.
- Maintains and tracks the database of approved qualified inspectors, welders and other positions.
- Conducts on-site inspections of contractors doing business with MDT to ensure compliance with program requirements.

Bridge Materials Testing - 15%

- Analyzing structural characteristics; materials inspection requirements; damage and maintenance reports; and construction plans to determine the appropriate inspection plan for individual structures. There are a wide range of non-destructive tests available, and the position must develop customized approaches to ensure quality assurance and testing requirements are properly applied to a variety of structures. The position must develop unique design construction criteria and repair procedures for contracts based on structure type.
- Performing or directing the performance of specialized non-destructive test procedures on structures. Advanced testing methods include magnetic particle, ultrasonic, dye penetration, and radiographic inspection.
- Interpreting results of testing to determine the soundness of materials and structures. The position will be responsible for working closely with and providing direction to bridge inspectors. In consultation and coordination with Bridge Structural Engineers (MDT or Consultant), the position will determine if cracks or other structural flaws are significant enough to affect safety and may suspend projects or restrict or eliminate traffic loads until the flaw can be corrected.
- Determines necessary materials changes or field modifications to attain compliance; communicates this information to project managers and contractors; and provides technical assistance and interpretation of materials specifications.
- Ensure proper quality assurance and safety protocols are followed. Such as the radiographic processes that involve live isotopes to ensure personnel are not exposed to radiation and that the safety of the public is protected.
- Ensures technicians are trained and certified to use hazardous materials and provide direct oversight to inspection processes.

Other Duties as Assigned - 5%

- Perform a variety of other professional and technical work to support MDT's mission.
- Directing special projects.
- Provides assistance and expertise in non-destructive testing to other MDT work units and contracts.
- Attends meetings and conferences; and attending continuing education and training.

Supervision

The number of employees supervised is: 0.

Physical and Environmental Demands:

- Ability to lift 80 pounds repeatedly (carrying equipment and samples)
- Climbing and bending to retrieve samples.
- Exposure to extreme weather and temperature
- Exposure to caustic fumes, dust, and noise
- Exposure to high temperature material (sparks, slag, asphalt)
- Work with radioactive isotopes (non-destructive radiographic testing)
- Operation of gas, diesel, and electric equipment
- Extensive statewide travel (25-50% estimated)

Knowledge, Skills and Abilities (Behaviors):

- Advanced knowledge of the principles and practices of construction, non-destructive steel materials inspection and testing, structural welding, program administration, and compliance enforcement.
- Advanced knowledge of properties and characteristics of a variety of materials; a variety of site-specific circumstances and their impacts (soils, temperature, weather conditions, etc.)
- Knowledge of laboratory and field-testing protocols and procedures.
- Knowledge of State, Federal, AASHTO, FHWA, ASNT and ASTM standards and project specifications.
- Knowledge and understanding of the Montana Bridge and Materials Manuals, structural construction methods and techniques.
- Knowledge of safety practices and procedures.
- Advanced knowledge of the principles and practices of non-destructive bridge materials inspection and testing.
- Advanced knowledge of the principles and practices of program management, compliance enforcement, structural welding, American Welding Society (AWS), and Certified Welding Inspector (CWI) program requirements.
- Knowledge and skill for job training methods and techniques.
- Skill in operating graphic representation tools and inspections and testing equipment (including magnetic particle, ultrasonic, dye penetration and radiographic equipment.)
- Skill in collecting computer data.
- Skills in time management and organization.
- Ability to establish and maintain effective professional working relationships.
- Ability to apply engineering judgment and analysis efficiently and successfully.

Minimum Qualifications (Education and Experience):

The required knowledge and skills are typically acquired through a combination of education and experience equivalent to an Associate's Degree in Construction Technology, Welding Technology, or Non-Destructive Testing, or a related field such as Structural, Civil, Metallurgical, or Welding Engineering.

This position requires a minimum of 4 years of work-related experience.

Certifications, licensure, and other credentials include: AWS Welding Inspector Certification with structural welding and ASNT QC-1 in ultrasonic, magnetic particle, radiographic, and dye penetrant inspection. This position requires current CWI certification.

Alternative qualifications include: Any combination of additional related work experience and education equivalent to the minimum qualifications.

This position requires advanced knowledge of welding, fabrication, steel and non-destructive testing. Candidates with various combinations of education, training, and/or work experience may be considered, and any combinations may be considered, with the objective being that at least 6 years of directly related experience, education, or training would be required to meet the minimum job qualifications. Indirectly related experience may also be considered but will have to be evaluated on its individual merits in relation to the job duties and responsibilities.

Special Requirements:

Actions and decisions directly affect MDT’s compliance with state and federal materials specifications and other regulations, along with the quality and safety of all steel structures in the state. The position is responsible for establishing, implementing, and monitoring the policies and procedures for steel materials and other non-destructive testing throughout the state. The position directs the construction welding certification program to ensure that MDT and contracted staff are qualified to carry out bridge inspection and testing work. Information provided to the FHWA by this position provides the foundation to determine the allocation of federal funding to bridge projects throughout the state. Proper detection and correction of structural flaws is critical to protecting the life and safety of the traveling public. The position is responsible for ensuring proper quality assurance and safety protocols are followed by MDT and contracted employees.

- ☐ Fingerprint check.
- ☒ Valid driver’s license
- ☐ Background check
- ☐ Other; Describe.
- MPEA Union Code
- Safety Responsibilities

The specific statements shown in each section of this description are not intended to be all inclusive. They represent typical elements and criteria considered necessary to perform the job successfully.

Signatures

My signature below indicates the statements in the job description are accurate and complete.

Immediate Supervisor

Title

Date

Administrative Review

Title

Date

My signature below indicates that I have read this job description.

Employee

Title

Date

Human Resources Review

Job Code Title: Materials Lab Specialist

Job Code Number: D2D011

My signature below indicates that Human Resources has reviewed this job description for completeness and has made the following determinations:

☐ FLSA Exempt

☒ FLSA Non-Exempt

☐ Telework Available

☒ Telework Not Available

☒ Classification Complete

☐ Organizational Chart attached.

Human Resources:

Signature

Title

Date