

Class Concept

This is supervisory work in coordinating and directing the statewide program for special bridge and ancillary highway structure safety inspections including above water inspections, underwater inspections, mechanical inspections of drawbridges and inspections utilizing non-destructive evaluation (ultra-sonic) testing methods.

Employee supervises statewide bridge inspection teams performing either: *special inspections* or *underwater bridge inspections* to detect evidence of deterioration and/or damage due to natural or accidental causes. Employee directs and oversees the taking of precise measurements of bridges and other structures to detect any movement, distortion or section loss; development and drafting of field plans for structures where plans are not available; and drafting of field sketches for deteriorated or damaged structure conditions. Employee makes determinations on whether to close down defective or controversial structures. For the underwater inspection program employee directs and oversees SCUBA and surface air supply diving operations; inspection of underwater cofferdam construction, underwater concrete pumping, and underwater epoxy injection construction; interpret and administer OSHA Commercial Diving regulations; and evaluates special underwater equipment for purchase. For the special inspection program employee directs and oversees machinery inspections of movable span bridges; evaluates non-destructive test methods and equipment for determining section loss or fatigue cracking in steel beams, pins, trunnions, hanger pin support members, drop-in-span seats, high mast light standards, overhead and cantilever sign structures and steel piles; directs and oversees special dock evaluations; and recommends deck rehabilitation or replacement. Work may include other duties and responsibilities as assigned.

Recruitment Standards

Knowledge, Skills, and Abilities

- Considerable knowledge of Federal and State bridge inspection principles, techniques, procedures and equipment; bridge construction and material characteristics; and bridge designs and construction, maintenance or repair principles or procedures.
- Ability to supervise, train and coordinate the work of subordinate inspectors.
- Ability to review and evaluate program efficiency.
- Physical ability to climb ladders, scaffolds, access equipment and bridge structures. Ability to interpret plans and specifications.
- Ability to compute areas and volumes.
- Ability to keep accurate notes and records.
- Ability to make detailed sketches.
- Ability to make accurate observations and complete standard forms.
- Ability to write narrative reports.
- Ability to perform work while exposed to varying climatic conditions.
- For the special inspection program considerable knowledge of applicable non-destructive evaluation testing equipment.
- For the underwater inspection program skill in the use and care of SCUBA equipment.

Minimum Education and Experience

Bachelor's degree in Civil Engineering Technology from an appropriately accredited institution and three (3) years of progressive experience in the design, construction or maintenance of major concrete or steel structures; or

Associate's degree in Civil Engineering Technology from an appropriately accredited institution and seven (7) years of progressive experience in the inspection, design or construction of major concrete or steel structures; or

High school or General Education Development (GED) diploma and nine (9) years of progressive experience in the inspection, design or construction of major concrete or steel structures; or an equivalent combination of training and directly related experience. In addition, successful completion of FHWA approved courses on comprehensive bridge inspection and/or underwater bridge inspection training.

Necessary Special Requirement

Supervision of underwater bridge inspection work also requires previous advanced SCUBA diving certification issued by a national diver certification association such as the National Association of Underwater Instructors (NAUI) or The Professional Association of Diving Instructors (PADI), and 100 hours of verifiable underwater diving experience (e.g., log entries). Supervision of special bridge inspection work also requires successful completion of FHWA approved course on fracture critical inspection techniques for steel bridges and agency approved ultrasonic testing (UT) level I & II.