

POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION HQ/Maintenance/Struct. Maint. & Investigations	
WORKING TITLE Area Fracture Critical Engineer	POSITION NUMBER 913-625-3135-XXX	EFFECTIVE DATE

As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. Caltrans is a performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

GENERAL STATEMENT:

Under the supervision of the Branch Chief, a Senior Bridge Engineer, the incumbent is responsible for performing field engineering investigations of some of the 24,000 existing highway bridge structures on the State and Local highway networks statewide and reporting the results of those investigations in a comprehensive written engineering report. The incumbent will be required to develop inspection plans for fracture critical steel bridges and special feature steel bridges. During emergency situations the incumbent may be required to work outside the normal hours, up to seven days a week to respond to bridge damage and direct field crews in the repair and stabilization activities of damaged bridge structures.

TYPICAL DUTIES:

Percentage		Job Description
Essential (E)/Marginal (M) ¹		
50%	E	Performing field structural investigations of approximately 200 bridge structures yearly to detect evidence of deterioration and/or damage due to environmental or accidental causes utilizing various tools to obtain precise measurements and perform visual observations that may require structural components be accessed via climbing, crawling or walking; making sound judgements in evaluating structural components; preparing inspection reports accurately describing structural conditions reflecting the amount of deterioration or distress measured; develop inspection plans; certifying/signing inspection results; consulting with supervisors and local agencies to determine the structural integrity and safety of these bridges and determining any required maintenance or corrective action necessary to keep the bridges in a safe and in functional condition.
35%	E	Writing comprehensive engineering reports for utilization by Caltrans Districts, local agencies, municipalities and the Federal Highway Administration for determining needed maintenance work on bridge structures statewide; originating correspondence to cities, counties, and local agencies, pertaining to particular structures and coordinate work; summarization of bridge maintenance recommendations, bridge condition judgements, suggestions for preventative maintenance, and/ or recommendations for emergency repair.
5%	M	Give instructions to co-workers and outside contractors, and direct operations (sometimes in emergency conditions) for the stabilization, repairs and service of damaged bridge structures.
5%	M	Perform analysis of bridge structures to determine the maximum safe load capacity for legal and extra-legal vehicles considering existing conditions and materials.
5%	M	Incumbent is required to attend and participate (as technical expert) in public hearings, if inspection results mandate that a public hearing be held prior to commencement of maintenance on structure.

¹ESSENTIAL FUNCTIONS are the core duties of the position that cannot be reassigned.

MARGINAL FUNCTIONS are the minor tasks of the position that can be assigned to others.

SUPERVISION OR GUIDANCE EXERCISED OVER OTHERS

This position does not supervise other employees. However, the incumbent may lead or coordinate the work of other employees depending on the situation.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Must possess a thorough knowledge of the principles and procedures relative to the design, construction and

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maintenance of bridge structures to certify and approve inspection reports.

The ability: to make neat and accurate engineering field notes and prepare concise engineering reports; apply sound engineering judgement in field conditions and analyze factors affecting the safe load capacity of bridges; collect physical and statistical data in field conditions and accurately maintain that data in a comprehensive database; work independently and make decisions with a minimum of direction or supervision; travel and work throughout Northern or Southern California on a routine basis; safely drive State vehicles and operate a variety of bridge inspection tools and equipment.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Errors in judgement and/or decisions could directly affect public safety. Inaccurate, delayed or incomplete bridge investigation and reporting activities may result in a reduction of public mobility, increased maintenance/operations costs, inaccurate project scope, unnecessary delays in bridge rehabilitation or replacement projects and potential tort liability for the Department.

PUBLIC AND INTERNAL CONTACTS

Must maintain oral and written contact with Districts and local agency maintenance operations, Division of Engineering Services, Project Development and various Department offices and branches. May be required to present the results of field investigations to Headquarters and District personnel. May be required to provide expert background and recommendations to technical committees in subjects relating to bridge maintenance. Will at times attend, participate in or conduct public hearings when posting local agency bridges for less than the full legal load.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The employee is required to make critical safety decisions in emergency conditions relative to bridge structural stability with little supervision. The employee must be able to participate in first aid/safety training and may be required to administer first aid in the field in the event of an injury.

Hearing and sight are both essential to job performance because the employee must be able to hear directions, traffic and equipment and must see to perform his/her duties safely. The employee should be able to travel with and work closely with other engineers and act as a team member. The employee is required to sit for long periods of time while driving or using a keyboard and video display terminal.

A bridge inspection might require an employee to walk up or down a steep incline, climb fences as high as eight (8) feet, and push or pull doors or scaffolding. Incumbent may be required to climb interior or exterior ladders, catwalks or scaffolding, and perform his/her inspection duties at heights as high as 700 feet above water or land.

The employee is required to lift and operate bridge inspection tools and equipment, which weigh as much as 65 pounds. These operations require grasping, fine manipulation, reaching overhead with the tools or equipment, twisting, lifting, squatting, crouching, balancing or bending while carrying the tools and equipment through confined spaces, on ladders or scaffolds, and then observing and recording the results of their operations.

The employee may also be required to work in streambeds and rivercrossings that are underneath bridge structures, in water depths that may exceed six (6) feet. This involves the ability to wade in water at those depths, or utilize flotation devices. Employee must have the ability to safely access and operate boats or other equipment in strong water currents and under adverse weather conditions. The employee is required to operate a variety of bridge inspection equipment, including under bridge inspection trucks, lift equipment and boats. This requires the employee to utilize his/her motor skills to operate and manipulate gears, drills, foot controls and other vehicle parts that control the motor or machinery.

The incumbent must possess a California Driver's License.

WORK ENVIRONMENT

The work environment is split approximately 50% between a base of operation and various field locations throughout Northern or Southern California. Extensive travel may be required, therefore, incumbent must be able to travel using a car or commercial transportation. Travel might involve being away from the base of operations for a significant amount of time consecutively. While at their base of operation, the employee will work in a climate-controlled office under artificial lighting. While in the field, the employee is required to drive State vehicles and work outdoors, and at night, and may be

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exposed to animals (such as snakes, bats or owls), dirt, dust, loud noises, traffic, chemicals, uneven surfaces, plants, and a variety of sometimes extreme weather conditions and climates that occur in California. While in the field, the employee could be exposed to various physical conditions that exist around bridge structures including working at heights, around water, in confined spaces, around traffic, in boats and on under bridge inspection equipment or lift equipment.

I have read, understand and can perform the duties listed above. (If you believe you may require reasonable accommodation, please discuss this with your hiring supervisor. If you are unsure whether you require reasonable accommodation, inform the hiring supervisor who will discuss your concerns with the Reasonable Accommodation Coordinator.)

EMPLOYEE (Print)

EMPLOYEE (Signature)

DATE

I have discussed the duties with, and provided a copy of this duty statement to the employee named above.

SUPERVISOR (Print)

SUPERVISOR (Signature)

DATE