

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION 56 (HQ)/Maintenance/SM&I/Structure Maint. & Inv. - North	
WORKING TITLE Area Bridge Maintenance Engineer (ABME)	POSITION NUMBER 913-622-3135-918	REVISION DATE 07/11/2022

As a valued member of the Caltrans leadership team, you make it possible for the Department to provide a safe and reliable transportation network that serves all people and respects the environment.

GENERAL STATEMENT:

Under the supervision of the Branch Chief, a Senior Bridge Engineer, the incumbent is responsible for performing routine and special field engineering investigations, for some of the 26,500 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. Incumbent will be required to develop inspection plans. During emergency situations, the incumbent may be required to work off-peak hours, seven days a week to respond to bridge damage and direct field crews in the repair and stabilization activities of damaged bridge structures. Desired qualifications for the incumbent include possession (or the intent to acquire) and maintenance of a valid certificate of registration as a Civil Engineer in California.

CORE COMPETENCIES:

As a Transportation Engineer (Civil), the incumbent is expected to become proficient in the following competencies as described below in order to successfully perform the essential functions of the job, while adhering to and promoting the Department's Mission, Vision, Values, Strategic Imperatives and Goals. Effective development of the identified Core Competencies fosters the advancement of the following Leadership Competencies: Change Commitment, Risk Appetite, Self-Development/Growth, Conflict Management, Relationship Building, Organizational Awareness, Communication, Strategic Perspective, and Results Driven.

- **Flexibility and Managing Uncertainty** : Adjusts thinking and behavior in order to adapt to changes in the job and work environment. (Safety First, Cultivate Excellence - Engagement, Integrity)
- **Decision Making**: Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Safety First, Cultivate Excellence - Innovation, Integrity)
- **Reliability**: Ability to demonstrate dependability in meeting commitments, and providing a consistent work product. Takes responsibility for individual actions in order to meet deadline demands. (Safety First, Cultivate Excellence - Engagement, Integrity)
- **Problem-solving and Decision-making** : Identifies problems and uses logical analysis to find information, understand causes, and evaluate and select or recommend best possible courses of action. (Safety First, Cultivate Excellence, Strengthen Stewardship and Drive Efficiency - Innovation, Integrity)
- **Teamwork/Partnership**: Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Safety First, Cultivate Excellence - Engagement, Innovation)
- **Organizational Awareness**: Contributes to the organization by understanding and aligning actions with the organization's strategic plan, including the mission, vision, goals, core functions, and values. (Safety First, Cultivate Excellence, Strengthen Stewardship and Drive Efficiency - Engagement, Innovation)
- **Communication**: Expresses oneself clearly in all forms of communication. Gives feedback and is receptive to feedback received. Knows that listening is essential. Keeps others in the Division and other functional units informed as appropriate. (Safety First, Cultivate Excellence - Engagement)
- **Analytical Skills**: Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Safety First, Cultivate Excellence - Innovation)
- **Thoroughness**: Ensures that work and information is complete and accurate. Ensures that assignment goals, objectives, and completion dates are met. Documents and reports on work progress. (Safety First, Cultivate Excellence, Strengthen Stewardship and Drive Efficiency - Engagement, Integrity)

TYPICAL DUTIES:

Percentage	Job Description
Essential (E)/Marginal (M) ¹	

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

40%	E	Perform routine and special field structural investigations of approximately 300 bridge structures yearly to detect evidence of deterioration and/or damage due to environmental or accidental causes utilizing various visual aids and tools such as binoculars, cameras, hammers, laser measuring devices, or chains; make visual observations, collecting required data and obtaining precise measurements that may require structural components be accessed via climbing, crawling, walking, wading, or by operating Unmanned Air Systems (UAS); make sound judgments in evaluating structural components; prepare inspection reports accurately describing structural conditions and clearly reflecting the amount of deterioration or distress measured; develop inspection plans; certify/sign inspection results; consult with supervisors and local agencies to determine the structural integrity and safety of bridge structures and determine any required maintenance or corrective action necessary to keep the structures in a safe and functional condition.
40%	E	Write comprehensive engineering reports in conformance with internal Office procedures for utilization by local agencies, municipalities, and the Federal Highway Administration in determining the structural condition and needed maintenance work on bridge structures statewide; make bridge maintenance work recommendations, bridge condition assessments, suggestions for preventative maintenance, and/or recommendations for emergency repairs; originate correspondence to Districts, and local agencies pertaining to particular structures.
5%	E	Collaborate with the Office of Bridge Asset Management to scope and prioritize required bridge maintenance work on State owned bridges.
5%	M	Give instructions to co-workers and outside contractors, and direct operations (sometimes in emergency conditions) for the stabilization, repair and service of damaged bridge structures.
5%	M	Collect required field data and initiate or perform specific analysis on highway bridge structures to determine the maximum safe load capacity for legal and extra-legal vehicles considering existing conditions and materials.
5%	M	Conduct, attend and/or participate in required public hearings as a Department representative.

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 and outside contractors 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 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.

The ability to apply sound engineering judgment in field conditions and analyze factors affecting the safe load capacity of bridges.

The ability to collect physical and statistical data in field conditions and accurately maintain that data in a comprehensive database.

The ability to work independently and make decisions with minimal direction or supervision.

The ability to travel and work throughout California on a routine basis. A CA Driver's License is recommended.

The ability to safely use and operate a variety of bridge inspection tools and equipment.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Errors in judgment 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, non-compliance with Federal Regulations and potential tort liability for the Department.

ADA Notice

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POSITION DUTY STATEMENTPM-0924 (REV 01/2022)

PUBLIC AND INTERNAL CONTACTS

Must maintain oral and written contact with internal Structure Maintenance Offices, District and local agency maintenance operations, Division of Engineering Services and various Department offices and branches as required. 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.

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 verbal 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 steep inclines, crawl into restricted access areas, walk on the shoulders of vehicular traveled ways and push or pull access doors. Incumbent may be required to climb interior or exterior ladders, safely walk on catwalks or scaffolding and perform his/her inspection duties from the surface of a waterway or 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 40 pounds. These operations require grasping, fine manipulations, reaching overhead with tools or equipment, twisting, lifting, squatting, crouching, balancing or bending while carrying 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 waterways, streambeds and river crossings that are underneath bridge structures, in water depths that may exceed six (6) feet. This involves the ability to wade in water, utilize flotation devices or operate human powered watercraft (including but not limited to float tubes and kayaks) in shallow depths, and have the ability to safely access and operate boats or other equipment in deeper depths, 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, Unmanned Air Systems (UAS), 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.

WORK ENVIRONMENT

The incumbent will work in the office or remote locations in Sacramento and at various bridge locations throughout California. All field work will originate from the Sacramento Headquarters office. While in the office or other remote locations, the incumbent will work in a climate controlled environment under artificial light using video monitors, computer equipment and software. While in the field, the incumbent will work outdoors (sometimes at night), on boats, around water, at heights, exposed to highway and/or marine traffic, construction activities, loud noises, dust, dirt, chemicals, uneven surfaces, steep slopes, animals (wild and domesticated), unsheltered individuals and encampments, plants/vegetation, and a variety of sometimes extreme weather conditions and climates that occur throughout California.

The incumbent must be able to travel to the field using State vehicles, commercial transportation, or personal vehicles. Travel is typically overnight away from his/her home and HQ Sacramento office for one or several contiguous days as required. Approximately two weeks of travel per month is required and will vary with workload.

The bridge inspection field environment can be harsh and aggressive. The incumbent will be expected to have the necessary skills and aptitude to work in various team roles and environmental conditions.

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

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