

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION Toll Bridge Investigation/Design	
WORKING TITLE Structure Design Engineer	POSITION NUMBER 913-623-3135-918	REVISION DATE

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 directions of the Branch Chief, a Senior Bridge Engineer, the incumbent performs structure analysis and design, prepares contract plans, details and other Caltrans design documents for delivering bridge maintenance and rehabilitation projects. The incumbent may perform some of the duties per current Caltrans teleworking policies. Bridge or structure design, bridge construction, bridge load rating experiences, a valid Class C Drivers License, and a valid California PE (Civil) License are desired.

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.

- **Learning on the Fly:** Learns quickly, is open to change, experiments, and is flexible. (Safety First, Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network - Engagement, Integrity, Pride)
- **Decision Making:** Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Cultivate Excellence, Strengthen Stewardship and Drive Efficiency, Lead Climate Action - Engagement, Equity, Innovation)
- **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, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Advance Equity and Livability in all Communities - Engagement, Equity, Innovation, Integrity, Pride)
- **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. (Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency - Engagement, Innovation, Pride)
- **Relationship Building:** The ability to develop and maintain internal and external trust and professional relationships, which includes listening and understanding to build rapport. (Cultivate Excellence, Strengthen Stewardship and Drive Efficiency, Advance Equity and Livability in all Communities - Engagement, Innovation, Integrity)
- **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, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Lead Climate Action, Advance Equity and Livability in all Communities - Engagement, Pride)
- **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, Innovation, Pride)
- **Planning and Results Oriented:** Organizes and executes work to meet organizational goals and objectives while meeting quality standards, following organizational processes, and demonstrating continuous commitment. (Cultivate Excellence, Strengthen Stewardship and Drive Efficiency - Innovation, Integrity, Pride)
- **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, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency - Integrity, Pride)

TYPICAL DUTIES:

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

ADA Notice

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50%	E	Deliver bridge preservation, modification, and rehabilitation projects, both planned and emergency, for the Bay Area bridges including the Toll Bridges. Typical tasks include but not limited to reviewing project documents, Caltrans and AASHTO bridge design manuals/specifications, bridge inspection reports, and all relevant bridge and roadway as-built plans and specifications; communicating with members of project developing team, technical specialists, bridge inspection personnel, construction personnel, and personnel outside Caltrans as needed; performing design analysis and calculations both by hand and using computer programs, developing design details and preparing contract plans, conducting quantity estimates, transmitting related project documents, performing project focused field investigations (on bridges including the Toll Bridges) and/or testings to validate design strategies and design assumptions and/or to achieve other project goals. Acts in the capacity of Project Engineer when assigned. Prepare project statements that involves project scoping, cost estimating, and constructibility evaluation to facilitate the Project Initiation Document (PID) for Toll Bridge maintenance projects. Prepare project advanced planning studies for maintenance projects.
15%	E	Performs independent design check on projects prepared by other engineers within the unit per Caltrans bridge design procedures. Typical tasks include but not limited to reviewing the plans and details against the project documents, performing independent design calculations and quantity estimate, conducting field inspections with the designers.
10%	E	Work with structure office engineers (SOE) assigned to your projects by reviewing project special provisions and cost & working day estimates developed by SOEs. Response to bidder's inquiries and develop contract addenda during project advertising period when necessary.
10%	E	Provides design support during construction stage of the projects. Typical tasks include but not limited to reviewing shop drawings and other structural submittal; answering design related questions, resolving plan/design issues, and providing design change orders. Construction site visits, including night work, are often needed.
10%	E	Perform other focused analysis, investigation, research to assist the needs in Toll Bridge maintenance and asset management. Participate and complete all mandate and required trainings.
5%	M	Assist on routine and/or special structure investigations conducted by Structure Maintenance & Investigations (SM&I) Toll Bridge Office when appropriate or necessary.

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 principles of physics, chemistry, and mathematics as applied to civil engineering; must be proficient using computer tools such as MS Office, etc.; knowledge of structural mechanics, stress analysis, common bridge construction material properties and applications; basic knowledge of Caltrans bridge design procedures, methods and softwares; basic knowledge of Caltrans project delivery procedures; basic knowledge of bridge construction method and equipment. The ability of following established procedures and using proper tools and/or computer programs; the ability of understanding design specifications and carrying out design calculations and analysis accordingly; the ability of collecting/filtering information and applying sound engineering judgment to achieve efficient bridge maintenance strategies; the ability of planning and prioritizing multiple work commitments to meet project delivery goals; the ability of communicating with supervisor, project team members, etc. clearly and timely both verbally and in writing; the ability of establishing and maintaining professional and supportive working relations with colleagues and coworkers.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The incumbent is responsible for evaluating the repair scopes of the subject structures base on both provided information and on his own site reviews. Errors in calculations and/or decisions could directly affect public safety. Inaccurate or incomplete project scope and/or design details may result in increased costs of constructions and operations, reduced effectiveness of Caltrans bridge preservation and rehabilitation programs. Critical errors can increased the potential of tort liability of the Department.

PUBLIC AND INTERNAL CONTACTS

During project delivery, the incumbent will routinely in contact with other Caltrans function units, engineering consultants, vendors, etc. The incumbent may be also in contact with representatives from the Bay Area Toll Authority (BATA), Federal Highway Administration, and contractors to transmit or obtain relevant engineering information. These contacts will be verbal or written as needed.

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PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The incumbent is required to sit for long periods of time using a keyboard and video display terminal either in a climate controlled office setting or in an alternative teleworking location. The incumbent must also be able to move large or cumbersome plans and diagrams from one location to another, and materials weighing up to 50 lbs.

WORK ENVIRONMENT

The incumbent should feel comfortable at heights and tight surroundings, to work outdoors in areas with exposure to dirt, dust, noise, allergens, hot or cold temperatures, uneven surfaces, within close proximity of vehicular traffic (lane closures) and/or construction equipment, open water, and at considerable heights with the need of either climbing ladders or riding on lifting 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