

POSITION DUTY STATEMENT

DOT PM-0924 (REV 01/2025)

PROPOSED

CLASSIFICATION TITLE Structural Design Technician I	OFFICE/BRANCH/SECTION Office of Design and Technical Services/Special Design Branch	
WORKING TITLE Structural Design Technician I	POSITION NUMBER 559-220-3038-XXXX	REVISION DATE 03/14/2025

As a valued member of the Caltrans team, you make it possible to improve lives and communities through transportation.

GENERAL STATEMENT:

This is the entry and first journey level of the series. Under the direct supervision of a Senior Bridge Engineer and/or lead person, incumbent prepares simple drawings and assists in the preparation of complete design, construction, and as-built drawings for a variety of structures.

CORE COMPETENCIES:

As a Structural Design Technician I, 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.

- **Creativity and Innovation:** Thinks beyond the confines of traditional models to recognize opportunities, seek creative solutions and take intelligent risks. (Equity, Employee Excellence - Collaboration, Integrity)
- **Dealing with Ambiguity (Risk):** Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Safety - Collaboration, Integrity, Stewardship)
- **Continuous Professional Development:** Seeks to obtain knowledge and improve performance while supporting others in doing the same. (Prosperity, Employee Excellence - Collaboration, 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. (Safety, Employee Excellence - Collaboration, Equity)
- **Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Equity, Employee Excellence - Collaboration)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Equity, Employee Excellence - Collaboration, Stewardship)
- **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, Equity - Collaboration, People First)
- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Employee Excellence - Integrity, Stewardship)
- **Computer literacy and application:** Appropriate knowledge of computer applications and other tools necessary to successfully perform tasks. (Equity, Employee Excellence - Collaboration, Integrity)

TYPICAL DUTIES:

Percentage	Job Description
45% E	Assists Project Engineers, staff engineers and detailers in preparing plans and specifications for bridges, walls, underground structures, barriers and sign structures by performing calculations, preparing structural analysis using computer software, and developing limited details in accordance with Memos to Designers, Bridge Design Aides and other reference material.
25% E	Prepares planning studies by investigating proposed structure location, span lengths, vertical clearance requirements and staging issues noted in the District planning request. Selects the most viable structure based on the District supplied data and design guidelines.

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15%	E	Calculates material quantities from structure plan sheets to develop the items listed in the Engineer's Estimate. Examples of quantities include computing the volume of structural concrete, the length of piling, the number of bearing assemblies, etc. These values are readily obtained from simple geometric computations of the structure plan details.
5%	E	Performs independent review of plans, specifications and quantities prepared by other engineers and detailers to ensure product meets established quality standards for design and detailing. Uses checklists, Memos to Designers, Bridge Design Aides and other reference material in completing the checking process.
5%	E	Assists the Branch Chief to provide resource estimates and develop schedules for projects in the Capital Outlay Support and Non-Capital programs. Communicate with the PLEs and District Project Managers on delivery/ resource issues. Tracks changes in project scope, schedule, and resource requirements using project database tools.
5%	M	Assists the Branch Chief with Task Management activities involving email correspondence using the business group inbox. Responsibilities also include archiving emails and work requests received. Such duties are important to ensure the branch maintains prompt customer service responses. Assists the Branch Chief with the control of documents and records in our quality processes. Assist and participate with the annual DES audit process along with periodic internal office audits. Assist with updates to the office quality management plans. Assists with ADA-compliance of documents and quarterly posting of Bridge Standard Details.

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.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Knowledge of: Common details, methods of layouts used in the preparation of structural design, construction drawings and as-builts for a variety of structures of average difficulty; basic engineering mathematics; simple quantity estimates; state-of-the-art technology, i.e., CADD and related computer programs used to determine layout, detail drawings and create geometric design for various types of structures.

Ability to: Communicate both orally and in writing; follow oral and written directions; draft neat, accurate and legible plans of average difficulty; interpret sketches, drawings and plans encountered in the work; prepare and check quantity estimates; use state-of-the art technology, i.e., CADD, and related computer programs; assist in performing geometric design of average difficulty; make basic engineering calculations; plot data from field notes; prepare charts and graphs; use of mathematical calculations and interpretation of the survey notes and computer alignment output in preparing General Plans, site data and locating specific abutments and bents.

Analytical Requirements: Use of trigonometric calculations and interpretation of the survey notes and computer alignment output in preparing General Plans, site data and locating specific abutments and bents. Must be informed in regard to information available from standards.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

The incumbent exercises judgment in the selection of views and standard plans and details used in the preparation of a complete set of plans, which could result in incomplete information in the contract plans and estimates. Incomplete information in the contract plans and estimates could result in unnecessary rework, increased cost and time to produce correct plans, and possible delay of the project.

PUBLIC AND INTERNAL CONTACTS

Employee maintains communications, generally through the Project Engineer, with various personnel working on the project to which he/she is assigned, including other Department personnel, engineering consultants and industry representatives to transmit or obtain relevant engineering information. These contacts will be verbal or written, to perform one's assignments.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

May be required to sit for long periods of time using keyboard and mouse. May also be required to lift/move/carry large or cumbersome plans (maximum of 50 pounds). May be required to lift/move/carry various types of portable equipment, which may weigh up to 50 pounds, around the work site or when out in the field.

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WORK ENVIRONMENT

Employee will work in a climate-controlled office under artificial lighting. Employees may also be required to travel to job site and may be exposed to dirt, noise, uneven surfaces and/or extreme heat or cold.

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.)

I agree that by providing my electronic signature for this form, I agree to conduct business transactions by electronic means and that my electronic signature is the legal binding equivalent to my handwritten signature. I hereby agree that my electronic signature represents my execution or authentication of this form, and my intent to be bound by it.

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

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