

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION DES /Bridge Design/Structure Office Engineer	
WORKING TITLE Cost Estimates Engineer	POSITION NUMBER 559-240-3135-414	REVISION DATE 03/01/2022

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:

This position exists in the Division of Engineering Services (DES), Bridge Design, Structure Office Engineer. Under the direction of a Senior Bridge Engineer (Supervisor), incumbent prepares complex cost estimates for bridges and transportation-related structures. The Cost Estimates Engineer provides the item costs for the Engineer's Estimate for all bridge and highway related structures.

As part of your employment with DES there is a mandatory TE-Civil Professional Development Rotation Program that applies to all permanent full-time TE-Civils hired after January 1, 2017. Temporary relocation more than 50 miles from your permanent unit may be necessary for rotation assignments.

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. (Cultivate Excellence - Engagement, Innovation)
- **Dealing with Ambiguity (Risk)**: Can comfortably handle risk and uncertainty, as well as make decisions to act without having the total picture. (Strengthen Stewardship and Drive Efficiency - Innovation)
- **Ethics and Integrity**: Demonstrated concern to be perceived as responsible, reliable, and trustworthy. Respects the confidentiality of information or concern shared by others. Honest and forthright. Conforms to accepted standards of conduct. (Safety First, Strengthen Stewardship and Drive Efficiency - Equity, 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 - Engagement)
- **Relationship Building**: The ability to develop and maintain internal and external trust and professional relationships, which includes listening and understanding to build rapport. (Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency - Engagement)
- **Customer Focus**: Considers, prioritizes, and takes action on the needs of both internal and external customers. (Cultivate Excellence - Engagement, Integrity)
- **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. (Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency - Engagement)
- **Analytical Skills**: Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Cultivate Excellence - Innovation, Pride)
- **Commitment/Results Oriented**: Dedicated to public service and strives for excellence and customer satisfaction. Ensures results in their organization. (Safety First, Enhance and Connect the Multimodal Transportation Network - Engagement, Innovation)

TYPICAL DUTIES:

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

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50%	E	Prepares complex cost estimates for bridges and transportation-related structures. The Engineer's Estimate is entered into the Department's estimating system as bid items with associated quantities and item prices. Structure estimates are prepared using probabilistic cost estimating techniques. The estimate is available for bid opening purposes and for contract progress payments. In accordance with the requirements of the State Contract Act, the Engineer must prepare full, complete and accurate plans, specifications and estimates of cost, before entering into any contract. The estimate, known as the "Engineer's Estimate," lists the total quantity and estimated price for each item and is used as a basis for requesting authority to advertise a project. After bids are received, the Engineer's Estimate is used as a basis for determining if the bid estimates are reasonable. This cost estimate data, along with the special provisions and contract plans, make up the Structure's portion of the Plans, Specifications & Estimates (PS&E) package. Structure cost estimates are provided for all phases of Project Development.
25%	E	Determines and reviews working day schedules for construction. The Cost Estimates Engineer determines the number of working days, using the critical path method, necessary to construct the structure construction contract work for PS&E. Information such as Traffic Control, Stage Construction and other restrictions and constraints, are necessary to provide an acceptable working day schedule. The working days schedule is created using Primavera P6 Professional Project Management software.
15%	E	Assists with Project Delivery of the PS&E. Works with Specifications Engineer to review Standard Special Provisions for pay clauses, consistency with plans, and permit restrictions.
5%	E	Develops Bid Item Studies based using historical contract bid data. Performs research on comparative data, such as Bridge Removal, Bridge Removal (Portion), Prestressing, Piling, Ground Anchors, Soldier Pile, Precast Girders, etc. These studies are incorporated into our RBIP database(Reasonable Bid Item Prices).
5%	M	Reviews Department-advertised Contract bid openings, Engineering News-Record, Material Trends and the Bridge Cost Index to stay abreast of current prices.

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

None

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

- Knowledge of principles of cost estimating.
- Knowledge of methods, procedures, tools, and equipment used in the design and construction of bridge and transportation related structures.
- Knowledge of properties and uses of construction materials.
- Knowledge of construction stages and sequences.
- Knowledge of the PS&E process.
- Knowledge of mathematics and computer programs used in cost estimating.
- Ability to read and interpret complex bridge engineering plans and specifications.
- Ability to analyze designs for construction feasibility.
- Ability to determine working days and costs for construction operations.
- Ability to analyze engineering plans, construction methods and materials, in developing accurate cost estimates and working day schedule required to construct all types of bridge and transportation-related structures.
- Ability to manage multiple fast-paced project assignments with variable and dynamic deliverable dates.
- Must have effective writing skills.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Responsible for the accuracy of estimates, working day schedule requirements, and their compatibility with specifications and design requirements. Responsible for post-bid justifications to the District. Has professional responsibility to develop structure cost estimates and working day schedules in a timely manner, while ensuring quality and accuracy. Errors in judgment and decisions could affect project delivery for the Department. Errors could lead to projects not having adequate funding to move forward, therefore, impacting the traveling public.

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PUBLIC AND INTERNAL CONTACTS

Has contact with all Structure Office Engineer staff, District and DES Office Engineer, Bridge Design, Construction, and Maintenance personnel. Has contact with material suppliers, fabricators, contractors and others concerning costs and time for the construction of bridge and transportation-related structure projects.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

- Ability to perform tasks utilizing a personal computer and sit for long periods of time.
- Ability to grasp the essence of new information and master new technical and business knowledge.
- Ability to master new technical and business knowledge.
- Ability to organize and prioritize workload.
- Ability to concentrate in order to review and create documents, and meet strict deadlines.
- Ability to maintain cooperative relationships with others.

WORK ENVIRONMENT

While at their base of operation, incumbent will work in a climate-controlled office under artificial lighting. As a statewide organization, DES adjusts to periods of fluctuating workload to successfully deliver projects. Incumbent will be required to travel and perform fieldwork and will be exposed to dirt, uneven surfaces, extreme temperatures, noise, vibration, and odor associated with fieldwork. May work around bulky/heavy materials and equipment used in the vicinity of inspection areas. May also be exposed to the motoring public. DES employees may be given temporary assignments on DES projects throughout the State as workload demands. May be required to travel.

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