

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

CURRENT / PROPOSED

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION 59 / Division of Engineering Services / Structure Construction	
WORKING TITLE Structure Representative / Assistant Structure Representative	POSITION NUMBER 559-540-3135-007	REVISION DATE 09/11/2023

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 direction of a Senior Bridge Engineer (Supervisor) in Structure Construction (SC), Division of Engineering Services (DES), the Transportation Engineer (Civil) classification is the entry, working and journeyman level of professional engineering work in Caltrans. The incumbent performs a wide variety of professional engineering work in either an office or field setting; as incumbents progress in experience they will be assigned more difficult work. This work is performed on highway construction projects involving bridges, buildings, walls, barriers, drainage structures, sign structures and appurtenances. The incumbent works as a field engineer to ensure contractors build structures in compliance with the contract documents (Standard Plans, Standard Specifications, contract plans and Special Provisions). May act as an Assistant Structure Representative or Assistant Resident Engineer/Resident Engineer on construction projects.

Structure Representation on projects where the nature of the work is predominately structural, e.g., bridges and tall walls, Streets and Highways Code Section 137.6 will apply. The possession and maintenance of a valid professional engineer's license in the State of California is highly desirable.

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.

As a statewide organization DES/SC adjusts to periods of fluctuating workload by moving staff to the location of the work.

Possession of a valid Driver's License is required when operating a state or personal vehicle on official business in performance of their duties driving to various field locations as required.

For journeyman level (Range D) the possession and maintenance of a valid professional engineer's license in the State of California is required.

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, Strengthen Stewardship and Drive Efficiency - Engagement, Innovation, Integrity)
- **Decision Making**: Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Safety First, Strengthen Stewardship and Drive Efficiency - Engagement, Innovation, Integrity)
- **Initiative**: Ability to identify what needs to be done and doing it before being asked or required by the situation. Seeks out others involved in a situation to learn their perspectives. (Safety First, Cultivate Excellence - Engagement, 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 First, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Advance Equity and Livability in all Communities - Engagement, Equity, Integrity)
- **Teamwork/Partnership**: Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Cultivate Excellence, Enhance and Connect the Multimodal Transportation Network, Strengthen Stewardship and Drive Efficiency, Advance Equity and Livability in all Communities - Engagement, Pride)

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- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Safety First, 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. (Safety First, Cultivate Excellence, Strengthen Stewardship and Drive Efficiency - Engagement, Integrity)
- **Forward Thinking:** Anticipates the implications and consequences of situations and takes appropriate actions to be prepared for possible contingencies. Anticipates and prepares for future developments. (Safety First, Strengthen Stewardship and Drive Efficiency - Engagement, 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. (Cultivate Excellence - Innovation, Integrity, Pride)

TYPICAL DUTIES:

Percentage		Job Description
Essential (E)/Marginal (M) ¹		
35%	E	<p>As an Assistant Structure Representative (entry, working, and journeyman levels) in a field setting, performs construction inspections to assure materials and workmanship incorporated into each highway construction project and appurtenances are in conformity with the requirements of the approved plans and specifications, including approved changes. Takes appropriate action when materials and workmanship are non-conforming, which may include ordering removal and replacement of non-conforming work.</p> <p>As a Structure Representative (journeyman level) performs construction and engineering inspections, may direct subordinate inspectors. The frequency of inspections are risk-based and include full-time, intermittent, and/or bench mark during all phases of construction. Advise Bridge Construction Engineer, Resident Engineer, and/or Project Manager on major phases of construction activity.</p>
30%	E	<p>As an Assistant Structure Representative (entry, working and journeyman levels) in a field setting, performs calculations related to the proper alignment and placement of bridge elements, establishes surveying control line and grade (elevation control) as required by established SC Practices & Procedures. Assists with calculations related to and the review of shop drawings, informational and action submittals received from the contractor.</p> <p>As a Structure Representative (journeyman level) reviews informational and action submittals, and shop drawings; authorizes shop drawings and action submittals when they are in compliance with the requirements of the approved plans and specifications. Performs required calculations such as alignment, grade (elevation control), quantities of work performed or materials placed. Ability to perform calculations to determine stresses within the various elements of structures (e.g., beams, columns, etc.) and the contractor's temporary works (falsework, shoring, and temporary structural supports, etc.).</p>
15%	E	<p>As an Assistant Structure Representative (entry, working and journeyman levels) confers with contractors regarding compliance with plans, quality of work, construction activity and California Occupational Safety and Health Administration (Cal/OSHA) regulations. Collaborates with other project personnel regarding the contractor's compliance with regulatory permit agencies requirements.</p> <p>As a Structure Representative (journeyman level) if the incumbent finds that materials, workmanship, and/or product are not in compliance with the contract documents they may reject the materials or product and take appropriate action until they are brought into compliance with the requirements of the approved plans and specifications.</p>

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10%	E	<p>As an Assistant Structure Representative (ASR) assist in identifying the need for and the preparation of contract related documents, e.g., change orders, contract quantities and estimates, claim reports, letters, response to contractor's claims, and requests for information (RFI). Completes daily diaries of contractor's construction activities being performed, inspections performed, tests taken, and materials placed. Develops contract quantity estimate documents at least once monthly and as materials are placed.</p> <p>As a Structure Representative or Resident Engineer identifies the need for and prepares contract related documents for submission to the contractor. Reviews CPM schedule. Identifies and mitigates project risks. Completes a project daily diary of pertinent activities and discussions held regarding the progress of the contractor's work and interaction with the Project Delivery Team, Project Manager, etc.</p>
5%	M	<p>As an Assistant Structure Representative assists in recording and filing project related records pertaining to construction progress including daily reports, submittals, shop drawings, monthly pay estimates, and job expenditures.</p> <p>As a Structure representative ensures all project related records are accurate, complete and filed.</p>
5%	M	<p>As an Assistant Structure Representative in a field setting performs verification sampling and/or tests to verify the acceptability of construction materials in accordance with American Society for Testing Materials (ASTM) or California Test (CT) methods.</p> <p>As a Structure Representative ensures all materials incorporated into the work meet the requirements of the approved plans and specifications and have been sampled and tested in accordance with the frequencies outlined in the Construction Manual. Prepares a Material Certification for delivery to the Resident Engineer.</p> <p>At a journeyman level participates as an active member of Structure Construction's Technical Teams, develops and presents training in area of technical expertise.</p>

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. Works under the direct supervision of a Senior Bridge Engineer (Supervisor), a registered Civil Engineer. This position does not supervise other employees. However, as a Structure Representative or Resident Engineer this position may act as a lead worker over 1 to 10 engineers and technicians.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Possession of a valid Driver's License is required when operating a state or personal vehicle on official business in performance of their duties driving to various field locations as required. Incumbent must attend first aid training and possess a valid Standard First Aid Certificate at all times. Certification is the filed sampling and testing of fresh Portland cement concrete is required. For journeyman level, possession and maintenance of a valid professional engineers license in the State of California is also required.

This position knowledge of stress analysis; strength of materials; uses of construction materials; mathematics as applied to civil engineering; methods, materials and equipment used in construction and maintenance of transportation structures; surveying; and the methods of proportioning and handling Portland cement concrete. Must be able to prepare clear and concise written correspondence and reports. Must be able to use and reference the Bridge Construction Records & Procedures, other SC manuals and the Construction and Caltrans Safety Manuals. Must be able to take appropriate action in all situations. Must have a working knowledge of and the ability to follow and apply the information contained in the Director's Policies and Deputy Directives applicable to SC. Must be proficient in the use of Excel, Microsoft Word and other engineer related computer programs and software. Must have a basic knowledge in the use of Access.

You may obtain a copy of the class specifications and salary information at www.calhr.ca.gov

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RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Must be able to recognize construction problems and take appropriate action. Incorrect decisions could result in delayed project delivery, structural failure, substantial increased costs to the State and/or injury or loss of life.

PUBLIC AND INTERNAL CONTACTS

Incumbent must be able to establish and maintain open communication with those contacted during the course of work. Will confer routinely with contractor's management staff, representatives from other State and public agencies, and the general public in order to resolve problems relating to the terms of the contract.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Ability to develop and maintain cooperative working relationships, respond to difficult situations, recognize emotionally charged issues and problems, validate various responses, and take appropriate action.

Incumbent must be able to climb steep inclines and perform work from heights which may be over 100 feet above ground or water. Must be able to climb ladders and stairs and traverse over open grating surfacing and scaffolding. Must be able to carry and/or use field engineering equipment such as, but not limited to Kelly Balls, surveying equipment, concrete testing equipment and profilograph. Other physical requirements of the job include the ability to lift and/or carry 50 pounds or more, reaching overhead, pushing or pulling, twisting, climbing, balancing, bending, crouching, squatting, crawling, and fine manipulation. Hearing and sight are both essential to job performance because the incumbent must be able to hear and see directions, traffic and equipment, and to perform his/her duties safely. Corrected hearing is acceptable. Corrected sight must meet the CA DMV minimum visual acuity requirement. Night vision must be good for safety when working after dark. Incumbent must be able to walk, stand and/or sit for long periods of time.

Must have the ability to problem solve, make decisions, interpret and organize data and convey it clearly.

Demonstrate personal integrity, truthfulness, and honesty; inspire public confidence and trust in state government; recognize that personal gains from public service are limited to respect, recognition, salary, and normal employee benefits.

WORK ENVIRONMENT

While at their base of operation, incumbent will spend the majority of their time working outdoors where they may be exposed to loud noises, dust, dirt, uneven surfaces, extreme temperatures, noise, vibration, chemical odors, extreme weather conditions and sunlight. May be required to work in a wide range of sometimes extreme weather conditions, including heat up to 120 degrees, cold as low as 15 degrees, strong winds, rain, sleet or snow. Incumbent may be required to work on urban roadways at night under artificial light. The minority part of their time they may work in a climate-controlled office under artificial lighting. In the office setting, must be able to walk, stand or sit for prolonged periods of time. As a statewide organization, DES adjusts to periods of fluctuating workload to successfully deliver projects by moving staff to the work. DES employees may be given temporary assignments on DES projects throughout the State as workload demands. Incumbent will be required to travel and perform fieldwork. Work nominally consists of five, eight-hour days but may be extended depending upon project urgency. Travel, overtime and/or night work may be required. May work around bulky/heavy materials and equipment used in the vicinity of inspection areas. May also be exposed to the motoring public. Extensive travel may be required; therefore, incumbent must be able to travel using a car or commercial transportation. Regular and punctual attendance is required.

Personal safety requirements include:

- Work boots, in good sturdy condition, must be worn to provide foot and ankle support and protection.
- Either long or short-sleeved shirts and a safety vest, must be worn on or around the job site.
- Long pants must be worn on or around the job site. No shorts or cut-offs are permitted.
- Provided safety gear (i.e., hard hats, safety glasses, safety vests, hearing protection devices, gloves, respirator and other safety gear) must be worn when required by the Department.

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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
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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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