

**POSITION DUTY STATEMENT**

DOT PM-0924 (REV 08/2024)

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION HQ/Maintenance/SM&I/Office of Specialty Investigations	
WORKING TITLE Structural Steel Bridge and Overhead Sign Inspector	POSITION NUMBER 913-624-3135-918	REVISION DATE 08/02/2024

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

**GENERAL STATEMENT:**

Under the supervision of the Branch Chief, a Senior Bridge Engineer in the Office of Specialty Investigations at Structure Maintenance and Investigations (SM&I), the incumbent is responsible for: (i) performing non-redundant steel tension members (NSTM) inspections, special feature member (SFM) inspections, and, occasionally, routine, damage and in-depth inspections of approximately 1500 in-service steel bridges on the state and local highway systems, (ii) reporting the results of these inspections in comprehensive written reports, which include the inspection findings, quantities and condition states of the elements and defects, maintenance work recommendations and inventory data, (iii) inspection preparation and development of specific procedures (inspection plans) for NSTM and/or SFM inspections, (iv) performing structural safety inspections of approximately 16000 in-service overhead signs on the state highway system, (v) reporting the results of the overhead sign inspections in comprehensive written reports, which include the inspection findings, quantities and condition states of the elements, maintenance work recommendations and inventory data, and (vi) preparation for the overhead sign inspections.

**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.

- **Creativity and Innovation:** Thinks beyond the confines of traditional models to recognize opportunities, seek creative solutions and take intelligent risks. (Safety First, Cultivate Excellence - Engagement, Innovation, Integrity)
- **Decision Making:** Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Safety First, Advance Equity and Livability in all Communities - Innovation, Integrity)
- **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. (Cultivate Excellence, Strengthen Stewardship and Drive Efficiency - Engagement)
- **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, Strengthen Stewardship and Drive Efficiency - Engagement, Equity)
- **Teamwork and Collaboration:** Sets team structure. Organizes, leads, and facilitates team activities. Promotes team cooperation and encourages participation. Capable of cross functionality and working well with others on a team to achieve personal goals, team goals, and organizational goals. Takes responsibility for individual actions in order to achieve consistent results. (Cultivate Excellence, Strengthen Stewardship and Drive Efficiency - Engagement, Equity)
- **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. (Enhance and Connect the Multimodal Transportation Network - 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. (Cultivate Excellence - Engagement, Equity, Integrity)
- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Strengthen Stewardship and Drive Efficiency - Engagement, Innovation)
- **Technical Expertise:** Depth of knowledge and skill in a technical area. (Strengthen Stewardship and Drive Efficiency - Engagement, Innovation)

**TYPICAL DUTIES:**

Percentage  
Essential (E)/Marginal (M)<sup>1</sup> Job Description

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40%	E	Perform NSTM inspections, SFM inspections, and, occasionally, routine, damage and in-depth inspections of approximately 1500 in-service steel bridges on the state and local highway systems in the capacity of a Team Leader and/or inspector using visual and other non-destructive methods. The bridge inspections are conducted in accordance with the National Bridge Inspection Standards, the Bridge Inspector's Reference Manual, the Manual for Bridge Evaluation, the Inspection of Fracture Critical Bridge Members Manual and the SM&I Inspection Procedures Manual. Perform structural safety inspections of approximately 16000 in-service overhead signs on the state highway system in the capacity of a Team Leader and/or inspector using visual and other non-destructive methods. The overhead sign inspections are conducted in accordance with the Guidelines for the Installation, Inspection, Maintenance and Repair of Structural Supports for Highway Signs, Luminaires and Traffic Signals, and the SM&I Inspection Procedures Manual.
20%	E	Report the results of the NSTM inspections, SFM inspections, and, occasionally, routine, damage and in-depth inspections of approximately 1500 in-service steel bridges in comprehensive written reports, which include the inspection findings, quantities and condition states of the elements and defects, maintenance work recommendations and inventory data using a computerized Bridge Management System. The reports comply with the National Bridge Inspection Standards, the Bridge Inspector's Reference Manual, the Manual for Bridge Evaluation, the Inspection of Fracture Critical Bridge Members Manual, the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, the Caltrans Bridge Element Inspection Manual and the SM&I Inspection Procedures Manual. Critical findings of bridge damage are identified and reported to the structure owners/custodians and the FHWA. Report the results of the structural safety inspections of approximately 16000 in-service overhead signs in comprehensive written reports, which include the inspection findings, quantities and condition states of the elements, maintenance work recommendations and inventory data using a computerized Overhead Sign Management System. The reports comply with Guidelines for the Installation, Inspection, Maintenance and Repair of Structural Supports for Highway Signs, Luminaires and Traffic Signals, and the SM&I Inspection Procedures Manual. Critical findings of overhead sign damage are identified and reported to the structure owners/custodians.
20%	E	Preparation for NSTM inspections, SFM inspections, and, occasionally, routine, damage and in-depth inspections of approximately 1500 steel bridges on the state and local highway systems in the capacity of a Team Leader and/or inspector. At a minimum, the preparation includes review and/or coordination of: (i) the structural members and details, (ii) the inspection methods, (iii) the lane closures, traffic control and railroad flagging, (iv) the access, inspection and nondestructive testing equipment, (v) the safety procedures, and (vi) the bridge records, including as-built plans and previous NSTM, SFM, routine, damage and in-depth inspection reports. Where necessary, initially develop and subsequently update the specific inspection procedures (inspection plan) for each bridge to be inspected and inventoried. Preparation for structural safety inspections of approximately 16000 overhead signs on the state highway system in the capacity of a Team Leader and/or inspector. At a minimum, the preparation includes review and/or coordination of: (i) the structural members and details, (ii) the inspection methods, (iii) the lane closures and traffic control, (iv) the access, inspection and nondestructive testing equipment, (v) the safety procedures, and (vi) the overhead sign records, including standard plans and previous inspection reports.
10%	E	Respond to various types of emergencies, including traffic hits, earthquakes, floods, fires, landslides and windstorms, that have caused structural damage to bridges and overhead signs.
10%	M	Perform miscellaneous engineering, training and administrative functions related to inspections and maintenance of bridges and overhead signs, as directed by the Branch Chief or the Office Chief.

<sup>1</sup>ESSENTIAL 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. The incumbent will be required to lead and guide the work of other employees in the capacity of a Team Leader.

**KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS**

The incumbent is required to have thorough knowledge of the standards, specifications, manuals, policies and procedures for inspection and maintenance of highway bridges and overhead signs. Expertise in the material properties, design, analysis, construction, maintenance and repair of structural steel is essential for the position.

The incumbent is required to be thoroughly familiar with the Caltrans Safety and Health Manual, the Caltrans Maintenance Manual and the SM&I Codes of Safe Practices. The incumbent is required to have the ability to: (i) perform visual observations,

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testing and checks during the inspections, and use engineering judgment to assess the structural condition, functionality and load-carrying capacity of highway bridges and overhead signs; (ii) take accurate field notes and report the inspection results in comprehensive reports; (iii) collect physical and statistical data during the inspections and enter that data in the computerized bridge and overhead sign management database systems; (iv) work independently and make decisions with minimum direction or supervision; (v) travel and work statewide for extended periods of time; (vi) safely drive state vehicles and operate a variety of access equipment and inspection tools.

The incumbent is required to be proficient in the use of computer software for word processing, engineering, computational and data management purposes.

The incumbent is required to attain certification as a Team Leader in accordance with the National Bridge Inspection Standards, 23 CFR Part 650, § 650.309 (b) (1) by successfully completing the FHWA-NHI-130055 Safety Inspection of In-Service Bridges training course at its first delivery by Caltrans after being hired in this position and maintain such certification thereafter.

The incumbent is required to successfully complete the FHWA-NHI-130078 Bridge Inspection Techniques for Nonredundant Steel Tension Members (NSTM) course at its first delivery by Caltrans after being hired in this position.

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**RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR**

Errors in judgment and/or decisions could jeopardize public or employee safety. Inaccurate, incomplete or overdue bridge or overhead sign inspections and reports could result in: (i) reduction of public mobility, (ii) increased maintenance and operations costs, (iii) inaccurate scope and unnecessary delays in repair, rehabilitation or replacement projects, (iv) potential tort liability for the Department, and (v) non-compliance with the federal bridge inspection mandates, which may cause sanctions by the FHWA such as withholding or forced re-direction of federal reimbursement funds.

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**PUBLIC AND INTERNAL CONTACTS**

The incumbent is expected to have regular written and/or verbal contacts with the maintenance, construction, local assistance and traffic operations personnel at various Caltrans districts and divisions, other state departments and local agencies. The incumbent may be required to present and discuss critical findings, inspection results and work recommendations with state, local agency and FHWA staff. The incumbent may have verbal contacts with members of the public during inspections or public hearings. The incumbent may be required to provide expert information and recommendations to technical committees on the inspection and maintenance of highway bridges and overhead signs.

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**PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS**

The incumbent is required make critical decisions in emergency situations regarding employee or public safety, and bridge or overhead sign safety or stability with or without direction from his/her chain of command. The incumbent is required to participate in safety training, wear personal, fall and respiratory protection equipment, and administer first aid in the field in the event of an injury.

Hearing and sight are essential for job performance. The incumbent must be able to see traffic, equipment, obstructions, gages, controls, warning signs and warning lights, and hear traffic, equipment, directions and warning sounds in order to perform his/her duties safely.

The incumbent is required to travel away from the office for day or overnight trips for up to 2 weeks per month.

The incumbent is required to drive state vehicles and use commercial transportation.

The incumbent is required to travel with and work closely with other members of the inspection team.

The incumbent is required to operate a variety of access equipment, including under bridge inspection trucks, aerial lifts and traveler platforms. This will involve the ability to utilize motor skills to operate and manipulate hand and foot controls, gears and other vehicle parts that control the basket, motor or machinery.

The incumbent is required to walk up and down steep inclines or suspension cables, walk or stand near sudden elevation breaks higher than 6 ft, work from catwalks, platforms, scaffolding or ledges, climb fences, interior or exterior ladders, push or pull heavy doors or manhole covers, walk or crawl in confined spaces and through narrow openings, perform inspection duties at heights up to 700 ft above ground or water, work in the channels underneath the bridges, wade in water up to 3 ft deep and in currents with velocity up to 1.5 ft/sec, utilize flotation devices, and perform inspections from boats or scaffolding or aerial lifts anchored to boats.

The incumbent is required to operate inspection or repair tools and equipment, which may weigh as much as 65 lbs. These operations involve grasping, fine manipulation, reaching overhead with the tools or equipment, grinding, drilling, removing paint and debris, twisting, lifting, squatting, crouching, balancing or bending while carrying the tools and equipment in tight and confined spaces, on ladders, scaffolding or traveler platforms, and while observing defects and recording results. The incumbent

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may need to sit for long periods of time when traveling or using a computer.

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### WORK ENVIRONMENT

The work is split approximately 50:50 between an office base of operation and various field locations throughout California.

While in the office, the incumbent will work in a climate-controlled environment under artificial lighting.

While in the field, the incumbent will work outdoors, near traffic, in lane closures, day or night. He/she may be exposed to noise, dust, dirt, exhaust gases, aurally-deposited lead, lead contained in the paint and primer coatings of bridges and overhead signs, chemicals, animals (such as birds, bats, spiders and rats) and their droppings, plants (such as poison oak, ivy and vines), various physical conditions that exist in and around the bridges and overhead signs (such as rough terrain, elevation breaks, waterways, heights and confined spaces), and a variety of sometimes extreme weather conditions and climates that occur in California.

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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.)

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.

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EMPLOYEE (Print)

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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.

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SUPERVISOR (Print)

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SUPERVISOR (Signature)

DATE

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