

**POSITION DUTY STATEMENT**

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE Transportation Engineer (Civil)	OFFICE/BRANCH/SECTION 56-Maintenance/Structure Maintenance and Investigations	
WORKING TITLE Bridge Rating Engineer	POSITION NUMBER 913-626-3135-XXX	EFFECTIVE DATE

As a valued member of the Caltrans team, you make it possible for the Department to provide a safe, sustainable, integrated, and efficient transportation system to enhance California's economy and livability. Caltrans is a performance-driven, transparent, and accountable organization that values its people, resources and partners, and meets new challenges through leadership, innovation and teamwork.

**GENERAL STATEMENT:**

Under the general direction of a Branch Chief, a Senior Bridge Engineer, the incumbent receives general direction, consisting of assignments, review of work progress and project supervision for assuring conformance with policies and applicable design and analysis specifications.

The incumbent is required to perform structural analysis to determine load ratings for all types of bridge structures that exist in the California state and local bridge inventory. The primary purpose of analysis/load ratings is to determine the safe load capacity for legal and extra-legal vehicles and construction loads.

Incumbent must possess and maintain a valid Class C California Driver License.

**TYPICAL DUTIES:**

Percentage		Job Description
Essential (E)/Marginal (M) <sup>1</sup>		
50%	E	Performs vehicular live load rating analysis for all structure types in the State and Local Agency bridge inventory. In performing this analysis (sometimes in emergency conditions), the incumbent must read and interpret bridge plans and field reports, account for the existing condition of the structure and unusual vehicle configurations. Both hand calculations and sophisticated structural analysis computer software are used to conduct the bridge analyses.
15%	E	Conducts analyses of bridges for exceptionally heavy extra-legal weight loads crossing or operating from existing State highway bridges.
10%	E	Reviews Variance and Encroachment permits and Airspace plans and proposals that are structural in nature, or that may potentially impact bridges or other transportation structures. Prepares correspondence and coordinate permit reviews with the Districts.
10%	E	Provides construction support to Office of Structure Construction and District Construction Offices. Reviews submittals for overload vehicles and/or construction equipment and give feedback to construction field personnel on the impact of these loads on existing structures.
5%	M	Performs scour stability analysis for all structure types in the State and Local Agency bridge inventory. Works with hydraulic engineers to determine load capacity of degraded substructure elements.
5%	M	Conducts limited field investigations related to Bridge Analysis and Maintenance Design Projects. Typical field investigation activities include taking measurements of bridge elements to be analyzed, assessing the condition of structural materials and verifying information contained in the bridge records.
5%	M	Acts as a consultant on specific projects. Determines structural adequacy repair schemes on structures damaged by natural disasters or traffic related accidents.

<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.

**KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS**

Knowledge of the functions of Bridge Maintenance, Bridge Design, and Bridge Construction is desirable.

Strong spreadsheet and database programming skills are desirable. Experience in programming using Visual Basic is

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desirable.

Must be competent in the analysis of statically determinant and indeterminate structures. A working knowledge and understanding of Caltrans Bridge Design Specifications, AASHTO (American Association of State Highway and Transportation Officials) Standard Specifications for Highway Bridges, AASHTO LRFD (Load & Resistance Factor Design) Bridge Design Specifications, and the Manual for Bridge Evaluation is desirable.

## RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Incumbent is directly involved in decisions affecting safety; determining safe loading of existing bridges, etc. Makes decisions regarding potential repairs and/or alterations on bridges. Errors in judgment or lack of ability could lead to the collapse or failure of a highway structure resulting in serious safety and financial consequences.

## PUBLIC AND INTERNAL CONTACTS

Employee maintains communication with all personnel assigned to his/her project. He/She holds meetings and discussions with other groups within Caltrans, such as Hydrology, Construction and Geology to resolve questions and problems concerning the project. Also handles routine communications with District personnel regarding the project.

## PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Ability to work under stressful situations. Ability to develop and maintain cooperative working relationships; respond to difficult situations; recognize emotionally charged issues and problems, and acknowledge various responses.

## WORK ENVIRONMENT

Incumbent will be exposed to various work environments. In the office setting, incumbent must be able to stand or sit for prolonged periods of time, and will be exposed to artificial lighting in a climate-controlled area. Travel and occasional fieldwork are required, therefore, incumbent must be able to travel using a car and/or public and/or commercial transportation. Incumbent may be exposed to traffic, difficult terrain, various types of vegetation, various types of animals, dust, loud noises, chemicals and extreme weather conditions.

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