

**CALIFORNIA DEPARTMENT OF TRANSPORTATION  
DUTY STATEMENT**

<b>CLASSIFICATION TITLE</b> Transportation Engineer (Civil)	<b>DISTRICT/DIVISION/OFFICE</b> 56-Maintenance/Structure Maintenance and Investigations	
<b>WORKING TITLE</b> Bridge Rating Engineer	<b>POSITION NUMBER</b> 913-626-3135-XXX	<b>EFFECTIVE</b>

**As a valued member of the Caltrans team, you make it possible for the Department to improve the mobility across California by being innovative and flexible; reporting to work as scheduled; working cooperatively with team members and others; and treating others fairly, honestly and with respect. Your efforts are important to each member of the team, as well as those we serve.**

**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.

Must possess a California certification as an Engineer in Training or a valid California certification of registration as a Civil Engineer in California. (Range A through D.) Incumbent must possess and maintain a valid Class C California Driver License.

**TYPICAL DUTIES:**

Percentage                      Job Description

Essential (E)/Marginal (M)

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~~on existing State highway bridges.

Vacant (New LT BCP Positions)

- 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.

**SUPERVISION 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 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.

**CONSEQUENCE OF ERROR/RESPONSIBILITY FOR DECISIONS**

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.

Vacant (New LT BCP Positions)

**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 accommodation, please discuss this with the hiring supervisor.

\_\_\_\_\_  
Employee's Name

\_\_\_\_\_  
Employee's Signature

\_\_\_\_\_  
Date

I have discussed the duties with and provided a copy of this duty statement to the employee named above.

\_\_\_\_\_  
Supervisor's Name

\_\_\_\_\_  
Supervisor's Signature

\_\_\_\_\_  
Date