

POSITION DUTY STATEMENT

PM-0924 (REV 7/2014)

CLASSIFICATION TITLE	OFFICE/BRANCH/SECTION	
Senior Bridge Engineer	DES/Structure Design	
WORKING TITLE	POSITION NUMBER	EFFECTIVE DATE
Seismic Specialist	559-240-3185-xxx	08/01/2014

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 direction of a Supervising Bridge Engineer, a Seismic Specialist will perform difficult and complex work on specialized transportation-related structures, engineering projects and research studies. Incumbent must hold a valid California certificate of registration as a Civil Engineer. This is a technical position with responsibility for seismic analysis and training, as well as project delivery relative to bridge design work.

TYPICAL DUTIES:

Percentage		Job Description
50%	E	Serves as a structures project engineer on complex transportation-related structures and as structures design single-focal point for the design independent quality assurance activities on design-build projects. This role requires coordinating tasks with engineers in the design branch and in other DES functional units as well as with partners such as District project management, design and construction staff, and local agencies, and other stakeholders.
20%	E	Participates in the evolution, development, and implementation of Caltrans policies for seismic design criteria through committee efforts and on extreme loads (wind vibrations, collision, and blast impacts) design criteria related to research, technical report reviews and literature surveys.
10%	E	Provides seismic technical support for the Design Branch Leader and branch staff. Attends monthly General Earthquake Engineering Committee (GEQC) meetings, participates in committee sponsored work teams, and reviews state-of-the-art literature related to seismic and extreme loads engineering.
10%	E	Briefs branch staff on topics being discussed at the GEQC meetings, answers technical questions regarding the design standards and software and provides training on design and retrofit procedures due to seismic and/or extreme loads. Reviews and approves structural transportation-related design, particularly related to seismic strategy, seismic retrofit, and extreme loads mitigation.
10%	M	Provide support to task management activities of the branch.

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

May provide lead direction to a group of employees regarding special projects. Does not supervise.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Knowledge of:

- Purposes, organization, policies, and procedures of the Department of Transportation and the Division of Engineering Services.
- Methods of design and construction of various types of bridges and transportation-related structures including segmental and cable-supported bridge structures.
- Characteristics of materials and equipment used in structure design and construction of bridges and transportation-

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related structures.

- Methods of stress analysis for both statistically determinate and indeterminate structures and nonlinear finite element and time-history analysis, of the determination and influence of deflection on the stresses in structures and of design practices and bridge or structure engineering as applied to transportation-related structures under wind-induced aeroelastic vibrations and blast impact loads and associated design and mitigation strategies.
- Factors affecting structure type selection, maintenance inspection and load rating of structures.
- Structure seismic criteria and program;
- Principles of project management including scope, schedule, and budget.
- Consultant contracting process, including consultant selection and contract management.
- External financing of transportation facilities.
- Budgetary and resource matters; economics of bridge design and financing and handling of construction work by contract.

Ability to:

- Analyze technical situations accurately and recommend or adopt an effective course of action.
- Do estimating and inspection work on all types of bridges, major structures or transportation-related buildings, including foundations.
- Address and audience effectively; work effectively with Caltrans' districts, consultants, local government agencies and other transportation financing agencies.
- Initiate correspondence and prepare complete and comprehensive reports.
- Be flexible and adaptive to changes.
- Work successfully with others to gain their respect and confidence.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

- Has the professional responsibility to assure the safety of the traveling public at a cost that is an effective use of public funds.
- Errors in judgment and decisions could affect public safety or result in liability for the Department.
- Structural failure can be catastrophic due to loss of life, disruption in goods movement, and/or delays to the traveling public.

PUBLIC AND INTERNAL CONTACTS

Employee maintains communication with all personnel assigned to his/her project, including bridge designers and staff from other DES functional units such as Structure Foundations and Geology, as well as District project managers and designers. Communicates with outside agencies on project issues such as scope, cost and schedule. Examples of outside contacts include regional transportation agencies and local communities with a vested stake in a particular project. Works with maintenance personnel on routine and emergency issues as a technical advisor. (S)he maintains communication with appropriate vendors and other industry representatives.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

Employees may be required to sit for long periods of time using keyboard and video display terminal. They may also be required to move large or cumbersome plans and diagrams from one location to another. May be required to lift/move/carry various types of portable equipment weighing up to 50 pounds around the work site or when out in the field.

WORK ENVIRONMENT

While at their base of operation, employees will work in a climate-controlled office under artificial lighting. However, due to periodic problems with the heating and air conditioning, the building temperature may fluctuate. Employee may be required to travel to other satellite offices for training and/or meetings. Employees may also be required to travel and work outdoors and may be exposed to dirt, noise, uneven surfaces and/or extreme heat or cold.

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.)

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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