

**CALIFORNIA DEPARTMENT OF TRANSPORTATION
DUTY STATEMENT**

CLASSIFICATION TITLE Transportation Engineering Technician	DISTRICT/DIVISION/OFFICE DES/Structure Design	
WORKING TITLE Detailer	POSITION NUMBER 559-240-3175-xxx	EFFECTIVE 8/1/11

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 regularly and on time; 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 general direction from the Senior Bridge Engineer and/or leadperson, incumbent prepares complete sets of contract drawings for a variety of steel, concrete, masonry, and timber structures (e.g.: retaining walls, sound walls, box culverts, and bridges). The incumbent will also assist in preparing quantity estimates for a wide variety of structures including bridges, tunnels, walls and barriers.

TYPICAL DUTIES:

Percentage (E) Essential/ (M) Marginal	Job Description
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| 50% (E) | Receives engineering direction to prepare construction contract drawings for a variety of steel, masonry, and timber structures from engineer's design notes and sketches. Uses state-of-the-art computer applications and related complex computer programs to develop details and to determine layout and geometric design and to electronically submit plans to Office Engineer. |
| 10% (E) | Makes engineering calculations as required for horizontal and vertical alignment and dimensions for layout of variety of structures based on data supplied by the project engineer. |
| 10% (E) | Calculates and checks quantities for preliminary estimates of structure costs based on the General Plan and final estimates of structure costs based on completed construction contract plans. |
| 10% (E) | Makes preliminary layouts of various types of structures for planning studies using the state-of-the-art applications and various complex computer programs. |
| 5% (E) | Prepares and checks contract plans from charts and design aids. |
| 5% (E) | Completes "as-builts" corrections either by hand-drafting or uses state-of-the-art technology based on data supplied by the Structure Construction representative and/or the Project Engineer. |

- 5% (E) Performs nonprofessional engineering site investigations necessary to develop plans, particularly when modifying existing structures.
- 5% (M) Provides limited nonprofessional engineering design support of construction contracts and/or participates in temporary field assignments with other functional units within DES.

SUPERVISION EXERCISED OVER OTHERS:

This position does not supervise other employees.

KNOWLEDGE, ABILITIES AND ANALYTICAL REQUIREMENTS:

Knowledge of:

- Details, methods, layouts, scale and organization of details used in preparation of structural design, details, construction drawings, as-built plans, quantity estimates for a variety of structures.
- Engineering mathematics.
- State-of-the-art technology, e.g., CADD and related computer programs used to determine layout, detail drawings and create geometric designs for a variety of structures.

Ability to:

- Communicate both orally and in writing.
- Follow oral and written directions.
- Interpret sketches, drawings and plans encountered in the work.
- Assist in performing geometric design for various structures.
- Prepare and check quantity estimates for a variety of structures
- Make basic engineering calculations, prepare chart and graphs.
- Use state-of-the-art technology, e.g., CADD and related computer programs.
- Use of mathematical calculations and interpretation of the survey notes and computer alignment output in preparing General Plans, site data and locating abutments and bents.
- Assist in training of Drafting Aids and less experienced Structural Design Technicians.

Analytical Requirements:

- Use of trigonometric calculations and interpretation of the survey notes and computer alignment output in preparing General Plans, site data and locating specific abutments and bents.
- Must be thoroughly informed in regard to information available from standards.

CONSEQUENCE OF ERROR/RESPONSIBILITY FOR DECISIONS:

The incumbent exercises judgment in the selection of views and standard plans and details used in the preparation of a complete set of plans, which could result in incomplete information in the contract plans and estimates. Incomplete information in the contract plans and estimates could result in unnecessary rework, increased cost and time to produce corrected plans, and possible delay of the project.

PUBLIC AND INTERNAL CONTACTS:

Employee maintains communications, generally through the Project Engineer, with various personnel working on the project to which he/she is assigned, including other Department personnel, engineering consultant and industry representatives to transmit or obtain relevant

engineering information. These contacts will be verbal or written, as needed to perform one's assignments.

PHYSICAL, MENTAL AND EMOTIONAL REQUIREMENTS:

Employee may be required to sit for long periods of time using keyboard and mouse. They may also be required to lift/move/carry large or cumbersome plans (maximum of 50 pounds). They may be required to lift/move/carry various types of portable equipment, which may weigh 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. Employees may also be required to travel to job sites 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 accommodation, please discuss this with the hiring supervisor.

Employee Name (please print)

Employee's Signature

Date

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

Supervisor Name (please print)

Supervisor's Signature

Date