

POSITION DUTY STATEMENT

DOT PM-0924 (REV 08/2024)

CLASSIFICATION TITLE Engineering Geologist	OFFICE/BRANCH/SECTION DES/GS/OGS/Geophysics & Geology Branch	
WORKING TITLE Staff Geologist	POSITION NUMBER 559-316-3756-002	REVISION DATE 12/12/2024

As a valued member of the Caltrans leadership team, you make it possible for the Department to provide a safe and reliable transportation network that serves all people and respects the environment.

GENERAL STATEMENT:

Under the direction of a Senior Engineering Geologist, the Engineering Geologist performs field and office work for geophysical and engineering geology studies. In this capacity, the Engineering Geologist conducts geophysical studies, field mapping, maintenance and calibration of geophysical equipment, implements solutions for technical testing problems, and works either as part of a team or independently as necessary to conduct field testing. The incumbent will receive overall supervision from a Senior Engineering Geologist, who provides general instructions for each assignment.

CORE COMPETENCIES:

As an Engineering Geologist, 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. (Strengthen Stewardship and Drive Efficiency - Innovation)
- **Decision Making:** Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Safety First - 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 - Integrity)
- **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. (Enhance and Connect the Multimodal Transportation Network - Innovation)
- **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. (Strengthen Stewardship and Drive Efficiency - Innovation, Integrity)
- **Customer Focus:** Considers, prioritizes, and takes action on the needs of both internal and external customers. (Safety First, Cultivate Excellence - Integrity)
- **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)
- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Safety First, Cultivate Excellence - Equity, Integrity)
- **Commitment/Results Oriented:** Dedicated to public service and strives for excellence and customer satisfaction. Ensures results in their organization. (Strengthen Stewardship and Drive Efficiency - Integrity)

TYPICAL DUTIES:

Percentage	Job Description
Essential (E)/Marginal (M) ¹	
35% E	Perform geophysical field investigations for foundation and roadway geotechnical studies, fault investigations, landslide mitigation, cut slope design, and utility location. Conduct non-destructive evaluations (NDE) for pavement and bridge investigations. May conduct geologic mapping, landslide investigations, and other geologic studies. Will transport equipment, prepare the test site, and set up and break down equipment. Will make and record measurements, and document results.

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POSITION DUTY STATEMENT

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25%	E	Applies knowledge of computers to process geophysical data. Will use Office 365 for routine data processing and reporting. Will use geophysics-specific interpretation software (such as WellCAD, Oasis-montaj and Geogiga Seismic Pro) to validate and present test data.
20%	E	Interpret geophysical and NDE data and document results, in the form of internal reports to our Maintenance and Engineering Services divisions. Such reports will be used to assist in structure foundation and roadway geotechnical design, pavement repair and rehabilitation, and subsurface utility engineering for construction planning.
10%	E	Maintains and calibrate equipment and facilities used for geophysical testing.
5%	M	Provides geophysical oversight and review geophysical reports of others, including external consultants. Will provide comments and evaluation for support of other offices within Caltrans.
5%	M	Performs research and other special assignments related to geophysics.

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

The incumbent may act as party chief and direct the work of drill crews, field assistants, transportation engineers and engineering geologists in the field.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Incumbent must have knowledge of various surface and borehole geophysical methods, including seismic refraction and refraction tomography, resistivity, ground penetrating radar and borehole geophysical logging. Incumbent must be able to adapt geophysical methods to various types of investigations and to learn new methods. Incumbent should have general knowledge of rock mechanics, slope stability fundamentals, and site investigation protocol for both shallow and deep foundations of large structures.

Incumbent must be able to apply sound judgment in field situations and analyze factors affecting test results. Effective communication, both verbal and written, is required. Must be able to deal tactfully with individuals and groups from the Department, contractors, government agencies, and private consultants. Excellent field-note taking skills are required. Knowledge of, and ability to use computers is required.

Incumbent must be able to design and perform geophysical and NDE surveys of varying complexity, and must be able to process and interpret the resulting data. The incumbent must be able to incorporate geophysical data, field observations and laboratory test data into a coherent geotechnical model. The incumbent will be capable of evaluating improvements to geophysical methods and will strive to develop and maintain state-of-the-art capabilities.

Incumbent must demonstrate safe operation of motor vehicles, and must possess or obtain a class C California driver's license. Incumbent must possess a degree in geophysics, geology, or a closely related field. Licensing as a Professional Geologist or Professional Geophysicist is desirable.

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

Incumbent is responsible to complete assigned tasks in a professional, safe, and exacting manner and in accordance with existing policy, specifications, rules, work plans and guidelines. This position requires effective and timely response in all aspects of geophysical and geologic studies. Errors in interpretation or delays in response to requests could result in project delays and failure to correctly acquire or interpret data, and could result in inadequate design recommendations, construction difficulties, and substandard performance of cuts, fills and structures, and the potential loss of Federal funds.

PUBLIC AND INTERNAL CONTACTS

Incumbent will routinely contact other Caltrans personnel and contractors concerning geophysical and geologic studies. Incumbent must be able to clearly and effectively communicate and direct operations, both verbally and in writing, with vendors, contractors, manufacturers, local agencies, and various State personnel. May be required to make public presentations.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The ability to travel to and work at sites throughout California is required. The ability to work in steep, rugged terrain and safely lift heavy objects is required. The ability to work from heights requiring the use of fall protection equipment is required. Must be willing to work with, and in the presence of, explosives used for seismic investigations.

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WORK ENVIRONMENT

While at their base of operation and unless otherwise required, incumbent will work day shift in a climate-controlled office under artificial lighting. Field investigations will require travel to remote locations, where incumbent will be exposed to dirt, uneven surfaces, extreme temperatures, noise, vibration, and odor associated with fieldwork. Incumbent will work within lane closures adjacent to moving traffic. Incumbent will work around bulky/heavy materials and equipment in construction zones. Incumbent will work overtime and at night as project schedule demands. Incumbent may be given temporary assignments on other projects throughout the State as workload demands.

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.

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