

POSITION DUTY STATEMENT

PM-0924 (REV 01/2022)

CLASSIFICATION TITLE Engineering Geologist	OFFICE/BRANCH/SECTION DES/GS/OGDN	
WORKING TITLE Engineering Geologist	POSITION NUMBER 559-323-3756-xxx	REVISION DATE 07/01/2022

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 Transportation Engineer, the Engineering Geologist provides technical expertise, support, and recommendations on engineering geologic topics as may evolve, commencing with the project planning phase and progressing through the design, construction, and operation phases of the State Transportation System. This position requires travel to the Districts and field sites for periods of several days to months.

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. (Cultivate Excellence - Innovation)
- **Decision Making:** Makes critical and timely decisions. Takes charge. Supports appropriate risk. Makes challenging and appropriate decisions. (Safety First, Cultivate Excellence - Integrity)
- **Continuous Professional Development:** Seeks to obtain knowledge and improve performance while supporting others in doing the same. (Cultivate Excellence - Engagement, Innovation)
- **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 - Integrity)
- **Teamwork/Partnership:** Develops, maintains, and strengthens partnerships with others inside or outside of the organization through effective communication and collaboration. (Cultivate Excellence - Engagement, Innovation)
- **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. (Strengthen Stewardship and Drive Efficiency - Engagement)
- **Analytical Skills:** Approaches problems using a logical, systematic, and sequential approach. Weighs priorities and recognizes underlying issues. (Safety First, Cultivate Excellence - Integrity)
- **Technical Expertise:** Depth of knowledge and skill in a technical area. (Safety First, Cultivate Excellence, Strengthen Stewardship and Drive Efficiency - Engagement)

TYPICAL DUTIES:

Percentage	Job Description
Essential (E)/Marginal (M) ¹	

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POSITION DUTY STATEMENT

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50%	E	Locate, identify, classify, analyze, and submit recommendations regarding the nature, extent, and occurrence of groundwater, rock, and other earth materials; prepare geologic profiles, cross sections, structure maps, charts, and graphs; prepare reports that include pertinent geologic factors relating to the design, construction, and maintenance of engineering structures. Studies including site exploration and direction of laboratory testing. These studies include and are not limited to the areas of structure foundations (shallow and deep), earth retaining systems, settlement and stability of embankments, stability of earth and rock slopes, geotechnical earthquake engineering including earthquake response, groundwater, and expansive soils. Provides assessment of hydrogeology, geologic setting, geologic mapping, and hazards such as slope instability, scour, seismicity, and fault rupture. Plans and conducts special geological investigations.
15%	E	Reviews for both technical content and conformity to Department policies and procedures, consultant-prepared and Department-prepared materials and geotechnical reports, plans, specifications, special provisions, and estimates for the geotechnical design and construction aspects of a variety of Department and special funded projects.
10%	E	Provides technical support to the District and the Division of Engineering Services construction personnel in the forms of, but not limited to, on site construction inspections, evaluation of construction claims, and claims support.
10%	E	Provides technical support to District Maintenance for remediation of earth related distress.
10%	E	Prepare and manage consultant contract task orders
5%	M	Other duties assigned by the supervisor.

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

Supervision is not a requirement of this position but the incumbent may act as a lead worker over employees in the Transportation Engineer (Civil), Engineering Geologist, Transportation Engineering Technician, Materials and Research Engineering Associate, or Foundation Driller classifications.

KNOWLEDGE, ABILITIES, AND ANALYTICAL REQUIREMENTS

Satisfactory performance in this position requires:

- A thorough knowledge of geologic processes, concepts, and principles; engineering geologic concepts and principles; hydrogeologic and geophysical concepts and principles; laboratory and field soil and rock testing methods and procedures; developing site investigation plans based on landforms, outcrops and other factors; site exploration and sampling techniques and equipment; and geotechnical field instrumentation methods and practices; and current computer applications. The employee should be a college graduate with a degree in geology, engineering geology, or geological engineering.
- Knowledge of earthwork and foundation construction methods, specifications, and quality control practices.
- Knowledge of Caltrans project development process, design and construction standards and maintenance practices
- Knowledge and ability to interpret stereo aerial photographs; conduct geologic and geophysical exploration; perform geologic mapping and drafting; interpret field and laboratory test data and ability to incorporate that information into an analysis pertaining to site requirements.
- The ability to conduct geotechnical information and data search.
- The ability to communicate effectively, both in written and oral form.

The position requires considerable analysis of engineering geology data applied to civil engineering works related to specific site conditions. The incumbent must recognize potential geological problems, reliably assess their probable effects on design study options and constructability, accurately determine major factors leading to the specific field problems, and ensure that viable geotechnical options are developed to effectively deal with the project.

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PM-0924 (REV 01/2022)

RESPONSIBILITY FOR DECISIONS AND CONSEQUENCES OF ERROR

This position requires effective and timely response in all aspects of preparing and reviewing geotechnical design reports developed by Department personnel and private consultants. Delays in response to requests for services or failure to detect omissions and/or inadequacies in design recommendations could affect worker and public safety, result in tort liability, unneeded additional project costs, and result in contract delays, construction difficulties and substandard performance of completed facilities. May be called upon to make on-the-spot decisions for construction problems or emergency repairs.

PUBLIC AND INTERNAL CONTACTS

This position requires frequent and regular contact with personnel in the Department concerning geologic engineering matters related to in-house developed projects and projects developed by consultants. The incumbent will also have regular communication with consultants, contractors, manufacturers, vendors, local agencies, and other State personnel.

PHYSICAL, MENTAL, AND EMOTIONAL REQUIREMENTS

The incumbent will be required to work on field and construction sites, lift and transport heavy equipment and materials, work with exploratory equipment and collect field data. Landslide and undeveloped sites are often rugged and heavily vegetated.

Field and construction site surfaces are often uneven, may have open excavations and may be located on steep slopes. Weather conditions can vary between icy, slippery and wet to hot and dry. The incumbent must have the ability to traverse these sites and withstand exposure to the adverse conditions for long periods of time.

Must be able to carry and/or use field engineering equipment such as, but not limited to hand augers, surveying equipment, slope inclinometer equipment and core boxes. Other physical requirements of the job include the ability to lift and carry 50 pounds, reach overhead, push or pull, twist, climb, balance, bend, crouch, squat, crawl, and perform fine manipulation. Hearing and sight are both essential to job performance because the incumbent must be able to hear and see directions, traffic, equipment, and to other warnings or hazards thereby allowing the incumbent to perform duties safely. Corrected hearing is acceptable. Corrected sight must meet the CA DMV minimum visual acuity requirement. Night vision must be good for safety when working after dark. Incumbent may be required to work at night under artificial light.

While in the office, employees may be required to sit for long periods of time using a keyboard and video display terminal.

The incumbent will be responsible to ensure that assigned tasks are carried out in a professional, safe, and exacting manner and in accordance with existing policy, specifications, rules, work plans and guidelines.

The incumbent must grasp the essence of new information and master new technical and engineering knowledge; must have the ability to multi-task, adapt to changes in priorities, and complete tasks or project meeting strict deadlines with, at times, short notice.

The incumbent must possess the ability to develop and maintain cooperative working relationships, have a positive, productive, and friendly attitude, and maintain a willingness to learn while exposed to a variety of work environments.

WORK ENVIRONMENT

While at their base of operation, incumbent will work in a climate-controlled office under artificial lighting. As a statewide organization, DES adjusts to periods of fluctuating workload to successfully deliver projects. Incumbent will be required to travel and perform fieldwork and will be exposed to dirt, uneven surfaces, extreme temperatures, noise, vibration, and odor associated with fieldwork. The incumbent will be required to work around bulky/heavy materials and equipment, and in proximity to vehicles traveling on active roadways. DES employees may be given temporary assignments on DES projects throughout the State as workload demands.

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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