



Title: Associate Systems Engineer

FLSA Status: Exempt

BRIEF DESCRIPTION:

The purpose of this position is to provide electrical/mechanical engineering service in support of light rail and bus operations. This is accomplished by acting as project engineer on engineering projects, overseeing project activities, and directing performance of services by consultants and contractors during project planning, engineering, manufacturing, testing, construction, and commissioning project phases.

ESSENTIAL FUNCTIONS:

Note: This information is intended to be descriptive of the key responsibilities of the position. The list of essential functions below does not identify all duties performed by any single incumbent in this position. Additionally, please be aware of the legend below when referring to the physical demands of each essential function.

(S) Sedentary Exerting up to 10 lbs. occasionally or negligible weights frequently; sitting most of the time.	(L) Light Exerting up to 20 lbs. occasionally; 10 lbs. frequently; or negligible amounts constantly; OR requires walking or standing to a significant degree.	(M) Medium Exerting 20-50 lbs. occasionally; 10-25 lbs. frequently; or up to 10 lbs. constantly.	(H) Heavy Exerting 50-100 lbs. occasionally; 10-25 lbs. frequently; or up to 10-20 lbs. constantly.	(V) Very Heavy Exerting over 100 lbs. occasionally; 50-100 lbs. frequently; or up to 20-50 lbs. constantly.
---	---	--	---	---

#	Code	Essential Functions	% of Time
1	S	Prepares engineering designs by reviewing and preparing designs, drawings, and design specifications to ensure compliance with codes, standards, and project requirements, assisting in developing effective project plans, analyzing, diagnosing, and resolving engineering problems encountered in projects, performing field verifications, and using engineering design tools.	40%
2	S	Prepares technical contract specifications and cost estimates by reviewing standard technical contract specifications, applying local, state, and federal construction codes and engineering standards, and assisting in developing programs and procedures for quality assurance and quality control, analyzing cost and quantity estimates for construction projects and using software tools.	30%
3	S	Provides engineering support to the District's operations and construction functions by coordinating with various governmental agencies, reviewing technical submittals from contractors, providing information and clarifications to contractors, attending construction meetings, conducting field inspections related to construction, establishing and maintaining cooperative working relationships with those contacted in the course of a project, and providing technical support, troubleshooting, and problem-solving for existing facilities.	30%



JOB REQUIREMENTS:

-Description of Minimum Job Requirements-	
Formal Education	<p>Work requires broad knowledge in a general professional or technical field. Knowledge is normally acquired through four (4) years of an accredited college or university resulting in a Bachelor's degree or equivalent in Engineering.</p> <p>Substitution of experience for the required education is not accepted.</p>
Experience	A minimum of three (3) years of experience performing systems engineering related tasks.
Supervision	Work requires functioning as a lead worker performing essentially the same work as those directed, and includes overseeing work quality, training, instructing, and scheduling work.
Human Collaboration Skills	Decisions regarding implementation of policies may be made. Contact may involve support of controversial positions or the negotiation of sensitive issues or important presentations. Contacts may involve stressful, negative interactions with the public requiring high levels of tact and the ability to respond to aggressive interpersonal interactions.
Freedom to Act	The employee normally performs the job by following established standard operating procedures and/or policies. There is a choice of the appropriate procedure or policy to apply to duties. Performance reviewed periodically.
Technical Skills	Advanced: Work requires advanced skills and knowledge in approaches and systems, which affect the design and implementation of major programs and/or processes organization-wide. Independent judgment and decision-making abilities are necessary to apply technical skills effectively.
Budget Responsibility	Position has limited fiscal responsibility. May assist in the collection of data in support of recommendations for departmental budget allocations. May monitor division or program/project level budget and expenditures.
Reading	Advanced - Ability to read literature, books, reviews, scientific or technical journals, abstracts, financial reports, and/or legal documents. Ordinarily, such education is obtained in at the college level or above. However, it may be obtained from experience and self-study.
Math	Advanced - Ability to apply fundamental concepts of theories; work with advanced mathematical operations methods and functions of real and complex variables. Ordinarily, such education is obtained in at the college level or above. However, it may be obtained from experience and self-study.
Writing	Advanced - Ability to write editorials, journals, speeches, manuals, or critiques. Ordinarily, such education is obtained in at the college level or above. However, it may be obtained from experience and self-study.
Certification & Other Requirements	Professional Engineer license in the State of California is required.



KNOWLEDGE
<ul style="list-style-type: none"> • Construction materials, methods, and processes. • Design submittals and proof of design and acceptance testing to validate safety certification. • Engineering principles, theory, and practices relating to design, specification writing, and estimating. • Project planning and management principles, theory, and practices. • Public outreach principles, theory, and practices. • Teamwork principles, theory and practices. • Project controls functions. • Responsibilities of design team members in construction projects. • National Electrical Codes as applied to power distribution. • Standards outlined in OSHA, FRA, CalTrans, PUC, AREMA, and ANSI/ASME.

SKILLS
<ul style="list-style-type: none"> • Advanced word processing, spreadsheet, presentation and database software. • Specialized software related to functional area.

ABILITIES
<ul style="list-style-type: none"> • Learn the District’s policies, procedures, plans, programs, and performance criteria. • Learn systems engineering related to traction power, wayside signaling, overhead catenary systems, fare vending equipment, communication systems, light rail vehicles, lighting and vehicle maintenance functions (bus and rail) and facilities. • Learn traffic signal design as it relates to the interface with wayside signaling and train to wayside communications. • Learn light rail transit systems, facilities, and operations. • Learn LRV and track signal, interface, and control technologies. • Learn power substation equipment for the existing transit light rail systems. • Learn rail vehicle rehabilitation methods, techniques, and processes. • Design rail-highway grade crossings. • Represent the District in meetings with other governmental agencies and the public. • Coordinate District projects with utilities, governmental agencies and private property owners as required. • Develop clear, complete, and accurate engineering specifications, drawings, and estimates within mutually established timelines. • Discuss and identify project problems, analyze situations, recommend solutions, and evaluate outcomes. • Communicate effectively, both orally and in writing, with various levels of employees, public officials, and outside representatives at all skill levels, position levels, and backgrounds. • Interpret, review, and approve design submittals, including drawings, descriptions,



and schematics.

- Make field and site inspections for problem investigation.
- Monitor and direct consultant/contractor performance to meet project milestones and maintain high quality.
- Manage consultant contracts; including review of invoices for accuracy of work performed vs. billed.
- Draft Issue Papers for presentation to the Board of Directors and write technical reports.
- Establish and maintain cooperative working relationships.



OVERALL PHYSICAL STRENGTH DEMANDS:

-Physical strength for this position is indicated below with "X"-

Sedentary	Light	Medium	Heavy	Very Heavy
X				
Exerting up to 10 lbs. occasionally or negligible weights frequently; sitting most of the time.	Exerting up to 20 lbs. occasionally, 10 lbs. frequently, or negligible amounts constantly OR requires walking or standing to a significant degree.	Exerting 20-50 lbs. occasionally, 10-25 lbs. frequently, or up to 10 lbs. constantly.	Exerting 50-100 lbs. occasionally, 10-25 lbs. frequently, or up to 10-20 lbs. constantly.	Exerting over 100 lbs. occasionally, 50-100 lbs. frequently, or up to 20-50 lbs. constantly.

PHYSICAL DEMANDS:

C	F	O	R	N
Continuously 2/3 or more of the time.	Frequently From 1/3 to 2/3 of the time.	Occasionally Up to 1/3 of the time.	Rarely Less than 1 hour per week.	Never Never occurs.

Note: This is intended as a description of the way the job is currently performed. It does not address the potential for accommodation.

-Physical Demand-	-Frequency-	-Brief Description-
Standing	O	Making presentations; communicating with co-workers; observing work duties; observing work site
Sitting	C	Desk work; meetings; driving
Walking	O	To other departments/offices; around work site
Lifting	R	Supplies; equipment; files
Carrying	R	Supplies; equipment; files
Pushing/Pulling	R	File drawers; equipment; tables and chairs
Reaching	R	For supplies; for files
Handling	R	Paperwork
Fine Dexterity	F	Computer keyboard; telephone keypad; calculator; calibrating equipment
Kneeling	R	Filing in lower drawers; Retrieving items from lower shelves/ground
Crouching	R	Filing in lower drawers; Retrieving items from lower shelves/ground
Crawling	R	Under equipment;
Bending	R	Filing in lower drawers; Retrieving items from lower shelves/ground; Making repairs
Twisting	O	From computer to telephone; Getting inside vehicle
Climbing	R	Stairs; ladders; onto equipment
Balancing	R	On ladders; on equipment
Vision	C	Reading; computer screen; driving; observing work site
Hearing	F	Communicating via telephone/radio to co-workers/public; listening to equipment
Talking	O	Communicating via telephone/radio to co-workers/public
Foot Controls	O	Driving
Other (specified if applicable)		None noted

MACHINES, TOOLS, EQUIPMENT, SOFTWARE, AND HARDWARE:

Telephone, fax machine, calculator, copier, vehicle, Auto CAD, computer and associated hardware and software, standard office equipment, multi-meter, low voltage power supply, chart data recorder, camera, and 2-way radio.



ENVIRONMENTAL FACTORS:

C Continuously	F Frequently	O Occasionally	R Rarely	N Never
--------------------------	------------------------	--------------------------	--------------------	-------------------

D Daily	W Several Times Per Week	M Several Times Per Month	S Seasonally	N Never
-------------------	--	---	------------------------	-------------------

-Health and Safety Factors-	
Mechanical Hazards	R
Chemical Hazards	N
Electrical Hazards	R
Fire Hazards	N
Explosives	N
Communicable Diseases	N
Physical Danger or Abuse	N
Other (see 1 below)	N/A

-Environmental Factors-	
Respiratory Hazards	R
Extreme Temperatures	S
Noise and Vibration	R
Wetness/Humidity	S
Physical Hazards	R

(1) N/A

PROTECTIVE EQUIPMENT REQUIRED: None

NON-PHYSICAL DEMANDS:

F Frequently From 1/3 to 2/3 of the time	O Occasionally Up to 1/3 of the time	R Rarely Less than 1 hour per week	N Never Never occurs
---	---	---	-----------------------------------

-Description of Non-Physical Demands-	-Frequency-
Time Pressure	O
Emergency Situation	R
Frequent Change of Tasks	O
Irregular Work Schedule/Overtime	R
Performing Multiple Tasks Simultaneously	F
Working Closely with Others as Part of a Team	F
Tedious or Exacting Work	R
Noisy/Distracting Environment	O
Other (see 2 below)	N/A

(2) N/A

PRIMARY WORK LOCATION:

Office Environment	X	Vehicle	
Warehouse		Outdoors	
Shop		Other (see 3 below)	
Recreation/Neighborhood Center			

(3) N/A

The above statements are intended to describe the general nature and level of work being performed by individuals assigned to this position. They are not intended to be an exhaustive list of all responsibilities, duties, and skills required. This description is subject to modification as the needs and requirements of the position change.