



Title: Senior Systems Engineer

FLSA Status: Exempt

BRIEF DESCRIPTION:

The purpose of this position is to plan, design, and direct systems engineering projects such as railway signaling, traction power and overhead catenary system, bus procurement and maintenance, light rail vehicle procurement and maintenance, bus fueling, and other transit facilities. This is accomplished by planning and supervising all phases of engineering and design programs, developing technical documents, reviewing technical reports, coordinating with various governmental agencies, and administering of consultant contract.

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.
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#	Code	Essential Functions	% of Time
1	S	Performs systems engineering design by supervising and participating in the preparation of contract plans and technical specifications, designing signaling and traction power/overhead catenary systems to meet existing design criteria, delegating drafting tasks to technical subordinates, performing complex calculations, performing field surveys, researching project design requirements, and calculating costs and determining feasibility of design projects based on analysis of collected data.	65%
2	S	Performs construction support by reviewing technical submittals of shop drawings, interpreting contract plans and technical specifications, inspecting construction sites, investigating field problems affecting the District's operations and maintenance functions, coordinating agencies/departments to resolve issues, and responding to requests for information.	10%
3	S	Assists in the implementation of new rail startups by coordinating construction activities of new rail start-up lines with the District staff, developing integrated test procedures for new track and vehicles as required, overseeing development of staging plans, conducting first article inspections of new materials to verify operating performance, safety, and quality, and assigning staff members to support new start-up activities.	5%



4	S	Supervises staff by planning and directing the work of professional engineers, assigning and monitoring technician workloads, preparing performance evaluations, and reviewing timesheets. Provides project management by developing the Request for proposals for selection of consultants, and contract management.	20%
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JOB REQUIREMENTS:

-Description of Minimum Job Requirements-	
Formal Education	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. Substitution of experience for the required education is not accepted.
Experience	A minimum of five (5) years of experience in engineering design, construction, or project management. One (1) year of lead or supervisory experience is preferred. Experience in transportation or transit facilities is preferred.
Supervision	Work requires supervising and monitoring performance for a regular group of employees or department including providing input on hiring/disciplinary actions and work objectives/ effectiveness, performance evaluations, and realigning work as needed.
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 moderate fiscal responsibility. May be responsible for the billing, collection and/or accounting of funds. May be responsible for the handling and balancing of cash.
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"> • Traffic signal design and communications. • 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. • National Electrical Codes as applied to power distribution. • Standards outlined in OSHA, FRA, CalTrans, PUC, AREMA, and ANSI/ASME. • Basic personnel management principles, theories, and practices. • Principals of supervision, training, and employee development. • Project development phases of work including NEPA and CEQA requirements. • Federal, State and local grant processes and requirements, including the Federal Transportation Improvement Plan.
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 systems engineering related to fare vending equipment, light rail vehicles, and vehicle maintenance functions (bus and rail) and facilities. • Learn traffic signal design as it relates to the interface with grade crossings, wayside signaling and train to wayside communications. • Learn Systems engineering related to traction power, wayside signaling, overhead catenary systems, communication systems, lighting and facilities. • Understand light rail transit systems, facilities, and operations. • Learn LRV and track signal, interface, and control technologies.



- Learn National Electrical Codes as applied to rail vehicles.
- Learn power substation equipment for the existing transit light rail systems.
- Learn rail vehicle rehabilitation methods, techniques, and processes.
- Design rail-highway grade crossings.
- Learn the District's policies, procedures, plans, programs, and performance criteria.
- 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.
- Write issue papers for presentation to the Board of Directors and technical reports.
- Provide leadership and mentor less experienced engineers.
- Solve complex technical problems with innovative solutions.
- Provide excellent customer service.
- Establish and maintain cooperative working relationships.



OVERALL PHYSICAL STRENGTH DEMANDS:

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

Sedentary	X	Light	Medium	Heavy	Very Heavy
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; observing work site; observing work duties; communicating with co-workers
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; tables and chairs
Reaching	R	For supplies; for files
Handling	O	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	N	
Bending	R	Filing in lower drawers; retrieving items from lower shelves/ground
Twisting	O	From computer to telephone, Getting inside vehicle
Climbing	R	Stairs; ladders, step stools
Balancing	R	Ladders, step stools
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

MACHINES, TOOLS, EQUIPMENT, SOFTWARE, AND HARDWARE:

Telephone, fax machine, copier, calculator, automobile, radio, test instruments, computer and associated hardware and software.



ENVIRONMENTAL FACTORS:

C Continuously	F Frequently	O Occasionally	R Rarely	N Never
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D Daily	W Several Times Per Week	M Several Times Per Month	S Seasonally	N Never
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-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

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

(1) N/A

PROTECTIVE EQUIPMENT REQUIRED: Hard hat, safety eyewear, reflective safety vest, safety boots, hearing protection and gloves.

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
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-Description of Non-Physical Demands-	-Frequency-
Time Pressure	O
Emergency Situation	R
Frequent Change of Tasks	O
Irregular Work Schedule/Overtime	O
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.