

MONTEREY COUNTY OFFICE OF EDUCATION

TELECOMMUNICATIONS ENGINEER

Classification: Classified
Salary Level: 42

DEFINITION:

Under the general direction of the Director II, Media Center for Art, Education and Technology (MCAET, the Telecommunications Engineer is responsible for the design, implementation and maintenance of the sites and systems needed to ensure the efficient, effective transmission of MCOE broadcast transmission for district communications; manages and monitors transmission licenses, manages tower operations, administers contracts with tower site tenants, provides path surveys and analysis for new tower and data link designs, and stays informed of the latest microwave and fiber communications needs throughout Monterey County; provides maintenance and setup of infrastructure equipment for the mobile lab, and provides tower site demonstrations, equipment maintenance, and intermediate level equipment repairs.

SUPERVISOR:

Director II, MCAET

POSITIONS SUPERVISED:

None

QUALIFICATION REQUIREMENTS:

To perform a job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed in the job description are representative of the knowledge, skills and/or abilities required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential duties of the position.

MAJOR DUTIES AND RESPONSIBILITIES: The following is a list of duties that is representative of the position that includes but is not limited to:

- Coordinates FCC Licenses associated with transmission of television and microwave communications
- Manages and monitors frequencies to ensure proper transmission to providers for broadcast and point-to-point outbound content
- Installs, tests, troubleshoots, diagnoses, and repairs a variety broadcast and microwave equipment at tower sites including climbing towers to install antennas
- Conducts field tests to determine cause of interruption or interference in the operation of communications equipment
- Uses a variety of diagnostic tools related to troubleshooting various systems (i.e. spectrum analyzer, oscilloscope, and other complex test equipment)
- Assists with contract administration, liaises with land owners
- Manages the daily operation of tower sites including security, maintenance, propane, generator, and safety concerns
- Provides organizational and intermediate level repair for tower and radio equipment
- Coordinates vendor repairs for tower and radio equipment
- Provides path surveys and analysis to support site design and ensure proper transmission
- Provides technical input for development of price lists for tower sites, mobile lab, as well as, new equipment, licensing and build-out of new transmission links
- Reports on tower site utilization, tenants, tower operations, maintenance activities, mobile lab usage, and others as required
- Provides tower site visits and operational demonstrations
- Coordinates the construction and setup of new tower sites
- Trains employees and contractors on proper tower climbing safety and regulations
- Provides maintenance and setup of infrastructure for mobile lab

- Stays abreast of latest microwave and fiber communications needs throughout Monterey County
- Researches, analyzes, assesses specifications, and makes recommendations for various analog and digital communications systems
- Consults with other agencies, engineers, and vendors, as directed, in order to identify and resolve telecommunications issues
- Provides input for tower budgets, timelines, and projects
- Complies with Monterey County Office of Education Board Policies, Superintendent Policies and Administrative Regulations.
- Performs other related duties as assigned

PHYSICAL AND MENTAL CHARACTERISTICS:

Physical, mental and emotional stamina to perform the duties and responsibilities of the position; manual dexterity sufficient to write, use the telephone and business machines; vision sufficient to read printed materials; hearing sufficient to conduct in-person and telephone conversations; speaking ability in an understandable voice with sufficient volume to be heard at normal conversational distance or on the telephone; physical mobility sufficient to move about the work environment (office and location) and drive an automobile; physical strength sufficient to lift 50 pounds and 100 pounds with assistance; ability to climb towers and work in a confined space; physical stamina sufficient to sit for prolonged periods of time; mental acuity to collect and interpret data, evaluate, reason and define problems, establish facts, draw valid conclusions, make valid judgments and decisions.

REQUIRED QUALIFICATIONS:

Education and Experience:

- Associate of Arts degree from an accredited institution in Telecommunications Technology, or other related discipline AND
- Minimum of four (4) years of relevant work experience OR
- Any combination of post-secondary education, training and experience which has provided the applicant with the required knowledge and abilities to successfully perform job duties (e.g. demonstrated competence in analog and digital mobile and base radio transmission equipment, microwave systems, and antenna systems)

Knowledge of:

- Principles, techniques, and methods/standards used in the installation of communications equipment such as microwave, antenna systems, DC/AC power sources, console controller equipment, and tone remote controls
- Pertinent rules and regulations applicable to the operation of communications equipment, including FCC Part 90 and FCC licensing and filings
- Advanced and emerging technologies such as P25, trunking, 4.9GHz microwave, 802.11(x), R0IP, broadband data applications, 700MHz, SDR, tuning, and filters
- Land leases and tenant management
- Inventory and asset management best practices
- Digital microwave and multiplexing equipment
- Digital and analog radio and microwave communications systems
- Tools and test equipment used in the installation and repair of communications equipment
- Personal computers including productivity software including but not limited to MS Office
- Basic safety practices when installing and repairing electrical and electronic equipment
- Tower site operation and management including maintenance, climbing safety, and security best practices
- Effective technical and non-technical communication practices

Skills and Abilities:

- Learn to operate, install, repair and maintain a wide range of communications equipment
- Check transmit power, receiver sensitivity, modulation, frequency, continuity, and DC/AC power of a variety of communications equipment
- Use path analysis software
- Gather, organize, and analyze complex data relative to communications performance
- Draw logical conclusions and formulate recommendations concerning problem resolution, performance

improvement and equipment upgrades

- Exercise initiative, ingenuity, and sound judgment in identifying and solving difficult technical problems and in unusual circumstances
- Reads, understands, and applies oral and written policies and procedures
- Use personal computers including productivity, reporting, and scheduling software
- Maintain physical inventory and related electronic records
- Use tools and test equipment such as a wattmeter, service monitor, voltmeter, ohm meter, spectrum analyzer, and oscilloscope to troubleshoot, install, and repair communications equipment
- Troubleshoot digital microwave and multiplexing equipment, and digital and analog radio systems
- Work both independently and function effectively within a team setting Safely and efficiently climb towers and provide maintenance and support on equipment
- Establish and maintain cooperative relationships with those contacted in the course of work
- Communicate effectively, both orally and in writing in English
- Use a ticketing system for tracking time and services
- Apply basic project management techniques

Desirable Qualifications:

- Experience in public education

Licenses and Certifications:

- Certificate of completion in a tower climbing safety course within 6 months of employment
- Possession of an appropriate California Driver's License with evidence of insurability

(Revised 12-10-15)