Los Alamos County
Job Description and Classification

JOB TITLE: **Network Architect/Sr. Network Architect**
JOB CODE: **214, 217**
CLASSIFICATION: **Exempt**
DEPARTMENT/DIVISION: **Administrative Services/ Information Management**
SUPERVISOR: **Chief Information Officer or Designee**

Position Summary:

The Network Architect's role is to develop and maintain the high-level design plan for the overall logical and technical network architecture. This individual will provide technical leadership and consulting across the organization, from strategic decision making down to the project planning level. The Network Architect will gain organizational commitment for all high-level network infrastructure plans and initiate and participate in projects to evaluate technologies and methods for implementing these plans.

The general level and nature of this position are described in the headings below. This is not an all-inclusive list of all responsibilities, duties, and skills required of personnel in this classification. Duties, responsibilities and activities may change at any time.

Essential Duties and Responsibilities:
Strategy & Planning:

- Design and implement short and long-term strategic plans to make certain network capacity meet existing and future requirements.
- Provide architectural consulting expertise, direction, and assistance to Network Analysts, Network Engineers, Network Administrators, and other 3rd-party vendors, contractors and strategic partners.
- Conduct research on emerging technologies in support of network development efforts and recommend technologies that will increase cost effectiveness and network flexibility.
- Develop, document, make recommendations, and communicate plans for investing in network technologies.
- Participate in the development of network strategies in collaboration with the division leadership.
- Conduct research and make recommendations on products, services, protocols, and standards in support of all network procurement and development efforts.
- Ensure network services have sufficient capacity, stability, and agility to satisfy service level agreements with business units.
- Create and maintain documentation as it relates to network configuration, network mapping, processes, and service records.

Acquisition & Deployment:

- Plan, collaborate and coordinate installation of in-house and remote network devices and appliances across the organization's network.
- Conduct research and make recommendations on network products, services, protocols, and standards in support of network procurement and development efforts.
- Design company LANs, WANs, Virtual LANs (vLAN), virtual/software (SDN) networks, and wireless networks, including servers, routers, switches, UPSs, and other devices.

- Recommend improvements and/or alternatives on the company's existing systems architecture and technology portfolio.
- Review new and existing network design projects and procurement or outsourcing plans for compliance with applicable standards and architectural plans.

Operational Management:

- Establish and maintain regular written and in-person communications with division leadership, decision-makers, stakeholders and end users regarding pertinent network activities.
- Direct and administrate tasks, tasks orders and projects with contractors, vendors and partners.
- Collaborate with end users and management to define business requirements for network development and gain buy-in for all network architecture plans.
- Manage and set priorities for the architectural design, maintenance, development, and evaluation of all network infrastructures, including LANs, WANs, vLANs, Internet, intranet, security, wireless implementations, and so on.
- Test circuits with OTDR or other industry-leading fiber testing equipment to identify faults, optimize performance in cabling and communications.
- Perform network testing and troubleshooting with ping, trace route, OTDR, OLTS, copper testing.
- Ensure BICSI/ANSI/TIA standards are being followed with all infrastructure adds and changes in accordance with published Technical and Industry Standards.
- Assist and provide input and direction in the maintenance of County Technical Standards and in support of County strategic goals and objectives.
- Conduct site surveys countywide for moves, adds, or changes relating to all county network infrastructure and structured cabling assets. Work with strategic partners to facilitate and support their infrastructure as needed.
- Experience in basic network troubleshooting using tools such as ping and trace route; fiber and CAT5E installation; basic circuit (T1, DS3, OC(x), Ethernet/TCP/IP) troubleshooting and testing; switching and cable infrastructure testing and equipment and fiber testing methods.
- Excellent architecture and technical support documentation skills.
- Strong interpersonal, written, and oral communication skills.
- Proven analytical and problem-solving abilities.
- Highly self-motivated and directed.
- Maintains confidentiality of all privileged information.
- Contributes to a team effort and accomplishes related results as required.
- Performs other duties as required.

Additional Essential Duties and Responsibilities for Senior Network Architect:

- Develop, implement, and maintain policies, procedures, and associated training plans for network resource administration and appropriate use.
- Develop and deploy methodologies for testing network performance and providing network performance statistics and reports.
- Interact and negotiate with vendors, outsourcers, and contractors in securing the network and networking services.
- Acts as the liaison between IT, project management teams, customers, and vendors to ensure appropriate communication, coordination, and scheduling regarding County infrastructure requirements and priorities.
- Provide technical support and the necessary documentation for procurement and material management including invitation for bids, request for proposals, and requests for quotes including evaluation, selection and award.

- Support continuous Infrastructure process improvement to realize the maximum benefit from County investment in equipment, and business processes.
- Develops and implements a comprehensive security strategy and an overall disaster recovery plan.
- Leads the design and implementation of data center systems architecture and network architecture.

Minimum Qualifications:
- Bachelor's Degree from an accredited college or university in Computer Science, Information Technology, Management Information Systems, or related field, or equivalent combination of education and related work experience.
- Four years' experience in network cable infrastructure installation to industry standards, routing trouble analysis and diagnosis skills on Cisco or equivalent routers and switches.
- two of which must include experience in design, configuration, and implementation of networking technologies.
- Must possess or have ability to obtain within first sixty days of employment and must maintain a valid New Mexico Class D driver's license.
- Successful completion of thorough background investigation, including FBI fingerprint Check. Must not have been convicted of a felony.

Additional Minimum Qualifications for Sr. Network Architect:
- Additional two years of experience in network infrastructure design and project management
- Six years' experience in network cable infrastructure installation to industry standards, routing trouble analysis and diagnosis skills on Cisco or equivalent routers and switches, four of which must include experience in design, configuration, and implementations of networking technologies.
- Must possess and maintain Cisco CCNP certification.
- Must possess and maintain BICSI TECH certification.

Preferred Qualifications:
- Master's degree in computer science, Information Technology, Management Information Systems, or related field
- BICSI RCDD certification
- Cisco CCIE or equivalent advanced Cisco certification.

Knowledge, Skills, and Abilities:
- Thorough knowledge of current networking and communications protocols and standards
- Knowledge and understanding of system flow charts, traffic flow, and data processing concepts.
- Knowledge of applicable data privacy practices and laws.
- Extensive experience with developing strategic plans.
- Exceptional analytical, conceptual, and problem-solving abilities.
- Exceptional understanding of the organization's goals and objectives.
- Proven experience with network capacity planning, network security principles, and general network management best practices.
- Knowledge of theory, design, and implementation of data centers, networks, communications links, operating systems, and hardware.
- Knowledge of contract documents and specifications.
- Knowledge of switch and radio systems platforms.

- Knowledge of equipment and rack installation, DC power, wire wrapping/color code understanding, blueprint and schematic reading, circuit labeling, and safety procedures.
- Knowledge of network test equipment to be able to monitor, diagnosis and repair network problems.
- Knowledge of network and field test equipment to be able to monitor, diagnose, and repair network and telecommunications problems.
- Knowledge of the features, design, performance/quality standards, and service requirements of a large, technologically advanced network infrastructure.
- Knowledge and understanding of work processes, volume, and traffic characteristics associated with networks.
- Knowledge of related construction methods.
- Knowledge of network and communications infrastructure design and maintenance.
- Skill in computer/network systems planning.
- Skill in fiber optic physical plant design, installation and termination.
- Skill in troubleshooting and diagnosing a wide variety of network, hardware and telecommunication platforms.
- Ability to establish and maintain professional relationships with individuals of varying social and cultural backgrounds and with co-workers at all levels.
- Ability to manage complex projects ensuring proper levels of communication, documentation, and notification.
- Ability to communicate effectively, both orally and in writing.
- Ability to analyze and assess network architecture requirements and determine optimum, cost-effective solutions.
- Ability to install, configure, and maintain IT infrastructure.
- Ability to act in an independent and conscientious manner using sound judgment.
- Knowledge of network and field test equipment to be able to monitor, diagnosis and repair network and telecommunications problems.
- Skill in troubleshooting on a variety of network hardware and telecommunication platforms.
- Ability to have keen attention to detail.
- Knowledge and experience working in a team-oriented, collaborative environment.
- Additional Knowledge, Skills, and Abilities – Senior Network Architect:
- Skill in project management.
- Ability to monitor, track, and report project status including objectives, timelines, and budgets.
- Ability to make sound business decisions applicable to County strategic goals and objectives
- Knowledge of general municipal procedures and practices.
- Knowledge of firewalls, intrusion detection/prevention systems (IDS/IPS) and other industry-standard techniques and practices.
- Ability to perform general mathematical calculations for the purpose of creating needs assessments, budgets, and so on.

Physical Demands:

While performing the duties of this job, the employee routinely sits, stands, walks, talks, and hears. The employee regularly uses manual dexterity and visual acuity to complete tasks. The employee is occasionally required to crawl, reach above shoulder level, crouch, kneel, balance, push/pull, carry and climb stairs. The employee regularly lifts and/or moves up to 25 pounds and must occasionally move or lift to 50 pounds with the assistance of appropriate equipment or another person.

Work Environment:

The work environment may involve exposure to hazards or physical risks and requires following basic safety precautions. Employee occasionally works under stressful conditions and for extended periods of time. Work is performed primarily in a professional office setting with a moderate noise level and may include some outdoor work with exposure to natural weather conditions and temperatures, various dusts, smoke and mists, and normal debris.   Evening, irregular hours, holiday, and weekend work outside of normal business hours may be required on short notice. Employee must be available for emergency system maintenance and emergency call out. Employee is required to provide support 7x24x365 for enterprise environments that will include providing consultative and proactive support.

Each and every county position requires the following professional skills and abilities as key and necessary elements of performance. Employees are required to:

- Demonstrate regular and reliable attendance;
- Work well with others and participate fully in a team oriented environment;
- Interface with other employees and customers in a courteous and respectful manner;
- Project positive support of their department and all county organizations at all times; and,
- Maintain and enhance the county's commitment to customer service excellence.

Approvals:

Department Director: _____ Date: _____
<div align="center">(signature)</div>

Human Resources Manager: _____ Date: _____
<div align="center">(signature)</div>

Reviewed: Revised: