State of Nebraska
Classification Specification
Department of Administrative Services

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Click one of these links to see the Job Description for that class:

Code	Title
M08821	Intelligent Transportation Systems (ITS) Technician
M08822	Intelligent Transportation Systems (ITS) Technician Senior
M08823	Intelligent Transportation Systems (ITS) Technician Specialist - Aviation
V08824	Intelligent Transportation Systems (ITS) Supervisor
V08825	Intelligent Transportation Systems (ITS) Supervisor - Aviation
V08826	Intelligent Transportation Systems (ITS) Manager

INTELLIGENT TRANSPORTATION SYSTEMS (ITS) SERIES

DESCRIPTION OF OCCUPATIONAL WORK

The ITS Series support the deployment, operation, and maintenance of technology-enhanced transportation systems designed to improve traffic flow, safety, situational awareness, incident response, and traveler information. A subset of ITS Series (Specialist - Aviation and Supervisor – Aviation) supports and oversee a variety of aviation electronic equipment, with responsibilities centered to aviation navigation systems and automated weather observation systems.

ITS Technician

M08821

DISTINGUISHING CHARACTERISTICS: (A position is assigned to this class based on the scope and level of work performed as outlined below.)

This is the entry-to-intermediate level in the Intelligent Transportation Systems (ITS) series. Under immediate supervision, incumbents perform routine installation, maintenance, and repair of ITS equipment and network infrastructure. Positions in this class focus on assisting senior technicians, executing physical work site preparation, and performing standard preventive maintenance. This level is distinguished from the Senior level by its reliance on established procedures, the absence of complex diagnostic responsibilities, and its focus on foundational equipment support and cabling rather than independent, highly technical troubleshooting.

EXAMPLES OF WORK: (A position may not be assigned all the duties listed, nor do the listed examples include all the duties that may be assigned.)

Assists senior technicians with the physical installation and repair of component parts for Intelligent Transportation Systems (ITS) such as traffic signals, digital cameras, dynamic messaging signs, weather information stations, automated devices, and OSP network infrastructure (copper, fiber, wireless).

Supports the configuration and programming of ITS field devices and network hardware by utilizing command-line interfaces (CLI), graphical user interfaces (GUI), or manufacturer-specific software applications.

Performs essential work site preparation including trenching, fabricating mounting hardware, and operating portable power generators to ensure a safe and efficient installation environment.

Participates in field-based training and shadowing during complex system outages to gain proficiency in advanced diagnostic and troubleshooting procedures.

Executes routine software and firmware updates on field equipment under the direct supervision of senior staff to maintain system security and operational efficiency.

Maintains the organization and inventory of shop spaces and fleet vehicles to ensure all necessary tools and materials are available for rapid response to field issues.

Conducts regularly scheduled preventive maintenance and site reviews to inspect, adjust, and replace worn components before they lead to system malfunctions or safety hazards.

Utilizes specialized testing equipment such as GPS-enabled cable locators, tone generators, and optical time-domain reflectometers (OTDRs) to assist in tracing and verifying cabling paths.

Monitors and orders shop supplies to maintain appropriate stock levels of high-use electrical components and prepares standard purchase orders for approval.

Maintains records of equipment inventory, configurations, field programming, maintenance activities, test results, and repairs in logs and digital systems, while tracking time, materials, and expenditures.

KNOWLEDGE, SKILLS, AND ABILITIES REQUIRED: (These are needed to perform the work assigned.)

Knowledge of: tools, materials, and methods of electronic repair work; principles and theory of electricity; component parts of electronic devices; occupational hazards and safety precautions of the electronics repair trade; employing agency policies and procedures; basic networking and networking security concepts; workplace safety protocols, especially when working with electrical systems, high-voltage equipment, and heavy machinery.

Skill in: using computers and software used for equipment operation, configuration, diagnostics, and record-keeping; the operation and application of troubleshooting tools essential for diagnosing issues in ITS and network systems, including a multimeter, OTDR, packet capture software (Wireshark), Optical Loss Test Set (OLTS), spectrum analyzer, cable tester, and power quality analyzer.

Ability to: construct and modify equipment for initial installation; use test equipment to locate and repair defects; read and understand operating manuals, work orders, technical manuals, sketches, and blueprints; establish work priorities; determine materials needed and appropriate procedures; install, troubleshoot, diagnose, and repair electronic systems; use hand tools, heavy machinery, and aerial lifts; effectively communicate technical concepts and equipment operations to end users verbally and in writing; analyze basic issues and identify root causes under time constraints; perform physically demanding tasks and work at heights.

MINIMUM QUALIFICATIONS: (Applicants will be screened for possession of these qualifications. Applicants who need accommodation in the selection process should request this in advance.)

Two-year vocational degree in electronics, electricity, information technology, or related field. Experience may substitute for education on a year for year basis.

Promotion to the Transportation Electronics Technician Senior classification is contingent on successful completion of NDOT's ITS required training.

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ITS Technician Senior

M08822

DISTINGUISHING CHARACTERISTICS: (A position is assigned to this class based on the scope and level of work performed as outlined below.)

This is the full-performance, journey level in the series. Under general supervision, incumbents independently perform complex configuration, programming, and troubleshooting of ITS and network equipment. This class is distinguished from the entry-level Technician by the autonomy to analyze and diagnose complex malfunctions, evaluate untested equipment, and act as a technical mentor to junior staff or agency inspectors. It differs from the Specialist level by its focus on highway ITS and network infrastructure rather than focusing on specialized aviation navigational aids.

EXAMPLES OF WORK: (A position may not be assigned all the duties listed, nor do the listed examples include all the duties that may be assigned.)

Independently installs, configures, programs, diagnoses, and repairs a wide array of complex ITS equipment, Internet of Things (IoT) hardware, and statewide network infrastructure.

Manages comprehensive configuration and programming records and analyzes how specific settings impact the overall performance and reliability of the statewide ITS network.

Serves as a lead responder for the restoration of critical ITS infrastructure during severe weather emergencies, major traffic incidents, or large-scale system failures.

Oversees the preparation of complex work sites, including the direction of heavy machinery and aerial lifts to facilitate the installation of large-scale messaging signs or camera towers.

Utilizes advanced schematic drawings and sophisticated diagnostic equipment to identify and resolve intermittent electronic malfunctions that lack obvious points of failure.

Provides technical consultation to senior leadership regarding the feasibility of proposed system upgrades or the integration of new technology into existing infrastructure.

Acts as the primary technical inspector for construction contractors to ensure that all ITS equipment is installed and integrated according to precise agency specifications and safety codes.

Develops and manages preventive maintenance schedules and documentation for the region and assists leadership in identifying recurring system vulnerabilities.

Conducts failure analysis on electronic components to recommend changes in purchasing specifications, equipment modifications, or long-term maintenance strategies.

Locates and repairs complex faults in outside plant (OSP) copper and fiber optic data lines using precision optical testing and GPS mapping tools.

Mentors and trains junior technicians in advanced troubleshooting techniques, equipment safety, and the proper use of diagnostic software.

Designs and assembles custom electronic shop projects, including the creation of technical blueprints and operation manuals for specialized agency-built equipment.

KNOWLEDGE, SKILLS, AND ABILITIES REQUIRED: (These are needed to perform the work assigned.)

Knowledge of: advanced networking and security concepts; agency-specific topologies, nomenclature, subnetting, and protocols; ITS architecture, control systems, and NTCIP standards; electronic components, circuitry, materials, and repair methods; theory and operation of troubleshooting tools; inspection and replacement techniques to maintain electronics; accurate record-keeping practices; National Electrical Code, Nebraska Electrical Code, FCC regulations, and workplace safety protocols.

Skill in: using computers and diagnostic software; using multimeter, OTDR, Wireshark, OLTS, spectrum analyzer, cable tester, and power quality analyzer; identifying and resolving issues in complex systems and analyzing blueprints, plans, and schematics; operating fabrication machinery, power generators, ditching equipment, and concrete saws; ordering and managing specialized inventory.

Ability to: design, install, troubleshoot, and repair complex systems; accurately perform maintenance and documentation to prevent errors; physically handle small components and operate heavy machinery; analyze technical issues to identify root causes under constraints; adapt to new technologies and methods; explain concepts to end users, document activities, and collaborate with vendors and leadership; tolerate heights in aerial lifts or tower climbing equipment.

MINIMUM QUALIFICATIONS: (Applicants will be screened for possession of these qualifications. Applicants who need accommodation in the selection process should request this in advance.)

Two-year vocational degree in electronics, electricity, information technology, or related fields and one year of related experience. Experience may substitute for education on a year for year basis.

Promotion into this classification is contingent on successful completion of NDOT's ITS required training.

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ITS Technician Specialist - Aviation

M08823

DISTINGUISHING CHARACTERISTICS: (A position is assigned to this class based on the scope and level of work performed as outlined below.)

This is the highly specialized technical expert level within the series. Under general supervision, incumbents primarily perform highly technical work constructing, installing, modifying, and repairing complex electronic aids to air navigation. This class is distinguished from the Senior level by its strict regulatory requirements (FAA/FCC compliance), its focus on precision flight and ground inspection calibrations, and the highly specialized environment of aviation weather observation and navigational systems. Incumbents in this classification also perform complex configuration, programming, and troubleshooting of ITS and network equipment.

EXAMPLES OF WORK: (A position may not be assigned all the duties listed, nor do the listed examples include all the duties that may be assigned.)

Performs high-precision verification of air navigational aids and weather reporting systems to ensure the safety and reliability of statewide aviation corridors.

Maintains real-time communication with FAA flight check crews to perform precision adjustments to ground-based navigational signals while aircraft are in flight.

Conducts technical site surveys to determine the optimal location for new navigational aids based on topography, signal interference, and utilization requirements.

Engineers and implements site-specific mounting and grounding solutions to protect sensitive weather observation equipment from environmental damage and electrical surges.

Authors technical manuals and drafts detailed prints for custom-built shop equipment to ensure long-term serviceability and documentation of specialized tools.

Develops and documents formal modification procedures for electronic systems and submits them for federal approval to maintain compliance with FAA standards.

Analyzes complex error curve graphs from flight inspections to perform minute calibrations and precision adjustments on critical electronic signals.

Utilizes spectrum analyzers to detect, identify, and mitigate radio frequency interference that may disrupt critical aviation or emergency communication frequencies.

Drafts and submits comprehensive technical reports on system outages and maintenance activities to federal authorities to meet strict airspace safety compliance requirements.

Evaluates long-term maintenance records for aviation electronics to provide data-driven recommendations for the upgrading or total replacement of aging facilities.

KNOWLEDGE, SKILLS, AND ABILITIES REQUIRED: (These are needed to perform the work assigned.)

Knowledge of: tools, materials, and practices of electronic repair and construction; circuit boards, processors, chips, computer hardware/software; FCC and FAA rules and regulations; air navigation principles; navaid site selection procedures; application procedures for the National Air Space System; advanced networking and security concepts; agency-specific topologies, nomenclature, subnetting, and protocols; ITS architecture, control systems, and NTCIP standards; electronic components, circuitry, materials, and repair methods; theory and operation of troubleshooting tools; inspection and replacement techniques to maintain electronics; accurate record-keeping practices; and National Electrical Code, Nebraska Electrical Code, FCC regulations, and workplace safety protocols.

Skill in: operation, repair, and calibration of test equipment; math and algebra; verbal and written communication; using computers and diagnostic software; using multimeter, OTDR, Wireshark, OLTS, spectrum analyzer, cable tester, and power quality analyzer; identifying and resolving issues in complex systems and analyzing blueprints, plans, and schematics; operating fabrication machinery, power generators, ditching equipment, and concrete saws; and ordering and managing specialized inventory.

Ability to: establish work priorities; layout and construct specialized circuits; solve complex electronic equations; troubleshoot and repair modules and circuit cards to the component level; read and understand schematics and plans; design, install, troubleshoot, and repair complex systems; accurately perform maintenance and documentation to prevent errors; physically handle small components and operate heavy machinery; analyze technical issues to identify root causes under constraints; adapt to new technologies and methods; explain concepts to end users, document activities, and collaborate with vendors and leadership; and tolerate heights in aerial lifts or tower climbing equipment.

MINIMUM QUALIFICATIONS: (Applicants will be screened for possession of these qualifications. Applicants who need accommodation in the selection process should request this in advance.)

Two-year vocational degree in electronics, electricity, information technology, or related fields and one year of related experience. Experience may substitute for education on a year for year basis.

Promotion into this classification is contingent on successful completion of NDOT's ITS required training. Must obtain FAA letter of verification for Automated Weather Observation Systems (AWOS) and the Non-Directional Beacon Certification within one year in this classification.

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ITS Supervisor

V08824

DISTINGUISHING CHARACTERISTICS: (A position is assigned to this class based on the scope and level of work performed as outlined below.)

This is the first-line supervisory level. Under limited supervision, incumbents direct the daily activities of ITS technicians while also serving as the ultimate technical escalation point for the most complex diagnostic issues. This class is distinguished from the technical levels by its formal responsibility for personnel management, including performance evaluations, grievance handling, and recommending disciplinary actions. It differs from the Manager level by its direct, ongoing involvement in field-level technical operations, hands-on diagnosis of unresolved equipment malfunctions, and in-field mentorship.

EXAMPLES OF WORK: (A position may not be assigned all the duties listed, nor do the listed examples include all the duties that may be assigned.)

Directs and supervises a team of ITS technicians, ensuring that daily work assignments align with agency priorities and safety policies.

Coordinates the deployment of staff and resources across the region to balance urgent repair needs with long-term project inspections and preventive maintenance.

Evaluates team performance and manages personnel actions, including conducting performance reviews, addressing grievances, and recommending hires or disciplinary measures.

Performs quality assurance inspections on completed work orders and maintenance logs to ensure technical standards and documentation requirements are consistently met.

Acts as the final technical escalation point for the region by diagnosing and resolving unprecedented or highly complex equipment failures that have resisted standard repair efforts.

Oversees the design and fabrication of updated electronic components to improve system performance or to rebuild equipment where original parts are no longer available.

Reviews and revises technical instruction manuals and electrical schematics to ensure the shop library reflects current field configurations and best practices.

Gathers and analyzes situational field data to provide recommendations for the management and oversight of third-party maintenance and service contracts.

Develops and executes customized training curricula for new hires to ensure they gain necessary technical skills and obtain required certifications within established timelines.

KNOWLEDGE, SKILLS, AND ABILITIES REQUIRED: (These are needed to perform the work assigned.)

Knowledge of: technical expertise in electronic equipment design, calibration, and modification; networking, IT, agency policies, industry standards, and preventive maintenance protocols; maintenance contract processes and data reporting; training methodologies and onboarding processes.

Skill in: performance evaluation, feedback, and supervisory techniques; project management of inspections, PM programs, and replacements; time management and oversight; advanced technical problem-solving, documentation, and reporting; delivering in-field training and mentorship.

Ability to: conduct feasibility studies and evaluate prototypes; make strategic decisions and recommend personnel actions; build trust, resolve conflicts, and foster collaboration; communicate effectively to provide clear instructions, deliver training, and report data to management.

MINIMUM QUALIFICATIONS: (Applicants will be screened for possession of these qualifications. Applicants who need accommodation in the selection process should request this in advance.)

Two-year vocational degree in electronics, electricity, information technology, or related fields and two years of related experience. Experience may substitute for education on a year for year basis.

Promotion into this classification is contingent on successful completion of NDOT's ITS required training.

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ITS Supervisor - Aviation

V08825

DISTINGUISHING CHARACTERISTICS: (A position is assigned to this class based on the scope and level of work performed as outlined below.)

This is a specialized first-line supervisory and operational coordinator level. Under limited supervision, incumbents are exclusively responsible for the statewide installation, maintenance, and inspection of critical aviation navigational facilities and weather reporting systems. This class is distinguished from the standard Supervisor level by its heavy emphasis on continuous intergovernmental coordination (city, county, state, and federal levels) and strict management of FAA/FCC licensing, contractual agreements for airport equipment, and NOTAM databases.

EXAMPLES OF WORK: (A position may not be assigned all the duties listed, nor do the listed examples include all the duties that may be assigned.)

Directs all statewide operations for aviation facilities, managing the personnel, budgets, and purchasing required to maintain a safe air navigation network.

Serves as the primary agency liaison to coordinate technical projects and regulatory compliance with municipal airport authorities and the Federal Aviation Administration (FAA).

Establishes internal operational procedures for the navigational aids division to standardize maintenance practices and improve response times for system failures.

Reviews and audits station logs and meter reading sheets for accuracy prior to submitting final documentation to federal regulatory bodies.

Negotiates and maintains contractual agreements for airport equipment leases, ensuring that state-owned assets are protected and legal requirements are met.

Plans and optimizes the logistics for statewide maintenance tours, ensuring that technicians are deployed efficiently to minimize travel costs and system downtime.

Manages the full lifecycle of FCC licensing for all state-operated facilities, including the preparation of applications for new sites and the timely renewal of existing licenses.

Monitors and triages critical NOTAMs (Notice to Air Missions) to ensure that pilots are immediately notified of equipment status and that repairs are prioritized effectively.

KNOWLEDGE, SKILLS, AND ABILITIES REQUIRED: (These are needed to perform the work assigned.)

Knowledge of: technical expertise in electronic equipment design, calibration, and modification; networking, IT, agency policies, industry standards, and preventive maintenance protocols; maintenance contract processes and data reporting; training methodologies and onboarding processes; office management; supervisory techniques; aviation industry regulations, terminology, and procedures; FAA and FCC standards; and agency policies.

Skill in: performance evaluation, feedback, and supervisory techniques; project management of inspections, PM programs, and replacements; time management and oversight; advanced technical problem-solving, documentation, and reporting; delivering in-field training and mentorship; identifying problems and developing solutions; and analyzing, evaluating, and interpreting data.

Ability to: conduct feasibility studies and evaluate prototypes; make strategic decisions and recommend personnel actions; build trust, resolve conflicts, and foster collaboration; communicate effectively to provide clear instructions, deliver training, and report data to management; supervise and direct others; manage financial and personnel resources; implement policies; interpret and apply laws and labor contracts; make decisions and exercise discretion; and prepare concise reports.

MINIMUM QUALIFICATIONS: (Applicants will be screened for possession of these qualifications. Applicants who need accommodation in the selection process should request this in advance.)

Two-year vocational degree in electronics, electricity, information technology, or related fields and two years of related experience. Experience may substitute for education on a year for year basis.

Promotion into this classification is contingent on successful completion of NDOT's ITS required training. Must obtain FAA letter of verification for Automated Weather Observation Systems (AWOS) and the Non-Directional Beacon Certification within one year in this classification.

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ITS Manager

V08826

DISTINGUISHING CHARACTERISTICS: (A position is assigned to this class based on the scope and level of work performed as outlined below.)

This is the administrative and strategic management level of the series. Under general direction, the incumbent directs all aspects of the agency's ITS work unit, typically supervising multiple subordinate section supervisors. This class is distinguished from the Supervisor levels by its primary focus on high-level administrative, budgetary, and strategic functions rather than hands-on technical fieldwork. Responsibilities unique to this level include overall resource allocation, formal ITS strategic planning, managing widespread maintenance contracts, and approving large-scale technology deployments.

EXAMPLES OF WORK: (A position may not be assigned all the duties listed, nor do the listed examples include all the duties that may be assigned.)

Provides administrative and strategic leadership for the entire agency ITS work unit, establishing long-term goals, policies, and operational standards.

Analyzes statewide performance metrics and system data to identify structural gaps in the ITS network and advocate for capital funding to modernize infrastructure.

Manages large-scale resource allocation, including the development and oversight of complex budgets, staffing levels, and statewide equipment inventories.

Drafts and maintains the agency's ITS strategic plan, creating an operational roadmap that aligns with both state and federal transportation goals.

Serves as the final authority for vendor relations, including the resolution of contract disputes and the enforcement of service-level agreements for maintenance contracts.

Directs subordinate supervisors in the administration of personnel functions, ensuring consistent application of performance standards and labor contract requirements.

Collaborates with regional and national transportation organizations to ensure that Nebraska's ITS infrastructure remains interoperable with emerging technologies and national standards.

Leads the research and evaluation of new technologies, providing data-driven recommendations to agency leadership regarding the adoption of next-generation ITS solutions.

Acts as the primary subject matter expert for the development of technical procurement contracts, ensuring that new equipment meets long-term agency needs and safety requirements.

KNOWLEDGE, SKILLS, AND ABILITIES REQUIRED: (These are needed to perform the work assigned.)

Knowledge of: computer systems, electronics, and technical areas relevant to ITS; business methods and practices; personnel management techniques; systems development; stakeholder engagement and vendor relations.

Skill in: active learning and effective oral/written communication; analytical and inductive reasoning; coaching and developing others; strategic planning; organization and prioritization; consultation and negotiation.

Ability to: cope with pressure and setbacks with maturity; coordinate work groups; monitor operational environments; continuously learn; interpret and apply state/federal laws, standards, and labor contracts.

MINIMUM QUALIFICATIONS: (Applicants will be screened for possession of these qualifications. Applicants who need accommodation in the selection process should request this in advance.)

Two-year vocational degree in electronics, electricity, information technology, or related field and three years of related supervisory experience. Experience may substitute for education on a year for year basis.

Promotion into this classification is contingent on successful completion of NDOT's ITS required training.

SPECIAL NOTES APPLICABLE TO ALL LEVELS:

State agencies are responsible to evaluate each of their positions to determine their individual overtime eligibility status as required by the Fair Labor Standards Act (FLSA).

Working in adverse weather conditions may be required.

May requires periodic overnight travel for team management, training, and regional assistance.

Applicant must possess a valid driver's license to perform work-related travel.

Ability to work at height (aerial lift, tower climbing).

Be able to be placed on-call and respond accordingly during non-scheduled work hours including holidays and weekends for emergencies and special events.

Established: 11/2026

Note: Classification-specification is subject to change. Please refer to the Nebraska State Personnel Job Specification website at https://das.nebraska.gov/personnel/classcomp/jobspecs/jobspecs.html to ensure this represents the most current copy of the description.

The following is a summary of changes made to this class specification.

Section	Change Description	Effective Date