

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
Public Employees Local 71 (LTC)
REQUEST FOR REFERRAL

DIVISION: M&O/ Fairbanks District		PCN: 25-1916	
JOB CLASS/TITLE: Maintenance Specialist, Traffic Control & Elec Sys, JII		WHEN POSITION IS NEEDED: ASAP	
WAGE GRADE: 51 (\$28.62) +Steps		DUTY STATION: Fairbanks	
<input checked="" type="checkbox"/>	Permanent Full-Time	<input type="checkbox"/>	Permanent Full-Time Seasonal
<input type="checkbox"/>	Permanent Part-Time	<input type="checkbox"/>	Permanent Part-Time Seasonal
<input type="checkbox"/>	Non-Perm Full-Time	<input type="checkbox"/>	Non-Perm Part-Time

CDL REQUIRED: <input checked="" type="checkbox"/> YES / <input type="checkbox"/> NO <input checked="" type="checkbox"/> At time of hire / <input type="checkbox"/> Within 90-days of hire TYPE OF CDL: B ENDORSEMENTS: Airbrake	WORK SCHEDULE: Monday – Friday Benefits include: Medical, Dental, Vision, Retirement, Paid Leave and Holidays.
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PRE-EMPLOYMENT BACKGROUND CHECK: <input checked="" type="checkbox"/> YES / <input type="checkbox"/> NO Type: CDL history check DRUG/ALCOHOL TESTING: <input checked="" type="checkbox"/> YES / <input type="checkbox"/> NO	COMMENTS/SPECIAL REQUIREMENTS: Journeyman Electrician Certificate of Fitness <i>Note: Candidates for CDL positions are required to register with the FMCSA Clearinghouse prior to hire.</i>
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CANDIDATE MUST BRING TO INTERVIEW: <input checked="" type="checkbox"/> Completed Workplace Alaska Application (if not already submitted to the hiring manager by Local 71) <input type="checkbox"/> Completed Certification of Employment as a Commercial Motor Vehicle Operator 10-year history form <input checked="" type="checkbox"/> Criminal Convictions: Must provide a copy of the judgement from the Court for <u>any</u> Felony Conviction (regardless of date) and any Misdemeanor Conviction within the last 5 years. For positions requiring APSIN* clearance, must provide judgement for <u>all</u> convictions regardless of date. <input checked="" type="checkbox"/> Copy of certifications and licenses <input type="checkbox"/> Other:
<i>Note: Candidates who do not bring the required information to the interview may be rejected.</i>

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2. Duties

2.1. In one or two sentences, state the main purpose of the position.

To repair and maintain all Northern Region electronic traffic control equipment, signal systems, and state highway illumination systems for the safety of the public.

2.2. Starting from the most to the least important, list the functional areas assigned to the position. Within each functional area, describe the duty statement associated; estimate the percentage of time spent performing the duties; and define each area as essential (E) or marginal (M).

Functional Area Title: Traffic and illumination systems		
E/M	% of Time	Duty Statement
E	30 %	Perform preventative and corrective maintenance on all electronic traffic control systems (Econolite VT4, Econolite KMC8000, Econolite ASC8000, Econolite ASC-2, Econolite ASC3 and Cobalt controllers) with the aid computer equipment, digital and analog multi-meters and miscellaneous hand tools, consisting of identifying and correcting malfunctions of the controllers, load switches, vehicle detection, fail-safe devices, relays, heaters, wiring, cooling fans and power supplies. Understand and implement Internet Protocols (IP) for the traffic signal controller interconnect system connecting cabinets to the Fairbanks Traffic Operations Center (TOC). Install and maintain a logbook in new and existing controllers, the ability to modify the controller timing data either on site or remotely with the use of a computer.
E	30 %	Perform preventative and corrective maintenance on the state highways illuminations system utilizing bucket trucks, multi-meters, megger, cable fault locators, trenchers, excavators and miscellaneous hand tools, consisting of identifying and correcting problems with the lighting controllers (breakers, lighting contractors, photo cells), lighting fixture (1000 watt, 400 watt, 250 watt, 200 watt, 75 watt, high pressure sodium or mercury vapor lamps, ballasts) and wiring in voltages ranging from 120 volt AC to 480 volt AC. To repair and replace (due to knockdowns) the various illumination poles ranging in heights from 30 to 150 feet. Assist with technical knowledge in the implementation of LED lighting within the Northern Region and utilize software to monitor the LED lighting systems.
E	7 %	Perform preventative and corrective maintenance on all the traffic signal lamps, lenses, signal compartments, pedestrian heads and wiring with the use of bucket trucks, multi-meters, megger, cable fault locators and miscellaneous hand tools.
E	5 %	Perform preventative and corrective maintenance on the emergency vehicle (OPTICOM) systems with the aid of man lifts, opticom emitter, multi-meters, portable computer, and miscellaneous hand tools, consisting of identifying and correcting problems with the phase selectors (752, 764 discriminators) detectors (100, 200 and 500 series) wiring and setting up the ranges for each intersection.
E	1 %	Fabricate and install vehicle detection when necessary to signalized intersections.
E	5 %	Troubleshoot and repair defective electronic/electrical equipment in the Traffic shop with the use of a digital and analog meters, loadswitch tester, CMU/MMU tester, BIU tester.

E	5 %	Assist and make recommendations to the various State design and construction departments for the design and constructions of the electronic traffic counting equipment and vehicle detection equipment.
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Functional Area Title:

E/M	% of Time	Duty Statement
E	2 %	Take delivery of and test out new traffic signal controller cabinets to make sure the functionality and design is correct for their respective intersection. Set up and prepare the cabinet for deployment to the respective construction project and assist the contractor with technical knowledge in the deployment on the new signal cabinet/controller.
E	1 %	Perform preventative and corrective maintenance on the Non Directional Beacon and runway lighting at Rural Airports as needed. This may include but not be limited to antenna repair, lighting control systems, NDB transmitter/receiver control system and repair of underground lighting cable malfunctions.
E	1 %	Perform preventative and corrective maintenance on variable LED message board display sign with the aid of bucket trucks, portable computer, multi-meters and miscellaneous hand tools, consisting of identifying and correcting problems within the display and controller both on site and at the remote computer.
E	1 %	Interpret and understand electronic/electrical drawings, schematics and blueprints and maintain a library of electronic/electrical prints and manuals, such as all the various signal controller cabinets and the State Highway Illuminations Systems.
E	10 %	Purchase electronic/electrical parts from various suppliers as necessary. Maintain a library of electronic/electrical parts catalogs.
E	1 %	Assist other State agencies in repair and maintenance of their illumination systems. Assist the sign crew to repair and replace damaged signs as needed.
E	1 %	Provide advice and assistance to City of Fairbanks signal maintenance personnel regarding questions and problems within their realm of responsibility.

Percentage Total: 100%

3. Other Work Details

3.1. List the computer software and hardware used to perform the duties described. Estimate how often each is used (e.g. daily, 2-3 times a week, 1-2 times a month, etc.).

PC and Maintenance Management Mystem (MMS) Software - 1-2 times a month

Econolite Autoscope and Terra Video Software - 5-7 times a month

Econolite Centracs Software - 5-7 times a month

Wavetronix Smartsensor Stop Bar and Advanced Software - 5-7 times a month

3.2. List the equipment and materials used to perform the duties described, including machinery, tools, instruments, vehicles, etc. Estimate how often each is used (e.g. daily, 2-3 times a week, 1-2 times a month, etc.).

Machinery: concrete saw, drill press, pipe threader, welder, air compressor, and portable generator - daily

Tools: pick shovels, rotohammer drill, electric drill, pneumatic tools, conduit benders, soldering irons, elec heat gun, and misc hand tools - daily

Equipment and Vehicles: 55-foot man lift, 29-foot man lift, pickup - daily

Instruments: digital multi-meter, amprobe, megger digital IC tester, econolite controller tester - daily

Fiber Optic testing equipment: OTDR, Power Loss meter, visual scope - 3-4 times a year

3.3. List the guides and references regularly used to perform the duties described. Examples include federal and state laws and regulations, professional standards, building codes, trade practices, contracts, and policy and procedure manuals. Explain how and why these guides and references are used. Estimate how often each is used (e.g. daily, 2-3 times a week, 1-2 times a month, etc.).

National Electrical Code, Alaska Traffic Manual, Manual on Uniform Traffic Control Devices, Alaska State Safety Code, OSHA Regulations, National Electrical Safety Code, State of Alaska DOT&PF Safety Manual, Alaska Highway Maintenance & Operations Manual, State of Alaska P&P's, State of Alaska Driving Laws, EPA Regulations - daily

3.4. Describe the level of authority and independence the incumbent of the position exercises. List the actions the incumbent takes or the decisions the incumbent makes on a regular basis without obtaining prior approval from a higher level employee. For example, explain how the position has the authority to commit the organization, or any parts thereof, to a course of action.

Virtually all maintenance decisions concerning traffic signals and highway illumination are made at this level as supported by direct supervisor and/or District Superintendent.

3.5. Describe the nature of the contacts the incumbent has with other people in order to perform the duties described. Include who is contacted, the reason for the contact, and how often the contact is made.

Fellow technicians for support - daily
Traffic and Safety Chief Engineer - monthly
M&O Superintendent and Station Foreman - weekly
Public contact in the course of normal duties - occasional

3.6. Describe the consequence of an error made by a prudent employee in the performance of the essential functions assigned to the position. What is the consequence of that error to individuals, operations, and programs?

Accidents with equipment may result in loss of equipment, asset damage, or loss of life. Monetary consequences and/or litigation may occur to individuals and/or the State and its programs. Operations may be hindered or delayed. Time and resources wasted.

3.7. List critical requirements of the position not previously described (e.g., skills in keyboarding, writing, negotiating, communications, etc.).

Ability to administer first aid. Valid Class B Commercial Driver's License. Skill and knowledge of proper soldering techniques. Knowledge and experience in the acquisition of proper components for electronic repair. Should have basic knowledge, skills and abilities to utilize a computer for timekeeping purposes and correspondence within departments and outside vendors or tech support.

3.8. List licenses, certifications, registrations, physical or other standards required by state or federal law or regulation to perform the duties described. Cite the specific authority (e.g. law or regulation, such as the OSHA Bloodborne Pathogens Act).

Certificate of Fitness Electrical Journeyman. Valid Commercial Driver's License, minimum of Class B with auto transmission and air brakes endorsement. Should have a current Industrial First Aid & CPR card.

4. Work Demands

The following identifies some of the physical and mental demands and potential hazards typically encountered by this position. These are job demands which can be ***reasonably anticipated and are an expectation of the job***.

Keeping in mind the essential functional areas and duty statements described in section 2, select the rating that best matches the requirement of this position according to the following descriptions:

Rating **Description**

Not Required (N): Not required of this position.

Present (P): Requirement **is** present, but **is not** essential to the position. (For example, a receptionist may encounter aggressive or angry people, but this is not an essential assignment.)

Occasional (O): Required 33 percent of the time or less **and** essential to the position. (For example, a lifeguard swims only occasionally, but it is essential that a lifeguard be able to swim; a correctional officer must control aggressive/angry people who are life threatening.)

Frequent (F): Required over 33 percent of the time **and** essential to the position.

Items checked below must be consistent with the duty statements listed in section 2.

4.1 Physical Requirements

Title	Rating			
	N	P	O	F
Sitting			O	
Walking				F
Standing				F
Running	N			
Jumping	N			
Bending or twisting				F
Squatting or kneeling				F
Crawling		P		
Reaching above shoulder level			O	
Reaching below shoulder level				F
Ascending or descending using a ladder or other conveyance				F
Climbing stairs			O	
Driving cars, light duty trucks				F
Driving heavy duty vehicles			O	
Using floor mounted foot controls to operate equipment (e.g., not driving a car)			O	
Repetitive motion of hands/fingers (e.g., keyboarding, turning pages)			O	
Fine manipulation with fingers				F
Pinching with fingers				F
Grasping with hand, gripping				F
Load, unload, aim, and fire handguns, shotguns or other firearms	N			

Lifting/carrying up to 25 pounds				F
Lifting/carrying 26-50 pounds			O	
Lifting/carrying more than 50 pounds		P		
Pushing/pulling up to 25 pounds				F
Pushing/pulling 26-50 pounds			O	
Pushing/pulling more than 50 pounds		P		
Balancing on moving surfaces		P		
Balancing on narrow surfaces				F
Balancing on slippery surfaces				F
Balancing on uneven surfaces				F
Restraining/grappling with people in a public protection environment	N			
Seeing objects at a distance				F
Seeing objects peripherally				F
Using depth perception				F
Seeing close work (e.g., typed print)				F
Distinguishing colors				F
Hearing conversations or sounds				F
Hearing via radio or telephone				F
Communicating through speech				F
Communicating by writing/reading				F
Distinguishing odors by smell	N			
Distinguishing tastes	N			

4.2 Work Environment

Title	Rating			
	N	P	O	F
Work in/exposure to inclement weather				F
Work in/exposure to cold water			O	
Work/live in remote field sites		P		
Work in confined areas (under desks, in heating vents, etc.)		P		
Exposure to dust, chemicals, or fumes			O	
Exposure to hazardous equipment (e.g., guns, chainsaws, explosives)			O	
Exposure to electrical current (not outlets)				F
Swimming/scuba diving	N			
Work at heights up to 25 feet (e.g., towers, poles)				F
Work at heights over 25 feet (e.g., towers, poles)				F
Work in urban or highway traffic (other than driving)				F
Work around moving machinery or mobile equipment				F
Work around moving mechanical parts				F
Work on and off moving equipment				F
Work on slippery or uneven surfaces				F
Work/travel in boat/small aircraft/helicopters		P		

Exposure to high noise levels		P		
Exposure to infection, germs, or contagious diseases (e.g., hospital, lab, clinic, etc.)	N			
Exposure to blood, body fluid, or materials potentially contaminated by blood or body fluids (e.g., hospital, lab, clinic, public protection environment)		P		
Exposure to needles or sharp implements (e.g., hospital, kitchens)	N			
Use of hot equipment (e.g., kitchen ovens, lab equipment)			O	
Exposure to wild/dangerous animals	N			
Exposure to insect bites or stings			O	
Exposure to aggressive/angry people in a public protection environment (e.g.: State Troopers, Correctional Officers, Probation Officer)	N			
Exposure to aggressive/angry people in the work environment		P		

4.3 Other Work Demands

Title	Rating			
	N	P	O	F
There are no other work demands.				

4.4. Explain any special physical, mental, or behavioral requirements of the position that have not already been addressed.

Operating equipment in repair operations exposes one to injury from equipment, traffic dust and smoke inhalation and cleaning fluids. Soldering and cutting materials required to complete operations risk burns from heat, sparks and flying debris. Smoke from soldering & cutting can be hazardous. Wintertime operations require exposure to extreme cold and are a constant threat to include slips & falls on ice, exposure to extreme cold. Risk of injury or death with working in and around traffic in low visibility and at night and/or collision with traffic is ever present. All above conditions can be encountered on any given day depending on work requirements, job assignments and time of year. The time of exposure can be from one to ten hours depending on job specific conditions.