

Title: Advanced Surveys Technician	Effective Date: June 17, 2023	Grade: XII	Job Category: Technician
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CHARACTERISTICS OF WORK

APPLICABLE TO SURVEYS FIELD POSITION:

Under general supervision, this position is responsible for assisting in directing a survey crew in conducting all phases of surveys for highway locations, bridge, land, and control surveys. This position is responsible for leading a survey crew in the absence of the crew chief. This position will work with and assist in the training of other members on the survey crew. Work will require contact with the public.

APPLICABLE TO SURVEYS OFFICE POSITION:

Under general supervision, this position is responsible for coordinating efforts regarding analyzing, compilation, and archiving of survey control, topographic, and terrain data using the Department’s computer software from survey field, photogrammetry, and LiDAR datasets. This position is responsible for assisting the Staff Surveys Engineers and Land Surveyors in receiving and transmitting survey data and performing survey calculations for field survey crews.

EXAMPLES OF WORK

The following examples are intended only as illustrations of various types of work performed. No attempt is made to be exhaustive. Related, similar, or other logical duties are performed as assigned. The Department may require employees to perform functions beyond those contained in job descriptions. The Department may modify job descriptions based on Department needs. The Arkansas Department of Transportation is an "at will" employer.

EXAMPLES OF WORK APPLICABLE TO SURVEYS FIELD POSITION:

- Use survey instruments, calculators, automated electronic data collectors, GPS equipment, and computers proficiently.
- Keep track of travel expenses and prepare individual expense reports.
- Use laptop computer for data processing, coordinate geometry computations, and computer-aided design and drafting (CADD).
- Plot survey data on plan sheets.
- Assist Surveys Crew Chief in training and supervision of survey crew members.
- Train in reading and plotting land descriptions and the use of computers.
- Perform field reconnaissance for Public Land Survey System (PLSS) monuments.

EXAMPLES OF WORK APPLICABLE TO SURVEYS OFFICE POSITION:

- Operate current generation of computers, electronic data collector, CADD, and photogrammetric workstations.
- Produce maps that conform to national accuracy standards.
- Interpret and utilize aerial imagery provided by the Department.
- Assist in the preparation of various types of maps, charts, and graphs as needed.
- Use desktop computer for data processing, coordinate geometry computations, and CADD.
- Compile survey field, photogrammetric, and LiDAR point cloud data into a combined topographic and digital terrain model (DTM) for Department design divisions.
- Train Survey Aides and Survey Technicians in the use of current generation CADD software.
- Plot survey data on plan sheets.
- Assist the Staff Surveys Engineers and Land Surveyors in providing survey calculations and other survey information to field survey crews.

MINIMUM REQUIREMENTS

Education and experience: The educational equivalent to a diploma from an accredited high school. Two years’ experience at the Surveys Technician level or above, or equivalent experience.

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Knowledge, skills and abilities: Ability to perform advanced mathematical calculations as related to control, engineering design, and land surveying to include trigonometry and geometry. Ability to adapt to evolving technologies as related to surveying, including handheld field computers, desktop computer applications, and electronic surveying instruments. Advanced use of computers and technology as related to surveying and ability to train others in their use. Proficient with reading and understanding highway plans and topographic maps. Extensive knowledge of the functions of a survey crew, surveying instruments, surveying terminology, and surveying principles and practices. Ability to read, interpret, and plot PLSS aliquot parts and metes and bounds land descriptions. Advanced knowledge of survey measurement computation and analysis to include a working knowledge of coordinate geometry (COGO) and highway alignments and curves. Ability to train and supervise others. Ability to interpret and apply Department policies and procedures as outlined in the Department’s Surveys Manual, Personnel Manual, and Safety Manual. These manuals are available for download from the internet at www.ardot.gov/manuals/manuals.aspx.

Licenses, registrations and certifications: Survey Intern (SI) certification preferred. Valid driver’s license.

ADDITIONAL MINIMUM REQUIREMENTS APPLICABLE TO SURVEYS FIELD POSITION:

Physical ability to work with hand tools. Ability to traverse at least two miles over rugged terrain, through water, and work in an outdoor environment. Ability to stand and operate surveying equipment for at least two hours without a break. Ability to carry 50 pounds of equipment and supplies for at least two hours without a break with or without reasonable accommodation. Constant statewide travel. Constant statewide travel for this position means overnight travel three or four nights per week, 52 weeks per year with reimbursement for expenses.

ADDITIONAL MINIMUM REQUIREMENTS APPLICABLE TO SURVEYS OFFICE POSITION:

Working knowledge of topographic and digital terrain models, map projections, aerial photography, and land surveying. Working knowledge of current computer-aided design and drafting (CADD) graphics design software. Ability to create surface models using Bentley InRoads software. Ability to generate plots and data required for field surveys or right of way staking. Ability to proficiently extract topographic and terrain data from LiDAR point clouds utilizing the Department’s current computer software. Available for occasional overnight statewide travel.

("Accredited" means the educational institution or program is accredited by an accrediting organization recognized either by the United States Department of Education or by the Council for Higher Education Accreditation.)