



Surveys Certification Requirements

General Information

It is required that the Consultant Surveyor be certified for the task or tasks to be performed. All survey work shall be performed according to the current Arkansas minimum standards and regulations governing the practice of Licensed Professional Surveyors, as well as the requirements of the Arkansas Department of Transportation (ARDOT) as specified in the most current version of the *Requirements and Procedures for Design Surveys and Land Surveys*, and under the supervision of the Professional Surveyor licensed in Arkansas approved by ARDOT to perform the task(s) specified. The most current version of the *Requirements and Procedures for Design Surveys and Land Surveys* can be downloaded from the ARDOT website at <https://ardot.flywheelsites.com/divisions/surveys/manuals>.

Survey Tasks

Control surveys, design surveys and land surveys require direct oversight by the Professional Surveyor(s), licensed in Arkansas, who is designated as the Surveyor(s) who will be in responsible charge, and who has been approved by the Surveys Division. Requirements specific to each type survey follow.

CONTROL SURVEYS

Control surveys consist of: static GPS; horizontal traverses; elevation control by three wire level techniques; and aerial photography targeting control for Photogrammetry. The task that may be assigned will be based on the Consultant Surveyor's previous experience and expertise shown in performing the task or tasks. The proper equipment meeting ARDOT requirements shall be used at all times. Currently, this requires dual frequency geodetic quality receivers and antennae for static GPS. The equipment shall be able to produce a RINEX raw data file. Dual frequency geodetic quality Trimble receivers, antennae, and data-collectors are required for RTK GPS. The surveyor shall utilize the AHTD.FCL feature code file. Trimble Business Center software suite is required for any GPS post processing and network adjustment functions. The GPS antennae for static and RTK surveys shall have been tested and phase-center models produced by the National Geodetic Survey (NGS).

DESIGN SURVEYS

Design surveys are currently broken down into four (4) separate tasks: (1) Topography, Terrain, and Utility data collection; (2) Photogrammetry and LiDAR Surveys; (3) Subsurface Utility Engineering Surveys; and (4) Survey Data Compilation. Once a Consultant Surveyor becomes certified to perform Task 1, they can also work toward becoming certified, for any or all the other tasks listed. Obtaining and maintaining certification for any or all tasks depends on performance of the current project task assigned.

Tasks (1) Topography, Terrain, and Utility data collection requires the use of the AHTD-SDMS collection software and AASHTO SDMS processor for collection and processing field collected data.

Tasks (2) Photogrammetry and LiDAR surveys and (3) Subsurface Utility Engineering (SUE) surveys may be performed by a subconsultant.

Task (4) will comprise of compiling survey data from different sources that may include field surveys, photogrammetry surveys, LiDAR surveys, and/or SUE surveys. The development of the CAD graphics (DGN), Survey Geometry database (ALG), and Digital Terrain Model (DTM) shall utilize the above stated Bentley Microstation InRoads softwares.

LAND SURVEYS

Land surveying is broken down into four (4) tasks: (1) field reconnaissance/data collection/worksheet generation; (2) right of way plan development; (3) right of way staking; and, (4) right of way monumentation and final plats. Once a Consultant Surveyor becomes certified to perform Task 1, they can also work toward becoming qualified, and ultimately certified, for any or all the other tasks listed. Obtaining and maintaining certification for any or all tasks depends on performance of the current project task assigned.

Land survey work requires the Consultant Surveyor to collect field information and process the data as prescribed above utilizing the AHTD-SDMS collector and the AASHTOWare SDMS Processor. The processed data shall be furnished in the Points and Chains (PAC) file format. The entire project, "field to finish", shall be archived and furnished to ARDOT for review.

Certified plats of the land survey information furnished to ARDOT shall meet current State and ARDOT requirements for land surveys. The plats shall be furnished in the Bentley Microstation and InRoads formats. Both graphic and coordinate information is required.

Software and Hardware Requirements

ARDOT also has requirements for software and hardware to be used on its projects. The information that follows provides details of the equipment and software required to perform control surveys, design surveys and/or land surveys for ARDOT.

It is currently required that all control, design, and land survey field data collection, with the exception of Surveys Division approved GPS collection techniques, shall be performed using the AHTD-SDMS field data collection system and according to current ARDOT data collection requirements. It is also required that all field data be processed using the public domain version of the AASHTOWare SDMS Processor software. This software will be provided by ARDOT. All field, calculated, and control data shall be submitted in the appropriate SDMS formats. This includes the survey data file (.SDF); unedited field files (.PRJ); edited files (.EDI); control files (.CTL); points and chains files (.PAC); and, alignment files (.ALI).

Digital Terrain Modeling (DTM), final design survey maps, land survey work sheets and final plats, if part of the scope of work, shall be prepared and submitted using Bentley Systems, Inc., Bentley Inroads, Version 8.11 SS2 and Microstation Version 8.11 SS2 or higher. The minimum modules required are Inroads Survey (for SDMS data import) and Inroads Site (for geometry and dtm). You are responsible for licensing the required CAD software products and for any and all training required in their use.

Total Stations must be capable of measuring angles 2"-5", with a read out of 1". Equipment utilized for vertical control surveys must be capable of achieving National Geodetic Survey (NGS) 2nd Order Class II accuracy. Observations from levelling equipment must be archivable in SDMS format.

A list of hardware platforms and total station instruments that are known to work with AHTD-SDMS Collector follows.

Data Collectors – Portable Computers with Windows Mobile 5 or later

- Trimble/TDS Ranger, Recon, & Nomad
- Juniper Systems Allegro & Archer

Total Station Instruments

- Sokkia Set Series
- Topcon GTS Series
- Leica TPS Series

Digital Levels

- Leica DNA Series

Certification Process

In order to be considered for on-call surveying contracts for fiscal years 2019 through 2022, certification in at least the Design Surveys task must have been completed prior to the issuance of the Notice for Letters of Interest for On-Call Surveying Consultants for Fiscal Years 2019 through 2022.

The initial certification must be in the Design Survey task. To begin the certification process, the following information shall be submitted shall be submitted to the Division Head of Surveys.

- Name, PS number, and resume of the Professional Surveyor who will be in responsible charge of the work.
- A list of the hardware (with specifications for each instrument attached) and software on hand that complies with the requirements for the task for which certification is requested.

Once the Professional Surveyor has met the basic requirements, a test project which includes field collection of data will be assigned by ARDOT for that person to work completely and submit. It is your responsibility to perform the fieldwork on a test project to demonstrate that you and your staff understand the procedures and requirements. Certification in a task is dependent upon the performance in the test project. **Each test project will be performed at no expense to ARDOT.** The test project will be as close to your headquarters as practical. The Consultant Surveyor and the surveys support staff will be trained by one of the Surveys Division staff members in the use of the AHTD-SDMS data collection software and the public domain version of the AASHTOWare SDMS processing software.

The intent of the ARDOT is to develop a list of certified firms to be available for projects on an as needed basis. ARDOT does not guarantee your firm will be selected as a Consultant Surveyor for one of the multi-year on-call contracts; receive a notice to perform either design surveys or land surveys; that your firm will be used for a specific number of projects; or, the size of a project, if assigned.

Maintaining Certification and Training

Maintaining certification is based on performance on each project assigned and attendance of training sessions. Training in general surveying techniques and in the use of the ARDOT data collection software and data processing software is provided at least once per year. Other training sessions are held occasionally when there is a new release of the software; an update in surveying techniques is required; and, when it is determined there is a general misunderstanding of existing surveying requirements. To maintain certification, it is required that each surveying consultant attend these sessions. Those unable to attend a session shall schedule a make-up session within six (6) weeks. Certification will be revoked for anyone not meeting these requirements.

Therefore, ARDOT reserves the right to remove a Consultant Surveyor from the list of certified Consultant Surveyors at any time based on the performance on any and all projects assigned.

Consultant Surveyors who have not been selected for an On-call contract shall maintain certification for the specific approved Control Surveys, Design Surveys, and Land Surveys tasks on an annual basis. It is the responsibility of the Consultant Surveyor to request continuation on the list of those qualified and/or certified to perform surveys for the ARDOT.

It should also be noted that certification is based on the credentials of the Arkansas Licensed Professional Surveyor(s) submitted for certification as being in responsible charge of the projects and trained in the use of the Public Domain version of AASHTO SDMS software. It is also required that each Professional Surveyor be certified individually. Any changes will affect your certification. Therefore, it is imperative you notify the Surveys Division immediately of any changes in licensed Professional Surveyor or Surveyors submitted for approval. Certification will be suspended or revoked until the new land surveyor has been approved.

When requested by prospective roadway and bridge design consultants, a list of Consultant Surveyors, with only the names and contact information, will be furnished. It is the responsibility of the Consultant Surveyor to inform the design consultant which task or tasks they are certified to perform.

Audit Requirements

The selected Consultant Surveyor must submit an audit report including a report on internal control and compliance. The report shall meet the reporting guidelines provided in the applicable financial audit standards sections of the *General Accepted Government Auditing Standards (GAGAS)*, and shall include **positive assurance** that all costs included in the recommended rate are allowed by **48 CFR Part 31**. An indirect cost rate, set by the audit, must be approved by the ARDOT prior to executing the contract. It is also required that proof of having current liability insurance be on file or submitted with the estimate.

City and County Street Projects Utilizing Federal or State Funds

Consultant surveyors do not have to be under contract with the ARDOT to perform surveys on city streets county roads for local governments utilizing state or federal funds administered by ARDOT. But, the consultant surveyor shall be certified for the surveying tasks specified in the scope of work for the local governments when roadway improvements will be made to a state highway (including rights of way) within the city or county contract.

If you have any questions, you may contact our office (501-569-2341).

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The Arkansas Department of Transportation (Department) complies with all civil rights provisions of federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance. Therefore, the Department does not discriminate on the basis of race, sex, color, age, national origin, religion (not applicable as a protected group under the Federal Motor Carrier safety Administration Title VI Program), or disability, Limited English Proficiency (LEP), or low-income status in the admission, access to and treatment in the Department's programs and activities, as well as the Department's hiring or employment practices. Complaints of alleged discrimination and inquiries regarding the Department's nondiscrimination policies may be directed to Joanna P. McFadden, Section Head - EEO/DBE (ADA/504/Title VI Coordinator), P. O. Box 2261, Little Rock, AR 72203, (501) 569-2298, (Voice/TTY 711), or the following email address: joanna.mcfadden@ardot.gov.

Free language assistance for Limited English Proficient individuals is available upon request.

This notice is available from the ADA/504/Title VI Coordinator in large print, on audiotape and in Braille.