

Standards of Practice No. 1

Arkansas Standards of Practice for Property Boundary Surveys and Plats

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Division of Land Surveys of the Arkansas Geographic Information
Systems Office



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Introduction

The purpose of these standards is to set minimum accuracies for land boundary surveys and minimum requirements for research, investigation, monumentation, and plat preparation, and the subsequent recording and distribution of the plat upon completion of a survey.

A.C.A. § 17-48-103 states “in order to safeguard the life, health, or property of the public, the practice of land surveying in this state is declared to be subject to regulation in the public interest”. These standards will promote the public interest.

These standards are binding upon any person duly licensed to practice within the State of Arkansas performing surveying services as defined herein. It is not the intent of these standards to limit the application of more stringent standards required by code, ordinance, or contractual specification. It is the responsibility of professional surveyors to stay informed on current rules and regulations pertaining to the practice of land surveying. When professional judgment necessitates deviation from these standards, the deviation shall be noted and explained by the surveyor on the plat.

Section 1 – Definitions

1.1 Survey

- A. “Land Surveying” means any service comprising the determination of the location of land boundaries and land boundary corners; the preparation of plats showing the shape and areas of tracts of land and their subdivision into smaller tracts; the preparation of plats showing the location of streets, roads, and rights-of-way of tracts to give access to smaller tracts; and, the preparation of official plats or maps of land thereof in this state (A.C.A. § 17-48-101 et. seq.).
 - 1. In these standards, land surveying is also defined to mean the setting or resetting of monuments that mark or reference the position of said corners and boundaries.

1.2 Area Designation

- A. Urban Area (Class A Property) - any municipality within the state having a population of 500 or more. Class A property shall also include the surveys of commercial and industrial properties, condominiums, townhouses, residential subdivisions, apartments and other multiunit residential lot developments.
- B. Suburban Area (Class B Property) - all that area within three miles of a city having a population of 2000 or more, or within one mile of a city having a population between 500 and 2000, or any area which, because of its location or natural resources, may become a developed area.
- C. Rural Area (Class C Property) - any area where land is used predominantly for agricultural purposes and which shows no signs of becoming a developed area.
- D. Mountain or Marsh Area (Class D Property) - surveys of lands, which normally lie in remote areas with difficult terrain and usually have limited potential for development.

1.3 Relative Positional Accuracy or Positional Tolerance. The linear horizontal distance without regard to direction by which a measured position of a monumented survey marker differs from its computed location.

Section 2 – Minimum Relative Positional Accuracy Standards

2.1 Determination of Area and Property Type. The area designation and property type for the land being surveyed shall be determined, using the definitions given in Section 1, paragraphs 1.2 and 1.3. The maximum allowable Positional Tolerance of property corners with respect to each other within a given Survey is listed in Table 1 below.

Table 1. Determination of Relative Positional Accuracy by Area Designation

Area Designation	Property Class	Relative Positional Accuracy (+/-feet)
Urban	A	$\pm(0.25)$
Suburban	B	$\pm(0.50)$
Rural	C	$\pm(0.75)$
Mountain or Marsh	D	$\pm(1.50)$

Section 3 – General Procedures

3.1 Research, Investigation, and Procedure. Prior to a boundary survey, the surveyor shall obtain information from the following, as applicable: field notes and plats of the original government survey and subsequent surveys, deeds, maps, county and state records. The surveyor shall analyze the information obtained to determine, to the best of his or her ability, the boundaries that were requested to be located.

- A. Surveys based on the U.S. Public Land Survey System shall be tied to the section and/or quarter section corners, which control position in accordance with the current *Bureau of Land Management (BLM) Manual of Surveying Instructions*. However, if a survey is to be performed within a section previously subdivided the surveyor may tie to and rely on any well-defined corners found therein. This exception in no manner relieves the surveyor from any liability resulting from his or her reliance on said corners in the performance of the survey.
- B. The current *Bureau of Land Management (BLM) Manual of Surveying Instructions* and other applicable references shall be used as the guide for the restoration of lost or obliterated corners and subdivision of sections.
- C. Lot and Block subdivision surveys shall conform to the minimum accuracy standards as set forth in Section 2. Where conflicts between the standards set forth herein and any such jurisdictional requirements and standards of practice occur, the more stringent shall apply. Lot surveys and plats within such subdivisions shall be tied to sufficient monumentation within the subdivision required to verify the correctness of the survey.

3.2 Field Work

- A. Execution. The surveyor shall, under his or her direction, locate and make measurements to all available monuments appropriate or necessary for the location of boundaries and corners, and coordinate the results of this field research and investigation.
- B. Measurement Techniques. Survey measurement techniques shall be designed to eliminate mistakes and minimize or compensate for instrumental, environmental, and operator error. All measurements shall be made to a precision compatible with the size and geometric shape of the parcel, and shall be consistent with the accuracy required for the class of property being surveyed.
- C. Monumentation. The surveyor shall cause monuments marking the corners of a parcel to be set as follows:
 - 1. Location. The surveyor shall locate or confirm the prior location of permanent monuments at each boundary corner of the lot, parcel, tract or line being surveyed. When the placement of a required monument at its proper location is impractical, an offset monument may be set. The location of said offset monument shall be clearly shown on the plat. The correctness or incorrectness of previously placed (existing)

monuments shall be confirmed by the surveyor, and they shall be shown and referenced on the plat.

2. Type of Monument. The surveyor shall select a type of monument that provides a reasonable degree of permanency consistent with the physical features of the terrain and the intended use of the monument. The following guidelines shall be followed as closely as is practically possible.
 - a. All the monuments shall be clearly marked with the license number of the surveyor setting or responsible for setting the monument.
 - b. Iron pipe shall be one-half inch (1/2") in (inside diameter) diameter or larger and steel rods (e.g. rebar) shall be at least one-half inch (1/2") in diameter. The minimum length for monuments shall be 18 inches where applicable. Alternate monument types may be used in asphalt, concrete, or rock surfaces where appropriate (e.g. PK/mag nail with aluminum washer, cotton picker spindle, bridge spike, RR spike, chisel marks).
 - c. Any monument set to mark the location of, a quarter-corner, or a section corner shall be marked with the precise corner position, the proper identification of the corner in accordance with the current BLM manual, and the year of monumentation. Letters and numerals on survey monument caps shall be neatly stamped with 1/8" or 3/16" steel dies and oriented to read from the south.
3. Monument Accessories. For any monument found or set marking the location of a quarter (1/4) corner, or a section corner, as well as any other corner for which the surveyor desires accessory evidence, shall be referenced by at least two (preferably four) permanent or semi-permanent reference objects (sound trees, when available). Horizontal measurements shall be made from the monumented corner position to the center of the base of reference trees at ground level, and to a readily identifiable point or mark on any other reference objects. On steep sites where a horizontal distance cannot be easily obtained, slope distance may be used and noted with the accessory information. It is encouraged, but not required, to include quarter (1/4) corner and section corner geographic coordinates to the thousandth of a second or Arkansas plane coordinates to the hundredth of a foot with an accuracy meeting or exceeding accuracies given in Section 2. Identify the datum and the year of system adjustment for geographic coordinates. Identify the year of system adjustment and the grid zone for plane coordinates.
4. Existing monuments verified or relied on for survey control, which are not considered permanent (such as a loose mound of stones) should be replaced or supplemented using monumentation standards in Section 3.2-C-2. Large permanent monuments, such as stone or concrete monuments, should have the precise corner position marked by a chiseled "X" or cross.

Section 4 – Plats

4.1 Publication of Results. A plat showing the results of each survey shall be prepared and distributed as follows:

- A. Preparation of Plats. A scale drawing of the property with the following information shall be part of every plat:
1. Boundaries with distances (horizontal ground) and directions (bearing or azimuths). When circular curves are platted the following four (4) curve elements shall be shown: radius, arc length, chord bearing, and chord distance.
 2. Ties to corners, monuments, corner accessories, and other relevant reference information, which control the location of a boundary or corner, the surveyor's basis for acceptance thereof, and the originating source of any found monument or accessory if known.
 3. Record title lines including record deed distance and direction calls and/or document (book and page) references.
 4. Reasonably observed encroachments and possession lines.
 5. Type and dimension description of monuments found and monuments set during the course of the survey. Pertinent inscriptions should also be included.
 6. Point of Commencement (if separate from the Point of Beginning) and Point of Beginning for metes and bounds surveys.
 7. Client's name.
 8. Business address of surveyor.
 9. North arrow with basis of direction.
 - a. The directional reference system shall be clearly described on the plat.
 - i. When the direction is based on a deed or survey plat record bearing or azimuth, include document references (book and page or other instrument number) and specify which boundary line controls the basis of direction.
 - ii. When the basis of direction is derived from the Arkansas Plane Coordinate System, identify the year of the system adjustment and the grid zone.
 10. Bar scale.
 11. Legend. A legend may not be required when all symbols, lines, and other graphics are described individually.
 12. Tract description.

13. Surveyor's seal with dated signature and the Certificate of Authorization seal when required (A.C.A § 17-48-207 et. seq.). Any additional sheets shall include required seal(s) with dated signature.
14. Date of survey.
15. A.C.A. § 17-48-107 et. seq. requires every survey of a parcel of real property made after March 30, 1981, shall include a statement of the number of acres or parts of acres included in the parcel surveyed. If the parcel surveyed includes lands situated in more than one quarter-quarter, the approximate number of acres of the parcel lying in each quarter-quarter shall be shown separately.
16. The appropriate index code shall be placed on each plat per the State Surveyor's current "Survey Plat Coding Instructions".

B. Distribution of Plats.

1. Survey shall be deemed to be complete when the survey plat has been dated, sealed, signed, and the surveyor has been paid.
2. Revised Plat or Re-plat. A plat that corrects or changes information shown on a previously recorded survey or subdivision plat and is required to be filed for record at the State Surveyor's office. The revised plat shall clearly indicate the portions revised and the document reference for the original plat.
3. Subdivision plats are boundary surveys creating parcels (e.g. lots, lots and block, tracts, easements, right of ways, etc.) and are to be filed with the State Surveyor's office after any recording requirements with City and/or County government.
 - a. Filing is not required, but may be submitted, for survey plats made of subdivided property located in a municipality where property has previously been surveyed and a plat filed (A.C.A. § 17-48-106 et. seq.).
4. Copies of the plat shall be distributed within 30 days of completion as follows:
 - a. State Surveyor's office (A.C.A § 17-48-106 et. seq.).
 - b. Client.

Section 5 – Enforcement

5.1 Enforcement. Enforcement of these regulations is vested in the Arkansas State Board of Licensure for Professional Engineers and Professional Surveyors, as prescribed in A.C.A. § 17-48-101 et. seq.