

ARIZONA MINIMUM STANDARDS OF PRACTICE FOR BOUNDARY SURVEYS

1. INTRODUCTION

- A. These Minimum Standards are subject to existing Arizona Revised Statutes, the Arizona Administrative Code and Substantive Policy Statements of the Arizona Board of Technical Registration.
- B. Standards of Practice are neither a substitute for professional judgment, nor performing work to an acceptable Standard of Care and are intended to help provide clients and the public with a more uniform product.
- C. If it is the professional opinion of the Surveyor to deviate from these standards of practice the Surveyor should justify the reason for the deviation on the Record of Survey.

2. DEFINITIONS

- A. For the purposes of this document, a Boundary Survey is a survey that locates the boundary of real property; is a survey that is dependent on the location of a boundary of real property; is a survey that recovers, rehabilitates, or places a monument that marks or controls the location of real property.
- B. Monument means an object set to mark a boundary corner, as a witness corner, or as a reference object.
- C. For the purposes of this document Registrant means a Land Surveyor licensed by the Arizona Board of Technical Registration.
- D. Documents shall include but not be limited to the following: maps, deeds, title reports, title opinions, County Engineer's records, Department of Transportation records, private surveyor's records, Railroad Company records, Mining Company records, Utility Company records, United States Public Lands Survey records and other County, State, Municipal or Federal Agency records.
- E. Supplemental Surveying Work includes control surveys, topographic surveys and easement surveys, and means surveying work performed in order to densify, augment and enhance previously performed surveying work (performed in compliance with these Standards) or site information, where monuments are not set, but excludes Boundary Surveying as defined in this Section. For the purposes of these Standards, Supplemental Surveying Work is not a Boundary Survey.
- F. Sufficient Identifying Marks of found monuments include one or more of the following:
 - 1. A qualified Registrant's identification number;
 - 2. The name of a Municipality or Agency together with the stamped date of monument(s) placement;
 - 3. Sufficient record information to verify the unique location and identity of government set monuments;
 - 4. Sufficient record information to verify the location and unique identity of all other monuments.

3. SCOPE OF SERVICES

There must be a documented scope of services determined for every Boundary Surveying engagement.

4. RESEARCH, IDENTIFICATION, MEASUREMENTS AND COMPUTATIONS

The Registrant in conducting a Boundary Survey must:

- A. Review the Documents necessary to perform a Boundary Survey.
- B. Perform an investigation of the property being surveyed and search for evidence necessary to determine boundary location(s).
- C. Analyze the data gathered and reach a professional opinion as to the location of the boundary of the property. The survey must achieve an accuracy which meets the standard of care.

- D. Retain a summary of the analysis and the conclusions reached, a list of all the documents utilized in the analysis, and copies of any documents utilized in the analysis that are not public records.

5. IDENTIFICATION AND RESOLUTION OF CONFLICTS

The Registrant in conducting a Boundary Survey must:

- A. When the Registrant disagrees with another survey, the Registrant shall make an attempt to contact the other surveyor and together they shall attempt to resolve the disagreement.
- B. Notify clients of evidence that, by reasonable analysis, might result in alternate positions of lines or points.

6. IDENTIFICATION AND DESCRIPTION OF MONUMENTS

The Registrant, in conducting a Boundary Survey, must:

- A. Thoroughly describe and specifically identify monuments as set or found, when shown on the Record of Survey.
- B. Affix his/her registration number to accepted found monuments on the boundary of the property being surveyed which do not bear Sufficient Identifying Marks.
- C. Never move, remove, alter or obscure an existing monument unless it is first properly referenced and all dimensions necessary to preserve its location are reported on a Record of Survey.
- D. Set new monuments prior to the completion of the survey, in conformance with the Monumentation Standards, as defined in Section 9, at all corners of the property being surveyed unless acceptable monuments already exist.
- E. Show the monuments marking the location(s) of the corner(s) relied upon to determine the location of the boundary of the property being surveyed on the Record of Survey. If the location(s) of the corner(s) relied upon are not occupied by monuments containing Sufficient Identifying Marks, the registrant must set new monument(s) or tag existing monument(s) and show them on the Record of Survey.

7. RECORD OF SURVEY

- A. The Registrant shall prepare an appropriately scaled Record of Survey drawing in accordance with A.R.S. §33-105. The Record of Survey shall include at a minimum, the following items:
 - 1. The record description of the property or the reference to the source of the record description.
 - 2. A graphic and a stated scale.
 - 3. The boundary being surveyed including the dimensions as measured on the ground and the relevant record dimensions unless the two are equivalent, in which case it shall be so stated.
 - 4. Pertinent facts and dimensions used in the determination of the Boundary Survey together with all controlling monumented corners, calculated corner positions and all dimensions pertaining to the restoration of a lost or obliterated corner or the subdividing of a section.
 - 5. Monuments identified per Section 6 of these Standards.
 - 6. The location and description of any evidence of a boundary or occupation including such things as a fence, building, hedge, wall, etc. or the remains thereof used to determine the boundary location.
 - 7. A minimum of three curve parameters for all curves; together with a chord, radial or tangent bearing for non-tangent curves. Curves are assumed to be tangent to the incoming and outgoing lines unless otherwise noted.
 - 8. A list of documents used to determine the boundaries and to prepare the Record of Survey drawing.
 - 9. When coordinates are published on the Record of Survey, in addition to stating the Northing (Y), Easting (X), and if applicable, Elevation, Latitude, Longitude and Ellipsoid Height, the following are also required:

Horizontal Metadata:

- a. Datum: If using an official datum recognized by a government agency, state the datum name, adjustment, epoch and government agency. If an unofficial datum is used, supply the necessary parameters to recreate said datum.
- b. Projection: If using an official projection recognized by a government agency, state the projection name and government agency. If using something else, state the projection parameters.
- c. Horizontal Adjustment Parameters: If any adjustments or modifications are performed to the projected coordinates, provide pertinent parameters such as translation(s), scale factor and scale factor origin to reproduce the coordinate system.
- d. Units: State the unit of measure.
- e. Controlling Positions: The name(s) and coordinate(s) of station(s) used to orient (realize) your survey to the coordinate system. In the event a real time GNSS network solution was utilized to generate positions, state the source (firm or agency) of the GNSS network solution

Vertical Metadata:

- a. Datum: If using an official datum recognized by a government agency, state the datum name and government agency, if not state the word "Local" datum.
- b. Controlling Benchmarks: List the name(s), horizontal coordinate(s)(if known), and elevations of the station(s) used to orient your survey to the vertical datum.

10. The firm name and address of the Registrant.

11. The date(s) of survey.

12. The signature and dated seal of the Registrant.

B. The Registrant need not record a Record of Survey if all of the following conditions are met:

1. The Boundary Survey is the retracement of a previously surveyed boundary for which a Record of Survey or subdivision plat is on file with the County Recorder.
2. The previously recorded survey or plat uniquely identifies all monuments on the boundary of the parcel being retraced.
3. All previously identified monuments exist at the time of the current survey.
4. No new monuments are set.

8. PROPERTY DESCRIPTION

- A. When written in conjunction with or in support of a Boundary Survey as defined in this document and the property's boundary is substantially as described in an existing recorded document then the existing record description should be utilized.
- B. When a new description is created in conjunction with or in support of a Boundary Survey as defined in this document it must be legally sufficient and the following should apply:
 1. The general format of caption, body, qualifications, closing and references should be used.
 2. A "metes" or "metes and bounds" description of an existing aliquot description or of an existing lot and block description should be written as being subordinate to the primary aliquot or lot and block description.
 3. A metes and bounds description of the surveyed boundary should include a reference to the same basis of bearing that was used for the Boundary Survey.
 4. A metes only description should be avoided.
- C. The contact information of the firm or Registrant preparing the description should be included with the description.

9. MONUMENTATION

Monuments set by the Registrant in the course of completing a Boundary Survey must conform to the following:

- A. Where practicable all monuments shall be at least one-half inch in diameter, at a minimum 16 inches long and the body of the monument shall be made of metal as determined by the registrant, suitable for the environment as to avoid corrosion. The Registrant's number shall be stamped, cast or scribed into a metallic surface as determined by the registrant, suitable for the environment as to avoid corrosion. The metal the registrant's number is on, if not on the body of the monument itself, shall be affixed either by compression fit to the body of the monument, epoxied to it or attached by a wire as determined by the registrant, suitable for the environment as to avoid corrosion. In situations where all the metals used are not ferromagnetically detectable, a magnet shall be incorporated into or buried alongside the monument.
- B. When a corner is located at a place where it is not practical to set a Monument, reference Monuments or a witness monument shall be set and dimensioned on the plat such that the location of the corner can be reestablished therefrom.
- C. If local subdivision regulations allow for the recording of a subdivision plat without having all of the Survey monuments set, an acceptable interim practice would include placing all exterior boundary monuments at the time of the filing of the preliminary plat and recording a Record of Survey in compliance with State statutes. Interior property corners shall then be monumented as soon as completion of the infrastructure and improvements make it practical to do so. If such Monuments should differ from the type described on the Final Plat, a Record of Survey Plat shall be recorded showing these differences. All monuments set shall be under the direct supervision of the Registrant of record. If for any reason the Registrant of record is not available to supervise the setting of the interior corner monuments, subsequent to the recording of the Final Plat, the replacement Registrant shall set Monuments with his/her identifying number and a Record of Survey Plat shall be recorded in accordance with the State Statutes.