

## FINAL

### Rule 21 STANDARDS OF PRACTICE FOR SURVEYING

**21.1** Whenever a survey is performed, it shall comply with Section 73-13-71 (4) and Section 73-13-73 and the Standards of Practice for Surveying in Mississippi as described below. Types of surveys shall include, but not be limited to the following as described:

1. **Boundary Surveys, Route Surveys, Easement Surveys, and Lease Surveys** shall mean a survey, the primary purpose of which includes, but is not limited to, determining the perimeters of a parcel or tract of land by establishing or re-establishing corners, and monuments, for the purposes of describing, platting or dividing the parcel and preparing a description(s) of the parcel of land. If an easement is performed in conjunction with a boundary survey, lying adjacent and parallel, monumentation is not required. In the event that an easement survey is performed independent of a boundary survey, monumentation is required.
2. **Topographic Survey** shall mean a survey of the natural and selected man-made features of a part of the earth's surface by ground measurements or remote sensing to determine horizontal and vertical spatial relations.
3. **Hydrographic Survey** shall mean a survey having for its principle purpose the determination of data relating to bodies of water and which may consist of the determination of one or several of the following classes of data: depth of water and configuration of bottom, directions and force of current, water stages, and location of fixed objects for survey and navigation purposes.
4. **Construction Layout Survey** shall mean the measurements made to control elevation, horizontal position and dimensions, and configuration, prior to or while construction is in progress.

#### **21.2** Attesting to Quality and Responsibility for Surveys

To provide the client with the assurance that the work was performed under the direct supervision of a licensee, and was performed to a certain standard, documentation shall be sealed and signed by the licensee in responsible charge, including, but not limited to, the following:

1. When a boundary, route, easement, or lease survey is performed, a plat shall be prepared and the plat shall bear the seal and signature of the Professional Surveyor in responsible charge.

2. When a topographic survey, hydrographic survey or construction layout survey is performed at the request of a client, any plat, map or report that is the final product of that licensee for that project shall be sealed and signed by the Professional Surveyor or the Professional Engineer in responsible charge. If a topographic survey, hydrographic survey or construction layout survey is performed by a licensee to obtain data to be used by that licensee to perform calculations or to be incorporated into a final product of that project, then the final product of that project shall be sealed and signed by the Professional Surveyor or the Professional Engineer in responsible charge.

**21.3** The boundary, route, easement, and lease survey plat shall conform to the following requirements and shall include the following information:

- a. The plat shall be displayed on any reasonably stable and durable drawing paper, vellum, linen, or film of reproducible quality. No plat or map shall have dimensions of less than 8 1/2 x 11 inches.
- b. The plat shall show the scale, area, and classification of the survey (A,B,C or D). These classifications are based upon both the purposes for which the property is being used at the time the survey is performed and any proposed developments which are disclosed by the client. This classification must be based on the criteria in Appendix A, and the survey must meet the minimum specifications set forth in Appendix B. Scale shall be sufficient to show detail for the appropriate classification.
- c. The reference meridian used to conduct the survey shall be stated on the survey plat. A definitive north arrow shall be shown on the plat. All surveys will be referenced to a true meridian by accepted methods with the following exceptions: (a) those used in existing subdivisions; (b) those shown on city or town plats; or, (c) those shown on a previous survey when the current survey is a division of said previous survey and enough monumentation is available to establish the original orientation. If Global Positioning System equipment is used to obtain the reference meridian, it shall be stated on the plat whether the bearings are grid or geodetic. If any published horizontal control stations are occupied during the survey, they shall be listed on the plat and the horizontal datum used shall be listed on the plat. If a meridian established by the compass is used, the compass must be properly declinated and adjusted to a True Meridian. Regardless of the meridian used, the survey must be referenced to a well defined line, group of monuments, reference points, etc. of a normally assumed permanent nature so the orientation of the survey can be re-established. This reference line and its relation to the meridian used must be clearly shown on the survey plat.
- d. All monuments, natural and artificial (man-made), found or set shall be shown and described on the survey plat. The monuments shall be noted as found or set. All monuments set shall be ferrous metal, or contain ferrous metal, not less than 1/2 inch in diameter, and not less than eighteen inches in length. All monuments set shall display the license number of the

Professional Surveyor , the COA number of the firm, or the name of the responsible government agency. All corners shall be monumented, either by a found monument clearly described on the survey plat, or by a monument set as described above, except however, a corner which falls in a creek, stream or ditch, in a gravel or asphalt road or upon solid rock, concrete or other like materials shall be marked in a permanent manner and clearly identified on the plat or witnessed by Witness Corners. Witness Corners shall be set whenever a corner monument cannot be set or is likely to be disturbed. Such witness corners shall be set as close as practical to the true corner and shall meet the same physical standards that would be required for the true corner were it set. If only one (1) witness corner is set, it must be set on the actual boundary line or prolongation thereof. Otherwise, at least two (2) witness corners shall be set and so noted on the plat of the survey. The bearing and distance referencing the witness corners from the true corner shall be shown on the plat. If the witness corner is set on the boundary line, only the distance may be shown. Courses that intersect a creek, stream, ditch or the center of a public road that is to be used as a boundary of the parcel being surveyed, should have witness corners set on the line intersecting same, and be clearly shown on the plat. Concrete right-of-way markers may be acceptable as monuments on all roadways, streets, and utility rights-of-way, and may be placed only at points where right-of-way width or direction change.

- e. The plat of a metes and boundary survey must clearly describe and show the monument marking the commencing point and the point of beginning for the survey. Commencing Point is a well defined, monumented point referenced to the U.S. Public Land (GLO) Survey system or other recorded subdivision plat, recorded and monumented City or County plat or map, compatible with Mississippi Statutes for filing and recording of land ownership that is used in a metes and bounds description. Point of Beginning is a well defined monumented point referenced to the U.S. Public Land (GLO) Survey system or recorded subdivision plat, recorded and monumented City or County plat or map, compatible with Mississippi Statutes for recording land ownership that is used as the beginning and ending point in a metes and bounds land description.
- f. All discrepancies between the survey and the record description, and the source of all information used in making the survey shall be indicated. When an inconsistency is found, including a gap or overlap, excess or deficiency, erroneously located boundary lines or monuments, or when any doubt as to the location on the ground of the true boundary or property rights exists, the nature of the inconsistency shall be clearly shown on the drawing.
- g. A description and location of any physical evidence of occupation found along a boundary line, including fences, walls, buildings or monuments.
- h. The horizontal length (distance) and direction (bearing or azimuth) of each line as specified in the legal description and as determined in the actual survey process.
- i. Four (4) elements of all circular curves shall be shown ( radius, arc length, chord bearing and chord length).

- j. When a property description is required by the client, the description prepared by the Professional Surveyor should list all pertinent information that is shown on the survey plat to include, but not limited to: commencing point, point of beginning, course bearing and distances, description of all corner monuments, description and offset of witness corners and basis of bearings.
- k. The lot and block or tract numbers or other designations, including those of adjoining lots and tracts if the survey is within a recorded subdivision.
- l. Visible encroachments onto or from adjoining property or abutting streets with the extent of such encroachment. No sub-surface encroachments are required to be located unless their existence and location is furnished to the surveyor by the client.
- m. All public and private rights-of-way or easements which are observed, adjoining or crossing the land surveyed and pertinent to the survey.
- n. Location of all permanent improvements pertinent to the survey, with reference to the boundaries.
- o. Anytime State Plane Coordinates are used on a survey in the State of Mississippi, these surveys must be performed in compliance with state Law (Chapter No.462, Senate Bill Number 2131, approved March 29, 1991) and in compliance with item (e) of this rule. State Plane Coordinates shall be clearly referenced to the appropriate horizontal datum on the plat. When State Plane Coordinates are used, the following information shall be shown on the plat: (1) the State Plane Coordinates System Zone, (2) the horizontal and/or vertical datum(s) used, (3) the method used to derive information such as Global Positioning System or conventional survey, (4) all horizontal and/or vertical control points used (5) a combined or correctional factor, (6) the convergence angle. The coordinates of a minimum of two (2) reference points relevant to the survey shall be shown on the plat or map.
- p. Regardless of the type of survey, a plat or survey shall bear the name, address, date of field survey, and signature and seal (either embossed or stamped) of the licensee in responsible charge. This signature and seal is certification that the survey meets the requirements of the Standards of Practice for Surveyors in Mississippi as adopted by the Mississippi Board of Licensure for Professional Engineers and Surveyors. Other regulations including the Manual of Instructions for the Survey of U.S. Public Lands and all subdivision Laws and regulations of the State of Mississippi Statutes shall be followed.

**21.3 Enforcement** - Licensees failing to meet these standards of practice will be subject to appropriate disciplinary action by the Licensure Board.

## APPENDIX A - Classification of Surveys

- A. **Class A Surveys** - Surveys of extensively developed and expensive properties which require maximum surveying accuracy. This includes, but is not limited to, surveys of urban business district properties and highly developed commercial properties.
- B. **Class B Surveys** - Surveys of properties which are subject to costly improvements and justify a high degree of surveying accuracy. This includes, but is not limited to, surveys of commercial properties and higher priced residential properties located outside urban business districts and highly developed commercial areas.
- C. **Class C Surveys** - Surveys of residential and surrounding areas which are apt to increase rapidly in value. This includes, but is not necessarily limited to, surveys of residential areas which cannot be classified as Class A or Class B surveys
- D. **Class D Surveys** - Surveys of all remaining properties which cannot be classified as Class A, B, or C surveys. This includes, but is not limited to, surveys of farm lands and rural areas.

## APPENDIX B

CONDITION	D	C	B	A	Remarks and Formula
	Rural	Suburban	Urban	Urban Business District	
Unadjusted Closure (Minimum)	1:2000	1:5000	1:7500	1:10000	Loop or between Control Monuments
Angular Closure (Minimum)	60" $\sqrt{N}$	30" $\sqrt{N}$	25" $\sqrt{N}$	15" $\sqrt{N}$	N=Number of Angles in Traverse
Accuracy of Bearing	$\pm 5$ Min.	$\pm 3$ Min.	$\pm 2$ Min.	$\pm 1$ Min.	Relative to Source
Accuracy of Distances	0.10 ft. +200 ppm	0.07 ft. +150 ppm	0.05 ft. +100 ppm	0.03 ft. +50 ppm	100 ppm = 1:10000
Elevations for Boundaries Controlled by Tides, Contours, Rivers, etc.	$\pm .30$ ft.	$\pm .20$ ft.	$\pm .10$ ft.	$\pm .05$ ft.	Based on NGVD/NAVD

Accurate to:					
Location of Improvements Structures, Paving, etc. (Tie Measurement)	<b>± 2.0 ft.</b>	<b>± 1.0 ft.</b>	<b>± .2 ft.</b>	<b>± .1. ft.</b>	