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The following is a portion of the minutes from the April 10, 2007 Board of Registration meeting that includes the changes to the technical standards. Please be aware that text that is stricken through will be deleted, text that is underlined is to be added, and text that is neither is already in the standards and will remain unchanged.

LS Minimum Technical Standards:

Mr. Chastain discussed revisions to the Land Surveyors Minimum Technical Standards. Mr. Richardson moved to post the changes to Board Rule 180-7-.01, 180-7-.02, 180-7-.03, 180-7-.04, 180-7-.05, 180-7-.07, 180-7-.08 and 180-7-.09. Mr. Dean seconded. Motion carried. Mr. Richardson moved to post Board Rule 180-7-.06. Mr. Dean seconded. Motion carried with Mr. Chastain opposed.

Changes to be made are:

*Technical Standards for Property Surveys
Chapter 180-7*

[180-7-.01 Preamble](#)
[180-7-.02 Land Titles and Locations](#)
[180-7-.03 Measurements – Horizontal](#)
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180-7-.01 Preamble. Amended.

In order to assure the public that proper and adequate surveys, maps, plats and writings are executed in connection with property, for whatever purpose, Technical Standards are hereby established. These standards establish the minimum degrees of accuracy, completeness and/or quality in the several areas of concern in order to be considered acceptable. Authority O.C.G.A. 43-15.

180-7-.02 Definitions

The board adopts those definitions listed in the latest edition of the American Congress on Surveying and Mapping book "Definitions of Surveying and Associated Terms."

180-7-.02 03 Land Titles and Location. Amended.

(1) (a) Every parcel of land whose boundaries are surveyed by a land surveyor should be made conformable with the record title boundaries of such land. The land surveyor prior to making such a survey, shall acquire ~~all necessary~~ the following prerequisite data, including deeds, maps, certificates of title, centerline data, right of way data, adjacent descriptions, and other boundary line locations in the vicinity as necessary or available. ~~He~~ The land surveyor shall compare and analyze all of the data obtained and make most nearly correct legal determination possible of the position of the boundaries of such parcel. ~~He~~ The land surveyor shall make a field survey traversing and connecting all available monuments appropriate or necessary for the location, and coordinate the facts of such survey with the pre-determined analysis. Not until then shall the monuments marking the corners or such parcel be set, and such monuments shall be set in accordance with the full and most satisfactory analysis obtainable. It shall be the responsibility of the land surveyor to evaluate conformity with adjacent tracts for overlaps and gores and to report the same on all maps, plats, and reports.

(b) In the event that the land surveyor determines that it is not possible to make the survey of a parcel of land conformable with the record title of such land or that it is not possible to coordinate the predetermined analysis with the field survey, the land surveyor shall explain the reason for his determination and shall denote in indisputable language, reasons may include, but are not limited to, the following:
 Disputed property lines or areas; possession lines; acquiescence; adverse possession; unrecorded deeds; proposed purchases (new parcels); dubious and nebulous deed descriptions; and any adverse claim.

This paragraph shall not be construed in any way to allow the land surveyor to evade his/her responsibilities under the law.

(2) Any description written for conveyance or other purpose, defining land boundaries, shall be complete and accurate from a title standpoint, providing definite and unequivocal identification of the lines or boundaries, and definite recitals as to use or rights to be created through such descriptions. A description shall include the general location of the tract or lot with sufficient accuracy such that the tract can be readily located on the ground. The land lot, district, section, militia district number (in Headright Grant areas), city (if known to be within the city limits) and county shall be called out in said description. Description shall start at a point of commencement and/or a point of beginning that can be readily re-established. The description shall include the names of adjoining subdivision and/or property owners on all lines, as can be determined at the time of commencement of the survey through public records such as the county tax assessor and/or clerk of court records. (A title search is not required for this.) A metes and bounds description shall describe all courses in logical sequence around a tract or lot in a clockwise direction such that the ending point is the beginning point, the exception to this would be a description for a linear easement. The monument at each corner shall be described. All lines adjacent to streets, roads, or other rights

~~of-way shall be referenced to these and all pertinent distances and curve data shall be listed (arc length, chord length, chord bearing and radius) in addition to the parcel's area. All descriptions, being a form of report, shall bear the surveyor's name, address, seal and signature. Any form of descriptions, regardless of presence or absence of any or all dimensions, but specifically tying to adjoiners, which fulfills the foregoing conditions, is acceptable. However, such description, insofar as possible, in addition to all necessary ties to adjoiners, should contain sufficient data of dimension, determined from accurate field survey, to enable the description to be completely platted. It is also advisable wherever correct surveys have determined the coordinate values of boundary corners or monuments recited in a description, to make proper reference thereto in the description by any appropriate recital.~~

~~(3) Any surveys made for purposes other than location of land boundaries need only the ordinary information and data necessary to fix the situs of the work to be done, by one or more ties to some known and accepted title boundary line or corner, together with such other data as may be required to the project into adjoining matters appurtenant.~~

180-7-.03 04 Measurements-Horizontal. Amended.

Measurements shall be made with instruments capable of attaining the required accuracy for the particular problem involved. Angles and distances shall be measured to obtain an

accuracy of not less than 1:10,000 in urban or suburban areas and 1:5,000 in rural areas except as follows:

(a) The allowable positional tolerance of property corners with respect to each other within a given survey may not be greater than:

1. ~~0.02~~ 0.1 foot in urban blocks wherein buildings can be erected along the property line, or where high land values so warrant;

2. ~~0.04~~ 0.25 foot in urban or suburban subdivisions interior blocks and/or ~~urban and~~ suburban lots or parcels;

3. ~~1~~ foot per 5,000 feet of perimeter 0.50 in rural areas, except as follows:

(i) Closer tolerance is required where land value in rural areas is increased by adjacency to major highway intersections or thruway complexes, building congestion, oil or mineral rights or any other reasons;

(ii) When a parcel of land is extremely long or narrow, closer tolerance is required on the shorter narrow dimensions to qualify acceptable corner positioning in relation to the narrow width;

~~(iii) Where surveys are made in areas of current or known low economic value, an error of closure of not less than 1:2,500 may be accepted.~~

~~(iv)~~ (iii) Where original surveys in rural areas were made with a compass, retracement may be made by compass in order to "follow the footsteps" of the original surveyor. However, such retracement also must be reduced to a non-magnetic traverse so that the error of closure as specified above is obtained. Authority O.C.G.A. 43-15-1.

180-7-.04 05 Measurements-Vertical. Amended.

(1) A circuit of levels between precise bench marks or a circuit closed upon the initial bench mark shall not differ more than 0.02 foot multiplied by the square root of the number of miles in the circuit, and in no case to exceed 0.05 foot.

(2) Levels run for control to topographic mapping of a site or project shall have an error of closure of not less than 0.1 foot per square root of the number of miles.

(3) Topographic maps and plats, delineated either by contours or by points with indicated elevation, shall be of such accuracy that no more than 10% of the area covered shall be in error by more than one half (1/2) of the contour interval shown. This degree of accuracy applied to maps and plats prepared from field work only and those compiled by photogrammetric techniques. Authority 43-15-1.

180-7-.05 06 Monuments. Amended.

(1) ~~The type and position of monuments to be set on any survey shall be determined by the nature of the survey, the permanency required, the nature of the terrain, the cadastral features involved, and the availability of material. In order to present boundary conflicts, the public must have assurances that the corners of real property boundaries as determined from an accurate survey are durably marked with survey monuments that may be identified on the ground with the aid of the survey plat. In meeting this objective, surveyors must meet the following minimum standards of accuracy, completeness and quality.~~

~~(2) Monuments set in an inhabited area with improved streets, buildings, and other more or less permanent topographical features, shall be such as will remain for the life of such features and may be set in contact with or alongside of such semi-permanent structures with reasonable security.~~

~~Monuments set in open country where their maintenance is to be continued for long periods shall be of a material such as concrete, rock, or metal, of sufficient size that they will not be readily removable and will be easily discoverable, and witness monuments of ready visibility shall be placed alongside nearby, if necessary. The surveyor shall set monuments as defined herein, unless monuments already exist or cannot be set due to physical obstructions. Said monuments shall be set at all boundary corners. Those monuments that cannot be set due to physical obstructions shall have a reference monument set. Said reference monument shall be referenced on the plat by bearing and distance from the true position of said monument. Also, said reference monument shall be set far enough away from the true corner so as not to be confused with the position of the true corner.~~

~~(3) Except in the case of original surveys, in which monuments are to be referred to in the record, permanent monuments shall not immediately be placed on lines or in positions where their destruction is more or less immediate by reason of construction; but semi-permanent monuments, such as stakes, pipes, or other material, shall be set in~~

~~protected spots at definitely known distances from the true corners for purpose of location of such corners after construction is completed. The surveyor shall make a definite commitment of record, that he/she will correctly set such true corners as soon as their permanence in position can be assured. All monuments set shall be composed of a durable material and shall incorporate a ferrous material to aid in location by magnetic locators. Said monuments shall have a minimum length of 18 inches. Longer monuments are required in soils less likely to hold and maintain the true position of the monument. Said monuments composed of solid metal rods shall have a minimum cross sectional area of 0.2 square inches. Concrete, composite or stone monuments shall have a minimum dimension of 3 inches by 3 inches. Monuments placed at land lot corners, district corners or county corners shall if a rod have a minimum diameter of 5/8 inches, a pipe of 1 inch diameter or a concrete or stone monument of not less than 4 inches square.~~

~~(4) In the layout of new subdivisions (field work initiated after the effective date of these rules) permanent type control monuments will be set in as protected locations as practical, as follows:~~

~~(a) At least two monuments for the first ten acres and at least one additional monument for each additional ten acres or major fraction thereof.~~

~~Monuments shall be intervisible at the time of installation, with consideration being given to the structures to be erected which will permit continued intervisibility in the original layout of the subdivision. All control monuments shall be located and tied together by traverse, with a positional tolerance of not less than 1:10,000. Control monuments may be coincident with the land lot, block or lot corners. They will be shown on the subdivision plat, with bearings and distances between monuments and sufficient ties to permit relocation of any lot or block corners within the subdivision.~~

~~(4) Every boundary monument set shall be identified with a durable marker or cap bearing the Georgia registration number of the surveyor in responsible charge or the name of the business entity and/or Certification of Authorization number. (COA #).~~

~~(5) If a boundary corner falls in a hard surface such as concrete or asphalt, alternate monumentation may be used that is durable and identifiable.~~

- (6) For irregular boundaries such as non-engineered roads, rivers, streams, lakes, beach, etc. a dimensioned meander or survey line may be used. If a meander or survey line is used, monuments shall be set at the meander or survey line's terminus points on real property boundary lines.
- (7) All monuments found or placed shall be described on the survey plat. The corner descriptions shall state the size, material and cap identification of the monument as well as whether the monument was set or found. Authority O.C.G.A. 43-15-1.

180-7-.06 .07 Coordinates and Triangulation. Amended.

- (1) ~~The use of the coordinate survey of the National Geodetic Survey and the U.S. Geological Survey state plane coordinates may be incorporated in any land survey.~~
- (2) ~~The establishment of secondary triangulation systems tied in and properly related to such coordinate systems may be incorporated with any land survey. State plane coordinates used and shown on surveys shall meet the requirements of O.C.G.A. Sections 44-4-1 through 44-4-31. Authority 43-15-1.~~
- (3) ~~Wherever available, within reasonable distances, every land survey is to be connected with two or more monuments of the main or secondary triangulation system; and the maps of such survey shall show the correct verified coordinates of such monuments and of at least two of the monumented corners of such survey, at the option of the client.~~

180-7-.07 .08 Maps and Plats. Amended.

- (+) All maps, plats and similar documents shall conform to the following minimum standards and specifications:
- (a) Material.
1. Any such surveys, maps, or plats shall be clearly legible.
 2. The minimum line widths and letters or character heights delineated on such maps or plats shall be as follows:
 - (i) Maps or plats drawn on 8 1/2 inch by 11 inch or 8 1/2 inch by 14 inch tracings shall have a minimum line width of 0.010 inches and a minimum letter or character height of 0.080 inches;
 - (ii) Maps or plats drawn on 11 inch by 17 inch tracings shall have a minimum line width of 0.010 inches and a minimum letter or character height of 0.080 inches; or
 - (iii) Maps or plats drawn on 17 inch by 22 inch or 24 inch by 36 inch tracings shall have a minimum line width of 0.013 inches and a minimum letter or character height of 0.080 inches.
 - (b) Caption. The maps or plats shall have a title or name, which shall be contained in the caption, and the caption shall also provide the following information:
 1. The name of the current owner of the property or the entity who authorized the survey;
 2. The county, city, town or village, land district and land lot, and subdivision, if the property line lies within a particular subdivision;
 3. The date of plat preparation;
 4. The date(s) of field survey;
 5. The scale, stated and shown graphically;
 6. The name, address, telephone number, and registration number of the registered land surveyor or the statement that he is the county surveyor and is not required by law to be a registered surveyor; and
 7. All reproductions of original maps or plats shall bear the original signature, in black ink, of the registrant placed across the registration seal, in order to be a valid or recordable map or plat.
 - (c) Size. Maps and plats shall not be less than 8 1/2 inches by 11 inches and not larger than can be recorded in the county of record without folding. In counties using microfilming procedures, when a map or plat is filed for record, the original drawing, which shall not be larger than 24 inches by 36 inches, shall be submitted to the clerk for microfilming and a legible copy, which shall not be larger than 17 inches by 22 inches, shall be filed for record; provided, however, that a full-size positive copy of the original may be tendered and used for microfilming. The clerk shall enter the filing date, plat book number, and page number on the original drawing and return the original drawing to the land surveyor or the person filing the same for record.
 - (d) Data. All maps or plats shall be made in a professional manner and in accordance with the standards of good drafting procedures and shall show the following information; as specified:
 1. The direction and distance from a point of reference to a point on the boundary of the individual survey, and such additional data as may be required to relocate the boundary point from the point of reference with the same degree of accuracy required of the parcel surveyed. The point of reference shall be established, monumented position which can be identified or relocated from maps, plats or other documents on public record;
 2. Bearings of all lines or angles at all corners and angle points of the boundary or lot lines, and distances of all boundary or lot lines, and area of the parcels expressed in acres or square feet;
 3. The closure precision of the field survey as the ratio of one foot to the traversed distance in which an error of one foot would occur and a statement as to the method of adjustment. The closure may be stated as follows:
"The field data upon which this map or plat is based has a closure precision of one foot in ____ feet, and an angular error of ____ per angle point, and was adjusted using rule ";
 4. The closure precision of the data shown on the map or plat. The closure may be stated as follows: "This map or plat has been calculated for closure and is found to be accurate within one foot in ____ feet ";
 5. The width and the former widths, if pertinent, of all rights-of way adjacent to or crossing the property or adjacent to any point of reference;
 6. All easements and apparent encroachments, if pertinent;
 7. In the case of curved lines, the curve shall be defined by curve data to include the radius, arc length, chord bearing, and distance of regular curves. Chord distances and directions shall be given for irregular curves;
 8. All land lot lines, land district lines, land section lines, and city, county, and state boundaries intersecting or adjacent to the surveyed property indicated by lines drawn upon the map or plat with appropriate words and figures;
 9. All corner markers and markers of pertinent reference points fully described and indicated as to the material or types, whether set or found;
 10. An arrow to indicate the principal meridian and a notation as to the reference of bearings to magnetic north, astronomic north, or grid north. A grid north reference shall indicate the zone;
 11. All linear distances shown on maps or plats shall be horizontal;

12. All angular directions shall be represented in degrees and minutes. Where plats state or surveys require accuracy in excess of 1 in 5000, the angular directions shall be

represented in degrees, minutes, and seconds. All angular directions shall be referenced to the principal meridian;

13. A statement to indicate the type of equipment used to obtain the linear and angular measurements used in the preparation of the map or plat;

14. ~~The state plane coordinates of at least two permanent monuments thereon, when a National Geodetic Survey monument is within 500 feet of any point on the property mapped or platted, or any point of reference shown thereon; The names of adjacent property owners on all lines, as can be determined at the time of commencement of the survey through public records such as the county tax assessor and/or clerk of court records. (A title search is not required for this.)~~

15. All water boundaries shown in sufficient detail to clearly identify the survey tract and the adjoining tract;

16. The character of any and all evidence of possession clearly stated, and the location of such evidence carefully given in relation to the surveyed boundary lines, including all apparent easements and right-of-way; and

17. Any features within or along the boundary located as requested by the client, or in conformity with the rules or requirements of any mortgagor or insurer, provided the technical standards of such rules or requirements are not less than those provided for by this chapter.

~~(2) If the plat meets the requirements of Rule 180-7-07, it shall be the duty of the clerk of the superior court to file and record such map or plat or blueprint, tracing, photostatic copy, or other copy of a map or plat.~~

180-7-08

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