

**OPEN MINUTES
PROFESSIONAL LAND SURVEYING DIVISION OF THE
MISSOURI BOARD FOR ARCHITECTS, PROFESSIONAL
ENGINEERS,
PROFESSIONAL LAND SURVEYORS AND LANDSCAPE
ARCHITECTS**

Thursday, April 25, 2013
Main Conference Room
Division of Professional Registration
3605 Missouri Boulevard
Jefferson City, Missouri

The Professional Land Surveying Division of the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors and Landscape Architects was called to order at 10:00 a.m. on Thursday, April 25, 2013 in the Main Conference Room of the Division of Professional Registration, 3605 Missouri Boulevard, Jefferson City, Missouri. A quorum being present, Mr. Mike Freeman declared the meeting open for business.

Members Present

Michael C. Freeman, Chair of the Division
J. Michael Flowers, Member of the Division
Daniel L. Govero, Member of the Division

Others Present

Judy Kempker, Executive Director
Sandy Robinson, Licensing Technician Supervisor
Darrell Pratte, P.L.S., State Land Surveyor, Missouri Department of
Natural Resources

To better track the order in which items were taken up on the agenda, each item in the minutes will be listed in the order it was discussed in the meeting.

Review and discuss the 1993 Memorandum of Understanding (MOU) between the Board and the Department of Natural Resources (DNR) – Does the MOU need to be updated and resigned?

The Members of the Professional Land Surveying Division discussed the 1993 Memorandum of Understanding (MOU) between the Board and the Missouri Department of Natural Resources (DNR) and whether the MOU needed to be

updated. Ms. Kempker stated that the Board's General Counsel, Curt Thompson, had reviewed the MOU and had determined that it could either be changed or left as written. Since the date of issuance (July 1993), the Division of Professional Registration was transferred from the Department of Economic Development to the Department of Insurance, Financial Institutions and Professional Registration, and Mr. Pratte stated there is a good chance that the Department of Natural Resources may be combined with the Department of Agriculture. Therefore, the Professional Land Surveying Division Members asked Ms. Kempker to put the MOU on the Professional Land Surveying Division's May 6, 2013 Agenda so that Members can go through it line-by-line to make some changes.

Discuss correspondence from Chris Wickern regarding Section 137.185

The Members of the Professional Land Surveying Division discussed correspondence received from Mr. Chris Wickern, LS-2000161240 regarding Section 137.185, RSMo. Upon discussion, the Professional Land Surveying Division decided to remove the phrase, "and section 137.185, RSMo." from 20 CSR 2030-16.020(8)(D) which would then remedy Mr. Wickern's concerns. Mr. Freeman stated that he would follow-up with Mr. Wickern.

Review and discuss suggested revisions to 10 CSR 30 Chapter 2 and 20 CSR 2030 Chapter 16 Missouri Minimum Standards for Property Boundary Surveys as approved by the Board of Directors of the Missouri Society of Professional Surveyors (MSPS) on December 1, 2012 as well as the suggested revisions approved by the Professional Land Surveying Division on January 28, 2013.

The Members of the Professional Land Surveying Division and Mr. Pratte reviewed the suggested revisions to 20 CSR 2030 Chapter 16 Missouri Minimum Standards for Property Boundary Surveys as approved by the Board of Directors of the Missouri Society of Professional Surveyors (MSPS) on December 1, 2012 as well as the suggested revisions approved by the Professional Land Surveying Division on January 28, 2013. After much discussion, the Members of the Professional Land Surveying Division and Mr. Pratte came to an agreement on the following revisions to 20 CSR 2030 Chapter 16 Missouri Minimum Standards for Property Boundary Surveys. Mr. Freeman directed Ms. Kempker to make the revisions as directed and place this item on the Board's and Professional Land Surveying Division's Agendas for review and approval. Upon discussion, it was decided Mr. Pratte will prepare the fiscal notes and share them with the Board. Mr. Pratte then asked Ms. Kempker to send a copy of the revised version of the agreed upon changes to him.

20 CSR 2030-16.115 (formerly 010) Application of Standards

PURPOSE: These standards provide the surveyor and recipient of boundary surveys with a realistic guideline for adequate survey performance. This rule describes the types of surveys to which these standards apply.

The standards in this chapter apply to all property boundary surveys made for determining the location of land boundaries and land boundary corners, but do not apply to preliminary plats or plans, plot plans, engineering surveys; geodetic surveys; or cartographic surveys. Any individual or corporation registered with the board to perform land surveying services in this state shall be familiar with and comply with these standards. The Missouri Standards for Property Boundary Surveys are not intended to be used in place of professional land surveying judgment. There may be special circumstances and conditions that make it impractical to comply with some provisions of the standards. If the survey deviates from these standards, this deviation shall be noted, described, and justified on the plat of survey by the professional land surveyor. This provision cannot be used to intentionally circumvent the basic tenets of these standards.

20 CSR 2030-16.120 (formerly 020) Definitions

PURPOSE: This rule defines the various technical and legal terms used in this chapter.

- (1) Condominium Survey: a property boundary survey that creates and defines condominium property in accordance with Chapter 448, RSMo.
- (2) Controlling Corners: those corners that determine the location of the exterior corners of the surveyed boundary.
- (3) Exterior corners: corners that define the shape and size of the parcel.
- (4) Material Variations: the differences between surveyed lines and lines of possession or measurements called for in the record source of the property being surveyed that are, in the professional judgment of the surveyor, significant enough to warrant particular notice.
- (5) Physical Monument: natural or artificial objects which are accepted and used to mark boundaries and corners.
- (6) Positional Uncertainty: the positive and negative range of values expected for a computed horizontal position as a result of random errors.

(7) Property Boundary Survey: any survey that creates, defines, marks, remarks, retraces, or reestablishes the boundaries of parcels of real property or the subdivision of lands.

(8) Property Description: a description of the limits of real property by recitation of metes and bounds or by an aliquot part of the United States Public Land Survey System or by lot or parcel designation referenced to a subdivision, survey or other document recorded in the public records.

(9) Record Title Boundaries: the limits of real property ownership as evidenced and provable by one (1) or more written means of real property transfer and having provided constructive notification by being duly entered into the public records.

(10) Random Errors: unavoidable errors in measurement that are caused by the inability of the operator to make exact measurements. (Random errors generally follow statistical principles and can be reduced with care in measurement, but can never be completely eliminated).

(11) Rural Property: any property that is not urban property.

(12) Subdivision: a property boundary survey that partitions land into two (2) or more parcels by platting the divisions of land in accordance with Chapter 445 and section 137.185, RSMo. (Highlighted section removed)

(13) Systematic Errors: errors in measurement that conform to mathematical and physical laws and remain the same under set conditions. Systematic errors are detectable and can be removed by ensuring the proper adjustment of equipment, by applying appropriate corrections to observations and by using appropriate observation techniques to eliminate the effects of imperfection in equipment manufacture.

(14) United States Public Land Survey Corners: those points that determine the boundaries of the various subdivisions of the United States Public Land Survey as set forth in section 60.301(1), RSMo.

(15) Urban Property: any property that is located wholly or partly within the corporate limits of any municipality or any commercial, industrial or multi-unit developmental property.

20 CSR 2030-16.130 (formerly 030) General Land Surveying Requirements

PURPOSE: This rule sets forth standards that apply to all property boundary surveys.

(1) Records Research:

(A) Every survey executed shall be based on the property description of the parcel or parent tract taken from the public records; and,

(B) Prior to performing the fieldwork, the surveyor shall acquire sufficient data to ascertain the record title boundary of the parcel(s) to be surveyed, (e.g. adjoining deeds, maps, right of way plans, subdivision plats, original plats and notes, and subsequent surveys). This requirement does not obligate the surveyor to search the entire chain of title.

(2) Field Investigation: The surveyor or a person under his/her direct personal supervision shall:

(A) Search thoroughly for monuments and accessories at the necessary controlling corners and any other physical evidence that may be required to define the location of the exterior corners of the parcel surveyed, (e.g. location of streets, roads, lines of occupation, parole information);

(B) Obtain appropriate and sufficiently redundant measurements to correlate all found evidence;

(C) Evaluate the reliability of the evidence and monuments found and apply the proper theory of location in accordance with surveying precedent; and

(D) Reach a conclusion on the location of the boundary and set monuments as defined herein.

(3) Monumentation:

(A) The land surveyor shall establish semi-permanent or confirm existing monuments at every exterior corner of the tract being surveyed, except for lines running along streams or lakes where witness monuments must be set along the connected sidelines. When it is impractical to set a monument at a required corner, a witness monument shall be set along a line of the survey or the prolongation thereof;

(B) Existing monuments shall be evaluated for permanency by the surveyor. Those needing restoration, preservation or replacement shall receive the due care necessary to insure that their permanency is secured in accordance with the requirements set forth herein;

(C) Additional Monumentation for Subdivision Surveys:

1. In addition to meeting the requirements set forth above, the surveyor shall, prior to the recording of the subdivision plat, establish at least two (2) permanent monuments for every four (4) acres of land developed by the subdivision. This requirement is waived if the survey does not create more than four (4) lots or parcels; and,

2. The permanent monuments required in subsection (3)(C)1. shall be set prior to the recording of the plat or if likely to be destroyed by construction, may be installed upon completion of the construction and must be set no later than twelve (12) months after

the recording of the plat. The surveyor shall also monument all lot corners in the subdivision with semi-permanent or witness monuments within the same twelve month period.

(D) Condominium surveys shall meet the requirements for subdivisions.

(4) Publication of Results: A plat shall be made showing the results of the survey or subdivision and shall conform to all of the following provisions;

(A) The plat shall include a drawing that shall be made to a convenient scale on a reasonably permanent and dimensionally stable material;

(B) The plat shall include the name of the person or entity for whom the survey was made and the date of the survey;

(C) Lettering shall be no less than eight-hundredths of an inch (0.08") in height and well-rounded characters of uniform width;

(D) The direction of boundary lines shall be shown by angles, azimuths or bearings with the directional reference system clearly described on the plat;

(E) A north arrow, a written scale and a graphic scale shall be shown on every sheet containing graphic survey data;

(F) Complete dimensions (distances, directions, and curve data) of all parcels surveyed or created. All linear measurements shall be shown as horizontal distances at the ground surface in feet or meters. Curved lines shall show at least two (2) elements. For non-tangential curves, a directional component shall be included to help define the direction of the curve (preferably the chord bearing);

(G) All vertical measurements shall be shown as elevations above an established or assumed datum in feet or meters. When elevations are shown, a clearly defined elevation datum shall be shown, including the location and elevation of the benchmark used to establish the project datum;

(H) The plat shall display either a property description for the parcel(s) and or parent tract surveyed or a reference to the source document from which the property description was taken. Any new parcel created by survey shall have its property description shown on the plat and must be complete enough so that the parcel can be located and clearly identified. Subdivision plats shall identify all lots for sale by numbers, as set forth in Section 445.010, RSMo;

(I) The plat shall show sufficient data (distances and directions) to positively locate the parcel surveyed within the United States Public Land Survey System (USPLSS), or within the recorded subdivision. If the survey cannot be located by either of the previously mentioned provisions, it must be referenced to other lines and points sufficiently established by record;

(J) All controlling corner monuments that were found and exterior corners that were found or set shall be identified on the plat;

(K) Any material variation between measured and record dimensions and any material variation between surveyed lines and lines of possession or previous surveys at each exterior corner as shown by fences, survey monuments, walls or other structures whether on the property surveyed or on adjoining property, along with the extent of such variations, shall be shown on the plat; (highlighted section was taken from 16.070(2)(A).

(L) The plat shall reference the source document(s) for any pertinent data obtained during the records research provision set forth above. The plat shall also reference the property type (Urban or Rural);

(M) The identity of the record title documents for adjoining properties, consistent with the records research provision set forth above, shall be shown on the plat, including their record source;

(N) In addition to the above, all condominium surveys shall show the pertinent information required in section 448.2-109, RSMo, (Removed, "To the extent feasible, the survey shall show any encroachments located in accordance with 20 CSR 2030-16.140 (3)(A)) and the legally sufficient descriptions of easements serving or burdening the condominium; and,

(O) The plat shall include a statement that the survey and or subdivision were executed in accordance with the Missouri Standards for Property Boundary Surveys as set forth herein. The statement on a condominium plat shall also include a declaration that the plat contains all information required by section 448.2-109, RSMo.

(5) Deliverables: The surveyor shall furnish to the client a plat containing the drawing and other pertinent information identified above. Each sheet of the plat shall bear the signature and seal of the surveyor in responsible charge. This signed and sealed plat shall be the official plat and shall take precedence over any other formatted data that may be delivered to the client or his representatives, successors or assigns.

20 CSR 2030-16.140 (formerly 040) Accuracy Standards for Property Boundary Surveys

PURPOSE: This rule sets forth the accuracy standards for all property boundary surveys.

(1) The surveyor shall make an effort to detect and remove systematic errors.

(2) Precision requirements for Urban Property:

(A) The uncertainty due to random errors of any dimension of direction or distance shown on the plat shall not exceed fifty parts per million (50ppm) or one tenth of a foot (0.10') for distances less than two thousand feet (2,000') at the sixty-eight percent (68%) confidence level (one sigma); and,

(B) The positional uncertainty of any coordinates shown on the plat relative to the control that is held fixed, shall not exceed fifty parts per million (50ppm) or one tenth of a foot (0.10') for distances less than two thousand feet (2,000') at the sixty-eight percent (68%) confidence level (one sigma).

(3) Precision requirements for Rural Property:

(A) The uncertainty due to random errors of any dimension of direction or distance shown on the plat shall not exceed one hundred parts per million (100ppm) or one tenth of a foot (0.10') for distances less than one thousand feet (1,000') at the sixty-eight percent (68%) confidence level (one sigma); and,

(B) The positional uncertainty of any coordinates shown on the plat relative to the control that is held fixed, shall not exceed one hundred parts per million (100ppm) or one tenth of a foot (0.10') for distances less than one thousand feet (1,000') at the sixty-eight percent (68%) confidence level (one sigma).

16.150 (formerly 050) Use of Missouri Coordinate System of 1983

PURPOSE: This rule sets forth the requirements for referencing land boundary corners to the Missouri Coordinate System of 1983.

(1) When the surveyor is specifically requested or required to reference land boundary corners to the Missouri Coordinate System of 1983, the surveyor shall comply with the following requirements:

(A) The position of the corner shall be based upon a geodetic control station having a horizontal accuracy of second order (as defined in 20 CSR 2030-18) or higher order;

(B) The survey connecting the corner to the geodetic control station shall meet the accuracy standards for property boundary surveys set forth in this chapter; and

(C) The plat or other publication of results shall identify the geodetic control station(s) that were used to determine the position of the corner(s), along with a list of the coordinates of those control stations(s); the appropriate adjustment date or realization designation on the North American Datum of 1983, along with the epoch date when applicable; a brief statement of the method used to obtain those positions; and the grid factor used.

20 CSR 2030-16.160 (formerly 060) Approved Monumentation

PURPOSE: This rule prescribes the approved type of monumentation to be used on property boundary surveys.

(1) The surveyor shall select a type of monument providing a degree of permanency consistent with that of the adjacent terrain and physical features and as required by these standards. All monuments shall be solid and free from movement. They shall be set in the ground at least to the depth of the length given unless they are encased in concrete. With the exception of drill holes and cut crosses, the precise position of the corner shall be marked by a point on a cap and the cap shall be inscribed with the licensure number of the land surveyor in responsible charge, or the corporate licensure number or name of the company.

(2) Permanent monuments shall be selected from the following:

(A) Concrete monuments consisting of reinforced concrete at least four inches (4") square or in diameter and no less than twenty-four inches (24") in length with its precise position marked by a point on a brass or aluminum cap not less than one and one-half inch (1 1/2") in diameter;

(B) Commercial cast iron or aluminum survey markers no less than twenty-four inches (24") in length. Nonferrous markers shall have ceramic magnets attached to aid in recovery;

(C) Steel, coated steel, or aluminum rod markers not less than five-eighths inch (5/8") in diameter, iron pipe markers not less than three-quarter inch (3/4") inside diameter and not less than twenty-four inches (24") in length. These monuments shall have a permanently attached cap of the same metal or of a dissimilar metal if the metals are insulated with a plastic insert to reduce corrosion. Nonferrous rod markers shall have ceramic magnets attached to aid in recovery; and

(D) Brass or aluminum disks not less than two inches (2") in diameter, countersunk and well-cemented in a drill hole in either solid rock or concrete. Ceramic magnets shall be attached or installed with the disk to aid in recovery.

(3) Semi-permanent monuments shall be selected from the following:

(A) Iron pipe markers not less than one half inch (1/2") inside diameter at least eighteen inches (18") in length and having a plastic or metal cap;

(B) Steel or aluminum rod markers not less than one-half inch (1/2") in diameter and not less than eighteen inches (18") in length and having a plastic or aluminum cap;

(C) A cross-cut or drill hole in concrete, brick, stone paving, or bedrock at the precise position of the corner or on a prolongation of a boundary line; and

(D) In asphalt paving, cotton picker spindles, (Removed: and other metal devices) railroad spikes, semi-permanent ½" rebar, and magnetic spikes (minimum of 8" in length) that are solid and not easily removed or destroyed. (Removed: "Nails are not acceptable semi-permanent monuments.")

20 CSR 2030-16.180 Location of Improvements and Easements

PURPOSE: This rule sets forth how and what improvements and easements are to be located and shown on a property boundary survey.

(1) When the surveyor is specifically requested by the client to locate the improvements on the property surveyed, the surveyor shall locate by measurement all permanent structures having fixed foundation, slabs or footings and shall reference them to the property boundary on the plat with at least three (3) dimensions. Dimensions shall be parallel, perpendicular or radial to the property lines.

(2) When the surveyor is specifically requested by the client to show easements on a property boundary survey, he/she shall show by graphic representation all easements appearing on the recorded subdivision plat and all easements provided to the surveyor by the client. If the surveyor is specifically requested by the client to locate any easements on the ground, he/she will do so in accordance with the standards defined herein.

Motion to Close

At 1:17 p.m., Chairman Freeman called for a motion to close the meeting to the general public for the purpose of discussing pending litigation and complaint matters. Mr. Govero made a motion that the meeting be closed to the general public pursuant to Chapter 610.021 subsection (14) and 324.001.8 and 324.001.9, RSMo for the purpose of discussing investigative reports, complaints, audits and/or other information pertaining to licensees or applicant. The motion was seconded by Mr. Flowers and unanimously carried. Mr. Freeman asked that all visitors leave the room. Upon Mr. Pratte's departure, Mr. Freeman then declared the meeting closed to the general public.

Please note that at approximately 1:17 p.m., Board Investigator, Kevin Oligschlaeger, joined the meeting.

Return to Open Session

At 1:39 p.m., the Professional Land Surveying Division reconvened in open session for the purpose of adjourning.

Adjournment

There being no further discussion, a motion was made by Mr. Govero and seconded by Mr. Flowers to adjourn. The motion carried unanimously. The meeting adjourned at 1:39 p.m. on April 25, 2013.

Executive Director

Date Approved:_____