



Oklahoma Minimum Standards for the Practice of Land Surveying

Two (2) Continuing Education Hours
Course #OK1002

Approved Continuing Education for Licensed Professional Engineers
& Professional Land Surveyors

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Course Description:

The Oklahoma Minimum Standards for the Practice of Land Surveying course satisfies the Continuing Professional Development (CPD) requirement of two (2) hours in standards of practice for boundary surveys, ref O.A.C. §245:15-11-5.

The course is designed as a distance learning interactive course that enables the practicing professional land surveyor or engineer to examine and revisit the Oklahoma standards for the practice of land surveying.

Objectives:

The primary objective of this course is to familiarize the student with the standards of practice for land surveying in Oklahoma and satisfy the two required hours of continuing education required by the O.A.C. § 245:15-11-5.

Upon successful completion of the course, the student will have a thorough understanding of this topic.

Grading:

Students must achieve a minimum score of 70% on the online quiz to pass this course. The quiz may be taken as many times as necessary to successfully pass and complete the course.

A copy of the quiz questions are attached to last pages of this document.

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TITLE 245 CHAPTER 15. LICENSURE AND PRACTICE OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS

SUBCHAPTER 13. MINIMUM STANDARDS FOR THE PRACTICE OF LAND SURVEYING

245:15-13-1. Purpose; scope; applicability

In order to better serve the public in regulating the practice of land surveying in Oklahoma, these minimum standards of practice are established to achieve no less than minimum standard degrees of accuracy, completeness, and quality so as to assure adequate and defensible real property boundary locations. When more stringent survey standards than those set forth herein are required the survey shall comply with both those standards and with the Oklahoma Minimum Standards for the Practice of Land Surveying. Where the Professional Land Surveyor elects to follow or use a more thorough method of determining accuracy, it is not the intent of these standards to interfere. Land Surveyors failing to comply with or meet these minimum standards will be subject to disciplinary action by the Board.

245:15-13-2. Minimum Standards

(a) Definitions: as used in these standards, the following terms shall have the following meanings where the context permits as provided in 59 O.S. 475.1 et seq. and Chapter 245:15-1-3 of the Rules of the Board.

(b) Research and investigation. Every property boundary survey shall be made in accordance with the boundary description, as provided to or as created by the professional land surveyor, as nearly as is practicable. The professional land surveyor, prior to making a survey, shall acquire available necessary survey data, which may include record descriptions, deeds, maps, Certified Corner Records,

government notes, subdivision plats, road records, and other available section and boundary line location data in the vicinity. The professional land surveyor shall analyze the data and make careful determination of the record title boundary of the property to be surveyed. From the information gathered, the professional land surveyor, or those working under his or her direct control and personal supervision, shall search thoroughly for all controlling corners and all other available field evidence of boundary location. In the event of the discovery of a material disagreement with the work of another surveyor, the surveyor shall make reasonable efforts to contact the other surveyor in an attempt to resolve the disagreement.

(c) Minimum technical standards for land or boundary surveys (field and office).

- (1) In order for a plat, subdivision plat, map, or sketch of a survey to be acceptable in terms of this rule, it must be complete and shall be certified or otherwise stated as meeting these minimum technical standards.
- (2) All measurements made in the field shall be in accordance with the United States Standard, using either US Survey Feet or meters. All measurements shall be referenced to the horizontal or vertical plane, with the exception of geodetic surveys.
- (3) All survey documents produced by an individual practicing under his or her own name shall bear the name, address, and telephone number, along with the license number, seal, signature, and date of signature of the professional land surveyor. All survey documents produced by a firm shall bear the name, address, telephone number, and Certificate of Authorization number, along with the name, license number, seal, signature, and date of signature of the surveyor.
- (4) All survey documents must bear the date of the last site visit and bear the date of any revisions thereon. If the site visit was performed on multiple dates, the drawing may specify the range of those dates.

(5) A designated north arrow and scale of the map shall be shown prominently upon the drawing.

(6) Any symbols and/or abbreviations representing physical objects used on the drawing will be clearly noted upon the drawing.

(7) The basis of control used in the survey must be shown on the survey and shall be based upon one or both of the following:

(A) Projections (state plane coordinates or other) with specifics to elevation, vertical datum, horizontal datum, zone, ground to grid factor used, state plane or UTM zone including all pertinent metadata, if applicable, measured and published geodetic control values based upon an online position user service (OPUS) solution or geodetic control stations or other control;

(B) A reference to all bearings shown must be clearly stated, i.e., whether to 'True North'; 'Grid North as established by state plane datum'; 'Assumed North based on the bearing of a well-established line'; a 'Deed call for a particular line'; or 'the bearing of a particular line shown upon a plat'; etc. A specific line between two points either found or re-established set points as shown on a filed plat or in an existing deed description. If a solar observation, GNSS observation, or other means for determining True or Geodetic North is used, it shall also include the accompanying latitudinal and longitudinal value of the observation point. 'GPS North' or similar ambiguous notations without explanation are unacceptable.

(8) Referencing surveys.

(A) Surveys based on the United States Public Land Survey System shall be referenced to original or properly restored corners. The appropriate Bureau of Land Management Manual of Surveying Instructions shall be used as a guide for the restoration of lost or obliterated corners and subdivision of sections into aliquot parts.

(B) Lot surveys within platted subdivisions shall be referenced to existing corner monuments within the subdivision as necessary to verify the survey.

(9) Where evidence of inconsistencies is found, such as overlapping descriptions, hiatuses, excess or deficiency, or conflicting boundary line or monuments; the nature and extent of the inconsistencies shall be shown on the drawing.

(10) All survey drawings shall show the change in direction between lines, lines and curves, and between adjacent curves, by angles, bearings or azimuths.

Circular curves shall show:

1. The length of radius;
2. The arc distance; and
3. The chord distance and chord bearing. Sufficient information must be shown to mathematically close all lots and/or parcels.

(11) All easements, rights-of-way and building lines drawn or referenced on recorded subdivision plats on or across the land being surveyed and the width of the rights-of-way of all section lines adjoining or within the surveyed property shall be shown upon the survey drawing. Physical evidence of roadways providing access to or through the property being surveyed shall be shown and/or noted. If location of easements or rights-of-way, other than those drawn or referenced on recorded subdivision plats is required, this information must be furnished to the professional land surveyor.

(12) The professional land surveyor shall establish or confirm a monument or confirm the prior placement of monuments at each and every property corner on the boundary line or boundary lines of the parcel or tract of land being surveyed. In such cases where the placement of a required monument at its proper location is impractical, a witness or reference monument shall be placed with the data given to show its location upon the ground in relation to the boundary lines or corner. In any case the type and size of all monuments, either found or set,

and the relationship of the monuments to the surveyed lines and corners will be shown on the drawing. Where practical, monuments shall be constructed of material capable of being detected with the conventional instruments for finding ferrous or magnetic objects. All set monuments shall have affixed thereto a durable marker or cap bearing, at a minimum, the license number of the land surveyor in responsible charge, or the Certificate of Authorization number of the firm performing the survey. Monuments for the exterior corners of a subdivision shall be set by the surveyor who certified the plat of the subdivision prior to the recordation of the subdivision plat. It is the responsibility of the surveyor to set the interior corners on all lot and block corners prior to the conveyance of the lot, block or any part thereof within thirty days of completion of the infrastructure improvements, but no later than one year after recordation of the subdivision plat.

(13) Accuracy of measurements. The accuracy of the measurements for the survey shall be based upon the type of survey, and the current or expected use of the land. The accuracy of the measurements thus performed shall be substantiated by the computations of the traverse or the results of a Global Navigation Satellite System (GNSS) survey; the relative error of closure permissible shall be no greater than the following standards given below:

(A) Where there is or will be zero lot line construction on small tracts in a high density urban area, the allowable closure error is 1:10,000 or the allowable positional error is plus or minus 0.10 feet.

(B) In residential or commercial subdivisions where the length of lines does not exceed 300 feet, the area of tracts does not exceed 2 acres, and there is no plan for zero lot line construction, the allowable closure error is 1:10,000 or the allowable positional error is plus or minus 0.25 feet.

(C) In suburban or rural residential or industrial tracts where the length of lines does not exceed 1000 feet and the area of tracts is between 2 and

40 acres, the allowable closure error is 1:10,000 or the allowable positional error is plus or minus 0.50 feet.

(D) Rural tracts of 40 acres or more where the corners of the tract may be connected with traverse legs in excess of 1000 feet, the allowable closure error is 1:10,000 or the allowable positional error is plus or minus 1.0 foot.

(E) Rural tracts of 40 acres or more in rough or tree covered terrain where the corners of the tract must be connected with short traverse lines because of poor visibility between the corners of the tract, the allowable closure error is 1:7,500 or the allowable positional error is plus or minus 1.5 feet.

(F) Field work performed which has a closure error greater than the maximum allowed, or linear error of closure greater than the maximum positional error shown, shall be considered unacceptable and shall be corrected. Adjustment of a traverse must not shift the position of any point more than the maximum positional error listed above.

(14) When special conditions exist that effectively prevent the survey from meeting these minimum standards, the special conditions and any necessary deviation from the standards shall be noted upon the drawing. It shall be a violation of this rule to use special conditions to circumvent the intent and purpose of these minimum standards.

(15) A survey plat, sketch or map must be created whenever a land or boundary survey is performed. Every survey plat, sketch or map must contain the legal description of the land being surveyed, either on the face of the survey plat or attached to and referenced to the survey plat. If the professional land surveyor prepares a new description, then both the surveyor's description and the original description must be on the drawing.

(16) Additions or deletions to survey drawings by other than the signing party or parties are prohibited without written consent of the signing party or parties.

(d) Specifications for Topographic and Planimetric Mapping, Including Ground, Airborne, and Space borne Surveys: Production procedures for topographic and planimetric mapping surveys shall be prepared in accordance with the Instruction Manual for Topographic and Planimetric Mapping, as adopted by the Board, and with the standards established by Part 3 of the Federal Geographic Data Committee (FGDC) Geospatial Positioning Accuracy Standard and applicable extensions and revisions. These standards are incorporated by reference including subsequent amendments and editions.

(e) Control Surveying Reporting: Whenever a professional land surveyor undertakes control surveying, where the coordinates and elevations of the control points established by the survey will be relied upon by professionals other than the original surveyor for future phases of the work, the licensee shall prepare a control survey report and shall provide the report to the prime client and to any other person who makes a written submittal. Alternatively, if the entire report is contained on the face of the work product, no other reporting is required. The report will contain the following information as appropriate to work being performed:

- (1) A listing of the final adjusted coordinates and elevations for all points within the control network along with a complete description of all monuments established or recovered,
- (2) A complete description of the horizontal and vertical datum used including the basis of bearings,
- (3) A complete description of the state plane or UTM zone used including all pertinent metadata, if appropriate,
- (4) Units used for coordinates and elevations,
- (5) Description of monument(s) used to constrain the control network including the reference coordinates and elevations used for aid monument(s),

(6) If the final adjusted coordinates are based on a modified (ground datum) state plane coordinate system or a low-distortion local coordinate system (ground referenced) derived from geospatial positions, a complete description of the method(s) used to generate the modified coordinates shall be included in the report,

(7) A brief description detailing the field methods and equipment used to conduct the control survey,

(8) The date when the control monuments were set, the date when the control monuments were positionally observed, and the date of the final network adjustment,

(9) Nothing in this section dictates the spatial accuracy that will be required by any specific project. It will be the responsibility of the individual licensee to determine the appropriate level of accuracy for each project. However, the licensee shall report the spatial accuracy in both the horizontal and vertical components,

(10) A certificate followed by the dated signature and seal of the professional land surveyor responsible for the control survey stating that the surveyor conducted an actual survey on the ground and is responsible for the survey. The following model certification is considered to be an example of the minimum that the surveyor should certify to: "I, _____, certify that this horizontal/vertical control survey was completed under my direct and responsible charge from an actual survey made under my supervision and meets the Oklahoma Minimum Standards for the Practice of Land Surveying as adopted by the Oklahoma State Board of Licensure for Professional Engineers and Land Surveyors."

(11) Preparation of the control portion of geographic information systems and land information systems means the authoritative and monumented ground

survey of a system of marks or objects to establish horizontal or vertical positions.

(f) Minimum Standards for Legal Descriptions: Preparation of a new description that is different from the description furnished to the professional land surveyor should be avoided unless deemed necessary by the professional land surveyor because of errors or ambiguities in the original description. Except in the case of an original survey, if a new description is prepared, a note shall be provided stating (a) that the new description describes the same real estate as the record description or, if it does not, (b) how the new description differs from the record description.

(1) Metes and bounds descriptions prepared shall at a minimum contain the following items:

(A) A preamble containing the Quarter Section, Section, Township, Range, Principal Meridian (Indian or Cimarron) and the County and/ or City of the tract of land being described or a preamble containing the Lot and/or Block number, subdivision name and if available, the recording information of the plat and the City, if applicable, and County in which it is filed of record, and

(B) A beginning point and point of commencement (if applicable) referenced to a known point such as a section corner, quarter-section corner, sixteenth section corner, or a Lot/Block corner of a recorded subdivision a tie to each additional section line or recorded subdivision line it passes through, and all distances and directions identified in the record description of the surveyed property (and in the new description, if one was prepared), and

(C) Distances listed to the nearest hundredth of a foot (if surveyed), and

(D) Bearings or angles listed in degrees, minutes and seconds (if surveyed), and

(E) The basis of control used in the description shall be as stated in (c)(7) of this subsection, and

(F) Curved lines with circular curves shall show:

1. Direction of the curve (right or left);
2. The radius;
3. Arc distance; and
4. Chord distance and chord bearing, and

(G) The name and license number of the professional land surveyor who prepared the description, and

(H) The date of preparation of the legal description, and

(I) Each metes and bounds description must return to the Point of Beginning and close mathematically.

(2) Aliquot descriptions may be used in lieu of a metes and bounds description and shall at a minimum contain the following items: Quarter Section, Section, Township, Range, Principal Meridian (Indian or Cimarron), city (if applicable) and the County of the tract of land being described.

(3) Lot and block description may be used in lieu of a metes and bounds description and shall at a minimum contain the following items: Lot and/or Block number, subdivision name, City (if applicable), the County in which it is filed of record and, if available, the recording information of the plat.

(4) A written legal description of the surveyed tract of land must provide sufficient information to locate the property on the ground and distinctly set it apart from all adjoining properties.

(5) The preparation of legal descriptions by a person who does not monument the land so described is not the practice of land surveying.

245:15-13-4. Mortgage Inspection Report

(a) A Professional Land Surveyor may prepare a Mortgage Inspection Report for the use of a specific client based upon their general knowledge of land boundaries and monuments in a given area. Such report shall be prominently labeled 'Mortgage Inspection Report - Not a Land or Boundary Survey' and shall not be designated as, or construed as being, a Land or Boundary Survey. Professional Land Surveyors showing measurements on a mortgage inspection report that are not true representations of the conditions that were found at the time of the inspection will be in violation of the Minimum Standards for the Practice of Land Surveying. The statement furnished on the certificate shall be similar to the following form:

(b) 'This Mortgage Inspection Report was prepared for ...(individual or firm).... It is not a land or boundary survey plat, and it is not to be relied upon for the establishment of fence, building or other future improvement lines. The accompanying sketch is a true representation of the conditions that were found at the time of the inspection, and the linear and angular values shown on the sketch, if any, are based on record or deed information and have not been verified unless noted.'

(c) Any further statements shall be made only after proper research, investigation and boundary analysis is conducted per 245:15-13-2(a) through (f).

Quiz Questions

- 1. Oklahoma minimum standards of practice are established to achieve no less than minimum standard degrees of?**
 - Accuracy
 - Completeness
 - Quality
 - All of the above
- 2. All measurements shall be referenced to the horizontal or vertical plane, with the exception of _____.**
 - plane surveys
 - geodetic surveys
 - ALTA/ACSM surveys
 - hydrographic surveys
- 3. Which of the following is an Unacceptable bearing reference?**
 - True North
 - Grid North
 - GPS North
- 4. Circular curves shall show?**
 - The length of radius
 - The arc distance
 - The chord distance and chord bearing
 - All of the above
- 5. What is the allowable position error in residential or commercial subdivisions where the length of lines does not exceed 300 feet?**
 - +/- 0.10 feet
 - +/- 0.25 feet
 - +/- 0.50 feet
 - +/- 1.0 foot

6. **True or False. Every survey plat, sketch or map must contain the legal description of the land being surveyed, either on the face of the survey plat or attached to and referenced to the survey plat.**
- True
 - False
7. **Additions or deletions to survey drawings by other than the signing party or parties are _____ without written consent of the signing party or parties.**
- prohibited
 - allowed by the client or property owner only
 - allowed during declared states of emergency
8. **When is the preparation of a new description that is different from the description furnished to the professional land surveyor required?**
- Always
 - Never
 - When the client or property owner requests it
 - When there are errors or ambiguities in the original description
9. **True or False. The preparation of legal descriptions by a person who does not monument the land so described is not the practice of land surveying.**
- True
 - False
10. **What report must state the following? "It is not a land or boundary survey plat, and it is not to be relied upon for the establishment of fence, building or other future improvement lines."**
- Land Survey
 - Boundary Survey
 - Mortgage inspection report