

SEC. 1 **TYPE:** Standard Land Survey

SEC. 2 **DEFINITION:** A Standard Land Survey is defined as a study, investigation and evaluation of major factors affecting and influencing the location of the boundaries, ownership lines, and may include rights of way and easements within or surrounding a certain lot, parcel or quantity of real estate. Such study and evaluation will culminate in the deliberate location or relocation on the ground of the perimeters, division lines or boundaries and the determination of area on the certain lot, parcel or quantity or real estate. A Standard Land Survey is not for title insuring purposes, but is suitable for most any other purpose. This survey will not normally locate improvements, rights of way or easements within the surveyed site unless requested by the client or where such items appear to the surveyor in his professional judgement to indicate an encumbrance on the real estate. The practice of locating land boundaries requires the expert skill of a Registered Professional Land Surveyor well-versed in the science and art of boundary law and long-practiced in the mechanics of measuring and computing values pertaining to such surveys.

SEC. 3 **PURPOSES:** The purpose of a Standard Land Survey is to establish or reestablish on the ground the physical or theoretical location and extent of real property lines, political boundaries or lines defining the perimeters of public or private ownership. This includes exteriors or centerlines of record easements and the evidence indicating the possibility of prescriptive or limitation rights. A Standard Land Survey is a means of marking such lines or boundaries for definition and identification. Thereby it uniquely locates each plot, parcel, lot, or other specific land area in relation to well recognized and established points of reference, adjoining properties and rights of way.

3.1 Purposes of this Specification: This specification shall be used for the location of real property, for determining boundaries, quantity or area, for preparing a written description or for platting or mapping real estate as a professional service for the

public where title insurance is not the purpose of the survey.

3.2 Standard Land Surveys may include, but are not limited to the proper location, monumentation, description or platting of the following real estate:

3.2.1 Residential, commercial and industrial lots, tracts, plots, blocks, sites or subdivisions.

3.2.2 Acreage tracts for homesites, farms and ranches.

3.2.3 Investment or commercial lands for production of timber, crops, livestock, oil, gas, coal, or quarries, mines or other excavations.

3.2.4 Public properties such as parks, beaches, lakes, roads, streets, waterways, highways, and building sites.

3.2.5 Leases for commercial, agricultural, or industrial purposes.

3.2.6 Improved properties for the purpose of locating buildings, utilities or other facilities in relation to the property lines.

SEC. 4 **PRODUCT:** A Standard Land Survey will produce but will not be limited to:

4.1 Monuments set for all corners, points of curves or references to property lines of the involved land (see Section 6 herein).

4.2 A signed, sealed and dated written description depicting the new survey, as required (see Section 12 herein).

4.3 A signed, sealed, dated and certified map or plat depicting the survey as made on the ground (see Section 10 herein).

4.4 As required, a written report of the surveyor's findings and determinations.

**SEC. 5 INFORMATION REQUIRED:** Sufficient information to perform the survey should be furnished by the client, his agent or acquired for the client by the surveyor at an agreeable fee. Necessity of the following data must be considered and evaluated by the surveyor: Copies of documents relied upon should be maintained in the surveyors records. Also see applicable TBPLS rules for this subject.

5.1 The most recent record instruments which define the location of the subject, real property (including owners name or names and recording references).

5.2 The most recent recorded instruments which define the location of the surrounding, or adjoining, real property (including owner's name and recording references).

5.3 The recorded easement or instrument (or unrecorded documents of which the surveyor has knowledge) which define the location of adjoining severing rights of way, particularly highways, roadways, pipelines, or utility corridors and drainage or flood control waterways (including grantees' names and recording references).

5.4 Surface leases. (Mineral leases when appropriate).

5.5 Permission to enter and survey on the land, preferably written.

5.6 Relevant data regarding special circumstances, such as unrecorded easements, affidavits to ownership, judgments or court decrees that may influence the property or ownership lines.

5.7 Claims against the property that may influence the location of property or ownership lines such as possible limitation, prescriptive rights, apparent intrusions or protrusions of improvements or other parties in possession.

5.8 Names of tenants or parties in charge of the site.

5.9 Any grant, patent, subdivision plat, historical data, covenants or other recorded data that will reference or influence the position of the property lines.

5.10 In areas prone to flood, areas in flood plains or floodways certain additional information may be required. (Note however, inherent inaccuracies of FEMA or Flood Insurance Rate Maps preclude a surveyor from certifying to the accuracies of locations based on such maps. Certification to elevations derived from appropriate benchmarks is not prohibited.)

SEC. 6 **MONUMENTS:** Monuments set or called for, whether artificial or natural, references or witnesses, shall represent the footsteps of the surveyor and his professional opinion as to the proper location of the point or corner. Also see applicable TBPLS rules for this subject.

6.1 Artificial monuments: An artificial monument considered permanent shall be construed as any mark or marker of relative permanence that if left undisturbed will remain in place for a period of at least 25 years. Monuments must be set at sufficient depth to retain a stable and distinctive location and be of sufficient size to withstand the deteriorating forces of nature. Monuments shall be set in such fashion as to remain stable.

6.1.1 Monument material: Material for monuments shall be chosen in regard to the terrain and situation that exists at the site of the survey. Consideration should be given to the following guidelines and the natural erosive forces that will work against the monument for decades to come.

6.1.1.1 Wooden stakes should only be used with discretion.

6.1.1.2 Iron or steel bars or rods for monuments shall be a minimum size of 1/2" in diameter by 24" long. Longer bars or rods should be used in soft soil to

insure stability of the monument. Where rocky or caliche soils prevent specified lengths, the rod should be driven to refusal at such depths where it will remain stable.

6.1.1.3 Iron pipes for monuments should be a minimum of 1/2" inside diameter and 24" long. Longer pipes shall be used in soft soil to insure stability of the monument. All iron pipes should be sized by the inside diameter. Where rocky or caliche soils prevent the use of the specified lengths, the shorter pipe should be driven to refusal at such depths where it will remain stable.

6.1.1.4 Non-ferrous metal monuments shall be equal to requirements for iron rods or iron pipes.

6.1.1.5 Precast reinforced concrete monuments shall have a precise station mark such as a center punch or cross embedded in the cap.

6.1.1.6 Poured in place concrete monuments shall contain a precise station mark (as in 6.1.1.5) and be reinforced with at least 1/4" or larger iron rods or pipe.

6.1.1.7 Other monumentation such as drill holes, chiselled marks in stone, concrete or steel, punch marks, precast bronze discs, etc., shall be of sufficient size, diameter or depth to be definitive, stable, and readily identified as a survey marker. Objects upon which such marks or makers are placed shall be of a stable and permanent nature greater than equal those of iron pipes or iron rods.

6.1.2 Monument placement: All monuments for corners, for witness points, points of curve, etc., shall be set vertically whenever possible and shall be reasonably flush with the earth or ground surface. Monuments subject to construction damage

or total destruction shall be referenced to objects that will survive or buried deep enough to offer protection from earth grading or destructive machinery.

6.1.3 Monument identification: Consideration should be given to the following guidelines:

6.1.3.1 Monuments may be identified by code numbers or letters for brevity and easy recognition. Monuments may be identified by names of specific corners.

6.1.3.2 Monuments shall be identified by appropriate caps, imprinted with surveyor's registration number or company/firm name.

6.1.3.3 The size, shape and substance or construction material of each monument shall be duly recorded in the field notes and recited in the survey description and noted on the map, plat, or drawing.

6.1.3.4 When possible, monuments shall be referenced to prominent nearby objects and the information recorded in the description of the survey. Where permissible and feasible, witness trees should be marked facing the corner. Before marking any tree, the surveyor must consider the probability of his liability for defacing valuable private property. Only healthy witness trees, a minimum of 6" diameter, breast high (D.B.H.) should be used. Each witness tree shall be described by species, diameter, and type of markings.

6.2 Natural or physical monuments: Natural monuments are the permanent objects which are the works of nature, such as streams, rivers, ponds, lakes, bays, trees, ledges, rock outcrops and other definitive terrestrial features.

6.2.1 Tree for corner: A tree standing at a corner may be marked only when permissible and then shall be marked with

care to be reasonably certain of creating only superficial damage to the tree. Such blazing shall penetrate the bark and leave an open vertical cut no wider than three inches and no longer than ten inches. Tree for corner will be marked with 4-way blazes (Blazed on all 4 sides).

6.2.2 Mark boundary line trees only when permission is received from appropriate authority.

6.2.2.1 Trees on boundary line (line trees) will be face-blazed with one hack above and one hack below, on opposite sides of the tree.

6.2.2.2 Trees on each side of the boundary line (within about three feet) will be hacked with three hacks facing the line and face-blazed on opposite sides of the tree.

SEC. 7 **CONDITIONS:** Surveys under this Category shall be termed a Standard Land Survey; see Section III E of Standards for appropriate conditions.

SEC. 8 **TOLERANCES FOR CONDITIONS:** See Section III O of the Standards and in addition refer to the tolerance chart for this Category.

SEC. 9 **FIELD PROCEDURES:** Field work shall be performed in accordance with accepted technical methods as expressed in standard textbooks on surveying theory, practice and procedures. Any textbook used for the purpose of surveying instruction by an accredited university, college, or junior college in the state of Texas will be considered a satisfactory text for this purpose. Any person in charge of a survey field party shall be well-trained in these technical aspects of surveying. The Registered Professional Land Surveyor is additionally charged with the responsibility of adhering to the following requirements: Also see applicable TBPLS rules for this subject.

9.1 Surveying instruments shall be kept in close adjustment according to manufacturers' specifications or in compliance to textbook standards.

9.2 Steel tapes (chains) used for boundary measurements shall be calibrated at intervals sufficient to obtain the tolerance required. Such calibration shall be traceable to the U.S. Bureau of Standards National Institute for Standards and Technology through appropriate certificates or documentation.

9.3 Electronic distance measuring devices shall be calibrated at intervals sufficient to obtain the tolerances required. Such calibration shall be traceable to the U.S. Bureau of Standards National Institute for Standards and Technology through appropriate prisms, and accessories be maintained as a matched set.

9.4 Field measurements of angles and distances shall be done in such fashion as to satisfy the closures and tolerances expressed in Section 8, herein.

9.5 Where special surveys for vertical or horizontal control are required as a base for a land boundary survey, refer to Categories 7 and 8 of these specifications or to relevant, special publications from the U.S. Department of Commerce, the Department of Interior or the Department of the Army on the special subject matter. These are considered as satisfactory texts to define acceptable field methods. Control by remote sensing or other indirect methods may be employed, provided:

9.5.1 Aerial Photogrammetry shall be field checked to sufficiently verify values for any incorporated data;

9.5.2 Satellite reliant or global positioning system (GPS) control should be performed in accordance with special publications on the subject and appropriate rules of boundary surveying.

9.6 Special consideration shall be afforded the rules of evidence, footsteps of the original surveyor, and "dignity of calls" before a decision is made as to locating on the ground any property, tract, survey, or grant line. The best evidence and intentions of

the parties shall be sought out according to accepted surveying procedures and as documented in standard textbooks on the legal aspects of surveying. Also see applicable TBPLS rules for this subject.

9.7 Corners or monuments called for in the relevant deeds to the land to be surveyed, including those of adjoining property affecting the location of the boundaries of the land to be surveyed shall, be physically searched for in a methodical and meticulous fashion. The use of magnetic or electronic locators is encouraged and strongly recommended. Each corner or monument recovered shall be evaluated as to its agreement by description and location with the calls in the relevant deeds.

9.8 Easements of record or indications of possible easements that are visible without meticulous searching shall be physically located during the survey. Such items may include, not limited to, overhead power, telephone or signal lines, roadbeds, car trails, or pipe line routes through timber or pipeline markers, buried cable markers or signs, new excavations. Any additional searching for non-visible easements such as pipelines in open fields should be negotiated with the client for the additional work and use of special equipment.

9.9 Apparent conflicts, protrusions and evidence of prescriptive or limitation rights along the perimeter boundaries of the tract shall be physically located.

9.10 Field data shall be gathered to satisfy or exceed the requirements for Section 8, and Section 10, herein.

**SEC. 10 PLATS, MAPS, AND DRAWINGS:** Land Title Surveys shall be represented by a reproducible plat, map or drawing at a suitable scale to depict the results and details of the field work, computation, research, and record information, as compiled and checked. Also see applicable TBPLS rules for this subject.

10.1 Any reasonably stable-base, standard drawing paper, linen or film of reproducible quality is considered as suitable material for Standard Land Survey plats, maps or drawings.

10.2 No plat, map or drawing shall be made on a sheet size smaller than 8 1/2" x 11".

10.3 Dimensions, bearings or angles, including curve lengths, (see Section 12.8) radii and delta angles shall be neatly and legibly shown in respect to each property or boundary line.

10.4 Monuments found shall be labeled as "found", with a brief definitive description of the monument as to size, type of material, condition and what it represents.

10.5 Monuments set shall be so labeled as "set" with a brief definitive description of the monument as to size and type of material and what it represents.

10.6 Relevant terrain features, streets, confined watercourses, utilities, and other similar data shall be labeled and dimensioned as to size, height or width and referenced to the nearest property line or represented by symbol on the map in its proper, dimensioned location. Symbols should be clear as to what is represented or should be labeled for identification, individually or in a separate key to symbols.

10.7 Maps, plats or drawings shall show a north arrow. Drawing shall be oriented as nearly as possible so that north is toward the top of the sheet unless otherwise directed by the client or the client's representative.

10.8 A statement as to the origin of the bearings or angles shall be made on each plat, map or drawing. All bearings or angles shall refer to a line monumented on the ground and one of the following:

10.8.1 The Geodetic meridian as observed within one mile of the surveyed site.

10.8.2 The Texas Coordinate System of 1983 (or 1927), with proper zone, theta angle and traverse or triangulation station noted.

10.8.3 A record bearing, or relation thereto, as called for in said record. Also see applicable TBPLS rules for this subject.

10.9 Where the new survey differs materially from prior deed information in regard to course, distance or quantity, the client or employer should be advised of such. The existing deed-call bearings and dimensions should be shown in parenthesis beside or on the opposite side of the boundary or property line and designated as "call". The deed acreage or quantity should be designated "call" and shown in parenthesis beneath the surveyed acreage or square footage. In this case the deed calls should be plainly referenced by a prominent note as to volume and page or file where the deed is recorded. Unrecorded deeds should be identified by the grantor, grantee and date of execution or delivery. As an alternate to this procedure, or where complications occur, the discrepancies, problems, conflicts or difference in call distances and bearings should be explained in a written surveyor's report issued to the client along with the plat or drawing. Also see applicable TBPLS rules for this subject.

10.10 Where separate intricate details, blowups or inserts are required for clarity, they shall be properly referenced to the portion of the map where they apply. This applies particularly to overlaps, gores, hiatuses or nonconformity of boundary or property lines.

10.11 Perimeter limits of cemeteries and burial grounds known or found within the premises being surveyed shall be shown by actual location.

10.12 Properties, confined watercourses, and rights-of-way surrounding, adjoining, penetrating or severing the surveyed site

shall be identified and labeled with the recording references. Such reference shall be one which describes and defines the adjoining lines.

10.13 Original subdivision, survey, league, or land grant lines shall be shown in proper location with pertinent labeling. Sufficient measurement by course and distance must be shown to the nearest parent tract corner, block corner, subdivision, survey, league or land grant corner. Approximate distance to nearest street or road intersection shall be shown.

10.14 If a coordinate system is used on the map, it shall be identified as to the origin such as:

10.14.1 All coordinates refer to site datum.

10.14.2 All coordinates refer to the Texas Coordinate System of 1983 (or 1927), (specifying the proper zone, the reference traverse or triangulation station(s) and the published coordinates of the station(s)).

10.15 Where the Texas Coordinate System is used for both bearings and coordinates, a statement similar to item 10.14.2 (herein) shall be shown on the map, but should begin, "All bearings and coordinates refer---".

10.15.1 The appropriate scale or grid factor(s) for the site should be shown on the map.

10.16 Line weights, or width of drawn lines, should be chosen to distinguish the surveyed site from other surrounding real estate, county, original grant or survey lines.

10.17 Any elevations shown on the map in the form of spot elevations or contours must be in reference to some datum or specific benchmarks even though the elevation was assumed. A statement as to basis of elevations shall be made on the map similar to one of the following examples:

Example #1.

Elevations refer to a BM (LOCATION)- set near the N.E. corner of the intersection of First St. and Ave. B, (DESCRIPTION)- on the north rim of the manhole. Elevation is assumed as 200.00 feet.

Example #2.

Elevations and contours are based upon N.G.S. bench mark A142, mean sea level (NAVD 88). Published elevation = 326.042 feet.

10.18 Each plat, map or drawing shall show the name, firm name and address of the Registered Professional Land Surveyor responsible for the survey, separate or as a part of the title block. The title block shall show:

10.18.1 Standard Land Survey (Caption).

10.18.2 General description of the property.

10.18.3 The date of the survey.

The date on the survey should be the date field work is complete, the date research is complete, the date of the surveyor's signature, (any or all dates) shall be used.

10.18.4 The stated scale of the drawing with a graphic scale displayed whenever feasible.

10.18.5 The street address of the site if known.

10.19 The original or reproducible copy of the survey map, plat or drawing shall be retained by the surveyor in his files. The client shall be furnished an agreed number of copies of the survey map, plat or drawing.

10.20 A reproducible copy of the original may be furnished at the Surveyor's discretion for an addition fee.

SEC. 11 **CERTIFICATION:** See applicable TBPLS rules for this subject. The certification for each map, plat or drawing must be signed and sealed by the Registered Professional Land Surveyor responsible for the Land Title Survey. Rubber stamps of signatures are not to be used. Rubber stamps of seals are acceptable. The certification may be in any form desired but shall contain the following sentence and minimum information:

This survey substantially complies with the current Texas Society of Professional Surveyors Standards and Specifications for a Category 1B, Condition \_\_\_\_\_ Survey.

(Surveyor's Seal)

\_\_\_\_\_  
\_\_\_\_\_

(Surveyor's signature)

(Registration Number)

Date: \_\_\_\_\_

SEC. 12 **DESCRIPTIONS:** A description written to describe a surveyed lot, parcel or quantity of land must provide the information to properly locate the land on the ground and distinctly set it aside from all other lands: Also see applicable TBPLS rules for this subject.

12.1 When the surveyed property's dimensions, boundaries and area are in close agreement with the existing recorded deed or platted calls, the aliquot method regarding subdivisions of rectangular surveys or the plat method, involving lot, block and subdivision may be used to describe the property.

12.2 Where any significant difference appears between the recorded description and the new survey, a metes and bounds description shall be made.

12.3 Basic information to be conveyed in any description will consist of the general location of the property in relation to the parent tract, established and recorded subdivisions, surveys, leagues or other original land divisions, the abstract number or numbers of such original land divisions, and the name of the county

in which the surveyed land is situated. Street addresses for small tracts or lots shall be used when reasonably available.

12.4 A metes and bounds description is to be written in two parts. The first part, called the general description, will logically compile all the requirements of item 12.3, above. The second part, called the particular description, shall logically compile and incorporate calls for the following:

12.4.1 Monuments, including descriptions as to the type, nature, size, substance or construction material, and as to whether set or found.

12.4.2 Adjoining property or rights-of-way.

12.4.3 Courses and distances of the new survey.

12.4.4 Appropriate passing calls.

12.4.5 Parenthetical deed calls where the deed calls significantly differ from the new survey may be used. (Or explain differences in a written report).

12.4.6 The area stated in acres, square feet or metric units within the specified tolerances in Section 8, herein.

12.4.7 The source of bearings.

12.5 The point of beginning of any description shall be carefully chosen and described so as to distinguish the point from any other point. Any other point used to locate the point of beginning shall be known as a "commencing" point.

12.5.1 The point of beginning should be the property corner that is most easily recognized or found by any interested parties.

12.5.2 When the new point of beginning is not the same as the old point of beginning called for in the current and valid deed, the old point of beginning should be identified or acknowledged by suitable language when passed or located.

12.5.3 The point of beginning must be located by course and distance or other locatable methods in relation to established and recognized record monuments.

12.6 It is recommended, for uniformity, that any metes and bounds description be written so that the progression of courses is in a clockwise direction.

12.7 The subsequent written courses in the description shall be as brief and yet as explanatory as the author can construct. Brevity shall not cause important locative information to be omitted and explanatory phrases shall not enlarge the description to the extent of confusion.

12.8 Curved boundaries shall be identified as tangent or non-tangent curves and sufficient data to locate the curve shall be recited. In all cases the radius and length of the curve must be given as well as the general direction the curve takes. Additional data to assist in locating the curve is desirable, such as bearing and length of the long chord, central angle, degree of curve by arc or chord definition, tangent lengths, etc.

12.9 Each metes and bounds description must close and return to the point of beginning and recite the area enclosed within the specified tolerances stated in Section 8, herein.

12.10 A statement at the end of the description shall connect the description to the date of the Standard Land Survey, and the map or plat representing that survey. Such statement may be phrased, "This description is based on the Standard Land Survey and plat made by \_\_\_\_\_(Name) #\_\_\_\_\_ Registered Professional Surveyor on \_\_\_\_\_.(Date)"

Also see Applicable TEPLS rules for this subject.

12.11 Upon completion of the metes and bounds description, the total description shall be read for correctness and continuity. A separate comparison of mathematical data regarding the computation sheets, the map, plat or drawing, and the written description shall be made as a check on all work. The surveyor's files shall contain a hard copy of the mathematical closure check of the description.

12.12 The metes and bounds description shall show the date of the survey, seal, and original signature of the Registered Professional Land Surveyor.

12.13 An agreed number of copies of the description shall be furnished the client.