MANUAL OF PRACTICE

For Land Surveying in the State of Texas

Comprised of Standards for Land Surveys, and Specifications
for Categories of Surveying 1A & 1B

TEXAS SOCIETY OF PROFESSIONAL SURVEYORS

MANUAL OF PRACTICE

FOR LAND SURVEYING IN THE STATE OF TEXAS

PREPARED BY THE TSPS STANDARDS COMMITTEE

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Preface

by Ken Gold, RPLS 1223

In the mid-1970's, I served as the Chairman of the *first* Texas Surveyors Association (TSA) *Standards* Committee directed to develop and publish workable surveying standards. That committee was comprised of seven experienced Registered Public Surveyors (RPSs) engaged in practice from seven different geographic areas of the state. Among the most unusual fact we discovered at that time was that members had difficulty in verbally communicating . . . there was little if any common "survey" language amongst them. That had to be resolved, as did many other irregularities before we could even get started. Success came about through cooperation, learning, compromise . . . a bit of arm twisting and over two years of concentrated trying.

It is heartwarming today to see the current Standards Committee engaged in the enormous and challenging task of updating and revising this work. This committee has taken the time to study, weigh and evaluate the old specifications and judge each as to its worth in today's modern practice. It is comforting to see they have maintained the original committees' mantra of addressing only "*what should be done, not how to do it*." This is meticulous, word sleuthing work. What has emerged are specifications that address current practice in a language that surveyors understand.

These specifications are handy for the veteran land surveyor, not only for a professional check list, but also for use by office and field technicians as training aids and/or to assure them their work is on the correct path. Every survey/engineering company responsible for quality land surveys should furnish their key employees with a copy of these specifications . . . so it can be used as a virtual string around their finger . . . a reminder that detailed product descriptions are not far away. Likewise, clients, the public, and surveying educators have an opportunity to become acquainted with this profession's services and objectives.

2. Introduction. This Manual of Practice is offered for voluntary use. The rules and regulations of the Texas Board of Professional Land Surveying (TBPLS) are mandatory and have the effect of law. The purpose of this Manual of Practice is to prescribe a more stringent standard of practice for land surveying in the State of Texas.

The Manual of Practice was first adopted in 1977 by Texas Surveyors Association (TSA), now Texas Society of Professional Surveyors (TSPS). In 1992, the Texas Board of Professional Land Surveying (TBPLS) adopted minimum Professional and Technical Standards, known as "board rules." The original board rules were largely derived from the Manual of Practice.

While the tools available to surveyors are rapidly changing, this manual does not provide instructions for the proper use of various tools. Rather, the objective of this manual is to provide a uniform standard for professional surveying services.

3. Definitions.

- **A. Category.** A division of survey services of similar nature, procedure, and practice.
- **B. Condition.** A division of a category with different survey precision requirements.
- **C. Record.** Any document filed in the public records of a city, county, state, or federal office that pertains to the location of real property.
- **D. Shall.** The word "shall," as used in this Manual of Practice, means obligatory.
- **E. Should.** The word "should," as used in this Manual of Practice, means recommended.
- **F. Surveyor.** A Registered Professional Land Surveyor (RPLS), sometimes referred to as a Land Surveyor or Professional Surveyor, is a person who holds a valid license to practice land surveying in the State of Texas.
- **G. Boundary Survey.** A survey performed by a Registered Professional Land Surveyor licensed in the State of Texas for the primary purpose of locating, describing, monumenting, and mapping a legal property boundary.
- **H. Land Title Survey.** A survey of real property performed by a Registered Professional Land Surveyor to be used by a title insurer for the purposes of insuring title to real property.
- **I. Title Insurance Company.** The insurer (underwriter) or the agent for the insurer.
- **J. Subject tract.** The parcel of land or easement that is being surveyed.
- **K. Adjoiner.** A tract that is contiguous with and in contact with the subject tract.
- **L. Adjacent Tract.** A tract that is near, but does not necessarily adjoin, the subject tract.
- **M. Lot.** A parcel of land, often within a recorded or unrecorded subdivision.
- **N. Cemetery.** A burial ground or graveyard.
- **O. Source Documents.** The legal instrument referenced within the title commitment.
- **P. Description.** A written report/statement defining the parcel using metes and bounds (field notes), lot & block, or section & block. A valid description must provide the information needed to uniquely identify the lot, parcel, or tract of land on the ground.
- **Q. Record Monuments.** Natural or artificial objects described in a recorded description for the purpose of locating a boundary.
- **R. Point of Beginning.** The first point on the boundary of the described tract.

S. **Point of Commencing.** The starting point if not a part of the tract being described.
T. **Passing Call.** A descriptive call to pass an object or feature that is on or close to the boundary line.
U. **Witness Monument.** A locative object referenced by a direction and distance from a boundary corner.
V. **Visible Improvements.** Visible improvements refer to significant or substantial improvements observed while conducting fieldwork.
W. **Water Course or Water Feature.** A stream of water including rivers, brooks, creeks, and bayous. A visible channel for water such as a ditch, channel, or the bed of a stream.
X. **Measurement Tolerances. (See chart in Section 3.C. below)**
    a. **Error of Closure.** The amount by which a value of a quantity obtained by the surveying operations fails to agree with a fixed or theoretical value of the same quantity.
    b. **Error of Closure (traverse).** The amount by which a value of the position of a traverse station, as obtained by computation through a traverse, fails to agree with another value of the same station as determined by a different set of observations or route of survey.
    c. **Error of Closure (description).** The amount by which a legal description fails to agree with a theoretical value of the same bearings and distances. The adjusted mathematical closure shall be no less than 1:50,000.
Y. **TBPLS.** Texas Board of Professional Land Surveying.

4. Standards.

A. **Standard of Care.** A surveyor shall perform the survey at the level that an ordinary surveyor would under the same or similar circumstances, with the foreseeability of harm to others.
B. **Boundary Determination.** The boundary lines and corners of the subject property shall be determined in accordance with current case law, statutes, and Texas Board of Professional Land Surveying (TBPLS) standards. The surveyor shall judiciously consider the application of the following:
    a. Footsteps of the original surveyor
    b. Dignity of calls
    c. Intention of the parties as expressed within the instrument's four corners
    d. Best evidence
    e. TBPLS rules
C. **Measurement Standards.** Boundaries and improvements shall be located using equipment and methods capable of meeting or exceeding the positional or traverse tolerances shown in the chart below. Because of the errors that are inherent to measurements of boundaries and improvements, absolute perfection cannot be obtained, and near perfection is impossible to obtain for a reasonable fee. The appropriate condition for the survey shall be determined based on the existing use of the property unless the planned use of the property is reported to the surveyor, preferably in writing.

SURVEY TOLERANCES for Category 1A and Category 1B			
CONDITION	**2**	**3**	**4**
	Urban	**Suburban**	**Rural**
Positional Standards			
Relative Positional Precision	0.10’	0.14’	0.20’
	Plus 50 PPM, at the 95% confidence level		
Traverse Standards			
Traverse Error of Closure	1:20,000	1:15,000	1:10,000
	Loop or between control monuments		
Angular Error of Closure	6"(√N)	8"(√N)	10"(√N)
	N = Number of Angles in Traverse		
Elevation for Boundaries by Tides, Contours, Rivers	±0.05'	±0.1'	±0.15'
Location of Improvements Measurement ties to boundary	±0.1'	±0.2'	±0.5'
Scale of Plats (No less than)	1" = 200'	1" = 400'	1" = 1000'

Condition 2 – Urban is appropriate for any land survey made in a business district.

Condition 3 – Suburban is appropriate for any land survey made within a municipality (but not within an urban as defined above); within the extra-territorial jurisdiction (ETJ) of a municipality; or (c) outside of the ETJ, but in an area that is or is intended to be used for residential, commercial, or industrial purposes.

Condition 4 – Rural is appropriate for any land survey of any tract containing more than 10 acres of land made outside the limits of a municipality.

D. Area reported on survey. The following reported area chart provides the recommended number of decimal places for reported acreages. This is based on using 4 significant figures. The surveyor shall use professional judgment in determining the appropriate number of decimal places for acreage or square footage reported.

Reported Area	
0.0001	0 - 0.9999 Acre
0.001	1 - 9.999 Acres
0.01	10 - 99.99 Acres
0.1	100 - 999.9 Acres

5. Survey Request. When ordering the survey, the client or client representative must specifically request the Category and Condition to which the survey shall be performed. Making the request later could result in additional expense being incurred. If the survey requires special permissions or clearances for the surveyor to enter the property, the client may need to make the arrangements so the surveyor may begin performing fieldwork.

TSPS Manual of Practice Requirements for
Category 1A - Land Title Survey

Approved January 26, 2019
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1. Purpose. Due to the unique history and laws regarding boundaries and title of real property in Texas, it is necessary to maintain a land title survey standard that is specific to Texas. The minimum standards set forth by the Texas Board of Professional Land Surveying (TBPLS) do not address matters that are unique to land title surveys. Therefore, it is necessary to maintain an independent standard for land title surveys. The TBPLS minimum standards shall be followed unless these standards provide more stringent specifications.

A land title survey, also known as a title survey, is a comprehensive examination and reporting of significant factors affecting a tract's boundary lines, right of way lines, and easements. The title survey includes detail not normally gathered for a traditional boundary survey, and, absent a title commitment or report, a survey of this magnitude cannot be performed. The parties to a transaction, including the title insurance company, lender, buyer, and seller, all benefit from a land title survey. The TSPS Land Title Survey provides clear and concise standards so the parties can have clear expectations regarding the title survey.

2. Research. Thorough research is a fundamental step in preparing a quality survey.

- **A. Boundary.** The surveyor will obtain sufficient research to adequately determine the boundaries surveyed. This research may be furnished by the client, title company, or any other third-party provider so long as the surveyor reasonably believes the research is sufficient to determine the boundaries and the surveyor states the source of the research on the survey.
- **B. Title Encumbrances.** The client or title company shall provide the surveyor with the most recent title commitment to complete the TSPS Land Title Survey. If the surveyor finds a mistake in the title commitment, such as an omission of an easement that the surveyor knows to exist, the surveyor should notify the title company or make reference to the omitted easement on the survey. The client or title company should provide the surveyor with any source documents necessary to address and/or depict the relevant easements or restrictions on the survey. When a current title commitment is not available, the surveyor may complete the survey using a prior title commitment or title report, and note such on the survey.
- **C. Private & Quasi-public Records.** If private or quasi-public documents are needed to complete the survey, the surveyor may utilize such documents as provided, but will not be obligated to perform additional research unless such research is necessary to determine the boundary location in accordance with TBPLS minimum standards.

3. Fieldwork. Fieldwork shall be performed using equipment and techniques capable of attaining the precision and quality required by these standards and the profession. Surveying instruments

shall be calibrated and/or adjusted according to manufacturer's specifications and in good working order.

A. **Boundary Monuments.** Corners of the subject tract shall be monumented when practicable. When appropriate, witness monuments should be used.
    a. **Natural 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.
    b. **Artificial Monuments.** A thorough on-the-ground search shall be made for called for artificial monuments affecting the location of the boundaries of the subject tract and adjoining boundary lines. Set monuments shall be of sufficient material to ensure that they will withstand the destructive forces of nature. Iron rods used for monuments shall be a minimum of 1/2 inch in diameter. Other monuments may be used to delineate or witness boundary corners such an X in concrete, a drill hole, etc. When practicable, monuments set to delineate or witness a boundary corner shall identify the registrant or associated firm.
B. **Water Features.** Visible evidence of canals, ditches, lakes, marshes, ponds, tanks, springs, streams, and swamps situated within the subject tract observed while performing fieldwork shall be located. If a water feature cannot be accessed, the surveyor shall note on the survey plat.
C. **Visible Improvements.** Visible improvements observed on the subject tract while conducting the survey shall be located, and visible improvements outside of the subject boundary but within approximately 5 feet of the boundary line should be located when practicable. Visible improvements could be evidence of easements, encroachments, protrusions, or prescriptive rights, and as such, the location of visible improvements is necessary to prepare a title survey. These improvements include, but are not limited to, the following:
    a. **Buildings.** Buildings observed while conducting fieldwork shall be located. Examples include, but are not limited to, houses, barns, sheds, offices, storage facilities, and other structures. A note shall be made on the plat if no buildings were observed on the property.
    b. **Access Roads.** Public and private roads can be evidence of access and possible prescriptive rights. Visible evidence of roads, streets, highways, alleys, or other public or private ways abutting or crossing the subject tract shall be located. Examples include, but are not limited to, back of curb, edge of pavement (absent curbing), curb cuts, driveways, culverts, and bridges.
    c. **Fences.** Perimeter fences and gates observed while performing fieldwork shall be located. Perimeter fences and gates may be evidence of prescriptive rights.
    d. **Water Wells.** Evidence of water wells and storage tanks observed while performing fieldwork shall be located.
    e. **Utilities.** Visible evidence of utilities observed while performing fieldwork shall be located. Examples include, but are not limited to, utility poles, guy wire anchors, cleanouts, septic tanks, pedestals, pipeline markers/signs, transformers, manhole covers, and meters. Visible evidence does not include sprinkler irrigation

system components. The surveyor is not responsible for locating buried utilities that are not visible, unless the surveyor has agreed to do so in writing.

f. **Energy Production.** Visible evidence of non-residential energy production on the property shall be located. Examples include, but are not limited to, oil wells, wind turbines, solar panels, and other associated permanent equipment.

D. Cemeteries. Cemeteries, if (a) observed while conducting fieldwork or (b) disclosed in documents obtained by or provided to the surveyor, must be located and shown on the survey. If a cemetery has multiple graves, the cemetery may be identified by its perimeter.

4. Survey Plat. The survey plat, sometimes also referred to as a drawing or map, shall be drawn in a manner that provides a clear and unambiguous representation of the land surveyed and the improvements and easements located therein.

A. Fieldwork. Evidence collected as required in Section 3 above shall be depicted on the survey plat.

B. Sheet size. The minimum sheet size for the plat is 8.5 by 11 inches.

C. Scale. The plat shall be drawn at a standard engineering scale that is legible. Details or inserts shall be used when necessary to provide a clear depiction of the boundary, improvements, or potential encroachments.

D. Lines.

a. **Boundary.** The subject tract's boundary line shall be drawn using a line weight, width, or color that makes the boundary line distinguishable.

b. **Record.** Survey lines of any original land grants, original subdivision lot lines, and parent tracts affecting the survey shall be depicted on the survey plat in a distinguishable manner. These lines should be constructed based on the best available evidence, though the location may be approximate.

c. **Conflicts.** All apparent and visible boundary conflicts between the subject tract and adjoining tracts or surveys of the adjoining tracts shall be shown on the survey.

E. Easements & Restrictions. Easements and Restrictions, as described in Section 2.B., shall be noted or depicted on the survey.

F. Annotations.

a. **Boundary.** All boundary lines shall be annotated to report a bearing and distance. All curves shall be annotated to report a minimum of the radius, arc length, central angle, chord bearing, and chord distance.

b. **Record Boundary.** When appropriate, record bearings, distances, and curve data should be shown on the plat in parenthesis. If the parentheticals are not explained on the plat, the data should be designated as "call." Record data should be derived from the subject deed when available. When the record deed does not contain the necessary record data, the record data may be derived from a prior deed in the chain of title, the deed of a tract severed from the subject tract, a subdivision plat, a TXDOT right of way map, or any other reliable and relevant source. The source of the record data shall be indicated on the survey.

G. Area.

- **a. Reported.** The surveyor shall report the determined acreage or square footage of the subject tract(s) on the survey plat.
- **b. Record.** Record acreages, when available, shall be shown in parenthesis along with the volume and page or the instrument/file number of the source instrument.

H. Basis of Bearing. The basis of bearing used for the survey shall be noted on the plat and based on one of the following:

- **a. Grid.** A grid bearing based on a Texas Coordinate System approved by the Texas Legislature as defined by the Natural Resource Code.
- **b. Record.** A record bearing shall be based on found and accepted monuments called for in an instrument or plat of public record. The source of the record information shall be noted on the survey.
- **c. Geodetic.** The Geodetic meridian as observed within one mile of the surveyed site.

I. Adjoiner. Adjoiners shall be reviewed and a reference shall be cited on the survey plat to the instruments of record that define the location of adjoining or adjacent boundaries.

J. Additional Requirements. The survey plat shall also include the following:

- **a.** North arrow
- **b.** Graphic scale and stated scale
- **c.** Point of Beginning and Point of Commencing, if applicable
- **d.** Registrant's name and RPLS number
- **e.** RPLS seal, signature, and date of completion
- **f.** Firm name and TBPLS firm registration number, if applicable
- **g.** Legend of symbols, abbreviations, and/or lines, if applicable
- **h.** Sheet numbers, if more than one sheet (e.g. Sheet 2 of 5)
- **i.** The caption "TSPS Land Title Survey"

K. Survey Plat Notes.

- **a. Survey Notes.** Notes, if used, should be applicable for the intended use of the survey. Notes should address or clarify information relevant to the survey.
- **b. Title Note.** Title note shall reference the title commitment details (i.e. the GF number, the effective date, the issued date) and list the appurtenant items from the commitment.

L. Survey Plat Certification. All Category 1A survey plats shall include a certification. Each surveyor may determine the preferred wording for the certification, but all certifications shall contain the following language in the certification:

> This survey substantially complies with the current Texas Society of Professional Surveyors Manual of Practice requirements for a Category 1A, Condition ___, TSPS Land Title Survey.

5. Descriptions. The surveyor's description of the land surveyed shall provide a definite and unambiguous location of the tract of land.

A. **Metes and Bounds Description.** When appropriate, the surveyor shall prepare a metes and bounds description of the surveyed property. A metes and bounds description shall be prepared if the surveyor finds significant differences between the surveyed dimensions and record description. A metes and bounds description will be written in two parts, the general description and the particular description.

   a. **General Description (Preamble).** The general description will provide a general location of the property in relation to the parent tract, survey, league, or other original land division by compiling the following as appropriate:

      i. County and state
      ii. Survey name and abstract number
      iii. Recorded and established subdivision
      iv. Recording information for the deed in which the tract is described and record area, when available

   b. **Particular Description.** The particular description shall compile and incorporate calls for the following:

      i. **Monuments.** All written descriptions shall adequately describe all monuments found or set as part of the surveyed boundary. The description shall include the diameter of the monument and the material of the monument. Monuments located in close proximity to the determined boundary shall be located by a reference or passing call. Monuments used to construct the surveyed boundary shall be referenced.
      ii. **Calls to Adjoin.** The surveyor shall consider adjoining properties during the boundary construction. When appropriate, a call to adjoin shall be used to define the relationship between the subject tract and the adjoining tract or right-of-way.
      iii. **Courses.** Descriptions shall report the bearing and distance of all lines. For curves, the description shall report a minimum of the radius, arc length, central angle, chord bearing, and chord distance.
      iv. **Area.** The surveyor shall report the determined acreage or square footage of the subject tract.
      v. **Basis of Bearing.** The basis of bearing used for the survey shall be noted and based on one of the following:

         1. **Grid.** A grid bearing based on a Texas Coordinate System approved by the Texas Legislature as defined by the Natural Resource Code.
         2. **Record.** A record bearing shall be based on found and accepted monuments called for in an instrument or plat of public record. The source of the record information shall be noted.
         3. **Geodetic.** The Geodetic meridian as observed within one mile of the surveyed site.

      vi. **Additional Requirements.** The description shall include the following:

         1. Point of Beginning and Point of Commencing, if applicable
         2. Registrant's name and RPLS number

3. RPLS seal, signature, and date
4. Firm name and TBPLS firm registration number, if applicable
5. Page numbers if more than one page (e.g. Page 2 of 5)

B. Lot & Block. When the surveyed dimensions are in close agreement with the lot's platted calls, the reference to the lot within the recorded subdivision plat is an adequate description. However, a metes and bounds description should be prepared for a platted lot in a recorded subdivision if (i) the subdivision plat contains insufficient data to locate the lot with reasonable accuracy or (ii) the boundary dimensions shown on the subdivision plat are subject to significant conflict, ambiguity, error, or blunder that would hinder the future location of the boundary.

C. Aliquot Descriptions. An aliquot description may be used to describe a portion of a lot, tract, survey, or section when the surveyed dimensions are in close agreement with record dimensions.

TSPS Manual of Practice Requirements for Category 1B – Standard Land Survey

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1. Purpose. A standard land survey, also known as a boundary survey, is a comprehensive examination and reporting of significant factors affecting a tract's boundary lines. The Texas Society of Professional Surveyors (TSPS) Standard Land Survey provides clear and concise standards so the parties can have clear expectations regarding the services provided. The Texas Board of Professional Land Surveying (TBPLS) minimum standards shall be followed unless these standards provide more stringent specifications.

2. Research. Thorough research is a fundamental step in preparing a quality survey.

- **A. Boundary.** The surveyor will obtain sufficient research to adequately determine the boundaries surveyed. This research may be furnished by the client, title company, or any other third-party provider so long as the surveyor reasonably believes the research is sufficient to determine the boundaries and the surveyor states the source of the research on the survey.
- **B. Private & Quasi-public Records.** If private or quasi-public documents are needed to complete the survey, the surveyor may utilize such documents as necessary to determine the boundary location.

3. Fieldwork. Fieldwork shall be performed using equipment and techniques capable of attaining the precision and quality required by these standards and the profession. Surveying instruments shall be calibrated and/or adjusted according to manufacturer's specifications and in good working order.

- **A. Boundary Monuments.** Every corner of the subject tract shall be monumented when practicable.
  - **a. Natural 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.
  - **b. Artificial Monuments.** A thorough on-the-ground search shall be made for called for artificial monuments affecting the location of the boundaries of the subject tract and adjoining boundary lines. Set monuments shall be of sufficient material to ensure that they will withstand the destructive forces of nature. Iron rods used for monuments shall be a minimum of 1/2 inch in diameter. Other monuments may be used to delineate or witness boundary corners such an X in concrete, a drill hole, etc. When practicable, monuments set to delineate or witness a boundary corner shall identify the registrant or associated firm.
- **B. Water Features.** Visible evidence of canals, ditches, lakes, marshes, ponds, tanks, springs, streams, and swamps situated within the subject tract observed while performing

fieldwork shall be located. If a water feature cannot be accessed, the surveyor shall note on the survey plat.

C. **Visible Improvements.** There is no requirement to show visible improvements except for visible evidence of adverse occupation or use along the perimeter boundary lines of the parcel(s) surveyed. Such evidence includes perimeter fences and improvements located on or near the boundary line.

D. **Cemeteries.** Cemeteries, if (a) observed while conducting fieldwork or (b) disclosed in documents obtained by or provided to the surveyor, must be located and shown on the survey. If a cemetery has multiple graves, the cemetery may be identified by its perimeter.

4. Survey Plat. The survey plat, sometimes also referred to as a drawing or map, shall be drawn in a manner that provides a clear and unambiguous representation of the land surveyed and the improvements and easements located therein.

A. **Fieldwork.** Evidence collected as required in Section 3 above shall be depicted on the survey plat.

B. **Sheet size.** The minimum sheet size for the plat is 8.5 by 11 inches.

C. **Scale.** The plat shall be drawn at a standard engineering scale that is legible. Details or inserts shall be used when necessary to provide a clear depiction of the boundary, improvements, or potential encroachments.

D. **Lines.**

   a. **Boundary.** The subject tract's boundary line shall be drawn using a line weight, width, or color that makes the boundary line distinguishable.

   b. **Record.** Survey lines of any original land grants, original subdivision lot lines, and parent tracts affecting the survey shall be depicted on the survey plat in a distinguishable manner. These lines should be constructed based on the best available evidence, though the location may be approximate.

   c. **Conflict.** All apparent and visible boundary conflicts between the subject tract and adjoining tracts or surveys of the adjoining tracts shall be shown on the survey.

E. **Annotations.**

   a. **Boundary.** All boundary lines shall be annotated to report a bearing and distance. All curves shall be annotated to report a minimum of the radius, arc length, central angle, chord bearing, and chord distance.

   b. **Record Boundary.** When appropriate, record bearings, distances, and curve data should be shown on the plat in parenthesis. If the parentheticals are not explained on the plat, the data should be designated as "call." Record data should be derived from the subject deed when available. When the record deed does not contain the necessary record data, the record data may be derived from a prior deed in the chain of title, the deed of a tract severed from the subject tract, a subdivision plat, a TXDOT right of way map, or any other reliable and relevant source. The source of the record data shall be indicated on the survey.

F. **Area.**

a. **Reported.** The surveyor shall report on the survey plat the determined acreage or square footage of the subject tract(s).
b. **Record.** Record acreages, when available, shall be shown in parenthesis along with the volume and page or the instrument/file number of the source instrument.

G. Basis of Bearing. The basis of bearing used for the survey shall be noted on the plat and based on one of the following:

a. **Grid.** A grid bearing based on a Texas Coordinate System approved by the Texas Legislature as defined by the Natural Resource Code.
b. **Record.** A record bearing shall be based on found and accepted monuments called for in an instrument or plat of public record. The source of the record information shall be noted on the survey.
c. **Geodetic.** The Geodetic meridian as observed within one mile of the surveyed site.

H. Adjoiner. Adjoiners shall be reviewed and a reference shall be cited on the survey plat to the instruments of record that define the location of adjoining or adjacent boundaries.

I. Additional Requirements. The survey plat shall also include the following:

a. North arrow
b. Graphic scale and stated scale
c. Point of Beginning and Point of Commencing, if applicable
d. Registrant's name and RPLS number
e. RPLS seal, signature, and date of completion
f. Firm name and TBPLS firm registration number, if applicable
g. Legend of symbols, abbreviations, and/or lines, if applicable
h. Sheet numbers, if more than one sheet (e.g. Sheet 2 of 5)
i. The caption "TSPS Standard Land Survey"

J. Survey Plat Notes. Notes, if used, should be applicable for the intended use of the survey. Notes should address or clarify information relevant to the survey.

K. Survey Plat Certification. All final survey plats shall include a certification. Each surveyor may determine the preferred wording for the certification, but all certifications shall contain the following language in the certification:

> This survey substantially complies with the current Texas Society of Professional Surveyors Manual of Practice requirements for a Category 1B, Condition ___, TSPS Standard Land Survey.

5. Descriptions. The surveyor's description of the land surveyed shall provide a definite and unambiguous location of the tract of land.

A. Metes and Bounds Description. When appropriate, the surveyor shall prepare a metes and bounds description of the surveyed property. A metes and bounds description shall be prepared if the surveyor finds significant differences between the surveyed dimensions and record description. A metes and bounds description will be written in two parts, the general description and the particular description.

a. **General Description (Preamble).** The general description will provide a general location of the property in relation to the parent tract, survey, league, or other original land division by compiling the following as appropriate:
    i. County and state
    ii. Survey name and abstract number
    iii. Recorded and established subdivision
    iv. Recording information for the deed in which the tract is described and record area, when available
b. **Particular Description.** The particular description shall compile and incorporate calls for the following:
    i. **Monuments.** All written descriptions shall adequately describe all monuments found or set as part of the surveyed boundary. The description shall include the diameter of the monument and the material of the monument. Monuments located in close proximity to the determined boundary shall be located by a reference or passing call. Monuments used to construct the surveyed boundary shall be referenced.
    ii. **Calls to Adjoin.** The surveyor shall consider adjoining properties during the boundary construction. When appropriate, a call to adjoin shall be used to define the relationship between the subject tract and the adjoining tract or right-of-way.
    iii. **Courses.** Descriptions shall report the bearing and distance of all lines. For curves, the description shall report a minimum of the radius, arc length, central angle, chord bearing, and chord distance.
    iv. **Area.** The surveyor shall report the determined acreage or square footage of the subject tract.
    v. **Basis of Bearing.** The basis of bearing used for the survey shall be noted and based on one of the following:
        1. **Grid.** A grid bearing based on a Texas Coordinate System approved by the Texas Legislature as defined by the Natural Resource Code.
        2. **Record.** A record bearing shall be based on found and accepted monuments called for in an instrument or plat of public record. The source of the record information shall be noted.
        3. **Geodetic.** The Geodetic meridian as observed within one mile of the surveyed site.
    vi. **Additional Requirements.** The description shall include the following:
        1. Point of Beginning and Point of Commencing, if applicable
        2. Registrant's name and RPLS number
        3. RPLS seal, signature, and date
        4. Firm name and TBPLS firm registration number, if applicable
        5. Page numbers if more than one page (e.g. Page 2 of 5)

B. **Platted Lot.** When the surveyed dimensions are in close agreement with the lot's platted calls, the reference to the lot within the recorded subdivision plat is an adequate

description. However, a metes and bounds description should be prepared for a platted lot in a recorded subdivision if (i) the subdivision plat contains insufficient data to locate the lot with reasonable accuracy or (ii) the boundary dimensions shown on the subdivision plat are subject to significant conflict, ambiguity, error, or blunder that would hinder the future location of the boundary.

C. Aliquot Descriptions. An aliquot description may be used to describe a portion of a lot, tract, or section when the surveyed dimensions are in close agreement with record dimensions.