

**MINIMUM STANDARD DETAIL REQUIREMENTS FOR  
ALTA/NSPS LAND TITLE SURVEYS**  
*(Effective February 23, 2021)*

1. **Purpose** - Members of the American Land Title Association® (ALTA®) have specific needs, unique to title insurance matters, when asked to insure title to land without exception as to the many matters which might be discoverable from survey and inspection, and which are not evidenced by the public records.

For a survey of real property, and the plat, map or record of such survey, to be acceptable to a title insurance company for the purpose of insuring title to said real property free and clear of survey matters (except those matters disclosed by the survey and indicated on the plat or map), certain specific and pertinent information must be presented for the distinct and clear understanding between the insured, the client (if different from the insured), the title insurance company (insurer), the lender, and the surveyor professionally responsible for the survey.

In order to meet such needs, clients, insurers, insureds, and lenders are entitled to rely on surveyors to conduct surveys and prepare associated plats or maps that are of a professional quality and appropriately uniform, complete, and accurate. To that end, and in the interests of the general public, the surveying profession, title insurers, and abstracters, the ALTA and the NSPS jointly promulgate the within details and criteria setting forth a minimum standard of performance for ALTA/NSPS Land Title Surveys. A complete 2021 ALTA/NSPS Land Title Survey includes:

- (i) the on-site fieldwork required pursuant to Section 5,
  - (ii) the preparation of a plat or map pursuant to Section 6 showing the results of the fieldwork and its relationship to documents provided to or obtained by the surveyor pursuant to Section 4,
  - (iii) any information from Table A items requested by the client, and
  - (iv) the certification outlined in Section 7.
2. **Request for Survey** - The client shall request the survey, or arrange for the survey to be requested, and shall provide a written authorization to proceed from the person or entity responsible for paying for the survey. Unless specifically authorized in writing by the insurer, the insurer shall not be responsible for any costs associated with the preparation of the survey. The request must specify that an "**ALTA/NSPS LAND TITLE SURVEY**" is required and which of the optional items listed in Table A, if any, are to be incorporated. Certain properties or interests in real properties may present issues outside those normally encountered on an ALTA/NSPS Land Title Survey (e.g., marinas, campgrounds, mobile home parks; easements, leases, mineral interests, other non-fee simple interests). The scope of work related to surveys of such properties or interests in real properties should be discussed with the client, lender, and insurer, and agreed upon in writing prior to commencing work on the survey. When required, the client shall secure permission for the surveyor to enter upon the property to be surveyed, adjoining properties, or offsite easements.
3. **Surveying Standards and Standards of Care**
- A. **Effective Date** - The 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys are effective February 23, 2021. As of that date, all previous versions of the Minimum Standard Detail Requirements for ALTA/ACSM or ALTA/NSPS Land Title Surveys are superseded by these standards.

- B. **Other Requirements and Standards of Practice** - Many states and some local jurisdictions have adopted statutes, administrative rules, and/or ordinances that set out standards regulating the practice of surveying within their jurisdictions. In addition to the standards set forth herein, surveyors must also conduct their surveys in accordance with applicable jurisdictional survey requirements and standards of practice. Where conflicts between the standards set forth herein and any such jurisdictional requirements and standards of practice occur, the more stringent must apply.
- C. **The Normal Standard of Care** - Surveyors should recognize that there may be unwritten local, state, and/or regional standards of care defined by the practice of the “prudent surveyor” in those locales.
- D. **Boundary** - The boundary lines and corners of any property or interest in real property being surveyed (hereafter, the “surveyed property” or “property to be surveyed”) as part of an ALTA/NSPS Land Title Survey must be established and/or retraced in accordance with appropriate boundary law principles governed by the set of facts and evidence found in the course of performing the research and fieldwork.
- E. **Measurement Standards** - The following measurement standards address Relative Positional Precision for the monuments or witnesses marking the corners of the surveyed property.
- i. “Relative Positional Precision” means the length of the semi-major axis, expressed in meters or feet, of the error ellipse representing the uncertainty in the position of the monument or witness marking any boundary corner of the surveyed property relative to the position of the monument or witness marking an immediately adjacent boundary corner of the surveyed property resulting from random errors in the measurements made in determining those positions at the 95 percent confidence level. Relative Positional Precision can be estimated by the results of a correctly weighted least squares adjustment of the survey. Alternatively, Relative Positional Precision can be estimated by the standard deviation of the distance between the monument or witness marking any boundary corner of the surveyed property and the monument or witness marking an immediately adjacent boundary corner of the surveyed property (called local accuracy) that can be computed using the full covariance matrix of the coordinate inverse between any given pair of points, understanding that Relative Positional Precision is based on the 95 percent confidence level, or approximately 2 standard deviations.
  - ii. Any boundary lines and corners established or retraced may have uncertainties in location resulting from
    - (1) the availability, condition, history and integrity of reference or controlling monuments,
    - (2) ambiguities in the record descriptions or plats of the surveyed property or its adjoiners,
    - (3) occupation or possession lines as they may differ from the written title lines, or
    - (4) Relative Positional Precision.

Of these four sources of uncertainty, only Relative Positional Precision is controllable, although, due to the inherent errors in any measurement, it cannot be eliminated. The magnitude of the first three uncertainties can be projected based on evidence; Relative Positional Precision is estimated using statistical means (see Section 3.E.i. above and Section 3.E.v. below).

- iii. The first three of these sources of uncertainty must be weighed as part of the evidence in the determination of where, in the surveyor’s opinion, the boundary lines and corners of the surveyed property should be located (see Section 3.D. above). Relative Positional Precision is a measure of how precisely the surveyor is able to monument and report those positions; it is not a substitute for the application of proper boundary law principles. A boundary corner or line may have a small Relative Positional Precision because the survey measurements were precise, yet still be in the wrong position (i.e., inaccurate) if it was established or retraced using faulty or improper application of boundary law principles.
- iv. For any measurement technology or procedure used on an ALTA/NSPS Land Title Survey, the surveyor must
  - (1) use appropriately trained personnel,

- (2) compensate for systematic errors, including those associated with instrument calibration, and
  - (3) use appropriate error propagation and measurement design theory (selecting the proper instruments, geometric layouts, and field and computational procedures) to control random errors such that the maximum allowable Relative Positional Precision outlined in Section 3.E.v. below is not exceeded.
- v. The maximum allowable Relative Positional Precision for an ALTA/NSPS Land Title Survey is 2 cm (0.07 feet) plus 50 parts per million (based on the direct distance between the two corners being tested). It is recognized that in certain circumstances, the size or configuration of the surveyed property, or the relief, vegetation, or improvements on the surveyed property, will result in survey measurements for which the maximum allowable Relative Positional Precision may be exceeded in which case the reason shall be noted pursuant to Section 6.B.x. below.
4. **Records Research** - It is recognized that for the performance of an ALTA/NSPS Land Title Survey, the surveyor will be provided with appropriate and, when possible, legible data that can be relied upon in the preparation of the survey. In order to complete an ALTA/NSPS Land Title Survey, the surveyor must be provided with the following:
- A. The current record description of the real property to be surveyed or, in the case of an original survey prepared for purposes of locating and describing real property that has not been previously separately described in documents conveying an interest in the real property, the current record description of the parent parcel that contains the property to be surveyed;
  - B. Complete copies of the most recent title commitment or, if a title commitment is not available, other title evidence satisfactory to the title insurer;
  - C. The following documents from records established under state statutes for the purpose of imparting constructive notice of matters relating to real property (public records):
    - i. The current record descriptions of any adjoiners to the property to be surveyed, except where such adjoiners are lots in platted, recorded subdivisions;
    - ii. Any recorded easements benefitting the property to be surveyed; and
    - iii. Any recorded easements, servitudes, or covenants burdening the property to be surveyed; and
  - D. If desired by the client, any unrecorded documents affecting the property to be surveyed and containing information to which the survey shall make reference.

Except, however, if the documents outlined in this section are not provided to the surveyor or if non-public or quasi-public documents are otherwise required to complete the survey, the surveyor must conduct that research which is required pursuant to the statutory or administrative requirements of the jurisdiction where the surveyed property is located and that research (if any) which is negotiated and outlined in the terms of the contract between the surveyor and the client.

5. **Fieldwork** - The survey must be performed on the ground (except as may be otherwise negotiated pursuant to Table A, Item 15 below). Except as related to the precision of the boundary, which is addressed in Section 3.E. above, features located during the fieldwork shall be located to what is, in the surveyor's professional opinion, the appropriate degree of precision based on
- (a) the planned use of the surveyed property, if reported in writing to the surveyor by the client, lender, or insurer, or
  - (b) the existing use, if the planned use is not so reported.

The fieldwork shall include the following:

A. **Monuments**

- i. The location, size, character, and type of any monuments found during the fieldwork.
- ii. The location, size, character, and type of any monuments set during the fieldwork, if item 1 of Table A was selected or if otherwise required by applicable jurisdictional requirements and/or standards of practice.

- iii. The location, description, and character of any lines that control the boundaries of the surveyed property.

**B. Rights of Way and Access**

- i. The distance from the appropriate corner or corners of the surveyed property to the nearest right of way line, if the surveyed property does not abut a right of way.
- ii. The name of any street, highway, or other public or private way abutting the surveyed property, together with the width of the travelled way and the location of each edge of the travelled way including on divided streets and highways. If the documents provided to or obtained by the surveyor pursuant to Section 4 indicate no access from the surveyed property to the abutting street or highway, the width and location of the travelled way need not be located.
- iii. Visible evidence of physical access (e.g., curb cuts, driveways) to any abutting streets, highways, or other public or private ways.
- iv. The location and character of vehicular, pedestrian, or other forms of access by other than the apparent occupants of the surveyed property to or across the surveyed property observed in the process of conducting the fieldwork (e.g., driveways, alleys, private roads, railroads, railroad sidings and spurs, sidewalks, footpaths).
- v. Without expressing a legal opinion as to ownership or nature, the location and extent of any potentially encroaching driveways, alleys, and other ways of access from adjoining properties onto the surveyed property observed in the process of conducting the fieldwork.
- vi. Where documentation of the location of any street, road, or highway right of way abutting, on, or crossing the surveyed property was not disclosed in documents provided to or obtained by the surveyor, or was not otherwise available from the controlling jurisdiction (see Section 6.C.iv. below), the evidence and location of parcel corners on the same side of the street as the surveyed property recovered in the process of conducting the fieldwork which may indicate the location of such right of way lines (e.g., lines of occupation, survey monuments).
- vii. Evidence of access to and from waters adjoining the surveyed property observed in the process of conducting the fieldwork (e.g., paths, boat slips, launches, piers, docks).

**C. Lines of Possession and Improvements along the Boundaries**

- i. The character and location of evidence of possession or occupation along the perimeter of the surveyed property, both by the occupants of the surveyed property and by adjoining, observed in the process of conducting the fieldwork.
- ii. Unless physical access is restricted, the character and location of all walls, buildings, fences, and other improvements within five feet of each side of the boundary lines observed in the process of conducting the fieldwork (see Section 5.E.iv. regarding utility poles). Trees, bushes, shrubs, and other vegetation need not be located other than as specified in the contract, unless they are deemed by the surveyor to be evidence of possession or occupation pursuant to Section 5.C.i.
- iii. Without expressing a legal opinion as to the ownership or nature of the potential encroachment, the evidence, location, and extent of potentially encroaching structural appurtenances and projections observed in the process of conducting the fieldwork (e.g., fire escapes, bay windows, windows and doors that open out, flue pipes, stoops, eaves, cornices, areaways, steps, trim) by or onto adjoining property, or onto rights of way, easements, or setback lines disclosed in documents provided to or obtained by the surveyor.

**D. Buildings**

The location of buildings on the surveyed property observed in the process of conducting the fieldwork.

**E. Easements and Servitudes**

- i. Evidence of any easements or servitudes burdening the surveyed property as disclosed in the documents provided to or obtained by the surveyor pursuant to Section 4 and observed in the process of conducting the fieldwork.
- ii. Evidence of easements, servitudes, or other uses by other than the apparent occupants of the surveyed property not disclosed in the documents provided to or obtained by the surveyor pursuant to Section 4, but observed in the process of conducting the fieldwork if they are on or

- across the surveyed property (e.g., roads, drives, sidewalks, paths and other ways of access, utility service lines, utility locate markings (including the source of the markings, with a note if unknown), water courses, ditches, drains, telephone lines, fiber optic lines, electric lines, water lines, sewer lines, oil pipelines, gas pipelines).
- iii. Surface indications of underground easements or servitudes on or across the surveyed property observed in the process of conducting the fieldwork (e.g., utility cuts, vent pipes, filler pipes, utility locate markings (including the source of the markings, with a note if unknown)).
  - iv. Evidence on or above the surface of the surveyed property observed in the process of conducting the fieldwork, which evidence may indicate utilities located on, over or beneath the surveyed property. Examples of such evidence include pipeline markers, utility locate markings (including the source of the markings, with a note if unknown), manholes, valves, meters, transformers, pedestals, clean-outs, overhead lines, guy wires, and utility poles on or within ten feet of the surveyed property. Without expressing a legal opinion as to the ownership or nature of the potential encroachment, the extent of all encroaching utility pole crossmembers or overhangs.
- F. Cemeteries**  
As accurately as the evidence permits, the perimeter of cemeteries and burial grounds, and the location of isolated gravesites not within a cemetery or burial ground,
- i disclosed in the documents provided to or obtained by the surveyor, or
  - ii observed in the process of conducting the fieldwork.
- G. Water Features**
- i. The location of springs, ponds, lakes, streams, rivers, canals, ditches, marshes, and swamps on, running through, or outside, but within five feet of, the perimeter boundary of the surveyed property and observed during the process of conducting the fieldwork.
  - ii. The location of any water feature forming a boundary of the surveyed property. The attribute(s) of the water feature located (e.g., top of bank, edge of water, high water mark) should be congruent with the boundary as described in the record description or, in the case of an original survey, in the new description (see Section 6.B.vi. below).
6. **Plat or Map** - A plat or map of an ALTA/NSPS Land Title Survey shall show the following information. Where dimensioning is appropriate, dimensions shall be annotated to what is, in the surveyor's professional opinion, the appropriate degree of precision based on
- (a) the planned use of the surveyed property, if reported in writing to the surveyor by the client, lender, or insurer, or
  - (b) existing use, if the planned use is not so reported.
- A. Field Locations.** The evidence and locations gathered, and the monuments and lines located during the fieldwork pursuant to Section 5 above, with accompanying notes if deemed necessary by the surveyor or as otherwise required as specified below.
- B. Boundary, Descriptions, Dimensions, and Closures**
- i. (a) The current record description of the surveyed property, or  
(b) In the case of an original survey, the current record document number of the parent tract that contains the surveyed property.
  - ii. Any new description of the surveyed property that was prepared in conjunction with the survey, including a statement explaining why the new description was prepared. Except in the case of an original survey, preparation of a new description should be avoided unless deemed necessary or appropriate by the surveyor and insurer. Preparation of a new description should also generally be avoided when the record description is a lot or block in a platted, recorded subdivision. Except in the case of an original survey, if a new description is prepared, a note must be provided stating
    - (a) that the new description describes the same real estate as the record description or,
    - (b) if it does not, how the new description differs from the record description.
  - iii. The point of beginning, the remote point of beginning or point of commencement (if applicable) and all distances and directions identified in the record description of the surveyed property

- (and in the new description, if one was prepared). Where a measured or calculated dimension differs from the record by an amount deemed significant by the surveyor, such dimension must be shown in addition to, and differentiated from, the corresponding record dimension. All dimensions shown on the survey and contained in any new description must be horizontal ground dimensions unless otherwise noted.
- iv. The direction, distance and curve data necessary to compute a mathematical closure of the surveyed boundary. A note if the record description does not mathematically close. The basis of bearings and, where it differs from the record basis, the difference.
  - v. The remainder of any recorded lot or existing parcel, when the surveyed property is composed of only a portion of such lot or parcel, shall be graphically depicted. Such remainder need not be included as part of the actual survey, except to the extent necessary to locate the lines and corners of the surveyed property, and it need not be fully dimensioned or drawn at the same scale as the surveyed property.
  - vi. When the surveyed property includes a title line defined by a water boundary, a note on the face of the plat or map noting the date the boundary was measured, which attribute(s) of the water feature was/were located, and the caveat that the boundary is subject to change due to natural causes and that it may or may not represent the actual location of the limit of title. When the surveyor is aware of natural or artificial realignments or changes in such boundaries, the extent of those changes and facts shall be shown or explained.
  - vii. The relationship of the boundaries of the surveyed property to its adjoiners (e.g., contiguity, gaps, overlaps) where ascertainable from documents provided to or obtained by the surveyor pursuant to Section 4 and/or from field evidence gathered during the process of conducting the fieldwork. If the surveyed property is composed of multiple parcels, the extent of any gaps or overlaps between those parcels must be identified. Where gaps or overlaps are identified, the surveyor must, prior to or upon delivery of the final plat or map, disclose this to the insurer and client.
  - viii. When, in the opinion of the surveyor, the results of the survey differ significantly from the record, or if a fundamental decision related to the boundary resolution is not clearly reflected on the plat or map, the surveyor must explain this information with notes on the face of the plat or map.
  - ix. The location of buildings on the surveyed property dimensioned perpendicular to those perimeter boundary lines that the surveyor deems appropriate (i.e., where potentially impacted by a setback line) and/or as requested by the client, lender or insurer.
  - x. A note on the face of the plat or map explaining the site conditions that resulted in a Relative Positional Precision that exceeds the maximum allowed pursuant to Section 3.E.v.
  - xi. A note on the face of the plat or map identifying areas, if any, on the boundaries of the surveyed property, to which physical access within five feet was restricted (see Section 5.C.ii.).
  - xii. A note on the face of the plat or map identifying the source of the title commitment or other title evidence provided pursuant to Section 4, and the effective date and the name of the insurer of same.

**C. Easements, Servitudes, Rights of Way, Access, and Documents**

- i. The location, width, and recording information of all plottable rights of way, easements, and servitudes burdening and benefitting the surveyed property, as evidenced by documents provided to or obtained by the surveyor pursuant to Section 4.
- ii. A summary of all rights of way, easements, and other survey-related matters burdening the surveyed property and identified in the title evidence provided to or obtained by the surveyor pursuant to Section 4. Such summary must include the record information of each such right of way, easement or other survey-related matter, a statement indicating whether it lies within or crosses the surveyed property, and a related note if:
  - (a) its location is shown;
  - (b) its location cannot be determined from the record document;
  - (c) there was no observed evidence at the time of the fieldwork;
  - (d) it is a blanket easement;

- (e) it is not on, does not touch, and/or - based on the description contained in the record document – does not affect, the surveyed property;
- (f) it limits access to an otherwise abutting right of way;
- (g) the documents are illegible; or
- (h) the surveyor has information indicating that it may have been released or otherwise terminated.

In cases where the surveyed property is composed of multiple parcels, indicate which of such parcels the various rights of way, easements, and other survey-related matters cross or touch.

- iii. A note if no physical access to an abutting street, highway, or other public or private way was observed in the process of conducting the fieldwork.
- iv. The locations and widths of rights of way abutting or crossing the surveyed property and the source of such information,
  - (a) where available from the controlling jurisdiction, or
  - (b) where disclosed in documents provided to or obtained by the surveyor pursuant to Section 4.
- v. The identifying titles of all recorded plats, filed maps, right of way maps, or similar documents that the survey represents, wholly or in part, with their recording or filing data.
- vi. For non-platted adjoining land, recording data and, where available, tax parcel number, identifying adjoining tracts according to current public records. For platted adjoining land, the recording data of the subdivision plat.
- vii. Platted setback or building restriction lines that appear on recorded subdivision plats or that were disclosed in documents provided to, or obtained by, the surveyor.
- viii. If in the process of preparing the survey the surveyor becomes aware of a recorded easement not otherwise listed in the title evidence provided, the surveyor must advise the insurer prior to delivery of the plat or map and, unless the insurer provides evidence of a release of that easement, show or otherwise explain it on the face of the plat or map, with a note that the insurer has been advised.

#### D. Presentation

- i. The plat or map must be drawn on a sheet of not less than 8 ½ by 11 inches in size at a legible, standard engineering scale, with that scale clearly indicated in words or numbers and with a graphic scale.
- ii. The plat or map must include:
  - (a) The boundary of the surveyed property drawn in a manner that distinguishes it from other lines on the plat or map.
  - (b) If no buildings were observed on the surveyed property in the process of conducting the fieldwork, a note stating “*No buildings observed.*”
  - (c) A north arrow (with north to the top of the drawing when practicable).
  - (d) A legend of symbols and abbreviations.
  - (e) A vicinity map showing the surveyed property in reference to nearby highway(s) or major street intersection(s).
  - (f) Supplementary or detail diagrams when necessary.
  - (g) Notes explaining any modifications to Table A items and the nature of any additional Table A items (e.g., 20(a), 20(b), 20(c)) that were negotiated between the surveyor and client.
  - (h) The surveyor’s project number (if any), and the name, registration or license number, signature, seal, street address, telephone number, company website, and email address (if any) of the surveyor who performed the survey.
  - (i) The date(s) of any revisions made by the surveyor who performed the survey.
  - (j) Sheet numbers where the plat or map is composed of more than one sheet.
  - (k) The caption “ALTA/NSPS Land Title Survey.”
- iii. When recordation or filing of a plat or map is required by state statutes or local ordinances, such plat or map shall be produced in the required form.

7. **Certification** - The plat or map of an ALTA/NSPS Land Title Survey must bear only the following unaltered certification except as may be required pursuant to Section 3.B. above:

To *(name of insured, if known), (name of lender, if known), (name of insurer, if known), (names of others as negotiated with the client):*

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items \_\_\_\_\_ of Table A thereof. The fieldwork was completed on \_\_\_\_\_ [date].

Date of Plat or Map: \_\_\_\_\_ *(Surveyor's signature, printed name and seal with Registration/License Number)*

8. **Deliverables** - The surveyor shall furnish copies of the plat or map of survey to the insurer and client and as otherwise negotiated with the client. Hard copies shall be on durable and dimensionally stable material of a quality standard acceptable to the insurer. A digital image of the plat or map may be provided in addition to, or in lieu of, hard copies pursuant to the terms of the contract. If the surveyor is required to record or file a plat or map pursuant to state statute or local ordinance it shall be so recorded or filed.

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**TABLE A**

**OPTIONAL SURVEY RESPONSIBILITIES AND SPECIFICATIONS**

*NOTE: Whether any of the nineteen (19) items of Table A are to be selected, and the exact wording of and fee for any selected item, may be negotiated between the surveyor and client. Any additional items negotiated between the surveyor and client must be identified as 20(a), 20(b), etc. Any additional items negotiated between the surveyor and client, and any negotiated changes to the wording of a Table A item, must be explained pursuant to Section 6.D.ii.(g). Notwithstanding Table A Items 5 and 11, if an engineering design survey is desired as part of an ALTA/NSPS Land Title Survey, such services should be negotiated under Table A, Item 20.*

*If checked, the following optional items are to be included in the ALTA/NSPS LAND TITLE SURVEY, except as otherwise qualified (see note above):*

1. \_\_\_\_\_ *Monuments placed (or a reference monument or witness to the corner) at all major corners of the boundary of the surveyed property, unless already marked or referenced by existing monuments or witnesses in close proximity to the corner.*
2. \_\_\_\_\_ *Address(es) of the surveyed property if disclosed in documents provided to or obtained by the surveyor, or observed while conducting the fieldwork.*
3. \_\_\_\_\_ *Flood zone classification (with proper annotation based on federal Flood Insurance Rate Maps or the state or local equivalent) depicted by scaled map location and graphic plotting only.*
4. \_\_\_\_\_ *Gross land area (and other areas if specified by the client).*
5. \_\_\_\_\_ *Vertical relief with the source of information (e.g., ground survey, aerial map), contour interval, datum, with originating benchmark, when appropriate.*
6. \_\_\_\_\_ *(a) If the current zoning classification, setback requirements, the height and floor space area restrictions, and parking requirements specific to the surveyed property are set forth in a zoning report or letter provided to the surveyor by the client or the client's designated representative, list the above items on the plat or map and identify the date and source of the report or letter.*  
\_\_\_\_\_ *(b) If the zoning setback requirements specific to the surveyed property are set forth in a zoning report or letter provided to the surveyor by the client or the client's designated representative, and if those requirements do not require an interpretation by the surveyor, graphically depict those requirements on the plat or map and identify the date and source of the report or letter.*
7. \_\_\_\_\_ *(a) Exterior dimensions of all buildings at ground level.*  
\_\_\_\_\_ *(b) Square footage of:*  
\_\_\_\_\_ *(1) exterior footprint of all buildings at ground level.*  
\_\_\_\_\_ *(2) other areas as specified by the client.*  
\_\_\_\_\_ *(c) Measured height of all buildings above grade at a location specified by the client. If no location is specified, the point of measurement shall be identified.*
8. \_\_\_\_\_ *Substantial features observed in the process of conducting the fieldwork (in addition to the improvements and features required pursuant to Section 5 above) (e.g., parking lots, billboards, signs, swimming pools, landscaped areas, substantial areas of refuse).*
9. \_\_\_\_\_ *Number and type (e.g., disabled, motorcycle, regular and other marked specialized types) of clearly identifiable parking spaces on surface parking areas, lots and in parking structures.*  
*Striping of clearly identifiable parking spaces on surface parking areas and lots.*

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10. \_\_\_\_\_ *As designated by the client, a determination of the relationship and location of certain division or party walls with respect to adjoining properties.*
  11. \_\_\_\_\_ *Evidence of underground utilities existing on or serving the surveyed property (in addition to the observed evidence of utilities required pursuant to Section 5.E.iv.) as determined by:*
    - \_\_\_\_\_ *(a) plans and/or reports provided by client (with reference as to the sources of information).*
    - \_\_\_\_\_ *(b) markings coordinated by the surveyor pursuant to a private utility locate request.*

*Note to the client, insurer, and lender - With regard to Table A, item 11, information from the sources checked above will be combined with observed evidence of utilities pursuant to Section 5.E.iv. to develop a view of the underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely, and reliably depicted. In addition, in some jurisdictions, 811 or other similar utility locate requests from surveyors may be ignored or result in an incomplete response, in which case the surveyor shall note on the plat or map how this affected the surveyor's assessment of the location of the utilities. Where additional or more detailed information is required, the client is advised that excavation may be necessary.*
  12. \_\_\_\_\_ *As specified by the client, Governmental Agency survey-related requirements (e.g., HUD surveys, surveys for leases on Bureau of Land Management managed lands). The relevant survey requirements are to be provided by the client or client's designated representative.*
  13. \_\_\_\_\_ *Names of adjoining owners according to current tax records. If more than one owner, identify the first owner's name listed in the tax records followed by "et al."*
  14. \_\_\_\_\_ *As specified by the client, distance to the nearest intersecting street.*
  15. \_\_\_\_\_ *Rectified orthophotography, photogrammetric mapping, remote sensing, airborne/mobile laser scanning and other similar products, tools or technologies as the basis for showing the location of certain features (excluding boundaries) where ground measurements are not otherwise necessary to locate those features to an appropriate and acceptable accuracy relative to a nearby boundary. The surveyor must (a) discuss the ramifications of such methodologies (e.g., the potential precision and completeness of the data gathered thereby) with the insurer, lender, and client prior to the performance of the survey, and (b) place a note on the face of the survey explaining the source, date, precision, and other relevant qualifications of any such data.*
  16. \_\_\_\_\_ *Evidence of recent earth moving work, building construction, or building additions observed in the process of conducting the fieldwork.*
  17. \_\_\_\_\_ *Proposed changes in street right of way lines, if such information is made available to the surveyor by the controlling jurisdiction. Evidence of recent street or sidewalk construction or repairs observed in the process of conducting the fieldwork.*
  18. \_\_\_\_\_ *Pursuant to Sections 5 and 6 (and applicable selected Table A items, excluding Table A item 1), include as part of the survey any plottable offsite (i.e., appurtenant) easements disclosed in documents provided to or obtained by the surveyor.*
  19. \_\_\_\_\_ *Professional liability insurance policy obtained by the surveyor in the minimum amount of \$\_\_\_\_\_ to be in effect throughout the contract term. Certificate of insurance to be furnished upon request, but this item shall not be addressed on the face of the plat or map.*
  20. \_\_\_\_\_

*Adopted by the Board of Governors, American Land Title Association, on October 1, 2020.*

*American Land Title Association, 1800 M St., N.W., Suite 300S, Washington, D.C. 20036-5828.  
[www.alta.org](http://www.alta.org)*

*Adopted by the Board of Directors, National Society of Professional Surveyors, on October 30, 2020.*

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<http://www.nsps.us.com/>*



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**MINIMUM STANDARD DETAIL REQUIREMENTS FOR  
ALTA/NSPS LAND TITLE SURVEYS**  
(Effective February 23, 2016)

**NOTE** - Attention is directed to the fact that the National Society of Professional Surveyors, Inc. (NSPS) is the legal successor organization to the American Congress on Surveying and Mapping (ACSM) and that these 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys are the next version of the former Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys.

**1. Purpose** - Members of the American Land Title Association® (ALTA®) have specific needs, unique to title insurance matters, when asked to insure title to land without exception as to the many matters which might be discoverable from survey and inspection, and which are not evidenced by the public records.

For a survey of real property, and the plat, map or record of such survey, to be acceptable to a title insurance company for the purpose of insuring title to said real property free and clear of survey matters (except those matters disclosed by the survey and indicated on the plat or map), certain specific and pertinent information must be presented for the distinct and clear understanding between the insured, the client (if different from the insured), the title insurance company (insurer), the lender, and the surveyor professionally responsible for the survey.

In order to meet such needs, clients, insurers, insureds, and lenders are entitled to rely on surveyors to conduct surveys and prepare associated plats or maps that are of a professional quality and appropriately uniform, complete, and accurate. To that end, and in the interests of the general public, the surveying profession, title insurers, and abstractors, the ALTA and the NSPS jointly promulgate the within details and criteria setting forth a minimum standard of performance for ALTA/NSPS Land Title Surveys. A complete 2016 ALTA/NSPS Land Title Survey includes:

- (i) the on-site fieldwork required pursuant to Section 5,
- (ii) the preparation of a plat or map pursuant to Section 6 showing the results of the fieldwork and its relationship to documents provided to or obtained by the surveyor pursuant to Section 4,
- (iii) any information from Table A items requested by the client, and
- (iv) the certification outlined in Section 7.

**2. Request for Survey** - The client shall request the survey, or arrange for the survey to be requested, and shall provide a written authorization to proceed from the person or entity responsible for paying for the survey. Unless specifically authorized in writing by the insurer, the insurer shall not be responsible for any costs associated with the preparation of the survey. The request shall specify that an "**ALTA/NSPS LAND TITLE SURVEY**" is required and which of the optional items listed in Table A, if any, are to be incorporated. Certain properties or interests in real properties may present issues outside those normally encountered on an ALTA/NSPS Land Title Survey (e.g., marinas, campgrounds, trailer parks; easements, leases, other non-fee simple interests). The scope of work related to surveys of such properties or interests in real properties should be discussed with the client, lender, and insurer; and agreed upon in writing prior to commencing work on the survey. The client may need to secure permission for the surveyor to enter upon the property to be surveyed, adjoining properties, or offsite easements.

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### 3. Surveying Standards and Standards of Care

- A. Effective Date** - The 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys are effective February 23, 2016. As of that date, all previous versions of the Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys are superseded by these standards.
- B. Other Requirements and Standards of Practice** - Many states and some local jurisdictions have adopted statutes, administrative rules, and/or ordinances that set out standards regulating the practice of surveying within their jurisdictions. In addition to the standards set forth herein, surveyors shall also conduct their surveys in accordance with applicable jurisdictional survey requirements and standards of practice. Where conflicts between the standards set forth herein and any such jurisdictional requirements and standards of practice occur, the more stringent shall apply.
- C. The Normal Standard of Care** - Surveyors should recognize that there may be unwritten local, state, and/or regional standards of care defined by the practice of the “prudent surveyor” in those locales.
- D. Boundary Resolution** - The boundary lines and corners of any property being surveyed as part of an ALTA/NSPS Land Title Survey shall be established and/or retraced in accordance with appropriate boundary law principles governed by the set of facts and evidence found in the course of performing the research and fieldwork.
- E. Measurement Standards** - The following measurement standards address Relative Positional Precision for the monuments or witnesses marking the corners of the surveyed property.
- i. “Relative Positional Precision” means the length of the semi-major axis, expressed in feet or meters, of the error ellipse representing the uncertainty due to random errors in measurements in the location of the monument, or witness, marking any corner of the surveyed property relative to the monument, or witness, marking any other corner of the surveyed property at the 95 percent confidence level. Relative Positional Precision is estimated by the results of a correctly weighted least squares adjustment of the survey.
  - ii. Any boundary lines and corners established or retraced may have uncertainties in location resulting from (1) the availability, condition, history and integrity of reference or controlling monuments, (2) ambiguities in the record descriptions or plats of the surveyed property or its adjoiners, (3) occupation or possession lines as they may differ from the written title lines, or (4) Relative Positional Precision. Of these four sources of uncertainty, only Relative Positional Precision is controllable, although, due to the inherent errors in any measurement, it cannot be eliminated. The magnitude of the first three uncertainties can be projected based on evidence; Relative Positional Precision is estimated using statistical means (see Section 3.E.i. above and Section 3.E.v. below).
  - iii. The first three of these sources of uncertainty must be weighed as part of the evidence in the determination of where, in the surveyor’s opinion, the boundary lines and corners of the surveyed property should be located (see Section 3.D. above). Relative Positional Precision is a measure of how precisely the surveyor is able to monument and report those positions; it is not a substitute for the application of proper boundary law principles. A boundary corner or line may have a small Relative Positional Precision because the survey measurements were precise, yet still be in the wrong position (*i.e.*, inaccurate) if it was established or retraced using faulty or improper application of boundary law principles.
  - iv. For any measurement technology or procedure used on an ALTA/NSPS Land Title Survey, the surveyor shall (1) use appropriately trained personnel, (2) compensate for systematic errors, including those associated with instrument calibration, and (3) use appropriate error propagation and measurement design theory (selecting the proper instruments, geometric layouts, and field and computational procedures) to control random errors such that the

maximum allowable Relative Positional Precision outlined in Section 3.E.v. below is not exceeded.

- v. The maximum allowable Relative Positional Precision for an ALTA/NSPS Land Title Survey is 2 cm (0.07 feet) plus 50 parts per million (based on the direct distance between the two corners being tested). It is recognized that in certain circumstances, the size or configuration of the surveyed property, or the relief, vegetation, or improvements on the surveyed property, will result in survey measurements for which the maximum allowable Relative Positional Precision may be exceeded. If the maximum allowable Relative Positional Precision is exceeded, the surveyor shall note the reason as explained in Section 6.B.x. below.

**4. Records Research** - It is recognized that for the performance of an ALTA/NSPS Land Title Survey, the surveyor will be provided with appropriate and, when possible, legible data which can be relied upon in the preparation of the survey. The request for an ALTA/NSPS Land Title Survey shall set forth the current record description of the property to be surveyed or, in the case of an original survey prepared for purposes of locating and describing real property that has not been previously separately described in documents conveying an interest in the real property, the current record description of the parent parcel that contains the property to be surveyed.

In order to complete an ALTA/NSPS Land Title Survey, the surveyor must be provided with complete copies of the most recent title commitment or, if a title commitment is not available, other title evidence satisfactory to the title insurer. In addition, the surveyor must be provided with the following:

- (i) The following records established under state statutes for the purpose of imparting constructive notice of matters relating to real property (public records):
  - (a) The current record descriptions of any adjoiners to the property to be surveyed, except where such adjoiners are lots in platted, recorded subdivisions;
  - (b) Any recorded easements benefitting the property;
  - (c) Any recorded easements, servitudes, or covenants burdening the property;
- (ii) Any unrecorded documents affecting the property being surveyed and containing information to which the survey shall make reference, if desired by the client.

Except, however, if the documents outlined above in (i) and (ii) of this section are not provided to the surveyor or if non-public or quasi-public documents are required to complete the survey, the surveyor shall be required to conduct only that research which is required pursuant to the statutory or administrative requirements of the jurisdiction where the property being surveyed is located and that research (if any) which is negotiated and outlined in the terms of the contract between the surveyor and the client.

**5. Fieldwork** - The survey shall be performed on the ground (except as otherwise negotiated pursuant to Table A, Item 15 below, if selected by the client). The fieldwork shall include the following, located to what is, in the surveyor's professional opinion, the appropriate degree of precision based on (a) the planned use of the property, if reported in writing to the surveyor by the client, lender, or insurer, or (b) the existing use, if the planned use is not so reported:

**A. Monuments**

- i. The location, size, character, and type of any monuments found during the fieldwork.
- ii. The location, size, character, and type of any monuments set during the fieldwork, if item 1 of Table A was selected or if otherwise required by applicable jurisdictional requirements and/or standards of practice.
- iii. The location, description, and character of any lines that control the boundaries of the

surveyed property.

**B. Rights of Way and Access**

- i. The distance from the appropriate corner or corners of the surveyed property to the nearest right of way line, if the surveyed property does not abut a right of way.
- ii. The name of any street, highway, or other public or private way abutting the surveyed property, together with the width of the travelled way and the location of each edge of the travelled way including on divided streets and highways. If the documents provided to or obtained by the surveyor pursuant to Section 4 indicate no access from the surveyed property to the abutting street or highway, the width and location of the travelled way need not be located.
- iii. Visible evidence of physical access (e.g., curb cuts, driveways) to any abutting streets, highways, or other public or private ways.
- iv. The location and character of vehicular, pedestrian, or other forms of access by other than the apparent occupants of the surveyed property to or across the surveyed property observed in the process of conducting the fieldwork (e.g., driveways, alleys, private roads, railroads, railroad sidings and spurs, sidewalks, footpaths).
- v. Without expressing a legal opinion as to ownership or nature, the location and extent of any potentially encroaching driveways, alleys, and other ways of access from adjoining properties onto the surveyed property observed in the process of conducting the fieldwork.
- vi. Where documentation of the location of any street, road, or highway right of way abutting, on, or crossing the surveyed property was not disclosed in documents provided to or obtained by the surveyor, or was not otherwise available from the controlling jurisdiction (see Section 6.C.iv. below), the evidence and location of parcel corners on the same side of the street as the surveyed property recovered in the process of conducting the fieldwork which may indicate the location of such right of way lines (e.g., lines of occupation, survey monuments).
- vii. Evidence of access to and from waters adjoining the surveyed property observed in the process of conducting the fieldwork (e.g., paths, boat slips, launches, piers, docks).

**C. Lines of Possession and Improvements along the Boundaries**

- i. The character and location of evidence of possession or occupation along the perimeter of the surveyed property, both by the occupants of the surveyed property and by adjoining, observed in the process of conducting the fieldwork.
- ii. Unless physical access is restricted, the character and location of all walls, buildings, fences, and other improvements within five feet of each side of the boundary lines, observed in the process of conducting the fieldwork. Trees, bushes, shrubs, and other natural vegetation need not be located other than as specified in the contract, unless they are deemed by the surveyor to be evidence of possession pursuant to Section 5.C.i.
- iii. Without expressing a legal opinion as to the ownership or nature of the potential encroachment, the evidence, location and extent of potentially encroaching structural appurtenances and projections observed in the process of conducting the fieldwork (e.g., fire escapes, bay windows, windows and doors that open out, flue pipes, stoops, eaves, cornices, areaways, steps, trim) by or onto adjoining property, or onto rights of way, easements, or setback lines disclosed in documents provided to or obtained by the surveyor.

**D. Buildings**

The location of buildings on the surveyed property observed in the process of conducting the fieldwork.

**E. Easements and Servitudes**

- i. Evidence of any easements or servitudes burdening the surveyed property as disclosed in the documents provided to or obtained by the surveyor pursuant to Section 4 and observed in the process of conducting the fieldwork.

- ii. Evidence of easements, servitudes, or other uses by other than the apparent occupants of the surveyed property not disclosed in the documents provided to or obtained by the surveyor pursuant to Section 4, but observed in the process of conducting the fieldwork if they appear to affect the surveyed property (e.g., roads; drives, sidewalks, paths and other ways of access; utility service lines; water courses; ditches; drains; telephone, fiber optic lines, or electric lines; or water, sewer, oil or gas pipelines on or across the surveyed property and on adjoining properties).
- iii. Surface indications of underground easements or servitudes on or across the surveyed property observed in the process of conducting the fieldwork (e.g., utility cuts, vent pipes, filler pipes).
- iv. Evidence on or above the surface of the surveyed property observed in the process of conducting the fieldwork, which evidence may indicate utilities located on, over or beneath the surveyed property. Examples of such evidence include pipeline markers, manholes, valves, meters, transformers, pedestals, clean-outs, utility poles, overhead lines and guy wires.

**F. Cemeteries**

As accurately as the evidence permits, the perimeter of cemeteries and burial grounds, and the location of isolated gravesites not within a cemetery or burial ground, (i) disclosed in the documents provided to or obtained by the surveyor, or (ii) observed in the process of conducting the fieldwork.

**G. Water Features**

- i. The location of springs, ponds, lakes, streams, rivers, canals, ditches, marshes, and swamps on, running through, or outside, but within five feet of the perimeter boundary of, the surveyed property, observed during the process of conducting the fieldwork.
- ii. The location of any water feature forming a boundary of the surveyed property. The attribute(s) of the water feature located (e.g., top of bank, edge of water, high water mark) should be congruent with the boundary as described in the record description or, in the case of an original survey, in the new description (see Section 6.B.vi. below).

**6. Plat or Map** - A plat or map of an ALTA/NSPS Land Title Survey shall show the following information. Where dimensioning is appropriate, dimensions shall be annotated to what is, in the surveyor's professional opinion, the appropriate degree of precision based on (a) the planned use of the property, if reported in writing to the surveyor by the client, lender, or insurer, or (b) existing use, if the planned use is not so reported.

**A. The evidence and locations gathered, and the monuments and lines located during the fieldwork pursuant to Section 5 above, with accompanying notes if deemed necessary by the surveyor or as otherwise required as specified below.**

**B. Boundary, Descriptions, Dimensions, and Closures**

- i. (a) The current record description of the surveyed property, or  
(b) In the case of an original survey, the current record description of the parent tract that contains the surveyed property.
- ii. Any new description of the surveyed property that was prepared in conjunction with the survey, including a statement explaining why the new description was prepared. Except in the case of an original survey, preparation of a new description should be avoided unless deemed necessary or appropriate by the surveyor and insurer. Preparation of a new description should also generally be avoided when the record description is a lot or block in a platted, recorded subdivision. 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.
- iii. The point of beginning, the remote point of beginning or point of commencement (if applicable) and all distances and directions identified in the record description of the surveyed property (and in the new description, if one was prepared). Where a measured or calculated dimension differs from the record by an amount deemed significant by the surveyor, such dimension shall be shown in addition to, and differentiated from, the corresponding record dimension. All dimensions shown on the survey and contained in any new description shall be ground dimensions unless otherwise noted.
  - iv. The directional, distance and curve data necessary to compute a mathematical closure of the surveyed boundary. A note if the record description does not mathematically close. The basis of bearings and, where it differs from the record basis, the difference.
  - v. The remainder of any recorded lot or existing parcel, when the surveyed property is composed of only a portion of such lot or parcel, shall be graphically depicted. Such remainder need not be included as part of the actual survey, except to the extent necessary to locate the lines and corners of the surveyed property, and it need not be fully dimensioned or drawn at the same scale as the surveyed property.
  - vi. When the surveyed property includes a title line defined by a water boundary, a note on the face of the plat or map noting the date the boundary was measured, which attribute(s) of the water feature was/were located, and the caveat that the boundary is subject to change due to natural causes and that it may or may not represent the actual location of the limit of title. When the surveyor is aware of natural or artificial realignments or changes in such boundaries, the extent of those changes and facts shall be shown or explained.
  - vii. The relationship of the boundaries of the surveyed property with its adjoiners (e.g., contiguity, gaps, overlaps), where ascertainable from documents provided to or obtained by the surveyor pursuant to Section 4 and/or from field evidence gathered during the process of conducting the fieldwork. If the surveyed property is composed of multiple parcels, the extent of any gaps or overlaps between those parcels shall be identified. Where gaps or overlaps are identified, the surveyor shall, prior to or upon delivery of the final plat or map, disclose this to the insurer and client.
  - viii. When, in the opinion of the surveyor, the results of the survey differ significantly from the record, or if a fundamental decision related to the boundary resolution is not clearly reflected on the plat or map, the surveyor shall explain this information with notes on the face of the plat or map.
  - ix. The location of all buildings on the surveyed property, located pursuant to Section 5.D., dimensioned perpendicular to those perimeter boundary lines that the surveyor deems appropriate (i.e., where potentially impacted by a setback line) and/or as requested by the client, lender or insurer.
  - x. A note on the face of the plat or map explaining the site conditions that resulted in a Relative Positional Precision that exceeds the maximum allowed pursuant to Section 3.E.v.
  - xi. A note on the face of the plat or map identifying areas, if any, on the boundaries of the surveyed property, to which physical access within five feet was restricted (see Section 5.C.ii.).
  - xii. A note on the face of the plat or map identifying the source of the title commitment or other title evidence provided pursuant to Section 4, and the effective date and the name of the insurer of same.
- C. Easements, Servitudes, Rights of Way, Access, and Documents**
- i. The location, width, and recording information of all plottable rights of way, easements, and servitudes burdening and benefitting the property surveyed, as evidenced by documents provided to or obtained by the surveyor pursuant to Section 4.

- ii. A summary of all rights of way, easements and servitudes burdening the property surveyed and identified in the title evidence provided to or obtained by the surveyor pursuant to Section 4. Such summary shall include the record information of each such right of way, easement or servitude, a statement indicating whether or not it is shown on the plat or map, and a related note if:
  - (a) the location cannot be determined from the record document;
  - (b) there was no observed evidence at the time of the fieldwork;
  - (c) it is a blanket easement;
  - (d) it is not on, or does not touch, the surveyed property;
  - (e) it limits access to an otherwise abutting right of way;
  - (f) the documents are illegible; or
  - (g) the surveyor has information indicating that it may have been released or otherwise terminated.

In cases where the surveyed property is composed of multiple parcels, indicate which of such parcels the various rights of way, easements, and servitudes cross or touch.

- iii. A note if no physical access to a public way was observed in the process of conducting the fieldwork.
- iv. The locations and widths of rights of way abutting or crossing the surveyed property, and the source of such information, (a) where available from the controlling jurisdiction, or (b) where disclosed in documents provided to or obtained by the surveyor pursuant to Section 4.
- v. The identifying titles of all recorded plats, filed maps, right of way maps, or similar documents which the survey represents, wholly or in part, with their recording or filing data.
- vi. For non-platted adjoining land, recording data identifying adjoining tracts according to current public records. For platted adjoining land, the recording data of the subdivision plat.
- vii. Platted setback or building restriction lines which appear on recorded subdivision plats or which were disclosed in documents provided or obtained by the surveyor.

#### D. Presentation

- i. The plat or map shall be drawn on a sheet of not less than 8 ½ by 11 inches in size at a legible, standard engineering scale, with that scale clearly indicated in words or numbers and with a graphic scale.
- ii. The plat or map shall include:
  - (a) The boundary of the surveyed property drawn in a manner that distinguishes it from other lines on the plat or map.
  - (b) If no buildings were observed on the surveyed property in the process of conducting the fieldwork, a note stating “*No buildings observed.*”
  - (c) A north arrow (with north to the top of the drawing when practicable).
  - (d) A legend of symbols and abbreviations.
  - (e) A vicinity map showing the property in reference to nearby highway(s) or major street intersection(s).
  - (f) Supplementary or detail diagrams when necessary.
  - (g) Notes explaining any modifications to Table A items and the nature of any additional Table A items (e.g., 21(a), 21(b), 21(c)) that were negotiated between the surveyor and client.
  - (h) The surveyor’s project number (if any), and the name, registration or license number, signature, seal, street address, telephone number, company website, and email address (if any) of the surveyor who performed the survey.
  - (i) The date(s) of any revisions made by the surveyor who performed the survey.
  - (j) Sheet numbers where the plat or map is composed of more than one sheet.
  - (k) The caption “ALTA/NSPS Land Title Survey.”

iii. When recordation or filing of a plat or map is required by law, such plat or map shall be produced in recordable form.

7. **Certification** - The plat or map of an ALTA/NSPS Land Title Survey shall bear only the following certification, unaltered, except as may be required pursuant to Section 3.B. above:

To (name of insured, if known), (name of lender, if known), (name of insurer, if known), (names of others as negotiated with the client):

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items \_\_\_\_\_ of Table A thereof. The fieldwork was completed on \_\_\_\_\_ [date].

*Date of Plat or Map: \_\_\_\_\_ (Surveyor's signature, printed name and seal with Registration/License Number)*

8. **Deliverables** - The surveyor shall furnish copies of the plat or map of survey to the insurer and client and as otherwise negotiated with the client. Hard copies shall be on durable and dimensionally stable material of a quality standard acceptable to the insurer. A digital image of the plat or map may be provided in addition to, or in lieu of, hard copies pursuant to the terms of the contract. When required by law or requested by the client, the plat or map shall be produced in recordable form and recorded or filed in the appropriate office or with the appropriate agency.

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**TABLE A**

**OPTIONAL SURVEY RESPONSIBILITIES AND SPECIFICATIONS**

*NOTE: The twenty (20) items of Table A may be negotiated between the surveyor and client. Any additional items negotiated between the surveyor and client shall be identified as 21(a), 21(b), etc. and explained pursuant to Section 6.D.ii.(g). Notwithstanding Table A Items 5 and 11, if an engineering design survey is desired as part of an ALTA/NSPS Land Title Survey, such services should be negotiated under Table A, Item 21.*

**If checked, the following optional items are to be included in the ALTA/NSPS LAND TITLE SURVEY, except as otherwise qualified (see note above):**

1. \_\_\_\_\_ *Monuments placed (or a reference monument or witness to the corner) at all major corners of the boundary of the property, unless already marked or referenced by existing monuments or witnesses in close proximity to the corner.*
  
2. \_\_\_\_\_ *Address(es) of the surveyed property if disclosed in documents provided to or obtained by the surveyor, or observed while conducting the fieldwork.*
  
3. \_\_\_\_\_ *Flood zone classification (with proper annotation based on federal Flood Insurance Rate Maps or the state or local equivalent) depicted by scaled map location and graphic plotting only.*
  
4. \_\_\_\_\_ *Gross land area (and other areas if specified by the client).*
  
5. \_\_\_\_\_ *Vertical relief with the source of information (e.g., ground survey, aerial map), contour interval, datum, and originating benchmark identified.*
  
6. \_\_\_\_\_ *(a) If set forth in a zoning report or letter provided to the surveyor by the client, list the current zoning classification, setback requirements, the height and floor space area restrictions, and parking requirements. Identify the date and source of the report or letter.*  
\_\_\_\_\_ *(b) If the zoning setback requirements are set forth in a zoning report or letter provided to the surveyor by the client, and if those requirements do not require an interpretation by the surveyor, graphically depict the building setback requirements. Identify the date and source of the report or letter.*
  
7. \_\_\_\_\_ *(a) Exterior dimensions of all buildings at ground level.*  
*(b) Square footage of:*  
\_\_\_\_\_ *(1) exterior footprint of all buildings at ground level.*  
\_\_\_\_\_ *(2) other areas as specified by the client.*  
\_\_\_\_\_ *(c) Measured height of all buildings above grade at a location specified by the client. If no location is specified, the point of measurement shall be identified.*

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8. \_\_\_\_\_ *Substantial features observed in the process of conducting the fieldwork (in addition to the improvements and features required pursuant to Section 5 above) (e.g., parking lots, billboards, signs, swimming pools, landscaped areas, substantial areas of refuse).*
9. \_\_\_\_\_ *Number and type (e.g., disabled, motorcycle, regular and other marked specialized types) of clearly identifiable parking spaces on surface parking areas, lots and in parking structures. Striping of clearly identifiable parking spaces on surface parking areas and lots.*
10. \_\_\_\_\_ *(a) As designated by the client, a determination of the relationship and location of certain division or party walls with respect to adjoining properties (client to obtain necessary permissions).*
- \_\_\_\_\_ *(b) As designated by the client, a determination of whether certain walls are plumb (client to obtain necessary permissions).*
11. \_\_\_\_\_ *Location of utilities existing on or serving the surveyed property as determined by:*
- *observed evidence collected pursuant to Section 5.E.iv.*
  - *evidence from plans requested by the surveyor and obtained from utility companies, or provided by client (with reference as to the sources of information), and*
  - *markings requested by the surveyor pursuant to an 811 utility locate or similar request*
- Representative examples of such utilities include, but are not limited to:*
- *Manholes, catch basins, valve vaults and other surface indications of subterranean uses;*
  - *Wires and cables (including their function, if readily identifiable) crossing the surveyed property, and all poles on or within ten feet of the surveyed property. Without expressing a legal opinion as to the ownership or nature of the potential encroachment, the dimensions of all encroaching utility pole crossmembers or overhangs; and*
  - *Utility company installations on the surveyed property.*
- Note to the client, insurer, and lender - With regard to Table A, item 11, source information from plans and markings will be combined with observed evidence of utilities pursuant to Section 5.E.iv. to develop a view of the underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely, and reliably depicted. In addition, in some jurisdictions, 811 or other similar utility locate requests from surveyors may be ignored or result in an incomplete response, in which case the surveyor shall note on the plat or map how this affected the surveyor's assessment of the location of the utilities. Where additional or more detailed information is required, the client is advised that excavation and/or a private utility locate request may be necessary.*
12. \_\_\_\_\_ *As specified by the client, Governmental Agency survey-related requirements (e.g., HUD surveys, surveys for leases on Bureau of Land Management managed lands).*

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13. \_\_\_\_\_ *Names of adjoining owners according to current tax records. If more than one owner, identify the first owner's name listed in the tax records followed by "et al."*
  14. \_\_\_\_\_ *As specified by the client, distance to the nearest intersecting street.*
  15. \_\_\_\_\_ *Rectified orthophotography, photogrammetric mapping, remote sensing, airborne/mobile laser scanning and other similar products, tools or technologies as the basis for the showing the location of certain features (excluding boundaries) where ground measurements are not otherwise necessary to locate those features to an appropriate and acceptable accuracy relative to a nearby boundary. The surveyor shall (a) discuss the ramifications of such methodologies (e.g., the potential precision and completeness of the data gathered thereby) with the insurer, lender, and client prior to the performance of the survey, and (b) place a note on the face of the survey explaining the source, date, precision, and other relevant qualifications of any such data.*
  16. \_\_\_\_\_ *Evidence of recent earth moving work, building construction, or building additions observed in the process of conducting the fieldwork.*
  17. \_\_\_\_\_ *Proposed changes in street right of way lines, if such information is made available to the surveyor by the controlling jurisdiction. Evidence of recent street or sidewalk construction or repairs observed in the process of conducting the fieldwork.*
  18. \_\_\_\_\_ *If there has been a field delineation of wetlands conducted by a qualified specialist hired by the client, the surveyor shall locate any delineation markers observed in the process of conducting the fieldwork and show them on the face of the plat or map. If no markers were observed, the surveyor shall so state.*
  19. \_\_\_\_\_ *Include any plottable offsite (i.e., appurtenant) easements or servitudes disclosed in documents provided to or obtained by the surveyor as a part of the survey pursuant to Sections 5 and 6 (and applicable selected Table A items) (client to obtain necessary permissions).*
  20. \_\_\_\_\_ *Professional Liability Insurance policy obtained by the surveyor in the minimum amount of \$\_\_\_\_\_ to be in effect throughout the contract term. Certificate of Insurance to be furnished upon request, but this item shall not be addressed on the face of the plat or map.*
  21. \_\_\_\_\_ \_\_\_\_\_

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ALTA/ACSM LAND TITLE SURVEYS**  
*(Effective February 23, 2011)*

**1. Purpose** - Members of the American Land Title Association (ALTA) have specific needs, unique to title insurance matters, when asked to insure title to land without exception as to the many matters which might be discoverable from survey and inspection, and which are not evidenced by the public records.

For a survey of real property, and the plat, map or record of such survey, to be acceptable to a title insurance company for the purpose of insuring title to said real property free and clear of survey matters (except those matters disclosed by the survey and indicated on the plat or map), certain specific and pertinent information must be presented for the distinct and clear understanding between the insured, the client (if different from the insured), the title insurance company (insurer), the lender, and the surveyor professionally responsible for the survey.

In order to meet such needs, clients, insurers, insureds, and lenders are entitled to rely on surveyors to conduct surveys and prepare associated plats or maps that are of a professional quality and appropriately uniform, complete and accurate. To that end, and in the interests of the general public, the surveying profession, title insurers and abstracters, the ALTA and the National Society of Professional Surveyors, Inc. (NSPS) jointly promulgate the within details and criteria setting forth a minimum standard of performance for ALTA/ACSM Land Title Surveys. A complete 2011 ALTA/ACSM Land Title Survey includes the on-site fieldwork required under Section 5 herein, the preparation of a plat or map showing the results of the fieldwork and its relationship to record documents as required under Section 6 herein, any information in Table A herein that may have been negotiated with the client, and the certification outlined in Section 7 herein.

**2. Request for Survey** - The client shall request the survey or arrange for the survey to be requested, and shall provide a written authorization to proceed from the person or entity responsible for paying for the survey. Unless specifically authorized in writing by the insurer, the insurer shall not be responsible for any costs associated with the preparation of the survey. The request shall specify that an "**ALTA/ACSM LAND TITLE SURVEY**" is required and which of the optional items listed in Table A herein, if any, are to be incorporated. Certain properties, including, but not limited to, marinas, campgrounds, trailer parks and leased areas, may present issues outside those normally encountered on an ALTA/ACSM Land Title Survey. The scope of work related to such properties should be discussed with the client, lender and insurer, and agreed upon in writing prior to requesting the survey. The client may need to secure permission for the surveyor to enter upon the property to be surveyed, adjoining properties, or offsite easements.

**3. Surveying Standards and Standards of Care**

**A. Effective Date** - The 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys are effective February 23, 2011. As of that date, all previous versions of the Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys are superseded by these standards.



- B. Other Requirements and Standards of Practice** - Some Federal agencies, many states and some local jurisdictions have adopted statutes, administrative rules and/or ordinances that set out standards regulating the practice of surveying within their jurisdictions. In addition to the standards set forth herein, surveyors shall also conduct their surveys in accordance with all applicable jurisdictional requirements and standards of practice. Where conflicts between the standards set forth herein and any such jurisdictional requirements and standards of practice occur, the more stringent shall apply.
- C. The Normal Standard of Care** - Surveyors should recognize that there may be unwritten local, state, and/or regional standards of care defined by the practice of the 'prudent surveyor' in those locales.
- D. Boundary Resolution** - The boundary lines and corners of any property being surveyed as part of an ALTA/ACSM Land Title Survey shall be established and/or retraced in accordance with appropriate boundary law principles governed by the set of facts and evidence found in the course of performing the research and survey.
- E. Measurement Standards** - The following measurement standards address Relative Positional Precision for the monuments or witnesses marking the corners of the surveyed property.
- i. "Relative Positional Precision" means the length of the semi-major axis, expressed in feet or meters, of the error ellipse representing the uncertainty due to random errors in measurements in the location of the monument, or witness, marking any corner of the surveyed property relative to the monument, or witness, marking any other corner of the surveyed property at the 95 percent confidence level (two standard deviations). Relative Positional Precision is estimated by the results of a correctly weighted least squares adjustment of the survey.
  - ii. Any boundary lines and corners established or retraced may have uncertainties in location resulting from (1) the availability, condition, history and integrity of reference or controlling monuments, (2) ambiguities in the record descriptions or plats of the surveyed property or its adjoining, (3) occupation or possession lines as they may differ from the written title lines, and (4) Relative Positional Precision. Of these four sources of uncertainty, only Relative Positional Precision is controllable, although due to the inherent errors in any measurement, it cannot be eliminated. The magnitude of the first three uncertainties can be projected based on evidence; Relative Positional Precision is estimated using statistical means (see Section 3.E.i. above and Section 3.E.v. below).
  - iii. The first three of these sources of uncertainty must be weighed as part of the evidence in the determination of where, in the surveyor's opinion, the boundary lines and corners of the surveyed property should be located (see Section 3.D. above). Relative Positional Precision is a measure of how precisely the surveyor is able to monument and report those positions; it is not a substitute for the application of proper boundary law principles. A boundary corner or line may have a small Relative Positional Precision because the survey measurements were precise, yet still be in the wrong position (i.e. inaccurate) if it was established or retraced using faulty or improper application of boundary law principles.
  - iv. For any measurement technology or procedure used on an ALTA/ACSM Land Title Survey, the surveyor shall (1) use appropriately trained personnel, (2) compensate for systematic errors, including those associated with instrument calibration, and (3) use appropriate error propagation and measurement design theory (selecting the proper instruments, geometric layouts, and field and computational procedures) to control random errors such that the maximum allowable Relative Positional Precision outlined in Section 3.E.v. below is not exceeded.



- v. The maximum allowable Relative Positional Precision for an ALTA/ACSM Land Title Survey is 2 cm (0.07 feet) plus 50 parts per million (based on the direct distance between the two corners being tested). It is recognized that in certain circumstances, the size or configuration of the surveyed property, or the relief, vegetation or improvements on the surveyed property will result in survey measurements for which the maximum allowable Relative Positional Precision may be exceeded. If the maximum allowable Relative Positional Precision is exceeded, the surveyor shall note the reason as explained in Section 6.B.ix below.

**4. Records Research** - It is recognized that for the performance of an ALTA/ACSM Land Title Survey, the surveyor will be provided with appropriate data which can be relied upon in the preparation of the survey. The request for an ALTA/ACSM Land Title Survey shall set forth the current record description of the property to be surveyed or, in the case of an original survey, the current record description of the parent parcel that contains the property to be surveyed. Complete copies of the most recent title commitment, the current record description of the property to be surveyed (or, in the case of an original survey, the parent parcel), the current record descriptions of adjoining, any record easements benefiting the property, the record easements or servitudes and covenants burdening the property (all hereinafter referred to collectively as "Record Documents"), documents of record referred to in the Record Documents, documents necessary to ascertain, if possible, the junior/senior relationship pursuant to Section 6.B.vii. below, and any other documents containing desired appropriate information affecting the property being surveyed, and to which the ALTA/ACSM Land Title Survey shall make reference, shall be provided to the surveyor for use in conducting the survey. Reference is made to Section 3.B. above.

**5. Field Work** - The Survey shall be performed on the ground (except as otherwise negotiated pursuant to Table A, Item 15 below, if selected by the client), and the field work shall include the following:

**A. Monuments**

- i. The location and description of any monuments or lines that control the boundaries of the surveyed property.
- ii. The location, size and type of any monuments found (or set, if Table A, Item 1 is requested by the client, or if otherwise required – see Section 3.B. above) on the boundary of the surveyed property.

**B. Rights of Way and Access**

- i. The distance from the appropriate corner or corners of the surveyed property to the nearest right of way line, if the surveyed property does not abut a right of way.
- ii. The name of any street, highway or other public or private way abutting the surveyed property, and the width and location of the travelled way relative to the nearest boundary line of the surveyed property.
- iii. Visible evidence of physical access (such as, but not limited to, curb cuts and driveways) to any abutting streets, highways or other public ways.
- iv. The location and character of vehicular, pedestrian or other forms of access by other than the apparent occupants of the surveyed property to or across the surveyed property, including, but not limited to driveways, alleys, private roads, sidewalks and footpaths observed in the process of conducting the survey.
- v. Without expressing a legal opinion as to ownership or nature, the location and extent of any potentially encroaching driveways, alleys, and other ways of access from adjoining properties onto the surveyed property observed in the process of conducting the survey.



- vi. Where documentation of the width or location of any abutting street, road or highway right of way was not disclosed in Record Documents provided to the surveyor or was not otherwise available from the controlling jurisdiction (see Section 6.C.iv. below), the evidence and location of parcel corners recovered which might indicate the width or location of such right of way lines.
  - vii. Evidence of access to and from waters adjoining the surveyed property, such as paths, boat slips, launches, piers and docks observed in the process of conducting the survey.
- C. Lines of Possession, and Improvements along the Boundaries**
- i. The character and location of evidence of possession or occupation along the perimeter of the surveyed property, both by the occupants of the surveyed property and by adjoining, observed in the process of conducting the survey.
  - ii. The character and location of all walls, buildings, fences, and other improvements within five feet of each side of the boundary lines, observed in the process of conducting the survey.
  - iii. Without expressing a legal opinion as to the ownership or nature of the potential encroachment, the evidence, location and extent of potentially encroaching structural appurtenances and projections observed in the process of conducting the survey, such as fire escapes, bay windows, windows and doors that open out, flue pipes, stoops, eaves, cornices, areaways, steps, trim, etc., by or onto adjoining property, or onto rights of way, easements or setback lines disclosed in Record Documents provided to the surveyor.
- D. Buildings**
- Based on the normal standard of care, the location of all buildings on the surveyed property shown perpendicular to the nearest perimeter boundary line(s) and expressed to the appropriate degree of precision.
- E. Easements and Servitudes**
- i. Evidence of any easements or servitudes burdening the surveyed property, disclosed in the Record Documents provided to the surveyor and observed in the process of conducting the survey.
  - ii. Evidence of easements or servitudes not disclosed in the Record Documents provided to the surveyor, but observed in the process of conducting the survey, such as those created by roads; rights of way; water courses; ditches; drains; telephone, fiber optic lines, or electric lines; water, sewer, oil or gas pipelines on or across the surveyed property and on adjoining properties if they appear to affect the surveyed property.
  - iii. Surface indications of underground easements or servitudes on or across the surveyed property observed in the process of conducting the survey.
  - iv. Evidence of use of the surveyed property by other than the apparent occupants observed in the process of conducting the survey.
- F. Cemeteries**
- As accurately as the evidence permits, the location of cemeteries, gravesites, and burial grounds (i) disclosed in the Record Documents provided to the surveyor, or (ii) observed in the process of conducting the survey.
- G. Water Features**
- i. The location of springs, together with the location of ponds, lakes, streams, and rivers bordering on or running through the surveyed property, observed during the process of conducting the survey. See Table A, Item 19 for wetlands locations.



- ii. The location of any water boundary on the surveyed property. The attribute(s) of the water feature located (e.g. top of bank, edge of water, high water mark, etc.) should be congruent with the boundary as described in the record description or, in the case of an original survey, in the new description. (See Section 6.B.vi. below).

**6. Plat or Map** - A plat or map of an ALTA/ACSM Land Title Survey shall show the following information. Where dimensioning is appropriate, dimensions shall be in accordance with the appropriate standard of care.

**A. The evidence and locations gathered during the field work as outlined in Section 5 above.**

**B. Boundary, Descriptions, Dimensions and Closures**

- i. The current record description of the surveyed property, and any new description of the surveyed property that was prepared in conjunction with the survey, including a statement explaining why the new description was prepared. Preparation of a new description should be avoided unless deemed necessary or appropriate by the surveyor and insurer. Preparation of a new description should also generally be avoided when the record description is a lot or block in a platted, recorded subdivision.
- ii. The location and description of any monuments, lines or other evidence that control the boundaries of the surveyed property or that were otherwise relied upon in establishing or retracing the boundaries of the surveyed property, and the relationship of that evidence to the surveyed boundary. In some cases, this will require notes on the plat or map.
- iii. All distances and directions identified in the record description of the surveyed property (and in the new description, if one was prepared). Where a measured or calculated dimension differs from the record by an amount deemed significant by the surveyor, such dimension shall be shown in addition to, and differentiated from, the corresponding record dimension.
- iv. The directional, distance and curve data necessary to compute a mathematical closure of the surveyed boundary. A note if the record description does not mathematically close. The basis of bearings and, when it differs from the record basis, the difference.
- v. The remainder of any recorded lot or existing parcel, when the surveyed property is composed of only a portion of such lot or parcel, shall be graphically depicted. Such remainder does not need to be included as part of the actual survey, except to the extent necessary to locate the lines and corners of the surveyed property, and it need not be fully dimensioned or drawn at the same scale as the surveyed property.
- vi. When the surveyed property includes a water boundary, a note on the face of the plat or map noting the date the boundary was measured, which attribute(s) of the water feature was/were located, and the caveat that the boundary is subject to change due to natural causes and that it may or may not represent the actual location of the limit of title. When the surveyor is aware of natural or artificial realignments or changes in such boundaries, the extent of those changes and facts shall be shown or explained.
- vii. The relationship of the boundaries of the surveyed property (i.e. contiguity, gaps, or overlaps) with its adjoiners, where ascertainable from Record Documents and/or from field evidence gathered during the process of conducting the survey of the property being surveyed. If the surveyed property is composed of multiple parcels, the extent of any gaps or overlaps between those parcels shall be identified. Where gaps or overlaps are identified, the surveyor shall, prior to preparation of the final plat or map, disclose this to the insurer and client for determination of a course of action concerning junior/senior rights.



- viii. When, in the opinion of the surveyor, the results of the survey differ significantly from the record, or if a fundamental decision related to the boundary resolution is not clearly reflected on the plat or map, the surveyor shall explain this information with notes on the face of the plat or map.
  - ix. A note on the face of the plat or map explaining the site conditions that resulted in a Relative Positional Precision that exceeds the maximum allowed under Section 3.E.v. of these standards.
  - x. A note on the face of the plat or map identifying the title commitment/policy number, effective date and name of the insurer for any title work provided to the surveyor.
- C. Easements, Servitudes, Rights of Way, Access and Record Documents**
- i. The width and recording information of all plottable rights of way, easements and servitudes burdening and benefitting the property surveyed, as evidenced by Record Documents which have been provided to the surveyor.
  - ii. A note regarding any right of way, easement or servitude evidenced by a Record Document which has been provided to the surveyor (a) the location of which cannot be determined from the record document, or (b) of which there was no observed evidence at the time of the survey, or (c) that is a blanket easement, or (d) that is not on, or does not touch, the surveyed property, or (e) that limits access to an otherwise abutting right of way, or (f) in cases where the surveyed property is composed of multiple parcels, which of such parcels the various rights of way, easements, and servitudes cross.
  - iii. A note if no physical access to a public way was observed in the process of conducting the survey.
  - iv. The width of abutting rights of way and the source of such information (a) where available from the controlling jurisdiction or (b) where disclosed in Record Documents provided to the surveyor.
  - v. The identifying titles of all recorded plats, filed maps, right of way maps, or similar documents which the survey represents, wholly or in part, with their recording or filing data.
  - vi. For non-platted adjoining land, names and recording data identifying adjoining owners according to current public records. For platted adjoining land, the recording data of the subdivision plat.
  - vii. Platted setback or building restriction lines which appear on recorded subdivision plats or which were disclosed in Record Documents provided to the surveyor.
- D. Presentation**
- i. The plat or map shall be drawn on a sheet of not less than 8 ½ by 11 inches in size at a legible, standard engineering scale, with that scale clearly indicated in words or numbers and with a graphic scale. When recordation or filing of a plat or map is required by law, such plat or map shall be produced in recordable form. The boundary of the surveyed property drawn in a manner that distinguishes it from other lines on the plat or map. A north arrow (with north to the top of the drawing when practicable), a legend of symbols and abbreviations, and a vicinity map showing the property in reference to nearby highway(s) or major street intersection(s).
  - ii. Supplementary or detail diagrams when necessary.
  - iii. If there are no visible buildings on the surveyed property, a note stating “*No buildings existing on the surveyed property*” shall appear on the face on the survey.



- iv. The surveyor's project number (if any), and the name, registration or license number, signature, seal, street address, telephone number, and email address of the surveyor who performed the survey. The date(s) of any revisions made by said surveyor.
- v. Sheet numbers where the plat or map is composed of more than one sheet.
- vi. The caption "ALTA/ACSM Land Title Survey."

7. **Certification** - The plat or map of an ALTA/ACSM Land Title Survey shall bear only the following certification, unaltered, except as may be required pursuant to Section 3.B. above:

*To (name of insured, if known), (name of lender, if known), (name of insurer, if known), (names of others as negotiated with the client):*

*This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2011 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items \_\_\_\_\_ of Table A thereof. The field work was completed on \_\_\_\_\_.*

Date of Plat or Map: \_\_\_\_\_ (Surveyor's signature, printed name and seal with Registration/License Number)

8. **Deliverables** - The surveyor shall furnish copies of the plat or map of survey to the insurer and client, and as otherwise negotiated with the client. Hard copies shall be on durable and dimensionally stable material of a quality standard acceptable to the insurer. Digital copies of the plat or map may be provided in addition to, or in lieu of, hard copies in accordance with the terms of the contract. When required by law or requested by the client, the plat or map shall be produced in recordable form and recorded or filed in the appropriate office or with the appropriate agency.



## TABLE A

### OPTIONAL SURVEY RESPONSIBILITIES AND SPECIFICATIONS

*NOTE: The items of Table A must be negotiated between the surveyor and client. It may be necessary for the surveyor to qualify or expand upon the description of these items (e.g., in reference to Item 6(b), there may be a need for an interpretation of a restriction). The surveyor cannot make a certification on the basis of an interpretation or opinion of another party. Notwithstanding Table A Items 5 and 11(b), if an engineering design survey is desired as part of an ALTA/ACSM Land Title Survey, such services should be negotiated under Table A, item 22.*

**If checked, the following optional items are to be included in the ALTA/ACSM LAND TITLE SURVEY, except as otherwise qualified (see note above):**

1. \_\_\_\_\_ Monuments placed (or a reference monument or witness to the corner) at all major corners of the boundary of the property, unless already marked or referenced by existing monuments or witnesses.
2. \_\_\_\_\_ Address(es) if disclosed in Record Documents, or observed while conducting the survey.
3. \_\_\_\_\_ Flood zone classification (with proper annotation based on federal Flood Insurance Rate Maps or the state or local equivalent) depicted by scaled map location and graphic plotting only.
4. \_\_\_\_\_ Gross land area (and other areas if specified by the client).
5. \_\_\_\_\_ Vertical relief with the source of information (e.g. ground survey or aerial map), contour interval, datum, and originating benchmark identified.
6. \_\_\_\_\_ (a) Current zoning classification, as provided by the insurer.  
\_\_\_\_\_ (b) Current zoning classification and building setback requirements, height and floor space area restrictions as set forth in that classification, as provided by the insurer. If none, so state.
7. \_\_\_\_\_ (a) Exterior dimensions of all buildings at ground level.  
\_\_\_\_\_ (b) Square footage of:  
\_\_\_\_\_ (1) exterior footprint of all buildings at ground level.  
\_\_\_\_\_ (2) other areas as specified by the client.  
\_\_\_\_\_ (c) Measured height of all buildings above grade at a location specified by the client. If no location is specified, the point of measurement shall be identified.



8. \_\_\_\_\_ *Substantial features observed in the process of conducting the survey (in addition to the improvements and features required under Section 5 above) such as parking lots, billboards, signs, swimming pools, landscaped areas, etc.*
9. \_\_\_\_\_ *Striping, number and type (e.g. handicapped, motorcycle, regular, etc.) of parking spaces in parking areas, lots and structures.*
10. \_\_\_\_\_ *(a) Determination of the relationship and location of certain division or party walls designated by the client with respect to adjoining properties (client to obtain necessary permissions).*
- \_\_\_\_\_ *(b) Determination of whether certain walls designated by the client are plumb (client to obtain necessary permissions).*
11. \_\_\_\_\_ *Location of utilities (representative examples of which are listed below) existing on or serving the surveyed property as determined by:*
- \_\_\_\_\_ *(a) Observed evidence.*
- \_\_\_\_\_ *(b) Observed evidence together with evidence from plans obtained from utility companies or provided by client, and markings by utility companies and other appropriate sources (with reference as to the source of information).*
- *Railroad tracks, spurs and sidings;*
  - *Manholes, catch basins, valve vaults and other surface indications of subterranean uses;*
  - *Wires and cables (including their function, if readily identifiable) crossing the surveyed property, and all poles on or within ten feet of the surveyed property. Without expressing a legal opinion as to the ownership or nature of the potential encroachment, the dimensions of all encroaching utility pole crossmembers or overhangs; and*
  - *utility company installations on the surveyed property.*
- Note - With regard to Table A, item 11(b), source information from plans and markings will be combined with observed evidence of utilities to develop a view of those underground utilities. However, lacking excavation, the exact location of underground features cannot be accurately, completely and reliably depicted. Where additional or more detailed information is required, the client is advised that excavation may be necessary.*
12. \_\_\_\_\_ *Governmental Agency survey-related requirements as specified by the client, such as for HUD surveys, and surveys for leases on Bureau of Land Management managed lands.*
13. \_\_\_\_\_ *Names of adjoining owners of platted lands according to current public records.*
14. \_\_\_\_\_ *Distance to the nearest intersecting street as specified by the client.*
15. \_\_\_\_\_ *Rectified orthophotography, photogrammetric mapping, airborne/mobile laser scanning and other similar products, tools or technologies as the basis for the showing the location of certain features (excluding boundaries) where ground measurements are not otherwise*



*necessary to locate those features to an appropriate and acceptable accuracy relative to a nearby boundary. The surveyor shall (a) discuss the ramifications of such methodologies (e.g. the potential precision and completeness of the data gathered thereby) with the insurer, lender and client prior to the performance of the survey and, (b) place a note on the face of the survey explaining the source, date, precision and other relevant qualifications of any such data.*

16. \_\_\_\_\_ *Observed evidence of current earth moving work, building construction or building additions.*
17. \_\_\_\_\_ *Proposed changes in street right of way lines, if information is available from the controlling jurisdiction. Observed evidence of recent street or sidewalk construction or repairs.*
18. \_\_\_\_\_ *Observed evidence of site use as a solid waste dump, sump or sanitary landfill.*
19. \_\_\_\_\_ *Location of wetland areas as delineated by appropriate authorities.*
20. \_\_\_\_\_ *(a) Locate improvements within any offsite easements or servitudes benefitting the surveyed property that are disclosed in the Record Documents provided to the surveyor and that are observed in the process of conducting the survey (client to obtain necessary permissions).*
- \_\_\_\_\_ *(b) Monuments placed (or a reference monument or witness to the corner) at all major corners of any offsite easements or servitudes benefitting the surveyed property and disclosed in Record Documents provided to the surveyor (client to obtain necessary permissions).*
21. \_\_\_\_\_ *Professional Liability Insurance policy obtained by the surveyor in the minimum amount of \$\_\_\_\_\_ to be in effect throughout the contract term. Certificate of Insurance to be furnished upon request.*
22. \_\_\_\_\_ \_\_\_\_\_

*Adopted by the Board of Governors, American Land Title Association, on October 13, 2010.  
American Land Title Association, 1828 L St., N.W., Suite 705, Washington, D.C. 20036.*

*Adopted by the Board of Directors, National Society of Professional Surveyors, on November 15, 2010.  
National Society of Professional Surveyors, Inc., a member organization of the American Congress on Surveying and Mapping, 6 Montgomery Village Avenue, Suite 403, Gaithersburg, MD 20879*



**2005 MINIMUM STANDARD DETAIL REQUIREMENTS FOR  
ALTA/ACSM LAND TITLE SURVEYS  
as adopted by  
American Land Title Association  
and  
National Society of Professional Surveyors  
(a member organization of the American Congress on Surveying and Mapping)**

It is recognized that members of the American Land Title Association (ALTA) have specific needs, peculiar to title insurance matters, which require particular information for acceptance by title insurance companies when said companies are asked to insure title to land without exception as to the many matters which might be discoverable from survey and inspection and not be evidenced by the public records. In the general interest of the public, the surveying profession, title insurers and abstracters, ALTA and the National Society of Professional Surveyors, Inc. (NSPS) jointly promulgate and set forth such details and criteria for standards. It is recognized and understood that local and state standards or standards of care, which surveyors in those respective jurisdictions are bound by, may augment, or even require variations to the standards outlined herein. Where conflicts between the standards outlined herein and any jurisdictional statutes or regulations occur, the more restrictive requirement shall apply. It is also recognized that title insurance companies are entitled to rely on the survey furnished to them to be of an appropriate professional quality, both as to completeness and as to accuracy. It is equally recognized that for the performance of a survey, the surveyor will be provided with appropriate data which can be relied upon in the preparation of the survey.

For a survey of real property and the plat or map of the survey to be acceptable to a title insurance company for purposes of insuring title to said real property free and clear of survey matters (except those matters disclosed by the survey and indicated on the plat or map), certain specific and pertinent information shall be presented for the distinct and clear understanding between the client (insured), the title insurance company (insurer), and the surveyor (the person professionally responsible for the survey). These requirements are:

1. The client shall request the survey or arrange for the survey to be requested and shall provide a written authorization to proceed with the survey from the person responsible for paying for the survey. Unless specifically authorized in writing by the insurer, the insurer shall not be responsible for any costs associated with the preparation of the survey. The request shall specify that an "**ALTA/ACSM LAND TITLE SURVEY**" is required and shall designate which of the optional items listed in Table A are to be incorporated. The request shall set forth the record description of the property to be surveyed or, in the case of an original survey, the record description of the parent parcel that contains the property to be surveyed. Complete copies of the record description of the property (or, in the case of an original survey, the parent parcel), any record easements benefiting the property; the record easements or servitudes and covenants burdening the property ("Record Documents"); documents of record referred to in the Record Documents; and any other documents containing desired appropriate information affecting the property being surveyed and to which the survey shall make reference shall be provided to the surveyor for notation on the plat or map of survey.

2. The plat or map of such survey shall bear the name, address, telephone number, and signature of the professional land surveyor who performed the survey, his or her official seal and registration number, the date the survey was completed, the dates of all of the surveyor's revisions and the caption "**ALTA/ACSM Land Title Survey**" with the certification set forth in paragraph 8.

3. An "**ALTA/ACSM LAND TITLE SURVEY**" shall be in accordance with the then-current "Accuracy Standards for Land Title Surveys" ("Accuracy Standards") as adopted, from time to time by the National Society of Professional Surveyors and the American Land Title Association and incorporated herein by reference.

4. On the plat or map of an "**ALTA/ACSM LAND TITLE SURVEY**," the survey boundary shall be drawn to a convenient scale, with that scale clearly indicated. A graphic scale, shown in feet or meters or both, shall be included. A north arrow shall be shown and when practicable, the plat or map of survey shall be oriented so that north is at the top of the drawing. Symbols or abbreviations used shall be identified on the face of the plat or map by use of a legend or other means. If necessary for clarity, supplementary or exaggerated diagrams shall be presented accurately on the plat or map. The plat or map shall be a minimum size of 8½ by 11 inches.

5. The survey shall be performed on the ground and the plat or map of an "**ALTA/ACSM LAND TITLE SURVEY**" shall contain, in addition to the required items already specified above, the following applicable information:

(a) All data necessary to indicate the mathematical dimensions and relationships of the boundary represented, with angles given directly or by bearings, and with the length and radius of each curve, together with elements necessary to mathematically define each curve. The point of beginning of the surveyor's description shall be shown as well as the remote point of beginning if different. A bearing base shall refer to some well-fixed line, so that the bearings may be easily re-established. The North arrow shall be referenced to its bearing base and should that bearing base differ from record title, that difference shall be noted.

(b) When record bearings or angles or distances differ from measured bearings, angles or distances, both the

record and measured bearings, angles, and distances shall be clearly indicated. If the record description fails to form a mathematically closed figure, the surveyor shall so indicate.

- (c) Measured and record distances from corners of parcels surveyed to the nearest right-of-way lines of streets in urban or suburban areas, together with recovered lot corners and evidence of lot corners, shall be noted. For streets and highways abutting the property surveyed, the name, the width and location of pavement relative to the nearest boundary line of the surveyed tract, and the width of existing rights of way, where available from the controlling jurisdiction, shall be shown. Observable evidence of access (or lack thereof) to such abutting streets or highways shall be indicated. Observable evidence of private roads shall be so indicated. Streets abutting the premises, which have been described in Record Documents, but not physically opened, shall be shown and so noted.
- (d) The identifying titles of all recorded plats, filed maps, right of way maps, or similar documents which the survey represents, wholly or in part, shall be shown with their appropriate recording data, filing dates and map numbers, and the lot, block, and section numbers or letters of the surveyed premises. For non-platted adjoining land, names, and recording data identifying adjoining owners as they appear of record shall be shown. For platted adjoining land, the recording data of the subdivision plat shall be shown. The survey shall indicate platted setback or building restriction lines which have been recorded in subdivision plats or which appear in Record Documents which have been delivered to the surveyor. Contiguity, gores, and overlaps along the exterior boundaries of the surveyed premises, where ascertainable from field evidence or Record Documents, or interior to those exterior boundaries, shall be clearly indicated or noted. Where only a part of a recorded lot or parcel is included in the survey, the balance of the lot or parcel shall be indicated.
- (e) All evidence of monuments shall be shown and noted to indicate which were found and which were placed. All evidence of monuments found beyond the surveyed premises on which establishment of the corners of the surveyed premises are dependent, and their application related to the survey shall be indicated.
- (f) The character of any and all evidence of possession shall be stated and the location of such evidence carefully given in relation to both the measured boundary lines and those established by the record. An absence of notation on the survey shall be presumptive of no observable evidence of possession.
- (g) The location of all buildings upon the plot or parcel shall be shown and their locations defined by measurements perpendicular to the nearest perimeter boundaries. The precision of these measurements shall be commensurate with the Relative Positional Accuracy of the survey as specified in the current Accuracy Standards for ALTA/ACSM Land Title Surveys. If there are no buildings erected on the property being surveyed, the plat or map shall bear the statement, "No buildings." Proper street numbers shall be shown where available.
- (h) All easements evidenced by Record Documents which have been delivered to the surveyor shall be shown, both those burdening and those benefiting the property surveyed, indicating recording information. If such an easement cannot be located, a note to this effect shall be included. Observable evidence of easements and/or servitudes of all kinds, such as those created by roads; rights-of-way; water courses; drains; telephone, telegraph, or electric lines; water, sewer, oil or gas pipelines on or across the surveyed property and on adjoining properties if they appear to affect the surveyed property, shall be located and noted. If the surveyor has knowledge of any such easements and/or servitudes, not observable at the time the present survey is made, such lack of observable evidence shall be noted. Surface indications, if any, of underground easements and/or servitudes shall also be shown.
- (i) The character and location of all walls, buildings, fences, and other visible improvements within five feet of each side of the boundary lines shall be noted. Without expressing a legal opinion, physical evidence of all encroaching structural appurtenances and projections, such as fire escapes, bay windows, windows and doors that open out, flue pipes, stoops, eaves, cornices, areaways, steps, trim, etc., by or on adjoining property or on abutting streets, on any easement or over setback lines shown by Record Documents shall be indicated with the extent of such encroachment or projection. If the client wishes to have additional information with regard to appurtenances such as whether or not such appurtenances are independent, division, or party walls and are plumb, the client will assume the responsibility of obtaining such permissions as are necessary for the surveyor to enter upon the properties to make such determinations.
- (j) Driveways, alleys and other ways of access on or crossing the property must be shown. Where there is evidence of use by other than the occupants of the property, the surveyor must so indicate on the plat or map. Where driveways or alleys on adjoining properties encroach, in whole or in part, on the property being surveyed, the surveyor must so indicate on the plat or map with appropriate measurements.
- (k) As accurately as the evidence permits, the location of cemeteries and burial grounds (i) disclosed in the Record Documents provided by client or (ii) observed in the process of performing the field work for the survey, shall be shown.
- (l) Ponds, lakes, springs, or rivers bordering on or running through the premises being surveyed shall be shown.

6. As a minimum requirement, the surveyor shall furnish two sets of prints of the plat or map of survey to

the title insurance company or the client. If the plat or map of survey consists of more than one sheet, the sheets shall be numbered, the total number of sheets indicated and match lines be shown on each sheet. The prints shall be on durable and dimensionally stable material of a quality standard acceptable to the title insurance company. The record title description of the surveyed tract, or the description provided by the client, and any new description prepared by the surveyor must appear on the face of the plat or map or otherwise accompany the survey. When, in the opinion of the surveyor, the results of the survey differ significantly from the record, or if a fundamental decision related to the boundary resolution is not clearly reflected on the plat or map, the surveyor may explain this information with notes on the face of the plat or map or in accompanying attachments. If the relative positional accuracy of the survey exceeds that allowable, the surveyor shall explain the site conditions that resulted in that outcome with a note on the face of the map or plat.

7. Water boundaries necessarily are subject to change due to erosion or accretion by tidal action or the flow of rivers and streams. A realignment of water bodies may also occur due to many reasons such as deliberate cutting and filling of bordering lands or by avulsion. Recorded surveys of natural water boundaries are not relied upon by title insurers for location of title.

When a property to be surveyed for title insurance purposes contains a natural water boundary, the surveyor shall measure the location of the boundary according to appropriate surveying methods and note on the plat or map the date of the measurement and the caveat that the boundary is subject to change due to natural causes and that it may or may not represent the actual location of the limit of title. When the surveyor is aware of changes in such boundaries, the extent of those changes shall be identified.

8. When the surveyor has met all of the minimum standard detail requirements for an ALTA/ACSM Land Title Survey, the following certification shall be made on the plat:

**To (name of client), (name of lender, if known), (name of title insurance company, if known), (name of others as instructed by client):**

**This is to certify that this map or plat and the survey on which it is based were made in accordance with the "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys," jointly established and adopted by ALTA and NSPS in 2005, and includes Items \_\_\_\_\_ of Table A thereof. Pursuant to the Accuracy Standards as adopted by ALTA and NSPS and in effect on the date of this certification, undersigned further certifies that in my professional opinion, as a land surveyor registered in the State of \_\_\_\_\_, the Relative Positional Accuracy of this survey does not exceed that which is specified therein.**

Date: \_\_\_\_\_ (signed) \_\_\_\_\_ (seal)  
Registration No.

NOTE: If, as otherwise allowed in the Accuracy Standards, the Relative Positional Accuracy exceeds that which is specified therein, the following certification shall be made on the plat:

**To (name of client), (name of lender, if known), (name of title insurance company, if known), (name of others as instructed by client):**

**This is to certify that this map or plat and the survey on which it is based were made in accordance with the "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys," jointly established and adopted by ALTA and NSPS in 2005, and includes Items \_\_\_\_\_ of Table A thereof. Pursuant to the Accuracy Standards as adopted by ALTA and NSPS and in effect on the date of this certification, undersigned further certifies that in my professional opinion, as a land surveyor registered in the State of \_\_\_\_\_, the maximum Relative Positional Accuracy is \_\_\_\_\_ feet.**

Date: \_\_\_\_\_ (signed) \_\_\_\_\_ (seal)  
Registration No.

*The 2005 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys are effective January 1, 2006. As of that date, all previous versions of the Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys are superseded by these 2005 standards.*

*Adopted by the American Land Title Association on October 5, 2005.  
Adopted by the Board of Directors, National Society of Professional Surveyors on October 24, 2005.  
American Land Title Association, 1828 L St., N.W., Suite 705, Washington, D.C. 20036.  
National Society of Professional Surveyors, Inc., 6 Montgomery Village Avenue, Suite 403, Gaithersburg, MD 20879*

## TABLE A

### OPTIONAL SURVEY RESPONSIBILITIES AND SPECIFICATIONS

**NOTE:** The items of Table A must be negotiated between the surveyor and client. It may be necessary for the surveyor to qualify or expand upon the description of these items, e.g., in reference to Item 6, there may be a need for an interpretation of a restriction. The surveyor cannot make a certification on the basis of an interpretation or opinion of another party. Items 16, 17 and 18 are only for use on projects for the U.S. Department of Housing and Urban Development (HUD).

If checked, the following optional items are to be included in the ALTA/ACSM LAND TITLE SURVEY, except as otherwise negotiated:

1. \_\_\_\_\_ Monuments placed (or a reference monument or witness to the corner) at all major corners of the boundary of the property, unless already marked or referenced by an existing monument or witness to the corner.
2. \_\_\_\_\_ Vicinity map showing the property surveyed in reference to nearby highway(s) or major street intersection(s).
3. \_\_\_\_\_ Flood zone designation (with proper annotation based on federal Flood Insurance Rate Maps or the state or local equivalent, by scaled map location and graphic plotting only.)
4. \_\_\_\_\_ Gross land area (and other areas if specified by the client).
5. \_\_\_\_\_ Contours and the datum of the elevations.
6. \_\_\_\_\_ List setback, height, and floor space area restrictions disclosed by applicable zoning or building codes (beyond those required under paragraph 5d of these standards). If none, so state. The source of such information must be disclosed. See "Note" above.
7. \_\_\_\_\_ (a) Exterior dimensions of all buildings at ground level  
(b) Square footage of:  
\_\_\_\_\_ (1) exterior footprint of all buildings at ground level  
\_\_\_\_\_ (2) gross floor area of all buildings; or  
\_\_\_\_\_ (3) other areas to be defined by the client  
\_\_\_\_\_ (c) Measured height of all buildings above grade at a defined location. If no defined location is provided, the point of measurement shall be shown.
8. \_\_\_\_\_ Substantial, visible improvements (in addition to buildings) such as billboards, signs, parking structures, swimming pools, etc.
9. \_\_\_\_\_ Parking areas and, if striped, the striping and the type (e.g. handicapped, motorcycle, regular, etc.) and number of parking spaces.
10. \_\_\_\_\_ Indication of access to a public way on land such as curb cuts and driveways, and to and from waters adjoining the surveyed tract, such as boat slips, launches, piers and docks..
11. \_\_\_\_\_ Location of utilities (representative examples of which are shown below) existing on or serving the surveyed property as determined by:  
\_\_\_\_\_ (a) Observed evidence  
\_\_\_\_\_ (b) Observed evidence together with evidence from plans obtained from utility companies or provided by client, and markings by utility companies and other appropriate sources (with reference as to the source of information)
  - railroad tracks and sidings;
  - manholes, catch basins, valve vaults or other surface indications of subterranean uses;
  - wires and cables (including their function, if readily identifiable) crossing the surveyed premises, all poles on or within ten feet of the surveyed premises, and the dimensions of all crossmembers or overhangs affecting the surveyed premises; and
  - utility company installations on the surveyed premises.
12. \_\_\_\_\_ Governmental Agency survey-related requirements as specified by the client.

13. \_\_\_\_\_ *Names of adjoining owners of platted lands.*
14. \_\_\_\_\_ *The distance to the nearest intersecting street as designated by the client*
15. \_\_\_\_\_ *Rectified orthophotography, photogrammetric mapping, laser scanning and other similar products, tools or technologies may be utilized as the basis for the location of certain features (excluding boundaries) where ground measurements are not otherwise necessary to locate those features to an appropriate and acceptable accuracy relative to a nearby boundary. The surveyor shall (a) discuss the ramifications of such methodologies (e.g. the potential accuracy and completeness of the data gathered thereby) with the title company, lender and client prior to the performance of the survey and, (b) place a note on the face of the survey explaining the source, date, relative accuracy and other relevant qualifications of any such data.*
16. \_\_\_\_\_ *Observable evidence of earth moving work, building construction or building additions within recent months.*
17. \_\_\_\_\_ *Any changes in street right of way lines either completed or proposed, and available from the controlling jurisdiction. Observable evidence of recent street or sidewalk construction or repairs.*
18. \_\_\_\_\_ *Observable evidence of site use as a solid waste dump, sump or sanitary landfill.*
19. \_\_\_\_\_

# Accuracy Standards for ALTA/ACSM Land Title Surveys

## Introduction

These Accuracy Standards address Relative Positional Accuracies for measurements that control land boundaries on ALTA/ACSM Land Title Surveys.

In order to meet these standards, the surveyor must assure and certify that the Relative Positional Accuracies resulting from the measurements made on the survey do not exceed that which is allowable.

If the size or configuration of the property to be surveyed, or the relief, vegetation or improvements on the property will result in survey measurements for which the allowable Relative Positional Accuracies will be exceeded, the surveyor must alternatively certify as to the Relative Positional Accuracy that was otherwise achieved on the survey.

## Definition:

“Relative Positional Accuracy” means the value expressed in feet or meters that represents the uncertainty due to random errors in measurements in the location of any point on a survey relative to any other point on the same survey at the 95 percent confidence level.

## Background

The lines and corners on any property survey have uncertainty in location which is the result of (1) availability and condition of reference monuments, (2) occupation or possession lines as they may differ from record lines, (3) clarity or ambiguity of the record descriptions or plats of the surveyed tracts and its adjoiners and (4) Relative Positional Accuracy.

The first three sources of uncertainty must be weighed as evidence in the determination of where, in the professional surveyor’s opinion, the boundary lines and corners should be placed. Relative Positional Accuracy is related to how accurately the surveyor is able to monument or report those positions.

Of these four sources of uncertainty, only Relative Positional Accuracy is controllable, although due

to the inherent error in any measurement, it cannot be eliminated. The first three can be estimated based on evidence; Relative Positional Accuracy can be estimated using statistical means.

The surveyor shall, to the extent necessary to achieve the standard contained herein, (1) compensate or correct for systematic errors, including those associated with instrument calibration, (2) select the appropriate equipment and methods, and use trained personnel and (3) use appropriate error propagation and other measurement design theory to select the proper instruments, field procedures, geometric layouts and computational procedures to control random errors.

If radial survey methods, GPS or other acceptable technologies or procedures are used to locate or establish points on the survey, the surveyor shall apply appropriate procedures in order to assure that the allowable Relative Positional Accuracy of such points is not exceeded.

## Computation of Relative Positional Accuracy

Relative Positional Accuracy may be tested by: (1) comparing the relative location of points in a survey as measured by an independent survey of higher accuracy or (2) the results of a minimally constrained, correctly weighted least square adjustment of the survey.

## Allowable Relative Positional Accuracy for Measurements Controlling Land Boundaries on ALTA/ACSM Land Title Surveys

0.07 feet (or 20 mm) + 50 ppm
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# Minimum Standard Detail Requirements

for

## ALTA/ACSM Land Title Surveys

  
AMERICAN  
LAND TITLE  
ASSOCIATION



as adopted by

American Land Title Association  
American Congress on Surveying & Mapping  
National Society of Professional Surveyors

**1999**

# MINIMUM STANDARD DETAIL REQUIREMENTS for ALTA/ACSM LAND TITLE SURVEYS

AMERICAN  
LAND TITLE  
ASSOCIATION



as adopted by  
**American Land Title Association**  
**American Congress on Surveying & Mapping**  
and  
**National Society of Professional Surveyors**



It is recognized that members of the American Land Title Association (ALTA) have specific needs, peculiar to title insurance matters, which require particular information for acceptance by title insurance companies when said companies are asked to insure title to land without exceptions as to the many matters which might be discoverable from survey and inspection and not be evidenced by the public records. In the general interest of the public, the surveying profession, title insurers and abstracters, ALTA, the American Congress on Surveying and Mapping (ACSM) and the National Society of Professional Surveyors, Inc. (NSPS) jointly promulgate and set forth such details and criteria for standards. It is understood that local variations may require local adjustments to suit local situations, and often must be applied. It is recognized that title insurance companies are entitled to rely on the survey furnished to them being of the appropriate professional quality, both as to completeness and as to accuracy. It is equally recognized that for the performance of a survey, the surveyor will be provided with appropriate data which can be relied upon in the preparation of the survey.

For a survey of real property and the plat or map of the survey to be acceptable to a title insurance company for purposes of insuring title to said real property free and clear of survey matters (except those matters disclosed by the survey and indicated on the plat or map), certain specific and pertinent information shall be presented for the distinct and clear understanding between the client (insured), the title insurance company (insurer), and the surveyor (the person professionally responsible for the survey).

These requirements are:

1. The client shall request the survey or arrange for the survey to be requested and shall provide a written authorization to proceed with the survey from the person responsible for paying for the survey. Unless specifically authorized in writing by the insurer, the insurer shall not be responsible for any costs associated with the preparation of the survey. The request shall specify that an "ALTA/ACSM LAND TITLE SURVEY" is required, meeting the then-current accuracy standards jointly adopted by ALTA, ACSM and NSPS. The request shall also designate which of the optional items listed in Table A are to be incorporated. The request shall set forth the record description of the property. Complete copies of the record description of the property, any record easements benefitting the property, the record easements or servitudes and covenants affecting the property ("Record Documents"), documents of record referred to in the Record Documents, and any other documents containing desired appropriate information affecting the property being surveyed and to which the survey shall make reference shall be provided to the surveyor for notation on the plat or map of survey.
2. The plat or map of such survey shall bear the name, address, telephone number, and signature of the professional land surveyor who made the survey, his or her official seal and registration number, the date the survey was completed and the dates of all revisions, and the caption "ALTA/ACSM Land Title Survey" with the certification set forth in paragraph 8.

3. An "ALTA/ACSM LAND TITLE SURVEY" shall be in accordance with the then-current "Accuracy Standards for Land Title Surveys" ("Accuracy Standards") as adopted, from time to time, by the American Congress on Surveying and Mapping, the National Society of Professional Surveyors, and the American Land Title Association and incorporated herein by reference.

4. On the plat or map of an "ALTA/ACSM LAND TITLE SURVEY," the survey boundary shall be drawn to a convenient scale, with that scale clearly indicated. A graphic scale, shown in feet or meters or both, shall be included. A north arrow shall be shown and when practicable, the plat or map of survey shall be oriented so that north is at the top of the drawing. Symbols or abbreviations used shall be identified on the face of the plat or map by use of a legend or other means. If necessary for clarity, supplementary or exaggerated diagrams shall be presented accurately on the plat or map. The plat or map shall be a minimum size of 8½ by 11 inches.

5. The survey shall be performed on the ground and the plat or map of an "ALTA/ACSM LAND TITLE SURVEY" shall contain, in addition to the required items already specified above, the following applicable information:

(a) All data necessary to indicate the mathematical dimensions and relationships of the boundary represented, with angles given directly or by bearings, and with the length and radius of each curve, together with elements necessary to mathematically define each curve. The point of beginning of the surveyor's description shall be shown as well as the remote point of beginning if different. A bearing base shall refer to some well-fixed bearing line, so that the bearings may be easily re-established. All bearings around the boundary shall read in a clockwise direction wherever possible. The North arrow shall be referenced to its bearing base and should that bearing base differ from record title, that difference shall be noted.

(b) When record bearings or angles or distances differ from measured bearings, angles or distances, both the record and measured bearings, angles, and distances shall be clearly indicated. If the record description fails to form a mathematically closed figure, the surveyor shall so indicate.

(c) Measured and record distances from corners of parcels surveyed to the nearest right-of-way lines of streets in urban or suburban areas, together with recovered lot corners and evidence of lot corners, shall be noted. The distances to the nearest intersecting street shall be indicated and verified. Names and widths of streets and highways abutting the property surveyed and widths of rights of way shall be given. Any use contrary to the above shall be noted. Observable evidence of access (or lack thereof) to such abutting streets or highways shall be indicated. Observable evidence of private roads shall be so indicated. Streets abutting the premises, which have been described in Record Documents, but not physically opened, shall be shown and so noted.

(d) The identifying titles of all recorded plats, filed maps, right of way maps, or similar documents which the survey represents, wholly or in part, shall be shown with their appropriate recording data, filing dates and map numbers, and the lot, block, and section numbers or letters of the surveyed premises. For non-platted adjoining land, names, and recording data identifying adjoining owners as they appear of record shall be shown. For platted adjoining land, the recording data of the subdivision plat shall be shown. The survey shall indicate platted setback or building restriction lines which have been recorded in subdivision plats or which appear in a Record Document which has been delivered to the surveyor. Contiguity, gores, and overlaps along the exterior boundaries of the surveyed premises, where ascertainable from field evidence or Record Documents, or interior to those exterior boundaries, shall be clearly indicated or noted. Where only a part of a recorded lot or parcel is in-

cluded in the survey, the balance of the lot or parcel shall be indicated.

- (e) All evidence of monuments shall be shown and noted to indicate which were found and which were placed. All evidence of monuments found beyond the surveyed premises on which establishment of the corners of the surveyed premises are dependent, and their application related to the survey shall be indicated.
- (f) The character of any and all evidence of possession shall be stated and the location of such evidence carefully given in relation to both the measured boundary lines and those established by the record. An absence of notation on the survey shall be presumptive of no observable evidence of possession.
- (g) The location of all buildings upon the plot or parcel shall be shown and their locations defined by measurements perpendicular to the boundaries. If there are no buildings erected on the property being surveyed, the plat or map shall bear the statement, "No buildings." Proper street numbers shall be shown where available.
- (h) All easements evidenced by a Record Document which have been delivered to the surveyor shall be shown, both those burdening and those benefitting the property surveyed, indicating recording information. If such an easement cannot be located, a note to this effect shall be included. Observable evidence of easements and/or servitudes of all kinds, such as those created by roads; rights-of-way; water courses; drains; telephone, telegraph, or electric lines; water, sewer, oil or gas pipelines on or across the surveyed property and on adjoining properties if they appear to affect the surveyed property, shall be located and noted. If the surveyor has knowledge of any such easements and/or servitudes, not observable at the time the present survey is made, such lack of observable evidence shall be noted. Surface indications, if any, of underground easements and/or servitudes shall also be shown.

- (i) The character and location of all walls, buildings, fences, and other visible improvements within five feet of each side of the boundary lines shall be noted. Without expressing a legal opinion, physical evidence of all encroaching structural appurtenances and projections, such as fire escapes, bay windows, windows and doors that open out, flue pipes, stoops, eaves, cornices, areaways, steps, trim, etc., by or on adjoining property or on abutting streets, on any easement or over setback lines shown by Record Documents shall be indicated with the extent of such encroachment or projection. If the client wishes to have additional information with regard to appurtenances such as whether or not such appurtenances are independent, division, or party walls and are plumb, the client will assume the responsibility of obtaining such permissions as are necessary for the surveyor to enter upon the properties to make such determinations.
- (j) Driveways and alleys on or crossing the property must be shown. Where there is evidence of use by other than the occupants of the property, the surveyor must so indicate on the plat or map. Where driveways or alleys on adjoining properties encroach, in whole or in part, on the property being surveyed, the surveyor must so indicate on the plat or map with appropriate measurements.
- (k) As accurately as the evidence permits, the location of cemeteries and burial grounds (i) disclosed in the process of researching title to the premises or (ii) observed in the process of performing the field work for the survey, shall be shown.
- (l) Ponds, lakes, springs, or rivers bordering on or running through the premises being surveyed shall be shown.

6. As a minimum requirement, the surveyor shall furnish two sets of prints of the plat or map of survey to the title insurance company or the client. If the plat or map of survey consists of more than one sheet, the sheets shall be numbered, the total number of sheets indicated and

match lines be shown on each sheet. The prints shall be on durable and dimensionally stable material of a quality standard acceptable to the title insurance company. At least two copies of the boundary description prepared from the survey shall be similarly furnished by the surveyor and shall be on the face of the plat or map of survey, if practicable, or otherwise attached to and incorporated in the plat or map. Reference to date of the "ALTA/ACSM LAND TITLE SURVEY," surveyor's file number (if any), political subdivision, section, township and range, along with appropriate aliquot parts thereof, and similar information shown on the plat or map of survey shall be included with the boundary description.

7. Water boundaries necessarily are subject to change due to erosion or accretion by tidal action or the flow of rivers and streams. A realignment of water bodies may also occur due to many reasons such as deliberate cutting and filling of bordering lands or by avulsion. Recorded surveys of natural water boundaries are not relied upon by title insurers for location of title.

When a property to be surveyed for title insurance purposes contains a natural water boundary, the surveyor shall measure the location of the boundary according to appropriate surveying methods and note on the plat or map the date of the measurement and the caveat that the boundary is subject to change due to natural causes and that it may or may not represent the actual location of the limit of title. When the surveyor is aware of changes in such boundaries, the extent of those changes shall be identified.

8. When the surveyor has met all of the minimum standard detail requirements for an ALTA/ACSM Land Title Survey, the following certification shall be made on the plat:

To (name of client), (name of lender, if known), (name of title insurance company, if known), (name of others as instructed by client):

This is to certify that this map or plat and the survey on which it is based were made in accordance with "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys," jointly established and adopted by ALTA, ACSM and NSPS in 1999, and includes Items \_\_\_\_\_ of Table A thereof. Pursuant to the Accuracy Standards as adopted by ALTA, NSPS, and ACSM and in effect on the date of this certification, undersigned further certifies that [Surveyor to complete certificate with the appropriate ONE of the following three phrases]

- the Positional Uncertainties resulting from the survey measurements made on the survey do not exceed the allowable Positional Tolerance.
- the survey measurements were made in accordance with the "Minimum Angle, Distance, and Closure Requirements for Survey Measurements Which Control Land Boundaries for ALTA/ACSM Land Title Surveys."
- proper field procedures, instrumentation, and adequate survey personnel were employed in order to achieve results comparable to those outlined in the "Minimum Angle, Distance, and Closure Requirements for Survey Measurements Which Control Land Boundaries for ALTA/ACSM Land Title Surveys."

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

(signed) \_\_\_\_\_ (seal)  
Registration No.

Adopted by the American Land Title Association on October 6, 1999.

Adopted by the Board of Direction, American Congress on Surveying and Mapping on October 20, 1999.

Adopted by the Board of Directors, National Society of Professional Surveyors on October 19, 1999.

American Land Title Association, 1828 L St., N.W., Suite 705, Washington, D.C. 20036.  
American Congress on Surveying and Mapping, 5410 Grosvenor Lane, Bethesda, MD 20814

National Society of Professional Surveyors, 5410 Grosvenor Lane, Bethesda, MD 20814

**TABLE A**

**OPTIONAL SURVEY RESPONSIBILITIES AND SPECIFICATIONS**

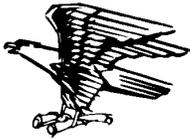
NOTE: The items of Table A must be negotiated between the surveyor and client. It may be necessary for the surveyor to qualify or expand upon the description of these items, e.g. in reference to Item 6, there may be a need for an interpretation of a restriction. The surveyor cannot make a certification on the basis of an interpretation.

If checked, the following optional items are to be included in the ALTA/ACSM LAND TITLE SURVEY:

- |  |  |
|--|--|
| <p>1. ___ Monuments placed (or a reference monument or witness to the corner) at all major corners of the boundary of the property, unless already marked or referenced by an existing monument or witness to the corner.</p> <p>2. ___ Vicinity map showing the property surveyed in reference to nearby highway(s) or major street intersection(s).</p> <p>3. ___ Flood zone designation (with proper annotation based on Federal Flood Insurance Rate Maps or the state or local equivalent, by scaled map location and graphic plotting only).</p> <p>4. ___ Land area as specified by the client.</p> <p>5. ___ Contours and the datum of the elevations.</p> <p>6. ___ Identify and show if possible, setback, height, and floor space area restrictions of record or disclosed by applicable zoning or building codes (in addition to those recorded in subdivision maps). If none, so state.</p> <p>7. ___ (a) Exterior dimensions of all buildings at ground level</p> <p style="padding-left: 20px;">(b) Square footage of:</p> <p style="padding-left: 40px;">___ (1) exterior footprint of all buildings at ground level</p> <p style="padding-left: 40px;">___ (2) gross floor area of all buildings; or</p> <p style="padding-left: 40px;">___ (3) other areas to be defined by the client</p> <p style="padding-left: 20px;">___ (c) Measured height of all buildings above grade at a defined location. If no defined location is provided, the point of measurement shall be shown.</p> <p>8. ___ Substantial, visible improvements (in addition to buildings) such as signs, parking areas or structures, swimming pools, etc.</p> <p>9. ___ Parking areas and, if striped, the striping and the type (eg. handicapped, motorcycle, regular, etc.) and number of parking spaces.</p> | <p>10. ___ Indication of access to a public way such as curb cuts and driveways.</p> <p>11. ___ Location of utilities (representative examples of which are shown below) existing on or serving the surveyed property as determined by:</p> <p style="padding-left: 20px;">___(a) Observed evidence</p> <p style="padding-left: 20px;">___(b) Observed evidence together with plans and markings provided by client, utility companies, and other appropriate sources (with reference as to the source of information)</p> <ul style="list-style-type: none"> <li>• railroad tracks and sidings;</li> <li>• manholes, catch basins, valve vaults or other surface indications of subterranean uses;</li> <li>• wires and cables (including their function) crossing the surveyed premises, all poles on or within ten feet of the surveyed premises, and the dimensions of all crosswires or overhangs affecting the surveyed premises; and</li> <li>• utility company installations on the surveyed premises.</li> </ul> <p>12. ___ Governmental Agency survey-related requirements as specified by the client.</p> <p>13. ___ Names of adjoining owners of platted lands.</p> <p>14. ___ Observable evidence of earth moving work, building construction or building additions within recent months.</p> <p>15. ___ Any changes in street right of way lines either completed or proposed, and available from the controlling jurisdiction. Observable evidence of recent street or sidewalk construction or repairs.</p> <p>16. ___ Observable evidence of site use as a solid waste dump, sump or sanitary landfill.</p> <p>17. ___ _____</p> <p style="padding-left: 20px;">_____</p> |
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# Accuracy Standards for ALTA-ACSM Land Title Surveys

**AMERICAN  
LAND TITLE  
ASSOCIATION**



*as adopted by*



**American Land Title Association**

**American Congress on Surveying & Mapping**

**and**

**National Society of Professional Surveyors**

**1999**

# Accuracy Standards for ALTA-ACSM Land Title Surveys

## Introduction

These Accuracy Standards address Positional Uncertainty and Minimum Angle, Distance and Closure Requirements for ALTA-ACSM Land Title Surveys. In order to meet these standards, the Surveyor must assure that the Positional Uncertainties resulting from the survey measurements made on the survey do not exceed the allowable Positional Tolerance. If the size or configuration of the property to be surveyed or the relief, vegetation, or improvements on the property will result in survey measurements for which the Positional Uncertainty will exceed the allowable Positional Tolerance, the surveyor must alternatively apply the within table of "Minimum Angle, Distance and Closure Requirements for Survey Measurements Which Control Land Boundaries for ALTA-ACSM Land Title Surveys" to the measurements made on the survey or employ, in his or her judgment, proper field procedures, instrumentation and adequate survey personnel in order to achieve comparable results.

The lines and corners on any property survey have uncertainty in location which is the result of (1) availability and condition of reference monuments, (2) occupation or possession lines as they may differ from record lines, (3) clarity or ambiguity of the record descriptions or plats of the surveyed tracts and its adjoiners and (4) Positional Uncertainty.

The first three sources of uncertainty must be weighed as evidence in the determination of where, in the professional surveyor's opinion, the boundary lines and corners should be placed. Positional Uncertainty is related to how accurately the surveyor is able to monument or report those positions.

Of these four sources of uncertainty, only Positional Uncertainty is controllable, although due to the inherent error in any measurement, it cannot be eliminated. The first three can be estimated based on evidence; Positional Uncertainty can be estimated using statistical means.

The surveyor should, to the extent necessary to achieve the standards contained herein, compensate or correct for systematic errors, including those associated with instrument calibration. The surveyor shall use appropriate error propagation and other measurement design theory to select the proper instruments, field procedures, geometric layouts and computational procedures to control and adjust random errors in order to achieve the allowable Positional Tolerance or required traverse closure.

If radial survey methods are used to locate or establish points on the survey, the surveyor shall apply appropriate procedures in order to assure that the allowable Positional Tolerance of such points is not exceeded.

## **Definitions:**

"Positional Uncertainty" is the uncertainty in location, due to random errors in measurement, of any physical point on a property survey, based on the 95% confidence level.

"Positional Tolerance" is the maximum acceptable amount of Positional Uncertainty for any physical point on a property survey relative to any other physical point on the survey, including lead-in courses.

## **Computation of Positional Uncertainty**

The Positional Uncertainty of any physical point on a survey, whether the location of that point was established using GPS or conventional surveying methods, may be computed using a minimally constrained, correctly weighted least squares adjustment of the points on the survey.

## **Positional Tolerances for Land Title Surveys**

0.07 feet (or 20mm) + 50ppm
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## **Application of Minimum Angle, Distance and Closure Requirements**

The combined precision of a survey can be statistically assured by dictating a combination of survey closure and specified procedures for an ALTA/ACSM Land Title Survey. ACSM, NSPS and ALTA have adopted the following specific procedures in order to assure the combined precision of an ALTA/ACSM Land Title Survey. The statistical base for these specifications is on file at ACSM and available for inspection.

**American Congress on Surveying and Mapping**  
**Minimum Angle, Distance and Closure Requirements for Survey Measurements**  
**Which Control Land Boundaries for ALTA-ACSM Land Title Surveys**  
**(Note 1)**

Dir. Reading of Instrument  (Note 2)	Instrument Reading Estimated  (Note 3)	Number of Observations Per Station  (Note 4)	Spread From Mean of D&R Not To Exceed  (Note 5)	Angle Closure Where N=No. of Stations Not To Exceed	Linear Closure  (Note 6)	Distance Measurement  (Note 7)	Minimum Length of Measurements  (Notes 8, 9, 10)
20" <1'> <span style="border: 1px solid black; padding: 2px;">10"</span>	<u>5" &lt;0.1'&gt; N.A.</u>	2 D&R	5" <0.1'> <span style="border: 1px solid black; padding: 2px;">5"</span>	10" $\sqrt{N}$	1:15,000	EDM or Doubletape with Steel tape	(8) 81m, (9) 153m, (10) 20 m

Note (1) All requirements of each class must be satisfied in order to qualify for that particular class of survey. The use of a more precise instrument does not change the other requirements, such as number of angles turned, etc.

Note (2) Instrument must have a direct reading of at least the amount specified (not an estimated reading), i.e.: 20" = Micrometer reading theodolite, <1'> = Scale reading theodolite, 10" = Electronic reading theodolite.

Note (3) Instrument must have the capability of allowing an estimated reading below the direct reading to the specified reading.

Note (4) D & R means the Direct and Reverse positions of the instrument telescope, i.e., Urban Surveys require that two angles in the direct and two angles in the reverse position be measured and meaned.

Note (5) Any angle measured that exceeds the specified amount from the mean must be rejected and the set of angles re-measured.

Note (6) Ratio of closure after angles are balanced and closure calculated.

Note (7) All distance measurements must be made with a properly calibrated EDM or Steel tape, applying atmospheric, temperature, sag, tension, slope, scale factor and sea level corrections as necessary.

Note (8) EDM having an error of 5mm, independent of distance measured (Manufacturer's specifications).

Note (9) EDM having an error of 10mm, independent of distance measured (Manufacturer's specifications).

Note (10) Calibrated steel tape.



**Minimum Standard Detail Requirements**  
**Minimum Standard Detail Requirements for ALTA/ACSM**  
**Land Title Surveys**  
**as adopted by**  
**American Land Title Association**  
**American Congress on Surveying & Mapping**  
**and**  
**National Society of Professional Surveyors**

It is recognized that members of the American Land Title Association (ALTA) have specific needs, peculiar to title insurance matters, which require particular information for acceptance by title insurance companies when said companies are asked to insure title to land without exceptions as to the many matters which might be discoverable from survey and inspection and not be evidenced by the public records. In the general interest of the public, the surveying profession, title insurers and abstractors, ALTA, the American Congress on Surveying and Mapping (ACSM) and the National Society of Professional Surveyors, Inc. (NSPS) jointly promulgate and set forth such details and criteria for standards. It is understood that local variations may require local adjustments to suit local situations, and often must be applied. It is recognized that title insurance companies are entitled to rely on the

survey furnished to them being of the appropriate professional quality, both as to completeness and as to accuracy. It is equally recognized that for the performance of a survey, the surveyor will be provided with appropriate data, which can be relied upon in the preparation of the survey.

For a survey of real property and the plat or map of the survey to be acceptable to a title insurance company for purposes of insuring title to said real property free and clear of survey matters (except those matters disclosed by the survey and indicated on the plat or map), certain specific and pertinent information shall be presented for the distinct and clear understanding between the client (insured), the title insurance company (insurer), and the surveyor (the person professionally responsible for the survey).

These requirements are:

1. The client shall request the survey or arrange for the survey to be requested and shall provide a written authorization to proceed with the survey from the person responsible for paying for the survey. Unless specifically authorized in writing by the insured, the insurer shall in no event be responsible for any costs associated with the preparation of the survey. The request shall specify that an Urban, Suburban, Rural or Mountain and Marshland "ALTA/ACSM LAND TITLE SURVEY" is required, meeting the then-current accuracy standards jointly adopted by ALTA and ACSM. The request shall also designate which of the optional items listed in Table A are to be incorporated. The request shall set forth the record description of the property. Complete copies of the record description of the property, any record easements benefiting the property, the record easements or servitudes and covenants affecting the property ("Record Documents"), documents of record referred to in the Record Documents, and any other documents containing desired appropriate information affecting the property being surveyed and to which the survey shall make reference shall be provided to the surveyor for notation on the plat or map of survey.

2. The plat or map of such survey shall bear the name, address, telephone number, and signature of the professional land surveyor who made the survey, his or her official seal and

registration number, the date the survey was completed and the dates of all revisions, and the caption "ALTA/ACSM Land Title Survey" with the certification set forth in paragraph 8.

3. An "ALTA/ACSM Land Title Survey" shall be an Urban, Suburban, Rural or Mountain and Marshland Survey in accordance with the then-current "Classifications of ALTA/ACSM Land Title Surveys" ("Accuracy Standards") as adopted, from time to time, by the American Congress on Surveying and Mapping and the American Land Title Association and incorporated herein by reference.

4. On the plat or map of an "ALTA/ACSM LAND TITLE SURVEY," the survey boundary shall be drawn to a convenient scale, with that scale clearly indicated. A graphic scale, shown in feet or meters or both, shall be included. A north arrow shall be shown and when practicable, the plat or map of survey shall be oriented so that north is at the top of the drawing. Symbols or abbreviations used shall be identified on the face of the plat or map by use of a legend or other means. If necessary for clarity, supplementary or exaggerated diagrams shall be presented accurately on the plat or map. The plat or map shall be a minimum size of 8½ by 11 inches.

5. The survey shall be performed on the ground and the plat or map of an "ALTA/ACSM LAND TITLE SURVEY" shall contain, in addition to the required

items already specified above, the following applicable information:

(a) All data necessary to indicate the mathematical dimensions and relationships of the boundary represented, with angles given directly or by bearings, and with the length and radius of each curve, together with elements necessary to mathematically define each curve. The point of beginning of the surveyor's description shall be shown as well as the remote point of beginning if different. A bearing base shall refer to some well-fixed bearing line, so that the bearings may be easily re-established. All bearings around the boundary shall read in a clockwise direction wherever possible. The North arrow shall be referenced to its bearing base and should that bearing base differ from record title, that difference shall be noted.

(b) When record bearings or angles or distances differ from measured bearings, angles or distances, both the record and measured bearings, angles, and distances shall be clearly indicated. If the record description fails to form a mathematically closed figure, the surveyor shall so indicate.

(c) Measured and record distances from corners of parcels surveyed to the nearest right-of-way lines of streets in urban or suburban areas, together with recovered lot corners and evidence of lot corners, shall be noted. The distances to the nearest intersecting street shall be indicated and verified. Names and

widths of streets and highways abutting the property surveyed and widths of rights of way shall be given. Any use contrary to the above shall be noted. Observable evidence of access (or lack thereof) to such abutting streets or highways shall be indicated. Observable evidence of private roads shall be so indicated. Streets abutting the premises, which have been described in Record Documents, but not physically opened, shall be shown and so noted.

(d) The identifying titles of all recorded plats, filed maps, right of way maps, or similar documents which the survey represents, wholly or in part, shall be shown with their appropriate recording data, filing dates and map numbers, and the lot, block, and section numbers or letters of the surveyed premises. Names of adjoining owners as they appear of record and recorded lot or parcel numbers, recording information identifying the current description of record and similar information, where appropriate, shall be shown. The survey shall indicate platted setback or building restriction lines, which have been recorded in subdivision plats, or which appear in a Record Document, which has been delivered to the surveyor. Parcel lines shall clearly indicate contiguity, gores, and overlaps. Where only a part of a recorded lot or parcel is included in the survey, the balance of the lot or parcel shall be indicated.

(e) All evidence of monuments shall be shown and noted to indicate which were found and which were placed. All evidence of monuments found beyond

the surveyed premises on which establishment of the corners of the surveyed premises are dependent, and their application related to the survey shall be indicated.

(f) The character of any and all evidence of possession shall be stated and the location of such evidence carefully given in relation to both the measured boundary lines and those established by the record. An absence of notation on the survey shall be presumptive of no observable evidence of possession.

(g) The location of all buildings upon the plot or parcel shall be shown and their locations defined by measurements perpendicular to the boundaries. If there are no buildings erected on the property being surveyed, the plat or map shall bear the statement, "No buildings." Proper street numbers shall be shown where available.

(h) All easements evidenced by a Record Document which have been delivered to the surveyor shall be shown, both those burdening and those benefiting the property surveyed, indicating recording information. If such an easement cannot be located, a note to this effect shall be included. Observable evidence of easements and/or servitudes of all kinds, such as those created by roads; rights-of-way; water courses; drains; telephone, telegraph, or electric lines; water, sewer, oil or gas pipelines on or across the surveyed property and on adjoining properties if they appear to affect the surveyed property, shall be located and noted. If the surveyor has

knowledge of any such easements and/or servitudes, not observable at the time the present survey is made, such lack of observable evidence shall be noted. Surface indications, if any, of underground easements and/or servitudes shall also be shown.

(i) The character and location of all walls, buildings, fences, and other visible improvements within five feet of each side of the boundary lines shall be noted. Physical evidence of all encroaching structural appurtenances and projections, such as fire escapes, bay windows, windows and doors that open out, flue pipes, stoops, eaves, cornices, areaways, steps, trim, etc., by or on adjoining property or on abutting streets, on any easement or over setback lines shall be indicated with the extent of such encroachment or projection. If the client wishes to have additional information with regard to appurtenances such as whether or not such appurtenances are independent, division, or party walls and are plumb, the client will assume the responsibility of obtaining such permissions as are necessary for the surveyor to enter upon the properties to make such determinations.

(j) Driveways and alleys on or crossing the property must be shown. Where there is evidence of use by other than the occupants of the property, the surveyor must so indicate on the plat or map. Where driveways or alleys on adjoining properties encroach, in whole or in part, on the property being surveyed, the surveyor must so indicate

on the plat or map with appropriate measurements.

(k) As accurately as the evidence permits, the location of cemeteries and burial grounds

(i) Disclosed in the process of researching title to the premises or

(ii) Observed in the process of performing the field work for the survey, shall be shown.

(l) Ponds, lakes, springs, or rivers bordering on or running through the premises being surveyed shall be shown.

6. As a minimum requirement, the surveyor shall furnish two sets of prints of the plat or map of survey to the title insurance company or the client. If the plat or map of survey consists of more than one sheet, the sheets shall be numbered and the total number of sheets indicated and match lines be shown on each sheet. The prints shall be on durable and dimensionally stable material of a quality standard acceptable to the title insurance company. At least two copies of the boundary description prepared from the survey shall be similarly furnished by the surveyor and shall be on the face of the plat or map of survey, if practicable, or otherwise attached to and incorporated in the plat or map. Reference to date of the "ALTA/ACSM LAND TITLE SURVEY," surveyor's file number (if any), political subdivision, section, township and range, along with appropriate aliquot parts thereof, and

similar information shown on the plat or map of survey shall be included with the boundary description.

7. Water boundaries necessarily are subject to change due to erosion or accretion by tidal action or the flow of rivers and streams. A realignment of water bodies may also occur due to many reasons such as deliberate cutting and filling of bordering lands or by avulsion. Recorded surveys of natural water boundaries are not relied upon by title insurers for location of title.

When a property to be surveyed for title insurance purposes contains a natural water boundary, the surveyor shall measure the location of the boundary according to appropriate surveying methods and note on the plat or map the date of the measurement and the caveat that the boundary is subject to change due to natural causes and that it may or may not represent the actual location of the limit of title. When the surveyor is aware of changes in such boundaries, the extent of those changes shall be identified.

8. When the surveyor has met all of the minimum standard detail requirements for an ALTA/ACSM Land Title Survey, the following certification shall be made on the plat:

To (name of client), (name of lender, if known), (name of title insurance company, if known), (name of others as instructed by client):

This is to certify that this map or plat and the survey on which it is based

were made (i) in accordance with "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys," jointly established and adopted by ALTA, ACSM and NSPS in 1997, and includes Items of Table A thereof, and (ii) pursuant to the

Accuracy Standards (as adopted by ALTA and ACSM and in effect on the date of this certification) of a(n) [insert "Urban," "Suburban," "Rural," or "Mountain/Marshland" here] Survey.

Date: (signed) (seal)

Adopted by the American Land Title Association on September 27, 1997. Adopted by the Board of Direction, American Congress on Surveying and Mapping on April 10, 1997. Adopted by the Board of Directors, National Society of Professional Surveyors on April 8, 1997.

American Land Title Association,  
1828 L St., N.W., Suite 705  
Washington, D.C. 20036.

American Congress on Surveying and Mapping  
5410 Grosvenor Lane  
Bethesda, MD 20814

National Society of Professional Surveyors  
5410 Grosvenor Lane  
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# Classifications of ALTA/ACSM Land Title Surveys

## Introduction

These Accuracy Standards address Positional Uncertainty and Minimum Angle, Distance and Closure Requirements for ALTA-ACSM Land Title Surveys. In order to meet these standards, the Surveyor may either: (1) Apply the within table of "Minimum Angle, Distance and Closure Requirements for Survey Measurements Which Control Land Boundaries for ALTA-ACSM Land Title Surveys" to the measurements made on the survey or (2) Compute the Positional Uncertainty for the physical points on the survey to assure that those uncertainties do not exceed the Positional Tolerance for the specified Class of Survey.

The lines and corners on any property survey have uncertainty in location which is the result of (1) availability and condition of reference monuments, (2) occupation or possession lines as they may differ from record lines, (3) clarity or ambiguity of the record descriptions or plats of the surveyed tracts and its adjoiners and (4) Positional Uncertainty.

The first three sources of uncertainty must be weighed as evidence in the determination of where, in the professional surveyor's opinion, the boundary lines and corners should be placed. Positional Uncertainty is related to how accurately the surveyor is able to monument or report those positions.

Of these four sources of uncertainty, only Positional Uncertainty is controllable, although due to the inherent error in any measurement, it cannot be eliminated. The first three can be estimated based on evidence; Positional Uncertainty can be estimated using statistical means.

The surveyor should, to the extent necessary to achieve the standards contained herein, compensate or correct for systematic errors, including those associated with instrument calibration. The surveyor shall use appropriate error propagation and other measurement design theory to select the proper instruments, field procedures, geometric layouts and computational procedures to control and adjust random errors in order to achieve the allowable Positional Tolerance or required traverse closure.

If radial survey methods are used to locate or establish points on the survey, the surveyor shall apply appropriate procedures in order to assure that the allowable Positional Tolerance of such points is not exceeded.

Definitions:

"Positional Uncertainty" is the uncertainty in location, due to random errors in measurement, of any physical point on a property survey, based on the 95% confidence

level.

“Positional Tolerance” for a specified Class of Survey is the maximum acceptable amount of Positional Uncertainty for any physical point on a property survey relative to any other physical point on the survey, including lead-in courses.

## **Survey Classes by Land Use**

The degree of precision and accuracy necessary for a particular property survey shall be based on the intended use of the land. If the client does not provide information regarding the intended use, it shall be based on the present use of the land.

The following four survey classes for ALTA-ACSM Land Title Surveys are defined using land use classifications:

**Urban Surveys** - Surveys of land lying within or adjoining a city or town, and including commercial and industrial properties, condominiums, townhouses, apartments and other multi-unit developments, regardless of geographic location..

**Suburban Surveys** - Surveys of land lying outside urban areas and developed for single family residential use.

**Rural Surveys** - Surveys of land such as farms and other undeveloped land outside urban and suburban areas which may have a potential for future development.

**Mountain and Marshland Surveys** - Surveys of land normally lying in remote areas with difficult terrain and normally having a limited potential for development.

## **Computation of Positional Uncertainty**

The Positional Uncertainty of any physical survey monument on a survey, whether the location of that point was established using GPS or conventional surveying methods, may be computed using a minimally constrained, correctly weighted least squares adjustment of the points on the survey.

## **Application of Minimum Angle, Distance and Closure Requirements**

The combined precision of a survey can be statistically assured by dictating a combination of survey closure and specified procedures for a particular class of survey. ACSM, NSPS and ALTA have adopted specific procedures in order to assure the combined precision of a particular survey class. The statistical base for these specifications is on file at ACSM and available for inspection. The surveyor shall employ, in his or her judgement, proper field procedures, instrumentation and adequate survey personnel in order to achieve accuracies comparable to those adopted for a designated class of survey.

### Positional Tolerances for Classes of Survey

Urban Surveys	0.07 feet (or 20 mm) + 50 ppm
Suburban Surveys	0.13 feet (or 40 mm) + 100 ppm
Rural Surveys	0.26 feet (or 80 mm) + 200 ppm
Mountain Marshland Surveys	0.66 feet (or 200 mm) + 200 ppm

### Minimum Angle, Distance and Closure Requirements for Survey Measurements Which Control Land Boundaries for ALTA-ACSM Land Title Surveys (Note 1)

	Urban	Suburban	Rural	Mountain/Marshland
Direct Reading of Instrument (Note 2)	20" <1'>10"	20" <1'>10"	20" <1'>20"	1'<1'>1'
Instrument Reading Estimated (Note 3)	5"<0.1'>NA	10"<0.1'>NA	NA	NA
Number of Observations Per Station (4)	2 D&R	2 D&R	1 D&R	1D&R
Spread from Mean of D&R Not to Exceed (5)	5"<0.1'>5"	10"<0.2'>10"	20"<0.3'>20"	30"<0.5'>30"
Angle Closure Where N = No. of Stations Not to Exceed	10" $\sqrt{N}$	15" $\sqrt{N}$	20" $\sqrt{N}$	30" $\sqrt{N}$
Linear Closure (6)	1:15,000	1:10,000	1:7,500	1:5,000
Distance Measurement (7)	EDM or Doubletape With Steel tape	EDM or Steel tape	EDM or Steel tape	EDM or Steel tape
Minimum Length of Measurements (8), (9), (10)	(8) 81m, (9) 153m, (10) 20m	(8) 54m, (9) 102m, (10) 14m	(8) 40m, (9) 76m, (10) 10m	(8) 27m, (9) 51m, (10) 7m

Note (1) All requirements of each class must be satisfied in order to qualify for that particular class of survey. The use of a more precise instrument does not change the other requirements, such as number of angles turned, etc.

Note (2) Instrument must have a direct reading of at least the amount specified (not an estimated reading), i.e.: 10" = Micrometer reading theodolite, <1'> = Scale reading theodolite, **10"** (boldface) = Electronic reading theodolite, 20" (*italic*)= Micrometer reading theodolite, or a vernier reading transit.

Note (3) Instrument must have the capability of allowing an estimated reading below the direct reading to the specified reading.

Note (4) D & R means the Direct and Reverse positions of the instrument telescope, i.e., Urban Surveys require that two angles in the direct and two angles in the reverse position be measured and meaned.

Note (5) Any angle measured that exceeds the specified amount from the mean must be rejected and the set of angles re-measured.

Note (6) Ratio of closure after angles are balanced and closure calculated.

Note (7) All distance measurements must be made with a properly calibrated EDM or Steel tape, applying atmospheric, temperature, sag, tension, slope, scale factor and sea level corrections as necessary.

Note (8) EDM having an error of 5mm, independent of distance measured (Manufacturer's specifications).

Note (9) EDM having an error of 10mm, independent of distance measured (Manufacturer's specifications).

Note (10) Calibrated steel tape.

## Table A

### OPTIONAL SURVEY RESPONSIBILITIES AND SPECIFICATIONS

NOTE: The items of Table A must be negotiated between the surveyor and client. It may be necessary for the surveyor to qualify or expand upon the description of these items, e.g. in reference to Item 6, there may be a need for an interpretation of a restriction. The surveyor cannot make a certification on the basis of an interpretation.

If checked, the following optional items are to be included in the ALTA/ACSM LAND TITLE SURVEY:

1. \_\_\_ Monuments placed (or a reference monument or witness to the corner) at all major corners of the boundary of the property, unless already marked or referenced by an existing monument or witness to the corner.
2. \_\_\_ Vicinity map showing the property surveyed in reference to nearby highway(s) or major street intersection(s).
3. \_\_\_ Flood zone designation (with proper annotation based on Federal Flood Insurance Rate Maps or the state or local equivalent, by scaled map location and graphic plotting only.)
4. \_\_\_ Land area as specified by the client.
5. \_\_\_ Contours and the datum of the elevations.
6. \_\_\_ Identify, and show if possible, setback, height and bulk restrictions of record or disclosed by applicable zoning or building codes (in addition to those recorded in subdivision maps). If none, so state.
7. \_\_\_ (a) Exterior dimensions of all buildings at ground level  
\_\_\_ (b) Square footage of:  
\_\_\_(1) exterior footprint of all buildings, or gross floor area of all buildings, at ground level;  
\_\_\_(2) other areas to be defined by the client  
\_\_\_ (c) Height of all buildings above grade at a defined location.
8. \_\_\_ Substantial, visible improvements (in addition to buildings) such as signs, parking areas or structures, swimming pools, etc.

- 9. \_\_\_ Parking areas and, if striped, the striping and the type (eg. handicapped, motorcycle, regular, etc.) and number of parking spaces.
- 10. \_\_\_ Indication of access to a public way such as curb cuts, driveways marked.
- 11. \_\_\_ Location of utilities serving or existing on the property as evidenced by on-site observation or as determined by records provided by client, utility companies and other appropriate sources (with reference as to the source of information.)

For example:

- (a) Railroad tracks and sidings;
- (b) Manholes, catch basins, valve vaults or other surface indications of subterranean uses;
- (c) Wires and cables (including their function) crossing the surveyed premises, all poles on or within ten feet of the surveyed premises, and the dimensions of all crosswires or overhangs affecting the surveyed premises; and
- (d) Utility company installations on the surveyed premises.

- 12. \_\_\_ Governmental Agency survey-related requirements as specified by the client.

- 13. \_\_\_ Significant observations not otherwise disclosed.

- 14. \_\_\_ Observable evidence of earth moving work, building construction or building additions within recent months.

- 15. \_\_\_ Any changes in street right of way lines either completed or proposed, and available from the controlling jurisdiction. Observable evidence of recent street or sidewalk construction or repairs.

- 16. \_\_\_ Observable evidence of site use as a solid waste dump, sump or sanitary landfill.

- 17. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# Minimum Standard Detail Requirements and Classifications

for

## ALTA/ACSM LAND TITLE SURVEYS

as adopted by

American Land Title Association

and

American Congress on Surveying & Mapping

1992



It is recognized that members of the American Land Title Association (ALTA) have specific needs, peculiar to title insurance matters, which require particular information for acceptance by title insurance companies when said companies are asked to insure title to land without exceptions as to the many matters which might be discoverable from survey and inspection and not be evidenced by the public records. In the general interest of the public, the surveying profession, title insurers and abstracters, ALTA and the American Congress on Surveying and Mapping (ACSM) jointly promulgate and set forth such details and criteria for standards. It is understood that local variations may require local adjustments to suit local situations, and often must be applied. It is recognized that title insurance companies are entitled to rely on the survey furnished to them being of the appropriate professional quality, both as to completeness and as to accuracy. It is equally recognized that for the performance of a survey, the surveyor will be provided with appropriate data which can be relied upon in the preparation of the survey.

For a survey of real property and the plat or map of the survey to be acceptable to a title insurance company for purposes of insuring title to said real property free and clear of survey matters (except those matters disclosed by the survey and indicated on the plat or map), certain specific and pertinent information shall be presented for the distinct and clear understanding between the client (insured), the title insurance company (insurer), and the surveyor (the person professionally responsible for the survey). These requirements are:

1. The client shall request the survey or arrange for the survey to be requested and shall provide a written authorization to proceed with the survey from the person responsible for paying for the survey. The request shall specify that an Urban, Suburban, Rural or Mountain and Marshland "ALTA/ACSM LAND TITLE SURVEY" is required, meeting the then-current accuracy standards jointly adopted by ALTA and ACSM. The request shall also designate which of the optional items listed in Table A are to be incorporated. The request shall set forth the record description of the property. The record description of the property, any record easements benefitting the property, the record easements or servitudes and covenants affecting the property ("Record Documents"), the names and

deed data of all adjacent owners, as available, and any other documents containing desired appropriate information affecting the property being surveyed and to which the survey shall make reference shall be provided to the surveyor for notation on the plat or map of survey.

2. The plat or map of such survey shall bear the name, address, telephone number, and signature of the professional land surveyor who made the survey, his or her official seal and registration number, the date the survey was completed and the dates of all revisions, and the caption "ALTA/ACSM Land Title Survey" with the certification set forth in paragraph 8.
3. An "ALTA/ACSM LAND TITLE SURVEY" shall be an Urban, Suburban, Rural or Mountain and Marshland Survey in accordance with the then-current "Classification and Specifications for Cadastral Surveys" ("Accuracy Standards") as adopted, from time to time, by the American Congress on Surveying and Mapping and the American Land Title Association and incorporated herein by reference.
4. On the plat or map of an "ALTA/ACSM LAND TITLE SURVEY," the survey boundary shall be drawn to a convenient scale, with that scale clearly indicated. A graphic scale, shown in feet or meters or both, shall be included. A north arrow shall be shown and when practicable, the plat or map of survey shall be oriented so that north is at the top of the drawing. Symbols or abbreviations used shall be identified on the face of the plat or map by use of a legend or other means. If necessary for clarity, supplementary or exaggerated diagrams shall be presented accurately on the plat or map. The plat or map shall be a minimum size of 8 1/2 by 11 inches.
5. The survey shall be performed on the ground and the plat or map of an "ALTA/ACSM LAND TITLE SURVEY" shall contain, in addition to the required items already specified above, the following applicable information:
  - (a) All data necessary to indicate the mathematical dimensions and relationships of the boundary represented, with angles given directly or by bearings, and with the length and radius of each curve, together with elements necessary to mathematically define each curve. The point of beginning of the surveyor's description shall be shown as well as the remote

point of beginning if different. A bearing base shall refer to some well-fixed bearing line, so that the bearings may be easily re-established. All bearings around the boundary shall read in a clockwise direction wherever possible. The North arrow shall be referenced to its bearing base and should that bearing base differ from record title, that difference shall be noted.

- (b) When record bearings or angles or distances differ from measured bearings, angles or distances, both the record and measured bearings, angles, and distances shall be clearly indicated. If the record description fails to form a mathematically closed figure, the surveyor shall so indicate.
- (c) Measured and record distances from corners of parcels surveyed to the nearest right-of-way lines of streets in urban or suburban areas, together with recovered lot corners and evidence of lot corners, shall be noted. The distances to the nearest intersecting street shall be indicated and verified. Names and widths of streets and highways abutting the property surveyed and widths of rights of way shall be given. Any use contrary to the above shall be noted. Observable evidence of access (or lack thereof) to such abutting streets or highways shall be indicated. Observable evidence of private roads shall be so indicated. Streets abutting the premises, which have been described in Record Documents, but not physically opened, shall be shown and so noted.
- (d) The identifying titles of all recorded plats, filed maps, right of way maps, or similar documents which the survey represents, wholly or in part, shall be shown with their appropriate recording data, filing dates and map numbers, and the lot, block, and section numbers or letters of the surveyed premises. Names of adjoining owners as they appear of record and recorded lot or parcel numbers, recording information identifying the current description of record and similar information, where appropriate, shall be shown. The survey shall indicate platted setback or building restriction lines which have been recorded in subdivision plats or which appear in a Record Document which has been delivered to the surveyor. Parcel lines shall clearly indicate contiguity, gores, and overlaps. Where only a part of a recorded lot or parcel is included in the survey, the balance of the lot or parcel shall be indicated.
- (e) All evidence of monuments shall be shown and noted to indicate which were found and which were placed. All evidence of monuments found beyond the surveyed premises on which establishment of the corners of the surveyed premises are dependent, and their application related to the survey shall be indicated.
- (f) The character of any and all evidence of possession shall be stated and the location of such evidence carefully given in relation to both the measured boundary lines and those established by the record. An absence of notation on the survey shall be presumptive of no observable evidence of possession.
- (g) The location of all buildings upon the plot or parcel shall be shown and their locations defined by measurements perpendicular to the boundaries. If there are no buildings erected on the property being surveyed, the plat or map shall bear the statement, "No buildings." Proper street numbers shall be shown

where available.

- (h) All easements evidenced by a Record Document which have been delivered to the surveyor shall be shown, both those burdening and those benefitting the property surveyed, indicating recording information. If such an easement cannot be located, a note to this effect shall be included. Observable evidence of easements and/or servitudes of all kinds, such as those created by roads; rights-of-way; water courses; drains; telephone, telegraph, or electric lines; water, sewer, oil or gas pipelines on or across the surveyed property and on adjoining properties if they appear to affect the surveyed property, shall be located and noted. If the surveyor has knowledge of any such easements and/or servitudes, not observable at the time the present survey is made, such lack of observable evidence shall be noted. Surface indications, if any, of underground easements and/or servitudes shall also be shown.
  - (i) The character and location of all walls, buildings, fences, and other visible improvements within five feet of each side of the boundary lines shall be noted. Physical evidence of all encroaching structural appurtenances and projections, such as fire escapes, bay windows, windows and doors that open out, flue pipes, stoops, eaves, cornices, areaways, steps, trim, etc., by or on adjoining property or on abutting streets, on any easement or over setback lines shall be indicated with the extent of such encroachment or projection. If the client wishes to have additional information with regard to appurtenances such as whether or not such appurtenances are independent, division, or party walls and are plumb, the client will assume the responsibility of obtaining such permissions as are necessary for the surveyor to enter upon the properties to make such determinations.
  - (j) Driveways and alleys on or crossing the property must be shown. Where there is evidence of use by other than the occupants of the property, the surveyor must so indicate on the plat or map. Where driveways or alleys on adjoining properties encroach, in whole or in part, on the property being surveyed, the surveyor must so indicate on the plat or map with appropriate measurements.
  - (k) As accurately as the evidence permits, the location of cemeteries and burial grounds
    - (i) disclosed in the process of researching title to the premises or
    - (ii) observed in the process of performing the field work for the survey, shall be shown.
  - (l) Ponds, lakes, springs, or rivers bordering on or running through the premises being surveyed shall be shown.
6. As a minimum requirement, the surveyor shall furnish two sets of prints of the plat or map of survey to the title insurance company or the client. If the plat or map of survey consists of more than one sheet, the sheets shall be numbered, the total number of sheets indicated and match lines be shown on each sheet. The prints shall be on durable and dimensionally stable material of a quality standard acceptable to the title insurance company. At least two copies of the boundary description prepared from the survey shall be similarly furnished by the surveyor and shall be on the face of the plat or map of survey, if practicable, or otherwise attached to and incorporated in the plat or map. Reference to date of the

"ALTA/ACSM LAND TITLE SURVEY," surveyor's file number (if any), political subdivision, section, township and range, along with appropriate aliquot parts thereof, and similar information shown on the plat or map of survey shall be included with the boundary description.

7. Water boundaries necessarily are subject to change due to erosion or accretion by tidal action or the flow of rivers and streams. A realignment of water bodies may also occur due to many reasons such as deliberate cutting and filling of bordering lands or by avulsion. Recorded surveys of natural water boundaries are not relied upon by title insurers for location of title.

When a property to be surveyed for title insurance purposes contains a natural water boundary, the surveyor shall measure the location of the boundary according to appropriate surveying methods and note on the or map the date of the measurement and the caveat that the boundary is subject to change due to natural causes and that it may or may not represent the actual location of the limit of title. When the surveyor is aware of changes in such boundaries, the extent of those changes shall be identified.

8. When the surveyor has met all of the minimum standard detail requirements for an ALTA/ACSM Land Title Survey, the following certification shall be made on the plat:

To (name of client), (name of lender, if known), (name

of title insurance company, if known), (name of others as instructed by client):

This is to certify that this map or plat and the survey on which it is based were made (i) in accordance with "Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys," jointly established and adopted by ALTA and ACSM in 1992, and includes Items \_\_\_ of Table A thereof, and (ii) pursuant to the Accuracy Standards (as adopted by ALTA and ACSM and in effect on the date of this certification) of a(n) [insert "Urban," "Suburban," "Rural," or "Mountain/Marshland" here] \_\_\_\_\_ Survey.

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

(signed) \_\_\_\_\_ (seal)

Registration No.

Adopted by the American Land Title Association on October 17, 1992.

Adopted by the Board of Direction, American Congress on Surveying and Mapping on November 11, 1992.

American Land Title Association, 1828 L St., N.W., Suite 705, Washington, D.C. 20036.

American Congress on Surveying and Mapping, 5410 Grosvenor Lane, Bethesda, MD 20814.

## TABLE A OPTIONAL SURVEY RESPONSIBILITIES AND SPECIFICATIONS

NOTE: The items of Table A must be negotiated between the surveyor and client. It may be necessary for the surveyor to qualify or expand upon the description of these items, e.g., in reference to Item 6, there may be a need for an interpretation of a restriction. The surveyor cannot make a certification on the basis of an interpretation.

If checked, the following optional items are to be included in the ALTA/ACSM LAND TITLE SURVEY:

1.  Monuments placed (or a reference monument or witness to the corner) at all major corners of the boundary of the property, unless already marked or referenced by an existing monument or witness to the corner.
2.  Vicinity map showing the property surveyed in reference to nearby highway(s) or major street intersection(s).
3.  Flood zone designation (with proper annotation based on Federal Flood Insurance Rate Maps or the state or local equivalent, by scaled map location and graphic plotting only).
4.  Land area as specified by the client.
5.  Contours and the datum of the elevations.
6.  Identify, and show if possible, setback, height and bulk restrictions of record or disclosed by applicable zoning or building codes (in addition to those recorded in subdivision maps). If none, so state.
7.  (a) Exterior dimensions of all buildings at ground level  
(b) Square footage of:
  - (1) exterior footprint of all buildings, or gross floor area of all buildings, at ground level
  - (2) other areas to be defined by the client
- (c) Height of all buildings above grade at a defined location.
8.  Substantial, visible improvements (in addition to buildings) such as signs, parking areas or structures, swimming pools, etc.
9.  Parking areas and, if striped, the striping and the type (e.g., handicapped, motorcycle, regular, etc.) and number of parking spaces.
10.  Indication of access to a public way such as curb cuts, driveways marked.
11.  Location of utilities serving or existing on the property as evidenced by on-site observation or as determined by records provided by client, utility companies and other appropriate sources (with reference as to the source of information) (for example):
  - (a) railroad tracks and sidings;
  - (b) manholes, catch basins, valve vaults or other surface indications of subterranean uses;
  - (c) wires and cables (including their function) crossing the surveyed premises, all poles on or within ten feet of the surveyed premises, and the dimensions of all crosswires or overhangs affecting the surveyed premises; and
  - (d) utility company installations on the surveyed premises.
12.  Governmental Agency survey-related requirements as specified by the client.
13.  Significant observations not otherwise disclosed.
14.  \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## CLASSIFICATIONS OF ALTA-ACSM LAND TITLE SURVEYS

### Introduction

The degree of precision and accuracy necessary for a particular cadastral survey should be based on the intended use of the land without regard to its present use, provided the surveyor has knowledge of the intended use. If the surveyor has no such knowledge, the degree of precision may be based on the present use of the land.

Four general survey classes are defined using various state regulations and accepted practices. These general classes are listed and defined below.

### Survey Classes By Land Use

#### URBAN SURVEYS

Surveys of land lying within or adjoining a city or town. This would also include the surveys of commercial and industrial properties, condominiums, townhouses, apartments and other multi-unit developments, regardless of geographic location.

#### SUBURBAN SURVEYS

Surveys of land lying outside urban areas. This land is used almost exclusively for single family residential use or residential subdivisions.

#### RURAL SURVEYS

Surveys of land such as farms and other undeveloped land outside the suburban areas which may have a potential for future development.

#### MOUNTAIN and MARSHLAND SURVEYS

Surveys of lands which normally lie in remote areas with difficult terrain and usually have limited potential for development.

Should these above cited specifications be in conflict with state laws, rules or regulations, the more stringent requirements must be followed.

The combined precision of a survey can be statistically assured by dictating a combination of survey closure and specified procedures for a particular survey class. ACSM and ALTA have adopted specific procedures for control surveys in order to assure the combined precision of a particular survey class. The statistical base for these specifications is on file at ACSM and available for inspection. The surveyor shall employ, in his or her judgement, proper field procedures, instrumentation and adequate survey personnel in order to achieve accuracies comparable to those adopted by ACSM for a designated class of survey.

## AMERICAN CONGRESS ON SURVEYING and MAPPING

### MINIMUM ANGLE, DISTANCE and CLOSURE REQUIREMENTS FOR CLASSES OF SURVEYS

(1)

SURVEY CLASS	DIR. READING OF INSTRUMENT (2)	INSTRUMENT READING ESTIMATED (3)	NUMBER OF OBSERVATIONS PER STATION (4)	SPREAD FROM MEAN OF D&R NOT TO EXCEED (5)	ANGLE CLOSURE WHERE N = NO. OF STATIONS NOT TO EXCEED	LINEAR CLOSURE (6)	DISTANCE MEASUREMENT (7)	MINIMUM LENGTH OF MEASUREMENTS (8), (9), (10)
URBAN	20° <1'> <span style="border: 1px solid black; padding: 0 2px;">10"</span>	5° <0.1'> N.A.	2 D&R	5° <0.1'> <span style="border: 1px solid black; padding: 0 2px;">5"</span>	10° $\sqrt{N}$	1:15,000	EDM or Doubletape with steel tape	(8) 81m, (9) 153m (10) 20m
SUBURBAN	20° <1'> <span style="border: 1px solid black; padding: 0 2px;">10"</span>	10° <0.1'> N.A.	2 D&R	10° <0.2'> <span style="border: 1px solid black; padding: 0 2px;">10"</span>	15° $\sqrt{N}$	1:10,000	EDM or steel tape	(8) 54m, (9) 102m (10) 14m
RURAL	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">20°</span> <1'> <span style="border: 1px solid black; padding: 0 2px;">20"</span>	N.A.	1 D&R	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">20°</span> <0.3'> <span style="border: 1px solid black; padding: 0 2px;">20"</span>	20° $\sqrt{N}$	1:7,500	EDM or steel tape	(8) 40m, (9) 76m (10) 10m
MOUNTAIN/ MARSHLAND	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">1'</span> <1'> <span style="border: 1px solid black; padding: 0 2px;">1'</span>	N.A.	1 D&R	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">30°</span> <0.5'> <span style="border: 1px solid black; padding: 0 2px;">30"</span>	30° $\sqrt{N}$	1:5,000	EDM or steel tape	(8) 27m, (9) 51m (10) 7m

Note (1) All requirements of each class must be satisfied in order to qualify for that particular class of survey. The use of a more precise instrument does not change the other requirements, such as number of angles turned, etc.

Note (2) Instrument must have a direct reading of at least the amount specified (not an estimated reading), i.e.: 10" = Micrometer reading theodolite, <1'> = Scale reading theodolite, 10" = Electronic reading theodolite, 20° = Micrometer reading theodolite, or a vernier reading transit.

Note (3) Instrument must have the capability of allowing an estimated reading below the direct reading to the specified reading.

Note (4) D & R means the Direct and Reverse positions of the instrument telescope, i.e., Urban Surveys require that two angles in the direct and two angles in the reverse position be measured and meaned.

Note (5) Any angle measured that exceeds the specified amount from the mean must be rejected and the set of angles re-measured.

Note (6) Ratio of closure after angles are balanced and closure calculated.

Note (7) All distance measurements must be made with a properly calibrated EDM or Steel tape, applying atmospheric, temperature, sag, tension, slope, scale factor and sea level corrections as necessary.

Note (8) EDM having an error of 5mm, independent of distance measured (Manufacturer's specifications)

Note (9) EDM having an error of 10mm, independent of distance measured (Manufacturer's specifications)

Note (10) Calibrated steel tape.

Minimum Standard  
Detail Requirements  
for  
ALTA/ACSM  
LAND TITLE SURVEYS



as  
adopted  
by



American Land Title Association  
and  
American Congress on Surveying & Mapping  
1988

# Minimum Standard Detail Requirements

FOR

## ALTA/ACSM Land Title Surveys



as adopted by

### American Land Title Association and American Congress On Surveying & Mapping

It is recognized that members of the American Land Title Association (ALTA) have specific problems, peculiar to title insurance matters, which require particular information in detail and exactness for acceptance by title insurance companies when said companies are asked to insure title to land without exceptions as to the many matters which might be discoverable from survey and inspection and not be evidenced by the public records. In the general interest of the public, the surveying profession, title insurers and abstracters, the American Land Title Association and the American Congress on Surveying and Mapping jointly promulgate and set forth such details and criteria for exactness. It is understood that local variations may require local adjustments to suit local situations, and often must be applied. It is recognized equally that title insurance companies are entitled to, and should be able to, rely on the evidence furnished to them being of the appropriate professional quality, both as to completeness and as to accuracy; that it is equally recognized that for the performance of a survey, the surveyor will be provided with appropriate data which can be relied upon in the preparation of the survey.

For a survey of real property and the plat or map of the survey to be acceptable to a title insurance company for purposes of insuring title to said real property free and clear of survey questions (except those questions disclosed by the survey and indicated on the plat or map), certain specific and pertinent information shall be presented for the distinct and clear understanding between the client (in-

sured), the title insurance company (insurer), and the surveyor (the person professionally responsible for the survey). These requirements are:

(1) The client, at the time of ordering a survey, shall notify the surveyor that an "ALTA/ACSM LAND TITLE SURVEY" is required, meeting the accuracy requirements of a Class A, B, C, or D Survey as defined in Tables 1 and 2 herein, shall designate which of the additional requirements listed on Table 3 must be included, and shall furnish to the surveyor the record description of the property, documents reflecting any record easements benefitting the property, and the record easements or servitudes and covenants affecting the property ("Record Documents") to which the "ALTA/ACSM LAND TITLE SURVEY" shall subsequently make reference. The names and deed data of all adjacent owners as available, and all pertinent information affecting the property being surveyed, shall be transmitted to the surveyor for notation on the plat or map of the survey.

(2) The plat or map of such survey shall bear the name, address, telephone number, and signature of the professional land surveyor who made the survey, his or her official seal and registration number, the date the survey was completed and the dates of all revisions, and the caption "ALTA/ACSM Land Title Survey" with the certification set forth in paragraph 8.

(3) An "ALTA/ACSM LAND TITLE SURVEY" shall be Class A, B, C, or D, in accor-

dance with the "Classification and Specifications for Cadastral Surveys" as adopted by the American Congress on Surveying and Mapping on March 21, 1986, incorporated herein as Tables 1 and 2. Should these above cited specifications be in conflict with state laws, rules or regulations, the more stringent requirements must be followed.

(4) On the plat or map of an "ALTA/ACSM LAND TITLE SURVEY," the survey boundary shall be drawn to a convenient scale, with that scale clearly indicated. A graphic scale, shown in feet or meters or both, will be included. A north arrow shall be shown and when practicable, the plat or map of survey shall be oriented so that North is at the top of the drawing. If required, supplementary or exaggerated diagrams shall be presented accurately on the plat or map. No plat or map drawing less than the minimum size of 8 1/2 by 11 inches will be acceptable.

(5) The survey shall be performed on the ground and the plat or map of an "ALTA/ACSM LAND TITLE SURVEY" shall contain, in addition to the required items already specified above, the following applicable information:

- (a) All data necessary to indicate the mathematical dimensions and relationships of the boundary represented, with angles given directly or by bearings, and with the length of each curve, together with its radius, chord, and chord bearing shown. The point of beginning of the surveyor's description shall be shown as well as the remote point of beginning if different. A bearing base shall refer to some well-fixed bearing line, so that the bearings may be easily re-established. All bearings around the boundary shall read in a clockwise direction wherever possible. The North arrow shall be referenced to its bearing base and should that bearing base differ from record title, that difference shall be noted.
- (b) When record bearings or angles or distances differ from measured bearings, angles or distances, both the record and measured bearings, angles, and distances shall be clearly indicated. If the record description fails to form a mathematically closed figure, the surveyor shall so indicate.
- (c) Measured and record distances from corners of parcels surveyed to the nearest right-of-way lines of streets in urban or suburban areas, together

with recovered lot corners and evidence of lot corners, shall be noted. The distances to the nearest intersecting street shall be indicated and verified. Names and widths of streets and highways abutting the property surveyed and the widths of rights of way shall be given. Any use contrary to the above shall be noted. Access (or lack thereof) to such abutting streets or highways shall be indicated. Private roads shall be so indicated.

- (d) The identifying title of all record plats or filed maps which the survey represents, wholly or in part, shall be shown with their filing dates and map numbers, and the lot, block, and section numbers or letters of the surveyed premises. Names of adjoining owners and/or recorded lot or parcel numbers, recording information for last available conveyance, and similar information, where needed, shall be shown. The survey shall indicate set back or building restriction lines which have been platted and recorded in subdivision plats or which appear in a Record Document which has been delivered to the surveyor. Parcel lines shall clearly indicate contiguity, gores, and/or overlaps. Where only a part of a recorded lot or parcel is included in the survey, the balance of the lot or parcel shall be indicated.
- (e) All evidence of monuments found or placed, shall be shown and noted to indicate which were found and which were placed. All evidence of monuments found beyond the surveyed premises, on which establishment of the corners of the surveyed premises are dependent, shall be indicated. The character of any and all evidence of possession shall be stated and the location of such evidence carefully given in relation to both the measured boundary lines, as well as those established by the record description. An absence of notation on the survey shall be presumptive of no physical evidence of possession along the record line.
- (f) The location of all buildings upon the plot or parcel shall be shown and their locations defined by measurements perpendicular to the boundaries. If there are no buildings erected on the property being surveyed, the plat or map shall bear the statement, "No buildings." Proper street numbers

shall be shown where available. All easements evidenced by a Record Document which have been delivered to the surveyor shall be shown, both those burdening and those benefitting the property surveyed, indicating recording information. If such an easement cannot be located, a note to this effect should be included. Observable evidence of easements and/or servitudes of all kinds, such as those created by roads; rights-of-way; water courses; drains; telephone, telegraph, or electric lines; water, sewer, oil or gas pipelines on or across the surveyed property and on adjoining properties if they appear to affect the surveyed property, shall be located and noted. If the surveyor has knowledge of any such easements and/or servitudes, not observable at the time the present survey is made, such lack of observable evidence shall be noted. Surface indications, if any, of underground easements and/or servitudes shall also be shown.

- (g) The character and location of all walls, buildings, or fences within two feet of either side of the boundary lines shall be noted. Physical evidence of all encroaching structural appurtenances and projections, such as fire escapes, bay windows, windows and doors that open out, flue pipes, stoops, eaves, cornices, areaways, steps, trim, etc., by or on adjoining property or on abutting streets, on any easement or over setback lines shall be indicated with the extent of such encroachment or projection. If the client wishes to have additional information with regard to appurtenances such as whether or not such appurtenances are independent, division, or party walls and are plumb, the client will assume the responsibility of obtaining such permissions as are necessary for the surveyor to enter upon the properties to make such determinations.
- (h) Driveways and alleys on or crossing the property must be shown. Where there is evidence of use by other than the occupants of the property, the surveyor must so indicate on his plan. Where driveways or alleys on adjoining properties encroach, in whole or in part, on the property being surveyed, the surveyor must so indicate on his plans with appropriate measurements.

- (i) Cemeteries and burial grounds disclosed in the process of surveying or searching the title to the premises shall be shown by actual location if known.
- (j) Ponds, lakes, springs, or rivers bordering on or running through the premises being surveyed shall be shown by actual location.
- (k) Streets abutting the premises, which have been legally defined but not physically opened, shall be shown and so noted.

(6) As a minimum requirement, the surveyor shall furnish two sets of prints of the plat or map of survey to the title insurance company or the client. If the plat or map of survey consists of more than one sheet, the sheets shall be numbered, the total number of sheets indicated and match lines be shown on each sheet. The prints shall be on durable and dimensionally stable material of a quality standard acceptable to the title insurance company. At least two copies of the boundary description prepared from the survey shall be similarly furnished by the surveyor and shall be on the face of the plat or map of survey, if practicable, or otherwise attached to and incorporated in the plat or map. Reference to date of the "ALTA/ACSM LAND TITLE SURVEY", surveyor's file number (if any), political subdivision, section, township and range, along with appropriate aliquot parts thereof, and similar information shown on the plat or map of survey shall be included with the boundary description.

(7) Water boundaries are subject to change due to erosion or accretion by tidal action or the flow of rivers and streams. A realignment of water bodies may also occur due to many reasons such as deliberate cutting and filling of bordering lands or by evulsion. Recorded surveys of natural water boundaries are not relied upon by title insurers for location of title.

When a property to be surveyed for title insurance purposes contains a natural water boundary, the surveyor shall measure the location of the boundary according to appropriate surveying methods and note on the plan the date of the measurement and the caveat that the boundary is subject to change due to natural causes and that it may or may not represent the actual location of the limit of title.

(8) When the surveyor has met all of the minimum standard detail requirements for an ALTA/ACSM Land Title Survey, he shall make the following certification on the plat:

To (name of client) and (name of title insurance company, if known):

This is to certify that this map or plat and the survey on which it is based were made in accordance with "Minimum Standard Detail requirements for ALTA/ACSM Land Title Surveys," jointly established and adopted by ALTA and ACSM in ; meets the accuracy requirements of a Class \_\_\_\_ Survey, as defined therein, and includes Items of Table 3 thereof.

(signed) \_\_\_\_\_ (seal)  
Registration No.

Adopted by the Board of Direction, American Congress on Surveying and Mapping on September 16, 1988.

Adopted by the American Land Title Association on October 19, 1988.

## American Congress On Surveying and Mapping

*Classification and Specifications  
For Cadastral Surveys*

### INTRODUCTION

The degree of precision necessary for a particular cadastral survey should be based on the intended use of the land parcel, without regard to its present use, provided the surveyor has knowledge of the intended use.

Four general survey classes are defined using various state regulations and accepted practices. These general classes are listed and defined in table 1 below.

The combined precision of a survey can be statistically assured by dictating a combination of survey closure and specified procedures for a particular survey class. Table 2 lists the closures and specified procedures to follow in order to assure the combined precision of a particular survey class. The statistical base for these specifications is on file at the ACSM and available for inspection.

TABLE 1

### SURVEY CLASSES BY LAND USE

#### CLASS A—URBAN SURVEYS

Surveys of land lying within or adjoining a City or Town. This would also include the surveys of Commercial and Industrial properties, Condominiums, Townhouses, Apartments and other multiunit developments, regardless of geographic location.

#### CLASS B—SUBURBAN SURVEYS

Surveys of land lying outside urban areas. This land is used almost exclusively for single family residential use or residential subdivisions.

#### CLASS C—RURAL SURVEYS

Surveys of land such as farms and other undeveloped land outside the suburban areas which may have a potential for future development.

#### CLASS D—MOUNTAIN and MARSHLAND SURVEYS

Surveys of lands which normally lie in remote areas with difficult terrain and usually have limited potential for development.

AMERICAN CONGRESS on SURVEYING and MAPPING

TABLE 2  
MINIMUM ANGLE, DISTANCE and CLOSURE REQUIREMENTS FOR CLASSES OF SURVEYS  
(1)

SURVEY CLASS	DIR. READING OF INSTRUMENT (2)	INSTRUMENT READING ESTIMATED (3)	NUMBER OF OBSERVATIONS PER STATION (4)	SPREAD FROM MEAN OF D&R NOT TO EXCEED (5)	ANGLE CLOSURE WHERE N = NO. OF STATIONS NOT TO EXCEED	LINEAR CLOSURE (6)	DISTANCE MEASUREMENT (7)	MINIMUM LENGTH OF MEASUREMENTS (8), (9), (10)
A	20" <1'> <span style="border: 1px solid black; padding: 0 2px;">10"</span>	5" <0.1'> N.A.	2 D&R	5" <0.1'> <span style="border: 1px solid black; padding: 0 2px;">5"</span>	10" $\sqrt{N}$	1:15,000	EDM or Doubletape with steel tape	(8) 81m, (9) 153m (10) 20m
B	20" <1'> <span style="border: 1px solid black; padding: 0 2px;">10"</span>	10" <0.1'> N.A.	2 D&R	10" <0.2'> <span style="border: 1px solid black; padding: 0 2px;">10"</span>	15" $\sqrt{N}$	1:10,000	EDM or steel tape	(8) 54m, (9) 102m (10) 14m
C	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">20"</span> <1'> <span style="border: 1px solid black; padding: 0 2px;">20"</span>	N.A.	1 D&R	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">20"</span> <0.3'> <span style="border: 1px solid black; padding: 0 2px;">20"</span>	20" $\sqrt{N}$	1:7,500	EDM or steel tape	(8) 40m, (9) 76m (10) 10m
D	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">1"</span> <1'> <span style="border: 1px solid black; padding: 0 2px;">1"</span>	N.A.	1 D&R	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">30"</span> <0.5'> <span style="border: 1px solid black; padding: 0 2px;">30"</span>	30" $\sqrt{N}$	1:5,000	EDM or steel tape	(8) 27m, (9) 51m (10) 7m

Note (1) All requirements of each class must be satisfied in order to qualify for that particular class of survey. The use of a more precise instrument does not change the other requirements, such as number of angles turned, etc.

Note (2) Instrument must have a direct reading of at least the amount specified (not an estimated reading), i.e.; 10" = Micrometer reading theodolite, <1'> = Scale reading theodolite, 10" = Electronic reading theodolite, 20" = Micrometer reading theodolite, or a vernier reading transit.

Note (3) Instrument must have the capability of allowing an estimated reading below the direct reading to the specified reading.

Note (4) D & R means the Direct and Reverse positions of the instrument telescope, i.e., Class A requires that two angles in the direct and two angles in the reverse position be measured and meaned.

Note (5) Any angle measured that exceeds the specified amount from the mean must be rejected and the set of angles re-measured.

Note (6) Ratio of closure after angles are balanced and closure calculated.

Note (7) All distance measurements must be made with a properly calibrated EDM or Steel tape, applying atmospheric, temperature, sag, tension, slope, scale factor and sea level corrections as necessary.

Note (8) EDM having an error of 5mm, independent of distance measured (Manufacturers specification)

Note (9) EDM having an error of 10mm, independent of distance measured (Manufacturers specifications)

Note (10) Calibrated steel tape.

TABLE 3

ADDITIONAL SURVEY REQUIREMENTS

If checked, the following additional items shall be shown on the ALTA/ACSM LAND TITLE SURVEY:

- 1. \_\_\_\_\_ Monuments placed (or a reference monument) at all major corners of the boundary of the property.
- 2. \_\_\_\_\_ Legend of all symbols and abbreviations used.
- 3. \_\_\_\_\_ Vicinity map showing the property surveyed in reference to nearby highway(s) or major street intersection(s).
- 4. \_\_\_\_\_ Flood zone designation.
- 5. \_\_\_\_\_ Land area.
- 6. \_\_\_\_\_ Contours.
- 7. \_\_\_\_\_ Setback, height and bulk restrictions of record or disclosed by applicable zoning or building codes (in addition to those recorded in subdivision maps). If none, so state.
- 8. \_\_\_\_\_ Square footage of all buildings.
- 9. \_\_\_\_\_ All improvements (in addition to buildings, such as signs, parking areas or structures, swimming pools, etc.).
- 10. \_\_\_\_\_ Parking areas and, if striped, the striping and the number of parking spaces.
- 11. \_\_\_\_\_ Indication of access to a public way such as curb cuts, driveways marked.
- 12. \_\_\_\_\_ Location of all utilities serving the property, including without limitation:
  - (a) all railroad tracks and sidings;

- (b) all manholes, catch basins, valve vaults or other surface indications of subterranean uses;
  - (c) all wires and cables (including their function) crossing the surveyed premises, all poles on or within ten feet of the surveyed premises, and the dimensions of all cross wires or overhangs affecting the surveyed premises; and
  - (d) all utility company installations on the surveyed premises.
- 13. \_\_\_\_\_ Observable evidence of cemeteries.
  - 14. \_\_\_\_\_ Governmental Agency Requirements:
    - Department of Housing and Urban Development
    - Veteran's Administration
    - Other
  - 15. \_\_\_\_\_ Significant observations not otherwise disclosed.
  - 16. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

NOTE: The items of Table 3 must be negotiated between the surveyor and client. It may be necessary for the surveyor to qualify or expand upon the description of these items, e.g. in reference to Item 7, there may be a need for an interpretation of a restriction. The surveyor cannot make a certification on the basis of an interpretation.



# Minimum Standard Detail Requirements

FOR

## ALTA/ACSM Land Title Surveys

as adopted by

American Land Title Association

and

American Congress On Surveying & Mapping



It is recognized that members of the American Land Title Association (ALTA) have specific problems, peculiar to title insurance matters, which require particular information in detail and exactness for acceptance by title insurance companies when said companies are asked to insure title to land without exceptions as to the many matters which might be discoverable from survey and inspection and not be evidenced by the public records. In the general interest of the public, the surveying profession, title insurers and abstracters, the American Land Title Association and the American Congress on Surveying and Mapping (ACSM) jointly promulgate and set forth such details and criteria for exactness. It is understood that local variations may require local adjustments to suit local situations, and often must be applied. It is recognized equally that title insurance companies are entitled to, and should be able to, rely on the evidence furnished to them being of the appropriate professional quality, both as to completeness and as to accuracy; that it is equally recognized that for the performance of a survey, the surveyor will be provided with appropriate data which can be relied upon in the preparation of the survey.

For a survey of real property and the plat or map of the survey to be acceptable to a title insurance company for purposes of insuring title to said real property free and clear of survey questions (except those questions disclosed by the survey and indicated on the plat or map), certain specific and pertinent information shall be presented for the distinct and clear understanding between the client (insured), the title insurance company (insurer), and the sur-

veyor (the person professionally responsible for the survey). These requirements are:

(1) The client, at the time of ordering a survey, shall notify the surveyor that an "ALTA/ACSM LAND TITLE SURVEY" is required, meeting the accuracy requirements of a Class A, B, C, or D Survey as defined herein, and shall furnish to the surveyor the record description of the property and the record easements or servitudes and covenants affecting the property to which the "ALTA/ACSM LAND TITLE SURVEY" shall subsequently make reference. The names and deed data of all adjacent owners as available, and all pertinent information affecting the property being surveyed, shall be transmitted to the surveyor for notation on the plat or map of the survey. If the area of the parcel is required, the client shall so indicate to the surveyor. If the plat or map of survey is to include thereon a note as to zoning classification of the property, the client shall so clearly indicate to the surveyor. If applicable, the surveyor shall be informed by the client of any survey requirements of the Department of Housing and Urban Development, the Veterans Administration or any other government agency or entity.

(2) The plat or map of such survey shall bear the name, address, and signature of the professional land surveyor who made the survey, his or her official seal and registration number, the date of the survey, and the caption "ALTA/ACSM Land Title Survey" with the certification set forth in paragraph 8.

(3) An "ALTA/ACSM LAND TITLE SURVEY" shall be Class A, B, C, or D, in accor-

dance with the "Classification and Specifications for Cadastral Surveys" as adopted by the American Congress on Surveying and Mapping on March 21, 1986, and attached hereto and incorporated herein. Should these above cited specifications be in conflict with state laws, rules or regulations, the more stringent requirements must be followed.

(4) On the plat or map of an "ALTA/ACSM LAND TITLE SURVEY," the survey boundary shall be drawn to a convenient scale, with that scale clearly indicated. A graphic scale, shown in feet or meters or both, will be included. When practicable, the plat or map of survey shall be oriented so that North is at the top of the drawing. If required, supplementary or exaggerated diagrams shall be presented accurately on the plat or map. No plat or map drawing less than the minimum size of 8½ by 11 inches will be acceptable.

(5) The plat or map of an "ALTA/ACSM LAND TITLE SURVEY" shall contain, in addition to the required items already specified above, the following applicable information:

- (a) All data necessary to indicate the mathematical dimensions and relationships of the boundary represented, with angles given directly or by bearings, and with the length of each curve, together with its radius, chord, and chord bearing shown. A bearing base shall refer to some well-fixed bearing line, so that the bearings may be easily re-established. All bearings around the boundary shall read in a clockwise direction wherever possible. The North arrow shall be referenced to its bearing base and should that bearing base differ from record title, that difference shall be noted.
- (b) When record bearings or angles or distances differ from measured bearings, angles or distances, both the record and measured bearings, angles, and distances shall be clearly indicated.
- (c) Measured and record distances from corners of parcels surveyed to the nearest right-of-way lines of streets in urban or suburban areas, together with recovered lot corners and evidence of lot corners, shall be noted. The distances to the nearest intersecting street shall be indicated and verified. Names and widths of streets and highways and the widths of rights of way shall be given. Any use contrary to the above shall be noted.
- (d) The identifying title of all record plats or filed maps which the survey represents, wholly or in part, shall be shown with their filing dates and map num-

bers, and the lot, block, and section numbers or letters of the surveyed premises. Names of adjoining owners and/or recorded lot or parcel numbers, recording information for last available conveyance, and similar information, where needed, shall be shown. The survey shall indicate set back or building restriction lines which have been platted and recorded in subdivision plats. Interior parcel lines shall clearly indicate contiguity, gores, and/or overlaps. Where only a part of a recorded lot or parcel is included in the survey, the balance of the lot or parcel shall be indicated.

- (e) All evidence of monuments found or placed, shall be shown and noted to indicate which were found and which were placed. All evidence of monuments found beyond the surveyed premises, on which establishment of the corners of the surveyed premises are dependent, shall be indicated. The character of any and all evidence of possession shall be stated and the location of such evidence carefully given in relation to the surveyed boundary lines. An absence of notation on the survey shall be presumptive of no physical evidence of possession along the record line.
- (f) The location of all buildings upon the plot or parcel shall be shown and their locations defined by measurements perpendicular to the boundaries. Proper street numbers shall be shown where available. Observable evidence of easements and/or servitudes of all kinds, such as those created by roads; rights-of-way; water courses; drains; telephone, telegraph, or electric lines; water, sewer, oil or gas pipelines on or across the surveyed property and on adjoining properties if they appear to affect the surveyed property, shall be located and noted. If the surveyor has knowledge of any such easements and/or servitudes, not observable at the time the present survey is made, such lack of observable evidence shall be noted. Surface indications, if any, of underground easements and/or servitudes shall also be shown. If there are no buildings erected on the property being surveyed, the plat or map shall bear the statement, "No buildings."
- (g) The character and location of all walls, buildings, or fences within two feet of either side of the boundary lines shall

be noted. Physical evidence of all encroaching structural appurtenances and projections, such as fire escapes, bay windows, windows and doors that open out, flue pipes, stoops, eaves, cornices, areaways, steps, trim, etc., by or on adjoining property or on abutting streets, shall be indicated with the extent of such encroachment or projection. If the client wishes to have additional information with regard to appurtenances such as whether or not such appurtenances are independent, division, or party walls and are plumb, the client will assume the responsibility of obtaining such permissions as are necessary for the surveyor to enter upon the properties to make such determinations.

- (h) Driveways and alleys on or crossing the property must be shown. Where there is evidence of use by other than the occupants of the property, the surveyor must so indicate on his plan. Where driveways or alleys on adjoining properties encroach, in whole or in part, on the property being surveyed, the surveyor must so indicate on his plans with appropriate measurements.
- (i) Cemeteries and burial grounds disclosed in the process of surveying or searching the title to the premises shall be shown by actual location if known. If the client wishes to have the survey reflect observable cemeteries and burial grounds, the surveyor shall be so advised.
- (j) Ponds, lakes, springs, or rivers bordering on or running through the premises being surveyed shall be shown by actual location.
- (k) Streets abutting the premises, which have been legally defined but not physically opened, shall be shown and so noted.

(6) As a minimum requirement, the surveyor shall furnish two sets of prints of the plat or map of survey to the title insurance company or the client. The prints shall be on durable and dimensionally stable material of a quality standard acceptable to the title insurance company. At least two copies of legal boundary descriptions prepared from the survey shall be similarly furnished by the surveyor. Reference to date of the "ALTA/ACSM LAND TITLE SURVEY," surveyor's file number (if any), political subdivision, section, township and range, along with appropriate aliquot parts thereof, and similar information shown on the plat or map of survey shall be included

with the boundary description and incorporated for documentation.

(7) Water boundaries are subject to change due to erosion or accretion by tidal action or the flow of rivers and streams. A realignment of water bodies may also occur due to many reasons such as deliberate cutting and filling of bordering lands or by evulsion. Recorded surveys of natural water boundaries are not relied upon by title insurers for location of title.

When a property to be surveyed for title insurance purposes contains a natural water boundary, the surveyor shall measure the location of the boundary according to appropriate surveying methods and note on the plan the date of the measurement and the caveat that the boundary is subject to change due to natural causes and that it may or may not represent the actual location of the limit of title.

(8) When the surveyor has met all of the minimum standard detail requirements for an ALTA/ACSM Land Title Survey, he shall make the following certification on the plat:

To (name of client) and (name of title insurance company, if known):

This is to certify that this map or plat and the survey on which it is based were made in accordance with "Minimum Standard Detail requirements for ALTA/ACSM Land Title Surveys," jointly established and adopted by ALTA and ACSM in 1986; and meets the accuracy requirements of a Class \_\_\_\_\_ Survey, as defined therein.

\_\_\_\_\_(signed) \_\_\_\_\_(seal)  
Registration No.

Adopted by the Board of Direction,  
American Congress on Surveying and Mapping

March 21, 1986.

Adopted by the American Land Title Association

September 27, 1986

# American Congress On Surveying and Mapping

## *Classification and Specifications For Cadastral Surveys*

### INTRODUCTION

The degree of precision necessary for a particular cadastral survey should be based on the intended use of the land parcel, without regard to its present use, provided the surveyor has knowledge of the intended use.

Four general survey classes are defined using various state regulations and accepted practices. These general classes are listed and defined in table 1 below.

The combined precision of a survey can be statistically assured by dictating a combination of survey closure and specified procedures for a particular survey class. Table 2 lists the closures and specified procedures to follow in order to assure the combined precision of a particular survey class. The statistical base for these specifications is on file at the ACSM and available for inspection.

TABLE 1

### SURVEY CLASSES BY LAND USE

#### CLASS A—URBAN SURVEYS

Surveys of land lying within or adjoining a City or Town. This would also include the surveys of Commercial and Industrial properties, Condominiums, Townhouses, Apartments and other multiunit developments, regardless of geographic location.

#### CLASS B—SUBURBAN SURVEYS

Surveys of land lying outside urban areas. This land is used almost exclusively for single family residential use or residential subdivisions.

#### CLASS C—RURAL SURVEYS

Surveys of land such as farms and other undeveloped land outside the suburban areas which may have a potential for future development.

#### CLASS D—MOUNTAIN and MARSHLAND SURVEYS

Surveys of lands which normally lie in remote areas with difficult terrain and usually have limited potential for development.

AMERICAN CONGRESS on SURVEYING and MAPPING

TABLE 2  
MINIMUM ANGLE, DISTANCE and CLOSURE REQUIREMENTS FOR CLASSES OF SURVEYS  
(1)

SURVEY CLASS	DIR. READING OF INSTRUMENT (2)	INSTRUMENT READING ESTIMATED (3)	NUMBER OF OBSERVATIONS PER STATION (4)	SPREAD FROM MEAN OF D&R NOT TO EXCEED (5)	ANGLE CLOSURE WHERE N = NO. OF STATIONS NOT TO EXCEED	LINEAR CLOSURE (6)	DISTANCE MEASUREMENT (7)	MINIMUM LENGTH OF MEASUREMENTS (8), (9), (10)
A	20" <1'> <span style="border: 1px solid black; padding: 0 2px;">10"</span>	5" <0.1'> N.A.	2 D&R	5" <0.1'> <span style="border: 1px solid black; padding: 0 2px;">5"</span>	10" $\sqrt{N}$	1:15,000	EDM or Doubletape with steel tape	(8) 81m, (9) 153m (10) 20m
B	20" <1'> <span style="border: 1px solid black; padding: 0 2px;">10"</span>	10" <0.1'> N.A.	2 D&R	10" <0.2'> <span style="border: 1px solid black; padding: 0 2px;">10"</span>	15" $\sqrt{N}$	1:10,000	EDM or steel tape	(8) 54m, (9) 102m (10) 14m
C	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">20"</span> <1'> <span style="border: 1px solid black; padding: 0 2px;">20"</span>	N.A.	1 D&R	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">20"</span> <0.3'> <span style="border: 1px solid black; padding: 0 2px;">20"</span>	20" $\sqrt{N}$	1:7,500	EDM or steel tape	(8) 40m, (9) 76m (10) 10m
D	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">1'</span> <1'> <span style="border: 1px solid black; padding: 0 2px;">1'</span>	N.A.	1 D&R	<span style="border: 1px solid black; border-radius: 50%; padding: 0 2px;">30"</span> <0.5'> <span style="border: 1px solid black; padding: 0 2px;">30"</span>	30" $\sqrt{N}$	1:5,000	EDM or steel tape	(8) 27m, (9) 51m (10) 7m

Note (1) All requirements of each class must be satisfied in order to qualify for that particular class of survey. The use of a more precise instrument does not change the other requirements, such as number of angles turned, etc.

Note (2) Instrument must have a direct reading of at least the amount specified (not an estimated reading), i.e.; 10" = Micrometer reading theodolite, <1'> = Scale reading theodolite, 10" = Electronic reading theodolite, 20" = Micrometer reading theodolite, or a vernier reading transit.

Note (3) Instrument must have the capability of allowing an estimated reading below the direct reading to the specified reading.

Note (4) D & R means the Direct and Reverse positions of the instrument telescope, i.e., Class A requires that two angles in the direct and two angles in the reverse position be measured and meaned.

Note (5) Any angle measured that exceeds the specified amount from the mean must be rejected and the set of angles re-measured.

Note (6) Ratio of closure after angles are balanced and closure calculated.

Note (7) All distance measurements must be made with a properly calibrated EDM or Steel tape, applying atmospheric, temperature, sag, tension, slope, scale factor and sea level corrections as necessary.

Note (8) EDM having an error of 5mm, independent of distance measured (Manufacturers specification)

Note (9) EDM having an error of 10mm, independent of distance measured (Manufacturers specifications)

Note (10) Calibrated steel tape.





# "AS-BUILT" SURVEY SPECIFICATIONS

(A Post Construction Survey)

**PREAMBLE:** This "As-Built" or Post Construction survey specification is a flexible, guide document that may be modified with professional discretion as particular occasion may require. The American Congress on Surveying and Mapping and its member organization, the National Society of Professional Surveyors, recommend that when an "As-Built" survey is required, the survey should be performed substantially in conformity with this specification and that the client and surveyor should make every effort to place a copy of the survey in an appropriate public record.

**SECTION 1. AUTHORITY:** This specification is recommended by the National Society of Professional Surveyors, a member organization of the American Congress on Surveying and Mapping.

**SECTION 2. PURPOSE OF THIS SPECIFICATION:** This specification will identify tasks to be accomplished while performing an "as-built" survey. The specification will describe what should be done, but not how to do it.

2.1 An as-built survey should be performed for computing pay quantities, recovering control monuments, locating easements, facilities and structures, and for creating a permanent record of such facilities.

**SECTION 3. DEFINITION:** A post construction or as-built survey is made after a facility has been constructed to obtain the necessary dimensions for establishing a permanent record of the location of all facilities. Construction and post construction surveying should be performed under the direction of a person licensed to practice surveying who is well versed in maintaining accuracy, precision, efficiency, measuring, and computing values pertaining to such surveys. An as-built survey may follow completion of construction or be made incrementally as phases of construction are completed.

**SECTION 4. SERVICES AND FINAL REPORTS:** An as-built survey will document, but will not be limited to the following:

- 4.1 Recovery of points that control the construction.
- 4.2 Horizontal Control: Established and referenced primary control monuments.
- 4.3 Vertical Control: Established permanent control elevations (bench marks) sufficiently described as to datum and location, and placed in secure areas so they can be used in the future.
- 4.4 The location of constructed facilities, improvements and easements.
- 4.5 The placement of electronically detectable markers for future recovery and identification of important underground facilities such as fuel, communications and electric lines (with client approval).
- 4.6 A final drawing, indicating the horizontal and vertical location of facilities, control monuments, improvements and easements as determined by a post construction survey.

**SECTION 5. INFORMATION REQUIRED:** Sufficient information concerning the construction site should be furnished to the surveyor by the client, the architect, the general contractor or other designated agent and should include, but not be limited to:

- 5.1 A certified boundary or right-of-way plat and a topographic map of the site together with pertinent maps. Such boundary survey is a prerequisite of the as-built survey.

- 5.2 Detailed construction plans for the project, including the proposed location of all facilities, improvements and easements.
- 5.3 Elevations, datum and descriptions of vertical control points used for the topographic survey and for construction.
- 5.4 The plans of existing facilities that were or are to be joined or modified.
- 5.5 The name or names, addresses and telephone number(s) of the person(s) in charge of the project.
- 5.6 Schedules for excavating and backfilling in respect to underground facilities.

SECTION 6. MONUMENTS: Monuments in this specification are defined as primary and secondary monuments.

- 6.1 Primary Monuments: Primary monuments should be established beyond the construction activity and should be of sufficient size, depth and composition to endure beyond completion of the project. Wooden stakes for primary monuments should not be used.
- 6.2 Secondary Monuments: Secondary monuments are to be used on a temporary basis and should be established close enough to the perimeter of a structure or facility to be convenient for use, but far enough from the structure to be protected from construction activities.
- 6.3 All monuments shall be marked and flagged, and witnessed in a manner that will provide for ease of recovery.

SECTION 7. SITE CONDITIONS: Certain conditions with respect to locale, such as rural, suburban, urban and urban business districts, including offshore facilities, often affect the precision of surveys. The procedures used should support the tolerances in Table 1.

SECTION 8. TOLERANCES: A post construction survey for as-built purposes must locate all facilities within the minimum tolerances shown on Table 1. Exceptions, if any, shall be explained by technical notes on the final plat.

SECTION 9. FIELD TOLERANCES: All field work shall be performed in accordance with accepted technical methods as expressed in standard textbooks on surveying theory, practice and procedures. Textbooks used for the purpose of surveying instruction by any accredited university or college in the appropriate state will be considered a satisfactory text for this purpose. Any person in charge of a survey field party shall be well trained in the technical aspects of surveying.

- 9.1 All survey field work should be scheduled to permit location of all facilities at the earliest opportunity, before the facilities are obscured by back filling, paving or other installations.
- 9.2 The surveyor should have a pre-arrangement with the client to place all necessary electronically detectable markers on the facilities before they are covered.
- 9.3 All as-built locations should be made from the primary monument control and closed back into a different point within the primary monument control net. The state plane coordinate system should be used when practical.
- 9.4 All vertical locations should be established from pre-established bench marks and checked by closing to a different bench mark on the project datum.
- 9.5 Where special surveys for vertical or horizontal control are required as a base for a construction survey, relevant special publications from the U.S. Department of Commerce, the Department of the Interior, or the Department of the Army will be considered as satisfactory texts to define acceptable field methods.

SECTION 10. MAPS, PLATS AND DRAWINGS: The final plat should be prepared on a reproducible plan, map or drawing at a suitable scale in accordance with Table 1. and should fully depict the improvements as-built.

- 10.1 Any stable base standard drawing paper, linen or film of reproducible quality will be considered as suitable material for such final plat.

- 10.2 No plat, map or drawing shall be made on a sheet size smaller than 8 1/2 by 11".
- 10.3 Dimensions necessary to reference structures, improvements and easements to property lines or permanent base lines shall be neatly and legibly shown on the final plat.
- 10.4 Each property line monument found shall be labeled as "Found" with a brief definition or description of the monuments as to size, type of material and what it represents.
- 10.5 Each property line monument set for the development of the final plat shall be labeled as "Set" with a brief definition thereof as to size, type of material, and description. These monuments shall be set in accordance with specifications for a Land Title Survey.
- 10.6 All map symbols should be referred to a legend or appropriately identified on the map with sufficient labeling.
- 10.7 Facilities, improvements and easements, and other similar data (including electronically detectable markers) shall be represented by symbol or labeled and dimensioned, and referenced to the primary monument control, coordinate system or the nearest property line.
- 10.8 All maps, plats or drawings must show a North arrow, and the drawing should be oriented as nearly as possible so that North is toward the top of the sheets.
- 10.9 The basis of bearing whether Geodetic North, State Plane Coordinate System or other permanent reproducible source, independent of project base lines, shall be clearly stated and shown.
- 10.10 An orderly compilation of relevant facts and sources, such as a list of coordinates, elevations, monument descriptions (including electronically detectable markers) and a statement of datum shall be included especially where the plat is to be made for a large or complicated project.
- 10.11 When a flood plain is involved, the finished floor elevations, the flood plain limit, and a bench mark referring to the project datum shall be shown on the plat.

- 10.12 Any suitable title block is acceptable so long as the caption "Post Construction Survey" is used and the location, date and scale is included.
- 10.13 The surveyor should develop procedures that will protect against the unauthorized alteration of his final plat.
- 10.14 The client should be advised if the map will be filed for record in accordance with local or state law.

SECTION 11. DESCRIPTIONS: Description procedure in this specification may differ from regular boundary surveys. The property description shown on the final plat shall be the description furnished in accordance with SECTION 5.1.

- 11.1 When the property description furnished the surveyor is used as part of the plat, a note on the map, plat or drawing will include a complete reference to the source document.
- 11.2 When the furnished description cannot be used and a new description is necessary, the client will be advised that a separate boundary survey should be performed and the surveyor will follow the land title survey specifications for proper procedures.

SECTION 12. CERTIFICATIONS: The certification statement for each final plat, map or drawing must be signed and sealed by a person licensed or registered to practice land surveying who is responsible for the as-built survey and the platted data. Rubber stamps of signatures are not to be used. The seal is to be affixed in accordance with local or state law.

- 12.1 A certification statement which incorporates by reference the requirements of these specifications shall be written in a form similar to the following:
  - 12.1.1 I hereby certify that this survey was performed in accordance with post construction survey specifications of ACSM/NSPS.

Adopted by the Board of Direction,  
American Congress on Surveying and Mapping,  
March 15, 1985

MINIMUM TOLERANCES  
FOR AN  
AS-BUILT OR POST CONSTRUCTION SURVEY

TABLE 1

CONDITIONS	I	II	III	IV	REMARKS***
	RURAL	SUBURBAN	URBAN	URBAN BUSINESS DISTRICT	
Unadjusted Closure (Minimum)	1:4,000	1:5,000	1:7,500	1:10,000	Locative Loop for Multiple Structures
Angular Closure (Minimum)	40" $\sqrt{N}$	30" $\sqrt{N}$	25" $\sqrt{N}$	15" $\sqrt{N}$	N=Number of Angles in Locative Loop
Accuracy of Bearing in Relation to Source	$\pm$ 1 Min.	$\pm$ 40 Sec.	$\pm$ 30 Sec.	$\pm$ 20 Sec.	Sin $\angle$ = Denominator in Error of Closures Divided into 1 (Approxn)
Linear Distances Accurate to:	$\pm$ 0.25 per 1000	$\pm$ 0.2 per 1000	$\pm$ 0.15 per 1000	$\pm$ 0.1 per 1000	For Locative Loop Regarding Multiple Structures (in feet or meters)
Positional Tolerance of Any Monument Relative to Project Baseline Origin	1:12,000	1:15,000	1:20,000	1:30,000	For Base Lines in Multiple or Major Construction Sites
Calculation of Area	N.A.	N.A.	N.A.	N.A.	Not Applicable unless Required by Client
Elevations for Bench Marks (Loop Closures into Site)	0.1 $\sqrt{M}$ or 0.024 $\sqrt{KM}$	.08 $\sqrt{M}$ or .019 $\sqrt{KM}$	.05 $\sqrt{M}$ or 0.012 $\sqrt{KM}$	.02 $\sqrt{M}$ or .005 $\sqrt{KM}$	M=Number of Miles and KM=Number of kilometers in loop. (Results are $\pm$ )
*Location of Improvements, Structures, etc.	$\pm$ 0.25 per 1000	$\pm$ 0.2 per 1000	$\pm$ 0.15 per 1000	$\pm$ 0.1 per 1000	In relation to Property or site Boundaries
Scale of Maps Sufficient to Show Detail, but No Less Than:	1"-2000' or 1:25,000	1"-1000' or 1:10,000	1"-400' or 1: 5000	1"-200' or 1: 2000	Plan Drawings to Show** Location of Base Lines, Bench Marks, Refer. etc.
Elevation Check Between Bench Marks on Site	$\pm$ 0.05 ft. or $\pm$ .015m	$\pm$ 0.03 ft. or $\pm$ .01m	$\pm$ 0.02 ft. or $\pm$ .006m	$\pm$ 0.02 ft. or $\pm$ .006m	

\* Business District improvement locations within 10 (3m) feet shall not have an error of more than one percent over the platted distance.

\*\* For city work (utilities) use 1" = 50' or 1:500, minimum.

\*\*\* Minimum tolerances for offshore surveys are not included.



## "AS-BUILT" SURVEY SPECIFICATIONS

(A Post Construction Survey)

American Congress on Surveying and Mapping

210 Little Falls Street, Falls Church, Virginia 22046  
(703) 241-2446

1962  
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# Minimum Standard Detail Requirements FOR

## Land Title Surveys

as adopted by



### American Title Association

(Now American Land Title Association)

and

### American Congress On Surveying & Mapping

#### PREFACE

While the "Technical Standards for Property Surveys" adopted by the American Congress on Surveying and Mapping (ACSM) in 1946, are recognized as clear and concise technical standards for property-line surveys, and are so recommended, it is recognized that members of the American Title Association (ATA) have specific problems peculiar to title insurance matters which require particular information in detail and exactness for acceptance by title insurance companies when said companies are asked to insure title to land without exceptions as to the many matters which might be discoverable from survey and inspection and not be evidenced by public records. In the general interest of the public, the surveying profession, title insurers and abstracters, the American Title Association (ATA) and the American Congress on Surveying and Mapping (ACSM) now jointly promulgate and set forth such details and criteria for exactness. It is understood that local variations may require local adjustments to suit local situations and often must be applied. It is recognized that no professional surveyor can ethically undertake any project requiring prudent exercise of professional responsibility unless he is assured adequate compensation. It is recognized, equally, that in insuring title, title insurance companies are entitled to and should be able to rely on the evidence produced to it, as the basis for its insurance, being of the highest professional quality both as to completeness and accuracy.

#### STANDARD DETAIL REQUIREMENTS

For a survey of real property and the plat or map of the survey to be acceptable to a title insurance company for purposes of insuring title to said real property free and clear of survey questions (except those questions disclosed by the survey and indicated on the plat or map), certain specific and pertinent information must be presented for the distinct and clear understanding between the client (insured), the title insurance company (insurer) and the surveyor (the person professionally responsible for the survey). These requirements are:

1. The plat or map of such survey must bear the name, address and signature of the licensed land surveyor who made the survey, his official seal and license number (if any, or both), the date of the survey, and the caption "LAND TITLE SURVEY" with the following certification:  
 "To (name of client) and (name of title insurance company, if known).  
 This is to certify that this map or plat and the survey on which it is based were made in accordance with the "Minimum Standard Detail Requirements for Land Title Surveys" jointly established and adopted by ATA and ACSM in 1962.  
 (Signed)..... (SEAL)"  
 License No. ....
2. The title insurance company or the client, at the time of ordering a survey, should notify the sur-

veyor that a "LAND TITLE SURVEY" is required, and furnish to the surveyor the record description of the property and the record easements or servitudes and covenants affecting the property, to which the "LAND TITLE SURVEY" must subsequently make reference. The names and deed data of all adjacent owners as available, and all pertinent information affecting the property being surveyed, should be transmitted to the surveyor for notation on the plat or map of the survey. If the area of the parcel is required, the title insurance company or the client shall so clearly indicate to the surveyor. If the plat or map of survey is to include thereon a note as to zoning classification of the property and indicate setback or building restriction lines (if such information can be platted on a map) the title insurance company or the client shall so clearly indicate to the surveyor. If applicable, the surveyor shall be informed by the title insurance company or client of any survey requirements of the Federal Housing Administration or Veterans Administration.

3. The surveyor's field work must be performed to locate the property corners accurately. The allowable positional tolerances of said corners may not be greater than
  - (a) 0.02 ft. in urban area blocks wherein buildings can be erected along the property line, or where high land values so warrant.
  - (b) 0.04 ft. in urban or suburban subdivision interior blocks and/or urban and suburban lots or parcels.
  - (c) 1 ft. per 5,000 ft. of perimeter in rural areas except as follows:
    - (i) closer tolerance is required where land value in rural areas is increased by adjacency to major highway intersections or thruway complexes, building congestion, oil or min-

eral rights or land value is increased for any other reason.

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

The surveyor shall note on the plat or map of survey the following:

"Maximum positional tolerance of corners is....."

When the surveyor has doubt as to the location on the ground of street or lot lines being within the tolerances cited above (for such reasons as street and lot lines being undefinable or indefinite because of insufficient monuments or markers in the ground or where errors are found to exist in the descriptions of legal or recorded plats or maps of streets and lots), the surveyor shall clearly indicate the nature of the difficulty or discrepancy and give his professional opinion as to range and scope of differences possibly involved and the effect, under the circumstances, of same on the surveyed positions. It is expected that the exercise of professional judgment by the surveyor will minimize differences of opinions with other professional surveyors exercising equally prudent judgment in such situation.

4. On the plat or map of a LAND TITLE SURVEY, the survey boundary should be drawn to a convenient scale, with that scale clearly indicated. If feasible, a graphic scale should be indicated. When practical, the plat or map of survey should be oriented so that North is at the top of the drawing. Supplementary or exaggerated scale diagrams should be presented accurately on the plat or map and drawn to scale. No plat or map drawing less than the minimum size of 8½" by 11" will be acceptable.

5. The plat or map of a LAND TITLE SURVEY shall contain, in addition to the items required already specified above, the following applicable information:
- (a) All data necessary to indicate the mathematical dimensions and relationships of the boundary represented, with a required mathematical closure of not less accuracy than 1 part in 10,000; with angles given directly or by bearings; with the length of curve together with the radius chord and chord bearings. Bearings should refer to true North for the area, or to State Plane Coordinate North, or to some well-fixed bearing line so that the bearings may be easily re-established. All bearings around the boundary should read in a clockwise direction. The North arrow, preferably in the upper right quadrant of the drawing, must be referenced to its bearing base.
  - (b) When record bearings or angles or distances differ from measured bearings, angles and distances, both the record and measured bearings, angles and distances shall be clearly indicated.
  - (c) Measured and record distances from corners of parcel surveyed, to the nearest right of way lines or streets in urban or suburban areas, together with evidence of found lot corners, should be noted. Where conditions warrant, the distances to the intersecting streets in both directions from the surveyed premises, with the bearing of such streets, should be indicated. Names and legal lines and widths of streets, roads and avenues should be given. Where the surveyor has notice of changes in the lines of such streets or roads, the changes should be noted with the date of and authority under which the change was made.
  - (d) The identifying title of all record plats or filed maps which the survey represents wholly or in part must be shown with their filing dates, map numbers and the lot, block and section numbers or letters of the surveyed premises. Names of adjoining owners and/or recorded lot or parcel numbers, and similar information where known, must be shown. Interior parcel lines must clearly indicate contiguity, gores and/or overlaps.
  - (e) All monuments, stakes or marks, found or placed, must be shown and noted to indicate which were found and which were placed. All evidence of monuments, stakes or marks found beyond the surveyed premises, on which establishment of the corners of the surveyed premises are dependent, shall be indicated. The character of any and all evidence of possession must be stated and the location of such evidence carefully given in relation to the surveyed boundary lines. Where there is no physical evidence of possession along the record lines, the plat or map of survey must note along the line— "No physical evidence of line".
  - (f) The character and location of all buildings upon the plot or parcel must be shown and their location given with reference to boundaries. Proper street numbers should be shown where available. Physical evidence of easements and/or servitudes of all kinds, including but not limited to those created by roads; rights of way; water courses; drains; telephone, telegraph or electric lines; water, sewer, oil or gas pipelines, etc., on or across the surveyed property and on adjoining properties if they appear to affect the enjoyment of the surveyed property should be located and noted. If the surveyor has

knowledge of any such easements and/or servitudes, not physically evident at time present survey is made, such physical non-evidence should be noted. Surface indications, if any, of underground easements and/or servitudes should also be shown. If there are no buildings erected on the property being surveyed, the plat or map of survey should bear the statement "No Buildings".

The character and location of all walls (independent, division, party or otherwise) and whether or not the same are plumb, buildings or fences within two (2) feet of either side of the boundary lines must be noted. Location of both sides of party walls and thickness should be shown. If the building on premises has no independent wall, but uses any wall of adjoining premises, this condition should be shown and explained. The same requirements apply where conditions are reversed. Physical evidence of all encroaching structural appurtenances and projections including but not limited to fire escapes, bay windows, windows that open out, flue pipes, stoops, eaves, cornices, areas, steps, trim, etc., by or on adjoining property or on abutting streets must be indicated with the extent of such encroachment or projection. Openings such as windows, doors, etc., in walls of adjoining premises within two (2) feet of the boundary lines being surveyed (other than street lines) should be shown. If the client or the title insurance company wishes to have same information as above, with regard to walls or buildings more than two (2) feet beyond the boundary lines of the premises being surveyed, the client or title insurance company will assume the re-

sponsibility of obtaining such permissions as are necessary for the surveyor to enter upon the adjoining property to make such determination. In the absence of such permissions, the surveyor will not be obligated to so enter.

Joint or common driveways and alleys must be indicated. Independent driveways along the boundary must be shown together with the width thereof. Encroaching driveways, strips, ribbons, aprons, etc., should be noted.

Cemeteries and burial grounds located within the premises being surveyed must be shown by actual location.

Springs, streams, rivers, ponds or lakes located, bordering on or running through the premises being surveyed must be shown by actual location.

Streets abutting the premises not physically opened should be so noted.

6. As minimum requirement, the surveyor shall furnish at least two sets of prints of the plat or map of survey to the title insurance company or the client. The prints should be on durable and dimensionally stable material of a quality standard acceptable to the title insurance company. At least two copies of legal boundary descriptions prepared from the survey shall be similarly furnished by the surveyor. For connecting record, reference to the date of the LAND TITLE SURVEY, surveyor's file number (if any), political subdivision, and similar information shown on the plat or map of survey shall be included and incorporated for documentation.

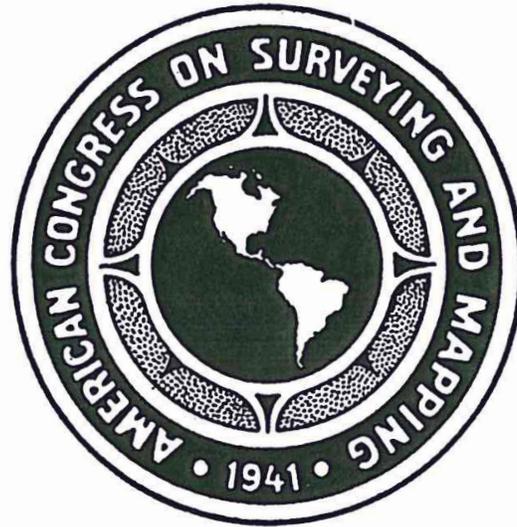
\* \* \*

Adopted by the American Title Association, March 2, 1902.

\* \* \*

Approved by Property Surveyors Division, ACSM, on a trial basis at its annual meeting, March 12, 1902. This action of PSD was endorsed by the American Congress on Surveying and Mapping, Board of Directors, on March 15, 1902.

# Technical Standards for Property Surveys



The American Congress on Surveying and Mapping has adopted the following set of Technical Standards for Property Surveys for the instruction and use of the members of the Congress and affiliates, and all others who have occasion to use them. The Congress hereby authorizes any changes, alterations, amendments, additions, or deletions, from time to time, as the occasion may arise, provided such variations are made with the consent and under the direction of the proper officers or committees of the Congress. These Standards may be segregated as to any or all parts, or revisions thereof, for particular use in any locality requiring them, without necessitating any change of form or recommendation in other parts of the Standards required or used by other sections. It is understood that these Standards are recommendatory only, and not mandatory. It is the hope of the Congress that members will use their influence, sponsorship, and recommendations in any proper capacity to promote the beneficial operation of such Standards.

# Technical Standards for Property Surveys

EDITOR'S NOTE.—The following set of Technical Standards for Property Surveys was devised by the Technical Division on Property Surveys of the American Congress on Surveying and Mapping. It was submitted to the membership of the Congress and adopted in the published form at the Sixth Annual Meeting of the Congress on June 28, 1946.

## TECHNICAL STANDARDS

### I. LAND TITLES AND LOCATION

Every parcel of land whose boundaries are surveyed by a licensed surveyor should be made conformable with the record title boundaries of such land. The surveyor, prior to making such a survey, shall acquire all necessary data, including deeds, maps, certificates of title, centerline, and other boundary line locations in the vicinity. He shall compare and analyze all of the data obtained, and make the most nearly correct legal determination possible of the position of the boundaries of such parcel. He shall make a field survey, traversing and connecting all available monuments appropriate or necessary for the location, and co-ordinate the facts of such survey with the predetermined analysis. Not until then shall the monuments marking the corners of such parcel be set, and such monuments shall be set in accordance with the full and most satisfactory analysis obtainable.

Any descriptions written for conveyance or other purpose, defining land boundaries; shall be complete and accurate from a title standpoint, providing definite and unequivocal identification of the lines or boundaries, and definite recitals as to use or rights to be created through such descriptions. Any form of description, regardless of presence or absence of any or all dimensions, but specifically tying to adjoiners, which fulfills the foregoing conditions, is acceptable. However, such description, insofar as possible, in addition to all necessary ties to adjoiners, should contain sufficient data of dimension, determined from accurate field survey, to enable the description to be completely platted. It is also advisable wherever correct surveys have determined the coordinate values of boundary corners or monuments recited in a description, to make proper reference thereto in the description by any appropriate recital.

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

### II. MAPS

Every land survey requires a map properly drawn, to a convenient scale, showing *all* the information developed by the survey; also a proper caption, proper dimensions and bearings or angles, and references to all deeds and other matters of record pertinent to such survey, including monuments found and set.

If the survey is made for purposes other than land location, then the map should be conformable to the needs of the work authorized to be done, giving all the necessary information in conformity therewith.

Wherever provided by law or whenever necessary to perpetuate valuable evidence of land line locations, a map of the survey should be recorded in a public office in accordance with the provisions or permissions of the law in the particular state in which the survey is made.

Every map submitted to a client or presented as a public record must bear the name of the Licensed Surveyor responsible for the work, his official seal or license number, and the date.

## TECHNICAL STANDARDS FOR PROPERTY SURVEYS

### III. COORDINATE SURVEYS AND BASE TRIANGULATION SYSTEMS

The use of the coordinate survey systems of the U. S. Coast and Geodetic Survey and the U. S. Geological Survey is to be encouraged in all states.

The establishment of secondary triangulation systems tied in and properly related to such coordinate systems is also recommended.

Wherever available, within reasonable distances, every land survey is to be connected with two or more monuments of the main or secondary triangulation system; and the maps of such survey shall show the correct verified coordinates of such monuments and of at least two of the monumented corners of such survey.

### IV. MEASUREMENTS

Measurements shall be made with instruments capable of attaining the required accuracy for the particular problem involved. All tapes shall be calibrated to government standard for temperature and pull, and all measurements in the category of accuracy of 1 part in 10,000 or greater shall be made, taking into consideration such temperature and pull in the actual field work.

All transits shall be maintained in close adjustment and the projection of lines shall be made with the system of double centering or proper adjustments made to field readings by predetermined coefficient of error. All angles with a transit shall be determined by the continuous repetition or run-up method, dividing the sum total of the angles by the number of repetitions for the average value of the measured angle.

All leveling instruments shall be maintained in close adjustment, and the readings of elevations shall be made with equal foresights and backsights as nearly as practicable and/or proper adjustment made to field readings by predetermined coefficient of error.

The minimum accuracy of linear measurements between points shall be 1 part in 10,000 on all property lines of boundary or interior survey. Preliminary or reconnaissance surveys shall maintain an accuracy of not less than 1 part in 5,000, except in those cases where general information only is to be obtained and no precise monumented corners are to be created.

In a closed traverse the sum of the measured angles shall agree with the theoretical sum by a difference not greater than 5 seconds per angle, or the sum of the total angles shall not differ from the theoretical sum by more than 90 seconds, whichever is smaller.

A circuit of levels between precise bench marks or a circuit closed upon the initial bench mark shall not differ more than 0.02 foot multiplied by the square root of the number of miles in the circuit, and in no case to exceed 0.05 foot, except in levels for preliminary or rough stadia control, in which case the allowable error of closure may be 0.10 foot.

All field measurements must be balanced, both as to angles and distances, so that the dimensions shown on the map of such survey will be mathematically exact; this will permit the proper use of the prorate method in field relocation.

Bearings or angles on the map shall be given to the nearest 5 seconds; distances to the nearest hundredth foot.

Accuracy of measurement in triangulation dimensions shall conform with the standards set by the U. S. Coast and Geodetic Survey.

## TECHNICAL STANDARDS FOR PROPERTY SURVEYS

### V. MONUMENTS

The type and position of monuments to be set on any survey shall be determined by the nature of the survey, the permanency required, the nature of the terrain, the cadastral features involved, and the availability of material.

Monuments set in an inhabited area with improved streets, buildings, and other more or less permanent topographical features, shall be such as will remain for the life of such features and may be set in contact with or alongside of such semi-permanent structures with reasonable security. Monuments set in open country where their maintenance is to be continued for long periods shall be of a material such as concrete, rock, or metal, of sufficient size that they will not be readily removable and will be easily discoverable; and witness monuments of ready visibility shall be placed alongside or nearby, if necessary.

Except in the case of original surveys, in which monuments are to be referred to in the record, permanent monuments shall not immediately be placed on lines or in positions where their destruction is more or less immediate by reason of construction; but semi-permanent monuments, such as stakes, pipes, or other material, shall be set in protected spots at definite known distances from the true corners for purpose of location of such corners after construction is completed. The surveyor shall make a definite commitment of record, that he will correctly set such true corners as soon as their permanence in position can be assured.

### VI. PLANNING AND DESIGN

No standard is set for planning and design of land line location as to the form and position of such lines. Each particular problem carries its own plan and its own design within itself. A plan acceptable in one locality or under some conditions may not be adaptable in another.

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The American Congress on Surveying and Mapping is a non-profit association, organized to advance the sciences of surveying and mapping in their several branches, in furtherance of the public welfare and in the interests of both those who use maps and surveys and those who make them. It aims to establish a central source of reference and union for its members, to contribute to public education in the use of maps, and to encourage the prosecution of basic mapping programs which are paid in whole or in part with public funds.

*For further information, write to*

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