

**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 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 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.

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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"** = 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. \_\_\_\_\_  
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