

**TITLE 12      TRADE, COMMERCE AND BANKING**  
**CHAPTER 8    TRADE PRACTICES AND REGULATIONS**  
**PART 2        MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO**

**12.8.2.1        ISSUING AGENCY:** New Mexico Board of Licensure for Professional Engineers and Professional Surveyors, 4001 Office Court Drive, Suite 903, Santa Fe, NM 87507, telephone no. (505) 827-7561.  
[12.8.2.1 NMAC - Rp, 12.8.2.1 NMAC, 5/01/2007] {Update address}

Justification: Obvious

**12.8.2.2        SCOPE:** Provisions for Part 2 apply to licensed professional surveyors engaging in the practice of surveying and to licensed professional engineers who are authorized by the Engineering and Surveying Practice Act.  
[12.8.2.2 NMAC - Rp, 12.8.2.2 NMAC, 5/01/2007]

**12.8.2.3        STATUTORY AUTHORITY:** NMSA 1978, Section 61-23-10 (D) prescribes that "the professional surveying committee shall adopt and promulgate rules of professional responsibility exclusive to the practice of surveying. All such bylaws and rules shall be binding upon all individuals licensed pursuant to the Engineering and Surveying Practice Act."  
[12.8.2.3 NMAC - Rp, 12.8.2.3 NMAC, 5/01/2007]

**12.8.2.4        DURATION:** Permanent.  
[12.8.2.4 NMAC - Rp, 12.8.2.4 NMAC, 5/01/2007]

**12.8.2.5        EFFECTIVE DATE:** 5/01/2007, unless a later date is cited at the end of a section.  
[12.8.2.5 NMAC - Rp, 12.8.2.5 NMAC, 5/01/2007]

**12.8.2.6        OBJECTIVE:** The objective of Part 2 is to define the types of surveying, and establish minimum requirements to govern the performance of surveying and other survey-related services by registered professional surveyors in New Mexico.  
[12.8.2.6 NMAC - Rp, 12.8.2.6 NMAC, 5/01/2007]

12.8.2.6 OBJECTIVE: The objective of Part 2 is to define the types of surveying, and to establish a minimum standard of care to govern the performance of surveying and other survey-related services by registered professional surveyors in New Mexico. It is the responsibility of the registrant to meet or exceed the minimum standards contained herein and to apply the technical knowledge and skill that would be applied by other qualified registrants performing the same task in the same area at the same time.

Justification: Add language for the minimum standard of care.

**12.8.2.7        DEFINITIONS:**

A. Types of Surveying.

- (1) Boundary surveying is the determination, description, portraying, measuring or monumentation of the boundaries of a tract of land. Other types of surveying, except as indicated, are not boundary surveying.

Boundary surveying is the determination, description, portraying, measuring or monumentation of the boundaries of a tract of land and reflecting the relationship of the boundaries of the surveyed property (i.e. contiguity, gaps, or overlaps) with its adjoining, 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. Other types of surveys, except as indicated, are not boundary surveying. Boundary surveying can generally be characterized as an "original survey" or a "retracement survey".

**Original Survey:** A survey of property being conducted for the owner(s) of a parent tract of land in order to delineate new property lines for a subdivision of the parent tract, to reconfigure existing property lines under common ownership for a new subdivision of property, or to subdivide a section of land or portions of a section of land as a part of the Public Land Survey System (PLSS) where no such subdivision has been previously done. The purpose of an original survey is to create an original subdivision or re-subdivision of land under common ownership.

**Retracement Survey:** A survey of existing property lines or the boundaries of any tract of land in order to determine where the property lines have become established on the ground, either through a previous original survey of the property lines being retraced or by the application of appropriate boundary law principles governed by the facts and evidence found in the course of performing the retracement survey. A proper retracement survey shall include, but is not limited to: 1) appropriate record and field research; 2) gathering and evaluating the best available evidence indicating where the property lines being retraced have become established on the ground; 3) if necessary, interviews with local landowners familiar with the property boundary lines in the community; and 4) reporting these findings on an appropriate map of survey indicating the corners and the lines retraced, the monuments found or set during the course of the survey, and an explanation, as appropriate, of the boundary law principles employed by the surveyor in making such determination.

Justification: A surveyor that surveys one property's boundary should be taking into consideration the adjoining properties as well.

- (2) Improvement location reporting is the preparation of a report which complies with all of the requirements and limitations of an improvement location report as set forth in 12.8.2.10 NMAC, and which is issued to a title, abstract or escrow company or a lending institution for their exclusive use in determining such things as insurability or value of a tract of land.
- (3) Topographic surveying is the measurement and portrayal of the configuration of the ground and/or the location and description of objects thereon. It can include the plotting and description of property boundary monuments and property lines on a topographic map provided:
  - (a) only existing monuments found at the time of the survey are shown, and no boundary monuments are set;
  - (b) the following words are prominently shown on the topographic map: THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS AND PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY. BOUNDARY DATA SHOWN IS FROM PREVIOUS SURVEY REFERENCED HEREON.

Topographic surveying is the measurement and portrayal of the configuration of the ground and/or the location and description of objects thereon. It can include the plotting and description of property boundary monuments and property lines on a topographic map provided:

(a) Unless a boundary survey is being conducted simultaneously, only existing monuments found at the time of the survey are shown, and no boundary monuments are set; and the following words are prominently shown on the topographic map: THIS IS NOT A BOUNDARY SURVEY OR A RIGHT OF WAY SURVEY, APPARENT PROPERTY CORNERS, RIGHT OF WAY LINES, AND/OR PROPERTY LINES AS SHOWN ARE DERIVED FROM RECORD SURVEY PLATS OR DEEDS REFERENCED HEREON AND ARE NOT GUARANTEED OR TO BE RELIED ON FOR THE ESTABLISHMENT OF PROPERTY LINES.

Justification: There are times when a boundary and topographic map are done simultaneously.

- (4) Easement surveying is the description, portrayal, or monumentation of easement(s) only.
- (5) Right of way surveying is the boundary surveying of right of way for acquisition or for locating existing right of way.

Right of way surveying is the boundary surveying of existing right of way lines, which may include the boundary survey of adjoining property lines, for locating existing and/or proposed right of way.

Justification: Clarity

- (6) Condominium surveying - when performing or preparing a survey that falls under the Condominium Act (Article 7B), the survey requirements (Article 47-7B-9 or subsequent amendments) of said act shall be the standards to which the survey shall be held.
- (7) Preparation of legal descriptions - the preparation of legal descriptions is a form of surveying and, other than the citing of a lot or parcel for reference or identification purposes of a duly recorded plat, must be performed by a licensed professional surveyor.
- (8) An ALTA/ACSM survey is a boundary survey. Therefore, a plat of survey must be recorded only if it is a survey of a parcel for which no previously recorded plat exists or, in the case of remonumentation, the surveyor finds that field measurements are significantly different from record dimensions. The filed survey can be a separate plat and need not include all the detail of the ALTA/ACSM Survey but only the improvements affecting the boundary (See Subsection J of 12 8.2.9 NMAC).

An ALTA/ACSM survey is a boundary survey. Therefore, a plat of survey must be recorded. The filed survey can be a separate plat and need not include all the detail of the ALTA/ACSM Survey but only the improvements affecting the boundary are required to be shown. (See Subsection J of 12 8.2.9 NMAC).

Justification: When filing a boundary survey plat, the surveyor forever publishes the evidence found and set at the time of the survey. When we live in a world of adverse possession, prescriptive rights and other unwritten rights that can change ownership over TIME, or may help a judge to make a decision about ownership. Time is EVIDENCE, and even if the property has not changed, the later survey will reflect that and arguably, that evidence of no change can be just as important as filing the original boundary survey plat.

- (9) Control surveying is the establishment of horizontal and vertical controls which will be the basis for all geospatial data used for design including construction staking surveys, surveys to layout horizontal and vertical alignments, topographic surveys, control surveys for aerial photography for the collection of topographic and planimetric data using photogrammetric methods, construction surveys of engineering and architectural public works projects.

Control surveying is the establishment of horizontal and/or vertical controls which will be the basis for future phases of a project including, but not limited to: extraction of geospatial data, engineering design projects, construction staking, surveys to layout horizontal and vertical alignments, topographic surveys using field methods, collection of topographic and planimetric data using photogrammetric methods and construction surveys of engineering and/or architectural public works projects.

Justification: Current wording is confusing to some surveyors and this is an attempt to clear the confusion.

- (10) Unclassified surveying is surveying not defined above.
  - B. Dimensions means the direction, expressed either as a bearing or an azimuth, and the length of a survey line.
  - C. Easement means a right that the public, a person or an entity holds in the land of another.
  - D. Monument means an object intended to mark a property boundary or a point of reference.
  - E. Surveyor means a professional surveyor licensed under the Engineering and Surveying Practice Act.
  - F. Tract or lot means a parcel of land in separate ownership or a leasehold or set off for separate ownership or a leasehold.

Tract or lot means a parcel of land in separate ownership, where a unique parcel identification number(s) has been or will be assigned by the County in which the tract or lot is situated. Can also be a leasehold set off for separate ownership or a leasehold for other uses.

Justification: Clarity

- G. Supplemental surveying work means surveying work performed in order to densify, augment and enhance previously performed surveying work or site information but excludes the surveying of real property for the establishment of land boundaries, rights of way, easements and the dependent or independent surveys or resurveys of the public land system.
- H. **GPS** is global positioning system.
- I. Classes of surveys.
  - (1) Urban means a survey within or adjoining a municipality or a survey, regardless of location, of land zoned for or intended for use for multifamily, commercial or industrial purposes.
  - (2) Suburban means a survey, which is not an Urban survey, of land zoned for or intended for use for residential purposes.
  - (3) Rural means a survey, which is neither an Urban nor Suburban survey.
  - (4) Positional error means the error inherent in setting or measuring from a monument and is added to the error expressed as a ratio for a closed traverse.  
Positional accuracy is an assessment of the closeness of the location of spatial objects in relation to their true positions geospatially.
- J. **GNSS** is Global Navigational Satellite System.
- K. **Geospatial** – is the relative position of features on, above, or below the earth's surface defined by a localized or globalized system

Justification: More definitions are needed

[12.8.2.7 NMAC - Rp, 12.8.2.7 NMAC, 5/01/2007]

**12.8.2.8 REQUIREMENTS:** Whenever a professional surveyor or a professional engineer undertakes any surveying as authorized in the Engineering and Surveying Practice Act, the licensee shall determine which type of surveying activity is being conducted from the definitions in Subsection A of 12. 8.2.7 NMAC shall then conform to the requirements set forth in 12.8.2.9 NMAC through 12.8.2.14 NMAC for that type of surveying and must also comply with accuracy standards in 12.8.2.16 NMAC when applicable. If the surveying is not defined, then the surveyor shall conform to the requirements for unclassified surveying set forth in 12.8.2.15 NMAC. [12.8.2.8 NMAC - Rp, 12.8.2.8 NMAC, 5/01/2007]

**12.8.2.9 BOUNDARY SURVEYING:** When performing a boundary survey, the surveyor shall be responsible for accomplishing all of the following.

- A. Obtain copies of relevant documents necessary to perform the survey and when available a copy of the title search for the tract being surveyed.  
Obtain copies of available, relevant documents necessary to perform the survey and, when available, a copy of the title search for the tract being surveyed.

Justification: added “available” what is available today isn’t always available tomorrow and may not have been available yesterday. Also commas.

- B. Review all recorded plats and all plats known to and available to the surveyor that are germane to the tract being surveyed.
- C. Make a site visit and inspect the subject property and look for evidence of existing monuments and for evidence of possession and usage.
- D. Determine the relative location on the ground of all found existing monuments which pertain to the survey using procedures which achieve the minimum accuracy standards in 12.8.2.16 NMAC.

- E. Tag found monuments which are accepted by the surveyor and pertain to the boundary being surveyed with a metal tag, bearing the surveyor’s license number, attached to the monument with a metal wire or strap; monuments set by a government agency which are clearly identified by their markings need not be tagged.

Tag found monuments which are accepted by the surveyor and pertain to the boundary being surveyed with a metal tag bearing the surveyor’s registration number attached to the monument with a metal wire or strap; monuments set by a government agency which are clearly identified by their markings need not be tagged.

Justification: comma’s

- F. Set new monuments in conformance with 12. 8.2.17 NMAC at all corners of the tract being surveyed using procedures which achieve the minimum accuracy standards in 12.8.2.16 NMAC, unless a permanent monument already exists.

- G. Follow the rules and procedures, except for the accuracy and monumentation standards, in the manual of instructions for the survey of the public lands of the United States (*manual of surveying instructions* available at [www.blm.gov/az/cadastral/manual/manindex.htm](http://www.blm.gov/az/cadastral/manual/manindex.htm)) prepared by the United States bureau of land management, if the tract being surveyed pertains to the United States survey of public lands in any way including the following:

Follow the rules and procedures, except for the accuracy and monumentation standards, in the current manual of survey instructions for the survey of the public lands of the United States, prepared by the United States bureau of land management, if the tract being surveyed pertains to the United States survey of public lands in any way including the following:

Justification: added “current” and removed a website address that was erroneous.

- (1) is a section or an aliquot part of a section;
  - (2) is a small holding claim, private claim, land grant, mining claim or any other tract described in the manual of instructions for the survey of the public lands of the United States (*manual of surveying instructions*);
  - (3) has a boundary which is a boundary of a tract described in Subsection G of 12.8.2.9 NMAC, paragraphs (1) or (2) above;
  - (4) prior surveys and physical evidence within and adjacent to the section being surveyed should be carefully considered as evidence of original corner locations.
- H. Never move, remove nor obscure an existing monument unless it is first properly referenced and all dimensions necessary to preserve its location are reported on a recorded plat.
- I. Updating a prior survey - If an existing survey is updated for any reason, the surveyor shall comply with the minimum standards in effect at the time of the update unless the update is only to correct a minor scrivener’s error. If the update is solely to bring the survey into compliance with the minimum standards and the location of the boundary has not changed, remonumentation is not required unless the original monumentation was not in compliance with the minimum standards in effect at the time the original survey was performed.
- J. Prepare a plat of the survey, unless the survey is only the re-monumentation of corners of a tract, shown on a recorded plat, where some of the existing corners of the tract are recovered, whose measured dimensions on the ground are reasonably close to the record dimensions. A plat of survey must be recorded only if it is a survey of a parcel for which no previously recorded plat exists or, in the case of remonumentation, the surveyor finds that field measurements are significantly different from record dimensions. The plat may contain as many sheets as required, which meet the size and material requirements of the state statute and shall contain at least the following:

Prepare a plat of the survey and record the survey. The plat may contain as many sheets as required, which meet the size and material requirements of the state statute and shall contain at least the following:

Justification: To comply with changes set forth in paragraph 8, subsection A, 12.8.2.7 NMAC

- (1) the name, address and registration number of the surveyor responsible for the survey;
- (2) a certificate followed by the dated signature and seal of the surveyor responsible for the survey stating that the surveyor conducted an actual survey on the ground and is responsible for the survey and that the survey and plat meet the minimum standards for surveying in New Mexico; only one surveyor's signature and seal shall appear on a plat; and the following model certification is considered to be an example of the minimum that the surveyor should certify to:

I, \_\_\_\_\_ (surveyor's name) \_\_\_\_\_, New Mexico Professional Surveyor No. (surveyors' license number), do hereby certify that this Boundary Survey Plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey; that this survey meets the Minimum Standards for Surveying in New Mexico; and that it is true and correct to the best of my knowledge and belief. I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this instrument is a Boundary Survey Plat of an existing tract or tracts.

(Surveyor's Name) \_\_\_\_\_ PS No. \_\_\_\_\_ Date \_\_\_\_\_;

- (3) a title which shall include the county in which the survey is located and at least the following:
  - (a) the lot, block or tract number and subdivision or district name if the survey is within a subdivision or conservancy district;  
the city, grant, small holding, mining or private claim, or similar area in which the survey is located;
  - (b) if neither subparagraph (a) nor (b) applies, then the section(s), township(s) and range(s) in which the survey is located; if the survey is not within a section, then the projected section(s) shall be stated and designated as such if required by the county clerk;
- (4) a north arrow, equivalent scale and graphic scale for each sheet of the main drawing;
- (5) a description of all monuments found or set including the size and material and all pertinent information stamped or printed on any cap or tag; a found monument which the surveyor has rejected as a true property corner shall be designated as such;  
a description of all monuments found or set, which shall include identifying characteristics such as the material, color or shape and all pertinent information stamped or printed on any cap or tag and the diameter when possible; a found monument which the surveyor has rejected as a true property corner shall be designated as such;

Justification: Why are we guessing the size of the rebar under the cap? Do we measure the size of the chiseled "x"?

- (6) the basis of bearings used in the survey which shall be based upon a procedure such as a solar observation or geodetic control stations or a line shown on a prior recorded document and defined on the ground by existing monuments; the use of assumed bearings is prohibited;  
the basis of bearings used in the survey shall be either based upon
  - (a) NM State Plane Coordinates with specifics to elevation, vertical datum, horizontal datum, zone, mapping angle, ground to grid factor used if using a modified ground system.
  - (b) a specific line between two points either found or re-established set points as shown on an existing filed plat,
  - (c) real geodetic control values based upon an OPUS solution or geodetic control stations.

(d) A longitudinal line is acceptable based off GPS observation or other means for determining the longitude for a basis of bearings as long as the longitudinal value is published on the survey with the method used in determining the longitude. Assumed bearings and GPS North without explanation described above is unacceptable.

Justification: clarity

- (7) a description of all documents used to determine the boundaries and to prepare the plat of survey; the recording information shall be stated; if the document is not of record, all information used from the document shall be shown on the plat;
- (8) the boundary being surveyed including the dimensions as measured on the ground and the record dimensions unless the two are equivalent in which case it shall be so stated; all dimensions which pertain to the determination of the tract boundaries, and a tie to a suitable, permanent, existing monument;
- (9) all dimensions which pertain to the restoration of a lost or obliterated corner or the subdividing of a section under Subsection G of 12.8.2.9 NMAC;
- (10) the location and description of any evidence of a boundary or line of occupation including such things as a fence, building, hedge, wall or the remains thereof which is on a boundary or close enough to a boundary to be confused with the boundary;

the location and description of any evidence of a boundary or line of occupation including such things as a fence, building, wall or the remains thereof which is on a boundary or close enough to a boundary to be confused with the boundary;

Justification: Does not make since to consider vegetation that is trimmed and clipped as lines of occupation.

- (11) the location and description of all easements known or disclosed to the surveyor which cross, adjoin or serve a surveyed tract together with the recording data for the document that created the easement and the location and description of any visible structures which encroach upon said easement;
- (12) the radius, central angle, length and chord dimensions for all curves;
- (13) the lot number, tract number, other designation or the apparent owner of all adjoining tracts with the recording data of the last recorded plat;
- (14) [reserved];

the relationship of the boundaries of the surveyed property (i.e. contiguity, gaps, or overlaps) with its adjoining, where ascertainable from record documents and 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.

Justification: This is a common principle that gets overlooked sometimes.

- (15) the location and description of any evidence of use by a nonowner of the surveyed tract including such things as a road, trail, path, pipeline or utility which crosses a boundary of the tract;
  - (16) a letter or number providing a unique designation of each surveyed tract on a plat with more than one tract;
  - (17) [reserved];
  - (18) access easement; if the surveyed tract is not contiguous to a public right-of-way, any access easement of record which is known to the surveyor shall be described on the plat and its location shall be determined; if no easement is known to the surveyor, a note prominently shown shall disclose that fact;
  - (19) the area of each surveyed tract.
- K. Record the plat prepared under Subsection J of 12.8.2.9 NMAC with the county clerk of the

county or counties in which the survey is located. A plat of survey must be recorded only if it is a survey of a parcel for which no previously recorded plat exists or, in the case of remonumentation, the surveyor finds that field measurements are significantly different from record dimensions. The plat shall be recorded within sixty days of completion. A plat which requires the approval of a government agency is complete upon final approval. Any other plat is complete when the surveyor signs or seals it.

[12.8.2.9 NMAC - Rp, 12.8.2.9 NMAC, 5/01/2007]

Record the plat prepared under Subsection J of 12.8.2.9 NMAC with the county clerk of the county or counties in which the survey is located. The plat shall be recorded within sixty days of completion. A plat which requires the approval of a government agency is complete upon final approval. Any other plat is complete when the surveyor signs or seals it.

Justification: See explanation for 12.8.2.7 subsection A, paragraph 8.

#### **12.8.2.10 IMPROVEMENT LOCATION REPORT:**

- A. Improvement location reporting is the preparation of an improvement location report which is a narrative report, which may be accompanied by a sketch, and which is issued only to a title, abstract or escrow company or a lending institution for their exclusive use in determining such things as insurability or value of a tract of land; it shall not be represented by the surveyor as being a property boundary survey.

Improvement location reporting is the preparation of an improvement location report which is a narrative report, which may be accompanied by a sketch, and which is issued only to a title, abstract or escrow company or a lending institution for their exclusive use; it shall not be represented by the surveyor as being a property boundary survey.

Justification: It would be wrong to consider the land value or insurability from an ILR.

- B. If the report contains a sketch, the sketch shall contain the following words which are printed as large and as prominently as any other words upon the sketch: "This report is not for use by a property owner for any purpose. This is not a boundary survey and may not be sufficient for the survey exception from an owner's title policy. It may or may not reveal encroachments, overlaps, conflicts in boundary lines, shortages in area, or other matters which would be disclosed by an accurate boundary survey."

[12.8.2.10 NMAC - Rp, 12.8.2.10 NMAC, 5/01/2007]

**12.8.2.11 TOPOGRAPHIC SURVEYING:** On topographic surveys with contour lines, the vertical accuracy of 90% of the points tested shall be within one half of the contour interval, unless otherwise stated on the survey.

- A. Every topographic map shall comply with **12.8.2.14 NMAC**

Justification: Every topographic map should have "shareable" control for the next professional to follow.

[12.8.2.11 NMAC - Rp, 12.8.2.11 NMAC, 5/01/2007]

#### **12.8.2.12 EASEMENT SURVEYING:**

A. When performing easement surveying, the surveyor shall use procedures in any field measurements which achieve the minimum accuracy standards in 12.8.2.16 NMAC.

B. If the easement does not run parallel to a boundary of the tract in which it is located, then the surveyor shall prepare a plat which shows the dimensions of the easement and conforms with Paragraphs (1), (2), (3), (4), (5) and (6) of Subsection J of 12.8.2.9 NMAC, and complies with one of the following:

- (1) shows ties to record monuments at the beginning and ending of the easement and at least at every mile along the easement, or
- (2) shows the coordinates of the beginning, ending and all angle points in accordance with the New Mexico coordinate system and shows the grid bearing and ground distance between said points, or
- (3) shows ties to existing corners of a subdivision in which the easement is located.

C. These field procedures and subsequent plat preparation or legal description must be conducted under the responsible charge of a professional surveyor.

D. Ties from points on the easement to lot corners shall be shown for every tract the easement is affecting so that when a subsequent survey is being prepared on the tract, the location can be defined based upon the ties.

Justification: An easement burdening a property should be described and platted in a fashion so that it can easily be located without establishing NMSP values or surveying a mile away. It is in the public's best interested to know where their property is being burdened not by a document that reflects a sketch without specific ties to their particular property.

[12.8.2.12 NMAC - Rp, 12.8.2.12 NMAC, 5/01/2007]

**12.8.2.13 RIGHT OF WAY SURVEYING:** When performing right of way surveying, the surveyor shall do all of the following.

- A. Obtain a copy of the last recorded deed for the tract(s) affected by the existing or contemplated right of way and obtain copies of all existing right of way maps and conveyance documents available.
- B. Obtain a copy of all recorded plats and all plats and maps known to be available to the surveyor for the tract(s) affected by the existing or contemplated right of way.
- C. Make a diligent search on the ground, including the use of a metal detector, for all existing monuments, which pertain to the property boundaries intersecting the public highway right of way corridor being surveyed.
- D. Determine the relative location on the ground of all found existing monuments, which pertain to the survey using procedures, which achieve the minimum accuracy standards in 12.8.2.16 NMAC.

Determine the relative location on the ground of all found existing monuments, which pertain to the survey using procedures to achieve the minimum accuracy standards in 12.8.2.16 NMAC.

Justification: Remove unnecessary coma.

- E. Tag all found and accepted monuments, which pertain to the survey, with a metal tag, bearing the surveyor's registration number, attached to the monument with a metal wire or strap.

Remove E

Justification: It makes no since to require a surveyor to tag monuments when a surveyor does not know when they are on site which monument they will accept or not and given the acknowledgement stated in paragraph 17 of subsection J of 12.8.2.13 indicating that many times the surveyor starting the job will not be the one finishing the job.

- F. Set new monuments conforming to 12.8.2.17 NMAC on the right of way limit lines at all changes in direction and at all points where property lines intersect, using procedures which achieve the minimum accuracy standards in 12.8.2.16 NMAC, unless a permanent monument exists; when monumenting existing right of way limit lines, monuments at intersecting property lines need not be set.
- G. Follow the rules and procedures, except for the accuracy and monumentation standards, in the manual of instructions for the survey of the public lands of the United States (*manual of surveying instructions*) prepared by the United States bureau of land management, if the tract being surveyed pertains to the United States survey of public lands in any way including the following:
  - (1) is a section or an aliquot part of a section;
  - (2) is a small holding claim, private claim, land grant, mining claim or any other tract described in the manual of instructions for the survey of the public lands of the United States (*manual of surveying instructions*);
  - (3) has a boundary which is a boundary of a tract described in Subsection G of 12.8.2.13 NMAC, paragraphs (1) or (2) above.

- H. Whenever a tract of land is to be severed by right of way acquisition, the surveyor shall locate property lines that intersect the right of way limits. The surveyor shall use all available documents, field data, including parol evidence and land title information to determine the length, location and bearing of the severed property line relative to the right of way limits. This includes surveying as many additional parcel boundaries as necessary which connect to the property lines intersecting the right of way in order to accurately locate the property lines affected by the contemplated right of way.
- I. [Reserved]
- J. Prepare a plat of survey, containing as many sheets as required, and which contains at least the following:
- (1) the name, address, and registration number of the surveyor responsible for the survey;
  - (2) a certificate followed by the signature and seal of the surveyor responsible for the survey and stating that the survey and plat meet the minimum standards for surveying in New Mexico;
  - (3) a title which shall include at least the following:
    - (a) the project number.
    - (b) the project's control number (PCN) of the project (if applicable);
  - (4) the section(s), township(s), range(s), grant or reservation, municipality, and county(s) in which the project is located;
  - (5) a north arrow, equivalent scale, graphic scale, date of the fieldwork and a location/vicinity map showing where the project is located;
  - (6) a description of all monuments found or set; a found monument, which the surveyor rejected as a property corner, shall be designated as such;
  - (7) the basis of bearing used in the survey which shall be a procedure such as solar observation or a line shown on a plat and defined on the ground by existing monuments;  
 The basis of bearing used shall comply with the requirement paragraph (6), Subsection J of 12.8.2.9 NMAC.
  - (8) a description of all documents used to determine the boundary of any tract surveyed and to prepare the plat of survey; the recording information shall be stated; if the document is not of record, all information used from the document shall be shown on the plat;
  - (9) the pertinent boundaries of the tract abutting the right of way being surveyed including the dimensions as measured on the ground and the record dimensions unless the two are equivalent;
  - (10) the location and description of any evidence of a boundary line or occupation including such things as a fence, building hedge, wall or the remains thereof which is on a boundary or close enough to a boundary to be confused with the boundary;  
  
 the location and description of any evidence of a boundary line shall comply with paragraph (10), Subsection J, 12.8.2.9 NMAC.
- Justification: To follow the same requirements as set forth under the given Subsection.
- (11) all dimensions which pertain to the restoration of a lost corner or the subdivision of a section under Subsection G of 12.8.2.13 NMAC;
  - (12) the location of permanent improvements lying in close proximity to the new right of way limit line and which may be affected by the contemplated acquisition of land for public use;
  - (13) the radius, central angle, length and the chord bearing and dimension for all curves;
  - (14) the lot number, tract number, other designation or the apparent owner of all adjoining tracts with the recording data of the last recorded plat;
  - (15) the name of the owner of the parcel from which right of way is being acquired;
  - (16) the location and description of all easements known or disclosed to the surveyor which cross, or adjoin the right of way;
  - (17) a letter/number or combined letter and number designation of each parcel acquired for right of way.
- K. Record the plat prepared under Subsection J of 12.8.2.13 NMAC with the county clerk of the county or counties in which the project is located. The plat shall be recorded within sixty days of completion. The plat is considered complete when the surveyor signs and seals it. For the New Mexico department of

transportation (NMDOT) right of way surveys, the plat(s) may carry multiple surveyor certifications, if necessary, in order to reflect specific areas of individual responsibility when the scope, duration, or complexity of a NMDOT right of way project so requires. Certifications of all other right of way surveys shall carry a single signature and seal of the surveyor responsible for the survey.

Record the plat prepared under Subsection J of 12.8.2.13 NMAC with the county clerk of the county or counties in which the project is located. The plat shall be recorded within sixty days of completion. The plat is considered complete when the surveyor signs and seals it. For the New Mexico Department {change to capitalized D} of Transportation {changed to capitalized T}(NMDOT) right of way surveys, the plat(s) may carry multiple surveyor certifications, if necessary, in order to reflect specific areas of individual responsibility when the scope, duration, or complexity of a NMDOT right of way project so requires. Certifications of all other right of way surveys shall carry a single signature and seal of the surveyor responsible for the survey.

Justification: Grammar

[12.8.2.13 NMAC - Rp, 12.8.2.13 NMAC, 5/01/2007]

**12.8.2.14 CONTROL SURVEYING REPORTING:** Whenever a professional surveyor undertakes control surveying as defined in 12.8.2.7 NMAC, the licensee shall prepare a control survey report which will contain the following information as appropriate to work being performed.

- A. A listing of the final adjusted coordinates and elevations for all points within the control network along with a complete description of all monuments established or recovered.
- B. A complete description of the horizontal and vertical datum used including the basis of bearings (GPS, plat etc.) if the coordinate system is not based on a published datum.
- C. A complete description of the state plane and/or UTM zone used, if appropriate.
- D. Units used for coordinates and elevations.
- E. Description of monument(s) used to constrain the control network including the reference coordinates and elevations used for said monument(s).
- F. If the final adjusted coordinates are based on a modified (ground datum) state plane coordinate system, a complete description of the method(s) used to generate the modified coordinates shall be included in the report.
- G. A brief description detailing the field methods and equipment used to conduct the control survey.
- H. The date when the control monuments were set, the date when the control monuments were positionally observed, and the date of the final network adjustment.

I. The geospatial positional accuracy shall be reported pursuant to the accuracy classifications contained within Subsection C of 12.8.2.16 NMAC. The surveyor shall report both the geospatial positional accuracy and the estimated network accuracy as defined in Subsection C of 12.8.2.16 NMAC and will report the geospatial positional accuracy separately for horizontal and vertical components.

J. A certificate followed by the dated signature and seal of the surveyor responsible for the control survey stating that the surveyor conducted an actual survey on the ground and is responsible for the survey along with a statement of accuracy pursuant to the accuracy standards contained within 12.8.2.16 NMAC. The following model certification is considered to be an example of the minimum that the surveyor should certify to:

I, (surveyor's name), New Mexico Professional Surveyor No. (surveyor's license number), do hereby certify that this Control Survey Report was prepared by me or under my direct supervision based on an actual survey on the ground as described herein; that I am responsible for this survey; and that the survey and report meets the minimum standards for surveying in New Mexico.

[12.8.2.14 NMAC - N, 5/01/2007]

Change all 12.8.2.14

**12.8.2.14 CONTROL SURVEYING REPORTING:** Whenever a professional surveyor undertakes control surveying as defined in 12.8.2.7 NMAC, where the coordinates and elevations of the control points established by the survey will be relied upon by professionals other than the original surveyor for future phases of the work, the licensee shall prepare a Control Survey Report and shall provide the report to the prime client and to any other person who makes a written submittal. Alternatively, if the entire report is contained on the face of the work product no other reporting is required. The report will contain the following information as appropriate to work being performed.

**A.** A listing of the final adjusted coordinates and elevations for all points within the control network along with a complete description of all monuments established or recovered.

**B.** A complete description of the horizontal and vertical datum used including the basis of bearings.

**C.** A complete description of the state plane and/or UTM zone used including all pertinent metadata, if appropriate.

**D.** Units used for coordinates and elevations.

**E.** Description of monument(s) used to constrain the control network including the reference coordinates and elevations used for said monument(s).

**F.** If the final adjusted coordinates are based on a modified (ground datum) state plane coordinate system, a complete description of the method(s) used to generate the modified coordinates shall be included in the report.

**G.** A brief description detailing the field methods and equipment used to conduct the control survey.

**H.** The date when the control monuments were set, the date when the control monuments were positionally observed, and the date of the final network adjustment.

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

**J.** A certificate followed by the dated signature and seal of the surveyor responsible for the control survey stating that the surveyor conducted an actual survey on the ground and is responsible for the survey. The following model certification is considered to be an example of the minimum that the surveyor should certify to:

I, (surveyor's name), New Mexico Professional Surveyor No. (surveyor's license number). do hereby certify that this Control Survey Report was prepared by me or under my direct supervision based on an actual survey on the ground as described herein; that I am responsible for this survey; and that the survey and report meets the minimum standards for surveying in New Mexico.

Justification: Clarity on where, when and how and what accuracy standards the control was established.

**12.8.2.15 UNCLASSIFIED SURVEYING:** When a surveyor does surveying of a type not described in these standards, the surveyor shall do all that is necessary to fully determine and report all information which is relevant to the project. The scope of the project may be stated and limited. The surveyor shall not prepare or sign a document, which could mislead or misinform. If a surveyor issues a plat with the surveyor's signature and seal,

which was not required by these minimum standards, the plat shall comply with the applicable portions of Subsection J of 12. 8.2.9 NMAC.

[12.8.2.15 NMAC - Rp, 12.8.2.14 NMAC, 5/01/2007]

#### **12.8.2.16 ACCURACY:**

##### **A. Topographic map accuracy standards.**

(1) Horizontal accuracy - For maps compiled at scales larger than 1:20,000, not more than 10 percent of the points tested shall be in error by more than 1/30 inch, measured at the compiled scale. For maps compiled at scales of 1:20,000 or smaller, not more than 10 percent of the points tested shall be in error by more than 1/50 inch, measured at the compiled scale. These limits of accuracy shall apply in all cases to positions of well-defined points only. Well-defined points are those that are easily visible or recoverable on the ground, such as the following:

monuments or markers, such as benchmarks, property boundary monuments; intersections of roads, railroads, etc.; corners of large buildings or structures (or center points of small buildings). In general what is well defined will be determined by what is plottable on the scale of the map within 1/100 inch. Thus while the intersection of two roads or property lines meeting at right angles would come within a sensible interpretation, identification of the intersection of such lines meeting at an acute angle would obviously not be practicable within 1/100 inch. Similarly, features not identifiable upon the ground within close limits are not to be considered as test points within the limits quoted, even though their positions may be scaled closely upon the map. This class would include timberlines, soil boundaries, etc.

(2) Vertical accuracy - As applied to contour maps on all publication scales, shall be such that not more than 10 percent of the elevations tested shall be in error more than one-half the contour interval.

(3) Accuracy test guidelines - When testing a topographic map for compliance with Paragraphs (1) and (2) of Subsection A of 12.8.2.16 NMAC, a minimum of 20 check points evenly distributed throughout the topographic map shall be tested. Horizontal accuracy shall be tested by comparing the planimetric coordinates of the well-defined points in the mapping with coordinates of the same points from an independent source of higher accuracy. Vertical accuracy shall be tested by comparing the elevations in the mapping with elevations of the same points as determined from an independent source of higher accuracy.

Remove 1-3 and add

(1) “The required horizontal and vertical accuracy of a topographic map produced by field procedures or photogrammetric methods shall be determined on a project by project basis and shall meet the accuracy standards set forth in the current American Society for Photogrammetry and Remote Sensing (ASPRS) Positional Accuracy Standards for Digital Geospatial Data. Accuracy testing and reporting shall be pursuant to the current ASPRS Positional Accuracy Standards for Digital Geospatial Data” as well.  
Paragraphs 2 and 3 are reserved

Justification: Clarity on where, when and how and what accuracy standards the control was established.

(4) Accuracy reporting - If testing by an independent source of higher accuracy has not or cannot be followed, the final topographic map shall contain the following statement: “This map has been produced according to procedures that have been demonstrated to produce data that meets or exceeds the *minimum standards* for a topographic map compiled at a scale of (insert map scale here) with a contour interval of (insert contour interval here).” If testing by an independent source of higher accuracy has been conducted pursuant to the guidelines contained herein, the final topographic map shall contain the following statement: “This map has been tested from an independent source of higher accuracy and meets the *Minimum Standards* for a topographic map compiled at a scale of (insert map scale here) with a contour interval of (insert contour interval here).”

(5) Alteration of original mapping (scale): When the presentation scale of a map is other than that of the compilation scale, that fact shall be stated in the legend. “This map is an enlargement of a 1:2,400 map” or “This map is a reduction of a 1”=200’ map.”

**B.** Boundary surveying, easement surveying and right-of-way surveying accuracy standards. The surveyor shall determine the class of a survey using the definitions in Paragraphs (1) through (3) of Subsection I of 12.8.2.7 NMAC, and achieve the accuracy specified for the class of survey. It is the responsibility of the surveyor to select the appropriate procedures and equipment to obtain the accuracy required by the minimum field accuracy standards below for boundary surveying, easement surveying and right-of-way surveying:

	<u>Urban</u>	<u>Suburban</u>	<u>Rural</u>
Unadjusted Closure (Traverse)	1 part in 15,000	1 part in 10,000	1 part in 7,500
Positional Accuracy	0.05 ft. 0.10 ft	0.10 ft. 0.10 ft	0.25 ft.
Location of Improvements	0.15 ft.	0.25 ft.	1.0 ft.

**C.** Geospatial positional accuracy standards for control surveys. The geospatial positional accuracy for control surveys shall be as follows:

- (1) horizontal control networks using GPS relative positioning techniques - the horizontal positional accuracy shall be reported in terms of relative positioning accuracy according to the order classifications contained within the geometric geodetic accuracy standards and specifications for using GPS relative positioning techniques, version 5.0 dated August 1, 1989, federal geodetic control committee;
- (2) horizontal control networks using conventional field traversing techniques - the horizontal positional accuracy shall be reported in terms of distance accuracy according to the order classifications contained within the standards and specifications for geodetic control networks dated September, 1984, federal geodetic control committee;
- (3) vertical control networks - the vertical positional accuracy shall be reported in terms of elevation difference accuracy according to the order classifications contained within the standards and specifications for geodetic control networks dated September, 1984, federal geodetic control committee;
- (4) the estimated network accuracy is a statement disclosing the order (and class, if appropriate) of the published monument or monuments used to constrain the final network adjustment and is intended to inform the end user of how well the data may fit with an established geodetic datum.

If the earlier Section 12.8.2.14 CONTROL SURVEYING REPORTING is revised as suggested, then c. above should be removed in its entirety.

[12.8.2.16 NMAC - Rp, 12.8.2.15 NMAC, 5/01/2007]

**12.8.2.17 MONUMENTS:**

**A.** Except as prescribed in Subsections B and C of 12.8.2.16 NMAC, monuments set by the surveyor shall be ferrous metal, at least one-half inch in diameter and at least sixteen inches long. They shall bear a metal or plastic cap stamped with the surveyor’s registration number.

**B.** Corners which fall upon a hard surface shall be monumented with a chiseled cross or a nail in a disk or tag bearing the surveyor’s registration number.

Corners monumented on hard surface shall be marked with a nail, tag or disk bearing the surveyor's registration number.

Justification: Better monumentation and identification of a monument.

- C. When a corner is located at a place where it is not practical to set a monument or a monument at the corner is likely to be destroyed, at least one reference monument shall be set and dimensioned on the plat such that the location of the corner can be reestablished.
- D. Monuments for the exterior corners of a subdivision shall be set by the surveyor who certified the plat of the subdivision prior to recordation of the subdivision plat. It is the responsibility of the subdivider to ensure that interior corners of a subdivision are set within thirty (30) days of completion of the construction of infrastructure improvements but within one (1) year after recordation of the subdivision plat. The board of licensure may elect to extend the time period upon the showing of good cause. The surveyor certifying the subdivision plat shall be responsible for notifying the subdivider by either including a statement regarding this responsibility in the executed contract for services or by letter sent certified mail, return receipt requested. The requirements of this section are met if any surveyor stakes the interior corners of the subdivision. If the subdivision is developed in phases, the interior corners of each phase may be staked by separate surveyors, provided the above stated time limits are met or extended by decision of the board of licensure. Under this section, it is the responsibility of each surveyor who stakes the interior corners of a subdivision to record an affidavit with the county clerk. Said affidavit shall be signed and sealed by the surveyor and shall contain at least the following: subdivision name as shown on the recorded plat, all recording information, name of subdivider, type of monuments set and, if the surveyor is staking a phase of the subdivision, the limits of responsibility. If the surveyor is required to record a plat of survey under the requirements of Subsection J of 12.8.2.9 NMAC, the affidavit may be included on said plat.
- E. A surveyor shall perpetuate monuments established by the public land survey system which the surveyor finds in need of rehabilitation or replacement. A description of the monument as found and as restored or referenced and all available dimensions to other monuments shall be reported on a recorded plat. Said plat may be a boundary survey plat. If circumstances do not require a boundary survey plat, a plat depicting only the rehabilitated or replaced monuments will satisfy the requirements of this section.
- F. For monuments which pertain to the survey, a surveyor shall perpetuate those monuments which the surveyor finds in need of rehabilitation or replacement. A description of the monument as found and as restored or referenced and all available dimensions to other monuments shall be reported on a recorded plat.

[12.8.2.17 NMAC - Rp, 12.8.2.16 NMAC, 5/01/2007]

#### 12.8.2.18 GENERAL:

- A. **Authority.** These rules are authorized by the Engineering and Surveying Practice Act.
- B. **Penalties.** The New Mexico board of licensure for professional engineers and professional surveyors may take those actions prescribed in the Engineering and Surveying Practice Act against any surveyor who has been found in violation of these standards, or against non-licensed practitioners.
- C. **Disclaimers.** Any disclaimer by a surveyor purporting to disavow compliance with any of these standards is prohibited.
- D. **Certifications.** Professional surveyors should be prepared to certify to those things required in the execution of their duties and those mandated by law or rule. They should be cautious, however, in certifying only to conditions and facts falling within their areas of competency. Certification language that goes beyond the obligations prescribed by law and the responsibilities assumed by the surveyor in the normal course of boundary surveying should be carefully considered by the surveyor before signing and sealing any document.
- E. **Interpretation.** The words “offers surveying services to the public” as used in Paragraph B of Section 61-23-27 (10), NMSA 1978, includes the certification by a surveyor of a plat or map which may be used by the public.
- F. **Advisory Opinions.** The surveying committee of the board of licensure may issue its opinion explaining the application of these standards to a specific situation.

[12.8.2.18 NMAC - Rp, 12.8.2.17 NMAC, 5/01/2007]

#### HISTORY OF 12.8.2 NMAC:

##### Pre-NMAC History:

Material in this Part is derived from that previously filed with the commission of public records - state records center

& archives under: PELS Rule No. 83-1, Standards for Land Surveyors in New Mexico, filed 3-21-83; PELS Rule No. 83-1, Amendment No. 1, filed 6-25-84; PE/PS rule No. 89-3 Minimum Standards for Land Surveying in New Mexico, filed 10-25-89; Rule 91-1, Minimum Standards for Surveying in New Mexico - Purpose, filed 11-19-91, Rule 500.1, Minimum Standards for Surveying in New Mexico/Requirements, filed 12-29-93; Rule 91-2, Minimum Standards for Surveying in New Mexico- Authority, filed 11-19-91; Rule 500.12, Minimum Standards for Surveying in New Mexico - General, filed 12-29-93, Rule 91-3, Minimum Standards for Surveying in New Mexico - Definitions, filed 11-19-91; Rule 500.2, Minimum Standards for Surveying in New Mexico - Types of Surveying, filed 12-29-93; Rule 91-4, Minimum Standards for Surveying in New Mexico - Requirements for Surveys, filed 11-19-91; Rule 500.10 Minimum Standards for Surveying in New Mexico - Monuments, filed 12-29-93; Rule 91-5, Minimum Standards for Surveying in New Mexico - Minimum Accuracy Standards, filed 11-19-91; Rule 500.9, Minimum Standards for Surveying in New Mexico - Accuracy, filed 12-29-93; Rule 91-6, Minimum Standards for Surveying in New Mexico - Penalties, filed 11-19-91; Rule 500.3, Minimum Standards for Surveying in New Mexico/Property Boundary Surveying, filed 12-29-93; Rule 500.4, Minimum Standards for Surveying in New Mexico/Inspection Report Surveying, filed 12-29-93; Rule 500.5, Minimum Standards for Surveying in New Mexico/Topographic Surveying, filed 12-29-93; Rule 500.6, Minimum Standards for Surveying in New Mexico/Easement Surveying, filed 12-29-93; Rule 500.7, Minimum Standards for Surveying in New Mexico/Highway Right of Way Surveying, filed 12-29-93; Rule 500.8, Minimum Standards for Surveying in New Mexico/Unclassified Surveying, filed 12-29-93; Rule 500.11, Minimum Standards for Surveying in New Mexico/Definitions, filed 12-29-93.

#### **History Repealed Material:**

12 NMAC 8.2, Minimum Standards for Surveying in New Mexico (filed 01-18-2000) repealed 10-01-2000.  
12.8.2 NMAC, Minimum Standards for Surveying in New Mexico (filed 08-15-00) repealed 5/01/2007.

#### **Other History:**

Rule 91-6, Minimum Standards for Surveying in New Mexico - Penalties, filed 11-19-91;  
Rule 500.1, Minimum Standards for Surveying in New Mexico/Requirements (filed 12-29-93);  
Rule 500.2, Minimum Standards for Surveying in New Mexico - Types of Surveying (filed 12-29-93);  
Rule 500.3, Minimum Standards for Surveying in New Mexico/Property Boundary Surveying (filed 12-29-93);  
Rule 500.4, Minimum Standards for Surveying in New Mexico/Inspection Report Surveying (filed 12-29-93);  
Rule 500.5, Minimum Standards for Surveying in New Mexico/Topographic Surveying (filed 12-29-93);  
Rule 500.6, Minimum Standards for Surveying in New Mexico/Easement Surveying (filed 12-29-93);  
Rule 500.7, Minimum Standards for Surveying in New Mexico/Highway Right of Way Surveying (filed 12-29-93);  
Rule 500.8, Minimum Standards for Surveying in New Mexico/Unclassified Surveying (filed 12-29-93);  
Rule 500.9, Minimum Standards for Surveying in New Mexico - Accuracy (filed 12-29-93); Rule  
500.10 Minimum Standards for Surveying in New Mexico - Monuments (filed 12-29-93);  
Rule 500.11, Minimum Standards for Surveying in New Mexico/Definitions (filed 12-29-93);  
Rule 500.12, Minimum Standards for Surveying in New Mexico - General (filed 12-29-93) were all renumbered, reformatted and replaced by 12 NMAC 8.2, Minimum Standards for Surveying in New Mexico, effective 03-02-03.  
12 NMAC 8.2, Minimum Standards for Surveying in New Mexico (filed 01-18-00) was renumbered, reformatted, and replaced by 12.8.2 NMAC, Minimum Standards for Surveying in New Mexico, effective 10-01-2000.  
12.8.2 NMAC, Minimum Standards for Surveying in New Mexico (filed 08-15-00) was replaced by 12.8.2 NMAC, Minimum Standards for Surveying in New Mexico, effective 5/01/2007.