

21 NCAC 56 .1602 is amended with changes as published in 39:17 NCR 1123–24 as follows:

21 NCAC 56 .1602 SURVEYING PROCEDURES

(a) A Professional Land Surveyor shall spend the necessary time and effort to make investigation to determine if there are encroachments, gaps, lappages, or other irregularities along each line surveyed. Points may be placed on the line from closed or verified traverses and the necessary investigations made from these points. If these investigations are not made, then the surveyor shall not certify to an actual survey of that line and the plat shall contain the appropriate qualifications in accordance with the rules in this Section.

(b) Any and all visible or determined encroachments or easements on the property being surveyed shall be accurately located and indicated.

(c) With respect to investigation of property boundaries and recorded easements, the surveyor shall examine the most recent deeds and recorded plats adjacent to the subject property as well as all deeds and plats recorded after the date of the deed or plat upon which the survey is being based (the survey reference deed or plat).

(d) Except as provided in Paragraph (e) of the Rule, metal stakes or materials of comparable permanence shall be placed at all ~~corners.~~ corners of the property.

(e) Where a corner falls in a right-of-way, tree, stream, or on a fence post, boulder, stone, or similar object, one or more monuments or metal stakes shall be placed in the boundary so that the inaccessible point may be located accurately on the ground and the map.

(f) The results of a survey shall be ~~reported~~ provided to the user of that survey as either a map or a report of survey survey. and, whether The results may be presented in written or graphic form, form. In either case, the survey shall be prepared in a clear and factual manner. factual and understandable to the anticipated user of the map or report. All reference sources shall be identified. Artificial monuments called for in such reports shall be described as having been found in place or ~~set.~~ set by the surveyor. When no monument is found or set for points described in Paragraph (e) of this Rule, that fact shall be noted.

(g) Tie lines and grid control defined. Where the results of a survey are reported in the form of a plat or a written description, one or more corners shall, by a system of azimuths or courses and distances, be accurately tied to and coordinated with a horizontal control monument of some United States or State Agency survey system, such as the North Carolina Geodetic Survey, where such monument is within 2000 feet of the subject property, right-of-way, easement or other surveyed ~~entity.~~ entity (i.e., "grid control"). Where the North Carolina grid system coordinates of said monument are on file in the Department of Public Safety, Emergency Management, Geodetic Survey office, the coordinates of both the referenced corner or point and the monument(s) shall be shown in X (easting) and Y (northing) coordinates on the plat or in the written description or document. The coordinates shall be identified as based on "NAD 83," indicating North American Datum of 1983 or as "NAD 27," indicating North American Datum of 1927. The datums of the National Geodetic Survey (NGS) are incorporated by reference including subsequent amendments and editions, and may be accessed free of charge at www.ngs.noaa.gov. The tie lines to the monuments shall be sufficient to establish true north or grid north bearings for the plat or description if the monuments exist in pairs. Control monuments within a previously recorded subdivision may be used in lieu of grid control. In the interest of bearing

consistency with previously recorded plats, existing bearing control may be used where practical. In the absence of grid control, other natural or artificial monuments or landmarks shall be used. In all cases, the tie lines shall be sufficient to accurately reproduce the subject lands from the control or reference points used.

(h) Whenever area is computed and included on a plat, the method of computation shall be stated on the plat. Area is to be computed by double meridian distance or equally accurate method and shown on the face of the plat, written description, or other document. Area computations by estimation, by planimeter, by scale, or by copying from another source are not acceptable methods, except in the case of tracts containing inaccessible areas and in these areas the method of computation shall be stated. areas. [The method of computation shall be stated on the plat.]

History Note: Authority G.S. 89C-10; 89C-20;

Eff. July 1, 1989;

Amended Eff. August 1, 2014; August 1, 2012 (see S.L. 2012-143, s.1.(f)); September 1, 2011; May 1, 2009; August 1, 2000; August 1, 1998; February 1, 1996;

Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. April 27, 2019.

Amended Eff. August 1, 2025.

21 NCAC 56 .1607 is amended with changes as published in 39:17 NCR 1123–24 as follows:

21 NCAC 56 .1607 GLOBAL POSITIONING SYSTEMS SURVEYS

(a) General. Global Navigation Satellite Systems (GNSS) is the generic name of navigation and positioning systems with global coverage that is comprised of GPS (Global Positioning System, United States, originally Navstar), GLONASS (Global Navigation Satellite System, Russia), Galileo (Europe), BDS (BeiDou Navigation Satellite System, China, also known as COMPASS), and any other satellite-based navigation and positioning systems that provide global coverage. ~~systems.~~

(b) The Professional Land Surveyor in responsible charge of the GPS survey shall certify all prepared ~~documents.~~ documents pursuant to Rule .1103 of this Chapter and include a GPS certificate on the survey. When a map or document consists of more than one sheet, only one sheet must contain the certificate and all others must be certified. The certificate or metadata notes shall contain the following information:

- (1) Class of GPS survey as defined in the Standards of Practice (or list the sections);
- (2) Type of GPS field procedure, such as Static, Kinematic, Pseudo-Kinematic, Real time Kinematic, Real time Kinematic networks, and Online Position User Service; Positional accuracy;
- (3) Positional accuracy; Type of GPS field procedure, such as Static, Kinematic, Pseudo-Kinematic, Real-time Kinematic, Real-time Kinematic networks, and Online Position User Service;
- (4) Dates of survey;
- (5) What datum and epoch coordinates or geographic positions are based on;
- (6) Designation of fixed-control stations and their positional data;
- (7) Geoid model used;
- (8) Combined grid factor(s); and
- (9) Units.

The certificate shall be substantially in the following form:

"I, _____, certify that this map was drawn under my supervision from an actual GPS survey made under my supervision and the following information was used to perform the survey:

- (1) Class of survey: _____
- (2) Positional accuracy: _____
- (3) Type of GPS field procedure: _____
- (4) Dates of survey: _____
- (5) Datum/Epoch: _____
- (6) Published/Fixed-control ~~use:~~ used: _____
- (7) Geoid model: _____
- (8) Combined grid factor(s): _____
- (9) Units: _____"

1 (c) GPS surveys to provide control networks shall be performed in such a manner that it meets a 95 percent confidence
2 level of the positional accuracy of each point relative to the published positions of the control points used and shall
3 meet the accuracy standards of a Class AA survey as set out in Rule .1603.

4 (d) GPS surveys performed to provide local horizontal or vertical ~~Grid~~ control on a parcel of land where the boundary
5 or topography of that parcel will be shown relative to ~~NC Grid~~ North Carolina grid horizontal or vertical datum shall
6 be performed using techniques that will provide the standards of accuracy for the class of survey being performed
7 while determining the horizontal or vertical positions of objects as set out in Rule .1603 or Rule .1606 as applicable.

8 (e) Fixed station(s) used for the project shall appear on the map, plat, or report. The minimum data shown for each
9 fixed station shall be station name, horizontal position (northing and easting) or latitude, longitude, elevation (ellipsoid
10 or orthometric), and datum and epoch.

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12 *History Note: Authority G.S. 89C-10; 89C-20;*

13 *Eff. November 2, 1992;*

14 *Amended Eff. August 1, 2011; May 1, 2009; August 1, 2002; August 1, 2000;*

15 *Pursuant to G.S. 150B-21.3A, rule is necessary without substantive public interest Eff. April 27,*
16 *2019;*

17 *Amended Eff. August 1, 2025; July 1, 2020.*