

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: All rules submitted

DEADLINE FOR RECEIPT: Friday, June 13, 2014

NOTE WELL: *This request when viewed on computer extends several pages. Please be sure you have reached the end of the document.*

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

Please underline "July 1, 2014" in the History Note for each Rule.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .0501

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In (a), line 7, delete "following" before "terms"

Delete "by the Board" on line 8.

In Subparagraphs (a)(1) through (3), the phrases should be in quotation marks and not begin with all capital letters.

In (a)(1), is this available on a website somewhere? You may want to add that.

In (a)(2), line 16, I note in other parts of the Rule you refer to "ABET" and "EAC" together. Is that applicable here?

Also in (a)(2), I take it your regulated public understands what you mean by "technical courses which contains engineering or scientific principles"?

On line 17, replace "which" with "that"

On line 18, to be consistent, add an "is defined as:" after the phrase.

On lines 20, 23 and 27, I would replace "is" with "shall be"

Throughout (a)(3), do you need the "other than one approved by the Board" language? I know this is from statute, but the purpose of this definition is to acknowledge this is the equivalent education other than that approved by the Board, right?

In (a)(3)(C), does an associate degree take four years? As I read 89C-13(1a), all of the education must take four years.

In (a)(3)(C), line 30, insert a comma after "examination"

On line 32, state "Rule .0503 of this Section."

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

On line 36, replace “to have qualified” with “qualify”

In (a)(3)(D), Page 2, line 2, you write “EAC/ABET” but on Page 1, line 20, it was “ABET (EAC)” Assuming this means the same thing, please be consistent in the reference.

Also in (a)(3)(D), do you wish to incorporate by reference the NCEES or AACRAO as you did with ABET? If so, use G.S. 150B-21.6.

In (b), in order to be consistent with (a), you should bring the language in (b)(1) up to line 9. It would read, “Experience. The experience of an applicant shall be considered in determining...”

Then current (b)(2) would become (b)(1) and so forth. If this conflicts with another Rule that cites to specific Subparagraphs, then you do not have to make the change at this time.

In (b)(2), line 13, when you refer to “progressive nature” are you referring to the terms “progressive engineering experience” and “progressive experience on engineering projects” in (b)(3)? Is that the meaning of that term?

On line 17, what does the “grade and character” mean as it applies to progressive experience? (Note the same question for line 29)

On line 19, what are the “appropriate” credentials?

In (b)(3), line 24, replace “in which” with “that”

I assume in (b)(3), you mean professional knowledge, growth, etc.? What do you mean by “continuous”?

On line 27, replace “must” with “shall” and again, what is meant by “continuous”?

In (b)(4)(C), Page 3, line 3, what is a “maximum” for? How is this calculated?

In (b)(4)(D), how many years of credit are awarded for this?

On line 6, write, “The Board shall not accept combinations of the categories in this Subparagraph as fulfilling all ...”

On line 9, delete “or” before “government”

In (b)(5), line 17, “experience” and “considered” should not be capitalized.

In (b)(5)(a), line 19, delete “which must be”

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .0501 is amended as published in 28:14 NCR 1624 – 1626 as follows:

SECTION .0500 - PROFESSIONAL ENGINEER

21 NCAC 56 .0501 REQUIREMENTS FOR LICENSING

(a) Education. The education of an applicant shall be considered in determining eligibility for licensing as a Professional Engineer. The following terms used by the Board for the specific educational requirements to be eligible to be licensed as a Professional Engineer are defined by the Board as follows:

- (1) Engineering Curriculum of Four or More Years Approved by the Board is defined as a program that has been accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET). This program is incorporated by reference including subsequent amendments and editions. This material is available for inspection at the office of the North Carolina Board of Examiners for Engineers and Surveyors. Copies may be obtained at the Board office at a cost of five dollars (\$5.00) per copy.
- (2) Engineering or Related Science Curriculum of Four or More Years Other than Ones Approved by the Board is defined as a curriculum, although not accredited by ABET, of technical courses which contains engineering or scientific principles.
- (3) Equivalent Education Satisfactory to the Board:
 - (A) A graduate degree in Engineering from an institution in which the same discipline undergraduate engineering program has been accredited by ABET (EAC) is considered equivalent to an engineering curriculum of four or more years approved by the Board.
 - (B) A bachelor's degree in Engineering Technology, whether or not accredited by the Technology Accreditation Commission (TAC) of ABET, is considered equivalent to an engineering or related science curriculum of four or more years other than one approved by the Board.
 - (C) Until June 30, 2016, an associate degree in an engineering related curriculum with an additional two years of progressive engineering experience is considered equivalent to an engineering or related science curriculum of four or more years other than one approved by the Board and may be used until that date as a basis for admission to the principles and practice of engineering examination. Once admitted to the examination an applicant may continue to re-take the examination until required to submit a new application as set out in Rule .0503. After June 30, 2016 an associate degree shall no longer be used as a basis for admission to that ~~examination-examination~~, unless the individual has passed the fundamentals of engineering examination prior to June 30, 2016, in which case the individual may continue the process to take the principles and practices exam based upon the associate degree and it will not be necessary to have qualified for admission to the principles and practice of engineering examination prior to June 30, 2016.

(D) Foreign degrees are considered equivalent only after receipt of an evaluation report that the degree is substantially equivalent to an EAC/ABET accredited engineering curriculum from the Center for Professional Engineering Education Services, an affiliate of the National Council of Examiners for Engineering and Surveying (NCEES), or from the American Association of Collegiate Registrars and Admissions Officers (AACRAO). The Board shall equate the degree to an EAC/ABET accredited engineering curriculum of four or more years approved by the Board in Subparagraph (a)(1) of this Rule if it receives a substantially equivalent evaluation.

(b) Experience:

(1) General. The experience of an applicant shall be considered in determining whether an applicant is eligible to be licensed as a Professional Engineer.

(2) Required Experience. In evaluating the work experience required, the Board shall consider the total experience record and the progressive nature of the record. Not less than half of required engineering experience shall be of a professional grade and character, and shall be performed under the responsible charge of a licensed Professional Engineer, or if not, a written explanation shall be submitted showing why the experience should be considered acceptable and the Board shall approve if satisfied of the grade and character of the progressive experience. Experience gained under the technical supervision of an unlicensed individual shall be considered if the appropriate credentials of the unlicensed supervisor are submitted to the Board. Experience gained in the armed services, usually while serving in an engineering or engineering related group, shall be considered if of a character equivalent to that which would have been gained in the civilian sector doing similar work.

(3) Definition. The terms "progressive engineering experience" or "progressive experience on engineering projects" mean that during the period of time in which an applicant has made a practical utilization of acquired knowledge, continuous improvement, growth and development have been shown in the utilization of that knowledge as revealed in the complexity and technical detail of the work product or work record. The applicant must show continuous assumption of greater individual responsibility for the work product over that period of time. The progressive experience on engineering projects shall be of a grade and a character which indicates to the Board that the applicant is competent to practice engineering.

(4) Specific Credit for Experience. In evaluating progressive engineering experience, the Board shall give credit for experience in the following areas of work:

(A) Graduate schooling or research in an engineering program resulting in award of a master's degree from an institution that offers EAC/ABET-accredited programs – one year;

(B) Graduate schooling or research in an engineering program resulting in award of an earned doctoral degree in engineering from an institution that offers EAC/ABET-accredited

1 programs – two years, with or without a master's degree, but includes the one year for the
2 master's degree, if obtained;

3 (C) Progressive land surveying - maximum two years; and

4 (D) Teaching of engineering subjects at the university level in an engineering program
5 offering a four year or more degree approved by the Board.

6 The Board, however, shall not accept combinations, in the categories in this Subparagraph, as fulfilling all
7 the necessary statutory experience requirements. Every applicant for licensure as a Professional Engineer,
8 as part of the total experience requirement, shall show a minimum of one year experience of a progressive
9 engineering nature in industry, or government, or under a licensed Professional Engineer offering service to
10 the public.

11 Full-time engineering faculty members who teach in an engineering program offering a four year or more
12 degree approved by the Board, may request and shall be granted waiver of the minimum one year
13 experience in industry, government, or private practice if they demonstrate consulting or research work of
14 at least one year's duration, which was pursued to fruition, and which is of a progressive engineering
15 nature. The faculty applicant shall document the work and demonstrate that the work meets the Board's
16 requirement.

17 (5) Other Experience is Considered if it is:

18 (A) Experience obtained prior to graduation as part of an ABET accredited engineering
19 program which must be shown on the transcript, with a maximum credit of one year; or

20 (B) Experience obtained in a foreign country that is performed under direct supervision of a
21 Professional Engineer licensed with a member Board of the National Council of
22 Examiners for Engineering and Surveying (NCEES).

23
24 *History Note: Authority G.S. 89C-10; 89C-13;*

25 *Eff. February 1, 1976;*

26 *Readopted Eff. September 29, 1977;*

27 *Amended Eff. July 1, 2014; August 1, 2011; May 1, 2009; August 1, 2002; August 1, 2000; August*
28 *1, 1998; November 2, 1992; April 1, 1989; January 1, 1982.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .0502

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

The language in (b) makes me curious - do you have a rule with the address and website information? I don't see one in Chapter 56. Does your regulated public know how to contact you?

In (c)(1), lines 12 -13, what do you mean by "photographic quality portrait that is adequate for current identification purposes"? Do you mean "a passport photo" that was taken in a XX period of time?

On line 14, insert an "also" before "required."

In (c)(2), are there one or two forms? If there are two, state "Forms" on line 19.

In (c)(2)(A), line 22, delete "by"

On line 25, what do you mean by "so qualified"? As determined by whom – the Board?

In (c)(2)(B), line 29, delete "have"

On line 30, what is the Engineering Intern Application form? Is it different from the Engineer Intern Certification Form in (c)(1)?

In (c)(3), line 33, replace "must" with "shall." Also on that line, state "supplement the initial application with this form upon applying.."

On line 36, replace "which" with "that"

In (c)(4)(A), Page 2, lines 2 and 5, replace "must" with "shall"

As I understand (c)(4)(A), this will occur when Engineer Interns apply to become Professional Engineers. Thus, the requirement for 5 references, as set forth in G.S. 89C-13(1a), correct? And are you saying that the Board will not accept other references from "individuals acceptable to the Board"?

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

In (c)(4)(B), line 10, insert a “to” before “them” Also, is the language on lines 26 and 27 about paying the examination fee necessary, given the language in (D)?

In (c)(4)(D), line 16, replace “see” with “ensure” or “be responsible for ensuring”

In (d)(1), line 24, you may want to replace “payable” with “due”

In (d)(4), I know your statute allows you to cost actual cost to defray the exam fees. (G.S. 89C-14). How does your regulated public know the cost?

In (e), line 35, insert a comma after “licensure”

What is the purpose of Paragraph (f) on Page 3? What do you mean by “section .0500”? Are you referring to this Section? Is this a person whose application may be approved under G.S. 89C and these Rules? If so, state “meets the requirements of this Section by meeting...”

In (g), when will the Board members meet applicants? Under what circumstances?

In the History Note, please add G.S. 89C-15, which speaks to the types of exams addressed in the Rule.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .0502 is amended as published in 28:14 NCR 1626 – 1627 as follows:

21 NCAC 56 .0502 APPLICATION PROCEDURE: INDIVIDUAL

(a) General. A person desiring to become licensed as a Professional Engineer must make application to the Board on a form prescribed and furnished by the Board.

(b) Request. A request for an appropriate application form may be made to the Board office or obtained from the website.

(c) Applicable Forms:

(1) ~~Engineering~~ Engineer Intern Certification Form. ~~After passing the fundamentals of engineering examination an applicant may make application to the Board to become certified as an “Engineer Intern.” This form requires the applicant to set forth personal history, educational background, engineering experience, provide and character references, references. A passport-type photographic quality portrait that is adequate and furnish a photograph for current identification purposes. purposes is required. The form is for use by those graduating, or those having graduated, from an engineering curriculum approved by the Board as follows:~~

~~(A) — Students graduating within two semesters, or the equivalent, of the semester in which the fundamentals of engineering examination is administered.~~

~~(B) — Graduates with less than two years since graduation.~~

(2) Professional Engineer Form:

(A) All persons, including comity applicants and ~~graduates of an engineering curriculum approved by the Board with more than two years progressive engineering experience, certified Engineer Interns,~~ shall apply for licensure by using the Professional Engineer form.

The submission of this form shall signify that the applicant seeks licensure, and shall result in seating for ~~each examination required,~~ the principles and practice of engineering examination, when the applicant is so qualified. This form requires the applicant to set forth personal and educational background, engineering experience and character references. A passport-type photographic quality portrait that is adequate for current identification purposes is required.

(B) Persons who have previously completed the fundamentals examination by use of the Engineering Intern Application Form shall submit the Professional Engineer Application Form to request licensure when qualified to take the ~~final eight hour~~ examination.

(3) Supplemental Form. Persons who initially applied for the fundamentals of engineering exam using the Professional Engineer form must supplement the initial application upon applying for the principles and practice examination. The supplemental form requires that engineering experience from the date of the initial application until the date of the supplemental application be listed. Five references shall be submitted which are current to within one year of the examination date.

(4) Reference Forms:

- (A) Persons applying ~~to take the examination for fundamentals of engineering for certification as an Engineer Intern~~ must submit to the Board names of three individuals who are familiar with the applicant's work, character and ~~reputation~~. reputation, one of whom is a professional engineer. Persons applying to take the examination for principles and practice of engineering must submit to the Board names of five individuals who are familiar with the applicant's work, character and reputation. ~~Two~~Three of these individuals must be Professional Engineers.
- (B) In addition to the applicant submitting names to the Board of individuals familiar with the applicant's work, character and reputation, those individuals listed shall submit to the Board their evaluations of the applicant on forms supplied them by the applicant.
- (C) The reference form requires the individual evaluating the applicant to state the evaluating individual's profession, knowledge of the applicant and information concerning the applicant's engineering experience, character and reputation.
- (D) The Board shall provide the reference forms to the applicant with the application. The reference forms shall then be distributed by the applicant to the persons listed on the application as references. The applicant shall see that the individuals listed as references return the reference forms to the Board prior to the filing deadline for the examination.

(d) Fees:

- (1) ~~Engineering Engineer Intern Certification Form. The examination fee for applicants applying for examination on the fundamentals of engineering using the engineering intern form is payable with the filing of the application. Once the applicant passes the examination on the fundamentals of engineering, engineering and makes application to the Board to become certified as an "Engineer Intern" the application fee of one hundred dollars (\$100.00) and the examination fee for the principles and practice of engineering examination are payable is payable with the applicant's subsequent application for licensure as a Professional Engineer using the Professional Engineer form.~~
- (2) Professional Engineer Form. The application fee of one hundred dollars (\$100.00) and examination fee for applicants applying for the examination on ~~the fundamentals of engineering or~~ the principles and practice of engineering using the Professional Engineer form are payable with the filing of the application.
- (3) Comity. The licensure fee of one hundred dollars (\$100.00) is payable with the filing of the application.
- (4) Examination. The examination fee for any applicant is payable with the filing of the application in accordance with G.S. 89C-14.

(e) The Board shall accept the records maintained by the National Council of Examiners for Engineering and Surveying (NCEES) as evidence of licensure in another state. For comity licensure the NCEES record shall be accepted in lieu of completing the experience, education and references sections of the application. A comity application, with or without a NCEES record, shall be administratively approved by the Executive Director based upon evidence of current licensure in

1 another jurisdiction based on comparable qualifications, required references and no record of disciplinary action, without
2 waiting for the next regular meeting of the Board at which time the action shall be reported to the Board for final
3 approval.

4 (f) Model Law Engineer. The term "Model Law Engineer" refers to a person who meets the requirements of section
5 .0500 by meeting the requirements of NCEES and has a current NCEES record on file and is designated as a "Model Law
6 Engineer." A "Model Law Engineer" application shall be administratively approved by the Executive Director based
7 upon the designation, without waiting for the next regular meeting of the Board at which time the action shall be reported
8 to the Board for final approval.

9 (g) Personal interview. During the application process, the applicant may be interviewed by the Board members.

10
11 *History Note: Authority G.S. 89C-10; 89C-13; 89C-14;*

12 *Eff. February 1, 1976;*

13 *Readopted Eff. September 29, 1977;*

14 *Amended Eff. May 1, 1994; November 2, 1992; April 1, 1989; December 1, 1984;*

15 *RRC Objection due to lack of Statutory Authority Eff. November 17, 1994;*

16 *Amended Eff. July 1, 2014; May 1, 2009; August 1, 2002; August 1, 2000; August 1, 1998; January 1,*
17 *1995.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .0503

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In (a), do you need "primarily" on line 4?

I take it your regulated public knows what "the fundamentals of engineering" (line 5) and "engineering principles and practices" (line 7) are? I note that you are reciting statute (G.S. 89C-15), but I am just checking.

In (c), by exam preparer, are you referring to NCEES? I take it this is the examination approved by the entire Board, as required in G.S. 89C-15?

In (d), line 11, insert a comma after "(NCEES)"

In (e), line 12, replace "is" with "shall be"

On line 13, replace "must" with "shall"

Also in (e), does this mean the Board will not be granting the waivers allowed under G.S. 89C-13(1a)(f) and (g)?

On line 16, I take it the reason you removed "eight hours" in (a) is because it is computer based and thus, will be self-paced. But how long does the Principles and Practice of Engineering exam take?

Also on line 16, replace "is" with "shall be" and how does one contact NCEES?

Please explain to me how this works – the individual sends the application, the application fee and the examination fee to your office per Rule .0502(d)(4) and the applicant contacts NCEES directly to arrange for taking the exam? And you forward the fee to NCEES? What exactly is the individual doing to apply to NCEES?

In (f), line 19, replace "must have" with "shall deliver" and replace the parenthesis and "which includes" with "application, including all... verifications,"

On line 20, replace "in the" with "to"

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

In (h), on line 24, replace “and” with “if”.

On line 25, insert a comma after “unexcused absence,” Also, what is meant by “official” jury duty?

Regarding the forfeited fee, I take it this is an obligated portion of the fee and thus, does not contradict G.S. 89C-14(d), requiring any unobligated portion of the fee to be returned?

Also, replace “is” with “shall be” on line 26.

In Paragraph (i), line 28, delete “has”

On line 30, state “absences shall be eligible only after submitting...”

I know on lines 32 through 34, you are mostly restating statute. However, how will someone demonstrate this to the Board? Also, on line 33, replace “must” with “shall”

In (j), you refer to “special accommodation” twice on line 35, but on line 36, it’s “reasonable accommodation.” I think you mean the latter term and should use it consistently.

In Paragraph (l) on Page 2, what is an “exam analysis”? Who does that – NCEES or the Board?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

21 NCAC 56 .0503 is amended as published in 28:14 NCR 1627 - 1628 as follows:

21 NCAC 56 .0503 EXAMINATIONS

(a) Fundamentals of Engineering. This ~~eight hour written~~ examination is designed primarily to test the applicant's proficiency and knowledge of the fundamentals of engineering.

(b) Principles and Practice of Engineering. This ~~eight hour written~~ examination is designed to test the applicant's proficiency and knowledge of engineering principles and practices.

(c) Examination Aids. Examinees may utilize examination aids as specified by the exam preparer.

(d) Preparation of Examination. The examinations in the fundamentals of engineering and in the principles and practice of engineering are national examinations provided by the National Council of Examiners for Engineering and Surveying (NCEES) of which the Board is a member.

(e) Examination Sequence. Before the applicant is permitted to be examined on the principles and practice of engineering, the applicant must pass the examination on the fundamentals of engineering, unless the applicant can evidence 20 years of progressive engineering experience to be exempt from taking the fundamentals of engineering exam. ~~In no event is an applicant allowed to take both examinations at the same time or at the same scheduled examination date.~~ NCEES administers the fundamentals of engineering examination as a computer-based exam. Application is made directly to NCEES to take the exam.

(f) Examination Filing Deadline. The applicant who wishes to take ~~an~~ the principles and practice of engineering examination must have the completed application (which includes all necessary references, transcripts, and verifications) in the Board office prior to August 1 for Fall examinations and January 2 for Spring examinations.

(g) Seating Notice. After approval of an application ~~to take either the examination on the fundamentals of engineering or principles and practice,~~ the applicant shall be sent a seating notice. This notice shall inform the applicant of the date, time and location of the examination and the seat number assigned.

(h) Unexcused Absences. After a seating notice has been issued for a scheduled examination by the Board, and the applicant fails to appear, that applicant's record shall reflect "unexcused absence" unless the absence was for official jury duty or the applicant was not physically able to be present, as indicated by a doctor's certificate. The examination fee is forfeited.

(i) Re-Examination. A person who has failed an examination may apply to take the examination again at the next regularly scheduled examination period by making written request and submitting the required exam fee. A person having a combined record of three failures or unexcused absences is only eligible after submitting a new application with appropriate application fee, and shall be considered by the Board for reexamination at the end of 12 months. After the end of the 12-month period, the applicant may take the examination no more than once every calendar year. The applicant must demonstrate to the Board that actions have been taken to improve the applicant's chances for passing the exam.

(j) Special Accommodation. An applicant may make a written request, before the application deadline, for special accommodation for the exam. Reasonable accommodation shall be granted based upon meeting the Guidelines for Requesting Religious and ADA Accommodations published by the National Council of Examiners for Engineering and

1 Surveying (NCEES), which are hereby incorporated by reference, including subsequent amendments and editions.

2 Copies are available at no cost at www.ncees.org.

3 (k) Exam Results. Exam results shall be supplied in writing as pass or fail. No results will be given in any other manner.

4 (l) Review of Failed Exams. An applicant who fails to make a passing score on an exam shall receive an exam analysis.

5
6 *History Note:* *Authority G.S. 89C-10; 89C-13; 89C-14; 89C-15;*

7 *Eff. February 1, 1976;*

8 *Readopted Eff. September 29, 1977;*

9 *Amended Eff. July 1, 2014; September 1, 2009; May 1, 2009; April 1, 2001; August 1, 1998;*

10 *November 2, 1992; April 1, 1989; January 1, 1982.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .0601

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In (a), line 6, I don't know that you need "following" before "terms"

Delete "by the Board" on line 7.

In Subparagraphs (a)(1) and (2), the phrases should be in quotation marks and not begin with all capital letters. For example, "B.S. in Surveying or other equivalent curriculum."

On line 8, replace "must" with "shall"

On line 9, what do you mean by "directly related"?

Note, the use of "minimum" is generally not allowed in rule, as rules set the minimum standard. Do you have a compelling reason to retain it here?

In (a)(2), line 14, replace "must" with "shall"

Delete or define "successfully" on line 17.

In (b)(1), lines 22 through 23, I assume this refers to professional growth, etc.? To whom must this be shown?

On line 23, replace "must" with "shall"

On line 26, do you mean "shall" rather than "may"? If not, when will the Board not consider this?

On lines 27 and 31, remove the parenthesis. And I think the sentence could be written more clearly. What about, "Half or more of the required land surveying experience shall be of a professional grade and character, performed under the responsible charge of a Professional Land Surveyor. If the work was not under the responsible charge of a Professional Land Surveyor, the applicant shall submit a written explanation to the Board explaining why the experience should be considered acceptable and the Board ..."

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

When you speak of “responsible charge”, I take it you are referring to the definition in G.S. 89C-3(10), which defines the term as:

Responsible charge. - Direct control and personal supervision, either of engineering work or of land surveying, as the case may be.

And I note that using “half or more” may not really be as direct as simply referring to the statute. As I read G.S. 89C-13(1a), the range is ½ to 3/5.

In (b)(3), line 32, what evidence will be accepted? What do you generally look for?

In (c)(1)(A), Page 2, line 6, replace “must” with “shall”

On line 8, replace “which discloses that” with “shows” or “demonstrates”

On line 9, replace “(Section .1600)” with “as set forth in Section .1600 of this Chapter,” Note the same for line 16.

Also on line 9, delete “also”

On line 10, you state “preparing” When I think of preparing, I think of actually creating the work. However, I note you are referring to G.S. 89C-13(b), which states, in relevant part:

The Board shall require an applicant to submit exhibits, drawings, plats, or other tangible evidence of land surveying work executed by the applicant under proper supervision and which the applicant has personally accomplished or supervised.

Therefore, I am fine with this language.

In (c)(1)(B), I take it your regulated public knows what you mean by “clean, clear and legible”? And on line 12, replace “must” with “shall”

In (c)(2), line 18, replace “the” with “that”

In (c)(3), line 20, end the sentence after “licensure.” Begin “It shall be...”

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

21 NCAC 56 .0601 is amended as published in 28:14 NCR 1628 – 1629 as follows:

SECTION .0600 - PROFESSIONAL LAND SURVEYOR

21 NCAC 56 .0601 REQUIREMENTS FOR LICENSING

(a) Education. The following terms used by the Board for the specific education requirements to be eligible to be licensed as a Professional Land Surveyor are defined by the Board as follows:

(1) B.S. in Surveying or Other Equivalent Curriculum. These degrees must contain a minimum of 45 semester hours, or their quarter-hour equivalents, of subjects directly related to the practice of surveying. Of the 45 semester hours, a minimum of 12 semester hours of surveying fundamentals, 12 semester hours of applied surveying practice and 12 semester hours of advanced or theoretical surveying courses are required. The remainder of the required surveying courses may be elective-type courses directly related to surveying; and

(2) Associate Degree in Surveying Technology. This degree must contain a minimum of 20 semester hours, or quarter-hour equivalents, of subjects directly related to the practice of surveying. Courses in surveying practices, subdivision design and planning, surface drainage and photogrammetry must be successfully completed.

(b) Experience:

(1) Definition. As used in the North Carolina Engineering and Land Surveying Act, the term "progressive practical surveying experience" means that during the period of time in which an applicant has made a practical utilization of the knowledge of the principles of geometry and trigonometry in determining the shape, boundaries, position and extent of the earth's surface, continuous improvement, growth and development in the utilization of that knowledge have been shown. In addition, the applicant must show the continuous assumption of greater individual responsibility for the work product over that period of time.

(2) Experience Accepted. In evaluating the work experience required, the Board may consider the total experience record and the progressive nature of the record. (Not less than half of required land surveying experience shall be of a professional grade and character, and shall be performed under the responsible charge of a Professional Land Surveyor, or if not, a written explanation shall be submitted showing why the experience should be considered acceptable and the Board may approve if satisfied of the grade and character of the progressive experience.)

(3) Other Experience. Work done in the following areas requires evidence to the Board of its equivalency to land surveying:

- (A) construction layout;
- (B) engineering surveying; or
- (C) part-time surveying work.

(c) Exhibits, Drawings, Plats:

1 ~~(1) Required Exhibit Before Fundamentals of Surveying Examination. The applicant must submit, along~~
2 ~~with the application, an actual plat or an example plat prepared by, or under the direct supervision of,~~
3 ~~the applicant which discloses that the applicant is knowledgeable in the elements of good mapping~~
4 ~~practices.~~

5 ~~(2)~~(1) Required Exhibit Before Principles and Practice of Surveying Examination:

6 (A) General. The applicant must submit, along with the application, an actual plat of a boundary
7 survey of an actual project prepared by, or under the direct supervision of, the applicant
8 which discloses that the applicant is knowledgeable of the contents of the Standards of
9 Practice for Land Surveying in North Carolina (Section .1600) and also is able to apply this
10 knowledge by preparing a plat in accordance with the various legal and professional
11 requirements of land surveying.

12 (B) Physical Requirement. The map submitted must be a clean, clear, legible print of an original
13 map in the file of a Professional Land Surveyor.

14 ~~(3)~~(2) Specific Requirements. The specific details that shall be evaluated are those applicable to the
15 particular project as described in the Standards of Practice for Land Surveying in North Carolina
16 (Section .1600) and as described in G.S. 47-30. In addition, the exhibit shall contain a statement that
17 the field work, calculation and mapping were performed by the applicant under the supervision of a
18 Professional Land Surveyor, attested to by the Professional Land Surveyor.

19 ~~(4)~~(3) Requirements for Comity Applicant. The map submitted by an applicant under comity may be a
20 sample plat of a project or work performed in the state of licensure which shall be evaluated in
21 accordance with legal requirements of North Carolina.

22
23 *History Note: Authority G.S. 47-30; 89C-10; 89C-13;*

24 *Eff. February 1, 1976;*

25 *Readopted Eff. September 29, 1977;*

26 *Amended Eff. July 1, 2014; July 1, 2009; August 1, 2000; August 1, 1998; November 2, 1992; April 1,*
27 *1989; December 1, 1984; January 1, 1982.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .0602

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

The language in (b) makes me curious - do you have a rule with the address and website information? I don't see one in Chapter 56. Does your regulated public know how to contact you?

In (c)(1), lines 14 -15, what do you mean by "photographic quality portrait that is adequate for current identification purposes"? Do you mean "a passport photo" that was taken in a recent period of time? Note the same concern for (C)(2)(A), lines 22 – 23.

On lines 14 and 23, insert an "also" before "required."

In (c)(2), are there one or two forms? If there are two, state "Forms" on line 16.

In (c)(2)(A), line 18, delete "by"

On line 20, what do you mean by "so qualified"? As determined by whom – the Board?

In (d), line 27, I think you can delete "initially"

On line 28, delete the comma after "surveying" and change "must" to "shall" and should "applications" be singular?

On line 29, delete "ultimately" and replace "must" with "shall"

On line 31, replace "which" with "that"

In (e)(1), line 35, replace "must" with "shall"

On line 36, replace "are" with "shall be"

In (e)(2), Page 2, line 2, replace "which must" with "whom shall." Note the same for line 3.

On line 3, replace both "must" with "shall"

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

I note that you changed “two” to “three” on line 3. Since this is the number of references required by G.S. 89C-13(1a), I do not have a problem with the change. Also, underline “three” on line 3.

In (e)(5), line 13, replace “see” with “ensure” or “be responsible for ensuring”

In (f)(1), line 18, you may want to replace “payable” with “due.”

Is the language on lines 20-21 in (f)(2) necessary, given the language in (f)(4)?

In (f)(4), I know your statute allows you to cost actual cost to defray the exam fees. (G.S. 89C-14). How does your regulated public know the cost?

In (g), line 27, insert a comma after “licensure”

On line 32, end the sentence “Board.” Begin the next sentence, “At that time, the action...”

In (h), when will the Board members meet applicants? Under what circumstances?

In the History Note, please add G.S. 89C-15, which speaks to the types of exams addressed in the Rule.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

21 NCAC 56 .0602 is amended as published in 28:14 NCR 1629 – 1630 with changes as follows:

21 NCAC 56 .0602 APPLICATION PROCEDURE: INDIVIDUAL

(a) General. A person desiring to become a Professional Land Surveyor must make application to the Board on a form prescribed and furnished by the Board.

(b) Request. A request for the application form may be made to the Board office or obtained from the website.

~~(c) Application Form. Forms: All persons applying to be licensed as a Professional Land Surveyor shall apply using the standard application form. This form requires the applicant to set forth personal background, plus educational background, land surveying experience, and references. A passport-type photographic quality portrait that shall be adequate for current clear identification purposes shall be required also.~~

(1) Surveyor Intern Certification Form. After passing the fundamentals of surveying examination an applicant may make application to the Board to become certified as a “Land Surveyor Intern.” This form requires the applicant to set forth personal history, educational background, surveying experience, character references and exhibit. A passport-type photographic quality portrait that is adequate for current identification purposes is required.

(2) Professional Land Surveyor Form:

(A) All persons, including comity applicants and certified Land Surveyor Interns, shall apply for licensure by using the Professional Land Surveyor form. The submission of this form shall signify that the applicant seeks licensure, and shall result in seating for the principles and practice of surveying examination, when the applicant is so qualified. This form requires the applicant to set forth personal and educational background, surveying experience, character references and exhibit. A passport-type photographic quality portrait that is adequate for current identification purposes is required.

(B) Persons who have previously completed the fundamentals examination by use of the Land Surveying Intern Application Form shall submit the Professional Land Surveyor Application Form to request licensure when qualified to take the examination.

(d) Supplemental Form. Persons who initially applied for licensure as a land surveyor, but were not eligible initially to be admitted to the examination for principles and practice of surveying, must supplement their initial applications upon ultimately applying for the ~~second~~ examination. The applicant must supplement the initial application by using the supplemental form, which requires the listing of land surveying experience from the date of the initial application to the date of the supplemental application. Five references shall be submitted which are current to within one year of the examination date.

(e) Reference Forms:

(1) Persons applying to be certified as a Surveyor Intern or to take the examination for the fundamentals of surveying or the examination for principles and practice must submit to the Board names of individuals who are familiar with the applicant's work, character and reputation. The names are submitted by the applicant on the application form.

(2) Persons applying for ~~the fundamentals of surveying examination~~ certification as a Surveyor Intern must submit three references, one of which must be a Professional Land Surveyor. Persons applying for the principles and practice examination must submit five references, ~~two~~ **three** of which must be Professional Land Surveyors.

(3) In addition to the applicant submitting names to the Board of such individuals, those individuals shall submit to the Board their evaluations of the applicant on reference forms supplied them by the applicant.

(4) The reference form requires the individual evaluating the applicant to state the evaluating individual's profession, knowledge of the applicant and information concerning the applicant's land surveying experience, character and reputation.

(5) The Board shall provide the reference forms to the applicant along with the application for licensure. The reference forms shall then be distributed by the applicant to the persons listed on the application as references. The applicant shall see that the individuals listed as references return the forms to the Board prior to the filing deadline for the examination applied for by the applicant.

(f) Fees:

(1) Land Surveyor Intern Certification Form. Once the applicant passes the examination on the fundamentals of surveying and makes application to the Board to become certified as a "Land Surveyor Intern" the application fee of one hundred dollars (\$100.00) is payable.

~~(1)(2)~~ Regular Professional Land Surveyor Form. The application fee of one hundred dollars (\$100.00) and appropriate examination fee for those applying for licensure based upon examination, experience, character and exhibit are payable with the filing of the application.

~~(2)(3)~~ Comity. The licensure fee of one hundred dollars (\$100.00) and appropriate examination fee for those applying for licensure based upon comity are payable with the filing of the application.

~~(3)(4)~~ Examination. The examination fee for any applicant shall be payable with the filing of the application in accordance with G.S. 89C-14.

(g) The Board shall accept the records maintained by the National Council of Examiners for Engineering and Surveying (NCEES) as evidence of licensure in another state. For comity licensure the NCEES record shall be accepted in lieu of completing the experience, education and references sections of the application. A comity application, with or without a NCEES record, shall be administratively approved by the Executive Director based upon evidence of current licensure in another jurisdiction based on comparable qualifications, required references, and having passed the two-hour North Carolina portion of the exam and no record of disciplinary action, without waiting for the next regular meeting of the Board at which time the action shall be reported to the Board for final approval.

(h) Personal Interview. During the application process, the applicant may be interviewed by Board members.

*History Note: Authority G.S. 89C-10; 89C-13; 89C-14;
Eff. February 1, 1976;
Readopted Eff. September 29, 1977;*

1 *Amended Eff. July 1, 2014; May 1, 2009; August 1, 2002; August 1, 2000; August 1, 1998; May 1,*
2 *1994; April 1, 1989; January 1, 1982.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .0603

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In (a), do you need "primarily" on line 4?

Why are the terms "Fundamentals of Surveying" and "Fundamentals of Land Surveying" capitalized on lines 5 and 6?

In (b), line 7, I note the name for the exam in statute is "Principles and Practice of Land Surveying." Is this term in the Rule what is generally used?

In (c), by exam preparer, are you referring to NCEES or the Board, depending upon the exam? For the portion administered by NCEES or the other examinations, I take it this is the examination approved by the entire Board, as required in G.S. 89C-15? What will the Board allow in their exam?

In (d), line 10, I think you don't need to retain "of the examination in"

On line 11, insert a comma after "(NCEES)" and "member"

Also on line 11, how will the Board adopt exams from any source besides NCEES? In rule?

On line 13, replace "is provided" with "shall be provided" On line 14, "NCEES shall administer" and "Application shall be made..." And how does one contact NCEES?

Also on line 14, I take it the reason you removed the references to hours in (a) and (d) because they are computer based and thus, will be self-paced. But how long does the Board portion of the exam last?

Please explain to me how this works – the individual sends the application, the application fee and the examination fee to your office per Rule .0502(d)(4) and the applicant contacts NCEES directly to arrange for taking the exam? And you forward the fee to NCEES? What exactly is the individual doing to apply to NCEES?

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

In (e), line 17, replace “must have” with “shall deliver” and replace the parenthesis and “which includes” with “application, including all... verifications, delivered to the Board office...”

In (f), who will send the notice? The Board? And insert a comma after “application” on line 19.

In (g), line 21, replace “and the” with “if” before “the applicant”

On line 22, insert a comma after “unexcused absence,” Also, what is meant by “official” jury duty?

Regarding the forfeited fee on line 23, I take it this is an obligated portion of the fee and thus, does not contradict G.S. 89C-14(d), requiring any unobligated portion of the fee to be returned?

In (h), line 24, delete “has”

On line 26, state, “absences shall be eligible only after submitting...”

I know on lines 29 - 30, you are mostly restating statute. However, how will someone demonstrate this to the Board? Also, on line 29, replace “must” with “shall”

In (i), you refer to “special accommodation” twice on line 31, but on line 32, it’s “reasonable accommodation.” I think you mean the latter term and should use it consistently.

In Paragraph (k) on Page 2, what do you mean by “supervision” of staff? And can the applicant bring anyone to review it? And out of curiosity, why are applicants for professional engineers given an analysis but land surveyors are not?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .0603 is amended as published in 28:14 NCR 1630 as follows:

21 NCAC 56 .0603 EXAMINATIONS

(a) Fundamentals of Surveying. This ~~eight-hour written~~ examination is designed primarily to test the applicant's proficiency and knowledge of the fundamentals of surveying. Reference to Fundamentals of Surveying is the revised name of the national exam that is the Fundamentals of Land Surveying in G.S. 89C.

(b) Principles and Practice of Surveying. This ~~eight-hour written~~ examination is designed to test the applicant's proficiency and knowledge of land surveying practices and procedures generally and specifically within North Carolina.

(c) Examination Aids. Examinees may utilize examination aids as specified by the national exam preparer.

(d) Preparation of Examination. The examination in the fundamentals of surveying and ~~six hours~~ of the examination in the principles and practice of surveying are national examinations provided by the National Council of Examiners for Engineering and Surveying (NCEES) of which the Board is a member or other examinations as adopted by the Board. The ~~two-hour~~ North Carolina portion of the principles and practice of surveying examination is provided by the Board. NCEES administers the fundamentals of surveying examination as a computer-based exam. Application is made directly to NCEES to take the exam.

(e) Examination Filing Deadline. The applicant who wishes to take ~~at the principles and practice of surveying~~ examination must have the completed application (which includes all necessary references, transcripts, and verifications) in the Board office prior to August 1 for Fall examinations and January 2 for Spring examinations.

(f) Seating Notice. After approval of an application the applicant shall be sent a seating notice. This notice shall inform the applicant of the date, time and location of the examination and the seat number assigned.

(g) Unexcused Absences. After a seating notice for a scheduled examination has been issued, and the applicant fails to appear, the applicant's record shall reflect "unexcused absence" unless the absence was for official jury duty or the applicant was not physically able to be present, as indicated by a doctor's certificate. The examination fee is forfeited.

(h) Re-Examination. A person who has failed an examination may apply to take the examination again at the next regularly scheduled examination ~~period~~period by making written request and submitting the required exam fee. A person having a combined record of three failures or unexcused absences is only eligible after submitting a new application with appropriate application fee, and shall be considered by the Board for re-examination at the end of 12 months. After the end of the 12-month period, the applicant may take the examination no more than once every calendar year. The applicant must demonstrate to the Board that actions have been taken to improve the applicant's chances for passing the exam.

(i) Special Accommodation. An applicant may make a written request, before the application deadline, for special accommodation for the exam. Reasonable accommodation shall be granted based upon meeting the Guidelines for Requesting Religious and ADA Accommodations published by the National Council of Examiners for Engineering and Surveying (NCEES).

(j) Exam Results. Exam results shall be supplied in writing as pass or fail. No results shall be given in any other manner.

1 (k) Review of Failed Exams. An applicant who fails to make a passing score on the two-hour North Carolina portion of
2 the exam may request in writing within thirty days of receiving the result to have an opportunity to review that portion of
3 the exam. The review shall be done in the Board Office under supervision of staff and is limited to one hour.

4
5 *History Note:* Authority G.S. 89C-10; 89C-15;

6 *Eff. February 1, 1976;*

7 *Readopted Eff. September 29, 1977;*

8 *Amended Eff. July 1, 2014; May 1, 2009; April 1, 2001; August 1, 1998; November 2, 1992; April 1,*
9 *1989; January 1, 1982.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .0802

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In (a)(1) and (b)(1), how do people know the web address?

In (a)(2), line 9, replace "which" with "that"

On line 11, replace "requires" with "shall require" Note the same for (b)(2), line 34.

On line 13, why do you say "to be offered"? Also on line 13, when you say "it" do you mean the corporation?

On line 15, end the sentence after "Statutes." Begin the next, "The form shall also require the officers... listed on the application."

In (a)(3)(B) line 21, replace "must" with "shall". Note the same for (a)(3)(C), line 23.

In (b)(1), lines 28 and 29, I'd replace the brackets with commas.

Please insert G.S. 55B-15 in the History Note.

Also in the History Note, put the citations in numerical order. And the citation is 57D-2-02.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .0802 Rule citation is amended without notice pursuant to G.S. 150B-21.5(a)(3).

21 NCAC 56 .0802 PROCEDURE

(a) Professional Corporations and Limited Liability Companies:

(1) Request. A request for an application for licensure as a professional corporation or professional limited liability company engaged in the practice of engineering or land surveying may be made at the Board office or obtained from the website.

(2) Applicable Form. All professional corporations and professional limited liability companies complying with the statutory requirements of G.S. 89C, G.S. 55B and G.S. ~~57C~~57D which desire to practice engineering or land surveying shall apply by using a form prepared by the Board. This form requires the applicant, by and through an officer, director and shareholder of the professional corporation or limited liability company who is licensed with the North Carolina Board of Examiners for Engineers and Surveyors in the field(s) of professional services to be offered, to certify that it and the stockholders of the corporation or members of the limited liability company have complied with the provisions of the applicable provisions of the General Statutes and requires that the officers, directors, shareholders, members and professional employees be listed on that application.

(3) Certificate of Licensure:

(A) Upon receiving the application with application fee of one hundred dollars (\$100.00), the Board, after determining that the firm has complied with the statutory requirements, shall issue a certificate of compliance.

(B) The firm must forward the certificate of compliance to the Secretary of State along with its articles of incorporation or articles of organization.

(C) Upon approval by the Secretary of State, the firm must forward to the Board a certified copy of its articles of incorporation or articles of organization.

(D) Upon receipt of the certified copy of the articles of the firm, if all statutory requirements have been met, the Board shall approve the application and issue the firm a certificate of licensure.

(b) Business Firms and Chapter 87 Corporations:

(1) Request. A request for an application for licensure as a business firm or Chapter 87 corporation [as defined in G.S. 55B-15(a)(2)] engaged in the practice of engineering or land surveying may be made at the Board office or obtained from the website. A sole proprietorship owned and operated by the individual licensee in the licensee's name as reflected in the Board's records is exempt from firm licensure.

(2) Applicable Form. All business firms or Chapter 87 corporations that desire to practice engineering or land surveying shall apply by using a form prepared by the Board. The form requires the applicant, through a principal officer, partner or owner, to certify that the business firm will be operated in compliance with the laws of the State of North Carolina and the rules of the North Carolina Board of Examiners for Engineers and Surveyors.

1 (3) Certificate of Licensure. Upon receiving the application with application fee of one hundred dollars
2 (\$100.00), the Board, after determining that the firm has complied with the statutory requirements,
3 shall issue a certificate of licensure.

4
5 *History Note:* Authority G.S. 55B-4; 55B-10; ~~57C-2.01~~; 89C-10; 89C-24; 57D-2.02
6 *Eff. February 1, 1976;*
7 *Readopted Eff. September 29, 1977;*
8 *Amended Eff. July 1, 2014; Amended Eff. May 1, 2009; August 1, 2000; February 1, 1996; May 1,*
9 *1994; April 1, 1989; January 1, 1982.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .0901

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In (a), line 6, replace "which" with "that" Do the same for line 12.

I note that "responsible charge" is defined in G.S. 89C-3(10). I take it the usage you have in rule "person in responsible charge" is the typical phrasing?

On line 8, replace "in which" with "where." Do the same for lines 9, 14 and 15.

On line 10, replace "are only required" with "shall be" and then insert "only" before "the specific projects" on line 11. Then end the sentence with "Rule .0701(c)(3) of this Chapter." Make conforming changes to lines 15 through 17.

In (c), I'd state "The terms "resident Professional Engineer" or "resident Land Surveyor" as used in this Rule means..."

On line 19, what do you mean by "majority" and "normal"?

Also on line 19, replace "said" with "that".

What is "majority" on line 20?

The sentence on lines 20 through 23 is very long. I'd break it up into two, ending the first sentence on line 22 after "professional." And then "This arrangement shall be approved by the Board after the Board determines..."

In (d), line 24, delete "or" before "offer to practice" Make a conforming change to line 29.

On lines 25 through 26, is there a reason you can't replace "said place of business" with "office"?

Delete the citation to 57C from the History Note, given that the Chapter was repealed. Do you want to cite to a statute in 57D?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .0901 is amended as published in 28:14 NCR 1630 – 1631 as follows:

SECTION .0900 - BUSINESS ENTITIES: GENERAL

21 NCAC 56 .0901 OFFICES

(a) Professional Engineering Services. Every firm, partnership, corporation or limited liability company which performs or offers to perform engineering services in the State of North Carolina shall have a resident Professional Engineer in responsible charge in each separate office located in North Carolina in which professional engineering services are performed or offered to be performed. Out-of-state office locations in which engineering services are performed or offered to be performed for North Carolina projects are only required to have Professional Engineers in responsible charge of the specific projects in compliance with Rule .0701(c)(3).

(b) Land Surveying Services. Every firm, partnership, corporation or limited liability company which performs or offers to perform land surveying services in the State of North Carolina shall have a resident Professional Land Surveyor in responsible charge in each separate office located in North Carolina in which land surveying services are performed or offered to be performed. Out-of-state office locations in which surveying services are performed or offered to be performed for North Carolina projects are only required to have Professional Land Surveyors in responsible charge of the specific projects in compliance with Rule .0701(c)(3).

(c) Resident. A resident Professional Engineer or Professional Land Surveyor as used in this Rule, means a licensee who spends a majority of the licensee's normal working time in said place of business. Such time shall not be less than a majority of the operating hours of the business. A Professional Engineer or Professional Land Surveyor shall be the resident licensee at only one place of business at one time unless each business is at least one-third owned by the resident professional and is specifically approved by the Board after a determination that the businesses are integrated in operation, ownership, office location and that the licensee will be in responsible charge of the professional services.

(d) No firm, partnership, corporation or limited liability company shall practice, or offer to practice, or market either land surveying or engineering unless there is a licensed resident for that service in responsible charge at that said place of business. Advertisements, signs, letterheads, business cards, directories, or any other form of representation shall avoid any reference to any service that cannot be provided under the responsible charge of a properly qualified resident professional. The licensed entity shall give notice to the Board of a change of resident professional within 30 days after the change and shall not practice, or offer to practice, or market the professional service during any period of time without a resident professional.

History Note: Authority G.S. 57C-2-01; 89C-10; 89C-24;

Eff. February 1, 1976;

Readopted Eff. September 29, 1977;

Amended Eff. July 1, 2014; August 1, 2002; April 1, 2001; August 1, 1998; May 1, 1994; January 1, 1992; April 1, 1989.

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .1402

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

On line 4, I'd state, "on any action where the effect would be:"

End Items (1) through (11) with semicolons, not periods or commas.

Delete the "or" on line 13.

Put an "or" after the semicolon on line 16.

In Items (10) and (11), do you mean renew or reinstate a license or certification or both?

In Item (12), begin with "to"

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .1402 is amended as published in 28:14 NCR 1631 as follows:

21 NCAC 56 .1402 OPPORTUNITY FOR LICENSEE OR APPLICANT TO HAVE HEARING

Every licensee or applicant for a license shall be afforded notice and an opportunity to be heard on any action, the effect of which would be:

- (1) to deny permission to take an examination for licensing for which application has been duly made,
- (2) to deny a license based on comity,
- (3) to deny a license after an applicant has taken and passed an examination,
- (4) to require re-examination for licensing,
- (5) to withhold the renewal of a license for any cause other than failure to pay a statutory renewal fee,
- (6) to suspend a license,
- (7) to revoke a license,
- (8) to impose a civil penalty, or
- (9) to issue a reprimand.
- (10) to refuse to renew.
- (11) to refuse to reinstate.
- (12) require additional education.

History Note: Authority G.S. 89C-10; 89C-21; 89C-22; 150B-38;
Eff. February 1, 1976;
Readopted Eff. September 29, 1977;
Amended Eff. July 1, 2014; April 1, 1989; January 1, 1982.

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .1602

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

Throughout this Rule, where you speak to “necessary” and “sufficient,” I assume you mean as determined by the surveyor in his or her professional opinion. Is this correct?

In (a), line 7, replace “must” with “shall”

In Paragraph (d), line 15, so I’m clear – the corners of the property?

In (e), you may want to delete “in a” before “tree” and “stream” on line 16. It would be consistent with the later sentence structure.

In (f), line 20, clear to whom? The surveyor, other professionals, or the individual who asked for the survey?

On line 21, what do “found” and “set” mean here?

On line 22, how is it that a surveyor can not do what is required in Paragraph (e)? Is it if (e) isn’t applicable?

In (g), I take it the regulated public knows what “accurately tied to” means on line 24?

In Rule .1604, Subparagraph (d)(9), Page 2, line 6 of that Rule, you state you are defining the term “tie lines” in Paragraph (g) of this Rule. That is not clear to me in reviewing this Rule, and I believe you need to be clearer here that you are defining the term.

On line 29, I believe the name is “Department of Public Safety, Emergency Management,”

Please refer to the NAD’s as “NAD 83,” and “NAD 27,” on lines 31 and 32. Also, are these incorporated by reference elsewhere? If not, they should be here.

On line 32, replace “must” with “shall”

On line 36, what is “Grid Control” and why is it capitalized?

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

In (h), Page 2, line 2, insert a comma after “description”

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .1602 is amended as published in 28:14 NCR 1631 – 1632 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 must 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.

(e) Where a corner falls in a right-of-way, in a tree, in a 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 to the user of that survey as a map or report of survey and, whether in written or graphic form, shall be prepared in a clear and factual manner. All reference sources shall be identified. Artificial monuments called for in such reports shall be described as found or set. When no monument is found or set for points described in Paragraph (e) of this Rule, that fact shall be noted.

(g) 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. Where the North Carolina grid system coordinates of said monument are on file in the ~~Division of Energy, Mineral, and Land Resources of the Department of Environment and Natural Resources, 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 tie lines to the monuments must 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) 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.

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

Eff. July 1, 1989;

Amended Eff. July 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.

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .1603

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

On Page 1, line 4, I believe "Boundary surveys" should be in quotes.

On line 5, that is not the proper way to insert a comma after "map"

On line 6, replace "which" with "that"

In Items (1) through (4), I take it that your regulated public knows the following terms?

- *angular error of closure;*
- *ratio of precision*
- *confidence level error ellipse*
- *horizontal control points*

In Item (1), line 11, what are "traverse networks"?

In Item (2), line 20, replace "which" with "that" and what do you mean by "normally"?

In Item (3), I take it your regulated public knows what is "lands in or surrounding the urban properties of a town or city" are?

In Item (4), line 37, what do you mean by "generally" outside?

On line 13, should it state "use by local surveyors" rather than "of"?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .1603 is amended as published in 28:14 NCR 1632 as follows:

21 NCAC 56 .1603 CLASSIFICATION OF BOUNDARY SURVEYS

General. Boundary surveys are defined as surveys made to establish or to retrace a boundary line on the ground, or to obtain data for constructing a map, ~~or~~ plat, or report showing a boundary line. For the purpose of this Rule, the term refers to all surveys, including "loan" or "physical" surveys, which involve the determination or depiction of property lines. For the purpose of specifying minimum allowable surveying standards for boundary surveys, the following four general classifications of lands in North Carolina are established from the standpoint of their real value, tax value, or location. Each map shall contain a statement of the calculated ratio of precision before adjustments or a statement of positional accuracy.

- (1) Local Control Network Surveys (Class AA). Local control network surveys are traverse networks utilizing permanent points for the purpose of establishing local horizontal control networks for future use of local surveyors. For Class AA boundary surveys in North Carolina, the angular error of closure shall not exceed ten seconds times the square root of the number of angles turned. The ratio of precision shall not exceed an error of closure of one foot per 20,000 feet of perimeter of the parcel of land (1:20,000). When using positional accuracy standards for Class AA control and boundary surveys, neither axis of the 95 percent confidence level error ellipse for any control point or property corner shall exceed 0.05 feet or 0.015 meters measured relative to the position(s) of the horizontal control points used and referenced on the survey.
- (2) Urban Land Surveys (Class A). Urban surveys include lands which normally lie within a town or city. For Class A boundary surveys in North Carolina, the angular error of closure shall not exceed 20 seconds times the square root of the number of angles turned. The ratio of precision shall not exceed an error of closure of one foot per 10,000 feet of perimeter of the parcel of land (1:10,000). When using positional accuracy standards for Class A control and boundary surveys, neither axis of the 95 percent confidence level error ellipse for any control point or property corner shall exceed 0.10 feet or 0.030 meters measured relative to the position(s) of the horizontal control points used and referenced on the survey.
- (3) Suburban Land Surveys (Class B). Suburban surveys include lands in or surrounding the urban properties of a town or city. For Class B boundary surveys in North Carolina, the angular error of closure shall not exceed 25 seconds times the square root of the number of angles turned. The ratio of precision shall not exceed an error of closure of one foot per 7,500 feet of perimeter of the parcel of land (1:7,500). When using positional accuracy standards for Class B control and boundary surveys, neither axis of the 95 percent confidence level error ellipse for any control point or property corner shall exceed 0.12 feet or 0.037 meters measured relative to the position(s) of the horizontal control points used and referenced on the survey.
- (4) Rural and Farmland Surveys (Class C). Rural and farmland surveys include lands located in rural areas of North Carolina and generally outside the suburban properties. For Class C boundary surveys

1 in North Carolina, the angular error of closure shall not exceed 30 seconds times the square root of the
2 number of angles turned. The ratio of precision shall not exceed an error of closure of one foot per
3 5,000 feet of perimeter of the parcel of land (1:5,000). When using positional accuracy standards for
4 Class C control and boundary surveys, neither axis of the 95 percent confidence level error ellipse for
5 any control point or property corner shall exceed 0.15 feet or 0.046 meters measured relative to the
6 position(s) of the horizontal control points used and referenced on the survey.

7
8 *History Note:* Authority G.S. 89C-10; 89C-20;

9 *Eff. July 1, 1989;*

10 *Amended Eff. July 1, 2014; May 1, 2009; August 1, 2000; August 1, 1998; November 2, 1992;*

11 *January 1, 1992.*

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .1604

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

I assume that throughout this Rule where you refer to "accurately," your regulated public knows what it means in the context?

In (b) on line 5, replace "must" with "shall"

Also on line 5, do you want to insert "by the Professional Land Surveyor" after "surveyed"?

In (d), why is "maps" in parenthesis?

What does the new language on lines 13 and 14 in (d)(1) mean? I'm sure your regulated public knows, but I don't, so please tell me.

In (d)(2), add "in Rule .1603 of this Section." at the end of line 18.

In (d)(3), line 22, is "grid distances" a singular noun? It doesn't appear to be (to my untrained eye) so shouldn't it read, "they shall be..."? (And replace "must" with "shall")

In (d)(6), line 34, insert a comma after "practical"

In (d)(7), what are you saying? If the surveyor can determine all three, he or she only has to show one?

In (d)(7)(A), delete the "or" at the end of line 37.

I am partial to lists, and think (d)(11) would be easier to read if it were further broken down, like so:

"Each map shall contain:

(A) the property designation;

(B) the name of the owner or prospective owner;..."

In (d)(12), what is "substantially the same form"? Does your regulated public know how much he or she can vary the form and be in compliance?

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

In the History Note, add G.S. 89C-16, since that requires the use of the seal.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .1604 is amended as published in 28:14 NCR 1632 – 1633 as follows:

21 NCAC 56 .1604 MAPPING REQUIREMENTS FOR BOUNDARY SURVEYS

(a) The size of a map shall be such that all details are legible on a copy.

(b) Any lines that are not actually surveyed must be indicated on the map and a statement included revealing the source of information from which the line is derived.

(c) All surveys based on the North Carolina grid system shall contain a statement identifying the coordinate system referenced datum used.

(d) All plats (maps), unless marked as "Preliminary Plat - Not for recordation, conveyances, or sales" shall be sealed, signed and dated by the Professional Land Surveyor and shall contain the following:

(1) An accurately positioned north arrow coordinated with any bearings shown on the plat. Indication shall be made as to whether the north index is true, magnetic, North Carolina grid ('NAD 83' and realization (date of adjustment of coordinate system) or 'NAD27'), or is referenced to old deed or plat bearings. If the north index is magnetic or referenced to old deed or plat bearings, the date and the source (if determined) shall be indicated.

(2) The azimuth or courses and distances of every property line surveyed shall be shown. Distances shall be in feet or meters and decimals thereof. The number of decimal places shall be appropriate to the class of survey required.

(3) All plat lines shall be horizontal or grid measurements. All lines shown on the plat shall be correctly plotted to the scale shown. Enlargements of portions of a plat are acceptable in the interest of clarity, where shown as inserts. Where the North Carolina grid system is used, the combined grid factor shall be shown on the face of the plat. If grid distances are used, it must be shown on the plat.

(4) Where a boundary is formed by a curved line, the following data must be given: actual survey data, or as a series of subchords with bearings and distances around the curve. If standard curve data is used, the bearing and distance of the long chord (from point of curvature to point of tangency) must be shown on the face of the plat.

(5) Where a subdivision of land is set out on the plat, all streets and lots shall be accurately plotted with dimension lines indicating widths and all other information pertinent to retracing all lines in the field. This shall include bearings and distances sufficient to form a continuous closure of the entire perimeter.

(6) Where control corners have been established in compliance with G.S. 39-32.1, 39-32.2, 39-32.3, and 39-32.4, as amended, the location and information as required in the referenced statute shall be shown on the plat. All other corners that are marked by monument or natural object shall be so identified on all plats, and where practical all corners of adjacent owners along the boundary lines of the subject tract that are marked by monument or natural object shall be shown.

(7) The surveyor shall show one of the following where they could be determined:

(A) The names of adjacent land owners; or

(B) The lot, block, parcel and subdivision designations; or

(C) Other legal reference where applicable.

(8) All visible and apparent rights-of-way, easements, watercourses, utilities, roadways, and other such improvements shall be accurately located where crossing or forming any boundary line of the property shown.

(9) Tie lines as required and defined in Rule .1602(g) of this Section shall be accurately shown on the face of the plat, whether or not the plat is to be recorded.

(10) A vicinity map (location map) shall appear on the face of the plat.

(11) Each map shall contain the property designation, name of owner or prospective owner, location (including township, county, and state), and the date or dates the survey was conducted. In addition each map shall contain a scale of the drawing listed in words or figures; a bargraph; the title source; and a legend depicting nomenclature or symbols not otherwise labeled.

(12) ~~Each~~ Any map not certified for recording under G.S. 47-30, and all reports of survey, shall contain a this certificate signed by the Professional Land Surveyor in substantially the following form:

"I certify that this map was drawn under my supervision from an actual survey made under my supervision (deed description recorded in Book _____, page _____ or other reference source _____); that the boundaries not surveyed are indicated as drawn from information in Book _____, page _____ or other reference source _____; that the ratio of precision or positional accuracy is _____; and that this map meets the requirements of The Standards of Practice for Land Surveying in North Carolina (21 NCAC 56. 1600)."

This _____ day of _____, 2_____.

Seal

Professional Land Surveyor

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

Eff. July 1, 1989;

Amended Eff. July 1, 2014; May 1, 2009; August 1, 2000; August 1, 1998; February 1, 1996; November 2, 1992; January 1, 1992.

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .1606

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In (a)(1) through (3), put the defined terms in quotation marks. "Topographic surveys," etc.

In (a)(2), line 10, end the sentence "represented." Then "This is distinguished..."

In (a)(3), I take it your regulated public knows what "LIDAR" and "IFSAR" are?

On line 13, what do you mean by "reliable" information?

In (b), lines 21 through 22, the Board is required to have a copy of the document for review pursuant to G.S. 150B-21.6. As such, if you want to strike the language about getting the document from the Board and retain the website for the standards, you may.

In Paragraph (c), line 25, what does "NAIP" mean? And are these standards also incorporated by reference? If so, you need to do so. If not, then what are these standards, how does one get them?

In Subparagraph (c)(1), insert a comma and "the" after "accuracy"

In (c)(2), Page 2, line 3, insert a "the" after "accuracy,"

In Part (c)(2)(A), strike the period after "surveys" on line 4. (This is consistent with the other Parts) On line 5, replace "which" with "that" and make "adjoining" "adjoin"

In (c)(2)(B), line 9, it's "Part (A) of this Subparagraph"

In (c)(2)(C), line 13, do you mean "shall" rather than "can"?

In (d), line 16, insert "that" after "document"

In (e), line 20, what do you mean by "Grid" and why is it in uppercase?

Generally, the use of "minimum" is not preferred in rule, since the rule sets minimum standards. Do you need to retain "A minimum" on line 20?

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

In (f)(5), line 28, what is meant by “assumed”?

In (f)(6), it appears you are missing the opening parenthesis on line 31. In addition, “e.g.” should be italicized.

In (f)(7), line 33, replace “must” with “shall”

In (g), Page 3, line 8, I believe you mean “Rule” not “Section”

On line 9, insert “of this Section” at the end of the sentence.

In (h), what is meant by “substantially the following form”? How much can an individual deviate?

On line 13, why are the items deleted?

On line 14, extend the underline under all of “that” (there is no underline under the initial “t”)

On line 20, what are the “NGVD 29” and “NAVD 88”? I see that the terms are used in Rule .1605, so I take it your regulated public would know that?

Also on line 20, you need to insert the opening parenthesis before “NGVD”

In the History Note, add G.S. 89C-16, since that requires the use of the seal.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .1606 is amended as published in 28:14 NCR 1633 – 1635 with changes as follows:

**21 NCAC 56 .1606 SPECIFICATIONS FOR TOPOGRAPHIC AND PLANIMETRIC MAPPING,
INCLUDING GROUND, AIRBORNE, AND SPACEBORNE SURVEYS**

(a) General.

(1) Topographic surveys are defined as surveys that have as their major purpose the determination of the configuration (relief) of the earth (ground) and the location of natural or artificial objects thereon.

(2) Planimetric mapping is defined as producing a map that presents the horizontal positions only for the features represented; distinguished from a topographic map by the omission of relief in measurable form.

(3) Airborne and spaceborne surveys are defined as the use of photogrammetry, LIDAR, IFSAR, or other similar measurement technologies for obtaining reliable information about physical objects and the environment, including terrain surface, through the process of recording, measuring, and interpreting images and patterns of electromagnetic radiant energy and other phenomena. This Rule establishes minimum allowable photogrammetric production procedures and standards for photogrammetric mapping and digital data production.

(b) Production procedures for topographic and planimetric mapping surveys shall be in accordance with the standards established by Part 3 of the Federal Geographic Data Committee (FGDC) Geospatial Positioning Accuracy Standard and applicable extensions and revisions. These standards are incorporated by reference including subsequent amendments and editions. The material is available from the Board office at the cost of reproduction as a public record or from the FGDC at www.fgdc.gov at no cost. Reporting accuracy shall be in accordance with Part 1 of the FGDC geospatial standards.

(c) Topographic or planimetric maps, orthophotos, and related electronic data, unless marked as "Preliminary Map," shall meet one of the below classes, as contractually specified to FGDC Standards, or NAIP Standards, or to State adopted base mapping standards for horizontal and vertical accuracies ~~(in the absence of specified standards, the National Map Accuracy Standards apply)~~ and shall be certified by the licensee accuracies. In the absence of a specified standard, the surveyor shall conform the survey to the requirements for a Class B survey.

(1) For horizontal accuracy five general classifications are:

(A) Class AA surveys. For Class AA surveys in North Carolina, the relative accuracy shall be equal to or no less than 0.033 meter (0.10 feet);

(B) Class A surveys. For Class A surveys in North Carolina, the relative accuracy shall be equal to or less than 0.5 meter (1.64 feet);

(C) Class B surveys. For Class B surveys in North Carolina, the relative accuracy shall be equal to or less than 1.0 meter (3.28 feet);

(D) Class C surveys. For Class C surveys in North Carolina, the relative accuracy shall be equal to or less than 2 meters (6.56 feet); and

- (E) Class D surveys. For Class D surveys in North Carolina, the relative accuracy shall be equal to or less than 5 meters (16.40 feet).
- (2) For vertical accuracy, three general classifications are:
- (A) Urban and suburban vertical control surveys. (Class A). Urban and suburban vertical control surveys include lands which lie within or adjoining a town or city. For Class A vertical control surveys in North Carolina, the vertical error in feet shall not exceed 0.10 times the square root of the number of miles run from the reference datum.
- (B) Other vertical control surveys (Class B). Other vertical control surveys include all lands which are not covered by Class A as described in Item (1) of this Rule. For Class B vertical control surveys in North Carolina, the vertical error in feet shall not exceed 0.20 times the square root of the number of miles run from the reference datum.
- (C) Trigonometric vertical control surveys (Class C). Trigonometric vertical control surveys can be used for vertical control for aerial and topographic mapping. The vertical error in feet shall not exceed 0.3 times the square root of the number of miles run from the reference datum.
- (d) When the resulting product is a digital (electronic) data set, or a map or document consists of more than one sheet or otherwise cannot be certified, a project report shall be certified. The report shall be marked "Preliminary" if applicable.
- (e) Ground control for topographic and planimetric mapping projects shall be in North Carolina State Plane Coordinate System grid coordinates and distances when the project is tied to Grid. A minimum of one permanent project vertical control point shall be shown.
- (f) The project map or report shall contain the following information:
- (1) Date of original data acquisition;
 - (2) Altitude of sensor and sensor focal length, as applicable;
 - (3) Date of document or data set compilation;
 - (4) If hard copy product is produced, the maps shall contain a north arrow, map legend, final document scale, including bargraph, and contour interval, as applicable;
 - (5) Coordinate system for horizontal and vertical denoting SI or English units (i.e., NAD83, assumed, or other coordinate system);
 - (6) A list or note showing the control points used for the project. The minimum data shown for each point shall include: physical attributes e.g. iron rod, railroad spike), latitude and longitude (or X and Y Grid coordinates), and elevation, as applicable;
 - (7) If other data is included, the source and accuracy of those items must be indicated;
 - ~~(8) A statement of horizontal and vertical accuracy at the 95 percent confidence level (2 sigma) complying with contractually specified FGDC standards consistent with Paragraph (e) of this Rule;~~

~~(9)~~(8) For topographic maps or data sets, contours in areas obscured by man-made or natural features shall be uniquely identified or enclosed by a polygon identifying the obscured area. The accuracies of the contours or of features in this obscured area shall be noted "No reliance is to be placed on the accuracy of these contours;"

~~(10)~~(9) A vicinity map depicting the project location on the first sheet of all hard copy maps or in the report accompanying digital files; and

~~(11)~~(10) The name of the client for whom the project was conducted.

(g) Nothing in this Section shall be construed to negate or replace the relative accuracy standards found in Rules .1601 through .1608.

(h) A certificate, substantially in the following form, shall be affixed to all maps or reports:

" I, _____, certify that this project was completed under my direct and responsible charge from an actual survey made under my supervision; that this _____ (insert as appropriate: ground, airborne or spaceborne) survey was performed at the 95 percent confidence level (2-sigma) to meet Federal Geographic Data Committee Standards; that this survey was performed to meet the requirements for a topographic/planimetric survey to the accuracy of Class _____ and vertical accuracy when applicable to the Class _____ standard; that the horizontal accuracy is _____, that the vertical accuracy is _____ and that the original data was obtained on _____(date)_____; that the survey was completed on _____(date)_____; that contours shown as [broken lines] may not meet the stated standard; and all coordinates are based on _____(~~NAD 83 (NSRS 2007), NAD 83/2001, or other~~);[NAD 83' and realization (date of adjustment of coordinate system) or 'NAD 27']and all elevations are based on _____(~~NGV 29, NGVD 29, NAVD 88, or other~~)."

(i) Documents transmitted electronically shall have the computer-generated seal removed from the original file and a copy of the project report shall be certified and sent to the client. The electronic data shall have the following inserted in lieu of the signature and date:

"This document originally issued and sealed by (name of sealer), (license number), on (date of sealing). This electronic media shall not be considered a certified document. See the project report for certificate and seal."

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

Eff. November 2, 1992;

Amended Eff. July 1, 2014; August 1, 2011; May 1, 2009; August 1, 2002; August 1, 2000.

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .1608

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In (a), line 5, put "Land Information System/ Geopgraphic Information System (LIS/GIS)" in quotation marks.

The sentence on lines 7 through 13 is very long. This would greatly benefit from being broken down into a list, like so:

All LIS/FIA surveys relating to:

(1) property lines;

(2) rights-of-way;...

shall be performed by a Land Surveyor who is a licensee of this Board, unless the individual is exempt under G.S. 89-25.

I'd then make the language on lines 13 and beyond new Paragraph (b).

On line 10, replace "which" with "that"

In current (a)(1), line 17, insert a comma and "the" after "accuracy"

In (a)(2), line 28, insert a "the" after "accuracy,"

In Part (a)(2)(A), strike the period after "surveys" on line 29. (This is consistent with the other Parts) On line 30, replace "which" with "that" and make "adjoining" "adjoin"

In (a)(2)(B), line 35, it's "Part (A) of this Subparagraph"

In (a)(2)(C), Page 2, line 4, do you mean "shall" rather than "can"?

In (b), line 11, replace "Chapter" with "Section."

In (c), line 13, delete "to"

In (c)(1), line 14, state "The method of measurement"

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

On line 15, what is meant by “least squares adjustment results”

There are several terms in the Rule that I am unfamiliar with, but I suspect your regulated public knows them. However, on line 17, I have to know – what is meant by “circle of uncertainty”?

In (c)(2), line 19, “i.e.” is italicized.

In (d), what is meant by “substantially the following form”? How much can an individual deviate?

On line 31, what are the “NGVD 29” and “NAVD 88”? I see that the terms are used in Rule .1605, so I take it your regulated public would know that?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .1608 is amended as published in 28:14 NCR 1635 – 1636 as follows:

**21 NCAC 56 .1608 CLASSIFICATION/LAND INFORMATION SYSTEM/GEOGRAPHIC
INFORMATION SYSTEM SURVEYS**

(a) General: Land Information System/Geographic Information System (LIS/GIS) surveys are defined as the measurement of existing surface and subsurface features for the purpose of determining their accurate geospatial location for inclusion in an LIS/GIS database. All LIS/GIS surveys as they relate to property lines, rights-of-way, easements, subdivisions of land, the position for any survey monument or reference point, the determination of the configuration or contour of the earth's surface or the position of fixed objects thereon, and geodetic surveying which includes surveying for determination of the size and shape of the earth both horizontally and vertically and the precise positioning of points on the earth utilizing angular and linear measurements through spatially oriented spherical geometry, shall be performed by a Land Surveyor who is a licensee of this Board unless exempt by G.S. 89C-25. For the purpose of specifying minimum allowable surveying standards, five general classifications of LIS/GIS surveys are established, any of which may be specified by the client. In the absence of a specified standard, the surveyor shall conform the survey to the requirements for a Class B survey. ~~The five classifications are:~~

(1) For horizontal accuracy five general classifications are:

(A) Class AA LIS/GIS Surveys. For Class AA LIS/GIS surveys in North Carolina, the relative accuracy shall be equal to or no less than 0.033 meter (0.10 feet);

(B) Class A LIS/GIS surveys. For Class A LIS/GIS surveys in North Carolina, the relative accuracy shall be equal to or less than 0.5 meter (1.64 feet);

(C) Class B LIS/GIS surveys. For Class B LIS/GIS surveys in North Carolina, the relative accuracy shall be equal to or less than 1.0 meter (3.28 feet);

(D) Class C LIS/GIS surveys. For Class C LIS/GIS surveys in North Carolina, the relative accuracy shall be equal to or less than 2 meters (6.56 feet); and

(E) Class D LIS/GIS surveys. For Class D LIS/GIS surveys in North Carolina, the relative accuracy shall be equal to or less than 5 meters (16.40 feet).

(2) For vertical accuracy, three general classifications are:

(A) Urban and suburban vertical control surveys. (Class A). Urban and suburban vertical control surveys include lands which lie within or adjoining a town or city. For Class A vertical control surveys in North Carolina, the vertical error in feet shall not exceed 0.10 times the square root of the number of miles run from the reference datum.

(B) Other vertical control surveys (Class B). Other vertical control surveys include all lands which are not covered by Class A as described in Item (1) of this Rule. For Class B vertical control surveys in North Carolina, the vertical error in feet

shall not exceed 0.20 times the square root of the number of miles run from the reference datum.

(C) Trigonometric vertical control surveys (Class C). Trigonometric vertical control surveys can be used for vertical control for aerial and topographic mapping. The vertical error in feet shall not exceed 0.3 times the square root of the number of miles run from the reference datum. The vertical error in Global Navigation Satellite System (GNSS) surveys shall not exceed five centimeters relative to the referenced benchmark(s) at the 95 percent confidence level (2 sigma) accuracy as defined in Federal Geographic Data Committee Standards.

(b) Nothing in this Rule negates or replaces the relative accuracy standards found in Rules .1601 through .1607 of this Chapter.

(c) The Professional Land Surveyor in responsible charge of the LIS/GIS boundary or geodetic control survey shall certify to all of the following in either written or digital form:

- (1) Class of LIS/GIS survey. Method used to evaluate the accuracy shall be described as either statistical testing or least squares adjustment results, comparison with values of higher accuracy, and repeat measurements. The reporting standard in the horizontal component is the radius of a circle of uncertainty, such that the true or theoretical location of the point falls within that circle 95 percent of the time. ~~For vertical accuracy requirements, see 21 NCAC 56.1605; time;~~
- (2) Method of measurement (i.e. global navigation satellite systems, electronic scanners, theodolite and electronic distance meter, transit and tape);
- (3) Date(s) of the survey; and
- (4) Datum used for the survey.

(d) A certificate, substantially in the following form, shall be affixed to all maps or reports:

"I, _____, certify that this project was completed under my direct and responsible charge from an actual survey made under my supervision; that this survey was performed to meet the requirements for an ~~LIS/GIS~~ LIS/GIS survey [21 NCAC 56.1608] to the accuracy of Class ____ and vertical accuracy; when applicable to the Class ____ standard ~~[(21 NCAC 56.1605(a))];~~ method used to evaluate the accuracy was _____; method of measurement _____; date(s) of survey _____; datum used for survey _____; and all coordinates are based on _____ ~~(NAD 83 (NSRS 2007), NAD 83/2001, or other);~~ ['NAD 83' and realization (date of adjustment of coordinate system) or 'NAD 27'] and all elevations are based on _____ ~~(NGV 29, (NGVD 29, NAVD 88, or other))."~~

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

Eff. February 1, 1996;

Amended Eff. July 1, 2014; August 1, 2011; July 1, 2009; May 1, 2009; August 1, 2002; August 1, 2000.

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .1703

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

On line 4, I see that "PDH" is defined in Rule .1702 as "Professional Development Hour." However, what is the "renewal period"? Is it what is contemplated in 89C-17, the annual renewal of the license?

On line 6, replace "which" with "that"

What are you saying on lines 7 and 8? That if the Board evaluates the courses after taken, the Board may say that it is not sufficient for credit? This sentence needs to be clearer.

In Item (3), make "Internet" uppercase on line 11. Insert a comma after "tutorials" on line 12.

In Item (5), what is the difference between "teaching" and "instructing"?

Remove the "and" after Item (8) on line 19.

At the end of (9), line 20, remove the period. Insert a semicolon and "or"

In Item (10), line 22, you mean to cite Paragraph (g) of the Rule, not (f).

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .1703 is amended as published in 28:14 NCR 1636 as follows:

21 NCAC 56 .1703 REQUIREMENTS

Every licensee shall obtain 15 PDH units during the renewal period. If a licensee exceeds the annual requirement in any renewal period, a maximum of 15 PDH units may be carried forward into the subsequent renewal period. Selection of courses and activities which meet the requirements of Rule .1702(4) of this Section is the responsibility of the licensee. Licensees may select courses other than those offered by sponsors. Post evaluation of courses may result in non-acceptance. PDH units may be earned as follows:

- (1) Completion of college courses;
- (2) Completion of continuing education courses, seminars, or workshops;
- (3) Completion of correspondence, televised, internet, videotaped, audiotaped, and other courses or tutorials provided an exam is required for completion. No exam is required for attendance at a webinar presentation if attendance is documented;
- (4) Presenting or attending seminars, in-house courses, workshops, or professional or technical presentations made at meetings, conventions or conferences;
- (5) Teaching or instructing in Items (1) through (4) of this Rule;
- (6) Authoring published papers, articles, or books;
- (7) Active participation in professional or technical societies as defined in Rule .1705(f) of this Section;
- (8) Patents; and
- (9) Authoring exam questions accepted for use in the engineering or land surveying exams.
- (10) Active participation on boards, commissions, committees or councils of private, local, state or federal government entities as defined in Rule .1705(f) of this Section.

History Note: Authority G.S. 89C-10(a); 89C-17;

Eff. December 1, 1994;

Amended Eff. July 1, 2014; August 1, 2011; May 1, 2009; August 1, 2000; August 1, 1998.

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .1704

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

As I understand this Rule, you are giving the conversion for the approved activities in Rule .1703.

Therefore, on line 4, state "The conversion of units of credit set forth in Rule .1703 of this Section to PDH units is as follows:"

Be consistent with your punctuation at the end of the sentences. You use no punctuation at the end of Items (1) through (3) and then switch to periods for Items (4) through (7) and then back to nothing for Items (8) through (10). I believe you should just use periods throughout.

In Item (4), is the "course work" taking into account "correspondence, televised, Internet, videotaped, audiotaped" courses in .1703, Item (4)?

In Items (7) and (10), be consistent with the punctuation and parentheses. I'd state "society (each organization)" but you do not have to. Just be consistent between the two.

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .1704 is amended as published in 28:14 NCR 1636 – 1637 as follows:

21 NCAC 56 .1704 UNITS

The conversion of other units of credit to PDH units is as follows:

(1)	1 College or unit semester hour	45 PDH
(2)	1 College or unit quarter hour	30 PDH
(3)	1 Continuing Education Unit	10 PDH
(4)	1 Contact hour of professional development in course work, seminars, or professional or technical presentations made at meetings, conventions or conferences. Contact hours equal the actual time of instruction and shall be credited to the nearest one-third of an hour.	1 PDH
(5)	For teaching in Items (1) – (4) of this Rule, PDH credits are doubled. Teaching credit is valid for teaching a course or seminar for the first time only. Teaching credit does not apply to full-time faculty, as defined by the institution where a licensee is teaching.	
(6)	Each published paper, article or book.	10 PDH
(7)	Active participation in professional and technical society. (Each organization.)	2 PDH
(8)	Each patent	10 PDH
(9)	Each question used	2 PDH
(10)	<u>Active participation on boards, commissions, committees or councils</u> <u>of private, local, state or federal government entities (Each entity)</u>	<u>2 PDH</u>

History Note: Authority G.S. 89C-10(a); 89C-17;
Eff. December 1, 1994;
Amended Eff. July 1, 2014; May 1, 2009; August 1, 2000; August 1, 1998.

REQUEST FOR TECHNICAL CHANGE

AGENCY: Board of Examiners for Engineers and Surveyors

RULE CITATION: 21 NCAC 56 .1705

DEADLINE FOR RECEIPT: Friday, June 13, 2014

The Rules Review Commission staff has completed its review of this rule prior to the Commission's next meeting. The Commission has not yet reviewed this rule and therefore there has not been a determination as to whether the rule will be approved. You may call this office to inquire concerning the staff recommendation.

In reviewing these rules, the staff determined that the following technical changes need to be made:

In (a), what are you saying? If it's that the Board will have final say over whether the credit is earned, say that. But also state what the guidelines will be in making the determination.

In (d), line 10, "Internet" is capitalized.

On line 12, what is "reasonably"?

In (e), line 13, I don't think you need the citation at all. Bear in mind, patents are governed by a different citation. Why not just state "Credit determination for published papers, articles and books and obtaining patents..."

And what do you mean it is the responsibility of the licensee? That they have the responsibility of notifying the Board this occurred?

In (f) and (g), you've already said in .1704 that credits are limited to 2 PDH per organization or entity. Do you need to retain it here?

Please retype the rule accordingly and resubmit it to our office at 1711 New Hope Church Road, Raleigh, North Carolina 27609.

Amanda J. Reeder
Commission Counsel
Date submitted to agency: June 2, 2014

21 NCAC 56 .1705 is amended as published in 28:14 NCR 1637 as follows:

21 NCAC 56 .1705 DETERMINATION OF CREDIT

(a) The Board of Examiners has final authority with respect to approval of courses, sponsors, credit, PDH value for courses, and other methods of earning credit.

(b) Credit for college or community college courses shall be based upon course credit established by the college.

(c) Credit for continuing education courses, seminars and workshops shall be based on one PDH unit for each hour of attendance. Attendance at programs presented at professional and technical society meetings shall earn PDH units for the actual time of each program.

(d) Credit for correspondence, televised, internet, videotaped, audiotaped, and other courses or tutorials, provided an exam is required for completion, shall be based upon one PDH unit for each hour assigned to the course, provided such hours are a reasonably estimated time for an average professional to complete the course.

(e) Credit determination, as allowed in 21 NCAC 56 .1704(6), for published papers, articles and books and obtaining patents is the responsibility of the licensee.

(f) Credit for active participation in professional and technical societies (limited to 2 PDH per organization), requires that a licensee serve as an officer or participate in a committee of the organization. PDH credits are not earned until the end of each year of service is completed.

(g) Credit for active participation on boards, commissions, committees or councils of private, local, state or federal government entities (limited to 2 PDH per entity) requires utilizing engineering or land surveying knowledge (as applicable) in the active participation. PDH credits are not earned until the end of each year of service is completed.

History Note: Authority G.S. 89C-10(a); 89C-17;

Eff. December 1, 1994;

Amended Eff. July 1, 2014; August 1, 2011; May 1, 2009; August 1, 2000; August 1, 1998.