South Carolina – Laws, Regulations, and Ethics for Professional Engineers

Three (3) Continuing Education Hours

Course #SC101

Approved Continuing Education for Licensed Professional Engineers

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Course Description:

The South Carolina Laws, Regulations and Ethics course satisfies 3 of the 30 hours of continuing professional competency (CPC) required for South Carolina licensed professional engineers.

The course is designed as a distance learning interactive course that enables the practicing professional engineer to examine the cannons of ethics as well as keep up to date on the legal aspects that govern the practice of engineering in the state of South Carolina.

Objectives:

The primary objective of this course is to familiarize the student with the cannons of ethics and familiarize the student with the laws and rules regulating the practice of engineering in the state of South Carolina. Upon successful completion of the course, the student will have increased understanding of ethical practices and be well versed with the GA state laws and board rules.

Grading:

Students must achieve a minimum score of 70% on the online quiz to pass this course. The quiz may be taken as many times as necessary to successful pass and complete the course.

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TITLE 40 PROFESSIONS & OCCUPATIONS, CHAPTER 22. ENGINEERS AND SURVEYORS

40-22-2. Purpose.

In order to safeguard life, health, and property and to promote the public welfare, the practice of the profession of engineering and surveying in this State is subject to regulation. It is the policy of this State and the purpose of this chapter to encourage the development of professional engineers and surveyors in this State and to promote the accountability for engineering practice and surveying practice in a global economy. The State recognizes the need for qualified engineers and surveyors to support the local and global economy and, to that end, encourages efforts to increase access to accredited education, the examinations, and the experience necessary and appropriate to protect the health, safety, and welfare of South Carolina citizens and to support licensure as the basis of accountability.

40-22-5. Application of Chapter 1; conflicts.

Unless otherwise provided for in this chapter, Article 1, Chapter 1 of Title 40 applies to those professions of engineering and surveying regulated by the Department of Labor, Licensing and Regulation. If there is a conflict between this chapter and Article 1, Chapter 1 of Title 40, the provisions of this chapter control.

40-22-10. Board of Registration for Professional Engineers and Land Surveyors: membership and qualifications; compensation; removal; meetings; liability.

(A) There is created the South Carolina State Board of Registration for Professional Engineers and Surveyors under the administration of the Department of Labor, Licensing and Regulation. The purpose of the board is to protect the health, safety, and welfare of the public by ensuring that only properly qualified and competent engineers and surveyors are licensed to practice, by promoting technical competency and ethical

standards consistent with the Rules of Professional Conduct applicable to engineers and surveyors, and by appropriately disciplining those found in violation of laws governing engineering and surveying.

(B) The board shall consist of eight members appointed by the Governor; recommendations for appointment may be made by any individual or group, including the South Carolina Council of Engineering and Surveying Societies. Five members must be professional engineers; two members must be professional surveyors, at least one of whom must be actively engaged in the practice of surveying; and one member must be from the general public appointed in accordance with Section 40-22-40. Professional engineer and professional surveyor members must be selected from a list of qualified candidates submitted to the Governor by the South Carolina Council of Engineering and Surveying Societies. Members of the board shall serve for terms of five years and until their successors are appointed and qualify. No more than two engineers' terms shall expire in any calendar year; no more than one surveyor's term shall expire in any calendar year. In the event of a vacancy, the Governor shall appoint a person to fill the vacancy for the unexpired portion of the term.

(C)(1) Each engineering member of the board must:

(a) be a citizen of the United States and a resident of this State;

(b) be licensed in this State;

(c) have been engaged in the practice of engineering in this State for at least twelve years; and

(d) must have been in responsible charge of important engineering work for at least five years, which may include teaching engineering.

(2) Each surveyor member of the board must:

(a) be a citizen of the United States and a resident of this State;

(b) be licensed in this State;

(c) have been engaged in the practice of surveying in this State for at least twelve years; and

(d) have been in responsible charge of important surveying work for at least five years, which may include teaching surveying in an academic setting.

(3) The public member of the board must be a citizen of the United States and a resident of this State for at least twelve consecutive years.

(D) Board members must be compensated for their services at the usual rate for mileage, subsistence, and per diem as provided by law for members of state boards, committees, and commissions and may be reimbursed for actual and necessary

expenses incurred in connection with and as a result of their work as members of the board.

(E) The Governor may remove a member of the board pursuant to Section 1-3-240. Vacancies on the board must be filled for the unexpired portion of the term in the manner of the original appointment.

(F)(1) The board shall elect or appoint annually a chairman, a vice chairman, and a secretary.

(2) The board shall meet at least two times a year and at other times upon the call of the chairman or a majority of the board.

(3) A simple majority of the members of the board eligible to vote constitutes a quorum; however, if there is a vacancy on the board, a majority of the members serving constitutes a quorum.

(4) A board member is required to attend meetings or to provide proper notice and justification of inability to do so. Unexcused absences from meetings may result in removal from the board as provided for in Section 1-3-240.

(G) Neither the board nor any of its members, agents, or department employees are liable for acts performed in good faith during the course of their official duties.

40-22-20. Definitions.

As used in this chapter:

(1) “ABET” means the Accreditation Board for Engineering and Technology. “EAC” means the Engineering Accreditation Commission of ABET. “TAC” means the Technology Accreditation Commission of ABET.

(2) “Approved engineering curriculum” means an engineering program of four or more years determined by the board to be substantially equivalent to that of an EAC/ABET accredited curriculum.

(3) “Board” means the South Carolina State Board of Registration for Professional Engineers and Surveyors created pursuant to this chapter.

(4) “Branch office” means a place of business separate from the principal place of business where engineering services or surveying services are provided. A

specific project or construction site office is not a branch office. Nothing contained in this chapter prevents a professional engineer or professional surveyor from undertaking an engineering or a surveying project anywhere in the State.

(5) “Current certificate of registration” means a license to practice which has not expired or has not been revoked and which has not been suspended or otherwise restricted by the board.

(6) “Department” means the Department of Labor, Licensing and Regulation.

(7) “Design coordination” includes the review and coordination of those technical submissions prepared by others, including as appropriate and without limitation, consulting engineers, architects, landscape architects, surveyors, and other professionals working under the direction of the engineer.

(8) “Direct responsibility”, “direct supervisory control”, “direct supervision”, and “responsible charge” all mean that there is a clear-cut personal connection to the project or employee supervised, marked by firsthand knowledge and direct control and assumption of professional responsibility for the work.

(9) "Emeritus engineer" or "emeritus surveyor" means a professional engineer or surveyor who has been registered for fifteen consecutive years or longer and who is sixty-five years of age or older and who has retired from active practice.

(10) "Engaged in practice" means holding one's self out to the public as being qualified and available to perform engineering or surveying services.

(11) “Engineer” means a professional engineer as defined in this section.

(12) “Engineering surveys” include all minor survey activities required to support the sound conception, planning, design, construction, maintenance, operation, and investigation of engineered projects but exclude the surveying of real property for the establishment of land boundaries, rights-of-way, and easements and the independent surveys or resurveys of general land masses.

(13) “Engineer-in-training” means a person who has qualified for and passed the Fundamentals of Engineering examination as provided in this chapter and is entitled to receive a certificate as an engineer-in-training.

(14) "Ethics" means conduct that conforms to professional standards of conduct

(15) “Firm” means a business entity functioning as a sole proprietorship, partnership, limited liability partnership, professional association, professional corporation, business corporation, limited liability company, joint venture, or other legally constituted organization which practices or offers to practice engineering or surveying, or both.

(16) “Fraud or deceit” means intentional deception to secure gain, through attempts deliberately to conceal, mislead, or misrepresent the truth in a manner that others might take some action in reliance or an act which provides incorrect, false, or misleading information on which others might rely.

(17) “GIS” means geographic information systems.

(18) “Good character” refers to a person of good moral character and one who has not been convicted of a violent crime, as defined in Section 16-1-60, or a crime of moral turpitude.

(19) “Gross negligence” means an act or course of action, or inaction, which denotes a lack of reasonable care and a conscious disregard or indifference to the rights, safety, or welfare of others and which does or could result in financial loss, injury, or damage to life or property.

(20) “Incompetence” means the practice of engineering or surveying by a licensee determined to be either incapable of exercising ordinary care and diligence or lacking the ability and skill necessary to properly perform the duties undertaken.

(21) “Licensed” means authorized by this board, pursuant to the statutory powers delegated by the State to this board, to engage in the practice of engineering, or surveying, or engineering and surveying, as evidenced by the board’s certificate issued to the registered license holder.

(22) “Misconduct” means the violation of a provision of this chapter or of a regulation promulgated by the board pursuant to this chapter.

(23) “NCEES examination” means those written or electronic tests developed and administered by the National Council of Examiners for Engineering and Surveying for the purpose of providing one indication of competency to practice engineering.

(24) "Person" means an individual human being, firm, partnership, or corporation.

(25) “Practice of engineering” means any service or creative work, the adequate performance of which requires engineering education, training, and experience in the application of special knowledge of the mathematical, physical, and engineering sciences to such services or creative work as consultation, investigation, expert technical testimony, evaluation, design and design coordination of engineering works and systems, design for development and use of land and water, performing engineering surveys and studies, and the review of construction for the purpose of monitoring compliance with drawings and specifications, any of which embraces such services or work, either public or private, in connection with any utilities, structures, buildings, machines, equipment, processes, work systems projects, and industrial or consumer products or equipment of control systems, communications, mechanical, electrical, hydraulic, pneumatic, or thermal nature, insofar as they involve safeguarding life, health, or property, and including such other professional services as may be necessary to the planning, progress, and completion of any engineering services. The mere execution, as a contractor, of work designed by a professional engineer or supervision of the construction of such work as a foreman or superintendent is not considered the practice of engineering. A person must be construed to practice or offer to practice engineering, within the meaning and intent of this chapter who:

(a) practices any branch of the profession of engineering;

(b) by verbal claim, sign, advertisement, letterhead, card, or in any other way represents himself to be a professional engineer or through the use of some other title implies that he is a professional engineer or that he is licensed under this chapter; or

(c) holds himself out as able to perform or does perform any engineering service or work or any other professional service designated by the practitioner or which is recognized as engineering.

(26) “Practice of TIER A surveying” means providing professional services including, but not limited to, consultation investigation, testimony evaluation, expert technical testimony, planning, mapping, assembling, and interpreting reliable scientific measurements and information relative to the location, size, shape, or physical features of the earth, the space above the earth, or part of the earth, and utilization and development of these facts and interpretation into an orderly survey map, site plan, report, description, or project. The practice of TIER A surveying consists of three separate disciplines: land surveying,

photogrammetry, and geographic information systems. A surveyor may be licensed in one or more of the disciplines and practice is restricted to only the discipline or disciplines for which the land surveyor is licensed. The practice of TIER A surveying does not include the use of geographic information systems to create maps pursuant to Section 40-22-290, analyze data, or create reports. The scope of the individual disciplines are identified as follows:

(a) Land surveyor:

(1) locates, relocates, establishes, reestablishes, lays out, or retraces any property line or boundary of any tract of land or any road, right-of-way, easement, alignment, or elevation of any fixed works embraced within the practice of land surveying, or makes any survey for the subdivision of land;

(2) determines, by the use of principles of land surveying, the position for any survey monument or reference point; or sets, resets, or replaces such monument or reference; determines the topographic configuration or contour of the earth's surface with terrestrial measurements; conducts hydrographic surveys;

(3) conducts geodetic surveying which includes surveying for determination of geographic position in an international three-dimensional coordinate system, where the curvature of the earth must be taken into account when determining directions and distances; geodetic surveying includes the use of terrestrial measurements of angles and distances, as well as measured ranges to artificial satellites.

(b) A photogrammetric surveyor determines the configuration or contour of the earth's surface or the position of fixed objects on the earth's surface by applying the principles of mathematics on remotely sensed data, such as photogrammetry.

(c) A geographic information systems surveyor creates, prepares, or modifies electronic or computerized data including land information systems and geographic information systems relative to the performance of the activities described in subitems (a) and (b).

(d) An individual licensed only as a geodetic surveyor before July 1, 2004, determines the geographic position in an international three-dimensional

coordinate system, where the curvature of the earth must be taken into account when determining directions and distances; geodetic surveying includes the use of terrestrial measurements of angles and distances, as well as measured ranges to artificial satellites. A geodetic surveyor is not authorized to perform the other services a land boundary surveyor is authorized to perform.

(27) “Practice of TIER B land surveying” includes all rights and privileges of the TIER A surveying discipline defined in Section 40-22-20(24)(a); and in addition to these rights and privileges, TIER B land surveying includes, for subdivisions, preparing and furnishing subdivision plans for sedimentation and erosion control and storm drainage systems, if the systems do not require the structural design of system components and are restricted to the use, where relevant, of any standards prescribed by local, state, or federal authorities. Regulations defining the scope of the additional powers granted to TIER B land surveyors must be promulgated by the board.

(28) “Private practice firm” means a firm as defined herein through which the practice of engineering or surveying would require a certificate of authorization as described in this chapter.

(29) “Private practitioner” means a person who individually holds himself out to the general public as able to perform, or who individually does perform, the independent practice of engineering or surveying.

(30) “Professional engineer” means a license holder who, by reason of his special knowledge of the mathematical and physical sciences and the principles and methods of engineering analysis and design, acquired by professional education and practical experience, is qualified to practice engineering as defined in this section, all as attested by his legal license and registration as a professional engineer in this State.

(31) “Professional surveyor” means a person who is qualified to practice any discipline of TIER A or TIER B surveying in this State, as defined in this section and as attested by his legal license and registration as a TIER A or TIER B professional surveyor in this State.

(32) “Professions of architecture, landscape architecture, and geology” mean those specified professions as defined by the laws of this State and applicable regulations.

(33) “Registered” means the engineer or surveyor is licensed and registered in the State.

(34) “Resident professional engineer” or “resident professional surveyor”, with respect to principal office and branch office requirements, means a licensed practitioner who spends a majority of each normal workday in the principal or branch office.

(35) “Retired from active practice” means not engaging or offering to engage in the practice of engineering or surveying as defined in this section.

(36) "Surveyor-in-training" means a person who has qualified for and passed the NCEES Fundamentals of Surveying examination as provided in this chapter and is entitled to receive a certificate as a surveyor-in-training.

40-22-30. Practice without a license; penalties.

(A) In addition to those penalties provided for in Section 40-1-200 and in order to safeguard life, health, and property and to promote the public welfare, it is unlawful for a:

(1) person in a public or private capacity to practice or offer to practice engineering or surveying without being licensed pursuant to this chapter;

(2) person to use in connection with his name or otherwise assume, use, or advertise a title or description tending to convey the impression that he is a professional engineer or professional surveyor unless the person is licensed and registered pursuant to this chapter;

(3) firm in a public or private capacity to practice or offer to practice engineering or surveying without being licensed and holding a valid authorization to practice, as provided in Section 40-22-250;

(4) person or firm to knowingly submit false information to the board for the purpose of obtaining licensure.

(B) It is unlawful for an individual or firm to engage in the practice of TIER A surveying or the practice of TIER B surveying in this State, to use the title “surveyor”, or to use or display any title, verbal claim, sign, advertisement, letterhead, card, or other device or method to indicate that the individual or firm engages in or offers to engage in the practice of TIER A or TIER B surveying without being registered as a surveyor or firm.

(C) It is unlawful for an individual or firm to engage in the practice of engineering in this State, to use the title “engineer”, or to use or display any title, verbal claim, sign, advertisement, letterhead, card, or other device or method to indicate that the individual or firm engages in or offers to engage in the practice of engineering without being registered as an engineer or firm.

(D) A violation of this section is punishable pursuant to Section 40-22-200.

40-22-40. Nomination of board member candidates from general public.

A board member candidate from the general public may be nominated by an individual, group, or association. The public member must be appointed to the board by the Governor in accordance with Section 40-1-45.

40-22-50. Duties of board; promulgation of examination, licensing, and registration fees; records; register of applications for certificates of authorization; roster.

(A) The Department of Labor, Licensing and Regulation shall provide all administrative, fiscal, investigative, inspectional, clerical, secretarial, and license renewal operations and activities of the board.

(B) The board shall promulgate examination, licensing, and registration fees for professional engineers, engineers-in-training, professional surveyors, surveyors-in-training, and registered firms in regulation. If the board denies the issuance of a license to an applicant, once the processing of the application has commenced, the fee deposited must be retained as an application fee.

(C) The board shall keep a record of its proceedings, a register of all applications for individual licenses, and a register of all applications for certificates of authorization. The records of the board are prima facie evidence of the proceedings of the board set forth in the record. A transcript of the proceedings, certified by the administrator or the director under seal, is admissible in evidence with the same force and effect as the original.

(1) For professional licensure applications, the register shall state:

(a) the name, age, and residence of each applicant;

(b) the date and type of the application;

(c) the business address and telephone number of the applicant;

(d) the applicant's educational and other qualifications;

(e) whether or not an examination was required;

(f) whether the applicant was rejected;

(g) whether a license to practice was granted;

(h) the date of the action of the board; and

(i) other information considered necessary by the board.

(2) For applications requesting a certificate of authorization, the register shall state:

(a) the name and type of business entity;

(b) the date of application;

(c) the business address and telephone number;

(d) the address for service of due process;

(e) the date of action by the board;

(f) approval or rejection of the application; and

(g) other information considered necessary by the board.

(D) Annually the board shall prepare a roster or supplements to the roster containing:

(1) the current names and places of business of all professional engineers and all professional surveyors; and (2) a listing of each business entity that holds a valid certificate of authorization to practice engineering, surveying, or both, in this State.

40-22-60. Rules and regulations; seal.

(A) The board may adopt rules governing its proceedings and may promulgate regulations necessary to carry out the provisions of this chapter. The board shall adopt and have an official seal.

(B) The board may promulgate regulations defining the requirements for licensure for each of the surveying disciplines enumerated in Section 40-22-20(26) and (27).

(C) The board may advise and recommend action to the department in the development of statutory revisions,

40-22-70. Additional powers and duties.

In addition to the powers and duties provided in this chapter, the board has those powers and duties set forth in Section 40-1-70.

40-22-75. Waiver of licensing requirements during emergencies.

The board may waive all licensing and credentialing requirements of this chapter during a declared national or state public emergency, not to exceed ninety days. The board shall establish the conditions as may be appropriate to enable engineers properly licensed in other jurisdictions having like standards as those currently in effect in this State or jurisdictions that meet the NCEES Model Law standards to render services in the geographic areas identified in the order declaring the emergency.

40-22-80. Investigations of violations; subpoenas; administration of oaths and taking of testimony; charges.

(A) If the board or the director of the Department of Labor, Licensing and Regulation has reason to believe that a person has violated a provision of this chapter or a regulation promulgated under this chapter or if a person files a written complaint with the board or the director of the Department of Labor, Licensing and Regulation charging a person or a business with a violation of a provision of this chapter or a regulation promulgated under this chapter, the board may initiate an investigation.

(B) In accordance with Section 40-1-80, the board, under the hand of its chairman and the seal of the board, may issue subpoenas to compel the attendance of witnesses and the production of documents and also may administer oaths, take testimony, hear proofs, and receive exhibits in evidence for all purposes required in the discharge of duties under this chapter. Upon failure of an individual or firm to obey a subpoena or to answer questions propounded by the board, the board may apply to an administrative law judge for an order requiring the person or firm to comply.

(C) A person may prefer charges of fraud, deceit, gross negligence, incompetency, or misconduct against a registrant and charges of unlicensed practice against nonregistrants. The charges must be in writing, supported by affidavit of specific wrongdoing, and filed with the chairman of the board. All charges, unless dismissed by

the board as unfounded, trivial, or otherwise without merit, must be investigated by the board to determine if a hearing is warranted.

(D) The board may not consider charges in a matter that would otherwise be precluded by prevailing statutes of limitation or repose.

40-22-90. Presentation of investigation results; hearing; notification of accused.

(A) The results of an investigation must be presented to the board. If from these results it appears that a violation has occurred or that a licensee has become unfit to practice engineering or surveying, the board, in accordance with the Administrative Procedures Act, may take disciplinary action authorized by Section 40-1-120.

(B) No disciplinary action may be taken unless the matter is presented to and voted upon by the board.

(C) The board may designate a hearing officer or hearing panel to conduct hearings or take other action as may be necessary under Section 40-1-90.

(D) If in the judgment of the board a hearing is warranted, the charges may be processed as provided for by the Administrative Procedures Act.

> (1) The time and place for a hearing must be fixed by the board. The accused must be furnished a copy of the charges and a notice of the time and place of hearing. Notification must be personally serviced or served by certified mail, return receipt requested, at the last known address of the accused at least thirty days before the scheduled hearing date.
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> (2) The accused may appear personally and with counsel to cross-examine witnesses appearing against him and to produce evidence and witnesses in his own defense.

40-22-100. Cease and desist orders; application for temporary restraining order.

(A) As provided for in Section 40-1-100, when the board has reason to believe that a person is violating or intends to violate a provision of this chapter or a regulation promulgated under this chapter, in addition to all other remedies, it may order the person immediately to cease and desist from engaging in the conduct. If a person is practicing engineering and/or surveying without being licensed under this chapter, is

violating a board order or a provision of this chapter or a regulation promulgated under this chapter, the board also may apply to an administrative law judge for a temporary restraining order, in accordance with the rules of the Administrative Law Court.

(B) No board member or director of the department or other employee of the department may be held liable for damages resulting from a wrongful temporary restraining order issued pursuant to Section 40-1-100.

40-22-110. Penalties; grounds.

(A) The board may seek administrative fines, pursuant to Section 40-1-120 or seek criminal penalties against a person or firm found guilty of unlicensed practice of engineering or surveying. In addition to the grounds provided for in Section 40-1-110, the board may cancel, suspend, refuse, revoke, or restrict a license as well as reprimand, fine, or require re-examination of an individual who is found guilty of:

(1) the practice of fraud or deceit in applying for or obtaining a certificate of registration;

(2) gross negligence, incompetency, or misconduct in the practice of engineering or surveying;

(3) a felony or misdemeanor which, in the judgment of the board, adversely affects the registrant's ability to perform satisfactorily within the licensed discipline;

(4) aiding or abetting any person in violation of a provision of this chapter or a regulation promulgated pursuant to this chapter;

(5) a violation of this chapter or a regulation promulgated by the board; and

(6) practicing in a registration category or tier for which the licensee has not been licensed by the board.

(B) The license of a person adjudged mentally incompetent is deemed automatically suspended upon the adjudication until the person is adjudged as being restored to mental competency by a court of competent jurisdiction or in any other manner provided by law.

40-22-115. Jurisdiction of board.

The board has jurisdiction over practice undertaken by nonlicensed individuals and firms and the actions committed or omitted by current and former licensees during the entire

period of licensure. The board has jurisdiction to act on any matter which arises during the practice authorization period of licensed practitioners and firms as provided for in Section 40-1-115.

40-22-120. Civil fines and other penalties.

(A) If a majority of the board sustains the charges against the offending party, the board may levy a civil fine, as well as reprimand, suspend, refuse licensure, require requalification, or revoke the certificate of registration, as appropriate.

(B) The board may require the offending party to pay a fine of not more than one thousand dollars to the board for each violation of a provision of this chapter or a regulation promulgated by the board; however, the total of the fines imposed for these violations may not exceed twenty thousand dollars.

(C) A final order of the board disciplining a licensee under this chapter is public information in accordance with Section 40-1-120(C).

40-22-130. Grounds for denial of license.

As provided for in Section 40-1-130, the board may deny licensure to an applicant based on the same grounds for which the board may take disciplinary action against a licensee.

40-22-140. Prior criminal record.

As provided for in Section 40-1-140, a license may not be denied solely based on a person's prior criminal record.

40-22-150. Voluntary surrender of license.

A licensee under investigation for a violation of this chapter or a regulation promulgated under this chapter may voluntarily surrender the license to practice in accordance with and subject to the provisions of Section 40-1-150.

40-22-160. Appeal.

A person aggrieved by a final action of the board may seek review of the decision to the Administrative Law Court in accordance with Section 40-1-160.

40-22-170. Costs.

A person found in violation of this chapter or regulations promulgated under this chapter may be required to pay costs associated with the investigation and prosecution of the case in accordance with Section 40-1-170.

40-22-180. Payment of fines; interest.

(A) All fines are payable immediately upon imposition. Unless the fine is paid within sixty days after the order becomes final, the order constitutes a judgment and must be filed and execution issued on the judgment in the same manner as the judgment of a court of common pleas. Interest accrues on the amount of the fine from the date imposed until the date paid at the rate specified in Section 34-31-20(B).

(B) No registrant against whom a fine is levied is eligible for reinstatement until the fine has been paid in full.

40-22-190. Confidentiality of proceedings.

To the extent provided in Section 40-1-190, investigations and proceedings conducted under this chapter are confidential and all communications are privileged. Notwithstanding the provisions of this section, a final order of the board disciplining a licensee is public information as provided for in Section 40-1-120(C).

40-22-200. Violation of chapter; penalty.

A person who violates a provision of this chapter or a regulation promulgated pursuant to this chapter or who commits any of the following violations is guilty of a misdemeanor and, upon conviction, must be imprisoned for not more than six months or fined not less than five hundred dollars and not more than two thousand dollars for each violation, or both; however, the total imposed for these violations may not exceed ten thousand dollars:

(1) practices or offers to practice engineering or surveying in this State without being registered in accordance with this chapter;

(2) presents or attempts to use as his own the certificate of registration or the seal of another;

(3) gives false or forged evidence of any kind to the board or to a member of the board in obtaining a certificate of registration;

(4) falsely impersonates another registrant of like or different name; or

(5) attempts to use an expired or revoked certificate of registration.

40-22-210. Injunctions; rule to show cause.

To enforce this chapter or to restrain a violation of this chapter, the department, on behalf of the board, may petition an administrative law judge for an injunction in the name of the State as provided generally in civil cases. In these proceedings:

(1) It is not necessary to establish the absence of an adequate remedy of law.

(2) Board members are not personally liable for damages resulting from a wrongful injunction.

(3) The initial order of injunction must include a rule to show cause and is temporary pending the return to the rule.

40-22-220. Eligibility requirements for license as engineer.

(A) A person having the necessary qualifications prescribed in this chapter to entitle him to registration is eligible for licensure. A person must be certified as an engineer-in-training as a prerequisite to licensure.

(B) To be eligible for certification as an engineer-in-training, an applicant must be of good character and reputation and be able to effectively communicate in the English language. The minimum evidence satisfactory to the board that an applicant is qualified for certification as an engineer-in-training is:

(1) graduation in an EAC/ABET accredited engineering curriculum of four or more scholastic years and passing of NCEES examinations as required by the board; or

(2) graduation in a baccalaureate degree program and completion of an engineering curriculum found to be substantially equivalent to an engineering curriculum accredited by EAC/ABET or graduation in a TAC/ABET accredited engineering technology curriculum of four or more years from a school or college approved by the board as being in satisfactory standing and passing NCEES examinations as required by the board.

(C) To be eligible for licensure and registration as a professional engineer, an applicant must be of good character and reputation and be able to effectively communicate in the English language. When the evidence presented in the application does not appear conclusive to the board or does not warrant the issuing of a license, the applicant may

be required to present further evidence for consideration by the board. The applicant also shall meet the requirements of the other pertinent sections of this chapter. The minimum evidence satisfactory to the board that an applicant is qualified for licensure as a professional engineer is:

(1) graduation in an EAC/ABET accredited engineering curriculum of four or more scholastic years from a school or college approved by the board as being in satisfactory standing and a specific record of an additional four or more years of progressive experience in engineering work of a character satisfactory to the board, indicating that the applicant is competent to practice engineering (in counting years of experience, the board may give one year credit for satisfactory completion of a Master's Degree in engineering or maximum credit of two years for satisfactory completion of the doctorate level degree in engineering), and passing examinations required by the board; or

(2) graduation in a baccalaureate degree program and completion of an engineering curriculum found to be substantially equivalent to an engineering curriculum accredited by EAC/ABET, a specific record after graduation of four or more years of progressive experience in engineering work of a character satisfactory to the board, indicating that the applicant is competent to practice engineering, passing a written or electronic examination designed to show knowledge and skill approximating that attained through graduation in an EAC/ABET accredited four-year engineering curriculum, and then passing the examinations required by the board.

40-22-222. Licensing of existing engineers; review process.

(A) Through June 30, 2020, individuals who have graduated in a TAC/ABET accredited engineering technology curriculum of four or more years and who have a specific record after graduation of eight or more years of experience in engineering work of a character satisfactory to the board, who are of good character and reputation, who can communicate effectively in the English language may take the NCEES Principles of Practice and the Fundamentals of Engineering examinations and become an associate engineer licensed for Category B practice. An associate engineer licensed for Category B practice as of July 1, 2006, may continue to practice under the conditions provided for in Regulation 49-202(B) or an identical successor regulation. As of July 1, 2020, Category B licensure ceases to exist.

(B) Through June 30, 2020, individuals who have graduated in a baccalaureate TAC/ABET accredited curriculum and who have successfully passed the NCEES

Principles of Practice and Fundamentals of Engineering examinations, and who have completed eight or more years of qualifying experience as an engineer and who are otherwise qualified for licensure, may present their credentials for evaluation by a committee of Professional Engineers licensed in this State composed of no less than three practicing engineers, a member or former member of the board, and a professor of engineering. Applicants for licensure under this subsection must demonstrate sufficient rigor in their scope or depth of qualifying experience, such that the committee can determine that they can meet established standards of engineering practice. Only applicants who are approved under the review process may be licensed as professional engineers. Absent a showing of a change or qualifications to correct deficiencies identified in the review process, no application may be reviewed by the committee more than twice.

(C) For the purposes of this section “associate professional engineer” means a Category B license holder who is qualified to practice within the profession of engineering in the manner defined in this chapter, and as attested by his recognition and registration as an associate professional engineer in this State.

40-22-225. Eligibility requirements for license as surveyor.

(A) A person having the necessary qualifications prescribed in this chapter to entitle him for a license is eligible for licensure.

(B) To be eligible for certification as a surveyor-in-training, an applicant must be of good character and reputation and be able to effectively communicate in the English language. When the evidence presented in the application does not appear to the board conclusive nor warranting the issuing of a certificate of registration, the applicant may be required to present further evidence for the consideration of the board. The applicant also must meet the requirements of the other pertinent sections of this chapter. The minimum evidence satisfactory to the board that an applicant is qualified for certification as a surveyor-in-training is: graduation from a school or college of four or more years with a board-approved degree, an ABET commission accredited curriculum in a related field, or a substantially equivalent program, including not less than twelve semester hours or the equivalent in quarter hours of discipline-specific courses satisfactory to the board in each of the disciplines described in Section 40-22-20(24) for which the applicant is requesting licensure, a specific record of one or more years of progressive practical experience of a character satisfactory to the board and performed under a practicing registered professional surveyor and has passed the written or electronic examinations in the Fundamentals of Surveying as prescribed by the board.

(C) To be eligible for licensure and registration as a professional surveyor TIER A, an applicant must be of good character and reputation and be able to effectively communicate in the English language. When the evidence presented in the application does not appear to the board conclusive or does not warrant the issuing of a certificate of registration, the applicant may be required to present further evidence for the consideration of the board. The applicant also must meet the requirements of the other pertinent sections of this chapter. The minimum evidence satisfactory to the board that an applicant is qualified for licensure as a TIER A Professional Surveyor is: graduation from a school or college of four or more years with a board-approved degree, an ABET commission accredited curriculum in a related field, or a substantially equivalent program, including completed discipline-specific courses of not less than twelve semester hours or the equivalent in quarter hours satisfactory to the board in each of the disciplines described in Section 40-22-20(24) for which the applicant is requesting licensure, a specific record of four or more years of progressive practical experience of a character satisfactory to the board and performed under a practicing registered professional surveyor, and passing of the Fundamentals of Surveying examinations and the written or electronic examinations in the Principles and Practices of Surveying in the discipline for which the applicant is requesting licensure as prescribed by the board.

(D) To be eligible for licensure and registration as a professional land surveyor TIER B, an applicant must be of good character and reputation and be able to effectively communicate in the English language. The minimum evidence satisfactory to the board that an applicant is qualified for licensure as a TIER B Professional Land Surveyor is:

(1) graduation from a school or college of four or more years with a board-approved degree, including in the curriculum not less than fifteen semester hours or the equivalent in quarter hours of surveying, mapping, hydraulics, and hydrology courses satisfactory to the board, or a bachelor of engineering technology degree in an ABET commission accredited curriculum of surveying or engineering technology, including in the curriculum not less than twelve semester hours or the equivalent in quarter hours of surveying, mapping, hydraulics, and hydrology courses satisfactory to the board, a specific record of four or more years of progressive practical experience of a character satisfactory to the board and performed under a practicing registered surveyor, and passing of the Surveyor-in-Training Fundamentals of Surveying examinations and the written or electronic examinations in the Principles and Practices of Surveying as prescribed by the board.

(2) Persons registered as both Professional Land Surveyor and Professional Engineer are classified TIER B Professional Surveyors.

40-22-230. Application forms; references; written examinations; reexaminations; issuance of certificate of registration; reissuance of revoked certificate.

(A) Applications for licensure must be on forms prescribed and furnished by the board and must contain statements made under oath showing the applicant's education and a detailed summary of his technical work.

(1) The application for engineering licensure must contain no fewer than five references of whom three or more are licensed engineers having personal knowledge of the applicant's engineering experience. In addition, the application must contain references to verify each employment period. The board shall solicit comments from references furnished; these comments must be confidential and privileged information for use only by the board.

(2) The application for surveying licensure must contain no fewer than five references of whom three or more must be licensed surveyors having personal knowledge of the applicant's surveying experience. In addition, the application must contain references to verify each employment period. The board shall solicit comments from references furnished; these comments must be confidential and privileged information for use only by the board.

(B) When written examinations are required, they must be held at the time and place the board determines. Examinations must be given for the purpose of determining the qualifications of applicants for licensure separately in engineering and surveying.

(C) A person who holds a certificate of registration to engage in the practice of engineering or surveying issued on comparable qualifications from a state, territory, or possession of the United States, or of a foreign country, must be given comity consideration. The applicant is required to take such examinations as the board considers necessary to establish that his qualifications meet the requirements of this chapter and the regulations promulgated by the board; however, a surveying applicant must pass a written examination including questions of law, procedures, and practices pertaining to the practice of surveying in this State.

(D)(1) A candidate who has failed an examination may apply for reexamination after payment of applicable examination fees and after a period of time determined by the board, but: (a) no earlier than three months following the date of the failed examination; and (b) no more than three times in one calendar year. (2) A candidate for licensure who has failed the same topical examination two times shall provide evidence satisfactory to the board that the candidate has taken additional

undergraduate college courses, attended seminars, or accomplished self-study to enhance his prospects for passing the exam. The board may refuse further examination until the candidate provides acceptable evidence. A candidate who has failed three times must submit a new application.

(E) The board shall issue a certificate of registration upon payment of the registration fee as provided in this chapter to an applicant who, in the opinion of the board, has satisfactorily met all the requirements of this chapter. In the case of a professional surveyor, the certificate authorizes the practice of TIER A or TIER B surveying as applicable. A certificate of registration must state the full name of the licensee, have a serial number, and must be signed by the chairman and the secretary of the board under seal of the board.

(F) The issuance of a certificate of registration by the board is prima facie evidence that the person is licensed and is entitled to all the rights and privileges of a professional engineer or of a professional surveyor while the license remains unrevoked or unexpired.

(G) The board, for sufficient reason, may reissue a certificate of registration to a person whose license has been revoked if a majority of the members of the board vote in favor of reissuance. A new certificate of registration to replace a revoked license or a certificate which has become lost, destroyed, or mutilated may be issued, subject to the rules of the board, and a charge to be determined by the board in regulation must be made for the issuance.

40-22-240. Renewal of registration; fees and late fees; lapsed license; continuing professional competency requirement.

(A)(1) Every professional engineer and professional surveyor licensed under this chapter who decides to continue the practice of his profession shall, biennially during the month of June, pay the board a fee sufficient to support the costs of the board's operations, to be determined by the board in regulation, for which fee a renewal registration card for the ensuing registration year must be issued.

(2) The board shall assess a late renewal penalty of twenty percent of the biennial renewal fee against those persons who do not renew their license within one month of the biennial renewal date. The penalty must be assessed for each two months thereafter with a maximum grace period of three months following the biennial renewal date. A person not renewing his license within three months following the annual renewal date shall file a new application accompanied by

the required application fee or, if he is in a position to do so, file a notarized affidavit with the board certifying that he has not been engaged in the practice of engineering or surveying in South Carolina during the period his license was not in a current condition, accompanied by the total amount of unpaid renewal fees and penalties.

(3) An individual whose license has lapsed due to nonpayment of the required renewal fee within three months of the due date is considered in the same category as a previously unlicensed person and, at the board's discretion, may be required to pass a written examination as a condition of relicensing.

(B) The board may promulgate regulations that as a condition of renewal or relicensure, a professional engineer must demonstrate continuing professional competency in engineering and a professional surveyor must demonstrate continuing professional competency in surveying. Any continuing professional competency requirement does not apply to a professional engineer or professional surveyor who has been continuously licensed in this State since January 1, 1969. Emeritus engineers and emeritus surveyors are not required to meet continuing education requirements.

(C) Emeritus engineers and emeritus surveyors who wish to return to active practice shall complete continuing education requirements for each exempted biennial renewal period not to exceed two renewal periods and shall submit applicable fees.

40-22-245. South Carolina Engineers and Surveyors Education and Research Fund; funding; report of expenditures.

(A) The board may allocate up to ten dollars of each renewal fee to the South Carolina Engineers and Surveyors Education and Research Fund, which must be established as a separate and distinct account and used exclusively for:

(1) advancement of education and research for the benefit of individuals and firms licensed under this chapter and for individuals in training to become licensed;

(2) analysis and evaluation of factors that affect the engineering and surveying professions in this State and activities that support initiatives of the board; and

(3) dissemination of the results of the research.

(B) The board shall submit to the chairman of the House and Senate Labor, Commerce and Industry Committees by August first of each year a report on how the funds were expended for the preceding fiscal year.

40-22-250. Certificate of authorization to practice as firm; conditions; application and registration fee; discipline.

(A) The practice of or offer to practice professional engineering or surveying through a firm is permitted only through entities holding a valid certificate of authorization issued by the board. For the purposes of this section a certificate of authorization is also required for a firm practicing in this State under a fictitious name. However, when an individual is practicing engineering or surveying in his name as individually licensed, that person is not required to obtain a certificate of authorization.

(B) The practice or offer to practice of engineering and surveying by individual professional engineers or professional surveyors licensed under this chapter through a firm offering engineering services or surveying services to the public is permitted if:

(1) one or more of the corporate officers, in the case of a corporation, or one or more of the principal owners, or a full-time employee, in the case of other firms, are designated as being responsible for the professional services regulated by this board and are licensed under this chapter;

(2) all personnel of the firm who act on behalf of the firm as professional engineers or surveyors in this State are licensed under this chapter; and

(3) the firm has been issued a certificate of authorization by the board as required by this section.

(C) Before the issuance of a certificate of authorization, the board must be in receipt of the firm's appropriate documentation issued by the Secretary of State.

(D) A firm desiring a certificate of authorization shall file with the board an application on forms provided by the board accompanied by the registration fee as provided in regulation. Each certificate of authorization must be renewed biennially beginning April 1, 2009. A renewal form provided by the board must be completed and submitted with the biennial registration fee, the fee being an amount as provided in regulation.

(E) Disciplinary action against a firm must be administered in the same manner and on the same grounds as disciplinary action against an individual. No firm is relieved of responsibility for conduct or acts of its agents, officers, or employees by reason of its compliance with this section, and an individual practicing engineering or surveying is not relieved of responsibility for professional services performed by reason of his employment or relationship with the firm.

(F) Nothing in this section may be construed to prohibit firms from joining together to offer engineering or surveying services to the public, if each separate entity providing the services in this State otherwise meets the requirements of this section. For firms practicing as a professional corporation under the laws of this State, the joint practice of engineering or surveying or both with the professions of architecture, landscape architecture, and geology is specifically approved by the board.

(G) If the requirements of this section are met, the board shall issue a certificate of authorization to the firm, and the firm may contract for and collect fees for professional engineering and or surveying services. The board, however, may refuse to issue a certificate or suspend or revoke an existing certificate for due cause. A person or firm aggrieved by an adverse determination of the board may file an appeal as provided for in this chapter.

(H) Nothing in this section may be construed to mean that a firm may practice or offer to practice engineering or surveying without meeting individual licensure.

(I) Nothing in this section may be construed to mean that a firm may practice or offer to practice engineering or surveying without meeting individual licensure.

40-22-260. Temporary licenses and certificates of authorization; branch offices.

(A) Upon application to and approval by the board and payment of the fee provided in regulation, the board shall grant a temporary license for engineering work on one specified project in this State for a period not to exceed one year to an engineer who has recently become a resident of this State, or is a nonresident having no established place of business in this State, who meets the qualification requirements for licensure in this State and who holds a valid license to practice in another state. An engineer may not renew a temporary certificate at its expiration date and may not apply for temporary licensure in connection with more than one specific project in any three-year period.

(B)(1) Upon approval by the board and payment of the fee provided in regulation, the board shall grant a temporary certificate of authorization to a firm for work on one specified project in this State for a period not to exceed one year.

(2) This temporary certificate may be granted only to an out-of-state firm if at least one of the principal officers of the firm is licensed under this chapter or has obtained a temporary registration license as provided by this chapter.

(3) The approval of a temporary certificate of authorization constitutes appointment of the Secretary of State as an agent of the applicant for service of process in an action or proceeding against the applicant arising out of any transaction or operation connected with or incidental to the practice of engineering.

(4) Plans produced and submitted for permitting under a registrant's temporary license or certificate of authorization shall be sealed with the registrant's home state seal. A temporary certificate of authorization may be indicated by notation on plans submitted for permitting. This notation must include the temporary certificate of authorization number, date of expiration, and address of the firm. A copy of the letter of the board approving the temporary license or the certificate of authorization must be attached to the plans.

40-22-270. Individual seals; stamping on plans and specifications.

Each licensee and each firm practicing under a certificate of authorization shall obtain a seal of the design authorized by the board and must comply with the following:

(1) Individual seals must be under the personal custody and control of the licensee and bear the licensee's name, registration license number, and the legend "Professional Engineer" or "Professional Surveyor" except for licenses issued before July 1, 2001, which may have the legend "Registered Professional Engineer" or "Registered Land Surveyor". The seal also shall bear evidence of the license category for professional engineers and the tier designation for professional surveyors.

(2) Seals for firms practicing under a certificate of authorization must bear the firm's name and authorization number.

(3) Plans, specifications, plats, and reports prepared by a licensee or prepared under the licensee's direct supervision must be stamped with seals when filed with public authorities during the life of the licensee's certificate.

(4) Plans and specifications prepared by a licensee or prepared under the licensee's direct supervision must be stamped with seals when issued for use as job site record documents at construction projects within this State.

(5) It is unlawful to seal documents with a seal after the certificate of the licensee or the certificate of authorization in the case of firms named on the seal

has expired or has been revoked or suspended unless the certificate has been renewed, reissued, or reinstated.

(6) Where individual seals are affixed to plans, specifications, plats, and reports, the licensee shall affix his signature and date under or across the face and beyond the circumference of the seal. The signature and date must not be applied in a manner that obliterates or renders illegible the licensee's license number or name.

(7) The clerk of court or the register of deeds for any county shall refuse to accept for filing or recording a map, plat, survey, or other document within the definition of surveying, dated after July 1, 1977, which does not have affixed to it the personal signature and prescribed impression seal of a professional surveyor. No charge may be made by a professional surveyor for the application of his impression seal.

(8) The building official, or other designated authority charged with the responsibility of issuing building or similar permits, shall refuse to issue a permit for any undertaking, the plans and specifications for which would require the seal of a professional engineer, unless the permit applicant has furnished satisfactory evidence that the documents were prepared by an engineer licensed as required by this chapter or that the documents are exempt from the requirements of this chapter. The building official, or designated authority charged with the responsibility of issuing building or similar permits, shall report to the board the name and address of a person who has or is suspected to have violated a provision of this chapter or a regulation promulgated pursuant to this chapter relating to the unlicensed practice of engineering.

(9) The seal and signature of a licensee certifies that the document was prepared by the licensee or his agent. For prototypical documents, the seal and signature of a licensee indicates that he has sufficiently reviewed the document and is able to fully coordinate and assume responsibility for application of the plans

40-22-280. Exceptions from application of chapter.

(A) This chapter may not be construed to prevent or to affect:

(1) the practice of any other regulated profession or trade where the practice of the profession or trade may legitimately overlap the professions regulated by this chapter;

(2) the work of an employee or other subordinate of a person holding a certificate of registration under this chapter;

(3) the engineering work of regular employees of the government of the United States officially performing their duties for their employer on federal lands within this State, in the practice of engineering for the government, and where specified by federal statute;

(4) the surveying work of regular employees of the government of the United States officially performing their duties for their employer on lands within this State, in the practice of surveying for the government, and where specified by federal statute;

(5) the work or practice of a regular employee of a public utility, a telephone utility, or an electrical utility by rendering to the employing company engineering service in connection with its facilities which are subject to regulation, supervision, and control in order to safeguard life, health, and property by the Public Service Commission of this State, so long as the person is actually and exclusively employed. Engineering work not related to the exemption in this item where the safety of the public is directly involved must be accomplished by or under the responsible charge of a professional engineer;

(6) the work or practice of a regular employee of an electric cooperative, when rendering to the employing cooperative engineering service in connection with its facilities which are subject to regulations and inspections of the Rural Electric Administration, if the person is actually and exclusively employed. Engineering work not related to the exemption in this item where the safety of the public is directly involved must be accomplished by or under the responsible charge of a professional engineer;

(7) the work or practice of a regular employee of a state authority which is licensed by and subject to the safety regulations of the Federal Energy Regulatory Commission and which sells and distributes electric power to consumers, so long as the person is actually and exclusively employed. Engineering work not related to the exemption in this item where the safety of the public is directly involved must be accomplished by or under the responsible charge of a registered professional engineer; and

(8) the work of a general contractor, specialty contractor, or material supplier in the preparation and use of shop drawings or other graphic descriptions used to detail or illustrate a portion of the work required to construct the project in

accordance with plans and specifications prepared under the requirements of this chapter.

(9) the work or practice of a person rendering engineering services to a corporation that operates in South Carolina under a production certificate issued by the Federal Aviation Authority, provided that the general business of the corporation does not consist, either wholly or in part, of the rendering of engineering services to the general public. For purposes of this section, 'engineering services' means design, construction, and maintenance of airplanes and airplane manufacturing equipment.

(10) the activities of full-time employees of a manufacturing company or other personnel under the direct supervision and control of the manufacturing company, or a subsidiary of the manufacturing company, on or in connection with activities related to the research, development, design, fabrication, production, assembly, integration, installation, or service of products manufactured by the manufacturing company. This exemption does not apply to activities where the seal of a professional engineer is expressly required by statute, regulation, or building code, or to engineering services offered to the public. For the purposes of this item, "manufacturing company" means a company that produces or assembles tangible personal property and "other personnel" includes individuals employed by a staffing company working for the manufacturing company.

(B) If drawings and specifications are signed by the authors with the true title of their occupations, this chapter does not apply to the preparation of plans and specifications for:

(1) farm buildings not designed or used for human occupancy;

(2) buildings and structures less than three stories high and less than five thousand square feet in area, except that buildings of assembly, educational, hazardous, and institutional occupancies as defined by the International Code Series regardless of area are not exempt from the provisions of this chapter; and

(3) alterations to a building to which this chapter does not apply, if the alterations do not result in a change which would otherwise place the building under the application of this chapter.

(4) alterations to a building to which this chapter does not apply, if the alterations do not result in a change which would otherwise place the building under the application of this chapter.

(C) This subsection may not be construed to prejudice a law, ordinance, regulation, or other directive enacted by another political body or a requirement by a contracting authority which would otherwise require preparation of plans and specifications under the responsible charge of a professional engineer or professional surveyor.

40-22-290. TIER A surveying; exclusions.

The practice of TIER A surveying does not include:

(1) the creation of maps:

(a) prepared by private firms or government agencies for use as guides to motorists, boaters, aviators, or pedestrians;

(b) prepared for publication in a gazetteer or atlas as an education tool or reference publication;

(c) prepared for or by education institutions for use in the curriculum of any course of study or academic research;

(d) produced by any broadcast or print media firm as an illustrative guide to the geographic location of any event;

(e) prepared by lay persons for conversational or illustrative purposes, including advertising material and use guides;

(2) the transcription of existing documents or land records into geographic information systems/land information systems by manual or electronic means;

(3) the transcription of public record data into a cadastre (tax maps and associated records) and the maintenance of that cadastre by either manual or electronic means, including tax maps and zoning maps;

(4) the use of all documents or databases prepared by any federal agency and documents or databases using federal data by any person to prepare documents and databases including, but not limited to, federal and military versions of quadrangle topographic maps, military maps, and satellite imagery;

(5) the use of all civilian or commercial remotely-sensed satellite data;

(6) all maps and databases created by any firm, in either hardcopy or electronic form, by full-time employees of that firm, of features that are wholly contained within properties that the firm owns, leases, rents, or has exclusive use or shared easement to, are exempt from the definition of surveying. This exclusion includes public and private utility companies preparing inventory maps of their facilities as long as those maps and databases are not provided to anyone outside the company with any data that illustrates property ownership lines of property the firm does not own, lease, rent, or on which they have exclusive use or shared easement;

(7) the creation of maps and databases depicting the distribution of natural or cultural resources prepared by foresters, geologists, soil scientists, geophysicists, biologists, geographers, archeologists, historians, urban and regional planners, or other individuals qualified to prepare such maps as long as any property boundaries shown are either supplied by a professional surveyor or transcribed from public deed or plat records converted from tax maps or cadastre, or are clearly not intended to serve as legal property boundaries;

(8) the creation of all maps and geo-referenced databases depicting physical features and events prepared by any government agency where the access to that data is restricted by statute, including geo-referenced data generated by law enforcement agencies involving crime statistics and criminal activities;

(9) the work of any official or employee of a political subdivision of this State while in the performance of their official duties involving Emergency 911 mapping, land use mapping, property tax mapping, remote sensing and implementation, maintenance, creation, and distribution of mapping grade GIS data as part of a political subdivision's geographic information system.

40-22-300. Promulgation of regulations for practice by firms located in foreign countries.

The board shall promulgate regulations for the practice of engineering in this State by engineers and engineering firms located in foreign countries. In promulgating these regulations, the board must consider requirements prescribed by this chapter and other requirements as may be reasonably necessary to protect consumers of engineering services provided by cross-border practitioners.

40-22-310. Status of regulations promulgated pursuant to Chapter 21.

Except where inappropriate, regulations promulgated pursuant to Chapter 21, Title 40 of the 1976 Code are considered to be promulgated pursuant to Chapter 22.

40-22-320. Severability.

If a provision of this chapter or the application of a provision to a person or circumstance is held invalid, the invalidity does not affect other provisions or applications of this chapter which can be given effect without the invalid provision or application, and to this end the provisions of this chapter are severable as provided in Section 40-1-220.

SOUTH CAROLINA CODE OF REGUALTIONS: CH. 49

ARTICLE 1. ORGANIZATION, ADMINISTRATION AND PROCEDURE

49-100. Definitions.

A. Definitions found in Section 40-22-20 of the Code of Laws of South Carolina apply to this Chapter.

B. The following definitions are terms used in this Chapter in addition to those included in Section 40-22-20 of the Code of Laws of South Carolina:

(1) “CEAB” means the Canadian Engineering Accreditation Board.

(2) “Comity Licensure” means the courteous recognition and extension of license privileges in this State to engineers and surveyors licensed in other states.

(3) “Dual License Holder” means a person who is licensed as an engineer and a surveyor.

(4) “Model Law Engineer” refers to a person who meets the following criteria:

(a) Graduation from an engineering program accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (EAC/ABET).

(b) Four years of qualifying experience after graduation.

(c) Passing of a NCEES Fundamentals of Engineering Examination (FE).

(d) Passing of a NCEES Principles and Practice of Engineering Examination (PE).

(e) Status in good standing as a registrant in the NCEES Records Program, and

(f) A record clear on any license violations or sanctions by an engineering board.

(5) “NCEES” means the National Council of Examiners for Engineering and Surveying.

(6) “Washington Accord” refers to an international agreement providing for the mutual recognition of engineering education program accreditation by and between EAC/ABET and engineering education accrediting bodies of other nations holding membership in the Washington Accord.

49-101. Board Rules of Order/Procedures and Seal of Board.

A. Rules of Order/Procedures. All proceedings of the Board shall be governed by provisions set forth in the Administrative Procedures Act.

B. Description of Seal of Board. The seal of the Board shall be circular in form and 1 7/8 inches in diameter. Concentric with the outside of the Seal there shall be a circle 1 1/4 inches in diameter, within which there shall be a replica of the device used on the Seal of the State of South Carolina, and in the annular space between the circle and the outside of the Seal there shall appear the words “State Board of Registration for Professional Engineers and Surveyors.” All official papers, registration certificates, and other formal documents of the Board shall bear the imprint of this Seal.

49-102. Use of Forms/Applications.

A. Forms.

(1) All applications for engineering and surveying licensure and certificate of authorization shall be made on a form provided by the Board, and no applications made otherwise will be accepted.

(2) Applications not completed in accordance with the applicable instructions will be returned to the applicant. Withholding information, misrepresentation, or untrue statements will be cause for denial of application.

B. Documentation.

(1) All information given on an application form must be documented. The applicant is required to provide the names and current mailing addresses of five references having personal knowledge of applicant’s character and professional reputation, and of employers or supervisors who can verify applicant’s work experience. It is the applicant’s responsibility to see that references return the forms promptly to the Board office.

(a) Engineering. At least three of the character references shall be professional engineers.

(b) Land Surveying. At least three of the character references shall be from professional surveyors.

(2) Official transcripts are required showing subjects and grades of all scholastic work which the applicant wishes to claim, degree issued and date of issuance. It is the responsibility of the applicant to see that such a record is sent from the institution directly to the Board office. A failure to provide such transcript directly from the institution, whether foreign or domestic, may be grounds for rejection of the application.

49-103. Fees.

A. The Board may charge fees as shown in South Carolina Code of Regulations Chapter 10-14 and on the South Carolina Board of Registration for Professional Engineers and Surveyors website at https://llr.sc.gov/eng/fees.aspx

B. No fee, or any part thereof, paid by any applicant for application, examination, licensure, and/or registration will be refunded once an application has been submitted to the Board for processing. Refunds will not be made.

49-104. Examinations--General.

A. Classifications—Engineering Examinations.

(1) NCEES Fundamentals of Engineering (FE).

(2) NCEES Principles and Practice of Engineering (PE).

(3) NCEES Special Structural Engineering Examinations.

B. Classifications—Surveying Examinations.

(1) NCEES Fundamentals of Surveying (FS).

(2) NCEES Principles and Practice of Surveying (PS).

(3) S.C. State Specific Surveying Examination (State-S).

(4) TIER B Land Surveying (State-TIER B LS).

(5) S.C. Board Rules and Regulations.

(6) Principles and Practice of Photogrammetric Surveying.

(7) Principles and Practice of GIS Surveying.

C. Examination for Record Purposes.

(1) Any engineer registered by this Board may take for record purposes one or more of the listed engineering examinations upon payment of a fee as established by the Board.

(2) Any surveyor registered by this Board may take for record purposes one or more of the listed surveying examinations upon payment of a fee as established by the Board.

(3) Failure to pass an examination will not affect current registration or licensure.

D. Re-Examination.

(1) An applicant who has failed the same topical examination two times shall provide evidence satisfactory to the Board that steps have been taken in preparation for a third examination on the same topical subject.

(2) A new application will be required of any applicant who has failed the same topical examination three times. The applicant must also provide documentation that additional study satisfactory to the Board was taken in preparation for further examination on the same topical subject.

49-105. License Expiration, Renewal and Reinstatement--Individuals.

A. Expiration and Renewal.

(1) The privilege to practice in any category or tier as a registered professional engineer or surveyor in South Carolina expires on June 30, biennially in even numbered years, unless the license is renewed. Every Registered Professional Engineer and Surveyor who elects to continue the practice of his profession shall complete and submit an application for renewal of licensure and pay the appropriate fee by June 30.

(2) Renewal notices will be mailed to the licensee's address on record with this Board in May each biennial year; however, it is the licensee's responsibility to renew his or her license prior to the official expiration date of June 30.

(3) A licensee whose license has been lapsed for three months or less and who can truthfully certify that he or she has not been engaged in the practice of engineering or surveying in South Carolina during the period the certificate was not in a current status, barring any other irregularities, shall be renewed and retain the original license number upon payment of the renewal fees and penalties.

B. Reinstatement.

(1) A licensee whose license has lapsed more than three months may be required to take and pass examinations as required by the Board.

(2) Those persons who cannot certify that they have refrained from practicing their profession in this State during the period in which their license lapsed may be required to show cause to the Board why their license should not be disciplined.

(3) Any person reinstating an expired license will be required to meet the continuing professional competency requirements. If the total number of PDH units required to become current exceeds 30, then 30 shall be the maximum number of PDH units required.

49-106. COA Expiration, Renewal and Reinstatement--Firms.

A. Expiration and Renewal.

(1) Certificates of Authorization must be renewed biennially to remain in effect. Unless renewed a Certificate of Authorization shall expire biennially on March 31 of odd numbered years. A firm whose certificate has expired may not offer or engage in engineering or surveying services until the Certificate of Authorization has been renewed or until a new certificate has been issued.

(2) Renewal notices will be mailed to the firm's address on record with this Board in January each biennial year; however, it is the firm's responsibility to renew its license prior to the official expiration date of March 31.

(3) The completed renewal form signed and sworn to by the applicant must be filed with the Board office on or before March 31 of each odd numbered year.

(4) A Certificate of Authorization will become invalid upon a failure to renew by April 1 of the biennial renewal year. The Certificate may be renewed by the Board at any time during the following three months on payment of the biennial renewal fee plus late penalty. The penalties are computed in the same manner as prescribed for individual licensees who fail to renew.

B. Reinstatement.

In the case of failure to renew within three months from the date of expiration, the Certificate of Authorization will be reinstated only upon submittal of a reinstatement application, accompanied by the application fee, and approval by the Board.

C. Resident Professional Requirement.

(1) A Certificate of Authorization (COA) is automatically suspended when the firm fails to comply with the resident professional requirement as provided for in Section 40-22-250 of the Practice Act.

ARTICLE 2. GENERAL PROVISIONS

49-200. Professional Engineer Licensure Requirements.

A. Education Requirements.

(1) The Board will recognize the degrees of Master of Engineering or Master of Science in Engineering in a program accredited by EAC/ABET at either the baccalaureate or master's level as fulfilling the education requirements in satisfaction of the qualifications detailed in Section 40-22-220.

(2) The Board will recognize degrees from an engineering program evaluated as accredited by a foreign accreditation board or other authority recognized by ABET as having accreditation criteria substantially equivalent as that established by EAC/ABET. Engineering degree programs in this category include the following:

(a) Four-year engineering degree accredited by the Canadian Engineering Accreditation Board (CEAB).

(b) Four-year engineering degree from an accredited program in other countries listed in the ABET published "Washington Accord" document.

(c) Courses taken for credit and appearing on official college or university transcripts must be evaluated by a Board approved Education Consultant or NCEES Credentials Evaluations. The purpose of such evaluations shall be to determine whether or not the curriculum presented by the applicant complies substantially with accreditation criteria of EAC/ABET. Programs determined by the Board, based upon the evaluations, to be substantially equivalent to those accredited by EAC/ABET will be considered as fulfilling the education requirements.

(3) In addition to transcripts submitted for evaluation by the Education Consultant or NCEES, an applicant shall have the academic institution furnish the Board such supporting documentation as necessary for a proper and sufficient evaluation.

B. Experience Requirements.

(1) General.

(a) An applicant must have completed the qualifying experience required by the Board by the application deadline. Experience cannot be anticipated. Experience gained prior to completion of the qualifying degree requirements will not be accepted as qualifying experience.

(b) Qualifying experience must be progressive and of an increasing standard of quality and responsibility after graduation. Where guidelines for qualifying experience are published by NCEES, such guidelines may be used by the Board to evaluate experience of the applicant.

(2) Engineering Experience.

(a) The applicant should have meaningful design experience under the supervision of a registered professional engineer in designing components or processes that meet a public need. This experience should include but is not limited to exposure to the formation of design problem statements and specifications, consideration of alternative solutions, feasibility considerations, analytical calculations and detailed systems descriptions. If the experience was not gained under the direct supervision of a registered professional engineer, then the indirect supervision should be explained with clarification of the degree of supervision received.

(b) Successful completion of a Master's degree in a Board approved engineering curriculum may be accepted for up to one year of equivalent engineering experience credit. The completion of a PhD in a Board approved engineering curriculum may be accepted for up to two years of equivalent experience credit. However, in no case will more than two years of equivalent engineering experience credit be given for post baccalaureate education. No applicant will be allowed credit of more than 1 year of experience for both work and education during any consecutive 12-month period.

(c) For teaching experience to be considered by the Board, the engineer applicant must have taught design courses acceptable by the Board in an engineering curriculum accredited by ABET.

(d) Military experience must have been spent in engineering and of a character substantially equivalent to that required in the civilian sector for like work.

(e) For sales experience to be considered by the Board, the engineer applicant must demonstrate conclusively that engineering principles and engineering knowledge were actually employed. The mere selection of data or equipment from a company catalogue or a similar publication will not be considered qualifying engineering experience.

(f) Experience in construction supervision must show proficiency in engineering computational and problem-solving skills in assuring compliance with specifications and designs.

(g) The Board will not accept the mere execution as a contractor of work designed by a registered professional engineer, or the supervision of the construction documents, or similar non-engineering tasks as qualifying engineering experience.

(h) Industrial experience should be directed toward the identification and solution of practice problems in the applicant's area of engineering specialization. This experience should include engineering analysis of existing physical systems and the design of new ones.

(i) Work as laboratory or field technicians where such work is merely the conduct of routine explorations or data acquisition activities shall not be considered as qualifying. In order to be qualifying, the experience should show a demonstrated and satisfactory use of basic engineering computational and problem-solving skills.

C. Examination Requirements.

(1) Engineer-in-Training (EIT).

(a) An applicant applying for certification as an engineer-in-training must take and pass one of the written examinations on the Fundamentals of Engineering (FE), prepared and graded by the NCEES.

(b) The Board may, at its discretion, exempt an applicant from taking the FE examination. These exemptions include the following:

1. An applicant who has earned a doctorate degree in engineering in which the undergraduate degree in the same field of study is accredited by EAC/ABET, and is otherwise qualified under the provisions of the South Carolina Code of Laws at the time the application is received.

2. An applicant with more than fifteen years of acceptable experience after the date of the accredited degree and is otherwise qualified under the provisions of Section 40-22-220 of the Practice Act, at the time the application is received.

3. An applicant who has been licensed in another jurisdiction for not fewer than 12 years and is otherwise qualified under the provisions of Section 40-22-220 of the Practice Act, at the time the application is received.

(2) Professional Engineer (PE).

(a) An applicant may sit for the Principles and Practice of Engineering (PE) examination prior to obtaining the mandatory four years of experience provided that:

1. The applicant has obtained an EAC/ABET undergraduate engineering degree; and

2. The applicant has successfully passed the FE examination.

(b) Upon successfully passing the PE examination and completing the qualifying four years of engineering experience, the applicant may apply for licensure with the Board.

49-201. Professional Land Surveyor Licensure Requirements.

A. Qualifying Experience and Documentation.

(1) Experience must be obtained under the supervision of a registered professional surveyor and must be of a character satisfactory to the Board.

(2) Qualifying experience approved by the Board is experience beyond elementary surveying duties such as rodman and and other unskilled tasks. In order for work to be considered as qualifying experience, an advanced level of responsibility must have been placed on the applicant. Responsibility should involve mature judgment and expertise gained in such job assignments as instrument man, assistant crew chief or crew chief. Work claimed as qualifying experience should demonstrate a sound working knowledge of surveying with respect to research (records and field), instrumentation, note-keeping and data management, calculations and mapping.

(3) An experience record in boundary and route surveying, topographical surveying, construction surveying, control/geodetic surveying, and rights-of-way surveying is beneficial to the applicant in the Board's evaluation of the application. Recognizing that boundary surveys are the types of surveys which more critically affect the public welfare, experience in boundary surveys should constitute a significant portion of the applicant's experience record and will be given more weight by the Board in considering an applicant's qualifications for licensure.

(4) An applicant must submit copies of three different maps and plats of land surveys on which he has worked. The documents must be signed by the professional land surveyor who supervised the work and contain a statement describing that part of the work done by the applicant. Submitted plats and maps must meet the requirements of the Standards of Practice Manual for Surveying in South Carolina, Chapter 49, Article 4, of the Code of Regulations, in effect at the time of licensure.

(5) An applicant must submit five references as to the applicant's character and quality of work, three or more must be registered land surveyors having personal knowledge of the applicant's qualifications.

B. Examination Requirements—Land Boundary Surveyor.

(1) An applicant applying for certification as land surveyor-in-training must take and pass a written examination on the Fundamentals of Surveying (FS), prepared and graded by the NCEES.

(2) An applicant applying for licensure as a TIER A land boundary surveyor must have taken and passed the FS written examination and must take and pass the Principles and Practice of Surveying (PS), prepared and graded by the NCEES, and a South Carolina State Specific Surveying examination.

(3) A person licensed as a professional land boundary surveyor may practice as a professional photogrammetric surveyor only by meeting the requirements as described in the section R.49-201D of this Chapter, and may practice as a professional GIS surveyor only by meeting the requirements as described in the section R.49-201E of this Chapter.

C. TIER A Professional Photogrammetric Surveyor.

(1) After June 30, 2004, any person applying for licensure as a photogrammetric surveyor must meet the following requirements:

(a) Education Requirement—Photogrammetric Surveyor.

1. Education must be evaluated by an Education Consultant and approved by the Board before an application can be considered for further processing.

2. In addition to one of the following degrees, an applicant must submit proof of satisfactorily completing not fewer than 12 semester hours, or the equivalent in quarter hours, of course work specific to the discipline of photogrammetric surveying, satisfactory to the Board:

a. Four-year engineering or bachelor of science degree in a related field from a program accredited by the Related Accreditation Commission (RAC) or the Accreditation Board for Engineering and Technology (ABET).

b. Four-year civil engineering technology degree from a program accredited by the Technology Accreditation Commission (TAC) of ABET.

c. Four-year related baccalaureate degree, or equivalent degree, approved by the Board.

(b) Experience Requirement—Photogrammetric Surveyor.

1. Photogrammetric Surveyor-in-Training.

a. An applicant applying for certification as a photogrammetric surveyor-in-training who meets the four-year education requirements must have one year of progressive practical experience.

2. Photogrammetric Surveyor.

a. An applicant applying for licensure as a photogrammetric surveyor who meets the four-year education requirements must have four years of progressive practical experience.

3. Qualifying Experience and Documentation.

a. Experience must be obtained under supervision of a licensed photogrammetric surveyor or a recognized professional in the field of photogrammetry and must be of a character satisfactory to the Board.

b. Qualifying experience approved by the Board is experience beyond elementary level activities. In order for work to be considered as qualifying experience, an advanced level of responsibility must have been placed on the applicant. Work claimed as qualifying experience should demonstrate a sound working knowledge of photogrammetry.

c. At least two years of the required experience must have been at the professional level in responsible charge of photogrammetric mapping projects meeting ASPRS Accuracy Standards.

d. The applicant must submit proof of employment in responsible charge of at least one project as a photogrammetrist. Maps and documents satisfactory to the Board detailing methods, procedures, amount of applicant's personal involvement must be submitted to document this project. These maps and documents must be signed by the professional who supervised the work and contain a statement describing the part or the work performed by the applicant. The applicant must submit the name, address and telephone number of references to verify this information.

e. An applicant must submit five references as to the applicant's character and quality of work, three or more must be licensed surveyors or practicing professionals in

the field of photogrammetry, having personal knowledge of the applicant's photogrammetric surveying experience.

(c) Examination Requirements—Photogrammetric Surveyor.

1. An applicant applying for certification as a photogrammetric surveyor-in-training must take and pass a written examination on the Fundamentals of Surveying (FS), prepared and graded by the NCEES.

2. An applicant applying for licensure as a photogrammetric surveyor must have taken and passed the FS examination and must take and pass an examination on the principles and practice of photogrammetry and an examination on the Board's rules and regulations as referred to in the section R.49-104B(5) of this Chapter.

(2) A person licensed as a professional photogrammetric surveyor may practice as a professional land boundary surveyor only by meeting the requirements of the section R.49-201A of this Chapter, and may practice as a professional GIS surveyor only by meeting the requirements of the section R.49-201D of this Chapter.

D. TIER A Professional Geographic Information System (GIS) Surveyor.

(1) Education Requirement—GIS Surveyor.

(a) Education must be evaluated by an Education Consultant and approved by the Board before an application can be considered for further processing.

(b) In addition to one of the following degrees, an applicant must also submit evidence of completion of discipline specific courses of not fewer than 12 semester hours or the equivalent in quarter hours satisfactory to the Board.

1. Four-year baccalaureate degree in a related field from a program accredited by the Accreditation Board for Engineering and Technology (ABET).

2. Four-year civil engineering technology degree from a program accredited by the Technology Accreditation Commission (TAC) of ABET.

3. Four-year related baccalaureate degree, or equivalent degree, approved by the Board.

(c) Experience Requirements—GIS Surveyor.

1. Geographic Information System Surveyor-in-Training.

a. An applicant applying for certification as geographic information system surveyor-in-training who meets the four-year education requirements must have one year of progressive practical experience.

2. Geographic Information System Surveyor.

a. An applicant applying for licensure as a geographic information system surveyor who meets the four-year education requirements must have four years of progressive practical experience.

b. An applicant applying for licensure as a geographic information system surveyor who holds a master's degree in surveying, geography, or a related field of study approved by the Board must have three years of practical experience.

3. Qualifying Experience and Documentation.

a. Experience must be obtained under supervision of a licensed geographic information system surveyor or a recognized professional in the field of GIS and must be of a character satisfactory to the Board.

b. Qualifying experience approved by the Board is experience beyond elementary level activities. In order for work to be considered as qualifying experience, an advanced level of responsibility must have been placed on the applicant. Work claimed as qualifying experience should demonstrate a sound working knowledge of GIS.

c. At least two years of the required experience must have been at the professional level in responsible charge of geographic information system mapping projects.

d. The applicant must submit proof of employment in responsible charge of at least one project as a GIS Surveyor. Maps and documents, satisfactory to the Board, detailing methods, procedures, amount of applicant's personal involvement must be submitted to document this project. The map and related project information submitted must include the project information.

e. Maps and documents must be signed by the professional who supervised the work and contain a statement describing the part or the work done by the applicant. The applicant must submit appropriate contact information including the name, address and telephone number of references to verify this information.

f. An applicant must submit five references as to the applicant's character and quality of work; three or more must be licensed surveyors or practicing professionals in the field of GIS having personal knowledge of the applicant's GIS surveying experience.

(d) Examination Requirements—GIS Surveyor.

1. An applicant applying for certification as geographic information system surveyor-in-training must take and pass the written examinations on the Fundamentals of Surveying (FS), prepared and graded by the NCEES.

2. An applicant applying for licensure as a geographic information system surveyor must have taken and passed the FS examination and must take and pass an examination on the principles and practice of geographic information systems and pass an examination on the Board's rules and regulations.

F. TIER B Professional Land Surveyor.

(1) An applicant shall be licensed as a TIER A Land Boundary Surveyor prior to submitting an application for licensure or registration as a TIER B Land Surveyor.

(2) An applicant must meet the requirements of education, experience and examinations.

(a) Education—Tier B Land Surveyor.

An applicant must meet the education requirements in S.C. Code Ann. Section 40-22-225(D).

(b) Experience—Tier B Land Surveyor.

1. Applicant must have qualifying experience acceptable to the Board in the design of storm drainage systems and preparation of sedimentation and erosion control plans associated with the development of residential subdivisions.

2. The experience must be obtained under the supervision of a licensed Tier B surveyor or a licensed professional engineer.

(c) Examinations—TIER B Land Surveyor.

1. An applicant must have taken and passed the written examinations required for licensure as a TIER A Land Boundary Surveyor which include the FS and PS examinations, prepared and graded by the NCEES, and the State Specific Land Surveying Examination.

2. An applicant must also take and pass a special written examination pertaining to the practice of TIER B land surveying in the State which includes the design of storm drainage systems and preparation of sedimentation and erosion control plans associated with the development of residential subdivisions.

(3) A TIER B land surveyor may practice as a professional photogrammetric surveyor only by meeting the requirements of the section R.49-201C of this Chapter, and may practice as a professional GIS surveyor only by meeting the requirements of the section R.49-201D of this Chapter.

49-202. Classifications and Scopes of Authority: Engineers and Surveyors.

A. Professional Engineer.

(1) A professional engineer who by reason of his special knowledge of the mathematical and physical sciences and the principles and methods of engineering analysis and design, acquired by professional education and practice experience, is qualified to practice engineering as defined in Section 40-22-20 of the Practice Act, all as attested by his legal license and registration as a professional engineer in this State.

(2) The professional engineer license holder is entitled to the unrestricted practice of engineering as described in Section 40-22-20 of the Practice Act.

B. TIER A Land Surveyor.

(1) The practice of TIER A land surveying consists of three separate disciplines: (a) land boundary surveying, (b) photogrammetry, and (c) geographic information systems (GIS). A land surveyor may be licensed in one or more of the disciplines and practice is restricted to only the discipline or disciplines for which the land surveyor is licensed.

(2) The scopes of authority for the individual disciplines of TIER A land surveying are identified as follows:

(a) Professional Land Boundary Surveyor (PLS).

1. Locates, relocates, establishes, re-establishes, lays out or retraces any property line or boundary of any tract of land or any road, right-of-way, easement, alignment, or elevation of any fixed works embraced within the practice of land surveying, or makes any survey for the subdivisions of land;

2. Determines, by use of principles of land surveying, the position for any survey monument or reference point; or sets, resets, or replaces such monument or reference; determines the topographic configuration or contour of the earth's surface with terrestrial or extraterrestrial measurements; conducts hydrographic surveys;

3. Conducts geodetic surveying which includes surveying for determination of geographic position in an international three-dimensional coordinate system, where the curvature of the earth must be taken into account when determining directions and distances; geodetic surveying includes the use of terrestrial measurements of angles and distances, as well as measured ranges to artificial satellites;

4. Creates graphical representations of the data related to items C(2)(a)1.2.3 above.

5. Performs work of a professional photogrammetric surveyor as described in the item C(2)(b).

(b) Professional Photogrammetric Surveyor (PPS).

1. Determines the configuration or contour of the earth's surface or the position of fixed objects thereon by applying the principles of mathematics on remotely sensed data, such as photogrammetry.

2. Creates graphical representations of data relating to the item (b)1 above.

3. Performs work of a land boundary surveyor as described in the item C(2)(a) above or as a geographic information systems (GIS) surveyor as described in the item C(2)(c) below only after obtaining a license in those categories.

(c) Professional Geographic Information System Surveyor (GIS).

1. Creates, prepares, or modifies electronic or computerized data including land information systems and geographic information systems relative to the performance of the activities described in subsections (a) and (b) above.

2. Creates digital spatial data based on integration, interpretations, transformations, and/or the manipulation of primary data sources that affects the health, welfare, or safety of the public.

3. Performs work of a land boundary surveyor as described in subsection C(2)(a) above or as a photogrammetric surveyor as described in the item C(2)(b) above only after obtaining a license in those categories.

(3) The practice of TIER A land surveying does not include the use of GIS or LIS to create maps pursuant to Section 40-22-290 of the Practice Act, analyze data, or create reports.

C. TIER B Professional Land Surveyor.

(1) Persons registered as both Professional Land Surveyor and Professional Engineer are classified as TIER B Professional Land Surveyors.

(2) The practice of TIER B land surveying as described by Section 40-22-20(27) of the Practice Act, and regulated by the Board shall include the authority, within the limits set by these regulations, to practice the design of storm drainage systems and the preparation of sedimentation and erosion control plans associated with the development of residential subdivisions. Included within this practice of TIER B land surveying is the design of stormwater detention or retention facilities incidental to the surveyor's design of storm drainage systems; provided, however, that these facilities are not lakes, ponds or similar impoundments intended to contain water at all times.

(a) As used in this section, the term "residential subdivision" means property developed for single family residences and other type projects where individual lots are established for each residential unit. The density of these projects shall be limited to two lots or units per acre. Apartment projects and projects for developments of commercial or industrial properties are not included within the scope of authority.

(b) Where reference has been made to "lakes, ponds or similar impoundments intended to contain water at all times," such reference is not intended to limit a TIER B Land Surveyor's authority to prepare calculations pertaining to the hydrology or hydraulics of these impoundments. It is expected, however, that such impoundments will require a more detailed analysis and design with respect to soil mechanics. Consequently, design of impoundments intended to contain water at all times should be based upon appropriate geotechnical evaluations conducted under the direction of a licensed engineer experienced in such matters. The geotechnical investigations and report should, as a minimum, evaluate site conditions and provide recommendations for materials and methods of construction of the impoundment.

(3) The practice of TIER B land surveying shall not include the design of drainage structures, drainage systems, or other drainage features which are not incidental to the development of a residential subdivision. Projects which are purely drainage in nature or where a subdivision of a parcel of land into small parcels is not involved shall not fall within the scope of practice authorized for TIER B land surveyors. The design of such features as water systems, sanitary sewer systems, surcharged storm drainage systems or pumping stations which may also be incidental to the project are not included in this practice. The exclusion from the scope of authority of the design of "surcharged storm drainage systems" is not intended to apply to submerged outlet pipes routinely used in detention and retention basins.

(4) The practice of TIER B land surveying is further limited to the use of predesigned structures, which are approved by the county or municipal governmental agency having jurisdiction. Where standard design structures cannot be used because of extra loading, extreme depth or unusually large size, the structure shall be designed by a licensed engineer. “Predesigned Structure” is intended to cover two situations:

(a) As used in this section, the standard design for catch basins, junction boxes, and headwalls that are specified by local governments will be considered “predesigned”.

(b) As used in this section, precast basins, junction boxes, and headwalls produced by concrete companies are considered as “predesigned” and may be used where allowed by the local authority.

(5) In exercising powers of a TIER B Land Surveyor, the surveyor shall undertake to perform only those assignments for which he is authorized by the statute and these regulations and for which he is qualified by education or experience in the specific technical area of TIER B land surveying involved.

49-203. Licensure by Comity.

A. Professional Engineer.

(1) An application will be considered for licensure by comity from an applicant who is appropriately licensed in another jurisdiction and has not been previously licensed in this State.

(2) Any applicant holding a valid license to practice engineering issued by a proper authority of a jurisdiction or possession of the United States, based on requirements not less than those specified by the applicable licensure act in effect in the State of South Carolina at the time such other license was issued, may, upon receipt of the proper documents and payment of the fee established by the Board, be considered for licensure without further written examination.

(3) A Model Law Engineer applicant may be licensed as a Professional Engineer by making application on the prescribed form and having the NCEES Council Record sent to the Board. To be considered, the Council Record must be submitted directly to the Board by NCEES. Upon receipt of the proper documents and payment of the fee established by the Board, a Model Law Engineer applicant may be licensed as a Professional Engineer upon further review.

B. Professional Surveyor.

(1) An application will be considered for licensure by comity from an applicant who has not been previously licensed in this State but is appropriately licensed in the state in which the applicant resides or is employed unless there are extenuating circumstances satisfactory to the Board.

(2) An application will be accepted for licensure by comity if the applicant meets the requirements for education, experience and examination as prescribed by the statutes, and the rules and regulations of this Board in effect at the time of filing said application.

(3) An applicant registered in another state may be required to take such examinations as the Board deems necessary to establish that his qualifications meet the requirements of the statutes, rules and regulations of the Board. The applicant shall in all cases be required to pass a written examination including questions of laws, procedures and practices pertaining to the practice of land surveying in this State.

(4) An application will be accepted for licensure by comity as a TIER B Land Surveyor after the applicant first obtains licensure as a TIER A Land surveyor. An applicant in this category will be required to pass the written examination for a TIER B Land Surveyor in addition to meeting the education and experience requirements as established by the statutes and the rules and regulations of the Board.

49-204. Deleted by State Register Volume 33, Issue No. 6, eff June 26, 2009.

49-205. Firm Registration.

A. For the purpose of this regulation, a sole proprietorship is one in which the ownership is held by a single individual who is duly licensed to practice engineering and/or surveying in this State, where there is no stock ownership in the firm, and where the practice name is identical to that in which the individual licensure is held. A licensed engineer or surveyor, practicing in his own name as a sole proprietorship is exempt from this section of the regulations. For multiple firms practicing engineering or surveying as a joint venture for one or more projects in this State, a Certificate of Authorization will be required for each firm practicing within the joint venture.

B. Failure to notify the Board within thirty (30) days of changes affecting the status of the firm's information shall be grounds for sanctions up to and including revocation of the organization's Certificate of Authorization. An engineer or surveyor on file with the Board as being in full authority and responsible charge shall notify the Board of any change in his employment.

49-206. Deleted by State Register Volume 33, Issue No. 6, eff June 26, 2009.

49-207. Seals: Individuals and Firms.

A. Description of Licensee's Seal.

(1) The seal of engineers and surveyors licensed by the Board shall be at least 1 1/2 inches in diameter and similar to that prescribed for the Board. In the center there shall appear the license number of the licensee along with the words:

(a) “Registered Professional Engineer”, for engineers licensed prior to July 1, 2001.

(b) “Licensed Professional Engineer”, for engineers licensed after July 1, 2001.

(c) “Professional Engineer and Surveyor”, for engineers holding dual licenses.

(d) “Professional Land Surveyor”, for TIER A land boundary surveyors.

(e) “Professional Photogrammetric Surveyor”, for photogrammetric surveyors.

(f) “Professional GIS Surveyor”, for geographic information systems surveyors.

(g) “Professional Land Surveyor—TIER B”, for TIER B land surveyors.

(2) Rubber stamps (wet seal), raised embossed seals or computer-generated seals, identical in size, design and content with the approved impression seals may be used by the licensee.

B. Description of Firm’s Seal.

(1) The seal evidencing issuance of a Certificate of Authorization by this Board shall be at least 1 1/2 inches in diameter and similar to that prescribed for the Board. In the center there shall appear the name of the certificate holder and the assigned Certificate of Authorization number. In the space between the circle and the outside of the Seal there shall appear the words “South Carolina” and the words “Certificate of Authorization”.

(2) Rubber stamps (wet seal), raised embossed seals, or computer-generated seals, identical in size, design and content may be used by the firm.

C. Seal on Documents.

(1) The seal and signature of a licensee on a document constitutes a certification that the document was prepared by the licensee or under his direct supervision, and in the case of prototypical documents, that the licensee has reviewed the document in sufficient depth to fully coordinate and assume responsibility for application of the plans.

(2) When sealing documents is required by statute, other authority or contract, each sheet of design or construction plans and drawings for engineering practice and of maps, plats, and charts for land surveying practice shall be sealed and signed by the licensee or permit holder preparing them, or in responsible charge of their preparation. The signature and date when the document was prepared must be affixed under or across the face and beyond the circumference of the seal but in a manner that does not obliterate or render illegible the licensee’s name and number. Where the engineering or surveying practice is provided through a firm, such documents shall also carry the Certificate of Authorization seal.

(3) Where more than one page is bound together in one volume of documents, specifications or reports, the licensee or permit holder who prepared said volume, or under whose direction and control said volume was prepared, may seal, date and sign only the title or index sheet, provided that the signed sheet clearly identifies all of the other sheets comprising the bound volume, and provided that any of the other sheets which were prepared by, or under the direction and control of, another licensee or permit holder, be sealed, dated and signed by said other licensee or permit holder with responsibility clearly delineated. This provision, however, shall not apply to design drawings and construction plans prepared by or under the responsible charge of a licensee. Such documents shall carry the required seals, date and licensee's signature on each sheet.

(4) Additions, deletions or other revisions to sealed documents shall not be made, unless such changes are sealed, dated and signed by the licensee who made the revisions or under whose directions and control said revisions were made.

(5) Documents transmitted electronically shall have the computer-generated seal removed from the original file and a copy of the project report shall be signed, sealed and sent to the client. The electronic data shall have the following inserted in lieu of the signature and date: "This document originally was issued and sealed by (name of sealer), (license number), on (date of sealing). The electronic media shall not be considered a certified document.

ARTICLE 3. RULES OF PROFESSIONAL CONDUCT

49-300. Preamble.

A. In order to safeguard the life, health, property and welfare of the public and to establish and maintain a high standard of integrity, skills, and practice in the profession of engineering and surveying, the following Rules of Professional Conduct are promulgated in accordance with the Code of Laws of South Carolina (1976, as amended), Title 40, Chapter 22, and shall be binding upon every person holding a certificate of registration as a Professional Engineer or Surveyor. Reference to engineer or surveyor in this Article shall mean any engineer, surveyor, corporation, professional corporation, partnership or firm, authorized to offer or perform engineering or surveying services in this State.

B. The Rules of Professional Conduct delineate specific obligations engineers and surveyors must meet. In addition, each engineer and surveyor is charged with the responsibility of adhering to standards of generally accepted ethical and moral conduct in all aspects of the practice of professional engineering and surveying.

C. The Rules of Professional Conduct as promulgated herein are an exercise of the police power vested in the South Carolina State Board of Registration for Professional Engineers and Surveyors by virtue of the acts of the legislature, and as such the South Carolina State Board of Registration for Professional Engineers and Surveyors is authorized to establish conduct, policy and practices in accordance with the powers herein above stated.

D. All engineers and surveyors registered under the Code of Laws of South Carolina (1976, as amended), Title 40, Chapter 22, are charged with having knowledge of the existence of these Rules of Professional Conduct, and shall be deemed to be familiar with their several provisions and to understand them. Such knowledge shall encompass the understanding that the practices of engineering and surveying are privileges, as opposed to rights, and the registrants shall be forthright and candid in their statements or written responses to the Board or its representatives on matters pertaining to professional conduct.

49-301. Responsibility to the Public.

The Engineer or Surveyor shall hold paramount the safety, health, and welfare of the public in the performance of their professional duties.

A. The Engineer or Surveyor shall at all times recognize that their primary obligation is to protect the safety, health, property and welfare of the public and shall conduct their practice to fulfill this obligation.

B. If the judgment of the engineer or surveyor is overruled under circumstances where the safety, health, and welfare of the public are endangered, they shall inform their employer of the possible consequences and notify other proper authority of the situation, as may be appropriate.

49-302. Competency for Assignments.

The Engineer or Surveyor shall perform services only in the areas of their competence.

A. The Engineer or Surveyor shall undertake to perform engineering or surveying assignments only when qualified by education or experience in the specific technical field of professional engineering or surveying involved.

B. The Engineer or Surveyor may accept an assignment requiring education or experience outside of their own field of competence, but only to the extent that their services are restricted to those phases of the project in which they are qualified. All other

phases of such projects shall be performed by qualified associates, consultants, or employees.

C. The Engineer or Surveyor shall not affix their signature and seal to any engineering or surveying plan or document dealing with subject matter to which they lack competence by virtue of education or experience, nor to any such plan or document not prepared under their direct supervisory control.

D. In the event a question arises as to the competence of an Engineer or Surveyor to perform an engineering or surveying assignment in a specific technical field of engineering or surveying which cannot be otherwise resolved to the Board's satisfaction, the Board, either upon request of the Engineer or Surveyor or by its own volition, may require them to submit to an appropriate examination as determined by the Board.

49-303. Public Statements.

The Engineer or Surveyor shall issue public statements only in an objective and truthful manner.

A. The Engineer or Surveyor shall be completely objective and truthful in all professional reports, statements, or testimony. He shall include all relevant and pertinent information in such reports, statements, or testimony.

B. The Engineer or Surveyor shall express a professional opinion only when it is founded upon adequate knowledge of the facts in issue, upon a background of technical competence in the subject matter, and upon honest conviction of the accuracy and propriety of their statement.

C. The Engineer or Surveyor will issue no statements, criticisms or arguments on engineering or surveying matters connected with public policy which are inspired or paid for by an interested party, or parties, unless they have prefaced their comment by explicitly identifying themselves, by disclosing the identities of the party or parties on whose behalf they are speaking, and by revealing the existence of any interest they may have in the matters.

49-304. Conflicts of Interest.

The Engineer or Surveyor shall avoid conflicts of interest.

A. The Engineer or Surveyor shall conscientiously strive to avoid conflicts of interest with employer or client, but when unavoidable, the Engineer or Surveyor shall forthwith disclose the circumstances to their employer or client. In addition the Engineer or

Surveyor shall avoid all known conflicts of interest with their employer or client and shall promptly inform their employer or client of any business association, interests, or circumstances which could influence their judgment or the quality of their service.

B. The Engineer or Surveyor shall not accept compensation, financial or otherwise, from more than one party for services on the same project at the same time, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to, by all interested parties.

C. The Engineer or Surveyor shall not solicit or accept financial or other valuable considerations from material or equipment suppliers for specifying their projects.

D. The Engineer or Surveyor shall not solicit or accept gratuities, directly or indirectly from contractors, their agents, or other parties dealing with their client or employer in connection with work for which they are responsible.

E. When in public service as a member, advisor, or employee of a governmental body or department, the Engineer or Surveyor shall not participate in considerations or actions with respect to services provided by them or their organization in private engineering or surveying practices.

49-305. Solicitation of Work.

The Engineer or Surveyor shall solicit and accept work only on the basis of their qualifications.

A. The Engineer or Surveyor shall not offer to pay, either directly or indirectly, any commission, political contribution, or a gift, or other consideration in order to secure work. It is not a violation of law to seek or secure salaried positions through employment agencies.

B. The Engineer of Surveyor shall not falsify or permit misrepresentation of their, or their associates' academic or professional qualifications. They shall not misrepresent or exaggerate their degree of responsibility in or for the subject matter of prior assignments. Brochures or other presentations pertaining to the solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, or their past accomplishments with the intent and purpose of enhancing their qualifications and work.

C. The Engineer or Surveyor shall not review the work of another engineer or surveyor for the same client, except with the knowledge of such engineer or surveyor, or unless the connection of such engineer or surveyor with the work has been terminated.

49-306. Improper Conduct.

The Engineer or Surveyor shall conduct their work with honesty and integrity.

A. The Engineer and Surveyor shall not knowingly associate with or permit the use of their name or organization's name in a business venture by any person or organization which they know, or have reason to believe, is engaging in business or professional practices of a fraudulent or dishonest nature.

B. If the Engineer or Surveyor has knowledge or reason to believe that another person or organization may be in violation of any of these provisions or of the Code of Laws of South Carolina (1976, as amended), Title 40, Chapter 22, they shall present such information to the Board in writing and shall cooperate with the Board in furnishing such further information or assistance as may be required by the Board.

C. Engineering and surveying registrants shall recognize and honor practice restrictions placed upon them by their designated license category or practice tier.

ARTICLE 4. STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA

49-400. Purpose.

A. These regulations are intended to establish minimum standards for the practice of surveying in South Carolina.

(1) The standards set forth are to promote uniform requirements for and accurate surveys by surveyors practicing in South Carolina.

(2) The established guidelines will assist a surveyor in meeting the needs of their clients so that surveyed properties henceforth can be readily located, mapped and described in a definitive and easily understood manner.

B. These regulations are also intended to provide guidelines that will assist property owners and others who deal with real property such as those in the legal, banking, and real estate professions.

(1) The manual should be of value to property owners in South Carolina when engaging the services of qualified surveyors to establish corners, boundaries and maps of their respective properties.

(2) The manual should assist the Clerks of Court in the various counties of South Carolina in receiving and accepting for recordation maps that are in compliance with appropriate standards and statutory requirements.

49-410. Compliance.

A. All Surveyors shall comply with these regulations governing minimum standards for the practice of surveying in South Carolina.

B. A surveyor who practices surveying in South Carolina in violation of the minimum standards contained in this manual, on complaint in writing, sworn to by the complainant and submitted to the Board of Registration for Professional Engineers and Surveyors, shall be notified of the complaint and afforded an opportunity to be heard before the Board.

C. The repeated failure to adhere to minimum standards for surveying as contained in this manual may be considered as prima facie evidence of misconduct in the practice of surveying on the part of a Surveyor.

D. The Board will investigate information from Clerks of Court, clients, individuals, and land owners if in the Board's opinion a surveyor appears to have performed surveying which is not in compliance with this manual. When a surveyor obligates themselves and contracts to survey real property in South Carolina by virtue of the license granted them by this State, they accept the responsibility to comply with minimum standards prescribed by this manual.

E. The Board shall provide for each Surveyor and for each Clerk of Court in this State a copy of the Standards of Practice Manual for Surveying in South Carolina. Copies will be made available, upon request, for other State officials and the general public.

49-420. General.

A. For the purpose of these regulations, the following terms or words are defined as meaning:

(1) The term "Board" shall mean the South Carolina State Board of Registration for Professional Engineers and Surveyors.

(2) The term "manual" shall mean the Standards of Practice Manual for Surveying in South Carolina.

(3) The term “minimum standards” shall mean the standards of practice for surveying in South Carolina.

(4) The term “surveyor” shall mean a surveying practitioner duly registered by the Board for the practice of surveying in the State of South Carolina.

(5) The terms “Clerk of Court”, “Register of Deeds” and “Register of Mesne Conveyance” shall refer to the office in the county having responsibility for recording plats, maps and deeds.

(6) The term “seal” shall mean the raised embossed seal, rubber stamp (wet seal) or computer-generated seal of the Surveyor.

(7) The term “accurate” shall mean that degree of accuracy consistent with the standards and tolerances specified in this manual.

B. The proper execution of surveying, platting and mapping procedures and all other details of a survey are the direct responsibility of the Surveyor whose seal and signature shall appear on the plat or map to be prepared. The fact that a plat or map is approved by a planning department or accepted by Clerk of Court for recordation in no way relieves the surveyor whose seal appears upon the drawing of the full responsibility to make certain that the plat or map meets the requirements of these standards.

C. The plat or map shall remain for a period of time required by the statute of repose in the possession of the surveyor whose seal appears thereon. It should, therefore, be professionally and accurately prepared as a permanent record and after prints or copies have been made for recordation or other purposes the original plat should be carefully preserved by the surveyor or their firm along with the surveyor’s original field notes, calculations, and work sheets for, at a minimum, the length of time the statute of repose applies. Such material, in original form, is to be made available when required either by the Board or by the courts.

D. The words “course” and “bearing” are used interchangeably in this manual.

E. Where survey requirements are more stringent than those set forth herein, the surveyor shall comply with those standards as mandated by federal, state, or local governmental requirements.

F. Surveys which are performed for a specific stated purpose other than boundary surveys as defined herein shall be permitted where unusual conditions make it impractical or impossible to perform the survey to the standards set forth herein, provided the purpose and conditions shall be clearly stated on the survey drawing. This section is not

to be used in any way to circumvent the standards in this manual on a survey which can be performed to these standards.

G. Additions and/or deletions to survey drawings by other than the signing party or parties are prohibited without written consent of the original signing party or parties.

H. The surveyor shall comply with the minimum survey classifications noted herein but has the option to negotiate with each client an agreement for a higher classification.

49-430. Nomenclature.

A. In surveying work, it is acceptable to employ abbreviations and symbols. When use of such abbreviations and symbols are necessary, the following are acceptable and may be employed in land surveying work in South Carolina:

(1) Acres: AC

(2) Acrylonitrile Butadiene ABS

(3) American Society of Photogrammetry and Remote Sensing: ASPRS

(4) Angle: Ang

(5) Avenue: AVE

(6) Azimuth: Az

(7) BeiDou Navigation Satellite System: BeDou

(8) Bench Mark: BM

(9) Catch Basin: CB

(10) Calculated Course(s): CC

(11) Calculated Distance: CD

(12) Corrugated Metal Pipe: CMP

(13) Crimp /Clip/Pinch Top: CT

(14) Curb Face: CF or FOC

(15) Curb Inlet: CI

(16) Curb and Gutter: CG

(17) Chord: CH

(18) Center Line: CL or C/L or CL

(19) Concrete Monument: Con. Mon.

(20) Continuously Operating Reference Station: CORS

(21) Degree of Curve: D

(22) Deed Book: DB

(23) Deflection Angle: Defl Ang

(24) Departure: Dep

(25) Ductile Iron Pipe: DIP

(26) Drop Inlet: DI

(27) Drill Hole: DH

(28) Delta Angle: Δ or I

(29) Double Meridian Distance: DMD

(30) Easement: ESMT

(31) East: E

(32) Error of Closure: EC

(33) Elevation: EL

(34) Edge of Pavement: EP

(35) Foot: Ft.

(36) Found: Fd. or F

(37) Global Navigation Satellite System: GNSS

(38) Global Positioning System: GPS

(39) Global'naya Navigatsionnava SputnikovavaSistima: GLONASS

(40) Gutter: Gut

(41) Highway: Hwy

(42) Invert Elevation: I.E. or Inv.

(43) Iron Pipe, Set: IPS

(44) Iron Pipe, Found: IPF

(45) Length of Curve: L or Arc

(46) Latitude: Lat

(47) Long Chord: LC

(48) Mag Nail: MN

(49) Magnetic course: MC

(50) Manhole: MH

(51) Mile: Mi

(52) Marker: Mk

(53) Monument: Mon

(54) Nail and Cap: N & C

(55) National Spatial Reference System: NSRS

(56) New: N or (N)

(57) Not To Scale: NTS

(58) North: N

(59) North American Datum 1927: NAD 27

(60) North American Datum 1983: NAD 83

(61) North American Vertical Datum 1988: NAVD 88

(62) National Geodetic Survey: NGS

(63) National Geodetic Vertical Datum 1929: NGVD 29

(64) Offset: O.S. OR O/S

(65) Old: O or (O)

(66) On-line Positioning User Service (NGS): OPUS

(67) Parts Per Million: PPM

(68) Perimeter: P

(69) Pavement: Pave

(70) PK Nail: PK

(71) Plat Book: PB

(72) Point of Beginning: POB

(73) Point of Curvature: PC

(74) Point of Compound Curve: PCC

(75) Point on Curve: POC

(76) Point of Intersection: P.O.I. or P.I.

(77) Point of Tangent: POT

(78) Point of Reverse Curvature: PRC

(79) Point on Tangency: PT

(80) Point: Pt

(81) Polymerized Vinyl Chloride: PVC

(82) Position Dilution of Position: PDOP

(83) Private: Pvt

(84) Property Line: PL

(85) Radius: R

(86) Reference Point: RP

(87) Railroad: RR

(88) Railroad Spike: RRS

(89) Reinforced Concrete Pipe: RCP

(90) Register of Mesne Conveyance: RMC

(91) Railway: Rwy

(92) Real Time Kinematic Surveying: RTK

(93) Real Time Network: RTN

(94) Rebar: RB

(95) Register of Deeds: ROD

(96) Right of way: R/W

(97) Satellite Receiver for RTK or VRS Surveying: Rover

(98) Satellite Receiver Base Station: Base

(99) South: S

(100) SC State Plane Coordinate System SPCS

(101) South Carolina Geodetic Survey: SCGS

(102) Square: Sq

(103) Square Feet: SF or FT2

(104) Street: St

(105) Station: Sta

(106) Stake: Stk

(107) Tangent of Curve: T

(108) Tack: Tk

(109) Traverse: Tra

(110) Track: Trk

(111) US Bureau of Standards: USBS

(112) Vertical: Vert

(113) Vitrified Clay Pipe: VCP

(114) Virtual Reference Station Network: VRS

(115) West: W

(116) Wood: Wd

(117) Symbols:

(a) Degree: o

(b) Minute: ‘

(c) Second: “

(d) Foot or Feet: ‘

B. The following are acceptable abbreviations for metric measures:

(1) Area: A

(2) Centimeter: CM.

(3) Decimeter: DM.

(4) Hectare: HA.

(5) Kilometer: KM.

(6) Meter: M

(7) Millimeter: MM.

(8) Square Meter: M2

C. Definitions: The following definitions and terminology shall be used in land descriptions:

(1) Boundary Line: Any line bounding an area or dividing separate properties; adequately dimensioned and described. Such lines may be straight, irregular, circular, or spiral.

(2) Point of Beginning: A defined, readily located, and permanent point or monument that is the starting point on a parcel for a metes and bounds description; and also is the final point of such description.

(3) Point of Commencement: A defined, readily located, and permanent point or monument that is the point to which the Point of Beginning is tied for a permanent reference.

(4) Convey: The act of transferring title or rights to a property.

(5) Grantor: A person or party conveying property or rights to a grantee.

(6) Grantee: A person or party receiving title or rights to property.

(7) Title: A written claim or right which constitutes a just and legal cause of exclusive possession.

(8) Metes and Bounds Description: A description in which the boundary lines start from a given point and is described by listing the direction, distance, and description of corners of the lines forming this boundary; in succession and adjoining owners.

(9) Description by Lot Number: A description which identifies a lot or tract of land by reference to a previously surveyed subdivision plat together with other pertinent information.

(10) Recorded: Placed on record in the office of the Clerk of Court, Register of Deeds or Register of Mesne Conveyance for the county in which all or part of the land lies.

(11) Coordinate Description: A description of lands in which the angle points or other points in the boundary are each referred to by grid coordinates on the South Carolina State Plane Coordinate System (current Datum) or similar coordinate system.

(12) Grid Coordinates: Distances measured at right angles to each other in a rectangular system having two base lines at right angles to each other.

(13) Survey: The orderly process of determining data relating to the physical characteristics of the earth, which may be further defined according to the type of data obtained, the methods and instruments used, and the purpose(s) to be served.

(14) Boundary Survey: A survey, the primary purpose of which may include, but is not limited to, the determining of the perimeters of a parcel or tract of land by establishing or reestablishing corners, monuments, and boundary lines for the purpose of describing, or platting or dividing the parcel.

(15) Closing/Loan or Mortgage Survey: A boundary survey of a parcel or lot which includes all improvements obvious and apparent found on the property, to be used in the preparation of a mortgage, loan or deed document.

(16) Topographical Survey: A survey of the natural and selected man-made features of a part of the earth’s surface by remote sensing and/or ground measurements to determine horizontal and vertical spatial relations.

(17) Compiled Map: A map drawn from previously recorded or unrecorded documents, photographic material or tax maps which represent the general configuration of the parcel where partial or no actual surveying has been performed by the land surveyor preparing the map.

(18) Right of Way Survey: A Survey of any strip or area of land, including surface, overhead, or underground, for a designated use, such as for drainage and irrigation canals and ditches; electric power, telegraph, and telephone lines: gas, oil, water, and other pipe lines; highways, and other roadways, or other similar uses.

(19) Geodetic Survey: A survey of areas and points affected by and taking into account the curvature of the earth using a nationally defined horizontal and vertical

datum. Geodetic surveys may be performed with terrestrial or satellite surveying technology but must be connected to the coordinate realization of the National Spatial Reference System (NSRS). All geodetic surveys, both vertical and horizontal, in the State of South Carolina shall conform to the datums currently supported by NSRS. Geodetic surveys shall be performed by a surveyor licensed by this board.

(20) Geodetic Datum: The recognized horizontal and vertical datum for South Carolina shall be currently adopted or recognized datum by the NSRS which is maintained by the National Geodetic Survey.

(21) State Plane Coordinate System: A map projection that is a mathematical transformation of latitudes and longitudes on the surface of sphere or ellipsoid representing the earth to grid coordinates (northing, easting, or y x values) on a plane. The official coordinate system for surveying purposes in South Carolina is the South Carolina State Plane Coordinate System. For the purpose of the South Carolina State Plane Coordinate System, the foot is the International Foot with one inch being exactly 2.54 centimeters. To convert metric coordinates to the international feet multiply by 3.280839895.

(22) Hydrographic Survey: A survey having for its principal purpose the determination of data relating to bodies of water, and which may consist of the determination of one or several of the following classes of data; depth of water and configuration of bottom; directions and force of current; heights and times and water stages; and location of fixed objects for survey and navigation purposes.

(23) Wetlands Survey: A survey showing the Wetland Boundaries tied by course and distance to either 1) property corners that are properly monumented, or 2) project boundaries that have been properly monumented, or 3) State Plane Coordinates. This shall be done in a manner that permits future surveyors to readily retrace the wetland boundary. The error of closure of such ties must be consistent with the land use classification of the parcel being surveyed as described in section 49-440 Classification of Surveys. Data collection and platting of these types of wetland boundaries must be performed by or under the direct supervision of a surveyor. A surveyor may not accept wetlands survey data from non-licensed individuals who are not under their direct supervision for the purpose of recording the information on survey plats.

(24) Corner: A point on a land boundary.

(25) Monument: A shaft of ferrous metal, concrete, stone or concrete and metal; placed to designate a fixed point; placed near vertically in the earth; designed for maximum permanency, placed by a land surveyor to mark corners.

(26) Witness Monument: Any monument that does not occupy the same defined position as the corner itself, but whose relationship to the corner is established.

(27) Reference Point: Any defined position that is or can be established in relation to another defined position.

(28) Benchmark: A relatively permanent material object, natural or artificial, bearing a marked point whose elevation above or below a referenced datum is known.

(29) Plat: A diagram drawn to scale showing all essential data pertaining to the boundaries and subdivisions of a tract of land, as determined by a survey and must be signed and sealed by the surveyor.

(30) Map: A representation on a plane surface, at an established scale, of the physical features of a part of the earth's surface, shown by the use of, but not limited to lines, arcs, signs, alpha numeric characters and symbols.

(31) Map of Survey, Plat of Survey, Survey for or other Similar Titles: Any drawing of a parcel or tract of real property used for the purpose of depicting the results of a field survey. Each survey drawing shall state the type of survey it depicts as defined in this manual.

(32) Global Navigation Satellite System (GNSS): Any satellite system which can be used to determine a precise location on the surface of the Earth. The US system is known as NAVSTAR Global Positioning System (GPS). The Russian system is known as the Global'naya Navigatsionnaya Sputnikovaya Sistema or GLONASS. The European Space Agency system is known as GALILEO.

(33) Position Dilution of Precision (PDOP): A numerical measure of the predicted accuracy of a geodetic position determined from GNSS satellites. The term represents the reliability of the geometry of the satellites with respect to the receiver location. A PDOP of 3 or less will generally ensure accuracy of the highest survey quality. A PDOP of 5 or less may be acceptable for most surveying and mapping projects where the distance between Rover and the nearest Base station is less than 10KM.

(34) Multipath: Multipath is an erroneous GNSS distance measurement between a GNSS satellite and either the Rover or Base. The multipath signal results from the receiver using a signal that has been reflected off a structure or water surface on its way to the receiver. The resulting measurement of distance from the satellite to the receiver is longer.

(35) Base Station: The name given to a GNSS receiver located over a known point or geodetic control monument.

(36) Rover: The name given to a GNSS receiver located over an unknown survey point whose coordinates are to be determined or checked against known geodetic control.

(37) Static GNSS Survey: A geodetic survey that uses multiple survey grade satellite receivers each collecting the same satellite data simultaneously. At least one satellite receiver must be on a known geodetic control station. The data are post-processed to yield three dimensional vectors between the known and unknown control stations. Static vectors solutions yield a “no check” solution and therefore by themselves do not meet minimum standards without additional independent checks. An expected relative accuracy of 0.07 foot plus 1:50,000 of the distance separating the Base and Rover can be obtained dependent on the length of time of simultaneous observations, the quality of the receivers, multipath and PDOP of less than 5.

(38) Static GNSS Positioning of Property Corners: If GNSS STATIC survey techniques are used to establish SC State Plane Coordinates on property corners, the corners shall be positioned from the nearest two (2) first or second order horizontal control monuments in the National Geodetic Survey (NGS) data base. Property corners shall be positioned to a horizontal accuracy of at least 0.07’ + 1/20,000 or 0.2 feet (whichever is smaller) with relation to the nearest NGS horizontal control monument.

(39) Real Time Kinematic (RTK) GNSS Survey: A geodetic survey that uses multiple survey grade satellite receivers each collecting the same satellite data simultaneously. At least one Base receiver must be on a known geodetic control station and is capable of transmitting satellite data in real time to other Rover receivers. The data are processed by the Rovers in real time to yield three dimensional vectors between the Base and Rover stations. RTK vectors solutions yield a “no check” solution and therefore by themselves do not meet minimum standards without additional independent checks. RTK surveys require a site calibration to the NAD83 and NAVD88 in the vicinity of the survey. An expected relative accuracy of 0.05 foot plus 1 PPM of the distance separating the Base and Rover can be obtained dependent on the length of time of RTK observations, the quality of the receivers, PDOP of less than 3, a minimum of 5 GPS satellites, multipath and quality of the site calibration.

(40) VRS GNSS Survey: A geodetic survey that uses multiple dual frequency survey grade satellite receivers each collecting the same satellite data simultaneously. Base stations are operated by the SCGS and data are streamed to the Rovers via the Internet and processed in real time to yield three dimensional vectors between the Base Stations and Rovers. VRS vectors solutions yield a “network check” solution and therefore will

meet minimum standards without additional independent checks. VRS surveys require an "independent check" by occupying a known geodetic control point in the National datum in the vicinity of the survey to verify the proper operation of the Rover. An expected relative accuracy of 0.05 foot can be obtained dependent on the length of time of VRS observations, the quality of the receivers, PDOP of less than 3, a minimum of 5 GPS satellites and minimal multipath.

(41) Classification of Geodetic Surveys (Performed using GNSS Technology)

Type	Relative Accuracy (95%)	Max PDOP	Min # of Satellites	Site Calibration
Static	GNSS 0.07' + 1:50,000	5	4	N
Property Corner	Positions 0.07' + 1:20,000	5	4	N
RTK GNSS	0.07' + 1PPM dist from Base	3	5	Y
VRS GNSS	0.07'	3	5	N

All the above Geodetic Surveys will achieve the required minimum accuracy for Land Surveys

(42) Spatial Data: Information about the locations and shapes of geographical features and relationships between them, usually stored as coordinates and topology. Any data that can be mapped.

(43) Ground Coordinates: A coordinate system that has its own origin within the region being investigated and is used principally for points within that region.

49-440. Classification of Surveys.

A. The accuracy of the measurements for a survey shall be based upon the character of the land, the type of survey and the current use of the land. Unadjusted Ratio of Precision permissible shall be no less than the errors of closure prescribed below. In lieu of an Unadjusted Ratio of Precision, a Relative Positional Accuracy may be used. Relative Positional Accuracy may be tested by: (1) comparing the relative location of points in a

survey as measured by an independent survey of higher accuracy or (2) the results of a minimally constrained, correctly weighted least square adjustment of the survey.

B. On the basis of the size and character of the land, boundary surveys for conveying, platting, mapping, or describing property shall be classified as follows:

(1) (Class A) Urban Land Surveys: Urban surveys include land properties which lie within or adjoin city or town limits, or other high valued properties. Bearings shall be shown in degrees, minutes and seconds and distances shall be shown to hundredths of a foot.

(2) (Class B) Suburban Land Surveys: Suburban surveys include properties surrounding the urban area of a town or city. Bearings shall be shown in degrees, minutes and seconds and distances shall be shown to hundredths of a foot.

(3) (Class C) Rural Land Surveys: Rural surveys include properties located outside suburban properties. Bearings shall be shown in degrees and minutes or less and distances shall be shown to hundredths of a foot.

(4) (Class D) Farm and Timber Land Surveys: Timber surveys include properties located throughout the State and represent land which may be cultivated; may provide space for farm houses and buildings; or may be employed as timber land. Bearings shall be shown in degrees and minutes or less and distances to the nearest tenth of a foot or less.

(5) (Class E) Vertical Control Surveys: Surveys involving vertical control (leveling) for land areas where a common datum is necessary shall be classified on the basis of accuracy.

(a) Urban Control: Control loops employed for commercial, industrial, or urban land surveys shall be executed with a precision or error of closure not to exceed in feet 0.04 times the square root of the number of miles of the level circuit. i.e. 0.04 &pi01b5; m (m = number of miles in the level circuit)

(b) Other: Other leveling surveys shall be conducted with a precision or error of closure not to exceed in feet 0.10 times the square root of the number of miles of the level circuit. i.e. 0.10 &pi01b5; m (m = number of miles in the level circuit). The VRS will achieve this accuracy when using a dual frequency GNSS receiver, PDOP less than 3 in the absence of multipath.

C. Table of Classifications:

	Classification	A	B	C	D
		Urban Surveys	Suburban Surveys	Rural Surveys	Farm & Timber Surveys
	Unadjusted Linear Closure				
	Closure				
	(Minimum)	1:10000	1:7500	1:5000	1:3000
	Angular				
	Closure	15” &pi01b5; N	20” &pi01b5; N	30” &pi01b5; N	50” &pi01b5; N
	(Maximum)				
	Location of Improvements, Structures, Paving, Etc.:				
	(Tie Measurement)	±0.1’	±0.2’	± 1.0’	±2.0’

N = Number of Points in Traverse

As an option:

Relative Positional Accuracy

0.07’ + 50 PPM or 0.07’ + 1/20,000 * Perimeter (95% confidence level).

The VRS can achieve of a Relative Positional Accuracy of 0.07' with a 95% confidence level and therefore can be used for all Classifications.

49-450. Plats and Platting.

A. A plat, as defined by this manual, is an accurate graphical representation, properly dimensioned, report of a survey made by a Surveyor of a finite piece of real property, including pertinent data and appropriate information.

B. A survey requiring a plat should be accurately presented and should reveal all of the pertinent information developed by the survey.

C. Primary reference materials which provide the basis for the establishment of the survey boundaries shall be listed on the face of the plat.

49-460. Survey Types and Requirements.

A. General Property Surveys: The following general requirements apply to all survey types included in this manual, other than GIS Surveys and Photogrametric Surveys (see section 49-460D and section 49-460E of these standards for the general requirements of these surveys).

(1) The size of the plat should conform to the requirements of the Clerk of Court, Register of Deeds or the Register of Mesne Conveyance of the county in which the plat is to be recorded with minimum size to be eight and one-half inches by eleven inches.

(2) All survey plats shall have a title and contain the following information:

(a) The seal and the signature of the Surveyor in responsible charge for the full conduct of the survey;

(b) A location map and/or adequate descriptive location of the property surveyed;

(c) The state, county and/or city in which the property is located;

(d) The name of the owner, company or agent of the property who requested the survey document;

(e) The date the field survey was completed;

(f) A graphic scale;

(g) A numerical scale;

(h) The name, license number, address and phone number of the land surveyor.

(i) A certification executed by the Surveyor which will contain a statement of the class of the survey performed as follows:

"I hereby state that to the best of my professional knowledge, information, and belief, the survey shown hereon was made in accordance with the requirements of the Standards of Practice Manual for Surveying in South Carolina, and meets or exceeds the requirements for a Class _ survey as specified therein."

(j) The area of the parcel of tract surveyed will be shown consistent with the class of survey or at least to the nearest one-hundredth (0.01) of an acre.

(k) At least one corner of the property surveyed shall be referenced so as to form a tie-line which can be used to help establish or verify the correct location of the property.

(l) The distances to the nearest intersections of street centerlines or street right-of-way intersections shall be shown on the survey document.

(m) The North arrow shall be shown and shall be correlated accurately with the courses so that it is accurately positioned and designated as astronomic, grid or magnetic or record source.

(n) All property lines shall be defined by bearings and horizontal distances and plotted to the scale indicated on the plat.

(o) Bearings and distances shall be shown consistent with the class of the survey.

(p) The Land Surveyor shall retrace the boundaries of the property being surveyed and set or reset monuments or corners consistent with the class of survey and accepted practices of boundary retracement. All monuments found or placed must be described in detail on the survey plat or drawing, with data given to show their location upon the ground in relation to the boundary lines. When a property corner is inaccessible and cannot be set, a witness or reference monument shall be placed on the boundary line and the offset distance noted on the survey document, plat or drawing. Control corners, monuments or property corners, on adjoining properties, used in the establishment or verification of property corners, shall be identified, located and defined, by course and distance, to an accuracy consistent with the class of survey. Primary reference materials which provide the basis for the establishment of survey boundaries shall be listed on the face of the plat.

(q) All new or re-established corners shall be in accordance with 49-470 F:

1. Metal, concrete, or other durable material and detectable with conventional instruments for finding ferrous or magnetic objects;

2. No less than 1/2 inch in diameter for metal corners and 4 inches in diameter for concrete;

3. No less than 24 inches in length;

4. If the corner location falls on pavement, concrete, or other material where one of the above cannot be placed, it is permissible to use nails, spikes, scribes, etc. in or on the surface;

5. In place prior to the signing, sealing and issuance of the plat.

(r) Where a boundary is formed by a curved line, the curve will be defined by curve data to include the radius, delta, arc length and the long chord, by course and distance. The curve may also be defined as a traverse of chords around curve. Chord shall be defined by course and distance.

(s) All visible items across the property line shall be indicated with their extent shown or noted on the survey plat/map. The use of the words projection or encroachment shall be at the discretion of the surveyor.

(t) Visible indications of easements and rights-of-way on the site (i.e. power lines, etc.), obvious and apparent at the time of the survey or known to the surveyor, shall be shown and shall include their widths, if known.

(u) Cemeteries and burial ground located within the premises surveyed shall be located and shown upon the drawing, plat or map if obvious and apparent observed by the surveyor at the time of the survey, or if knowledge of their existence and location is furnished to the land surveyor prior to or during the performance of the survey.

(v) Lot and block numbers and/or the full names of adjoining land owners, and the names and/or numbers of principal highways, roads, streets or railroads, shall be shown, on the plat, with their rights-of-way. The plat book and page number of the subdivision as recorded by the Register of Mesne Conveyance, Register of Deeds or Clerk of Court of the county where the survey document is recorded should be included, if known.

(w) Boundaries formed by water courses shall be located and plotted to scale as shown in the title.

(x) If calculated lines are not shown, traverse lines and/or off-set lines used to close water course boundaries shall be shown, plotted to scale, and defined by course and distance. Note “Creek the line” where applicable.

(y) Maps prepared partially or entirely from reference or source data, such as compiled maps, do not represent land surveys as defined herein, and shall be clearly marked accordingly. Compiled maps must have a prominently displayed statement that the said document does not represent a land survey and is unsuitable for deeding of property or recordation.

(z) Plot plans representing planned locations prepared for city, county, state, federal governmental or other uses may be signed and sealed. A prominent statement shall be placed on the face of the document stating “This plot plan does not represent a land survey, was not prepared for recordation, and is not suitable for deeding of property. No ground survey was performed.”

B. Closing/Loan or Mortgage Surveys: In addition to the requirements set forth in Section 49-460 A., General Property Surveys, the following applies to closing/loan or mortgage surveys:

(1) If a survey is all or a portion of a lot which is part of or adjoining a recorded subdivision, lot and block numbers or other designations including those of adjoining lots must be shown on the drawing.

(2) Structures shall be dimensioned to show size and location in relation to the boundary.

(3) Location distances are to be measured perpendicular from the closest side and front lines.

(4) Physical features obvious and apparent at the time of the survey to the surveyor such as storm drains, power lines, etc. on the subject property shall be shown and plotted to scale.

(5) Accuracy requirements of residential lots shall be consistent with the class of survey or a maximum closure of 0.05 foot, whichever is less restrictive.

(6) A certification shall be executed by the Surveyor as follows:

“I hereby state that to the best of my professional knowledge, information, and belief, the survey shown herein was made in accordance with the requirements of the Standards of Practice Manual for Surveying in South Carolina, and meets or exceeds the

requirements for a Class _ survey as specified therein; also there are no visible encroachments or projections other than shown."

C. Topographical Surveys: The following applies to topographical surveys:

(1) Structures shall be shown in relation to the boundary.

(2) Physical features obvious and apparent at the time of the survey to the surveyor such as storm drains, sanitary sewers, power lines, gas lines and water lines on the subject property shall be shown and plotted to scale.

(3) Elevations may be shown as spot elevations and/or contours.

(4) Contour intervals shall be noted.

(5) The vertical and horizontal error of contour lines and physical features shown shall not exceed one-half the contour interval.

(6) An on-site temporary bench mark shall be established with reference to datum currently adopted by NGS and plotted to scale as shown on the title.

(7) The following items from Section 49-460 A. (3) shall be used when a general property survey is not made in conjunction with the topographic survey: a through h, l through n, and t through w.

(8) Where the property boundaries are not surveyed, the source from which the boundary data was taken must be clearly noted thereon.

(9) A certification shall be executed by the Land Surveyor which will contain a statement as follows:

"I hereby state that to the best of my professional knowledge, information, and belief, the survey shown herein was made in accordance with the requirements of the Standards of Practice Manual for Surveying in South Carolina, and meets or exceeds the requirements as specified therein."

D. Geographic Information System Surveys: The following applies to Geographic Information System Surveys.

(1) Purpose: The purpose of these standards is to provide the Surveyor with a guideline for surveys that provide the location of infrastructure information used in a geographic information system (GIS). The primary objective of this standard is to ensure that surveyed information in a GIS is reliable and can be used to make definitive decisions. These standards are not to be used in place of professional judgment.

(2) The Survey: Geographic information system (GIS) surveys are defined as the measurement of existing surface and subsurface features for the purpose of determining their geospatial location for inclusion in a GIS database. All 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 Surveyor who is a licensee of this Board.

The Surveyor shall select the proper equipment and methods necessary to achieve at least the Minimum Horizontal and Vertical Accuracy required in Sections 5a and 5b of these standards. The survey work will be executed in a professional manner by the Surveyor or by personnel under the direct personal supervision of the Surveyor. In the event that more stringent survey requirements are required for a given project than what is provided for herein, the more stringent requirements shall be followed.

(3) Coordinate values: Coordinate values should be in the South Carolina State Plane Coordinate System or Geographic Positions based on the National Coordinate System. Horizontal coordinate values should be in the NSRS or the most current datum published by the National Geodetic Survey (NGS). Vertical coordinate values should be in the North American Vertical Datum of 1988 (NAVD 88) or the most current datum published by the National Geodetic Survey (NGS). If coordinates are not referenced to the NSRS, identify the local coordinate system used and its relationship to the NSRS. Coordinates shall be given in either metric or English units. The English unit in South Carolina is the international foot.

(4) Results: The results of the survey shall be transmitted to the client in the form of a document in a digital format. The following information shall be included in the drawing or in the Federal Geographic Data Committee (FGDC) Metadata and certified to by the Professional Surveyor in responsible charge;

(a) The accuracy classification to which the data was gathered.

(b) The methods and procedures used to obtain the data, including but not limited to: equipment, (i.e. global positioning system, theodolite and electronic distance meter, transit and tape), documentation of positional inaccuracies, control points, bench marks, and PDOP levels for GPS surveys.

(c) Date of the survey work.

(d) Datum used for the survey.

(5) Accuracy - General: The minimum positional accuracy of the survey data is a Geospatial Positional Accuracy that is relative to the mapping scale, and therefore it is the accuracy of the base map on which the GIS is based. The reporting methodology shall be in accordance with the Federal Geographic Data Committee, Geospatial Positioning Accuracy Standards, Part 1 Reporting Methodology. The Geospatial Position Accuracy shall be reported by positional accuracy as defined in two components: horizontal and vertical. Horizontal Positional Accuracy is the radius of the circle of uncertainty, such that the true or theoretical location of the point falls within that circle 95-percent of the time. Horizontal Accuracy may be tested by comparing the planimetric coordinates of surveyed ground points with the coordinates of the same points from an independent source of higher order. Vertical Positional Accuracy is a linear uncertainty value, such that the true or theoretical location of the point falls within + /- of that linear uncertainty value 95-per cent of the time. Vertical Accuracy may be tested by comparing the elevation of surveyed ground points with the elevations of the same point determined from a source of higher accuracy.

(a) Horizontal Accuracy: The horizontal accuracy is based upon the American Society of Photogrammetry and Remote Sensing (ASPRS) Standard for Class 2 and reported in agreement with the National Standard for Spatial Data Accuracy. The NSSDA Horizontal Positional Accuracy Statistic at the 95% confidence level is determined by multiplying the Root Mean Square Error (RMSE) of the data set by 1.7308.

Acceptable	
Base Mapping Scale of LIS/GIS	Positional Accuracy Statistic of Survey Data
1”= 20 ft.	0.7 feet
1”= 50 ft.	1.7 feet
1”= 100 ft.	3.5 feet
1”= 200 ft.	6.9 feet
1”= 400 ft.	13.8 feet

1”= 500 ft	17.3 feet
1”= 1000 ft.	34.6 feet
1”= 2000 ft.	69.2 feet

(b) Vertical Accuracy: The vertical accuracy is based upon the ASPRS Standard for Class 1 and reported in agreement with the National Standard for Spatial Data Accuracy. The NSSDA Vertical Positional Accuracy Statistic at the 95% confidence level is determined by multiplying the Root Mean Square Error (RMSE) of the data set by 1.9600.

Acceptable	
Base Mapping Contour Interval	Positional Accuracy Statistic of Survey Data
1 foot	0.7 feet
2 feet	1.3 feet
5 feet	3.2 feet
10 feet	6.5 feet
15 feet	9.7 feet

(6) Certification: A certification shall be executed by the Surveyor which will contain a statement of the class of survey performed as follows:

“I hereby state that to the best of my professional knowledge, information, and belief, the GIS survey shown herein was made in accordance with the requirements of the Standards of Practice Manual for Surveying in South Carolina, and meets or exceeds the requirements as specified therein.”

E. Photogrammetric (Airborne and Spaceborne) Surveys:

(1) Airborne and spaceborne surveys are defined as the use of photogrammetry, American Society of Photogrammetry and Remote Sensing (ASPRS), 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.

(2) Production procedures for topographic and planimetric mapping surveys shall be in accordance with the standards established by Chapter 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.

(3) Topographic or planimetric maps, orthophotos, or related electronic data, unless clearly marked as "Preliminary Map," shall meet contractually specified FGDC Standards for horizontal and vertical accuracies (in the absence of specified standards, the ASPRS applies) and shall be sealed, signed and dated by the licensee.

(4) When the issued product is a digital (electronic) data set, or a map or document consisting of more than one sheet or otherwise cannot be signed and sealed, a project report shall be certified, signed and sealed. Such report shall be clearly marked "Preliminary" if applicable.

(5) Ground control for topographic and planimetric mapping projects shall be in South Carolina State Plane Coordinate System grid coordinates, and distances in International feet or meters. A minimum of one permanent project vertical control point shall be shown.

(6) A project map or report shall contain the applicable following information:

(a) Date of original data acquisition;

(b) Altitude of sensor and sensor focal length, as applicable;

(c) Date of document or data set compilation;

(d) If hard copy product is produced, the maps shall contain a north arrow, map legend, final document scale, including barograph, and contour interval, as applicable;

(e) Coordinate system for horizontal and vertical denoting SI (System International English units (i.e., latest datum adjustment maintained by the NSRS, assumed, or other coordinate system);

(f) A list or note showing the control points used for the project. The minimum data shown for each point shall include: physical attributes (i.e. iron rod, railroad spike, etc), latitude and longitude (or Easting and Northing Grid coordinates), and elevation, as applicable;

(g) If other data is included, the source and accuracy of those items must be clearly indicated;

(h) A statement of accuracy complying with contractually specified FGDC standards consistent with 49-460C of this Rule;

(i) 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 clearly 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”;

(j) A vicinity map depicting the project location shall appear on the first sheet of all hard copy maps or in the report accompanying digital files;

(k) Company name, address and phone number; and

(l) The name of the client for whom the project was conducted.

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

“I hereby state that to the best of my professional knowledge, information, and belief, that this photogrammetric project was performed in accordance with the requirements of the Standards of Practice Manual for Surveying in South Carolina, and meets or exceeds the requirements as specified therein.”

F. Right of Way Surveys: Right-of-way surveys are surveys of the boundaries of a strip, area or parcel of land being used for some designated public or private use. When these rights of way are taken in fee simple, the surveys and plats shall be performed in accordance with the requirements of Section 49-460-A “General Property Surveys.”

49-470. Methods of Marking Property Boundaries.

A. Corner Tree: “X” and three (3) chops on the sides where the line enters and leaves the tree.

B. Corner Witness Tree: One (1) blaze and three (3) chops or three (3) chops facing the corner.

C. Side Line Tree: Two (2) chops facing the property line.

D. Property Line Tree or Center Line Tree: One (1) blaze and two (2) chops, at points where the line enters and leaves the tree.

E. Monuments shall be placed at all property corners where there is a change in direction of a property line.

F. Inaccessible Point: In the event a corner cannot be marked or monumented, one or more witness monuments or metal stakes shall be placed on the boundary line and described by bearings and/or distances so that the inaccessible point may be located accurately on the ground.

G. Boundary Monument or Witness Monument: In the event the location falls on pavement, concrete, or other material, it is permissible to use spikes or scribes in or on the surface.

49-480. Land Descriptions.

A. Land Description: A land description is the detailed statement of appropriate information necessary to locate, relocate, or define the boundaries of a certain area or tract of land.

(1) A land description can be part of a land survey and can be used in connection with the preparation of deeds or similar documents.

(2) It is the surveyor's responsibility to make certain that the surveyor's description is complete and proper. The fact that some element or object which should be described is not included in the above does not justify the surveyor's omitting it from the description.

B. Preparing a Description: In a land survey the land description may be prepared by the surveyor. The writing of a deed is the practice of Law and is not the practice of surveying. In a description the full name, address and signature of the surveyor, their license number and seal, the date the land description was prepared, and the date of survey from which the information was procured, or the book and page number of the recorded map or deed, if it is used in preparing the description, shall appear as part of the document.

C. Types of Land Descriptions and Their Content: In describing a lot located in a subdivision by number; the plat or map must be referenced with the name of the subdivision, the surveyor's name, the date, the township and the general location of the property. In addition, the book and page number in which the particular lot is recorded shall be included.

D. Metes and Bounds Description: A metes and bounds description shall include the general location of the tract or lot with sufficient accuracy such that the tract can be readily located on the ground. This is commonly known as a "being clause" and it should

also include the source of title of the tract or lot. The point of beginning must be selected such that it can be readily and accurately located from some previously established monument or corner of record and can be readily described. The description shall include the names of adjoining property owners on all lines and at all points. The monument or marker at each corner shall be described. A metes and bounds description shall describe all courses in logical sequence around a tract or lot in a clockwise direction such that the ending point is the beginning point. All lines adjacent to streets, roads, or other rights-of-way shall be referenced to these and all pertinent distances and curve data shall be listed in addition to the parcel's area.

49-490. Instruments and Apparatus.

A. Surveyor's Instruments: Surveying in South Carolina shall be conducted in the field with properly calibrated equipment appropriate for the tolerance of work being performed. The equipment shall be tested at regular intervals and adjusted to maintain its optimum accuracy.

B. Tapes: All tapes shall be of alloy or carbon steel and shall be certified as USBS quality with a known coefficient of temperature and tension corrections, and graduated in feet and decimal parts of a foot or calibrated to another tape or means that has been certified by the USBS or NGS.

C. Baselines: Baselines have been established by NGS throughout the state for the purpose of calibrating electronic distance measuring devices. Some of these baselines have 100' monuments to calibrate tapes. Surveyors shall utilize these baselines to insure calibration of their electronic measuring equipment and tapes. Calibration records for each instrument and tapes shall be maintained by the Surveyor and shall be made available when required by the Board or the courts.

ARTICLE 5. AGREEMENTS AND UNDERSTANDINGS WITH OTHER BOARDS

49-500. Deleted by State Register Volume 33, Issue No. 6, eff June 26, 2009.

ARTICLE 6.CONTINUING PROFESSIONAL COMPETENCY

49-600. Purpose.

A. Professionals licensed to practice engineering, surveying, or engineering and surveying in South Carolina are required to demonstrate a continuing development of professional competency.

B. Each licensee shall meet the continuing professional competency requirements of these regulations as a condition for biennial renewal of license.

49-601. Definitions.

Terms used in this section are defined as follows:

(1) Professional Development Hour (PDH) -A contact hour (nominal) of instruction or presentation. The common denominator for other units of credit.

(2) Continuing Education Unit (CEU) -Unit of credit customarily used for continuing education courses.

(3) College/Unit Semester/Quarter Hour -Credit for courses in EAC/ABET approved programs or other related college courses approved in accordance with provision 49-604 of this section.

(4) Course/Activity -Any qualifying course or activity with a clear purpose and objective which will maintain, improve, or expand the skills and knowledge relevant to the licensee's field of practice. Regular duties are not considered qualified activities.

(5) Dual Licensee -A person who is licensed as both an engineer and a surveyor.

49-602. Requirements.

A. Each licensee is required to obtain 30 PDH units during each biennial renewal period.

B. If a licensee exceeds the requirements in any renewal period, a maximum of 15 PDH units may be carried forward into the subsequent renewal period. If the licensee claims 15 PDH carry over units, the previous renewal period will be subject to audit.

C. PDH units may be earned as follows:

(1) Successful completion of college courses.

(2) Successful completion of continuing education courses.

(3) Successful completion of short courses, tutorials, webinars, and distance-education courses offered for documented individual or group study. The method of delivery can be through the following:

(a) Face-to-face programs or live internet-based programs; or

(b) Archived prerecorded programs or archived correspondence programs.

(4) Teaching or instructing in (1) through (3) above.

(5) Authoring published papers, articles, or books.

(6) Active participation in professional or technical societies.

(7) Successful application for patents.

49-603. Units of Credit.

The conversion of other 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 Hour of professional development for attendance in course work, seminars, or professional or technical presentations made at meetings, conventions, or conferences	1 PDH
	(5)	For teaching as in 49-602C(5)	PDH Credits are doubled
	(6)	Each published technical or professional paper, article or book	10 PDH
	(7)	Active participation in a professional and technical society	2 PDH
	(8)	Each patent	10 PDH

49-604. Determination of Credit.

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

(1) Credit for college or community college approved courses will be based upon course credit established by the college.

(2) Credit for qualifying seminars and workshops will be based on one PDH unit for each hour of attendance. Attendance at qualifying programs presented at professional and/or technical society meetings will earn PDH units for the actual contact time of each program.

(3) Credit determination for activities 49-603-(6) and 49-603-(8) is the responsibility of the licensee, subject to review as required by the Board.

(4) Credit for activity 49-603-(7), active participation in professional and technical societies is limited to 2 PDH units per organization, with a maximum of 4 PDH units per year, and requires that a licensee serve as an officer, or actively participate in a committee of the organization, or have at least a 50% documented attendance at meetings held not less than eight times per year. PDH credits for participation in a professional or technical society are not earned until the end of the administrative year of the society.

(5) Teaching credit is valid for teaching a course or seminar for the first time only. Teaching credit does not apply to full-time faculty.

(6) No more than twelve hours of credit may be obtained in one calendar day.

49-605. Record Keeping.

A. The responsibility for maintaining records used to support credits claimed is that of the licensee. Records required include, but are not limited to:

(1) A log showing the type of activity claimed, sponsoring organization, location, duration, instructor's or speaker's name, and PDH credits earned and;

(a) Attendance verification records in the form of completion certificates or other documents supporting evidence of attendance; or

(b) Records as maintained by the NCEES Records Program or other recognized repositories for such records.

B. These records must be maintained for a minimum period of two renewal cycles during which copies may be requested by the Board for audit verification purposes.

C. If, upon review or audit by the Board, any or all PDH units claimed by the license holders are disallowed, the license holder will be allowed a ninety-day period during which such deficiencies must be remedied. A license will be automatically deemed lapsed if the licensee fails to remedy the deficiencies during the allowed time frame.

49-606. Exemptions.

A licensee may be exempt from the professional development educational requirements for one or more of the following reasons:

A. New licensees by way of examination or comity shall be exempt for their first renewal period.

B. Licensees experiencing physical disability, illness, or other extenuating circumstances may apply to the Board for an exemption or extension of time to obtain the credits subject to the review and approval of the Board. Supporting documentation must be furnished with any such exemption request made to the Board.

C. Licensees who list their occupation as “Retired” on the Board approved renewal form and who further certify that they are no longer receiving any remuneration from providing professional engineering or surveying services shall be exempt from requirements for professional development hours. In the event such a person elects to return to the active practice of professional engineering or surveying, professional development hours must be earned, before returning, for each year exempted, not to exceed 30 PDHs.

D. Engineers and Surveyors continuously licensed by this Board prior to January 1, 1969 will be exempt from continuing education requirements.

49-607. Reinstatements.

A. A licensee may bring an inactive license to active status by obtaining all delinquent PDH units, provided other provisions of the statutes are met.

B. If the total number of PDH units required to become current exceeds 30, then 30 shall be the maximum number of PDH units required.

49-608. Deleted by State Register Volume 33, Issue No. 6, eff June 26, 2009.

49-609. Dual License Holders.

The total number of PDH units required shall be the same as that required for a single license holder; but at least ten units shall be obtained separately for each profession.

49-610. Reporting Forms.

A. All renewal applications will contain a statement of verification that the licensee has obtained the required professional development hours at the time of renewal. Upon audit, the licensee must report the course date, sponsoring organization, location, activity title, brief description and PDH's claimed and provide documentation of attendance or completion as well as any other information required by the Board.

B. Failure to fulfill the professional development requirements or to comply with the Board's audit shall be considered a violation of the Registration Law for Professional Engineers and Surveyors.

CODE OF ETHICS

Preamble

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity. Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety, and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

I. Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1) Hold paramount the safety, health, and welfare of the public.

2) Perform services only in areas of their competence.

3) Issue public statements only in an objective and truthful manner.

4) Act for each employer or client as faithful agents or trustees.

5) Avoid deceptive acts.

6) Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

II. Rules of Practice

1. Engineers shall hold paramount the safety, health, and welfare of the public.

1) If engineers' judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.

2) Engineers shall approve only those engineering documents that are in conformity with applicable standards.

3) Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except as authorized or required by law or this Code.

4) Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise.

5) Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.

6) Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.

2. Engineers shall perform services only in the areas of their competence.

1) Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.

2) Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.

3) Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.

3. Engineers shall issue public statements only in an objective and truthful manner.

1) Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent

information in such reports, statements, or testimony, which should bear the date indicating when it was current.

2) Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.

3) Engineers shall issue no statements, criticisms, or arguments on technical matters that are inspired or paid for by interested parties, unless they have prefaced their comments by explicitly identifying the interested parties on whose behalf they are speaking, and by revealing the existence of any interest the engineers may have in the matters.

4. Engineers shall act for each employer or client as faithful agents or trustees.

1) Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.

2) Engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, or for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to by all interested parties.

3) Engineers shall not solicit or accept financial or other valuable consideration, directly or indirectly, from outside agents in connection with the work for which they are responsible.

4) Engineers in public service as members, advisors, or employees of a governmental or quasi-governmental body or department shall not participate in decisions with respect to services solicited or provided by them or their organizations in private or public engineering practice.

5) Engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member.

5. Engineers shall avoid deceptive acts.

1) Engineers shall not falsify their qualifications or permit misrepresentation of their or their associates' qualifications. They shall not misrepresent or exaggerate their responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the

solicitation of employment shall not misrepresent pertinent facts concerning employers, employees, associates, joint venturers, or past accomplishments.

2) Engineers shall not offer, give, solicit, or receive, either directly or indirectly, any contribution to influence the award of a contract by public authority, or which may be reasonably construed by the public as having the effect or intent of influencing the awarding of a contract. They shall not offer any gift or other valuable consideration in order to secure work. They shall not pay a commission, percentage, or brokerage fee in order to secure work, except to a bona fide employee or bona fide established commercial or marketing agencies retained by them.

III. Professional Obligations

1. Engineers shall be guided in all their relations by the highest standards of honesty and integrity.

1) Engineers shall acknowledge their errors and shall not distort or alter the facts.

2) Engineers shall advise their clients or employers when they believe a project will not be successful.

3) Engineers shall not accept outside employment to the detriment of their regular work or interest. Before accepting any outside engineering employment, they will notify their employers.

4) Engineers shall not attempt to attract an engineer from another employer by false or misleading pretenses.

5) Engineers shall not promote their own interest at the expense of the dignity and integrity of the profession.

2. Engineers shall at all times strive to serve the public interest.

1) Engineers are encouraged to participate in civic affairs; career guidance for youths; and work for the advancement of the safety, health, and well-being of their community.

2) Engineers shall not complete, sign, or seal plans and/or specifications that are not in conformity with applicable engineering standards. If the

client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.

3) Engineers are encouraged to extend public knowledge and appreciation of engineering and its achievements.

4) Engineers are encouraged to adhere to the principles of sustainable development[1] in order to protect the environment for future generations.

3. Engineers shall avoid all conduct or practice that deceives the public.

1) Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.

2) Consistent with the foregoing, engineers may advertise for recruitment of personnel.

3) Consistent with the foregoing, engineers may prepare articles for the lay or technical press, but such articles shall not imply credit to the author for work performed by others.

4. Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve.

1) Engineers shall not, without the consent of all interested parties, promote or arrange for new employment or practice in connection with a specific project for which the engineer has gained particular and specialized knowledge.

2) Engineers shall not, without the consent of all interested parties, participate in or represent an adversary interest in connection with a specific project or proceeding in which the engineer has gained particular specialized knowledge on behalf of a former client or employer.

5. Engineers shall not be influenced in their professional duties by conflicting interests.

1) Engineers shall not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product.

2) Engineers shall not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with clients or

employers of the engineer in connection with work for which the engineer is responsible.

6. Engineers shall not attempt to obtain employment or advancement or professional engagements by untruthfully criticizing other engineers, or by other improper or questionable methods.

1) Engineers shall not request, propose, or accept a commission on a contingent basis under circumstances in which their judgment may be compromised.

2) Engineers in salaried positions shall accept part-time engineering work only to the extent consistent with policies of the employer and in accordance with ethical considerations.

3) Engineers shall not, without consent, use equipment, supplies, laboratory, or office facilities of an employer to carry on outside private practice.

7. Engineers shall not attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other engineers. Engineers who believe others are guilty of unethical or illegal practice shall present such information to the proper authority for action.

1) Engineers in private practice shall not review the work of another engineer for the same client, except with the knowledge of such engineer, or unless the connection of such engineer with the work has been terminated.

2) Engineers in governmental, industrial, or educational employ are entitled to review and evaluate the work of other engineers when so required by their employment duties.

3) Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.

8. Engineers shall accept personal responsibility for their professional activities, provided, however, that engineers may seek indemnification for services arising out of their practice for other than gross negligence, where the engineer's interests cannot otherwise be protected.

1) Engineers shall conform with state registration laws in the practice of engineering.

2) Engineers shall not use association with a nonengineer, a corporation, or partnership as a "cloak" for unethical acts.

9. Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.

1) Engineers shall, whenever possible, name the person or persons who may be individually responsible for designs, inventions, writings, or other accomplishments.

2) Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the engineer for others without express permission.

3) Engineers, before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights or patents, should enter into a positive agreement regarding ownership.

4) Engineers' designs, data, records, and notes referring exclusively to an employer's work are the employer's property. The employer should indemnify the engineer for use of the information for any purpose other than the original purpose.

5) Engineers shall continue their professional development throughout their careers and should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminars.

REFERENCES

South Carolina State Board of Registration for Professional Engineers and Surveyors: Laws/Policies

https://llr.sc.gov/eng/laws.aspx

South Carolina Code of Law: Title 40 Professions and Occupations, Chapter 22. Engineers and Surveyors, (40-22-2. to 44-22-320.)

http://www.scstatehouse.gov/code/t40c022.php

South Carolina Code of Regulations: Ch. 49 Department of Labor, Licensing And Regulation - South Carolina State Board Of Registration For Professional Engineers And Land Surveyors, (49-100 to 49-610)

http://www.scstatehouse.gov/coderegs/statmast.php

National Society of Professional Engineers, Code of Ethics

http://www.nspe.org/resources/ethics/code-ethics